



**O'BRIEN & GERE**

May 11, 2007

Mr. William Sivak  
Bristol-Myers Squibb Company  
Environmental Health and Safety  
P.O. Box 4755  
Syracuse, NY 13221-4755

Re: Additional Site Investigation  
Bristol-Myers Squibb Company  
Krutulis Property  
Kirkville, New York

File: 2874/40312 #2

Dear Bill:

This letter report summarizes the results of additional site investigation activities conducted at the Krutulis property located at 852 Marsh Mill Road in Kirkville, New York (Figure 1). The intent of the site investigation was to gather additional ground water and soil data to gain a better understanding of the vertical and horizontal limits of the presence of volatile organic compounds (VOCs) in ground water near monitoring well MW-3. MW-3 has historically indicated the presence of VOCs at concentrations above New York State Class GA ground water standards.

#### **Proposed Scope of Work**

In a letter dated February 10, 2006, O'Brien & Gere submitted the Work Plan for additional site investigation activities to the New York State Department of Environmental Conservation (NYSDEC) for review and approval. NYSDEC approved the Work Plan in a letter dated March 1, 2006. The scope of work included membrane interface probe (MIP) borings, ground water sample collection, and soil confirmation borings.

This investigation was tentatively proposed for late February or early March 2006. However, the ground at the site was not sufficiently frozen during the remaining winter months of 2006 so that truck-mounted equipment could not access the area near MW-3 without getting stuck. Also during the summer months of 2006, the area around MW-3 was under water and could not be accessed. In view of the foregoing, the work was re-scheduled for the winter of 2007.

After receiving the Owner's consent to conduct the proposed site investigation activities, field activities occurred between February 21 and February 23, 2007. Field conditions at the time necessitated modifications to the proposed boring locations that are shown in Figure 2. Much of the work was proposed within a floodplain area of Black Creek, which during recent years has been flooded year round due to beaver damming of Black Creek downstream of the Krutulis property. At

the time of the fieldwork, many of the boring locations were on a frozen pond that was approximately 3 ft deep.

In view of these field conditions, the following modifications to the boring locations presented in the Work Plan were made and the revised locations are shown on Figure 3:

- MIP-4, 8, and 9 were initially proposed at approximate 25-ft intervals to the southwest of MW-3 as shown on Figure 2. Based on accessibility to boring locations, these borings were relocated. Boring MIP-4R was completed adjacent to MIP-4 to determine the approximate depth of refusal per NYSDEC's request.
- MIP-1 and 5 were initially proposed at approximately 25-ft intervals to the northwest of MW-3 as shown on Figure 2. However, as a result of an elevated MIP response observed at MIP-5, MIP-1 was not installed. Instead, boring MIP-13 was advanced approximately 35-ft to the northwest of MIP-5 in an effort to delineate the northwest extent of elevated VOC observations.
- MIP-2, 6, and 10 were initially proposed at approximately 25-ft intervals northeast of MW-3 as shown on Figure 2. However, as a result of an elevated MIP response observed at MIP-10, MIP-2 and 6 were not installed. Instead, boring MIP-12 was advanced approximately 60-ft to the northeast of MIP-10 in an effort to delineate the northeastern extent of elevated VOC observations.
- MIP-3 and 7 were initially proposed at approximately 25-ft intervals southeast of MW-3. MIP-3 and 7 were relocated further northeast from their initially proposed locations due to numerous downed trees and surface water at the proposed locations. Due to the depth of the snow and the presence of a drainage swale, additional borings could not be completed south of MIP-7.
- MIP-11 was initially proposed to be located approximately 190-ft south of MW-3. However, due to thin ice in this area, the boring could not be completed.

#### Field Investigation Activities

As discussed above, MIP borings were advanced at 10 locations (MIP-3, 4, 4R, 5, 7, 8, 9, 10, 12, and 13) to approximately 30-ft below grade to evaluate the extent of impacted soil and ground water. Refer to Figure 3. However, at the request of NYSDEC, MIP-3, 4R, 5, and 10 were advanced to refusal, which appeared to be an area of very dense fine sand.

Vironex, Inc. of Bowie, Maryland installed the borings using the MIP Geoprobe® 6600 and a dolly rig (on the frozen pond). In addition an Electron Capture Detector (ECD), Photo Ionization Detector (PID), and Flame Ionization Detector (FID) were used with a Hewlett Packard 5890 gas chromatograph to evaluate the potential compounds in the area around MW-3.

During the field activities, representatives from NYSDEC (Karen Cahill and Chris Magee), B-MS (Dave Plutto), O'Brien & Gere (Scott Tucker, Dick McLaughlin, and Marc Dent) and Vironex (up to five individuals) were on-site at various times.

In addition to the MIP borings, ground water samples were collected from select depth intervals to evaluate the depth of the VOC plume and provide laboratory data to compare with elevated MIP

responses. Specifically, ground water samples were collected from the 10-14 ft and 24-28 ft intervals at MIP-4, the 14-18 ft interval at MIP-5, and the 21-25 ft interval at MIP-7.

The ground water samples were collected using a Geoprobe® Screen Point 15 (SP15) ground water sampling system. The SP15 ground water sampling system is a stainless steel reusable tool that exposes a stainless steel screen to a discrete sampling zone. A ground water sample at MW-3 was later requested by NYSDEC but was unattainable due to ice build up in the well. The collected ground water samples were submitted to Life Science Laboratories, Inc. of Syracuse, New York for VOC analysis using USEPA Method 8260.

To evaluate soil conditions near MIP-3, which exhibited an elevated MIP response, a soil boring was advanced to an approximate depth of 25 ft below grade. Soil samples were collected at continuous 5 ft intervals for descriptive purposes and field screening using a PID. Soil descriptions and PID results were recorded on a test boring log. This log is provided in Attachment A.

Following the MIP activities a field survey was conducted by Richard Rybinski Land Surveyor from Manlius, New York to obtain ground elevations and horizontal locations of the MIP borings. Vironex prepared a report summarizing the MIP field activities and included graphs of the ECD, PID and FID responses for each boring. A copy of the report is included in Attachment B.

#### Ground Water and MIP Results

As previously discussed, ground water samples were collected from MIP-4, 5, and 7 to evaluate the depth of the VOC plume and to compare the VOC concentrations to the ECD and PID responses. Table 1 presents the ground water analytical results for MIP 4, 5, and 7. As shown, VOCs were present in MIP-4 (10-14 ft bgs), 5 (14-18 ft bgs), and 7 (21-25 ft bgs) at 78.4, 1,195, and 3,190 ug/l, (totals) respectively. Ground water laboratory analytical reports are provided in Attachment C.

Total VOC concentrations and maximum ECD and PID responses are summarized in Table 2. Given the discrete nature of MIP responses to both soil and ground water VOCs at 0.05 ft intervals *in situ* and the composite nature of ground water samples collected over an interval of several feet, a direct correlation between the two is not expected. However, ECD responses and comparative ground water sample results are useful in confirming the presence and relative magnitude of particular VOCs at specific locations.

Table 3 provides historical ground water data from Hydropunch investigations conducted around MW-3. The depths of the Hydropunch samples were 15 and 28 ft deep for the shallow and deep samples, respectively. Considering the ECD and PID responses at the various MIP borings and the historical ground water data we developed the approximate horizontal limits of the VOC plume around MW-3 as shown on Figure 4. Historical data was used to delineate the horizontal plume where MIP data was not available.

Regarding the MIP monitoring equipment, the ECD will typically detect chlorinated compounds (low level trichloroethylene, tetrachloroethylene, and vinyl chloride). The PID typically detects aromatic and double bonded compounds (gasoline, BTEX and high levels of trichloroethylene, and tetrachloroethylene). The FID will typically detect combustible hydrocarbons (gasoline, BTEX, methane, butane, and landfill gases).

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May 11, 2007  
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Review of the MIP graphs in Attachment B indicates that elevated ECD and PID responses were observed at boring locations MIP-3, 4, 5, 7, and 10 with a minor ECD response observed at MIP-12. It is noteworthy that instrument responses from the FID indicate the presence of combustible hydrocarbons, likely natural methane gas, in the subsurface. While methane is not detected by the other instruments, its presence can affect the measurements of VOCs.

Table 4 presents the ground elevations, depths of borings, water sample depths and ECD and PID response depths for the MIP borings. As shown, the depth of refusal at MIP-3, 5, and 10 was relatively consistent at 33.25 to 35.15 ft bgs. An elevation view of MIP-3, 4, 5, 7, 10 and 12 showing elevations, total depths, depths of ECD and PID responses and ground water sample depths is presented in Figure 5.

### Summary

The MIP investigation results have further refined the site conceptual model. These results together with historical ground water data from Hydropunch and permanent ground water sampling locations better define the VOC ground water plume near MW-3. The plume appears to extend vertically below the screened interval of MW-3 and attenuate in concentration just above the refusal depth encountered by the MIP (33.25 to 35.15 ft bgs). While the horizontal limits of the plume were not confirmed by the MIP in the southern direction, historical data from Hydropunch ground water sampling locations provide a basis for estimating the overall plume geometry.

Very truly yours,

O'BRIEN & GERE



Marc J. Dent, P.E.  
Managing Engineer

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cc: D. Pluto – Bristol-Myers Squibb Company  
J.R.Pooler - Bristol-Myers Squibb Company  
M.A. Lowery, P.E. – O'Brien & Gere  
C.J. Voci – O'Brien & Gere

## **Tables**

TABLE 1

Krutulis Property  
Kirkville, New York Site

Groundwater Analytical Data - MIP Investigations  
Volatile Organic Compounds  
(Concentrations reported in ug/L)

February 2007

PARAMETERS	Location Identification and Depth (ft bgs)			
	MIP-4 (10-14 ft)	MIP-4 (24-28 ft)	MIP-5 (14-18 ft)	MIP-7 (21-25 ft)
1,1-Dichloroethene	1.5	<0.5	<25	<100
4-Methyl-2-pentanone	<10	<5	<250	<1,000
Acetone	<20	<10	<500	<2,000
Benzene	<1	<0.5	<25	<100
Chloroform	<1	<0.5	<25	<100
cis-1,2-Dichloroethene	49	<0.5	25	<100
Tetrachloroethene	<1	<0.5	<25	<100
Toluene	<1	<0.5	<25	<100
trans-1,2-Dichloroethene	<1	<0.5	<0.5	<100
Trichloroethylene	4.6	<0.5	1,170	3,190
Vinyl chloride	23.3	<1	<50	<200
Xylenes (Total)	<1	<0.5	<25	<100
Total Volatile Organic Compounds	78.4	ND	1,195	3,190

Notes:

- 1) All values are in ug/L
- 2) NA - Not Applicable
- 3) ft bgs - feet below ground surface
- 4) ND - Non-Detect

**TABLE 2**

**Krutulis Property  
Kirkville, New York Site**

**Ground Water Sample Data and ECD/PID Response Comparison**

MIP Designation	Depth (Ft.)	Total VOCs (ug/l)	Maximum ECD Response	Maximum PID Response
MIP-3	-		>1.4E+07	7.4E+05
MIP-4	10-14	78.4	0.25E+06	3.1E+05
MIP-4	24-28	ND	5.8E+06	1.5E+05
MIP-5	14-18	1,195	5.6E+06	1.5E+05
MIP-7	21-25	3,190	>1.4E+07	4.8E+05
MIP-10	-	-	>1.4E+07	4.5E+05
MIP-12	-	-	5.5E+05	0.5E+05

TABLE 3

Krullis Property  
Kirkville, New York Site

Summary of Historical Hydropunch Sampling Results  
Volatile Organic Compounds Detected in Groundwater  
(Concentrations reported in ug/L)

PARAMETERS	MW-3	MW-5	HP-3S	HP-6S	HP-8S	HP-9S	HP-10S	HP-11D	HP-12S	HP-12D	HP-13S	HP-13D	HP-14S	HP-15D	HP-16S	HP-16D
1,1-Dichloroethene	06/01/93 31	08/23/93 ND	06/01/93 ND	08/23/93 ND	02/08/94 ND	02/09/94 ND	02/09/94 ND	02/09/94 ND	02/10/94 ND	02/10/94 ND	05/19/94 ND	05/19/94 ND	08/15/94 ND	08/15/94 ND		
1,2-Dichloroethene	4,000 ND	8,600 ND	ND	ND	200 ND	2 ND	ND	ND	450 ND	1 ND	440 ND	370 ND	2 ND	ND ND	ND ND	
Acetone	ND	75 ND	28 ND	ND	ND ND	ND 3	ND 12	ND 5	ND 35	ND 1	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND
Benzene	ND	ND ND	ND ND	ND ND												
Chloroform	ND	ND ND	ND ND	ND ND												
Tetrachloroethene	60 ND	ND ND	ND ND	ND ND												
Toluene	710 ND	ND ND	ND ND	ND ND												
Trichloroethylene	20,000 ND	18,000 ND	ND	ND	ND	ND	ND	ND	230 1,800	12 3	ND ND	1,400 1,600	12 140	ND ND	ND ND	ND ND
Vinyl Chloride	51 ND	ND ND	ND ND	ND ND												
Xylenes (Total)	12 ND	ND ND	ND ND	ND ND												

## Notes:

1) All values are in ug/L.

2) ND - Not Detected

3) The shallow hydropunches were advanced to a depth of 15 feet below grade.

4) The deep hydropunches were advanced to a depth of 26 feet below grade.

TABLE 4

**Krutzulis Property  
Kirkville, New York Site**

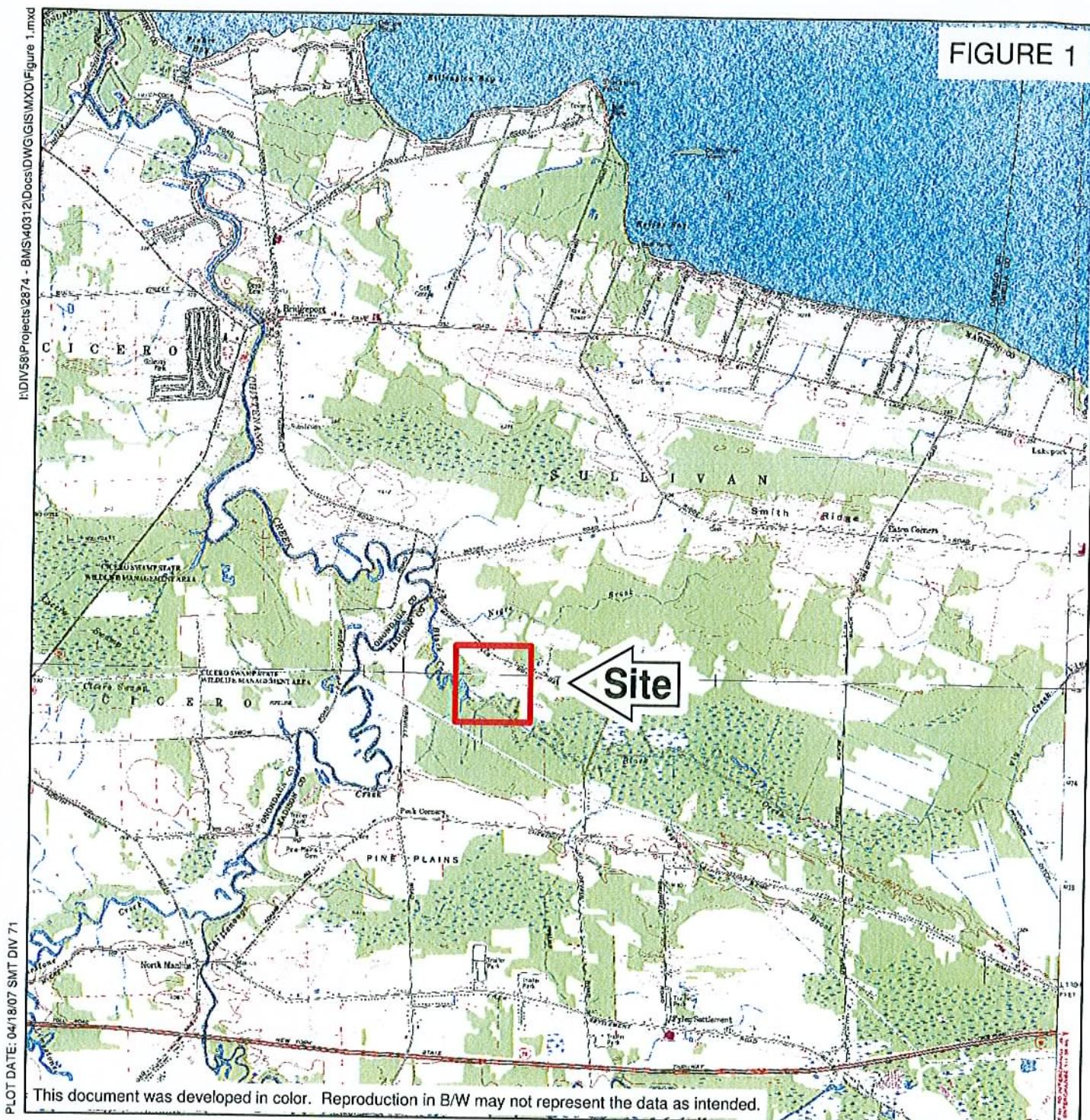
MIP Designation	Ground Elevation (Ft)	Depth of MIP Boring (Ft)	Elevation of Bottom of MIP Boring (Ft)	Depth of Water Sample (Ft) (BGS)	Elevation of Ground Water Samples (Ft)	Depth of ECD/PID Response (Ft)	Approximate Elevation Of ECD/PID Response (Ft)
MIP-3	292.98	35.15 (4)	257.83	-	-	14-35 (2) (3)	278.98-257.98
MIP-4	289.51 (1)	28.95	260.56	10-14 and 24-28	279.51 to 275.51, 265.51 to 261.51	23-29 (2), 8-13 (3), 22-29 (3)	281.51-276.51, 267.51-260.51
MIP-4R	289.52 (1)	30.95	258.57	-	-	-	-
MIP-5	290.0	33.25 (4)	256.75	14-18	276.0 to 272.0	13.5-23.5 (2) (3)	276.5-266.5
MIP-7	291.44	28.95	262.49	21-25	270.44 to 266.44	10-29 (2)	281.44-262.44
MIP-8	289.53 (1)	28.05	261.48	-	-	-	-
MIP-9	289.49 (1)	27.25	262.24	-	-	-	-
MIP-10	293.91	34.35 (4)	259.56	-	-	-	-
MIP-12	293.63	25.90	267.73	-	-	18-34 (2) (3)	275.91-259.91
MIP-13	290.79	25.25	265.54	-	-	14-19 (2)	279.63-274.63

Notes:

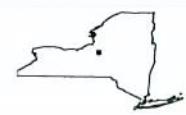
- (1) Top of ice on pond.
- (2) The range of the depth represents an ECD response greater than 1.0E+06.
- (3) The range of the depth represents a PID response greater than 1.0E+05
- (4) The depths for these borings represent refusal depths.

## **Figures**

FIGURE 1



ADAPTED FROM: CLEVELAND AND MANLIUS USGS QUADRANGLE



BRISTOL-MYERS SQUIBB COMPANY  
KRUTULIS PROPERTY  
KIRKVILLE, NY

QUADRANGLE LOCATION

SITE LOCATION



**FIGURE 2**

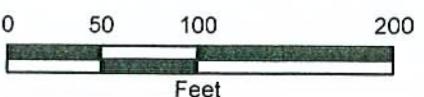


**LEGEND**

- ◆ MONITORING WELL
- ▲ PROPOSED MIP BORING LOCATION
- - - EDGE OF WATER/POND
- TREE LINE
- - - PROPERTY LINE

KRUTULIS PROPERTY  
KIRKVILLE, NEW YORK

**PROPOSED MEMBRANE  
INTERFACE PROBE (MIP)  
BORING LOCATIONS**



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**FIGURE 3**



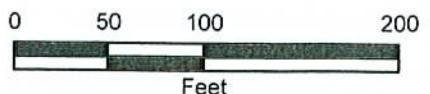
**LEGEND**

- ▲ MEMBRANE INTERFACE PROBE
- HYDROPUCH
- ◆ MONITORING WELL
- - - EDGE OF WATER/POND
- TREE LINE
- - - PROPERTY LINE
- (290) Reference Elevation

Note: Locations MIP-4, MIP-4R, MIP-8, and MIP-9 were surveyed on ice.

KRUTULIS PROPERTY  
KIRKVILLE, NEW YORK

**MEMBRANE INTERFACE  
PROBE (MIP) AND  
HYDROPUCH (HP)  
BORING LOCATIONS**



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**FIGURE 4**

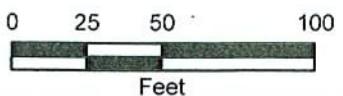


**LEGEND**

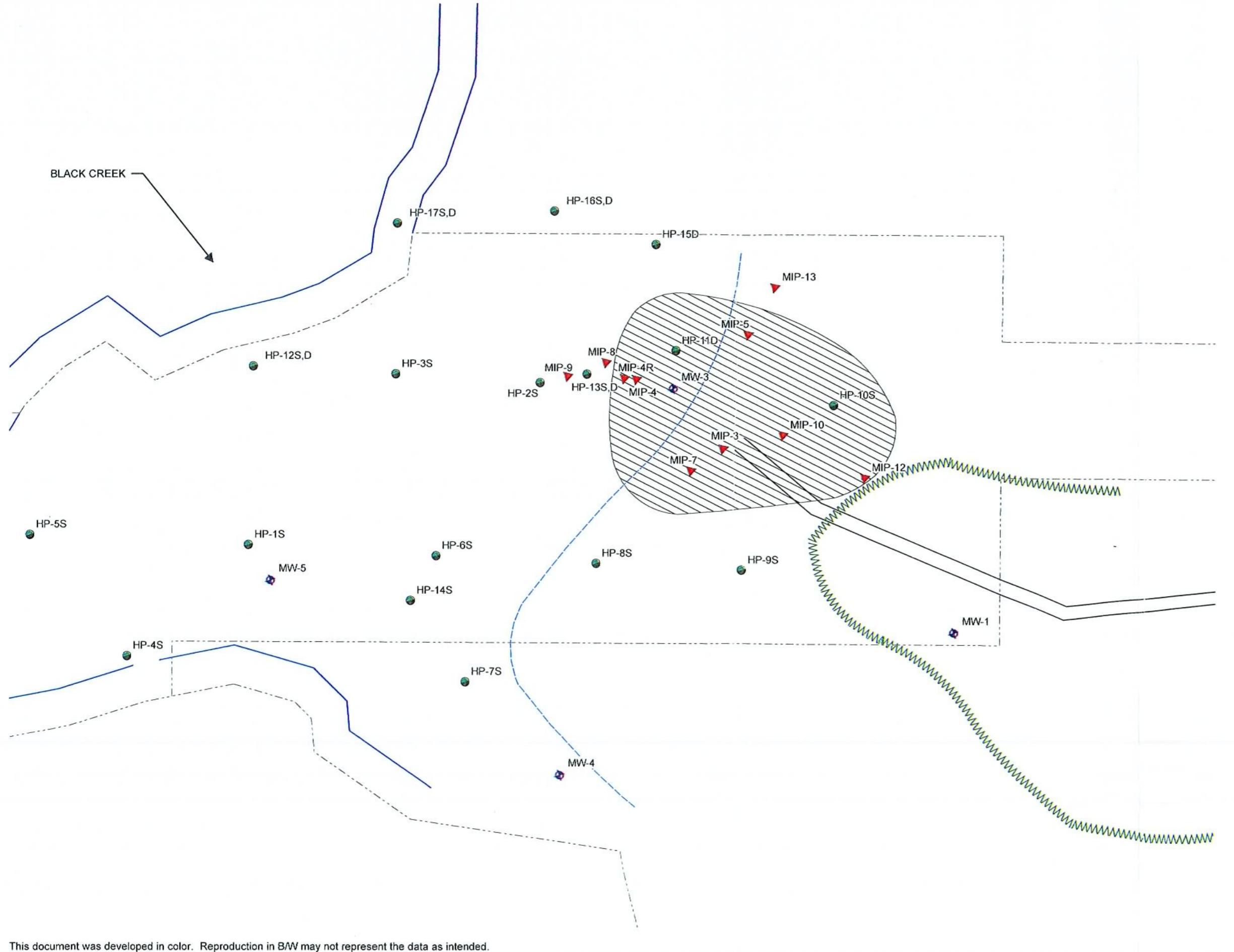
- ▲ MEMBRANE INTERFACE PROBE
- HYDROPUCH
- ◆ MONITORING WELL
- - - PROPERTY LINE
- - - EDGE OF WATER/POND
- TREE LINE
- // APPROXIMATE BOUNDARY OF IMPACTS

KRUTULIS PROPERTY  
KIRKVILLE, NEW YORK

**APPROXIMATE  
HORIZONTAL LIMITS  
OF VOC PLUME**



APRIL 2007  
2874.36312



## **Attachments**

**Attachment A**

**Boring Log**

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG	REPORT OF BORING MIP-3			
Client: Bristol-Meyer Squibb Proj. Loc: Krutulis Property Kirkville, NY  File No.: 2874/40312  Boring Company: Vironex Foreman: Johnny Dewitt Drill Rig: Geoprobe 66 Series Geologist: Scott Tucker							Page 1 of 1 Location: Along shore edge between MIP-7 and MIP-10 Start Date: 2/23/2007 End Date: 2/23/2007  Screen = <input type="checkbox"/> Riser <input type="checkbox"/> Grout <input checked="" type="checkbox"/> Sand Pack <input checked="" type="checkbox"/> Bentonite			
Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Descript	Equip. Installed	Field Testing PID (ppm) UV	
0		5	-	5.0/0.5	-	10YR4/2 Dark Yellowish Brown, very fine SAND, very loose, trace root material, dry to damp, no odor.	Fine Sand		0	
5		10	-	5.0/3.0	-	5YR5/6 Light Brown to 10YR5/4 Moderate Yellowish Brown medium to fine SAND grading to fine SAND, wet becoming saturated, very loose.				0
10		15	-	5.0/2.0	-	Same as above, 5YR5/2 Pale Brown				0
15		20	-	5.0/2.0	-	Same as above, silt clasts in fine SAND				0
20		25	-	5.0/1.5	-	Same as above				0
						End of Boring 25 ft				
Notes:										

**Vironex MIP Report**

**MIP Report  
Krutulis Site  
852 Marsh Mill Road, Kirkville, NY**



**March 29, 2007**



*"Bringing Chemistry and Contaminants Together"  
For the Consulting Community*



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**Client:** O'Brien & Gere                    Marc Dent  
5000 Brittonfield Parkway  
Syracuse, NY 13221

**Start Date:** 2/21/2007  
**Completed Date:** 2/23/2007

**Site Address:** 852 Marsh Mill Road, Kirkville, NY  
**Project Name:** Krutulis Site

**Project Scope:** Collected 10 Membrane Interface Probe logs from 9 boring locations from approximately surface to as deep as 34.35 feet to delineate volatile organic compounds (VOC) impact that is currently present at MW-3.

**Project Information:**

MIP-9	Boring began at top of ice. Bottom of pond 3' below top of ice.
MIP-8	Boring began at top of ice. Bottom of pond 3' below top of ice.
MIP-4	Boring began at top of ice. Bottom of pond 3' below top of ice.
MIP-4R	Boring began at top of ice. Bottom of pond 3' below top of ice.
MIP-3	Refusal at 35.15' bgs.
MIP-5	Refusal at 33.25' bgs.
MIP-10	Refusal at 34.35' bgs.
MIP-7	Boring terminated at desired depth.
MIP-13	Boring terminated at desired depth.
MIP-12	Boring terminated at desired depth.

**MIP Boring and Confirmation Sampling Summary**

Date Sampled	Time Sampled	Boring Name	Total Depth	Confirmation Samples Groundwater	Confirmation Samples Depths
Feb 21 2007	11:54	MIP-9	27.25	Not collected	--
Feb 21 2007	13:28	MIP-8	28.05	Not collected	--
Feb 21 2007	16:09	MIP-4	28.95	Collected	10-14' bgs & 24-28' bgs
Feb 22 2007	08:28	MIP-4R	30.95	Not collected	--
Feb 22 2007	10:31	MIP-3	35.15	Not collected	--
Feb 22 2007	12:16	MIP-5	33.25	Collected	14-18' bgs
Feb 22 2007	13:43	MIP-10	34.35	Not collected	--
Feb 23 2007	10:12	MIP-7	28.95	Collected	21-25' bgs
Feb 23 2007	11:31	MIP-13	25.25	Not collected	--
Feb 23 2007	13:08	MIP-12	25.90	Not collected	--



**Quality Control:** Vironex utilizes a response test\* prior to each MIP boring. A solution containing water, Trichloroethene & Toluene are mixed and transferred into a galvanized test pipe. The MIP is then lowered into the test pipe for 45 seconds and then extracted. The trip time\* is then noted and entered into the FC 5000 MIP computer.

\*Response Test - A test that ensures that the MIP system is working correctly.

\*\*Trip Time - Time it takes for the standard to enter the MIP probe, at the probe membrane, till the time a significant response is noticed on the FC 5000 Computer

**MIP Components** • Geoprobe 6600

- Used:**
- Badger/Dolly Rig
  - FC 5000 MIP Computer
  - Flow Control Box
  - HP Gas Chromatograph
  - ECD (Electron Capture Detector)
  - PID (Photo Ionization Detector)
  - FID (Flame Ionization Detector)
  - 200' and 100' Trunk Lines
  - 1.75" MIP Probe
  - 1.5" Drive Rods

**Soil Confirmation** Confirmation groundwater samples were collected and released to O'Brien & Gere for analysis.

**Qualitative Analysis** The MIP system will detect most VOC's (Volatile Organic Compounds) which have the capability of migrating through the membrane. The ECD (Electron Capture Detector) will typically detect chlorinated compounds. The PID will typically detect aromatic and double bonded compounds, typical of gasoline components and some solvents. At high concentrations the ECD, PID and FID may detect other compounds not normally associated with the detector. Physical soil samples which are prepared by EPA Method 5035, and analyzed by EPA Method 8260, may be semi correlated with the MIP responses. The MIP responses are semi-correlated with most detected compounds, even those which are not reported nor detected by EPA Method 8260.

**Lithology:** The conductivity of soils is different for each type of media. Finer grained sediments, such as silts or clays, will have a higher EC signal. While coarser grained sediments, sands and gravel, will have a lower EC signal. Lithology should be correlated with a physical soil sample.

Kurt M. Scarbro  
Project Manager  
Vironex, Inc.

Chuck Terry  
Certified Geoprobe MIP Technician  
Vironex, Inc.



**Client:** O'Brien & Gere  
5000 Brittonfield Parkway  
Syracuse, NY 13221

**Start Date:** 2/21/2007  
**Completed Date:** 2/23/2007

**Site Address:** 852 Marsh Mill Road, Kirkville, NY  
**Project Name:** Krutulis Site

#### MIP Quality Control

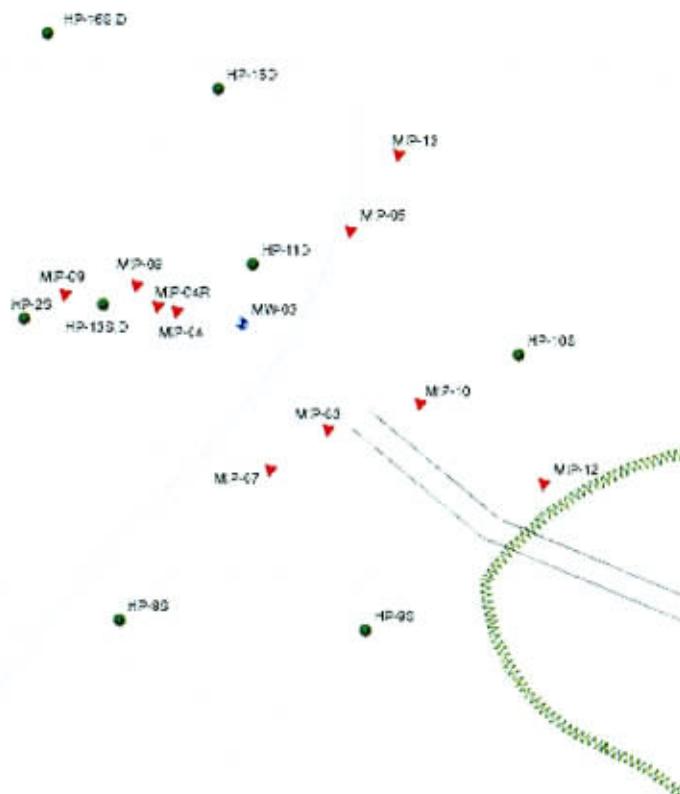
##### Standard Summary

Boring Name	Date	Time	Standard	PID Response	ECD Response	Pressure (PSI)	Response Time (s)
QA QC 1	Feb 21 2007	09:19	1 ppm TCE & Toluene	Yes	Yes	18.85	135
MIP-9	Feb 21 2007	11:54				18.13	135
QA QC 2	Feb 21 2007	13:06	1 ppm TCE & Toluene	Yes	Yes	18.40	185
MIP-8	Feb 21 2007	13:28				18.24	185
QA QC 3	Feb 21 2007	14:33	1 ppm TCE & Toluene	Yes	Yes	19.01	185
QA QC 4	Feb 21 2007	16:03	1 ppm TCE & Toluene	Yes	Yes	13.04	122
MIP 4	Feb 21 2007	16:09				13.30	122
QA QC 5	Feb 22 2007	08:13	1 ppm TCE & Toluene	Yes	Yes	13.90	140
MIP 4R	Feb 22 2007	08:28				13.91	140
QA QC 6	Feb 22 2007	09:38	1 ppm TCE & Toluene	Yes	Yes	13.52	137
MIP 3	Feb 22 2007	10:31				13.78	137
QA QC 7	Feb 22 2007	11:58	1 ppm TCE & Toluene	Yes	Yes	15.82	140
MIP5	Feb 22 2007	12:16				13.44	140
QA QC 8	Feb 22 2007	13:33	1 ppm TCE & Toluene	Yes	Yes	13.28	130
MIP10	Feb 22 2007	13:43				13.14	130
QA QC 9	Feb 22 2007	15:16	1 ppm TCE & Toluene	Yes	Yes	13.23	123
QA QC 10	Feb 23 2007	10:00	1 ppm TCE & Toluene	Yes	Yes	12.37	90
MIP 7	Feb 23 2007	10:12				12.56	90
QA QC 11	Feb 23 2007	11:11	1 ppm TCE & Toluene	Yes	Yes	12.42	88
MIP13	Feb 23 2007	11:31				12.29	88
QA QC 12	Feb 23 2007	12:42	1 ppm TCE & Toluene	Yes	Yes	11.96	87
MIP12	Feb 23 2007	13:08				12.31	87

##### End of Day QA QC Summary

Boring Name	Date	Time	Standard	PID Response	ECD Response	Pressure (PSI)	Response Time (s)
End of Day 1	Feb 21 2007	17:21	1 ppm TCE & Toluene	Yes	Yes	13.05	145
End of Day 2	Feb 22 2007		Equipment failure.				
End of Day 3	Feb 23 2007	14:22	1 ppm TCE & Toluene	Yes	Yes	12.37	87

SITE MAP



LEGEND

EDGE OF WATER POND

TREELINE

PROPERTY LINE

MONITORING WELL

MEMBRANE INTERFACE PROBE

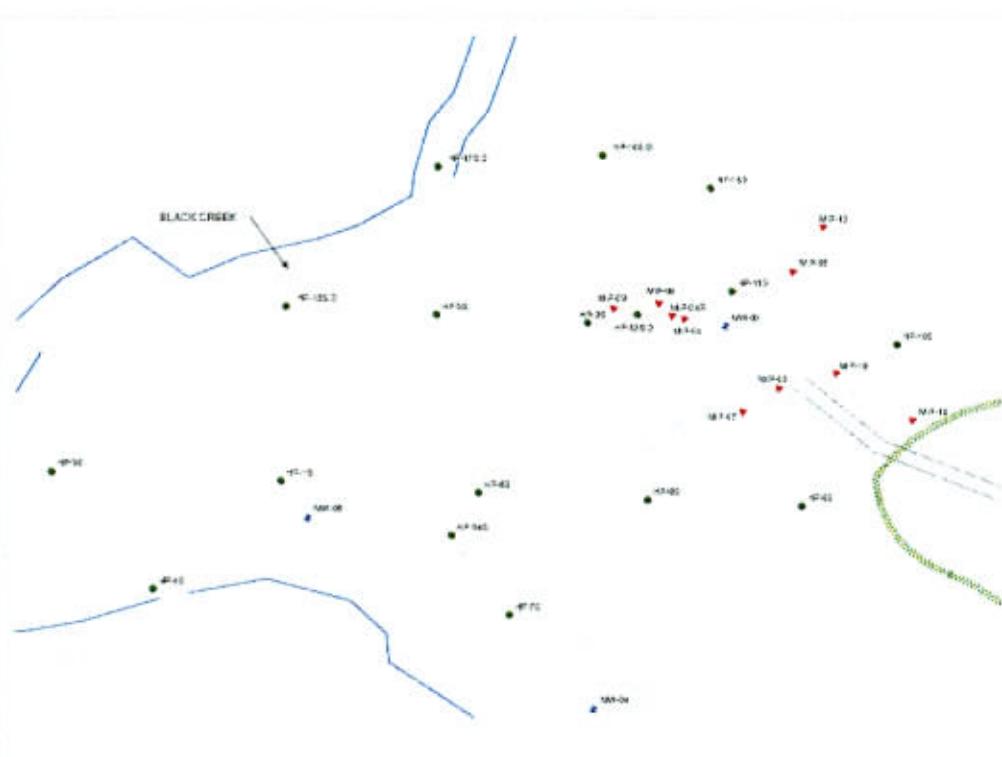
HYDRO PUNCH

KRUTULIS PROPERTY  
KIRKVILLE, NEW YORK

MEMBRANE INTERFACE  
PROBE (MIP) AND  
HYDROPUNCH (HP)  
BORING LOCATIONS

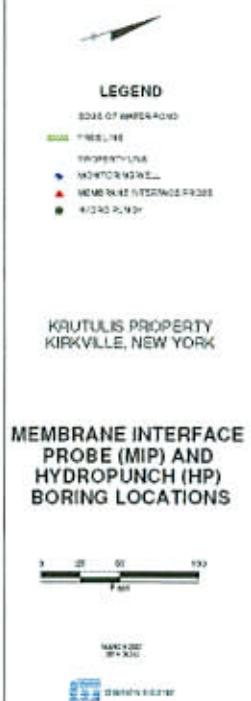


## SITE MAP



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FIGURE 2





## Confirmation Sampling

Compound	Point & Depth	MIP-4 10-14'	MIP-4 24-28'	MIP-5 14-18'	MIP-7 21-25'
1,1-Dichloroethene	1.54	ND	ND	ND	ND
4-Methyl-2-pentanone	ND	ND	ND	ND	ND
Acetone	ND	ND	ND	ND	ND
Chloroform	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	49	ND	25	ND	ND
Tetrachloroethene	ND	ND	ND	ND	ND
Trans-1,2-Dichloroethene	ND	ND	ND	ND	ND
Trichloroethene	4.58	ND	1170	3190	
Vinyl Chloride	23.3	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND
Xylenes (total)	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND
<b>Total µg/L</b>	<b>78.42</b>	<b>ND</b>	<b>1195</b>	<b>3190</b>	

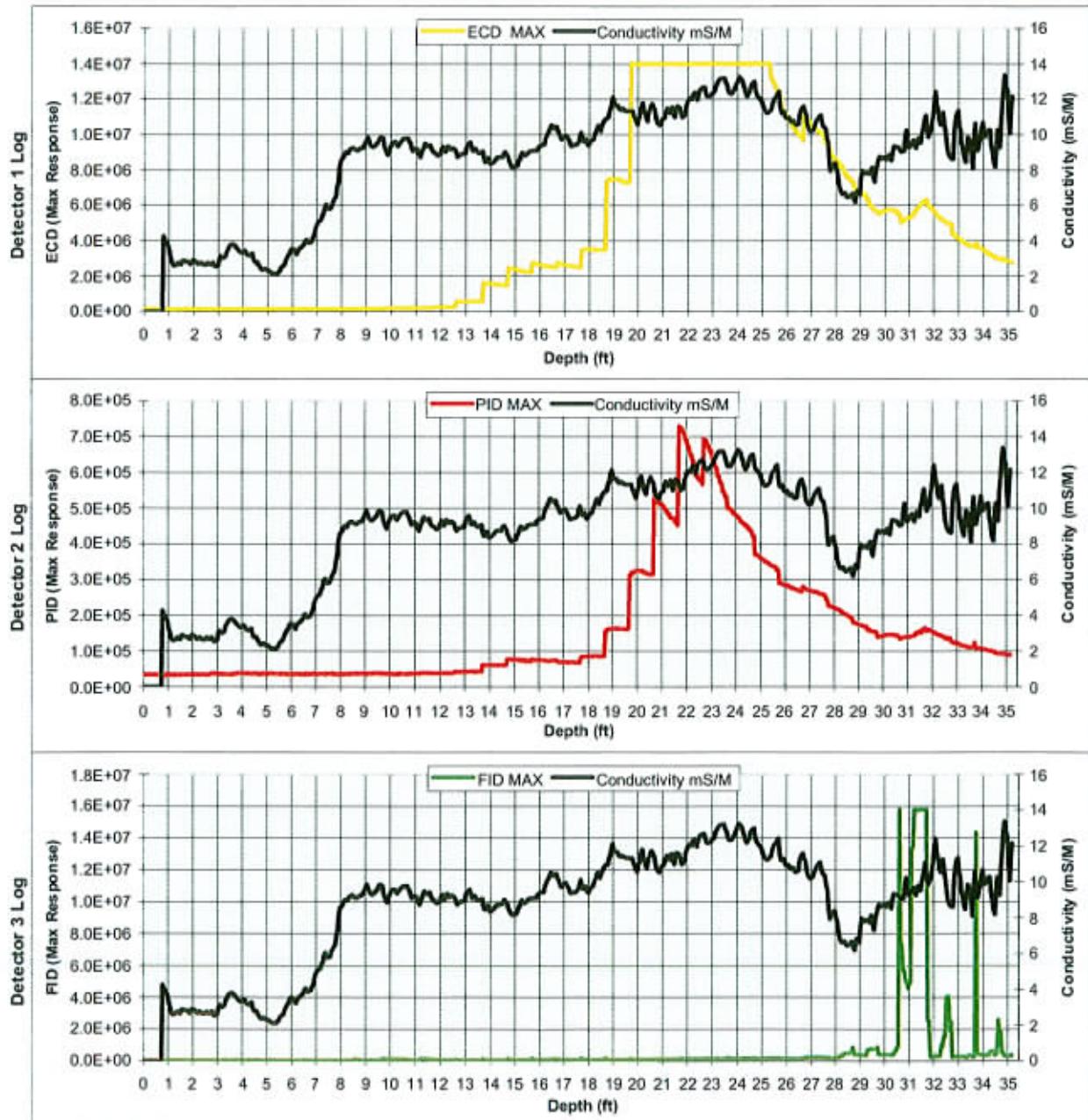
µg/L - Micrograms per Liter

### Typical compounds found in primary compounds

- Chlorinated
- Gasoline
- Diesel
- Gasoline and Diesel
- Not typical of primary compounds

## MIP Log Results by Boring - Detector Reading vs. Depth

Client:	O'Brien & Gere	Boring I.D.:	MIP-3	Detector 1:	Electron Capture (ECD)
Date:	Feb 22 2007	Detector 2:	Photo Ionization (PID)		
Time:	10:31	Detector 3:	Flame Ionization (FID)		



## MIP Log Results by Boring - Detector Reading vs. Depth

Client: O'Brien & Gere

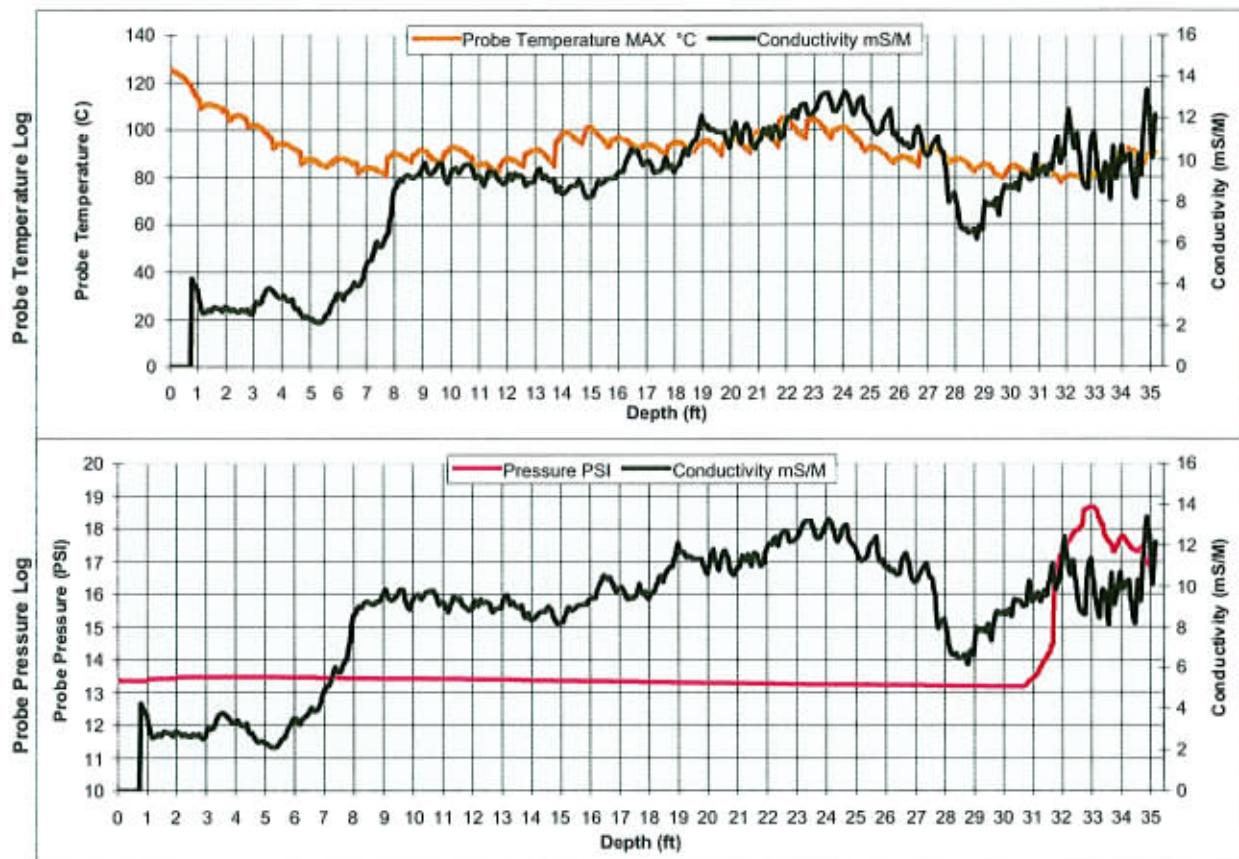
Boring I.D.: MIP-3

Graph 1: Probe Temperature (C)

Date: Feb 22 2007

Graph 2: Probe Pressure (PSI)

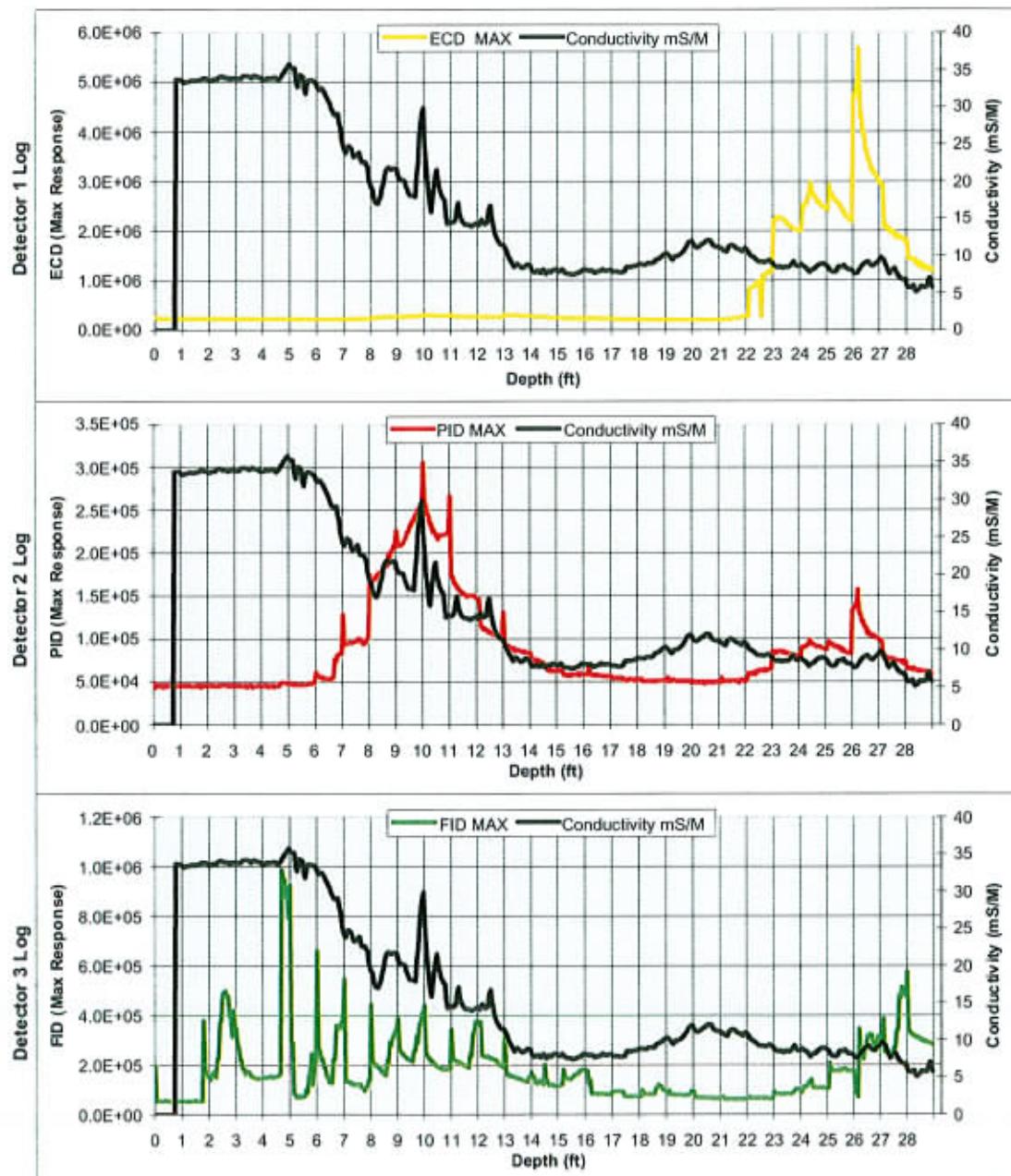
Time: 10:31



Explanation: Refusal at 35.15' bgs.

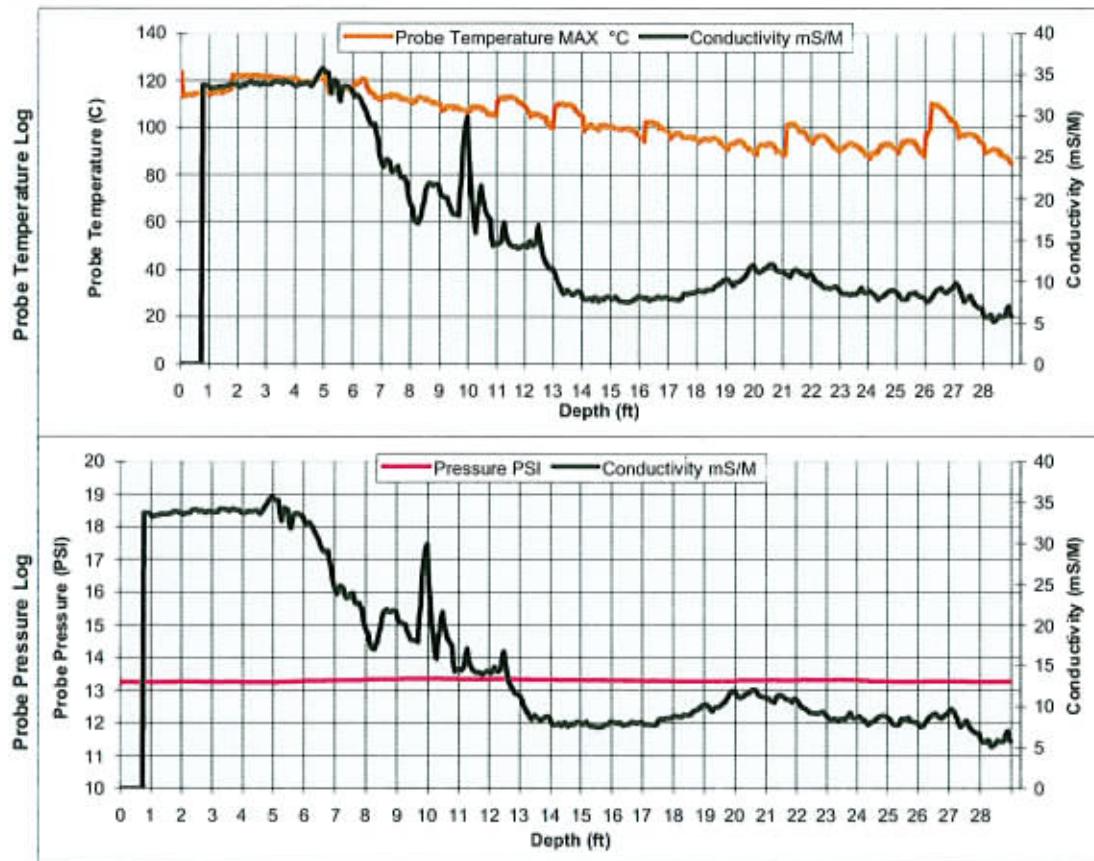
### MIP Log Results by Boring - Detector Reading vs. Depth

Client: O'Brien & Gere      Boring I.D.: MIP-4      Detector 1: Electron Capture (ECD)  
 Date: Feb 21 2007      Detector 2: Photo Ionization (PID)  
 Time: 16:09      Detector 3: Flame Ionization (FID)



### MIP Log Results by Boring - Detector Reading vs. Depth

Client: O'Brien & Gere      Boring I.D.: MIP-4      Graph 1: Probe Temperature (C)  
 Date: Feb 21 2007      Graph 2: Probe Pressure (PSI)  
 Time: 16:09



**Explanation:** Boring began at top of ice. Bottom of pond 3' below top of ice.

### MIP Log Results by Boring - Detector Reading vs. Depth

Client: O'Brien & Gere

Boring I.D.: MIP-4R

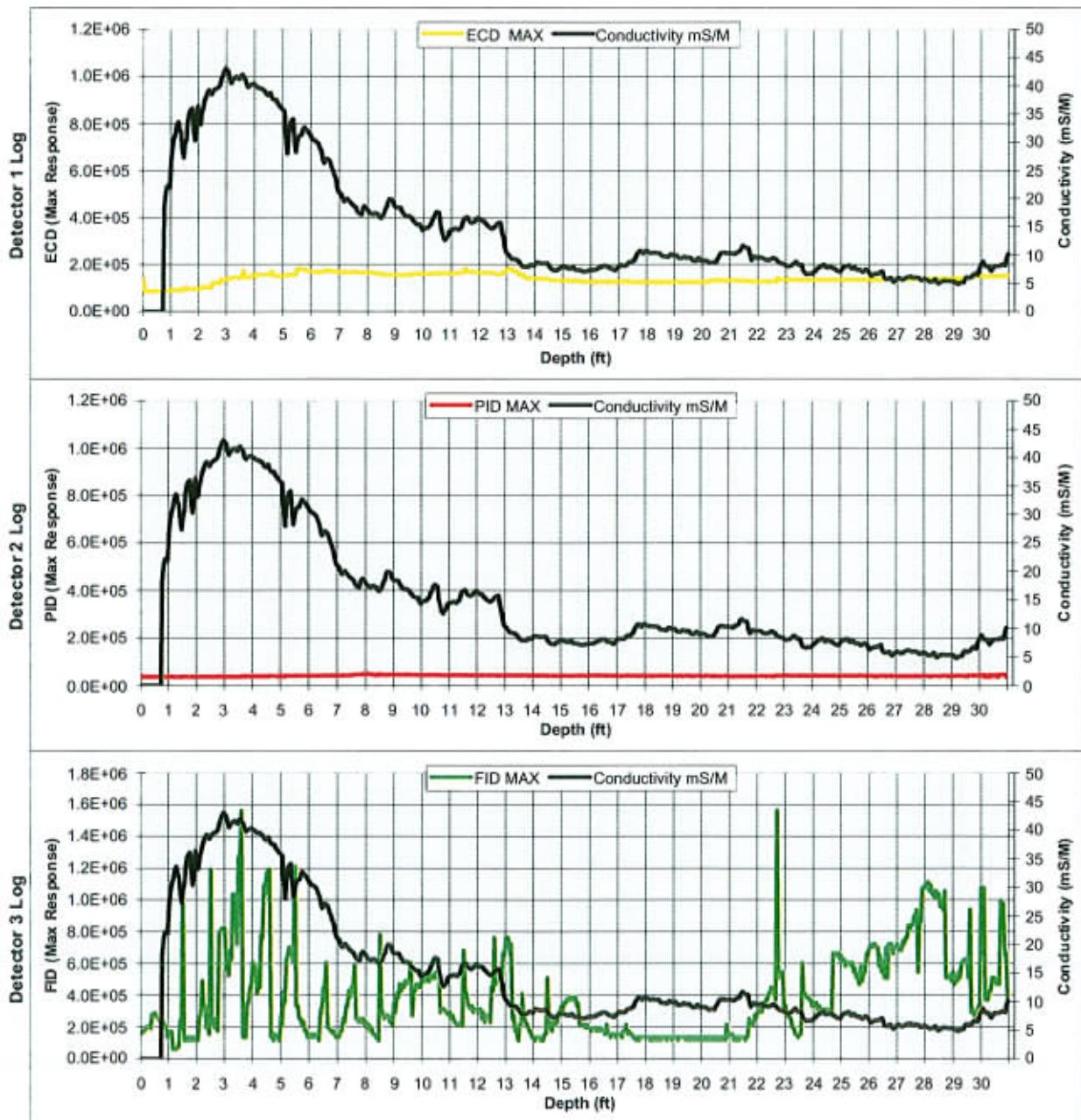
Detector 1: Electron Capture (ECD)

Date: Feb 22 2007

Detector 2: Photo Ionization (PID)

Time: 08:28

Detector 3: Flame Ionization (FID)



### MIP Log Results by Boring - Detector Reading vs. Depth

Client: O'Brien & Gere

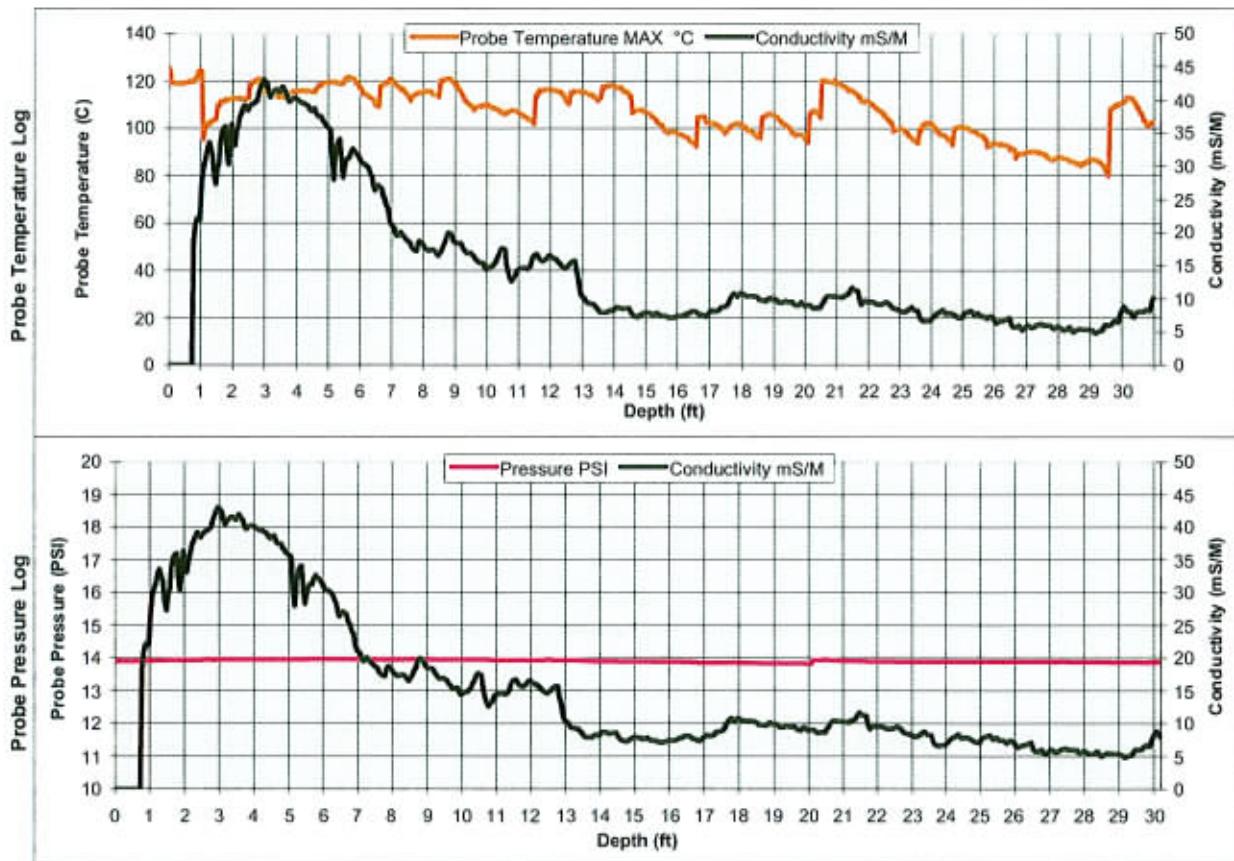
Boring I.D.: MIP-4R

Graph 1: Probe Temperature (C)

Date: Feb 22 2007

Graph 2: Probe Pressure (PSI)

Time: 08:28



**Explanation:** Boring began at top of ice. Bottom of pond 3' below top of ice.

## MIP Log Results by Boring - Detector Reading vs. Depth

Client: O'Brien & Gere

Boring I.D.: MIP-5

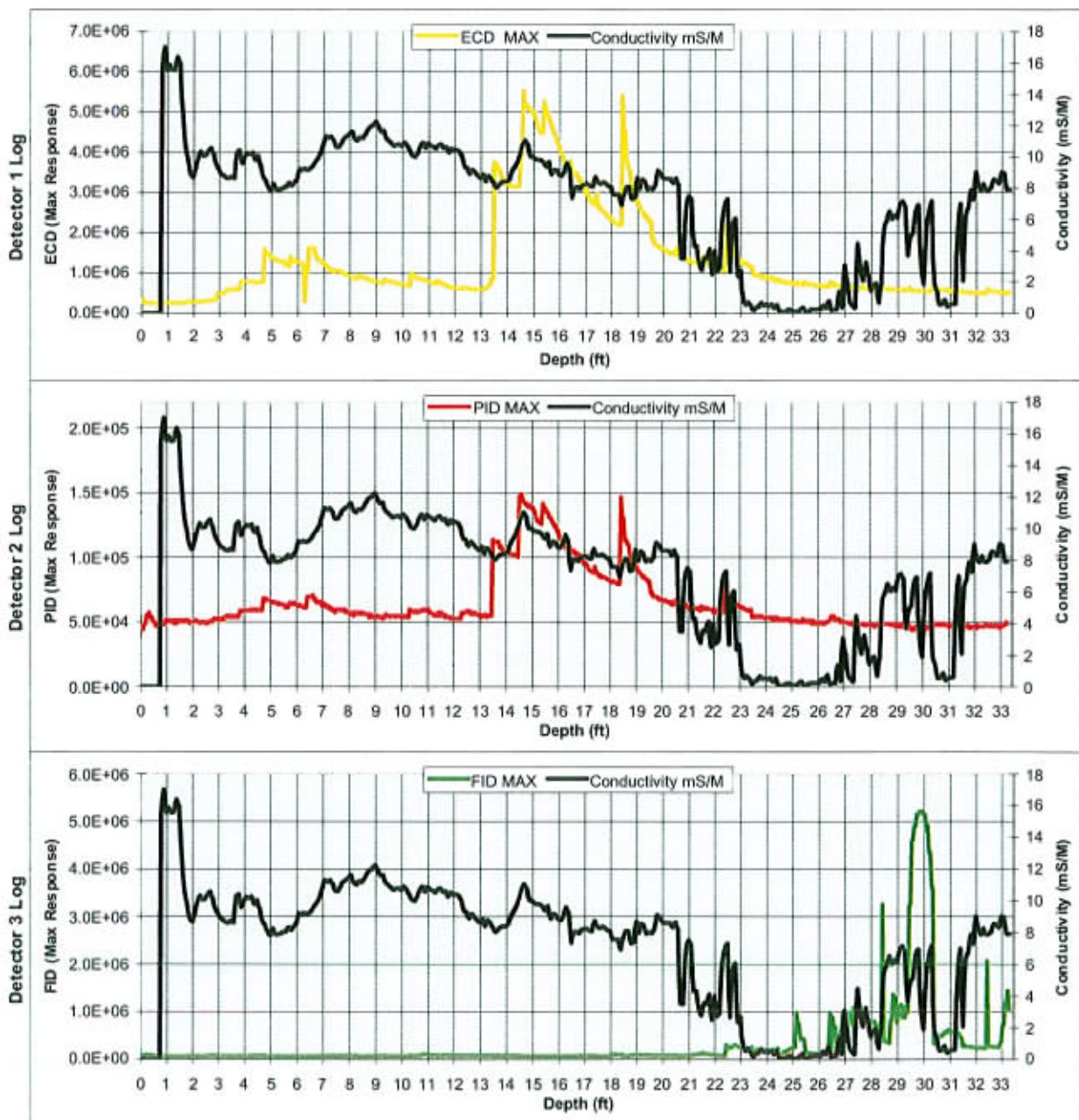
Detector 1: Electron Capture (ECD)

Date: Feb 22 2007

Detector 2: Photo Ionization (PID)

Time: 12:16

Detector 3: Flame Ionization (FID)



### MIP Log Results by Boring - Detector Reading vs. Depth

Client: O'Brien & Gere

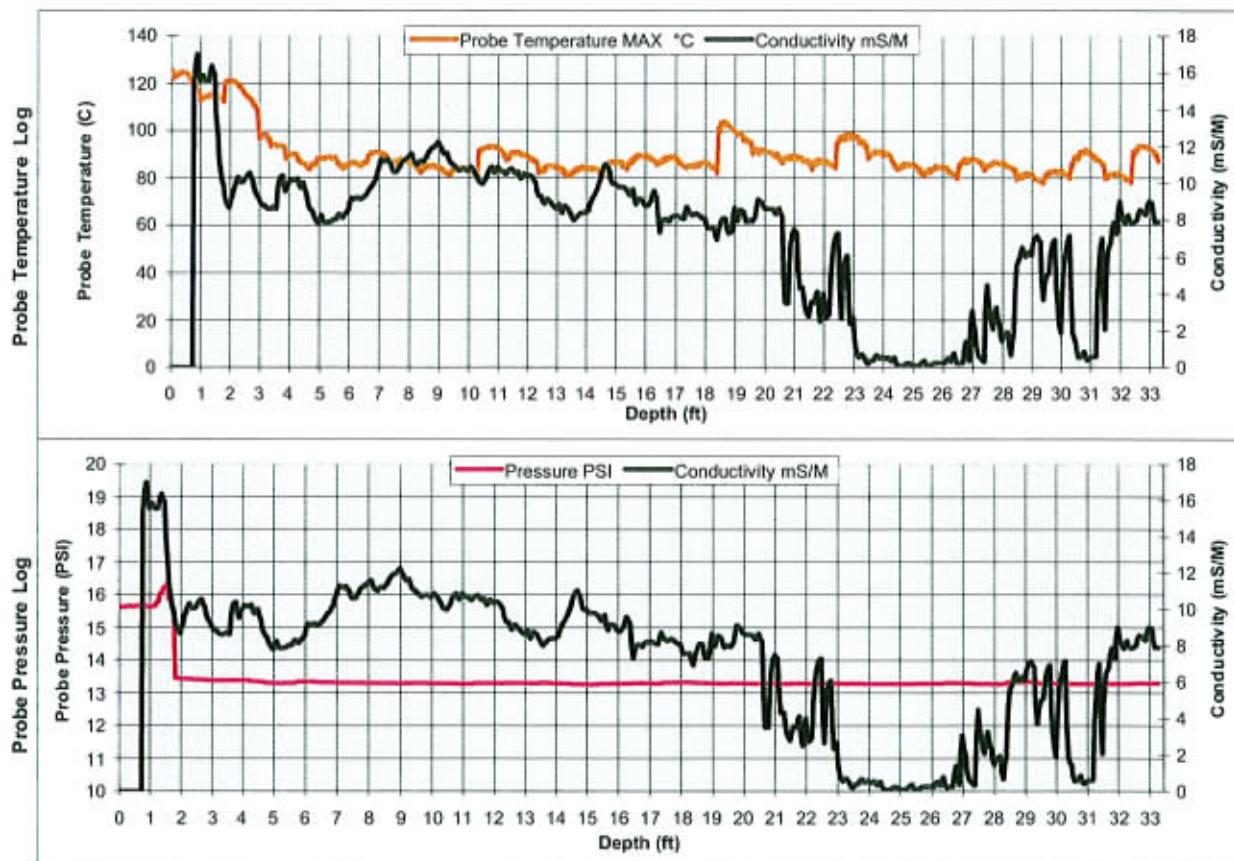
Boring I.D.: MIP-5

Graph 1 : Probe Temperature (C)

Date: Feb 22 2007

Graph 2 : Probe Pressure (PSI)

Time: 12:16



Explanation: Refusal at 33.25' bgs.

### MIP Log Results by Boring - Detector Reading vs. Depth

Client: O'Brien & Gere

Boring I.D.: MIP-7

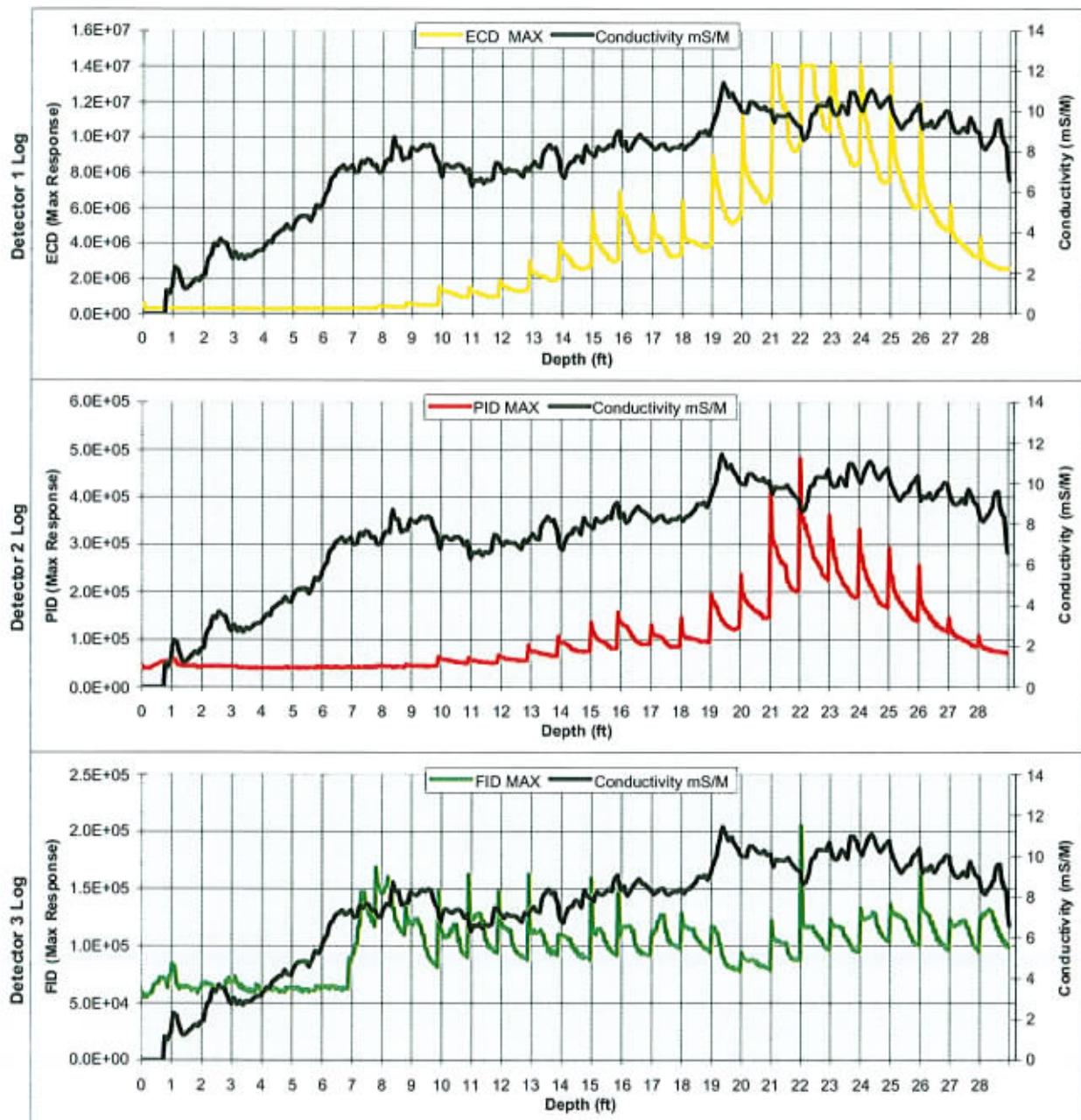
Detector 1: Electron Capture (ECD)

Date: Feb 23 2007

Detector 2: Photo Ionization (PID)

Time: 10:12

Detector 3: Flame Ionization (FID)



### MIP Log Results by Boring - Detector Reading vs. Depth

Client: O'Brien & Gere

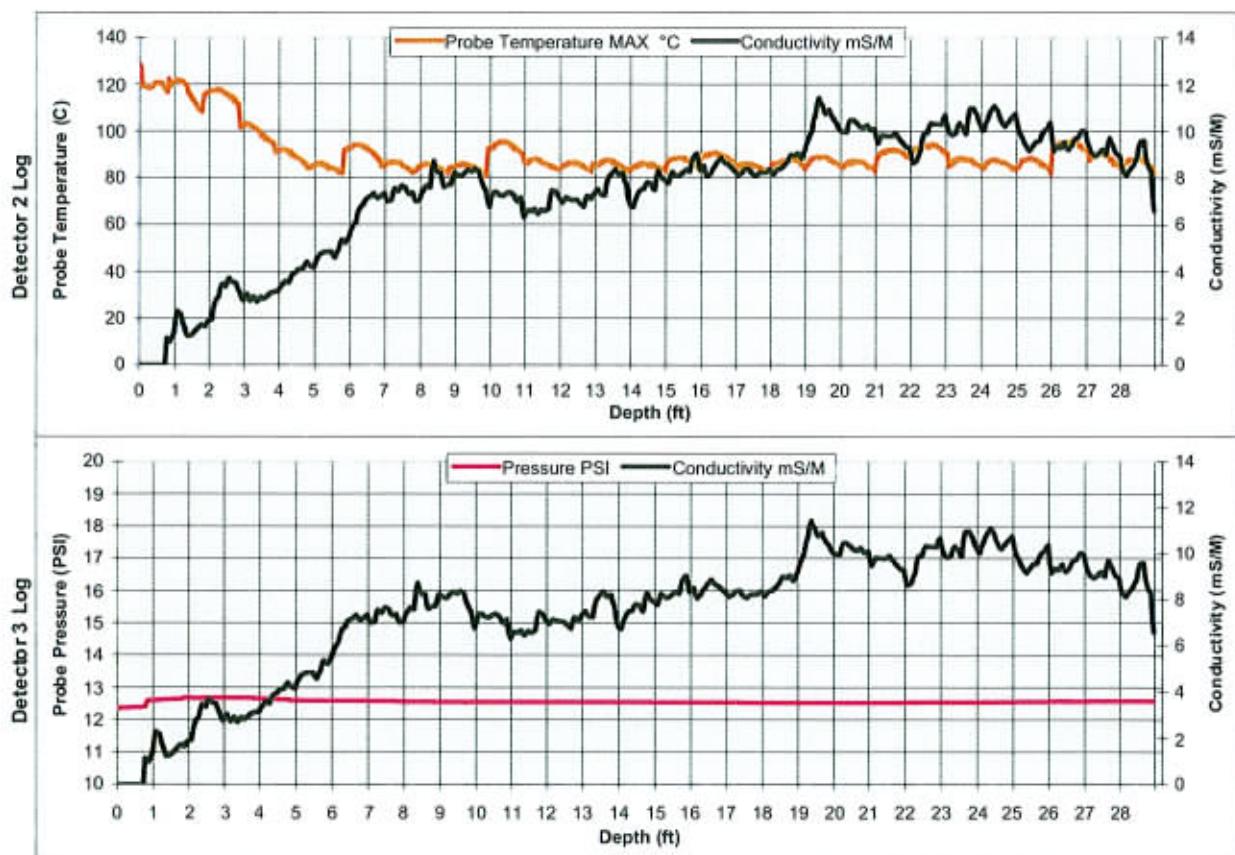
Boring I.D.: MIP-7

Graph 1 : Probe Temperature (C)

Date: Feb 23 2007

Graph 2 : Probe Pressure (PSI)

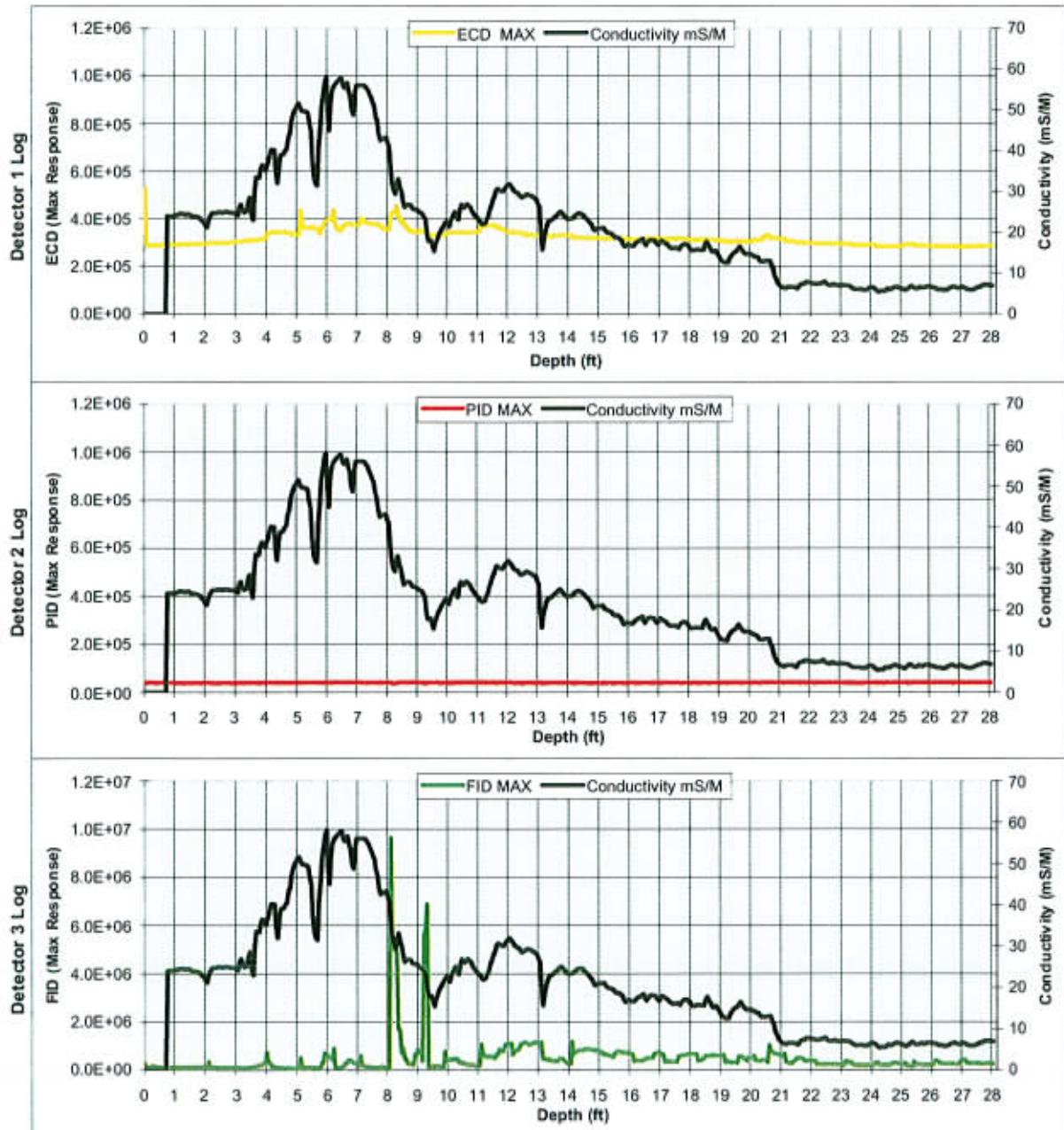
Time: 10:12



**Explanation:** Boring terminated at desired depth.

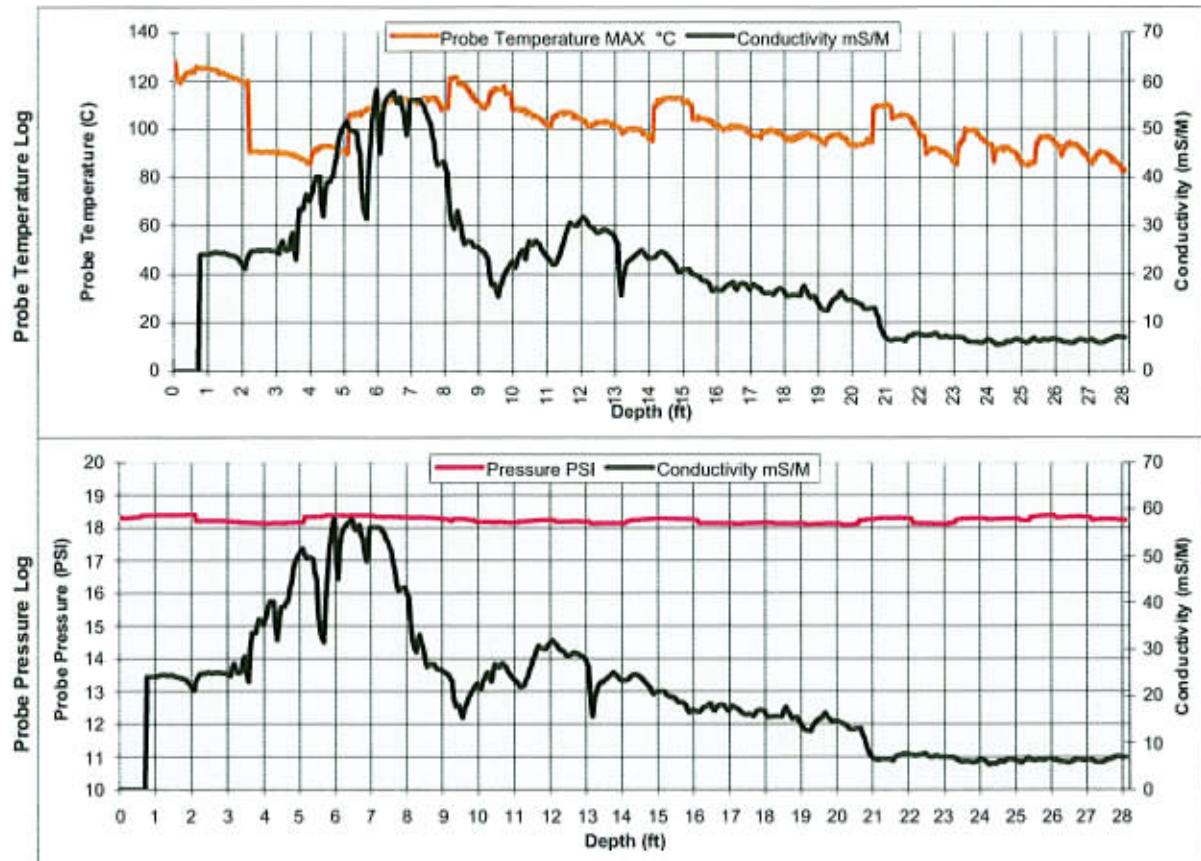
### MIP Log Results by Boring - Detector Reading vs. Depth

Client: O'Brien & Gere      Boring I.D.: MIP-8      Detector 1: Electron Capture (ECD)  
 Date: Feb 21 2007      Detector 2: Photo Ionization (PID)  
 Time: 13:28      Detector 3: Flame Ionization (FID)



### MIP Log Results by Boring - Detector Reading vs. Depth

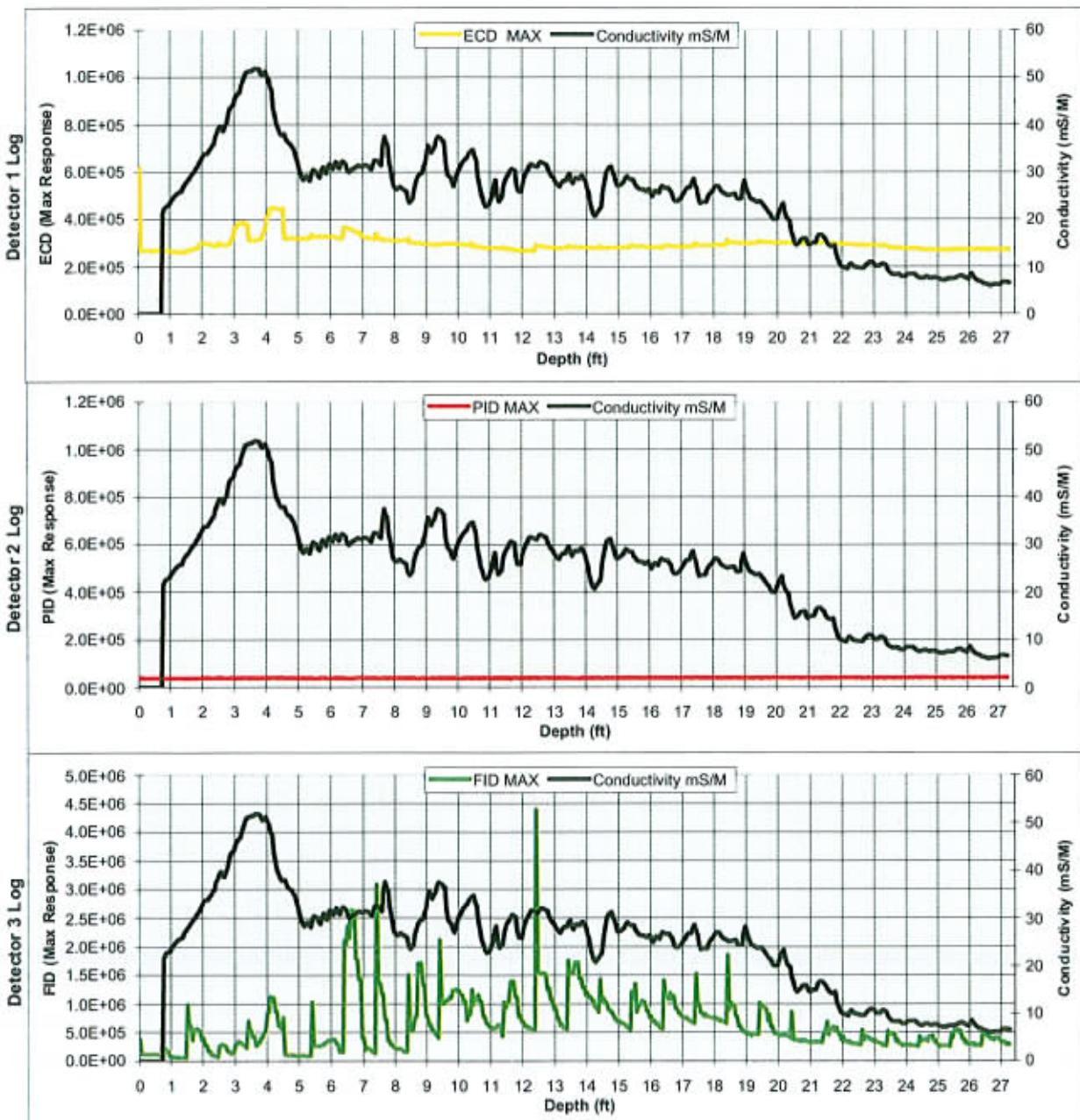
Client: O'Brien & Gere      Boring I.D.: MIP-8      Graph 1 : Probe Temperature (C)  
 Date: Feb 21 2007      Graph 2 : Probe Pressure (PSI)  
 Time: 13:28



**Explanation:** Boring began at top of ice. Bottom of pond 3' below top of ice.

## MIP Log Results by Boring - Detector Reading vs. Depth

Client: O'Brien & Gere      Boring I.D.: MIP-9  
 Date: Feb 21 2007      Time: 11:54  
 Detector 1: Electron Capture (ECD)  
 Detector 2: Photo Ionization (PID)  
 Detector 3: Flame Ionization (FID)



### MIP Log Results by Boring - Detector Reading vs. Depth

Client: O'Brien & Gere

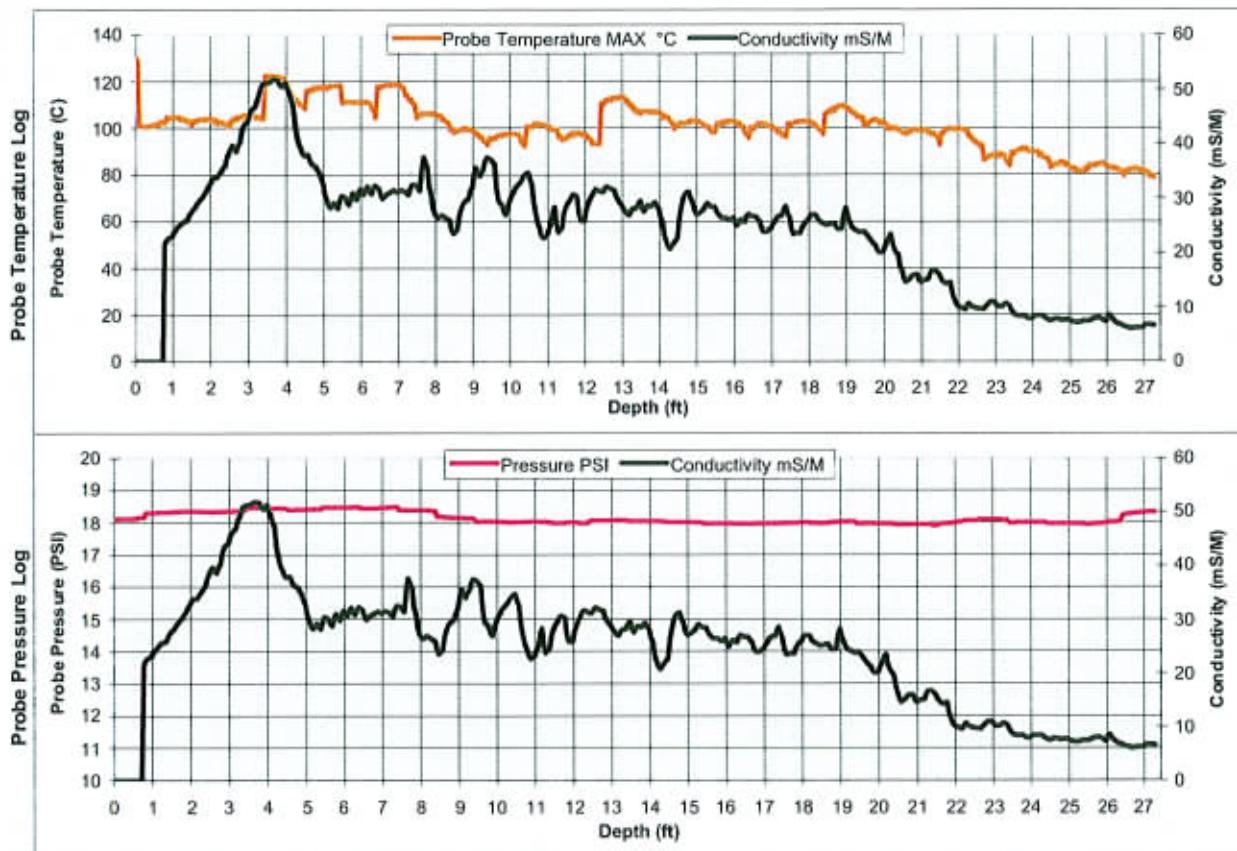
Boring I.D.: MIP-9

Graph 1 : Probe Temperature (C)

Date: Feb 21 2007

Graph 2 : Probe Pressure (PSI)

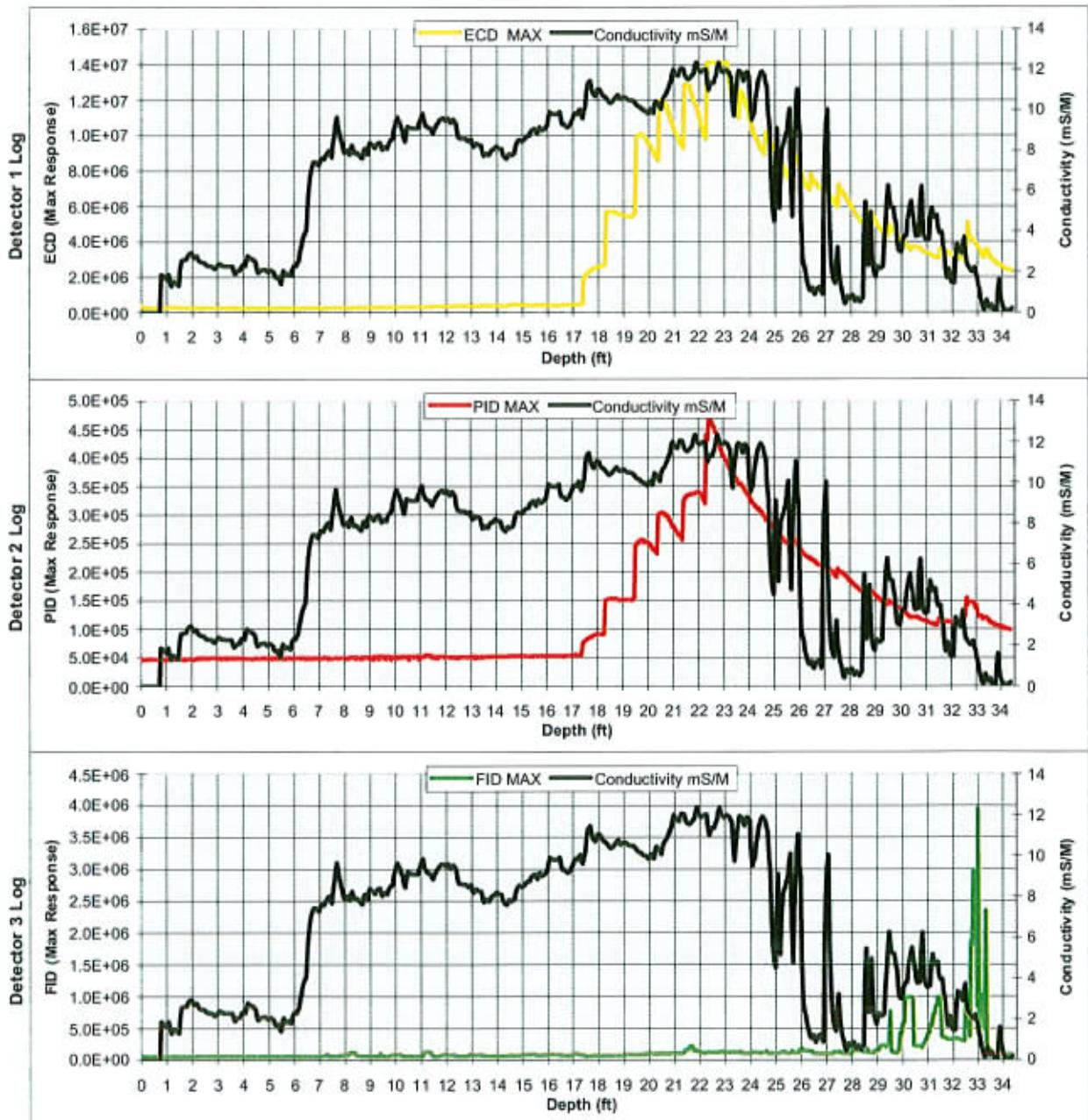
Time: 11:54



**Explanation:** Boring began at top of ice. Bottom of pond 3' below top of ice.

### MIP Log Results by Boring - Detector Reading vs. Depth

Client:	O'Brien & Gere	Boring I.D.:	MIP-10	Detector 1:	Electron Capture (ECD)
Date:	Feb 22 2007	Date:		Detector 2:	Photo Ionization (PID)
Time:	13:43			Detector 3:	Flame Ionization (FID)



### MIP Log Results by Boring - Detector Reading vs. Depth

Client: O'Brien & Gere

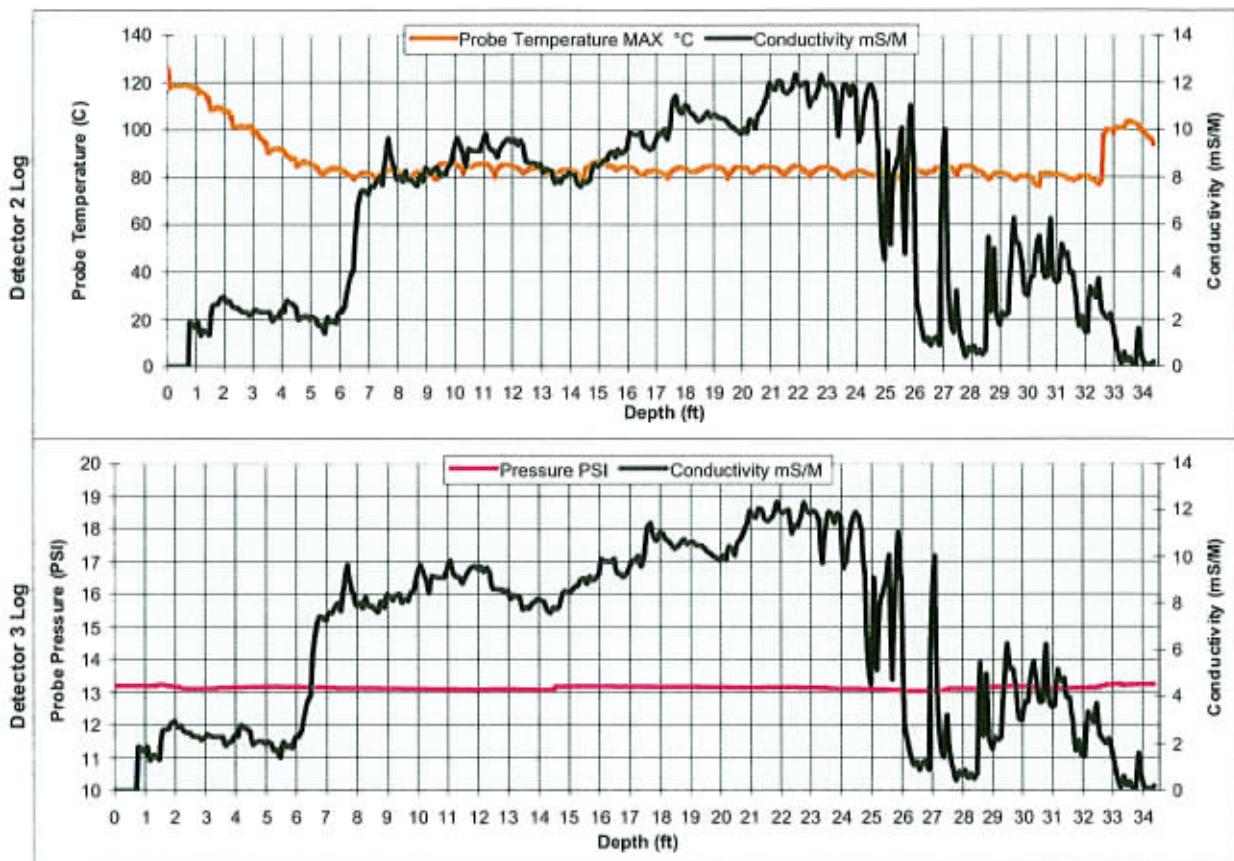
Boring I.D.: MIP-10

Graph 1 : Probe Temperature (C)

Date: Feb 22 2007

Graph 2 : Probe Pressure (PSI)

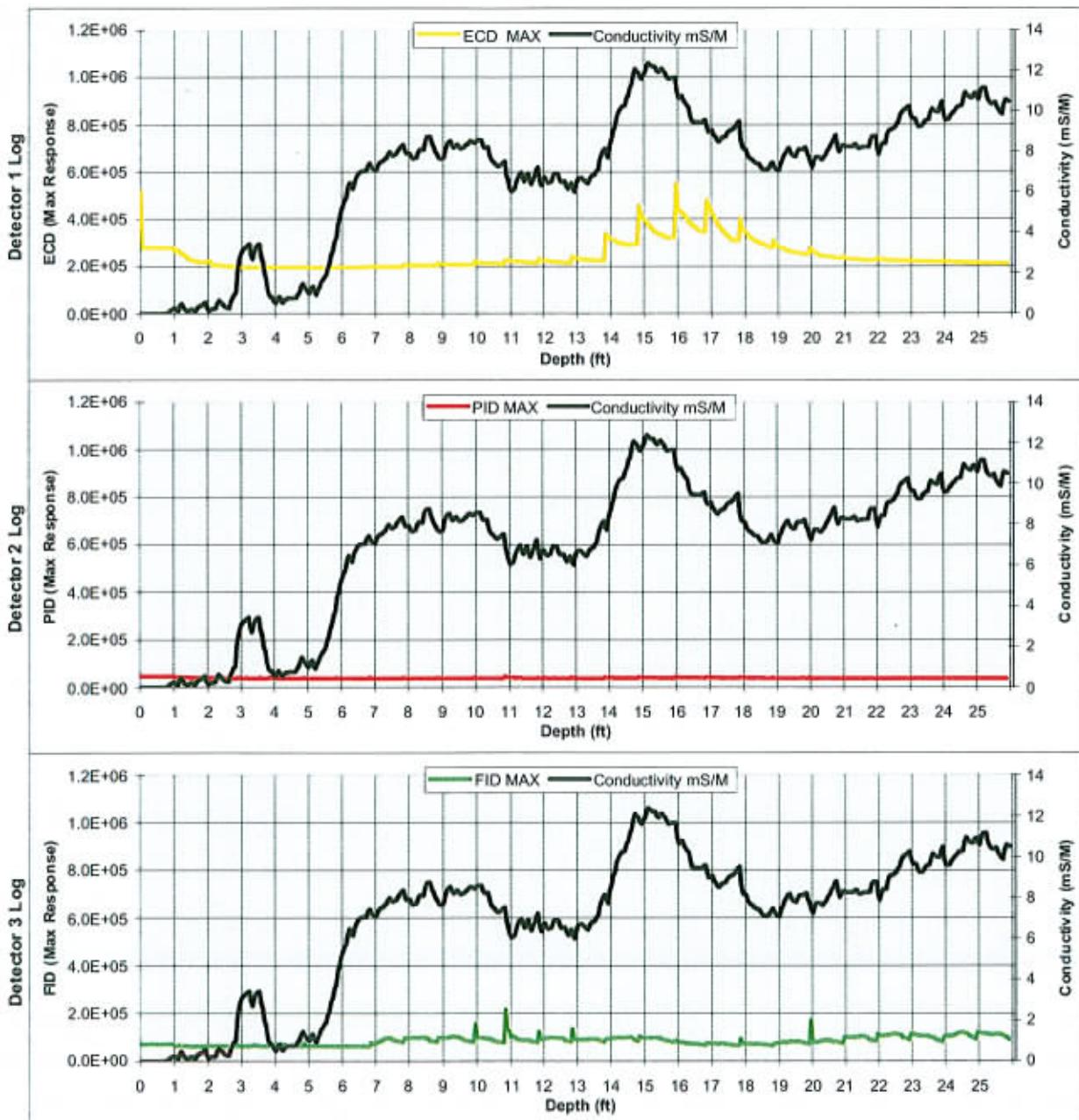
Time: 13:43



Explanation: Refusal at 34.35' bgs.

### MIP Log Results by Boring - Detector Reading vs. Depth

Client: O'Brien & Gere      Boring I.D.: MIP-12  
 Date: Feb 23 2007      Time: 13:08  
 Detector 1: Electron Capture (ECD)  
 Detector 2: Photo Ionization (PID)  
 Detector 3: Flame Ionization (FID)



### MIP Log Results by Boring - Detector Reading vs. Depth

Client: O'Brien & Gere

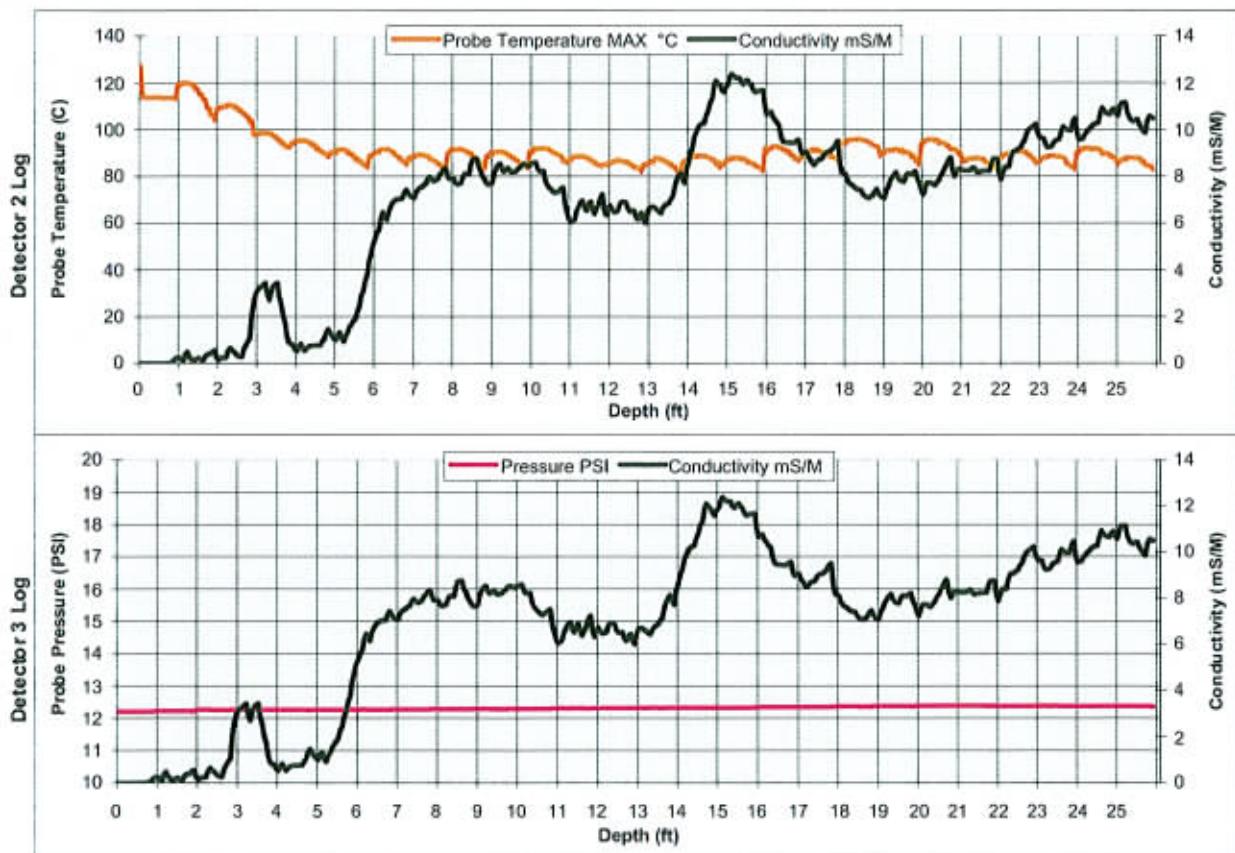
Boring I.D.: MIP-12

Graph 1 : Probe Temperature (C)

Date: Feb 23 2007

Graph 2 : Probe Pressure (PSI)

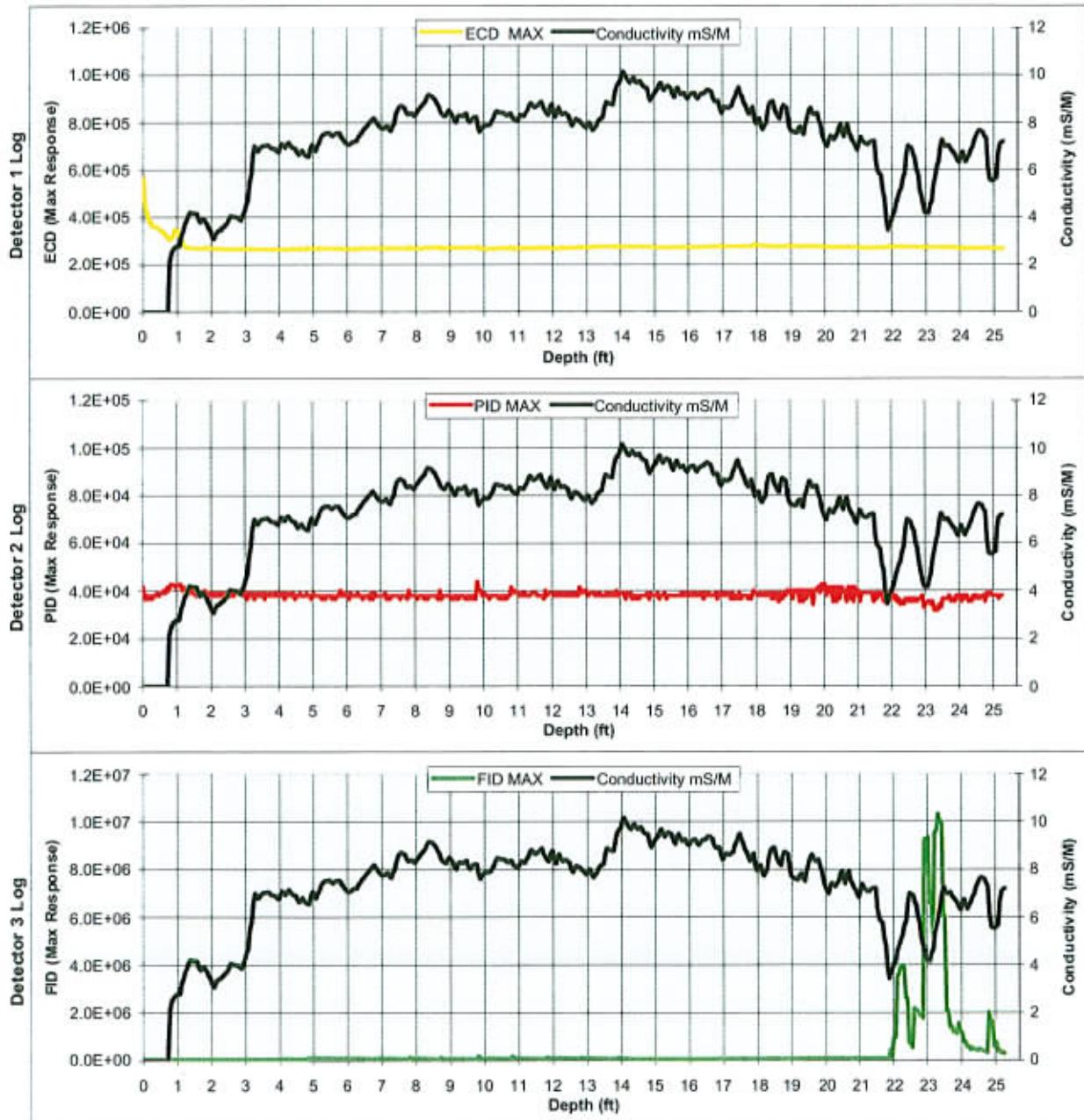
Time: 13:08



Explanation: Boring terminated at desired depth.

## MIP Log Results by Boring - Detector Reading vs. Depth

Client: O'Brien & Gere      Boring I.D.: MIP-13  
 Date: Feb 23 2007      Time: 11:31  
 Detector 1: Electron Capture (ECD)  
 Detector 2: Photo Ionization (PID)  
 Detector 3: Flame Ionization (FID)



### MIP Log Results by Boring - Detector Reading vs. Depth

Client: O'Brien & Gere

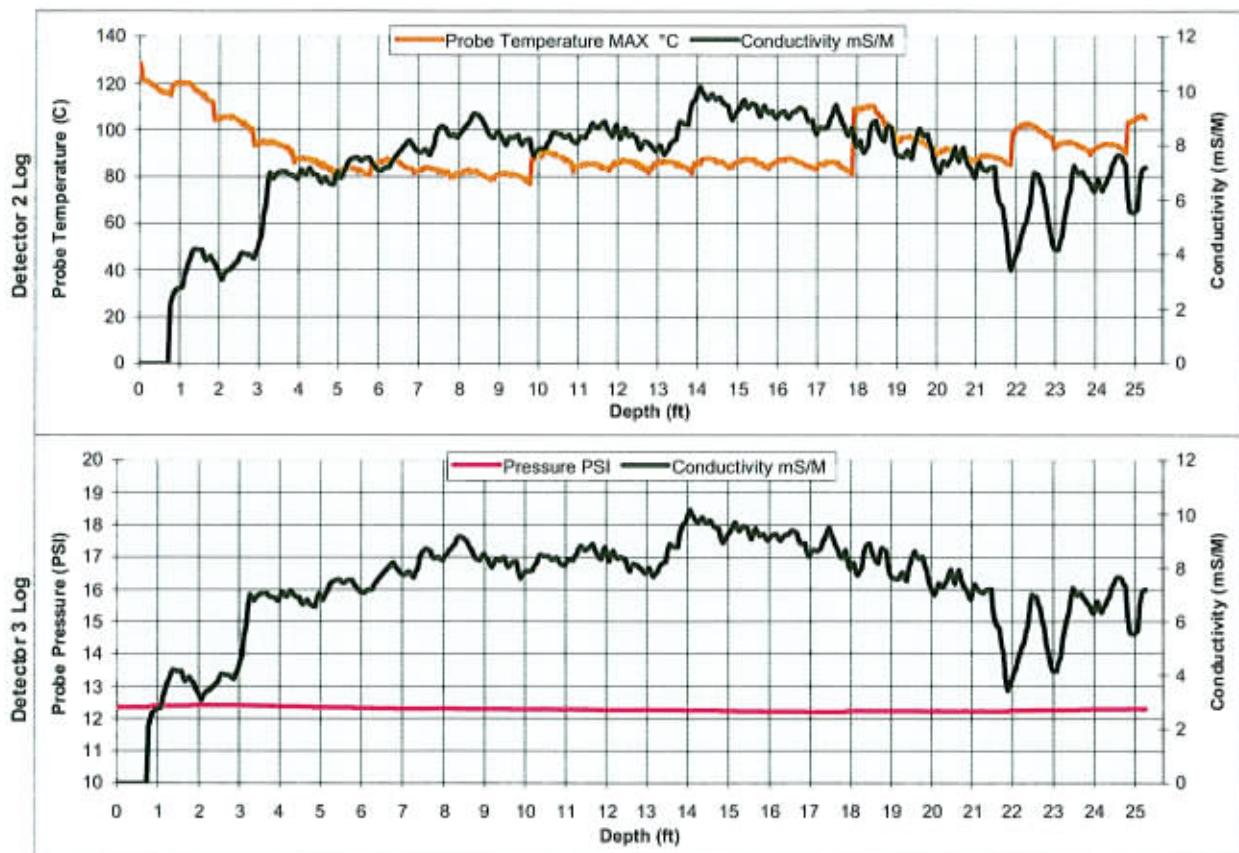
Boring I.D.: MIP-13

Graph 1 : Probe Temperature (C)

Date: Feb 23 2007

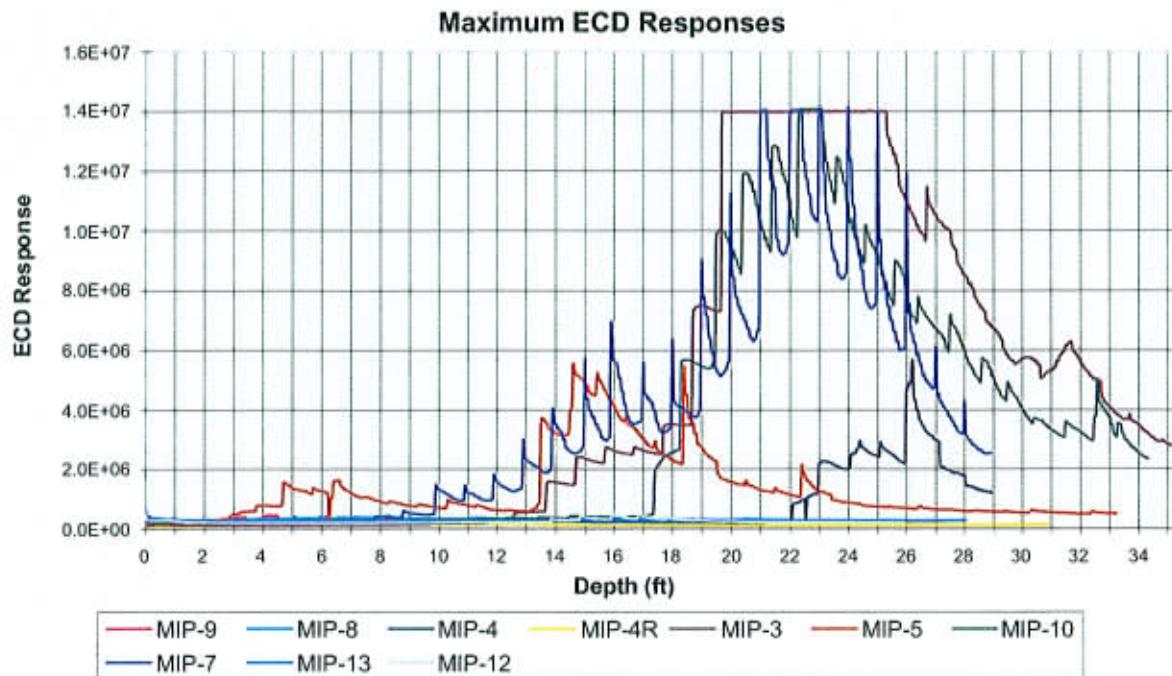
Graph 2 : Probe Pressure (PSI)

Time: 11:31

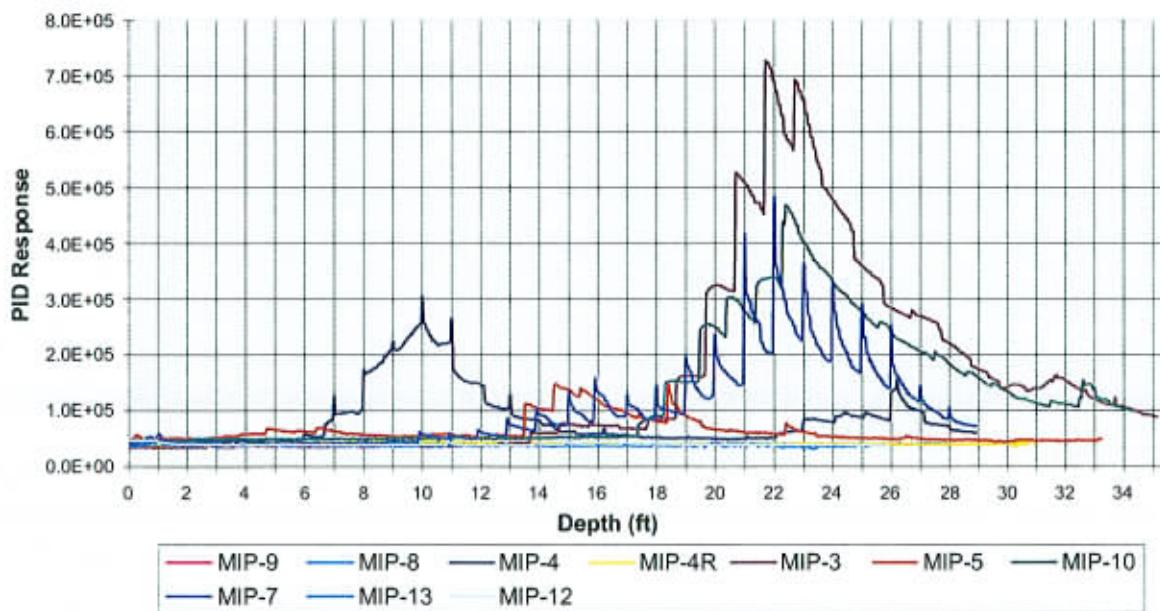


Explanation: Boring terminated at desired depth.

### MIP Log Results by Detector - Detector Reading vs. Depth

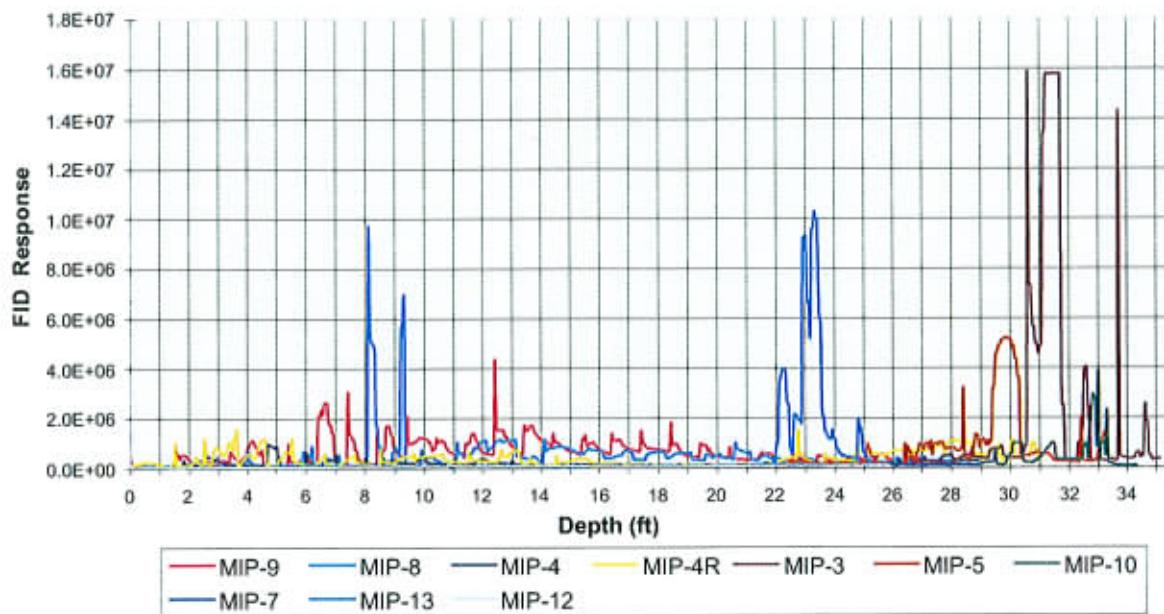


### Maximum PID Responses

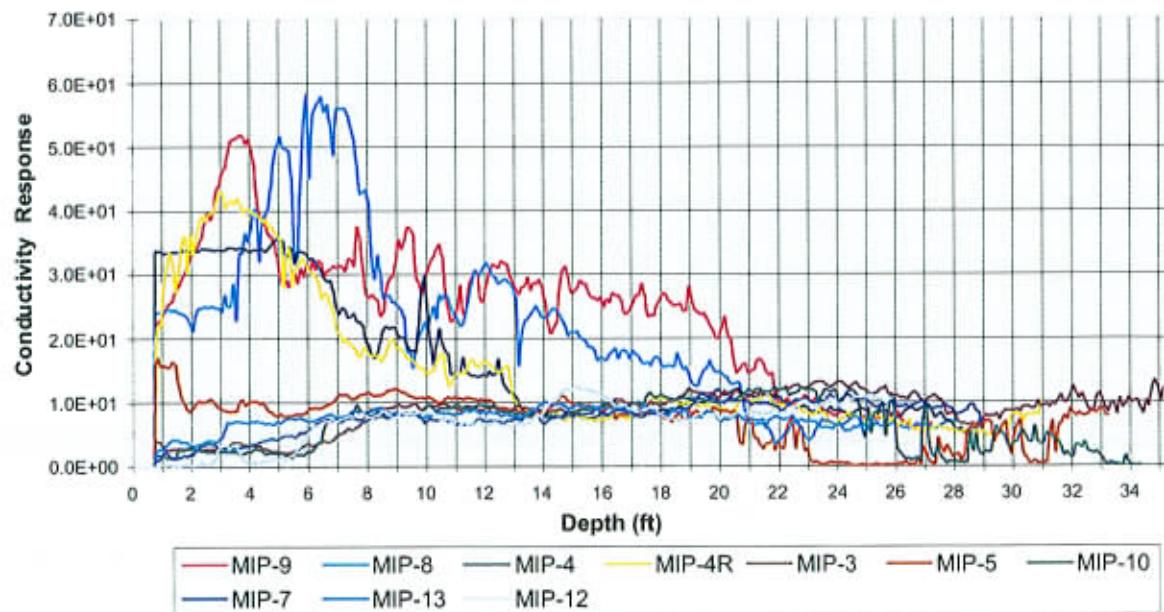


### MIP Log Results by Detector - Detector Reading vs. Depth

#### Maximum FID Responses

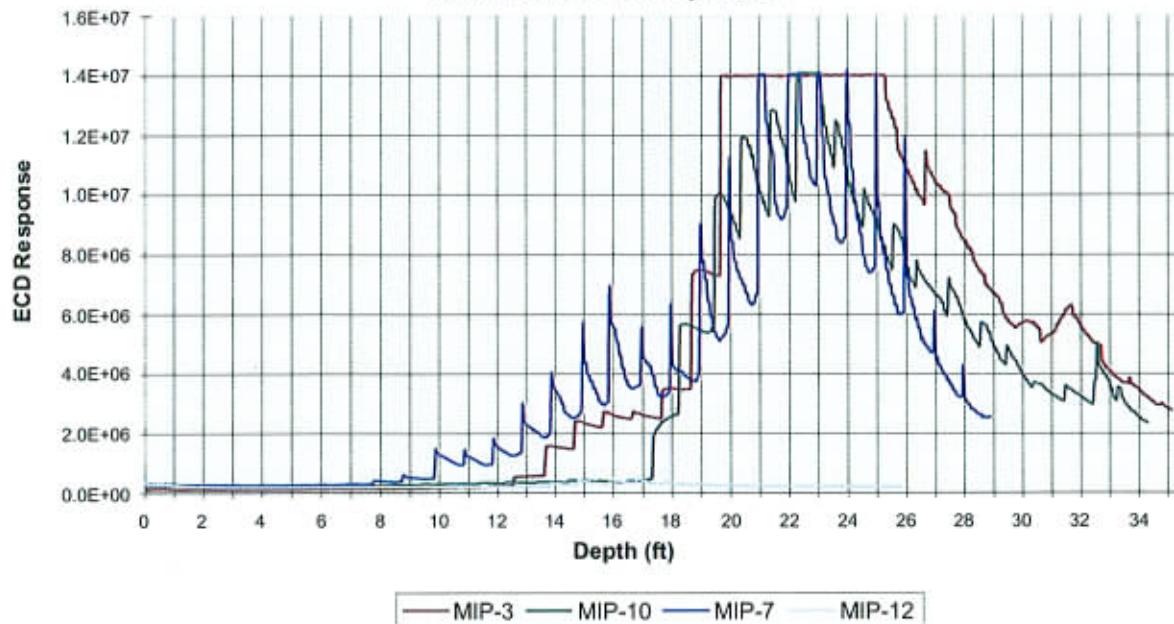


#### Conductivity Responses

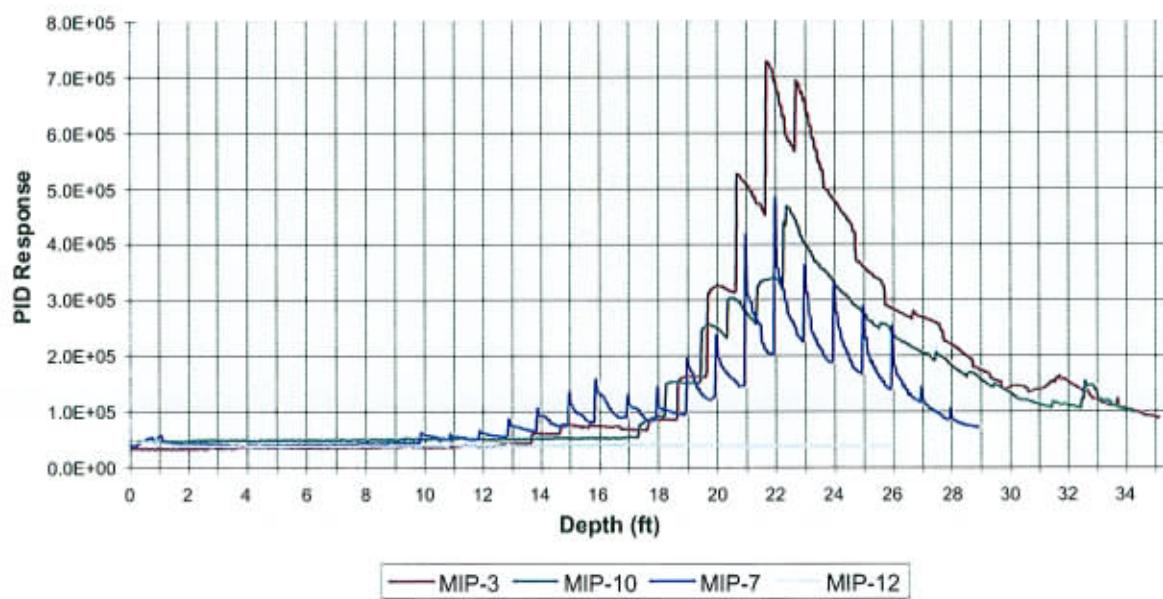


### MIP Log Results by Detector - Detector Reading vs. Depth

#### Maximum ECD Responses

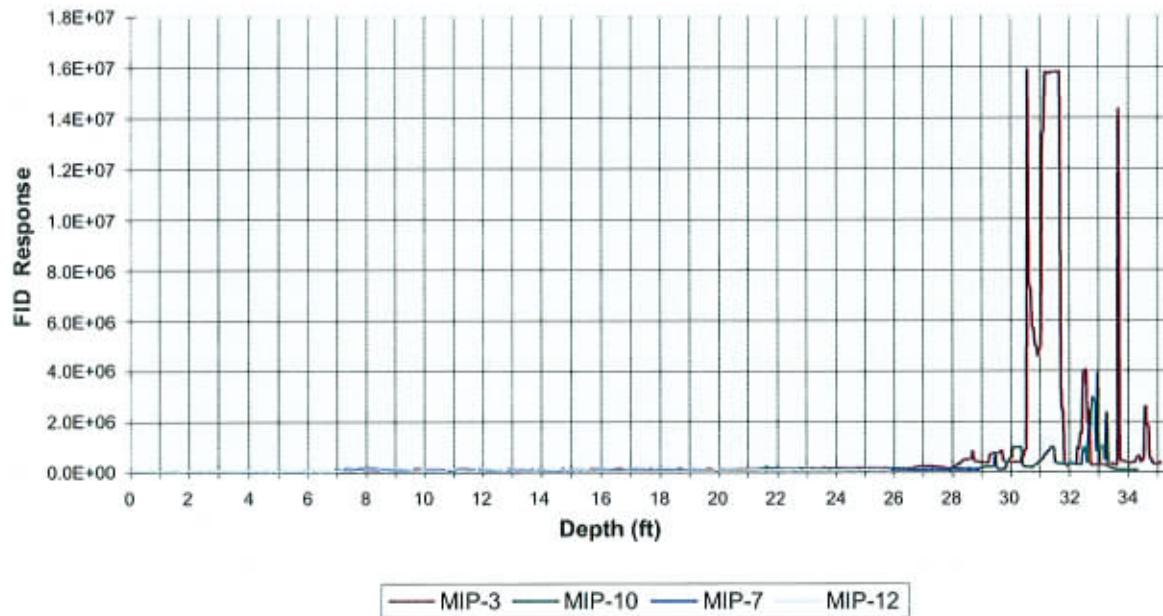


#### Maximum PID Responses

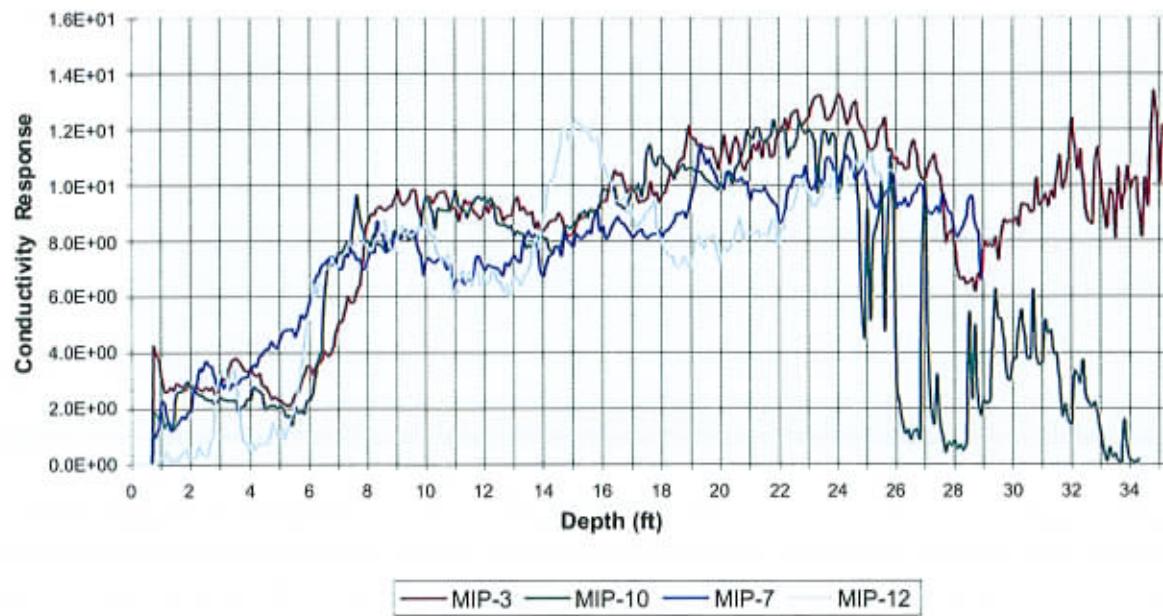


### MIP Log Results by Detector - Detector Reading vs. Depth

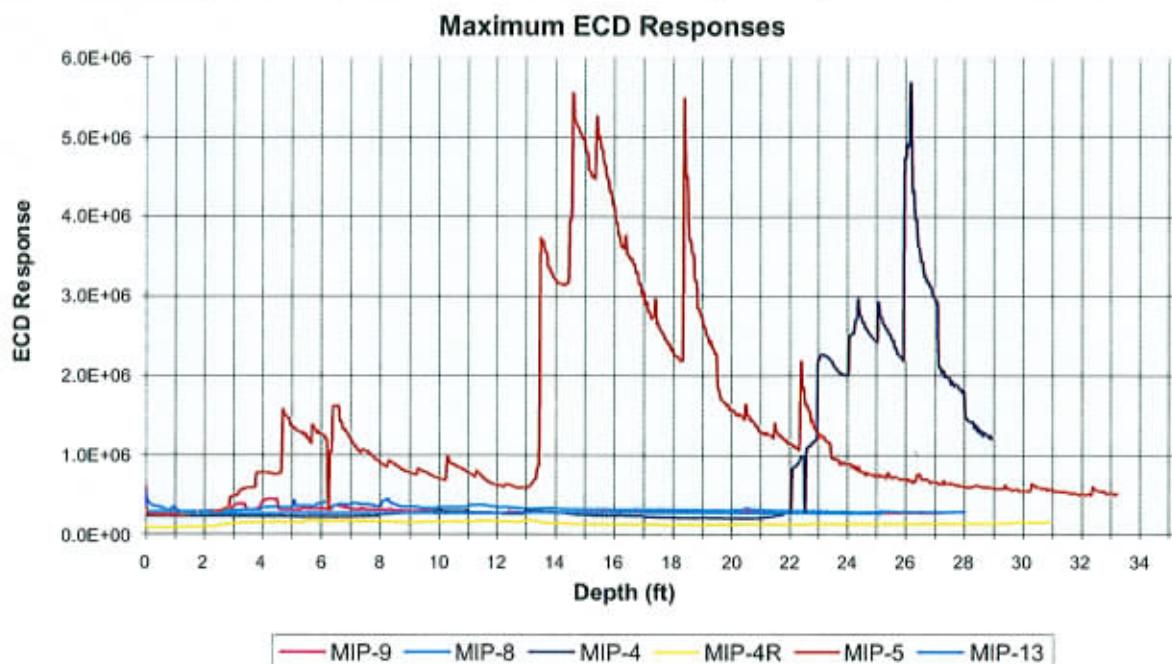
#### Maximum FID Responses



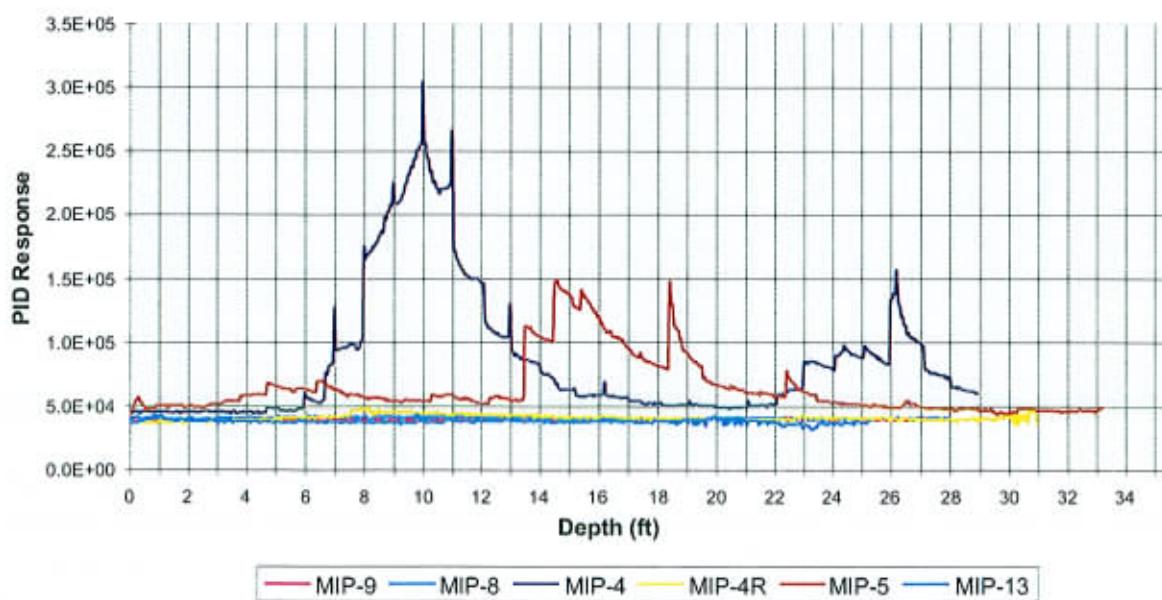
#### Conductivity Responses



### MIP Log Results by Detector - Detector Reading vs. Depth

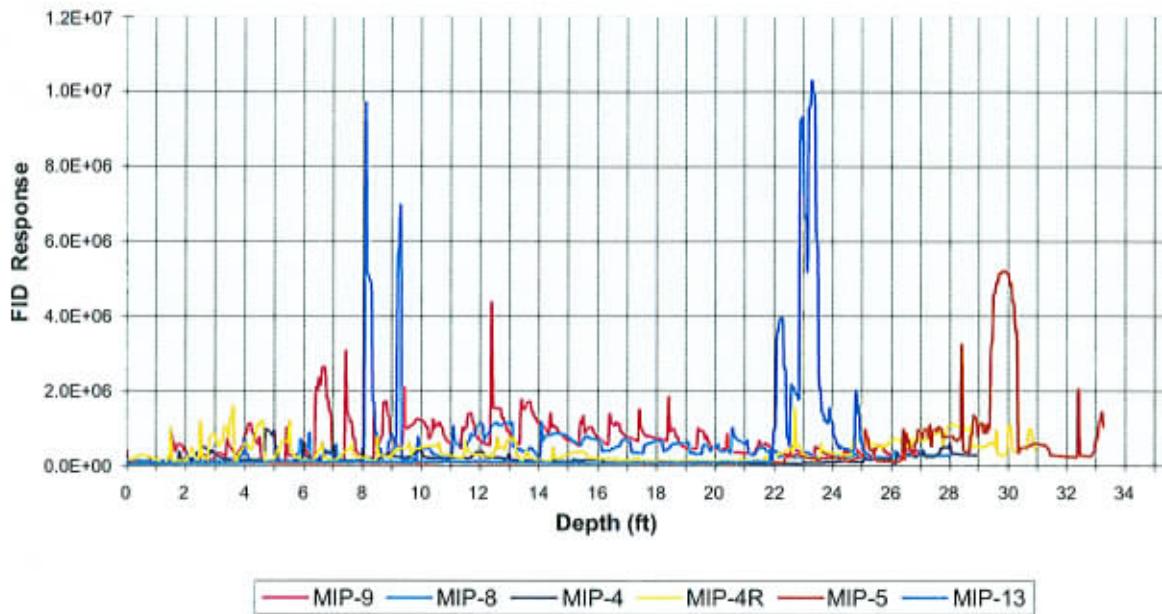


### Maximum PID Responses

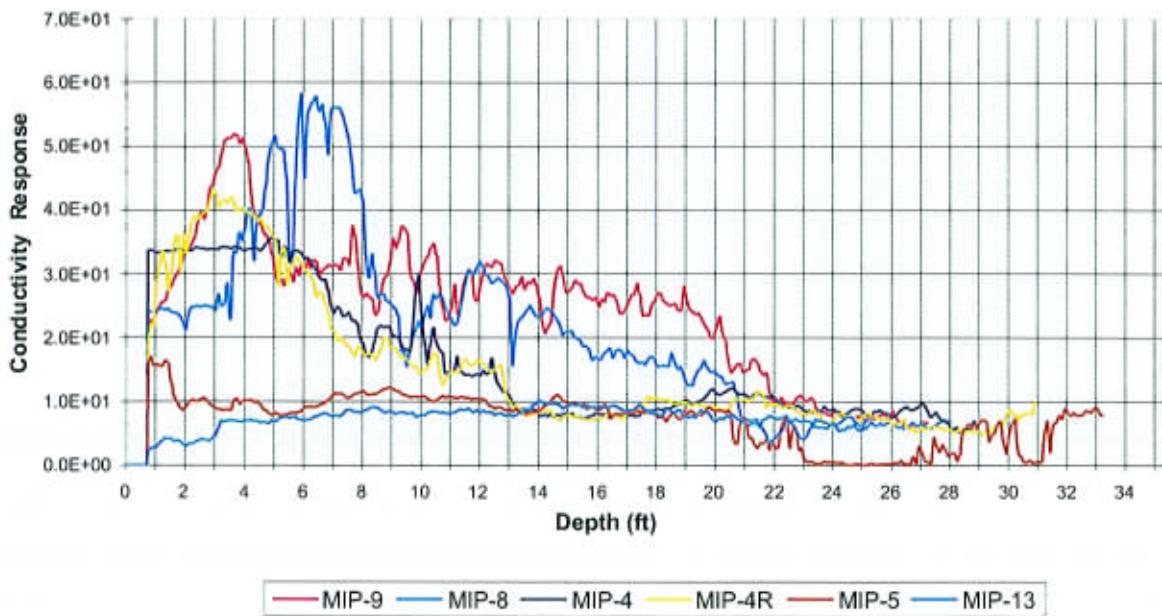


### MIP Log Results by Detector - Detector Reading vs. Depth

#### Maximum FID Responses



#### Conductivity Responses





### MIP Data Summary:

#### **Background:**

Data was collected at the Krutulis Site located at 852 Marsh Mill Road in Kirkville, NY using the MIP (Membrane Interface Probe) and a Geoprobe® 6600 and a dolly rig at 9 sampling locations, collecting data from the surface to as deep as 35' bgs. An ECD (Electron Capture Detector), PID (Photo Ionization Detector) and a FID (Flame Ionization Detector) were used with a Hewlett Packard 5890 Gas Chromatograph.

The purpose of this MIP project was to delineate VOC impact that is currently present at MW-3

#### **Contaminant Mass:**

Significant ECD detections were noted. The highest detections were south and east of MW-3 with maximum ECD values of 1.4E+7 being attained from MIP-3, 7, and 10. The depth range of these detections were generally from 19 to 28 feet bgs. MIP-4 to the west of MW-3 and MIP-5 to the north of MW-3 had distinct detections of 5.7E+6 at depths of 26 feet bgs and 15 feet bgs, respectively. Both these points had detections indicating a thickness of about 5 feet (23 to 28 feet bgs for MIP-4 and 14 to 19 feet bgs for MIP 5). The remaining points, MIP-8, 9, 12, and 13, had no distinct ECD detection peaks. ECD detections are an indication of halogenated compounds.

PID detections from MIP-3, 7, and 10 correlated very well with ECD responses both in magnitude and length. Similar, although less pronounced, patterns and correlations were observed for the PID detection from MIP-4 and 5. The highest PID detection 7.2E+5 was noted at MIP-3 at 22 feet bgs. PID detections are an indication of double bonded compounds.

FID detections were noted in 5 MIP logs. Distinct FID detections were primarily located at discrete depths and did not span a significant thickness or layer. The highest FID detection of 1.6E+7 was noted at MIP-3 at 31 feet bgs. FID detections are an indication of combustible hydrocarbons.



### MIP Data Summary:

#### **Soil Conductivity:**

Electrical conductivity (EC) responses at points east and south of MW-3 (MIP-3, 7, 10, and 12) showed values for silty sands from near the surface to about 7 feet bgs, transitioning to silty clays with depth. At about 27 feet bgs there is a decrease in EC values toward silty sands. EC responses at points west and north of MW-3 (MIP-4, 4R, 5, 8, 9, and 13) showed values for silty sands from near the surface to about 8 feet bgs, transitioning to sands with depth.

The conductivity of soils is different for each type of media. Finer grained sediments, such as silts or clays, will have a higher EC signal. While coarser grained sediments, sands and gravel, will have a lower EC signal.

#### **Confirmation Samples:**

Four confirmation groundwater samples were collected by O'Brien & Gere.

#### **Summary:**

The maximum ECD and PID responses from MIP-3, 4, and 10 correlate with the layer of highest EC values. When the EC values at these points begins to decrease at about 24 to 25 feet bgs, the ECD values also begin to decrease with depth.

ECD responses appear to indicate that the area of impact is not located much west of MIP-4, north of MIP-5, nor east of MIP-10. Impact to the south does not appear to be delineated at this time since MIP-7 had significant ECD and PID detection values.

**Ground Water Analytical  
Laboratory Forms**



# Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200

East Syracuse, NY 13057

(315) 437-0200

## Analytical Results

StateCertNo: 10155

<b>CLIENT:</b>	O'Brien & Gere Engineers, Inc.	<b>Lab ID:</b>	0702101-001A
<b>Project:</b>	Bristol Myers - Krutulis Property	<b>Client Sample ID:</b>	Trip Blank
<b>W Order:</b>	0702101	<b>Collection Date:</b>	02/22/07 0:00
<b>Matrix:</b>	WATER Q	<b>Date Received:</b>	02/23/07 19:00
<b>Inst. ID:</b>	MS01_11	<b>PrepDate:</b>	
<b>ColumnID:</b>	Rtx-VMS	<b>BatchNo:</b>	R8735
<b>Revision:</b>	03/07/07 17:00	<b>FileID:</b>	I-SAMP-T7333.D
<b>Col Type:</b>			

Analyte	Result	Qual	PQL	Units	DF	Date Analyzed
<b>VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>						
1,1-Dichloroethene	ND	0.50		µg/L	1	03/06/07 17:35
4-Methyl-2-pentanone	ND	5.00		µg/L	1	03/06/07 17:35
Acetone	ND	10.0		µg/L	1	03/06/07 17:35
Benzene	ND	0.50		µg/L	1	03/06/07 17:35
Chloroform	ND	0.50		µg/L	1	03/06/07 17:35
cis-1,2-Dichloroethene	ND	0.50		µg/L	1	03/06/07 17:35
Tetrachloroethene	ND	0.50		µg/L	1	03/06/07 17:35
Toluene	ND	0.50		µg/L	1	03/06/07 17:35
trans-1,2-Dichloroethene	ND	0.50		µg/L	1	03/06/07 17:35
Trichloroethene	ND	0.50		µg/L	1	03/06/07 17:35
Vinyl chloride	ND	1.00		µg/L	1	03/06/07 17:35
Xylenes (total)	ND	0.50		µg/L	1	03/06/07 17:35
Surr: 1,2-Dichloroethane-d4	110	75-134		%REC	1	03/06/07 17:35
Surr: 4-Bromofluorobenzene	93.8	75-125		%REC	1	03/06/07 17:35
Surr: Dibromofluoromethane	105	75-127		%REC	1	03/06/07 17:35
Surr: Toluene-d8	103	75-125		%REC	1	03/06/07 17:35

<b>Qualifiers:</b>	* Value exceeds Maximum Contaminant Level	B Analyte detected in the associated Method Blank
	E Value exceeds the instrument calibration range	H Holding times for preparation or analysis exceeded
	J Analyte detected below the PQL	ND Not Detected at the Practical Quantitation Limit (PQL)
	P Prim./Conf. column %D or RPD exceeds limit	S Spike Recovery outside accepted recovery limits



# Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200

East Syracuse, NY 13057

(315) 437-0200

## Analytical Results

StateCertNo: 10155

<b>CLIENT:</b>	O'Brien & Gere Engineers, Inc.	<b>Lab ID:</b>	0702101-002A
<b>Project:</b>	Bristol Myers - Krutulis Property	<b>Client Sample ID:</b>	MIP-4-02222007 (10-14)
<b>W Order:</b>	0702101	<b>Collection Date:</b>	02/22/07 10:35
<b>Matrix:</b>	GROUNDWATER	<b>Date Received:</b>	02/23/07 19:00
<b>Inst. ID:</b>	MS01_11	<b>PrepDate:</b>	
<b>ColumnID:</b>	Rtx-VMS	<b>BatchNo:</b>	R8748
<b>Revision:</b>	03/08/07 15:35	<b>FileID:</b>	1-SAMP-T7360.D
<b>Col Type:</b>			

Analyte	Result	Qual	PQL	Units	DF	Date Analyzed
<b>VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>						
				SW8260B		
1,1-Dichloroethene	1.54	1.00		µg/L	2	03/07/07 15:39
4-Methyl-2-pentanone	ND	10.0		µg/L	2	03/07/07 15:39
Acetone	ND	20.0		µg/L	2	03/07/07 15:39
Benzene	ND	1.00		µg/L	2	03/07/07 15:39
Chloroform	ND	1.00		µg/L	2	03/07/07 15:39
cis-1,2-Dichloroethene	49.0	1.00		µg/L	2	03/07/07 15:39
Tetrachloroethene	ND	1.00		µg/L	2	03/07/07 15:39
Toluene	ND	1.00		µg/L	2	03/07/07 15:39
trans-1,2-Dichloroethene	ND	1.00		µg/L	2	03/07/07 15:39
Trichloroethene	4.68	1.00		µg/L	2	03/07/07 15:39
Vinyl chloride	23.3	2.00		µg/L	2	03/07/07 15:39
Xylenes (total)	ND	1.00		µg/L	2	03/07/07 15:39
Surr: 1,2-Dichloroethane-d4	109	75-134		%REC	2	03/07/07 15:39
Surr: 4-Bromofluorobenzene	90.2	75-125		%REC	2	03/07/07 15:39
Surr: Dibromofluoromethane	105	75-127		%REC	2	03/07/07 15:39
Surr: Toluene-d8	105	75-125		%REC	2	03/07/07 15:39

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value exceeds the instrument calibration range
- J Analyte detected below the PQL
- P Prim./Conf. column %D or RPD exceeds limit

**B** Analyte detected in the associated Method Blank  
**H** Holding times for preparation or analysis exceeded  
**ND** Not Detected at the Practical Quantitation Limit (PQL)  
**S** Spike Recovery outside accepted recovery limits



# Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200

East Syracuse, NY 13057

(315) 437-0200

## Analytical Results

StateCertNo: 10155

<b>CLIENT:</b>	O'Brien & Gere Engineers, Inc.	<b>Lab ID:</b>	<b>0702101-003A</b>
<b>Project:</b>	Bristol Myers - Krutulis Property	<b>Client Sample ID:</b>	<b>MIP-4-02222007 (24-28)</b>
<b>W Order:</b>	0702101	<b>Collection Date:</b>	02/22/07 11:00
<b>Matrix:</b>	GROUNDWATER	<b>Date Received:</b>	02/23/07 19:00
<b>Inst. ID:</b>	MS01_11	<b>PrepDate:</b>	
<b>ColumnID:</b>	Rtx-VMS	<b>BatchNo:</b>	R8735
<b>Revision:</b>	03/07/07 17:00	<b>FileID:</b>	1-SAMP-T7335.D
<b>Col Type:</b>			

Analyte	Result	Qual	PQL	Units	DF	Date Analyzed
<b>VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>						
1,1-Dichloroethene	ND	0.50		µg/L	1	03/06/07 18:41
4-Methyl-2-pentanone	ND	5.00		µg/L	1	03/06/07 18:41
Acetone	ND	10.0		µg/L	1	03/06/07 18:41
Benzene	ND	0.50		µg/L	1	03/06/07 18:41
Chloroform	ND	0.50		µg/L	1	03/06/07 18:41
cis-1,2-Dichloroethene	ND	0.50		µg/L	1	03/06/07 18:41
Tetrachloroethene	ND	0.50		µg/L	1	03/06/07 18:41
Toluene	ND	0.50		µg/L	1	03/06/07 18:41
trans-1,2-Dichloroethene	ND	0.50		µg/L	1	03/06/07 18:41
Trichloroethene	ND	0.50		µg/L	1	03/06/07 18:41
Vinyl chloride	ND	1.00		µg/L	1	03/06/07 18:41
Xylenes (total)	ND	0.50		µg/L	1	03/06/07 18:41
Surr: 1,2-Dichloroethane-d4	112		75-134	%REC	1	03/06/07 18:41
Surr: 4-Bromofluorobenzene	91.5		75-125	%REC	1	03/06/07 18:41
Surr: Dibromofluoromethane	103		75-127	%REC	1	03/06/07 18:41
Surr: Toluene-d8	96.6		75-125	%REC	1	03/06/07 18:41

**Qualifiers:**

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- E Value exceeds the instrument calibration range
- J Analyte detected below the PQL
- P Prim./Conf. column %D or RPD exceeds limit

**B** Analyte detected in the associated Method Blank  
**H** Holding times for preparation or analysis exceeded  
**ND** Not Detected at the Practical Quantitation Limit (PQL)  
**S** Spike Recovery outside accepted recovery limits



# Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200

East Syracuse, NY 13057

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## Analytical Results

StateCertNo: 10155

<b>CLIENT:</b>	O'Brien & Gere Engineers, Inc.	<b>Lab ID:</b>	<b>0702101-004A</b>
<b>Project:</b>	Bristol Myers - Krutulis Property	<b>Client Sample ID:</b>	<i>MIP-S-02222007 (I4-I8)</i>
<b>W Order:</b>	0702101	<b>Collection Date:</b>	02/23/07 16:00
<b>Matrix:</b>	GROUNDWATER	<b>Date Received:</b>	02/23/07 19:00
<b>Inst. ID:</b>	MS01_11	<b>PrepDate:</b>	
<b>ColumnID:</b>	Rtx-VMS	<b>BatchNo:</b>	R8735
<b>Revision:</b>	03/07/07 17:00	<b>FileID:</b>	I-SAMP-T7336.D
<b>Col Type:</b>			

Analyte	Result	Qual	PQL	Units	DF	Date Analyzed
<b>VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>						
1,1-Dichloroethene	ND	25.0		µg/L	50	03/06/07 19:13
4-Methyl-2-pentanone	ND	250		µg/L	50	03/06/07 19:13
Acetone	ND	500		µg/L	50	03/06/07 19:13
Benzene	ND	25.0		µg/L	50	03/06/07 19:13
Chloroform	ND	25.0		µg/L	50	03/06/07 19:13
cis-1,2-Dichloroethene	25.0	25.0		µg/L	50	03/06/07 19:13
Tetrachloroethene	ND	25.0		µg/L	50	03/06/07 19:13
Toluene	ND	25.0		µg/L	50	03/06/07 19:13
trans-1,2-Dichloroethene	ND	25.0		µg/L	50	03/06/07 19:13
Trichloroethene	1170	25.0		µg/L	50	03/06/07 19:13
Vinyl chloride	ND	50.0		µg/L	50	03/06/07 19:13
Xylenes (total)	ND	25.0		µg/L	50	03/06/07 19:13
Surr: 1,2-Dichloroethane-d4	103	75-134		%REC	50	03/06/07 19:13
Surr: 4-Bromofluorobenzene	89.4	75-125		%REC	50	03/06/07 19:13
Surr: Dibromoiodomethane	102	75-127		%REC	50	03/06/07 19:13
Surr: Toluene-d8	105	75-125		%REC	50	03/06/07 19:13

**Qualifiers:**

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- E Value exceeds the instrument calibration range
- J Analyte detected below the PQL
- P Prim./Conf. column %D or RPD exceeds limit

**B** Analyte detected in the associated Method Blank  
**H** Holding times for preparation or analysis exceeded  
**ND** Not Detected at the Practical Quantitation Limit (PQL)  
**S** Spike Recovery outside accepted recovery limits



# Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200

East Syracuse, NY 13057

(315) 437-0200

## Analytical Results

StateCertNo: 10155

**CLIENT:** O'Brien & Gere Engineers, Inc.

**Lab ID:** 0702101-005A

**Project:** Bristol Myers - Krutulis Property

**Client Sample ID:** MIP-7-02222007 (21-25)

**W Order:** 0702101

**Collection Date:** 02/23/07 16:45

**Matrix:** GROUNDWATER

**Date Received:** 02/23/07 19:00

**Inst. ID:** MS01\_11

**Sample Size:** 10 mL

**PrepDate:**

**ColumnID:** Rtx-VMS

**%Moisture:**

**BatchNo:** R8735

**Revision:** 03/07/07 17:00

**TestCode:** 8260W\_KET

**FileID:** 1-SAMP-T7337.D

**Col Type:**

Analyte	Result	Qual	PQL	Units	DF	Date Analyzed
<b>VOLATILE ORGANIC COMPOUNDS BY GC/MS</b>						
1,1-Dichloroethene	ND	100		µg/L	200	03/06/07 19:46
4-Methyl-2-pentanone	ND	1000		µg/L	200	03/06/07 19:46
Acetone	ND	2000		µg/L	200	03/06/07 19:46
Benzene	ND	100		µg/L	200	03/06/07 19:46
Chloroform	ND	100		µg/L	200	03/06/07 19:46
cis-1,2-Dichloroethene	ND	100		µg/L	200	03/06/07 19:46
Tetrachloroethene	ND	100		µg/L	200	03/06/07 19:46
Toluene	ND	100		µg/L	200	03/06/07 19:46
trans-1,2-Dichloroethene	ND	100		µg/L	200	03/06/07 19:46
Trichloroethene	3190	100		µg/L	200	03/06/07 19:46
Vinyl chloride	ND	200		µg/L	200	03/06/07 19:46
Xylenes (total)	ND	100		µg/L	200	03/06/07 19:46
Surr: 1,2-Dichloroethane-d4	100	75-134		%REC	200	03/06/07 19:46
Surr: 4-Bromofluorobenzene	91.4	75-125		%REC	200	03/06/07 19:46
Surr: Dibromofluoromethane	102	75-127		%REC	200	03/06/07 19:46
Surr: Toluene-d8	107	75-125		%REC	200	03/06/07 19:46

**Qualifiers:**

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- E Value exceeds the instrument calibration range
- J Analyte detected below the PQL
- P Prim./Conf. column %D or RPD exceeds limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ND Not Detected at the Practical Quantitation Limit (PQL)

S Spike Recovery outside accepted recovery limits