Apex Environmental, Inc.
New York Division
312 East Main Street
Patchogue, New York 11772
Telephone: 631-207-3700
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October 29, 2004

Mr. Jeffrey L. Dyber, P.E.
New York State Dept. of Environmental Conservation
Bureau of Eastern Remedial Action
Division of Environmental Remediation
625 Broadway, 11th Floor
Albany, New York 12233-7015

Re: Pall Corporation
NYSDEC IHWDS No. 1-30-053B

Dear Mr. Dyber,

We are in receipt of your comments regarding the Pilot Test Work Plan Addendum and Health and Safety Plan for the Pall Corporation site. This correspondence addresses all issues raised in your comments. Specifically, the following items are enclosed to finalize the work plans and allow the start of the Phase II Pilot Test field work:

- Three (3) original cover pages for the Pilot Test Work Plan Addendum with a Professional Engineering (P.E.) seal are enclosed. These signed and sealed cover pages should replace the previous cover page.
- The revised HASP, referencing the change in oxidizer and the Phase II Pilot Test scope of work is enclosed.
- The New York State Department of Health (NYSDOH) letter dated October 20, 2004, is to be inserted as part of Appendix A in the Work Plan Addendum (a copy is attached herein). This correspondence shall serve as our confirmation that the scope of work requested by the NYSDOH will be included in the Phase II Pilot Test field work. We will collect at least four (4) samples daily with a field Gas Chromatograph (GC) during the first week of injections. Sample locations will be coordinated with the NYSDEC and will at a minimum include areas adjacent to structures near the injection zone. Based upon the sampling results, the frequency of samples will be increased or decreased as necessary and as approved by the NYSDEC. We will coordinate any actions required, including but not limited to the stoppage of pilot testing, with the NYSDEC daily based upon soil gas monitoring results.

We trust this submittal will allow the field phase of the pilot test to commence as soon as possible so that we can complete injections before the onset of extremely cold temperatures. It is our intent to initiate re-mobilization to the site on approximately November 15, 2004 to initiate drilling and receive initial chemical deliveries. Please notify us in writing with your approval to

initiate remobilization and field injections.

If you have any questions or comments, please do not hesitate to contact me at (631) 207-3700 extension 102.

Sincerely,
Apex Environmental, Inc.

Daniel J. Smith, P.E.
New York Division Director
October 29 Letter.doc

cc: F. Fotouhi / Pall
V. Robbins / BSK

Apex Environmental, Inc.
New York Division
312 East Main Street
Patchogue, New York 11772
Telephone: 631-207-3700
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September 13, 2004

Mr. Jeffrey Dyber, P.E.
NYSDEC
Bureau of Eastern Remedial Action
Division of Environmental Remediation
625 Broadway
Albany, New York 12233-7015

Re: Pall Corporation, Former Sea Cliff Avenue Facility, Glen Cove, NY
NYSDEC IHWDS No. 1-30-053B
Work Plan Addendum: Phase II Pilot Test

Dear Mr. Dyber,

Enclosed is one (1) original of the revised Work Plan Addendum for the Phase II Pilot Test to be completed at Pall Corporation's former facility at 30 Sea Cliff Avenue, Glen Cove, New York. The revised submittal incorporates all NYSDEC comments received to date.

If you have any questions or comments, please do not hesitate to contact me at (631) 207-3700 extension 102.

Sincerely,
Apex Environmental, Inc.

Daniel J. Smith, P.E.
New York Division Director

September 13 cover letter.doc

Cc: F. Fotouhi / Pall
V. Robbins / BSK

PALL

WORK PLAN ADDENDUM
PHASE II PILOT TEST: FENTON'S REAGENT, *IN-SITU* CHEMICAL OXIDATION

FORMER PALL CORPORATION FACILITY
30 SEA CLIFF AVENUE
GLEN COVE, NEW YORK

Prepared for:

NYSDEC
Bureau of Eastern Remedial Action
Division of Environmental Remediation
625 Broadway
Albany, New York 12233-7015

Prepared on behalf of:

Pall Corporation
25 Harbor Park Drive
Port Washington, New York

September 13, 2004

Apex environmental, inc.

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TABLE OF CONTENTS:

TABLES:

FIGURES:

APPENDICES:

PILOT TEST WORK PLAN ADDENDUM: PHASE II PILOT TEST – FENTON'S REAGENT, *IN-SITU* CHEMICAL OXIDATION

Former Pall Corporation Facility
30 Sea Cliff Avenue
Glen Cove, New York

1.0 INTRODUCTION

Based on the findings of the Feasibility Study (FS) and the *In-situ* Chemical Oxidation (ISCO) Phase I Pilot Test Report, Pall Corporation (Pall) recommends modifying the Phase II ISCO Pilot Test by evaluating the use of Fenton's Reagent to address groundwater contamination at the Pall facility located at 30 Sea Cliff Avenue in Glen Cove, New York. The recommendation to use Fenton's Reagent rather than potassium permanganate is based on the need to address trichloro-trifluoroethane and chlorinated ethanes more aggressively in the shallow and intermediate groundwater and to determine if a more cost-effective oxidizer can be used at the site for full-scale remediation. As agreed upon with the New York State Department of Environmental Conservation (NYSDEC), this addendum only addresses the changes to the originally proposed pilot test scope of work and is to be used in conjunction with the original ISCO Pilot Test Design (i.e., original Work Plan) dated July 31, 2002.

1.1 Overview of Fenton's Reagent Use

Fenton's Reagent is a well-established oxidizing agent that has long been used in water treatment. The reaction process involves free radical generation and direct oxidation with hydrogen peroxide (H_2O_2), aided by a metal catalyst (most commonly iron in the form of ferrous sulfate, but other sources of ferrous iron such as ferrous sulfate heptahydrate may also be used). The combination of hydrogen peroxide and the metal catalyst is commonly known as Fenton's Reagent. The basic reaction is:

$$H_2O_2 + Fe^{+2} \rightarrow Fe^{+3} + OH^- + OH^{\bullet}$$

$$OH^{\bullet} + \text{Organics} \rightarrow \text{Products (typically } H_2O, CO_2, O_2, \text{ and halide ions)}$$

This reaction produces hydroxyl radicals ($OH^{\bullet}$) by the reaction of hydrogen peroxide with ferrous iron (Fe^{+2}). The hydroxyl radicals are non-specific oxidizing agents that are second only to fluorine in oxidizing power. As such, they will target many chlorinated organic compounds that are not necessarily remediated by other oxidizing agents such as permanganate (which is more contaminant specific). Since trichloro-trifluoroethanes, which should be more effectively reacted with hydrogen peroxide than with permanganate, have

been identified by NYSDEC as a concern, Fenton's reagent is recommended instead of potassium permanganate for the second phase of pilot testing.

Fenton's Reagent is a very effective oxidizer with high water solubility. The high solubility makes it highly mobile and relatively easy to inject into the subsurface. In addition, the high solubility allows the Fenton's Reagent to achieve greater in-situ mixing and better contact with contaminants of concern. The Fenton's reaction is very rapid and typically goes to completion within days or weeks of in-situ injections.

Potential concerns associated with the use of Fenton's Reagent that will be addressed and evaluated during Phase II testing include:

- ***Exothermic reaction:*** Fenton's Reagent and organics react in an exothermic reaction that gives off heat to its surroundings. To monitor this issue, the temperature of the subsurface in the injection areas will be monitored with thermocouples. The concentration of hydrogen peroxide to be injected (10% by volume) is relatively low and the flow rate of injected reactants will also be maintained at a sufficiently low rate (typically under 5 gpm) to minimize the temperature rise in the aquifer. Initial injections will be made via a gravity feed system instead of pressurizing the injection wellhead to further minimize the heat generated during reaction. In addition, phosphoric acid (an H_2O_2 stabilizer) will be available on-site to break the reaction if necessary).

- ***Worker Protection:*** Hydrogen peroxide must be properly stored and handled at all times. The site Health and Safety Plan (HASP) has been amended to include peroxide handling precautions and all workers will be trained for proper chemical handling before any site activities are initiated. Eye and skin protective equipment will be worn at all times when handling chemicals. Chemicals will be stored in containers designed for the intended use and provided by the chemical manufacturer. In addition, representatives from U.S. Peroxide (the manufacturer of the chemicals to be used on-site) will be present throughout initial deliveries and injection events.

- ***Radius of Influence:*** The effective radius of influence of Fenton's injection is typically less than that for permanganate. This will be compensated for by injecting water directly into the injection wells immediately following Fenton's Reagent injection to spread the reactants away from the well. The volume of water to be injected following each chemical injection cycle will be approximately 10% of the chemical volume injected. This amount may be varied up or down in the field depending upon water table elevation and temperature measurements collected in the field at the time of injection. The NYSDEC will be notified prior to any water injection greater than 20% of the design estimates (see **Appendix B**). Actual water injection rates and volumes will be documented in the field. In addition, Pall has selected a slower injection rate at a lower peroxide concentration rather than rapid injection of a high concentration peroxide solution. This approach has been demonstrated to decrease local decomposition of peroxide near the wellhead and therefore

extends the effective radius of influence from the injection well.

- ***Solubilty:*** Fenton's Reagent is highly water soluble and makes it highly mobile and relatively easy to inject into the subsurface. The high solubility allows the Fenton's Reagent to achieve greater *in-situ* mixing and better contact with contaminants of concern. The Fenton's reaction typically reaches completion within days or weeks of in-situ injections. Apex will be monitoring the site daily as indicated in subsequent sections of this Work Plan Addendum to understand where the injected reactants have migrated and reacted *in-situ*.

- ***pH of Aquifer:*** Fenton's Reagent is typically only effective over an acidic to neutral pH range and may require a temporary, localized acidification of the aquifer to be treated to optimize the reaction. Based upon discussions with U.S. Peroxide, continuous acid injection may not be needed because the use of ferrous sulfate to supply iron catalyst will serve to lower the pH of the aquifer because of residual H_2SO_4 associated with ferrous sulfate addition to the aquifer. However, an additional injection of H_2SO_4 (<15% Concentration) may be made at the onset of testing to lower the local aquifer pH following ferrous sulfate addition and prior to peroxide injections if the pH level in the aquifer is not at optimum conditions (between 3 and 5 standard units). One of the design issues to be evaluated during testing is the need to lower the aquifer pH temporarily with acid addition.

Detailed procedures to address these design issues are discussed in the following sections of this Work Plan Addendum.

NYSDEC, as well as all relevant parties occupying buildings in the direct vicinity of the site (limited to the August Thomsen site, the City of Glen Cove Day Care Center, the EMS Garage, and the Carney Street Well Field Site), will be notified in writing at least 7 days prior to the start of any injections. The work will commence on a weekend when the adjacent properties are reportedly unoccupied as a further safety precaution. The peroxide mixture, unlike the previous permanganate mixture, is an all liquid medium and as such will have no airborne particulate issues associated with it. However, an air monitoring program for VOCs will be initiated and maintained throughout the injection period as requested by the NYSDEC. The VOC air monitoring will comply with the NYSDOH Community Air Monitoring Plan (CAMP) which is included as **Appendix A**.

Hydrogen peroxide is typically purchased in 50% or 35% solution form. For this pilot test, hydrogen peroxide will be purchased in 50% solution and diluted down to a 10% feed concentration on-site. Additional discussion regarding dosing rates and concentrations is provided in Sections 3.0 through 3.3. Specific injection procedures are provided in Section 3.4. These procedures will not be altered without first notifying NYSDEC. However, in the event of an emergency, Apex and Pall reserve the right to alter procedures as necessary immediately, and NYSDEC will be notified as soon as possible, at a minimum within 48 hours, after the emergency situation has been controlled.

2.0 MODIFICATIONS TO ORIGINAL SCOPE OF WORK

2.1 Installation of Monitoring Wells

In order to address concerns related to potential re-contamination resulting from upgradient contamination migrating into the pilot test area, the installation of four (4) new monitoring well couplets is proposed. The new monitoring well locations are identified in **Figure 1**. All wells will be installed as two-inch diameter, PVC monitoring wells with flush mount covers at grade. Shallow wells will be installed with a screened interval from approximately 5 to 15 feet below grade surface (bgs). Intermediate wells will be installed with a screened interval from approximately 40 to 50 feet bgs. The final screened interval will be determined in the field based upon actual depth to water readings.

2.2 Use of Fenton's Reagent instead of Potassium Permanganate

Additional pilot testing will be performed with a more aggressive oxidant than potassium permanganate (i.e., Fenton's Reagent) to determine if full-scale remediation is potentially possible at lower costs. In addition, the use of Fenton's Reagent will address several secondary contaminants of concern (e.g., chlorofluorocarbons and chlorinated alkanes) that are not as readily oxidized by permanganate. Because hydrogen peroxide is normally injected at higher concentrations than permanganate, Fenton's Reagent injection typically requires less water addition. However, this fact is often offset by the need to inject additional water to ensure that the desired reaction does not occur only in the immediate vicinity of the injection well (i.e., the reaction goes to completion before adequate dispersion into the aquifer). Water is often added to better disperse the injected reactants and to increase the effective radius of influence of the injection well.

2.3 Further Evaluation of Shallow Well Injection Effectiveness

The originally proposed Phase II through Phase V Pilot Test work related to shallow well effectiveness shall be replaced in its entirety by the scope outlined in this section. The shallow well stage of testing during Phase II shall be designated Phase II, Stage 1.

Since there were several implementation difficulties noted during shallow well oxidant injections during Phase I work (e.g., mounding, slower injection rates than anticipated, etc.), additional Phase II study is necessary to determine if full-scale injection in the shallow zone is technically effective and economically practical. The data collected during this phase of testing will also be used to finalize the design basis for calculations necessary for full-scale implementation. Fenton's Reagent shall be used instead of potassium permanganate in all Phase II, Stage 1 testing to evaluate the use of alternative oxidants that can reduce chlorinated ethanes more effectively.

The first stage of the revised Phase II Pilot Test will include injections in eight (8) shallow injection wells as indicated in **Figure 2**. Since the injection well locations have changed slightly from the original plan, the related monitoring well locations were also adjusted to collect data as necessary to meet objectives. The proposed Phase II, Stage 1 monitoring well locations are also identified in **Figure 2**.

2.4 Evaluation of Fenton's Reagent in the Intermediate Zone

The originally proposed Phase II through Phase V Pilot Test work related to intermediate well effectiveness shall be replaced in its entirety by the scope outlined in this section. The intermediate well stage of testing during Phase II shall be designated Phase II, Stage 2.

Since intermediate zone contaminant reductions were so pronounced during Phase I Pilot Tests, it has already been determined that oxidants can be effectively delivered to the intermediate groundwater zone. However, the type of oxidant can be optimized to better address trichloro-trifluoroethanes and other chlorinated ethanes that are not as effectively reduced using potassium permanganate. Therefore, the modified Phase II Pilot Test work related to the intermediate zone will focus on the ability to address contaminants that while not widespread at the site, still may require remediation based upon initial indications from the NYSDEC. The proposed Phase II, Stage 2 pilot test layout, including injection points and monitoring locations is presented in **Figure 3**.

As indicated in **Figure 3**, only two (2) intermediate injection wells are to be utilized in areas where trichloro-trifluoroethane concentrations have been historically elevated. The monitoring well network has also been modified to include further downgradient monitoring at the request of the NYSDEC.

2.5 Injection Effectiveness Using Single Point Injection Wells

Injection of Fenton's Reagent directly into existing, single point locations will be evaluated as a localized treatment option. The wells recommended for inclusion in the single well injection testing are MW-4PI, PT-12I, PT-18I, and PT-7S. These wells were chosen because of localized concentrations of trichloro-trifluoroethanes and downgradient areas of elevated VOCs, plus the availability of sufficient, existing monitoring wells downgradient of the injection locations. The proposed injection and monitoring program for Stage 3 of the modified Phase II Pilot Test is presented in **Figure 4**.

3.0 INJECTION DOSAGE AND FIELD PROCEDURES

Based upon the data obtained during Phase I testing and the consideration of an alternative oxidizer, dosage concentrations were re-calculated for the Phase II Pilot Test work. The following sections of this Work Plan Addendum summarize the dosing for each stage of the Phase II Pilot Test.

3.1 Phase II, Stage I Pilot Test Injection Dosing

The following is a summary of the dosing to be utilized for Stage 1 of the Phase II pilot Test. Detailed calculations are provided in **Appendix B**.

Size of Stage 1 Pilot Test Area: Approximately 140 ft long x 160 ft wide x 40 ft deep

Total No. of Injection Wells: Eight (8) Shallow Wells (See **Figure 2**)

Injection Concentration And Flow Rate: Peroxide injections are going to be performed using 10% hydrogen peroxide by volume. An initial injection rate of 5 gallons per minute will be used. The subsurface temperature and pressure are carefully monitored to ensure that the exothermic reaction is controlled. Initial injection will utilize gravity flow into the well. If temperature data is acceptable in the subsurface (typically less than 110 to 115 degrees Fahrenheit), pressurized injection may be utilized. The NYSDEC would be consulted before pressurized injections would be initiated.

Clean Soil Oxidant Demand: Estimated to range from 1g/kg to 5 g/kg based upon review of literature values and interpretation of past permanganate study results. Initial injections will be performed on a 1 g/kg SOD basis and additional injection events will be performed at a 3 g/kg and 5 g/kg SOD basis if determined to be necessary upon post-injection monitoring data review after each injection event.

Temporary Chemical Storage: Hydrogen peroxide will be delivered via tanker truck at 50% concentration (v/v) and will be stored in a tank system specifically designed for H2O2 storage by the manufacturer. Ferrous sulfate will be delivered at 12% concentration in totes, specifically designed for ferrous sulfate storage by the manufacturer. Acid will be stored in drums (if necessary). Secondary containment will be provided for chemicals stored on-site.

Mass of Hydrogen Peroxide:	SOD = 1 g/kg:	92,212 pounds H_2O_2
	SOD = 3 g/kg:	243,105 pounds H_2O_2
	SOD = 5 g/kg:	393,998 pounds H_2O_2
Volume of 10% H_2O_2 Soln:	SOD = 1 g/kg:	100,122 gallons H_2O_2 solution
	SOD = 3 g/kg:	263,958 gallons H_2O_2 solution
	SOD = 5 g/kg:	427,794 gallons H_2O_2 solution
Volume of 10% H_2O_2 Per Well:	SOD = 1 g/kg:	12,515 gallons H_2O_2
	SOD = 3 g/kg:	32,995 gallons H_2O_2
	SOD = 5 g/kg:	53,474 gallons H_2O_2
Mass of Ferrous Sulfate:	SOD = 1 g/kg:	11,527 pounds $FeSO_4 \cdot 7H_2O$
	SOD = 3 g/kg:	36,497 pounds $FeSO_4 \cdot 7H_2O$
	SOD = 5 g/kg:	61,466 pounds $FeSO_4 \cdot 7H_2O$
Volume of 12% $FeSO_4$ Soln:	SOD = 1 g/kg:	9,713 gallons $FeSO_4 \cdot 7H_2O$
	SOD = 3 g/kg:	30,752 gallons $FeSO_4 \cdot 7H_2O$
	SOD = 5 g/kg:	51,791 gallons $FeSO_4 \cdot 7H_2O$
Volume of 12% $FeSO_4$ Per Well:	SOD = 1 g/kg:	1,214 gallons $FeSO_4 \cdot 7H_2O$
	SOD = 3 g/kg:	3,844 gallons $FeSO_4 \cdot 7H_2O$
	SOD = 5 g/kg:	6,474 gallons $FeSO_4 \cdot 7H_2O$
Flush Water Between Injections[1]: (Totals ~ 10% of Chem. Vol.)	SOD = 1 g/kg:	1,373 gallons H_2O each well
	SOD = 3 g/kg:	3,683 gallons H_2O each well
	SOD = 5 g/kg:	5,994 gallons H_2O each well

Additional dosing calculations and information is provided in **Appendix B**.

3.2 Phase II, Stage 2 Pilot Test Injection Dosing

The following is a summary of the dosing to be utilized for Stage 2 of the Phase II Pilot Test. Detailed calculations are provided in Appendix B.

Size of Stage 1 Pilot Test Area:	Approximately 60 ft long x 60 ft wide x 20 ft deep (intermediate zone depth from 40 to 60 feet approximate)
Total No. of Injection Wells:	Two (2) Intermediate Wells (See **Figure 3**)

[1] *NOTE: The actual flush volume at higher dosing concentrations of peroxide may be less than 10% because the amount of water needed to push reactants away from the well screen does not have a direct linear relationship with the amount of reactants injected. The 10% flush water estimated is therefore a conservative estimate and actual flush water injected may be lower.*

Injection Concentration And Flow Rate:

Peroxide injections are going to be performed using 10% hydrogen peroxide by volume. An initial injection rate of 5 gallons per minute will be used. The subsurface temperature and pressure are carefully monitored to ensure that the exothermic reaction is controlled. Initial injection will utilize gravity flow into the well. If temperature data is acceptable in the subsurface (typically less than 110 to 115 degrees Fahrenheit), pressurized injection may be utilized. The NYSDEC would be consulted before pressurized injections would be initiated.

Clean Soil Oxidant Demand:

Estimated to range from 1g/kg to 5 g/kg based upon review of literature values and interpretation of past permanganate study results. Initial injections will be performed on a 1 g/kg SOD basis and additional injection events will be performed at a 3 g/kg and 5 g/kg SOD basis if determined to be necessary upon post-injection monitoring data review after each injection event.

Temporary Chemical Storage:

Hydrogen peroxide will be delivered via tanker truck at 50% concentration (v/v) and will be stored in a tank system specifically designed for H2O2 storage by the manufacturer. Ferrous sulfate will be delivered at 12% concentration in totes, specifically designed for ferrous sulfate storage by the manufacturer. Acid will be stored in drums (if necessary). Secondary containment will be provided for chemicals stored on-site.

Mass of Hydrogen Peroxide:	SOD = 1 g/kg:	7,410 pounds H_2O_2
	SOD = 3 g/kg:	19,535 pounds H_2O_2
	SOD = 5 g/kg:	31,661 pounds H_2O_2
Volume of 10% H_2O_2 Soln:	SOD = 1 g/kg:	8,046 gallons H_2O_2 solution
	SOD = 3 g/kg:	21,211 gallons H_2O_2 solution
	SOD = 5 g/kg:	34,376 gallons H_2O_2 solution
Volume of 10% H_2O_2 Per Well:	SOD = 1 g/kg:	4,023 gallons H_2O_2
	SOD = 3 g/kg:	10,605 gallons H_2O_2
	SOD = 5 g/kg:	17,188 gallons H_2O_2
Mass of Ferrous Sulfate:	SOD = 1 g/kg:	926 pounds $FeSO_4 \cdot 7H_2O$
	SOD = 3 g/kg:	2,933 pounds $FeSO_4 \cdot 7H_2O$
	SOD = 5 g/kg:	4,939 pounds $FeSO_4 \cdot 7H_2O$
Volume of 12% $FeSO_4$ Soln:	SOD = 1 g/kg:	781 gallons $FeSO_4 \cdot 7H_2O$
	SOD = 3 g/kg:	2,471 gallons $FeSO_4 \cdot 7H_2O$
	SOD = 5 g/kg:	4,162 gallons $FeSO_4 \cdot 7H_2O$

Volume of 12% $FeSO_4$ Per Well:	SOD = 1 g/kg:	390 gallons $FeSO_4 \cdot 7H_2O$
	SOD = 3 g/kg:	1,236 gallons $FeSO_4 \cdot 7H_2O$
	SOD = 5 g/kg:	2,081 gallons $FeSO_4 \cdot 7H_2O$
Flush Water Between Injections[2]: (Totals ~ 10% of Chem. Vol.)	SOD = 1 g/kg:	441 gallons H_2O each well
	SOD = 3 g/kg:	1,185 gallons H_2O each well
	SOD = 5 g/kg:	1,927 gallons H_2O each well

Additional dosing calculations and information is provided in **Appendix B**.

3.3 Phase II, Stage 3 Pilot Test Injection Dosing

The following is a summary of the dosing to be utilized for Stage 3 of the Phase II Pilot Test. Detailed calculations are provided in **Appendix B**.

Size of Stage 1 Pilot Test Area: Approximately 60 ft long x 120 ft wide x 20 ft (most of area) deep total area – divided into four individual injection well areas (intermediate zone depth from approximately 40 to 60 feet, shallow zone depth from approximately 10 to 40 feet)

Total No. of Injection Wells: Three (3) Individual, Intermediate Wells and one (1) individual shallow well. (See **Figure 4**)

Injection Concentration And Flow Rate: Peroxide injections are going to be performed using 10% hydrogen peroxide by volume. An initial injection rate of 5 gallons per minute will be used. The subsurface temperature and pressure are carefully monitored to ensure that the exothermic reaction is controlled. Initial injection will utilize gravity flow into the well. If temperature data is acceptable in the subsurface (typically less than 110 to 115 degrees Fahrenheit), pressurized injection may be utilized. The NYSDEC would be consulted before pressurized injections would be initiated.

Clean Soil Oxidant Demand: Estimated to range from 1g/kg to 5 g/kg based upon review of literature values and interpretation of past

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[2] *NOTE: The actual flush volume at higher dosing concentrations of peroxide may be less than 10% because the amount of water needed to push reactants away from the well screen does not have a direct linear relationship with the amount of reactants injected. The 10% flush water estimated is therefore a conservative estimate and actual flush water injected may be lower.*

	permanganate study results. Initial injections will be performed on a 1 g/kg SOD basis and additional injection events will be performed at a 3 g/kg and 5 g/kg SOD basis if determined to be necessary upon post-injection monitoring data review after each injection event.	
Temporary Chemical Storage:	Hydrogen peroxide will be delivered via tanker truck at 50% concentration (v/v) and will be stored in a tank system specifically designed for H2O2 storage by the manufacturer. Ferrous sulfate will be delivered at 12% concentration in totes, specifically designed for ferrous sulfate storage by the manufacturer. Acid will be stored in drums (if necessary). Secondary containment will be provided for chemicals stored on-site.	
Mass of Hydrogen Peroxide:	SOD = 1 g/kg: SOD = 3 g/kg: SOD = 5 g/kg:	14,820 pounds H_2O_2 39,071 pounds H_2O_2 63,321 pounds H_2O_2
Volume of 10% H_2O_2 Soln:	SOD = 1 g/kg: SOD = 3 g/kg: SOD = 5 g/kg:	16,091 gallons H_2O_2 solution 42,422 gallons H_2O_2 solution 68,753 gallons H_2O_2 solution
Volume of 10% H_2O_2 Per Well:	SOD = 1 g/kg: SOD = 3 g/kg: SOD = 5 g/kg:	4,023 gallons H_2O_2 10,605 gallons H_2O_2 17,188 gallons H_2O_2
Mass of Ferrous Sulfate:	SOD = 1 g/kg: SOD = 3 g/kg: SOD = 5 g/kg:	1,853 pounds $FeSO_4 \cdot 7H_2O$ 5,866 pounds $FeSO_4 \cdot 7H_2O$ 9,878 pounds $FeSO_4 \cdot 7H_2O$
Volume of 12% $FeSO_4$ Soln:	SOD = 1 g/kg: SOD = 3 g/kg: SOD = 5 g/kg:	1,561 gallons $FeSO_4 \cdot 7H_2O$ 4,942 gallons $FeSO_4 \cdot 7H_2O$ 8,324 gallons $FeSO_4 \cdot 7H_2O$
Volume of 12% $FeSO_4$ Per Well:	SOD = 1 g/kg: SOD = 3 g/kg: SOD = 5 g/kg:	390 gallons $FeSO_4 \cdot 7H_2O$ 1,236 gallons $FeSO_4 \cdot 7H_2O$ 2,081 gallons $FeSO_4 \cdot 7H_2O$
Flush Water Between Injections[3]: (Totals ~ 10% of Chem. Vol.)	SOD = 1 g/kg: SOD = 3 g/kg: SOD = 5 g/kg:	441 gallons H_2O each well 1,185 gallons H_2O each well 1,927 gallons H_2O each well

[3] *NOTE: The actual flush volume at higher dosing concentrations of peroxide may be less than 10% because the amount of water needed to push reactants away from the well screen does not have a direct linear relationship with the amount of reactants injected. The 10% flush water estimated is therefore a conservative estimate and actual flush water injected may be lower.*

Additional dosing calculations and information is provided in **Appendix B**.

3.4 Injection Procedures

The injection procedures will be basically the same for all stages of pilot testing. The following test procedures shall be implemented:

1. Coordinate delivery of chemicals to the site with chemical manufacturer. A manufacturer's representative will be on-site during chemical deliveries to supervise off-loading of materials and to ensure that materials are stored properly. Incompatibles will be properly segregated and appropriate H&S personnel protective equipment (PPE) will be utilized. Copies of Material Safety Data Sheets (MSDS) for the chemicals to be used during pilot testing are provided in **Appendix C**.

2. Complete visual inspection of chemical storage and conveyance system to verify system integrity. If any evidence of leakage is present, notify Apex Environmental, Inc. Project Manager: Daniel Smith at (631) 207-3700 extension 102 or by cell phone at (914) 319-9375. A spill kit will be provided on-site to remedy any small spills during injection events. In addition, a neutralizing solution of sodium metabisulfite will be available on-site to stop any unwanted hydrogen peroxide reactions after dilution (with water) to less than 5% H_2O_2. The use of sodium metabisulfite will allow the controlled decomposition of H_2O_2.

3. Prior to injection of chemicals, all wells will be flushed with approximately 10 to 20 gallons of water, followed by flush with a dilute solution of vinegar, hydrogen peroxide and water (about 3% peroxide and 5:1 ratio of vinegar to peroxide). This initial flush will be used to dissolve any manganese oxide that may remain from previous potassium permanganate injections. During the water injections, the feed system integrity will be verified and all control systems will be checked out in the field.

4. A round of baseline field parameter readings will be collected prior to injections (see Section 4.2 for list of parameters for field monitoring).

5. Ferrous sulfate solution will be the first chemical injected. Injection of 12% $FeSO_4 \cdot 7H_2O$ solution will proceed at an approximate injection rate of 5 gallons per minute. Initial injections will be made by gravity feed. Injections of $FeSO_4 \cdot 7H_2O$ will continue until the quantities identified in the previous sections of the Work Plan Addendum and as identified in **Appendix B** have been introduced at each well.

6. A round of field parameter readings will be collected approximately one hour after $FeSO_4 \cdot 7H_2O$ injections have been completed.

7. A decision will be made in the field whether acid addition is required. This decision will be made in consultation with the peroxide manufacturer's representative based upon field pH readings after ferrous sulfate injection. If

the pH in the test area is between 3.0 and 5.5, no additional acid will be added. If the pH is above 5.5, acid will be added to bring the pH in the aquifer to below 5.5 standard units. A dilute (5% to 10% sulfuric acid solution) will be utilized for field pH adjustments. It is important to note that the lowering of the aquifer pH is a temporary, localized action and normal aquifer pH should be restored following completion of pilot testing.

8. After confirming pH levels, hydrogen peroxide injection will be initiated. Injection of 10% H_2O_2 solution will proceed at an approximate injection rate of 5 gallons per minute. Initial injections will be made by gravity feed. Injections of H_2O_2 will continue until the quantities identified in the previous sections of the Work Plan Addendum and as identified in **Appendix B** have been introduced at each well.

9. During injections, temperature and subsurface pressure will be carefully monitored to ensure that the Fenton's Reaction proceeds in a controlled manner. Additional discussion on temperature and pressure monitoring is provided in Section 4.

10. At least one (1) round of full field parameters will be collected daily during peroxide injections. However, additional monitoring of key indicating parameters such as temperature, pressure, and soil gas VOCs will be collected more frequently.

11. Periodically during injections, the wells will be flushed with water to distribute the reactants away from the well screen. This will assist in-situ mixing and will also help control the aggressiveness of the reaction. It is anticipated that approximately 10% of the total chemical injection volume will be a water-only flush at the injection wells. However, Pall and Apex reserve the right to vary the injection rates and volumes of flush water as necessary to ensure safety of injections and control of the exothermic reaction. We will carefully monitor flush water injection volumes and will notify NYSDEC of changes from the estimated flush water volumes provided in **Appendix B** as soon as practical.

12. Following completion of injections, all field equipment will be decontaminated and the post-injection monitoring program will be initiated as outlined in Section 4.2.

4.0 MONITORING PROGRAM MODIFICATIONS

Based upon review of Phase I Pilot Test data and discussions with the NYSDEC, the monitoring program for the modified Phase II Pilot Test will be adjusted to address concerns noted by the NYSDEC and practical limitations related to collection of readings at individual monitoring locations. Specifically, the monitoring program will consist of three types of monitoring: (1) Baseline (Pre-Injection) Monitoring; (2) Monitoring during injection events; and, (3) Post-Injection Monitoring. Each of these monitoring events is described below.

4.1 Baseline Monitoring

At the request of the NYSDEC, all on-site monitoring wells (shallow, intermediate and deep) and the upgradient wells along Sea Cliff Avenue have already been sampled prior to the start of testing. In addition, the off-site, downgradient wells identified on Figures 1, 2, and 3 related to pilot testing were included in the baseline-sampling event. The data obtained was used to update the groundwater-monitoring database for the site and to establish pre-injection conditions related to water quality.

The wells sampled as part of baseline sampling are indicated in **Table 1**.

All samples were analyzed for VOCs, trichloro-trifluoroethanes, iron, chromium, and dissolved oxygen (DO). The results of baseline sampling are presented in **Table 2** (Shallow Wells), **Table 3** (Intermediate Wells) and **Table 4** (Deep Wells). Graphics showing the baseline sample results and sampling locations are provided in **Figure 5** (Shallow Wells), **Figure 6** (Intermediate Wells) and **Figure 7** (Deep Wells). Analytical Lab Reports are provided in **Appendix D**.

In addition, field screening for Temperature, Pressure, Depth to Water, pH, Conductivity, Soil Gas VOCs (via field photoionization detector) and Oxidation-Reduction Potential (ORP) will be completed prior to the start of injections. Additional details regarding justification for these analytes were provided in the original work plan and design documents.

4.2 Monitoring During Injection Events

During field injection events, full field parameters will be monitored at least once daily. The monitoring locations for each stage of testing are indicated on Figures 1, 2, and 3. The following field parameters will be considered "full field parameters."

- Temperature (subsurface via thermocouples);
- Pressure (subsurface via magnehelic gauges and wellhead when pressure injection is used);

- pH of the aquifer;
- Conductivity;
- Turbidity (if necessary based upon visual observations);
- Depth to Water at monitoring wells in the test area;
- Soil Gas Monitoring: Soil gas monitoring will be conducted with and downgradient of the test area by inserting a probe into ½" diameter holes punched into the ground to a depth of approximately 2 to 3 feet below grade. Soil gas readings will be collected via the probe on a photoionization detector and recorded in field log books. Approximately ten (10) soil gas survey locations within the test area will be utilized for soil gas monitoring. Monitoring locations will be within fifteen feet of pilot test monitoring and/or injection wells and along property boundaries.
- ORP at monitoring wells in the test area

In addition to the daily "full field parameter" monitoring, temperature, pH, and pressure may be measured more frequently to monitor the *in-situ* reaction progress and control.

4.3 Post-Injection Monitoring

In addition to the pre-injection monitoring and monitoring during injection events, several additional rounds of field monitoring after the final injection event will be added to better understand the long-term impacts to the chemicals of concern and the aquifer. Post injection monitoring will include field screening and collection of analytical samples. Field screening will be conducted daily for "full field parameters" for the first week following the termination of injections and weekly thereafter for a period of 3 weeks (4 weeks total field monitoring after injections). In addition, a field-screening event will also be conducted during all analytical sampling events.

Three (3) analytical sampling events will be performed. The first event will occur approximately five (5) days after the termination of injection events. The second will occur approximately thirty (30) days after injection events, and the final sampling event will occur approximately sixty (60) days after completion of injection events. The same analytical parameters identified in the baseline-sampling event will be analyzed.

5.0 SCHEDULE

It is Pall's intention to initiate work on the Phase II Pilot Test immediately upon NYSDEC approval of this Work Plan Addendum. Baseline sampling has been completed and chemical purchase and delivery will be initiated upon NYSDEC's approval of this Work Plan Addendum.

The schedule for implementation of the key elements of the Phase II Pilot Test is indicated below.

Dosage Calculations:	Complete
Baseline Sampling:	Complete
NYSDEC Approval of Work Plan Addendum:	September 22, 2004
Chemical Deliveries:	September 27, 2004
Field System Checks and Initial Well Flushes:	September 27 – September 30, 2004
Stage 1 Injections at Low Dose:	October 1 – October 15, 2004
Stage 2 Injections at Low Dose:	October 18 – October 22, 2004
Stage 3 Injections at Low Dose:	October 25 – November 5, 2004
Low Dose Injection & Post-Injection Monitoring:	September 27 – December 17, 2004
Low Dose Data Evaluation:	December 17 – January 4, 2004
Determination if Mid & High Dosing is Req'd:	January 4, 2005
Report Preparation (if no additional dosing):	January 4 – January 25, 2005
Remedial Design / Remedial Action Work Plan Submittal: (if no additional dosing required)	February 25, 2005
Re-Mobe for Additional Dosing (if req'd):	March 21, 2005

Detailed Schedule for Additional Dosing Tests to be Provided January 4, 2005 (if necessary).

Table 1

Wells Included in Baseline Sampling Event

Groundwater Zone	Well ID	
Shallow Zone (Typical Screen: 5 – 20 ft bgs)	• MW-1GS • MW-1A • MW-2A • MW-3P • MW-4PS • MW-5P • MW-7P • MW-8PS • MW-10PS	• MW-11PS • MW-12PS • MW-13PS • PTMW-1S • PTMW-2S • PTMW-3S • PTMW-4S • PTMW-5S • PTMW-6S
Intermediate Zone (Typical Screen 40 – 60 ft bgs)	• MW-1GI • MW-1PI • MW-2AI • MW-4PI • MW-5PI • MW-6PI • MW-8PI • MW-10PI • MW-11PI	• MW-12PI • MW-13PI • MW-16PCI • PTMW-1I • PTMW-2I • PTMW-3I • PTMW-4I • PTMW-5I • PTMW-6I
Deep Zone (Typical Screen 90 – 100 ft bgs)	• MW-1GD • MW-1PD • MW-2AD • MW-4PD • MW-5PD • MW-6PD • MW-10PD	• MW-11PD • MW-12PD • MW-13PD • MW-14PCD • MW-15PCD • MW-16PCD

Table 2
GroundwaterSample Results-Shallow Groundwater Monitoring Wells
Phase II Pilot Test: Pre-Injection Baseline Monitoring

All results in ug/l except as noted.

Parameter	Upgradient MW-1A 2/25/2004	MW-2A 2/19/2004	MW-3P 2/23/2004	MW-4PS 2/18/2004	MW-5P 2/19/2004	Upgradient MW-7P 2/20/2004	Upgradient MW-8PS 10/30/2002	MW-10PS 2/19/2004	MW-11PS 2/18/2004	MW-12PS 2/23/2004	Upgradient MW-13PS 2/20/2004	PTMW-1S 2/23/2004	PTMW-2S 2/23/2004	PTMW-3S 2/24/2004	PTMW-4S 2/24/2004	PTMW-5S 2/24/2004	PTMW-6S 2/24/2004
Chloromethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Bromomethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Vinyl Chloride	3 J	6 J	220 D	55	30	<10	<10	110	20	8 J	<10	8 J	18	32	31	93	190
Chloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Methylene Chloride	<10	<10	<10	2 J	<10 J	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Acetone	<10	14	5 J	5 J	8 J	<10	<10	<10	<10	6 J	<10	<10	<10	<10	70	50	75
1,1-Dichloroethene	<10	<10	3 J	2 J	1 J	<10	<10	5 J	<10	<10	<10	<10	<10	<10	4 J	4 J	8 J
Carbon Disulfide	<10	<10	<10 J	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,1-Dichlorethane	<10	11	11	4 J	1 J	<10	<10	9 J	2 J	<10	1 J	1 J	1 J	2 J	3 J	2 J	13
1,2-Dichloroethene (total)	<10	80	210 D	400 D	720 D	<10	<10	1,200 D	83	64	12	31	67	140	510 D	2,500 D	1,800 D
Chloroform	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Freon-113	2 J	280 D	<10	7 J	86	<10	<10	1,400 D	13	59	<10	12	7 J	4 J	1,400 D	1,000 D	1,600 D
1,2-Dichloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2-Butanone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,1,1-Trichloroethane	<10	5 J	<10	2 J	<10	<10	<10	2 J	<10	<10	<10	<10	<10	<10	3 J	<10	5 J
Carbon Tetrachloride	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Bromodichloromethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,2-Dichloropropane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
cis-1,3-Dichloropropene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Trichloroethene	1 J	26	5 J	2 J	11	<10	<10	140	53	46	2 J	14	14	2 J	330 D	290 D	170
Dibromochloromethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,1,2-Trichloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Benzene	<10	<10 J	<10	<10	<10	<10	<10	1 J	<10	<10	<10	<10	<10	<10	1 J	<10	1 J
trans-1,3-Dichloropropene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Bromoform	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
4-Methyl-2-Pentanone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2-Hexanone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Tetrachloroethene	3 J	38	<10	<10	11	<10	<10	90	10	45	<10	5 J	2 J	1 J	52	850 D	110
1,1,2,2-Tetrachloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Toluene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Chlorobenzene	<10	<10	<10	<10	1 J	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Ethylbenzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Styrene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Xylene (total)	<10	<10	<10	<10	<10	<10	<10	2 J	<10	<10	<10	<10	<10	<10	<10	<10	1 J
Total "Freon" TICs	0	13 NJ	19 NJ	9 NJ	97 NJ	0	0	290 NJ	12 NJ	10 NJ	0	0	0	40 NJ	184 NJ	84 NJ	300 NJ
Total VOCs	9	460	454	479	869	0	0	2,959	181	228	15	71	109	181	2,404	4,789	3,973

Notes:

Shallow" groundwater is defined as wells screened from grade to approximately 20 feet into the water table.
TICs = Tentatively Identified Compounds, 1,2-DCE listed individually as a VOC because of its importance at the site.
NA = Not Available
Total VOCs does not include TICs
J = Estimated value
B = Analyte is found in associated blank as well as in the sample
E = Compound whose concentrations exceeded the calibration range of the GC/MS for that specific analysis. The sample was diluted and re-analyzed.
D = Compound is identified at a secondary dilution factor.
N = presumptive evidence of a compound, only applicable to TICs.
<## = Compound was analyzed for but not detected. The ## represents the sample quantitation limit (This is similar to the U flag).
* Indicates a guidance value, not a standard.
ND = Tentatively identified compound that was not detected, Actual MDL not available but likely <10 ug/l based upon similar sample matrices.
Acetone levels detected during 11/4 through 11/7 lab analyses are the result of possible lab contamination because acetone was not detected at elevated levels during previous studies, nor was it used at the facility in any significant quantities.

Table 3
Groundwater Sample Results-Intermediate Monitoring Wells
Phase II Pilot Test: Pre-Injection Baseline Monitoring

All results in ug/l except as noted.

Parameter	MW-1GI 4/17/2004	Upgradient MW-1PI 2/20/2004	MW-2AI 2/19/2004	MW-4PI 2/18/2004	MW-5PI 10/31/2002	Upgradient MW-6P 2/20/2004	Upgradient MW-8PI 2/20/2004	MW-10PI 11/1/2002	MW-11PI 2/18/2004	MW-12PI 2/23/2004	Upgradient MW-13PI 2/20/2004	Upgradient MW-16PCI 4/16/2004	PTMW-1I 2/23/2004	PTMW-2I	PTMW-3I 2/24/2004	PTMW-4I	PTMW-5I	PTMW-6I
Chloromethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Bromomethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Vinyl Chloride	33	<10	<10	6 J	12	3 J	<10	4 J	16	3 J	23	<10	5 J	4 J	<10	4 J	<10 J	3 J
Chloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	1 J	<10	<10	<10	<10	<10	<10	<10	<10
Methylene Chloride	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Acetone	35	<10	<10	<10	<10	<10	<10	<10	14	<10	<10	<10	25	11	32	11	4 J	8 J
1,1-Dichloroethene	<10	<10	51	<10	12	14	21	<10	18	39	15	<10	<10	<10	<10	<10	<10	<10
Carbon Disulfide	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,1-Dichlorethane	<10 J	6 J	26	2 J	11	27	29	2 J	18	56	24	<10	<10	<10	4 J	1 J	<10	2 J
1,2-Dichloroethene (total)	480	43	580 D	13	230 D	140	120	98	370 D	970 D	240 D	<10	21	18	<10	73	28	26
Chloroform	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Freon-113	160	<10	28	1,000 D	<10	<10	<10	27	320 D	110	<10	<10	<10	<10	24	24	1 J	3 J
1,2-Dichloroethane	<10	<10	2 J	<10	<10	4 J	3 J	<10	<10	2 J	7 J	<10	<10	<10	<10	<10	<10	<10
2-Butanone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,1,1-Trichloroethane	<10	<10	18	<10	14	<10	8 J	<10	15	19	5 J	<10	<10	<10	<10	<10	<10	<10
Carbon Tetrachloride	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Bromodichloromethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,2-Dichloropropane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
cis-1,3-Dichloropropene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Trichloroethene	81	35	730 D	10	200	28	53	38	210 D	1,400 D	95	<10	<10	<10	<10	62	<10	8 J
Dibromochloromethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,1,2-Trichloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	2 J	<10	<10	<10	<10	<10	<10	<10	<10
Benzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	1 J	<10	<10	<10	<10	<10	<10	<10
trans-1,3-Dichloropropene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Bromoform	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
4-Methyl-2-Pentanone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2-Hexanone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Tetrachloroethene	160	37	110	1 J	13	17	17	99	330 D	190	21	<10	2 J	4 J	19	4 J	60	13
1,1,2,2-Tetrachloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Toluene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Chlorobenzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Ethylbenzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Styrene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Xylene (total)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Total "Freon" TICs	0	0	6 NJ	20 NJ	0	0	0	0	14 NJ	0	0	0	0	0	0	50 NJ	0	0
Total VOCs	949	121	1,545	1,032	492	233	251	268	1,311	2,792	431	0	53	37	79	179	93	63
Total VOCs (less Acetone)	914	121	1,545	1,032	492	233	251	268	1,311	2,792	431	0	53	37	47	168	89	55

Notes:

Intermmediate" groundwater is defined as wells screened in the interval from approximately 45 to 65 feet into the water table.
TICs = Tentatively Identified Compounds, 1,2-DCE listed individually as a VOC because of its importance at the site.
NA = Not Available
Total VOCs does not include TICs
J = Estimated value
B = Analyte is found in associated blank as well as in the sample
E = Compound whose concentrations exceeded the calibration range of the GC/MS for that specific analysis. The sample was diluted and re-analyzed.
D = Compound is identified at a secondary dilution factor.
N = presumptive evidence of a compound, only applicable to TICs.
<## = Compound was analyzed for but not detected. The ## represents the sample quantitation limit (This is similar to the U flag).
* Indicates a guidance value, not a standard.
ND = Tentatively identified compound that was not detected, Actual MDL not available but likely <10 ug/l based upon similar sample matrices.
Acetone levels detected during 11/4 through 11/7 lab analyses are the result of possible lab contamination because acetone was not detected at elevated levels during previous studies, nor was it used at the facility in any significant quantities.

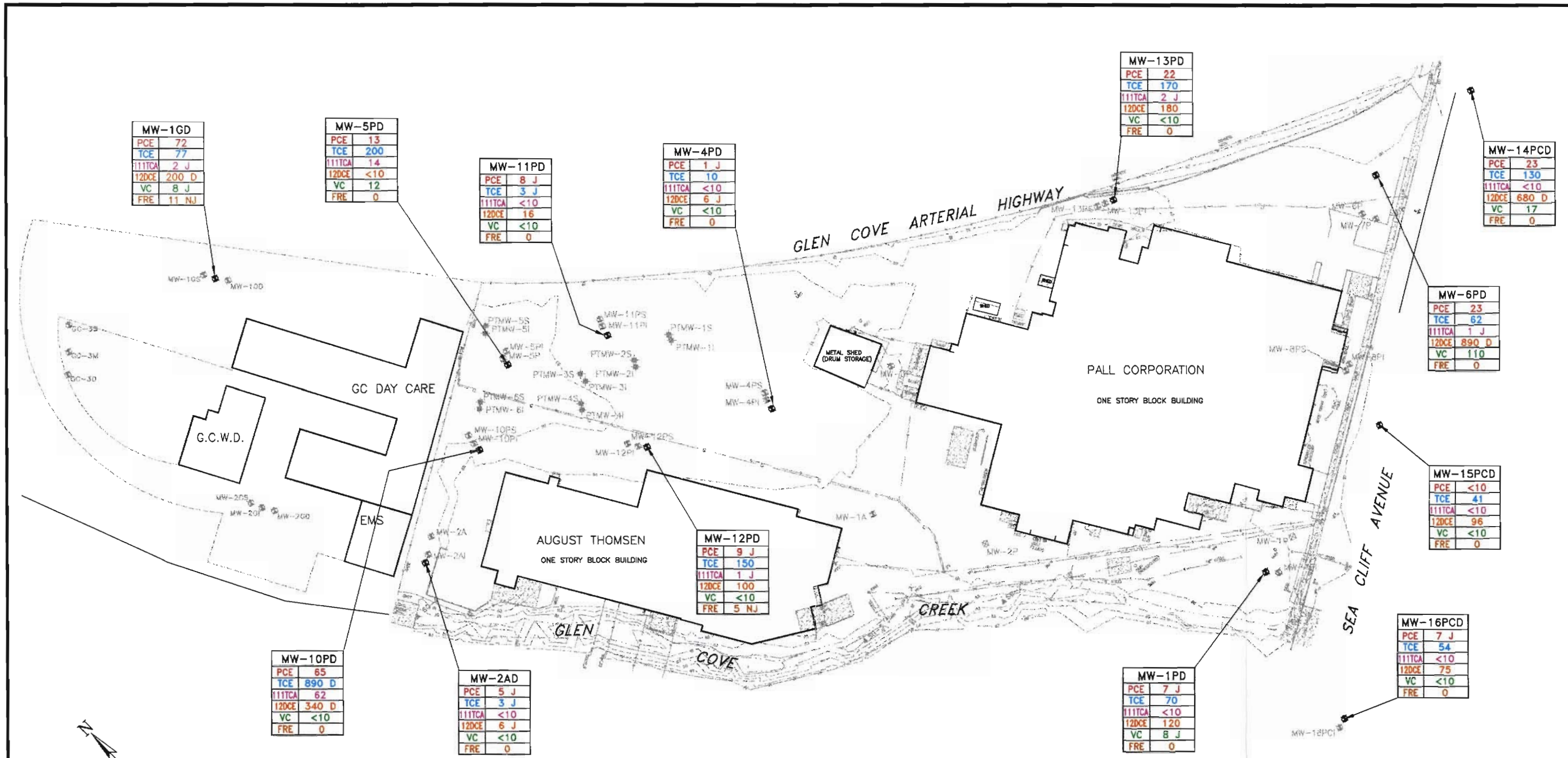
Table 4
Groundwater Sample Results - Deep Groundwater Monitoring Well
Phase II Pilot Test: Pre-Injection Baseline Monitorin

All results in ug/l except as noted.

Parameter	Upgradient MW-1PD 2/25/04	MW-2AD 2/19/04	MW-4PD 2/18/04	MW-5PD 2/19/04	Upgradient MW-6PD 2/20/04	MW-10PD 11/1/02	MW-11PD 2/18/04	MW-12PD 2/23/04	Upgradient MW-13PD 2/20/04	Upgradient MW-14PCD	Upgradient MW-15PCD	Upgradient MW-16PCD
Chloromethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Bromomethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Vinyl Chloride	8 J	<10	<10	11	110	<10	<10	<10	<10	17	<10	<10
Chloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Methylene Chloride	<10	<10	<10	<10	<10	1 BJ	<10	<10	<10	<10	<10	<10
Acetone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,1-Dichloroethene	4 J	<10	<10	12	45	63	<10	4 J	8 J	<10	<10	<10
Carbon Disulfide	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,1-Dichlorethane	12	<10	<10	10	100	69	3 J	6 J	13	30	11	<10
1,2-Dichloroethene (total)	120	6 J	6 J	200	890 D	340 D	16	100	180	680	96	75
Chloroform	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Freon-113	<10	<10	<10	<10	<10	<10	2 J	<10	<10	<10	<10	<10
1,2-Dichloroethane	<10	<10	<10	<10	14	1 J	<10	<10	<10	<10	<10	<10
2-Butanone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,1,1-Trichloroethane	<10	<10	<10	13	1 J	62	<10	1 J	2 J	<10	<10	<10
Carbon Tetrachloride	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Bromodichloromethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,2-Dichloropropane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
cis-1,3-Dichloropropene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Trichloroethene	70	3 J	10	180	62	890 D	3 J	150	170	130	41	54
Dibromochloromethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,1,2-Trichloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Benzene	<10	<10	<10	<10	3 J	<10	<10	<10	<10	<10	<10	<10
trans-1,3-Dichloropropene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Bromoform	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
4-Methyl-2-Pentanone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2-Hexanone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Tetrachloroethene	7 J	5 J	1 J	13	23	65	8 J	9 J	22	23	<10	<10
1,1,2,2-Tetrachloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Toluene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Chlorobenzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Ethylbenzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Styrene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Xylene (total)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Total "Freon" TICs	0	0	0	0	0	0	0	5 NJ	0	0	0	0
Total VOCs	221	14	17	439	1,248	1,491	32	270	395	880	148	129

Notes:

Deep" groundwater is defined as wells screened in the interval from approximately 85 to 105 feet into the water table
TICs = Tentatively Identified Compounds, 1,2-DCE listed individually as a VOC because of its importance at the site
NA = Not Available
Total VOCs does not include TICs
J = Estimated value
B = Analyte is found in associated blank as well as in the sample
E = Compound whose concentrations exceeded the calibration range of the GC/MS for that specific analysis. The sample was diluted and re-analyzed.
D = Compound is identified at a secondary dilution factor
N = presumptive evidence of a compound, only applicable to TICs.
<## = Compound was analyzed for but not detected The ## represents the sample quantitation limit (This is similar to the U flag)
* Indicates a guidance value, not a standard
ND = Tentatively identified compound that was not detected Actual MDL not available but likely <10 ug/l based upon similar sample matrices.



NOTE: OFF-SITE WELLS WERE SAMPLED MARCH 16-17, 2004.

SOURCE: BASE MAP REPRINTED FROM "FOCUSED REMEDIAL INVESTIGATION REPORT", TAMS & GZA, 4/99

LEGEND

- MW-##S OR MW-##S — SHALLOW MONITORING WELL LOCATION (SCREENED INTERVAL APPROX. 5 TO 15 FT BGS)
- PTMW-##S — NEW SHALLOW MONITORING WELL LOCATION (SCREENED INTERVAL APPROX. 15 TO 25 FT BGS)
- MW-##I — INTERMEDIATE MONITORING WELL LOCATION (SCREENED INTERVAL APPROX. 45 TO 55 FT BGS)
- PTMW-##I — NEW INTERMEDIATE MONITORING WELL LOCATION (SCREENED INTERVAL APPROX. 45 TO 55 FT BGS)
- MW-##D — DEEP MONITORING WELL LOCATION (SCREENED INTERVAL APPROX. 90 TO 100 FT BGS)

NOTES:
1. SCREENED INTERVAL LISTED ON THIS FIGURE IS APPROXIMATE. SEE WELL CONSTRUCTION LOGS FOR EXACT SCREENED INTERVAL.
2. FOR THE PURPOSES OF THIS FIGURE, THE WELLS INSTALLED ON SEA CLIFF AVENUE ARE CONSIDERED, UPGRADIENT, ON-SITE WELLS.

DATA BOX LEGEND

MW-12PS	WELL ID
PCE <10	TETRACHLOROETHENE (ug/L)
TCE 1700 D	TRICHLOROETHENE (ug/L)
111TCA 18	1,1,1-TRICHLOROETHANE (ug/L)
12DCE 550 D	1,2-DICHLOROETHENE (ug/L)
VC 67	VINYL CHLORIDE (ug/L)
FRE 1200 D	TOTAL FREON TIC's/ 1,1,2-TRICHLOROTRIFLUOROETHANE (ug/L)

TIC – TENTATIVELY IDENTIFIED COMPOUND
J – ESTIMATED VALUE
D – COMPOUND IS IDENTIFIED AT A SECONDARY DILUTION FACTOR
N – PRESUMPTIVE EVIDENCE OF A COMPOUND (TIC's ONLY)

Apex environmental, inc.
312 E. Main Street
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Phone: (631) 207-3700

PALL

Pall Corporation
30 Sea Cliff Avenue
Glen Cove, New York 11542

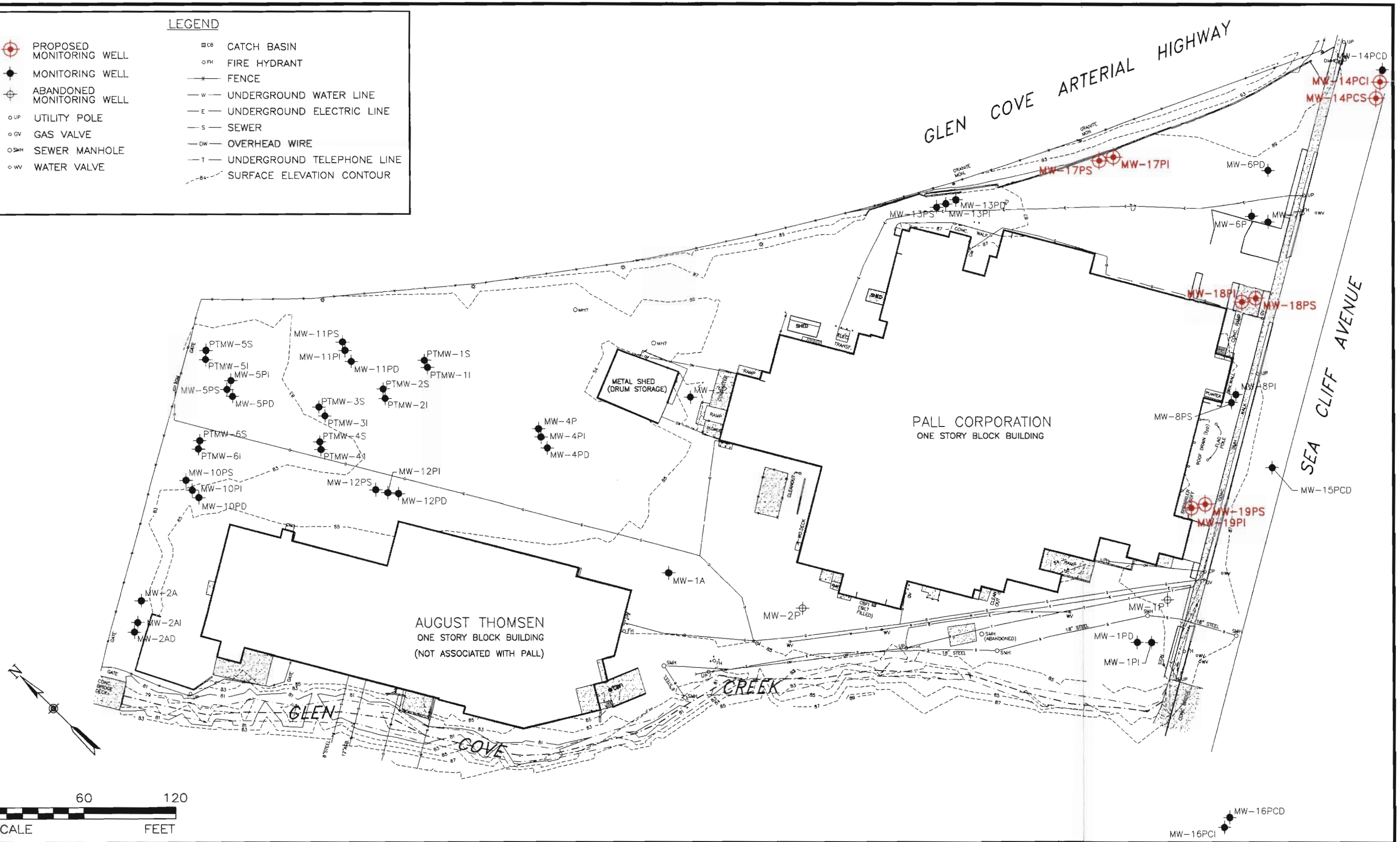
Date: 7/7/04		Drawn: TRS	
Rev. No.: -		Designed: DJS	
Project No.: MT&E-PALL-M371		File: PALLBDA204	

Title: **DEEP GROUNDWATER ANALYTICAL DATA BASELINE SAMPLING FEBRUARY 18-24, 2004**

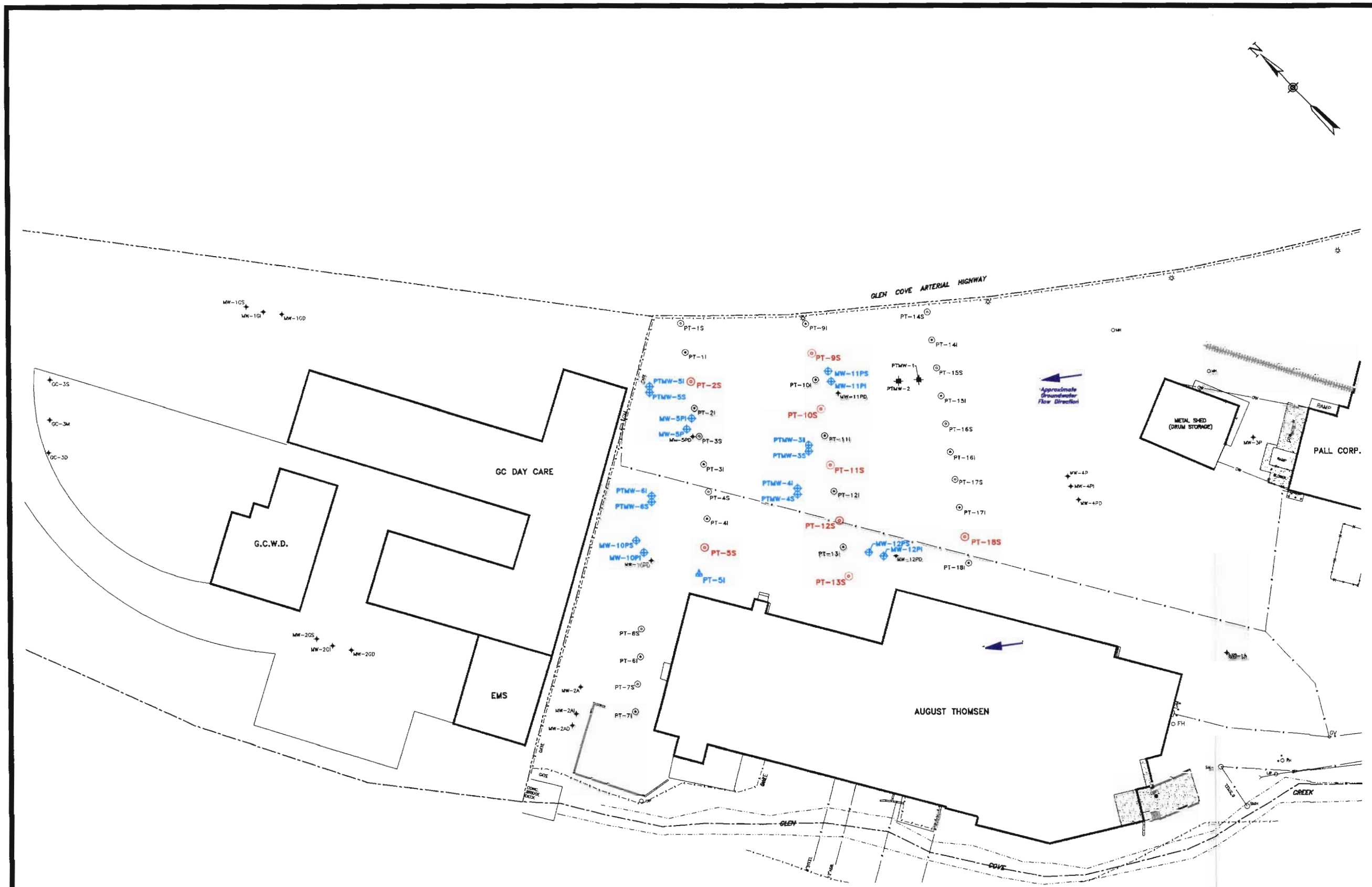
Figure: **7**

LEGEND

- PROPOSED MONITORING WELL
- MONITORING WELL
- ABANDONED MONITORING WELL
- UTILITY POLE
- GAS VALVE
- SEWER MANHOLE
- WATER VALVE
- CATCH BASIN
- FIRE HYDRANT
- FENCE
- UNDERGROUND WATER LINE
- UNDERGROUND ELECTRIC LINE
- SEWER
- OVERHEAD WIRE
- UNDERGROUND TELEPHONE LINE
- SURFACE ELEVATION CONTOUR



Apex environmental, inc. 312 E. Main Street Patchogue, N.Y. 11772 Phone: (631) 207-3700	PALL **Pall Corporation** **30 Sea Cliff Avenue** **Glen Cove, New York 11542**	Date: 8/23/04 Rev. No.: – Project No.: 8501.002	Drawn: TRS Designed: DJS File: PALLPMW804	Title: **NEW MONITORING WELL LOCATIONS**	Figure: **1**



NO.	DATE	BY	REVISION

LEGEND

- SHALLOW INJECTION WELL FOR FENTON'S REAGENT (SCREEN: 5'-25' BGS)
- EXISTING MONITORING WELL GROUP USED FOR MONITORING INJECTION EVENT (SHALLOW/INTERMEDIATE/DEEP)
- SHALLOW INJECTION WELL FOR MONITORING INJECTION EVENT
- INTERMEDIATE INJECTION WELL FOR MONITORING INJECTION EVENT
- INJECTION WELLS NOT USED DURING STAGE 1
- MONITORING WELL COUPLET NOT USED DURING STAGE 1
- EXISTING MONITORING WELL
- SCH 40 PVC PIPE
- FLEXIBLE HOSE
- PROPERTY LINE
- GROUNDWATER FLOW DIRECTION
- UTILITY POLE
- FIRE HYDRANT
- CATCH BASIN
- WATER VALVE
- GAS VALVE
- SEWER MANHOLE
- MANHOLE
- —E— UNDERGROUND ELECTRIC LINE
- —T— UNDERGROUND TELEPHONE LINE
- —S— SANITARY SEWER
- —G— UNDERGROUND GAS LINE
- —W— UNDERGROUND WATER LINE
- —OW— OVERHEAD WIRE
- HORIZONTAL EXTRACTION WELL

SIGNATURE	DATE
REVIEW ENGR:	
PROJECT ENGR:	
PROJECT MGR:	
CLIENT:	

Apex environmental, inc.
312 E. Main Street
Patchogue, N.Y. 11772
Phone: (631) 207-9700

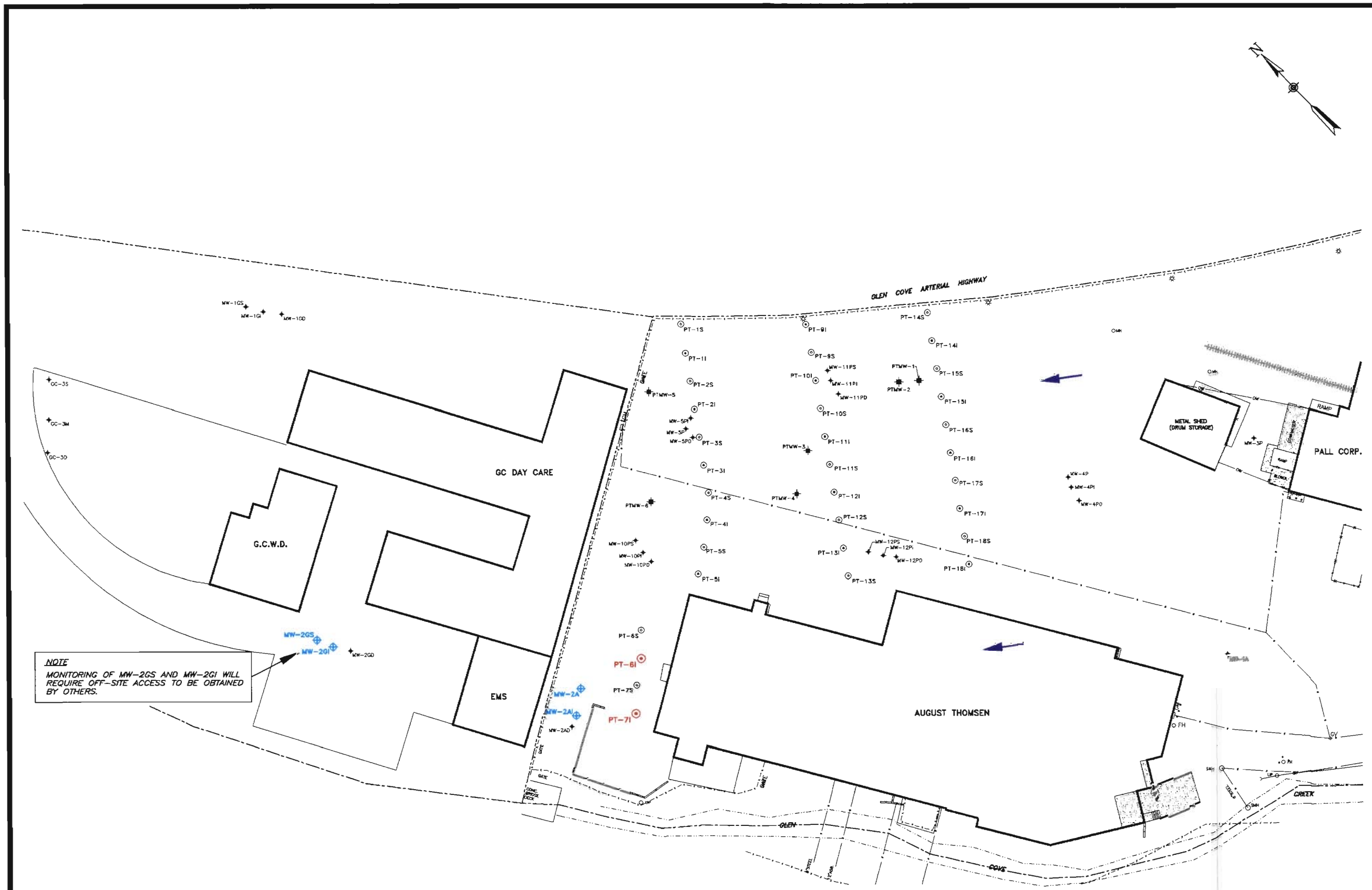
PALL CORPORATION PILOT TEST

30 SEA CLIFF AVENUE
GLEN COVE, NEW YORK

PHASE II - STAGE 1 INJECTION OF FENTON'S REAGENT

DESIGNED BY:	DETAILED BY:	CHECKED BY:
DJS	TRS	

DRAWING DATE:	ACAD FILE:
1/13/04	PALLY3FEN
PROJECT NO.:	CONTRACT:
8501.002	PALL CORP.
FIGURE:	REVISION:
2	



NO.	DATE	BY	REVISION

LEGEND

- INTERMEDIATE INJECTION WELL FOR FENTON'S REAGENT (SCREEN: 35'-55' BGS)
- EXISTING MONITORING WELL GROUP USED FOR MONITORING INJECTION EVENT (SHALLOW/INTERMEDIATE/DEEP)
- SHALLOW INJECTION WELL FOR MONITORING INJECTION EVENT
- INTERMEDIATE INJECTION WELL FOR MONITORING INJECTION EVENT
- INJECTION WELLS NOT USED DURING STAGE 2
- MONITORING WELL COUPLET NOT USED DURING STAGE 2
- EXISTING MONITORING WELL
- SCH 40 PVC PIPE
- FLEXIBLE HOSE
- PROPERTY LINE
- GROUNDWATER FLOW DIRECTION
- UTILITY POLE
- FIRE HYDRANT
- CATCH BASIN
- WATER VALVE
- GAS VALVE
- SEWER MANHOLE
- MANHOLE
- E — UNDERGROUND ELECTRIC LINE
- T — UNDERGROUND TELEPHONE LINE
- S — SANITARY SEWER
- G — UNDERGROUND GAS LINE
- W — UNDERGROUND WATER LINE
- OW — OVERHEAD WIRE
- HORIZONTAL EXTRACTION WELL

GRAPHIC SCALE
0 25 50
1"=25'

SIGNATURE	DATE
REVIEW ENGR:	
PROJECT ENGR:	
PROJECT MGR:	
CLIENT:	

Apex environmental, inc.
312 E. Main Street
Patchogue, N.Y. 11772
Phone: (631) 207-9706

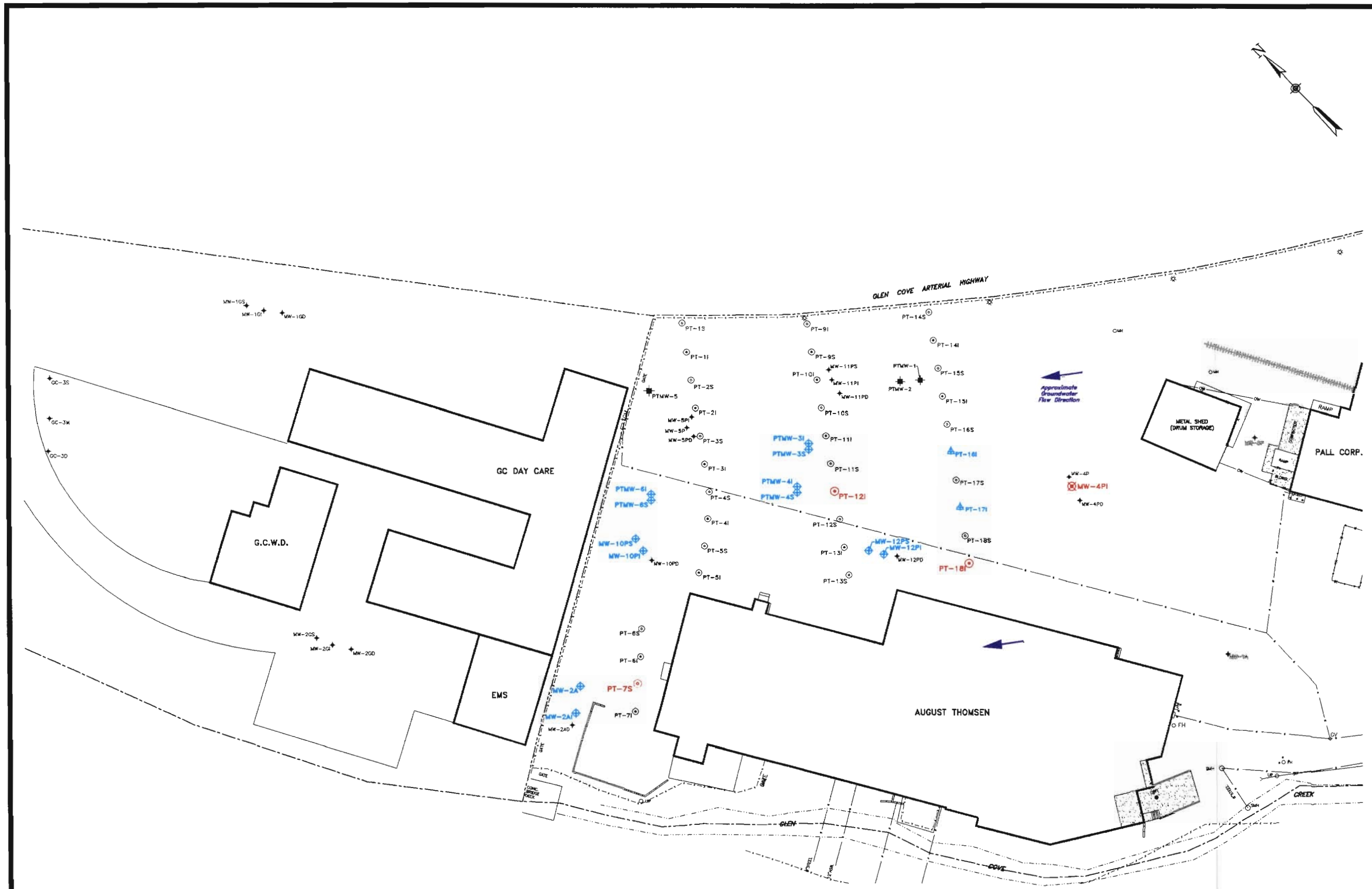
PALL CORPORATION PILOT TEST

30 SEA CLIFF AVENUE
GLEN COVE, NEW YORK

PHASE II - STAGE 2 INJECTION OF FENTON'S REAGENT

DESIGNED BY:	DETAILED BY:	CHECKED BY:
DJS	TRS	

DRAWING DATE:	ACAD FILE:
1/13/04	PALLY3FEN2
PROJECT NO.: 8501.002	CONTRACT:
FIGURE: 3	REVISION:



NO.	DATE	BY	REVISION

LEGEND

- SHALLOW INJECTION WELL FOR FENTON'S REAGENT (SCREEN: 5'-25' BGS)
- SHALLOW MONITORING WELL USED FOR INJECTING FENTON'S REAGENT
- INTERMEDIATE INJECTION WELL FOR FENTON'S REAGENT (SCREEN: 35'-55' BGS)
- EXISTING MONITORING WELL GROUP USED FOR MONITORING INJECTION EVENT (SHALLOW/INTERMEDIATE/DEEP)
- SHALLOW INJECTION WELL FOR MONITORING INJECTION EVENT
- INTERMEDIATE INJECTION WELL FOR MONITORING INJECTION EVENT
- INJECTION WELLS NOT USED DURING STAGE 3
- MONITORING WELL COUPLET NOT USED DURING STAGE 3
- EXISTING MONITORING WELL
- SCH 40 PVC PIPE
- FLEXIBLE HOSE
- PROPERTY LINE
- GROUNDWATER FLOW DIRECTION
- UTILITY POLE
- FIRE HYDRANT
- CATCH BASIN
- WATER VALVE
- GAS VALVE
- SEWER MANHOLE
- MANHOLE
- —E— UNDERGROUND ELECTRIC LINE
- —T— UNDERGROUND TELEPHONE LINE
- —S— SANITARY SEWER
- —G— UNDERGROUND GAS LINE
- —W— UNDERGROUND WATER LINE
- —OW— OVERHEAD WIRE
- HORIZONTAL EXTRACTION WELL

GRAPHIC SCALE
0 25 50
1"=25'

SIGNATURE	DATE
REVIEW ENGR:	
PROJECT ENGR:	
PROJECT MGR:	
CLIENT:	

Apex environmental, inc.
312 E. Main Street
Patchogue, N.Y. 11772
Phone: (631) 207-9700

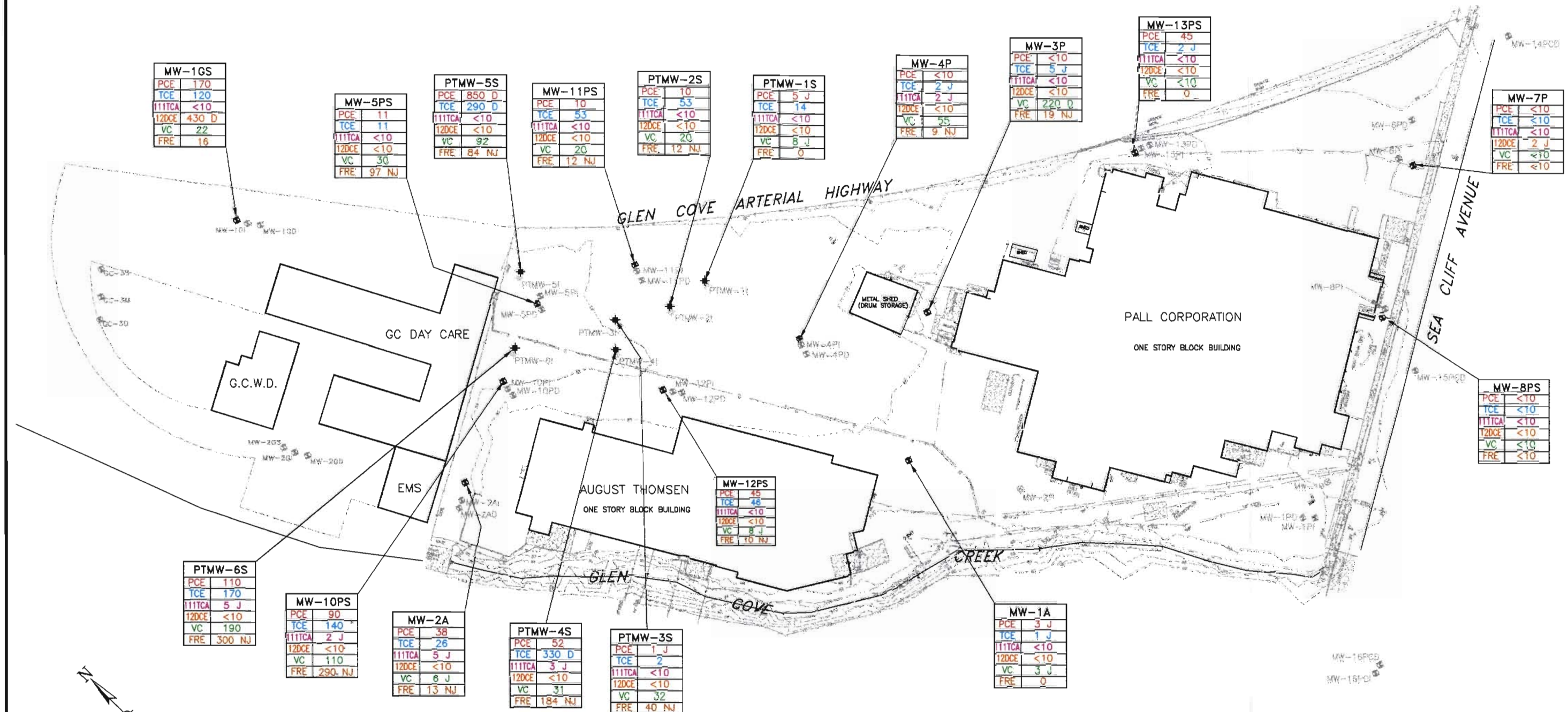
PALL CORPORATION PILOT TEST

30 SEA CLIFF AVENUE
GLEN COVE, NEW YORK

PHASE II - STAGE 3 INJECTION OF FENTON'S REAGENT

DESIGNED BY:	DETAILED BY:	CHECKED BY:
DJS	TRS	

DRAWING DATE:	ACAD FILE:
1/13/04	PALLY3FEN3
PROJECT NO.: 8501.002	CONTRACT: PALL CORP.
FIGURE: 4	REVISION:



NOTE: OFF-SITE WELLS WERE SAMPLED MARCH 16-17, 2004.

SOURCE: BASE MAP REPRINTED FROM "FOCUSED REMEDIAL INVESTIGATION REPORT", TAMS & GZA, 4/99

LEGEND

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- MW-##I — INTERMEDIATE MONITORING WELL LOCATION (SCREENED INTERVAL APPROX. 45 TO 55 FT BGS)
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- MW-##D — DEEP MONITORING WELL LOCATION (SCREENED INTERVAL APPROX. 90 TO 100 FT BGS)

NOTES:
1. SCREENED INTERVAL LISTED ON THIS FIGURE IS APPROXIMATE. SEE WELL CONSTRUCTION LOGS FOR EXACT SCREENED INTERVAL.
2. FOR THE PURPOSES OF THIS FIGURE, THE WELLS INSTALLED ON SEA CLIFF AVENUE ARE CONSIDERED, UPGRADIENT, ON-SITE WELLS.

DATA BOX LEGEND

MW-12PS	WELL ID
PCE <10	TETRACHLOROETHENE (ug/L)
TCE 1700 D	TRICHLOROETHENE (ug/L)
111TCA 18	1,1,1-TRICHLOROETHANE (ug/L)
12DCE 550 D	1,2-DICHLOROETHENE (ug/L)
VC 67	VINYL CHLORIDE (ug/L)
FRE 1200 D	TOTAL FREON TIC's / 1,1,2-TRICHLOROTRIFLUOROETHANE (ug/L)

TIC - TENTATIVELY IDENTIFIED COMPOUND
J - ESTIMATED VALUE
D - COMPOUND IS IDENTIFIED AT A SECONDARY DILUTION FACTOR
N - PRESUMPTIVE EVIDENCE OF A COMPOUND (TIC's ONLY)

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Phone: (631) 207-3700

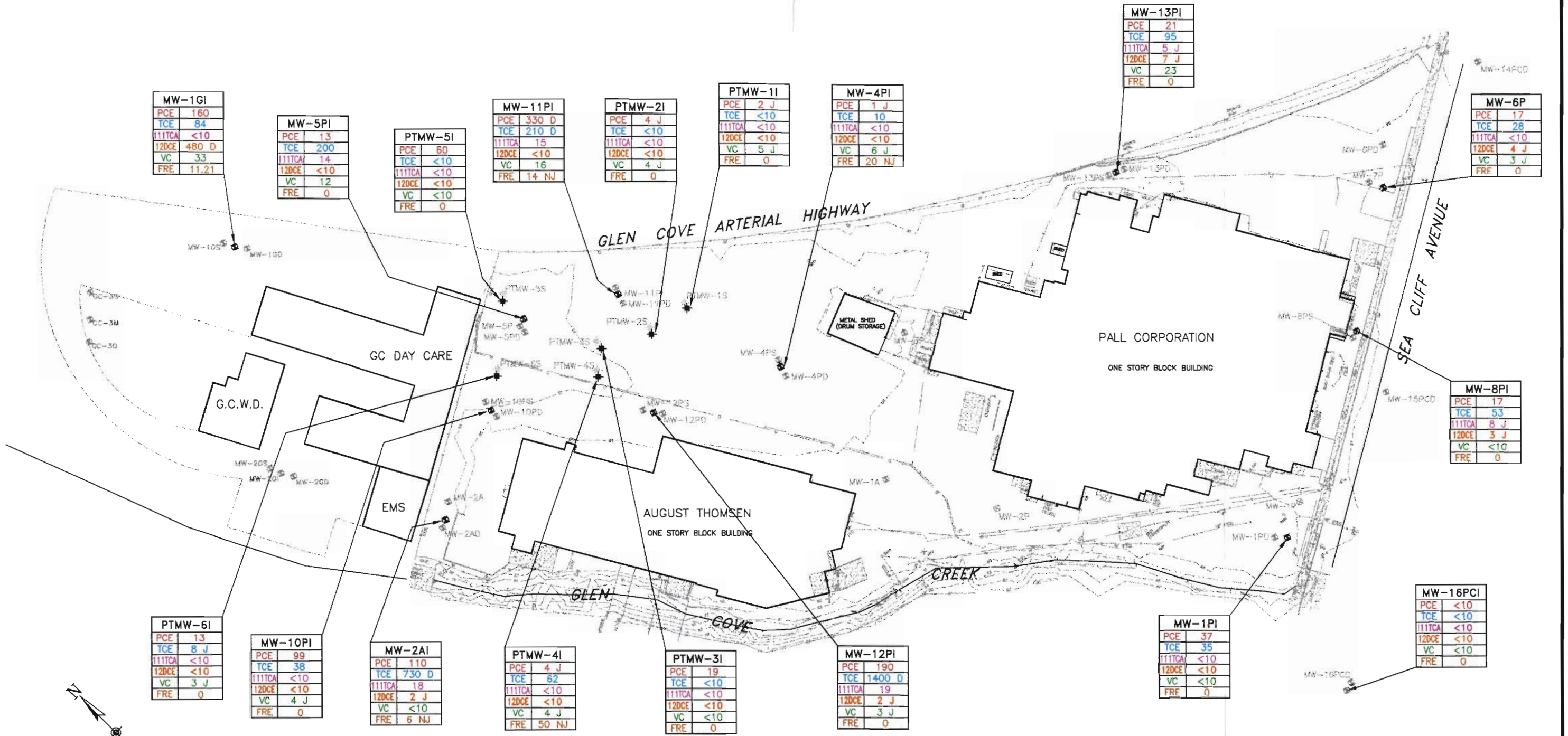
PALL

Pall Corporation
30 Sea Cliff Avenue
Glen Cove, New York 11542

Date: 7/7/04		Drawn: TRS	
Rev. No.: -		Designed: DJS	
Project No.: MT&E-PALL-M371		File: PALLBSA204	

Title: **SHALLOW GROUNDWATER ANALTYCAL DATA BASELINE SAMPLING FEBRUARY 19-24, 2004**

Figure: **5**



NOTE: OFF-SITE WELLS WERE SAMPLED MARCH 16-17, 2004.

SOURCE: BASE MAP REPRINTED FROM "FOCUSED REMEDIAL INVESTIGATION REPORT", TAMS & GZA, 4/99

LEGEND

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- PTMW-##I — NEW INTERMEDIATE MONITORING WELL LOCATION (SCREENED INTERVAL APPROX. 45 TO 55 FT BGS)
- MW-##D — DEEP MONITORING WELL LOCATION (SCREENED INTERVAL APPROX. 90 TO 100 FT BGS)

NOTES:
1. SCREENED INTERVAL LISTED ON THIS FIGURE IS APPROXIMATE. SEE WELL CONSTRUCTION LOGS FOR EXACT SCREENED INTERVAL.
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DATA BOX LEGEND

MW-12PS	WELL ID
PCE <10	TETRACHLOROETHENE (ug/L)
TCE 1700 D	TRICHLOROETHENE (ug/L)
111TCA 18	1,1,1-TRICHLOROETHANE (ug/L)
12DCE 550 D	1,2-DICHLOROETHENE (ug/L)
VC 67	VINYL CHLORIDE (ug/L)
FRE 1200 D	TOTAL FREON TIC's/ 1,1,2-TRICHLOROTRIFLUOROETHANE (ug/L)

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- J – ESTIMATED VALUE
- D – COMPOUND IS IDENTIFIED AT A SECONDARY DILUTION FACTOR
- N – PRESUMPTIVE EVIDENCE OF A COMPOUND (TIC's ONLY)

Apex environmental, Inc.
312 E. Main Street
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Phone: (631) 207-3700

PALL

Pall Corporation
30 Sea Cliff Avenue
Glen Cove, New York 11542

Date: 7/7/04	Drawn: TRS	Title: **INTERMEDIATE GROUNDWATER ANALYTICAL DATA BASELING SAMPLING FEBRUARY 18-24, 2004**	Figure: **6**
Rev. No.: _	Designed: DJS		
Project No.: MT&E-PALL-M371	File: PALLBIA204		

APPENDIX A

NYSDOH COMMUNITY AIR MONITORING PROGRAM

APPENDIX 1A

New York State Department of Health
Generic Community Air Monitoring Plan

A Community Air Monitoring Plan (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air.

The generic CAMP presented below will be sufficient to cover many, if not most, sites. Specific requirements should be reviewed for each situation in consultation with NYSDOH to ensure proper applicability. In some cases, a separate site-specific CAMP or supplement may be required. Depending upon the nature of contamination, chemical- specific monitoring with appropriately-sensitive methods may be required. Depending upon the proximity of potentially exposed individuals, more stringent monitoring or response levels than those presented below may be required. Special requirements will be necessary for work within 20 feet of potentially exposed individuals or structures and for indoor work with co-located residences or facilities. These requirements should be determined in consultation with NYSDOH.

Reliance on the CAMP should not preclude simple, common-sense measures to keep VOCs, dust, and odors at a minimum around the work areas.

Community Air Monitoring Plan

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for volatile organic compounds (VOCs) and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary. Most sites will involve VOC and particulate monitoring; sites known to be contaminated with heavy metals alone may only require particulate monitoring. If radiological contamination is a concern, additional monitoring requirements may be necessary per consultation with appropriate NYSDEC/NYSDOH staff.

Continuous monitoring will be required for all ground intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. "Periodic" monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

- If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

- If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

- If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

All 15-minute readings must be recorded and be available for State (DEC and DOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

Particulate Monitoring, Response Levels, and Actions

Particulate concentrations should be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring should be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

- If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m^3 above the upwind level and provided that no visible dust is migrating from the work area.

- If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m^3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m^3 of the upwind level and in preventing visible dust migration.

All readings must be recorded and be available for State (DEC and DOH) personnel to review.

STATE OF NEW YORK
DEPARTMENT OF HEALTH

Flanigan Square, 547 River Street, Troy, New York 12180-2216

Antonia C. Novello, M.D., M.P.H., Dr.P.H.
Commissioner

Dennis P. Whalen
Executive Deputy Commissioner

October 20, 2004

Mr. Jeffrey Dyber
New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 11th Floor
Albany, New York 12233-7015

Re: **Pall Corporation**
Site No. 130053B
Glen Cove, Nassau County

Dear Mr. Dyber:

I have reviewed the September 2004 Pilot Test Work Plan Addendum for the subject site and I find it acceptable providing that the following items regarding the soil vapor monitoring are addressed.

1. We prefer that permanent stainless steel probes fitted with stainless, polyethylene or Teflon implants are used. The seal between the surface and probe should be air-tight. We recommend that no more than 1-2 volumes be purged and that purging and sampling flow rates not exceed 0.2 liters per minute. The detection limit should be 1 $\mu g/m^3$ (microgram per cubic meter) and results should be reported in $\mu g/m^3$.

2. If samples are analyzed on-site using a portable device, such as a gas chromatograph, then 10% of the samples collected should be sent to a fixed laboratory for analysis.

3. One of the objectives of the soil vapor monitoring is to evaluate the impact Fenton's Reagent has on the soil vapor. If a significant increase in contaminated soil vapor is observed, then the DEC project manager should be contacted by telephone. In addition, sampling results collected on-site should be faxed to the DEC and the state and county health departments so they can be evaluated.

Thank you for the opportunity to comment on this document. If you have any questions or would like to discuss these comments, please call me at (518) 402-7870.

Sincerely,

Justin H. Deming
Public Health Specialist I
Bureau of Environmental Exposure Investigation

cc: Mr. G. Litwin/Mr. R. Fedigan/File
Mr. R. Weitzman - NCDH
Mr. W. Parish - NYSDEC Region 1
Mr. G. Bobersky – NYSDEC

APPENDIX B

DOSING CALCULATIONS

Oxidant Injection Calculations for ISCO

Phase II, Stage 1 Calculations - Low SOD Scenario

1 Site Information and Design Basis Input:

Site Name: Pall Corp
Location: Glen Cove, New York
Project: **Pilot Test for Fenton's Reagent Injection (Phase II, Stage I Test Requirements)**

Calculation Basi					
Length (L):	140 ft.	**Clean SOD for Oxidant (SOD_s):**	**1.00 g/kg**
Width (W):	160 ft.	Oxidant for GW Only (Ogw):	1.00 g/L
Depth (D):	40 ft.	Desired Feed Solution (%Feed):	10% v/v
Soil Bulk Density (ρ):	1.35 kg/l	Raw Makeup Oxidant Conc.(%Raw):	50% v/v
Porosity (Pe):	0.30	Feed Soln Density:	9.21 #/gal
Oxidant Type:	Fentons	No. Injection Wells in Area:	8
Iron Conc (Fec):	see below mg/l	Injection Flowrate (average per well)	5 gpm

2 Pilot Test Oxidant Dosing

Volume of Soil (Vs) = L x W x D
= 140 x 160 x 40
= 896,000 Cu. Ft.

Metric Conversion		
=	25,372	M^3
=	25,372,374	L

Mass of GW in Pore Vol. (Mgw) = Vs x Pe x ρw
= 896,000 x 0.30 x 62.40
= 268,800 cu.ft. water x 62.40
= 16,773,120 lbs water
= 268,800 gal water, Vgw

Metric Conversion		
=	7,612	M^3
=	7,611,712	L

Mass of Soil (Ms) = ρ x Vs
= 1.35 x 25,372,374
= 34,252,704 kg soil

Mass (MOs) of Oxidant Req'd -soil = SODs x Ms x / 1000 g/kg
= 1.00 x 34,252,704 / 1,000
= 34,253 kg Oxidant
= 75,446 lbs. Oxidant

Mass (MOgw) of Oxidant Req'd -gw = Pore Vol. x Ogw / 1000 g/kg
= 7,611,712 x 1.00 / 1,000
= 7,612 kg Oxidant
= 16,766 lbs. Oxidant

Total Mass of Oxidant (MOtot) = Mos + Mogw
= 75,446 + 16,766
= 92,212 lbs. Oxidant

Total Vol. of Oxidant at 100% (VOtot) = MOtot / Oxidant Den.
= 92,212 / 9.21
= 10,012 gal Oxidant (at 100% theoretical strength), VOtot

Total Vol. Makeup Solution (VOraw) = VOtot / %Raw
= 10,012 / 50.00%
= 20,024 gallons of makeup (50.00%) Solution (v/v)

Total Vol. Feed Solution (VOfeed) = (VOraw * %Raw) / %Feed
= 10,012 / 10.00%
= 100,122 gallons of feed (10.00%) Solution (v/

Makeup H2O for Feed Soln (Vwat) =	VOfeed	-	VOraw						
=	100,122	-	20,024						
=	80,098	gallons of water added to raw solution for feed conc.							
Approximate Effective in-situ Dosage =	VOtot	/	(Vgw	+	Vwat	+	Vraw)		
=	10,012	/	268,800	+	80,098	+	10,012		
=	2.79%	v/v							

3 Individual Injection Well Calculations (Injection Time Estimates)

Mass of Oxidant Per Well (MOwell) =	MOtot	/	No. Wells
=	92,212	/	8
=	11,527	lbs Oxidant per well (assumes same screened length)	
Gallons of Feed Soln per Well (VFwell) =	VOfeed	/	No. Wells
=	100,122	/	8
=	12,515	gallons of feed solution per well	
"Flush" Water After Injections: =	1,252	gal	(assumes 10% of total solution injected)
Duration of Injection Events =	Gal Soln+Flush.	/	Injection rate
=	13,767	/	5
=	2,753	minutes	
=	5.7	days (at 8 hours per day injection time)	

4 Oxidant Make-up Solution Requirements:

Total Oxidant Requirements:
Total Mass of Oxidant Required: 92,212 lbs. Oxidant

Total Make-up Solution (as sold) Req'ts:
Total of **50.0%** Soln. Req'd: 20,024 gallons of raw Oxidant solution at **50%** concentration

Total Feed Solution Requirements:
Total of **10.0%** Feed Soln Req'd (tot): 100,122 gallons of well injection solution at **10%** concentration
Amt. of addtl. H2O for feed conc make-up: 80,098 gallons of addl. water to be added to raw solution.

Per Well Requirements:
Total of **10.0%** Feed Soln. (ea. well): 12,515 gallons of well injection solution at **10%** concentration
Total Oxidant injected (ea. well): 11,527 pounds of H2O2 injected (theoretical 100%)
Approximate Total Flush Water (ea. well): 1,252 gallons of flush water (assumed at 10% total)

5 Ferrous Sulfate Addition Requirements (for Fenton's Reagent)

H202:FE Mass Ratio Estimate (H2O2:Fe):	30	:	1	(Typical range is 5:1 to 40:1)
Total Mass of Oxidant Required, MOtot:	92,212	lbs		
Total Mass of Fe Required (Mfe) =	MOtot	/	Ratio	
=	92,212	/	30	
=	3,074	lbs Fe Required		
Available Fe in Treatment Area (Feavail)=	13.3	mg/kg in soil		
	75%	percent of total iron available (assumed)		
=	342	kg available Fe in entire test area		
=	752	lbs available Fe in entire test area		
Total Mass Fe Add. Reqd (Mfeadd) =	Mfe	-	Feavail	
=	3,074	-	752	
=	2,322	lbs Fe addition required		

Mol. Wt. Fe =	56	lb/lbmole				
Type of Iron Solution:	12% FeSO4-7 H20					
Iron Cmpd Solution Feed Strength (Sfe):	12.0%	w/w				
Mol Wt Iron Compound (MWfecmpd):	278	lb/lbmole				
Density of Iron Cmpd Solution (Dfecmpd):	9.89	lb/gallon				
Mole Ratio Iron Compound:Fe	1	:	1			
Mass Iron Compound Reqd (MFeCmpd) =	(Mfeadd / MWfe)	*	(Fecmpd:Fe)	*	(MWSfe)	
=	41.47	*	1.00	*	278	
=	11,527	lbs Iron Compound				
Vol. of Iron Compound Solution (Vfetot)=	MFeCmpd	/	Sfe	/	Density of Solution	
=	11,527	/	12.0%	/	9.89	
=	9,713	gal of Iron Solution @	**12.0%** strength.			
Gallons of Iron Soln per Well (VFewell) =	Vfetot	/	No. Wells			
=	9,713	/	8			
=	1,214	gallons of feed solution per well				
"Flush" Water After Injections: =	121	gal	(assumes 10% of total solution injected)			
Duration of Injection Events =	Gal Soln+Flush.	/	Injection rate			
=	1,336	/	5			
=	267	minutes				
=	0.6	days (at 8 hours per day injection time)				

Oxidant Injection Calculations for ISCO

Phase II_Stage I Calculations - Fenton SOD Demand

1 Site Information and Design Basis Input:

Site Name: Pall Corp
Location: Glen Cove, New York
Project: Pilot Test for Fenton's Reagent Injection (Phase II, Stage I Test Requirements)

Calculation Basi							
	Length (L):	140	ft.	Clean SOD for Oxidant (SOD $_c$):	3.00	g/kg
	Width (W):	160	ft.	Oxidant for GW Only (Ogw):	1.00	g/L
	Depth (D):	40	ft.	Desired Feed Solution (%Feed):	10%	v/v
	Soil Bulk Density (ρ):	1.35	kg/l	Raw Makeup Oxidant Conc.(%Raw):	50%	v/v
	Porosity (Pe):	0.30		Feed Soln Density:	9.21	#/gal
	Oxidant Type:	Fentons		No. Injection Wells in Area:	8	
	Iron Conc (Fec):	see below	mg/l	Injection Flowrate (average per well)	5	gpm

2 Pilot Test Oxidant Dosing

Volume of Soil (Vs) = L x W x D
= 140 x 160 x 40
= 896,000 Cu. Ft.

Metric Conversion		
=	25,372	M^3
=	25,372,374	L

Mass of GW in Pore Vol. (Mgw) = Vs x Pe x ρw
= 896,000 x 0.30 x 62.40
= 268,800 cu.ft. water x 62.40
= 16,773,120 lbs water
= 268,800 gal water, Vgw

Metric Conversion		
=	7,612	M^3
=	7,611,712	L

Mass of Soil (Ms) = ρ x Vs
= 1.35 x 25,372,374
= 34,252,704 kg soil

Mass (MOs) of Oxidant Req'd -soil = SODs x Ms x / 1000 g/kg
= 3.00 x 34,252,704 / 1,000
= 102,758 kg Oxidant
= 226,339 lbs. Oxidant

Mass (MOgw) of Oxidant Req'd -gw = Pore Vol. x Ogw / 1000 g/kg
= 7,611,712 x 1.00 / 1,000
= 7,612 kg Oxidant
= 16,766 lbs. Oxidant

Total Mass of Oxidant (MOtot) = Mos + Mogw
= 226,339 + 16,766
= 243,105 lbs. Oxidant

Total Vol. of Oxidant at 100% (VOtot) = MOtot / Oxidant Den.
= 243,105 / 9.21
= 26,396 gal Oxidant (at 100% theoretical strength), VOtot

Total Vol. Makeup Solution (VOraw) = VOtot / %Raw
= 26,396 / 50.00%
= 52,792 gallons of makeup (50.00%) Solution (v/v)

Total Vol. Feed Solution (VOfeed) =	(VOraw * %Raw)	/	%Feed					
=	26,396	/	10.00%					
=	263,958	gallons of feed (	10.00%	) Solution (v/v)				
Makeup H2O for Feed Soln (V wat) =	VOfeed	-	VOraw					
=	263,958	-	52,792					
=	211,166	gallons of water added to raw solution for feed conc.						
Approximate Effective in-situ Dosage =	VOtot	/	(Vgw	+	Vwat	+	Vraw)	
=	26,396	/	268,800	+	211,166	+	26,396	
=	5.21%	v/v						

3 Individual Injection Well Calculations (Injection Time Estimates)

Mass of Oxidant Per Well (MOwell) =	MOtot	/	No. Wells
=	243,105	/	8
=	30,388	lbs Oxidant per well (assumes same screened length)	
Gallons of Feed Soln per Well (VFwell) =	VOfeed	/	No. Wells
=	263,958	/	8
=	32,995	gallons of feed solution per well	
"Flush" Water After Injections: =	3,299	gal	(assumes 10% of total solution injected)
Duration of Injection Events =	Gal Soln+Flush.	/	Injection rate
=	36,294	/	5
=	7,259	minutes	
=	15.1	days (at 8 hours per day injection time)	

4 Oxidant Make-up Solution Requirements:

Total Oxidant Requirements:		
Total Mass of Oxidant Required:	243,105	lbs. Oxidant
Total Make-up Solution (as sold) Req'ts:		
Total of **50.0%** Soln. Req'd:	52,792	gallons of raw Oxidant solution at **50%** concentration
Total Feed Solution Requirements:		
Total of **10.0%** Feed Soln Req'd (tot):	263,958	gallons of well injection solution at **10%** concentration
Amt. of addtl. H2O for feed conc make-up:	211,166	gallons of addl. water to be added to raw solution.
Per Well Requirements:		
Total of **10.0%** Feed Soln. (ea. well):	32,995	gallons of well injection solution at **10%** concentration
Total Oxidant injected (ea. well):	30,388	pounds of H2O2 injected (theoretical 100%)
Approximate Total Flush Water (ea. well):	3,299	gallons of flush water (assumed at 10% total)

5 Ferrous Sulfate Addition Requirements (for Fenton's Reagent)

H202:FE Mass Ratio Estimate (H2O2:Fe):	30	: 1	(Typical range is 5:1 to 40:1)
Total Mass of Oxidant Required, MOtot:	243,105	lbs	
Total Mass of Fe Required (Mfe) =	MOtot	/ Ratio	
=	243,105	/ 30	
=	8,104	lbs Fe Required	
Available Fe in Treatment Area (Feavail)=	13.3	mg/kg in soil	
	75%	percent of total iron available (assumed)	
=	342	kg available Fe in entire test area	
=	752	lbs available Fe in entire test area	

Total Mass Fe Add. Reqd (Mfeadd) =	Mfe	-	Feavail		
=	8,104	-	752		
=	7,352	lbs Fe addition required			
Mol. Wt. Fe =	56	lb/lbmole			
Type of Iron Solution:	12% FeSO4-7 H20				
Iron Cmpd Solution Feed Strength (Sfe):	12.0%	w/w			
Mol Wt Iron Compound (MWfecmpd):	278	lb/lbmole			
Density of Iron Cmpd Solution (Dfecmpd):	9.89	lb/gallon			
Mole Ratio Iron Compound:Fe	1	:	1		
Mass Iron Compound Reqd (MFeCmpd) =	(Mfeadd / MWfe)	*	(Fecmpd:Fe)	*	(MWSfe)
=	131.28	*	1.00	*	278
=	36,497	lbs Iron Compound			
Vol. of Iron Compound Solution (Vfetot)=	MFeCmpd	/	Sfe	/	Density of Solution
=	36,497	/	12.0%	/	9.89
=	30,752	gal of Iron Solution @	**12.0%** strength.		
Gallons of Iron Soln per Well (VFewell) =	Vfetot	/	No. Wells		
=	30,752	/	8		
=	3,844	gallons of feed solution per well			
"Flush" Water After Injections: =	384	gal	(assumes 10% of total solution injected)		
Duration of Injection Events =	Gal Soln+Flush.	/	Injection rate		
=	4,228	/	5		
=	846	minutes			
=	1.8	days (at 8 hours per day injection time)			

Oxidant Injection Calculations for ISCO

Phase II, Stage I Calculations - High SOD Scenario

1 Site Information and Design Basis Input:

Site Name: Pall Corp
Location: Glen Cove, New York
Project: Pilot Test for Fenton's Reagent Injection (Phase II, Stage I Test Requirements)

Calculation Basi							
	Length (L):	140	ft.	Clean SOD for Oxidant (SOD $_c$):	5.00	g/kg
	Width (W):	160	ft.	Oxidant for GW Only (Ogw):	1.00	g/L
	Depth (D):	40	ft.	Desired Feed Solution (%Feed):	10%	v/v
	Soil Bulk Density (ρ):	1.35	kg/l	Raw Makeup Oxidant Conc.(%Raw):	50%	v/v
	Porosity (Pe):	0.30		Feed Soln Density:	9.21	#/gal
	Oxidant Type:	Fentons		No. Injection Wells in Area:	8	
	Iron Conc (Fec):	see below	mg/l	Injection Flowrate (average per well)	5	gpm

2 Pilot Test Oxidant Dosing

Volume of Soil (Vs) = L x W x D
= 140 x 160 x 40
= 896,000 Cu. Ft.

Metric Conversion		
=	25,372	M^3
=	25,372,374	L

Mass of GW in Pore Vol. (Mgw) = Vs x Pe x ρw
= 896,000 x 0.30 x 62.40
= 268,800 cu.ft. water x 62.40
= 16,773,120 lbs water
= 268,800 gal water, Vgw

Metric Conversion		
=	7,612	M^3
=	7,611,712	L

Mass of Soil (Ms) = ρ x Vs
= 1.35 x 25,372,374
= 34,252,704 kg soil

Mass (MOs) of Oxidant Req'd -soil = SODs x Ms x / 1000 g/kg
= 5.00 x 34,252,704 / 1,000
= 171,264 kg Oxidant
= 377,232 lbs. Oxidant

Mass (MOgw) of Oxidant Req'd -gw = Pore Vol. x Ogw / 1000 g/kg
= 7,611,712 x 1.00 / 1,000
= 7,612 kg Oxidant
= 16,766 lbs. Oxidant

Total Mass of Oxidant (MOtot) = Mos + Mogw
= 377,232 + 16,766
= 393,998 lbs. Oxidant

Total Vol. of Oxidant at 100% (VOtot) = MOtot / Oxidant Den.
= 393,998 / 9.21
= 42,779 gal Oxidant (at 100% theoretical strength), VOtot

Total Vol. Makeup Solution (VOraw) = VOtot / %Raw
= 42,779 / 50.00%
= 85,559 gallons of makeup (50.00%) Solution (v/v)

Total Vol. Feed Solution (VOfeed) =	(VOraw * %Raw)	/	%Feed					
=	42,779	/	10.00%					
=	427,794	gallons of feed (	10.00%	) Solution (v/v)				
Makeup H2O for Feed Soln (V wat) =	VOfeed	-	VOraw					
=	427,794	-	85,559					
=	342,235	gallons of water added to raw solution for feed conc.						
Approximate Effective in-situ Dosage =	VOtot	/	(Vgw	+	Vwat	+	Vraw)	
=	42,779	/	268,800	+	342,235	+	42,779	
=	6.54%	v/v						

3 Individual Injection Well Calculations (Injection Time Estimates)

Mass of Oxidant Per Well (MOwell) =	MOtot	/	No. Wells	
=	393,998	/	8	
=	49,250	lbs Oxidant per well (assumes same screened length)		
Gallons of Feed Soln per Well (VFwell) =	VOfeed	/	No. Wells	
=	427,794	/	8	
=	53,474	gallons of feed solution per well		
"Flush" Water After Injections: =	5,347	gal	(assumes 10% of total solution injected)	
Duration of Injection Events =	Gal Soln+Flush.	/	Injection rate	
=	58,822	/	5	
=	11,764	minutes		
=	24.5	days (at 8 hours per day injection time)		

4 Oxidant Make-up Solution Requirements:

Total Oxidant Requirements:			
Total Mass of Oxidant Required:	393,998	lbs. Oxidant	
Total Make-up Solution (as sold) Req'ts:			
Total of **50.0%** Soln. Req'd:	85,559	gallons of raw Oxidant solution at	**50%** concentration
Total Feed Solution Requirements:			
Total of **10.0%** Feed Soln Req'd (tot):	427,794	gallons of well injection solution at	**10%** concentration
Amt. of addtl. H2O for feed conc make-up:	342,235	gallons of addl. water to be added to raw solution.	
Per Well Requirements:			
Total of **10.0%** Feed Soln. (ea. well):	53,474	gallons of well injection solution at	**10%** concentration
Total Oxidant injected (ea. well):	49,250	pounds of H2O2 injected (theoretical 100%)	
Approximate Total Flush Water (ea. well):	5,347	gallons of flush water (assumed at 10% total)	

5 Ferrous Sulfate Addition Requirements (for Fenton's Reagent)

H202:FE Mass Ratio Estimate (H2O2:Fe):	30	:	1	(Typical range is 5:1 to 40:1)
Total Mass of Oxidant Required, MOtot:	393,998	lbs		
Total Mass of Fe Required (Mfe) =	MOtot	/	Ratio	
=	393,998	/	30	
=	13,133	lbs Fe Required		
Available Fe in Treatment Area (Feavail)=	13.3	mg/kg in soil		
	75%	percent of total iron available (assumed)		
=	342	kg available Fe in entire test area		
=	752	lbs available Fe in entire test area		

Total Mass Fe Add. Reqd (Mfeadd) =	Mfe	-	Feavail	
=	13,133	-	752	
=	12,382	lbs Fe addition required		
Mol. Wt. Fe =	56	lb/lbmole		
Type of Iron Solution:	12% FeSO4-7 H20			
Iron Cmpd Solution Feed Strength (Sfe):	12.0%	w/w		
Mol Wt Iron Compound (MWfecmpd):	278	lb/lbmole		
Density of Iron Cmpd Solution (Dfecmpd):	9.89	lb/gallon		
Mole Ratio Iron Compound:Fe	1	:	1	
Mass Iron Compound Reqd (MFeCmpd) =	(Mfeadd / MWfe)	*	(Fecmpd:Fe) *	(MWSfe)
=	221.10	*	1.00 *	278
=	61,466	lbs Iron Compound		
Vol. of Iron Compound Solution (Vfetot)=	MFeCmpd	/	Sfe /	Density of Solution
=	61,466	/	12.0% /	9.89
=	51,791	gal of Iron Solution @		**12.0%** strength.
Gallons of Iron Soln per Well (VFewell) =	Vfetot	/	No. Wells	
=	51,791	/	8	
=	6,474	gallons of feed solution per well		
"Flush" Water After Injections: =	647	gal	(assumes 10% of total solution injected)	
Duration of Injection Events =	Gal Soln+Flush.	/	Injection rate	
=	7,121	/	5	
=	1,424	minutes		
=	3.0	days (at 8 hours per day injection time)		

Oxidant Injection Calculations for ISCO

Phase II, Stage 2 Calculations - Low SOD Scenario

1 Site Information and Design Basis Input:

Site Name: Pall Corp
Location: Glen Cove, New York
Project: Pilot Test for Fenton's Reagent Injection (Phase II, Stage 2 Test Requirements)

Calculation Basi						
	Length (L):	60 ft.	Clean SOD for Oxidant (SOD $_s$):	1.00	g/kg
	Width (W):	60 ft.	Oxidant for GW Only (Ogw):	1.00	g/L
	Depth (D):	20 ft.	Desired Feed Solution (%Feed):	10%	v/v
	Soil Bulk Density (ρ):	1.35 kg/l	Raw Makeup Oxidant Conc.(%Raw):	50%	v/v
	Porosity (Pe):	0.30	Feed Soln Density:	9.21	#/gal
	Oxidant Type:	Fentons	No. Injection Wells in Area:	2	
	Iron Conc (Fec):	see below mg/l	Injection Flowrate (average per well)	5	gpm

2 Pilot Test Oxidant Dosing

Volume of Soil (Vs) = L x W x D
= 60 x 60 x 20
= 72,000 Cu. Ft.

Metric Conversion		
=	2,039	M^3
=	2,038,851	L

Mass of GW in Pore Vol. (Mgw) = Vs x Pe x ρw
= 72,000 x 0.30 x 62.40
= 21,600 cu.ft. water x 62.40
= 1,347,840 lbs water
= 21,600 gal water, Vgw

Metric Conversion		
=	612	M^3
=	611,655	L

Mass of Soil (Ms) = ρ x Vs
= 1.35 x 2,038,851
= 2,752,449 kg soil

Mass (MOs) of Oxidant Req'd -soil = SODs x Ms x / 1000 g/kg
= 1.00 x 2,752,449 / 1,000
= 2,752 kg Oxidant
= 6,063 lbs. Oxidant

Mass (MOgw) of Oxidant Req'd -gw = Pore Vol. x Ogw / 1000 g/kg
= 611,655 x 1.00 / 1,000
= 612 kg Oxidant
= 1,347 lbs. Oxidant

Total Mass of Oxidant (MOtot) = Mos + Mogw
= 6,063 + 1,347
= 7,410 lbs. Oxidant

Total Vol. of Oxidant at 100% (VOtot) = MOtot / Oxidant Den.
= 7,410 / 9.21
= 805 gal Oxidant (at 100% theoretical strength), VOtot

Total Vol. Makeup Solution (VOraw) = VOtot / %Raw
= 805 / 50.00%
= 1,609 gallons of makeup (50.00%) Solution (v/v)

Total Vol. Feed Solution (VOfeed) =	(VOraw * %Raw)	/	%Feed					
=	805	/	10.00%					
=	8,046	gallons of feed (	10.00%	) Solution (v/v)				
Makeup H2O for Feed Soln (V wat) =	VOfeed	-	VOraw					
=	8,046	-	1,609					
=	6,436	gallons of water added to raw solution for feed conc.						
Approximate Effective in-situ Dosage =	VOtot	/	(Vgw	+	Vwat	+	Vraw)	
=	805	/	21,600	+	6,436	+	805	
=	2.79%	v/v						

3 Individual Injection Well Calculations (Injection Time Estimates)

Mass of Oxidant Per Well (MOwell) =	MOtot	/	No. Wells	
=	7,410	/	2	
=	3,705	lbs Oxidant per well (assumes same screened length)		
Gallons of Feed Soln per Well (VFwell) =	VOfeed	/	No. Wells	
=	8,046	/	2	
=	4,023	gallons of feed solution per well		
"Flush" Water After Injections: =	402	gal	(assumes 10% of total solution injected)	
Duration of Injection Events =	Gal Soln+Flush.	/	Injection rate	
=	4,425	/	5	
=	885	minutes		
=	1.8	days (at 8 hours per day injection time)		

4 Oxidant Make-up Solution Requirements:

Total Oxidant Requirements:			
Total Mass of Oxidant Required:	7,410	lbs. Oxidant	
Total Make-up Solution (as sold) Req'ts:			
Total of **50.0%** Soln. Req'd:	1,609	gallons of raw Oxidant solution at	**50%** concentration
Total Feed Solution Requirements:			
Total of **10.0%** Feed Soln Req'd (tot):	8,046	gallons of well injection solution at	**10%** concentration
Amt. of addtl. H2O for feed conc make-up:	6,436	gallons of addl. water to be added to raw solution.	
Per Well Requirements:			
Total of **10.0%** Feed Soln. (ea. well):	4,023	gallons of well injection solution at	**10%** concentration
Total Oxidant injected (ea. well):	3,705	pounds of H2O2 injected (theoretical 100%)	
Approximate Total Flush Water (ea. well):	402	gallons of flush water (assumed at 10% total)	

5 Ferrous Sulfate Addition Requirements (for Fenton's Reagent)

H202:FE Mass Ratio Estimate (H2O2:Fe):	30	:	1	(Typical range is 5:1 to 40:1)
Total Mass of Oxidant Required, MOtot:	7,410	lbs		
Total Mass of Fe Required (Mfe) =	MOtot	/	Ratio	
=	7,410	/	30	
=	247	lbs Fe Required		
Available Fe in Treatment Area (Feavail)=	13.3	mg/kg in soil		
	75%	percent of total iron available (assumed)		
=	27	kg available Fe in entire test area		
=	60	lbs available Fe in entire test area		

Total Mass Fe Add. Reqd (Mfeadd) =	Mfe	-	Feavail	
=	247	-	60	
=	187	lbs Fe addition required		
Mol. Wt. Fe =	56	lb/lbmole		
Type of Iron Solution:	12% FeSO4-7 H20			
Iron Cmpd Solution Feed Strength (Sfe):	12.0%	w/w		
Mol Wt Iron Compound (MWfecmpd):	278	lb/lbmole		
Density of Iron Cmpd Solution (Dfecmpd):	9.89	lb/gallon		
Mole Ratio Iron Compound:Fe	1	:	1	
Mass Iron Compound Reqd (MFeCmpd) =	(Mfeadd / MWfe)	*	(Fecmpd:Fe) *	(MWSfe)
=	3.33	*	1.00 *	278
=	926	lbs Iron Compound		
Vol. of Iron Compound Solution (Vfetot)=	MFeCmpd	/	Sfe /	Density of Solution
=	926	/	12.0% /	9.89
=	781	gal of Iron Solution @	**12.0%**	strength.
Gallons of Iron Soln per Well (VFewell) =	Vfetot	/	No. Wells	
=	781	/	2	
=	390	gallons of feed solution per well		
"Flush" Water After Injections: =	39	gal	(assumes 10% of total solution injected)	
Duration of Injection Events =	Gal Soln+Flush.	/	Injection rate	
=	429	/	5	
=	86	minutes		
=	0.2	days (at 8 hours per day injection time)		

Oxidant Injection Calculations for ISCO

Phase II, Stage 2 Calculations - Mid SOD Scenario

1 Site Information and Design Basis Input:

Site Name: Pall Corp
Location: Glen Cove, New York
Project: Pilot Test for Fenton's Reagent Injection (Phase II, Stage 2 Test Requirements)

Calculation Basi							
	Length (L):	60	ft.	Clean SOD for Oxidant (SOD $_c$):	3.00	g/kg
	Width (W):	60	ft.	Oxidant for GW Only (Ogw):	1.00	g/L
	Depth (D):	20	ft.	Desired Feed Solution (%Feed):	10%	v/v
	Soil Bulk Density (ρ):	1.35	kg/l	Raw Makeup Oxidant Conc.(%Raw):	50%	v/v
	Porosity (Pe):	0.30		Feed Soln Density:	9.21	#/gal
	Oxidant Type:	Fentons		No. Injection Wells in Area:	2	
	Iron Conc (Fec):	see below	mg/l	Injection Flowrate (average per well)	5	gpm

2 Pilot Test Oxidant Dosing

Volume of Soil (Vs) = L x W x D
= 60 x 60 x 20
= 72,000 Cu. Ft.

Metric Conversion		
=	2,039	M^3
=	2,038,851	L

Mass of GW in Pore Vol. (Mgw) = Vs x Pe x ρw
= 72,000 x 0.30 x 62.40
= 21,600 cu.ft. water x 62.40
= 1,347,840 lbs water
= 21,600 gal water, Vgw

Metric Conversion		
=	612	M^3
=	611,655	L

Mass of Soil (Ms) = ρ x Vs
= 1.35 x 2,038,851
= 2,752,449 kg soil

Mass (MOs) of Oxidant Req'd -soil = SODs x Ms x / 1000 g/kg
= 3.00 x 2,752,449 / 1,000
= 8,257 kg Oxidant
= 18,188 lbs. Oxidant

Mass (MOgw) of Oxidant Req'd -gw = Pore Vol. x Ogw / 1000 g/kg
= 611,655 x 1.00 / 1,000
= 612 kg Oxidant
= 1,347 lbs. Oxidant

Total Mass of Oxidant (MOtot) = Mos + Mogw
= 18,188 + 1,347
= 19,535 lbs. Oxidant

Total Vol. of Oxidant at 100% (VOtot) = MOtot / Oxidant Den.
= 19,535 / 9.21
= 2,121 gal Oxidant (at 100% theoretical strength), VOtot

Total Vol. Makeup Solution (VOraw) = VOtot / %Raw
= 2,121 / 50.00%
= 4,242 gallons of makeup (50.00%) Solution (v/v)

Total Vol. Feed Solution (VOfeed) =	(VOraw * %Raw) /	%Feed							
=	2,121 /	10.00%							
=	21,211	gallons of feed (	10.00%	) Solution (v/v)					
Makeup H2O for Feed Soln (V wat) =	VOfeed	-	VOraw						
=	21,211	-	4,242						
=	16,969	gallons of water added to raw solution for feed conc.							
Approximate Effective in-situ Dosage =	VOtot	/	(Vgw	+	Vwat	+	Vraw)		
=	2,121	/	21,600	+	16,969	+	2,121		
=	5.21%	v/v							

3 Individual Injection Well Calculations (Injection Time Estimates)

Mass of Oxidant Per Well (MOwell) =	MOtot	/	No. Wells
=	19,535	/	2
=	9,768	lbs Oxidant per well (assumes same screened length)	
Gallons of Feed Soln per Well (VFwell) =	VOfeed	/	No. Wells
=	21,211	/	2
=	10,605	gallons of feed solution per well	
"Flush" Water After Injections: =	1,061	gal	(assumes 10% of total solution injected)
Duration of Injection Events =	Gal Soln+Flush.	/	Injection rate
=	11,666	/	5
=	2,333	minutes	
=	4.9	days (at 8 hours per day injection time)	

4 Oxidant Make-up Solution Requirements:

Total Oxidant Requirements:			
Total Mass of Oxidant Required:	19,535	lbs. Oxidant	
Total Make-up Solution (as sold) Req'ts:			
Total of **50.0%** Soln. Req'd:	4,242	gallons of raw Oxidant solution at	**50%** concentration
Total Feed Solution Requirements:			
Total of **10.0%** Feed Soln Req'd (tot):	21,211	gallons of well injection solution at	**10%** concentration
Amt. of addtl. H2O for feed conc make-up:	16,969	gallons of addl. water to be added to raw solution.	
Per Well Requirements:			
Total of **10.0%** Feed Soln. (ea. well):	10,605	gallons of well injection solution at	**10%** concentration
Total Oxidant injected (ea. well):	9,768	pounds of H2O2 injected (theoretical 100%)	
Approximate Total Flush Water (ea. well):	1,061	gallons of flush water (assumed at 10% total)	

5 Ferrous Sulfate Addition Requirements (for Fenton's Reagent)

H202:FE Mass Ratio Estimate (H2O2:Fe):	30	:	1	(Typical range is 5:1 to 40:1)
Total Mass of Oxidant Required, MOtot:	19,535	lbs		
Total Mass of Fe Required (Mfe) =	MOtot	/	Ratio	
=	19,535	/	30	
=	651	lbs Fe Required		
Available Fe in Treatment Area (Feavail)=	13.3	mg/kg in soil		
	75%	percent of total iron available (assumed)		
=	27	kg available Fe in entire test area		
=	60	lbs available Fe in entire test area		

Total Mass Fe Add. Reqd (Mfeadd) =	Mfe	-	Feavail		
=	651	-	60		
=	591	lbs Fe addition required			
Mol. Wt. Fe =	56	lb/lbmole			
Type of Iron Solution:	12% FeSO4-7 H20				
Iron Cmpd Solution Feed Strength (Sfe):	12.0%	w/w			
Mol Wt Iron Compound (MWfecmpd):	278	lb/lbmole			
Density of Iron Cmpd Solution (Dfecmpd):	9.89	lb/gallon			
Mole Ratio Iron Compound:Fe	1	:	1		
Mass Iron Compound Reqd (MFeCmpd) =	(Mfeadd / MWfe)	*	(Fecmpd:Fe)	*	(MWSfe)
=	10.55	*	1.00	*	278
=	2,933	lbs Iron Compound			
Vol. of Iron Compound Solution (Vfetot)=	MFeCmpd	/	Sfe	/	Density of Solution
=	2,933	/	12.0%	/	9.89
=	2,471	gal of Iron Solution @	**12.0%**	strength.	
Gallons of Iron Soln per Well (VFewell) =	Vfetot	/	No. Wells		
=	2,471	/	2		
=	1,236	gallons of feed solution per well			
"Flush" Water After Injections: =	124	gal	(assumes 10% of total solution injected)		
Duration of Injection Events =	Gal Soln+Flush.	/	Injection rate		
=	1,359	/	5		
=	272	minutes			
=	0.6	days (at 8 hours per day injection time)			

Oxidant Injection Calculations for ISCO

Phase II, Stage 2 Calculations - High SOD Scenario

1 Site Information and Design Basis Input:

Site Name: Pall Corp
Location: Glen Cove, New York
Project: Pilot Test for Fenton's Reagent Injection (Phase II, Stage 2 Test Requirements)

Calculation Basi						
	Length (L):	60 ft.	Clean SOD for Oxidant (SOD $_s$):	5.00	g/kg
	Width (W):	60 ft.	Oxidant for GW Only (Ogw):	1.00	g/L
	Depth (D):	20 ft.	Desired Feed Solution (%Feed):	10%	v/v
	Soil Bulk Density (ρ):	1.35 kg/l	Raw Makeup Oxidant Conc.(%Raw):	50%	v/v
	Porosity (Pe):	0.30	Feed Soln Density:	9.21	#/gal
	Oxidant Type:	Fentons	No. Injection Wells in Area:	2	
	Iron Conc (Fec):	see below mg/l	Injection Flowrate (average per well)	5	gpm

2 Pilot Test Oxidant Dosing

Volume of Soil (Vs) = L x W x D
= 60 x 60 x 20
= 72,000 Cu. Ft.

Metric Conversion		
=	2,039	M^3
=	2,038,851	L

Mass of GW in Pore Vol. (Mgw) = Vs x Pe x ρw
= 72,000 x 0.30 x 62.40
= 21,600 cu.ft. water x 62.40
= 1,347,840 lbs water
= 21,600 gal water, Vgw

Metric Conversion		
=	612	M^3
=	611,655	L

Mass of Soil (Ms) = ρ x Vs
= 1.35 x 2,038,851
= 2,752,449 kg soil

Mass (MOs) of Oxidant Req'd -soil = SODs x Ms x / 1000 g/kg
= 5.00 x 2,752,449 / 1,000
= 13,762 kg Oxidant
= 30,313 lbs. Oxidant

Mass (MOgw) of Oxidant Req'd -gw = Pore Vol. x Ogw / 1000 g/kg
= 611,655 x 1.00 / 1,000
= 612 kg Oxidant
= 1,347 lbs. Oxidant

Total Mass of Oxidant (MOtot) = Mos + Mogw
= 30,313 + 1,347
= 31,661 lbs. Oxidant

Total Vol. of Oxidant at 100% (VOtot) = MOtot / Oxidant Den.
= 31,661 / 9.21
= 3,438 gal Oxidant (at 100% theoretical strength), VOtot

Total Vol. Makeup Solution (VOraw) = VOtot / %Raw
= 3,438 / 50.00%
= 6,875 gallons of makeup (50.00%) Solution (v/v)

Total Vol. Feed Solution (VOfeed) =	(VOraw * %Raw)	/	%Feed					
=	3,438	/	10.00%					
=	34,376	gallons of feed (	10.00%	) Solution (v/v)				
Makeup H2O for Feed Soln (V wat) =	VOfeed	-	VOraw					
=	34,376	-	6,875					
=	27,501	gallons of water added to raw solution for feed conc.						
Approximate Effective in-situ Dosage =	VOtot	/	(Vgw	+	Vwat	+	Vraw)	
=	3,438	/	21,600	+	27,501	+	3,438	
=	6.54%	v/v						

3 Individual Injection Well Calculations (Injection Time Estimates)

Mass of Oxidant Per Well (MOwell) =	MOtot	/	No. Wells	
=	31,661	/	2	
=	15,830	lbs Oxidant per well (assumes same screened length)		
Gallons of Feed Soln per Well (VFwell) =	VOfeed	/	No. Wells	
=	34,376	/	2	
=	17,188	gallons of feed solution per well		
"Flush" Water After Injections: =	1,719	gal	(assumes 10% of total solution injected)	
Duration of Injection Events =	Gal Soln+Flush.	/	Injection rate	
=	18,907	/	5	
=	3,781	minutes		
=	7.9	days (at 8 hours per day injection time)		

4 Oxidant Make-up Solution Requirements:

Total Oxidant Requirements:			
Total Mass of Oxidant Required:	31,661	lbs. Oxidant	
Total Make-up Solution (as sold) Req'ts:			
Total of **50.0%** Soln. Req'd:	6,875	gallons of raw Oxidant solution at	**50%** concentration
Total Feed Solution Requirements:			
Total of **10.0%** Feed Soln Req'd (tot):	34,376	gallons of well injection solution at	**10%** concentration
Amt. of addtl. H2O for feed conc make-up:	27,501	gallons of addl. water to be added to raw solution.	
Per Well Requirements:			
Total of **10.0%** Feed Soln. (ea. well):	17,188	gallons of well injection solution at	**10%** concentration
Total Oxidant injected (ea. well):	15,830	pounds of H2O2 injected (theoretical 100%)	
Approximate Total Flush Water (ea. well):	1,719	gallons of flush water (assumed at 10% total)	

5 Ferrous Sulfate Addition Requirements (for Fenton's Reagent)

H202:FE Mass Ratio Estimate (H2O2:Fe):	30	:	1	(Typical range is 5:1 to 40:1)
Total Mass of Oxidant Required, MOtot:	31,661	lbs		
Total Mass of Fe Required (Mfe) =	MOtot	/	Ratio	
=	31,661	/	30	
=	1,055	lbs Fe Required		
Available Fe in Treatment Area (Feavail)=	13.3	mg/kg in soil		
	75%	percent of total iron available (assumed)		
=	27	kg available Fe in entire test area		
=	60	lbs available Fe in entire test area		

Total Mass Fe Add. Reqd (Mfeadd) =	Mfe	-	Feavail	
=	1,055	-	60	
=	995	lbs Fe addition required		
Mol. Wt. Fe =	56	lb/lbmole		
Type of Iron Solution:	12% FeSO4-7 H20			
Iron Cmpd Solution Feed Strength (Sfe):	12.0%	w/w		
Mol Wt Iron Compound (MWfecmpd):	278	lb/lbmole		
Density of Iron Cmpd Solution (Dfecmpd):	9.89	lb/gallon		
Mole Ratio Iron Compound:Fe	1	:	1	
Mass Iron Compound Reqd (MFeCmpd) =	(Mfeadd / MWfe)	*	(Fecmpd:Fe) *	(MWSfe)
=	17.77	*	1.00 *	278
=	4,939	lbs Iron Compound		
Vol. of Iron Compound Solution (Vfetot)=	MFeCmpd	/	Sfe /	Density of Solution
=	4,939	/	12.0% /	9.89
=	4,162	gal of Iron Solution @	**12.0%**	strength.
Gallons of Iron Soln per Well (VFewell) =	Vfetot	/	No. Wells	
=	4,162	/	2	
=	2,081	gallons of feed solution per well		
"Flush" Water After Injections: =	208	gal	(assumes 10% of total solution injected)	
Duration of Injection Events =	Gal Soln+Flush.	/	Injection rate	
=	2,289	/	5	
=	458	minutes		
=	1.0	days (at 8 hours per day injection time)		

Oxidant Injection Calculations for ISCO

Phase II, Stage 3 Calculations - Low SOD Scenario

1 Site Information and Design Basis Input:

Site Name: Pall Corp
Location: Glen Cove, New York
Project: Pilot Test for Fenton's Reagent Injection (Phase II, Stage 3 Test Requirements)

Calculation Basi							
	Length (L):	60	ft.	Clean SOD for Oxidant (SOD $_o$):	1.00	g/kg
	Width (W):	120	ft.	Oxidant for GW Only (Ogw):	1.00	g/L
	Depth (D):	20	ft.	Desired Feed Solution (%Feed):	10%	v/v
	Soil Bulk Density (ρ):	1.35	kg/l	Raw Makeup Oxidant Conc.(%Raw):	50%	v/v
	Porosity (Pe):	0.30		Feed Soln Density:	9.21	#/gal
	Oxidant Type:	Fentons		No. Injection Wells in Area:	4	
	Iron Conc (Fec):	see below	mg/l	Injection Flowrate (average per well)	5	gpm

2 Pilot Test Oxidant Dosing

Volume of Soil (Vs) = L x W x D
= 60 x 120 x 20
= 144,000 Cu. Ft.

Metric Conversion		
=	4,078	M^3
=	4,077,703	L

Mass of GW in Pore Vol. (Mgw) = Vs x Pe x ρw
= 144,000 x 0.30 x 62.40
= 43,200 cu.ft. water x 62.40
= 2,695,680 lbs water
= 43,200 gal water, Vgw

Metric Conversion		
=	1,223	M^3
=	1,223,311	L

Mass of Soil (Ms) = ρ x Vs
= 1.35 x 4,077,703
= 5,504,899 kg soil

Mass (MOs) of Oxidant Req'd -soil = SODs x Ms x / 1000 g/kg
= 1.00 x 5,505,899 / 1,000
= 5,505 kg Oxidant
= 12,125 lbs. Oxidant

Mass (MOgw) of Oxidant Req'd -gw = Pore Vol. x Ogw / 1000 g/kg
= 1,223,311 x 1.00 / 1,000
= 1,223 kg Oxidant
= 2,695 lbs. Oxidant

Total Mass of Oxidant (MOtot) = Mos + Mogw
= 12,125 + 2,695
= 14,820 lbs. Oxidant

Total Vol. of Oxidant at 100% (VOtot) = MOtot / Oxidant Den.
= 14,820 / 9.21
= 1,609 gal Oxidant (at 100% theoretical strength), VOtot

Total Vol. Makeup Solution (VOraw) = VOtot / %Raw
= 1,609 / 50.00%
= 3,218 gallons of makeup (50.00%) Solution (v/v)

Total Vol. Feed Solution (VOfeed) =	(VOraw * %Raw)	/	%Feed					
=	1,609	/	10.00%					
=	16,091	gallons of feed (	10.00%	) Solution (v/v)				
Makeup H2O for Feed Soln (V wat) =	VOfeed	-	VOraw					
=	16,091	-	3,218					
=	12,873	gallons of water added to raw solution for feed conc.						
Approximate Effective in-situ Dosage =	VOtot	/	(Vgw	+	Vwat	+	Vraw)	
=	1,609	/	43,200	+	12,873	+	1,609	
=	2.79%	v/v						

3 Individual Injection Well Calculations (Injection Time Estimates)

Mass of Oxidant Per Well (MOwell) =	MOtot	/	No. Wells	
=	14,820	/	4	
=	3,705	lbs Oxidant per well (assumes same screened length)		
Gallons of Feed Soln per Well (VFwell) =	VOfeed	/	No. Wells	
=	16,091	/	4	
=	4,023	gallons of feed solution per well		
"Flush" Water After Injections: =	402	gal	(assumes 10% of total solution injected)	
Duration of Injection Events =	Gal Soln+Flush.	/	Injection rate	
=	4,425	/	5	
=	885	minutes		
=	1.8	days (at 8 hours per day injection time)		

4 Oxidant Make-up Solution Requirements:

Total Oxidant Requirements:			
Total Mass of Oxidant Required:	14,820	lbs. Oxidant	
Total Make-up Solution (as sold) Req'ts:			
Total of **50.0%** Soln. Req'd:	3,218	gallons of raw Oxidant solution at	**50%** concentration
Total Feed Solution Requirements:			
Total of **10.0%** Feed Soln Req'd (tot):	16,091	gallons of well injection solution at	**10%** concentration
Amt. of addtl. H2O for feed conc make-up:	12,873	gallons of addl. water to be added to raw solution.	
Per Well Requirements:			
Total of **10.0%** Feed Soln. (ea. well):	4,023	gallons of well injection solution at	**10%** concentration
Total Oxidant injected (ea. well):	3,705	pounds of H2O2 injected (theoretical 100%)	
Approximate Total Flush Water (ea. well):	402	gallons of flush water (assumed at 10% total)	

5 Ferrous Sulfate Addition Requirements (for Fenton's Reagent)

H202:FE Mass Ratio Estimate (H2O2:Fe):	30	:	1	(Typical range is 5:1 to 40:1)
Total Mass of Oxidant Required, MOtot:	14,820	lbs		
Total Mass of Fe Required (Mfe) =	MOtot	/	Ratio	
=	14,820	/	30	
=	494	lbs Fe Required		
Available Fe in Treatment Area (Feavail)=	13.3	mg/kg in soil		
	75%	percent of total iron available (assumed)		
=	55	kg available Fe in entire test area		
=	121	lbs available Fe in entire test area		

Total Mass Fe Add. Reqd (Mfeadd) =	Mfe	-	Feavail	
=	494	-	121	
=	373	lbs Fe addition required		

Mol. Wt. Fe =	56	lb/lbmole
Type of Iron Solution:	12% FeSO4-7 H20	
Iron Cmpd Solution Feed Strength (Sfe):	12.0%	w/w
Mol Wt Iron Compound (MWfecmpd):	278	lb/lbmole
Density of Iron Cmpd Solution (Dfecmpd):	9.89	lb/gallon
Mole Ratio Iron Compound:Fe	1 :	1

Mass Iron Compound Reqd (MFeCmpd) =	(Mfeadd / MWfe)	*	(Fecmpd:Fe)	*	(MWSfe)
=	6.66	*	1.00	*	278
=	1,853	lbs Iron Compound			

Vol. of Iron Compound Solution (Vfetot)=	MFeCmpd	/	Sfe	/	Density of Solution
=	1,853	/	12.0%	/	9.89
=	1,561	gal of Iron Solution @	**12.0%**	strength.	

Gallons of Iron Soln per Well (VFewell) =	Vfetot	/	No. Wells
=	1,561	/	4
=	390	gallons of feed solution per well	

"Flush" Water After Injections: =	39	gal	(assumes 10% of total solution injected)

Duration of Injection Events =	Gal Soln+Flush.	/	Injection rate
=	429	/	5
=	86	minutes	
=	0.2	days (at 8 hours per day injection time)	

Oxidant Injection Calculations for ISCO

Phase II, Stage 3 Calculations - Mid SOD Scenario

1 Site Information and Design Basis Input:

Site Name: Pall Corp
Location: Glen Cove, New York
Project: Pilot Test for Fenton's Reagent Injection (Phase II, Stage 3 Test Requirements)

Calculation Basi						
Length (L):	60	ft.	Clean SOD for Oxidant (SOD $_s$):	3.00	g/kg
Width (W):	120	ft.	Oxidant for GW Only (Ogw):	1.00	g/L
Depth (D):	20	ft.	Desired Feed Solution (%Feed):	10%	v/v
Soil Bulk Density (ρ):	1.35	kg/l	Raw Makeup Oxidant Conc.(%Raw):	50%	v/v
Porosity (Pe):	0.30		Feed Soln Density:	9.21	#/gal
Oxidant Type:	Fentons		No. Injection Wells in Area:	4	
Iron Conc (Fec):	see below	mg/l	Injection Flowrate (average per well)	5	gpm

2 Pilot Test Oxidant Dosing

Volume of Soil (Vs) = L x W x D
= 60 x 120 x 20
= 144,000 Cu. Ft.

Metric Conversion		
=	4,078	M^3
=	4,077,703	L

Mass of GW in Pore Vol. (Mgw) = Vs x Pe x ρw
= 144,000 x 0.30 x 62.40
= 43,200 cu.ft. water x 62.40
= 2,695,680 lbs water
= 43,200 gal water, Vgw

Metric Conversion		
=	1,223	M^3
=	1,223,311	L

Mass of Soil (Ms) = ρ x Vs
= 1.35 x 4,077,703
= 5,504,899 kg soil

Mass (MOs) of Oxidant Req'd -soil = SODs x Ms x / 1000 g/kg
= 3.00 x 5,504,899 / 1,000
= 16,515 kg Oxidant
= 36,376 lbs. Oxidant

Mass (MOgw) of Oxidant Req'd -gw = Pore Vol. x Ogw / 1000 g/kg
= 1,223,311 x 1.00 / 1,000
= 1,223 kg Oxidant
= 2,695 lbs. Oxidant

Total Mass of Oxidant (MOtot) = Mos + Mogw
= 36,376 + 2,695
= 39,071 lbs. Oxidant

Total Vol. of Oxidant at 100% (VOtot) = MOtot / Oxidant Den.
= 39,071 / 9.21
= 4,242 gal Oxidant (at 100% theoretical strength), VOtot

Total Vol. Makeup Solution (VOraw) = VOtot / %Raw
= 4,242 / 50.00%
= 8,484 gallons of makeup (50.00%) Solution (v/v)

Total Vol. Feed Solution (VOfeed) =	(VOraw * %Raw)	/	%Feed						
=	4,242	/	10.00%						
=	42,422	gallons of feed (	10.00%	) Solution (v/v)					
Makeup H2O for Feed Soln (V wat) =	VOfeed	-	VOraw						
=	42,422	-	8,484						
=	33,937	gallons of water added to raw solution for feed conc.							
Approximate Effective in-situ Dosage =	VOtot	/	(Vgw	+	Vwat	+	Vraw)		
=	4,242	/	43,200	+	33,937	+	4,242		
=	5.21%	v/v							

3 Individual Injection Well Calculations (Injection Time Estimates)

Mass of Oxidant Per Well (MOwell) =	MOtot	/	No. Wells	
=	39,071	/	4	
=	9,768	lbs Oxidant per well (assumes same screened length)		
Gallons of Feed Soln per Well (VFwell) =	VOfeed	/	No. Wells	
=	42,422	/	4	
=	10,605	gallons of feed solution per well		
"Flush" Water After Injections: =	1,061	gal	(assumes 10% of total solution injected)	
Duration of Injection Events =	Gal Soln+Flush.	/	Injection rate	
=	11,666	/	5	
=	2,333	minutes		
=	4.9	days (at 8 hours per day injection time)		

4 Oxidant Make-up Solution Requirements:

Total Oxidant Requirements:			
Total Mass of Oxidant Required:	39,071	lbs. Oxidant	
Total Make-up Solution (as sold) Req'ts:			
Total of **50.0%** Soln. Req'd:	8,484	gallons of raw Oxidant solution at	**50%** concentration
Total Feed Solution Requirements:			
Total of **10.0%** Feed Soln Req'd (tot):	42,422	gallons of well injection solution at	**10%** concentration
Amt. of addtl. H2O for feed conc make-up:	33,937	gallons of addl. water to be added to raw solution.	
Per Well Requirements:			
Total of **10.0%** Feed Soln. (ea. well):	10,605	gallons of well injection solution at	**10%** concentration
Total Oxidant injected (ea. well):	9,768	pounds of H2O2 injected (theoretical 100%)	
Approximate Total Flush Water (ea. well):	1,061	gallons of flush water (assumed at 10% total)	

5 Ferrous Sulfate Addition Requirements (for Fenton's Reagent)

H202:FE Mass Ratio Estimate (H2O2:Fe):	30	: 1	(Typical range is 5:1 to 40:1)
Total Mass of Oxidant Required, MOtot:	39,071	lbs	
Total Mass of Fe Required (Mfe) =	MOtot	/ Ratio	
=	39,071	/ 30	
=	1,302	lbs Fe Required	
Available Fe in Treatment Area (Feavail)=	13.3	mg/kg in soil	
	75%	percent of total iron available (assumed)	
=	55	kg available Fe in entire test area	
=	121	lbs available Fe in entire test area	

Total Mass Fe Add. Reqd (Mfeadd) =	Mfe	-	Feavail	
=	1,302	-	121	
=	1,182	lbs Fe addition required		

Mol. Wt. Fe =	56	lb/lbmole
Type of Iron Solution:	12% FeSO4-7 H20	
Iron Cmpd Solution Feed Strength (Sfe):	12.0%	w/w
Mol Wt Iron Compound (MWfecmpd):	278	lb/lbmole
Density of Iron Cmpd Solution (Dfecmpd):	9.89	lb/gallon
Mole Ratio Iron Compound:Fe	1 :	1

Mass Iron Compound Reqd (MFeCmpd) =	(Mfeadd / MWfe)	*	(Fecmpd:Fe)	*	(MWSfe)
=	21.10	*	1.00	*	278
=	5,866	lbs Iron Compound			

Vol. of Iron Compound Solution (Vfetot)=	MFeCmpd	/	Sfe	/	Density of Solution
=	5,866	/	12.0%	/	9.89
=	4,942	gal of Iron Solution @	**12.0%**	strength.	

Gallons of Iron Soln per Well (VFewell) =	Vfetot	/	No. Wells
=	4,942	/	4
=	1,236	gallons of feed solution per well	

"Flush" Water After Injections: =	124	gal	(assumes 10% of total solution injected)

Duration of Injection Events =	Gal Soln+Flush.	/	Injection rate
=	1,359	/	5
=	272	minutes	
=	0.6	days (at 8 hours per day injection time)	

Oxidant Injection Calculations for ISCO

Phase II, Stage 3 Calculations - High SOD Scenario

1 Site Information and Design Basis Input:

Site Name: Pall Corp
Location: Glen Cove, New York
Project: Pilot Test for Fenton's Reagent Injection (Phase II, Stage 3 Test Requirements)

Calculation Basi						
Length (L):	60	ft.	Clean SOD for Oxidant (SOD $_s$):	5.00	g/kg
Width (W):	120	ft.	Oxidant for GW Only (Ogw):	1.00	g/L
Depth (D):	20	ft.	Desired Feed Solution (%Feed):	10%	v/v
Soil Bulk Density (ρ):	1.35	kg/l	Raw Makeup Oxidant Conc.(%Raw):	50%	v/v
Porosity (Pe):	0.30		Feed Soln Density:	9.21	#/gal
Oxidant Type:	Fentons		No. Injection Wells in Area:	4	
Iron Conc (Fec):	see below	mg/l	Injection Flowrate (average per well)	5	gpm

2 Pilot Test Oxidant Dosing

Volume of Soil (Vs) = L x W x D
= 60 x 120 x 20
= 144,000 Cu. Ft.

Metric Conversion		
=	4,078	M^3
=	4,077,703	L

Mass of GW in Pore Vol. (Mgw) = Vs x Pe x ρw
= 144,000 x 0.30 x 62.40
= 43,200 cu.ft. water x 62.40
= 2,695,680 lbs water
= 43,200 gal water, Vgw

Metric Conversion		
=	1,223	M^3
=	1,223,311	L

Mass of Soil (Ms) = ρ x Vs
= 1.35 x 4,077,703
= 5,504,899 kg soil

Mass (MOs) of Oxidant Req'd -soil = SODs x Ms x / 1000 g/kg
= 5.00 x 5,504,899 / 1,000
= 27,524 kg Oxidant
= 60,627 lbs. Oxidant

Mass (MOgw) of Oxidant Req'd -gw = Pore Vol. x Ogw / 1000 g/kg
= 1,223,311 x 1.00 / 1,000
= 1,223 kg Oxidant
= 2,695 lbs. Oxidant

Total Mass of Oxidant (MOtot) = Mos + Mogw
= 60,627 + 2,695
= 63,321 lbs. Oxidant

Total Vol. of Oxidant at 100% (VOtot) = MOtot / Oxidant Den.
= 63,321 / 9.21
= 6,875 gal Oxidant (at 100% theoretical strength), VOtot

Total Vol. Makeup Solution (VOraw) = VOtot / %Raw
= 6,875 / 50.00%
= 13,751 gallons of makeup (50.00%) Solution (v/v)

Total Vol. Feed Solution (VOfeed) =	(VOraw *	%Raw) /	%Feed						
=	6,875 /	10.00%							
=	68,753	gallons of feed (	10.00%	) Solution (v/v)					
Makeup H2O for Feed Soln (V wat) =	VOfeed	-	VOraw						
=	68,753	-	13,751						
=	55,002	gallons of water added to raw solution for feed conc.							
Approximate Effective in-situ Dosage =	VOtot	/	(Vgw	+	Vwat	+	Vraw)		
=	6,875	/	43,200	+	55,002	+	6,875		
=	6.54%	v/v							

3 Individual Injection Well Calculations (Injection Time Estimates)

Mass of Oxidant Per Well (MOwell) =	MOtot	/	No. Wells
=	63,321	/	4
=	15,830	lbs Oxidant per well (assumes same screened length)	
Gallons of Feed Soln per Well (VFwell) =	VOfeed	/	No. Wells
=	68,753	/	4
=	17,188	gallons of feed solution per well	
"Flush" Water After Injections: =	1,719	gal	(assumes 10% of total solution injected)
Duration of Injection Events =	Gal Soln+Flush.	/	Injection rate
=	18,907	/	5
=	3,781	minutes	
=	7.9	days (at 8 hours per day injection time)	

4 Oxidant Make-up Solution Requirements:

Total Oxidant Requirements:		
Total Mass of Oxidant Required:	63,321	lbs. Oxidant
Total Make-up Solution (as sold) Req'ts:		
Total of **50.0%** Soln. Req'd:	13,751	gallons of raw Oxidant solution at **50%** concentration
Total Feed Solution Requirements:		
Total of **10.0%** Feed Soln Req'd (tot):	68,753	gallons of well injection solution at **10%** concentration
Amt. of addtl. H2O for feed conc make-up:	55,002	gallons of addl. water to be added to raw solution.
Per Well Requirements:		
Total of **10.0%** Feed Soln. (ea. well):	17,188	gallons of well injection solution at **10%** concentration
Total Oxidant injected (ea. well):	15,830	pounds of H2O2 injected (theoretical 100%)
Approximate Total Flush Water (ea. well):	1,719	gallons of flush water (assumed at 10% total)

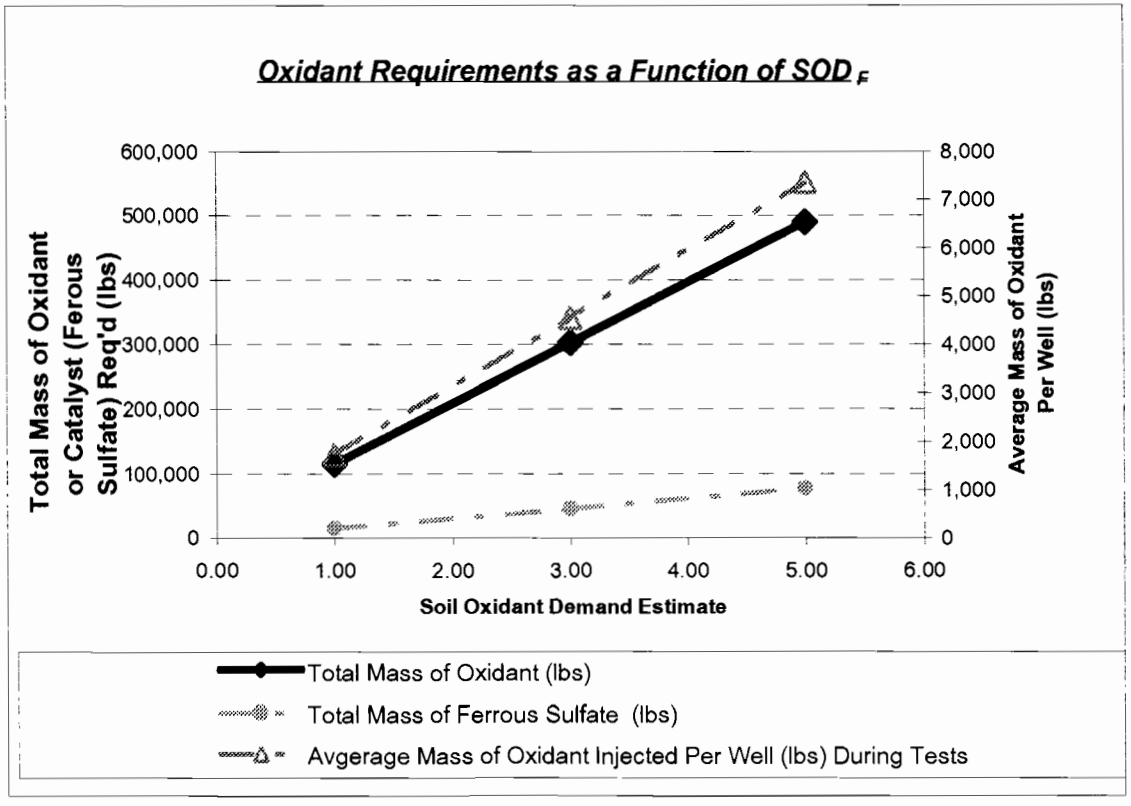
5 Ferrous Sulfate Addition Requirements (for Fenton's Reagent)

H202:FE Mass Ratio Estimate (H2O2:Fe):	30	: 1	(Typical range is 5:1 to 40:1)
Total Mass of Oxidant Required, MOtot:	63,321	lbs	
Total Mass of Fe Required (Mfe) =	MOtot	/ Ratio	
=	63,321	/ 30	
=	2,111	lbs Fe Required	
Available Fe in Treatment Area (Feavail)=	13.3	mg/kg in soil	
	75%	percent of total iron available (assumed)	
=	55	kg available Fe in entire test area	
=	121	lbs available Fe in entire test area	

Total Mass Fe Add. Reqd (Mfeadd) =	Mfe	-	Feavail	
=	2,111	-	121	
=	1,990	lbs Fe addition required		
Mol. Wt. Fe =	56	lb/lbmole		
Type of Iron Solution:	12% FeSO4-7 H20			
Iron Cmpd Solution Feed Strength (Sfe):	12.0%	w/w		
Mol Wt Iron Compound (MWfecmpd):	278	lb/lbmole		
Density of Iron Cmpd Solution (Dfecmpd):	9.89	lb/gallon		
Mole Ratio Iron Compound:Fe	1	:	1	
Mass Iron Compound Reqd (MFeCmpd) =	(Mfeadd / MWfe)	*	(Fecmpd:Fe) *	(MWSfe)
=	35.53	*	1.00 *	278
=	9,878	lbs Iron Compound		
Vol. of Iron Compound Solution (Vfetot)=	MFeCmpd	/	Sfe /	Density of Solution
=	9,878	/	12.0% /	9.89
=	8,324	gal of Iron Solution @	**12.0%**	strength.
Gallons of Iron Soln per Well (VFewell) =	Vfetot	/	No. Wells	
=	8,324	/	4	
=	2,081	gallons of feed solution per well		
"Flush" Water After Injections: =	208	gal	(assumes 10% of total solution injected)	
Duration of Injection Events =	Gal Soln+Flush.	/	Injection rate	
=	2,289	/	5	
=	458	minutes		
=	1.0	days (at 8 hours per day injection time)		

Phase II Pilot Test - Modified Scope
Mass of Oxidant Required as a Function of Soil Oxidant Demand (SOD_F)

SOD Estimate	Avgerage Mass of Oxidant Injected Per Well (lbs) During Tests	Total Mass of Oxidant (lbs)	Total Mass of Ferrous Sulfate (lbs)
1.00	1,721	114,442	14,306
3.00	4,538	301,711	45,295
5.00	7,355	488,980	76,283



APPENDIX C

MATERIAL SAFETY DATA SHEETS

MATERIAL SAFETY DATA SHEET

Hydrogen Peroxide (40 to 60%)

MSDS Ref. No.: 7722-84-1-4
Date Approved: 02/02/2004
Revision No.: 7

This document has been prepared to meet the requirements of the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200; the Canada's Workplace Hazardous Materials Information System (WHMIS) and, the EC Directive, 2001/58/EC.

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Hydrogen Peroxide (40 to 60%)

ALTERNATE PRODUCT NAME(S): Durox® Reg. & LR 50%, Oxypure® 50%, Semiconductor Reg & Seg 50%, Standard 50%, Technical 50%, Chlorate Grade 50%, Super D® 50%

GENERAL USE:

Durox® 50% Reg. and LR - meets the Food Chemical Codex requirements for aseptic packaging and other food related applications.

Oxypure® 50% - certified by NSF to meet NSF/ANSI Standard 60 requirements for drinking water treatment.

Standard 50% - most suitable for industrial bleaching, processing, pollution abatement and general oxidation reactions.

Semiconductor Reg. & Seg. 50% - conforms to ACS and Semi Specs., for wafer etching and cleaning, and applications requiring low residues.

Super D® 50% - meets US Pharmacopoeia specifications for 3% topical solutions when diluted with proper quality water. While manufactured to the USP standards or purity and to FMC's demanding ISO 9002 quality standards, FMC does not claim that its Hydrogen Peroxide is manufactured in accordance with all pharmaceutical cGMP conditions.

Technical 50% - essentially free of inorganic metals, suitable for chemical synthesis.

Chlorate Grade 50% - specially formulated for use in chlorate manufacture or processing.

SynergOx™ - combination of a proprietary catalyst and 50% hydrogen peroxide, at the point of use, for environmental applications.

MANUFACTURER

FMC CORPORATION
Hydrogen Peroxide Division
1735 Market Street
Philadelphia, PA 19103
(215) 299-6000 (General Information)

FMC of Canada Ltd.
Hydrogen Peroxide Division
PG Pulp Mill Road
Prince George, BC V2N2S6
(250) 561-4200 (General Information)

EMERGENCY TELEPHONE NUMBERS

(800) 424-9300 (CHEMTREC - U.S.)
(613) 996-6666 (CANUTEC)
(303) 595-9048 (Medical - U.S. - Call Collect)

(281) 474-8750 (Plant: Pasadena, TX, US - Call Collect)
(250) 561-4221 (Plant: Prince George, BC, Canada - Call Collect)

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

- Clear, colorless, odorless liquid
- Oxidizer.
- Contact with combustibles may cause fire.
- Decomposes yielding oxygen that supports combustion of organic matters and can cause overpressure if confined.
- Corrosive to eyes, nose, throat, lungs and gastrointestinal tract.

POTENTIAL HEALTH EFFECTS: Corrosive to eyes, skin, nose, throat and lungs. May cause irreversible tissue damage to the eyes including blindness.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS#	Wt.%	EC No.	EC Class
Hydrogen Peroxide	7722-84-1	40 - 60	231-765-0	C, R34
Water	7732-18-5	40 - 60	231-791-2	Not classified as hazardous

4. FIRST AID MEASURES

EYES: Immediately flush with water for at least 15 minutes, lifting the upper and lower eyelids intermittently. See a medical doctor or ophthalmologist immediately.

SKIN: Immediately flush with plenty of water while removing contaminated clothing and/or shoes, and thoroughly wash with soap and water. See a medical doctor immediately.

INGESTION: Rinse mouth with water. Dilute by giving 1 or 2 glasses of water. Do not induce vomiting. Never give anything by mouth to an unconscious person. See a medical doctor immediately.

INHALATION: Remove to fresh air. If breathing difficulty or discomfort occurs and persists, contact a medical doctor.

NOTES TO MEDICAL DOCTOR: Hydrogen peroxide at these concentrations is a strong oxidant. Direct contact with the eye is likely to cause corneal damage especially if not washed immediately. Careful ophthalmologic evaluation is recommended and the possibility of local corticosteroid therapy should be considered. Because of the likelihood of corrosive effects on the gastrointestinal tract after ingestion, and the unlikelihood of systemic effects, attempts at evacuating the stomach via emesis induction or gastric lavage should be avoided. There is a remote possibility, however, that a nasogastric or orogastric tube may be required for the reduction of severe distension due to gas formation.

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Flood with water.

FIRE / EXPLOSION HAZARDS: Product is non-combustible. On decomposition releases oxygen which may intensify fire.

FIRE FIGHTING PROCEDURES: Any tank or container surrounded by fire should be flooded with water for cooling. Wear full protective clothing and self-contained breathing apparatus.

FLAMMABLE LIMITS: Non-combustible

SENSITIVITY TO IMPACT: No data available

SENSITIVITY TO STATIC DISCHARGE: No data available

6. ACCIDENTAL RELEASE MEASURES

RELEASE NOTES: Dilute with a large volume of water and hold in a pond or diked area until hydrogen peroxide decomposes. Hydrogen peroxide may be decomposed by adding sodium metabisulfite or sodium sulfite after diluting to about 5%. Dispose according to methods outlined for waste disposal.

Combustible materials exposed to hydrogen peroxide should be immediately submerged in or rinsed with large amounts of water to ensure that all hydrogen peroxide is removed. Residual hydrogen peroxide that is allowed to dry (upon evaporation hydrogen peroxide can concentrate) on organic materials such as paper, fabrics, cotton, leather, wood or other combustibles can cause the material to ignite and result in a fire.

7. HANDLING AND STORAGE

HANDLING: Wear chemical splash-type monogoggles and full-face shield, impervious clothing, such as rubber, PVC, etc., and rubber or neoprene gloves and shoes. Avoid cotton, wool and leather. Avoid excessive heat and contamination. Contamination may cause decomposition and generation of oxygen gas which could result in high pressures and possible container rupture. Hydrogen peroxide should be stored only in vented containers and transferred only in a prescribed manner (see FMC Technical Bulletins). Never return unused hydrogen peroxide to original container, empty drums should be triple rinsed with water before discarding. Utensils used for handling hydrogen peroxide should only be made of glass, stainless steel, aluminum or plastic.

STORAGE: Store drums in cool areas out of direct sunlight and away from combustibles. For bulk storage refer to FMC Technical Bulletins.

COMMENTS: VENTILATION: Provide mechanical general and/or local exhaust ventilation to prevent release of vapor or mist into the work environment.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMITS

Chemical Name	ACGIH	OSHA	Supplier
Hydrogen Peroxide	1 ppm (TWA)	1 ppm (PEL)	

ENGINEERING CONTROLS: Ventilation should be provided to minimize the release of hydrogen peroxide vapors and mists into the work environment. Spills should be minimized or confined immediately to prevent release into the work area. Remove contaminated clothing immediately and wash before reuse.

PERSONAL PROTECTIVE EQUIPMENT

EYES AND FACE: Use chemical splash-type monogoggles and a full-face shield made of polycarbonate, acetate, polycarbonate/acetate, PETG or thermoplastic.

RESPIRATORY: If concentrations in excess of 10 ppm are expected, use NIOSH/DHHS approved self-contained breathing apparatus (SCBA), or other approved atmospheric-supplied respirator (ASR) equipment (e.g., a full-face airline respirator (ALR)). DO NOT use any form of air-purifying respirator (APR) or filtering facepiece (AKA dust mask), especially those containing oxidizable sorbants such as activated carbon.

PROTECTIVE CLOTHING: For body protection wear impervious clothing such as an approved splash protective suit made of SBR Rubber, PVC (PVC Outershell w/Polyester Substrate), Gore-Tex (Polyester trilaminate w/Gore-Tex), or a specialized HAZMAT Splash or Protective Suite (Level A, B, or C). For foot protection, wear approved boots made of NBR, PVC, Polyurethane, or neoprene. Overboots made of Latex or PVC, as well as firefighter boots or specialized HAZMAT boots are also permitted. DO NOT wear any form of boot or overboots made of nylon or nylon blends. DO NOT use cotton, wool or leather, as these materials react RAPIDLY with higher concentrations of hydrogen peroxide. Completely submerge hydrogen peroxide contaminated clothing or other materials in water prior to drying. Residual hydrogen peroxide, if allowed to dry on materials such as paper, fabrics, cotton, leather, wood or other combustibles can cause the material to ignite and result in a fire.

GLOVES: For hand protection, wear approved gloves made of nitrile, PVC, or neoprene. DO NOT use cotton, wool or leather for these materials react RAPIDLY with higher concentrations of hydrogen peroxide. Thoroughly rinse the outside of gloves with water prior to removal. Inspect regularly for leaks.

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9. PHYSICAL AND CHEMICAL PROPERTIES

ODOR:	Odorless
APPEARANCE:	Clear, colorless liquid
AUTOIGNITION TEMPERATURE:	Non-combustible
BOILING POINT:	110°C (229°F) (40%); 114°C (237°F) (50%)
COEFFICIENT OF OIL / WATER:	Not available
DENSITY / WEIGHT PER VOLUME:	Not available
EVAPORATION RATE:	Above 1 (Butyl Acetate = 1)
FLASH POINT:	Non-combustible
FREEZING POINT:	-41.4°C (-42.5°F) (40%); -52°C (-62°F) (50%)
ODOR THRESHOLD:	Not available
OXIDIZING PROPERTIES:	Strong oxidizer
PERCENT VOLATILE:	100%
pH:	(as is) 1.0 to 3.0
SOLUBILITY IN WATER:	(in H_2O % by wt) 100%

SPECIFIC GRAVITY:	(H_2O = 1) 1.15 @ 20°C/4°C (40%); 1.19 @ 20°C/4°C (50%)
VAPOR DENSITY:	Not available (Air = 1)
VAPOR PRESSURE:	22 mmHg @ 30°C (40%); 18.3 mmHg @ 30°C (50%)

COMMENTS:
pH (1% solution) : 5.0 - 6.0

10. STABILITY AND REACTIVITY

CONDITIONS TO AVOID:	Excessive heat or contamination could cause product to become unstable.
STABILITY:	Stable (heat and contamination could cause decomposition)
POLYMERIZATION:	Will not occur
INCOMPATIBLE MATERIALS:	Reducing agents, wood, paper and other combustibles, iron and other heavy metals, copper alloys and caustic.
HAZARDOUS DECOMPOSITION PRODUCTS:	Oxygen which supports combustion.

COMMENTS: Materials to Avoid : Dirt, organics, cyanides and combustibles such as wood, paper, oils, etc.

11. TOXICOLOGICAL INFORMATION

EYE EFFECTS: 70% hydrogen peroxide: Severe irritant (corrosive) (rabbit) [FMC Study Number: ICG/T-79.027]

SKIN EFFECTS: 50% hydrogen peroxide: Severe irritant (corrosive) (rabbit) [FMC Study Number: I89-1079]

DERMAL LD_{50}: 70% hydrogen peroxide: > 6.5 g/kg (rabbit) [FMC Study Number: ICG/T-79.027]

ORAL LD_{50}: 50% hydrogen peroxide: > 225 mg/kg (rat) [FMC Study Number: I86-914]

INHALATION LC_{50}: 50% hydrogen peroxide: > 0.17 mg/l (rat) [FMC Study Number: I89-1080]

TARGET ORGANS: Eye, skin, nose, throat, lungs

ACUTE EFFECTS FROM OVEREXPOSURE: Severe irritant/corrosive to eyes, skin and gastrointestinal tract. May cause irreversible tissue damage to the eyes including blindness. Inhalation of mist or vapors may be severely irritating to nose, throat and lungs.

CHRONIC EFFECTS FROM OVEREXPOSURE: The International Agency for Research on Cancer (IARC) has concluded that there is inadequate evidence for carcinogenicity of hydrogen peroxide in humans, but limited evidence in experimental animals (Group 3 - not classifiable as to its carcinogenicity to humans). The American Conference of Governmental Industrial Hygienists (ACGIH) has concluded that hydrogen peroxide is a 'Confirmed Animal Carcinogen with Unknown Relevance to Humans' (A3).

CARCINOGENICITY:

Chemical Name	IARC	NTP	OSHA	Other
Hydrogen Peroxide	Listed	Not listed	Not listed	(ACGIH) Listed (A3, Animal Carcinogen)

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION: Channel catfish 96-hour LC_{50} = 37.4 mg/L
Fathead minnow 96-hour LC_{50} = 16.4 mg/L
Daphnia magna 24-hour EC_{50} = 7.7 mg/L
Daphnia pulex 48-hour LC_{50} = 2.4 mg/L
Freshwater snail 96-hour LC_{50} = 17.7 mg/L
For more information refer to ECETOC "Joint Assessment of Commodity Chemicals No. 22, Hydrogen Peroxide." ISSN-0773-6339, January 1993

CHEMICAL FATE INFORMATION: Hydrogen peroxide in the aquatic environment is subject to various reduction or oxidation processes and decomposes into water and oxygen. Hydrogen peroxide half-life in freshwater ranged from 8 hours to 20 days, in air from 10-20 hrs. and in soils from minutes to hours depending upon microbiological activity and metal contaminants.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: An acceptable method of disposal is to dilute with a large amount of water and allow the hydrogen peroxide to decompose followed by discharge into a suitable treatment system in accordance with all regulatory agencies. The appropriate regulatory agencies should be contacted prior to disposal.

14. TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION (DOT)

PROPER SHIPPING NAME:	Hydrogen peroxide, aqueous solutions with more than 40% but not more than 60% hydrogen peroxide.
PRIMARY HAZARD CLASS / DIVISION:	5.1 (Oxidizer)
UN/NA NUMBER:	UN 2014
PACKING GROUP:	II
LABEL(S):	Oxidizer, Corrosive
PLACARD(S):	5.1 (Oxidizer)
ADDITIONAL INFORMATION:	DOT Marking: Hydrogen Peroxide, aqueous solution with more than 40%, but not more than 60% Hydrogen Peroxide, UN 2014 Hazardous Substance/RQ: Not applicable 49 STCC Number: 4918775 DOT Spec: stainless steel/high purity aluminum cargo tanks and rail cars. UN Spec: HDPE drums. Contact FMC for specific details.

INTERNATIONAL MARITIME DANGEROUS GOODS (IMDG)

PROPER SHIPPING NAME:	Hydrogen peroxide, aqueous solutions with not less than 20%, but not more than 60% hydrogen peroxide.

INTERNATIONAL CIVIL AVIATION ORGANIZATION (ICAO) / INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA)

PROPER SHIPPING NAME:	Hydrogen peroxide (40 - 60%) is forbidden on Passenger and Cargo Aircraft, as well as Cargo Only Aircraft.

OTHER INFORMATION:

Protect from physical damage. Keep drums in upright position. Drums should not be stacked in transit. Do not store drum on wooden pallets.

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15. REGULATORY INFORMATION

UNITED STATES

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355, APPENDIX A):

Hydrogen Peroxide > 52%, RQ: 1000 lbs. Planning Threshold: 10,000 lbs.

SECTION 311 HAZARD CATEGORIES (40 CFR 370):
Fire Hazard, Immediate (Acute) Health Hazard

SECTION 312 THRESHOLD PLANNING QUANTITY (40 CFR 370):
The Threshold Planning Quantity (TPQ) for this product, if treated as a mixture, is 10,000 lbs; however, this product contains the following ingredients with a TPQ of less than 10,000 lbs.: None, (conc. <52%) (hydrogen peroxide, 1000 lbs. when conc is >52%)

SECTION 313 REPORTABLE INGREDIENTS (40 CFR 372):
Not listed

CERCLA (COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT)

CERCLA DESIGNATION & REPORTABLE QUANTITIES (RQ) (40 CFR 302.4):
Unlisted (Hydrogen Peroxide); RQ = 100 lbs.; Ignitability, Corrosivity

TSCA (TOXIC SUBSTANCE CONTROL ACT)

TSCA INVENTORY STATUS (40 CFR 710):
Listed

RESOURCE CONSERVATION AND RECOVERY ACT (RCRA)
RCRA IDENTIFICATION OF HAZARDOUS WASTE (40 CFR 261):
Waste Number: D001, D002

CANADA

WHMIS (WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM):

Product Identification Number:	2014
Hazard Classification / Division:	Class C (Oxidizer), Class D, Div. 2, Subdiv. B (Toxic), Class E (Corrosive)
Ingredient Disclosure List:	Listed

EU EINECS NUMBERS:

008-003-00-9 (hydrogen peroxide)

INTERNATIONAL LISTINGS

Hydrogen peroxide:
China: Listed
Japan (ENCS): (1)-419
Korea: KE-20204
Philippines (PICCS): Listed

16. OTHER INFORMATION

HAZARD, RISK AND SAFETY PHRASE DESCRIPTIONS:

Hydrogen Peroxide:

EC Symbols:	C	(Corrosive)
EC Risk Phrases:	R34	(Causes burns)
EC Safety Phrases:	S1/2	(Keep locked up and out of reach of children.)
	S3	(Keep in a cool place.)
	S28	(After contact with skin, wash immediately with plenty of water and soap.)
	S36/39	(Wear suitable protective clothing. Wear eye / face protection.)
	S45	(In case of accident or if you feel unwell, seek medical advice immediately - show the label where possible.)

HMIS

Health	3
Flammability	0
Physical Hazard	1
Personal Protection (PPE)	H

Protection = H (Safety goggles, gloves, apron, the use of a supplied air or SCBA respirator is required in lieu of a vapor cartridge respirator)

HMIS = Hazardous Materials Identification System

Degree of Hazard Code:
4 = Severe
3 = Serious
2 = Moderate
1 = Slight
0 = Minimal

NFPA

Health	3
Flammability	0
Reactivity	1
Special	OX

SPECIAL = OX (Oxidizer)

NFPA = National Fire Protection Association

Degree of Hazard Code:
4 = Extreme
3 = High
2 = Moderate

1 = Slight
0 = Insignificant

REVISION SUMMARY:
Changes in information are as follows:
New Format, as well as text changes and/or updates to one or more Sections of this MSDS.

Durox, Oxypure, Super D, SynergOx and FMC Logo - FMC Trademarks

NOTE: NFPA Reactivity is 3 - when greater than 52%

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MSDS Material Safety Data Sheet

From: **Mallinckrodt Baker, Inc.**
222 Red School Lane
Phillipsburg, NJ 08865

Mallinckrodt CHEMICALS | J.T.Baker

24 Hour Emergency Telephone 908-859-2151
CHEMTREC 1-800-424-9300

National Response in Canada
CANUTEC: 613-996-6666

Outside U.S. and Canada
Chemtrec: 703-527-3887

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

FERROUS SULFATE

1. Product Identification

Synonyms: Iron (II) sulfate (1:1)ç; sulfuric acid, iron (2+) salt (1:1), heptahydrate
CAS No.: 7720-78-7 (Anhydrous) 7782-63-0 (heptahydrate)
Molecular Weight: 278
Chemical Formula: FeSO4 7H2O
Product Codes:
J.T. Baker: 2063, 2070, 2074
Mallinckrodt: 5055, 5056, 5401, 5572

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Ferrous Sulfate	7720-78-7	99 - 100%	Yes

3. Hazards Identification

Emergency Overview

WARNING! HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. AFFECTS THE LIVER.

SAF-T-DATA(tm) Ratings (Provided here for your convenience)

Health Rating: 3 - Severe (Life)
Flammability Rating: 0 - None
Reactivity Rating: 1 - Slight
Contact Rating: 2 - Moderate
Lab Protective Equip: GOGGLES; LAB COAT; VENT HOOD; PROPER GLOVES
Storage Color Code: Green (General Storage)

Potential Health Effects

Inhalation:
Causes irritation to the respiratory tract. Symptoms may include coughing, shortness of breath.
Ingestion:
Low toxicity in small quantities but larger dosages may cause nausea, vomiting, diarrhea, and black stool. Pink urine discoloration is a strong indicator of iron poisoning. Liver damage, coma, and death from iron poisoning has been recorded. Smaller doses are much more toxic to children.
Skin Contact:
Causes irritation to skin. Symptoms include redness, itching, and pain.
Eye Contact:
Causes irritation, redness, and pain.
Chronic Exposure:
Severe or chronic ferrous sulfate poisonings may damage blood vessels. Large chronic doses cause rickets in infants. Chronic exposure may cause liver effects. Prolonged exposure of the eyes may cause discoloration.
Aggravation of Pre-existing Conditions:
Persons with pre-existing skin disorders or eye problems, or impaired liver, kidney or respiratory function may be more susceptible to the effects of the substance.

---

4. First Aid Measures

Inhalation:
Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Ingestion:

Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.

Skin Contact:

Immediately flush skin with plenty of soap and water for at least 15 minutes. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Eye Contact:

Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

5. Fire Fighting Measures

Fire:

Not considered to be a fire hazard.

Explosion:

Not considered to be an explosion hazard.

Fire Extinguishing Media:

Use any means suitable for extinguishing surrounding fire.

Special Information:

Use protective clothing and breathing equipment appropriate for the surrounding fire.

6. Accidental Release Measures

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Pick up and place in a suitable container for reclamation or disposal, using a method that does not generate dust. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

7. Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Maintain a constant temperature not to exceed 24 degrees centigrade (75 degrees fahrenheit). Fluctuating temperatures causes product oxidation. Do not use this product if coated with brownish-yellow basic ferric sulfate. Isolate from incompatible substances. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:
-ACGIH Threshold Limit Value (TLV):
1 mg/m3 (TWA) soluble iron salt as Fe
Ventilation System:
A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.
Personal Respirators (NIOSH Approved):
If the exposure limit is exceeded and engineering controls are not feasible, a half facepiece particulate respirator (NIOSH type N95 or better filters) may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest.. A full-face piece particulate respirator (NIOSH type N100 filters) may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency, or respirator supplier, whichever is lowest. If oil particles (e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a NIOSH type R or P filter. For emergencies or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.
Skin Protection:
Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.
Eye Protection:
Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance:
Blue green crystals.
Odor:
Odorless.
Solubility:
48.6 g/100 g water @ 50C (122F)
Density:
1.90
pH:
No information found.

% Volatiles by volume @ 21C (70F):
0
Boiling Point:
> 300C (> 572F) Decomposes.
Melting Point:
57C (135F) Loses water
Vapor Density (Air=1):
No information found.
Vapor Pressure (mm Hg):
No information found.
Evaporation Rate (BuAc=1):
No information found.

10. Stability and Reactivity

Stability:
Stable under ordinary conditions of use and storage. Looses water in dry air and oxidizes upon exposure to moisture, forming a brown coating of extremely corrosive basic ferric sulfate.
Hazardous Decomposition Products:
Burning may produce sulfur oxides.
Hazardous Polymerization:
This substance does not polymerize.
Incompatibilities:
Alkalis, soluble carbonates, and oxidizing materials. Reacts in moist air to form ferric sulfate.
Conditions to Avoid:
Moisture.

11. Toxicological Information

Oral rat LD50: 319 mg/kg. Investigated as a tumorigen and mutagen.

--------\Cancer Lists\----------

Ingredient	---NTP Carcinogen--- Known	Anticipated	IARC Category
Ferrous Sulfate (7720-78-7)	No	No	None

12. Ecological Information

Environmental Fate:
No information found.
Environmental Toxicity:
No information found.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Not regulated.

15. Regulatory Information

--------\Chemical Inventory Status - Part 1\--------

Ingredient	TSCA	EC	Japan	Australia
Ferrous Sulfate (7720-78-7)	Yes	Yes	Yes	Yes

--------\Chemical Inventory Status - Part 2\--------

		--Canada--		
Ingredient	Korea	DSL	NDSL	Phil.
Ferrous Sulfate (7720-78-7)	Yes	Yes	No	Yes

--------\Federal, State & International Regulations - Part 1\--------

	-SARA 302-		------SARA 313------	

Ingredient	RQ	TPQ	List	Chemical Catg.
Ferrous Sulfate (7720-78-7)	No	No	No	No

--------\Federal, State & International Regulations - Part 2\--------

Ingredient	CERCLA	-RCRA- 261.33	TSCA- 8(d)
Ferrous Sulfate (7720-78-7)	1000	No	No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No
SARA 311/312: Acute: Yes Chronic: Yes Fire: No Pressure: No
Reactivity: No (Pure / Solid)

Australian Hazchem Code: None allocated.
Poison Schedule: None allocated.
WHMIS:
This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

16. Other Information

NFPA Ratings: Health: **1** Flammability: **0** Reactivity: **0**
Label Hazard Warning:
WARNING! HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. AFFECTS THE LIVER.
Label Precautions:
Avoid contact with eyes, skin and clothing.
Wash thoroughly after handling.
Avoid breathing dust.
Keep container closed.
Use only with adequate ventilation.
Label First Aid:
If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. In all cases, get medical attention.
Product Use:

Laboratory Reagent. Bulk pharmaceutical chemical.

Revision Information:

MSDS Section(s) changed since last revision of document include: 3.

Disclaimer:

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Prepared by: Environmental Health & Safety
Phone Number: (314) 654-1600 (U.S.A.)

Material Safety Data Sheet

General Chemical

Sulfuric Acid

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Sulfuric Acid

OTHER/GENERIC NAMES: Battery acid

PRODUCT USE: Industrial

MANUFACTURER: General Chemical Corporation
90 East Halsey Road
Parsippany, NJ 07054

FOR MORE INFORMATION CALL: 973-515-1840
(Monday-Friday, 9:00am-4:30pm)

IN CASE OF EMERGENCY CALL: 800-631-8050
(24 Hours/Day, 7 Days/Week)

2. COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT NAME	CAS NUMBER	WEIGHT %
Sulfuric acid	7664-93-9	>51
Water	7732-18-5	Balance

Trace impurities and additional material names not listed above may appear in Section 15 of this MSDS. These materials may be listed for local "Right-To-Know" compliance and for other reasons.

OSHA Hazard Communication Standard: *This product is considered hazardous under the OSHA Hazard Communication Standard.*

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Oily, colorless to slightly yellow, clear to turbid liquid. Odorless. Causes severe skin burns. Causes severe eye burns. Causes burns of the mouth, throat, and stomach.

POTENTIAL HEALTH HAZARDS

SKIN: Causes severe burns.

EYES: Liquid contact can cause irritation, corneal burns, and conjunctivitis. May result in severe or permanent injury. May cause blindness.

INHALATION: Inhalation of fumes or acid mist can cause irritation or corrosive burns to the upper respiratory system, including the nose, mouth and throat. May irritate the lungs. May cause pulmonary edema.

INGESTION: Causes burns of the mouth, throat and stomach. May be fatal if swallowed. Hazards are also applicable to dilute solutions.

DELAYED EFFECTS: Erosion of teeth, lesions of the skin, tracheo-bronchitis, mouth inflammation, conjuctivitis and gastritis.IARC and NTP have classified "strong inorganic acid mists containing sulfuric acid" as a known human carcinogen. This classification is for inorganic acid mists only and does not apply to sulfuric acid or sulfuric acid solutions. The basis for the classifications rests on several epidemiology studies which have several deficiencies. These studies did not account for exposure to other substances, some known to be animal or potential human carcinogens, social influences (smoking or alcohol consumption) and included small numbers of subjects. Based on the overall weight of evidence from all human and chronic animal studies, no definitive causal relationship between sulfuric acid mist exposure and respiratory tract cancer has been shown.

Ingredients found on one of the three OSHA designated carcinogen lists are listed below.

INGREDIENT NAME	NTP STATUS	IARC STATUS	OSHA LIST
Sulfuric acid	Known carcinogen – sulfuric acid mist	1-Known carcinogen – sulfuric acid mist	Not listed

4. FIRST AID MEASURES

SKIN: Immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing while washing. Get medical attention immediately.

EYES: Immediately flush eyes with large amounts of water for at least 15 minutes. Get immediate medical attention.

INHALATION: If inhaled, remove to fresh air. If not breathing give artificial respiration, preferably mouth-to-mouth. If breathing is difficult give oxygen. Get medical attention.

INGESTION: If swallowed, do NOT induce vomiting. Give victim two glasses of water. Call a physician immediately. Never give anything by mouth to an unconscious person.

ADVICE TO PHYSICIAN: Treat symptomatically.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

FLASH POINT:	Not applicable.
FLASH POINT METHOD:	Not applicable.
AUTOIGNITION TEMPERATURE:	Not applicable.
UPPER FLAME LIMIT (volume % in air):	Not applicable.
LOWER FLAME LIMIT (volume % in air):	Not applicable.
FLAME PROPAGATION RATE (solids):	Not applicable.
OSHA FLAMMABILITY CLASS:	Not flammable.

EXTINGUISHING MEDIA:

Water spray or fog may be used to knock down corrosive vapor cloud. Water may be applied to the sides of the containers exposed to flames provided the water does not come in contact with the tank contents.

UNUSUAL FIRE AND EXPLOSION HAZARDS:
Flammable and potentially explosive hydrogen gas can be generated inside metal drums and storage tanks. Concentrated sulfuric acid can ignite combustible materials on contact.

SPECIAL FIRE FIGHTING PRECAUTIONS/INSTRUCTIONS:
Do not use solid water streams near ruptured tanks or spills of sulfuric acid. Acid reacts violently with water and can spatter acid onto personnel. Wear approved positive-pressure self-contained breathing apparatus and protective clothing.

6. ACCIDENTAL RELEASE MEASURES

IN CASE OF SPILL OR OTHER RELEASE: (See section 8 for recommended personal protective equipment.)
Dilute small spills or leaks cautiously with plenty of water. Neutralize residue with sodium bicarbonate or other suitable neutralizing agent. When using carbonates for neutralization, adequate precautions should be taken to minimize hazards from carbon dioxide gas generation. No smoking in spill area. Major spills must be handled by a predetermined plan. Attempt to keep out of sewers.

Spills and releases may have to be reported to Federal and/or local authorities. See Section 15 regarding reporting requirements.

7. HANDLING AND STORAGE

NORMAL HANDLING: (See section 8 for recommended personal protective equipment.)
Avoid contact with skin, eyes and clothing. Avoid breathing mist. Use appropriate personnel protective equipment. Do not add water to acid. When diluting, always add acid to water cautiously and with agitation. Use with adequate ventilation.

STORAGE RECOMMENDATIONS:
Protect from physical damage. Store in a cool, well-ventilated area away from combustibles and reactive chemicals. Keep out of sun and away from heat. Keep containers upright. No smoking in storage area.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS:
Sufficient to reduce vapor and acid mists to permissible levels. Packaging and unloading areas and open processing equipment may require mechanical exhaust systems. Corrosion-proof construction recommended. Closed ventilation systems (e.g. vapor hoods) are frequently used in the electronics industry.

PERSONAL PROTECTIVE EQUIPMENT

SKIN PROTECTION: As a minimum, wear acid-resistant, preferably rubber, gloves and apron. Acid resistant boots, trousers and jacket may be used for increased protection.

EYE PROTECTION: Wear chemical safety goggles. Add a full faceshield for pouring liquids. Do not wear contact lenses.

RESPIRATORY PROTECTION: Generally, none required. If misting conditions prevail, wear a NIOSH-approved acid-mist respirator.

ADDITIONAL RECOMMENDATIONS: Provide eyewash stations and quick-drench shower facilities in or near areas of use or handling.

EXPOSURE GUIDELINES

INGREDIENT NAME	ACGIH TLV	OSHA PEL	OTHER LIMIT
Sulfuric acid	1 mg/m^3 – TWA 3 mg/m^3 – STEL	1 mg/m^3 – TWA	15 mg/m^3 - IDLH

[1] = Limit established by General Chemical Corporation.
[2] = Workplace Environmental Exposure Level (AIHA).
[3] = Biological Exposure Index (ACGIH).

OTHER EXPOSURE LIMITS FOR POTENTIAL DECOMPOSITION PRODUCTS:
None.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Colorless to light yellow liquid
PHYSICAL STATE: Liquid
MOLECULAR WEIGHT: 98.08 (H_2SO_4)
CHEMICAL FORMULA: H_2SO_4 (various concentrations) in water
ODOR: Odorless
SPECIFIC GRAVITY (water = 1.0): 1.842
SOLUBILITY IN WATER (weight %): 100%
pH: 0.9 (1% solution)
BOILING POINT: ~310C (94%)
MELTING POINT: ~ -27C (94%)
VAPOR PRESSURE: <0.001 mm Hg @ 20C
VAPOR DENSITY (air = 1.0): Not applicable
EVAPORATION RATE: Not applicable **COMPARED TO:** Not applicable
% VOLATILES: Not applicable
FLASH POINT: Not applicable
(Flash point method and additional flammability data are found in Section 5.)

10. STABILITY AND REACTIVITY

NORMALLY STABLE? (CONDITIONS TO AVOID):
Normally stable. Avoid temperatures greater than 300C: yields sulfur trioxide gas, which is toxic, corrosive,and an oxidizer.

INCOMPATIBILITIES:
Nitro compounds, carbides, dienes, alcohols (when heated): causes explosions.
Oxidizing agents, such as chlorates and permanganates: causes fires and possible explosions.
Allyl compounds and aldehydes: undergoes polymerization, possibly violent.
Alkalies, amines, water, hydrated salts, carboxylic acid anhydrides, nitriles, olefinic organics, glycols, aqueous acids: causes strong exothermic reactions.

Carbonates, cyanides, sulfides, sulfites, metals such as copper: yields toxic gases.

HAZARDOUS DECOMPOSITION PRODUCTS:
Sulfur trioxide gas.

HAZARDOUS POLYMERIZATION:
Will not occur.

11. TOXICOLOGICAL INFORMATION

IMMEDIATE (ACUTE) EFFECTS:
LD_{50} (oral-rat): 2140 mg/kg
LC_{50} (inhl-rat): 510 mg/m^3/2 hr
LC_{50} (inhl-mouse): 320 mg/m^3/2 hr

DELAYED (SUBCHRONIC AND CHRONIC) EFFECTS:
IARC and NTP have classified "strong inorganic acid mists containing sulfuric acid" as known human carcinogens. The state of California has also listed "strong inorganic acid mists containing sulfuric acid" on the Proposition 65 list as a cancer causing agent. No definitive causal relationship between sulfuric acid mist exposure and respiratory cancer has been shown.

OTHER DATA:
None.

12. ECOLOGICAL INFORMATION

24.5 ppm/24 hr./bluegill/lethal/fresh water
42.5 ppm/48 hr./prawn/LC_{50}/salt water

13. DISPOSAL CONSIDERATIONS

RCRA

Is the unused product a RCRA hazardous waste if discarded? Yes

If yes, the RCRA ID number is: D002

OTHER DISPOSAL CONSIDERATIONS:

The information offered in section 13 is for the product as shipped. Use and/or alterations to the product such as mixing with other materials may significantly change the characteristics of the material and alter the RCRA classification and the proper disposal method.

14. TRANSPORT INFORMATION

US DOT HAZARD CLASS: 8, PG II
US DOT ID NUMBER: UN1830
PROPER SHIPPING NAME: Sulfuric acid

For additional information on shipping regulations affecting this material, contact the information number found in Section 1.

15. REGULATORY INFORMATION

TOXIC SUBSTANCES CONTROL ACT (TSCA)

TSCA INVENTORY STATUS: Listed on the TSCA Inventory.

OTHER TSCA ISSUES: None.

SARA TITLE III/CERCLA

"Reportable Quantities" (RQs) and/or "Threshold Planning Quantities" (TPQs) exist for the following ingredients.

INGREDIENT NAME	SARA/CERCLA RQ (lb)	SARA EHS TPQ (lb)
Sulfuric acid	1000	1000

Spills or releases resulting in the loss of any ingredient at or above its RQ requires immediate notification to the National Response Center [(800) 424-8802] and to your Local Emergency Planning Committee.

SECTION 311 HAZARD CLASS: Immediate.

SARA 313 TOXIC CHEMICALS:
The following ingredients are SARA 313 "Toxic Chemicals" and may be subject to annual reporting requirements. CAS numbers and weight percents are found in Section 2.

INGREDIENT NAME	COMMENT
Sulfuric acid	None

STATE RIGHT-TO-KNOW

In addition to the ingredients found in Section 2, the following are listed for state right-to-know purposes.

INGREDIENT NAME	WEIGHT %	COMMENT
No ingredients listed in this section.		

ADDITIONAL REGULATORY INFORMATION:
"Strong inorganic acid mists containing sulfuric acid" has been listed on California Proposition 65 as a cancer-causing agent.

WHMIS CLASSIFICATION (CANADA):
Listed on Canadian DSL and EU EINECS.

FOREIGN CHEMICAL CONTROL INVENTORY STATUS:
Listed on the Canadian DSL and EU EINECS.

16. OTHER INFORMATION

CURRENT ISSUE DATE: May, 2003

PREVIOUS ISSUE DATE: November, 2001

CHANGES TO MSDS FROM PREVIOUS ISSUE DATE ARE DUE TO THE FOLLOWING:
Addition of Prop 65 listing.

OTHER INFORMATION: None

APPENDIX D

BASELINE SAMPLING ANALYTICAL RESULTS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-1A

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402697-001A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37592.D

Level: (low/med) LOW Date Received: 02/25/04

% Moisture: not dec. Date Analyzed: 02/27/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	3	J
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	10	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	10	U
75-15-0	Carbon disulfide	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
76-13-1	Freon-113	2	J
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	1	J
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	3	J
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1B

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-1A

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402697-001A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37592.D

Level: (low/med) LOW Date Received: 02/25/04

% Moisture: not dec. Date Analyzed: 02/27/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(µg/L or µg/Kg) UG/L	Q
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1F

EPA SAMPLE NO.

MW-1A

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name H2M LABS, INC. Contract _____

Lab Code 10478 Case No. APE SAS No. _____ SDG No. APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402697-001A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37592.D

Level: (low/med) LOW Date Received: 02/25/04

% Moisture: not dec. Date Analyzed: 02/27/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

Number TICs found: 0 CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-1PD

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402697-002A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37593.D

Level: (low/med) LOW Date Received: 02/25/04

% Moisture: not dec. Date Analyzed: 02/27/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	8	J
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	10	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	4	J
75-15-0	Carbon disulfide	10	U
75-34-3	1,1-Dichloroethane	12	
540-59-0	1,2-Dichloroethene (total)	120	
67-66-3	Chloroform	10	U
76-13-1	Freon-113	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	70	
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	7	J
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1B

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-1PD

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402697-002A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37593.D

Level: (low/med) LOW Date Received: 02/25/04

% Moisture: not dec. Date Analyzed: 02/27/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

APE002 S23

1F

EPA SAMPLE NO.

MW-1PD

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name H2M LABS, INC. Contract _____

Lab Code 10478 Case No. APE SAS No. _____ SDG No. APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402697-002A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37593.D

Level: (low/med) LOW Date Received: 02/25/04

% Moisture: not dec. Date Analyzed: 02/27/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

Number TICs found: 0 CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q

APE002 S24

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-1PI

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-001A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37545.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/25/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	10	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	10	U
75-15-0	Carbon disulfide	10	U
75-34-3	1,1-Dichloroethane	6	J
540-59-0	1,2-Dichloroethene (total)	43	
67-66-3	Chloroform	10	U
76-13-1	Freon-113	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	35	
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	37	
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1B

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-1PI

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-001A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37545.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/25/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1F

EPA SAMPLE NO.

MW-1PI

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

b Name H2M LABS, INC. Contract _____

Lab Code 10478 Case No. APE SAS No. _____ SDG No. APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-001A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37545.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/25/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

CONCENTRATION UNITS:

Number TICs found: 1 (µg/L or µg/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1.		unknown	8.51	9	J

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-6P

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-002A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37546.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/25/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	3	J
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	10	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	14	
75-15-0	Carbon disulfide	10	U
75-34-3	1,1-Dichloroethane	27	
540-59-0	1,2-Dichloroethene (total)	140	
67-66-3	Chloroform	10	U
76-13-1	Freon-113	10	U
107-06-2	1,2-Dichloroethane	4	J
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	28	
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	17	
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1B

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-6P

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-002A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37546.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/25/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1F

EPA SAMPLE NO.

MW-6P

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name H2M LABS, INC. Contract _____

Lab Code 10478 Case No. APE SAS No. _____ SDG No. APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-002A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37546.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/25/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

Number TICs found: 0 CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q

APE002 S30

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-6PD

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-003A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37547.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/25/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	110	
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	10	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	45	
75-15-0	Carbon disulfide	10	U
75-34-3	1,1-Dichloroethane	100	
540-59-0	1,2-Dichloroethene (total)	840	E
67-66-3	Chloroform	10	U
76-13-1	Freon-113	10	U
107-06-2	1,2-Dichloroethane	14	
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	1	J
56-23-5	Carbon tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	62	
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	3	J
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	23	
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1B

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-6PD

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-003A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37547.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/25/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1F

EPA SAMPLE NO.

MW-6PD

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name H2M LABS, INC. Contract _____

Lab Code 10478 Case No. APE SAS No. _____ SDG No. APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-003A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37547.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/25/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

CONCENTRATION UNITS:

Number TICs found: 0 (µg/L or µg/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q

APE002 S33

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-6PDDL

Lab Name: H2M LABS, INC. Contract: _____

Lab Code: 10478 Case No.: APE SAS No.: _____ SDG No.: APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-003A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37559.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/26/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 5.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	50	U
74-83-9	Bromomethane	50	U
75-01-4	Vinyl chloride	120	D
75-00-3	Chloroethane	50	U
75-09-2	Methylene chloride	50	U
67-64-1	Acetone	50	U
75-35-4	1,1-Dichloroethene	43	DJ
75-15-0	Carbon disulfide	50	U
75-34-3	1,1-Dichloroethane	100	D
540-59-0	1,2-Dichloroethene (total)	890	D
67-66-3	Chloroform	50	U
76-13-1	Freon-113	50	U
107-06-2	1,2-Dichloroethane	13	DJ
78-93-3	2-Butanone	50	U
71-55-6	1,1,1-Trichloroethane	50	U
56-23-5	Carbon tetrachloride	50	U
75-27-4	Bromodichloromethane	50	U
78-87-5	1,2-Dichloropropane	50	U
10061-01-5	cis-1,3-Dichloropropene	50	U
79-01-6	Trichloroethene	62	D
124-48-1	Dibromochloromethane	50	U
79-00-5	1,1,2-Trichloroethane	50	U
71-43-2	Benzene	50	U
10061-02-6	trans-1,3-Dichloropropene	50	U
75-25-2	Bromoform	50	U
108-10-1	4-Methyl-2-pentanone	50	U
591-78-6	2-Hexanone	50	U
127-18-4	Tetrachloroethene	23	DJ
79-34-5	1,1,2,2-Tetrachloroethane	50	U
108-88-3	Toluene	50	U
108-90-7	Chlorobenzene	50	U
100-41-4	Ethylbenzene	50	U

1B

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-6PDDL

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-003A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37559.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/26/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 5.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
100-42-5	Styrene	50	U
1330-20-7	Xylene (total)	50	U

1F

EPA SAMPLE NO.

MW-6PDDL

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name H2M LABS, INC Contract _____

Lab Code 10478 Case No. APE SAS No. _____ SDG No. APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-003A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37559.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/26/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 5.00

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

Number TICs found: 0 CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-7P

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-004A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37548.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/25/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	10	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	10	U
75-15-0	Carbon disulfide	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
76-13-1	Freon-113	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1B

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-7P

Lab Name: H2M LABS, INC. Contract: _____

Lab Code: 10478 Case No.: APE SAS No.: _____ SDG No.: APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-004A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37548.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/25/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1F

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
MW-7P

Lab Name H2M LABS, INC. Contract _____

Lab Code 10478 Case No. APE SAS No. _____ SDG No. APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-004A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37548.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/25/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

Number TICs found: 0 CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-8PI

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-005A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37549.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/25/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	10	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	21	
75-15-0	Carbon disulfide	10	U
75-34-3	1,1-Dichloroethane	29	
540-59-0	1,2-Dichloroethene (total)	120	
67-66-3	Chloroform	10	U
76-13-1	Freon-113	10	U
107-06-2	1,2-Dichloroethane	3	J
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	8	J
56-23-5	Carbon tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	53	
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	17	
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1B

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-8PI

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-005A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37549.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/25/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1F

EPA SAMPLE NO.

MW-8PI

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name H2M LABS, INC. Contract _____

Lab Code 10478 Case No. APE SAS No. _____ SDG No. APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-005A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37549.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/25/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

Number TICs found: 1 CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1.		unknown	4.35	12	J

APE002 S42

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-8PS

Lab Name: H2M LABS. INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-006A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37550.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/25/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume ____ __ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	10	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	10	U
75-15-0	Carbon disulfide	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
76-13-1	Freon-113	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1B

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-8PS

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-006A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37550.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/25/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1F

EPA SAMPLE NO.

MW-8PS

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

b Name H2M LABS. INC. Contract _____

Lab Code 10478 Case No. APE SAS No. _____ SDG No. APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-006A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37550.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/25/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

Number TICs found: 0 CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q

APE002 S45

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-13PD

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-007A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37551.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/25/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	10	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	8	J
75-15-0	Carbon disulfide	10	U
75-34-3	1,1-Dichloroethane	13	
540-59-0	1,2-Dichloroethene (total)	180	
67-66-3	Chloroform	10	U
76-13-1	Freon-113	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	2	J
56-23-5	Carbon tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	170	
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	22	
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1B

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-13PD

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-007A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37551.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/25/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1F

EPA SAMPLE NO.

MW-13PD

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name H2M LABS, INC. Contract _____

Lab Code 10478 Case No. APE SAS No. _____ SDG No. APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-007A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37551.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/25/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

Number TICs found: 0 CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q

APE002 S48

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-13PI

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-008A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37552.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/25/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	23	
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	10	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	15	
75-15-0	Carbon disulfide	10	U
75-34-3	1,1-Dichloroethane	24	
540-59-0	1,2-Dichloroethene (total)	240	E
67-66-3	Chloroform	10	U
76-13-1	Freon-113	10	U
107-06-2	1,2-Dichloroethane	7	J
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	J
56-23-5	Carbon tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	95	
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	1	J
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	21	
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1B

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-13PI

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-008A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37552.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/25/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

APE002 S50

1F

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
MW-13PI

b Name H2M LABS, INC. Contract _____

Lab Code 10478 Case No. APE SAS No. _____ SDG No. APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-008A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37552.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/25/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

Number TICs found: 3 CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1. 000078-78-4	Butane, 2-methyl-	6.00	33	NJ
2. 000079-29-8	Butane, 2,3-dimethyl-	7.67	12	NJ
3.	unknown	7.97	16	J

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-13PIDL

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-008A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37560.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/26/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 2.50

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	25	U
74-83-9	Bromomethane	25	U
75-01-4	Vinyl chloride	25	D
75-00-3	Chloroethane	25	U
75-09-2	Methylene chloride	25	U
67-64-1	Acetone	25	U
75-35-4	1,1-Dichloroethene	15	DJ
75-15-0	Carbon disulfide	25	U
75-34-3	1,1-Dichloroethane	24	DJ
540-59-0	1,2-Dichloroethene (total)	240	D
67-66-3	Chloroform	25	U
76-13-1	Freon-113	25	U
107-06-2	1,2-Dichloroethane	7	DJ
78-93-3	2-Butanone	25	U
71-55-6	1,1,1-Trichloroethane	5	DJ
56-23-5	Carbon tetrachloride	25	U
75-27-4	Bromodichloromethane	25	U
78-87-5	1,2-Dichloropropane	25	U
10061-01-5	cis-1,3-Dichloropropene	25	U
79-01-6	Trichloroethene	94	D
124-48-1	Dibromochloromethane	25	U
79-00-5	1,1,2-Trichloroethane	25	U
71-43-2	Benzene	25	U
10061-02-6	trans-1,3-Dichloropropene	25	U
75-25-2	Bromoform	25	U
108-10-1	4-Methyl-2-pentanone	25	U
591-78-6	2-Hexanone	25	U
127-18-4	Tetrachloroethene	20	DJ
79-34-5	1,1,2,2-Tetrachloroethane	25	U
108-88-3	Toluene	25	U
108-90-7	Chlorobenzene	25	U
100-41-4	Ethylbenzene	25	U

1B

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-13PIDL

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-008A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37560.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/26/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 2.50

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
100-42-5	Styrene	25	U
1330-20-7	Xylene (total)	25	U

1F

EPA SAMPLE NO.

MW-13PIDL

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name H2M LABS, INC. Contract _____

Lab Code 10478 Case No. APE SAS No. _____ SDG No. APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-008A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37560.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/26/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 2.50

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

Number TICs found: 2 CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1. 000078-78-4	Butane, 2-methyl-	5.97	35	NJ
2.	unknown	7.96	17	J

APE002 S54

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-13PS

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-009A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37553.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/25/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	10	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	10	U
75-15-0	Carbon disulfide	10	U
75-34-3	1,1-Dichloroethane	1	J
540-59-0	1,2-Dichloroethene (total)	12	
67-66-3	Chloroform	10	U
76-13-1	Freon-113	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	2	J
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1B

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-13PS

Lab Name: H2M LABS, INC. Contract: _____

Lab Code: 10478 Case No.: APE SAS No.: _____ SDG No.: APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-009A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37553.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/25/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1F

EPA SAMPLE NO.

MW-13PS

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name H2M LABS, INC. Contract _____

Lab Code 10478 Case No. APE SAS No. _____ SDG No. APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-009A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37553.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/25/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

Number TICs found: 0 CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q

APE002 S57

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

MW-10PD

Lab Name: H2M LABS, INC. Contract:

Lab Code: 10478 Case No. SAS No.: SDG No.: APE001

Matrix (soil/water): WATER Lab Sample ID: 0402519-007

Level (low/med): LOW Date Received: 2/19/04

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-47-3	Chromium	6.1	B		P
7439-89-6	Iron	5320			P
7439-96-5	Manganese	60.3		N	P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED: MARCH 1, 2004

APE001 M5

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

MW-10PI

Lab Name: H2M LABS, INC. Contract:

Lab Code: 10478 Case No. SAS No.: SDG No.: APE001

Matrix (soil/water): WATER Lab Sample ID: 0402519-008

Level (low/med): LOW Date Received: 2/19/04

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-47-3	Chromium	2.3	B		P
7439-89-6	Iron	211			P
7439-96-5	Manganese	636		N	P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED: MARCH 1, 2004

APE001 M6

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

MW-10PS

Lab Name: H2M LABS, INC. Contract:

Lab Code: 10478 Case No. SAS No.: SDG No.: APE001

Matrix (soil/water): WATER Lab Sample ID: 0402519-009

Level (low/med): LOW Date Received: 2/19/04

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-47-3	Chromium	5.0	B		P
7439-89-6	Iron	13900			P
7439-96-5	Manganese	672		N	P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED: MARCH 1, 2004

APE001 M7

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

MW-11PD

Lab Name: B2M LABS, INC. Contract:

Lab Code: 10478 Case No. SAS No.: SDG No.: APE001

Matrix (soil/water): WATER Lab Sample ID: 0402496-004

Level (low/med): LOW Date Received: 2/18/04

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-47-3	Chromium	16.3			P
7439-89-6	Iron	92.2	B		P
7439-96-5	Manganese	945		N	P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED: MARCH 1, 2004

APE001 M8

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

MW-11PI

Lab Name: HZM LABS, INC. Contract:

Lab Code: 10478 Case No. SAS No.: SDG No.: APE001

Matrix (soil/water): WATER Lab Sample ID: 0402496-005

Level (low/med): LOW Date Received: 2/18/04

Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-47-3	Chromium	2.1	B		P
7439-89-6	Iron	2080			P
7439-96-5	Manganese	256		N	P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED: MARCH 1, 2004

APE001 M9

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

MW-11PS

Lab Name: H2M LABS, INC. Contract:

Lab Code: 10476 Case No. SAS No.: SDG No.: APE001

Matrix (soil/water): WATER Lab Sample ID: 0402496-006

Level (low/med): LOW Date Received: 2/18/04

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-47-3	Chromium	1.4	B		P
7439-89-6	Iron	69700			P
7439-96-5	Manganese	1270		N	P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:
DATE REPORTED: MARCH 1, 2004

APE001 M10

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

MW-2A

Lab Name: H2M LABS, INC. Contract:

Lab Code: 10478 Case No. SAS No.: SDG No.: APE001

Matrix (soil/water): WATER Lab Sample ID: 0402519-001

Level (low/med): LOW Date Received: 2/19/04

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-47-3	Chromium	0.89	B		P
7439-89-6	Iron	1130			P
7439-96-5	Manganese	4030		N	P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED: MARCH 1, 2004

APE001 M11

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

MW-2AD

Lab Name: BZM LABS, INC. Contract:

Lab Code: 10478 Case No. SAS No.: SDG No.: APE001

Matrix (soil/water): WATER Lab Sample ID: 0402519-002

Level (low/med): LOW Date Received: 2/19/04

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-47-3	Chromium	1.1	B		P
7439-89-6	Iron	2870			P
7439-96-5	Manganese	456		N	P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED: MARCH 1, 2004

U.S. EPA - CLP

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

MW-2AI

Lab Name: H2M LABS, INC. Contract:

Lab Code: 10478 Case No. SAS No.: SDG No.: APE001

Matrix (soil/water): WATER Lab Sample ID: 0402519-003

Level (low/med): LOW Date Received: 2/19/04

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-47-3	Chromium	0.99	B		P
7439-89-6	Iron	2390			P
7439-96-5	Manganese	631		N	P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED: MARCH 1, 2004

APE001 M13

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

MW-4P

Lab Name: H2M LABS, INC. Contract:

Lab Code: 10478 Case No. SAS No.: SDG No.: APE001

Matrix (soil/water): WATER Lab Sample ID: 0402496-003

Level (low/med): LOW Date Received: 2/18/04

Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-47-3	Chromium	7.9	B		P
7439-89-6	Iron	4390			P
7439-96-5	Manganese	41.9		N	P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED: MARCH 1, 2004

APE001 M14

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

MW-4PD

Lab Name: D2M LABS, INC. Contract:

Lab Code: 10478 Case No. SAS No.: SDG No.: APE001

Matrix (soil/water): WATER Lab Sample ID: 0402496-001

Level (low/med): LOW Date Received: 2/18/04

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-47-3	Chromium	2.0	B		P
7439-89-6	Iron	1280			P
7439-96-5	Manganese	199		N	P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED: MARCH 1, 2004

APE001 M15

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

MW-4PI

Lab Name: H2M LABS, INC. Contract:

Lab Code: 10478 Case No. SAS No.: SDG No.: APE001

Matrix (soil/water): WATER Lab Sample ID: 0402496-002

Level (low/med): LOW Date Received: 2/18/04

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-47-3	Chromium	1.3	B		P
7439-89-6	Iron	31900			P
7439-96-5	Manganese	1210		N	P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED: MARCH 1, 2004

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

MW-5P

Lab Name: H2M LABS, INC. Contract:

Lab Code: 10478 Case No. SAS No.: SDG No.: APE001

Matrix (soil/water): WATER Lab Sample ID: 0402519-004

Level (low/med): LOW Date Received: 2/19/04

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-47-3	Chromium	1.3	B		P
7439-89-6	Iron	14200			P
7439-96-5	Manganese	337		N	P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED: MARCH 1, 2004

APE001 M17

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

MW-5PD

Lab Name: H2M LABS, INC. Contract:

Lab Code: 10478 Case No. SAS No.: SDG No.: APE001

Matrix (soil/water): WATER Lab Sample ID: 0402519-005

Level (low/med): LOW Date Received: 2/19/04

Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-47-3	Chromium	2.5	B		P
7439-89-6	Iron	2000			P
7439-96-5	Manganese	509		N	P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED: MARCH 1, 2004

APE001 M18

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

MW-5PI

Lab Name: H2M LABS, INC. Contract:

Lab Code: 10478 Case No. SAS No.: SDG No.: APE001

Matrix (soil/water): WATER Lab Sample ID: 0402519-006

Level (low/med): LOW Date Received: 2/19/04

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-47-3	Chromium	4.8	B		P
7439-89-6	Iron	1370			P
7439-96-5	Manganese	463		N	P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:
DATE REPORTED: MARCH 1, 2004

APE001 M19

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

PTMW-3I

Lab Name: H2M LABS, INC. Contract:

Lab Code: 10478 Case No. SAS No.: SDG No.: APE001

Matrix (soil/water): WATER Lab Sample ID: 0402646-001

Level (low/med): LOW Date Received: 2/24/04

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-47-3	Chromium	453			P
7439-89-6	Iron	77.3	B		P
7439-96-5	Manganese	10600		N	P

Color Before: VIOLET Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED: MARCH 1, 2004

APE001 M20

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

RINSATE BLANK 2/24

Lab Name: H2M LABS, INC. Contract:

Lab Code: 10478 Case No. SAS No.: SDG No.: APE001

Matrix (soil/water): WATER Lab Sample ID: 0402646-003

Level (low/med): LOW Date Received: 2/24/04

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-47-3	Chromium	0.60	U		P
7439-89-6	Iron	3.2	U		P
7439-96-5	Manganese	2.8	B	N	P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED: MARCH 1, 2004

APE001 M21

LABORATORY TEST RESULTS

Job Number: 233421 Date: 02/23/2004

CUSTOMER: H2M Labs PROJECT: 0402496 ATTN: Sarah Benvenuto

Customer Sample ID: 0402496-001B
Date Sampled.....: 02/18/2004
Time Sampled.....: 14:00
Sample Matrix.....: Water

Laboratory Sample ID: 233421-1
Date Received.....: 02/19/2004
Time Received.....: 09:40

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	REPORTING LIMIT	UNITS	ANALYZED	TECH
SM18 3500FED	Ferrous Iron, Fe+2	0.40	U		0.40	mg/L	02/19/04	bg

In Description = Dry Wgt.

000009

STL Newburgh
315 Fullerton Avenue
Newburgh, NY 12550
Tel (845) 562-0890
Fax (845) 562-0841

LABORATORY TEST RESULTS

Job Number: 233421

Date: 02/23/2004

CUSTOMER: H2M Labs

PROJECT: 0402496

ATTN: Sarah Benvenuto

Customer Sample ID: 0402496-0028
Date Sampled.....: 02/18/2004
Time Sampled.....: 13:30
Sample Matrix.....: Water

Laboratory Sample ID: 233421-2
Date Received.....: 02/19/2004
Time Received.....: 09:40

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	REPORTING LIMIT	UNITS	ANALYZED	TECH
SM18 3500FED	Ferrous Iron, Fe+2	8.42			2.0	mg/L	02/19/04	bg

In Description = Dry Wgt.

000010

STL Newburgh
315 Fullerton Avenue
Newburgh, NY 12550
Tel (845) 562-0890
Fax (845) 562-0841

LABORATORY TEST RESULTS

Job Number: 233421

Date: 02/23/2004

CUSTOMER: H2M Labs

PROJECT: 0402496

ATTN: Sarah Benvenuto

Customer Sample ID: 0402496-003B
Date Sampled.....: 02/18/2004
Time Sampled.....: 14:30
Sample Matrix.....: Water

Laboratory Sample ID: 233421-3
Date Received.....: 02/19/2004
Time Received.....: 09:40

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	REPORTING LIMIT	UNITS	ANALYZED	TECH
SM18 3500FED	Ferrous Iron, Fe+2	0.40	U		0.40	mg/L	02/19/04	bg

ɔ Description = Dry Wgt.

000011

STL Newburgh
315 Fullerton Avenue
Newburgh, NY 12550
Tel (845) 562-0890
Fax (845) 562-0841

LABORATORY TEST RESULTS

Job Number: 233421

Date: 02/23/2004

CUSTOMER: H2M Labs | PROJECT: 0402496 | ATTN: Sarah Benvenuto

Customer Sample ID: 0402496-004B
Date Sampled.....: 02/18/2004
Time Sampled.....: 11:30
Sample Matrix.....: Water

Laboratory Sample ID: 233421-4
Date Received.....: 02/19/2004
Time Received.....: 09:40

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	REPORTING LIMIT	UNITS	ANALYZED	TECH
SM18 3500FED	Ferrous Iron, Fe+2	0.40	U		0.40	mg/L	02/19/04	bg

In Description = Dry Wgt.

000012

STL Newburgh
315 Fullerton Avenue
Newburgh, NY 12550
Tel (845) 562-0890
Fax (845) 562-0841

LABORATORY TEST RESULTS

Job Number: 233421

Date: 02/23/2004

CUSTOMER: H2M Labs

PROJECT: 0402496

ATTN: Sarah Benvenuto

Customer Sample ID: 0402496-005B
Date Sampled.....: 02/18/2004
Time Sampled.....: 11:00
Sample Matrix.....: Water

Laboratory Sample ID: 233421-5
Date Received.....: 02/19/2004
Time Received.....: 09:40

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	REPORTING LIMIT	UNITS	ANALYZED	TECH
SM18 3500FED	Ferrous Iron, Fe+2	0.40	U		0.40	mg/L	02/19/04	bg

In Description = Dry Wgt.

000013

SEVERN TRENT STL

NYSDOH 10142 NJDEP 73015 CTDOHS PH-0554 EPA NY049 PA 68-378 M-NY049

STL Newburgh
315 Fullerton Avenue
Newburgh, NY 12550
Tel (845) 562-0890
Fax (845) 562-0841

LABORATORY TEST RESULTS

Job Number: 233421 Date: 02/23/2004

CUSTOMER: H2M Labs PROJECT: 0402496 ATTN: Sarah Benvenuto

Customer Sample ID: 0402496-0068
Date Sampled.....: 02/18/2004
Time Sampled.....: 10:30
Sample Matrix.....: Water

Laboratory Sample ID: 233421-6
Date Received.....: 02/19/2004
Time Received.....: 09:40

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	REPORTING LIMIT	UNITS	ANALYZED	TECH
SM18 3500FED	Ferrous Iron, Fe+2	13.6			5.0	mg/L	02/19/04	bg

In Description = Dry Wgt.

000014

STL Newburgh
315 Fullerton Avenue
Newburgh, NY 12550
Tel (845) 562-0890
Fax (845) 562-0841

QUALITY CONTROL RESULTS

Job Number.: 233421 Report Date.: 02/23/2004

CUSTOMER: H2M Labs PROJECT: 0402496 ATTN: Sarah Benvenuto

Test Method.....: SM18 3500FED Batch.....: 62943 Analyst...: bg
Method Description.: Iron Analysis Units.....: mg/L Test Code.: FE2
Parameter.....: Ferrous Iron, Fe+2

QC	Lab ID	Reagent	QC Result	Q	QC Result	True Value	Orig. Value	Calc. Result *	Limits	F	Date	Time
MB			0.000								02/19/2004	1130
MD	233421-4		0				0	0	16-16		02/19/2004	1130
ICV		W02FFEICV1	1.002			1.00		100.2	89-120		02/19/2004	1130
MS	233421-4	W02FFESPK1	0.768			0.80	0	96.0	70-135		02/19/2004	1130
CCB			0.000								02/19/2004	1130
CCV		W02FFEICV1	1.002			1.00		100.2	89-120		02/19/2004	1130
CCB			0.000								02/19/2004	1130
CCV		W02FFEICV1	1.002			1.00		100.2	89-120		02/19/2004	1130

STL Newburgh
315 Fullerton Avenue
Newburgh, NY 12550
Tel (845) 562-0890
Fax (845) 562-0841

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-1GD

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE004

Matrix: (soil/water) WATER Lab Sample ID: 0404621-001A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A38033.D

Level: (low/med) LOW Date Received: 04/19/04

% Moisture: not dec. Date Analyzed: 04/22/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: ____ (µL) Soil Aliquot Volume ____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	8	J
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	10	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	2	J
75-15-0	Carbon disulfide	10	U
75-34-3	1,1-Dichloroethane	3	J
540-59-0	1,2-Dichloroethene (total)	220	E
67-66-3	Chloroform	10	U
76-13-1	Freon-113	110	
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	2	J
56-23-5	Carbon tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-1GD

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE004

Matrix: (soil/water) WATER Lab Sample ID: 0404621-001A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A38033.D

Level: (low/med) LOW Date Received: 04/19/04

% Moisture: not dec. Date Analyzed: 04/22/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: ____ (µL) Soil Aliquot Volume ____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	77	
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	72	
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1F

EPA SAMPLE NO.

MW-1GD

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name H2M LABS, INC. Contract _____

Lab Code 10478 Case No. APE SAS No. _____ SDG No. APE004

Matrix: (soil/water) WATER Lab Sample ID: 0404621-001A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A38033.D

Level: (low/med) LOW Date Received: 04/19/04

% Moisture: not dec. Date Analyzed: 04/22/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

Number TICs found: 1 CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1. 000354-23-4	Ethane, 1,2-dichloro-1,1,2-trifluor	7.07	11	NJ

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-1GDDL

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE004

Matrix: (soil/water) WATER Lab Sample ID: 0404621-001ADL

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A38036.D

Level: (low/med) LOW Date Received: 04/19/04

% Moisture: not dec. Date Analyzed: 04/22/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 2.50

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	25	U
74-83-9	Bromomethane	25	U
75-01-4	Vinyl chloride	6	DJ
75-00-3	Chloroethane	25	U
75-09-2	Methylene chloride	25	U
67-64-1	Acetone	25	U
75-35-4	1,1-Dichloroethene	25	U
75-15-0	Carbon disulfide	25	U
75-34-3	1,1-Dichloroethane	25	U
540-59-0	1,2-Dichloroethene (total)	200	D
67-66-3	Chloroform	25	U
76-13-1	Freon-113	98	D
107-06-2	1,2-Dichloroethane	25	U
78-93-3	2-Butanone	25	U
71-55-6	1,1,1-Trichloroethane	25	U
56-23-5	Carbon tetrachloride	25	U
75-27-4	Bromodichloromethane	25	U
78-87-5	1,2-Dichloropropane	25	U

EPA SAMPLE NO.

MW-1GDDL

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE004

Matrix: (soil/water) WATER Lab Sample ID: 0404621-001ADL

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A38036.D

Level: (low/med) LOW Date Received: 04/19/04

% Moisture: not dec. Date Analyzed: 04/22/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 2.50

Soil Extract Volume: (µL) Soil Aliquot Volume (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
10061-01-5	cis-1,3-Dichloropropene	25	U
79-01-6	Trichloroethene	70	D
124-48-1	Dibromochloromethane	25	U
79-00-5	1,1,2-Trichloroethane	25	U
71-43-2	Benzene	25	U
10061-02-6	trans-1,3-Dichloropropene	25	U
75-25-2	Bromoform	25	U
108-10-1	4-Methyl-2-pentanone	25	U
591-78-6	2-Hexanone	25	U
127-18-4	Tetrachloroethene	65	D
79-34-5	1,1,2,2-Tetrachloroethane	25	U
108-88-3	Toluene	25	U
108-90-7	Chlorobenzene	25	U
100-41-4	Ethylbenzene	25	U
100-42-5	Styrene	25	U
1330-20-7	Xylene (total)	25	U

1F

EPA SAMPLE NO.

MW-1GDDL

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

b Name H2M LABS, INC. Contract _____

Lab Code 10478 Case No. APE SAS No. _____ SDG No. APE004

Matrix: (soil/water) WATER Lab Sample ID: 0404621-001ADL

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A38036.D

Level: (low/med) LOW Date Received: 04/19/04

% Moisture: not dec. Date Analyzed: 04/22/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 2.50

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

Number TICs found: 0 CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q

APE004 S40

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

MW-1GD

Lab Name: H2M LABS, INC. Contract:

Lab Code: 10478 Case No. SAS No.: SDG No.: APE004

Matrix (soil/water): WATER Lab Sample ID: 0404621-001

Level (low/med): LOW Date Received: 4/19/2004

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-47-3	Chromium	9.2	B		P
7439-89-6	Iron	2570			P
7439-96-5	Manganese	495			P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED MAY 6, 2004

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

MW-1GD

Lab Name: H2M LABS, INC. Contract:

Lab Code: 10478 Case No. SAS No.: SDG No.: APE004F

Matrix (soil/water): WATER Lab Sample ID: 0404625-001

Level (low/med): LOW Date Received: 4/19/2004

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Iron	38.3	B		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED MAY 6, 2004
DISSOLVED METALS

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

MW-1GI

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE004

Matrix: (soil/water) WATER Lab Sample ID: 0404621-002A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A38038.D

Level: (low/med) LOW Date Received: 04/19/04

% Moisture: not dec. Date Analyzed: 04/22/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: (µL) Soil Aliquot Volume (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	33	
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	10	U
67-64-1	Acetone	35	
75-35-4	1,1-Dichloroethene	2	J
75-15-0	Carbon disulfide	10	U
75-34-3	1,1-Dichloroethane	7	J
540-59-0	1,2-Dichloroethene (total)	490	E
67-66-3	Chloroform	10	U
76-13-1	Freon-113	170	
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-1GI

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE004

Matrix: (soil/water) WATER Lab Sample ID: 0404621-002A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A38038.D

Level: (low/med) LOW Date Received: 04/19/04

% Moisture: not dec. Date Analyzed: 04/22/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: (µL) Soil Aliquot Volume (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	84	
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	160	
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1F

EPA SAMPLE NO.

MW-1GI

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name H2M LABS, INC. Contract _____

Lab Code 10478 Case No. APE SAS No. _____ SDG No. APE004

Matrix: (soil/water) WATER Lab Sample ID: 0404621-002A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A38038.D

Level: (low/med) LOW Date Received: 04/19/04

% Moisture: not dec. Date Analyzed: 04/22/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

Number TICs found: 2 CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1.	000079-38-9	Ethene, chlorotrifluoro-	4.17	85	NJ
2.	000354-23-4	Ethane, 1,2-dichloro-1,1,2-trifluor	7.04	41	NJ

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-1GIDL

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE004

Matrix: (soil/water) WATER Lab Sample ID: 0404621-002ADL

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A38040.D

Level: (low/med) LOW Date Received: 04/19/04

% Moisture: not dec. Date Analyzed: 04/22/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 5.00

Soil Extract Volume: ____ (µL) Soil Aliquot Volume ____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	50	U
74-83-9	Bromomethane	50	U
75-01-4	Vinyl chloride	31	DJ
75-00-3	Chloroethane	50	U
75-09-2	Methylene chloride	50	U
67-64-1	Acetone	50	U
75-35-4	1,1-Dichloroethene	50	U
75-15-0	Carbon disulfide	50	U
75-34-3	1,1-Dichloroethane	6	DJ
540-59-0	1,2-Dichloroethene (total)	480	D
67-66-3	Chloroform	50	U
76-13-1	Freon-113	160	D
107-06-2	1,2-Dichloroethane	50	U
78-93-3	2-Butanone	50	U
71-55-6	1,1,1-Trichloroethane	50	U
56-23-5	Carbon tetrachloride	50	U
75-27-4	Bromodichloromethane	50	U
78-87-5	1,2-Dichloropropane	50	U

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-1GIDL

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE004

Matrix: (soil/water) WATER Lab Sample ID: 0404621-002ADL

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A38040.D

Level: (low/med) LOW Date Received: 04/19/04

% Moisture: not dec. Date Analyzed: 04/22/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 5.00

Soil Extract Volume: (µL) Soil Aliquot Volume (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
10061-01-5	cis-1,3-Dichloropropene	50	U
79-01-6	Trichloroethene	81	D
124-48-1	Dibromochloromethane	50	U
79-00-5	1,1,2-Trichloroethane	50	U
71-43-2	Benzene	50	U
10061-02-6	trans-1,3-Dichloropropene	50	U
75-25-2	Bromoform	50	U
108-10-1	4-Methyl-2-pentanone	50	U
591-78-6	2-Hexanone	50	U
127-18-4	Tetrachloroethene	160	D
79-34-5	1,1,2,2-Tetrachloroethane	50	U
108-88-3	Toluene	50	U
108-90-7	Chlorobenzene	50	U
100-41-4	Ethylbenzene	50	U
100-42-5	Styrene	50	U
1330-20-7	Xylene (total)	50	U

1F

EPA SAMPLE NO.

MW-1GIDL

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name H2M LABS, INC. Contract _____

Lab Code 10478 Case No. APE SAS No. _____ SDG No. APE004

Matrix: (soil/water) WATER Lab Sample ID: 0404621-002ADL

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A38040.D

Level: (low/med) LOW Date Received: 04/19/04

% Moisture: not dec. Date Analyzed: 04/22/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 5.00

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

Number TICs found: 1 CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1. 000354-23-4	Ethane, 1,2-dichloro-1,1,2-trifluor	7.04	35	NJ

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

MW-1GI

Lab Name: H2M LABS, INC. Contract:

Lab Code: 10478 Case No. SAS No.: SDG No.: APE004

Matrix (soil/water): WATER Lab Sample ID: 0404621-002

Level (low/med): LOW Date Received: 4/19/2004

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-47-3	Chromium	2.7	B		P
7439-89-6	Iron	15000			P
7439-96-5	Manganese	7750			P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED MAY 6, 2004

APE004 S49

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

MW-1GI

Lab Name: H2M LABS, INC. Contract:

Lab Code: 10478 Case No. SAS No.: SDG No.: APE004F

Matrix (soil/water): WATER Lab Sample ID: 0404625-002

Level (low/med): LOW Date Received: 4/19/2004

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Iron	27.9	B		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED MAY 6, 2004

DISSOLVED METALS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-1GS

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE004

Matrix: (soil/water) WATER Lab Sample ID: 0404621-003A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A38039.D

Level: (low/med) LOW Date Received: 04/19/04

% Moisture: not dec. Date Analyzed: 04/22/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: ____ (µL) Soil Aliquot Volume ____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	22	
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	10	U
67-64-1	Acetone	16	
75-35-4	1,1-Dichloroethene	1	J
75-15-0	Carbon disulfide	10	U
75-34-3	1,1-Dichloroethane	6	J
540-59-0	1,2-Dichloroethene (total)	450	E
67-66-3	Chloroform	10	U
76-13-1	Freon-113	170	
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-1GS

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE004

Matrix: (soil/water) WATER Lab Sample ID: 0404621-003A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A38039.D

Level: (low/med) LOW Date Received: 04/19/04

% Moisture: not dec. Date Analyzed: 04/22/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: ____ (µL) Soil Aliquot Volume ____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	120	
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	170	
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1F

EPA SAMPLE NO.

MW-1GS

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name H2M LABS, INC. Contract _____

Lab Code 10478 Case No. APE SAS No. _____ SDG No. APE004

Matrix: (soil/water) WATER Lab Sample ID: 0404621-003A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A38039.D

Level: (low/med) LOW Date Received: 04/19/04

% Moisture: not dec. Date Analyzed: 04/22/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

Number TICs found: 1 CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1. 000354-23-4	Ethane, 1,2-dichloro-1,1,2-trifluor	7.10	16	NJ

APE004 S53

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

MW-1GSDL

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE004

Matrix: (soil/water) WATER Lab Sample ID: 0404621-003ADL

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A38041.D

Level: (low/med) LOW Date Received: 04/19/04

% Moisture: not dec. Date Analyzed: 04/22/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 5.00

Soil Extract Volume: ____ (µL) Soil Aliquot Volume ____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	50	U
74-83-9	Bromomethane	50	U
75-01-4	Vinyl chloride	18	DJ
75-00-3	Chloroethane	50	U
75-09-2	Methylene chloride	50	U
67-64-1	Acetone	50	U
75-35-4	1,1-Dichloroethene	50	U
75-15-0	Carbon disulfide	50	U
75-34-3	1,1-Dichloroethane	6	DJ
540-59-0	1,2-Dichloroethene (total)	430	D
67-66-3	Chloroform	50	U
76-13-1	Freon-113	150	D
107-06-2	1,2-Dichloroethane	50	U
78-93-3	2-Butanone	50	U
71-55-6	1,1,1-Trichloroethane	50	U
56-23-5	Carbon tetrachloride	50	U
75-27-4	Bromodichloromethane	50	U
78-87-5	1,2-Dichloropropane	50	U

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-1GSDL

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE004

Matrix: (soil/water) WATER Lab Sample ID: 0404621-003ADL

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A38041.D

Level: (low/med) LOW Date Received: 04/19/04

% Moisture: not dec. Date Analyzed: 04/22/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 5.00

Soil Extract Volume: ____ (µL) Soil Aliquot Volume ____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
10061-01-5	cis-1,3-Dichloropropene	50	U
79-01-6	Trichloroethene	110	D
124-48-1	Dibromochloromethane	50	U
79-00-5	1,1,2-Trichloroethane	50	U
71-43-2	Benzene	50	U
10061-02-6	trans-1,3-Dichloropropene	50	U
75-25-2	Bromoform	50	U
108-10-1	4-Methyl-2-pentanone	50	U
591-78-6	2-Hexanone	50	U
127-18-4	Tetrachloroethene	160	D
79-34-5	1,1,2,2-Tetrachloroethane	50	U
108-88-3	Toluene	50	U
108-90-7	Chlorobenzene	50	U
100-41-4	Ethylbenzene	50	U
100-42-5	Styrene	50	U
1330-20-7	Xylene (total)	50	U

1F

EPA SAMPLE NO.

MW-1GSDL

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name H2M LABS, INC. Contract _____

Lab Code 10478 Case No. APE SAS No. _____ SDG No. APE004

Matrix: (soil/water) WATER Lab Sample ID: 0404621-003ADL

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A38041.D

Level: (low/med) LOW Date Received: 04/19/04

% Moisture: not dec. Date Analyzed: 04/22/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 5.00

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

Number TICs found: 0 CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

MW-1GS

Lab Name: H2M LABS, INC. Contract:

Lab Code: 10478 Case No. SAS No.: SDG No.: APE004

Matrix (soil/water): WATER Lab Sample ID: 0404621-003

Level (low/med): LOW Date Received: 4/19/2004

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-47-3	Chromium	16.4			P
7439-89-6	Iron	107000			P
7439-96-5	Manganese	752			P

Color Before: YELLOW Clarity Before: CLEAR Texture:

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED MAY 6, 2004

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

MW-1GS

Lab Name: H2M LABS, INC. Contract:

Lab Code: 10478 Case No. SAS No.: SDG No.: APE004F

Matrix (soil/water): WATER Lab Sample ID: 0404625-003

Level (low/med): LOW Date Received: 4/19/2004

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Iron	73.6	B		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED MAY 6, 2004

DISSOLVED METALS

APE004 S58

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-14PCD

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE004

Matrix: (soil/water) WATER Lab Sample ID: 0404574-001A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A38007.D

Level: (low/med) LOW Date Received: 04/16/04

% Moisture: not dec. Date Analyzed: 04/21/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: (µL) Soil Aliquot Volume (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	17	
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	10	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	7	J
75-15-0	Carbon disulfide	10	U
75-34-3	1,1-Dichloroethane	30	
540-59-0	1,2-Dichloroethene (total)	700	E
67-66-3	Chloroform	10	U
76-13-1	Freon-113	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-14PCD

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE004

Matrix: (soil/water) WATER Lab Sample ID: 0404574-001A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A38007.D

Level: (low/med) LOW Date Received: 04/16/04

% Moisture: not dec. Date Analyzed: 04/21/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: ____ (µL) Soil Aliquot Volume ____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	130	
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	23	
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1F

EPA SAMPLE NO.

MW-14PCD

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name H2M LABS, INC. Contract _____

Lab Code 10478 Case No. APE SAS No. _____ SDG No. APE004

Matrix: (soil/water) WATER Lab Sample ID: 0404574-001A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A38007.D

Level: (low/med) LOW Date Received: 04/16/04

% Moisture: not dec. Date Analyzed: 04/21/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

CONCENTRATION UNITS:

Number TICs found: 1 (µg/L or µg/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1. ~~000095-49-8~~	Benzene, ~~1~~-chloro-~~2~~-methyl- isomer	18.03	24	~~NJ~~

Maddie 5/6/04

FORM I VOA-TIC OLM04.2

APE004 S61

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-14PCDDL

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE004

Matrix: (soil/water) WATER Lab Sample ID: 0404574-001ADL

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A38037.D

Level: (low/med) LOW Date Received: 04/16/04

% Moisture: not dec. Date Analyzed: 04/22/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 5.00

Soil Extract Volume: ____ (µL) Soil Aliquot Volume ____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	50	U
74-83-9	Bromomethane	50	U
75-01-4	Vinyl chloride	15	DJ
75-00-3	Chloroethane	50	U
75-09-2	Methylene chloride	50	U
67-64-1	Acetone	50	U
75-35-4	1,1-Dichloroethene	6	DJ
75-15-0	Carbon disulfide	50	U
75-34-3	1,1-Dichloroethane	28	DJ
540-59-0	1,2-Dichloroethene (total)	680	D
67-66-3	Chloroform	50	U
76-13-1	Freon-113	50	U
107-06-2	1,2-Dichloroethane	50	U
78-93-3	2-Butanone	50	U
71-55-6	1,1,1-Trichloroethane	50	U
56-23-5	Carbon tetrachloride	50	U
75-27-4	Bromodichloromethane	50	U
78-87-5	1,2-Dichloropropane	50	U

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-14PCDDL

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE004

Matrix: (soil/water) WATER Lab Sample ID: 0404574-001ADL

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A38037.D

Level: (low/med) LOW Date Received: 04/16/04

% Moisture: not dec. Date Analyzed: 04/22/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 5.00

Soil Extract Volume: (µL) Soil Aliquot Volume (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
10061-01-5	cis-1,3-Dichloropropene	50	U
79-01-6	Trichloroethene	130	D
124-48-1	Dibromochloromethane	50	U
79-00-5	1,1,2-Trichloroethane	50	U
71-43-2	Benzene	50	U
10061-02-6	trans-1,3-Dichloropropene	50	U
75-25-2	Bromoform	50	U
108-10-1	4-Methyl-2-pentanone	50	U
591-78-6	2-Hexanone	50	U
127-18-4	Tetrachloroethene	21	DJ
79-34-5	1,1,2,2-Tetrachloroethane	50	U
108-88-3	Toluene	50	U
108-90-7	Chlorobenzene	50	U
100-41-4	Ethylbenzene	50	U
100-42-5	Styrene	50	U
1330-20-7	Xylene (total)	50	U

1F

EPA SAMPLE NO.

MW-14PCDDL

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name H2M LABS, INC. Contract _____

Lab Code 10478 Case No. APE SAS No. _____ SDG No. APE004

Matrix: (soil/water) WATER Lab Sample ID: 0404574-001ADL

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A38037.D

Level: (low/med) LOW Date Received: 04/16/04

% Moisture: not dec. Date Analyzed: 04/22/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 5.00

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

Number TICs found: 0 CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q

EPA SAMPLE NO.

MW-15PCD

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE004

Matrix: (soil/water) WATER Lab Sample ID: 0404574-002A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A38010.D

Level: (low/med) LOW Date Received: 04/16/04

% Moisture: not dec. Date Analyzed: 04/21/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: ____ (µL) Soil Aliquot Volume ____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	10	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	5	J
75-15-0	Carbon disulfide	10	U
75-34-3	1,1-Dichloroethane	11	
540-59-0	1,2-Dichloroethene (total)	96	
67-66-3	Chloroform	10	U
76-13-1	Freon-113	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-15PCD

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE004

Matrix: (soil/water) WATER Lab Sample ID: 0404574-002A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A38010.D

Level: (low/med) LOW Date Received: 04/16/04

% Moisture: not dec. Date Analyzed: 04/21/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: (µL) Soil Aliquot Volume (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	41	
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	6	J
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1F

EPA SAMPLE NO.

MW-15PCD

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name H2M LABS, INC. Contract _____

Lab Code 10478 Case No. APE SAS No. _____ SDG No. APE004

Matrix: (soil/water) WATER Lab Sample ID: 0404574-002A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A38010.D

Level: (low/med) LOW Date Received: 04/16/04

% Moisture: not dec. Date Analyzed: 04/21/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

CONCENTRATION UNITS:

Number TICs found: 0 (µg/L or µg/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-16PCD

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE004

Matrix: (soil/water) WATER Lab Sample ID: 0404574-003A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A38011.D

Level: (low/med) LOW Date Received: 04/16/04

% Moisture: not dec. Date Analyzed: 04/21/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: ____ (µL) Soil Aliquot Volume ____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	10	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	4	J
75-15-0	Carbon disulfide	10	U
75-34-3	1,1-Dichloroethane	8	J
540-59-0	1,2-Dichloroethene (total)	75	
67-66-3	Chloroform	10	U
76-13-1	Freon-113	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U

1B

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-16PCD

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE004

Matrix: (soil/water) WATER Lab Sample ID: 0404574-003A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A38011.D

Level: (low/med) LOW Date Received: 04/16/04

% Moisture: not dec. Date Analyzed: 04/21/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: ____ (µL) Soil Aliquot Volume ____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	54	
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	7	J
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1F

EPA SAMPLE NO.

MW-16PCD

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name H2M LABS, INC. Contract _____

Lab Code 10478 Case No. APE SAS No. _____ SDG No. APE004

Matrix: (soil/water) WATER Lab Sample ID: 0404574-003A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A38011.D

Level: (low/med) LOW Date Received: 04/16/04

% Moisture: not dec. Date Analyzed: 04/21/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

CONCENTRATION UNITS:

Number TICs found: 1 (µg/L or µg/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1.	000075-28-5	Isobutane	4.64	8	NJ

APE004 S70

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-16PCI

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE004

Matrix: (soil/water) WATER Lab Sample ID: 0404574-004A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A38012.D

Level: (low/med) LOW Date Received: 04/16/04

% Moisture: not dec. Date Analyzed: 04/21/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: (µL) Soil Aliquot Volume (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	10	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	10	U
75-15-0	Carbon disulfide	10	U
75-34-3	1,1-Dichloroethane	4	J
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
76-13-1	Freon-113	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-16PCI

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE004

Matrix: (soil/water) WATER Lab Sample ID: 0404574-004A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A38012.D

Level: (low/med) LOW Date Received: 04/16/04

% Moisture: not dec. Date Analyzed: 04/21/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: ____ (µL) Soil Aliquot Volume ____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1F

EPA SAMPLE NO.

MW-16PCI

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name H2M LABS, INC. Contract _____

Lab Code 10478 Case No. APE SAS No. _____ SDG No. APE004

Matrix: (soil/water) WATER Lab Sample ID: 0404574-004A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A38012.D

Level: (low/med) LOW Date Received: 04/16/04

% Moisture: not dec. Date Analyzed: 04/21/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

Number TICs found: 0 CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

TRIP BLANK 4/16

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE004

Matrix: (soil/water) WATER Lab Sample ID: 0404574-006A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A38014.D

Level: (low/med) LOW Date Received: 04/16/04

% Moisture: not dec. Date Analyzed: 04/21/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: ____ (µL) Soil Aliquot Volume ____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	10	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	10	U
75-15-0	Carbon disulfide	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
76-13-1	Freon-113	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-1A

Lab Name: H2M LABS, INC. Contract: _____

Lab Code: 10478 Case No.: APE SAS No.: _____ SDG No.: APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402697-001A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37592.D

Level: (low/med) LOW Date Received: 02/25/04

% Moisture: not dec. Date Analyzed: 02/27/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	3	J
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	10	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	10	U
75-15-0	Carbon disulfide	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
76-13-1	Freon-113	2	J
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	1	J
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	3	J
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1B

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-1A

Lab Name: H2M LABS, INC. Contract: _____

Lab Code: 10478 Case No.: APE SAS No.: _____ SDG No.: APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402697-001A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37592.D

Level: (low/med) LOW Date Received: 02/25/04

% Moisture: not dec. Date Analyzed: 02/27/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1F

EPA SAMPLE NO.

MW-1A

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

b Name H2M LABS, INC. Contract _____

Lab Code 10478 Case No. APE SAS No. _____ SDG No. APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402697-001A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37592.D

Level: (low/med) LOW Date Received: 02/25/04

% Moisture: not dec. Date Analyzed: 02/27/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

Number TICs found: 0 CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-1PD

Lab Name: H2M LABS, INC. Contract: _____

Lab Code: 10478 Case No.: APE SAS No.: _____ SDG No.: APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402697-002A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37593.D

Level: (low/med) LOW Date Received: 02/25/04

% Moisture: not dec. Date Analyzed: 02/27/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	8	J
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	10	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	4	J
75-15-0	Carbon disulfide	10	U
75-34-3	1,1-Dichloroethane	12	
540-59-0	1,2-Dichloroethene (total)	120	
67-66-3	Chloroform	10	U
76-13-1	Freon-113	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	70	
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	7	J
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-1PD

Lab Name: H2M LABS, INC. Contract: _____

Lab Code: 10478 Case No.: APE SAS No.: _____ SDG No.: APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402697-002A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37593.D

Level: (low/med) LOW Date Received: 02/25/04

% Moisture: not dec. Date Analyzed: 02/27/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1F

EPA SAMPLE NO.

MW-1PD

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name H2M LABS, INC. Contract _____

Lab Code 10478 Case No. APE SAS No. _____ SDG No. APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402697-002A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37593.D

Level: (low/med) LOW Date Received: 02/25/04

% Moisture: not dec. Date Analyzed: 02/27/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

Number TICs found: 0 CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-1PI

Lab Name: H2M LABS, INC. Contract: _____

Lab Code: 10478 Case No.: APE SAS No.: _____ SDG No.: APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-001A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37545.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/25/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	10	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	10	U
75-15-0	Carbon disulfide	10	U
75-34-3	1,1-Dichloroethane	6	J
540-59-0	1,2-Dichloroethene (total)	43	
67-66-3	Chloroform	10	U
76-13-1	Freon-113	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	35	
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	37	
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-1PI

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-001A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37545.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/25/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1F

EPA SAMPLE NO.

MW-1PI

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name H2M LABS, INC. Contract _____

Lab Code 10478 Case No. APE SAS No. _____ SDG No. APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-001A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37545.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/25/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

CONCENTRATION UNITS:

Number TICs found: 1 (µg/L or µg/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1.	unknown	8.51	9	J

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-6P

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-002A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37546.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/25/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	3	J
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	10	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	14	
75-15-0	Carbon disulfide	10	U
75-34-3	1,1-Dichloroethane	27	
540-59-0	1,2-Dichloroethene (total)	140	
67-66-3	Chloroform	10	U
76-13-1	Freon-113	10	U
107-06-2	1,2-Dichloroethane	4	J
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	28	
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	17	
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-6P

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-002A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37546.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/25/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1F

EPA SAMPLE NO.

MW-6P

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name H2M LABS, INC. Contract _____

Lab Code 10478 Case No. APE SAS No. _____ SDG No. APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-002A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37546.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/25/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

Number TICs found: 0 CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-6PD

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-003A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37547.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/25/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	110	
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	10	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	45	
75-15-0	Carbon disulfide	10	U
75-34-3	1,1-Dichloroethane	100	
540-59-0	1,2-Dichloroethene (total)	840	E
67-66-3	Chloroform	10	U
76-13-1	Freon-113	10	U
107-06-2	1,2-Dichloroethane	14	
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	1	J
56-23-5	Carbon tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	62	
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	3	J
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	23	
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1B

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-6PD

Lab Name: H2M LABS, INC. Contract: _____

Lab Code: 10478 Case No.: APE SAS No.: _____ SDG No.: APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-003A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37547.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/25/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1F

EPA SAMPLE NO.

MW-6PD

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name H2M LABS, INC. Contract _____

Lab Code 10478 Case No. APE SAS No. _____ SDG No. APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-003A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37547.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/25/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

CONCENTRATION UNITS:

Number TICs found: 0 (µg/L or µg/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q

APE002 S33

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-6PDDL

Lab Name: H2M LABS, INC. Contract: _____

Lab Code: 10478 Case No.: APE SAS No.: _____ SDG No.: APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-003A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37559.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/26/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 5.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	50	U
74-83-9	Bromomethane	50	U
75-01-4	Vinyl chloride	120	D
75-00-3	Chloroethane	50	U
75-09-2	Methylene chloride	50	U
67-64-1	Acetone	50	U
75-35-4	1,1-Dichloroethene	43	DJ
75-15-0	Carbon disulfide	50	U
75-34-3	1,1-Dichloroethane	100	D
540-59-0	1,2-Dichloroethene (total)	890	D
67-66-3	Chloroform	50	U
76-13-1	Freon-113	50	U
107-06-2	1,2-Dichloroethane	13	DJ
78-93-3	2-Butanone	50	U
71-55-6	1,1,1-Trichloroethane	50	U
56-23-5	Carbon tetrachloride	50	U
75-27-4	Bromodichloromethane	50	U
78-87-5	1,2-Dichloropropane	50	U
10061-01-5	cis-1,3-Dichloropropene	50	U
79-01-6	Trichloroethene	62	D
124-48-1	Dibromochloromethane	50	U
79-00-5	1,1,2-Trichloroethane	50	U
71-43-2	Benzene	50	U
10061-02-6	trans-1,3-Dichloropropene	50	U
75-25-2	Bromoform	50	U
108-10-1	4-Methyl-2-pentanone	50	U
591-78-6	2-Hexanone	50	U
127-18-4	Tetrachloroethene	23	DJ
79-34-5	1,1,2,2-Tetrachloroethane	50	U
108-88-3	Toluene	50	U
108-90-7	Chlorobenzene	50	U
100-41-4	Ethylbenzene	50	U

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-6PDDL

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-003A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37559.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/26/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 5.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
100-42-5	Styrene	50	U
1330-20-7	Xylene (total)	50	U

1F

EPA SAMPLE NO.

MW-6PDDL

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name H2M LABS, INC. Contract _____

Lab Code 10478 Case No. APE SAS No. _____ SDG No. APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-003A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37559.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/26/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 5.00

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

CONCENTRATION UNITS:

Number TICs found: 0 (µg/L or µg/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-7P

Lab Name: H2M LABS, INC. Contract: _____

Lab Code: 10478 Case No.: APE SAS No.: _____ SDG No.: APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-004A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37548.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/25/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	10	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	10	U
75-15-0	Carbon disulfide	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
76-13-1	Freon-113	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-7P

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-004A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37548.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/25/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(µg/L or µg/Kg) UG/L	Q
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1F

EPA SAMPLE NO.

MW-7P

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name H2M LABS, INC. Contract _____

Lab Code 10478 Case No. APE SAS No. _____ SDG No. APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-004A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37548.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/25/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

Number TICs found: 0 CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-8PI

Lab Name: H2M LABS, INC. Contract: _____

Lab Code: 10478 Case No.: APE SAS No.: _____ SDG No.: APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-005A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37549.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/25/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	10	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	21	
75-15-0	Carbon disulfide	10	U
75-34-3	1,1-Dichloroethane	29	
540-59-0	1,2-Dichloroethene (total)	120	
67-66-3	Chloroform	10	U
76-13-1	Freon-113	10	U
107-06-2	1,2-Dichloroethane	3	J
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	8	J
56-23-5	Carbon tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	53	
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	17	
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

APE002 S40

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-8PI

Lab Name: H2M LABS, INC. Contract: _____

Lab Code: 10478 Case No.: APE SAS No.: _____ SDG No.: APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-005A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37549.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/25/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1F

EPA SAMPLE NO.

MW-8PI

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

b Name H2M LABS, INC. Contract _____

Lab Code 10478 Case No. APE SAS No. _____ SDG No. APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-005A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37549.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/25/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

Number TICs found: 1 CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1.	unknown	4.35	12	J

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-8PS

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-006A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37550.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/25/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	10	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	10	U
75-15-0	Carbon disulfide	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
76-13-1	Freon-113	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-8PS

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-006A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37550.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/25/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1F

EPA SAMPLE NO.

MW-8PS

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

b Name H2M LABS, INC. Contract _____

Lab Code 10478 Case No. APE SAS No. _____ SDG No. APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-006A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37550.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/25/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

CONCENTRATION UNITS:

Number TICs found: 0 (µg/L or µg/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

MW-13PD

Lab Name: H2M LABS, INC. Contract: _____

Lab Code: 10478 Case No.: APE SAS No.: _____ SDG No.: APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-007A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37551.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/25/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	10	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	8	J
75-15-0	Carbon disulfide	10	U
75-34-3	1,1-Dichloroethane	13	
540-59-0	1,2-Dichloroethene (total)	180	
67-66-3	Chloroform	10	U
76-13-1	Freon-113	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	2	J
56-23-5	Carbon tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	170	
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	22	
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1B

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-13PD

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-007A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37551.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/25/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

APE002 S47

1F

EPA SAMPLE NO.

MW-13PD

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name H2M LABS, INC. Contract _____

Lab Code 10478 Case No. APE SAS No. _____ SDG No. APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-007A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37551.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/25/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

Number TICs found: 0 CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q

APE002 S48

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-13PI

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-008A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37552.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/25/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	23	
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	10	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	15	
75-15-0	Carbon disulfide	10	U
75-34-3	1,1-Dichloroethane	24	
540-59-0	1,2-Dichloroethene (total)	240	E
67-66-3	Chloroform	10	U
76-13-1	Freon-113	10	U
107-06-2	1,2-Dichloroethane	7	J
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	J
56-23-5	Carbon tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	95	
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	1	J
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	21	
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1B

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-13PI

Lab Name: H2M LABS, INC. Contract: _____

Lab Code: 10478 Case No.: APE SAS No.: _____ SDG No.: APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-008A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37552.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/25/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1F

EPA SAMPLE NO.

MW-13PI

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name H2M LABS, INC. Contract _____

Lab Code 10478 Case No. APE SAS No. _____ SDG No. APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-008A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37552.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/25/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

CONCENTRATION UNITS:

Number TICs found: 3 (µg/L or µg/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1. 000078-78-4	Butane, 2-methyl-	6.00	33	NJ
2. 000079-29-8	Butane, 2,3-dimethyl-	7.67	12	NJ
3.	unknown	7.97	16	J

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-13PIDL

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-008A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37560.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/26/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 2.50

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	25	U
74-83-9	Bromomethane	25	U
75-01-4	Vinyl chloride	25	D
75-00-3	Chloroethane	25	U
75-09-2	Methylene chloride	25	U
67-64-1	Acetone	25	U
75-35-4	1,1-Dichloroethene	15	DJ
75-15-0	Carbon disulfide	25	U
75-34-3	1,1-Dichloroethane	24	DJ
540-59-0	1,2-Dichloroethene (total)	240	D
67-66-3	Chloroform	25	U
76-13-1	Freon-113	25	U
107-06-2	1,2-Dichloroethane	7	DJ
78-93-3	2-Butanone	25	U
71-55-6	1,1,1-Trichloroethane	5	DJ
56-23-5	Carbon tetrachloride	25	U
75-27-4	Bromodichloromethane	25	U
78-87-5	1,2-Dichloropropane	25	U
10061-01-5	cis-1,3-Dichloropropene	25	U
79-01-6	Trichloroethene	94	D
124-48-1	Dibromochloromethane	25	U
79-00-5	1,1,2-Trichloroethane	25	U
71-43-2	Benzene	25	U
10061-02-6	trans-1,3-Dichloropropene	25	U
75-25-2	Bromoform	25	U
108-10-1	4-Methyl-2-pentanone	25	U
591-78-6	2-Hexanone	25	U
127-18-4	Tetrachloroethene	20	DJ
79-34-5	1,1,2,2-Tetrachloroethane	25	U
108-88-3	Toluene	25	U
108-90-7	Chlorobenzene	25	U
100-41-4	Ethylbenzene	25	U

1B

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-13PIDL

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-008A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37560.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/26/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 2.50

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
100-42-5	Styrene	25	U
1330-20-7	Xylene (total)	25	U

1F

EPA SAMPLE NO.

MW-13PIDL

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name H2M LABS, INC. Contract _____

Lab Code 10478 Case No. APE SAS No. _____ SDG No. APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-008A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37560.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/26/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 2.50

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

CONCENTRATION UNITS:

Number TICs found: 2 (µg/L or µg/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1. 000078-78-4	Butane, 2-methyl-	5.97	35	NJ
2.	unknown	7.96	17	J

APE002 S54

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-13PS

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-009A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37553.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/25/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	10	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	10	U
75-15-0	Carbon disulfide	10	U
75-34-3	1,1-Dichloroethane	1	J
540-59-0	1,2-Dichloroethene (total)	12	
67-66-3	Chloroform	10	U
76-13-1	Freon-113	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	2	J
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-13PS

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-009A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37553.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/25/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1F

EPA SAMPLE NO.

MW-13PS

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

b Name H2M LABS, INC. Contract _____

Lab Code 10478 Case No. APE SAS No. _____ SDG No. APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-009A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37553.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/25/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

Number TICs found: 0 CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RINSATEBLK2/20

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE002

Matrix: (soil/water) WATER Lab Sample ID: 0402557-010A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37554.D

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. Date Analyzed: 02/25/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	10	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	10	U
75-15-0	Carbon disulfide	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
76-13-1	Freon-113	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-3P

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402599-001A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37562.D

Level: (low/med) LOW Date Received: 02/23/04

% Moisture: not dec. Date Analyzed: 02/26/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	260	E
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	10	U
67-64-1	Acetone	5	J
75-35-4	1,1-Dichloroethene	3	J
75-15-0	Carbon disulfide	10	U
75-34-3	1,1-Dichloroethane	11	
540-59-0	1,2-Dichloroethene (total)	230	E
67-66-3	Chloroform	10	U
76-13-1	Freon-113	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	5	J
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-3P

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402599-001A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37562.D

Level: (low/med) LOW Date Received: 02/23/04

% Moisture: not dec. Date Analyzed: 02/26/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1F

EPA SAMPLE NO.

MW-3P

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name H2M LABS, INC. Contract _____

Lab Code 10478 Case No. APE SAS No. _____ SDG No. APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402599-001A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37562.D

Level: (low/med) LOW Date Received: 02/23/04

% Moisture: not dec. Date Analyzed: 02/26/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

CONCENTRATION UNITS:

Number TICs found: 1 (µg/L or µg/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1.	000354-23-4	Ethane, 1,2-dichloro-1,1,2-trifluor	6.53	19	NJ

APE003 S39

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-3PDL

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402599-001ADL

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37565.D

Level: (low/med) LOW Date Received: 02/23/04

% Moisture: not dec. Date Analyzed: 02/26/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 2.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	20	U
74-83-9	Bromomethane	20	U
75-01-4	Vinyl chloride	220	D
75-00-3	Chloroethane	20	U
75-09-2	Methylene chloride	20	U
67-64-1	Acetone	6	DJ
75-35-4	1,1-Dichloroethene	3	DJ
75-15-0	Carbon disulfide	20	U
75-34-3	1,1-Dichloroethane	10	DJ
540-59-0	1,2-Dichloroethene (total)	210	D
67-66-3	Chloroform	20	U
76-13-1	Freon-113	20	U
107-06-2	1,2-Dichloroethane	20	U
78-93-3	2-Butanone	20	U
71-55-6	1,1,1-Trichloroethane	20	U
56-23-5	Carbon tetrachloride	20	U
75-27-4	Bromodichloromethane	20	U
78-87-5	1,2-Dichloropropane	20	U
10061-01-5	cis-1,3-Dichloropropene	20	U
79-01-6	Trichloroethene	5	DJ
124-48-1	Dibromochloromethane	20	U
79-00-5	1,1,2-Trichloroethane	20	U
71-43-2	Benzene	20	U
10061-02-6	trans-1,3-Dichloropropene	20	U
75-25-2	Bromoform	20	U
108-10-1	4-Methyl-2-pentanone	20	U
591-78-6	2-Hexanone	20	U
127-18-4	Tetrachloroethene	20	U
79-34-5	1,1,2,2-Tetrachloroethane	20	U
108-88-3	Toluene	20	U
108-90-7	Chlorobenzene	20	U
100-41-4	Ethylbenzene	20	U

APE003 S40

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-3PDL

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402599-001ADL

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37565.D

Level: (low/med) LOW Date Received: 02/23/04

% Moisture: not dec. Date Analyzed: 02/26/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 2.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
100-42-5	Styrene	20	U
1330-20-7	Xylene (total)	20	U

1F

EPA SAMPLE NO.

MW-3PDL

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name H2M LABS, INC. Contract _____

Lab Code 10478 Case No. APE SAS No. _____ SDG No. APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402599-001ADL

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37565.D

Level: (low/med) LOW Date Received: 02/23/04

% Moisture: not dec. Date Analyzed: 02/26/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 2.00

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

CONCENTRATION UNITS:

Number TICs found: 1 (µg/L or µg/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1. 000354-23-4	Ethane, 1,2-dichloro-1,1,2-trifluor	6.65	16	NJ

APF003 S42

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

MW-3P

Lab Name: H2M LABS, INC. Contract:

Lab Code: 10478 Case No. SAS No.: SDG No.: APE003

Matrix (soil/water): WATER Lab Sample ID: 0402599-001

Level (low/med): LOW Date Received: 2/23/04

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-47-3	Chromium	2.6	B		P
7439-89-6	Iron	14600			P
7439-96-5	Manganese	560			P

Color Before: YELLOW Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED MARCH 4, 2004

APE003 S43

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

MW-3P

Lab Name: H2M LABS, INC. Contract:

Lab Code: 10478 Case No. SAS No.: SDG No.: APE003F

Matrix (soil/water): WATER Lab Sample ID: 0402607-001

Level (low/med): LOW Date Received: 2/23/04

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Iron	88.6	B		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED MARCH 29, 2004

FILTERED METALS

APE003 S44

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-12PD

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402599-002A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37563.D

Level: (low/med) LOW Date Received: 02/23/04

% Moisture: not dec. Date Analyzed: 02/26/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	10	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	4	J
75-15-0	Carbon disulfide	10	U
75-34-3	1,1-Dichloroethane	6	J
540-59-0	1,2-Dichloroethene (total)	100	
67-66-3	Chloroform	10	U
76-13-1	Freon-113	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	1	J
56-23-5	Carbon tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	150	
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	9	J
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1B

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-12PD

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402599-002A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37563.D

Level: (low/med) LOW Date Received: 02/23/04

% Moisture: not dec. Date Analyzed: 02/26/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(µg/L or µg/Kg) UG/L	Q
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1F

EPA SAMPLE NO.

MW-12PD

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name H2M LABS, INC. Contract _____

Lab Code 10478 Case No. APE SAS No. _____ SDG No. APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402599-002A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37563.D

Level: (low/med) LOW Date Received: 02/23/04

% Moisture: not dec. Date Analyzed: 02/26/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

Number TICs found: 1 CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1. 000115-10-6	Dimethyl ether	4.14	5	NJ

APF003 S47

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

MW-12PD

Lab Name: H2M LABS, INC. Contract:

Lab Code: 10478 Case No. SAS No.: SDG No.: APE003

Matrix (soil/water): WATER Lab Sample ID: 0402599-002

Level (low/med): LOW Date Received: 2/23/04

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-47-3	Chromium	3.6	B		P
7439-89-6	Iron	2480			P
7439-96-5	Manganese	101			P

Color Before: YELLOW Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED MARCH 4, 2004

APE003.S48

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

MW-12PD

Lab Name: H2M LABS, INC. Contract:

Lab Code: 10478 Case No. SAS No.: SDG No.: APE003F

Matrix (soil/water): WATER Lab Sample ID: 0402607-002

Level (low/med): LOW Date Received: 2/23/04

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Iron	18.1	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED MARCH 29, 2004

FILTERED METALS

APE003 S49

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-12PI

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402599-003A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37566.D

Level: (low/med) LOW Date Received: 02/23/04

% Moisture: not dec. Date Analyzed: 02/26/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	3	J
75-00-3	Chloroethane	1	J
75-09-2	Methylene chloride	10	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	39	
75-15-0	Carbon disulfide	10	U
75-34-3	1,1-Dichloroethane	56	
540-59-0	1,2-Dichloroethene (total)	940	E
67-66-3	Chloroform	10	U
76-13-1	Freon-113	110	
107-06-2	1,2-Dichloroethane	2	J
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	19	
56-23-5	Carbon tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	1300	E
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	2	J
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	190	
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-12PI

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402599-003A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37566.D

Level: (low/med) LOW Date Received: 02/23/04

% Moisture: not dec. Date Analyzed: 02/26/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1F

EPA SAMPLE NO.

MW-12PI

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name H2M LABS, INC. Contract _____

.b Code 10478 Case No. APE SAS No. _____ SDG No. APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402599-003A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37566.D

Level: (low/med) LOW Date Received: 02/23/04

% Moisture: not dec. Date Analyzed: 02/26/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

Number TICs found: 0 CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q

APE003 S52

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-12PIDL

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402599-003ADL

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37582.D

Level: (low/med) LOW Date Received: 02/23/04

% Moisture: not dec. Date Analyzed: 02/27/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 10.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	100	U
74-83-9	Bromomethane	100	U
75-01-4	Vinyl chloride	100	U
75-00-3	Chloroethane	100	U
75-09-2	Methylene chloride	100	U
67-64-1	Acetone	100	U
75-35-4	1,1-Dichloroethene	36	DJ
75-15-0	Carbon disulfide	100	U
75-34-3	1,1-Dichloroethane	56	DJ
540-59-0	1,2-Dichloroethene (total)	970	D
67-66-3	Chloroform	100	U
76-13-1	Freon-113	100	D
107-06-2	1,2-Dichloroethane	100	U
78-93-3	2-Butanone	100	U
71-55-6	1,1,1-Trichloroethane	18	DJ
56-23-5	Carbon tetrachloride	100	U
75-27-4	Bromodichloromethane	100	U
78-87-5	1,2-Dichloropropane	100	U
10061-01-5	cis-1,3-Dichloropropene	100	U
79-01-6	Trichloroethene	1400	D
124-48-1	Dibromochloromethane	100	U
79-00-5	1,1,2-Trichloroethane	100	U
71-43-2	Benzene	100	U
10061-02-6	trans-1,3-Dichloropropene	100	U
75-25-2	Bromoform	100	U
108-10-1	4-Methyl-2-pentanone	100	U
591-78-6	2-Hexanone	100	U
127-18-4	Tetrachloroethene	200	D
79-34-5	1,1,2,2-Tetrachloroethane	100	U
108-88-3	Toluene	100	U
108-90-7	Chlorobenzene	100	U
100-41-4	Ethylbenzene	100	U

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-12PIDL

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402599-003ADL

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37582.D

Level: (low/med) LOW Date Received: 02/23/04

% Moisture: not dec. Date Analyzed: 02/27/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 10.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
100-42-5	Styrene	100	U
1330-20-7	Xylene (total)	100	U

1F

EPA SAMPLE NO.

MW-12PIDL

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name H2M LABS, INC. Contract _____

Lab Code 10478 Case No. APE SAS No. _____ SDG No. APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402599-003ADL

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37582.D

Level: (low/med) LOW Date Received: 02/23/04

% Moisture: not dec. Date Analyzed: 02/27/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 10.00

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

CONCENTRATION UNITS:

Number TICs found: 0 (µg/L or µg/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q

APE003 S55

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

MW-12PI

Lab Name: H2M LABS, INC. Contract:

Lab Code: 10478 Case No. SAS No.: SDG No.: APE003

Matrix (soil/water): WATER Lab Sample ID: 0402599-003

Level (low/med): LOW Date Received: 2/23/04

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-47-3	Chromium	18.6			P
7439-89-6	Iron	13100			P
7439-96-5	Manganese	348			P

Color Before: YELLOW Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED MARCH 4, 2004

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

MW-12PI

Lab Name: H2M LABS, INC. Contract:

Lab Code: 10478 Case No. SAS No.: SDG No.: APE003F

Matrix (soil/water): WATER Lab Sample ID: 0402607-003

Level (low/med): LOW Date Received: 2/23/04

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Iron	18.1	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED MARCH 29, 2004

FILTERED METALS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-12PS

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402599-004A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37583.D

Level: (low/med) LOW Date Received: 02/23/04

% Moisture: not dec. Date Analyzed: 02/27/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	8	J
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	10	U
67-64-1	Acetone	6	J
75-35-4	1,1-Dichloroethene	10	U
75-15-0	Carbon disulfide	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	64	
67-66-3	Chloroform	10	U
76-13-1	Freon-113	59	
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	46	
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	45	
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-12PS

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402599-004A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37583.D

Level: (low/med) LOW Date Received: 02/23/04

% Moisture: not dec. Date Analyzed: 02/27/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1F

EPA SAMPLE NO.

MW-12PS

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name H2M LABS, INC. Contract _____

Lab Code 10478 Case No. APE SAS No. _____ SDG No. APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402599-004A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37583.D

Level: (low/med) LOW Date Received: 02/23/04

% Moisture: not dec. Date Analyzed: 02/27/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

CONCENTRATION UNITS:

Number TICs found: 1 (µg/L or µg/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1. 000354-23-4	Ethane, 1,2-dichloro-1,1,2-trifluor	6.55	10	NJ

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

MW-12PS

Lab Name: H2M LABS, INC. Contract:

Lab Code: 10478 Case No. SAS No.: SDG No.: APE003

Matrix (soil/water): WATER Lab Sample ID: 0402599-004

Level (low/med): LOW Date Received: 2/23/04

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-47-3	Chromium	3.3	B		P
7439-89-6	Iron	3690			P
7439-96-5	Manganese	139			P

Color Before: YELLOW Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED MARCH 4, 2004

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

MW-12PS

Lab Name: H2M LABS, INC. Contract:

Lab Code: 10478 Case No. SAS No.: SDG No.: APE003F

Matrix (soil/water): WATER Lab Sample ID: 0402607-004

Level (low/med): LOW Date Received: 2/23/04

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Iron	18.1	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED MARCH 29, 2004

FILTERED METALS

APE003 S62

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PTMW-1I

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402599-005A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37568.D

Level: (low/med) LOW Date Received: 02/23/04

% Moisture: not dec. Date Analyzed: 02/26/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	5	J
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	10	U
67-64-1	Acetone	25	
75-35-4	1,1-Dichloroethene	10	U
75-15-0	Carbon disulfide	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	21	
67-66-3	Chloroform	10	U
76-13-1	Freon-113	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	2	J
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1B

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PTMW-1I

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402599-005A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37568.D

Level: (low/med) LOW Date Received: 02/23/04

% Moisture: not dec. Date Analyzed: 02/26/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1F

EPA SAMPLE NO.

PTMW-1I

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name H2M LABS, INC. Contract _____

Lab Code 10478 Case No. APE SAS No. _____ SDG No. APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402599-005A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37568.D

Level: (low/med) LOW Date Received: 02/23/04

% Moisture: not dec. Date Analyzed: 02/26/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

CONCENTRATION UNITS:

Number TICs found: 0 (µg/L or µg/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q

APE003 S65

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

PTMW-1I

Lab Name: H2M LABS, INC. Contract:

Lab Code: 10478 Case No. SAS No.: SDG No.: APE003

Matrix (soil/water): WATER Lab Sample ID: 0402599-005

Level (low/med): LOW Date Received: 2/23/04

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-47-3	Chromium	4.6	B		P
7439-89-6	Iron	6810			P
7439-96-5	Manganese	1520			P

Color Before: YELLOW Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED MARCH 4, 2004

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

PTMW-1I

Lab Name: H2M LABS, INC. Contract:

Lab Code: 10478 Case No. SAS No.: SDG No.: APE003F

Matrix (soil/water): WATER Lab Sample ID: 0402607-005

Level (low/med): LOW Date Received: 2/23/04

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Iron	30.4	B		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED MARCH 29, 2004

FILTERED METALS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PTMW-1S

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402599-006A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37569.D

Level: (low/med) LOW Date Received: 02/23/04

% Moisture: not dec. Date Analyzed: 02/26/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	8	J
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	10	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	10	U
75-15-0	Carbon disulfide	10	U
75-34-3	1,1-Dichloroethane	1	J
540-59-0	1,2-Dichloroethene (total)	31	
67-66-3	Chloroform	10	U
76-13-1	Freon-113	12	
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	14	
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	J
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1B

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PTMW-1S

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402599-006A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37569.D

Level: (low/med) LOW Date Received: 02/23/04

% Moisture: not dec. Date Analyzed: 02/26/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1F

EPA SAMPLE NO.

PTMW-1S

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name H2M LABS, INC. Contract _____

Lab Code 10478 Case No. APE SAS No. _____ SDG No. APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402599-006A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37569.D

Level: (low/med) LOW Date Received: 02/23/04

% Moisture: not dec. Date Analyzed: 02/26/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

CONCENTRATION UNITS:

Number TICs found: 0 (µg/L or µg/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q

APE003 S70

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

PTMW-1S

Lab Name: H2M LABS, INC. Contract:

Lab Code: 10478 Case No. SAS No.: SDG No.: APE003

Matrix (soil/water): WATER Lab Sample ID: 0402599-006

Level (low/med): LOW Date Received: 2/23/04

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-47-3	Chromium	2.7	B		P
7439-89-6	Iron	23400			P
7439-96-5	Manganese	1720			P

Color Before: YELLOW Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED MARCH 4, 2004

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

PTMW-1S

Lab Name: H2M LABS, INC. Contract:

Lab Code: 10478 Case No. SAS No.: SDG No.: APE003F

Matrix (soil/water): WATER Lab Sample ID: 0402607-006

Level (low/med): LOW Date Received: 2/23/04

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Iron	52.3	B		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED MARCH 29, 2004

FILTERED METALS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PTMW-2I

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402599-007A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37570.D

Level: (low/med) LOW Date Received: 02/23/04

% Moisture: not dec. Date Analyzed: 02/26/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	4	J
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	10	U
67-64-1	Acetone	11	
75-35-4	1,1-Dichloroethene	10	U
75-15-0	Carbon disulfide	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	18	
67-66-3	Chloroform	10	U
76-13-1	Freon-113	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	4	J
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PTMW-2I

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402599-007A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37570.D

Level: (low/med) LOW Date Received: 02/23/04

% Moisture: not dec. Date Analyzed: 02/26/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1F

EPA SAMPLE NO.

PTMW-2I

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name H2M LABS, INC. Contract _____

Lab Code 10478 Case No. APE SAS No. _____ SDG No. APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402599-007A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37570.D

Level: (low/med) LOW Date Received: 02/23/04

% Moisture: not dec. Date Analyzed: 02/26/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

Number TICs found: 0 CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q

APE003 S75

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

PTMW-2I

Lab Name: H2M LABS, INC. Contract:

Lab Code: 10478 Case No. SAS No.: SDG No.: APE003

Matrix (soil/water): WATER Lab Sample ID: 0402599-007

Level (low/med): LOW Date Received: 2/23/04

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-47-3	Chromium	2.5	B		P
7439-89-6	Iron	115			P
7439-96-5	Manganese	100			P

Color Before: YELLOW Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED MARCH 4, 2004

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

PTMW-2I

Lab Name: H2M LABS, INC. Contract:

Lab Code: 10478 Case No. SAS No.: SDG No.: APE003F

Matrix (soil/water): WATER Lab Sample ID: 0402607-007

Level (low/med): LOW Date Received: 2/23/04

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Iron	18.1	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED MARCH 29, 2004

FILTERED METALS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PTMW-2S

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402599-008A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37571.D

Level: (low/med) LOW Date Received: 02/23/04

% Moisture: not dec. Date Analyzed: 02/26/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	18	
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	10	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	10	U
75-15-0	Carbon disulfide	10	U
75-34-3	1,1-Dichloroethane	1	J
540-59-0	1,2-Dichloroethene (total)	67	
67-66-3	Chloroform	10	U
76-13-1	Freon-113	7	J
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	2	J
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PTMW-2S

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402599-008A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37571.D

Level: (low/med) LOW Date Received: 02/23/04

% Moisture: not dec. Date Analyzed: 02/26/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1F

EPA SAMPLE NO.

PTMW-2S

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name H2M LABS, INC. Contract _____

Lab Code 10478 Case No. APE SAS No. _____ SDG No. APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402599-008A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37571.D

Level: (low/med) LOW Date Received: 02/23/04

% Moisture: not dec. Date Analyzed: 02/26/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

CONCENTRATION UNITS:

Number TICs found: 0 (µg/L or µg/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q

APE003 S80

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

PTMW-2S

Lab Name: H2M LABS, INC. Contract:

Lab Code: 10478 Case No. SAS No.: SDG No.: APE003

Matrix (soil/water): WATER Lab Sample ID: 0402599-008

Level (low/med): LOW Date Received: 2/23/04

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-47-3	Chromium	2.4	B		P
7439-89-6	Iron	27100			P
7439-96-5	Manganese	996			P

Color Before: YELLOW Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED MARCH 4, 2004

APE003 S81

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

PTMW-2S

Lab Name: H2M LABS, INC. Contract:

Lab Code: 10478 Case No. SAS No.: SDG No.: APE003F

Matrix (soil/water): WATER Lab Sample ID: 0402607-008

Level (low/med): LOW Date Received: 2/23/04

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Iron	2270			P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED MARCH 29, 2004

FILTERED METALS

APE003 S82

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PTMW-3S

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402655-001A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37584.D

Level: (low/med) LOW Date Received: 02/24/04

% Moisture: not dec. Date Analyzed: 02/27/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	32	
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	10	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	10	U
75-15-0	Carbon disulfide	10	U
75-34-3	1,1-Dichloroethane	2	J
540-59-0	1,2-Dichloroethene (total)	140	
67-66-3	Chloroform	10	U
76-13-1	Freon-113	4	J
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	2	J
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	1	J
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1B

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PTMW-3S

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402655-001A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37584.D

Level: (low/med) LOW Date Received: 02/24/04

% Moisture: not dec. Date Analyzed: 02/27/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1F

EPA SAMPLE NO.

PTMW-3S

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name H2M LABS, INC. Contract _____

Lab Code 10478 Case No. APE SAS No. _____ SDG No. APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402655-001A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37584.D

Level: (low/med) LOW Date Received: 02/24/04

% Moisture: not dec. Date Analyzed: 02/27/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

CONCENTRATION UNITS:

Number TICs found: 2 (µg/L or µg/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1. 000079-38-9	Ethene, chlorotrifluoro-	3.89	32	NJ
2. 000354-23-4	Ethane, 1,2-dichloro-1,1,2-trifluor	6.53	8	NJ

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

PTMW-3S

Lab Name: H2M LABS, INC. Contract:

Lab Code: 10478 Case No. SAS No.: SDG No.: APE003

Matrix (soil/water): WATER Lab Sample ID: 0402655-001

Level (low/med): LOW Date Received: 2/24/04

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-47-3	Chromium	4.3	B		P
7439-89-6	Iron	8060			P
7439-96-5	Manganese	214			P

Color Before: YELLOW Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED MARCH 4, 2004

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

PTMW-3S

Lab Name: H2M LABS, INC. Contract:

Lab Code: 10478 Case No. SAS No.: SDG No.: APE003F

Matrix (soil/water): WATER Lab Sample ID: 0402659-001

Level (low/med): LOW Date Received: 2/24/04

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Iron	64.4	B		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED MARCH 29, 2004

FILTERED METALS

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PTMW-4I

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402655-002A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37585.D

Level: (low/med) LOW Date Received: 02/24/04

% Moisture: not dec. Date Analyzed: 02/27/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	4	J
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	10	U
67-64-1	Acetone	11	
75-35-4	1,1-Dichloroethene	10	U
75-15-0	Carbon disulfide	10	U
75-34-3	1,1-Dichloroethane	1	J
540-59-0	1,2-Dichloroethene (total)	73	
67-66-3	Chloroform	10	U
76-13-1	Freon-113	24	
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	62	
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	4	J
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1B

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PTMW-4I

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402655-002A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37585.D

Level: (low/med) LOW Date Received: 02/24/04

% Moisture: not dec. Date Analyzed: 02/27/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1F

EPA SAMPLE NO.

PTMW-4I

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name H2M LABS, INC. Contract _____

Lab Code 10478 Case No. APE SAS No. _____ SDG No. APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402655-002A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37585.D

Level: (low/med) LOW Date Received: 02/24/04

% Moisture: not dec. Date Analyzed: 02/27/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

Number TICs found: 3 CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1. 000079-38-9	Ethene, chlorotrifluoro-	3.89	33	NJ
2. 000354-23-4	Ethane, 1,2-dichloro-1,1,2-trifluor	6.54	17	NJ
3. 001634-04-4	Propane, 2-methoxy-2-methyl-	8.01	9	NJ

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

PTMW-4I

Lab Name: H2M LABS, INC. Contract:

Lab Code: 10478 Case No. SAS No.: SDG No.: APE003

Matrix (soil/water): WATER Lab Sample ID: 0402655-002

Level (low/med): LOW Date Received: 2/24/04

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-47-3	Chromium	3.0	B		P
7439-89-6	Iron	961			P
7439-96-5	Manganese	290			P

Color Before: YELLOW Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED MARCH 4, 2004

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

PTMW-4I

Lab Name: H2M LABS, INC. Contract:

Lab Code: 10478 Case No. SAS No.: SDG No.: APE003F

Matrix (soil/water): WATER Lab Sample ID: 0402659-002

Level (low/med): LOW Date Received: 2/24/04

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Iron	18.1	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED MARCH 29, 2004

FILTERED METALS

APE003 S92

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PTMW-4S

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402655-003A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37586.D

Level: (low/med) LOW Date Received: 02/24/04

% Moisture: not dec. Date Analyzed: 02/27/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	31	
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	10	U
67-64-1	Acetone	70	
75-35-4	1,1-Dichloroethene	4	J
75-15-0	Carbon disulfide	10	U
75-34-3	1,1-Dichloroethane	3	J
540-59-0	1,2-Dichloroethene (total)	530	E
67-66-3	Chloroform	10	U
76-13-1	Freon-113	1800	E
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	3	J
56-23-5	Carbon tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	360	E
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	1	J
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	52	
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PTMW-4S

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402655-003A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37586.D

Level: (low/med) LOW Date Received: 02/24/04

% Moisture: not dec. Date Analyzed: 02/27/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1F

EPA SAMPLE NO.

PTMW-4S

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name H2M LABS, INC. Contract _____

Lab Code 10478 Case No. APE SAS No. _____ SDG No. APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402655-003A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37586.D

Level: (low/med) LOW Date Received: 02/24/04

% Moisture: not dec. Date Analyzed: 02/27/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

CONCENTRATION UNITS:

Number TICs found: 2 (µg/L or µg/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1. 000079-38-9	Ethene, chlorotrifluoro-	3.91	120	NJ
2. 000354-23-4	Ethane, 1,2-dichloro-1,1,2-trifluor	6.54	64	NJ

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PTMW-4SDL

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402655-003ADL

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37595.D

Level: (low/med) LOW Date Received: 02/24/04

% Moisture: not dec. Date Analyzed: 02/27/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 20.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	200	U
74-83-9	Bromomethane	200	U
75-01-4	Vinyl chloride	23	DJ
75-00-3	Chloroethane	200	U
75-09-2	Methylene chloride	200	U
67-64-1	Acetone	77	DJ
75-35-4	1,1-Dichloroethene	200	U
75-15-0	Carbon disulfide	200	U
75-34-3	1,1-Dichloroethane	200	U
540-59-0	1,2-Dichloroethene (total)	510	D
67-66-3	Chloroform	200	U
76-13-1	Freon-113	1400	D
107-06-2	1,2-Dichloroethane	200	U
78-93-3	2-Butanone	200	U
71-55-6	1,1,1-Trichloroethane	200	U
56-23-5	Carbon tetrachloride	200	U
75-27-4	Bromodichloromethane	200	U
78-87-5	1,2-Dichloropropane	200	U
10061-01-5	cis-1,3-Dichloropropene	200	U
79-01-6	Trichloroethene	330	D
124-48-1	Dibromochloromethane	200	U
79-00-5	1,1,2-Trichloroethane	200	U
71-43-2	Benzene	200	U
10061-02-6	trans-1,3-Dichloropropene	200	U
75-25-2	Bromoform	200	U
108-10-1	4-Methyl-2-pentanone	200	U
591-78-6	2-Hexanone	200	U
127-18-4	Tetrachloroethene	44	DJ
79-34-5	1,1,2,2-Tetrachloroethane	200	U
108-88-3	Toluene	200	U
108-90-7	Chlorobenzene	200	U
100-41-4	Ethylbenzene	200	U

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PTMW-4SDL

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402655-003ADL

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37595.D

Level: (low/med) LOW Date Received: 02/24/04

% Moisture: not dec. Date Analyzed: 02/27/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 20.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
100-42-5	Styrene	200	U
1330-20-7	Xylene (total)	200	U

1F

EPA SAMPLE NO.

PTMW-4SDL

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name H2M LABS, INC. Contract _____

Lab Code 10478 Case No. APE SAS No. _____ SDG No. APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402655-003ADL

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37595.D

Level: (low/med) LOW Date Received: 02/24/04

% Moisture: not dec. Date Analyzed: 02/27/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 20.00

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

CONCENTRATION UNITS:

Number TICs found: 0 (µg/L or µg/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

PTMW-4S

Lab Name: H2M LABS, INC. Contract:

Lab Code: 10478 Case No. SAS No.: SDG No.: APE003

Matrix (soil/water): WATER Lab Sample ID: 0402655-003

Level (low/med): LOW Date Received: 2/24/04

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-47-3	Chromium	9.9	B		P
7439-89-6	Iron	10400			P
7439-96-5	Manganese	808			P

Color Before: YELLOW Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED MARCH 4, 2004

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

PTMW-4S

Lab Name: H2M LABS, INC. Contract:

Lab Code: 10478 Case No. SAS No.: SDG No.: APE003F

Matrix (soil/water): WATER Lab Sample ID: 0402659-003

Level (low/med): LOW Date Received: 2/24/04

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Iron	38.1	B		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED MARCH 29, 2004

FILTERED METALS

APE003 S100

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PTMW-5I

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402655-004A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37587.D

Level: (low/med) LOW Date Received: 02/24/04

% Moisture: not dec. Date Analyzed: 02/27/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	10	U
67-64-1	Acetone	4	J
75-35-4	1,1-Dichloroethene	10	U
75-15-0	Carbon disulfide	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	28	
67-66-3	Chloroform	10	U
76-13-1	Freon-113	1	J
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	60	
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1B

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PTMW-5I

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402655-004A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37587.D

Level: (low/med) LOW Date Received: 02/24/04

% Moisture: not dec. Date Analyzed: 02/27/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1F

EPA SAMPLE NO.

PTMW-5I

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name H2M LABS, INC. Contract _____

Lab Code 10478 Case No. APE SAS No. _____ SDG No. APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402655-004A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37587.D

Level: (low/med) LOW Date Received: 02/24/04

% Moisture: not dec. Date Analyzed: 02/27/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

CONCENTRATION UNITS:

Number TICs found: 0 (µg/L or µg/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q

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1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

PTMW-5I

Lab Name: H2M LABS, INC. Contract:

Lab Code: 10478 Case No. SAS No.: SDG No.: APE003

Matrix (soil/water): WATER Lab Sample ID: 0402655-004

Level (low/med): LOW Date Received: 2/24/04

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-47-3	Chromium	14.1			P
7439-89-6	Iron	2240			P
7439-96-5	Manganese	1280			P

Color Before: YELLOW Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED MARCH 4, 2004

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

PTMW-5I

Lab Name: H2M LABS, INC. Contract:

Lab Code: 10478 Case No. SAS No.: SDG No.: APE003F

Matrix (soil/water): WATER Lab Sample ID: 0402659-004

Level (low/med): LOW Date Received: 2/24/04

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Iron	18.1	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED MARCH 29, 2004

FILTERED METALS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PTMW-5S

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402655-005A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37588.D

Level: (low/med) LOW Date Received: 02/24/04

% Moisture: not dec. Date Analyzed: 02/27/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	93	
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	10	U
67-64-1	Acetone	50	
75-35-4	1,1-Dichloroethene	4	J
75-15-0	Carbon disulfide	10	U
75-34-3	1,1-Dichloroethane	2	J
540-59-0	1,2-Dichloroethene (total)	2400	E
67-66-3	Chloroform	10	U
76-13-1	Freon-113	1200	E
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	320	E
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	940	E
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1B

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PTMW-5S

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402655-005A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37588.D

Level: (low/med) LOW Date Received: 02/24/04

% Moisture: not dec. Date Analyzed: 02/27/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1F

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
PTMW-5S

Lab Name H2M LABS, INC. Contract _____

Lab Code 10478 Case No. APE SAS No. _____ SDG No. APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402655-005A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37588.D

Level: (low/med) LOW Date Received: 02/24/04

% Moisture: not dec. Date Analyzed: 02/27/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

Number TICs found: 3 CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1. 000079-38-9	Ethene, chlorotrifluoro-	3.88	33	NJ
2. 000354-23-4	Ethane, 1,2-dichloro-1,1,2-trifluor	6.68	51	NJ
3.	unknown hydrocarbon	9.78	8	J

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PTMW-5SDL

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402655-005ADL

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37596.D

Level: (low/med) LOW Date Received: 02/24/04

% Moisture: not dec. Date Analyzed: 02/27/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 20.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	200	U
74-83-9	Bromomethane	200	U
75-01-4	Vinyl chloride	72	DJ
75-00-3	Chloroethane	200	U
75-09-2	Methylene chloride	200	U
67-64-1	Acetone	200	U
75-35-4	1,1-Dichloroethene	200	U
75-15-0	Carbon disulfide	200	U
75-34-3	1,1-Dichloroethane	200	U
540-59-0	1,2-Dichloroethene (total)	2500	D
67-66-3	Chloroform	200	U
76-13-1	Freon-113	1000	D
107-06-2	1,2-Dichloroethane	200	U
78-93-3	2-Butanone	200	U
71-55-6	1,1,1-Trichloroethane	200	U
56-23-5	Carbon tetrachloride	200	U
75-27-4	Bromodichloromethane	200	U
78-87-5	1,2-Dichloropropane	200	U
10061-01-5	cis-1,3-Dichloropropene	200	U
79-01-6	Trichloroethene	290	D
124-48-1	Dibromochloromethane	200	U
79-00-5	1,1,2-Trichloroethane	200	U
71-43-2	Benzene	200	U
10061-02-6	trans-1,3-Dichloropropene	200	U
75-25-2	Bromoform	200	U
108-10-1	4-Methyl-2-pentanone	200	U
591-78-6	2-Hexanone	200	U
127-18-4	Tetrachloroethene	850	D
79-34-5	1,1,2,2-Tetrachloroethane	200	U
108-88-3	Toluene	200	U
108-90-7	Chlorobenzene	200	U
100-41-4	Ethylbenzene	200	U

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PTMW-5SDL

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402655-005ADL

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37596.D

Level: (low/med) LOW Date Received: 02/24/04

% Moisture: not dec. Date Analyzed: 02/27/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 20.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
100-42-5	Styrene	200	U
1330-20-7	Xylene (total)	200	U

1F

EPA SAMPLE NO.

PTMW-5SDL

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name H2M LABS, INC. Contract _____

Lab Code 10478 Case No. APE SAS No. _____ SDG No. APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402655-005ADL

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37596.D

Level: (low/med) LOW Date Received: 02/24/04

% Moisture: not dec. Date Analyzed: 02/27/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 20.00

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

Number TICs found: 0 CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q

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1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

PTMW-5S

Lab Name: H2M LABS, INC. Contract:

Lab Code: 10478 Case No. SAS No.: SDG No.: APE003

Matrix (soil/water): WATER Lab Sample ID: 0402655-005

Level (low/med): LOW Date Received: 2/24/04

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-47-3	Chromium	2.6	B		P
7439-89-6	Iron	48800			P
7439-96-5	Manganese	298			P

Color Before: YELLOW Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED MARCH 4, 2004

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

PTMW-5S

Lab Name: H2M LABS, INC. Contract:

Lab Code: 10478 Case No. SAS No.: SDG No.: APE003F

Matrix (soil/water): WATER Lab Sample ID: 0402659-005

Level (low/med): LOW Date Received: 2/24/04

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Iron	76.4	B		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED MARCH 29, 2004

FILTERED METALS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PTMW-6I

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402655-006A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37605.D

Level: (low/med) LOW Date Received: 02/24/04

% Moisture: not dec. Date Analyzed: 03/01/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	3	J
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	10	U
67-64-1	Acetone	8	J
75-35-4	1,1-Dichloroethene	10	U
75-15-0	Carbon disulfide	10	U
75-34-3	1,1-Dichloroethane	2	J
540-59-0	1,2-Dichloroethene (total)	26	
67-66-3	Chloroform	10	U
76-13-1	Freon-113	3	J
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	8	J
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	13	
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1B

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PTMW-6I

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402655-006A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37605.D

Level: (low/med) LOW Date Received: 02/24/04

% Moisture: not dec. Date Analyzed: 03/01/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1F

EPA SAMPLE NO.

PTMW-6I

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name H2M LABS, INC. Contract _____

Lab Code 10478 Case No. APE SAS No. _____ SDG No. APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402655-006A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37605.D

Level: (low/med) LOW Date Received: 02/24/04

% Moisture: not dec. Date Analyzed: 03/01/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

Number TICs found: 0 CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q

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1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

PTMW-6I

Lab Name: H2M LABS, INC. Contract:

Lab Code: 10478 Case No. SAS No.: SDG No.: APE003

Matrix (soil/water): WATER Lab Sample ID: 0402655-006

Level (low/med): LOW Date Received: 2/24/04

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-47-3	Chromium	3.0	B		P
7439-89-6	Iron	922			P
7439-96-5	Manganese	90.3			P

Color Before: YELLOW Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED MARCH 4, 2004

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

PTMW-6I

Lab Name: H2M LABS, INC. Contract:

Lab Code: 10478 Case No. SAS No.: SDG No.: APE003F

Matrix (soil/water): WATER Lab Sample ID: 0402659-006

Level (low/med): LOW Date Received: 2/24/04

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Iron	18.1	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED MARCH 29, 2004

FILTERED METALS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PTMW-6S

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402655-007A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37590.D

Level: (low/med) LOW Date Received: 02/24/04

% Moisture: not dec. Date Analyzed: 02/27/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	190	
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	10	U
67-64-1	Acetone	75	
75-35-4	1,1-Dichloroethene	8	J
75-15-0	Carbon disulfide	10	U
75-34-3	1,1-Dichloroethane	13	
540-59-0	1,2-Dichloroethene (total)	1700	E
67-66-3	Chloroform	10	U
76-13-1	Freon-113	1900	E
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	J
56-23-5	Carbon tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	170	
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	1	J
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	110	
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1B

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PTMW-6S

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402655-007A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37590.D

Level: (low/med) LOW Date Received: 02/24/04

% Moisture: not dec. Date Analyzed: 02/27/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	1	J

1F

EPA SAMPLE NO.

PTMW-6S

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name H2M LABS, INC. Contract _____

Lab Code 10478 Case No. APE SAS No. _____ SDG No. APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402655-007A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37590.D

Level: (low/med) LOW Date Received: 02/24/04

% Moisture: not dec. Date Analyzed: 02/27/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

CONCENTRATION UNITS:

Number TICs found: 3 (µg/L or µg/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1. 000079-38-9	Ethene, chlorotrifluoro-	3.92	200	NJ
2. 000354-23-4	Ethane, 1,2-dichloro-1,1,2-trifluor	6.56	100	NJ
3. 000107-83-5	Pentane, 2-methyl-	7.67	8	NJ

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PTMW-6SDL

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402655-007ADL

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37598.D

Level: (low/med) LOW Date Received: 02/24/04

% Moisture: not dec. Date Analyzed: 02/27/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 20.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	200	U
74-83-9	Bromomethane	200	U
75-01-4	Vinyl chloride	160	DJ
75-00-3	Chloroethane	200	U
75-09-2	Methylene chloride	200	U
67-64-1	Acetone	200	U
75-35-4	1,1-Dichloroethene	200	U
75-15-0	Carbon disulfide	200	U
75-34-3	1,1-Dichloroethane	200	U
540-59-0	1,2-Dichloroethene (total)	1800	D
67-66-3	Chloroform	200	U
76-13-1	Freon-113	1600	D
107-06-2	1,2-Dichloroethane	200	U
78-93-3	2-Butanone	200	U
71-55-6	1,1,1-Trichloroethane	200	U
56-23-5	Carbon tetrachloride	200	U
75-27-4	Bromodichloromethane	200	U
78-87-5	1,2-Dichloropropane	200	U
10061-01-5	cis-1,3-Dichloropropene	200	U
79-01-6	Trichloroethene	160	DJ
124-48-1	Dibromochloromethane	200	U
79-00-5	1,1,2-Trichloroethane	200	U
71-43-2	Benzene	200	U
10061-02-6	trans-1,3-Dichloropropene	200	U
75-25-2	Bromoform	200	U
108-10-1	4-Methyl-2-pentanone	200	U
591-78-6	2-Hexanone	200	U
127-18-4	Tetrachloroethene	92	DJ
79-34-5	1,1,2,2-Tetrachloroethane	200	U
108-88-3	Toluene	200	U
108-90-7	Chlorobenzene	200	U
100-41-4	Ethylbenzene	200	U

1B

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PTMW-6SDL

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402655-007ADL

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37598.D

Level: (low/med) LOW Date Received: 02/24/04

% Moisture: not dec. Date Analyzed: 02/27/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 20.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
100-42-5	Styrene	200	U
1330-20-7	Xylene (total)	200	U

1F

EPA SAMPLE NO.

PTMW-6SDL

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name H2M LABS, INC. Contract _____

Lab Code 10478 Case No. APE SAS No. _____ SDG No. APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402655-007ADL

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37598.D

Level: (low/med) LOW Date Received: 02/24/04

% Moisture: not dec. Date Analyzed: 02/27/04

GC Column R-502.2 ID: .53 (mm) Dilution Factor: 20.00

Soil Extract Volume: (µl) Soil Aliquot Volume: 0 (µL)

Number TICs found: 1 CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1.	000354-23-4	Ethane, 1,2-dichloro-1,1,2-trifluor	6.55	110	NJ

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1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

PTMW-6S

Lab Name: H2M LABS, INC. Contract:

Lab Code: 10478 Case No. SAS No.: SDG No.: APE003

Matrix (soil/water): WATER Lab Sample ID: 0402655-007

Level (low/med): LOW Date Received: 2/24/04

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-47-3	Chromium	2.1	B		P
7439-89-6	Iron	44800			P
7439-96-5	Manganese	551			P

Color Before: YELLOW Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED MARCH 4, 2004

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

PTMW-6S

Lab Name: H2M LABS, INC. Contract:

Lab Code: 10478 Case No. SAS No.: SDG No.: APE003F

Matrix (soil/water): WATER Lab Sample ID: 0402659-007

Level (low/med): LOW Date Received: 2/24/04

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-89-6	Iron	8270			P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DATE REPORTED MARCH 29, 2004

FILTERED METALS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TRIP BLANK 2/23

Lab Name: H2M LABS, INC. Contract: ____

Lab Code: 10478 Case No.: APE SAS No.: ____ SDG No.: APE003

Matrix: (soil/water) WATER Lab Sample ID: 0402599-009A

Sample wt/vol: 5 (g/mL) ML Lab File ID: A\A37572.D

Level: (low/med) LOW Date Received: 02/23/04

% Moisture: not dec. Date Analyzed: 02/26/04

GC Column: R-502.2 ID: .53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (µL) Soil Aliquot Volume _____ (µL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (µg/L or µg/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene chloride	10	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	10	U
75-15-0	Carbon disulfide	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
76-13-1	Freon-113	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U