Minnesota Pollution Control Agency

Monitoring Report

Guidance Document 4-08

This form must be completed annually for Minnesota Pollution Control Agency (MPCA) review following the submittal of Guidance Document 4-06 *Investigation Report Form*. Under certain circumstances MPCA staff may request submittal of this form on an alternate schedule (e.g., quarterly, semi-annually).

All site monitoring results and additional work activities requested by the MPCA must be included and used to support the site management decision. Include any additional information that is important for making the site management decision. Refer to MPCA Guidance Document 1-01 *Petroleum Remediation Program General Policy* for the overall site investigation objectives and to other MPCA guidance documents for details on investigation methods. Do not revise or delete any text from this report form. Attach all applicable figures, tables, and appendices, and indicate those that have been updated during this reporting period. **All data provided must be cumulative.**

MPCA Site ID: Leak000 **8001** Date: **November 30, 2011**

Responsible Party Information

Name: **Mille Lacs Oil Company** Phone #: **763-689-2220**
Maria Olson
Mailing Address: **102 Main Street**

City: **Cambridge** Zip Code: **55008**

Alternate Contact (if any) for Responsible Party: Phone #:

Leak Site Information

Leak Site Name: **Former Union 76** Phone #:

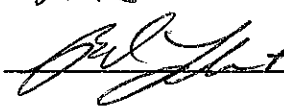
Leak Site Address: **329 East First Avenue South**

City: **Cambridge** Zip Code: **55008** County: **Isanti**

Environmental Professional Information

By signing this document, I/we acknowledge that we are submitting this document on behalf of and as agents of the responsible person or volunteer for this leak site. I/we acknowledge that if information in this document is inaccurate or incomplete, it will delay the completion of remediation and may harm the environment and may result in a reduction in Petrofund reimbursement. In addition, I/we acknowledge on behalf of the responsible person or volunteer for this leak site that if this document is determined to contain a false material statement, representation, or certification, or if it omits material information, the responsible person or volunteer may be found to be in violation of Minn. Stat. § 115.075 (2007) or Minn. R. 7000.0300 (Duty of Candor), and that the responsible person or volunteer may be liable for civil penalties.

MPCA staff are instructed to reject unsigned reports and reports that have been altered.

Name and Title of Report Author(s)	Signature	Date Signed
Aaron Benker		1-5-12
Dan Larson		1-5-12

Name and Title of Report Reviewer(s)	Signature	Date Signed

Name(s) of Field Technician(s): _____

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Section 1: Work Completed

1.1 Describe all site work completed since the *Investigation Report Form* or the last *Monitoring Report* was submitted. This should include both field and non-field related activities.

This Annual Report documents work completed by Liesch in accordance with the additional work requested by the MPCA in a letter dated September 2, 2010.

The additional work included the following:

1) **Quarterly groundwater monitoring from the existing monitoring well network. See Section 2.1 below for more information. Figure 2 shows the location of the existing monitoring well network.**

2) **Non-aqueous phase liquids (LNAPL) monitoring was conducted during quarterly groundwater monitoring.**

3) **An updated utility vapor survey was conducted; refer to Section 2.2, Tables 18 and 19, and Figure 2.**

4) **A sub-slab soil gas sample was collected in the basement of the American Legion building and a building survey was completed.**

5) **A Laser Induced Fluorescence (LIF) / Electrical Conductivity (EC) investigation was conducted. The LIF / EC report is being submitted along with this Annual Report.**

1.2 If additional work requested in the most recent MPCA correspondence has not been completed, explain why.

All additionally request work has been completed at the site with the exception of quarterly LNAPL checks instead of monthly checks due to the minimal amount of LNAPL observed in the wells.

Section 2: Monitoring Results

2.1 Ground Water

Discuss the cumulative ground water monitoring results, water level measurements, and plume characteristics with respect to identified receptors.

Groundwater monitoring and sampling has continued for monitoring wells MW-1, MW-3, MW-6, MW-6A, and MW-7. Liesch completed four additional rounds of groundwater monitoring on:

January 12, 2011
March 21, 2011
June 7, 2011
October 4, 2011

Groundwater monitoring in MW-1, MW-3, MW-6, MW-6A, and MW-7 have shown relatively stable groundwater elevations. These elevations are consistent to historical groundwater data collected at the site in past years which include normal seasonal fluctuations. The last round of monitoring (October 2, 2011) showed a higher elevation than usual in all of the wells.

MW-1

MW-1 is located north of the former Union 76 building. Groundwater contamination concentrations in MW-1 have continued to be non-detect for Benzene dating back to August 4, 2005. GRO concentrations have continued to be well below the March 2006 sampling event, when GRO was detected at 10,000 ug/L. Other petroleum related contaminants also have shown stable decreases in dissolved concentrations indicating plume stability and natural attenuation of the impacted groundwater.

MW-6

Monitoring well MW-6 is located downgradient, on the south side of 2nd Avenue. MW-6 has shown relatively stable Benzene concentrations relative to the increase in concentrations recorded in 2004-2005. GRO concentrations decreased, then increased for the last sampling round to a relativity normal historical concentration such as October 2006 and March 2007.

MW-6A

MW-6A, is a deep nested well located adjacent to MW-6 and has shown concentrations of GRO and BTEX that are below laboratory detection limits. DRO has continued to be detected just above the laboratory detection limits, but below the MDH HBV of 200 ppb. One exception to this was the June 8, 2011 sampling round which exhibited a 312 ug/L DRO detection.

MW-7

MW-7, located (west) downgradient from MW-3 in the American Legion parking lot, was sampled during the last sampling round (October 5, 2011). The last time this well was sampled was on July 24, 2007, due to free product in the well or a sheen on the water. Free product was identified in monitoring well MW-7 as follows:

January 20, 2010 – 16"
January 21, 2011 – 1.5"
March 21, 2011 – 1.5" (removed approximately 3 gallons of gas/water mix for disposal)

BTEX concentrations for the last sampling round showed concentrations similar but slightly elevated from the July 24, 2007 sampling round.

MW-3
Free product was observed in MW-3 for the majority of the 2005 and 2006 monitoring events. Vacuum enhanced free product recovery was completed on the following dates:

- **February 3, 2006 - 25 gallons of petroleum impacted groundwater;**
- **February 28, 2005 - 107 gallons of petroleum impacted groundwater; and**
- **September 28, 2005 - 349 gallons of petroleum impacted groundwater.**

Free product has not been found in MW-3 since January 20, 2010. Benzene concentrations have fluctuated between 159 ug/L to 2,420 ug/L in the four sampling rounds conducted in this well since March 1, 2006. GRO has fluctuated between 8,320 ug/L to 260,000 ug/L.

Groundwater Flow Direction
Based on past observations at the site, groundwater appears to continue to flow west-southwest. Table 2 depicts the groundwater elevations recorded for the past monitoring events. Due to the linear nature of the monitoring well placement at the site, ground water flow direction has not historically been mapped for the Property. Also, due to the periodic presence of LNAPL at MW-3 and MW-7, the accuracy of groundwater elevations at these locations is questionable. LNAPL plume characteristics, identified during the LIF investigation, also confirm a west-southwest groundwater flow direction.

2.2 **Field-Detectable Vapors** (photoionization detector, explosimeter, etc.)
Discuss the results of any additional follow-up field vapor monitoring. Include a description of each vapor monitoring location and an explanation of monitoring methods and instruments used. Interpret the cumulative results as related to the identified receptors.

Liesch completed a vapor survey at various locations on March 23, 2011 using a photoionization detector (PID) and a lower explosive limit meter (LEL). Vapor readings were taken from nearby storm and sanitary sewers and from the basement of the American Legion building. No detectable vapors were identified. Refer to Tables 18 and 19 for Utility information and results of the vapor survey. Figure 2 depicts the vapor sampling and utility locations.

NOTE: If vapor concentrations exceed 10 percent of the lower explosive limit, exit the building and contact the local fire department immediately. Then contact the Minnesota Duty Officer (24 hours) at 651-649-5451 (metro and outside Minnesota) or 1-800-422-0798 (Greater Minnesota). TTY users call 651-297-5353 (V/TTY) or 1-800-627-3529 (V/TTY).

2.3 Vapor Intrusion (soil gas, sub-slab, indoor, ambient)
Discuss the results of any follow-up vapor intrusion assessment (VIA) activities including a description of each VIA sampling location and an interpretation of the results with respect to receptors.

On March 22, 2011 Liesch collected a subslab vapor sample beneath the basement of the American Legion building, located at 200 Second Avenue SE, to assess the potential for vapor migration into the building. The subslab vapor sample (Subslab-1) was collected at the northeast corner of the building in a storage closet adjacent to a large entertainment/banquet room (see Figure 2).

Preparation for collecting the subslab vapor sample included installing a pre-manufactured stainless-steel sampling point distributed by AMS. The sampling device was installed using a rotary hammer drill to core through the concrete slab. A rubber stopper through which the riser pipe extended provided a rough seal against the drilled bore hole. A ball valve was then connected to the riser using a compression type fitting. Granualar bentonite was poured around the riser to the floor surface and water was added and allowed to set. Flexible Tygon tubing was placed over the ball valve outlet and a three-way valve and suction cylinder was connected to the probe assembly. A vacuum was placed on the probe using the three-way valve to draw air from the probe area. The surface of the bentonite was checked to insure air was not entering the probe from above the slab. This extracted air volume was then discharged to the room using the three-way valve. After several volumes of air within the assembly was purged, the collection canister was connected to the valve assembly.

After purging and vacuum testing all connections, the sample was collected using a 1-liter summa canister under vacuum. The collected samples was delivered, under chain-of-custody documentation, to Pace Analytical Services for TO-15 analyses.

Table 20 summarizes the vapor sampling results for sample Subslab-1 along with previous near slab soil gas sampling point. Vapor Pt #1, #2 and #3 collected in January 2010. Low levels of various petroleum and other compounds were detected in the Subslab-1 samples. None of the detections were in excess of their respective Intrusion Screening Values (ISVs), let alone the 10X or 100X ISV values. MPCA guidance document 4-01a provides guidelines for comparing soil gas sample results to 10 times the ISV and 100 times the ISV for sub-slab vapor sampling.

Based on results of the Subslab-1 sample beneath the American Legion building, there does not appear to be a vapor pathway between the deeper (18-20') dissolved phase petroleum impacts and the American Legions subslab.

Also, as previously concluded: Near-slab vapor samples Vapor Pt #1 and Vapor Pt #3 do not show vapor migration to the west and south west of the site beyond the American Legion Building and no further off-site vapor investigation is necessary to the west of the American Legion Building.

Liesch conducted a Vapor Intrusion Interior Building Survey Form for the American Legion building (attached). Results of the Building Survey do not indicate the building is obviously suspect to vapor intrusion.

2.4 Free Product

If free product is present, discuss what activities are being completed to measure and recover it. Describe the effectiveness of the recovery efforts and free product trends over the course of the investigation. Complete Table 14 and discuss the data compiled to date.

Free product has historically been found in monitoring wells MW-3 and MW-7. Free product has not been found in MW-3 during the last four monitoring rounds and in MW-7 during the last two monitoring rounds. A summary of free product observations and recovery is included on a modified Table 14.

2.5 Other (e.g., surface water, contaminated surface soil, etc.)

Discuss the results of any additional monitoring or subsurface investigation conducted during this reporting period. Identify all monitoring locations on an attached site map by labeling each location. A description of sampling methods, including the instruments used, must be included in Section 6.

Not Applicable

2.6 Site Conceptual Model

Discuss any changes to the overall site conceptual model that has altered the current site management decision based upon the information presented in this report.

The previous site conceptual model for the site identified two main receptors of concern for the site:

1) **LNAPL was detected at MW-7 and MW-3. While LNAPL has continually been detected at MW-3, LNAPL was not historically present at MW-7.**

   LNAPL was not detected in MW-7 in the last two rounds of groundwater monitoring. LNAPL was last detected in MW-7 on March 31, 2011. LNAPL has not been

detected in monitoring well MW-3 in the last four rounds of monitoring. LNAPL was last detected in MW-3 on January 20, 2010.

A LIF investigation, conducted in March 2011, provided a better understanding of the occurrence of LNAPL beneath the site and adjacent Property to the west (American Legion). The LIF Investigation report is submitted to the MPCA under separate cover.

Based on the LIF Investigation and the previous product draw down testing, the LNAPL at the site is primarily immobile.

2) **Vapors were identified at Vapor Pt #2 at concentrations exceeding 10 times the ISV adjacent to the American Legion Building.**

In order to address this concern, Liesch collected a sub-slab vapor sample beneath the basement of the American Legion building to assess the potential for vapor migration into the building. Based on results of the Subslab-1 sample beneath the American Legion building, there does not appear to be a vapor pathway between the deeper (18-20') dissolved phase petroleum impacts and the American Legions subslab. A Vapor Intrusion Interior Building Survey Form was also included to address the potential vapor intrusion risk to the American Legion Building.

In addition, an updated utility vapor survey was conducted and no petroleum vapors were identified.

Section 3: Site Management Decision

The site management decision should be based on the Program's objectives described in Guidance Document 1-01 *Petroleum Remediation Program General Policy*.

3.1 Recommendation for site:

- ☒ site closure
- ☐ additional ground water monitoring
- ☐ additional field-detectable vapor monitoring
- ☐ additional soil or ground water investigation
- ☐ additional soil gas/vapor intrusion investigation
- ☐ corrective action

3.2 If closure is recommended, summarize significant investigative events and describe how the site-specific exposure pathways identified in the site conceptual model (SCM) have been adequately addressed.

LNAPL

LNAPL was not detected in MW-7 in the last two rounds of groundwater monitoring. LNAPL was last detected in MW-7 on March 31, 2011. LNAPL has not been detected in monitoring well MW-3 in the last four rounds of monitoring. LNAPL was last detected in MW-3 on January 20, 2010.

A LIF investigation, conducted in March 2011, provided a better understanding of the occurrence of LNAPL beneath the site and adjacent Property to the west (American Legion). The LIF investigation also provided vertical and horizontal delineation of the most significant LNAPL beneath the site.

One finding of the LIF investigation is that there is no shallow LNAPL west of the east curb line separating South Buchanan Street and the Union 76 Property. This observation is important since utilities are not buried deeper than 12 feet beneath Buchanan Street; this significantly reduces the risk these utilities pose as a receptor. Further, the EC plots do not indicate heterogeneous soil conditions in the presence of shallow LNAPL which could lead to preferential migration of LNAPL. The LIF Investigation report was submitted to the MPCA under separate cover.

Groundwater

Groundwater monitoring has been occurring at the site since June 1995. The groundwater contamination plume appears to be relatively stable.

Vapor Intrusion

Liesch collected three soil vapor samples to assess off-site vapor intrusion potential. Vapor Pt #1 was collected west of the Midwest Environmental Consulting building located at 145 Second Avenue SE, Vapor Pt #2 was collected on the east side of the American Legion Building located at 200 Second Avenue SE, and Vapor Pt #3 was

collected to the east of the Cambridge Bible Bookstore located at 220 Main Street South. All vapor samples were collected at depths between 6-8 feet below grade.

Vapor Pt #1, #2 and #3. No detectable concentrations of VOCs were identified in Vapor Pt #1 and Vapor Pt #3. Vapor Pt #2 (American Legion) detected several VOCs of which benzene at 84.6 ug/m^3 was detected above the ISV of 4.5 ug/m^3 and 1,3-butadine was detected at 64.5 ug/m^{3}above the ISV of 0.3 ug/m^3. MPCA guidance document 4-01a provides guidelines for comparing soil gas sample results to 10 times the ISV and 100 times the ISV. Benzene detected at 86.6 ug/m^3 in Vapor Pt #2 exceeds 10 times the ISV of 45 ug/m^3 but does not exceed 100 times the ISV 450 ug/m^3. While 1,3 Butadiene exceeds 100 times the ISV of 30 ug/m^3 1,3-Butadine is not anticipated to be a contaminant of concern for the petroleum release. Liesch recommends that an additional vapor intrusion assessment be completed at the American Legion Building which would include completion of an Indoor Building Survey and collection of sub-slab vapor samples to determine if a vapor pathway exists for this potential receptor.

Liesch collected a subslab vapor sample beneath the basement of the American Legion building to assess the potential for vapor migration into the building. Based on results of the Subslab-1 sample beneath the American Legion building, there does not appear to be a vapor pathway between the deeper (18-20') dissolved phase petroleum impacts and the American Legions subslab. A Vapor Intrusion Interior Building Survey Form was also included to address the potential vapor intrusion risk to the American Legion Building.

In addition, an updated utility vapor survey was conducted and no petroleum vapors were identified.

3.3 If additional monitoring or subsurface investigation is recommended, provide details of all proposed activities (e.g., monitoring locations, sampling frequency, target analytes, additional monitoring wells, soil borings). Continue ground water monitoring and sampling in accordance with the previously-approved schedule until the MPCA responds to this report.

NA

3.4 If additional vapor intrusion investigation is recommended, provide details of proposed activities such as completing an indoor building survey, sub-slab vapor sampling, indoor air sampling, or locations for additional soil gas sampling.

NA

3.5 If corrective action is recommended, provide a conceptual approach by completing Guidance Document 4-19 *Conceptual Corrective Action Design Worksheet* and include in Section 6. See Guidance Document 4-10 *Elements of the Corrective Action Design* for more information on the corrective action design process and other requirements. (Note: If a *Conceptual Corrective*

Action Design Worksheet is submitted, MPCA staff will review this report at a higher-than-normal priority to determine if corrective action is required.)

Section 4: Figures

Attach the following figures in the order listed below. All figures must include a north arrow, scale, and legend. Approximate scales are not acceptable.

☒ Site Location Map using a U.S. Geological Survey 7.5 minute quadrangle map.

☒ One or more Site Maps showing:

- Structures
- Locations and depths of on-site buried utilities
- All past and present petroleum storage tanks, piping, dispensers, and transfer areas
- Extent of soil excavation
- Boring and well locations (including any drinking water wells on site)
- Horizontal extent of soil contamination
- Extent of contaminated surface soil
- Horizontal extent of ground water contamination
- Horizontal extent of NAPL
- Location of end points for all geologic cross sections
- Potential pathways that lead to surface water features within ¼ mile of the site

Distinguish sequential elements of investigations by dates, symbols, etc. in the key.

☐ Updated ground water gradient contour maps using water level elevations from each monitoring event since the last report. Show all wells at the site, and differentiate wells constructed in different aquifers. Label ground water contours and elevations at each data point used for contouring.

☒ Hydrograph for all monitoring and recovery wells.

☒ Graph(s) showing contaminant concentrations over time for all monitoring and recovery wells.

☐ Potential Receptor Map (scale 1 inch = 50 to 100 feet), centered on the release area, showing property boundaries and roads, and potential receptors such as buildings, water wells, underground utilities (distinguish between water, storm sewer, and sanitary sewer), surface waters, ditches, and any other pertinent items within 500 feet of the release source.

☒ Vapor Survey Map showing utilities and buildings with basements and monitoring locations within 500 feet (if a survey was required). If the survey area has been expanded beyond 500 feet, adjust the map to encompass the entire surveyed area.

☒ Vapor Intrusion Assessment Map showing all vapor intrusion samples and receptors at and within the 100-foot preliminary assessment area. If the assessment area has been expanded beyond 100 feet, adjust the map to encompass the entire assessment area.

Section 5: Tables

Attach all tables from the *Investigation Report Form* and indicate those that have been updated during this reporting period by marking the check box below. **Tables must include all cumulative data.**

Updated	Table Number and Name
☒	Table 1. Tank Information
☒	Table 2. Results of Soil Headspace Screening
☒	Table 3. Analytical Results of Soil Samples
☐	~~Table 4. Other Contaminants Detected in Soils (Petroleum or Non-petroleum Derived)~~
☐	~~Table 5. Contaminated Surface Soil Results~~
☐	~~Table 6. Water Level Measurements and Depths of Water Samples Collected from Borings~~
☒	Table 7. Analytical Results of Water Samples Collected from Borings
☒	Table 8. Other Contaminants Detected in Water Samples Collected from Borings (Petroleum or Non-petroleum Derived)
☒	Table 9. Monitoring Well Completion Information
☒	Table 10. Water Level Measurements in Wells
☒	Table 11. Analytical Results of Water Samples Collected from Wells
☒	Table 12. Other Contaminants Detected in Water Samples Collected from Wells (Petroleum or Non-petroleum Derived)
☐	~~Table 13. Natural Attenuation Parameters~~
☒	Table 14. Free Product Recovery
☐	~~Table 15. Properties Located within 500 feet of the Release Source~~
☐	~~Table 16. Water Supply Wells Located within 500 feet of the Release Source and Municipal or Industrial Wells within ½ mile~~
☐	~~Table 17. Surface Water Receptor Information~~
☒	Table 18. Utility Receptor Information
☒	Table 19. Vapor Survey Results
☒	Table 20. Results of Soil Gas Sampling for Vapor Intrusion Screening
☒	Table 21. LNAPL Recovery Test

Table 1
Tank Information

Tank #	Tank Material[1]	UST or AST	Capacity (gallons)	Contents (product type)	Year Installed	Tank Status[2]	Tank Condition
001		UST	1,000	Diesel Fuel	Unknown	Removed	Good
002		UST	5,000	Gasoline	Unknown	Removed	Good
003		UST	5,000	Gasoline	Unknown	Removed	Good

[1] "F" for fiberglass or "S" for Steel
[2] Indicate: removed (date), abandoned in place (date), or currently in use.
Add additional rows as needed.
Notes:

Table 2
Results of Soil Headspace Screening

Depth (ft)	Soil Boring ID									
	1	2	3	4	5	6	7	8	9	10
4										
5	80	6.0			210		170			
6						0.0		150		
8										
9										
11	1000+	5.0	5.0	0.0	310	4.0	160	180		
12									66	450
15							135			
16					400	50		160	32	12
17			5.0	0.0						
18	1000+	68								
20	1000+		7.5	0.0					1000+	1000+
21					200	30	140	130		
26					240	0.5	5.0	250		
29	5.0									

Depth (ft)	Soil Boring ID									
	11	12	13	14	15	16	17	18	19	20
4	0.5	1.0	5.0	9.5						
5										
6										
8	0.0	0.5	1000+	36						
9			1000+			0.0	0.0	0.0	0.0	
11					390					
12	0.0	0.0	580	240						
15	0.5									
16		0.0	1000+	550	1000+					
17										
18										360
20		9.0	1000+	1000+	1000+	105	136	0.0	480	
21										
26										
29										

Depth (ft)	Soil Boring ID									
	21	22	23	24	25	26	27	28	29	30
4										
5			1999	1999	5.0					
6										
8										
9			1999	1999	5.0					
11										
12										
15			1999	1999	5.4					
16										
17										
18	360									
20		698								
21										
26										
29										

List instruments used and discuss field methods and procedures in Section 6. Add additional rows as needed, and copy the entire table if more columns are needed.
Notes:

Table 3
Analytical Results of Soil Samples[1]

Boring ID	Sampled Depth (ft)	Date Sampled	Benzene	Toluene	Ethyl-benzene	Xylenes	MTBE	GRO	DRO	Lab Type[2]
TH-1	17.5-19.5	4/19/95	<0.05	0.078	<0.05	<0.15		<10*	334	Fix
TH-1	28-30	4/19/95	4.97	52	45.9	322		2140	<10	Fix
TH-2	17.5-19.5	4/19/95	<0.05	0.101	<0.05	0.159		<10	<10	Fix
TH-3	17.5-19.5	4/19/95	<0.05	<0.05	<0.05	<0.15		<10	<10	Fix
TH-4	18.5-20.5	4/19/95	<0.05	0.069	<0.05	<0.15		<10	<10	Fix
TH-6	15-16.5	6/27/95	<0.05	<0.05	<0.05	<0.15		<10	<10	Fix
TH-7	5-6.5	6/27/95	<0.05	<0.145	0.109	<0.15		86.6	155	Fix
TH-7	25-26.5	6/27/95	<0.05	0.089	<0.05	<0.15		<10	<10	Fix
TH-8	5-6.5	6/27/95	326	794	183	955		14700	3470	Fix

[1] Report results in mg/kg. Use less than symbols to show detection limit.
[2] Indicate "mobile" or "fixed" in the lab type column.
Add additional rows as needed.
Notes:

~~Table 4~~
~~Other Contaminants Detected in Soils (Petroleum or Non-petroleum Derived)~~[1]

Boring ID	Sampled Depth (ft)	Date Sampled								Lab Type[2]

[1] Report results in mg/kg. Use less than symbols to show detection limit.
[2] Indicate "mobile" or "fixed" in the lab type column.
Indicate other contaminants (either petroleum or non-petroleum derived) detected in soil collected from borings. Add additional rows as needed, and copy the entire table if more columns are needed.
Notes:

~~Table 5~~
~~Contaminated Surface Soil Results~~

Sample ID	Headspace 10 ppm or Greater[1] (Y/N)	Petroleum Saturated (Y/N)

[1] As measured with a photoionization detector (PID).
Add additional rows as needed.
Notes:

Table 6
Water Level Measurements and Depths of Water Samples Collected from Borings

	Soil Boring									
	1	2	3	4	5	6	7	8	9	10
Static Water Level Depth[1] (ft)										
Sampled Depth (ft)										
Sampling Method[2]										

[1] Describe the methods used to measure water levels in borings in Section 6.
[2] Refer to Guidance Document 4-05 for acceptable ground water sampling methods.
Notes:

Table 7
Analytical Results of Water Samples Collected from Borings[1]

Boring ID	Date Sampled	Sampled Depth (ft)	Benzene	Toluene	Ethyl-benzene	Xylenes	MTBE	GRO	DRO	Lab Type
TH-1	4/19/95		1,080	1,520	943	9,000		5,840		Fixed
TH-9	8/01/95	20	129	133	38.5	68.7		3,200	1,500	Fixed
TH-10	8/01/95	20	318	314	49.9	295		15,100		Fixed
TH-11	8/01/95	20	<1.0	<1.0	<1.0	<3.0		<100		Fixed
TH-12	8/01/95	20	1.1	1.9	1.1	3.1		<100		Fixed
TH-13	8/01/95	20	130,000	349,000	162,000	244,000		9,100,000		Fixed
TH-14	8/01/95	20	19,600	37,200	11,200	66,200		1,660,000		Fixed
TH-15	8/01/95	20	10,100	20,500	5,160	23,100		597,000		Fixed
TH-16	8/01/95	20	2,130	5,210	1,230	5,910		135,000		Fixed
TH-17	11/28/95	20	3.6	<0.4	<0.4	<0.5		<100	300	Fixed
TH-18	11/28/95	20	<0.5	<0.4	<0.4	<0.5		<100	<100	Fixed
TH-19	11/28/95	20	1,900	5,470	3,350	25,730		57,900	7,300	Fixed
TH-20	11/28/95	20	1,450	85.6	75.1	494.7		10,900	1,500	Fixed
TH-21	11/28/95	22	328	55.5	377	910		12,900		Fixed
TH-22	11/28/95	22	122	69.9	17.1	99.6		1,100	100	Fixed
TH-23	6/23/97	20-24	1,346	11,900	990	6,590		49,880		Fixed
TH-24	6/23/97	20-24	1,310	2,650	674	4,200		26,930		Fixed
TH-25	6/23/97	20-24	<1.0	2.1	<1.0	<3.0		<100		Fixed
TH-26	6/23/97	20-24	1.0	3.4	<1.0	<3.0		<100		Fixed
TH-27	6/23/97	22-26	2,260	899	774	1,540		13,100		Fixed
TH-28	6/23/97	22-26	4,160	2,520	538	2,880		22,800		Fixed
TH-29	6/23/97	22	11.3	3.3	<1.0	<3.0		180		Fixed
TH-30	6/23/97	22	<1.0	<1.0	<1.0	<3.0		<100		Fixed
TH-31	6/24/97	22-26	88.2	3.1	<1.0	7.1		730		Fixed
TH-32	6/24/97	22-26	2,550	9,080	1,350	7,190		33,000		Fixed
TH-33	6/24/97	22-26	3,340	5,230	1,980	9,320		50,200		Fixed
TH-34	6/24/97	22-26	28.5	39.5	43.2	209		1,380		Fixed
TH-35	6/24/97	20-22	3,540	9,690	1,370	8,380		37,600		Fixed
TH-36	6/24/97	22-26	1,720	298	294	754		8,360		Fixed
TH-37	7/21/97	24-25	313	3.5	2.2	10.8		1,800		Fixed
TH-38	7/21/97	22-26	209	<1.0	1.2	8.8		700		Fixed
TH-39	7/21/97	28-32	147	<1.0	<1.0	<3.0		500		Fixed
TH-40	7/21/97	24-28	42	<1.0	<1.0	1.8		100		Fixed
TH-41	7/21/97	24-28	<1.0	<1.0	<1.0	<3.0		<100		Fixed
TH-42	8/02/97	24-26	<1.0	<1.0	<1.0	<3.0		<100		Fixed
TH-43	7/23/97	21-26	291	<1.0	1.1	5.3		670		Fixed
TH-44	7/23/97	24-26	36	<1.0	<1.0	<3.0		<100		Fixed
TH-45	7/23/97	26-28	4.9	<1.0	<1.0	<3.0		<100		Fixed
GP-1	1/21/2010	24-29	895	613	508	2,200	<25	10,200	3.6	Fixed
GP-2	1/21/2010	25-30	10.4	3.5	<1.0	8.6	5.7	1,240	0.42	Fixed
Trip Blank	1/21/2010		<1.0	<1.0	<1.0	<1.0	<5.0	<100		Fixed
Equip. Blank										
Lab Blank										
HRL[3]			10	200	50	300		200		

[1] Report results in µg/L. Use less than symbols to show detection limit.
[2] Indicate "mobile" or "fixed" in the lab type column.
[3] See http://www.health.state.mn.us/divs/eh/groundwater/hrltable.html for list of current HRLs.
Add additional rows as needed.
Notes:

Table 8
Other Contaminants Detected in Water Samples
Collected from Borings (Petroleum or Non-petroleum Derived)[1]

Boring ID	Date Sampled	Sampled Depth (ft)	Acetone	Methylethyl ketone	1,2-di-chloroethane	Methyl isobutylethane	1,2-Dibromoethane	Chlorobenzene	Isopropylbenzene	N-propylbenzene	1,3,5-TMB	Tert-Butylbenzene	1,2,4-TMB	Sec-Butylbenzene	p-Isopropyltoluene	n-butylbenzene	Napthalene	Lab Type[2]
TH-17	20	11/20/1995	4.5	<2.8	<0.3	<0.7	<0.8	<0.4	<0.7	<0.8	<0.2	<0.6	<0.7	<0.5	<0.4	<0.3	<0.7	
TH-18	20	11/20/1995	<0.3	<2.8	<0.3	<0.7	<0.8	<0.4	<0.7	<0.8	<0.2	<0.6	<0.7	<0.5	<0.4	<0.3	<0.7	
TH-19	20	11/20/1995	820	52,200	<0.3	<0.7	<0.8	<0.4	7,780	3,010	3,680	1,430	10,200	2,110	968	5,330	2,200	
TH-20	20	11/21/1995	52.3	529	41.9	12	15.9	<0.4	19.4	2.2	70.1	<0.6	375	<0.5	<0.4	28.7	172	
TH-21	22	11/21/1995	56.8	1630	24	<0.7	<0.8	112	302	384	491	120	1500	224	77.5	505	361	
TH-22	22	11/21/1995	29	63	<0.3	<0.7	<0.8	<0.4	4.1	0.9	4.6	<0.6	20.7	<0.5	<0.4	4.8	5.8	
GP-1											113		413					
GP-2	25-30	1/21/2010											1.1					
Trip Blank																		
Equip. Blank																		
Lab Blank																		
HRL[3]																		

[1] Report results in µg/L. Use less than symbols to show detection limit.
[2] Indicate "mobile" or "fixed" in the lab type column.
[3] See http://www.health.state.mn.us/divs/eh/groundwater/hrltable.html for list of current HRLs.
Indicate other contaminants (either petroleum or non-petroleum derived) detected in water samples collected from soil borings and temporary wells. Add additional rows as needed, and copy the entire table if more columns are needed.
Notes:

Table 9
Monitoring Well Completion Information[1]

Well Number	MDH Unique Well Number	Date Installed	Surface Elevation	Top of Casing Elevation	Bottom of Well Elevation	Screen Interval (Elev. - Elev.)	Total Well Depth from Surface (ft)
MW-1	554377	6/15/1995	963.07	963.10	939.07	939.07–949.07	
MW-2	554378	6/15/1995	963.67	963.37	939.67	939.67–949.67	
MW-3	554379	6/15/1995	961.97	963.72	934.97	934.97–944.97	
MW-4	617207	9/01/1998	964.87	964.62	935.87	935.87–945.87	
MW-5	617205	9/02/1998	963.84	963.68	934.84	934.84–944.84	
MW-5A	617206	9/02/1998	963.81	963.62	919.81	919.81–929.81	
MW-6	617203	9/02/1998	963.94	963.93	934.94	934.94–944.94	
MW-6A	617204	9/02/1998	963.76	963.73	922.76	922.76–932.76	
MW-7	731591	9/19/2005	963.27	963.29	939.29	939.29–949.29	

[1] Include well construction diagrams and MDH well logs in Section 6.
Add additional rows as needed.
Notes: (location and elevation of benchmark)

Table 10
Water Level Measurements in Wells[1]

Well Number	Date Sampled	Depth to Water from Top of Riser	Product Thickness	Depth to Water Below Grade	Relative Groundwater Elevation	Water Level Above Screen (Y/N)
MW-1	1/11/2002	NR	NR	NR	NR	NR
	6/24/2002	NR	ND	NR	NR	N
	9/13/2002	18.21	ND	18.18	944.89	N
	12/26/2002	17.73	ND	17.70	945.37	N
	4/14/2003	18.18	ND	18.15	944.92	N
	7/7/2003	17.74	ND	17.71	945.36	N
	10/10/2003	17.42	ND	17.39	945.68	N
	2/6/2004	18.20	ND	18.17	944.9	N
	3/18/2004	18.48	ND	18.45	944.62	N
	6/18/2004	NR	ND	NR	NR	NR
	9/7/2004	18.17	ND	18.14	944.93	N
	9/14/2004	NR	ND	NR	NR	NR
	12/20/2004	18.32	ND	18.29	944.78	N
	2/23/2005	NR	ND	NR	NR	NR
	3/10/2005	18.51	ND	18.48	944.59	N
	4/11/2005	18.79	ND	18.76	944.31	N
	6/9/2005	18.93	ND	18.90	944.17	N
	8/4/2005	18.77	ND	18.74	944.33	N
	11/1/2005	17.16	ND	17.13	945.94	N
	3/1/2006	18.13	ND	18.1	944.97	N
	7/13/2006	Dry	ND	NR	NR	N
	10/4/2006	18.67	ND	18.64	944.43	N
	3/9/2007	NS Covered w snow pile	NA	NR	NR	NA
	7/24/2007	19.28	ND	19.25	943.82	N
	1/20/2010	19.95	ND	19.92	943.15	N
	1/12/2011	18.96	0.15	18.93	944.14	N
	3/21/2011	19.16	ND	19.13	943.94	N
	6/7/2011	18.59	ND	18.56	944.51	N
	10/4/2011	17.03	ND	17.00	946.07	N
MW-3	10/10/2003	18.11	ND	16.36	945.61	Y
	2/6/2004	20.19	1.3'	18.44	943.53	N
	3/18/2004	20.21	1.3	18.46	943.51	N
	6/18/2004	19.65	0.56	17.90	944.07	N
	9/7/2004	18.97	ND	17.22	944.75	N
	9/14/2004	18.82	NR	17.07	944.90	N
	12/20/2004	19.13	0.05	17.38	944.59	N
	2/23/2005	10.94	0.77	9.19	952.78	N

Table 10
Water Level Measurements in Wells[1]

Well Number	Date Sampled	Depth to Water from Top of Riser	Product Thickness	Depth to Water Below Grade	Relative Groundwater Elevation	Water Level Above Screen (Y/N)
	3/10/2005	19.61	0.47	17.86	944.11	Y
	4/11/2005	20.13	0.86	18.38	943.59	N
	6/9/2005	20.46	1.03	18.71	943.26	N
	7/12/2005	20.22	0.82	18.47	943.50	N
	8/4/2005	20.15	0.79	18.4	943.57	N
	9/28/2005	N/R	N/R	NR	NR	
	10/5/2005	16.76	0.3	15.01	946.96	Y
	11/1/2005	17.44	0	15.69	946.28	Y
	3/1/2006	17.65	ND	15.9	946.07	Y
	7/13/2006	18.34	.52'	16.59	945.38	Y
	10/4/2006	18.92	ND	17.17	944.8	N
	3/9/2007	19.98	5.5"	18.23	943.74	N
	7/24/2007	NA	0.8"	NR	NR	N
	1/20/2010	TOC Broken	4"	NR	NR	N
	3/21/2011	17.89	ND	16.14	945.83	Y
	6/7/2011	17.29	ND	15.54	946.43	Y
	10/4/2011	15.77	ND	14.02	947.95	Y
MW-6	1/11/2002	20.21	ND	20.22	943.72	N
	6/24/2002	NR	ND	NR	NR	N
	9/13/2002	19.57	ND	19.58	944.36	N
	12/26/2002	18.58	ND	18.59	945.35	Y
	4/14/2003	18.85	ND	18.86	945.08	Y
	7/7/2003	18.65	ND	18.66	945.28	Y
	10/10/2003	18.21	ND	18.22	945.72	Y
	2/6/2004	19.41	ND	19.42	944.52	N
	3/18/2004	19.14	ND	19.15	944.79	N
	6/18/2004	NR	ND	NR	NR	NR
	9/7/2004	19.02	ND	19.03	944.91	N
	9/14/2004	NR	ND	NR	NR	N
	12/20/2004	19.1	ND	19.11	944.83	N
	2/23/2005	NR	ND	NR	NR	NR
	3/10/2005	19.13	ND	19.14	944.80	N
	4/11/2005	20.59	ND	20.60	943.34	N
	6/9/2005	19.65	ND	19.66	944.28	N
	8/4/2005	19.71	ND	19.72	944.22	N
	11/1/2005	19.22	ND	19.23	944.71	N
	3/1/2006	19.74	ND	19.75	944.19	N
	7/13/2006	19.51	ND	19.52	944.42	N
	10/4/2006	19.59	ND	19.60	944.34	N

Table 10
Water Level Measurements in Wells[1]

Well Number	Date Sampled	Depth to Water from Top of Riser	Product Thickness	Depth to Water Below Grade	Relative Groundwater Elevation	Water Level Above Screen (Y/N)
	3/9/2007	19.87	ND	19.88	944.06	N
	7/24/2007	20.12	ND	20.13	943.81	N
	1/20/2010	20.67	ND	20.68	943.26	N
	1/12/2011	19.73	ND	19.74	944.2	N
	3/21/2011	19.83	ND	19.84	944.1	N
	6/7/2011	19.52	ND	19.53	944.41	N
	10/4/2011	17.98	ND	17.99	945.95	Y
MW-6A	1/11/2002	20.13	ND	20.16	943.6	N
	6/24/2002	NR	ND	NR	NR	Y
	6/24/2002	NR	ND	NR	NR	Y
	9/13/2002	19.48	ND	19.51	944.25	Y
	12/26/2002	18.61	ND	18.64	945.12	Y
	4/14/2003	18.96	ND	18.99	944.77	Y
	7/7/2003	18.79	ND	18.82	944.94	Y
	10/10/2003	20.19	ND	20.22	943.54	Y
	2/6/2004	19.46	ND	19.49	944.27	Y
	3/18/2004	19.19	ND	19.22	944.54	Y
	6/18/2004	NR	ND	NR	NR	NR
	9/7/2004	19.83	ND	19.86	943.9	Y
	9/14/2004	NR	ND	NR	NR	NR
	12/20/2004	19.18	ND	19.21	944.55	Y
	2/23/2005	NR	ND	NR	NR	NR
	3/10/2005	19.21	ND	19.24	944.52	Y
	4/11/2005	19.44	ND	19.47	944.29	Y
	6/9/2005	20.06	ND	20.09	943.67	Y
	8/4/2005	21.11	ND	21.14	942.62	Y
	11/1/2005	21.51	ND	21.54	942.22	Y
	3/1/2006	19.13	ND	19.16	944.6	Y
	7/13/2006	21.19	ND	21.22	942.54	Y
	10/4/2006	20.05	ND	20.08	943.68	Y
	3/9/2007	20.31	ND	20.34	943.42	Y
	7/24/2007	20.16	ND	20.19	943.57	Y
	1/20/2010	20.70	ND	20.73	943.03	Y
	1/12/2011	19.78	ND	19.81	943.95	Y
	3/21/2011	19.87	ND	19.9	943.86	Y
	6/7/2011	19.56	ND	19.59	944.17	Y
	10/4/2011	18.03	ND	18.06	945.7	Y
MW-7	9/16/2005	17.00	ND	16.98	946.29	N
	11/1/2005	17.72	ND	17.70	945.57	N

Table 10
Water Level Measurements in Wells[1]

Well Number	Date Sampled	Depth to Water from Top of Riser	Product Thickness	Depth to Water Below Grade	Relative Groundwater Elevation	Water Level Above Screen (Y/N)
	3/1/2006	17.81	ND	17.79	945.48	N
	7/13/2006	18.14	ND	18.12	945.15	N
	10/4/2006	18.20	ND	18.18	945.09	N
	3/9/2007	18.60	ND	18.58	944.69	N
	7/24/2007	18.83	ND	18.81	944.46	N
	1/20/2010	20.45	16"	20.43	942.84	N
	1/21/2011	18.50	0.15	18.48	944.79	N
	3/21/2011	18.8	0.15	18.78	944.49	N
	6/7/2011	18.13	ND	18.11	945.16	N
	10/4/2011	16.53	ND	16.51	946.76	N

[1] Describe the methods used to measure water levels in Section 6.
Add additional rows as needed.
Notes:

Table 11
Analytical Results of Water Samples Collected from Wells[1]

Well Number	Date Sampled	Benzene	Toluene	Ethyl-benzene	Xylenes	MTBE	GRO	DRO	Lab Type[2]
MW-1	1/11/2002	NS	NS	NS	NS	NS	NS	NS	Fixed
	6/24/2002	<1.0	<1.0	2.6	26/15	<1.0	200	NA	Fixed
	9/13/2002	<1.0	5.6	14	240	NA	610 H	NA	Fixed
	12/26/2002	<1.0	<1.0	<1.0	67	NA	110	NA	Fixed
	4/14/2003	<1.0	2.1	4.1	131	<1.0	1,900	NA	Fixed
	7/7/2003	<1.0	17	8	2,100	<1.0	4,300	NA	Fixed
	10/10/2003	<1.0	10	19	580	<1.0	2,500	NA	Fixed
	2/6/2004	ND	2.1	9.1	192	ND	240	NS	Fixed
	3/18/2004	ND	14	63	1120	ND	2,300	NA	Fixed
	9/7/2004	ND	32	220	2400	ND	6,800	NA	Fixed
	12/20/2004	ND	51.9	300	4660	ND	8,940	NA	Fixed
	3/10/2005	ND	ND	72.8	2940	ND	11,500	NA	Fixed
	6/9/2005	ND	ND	16.4	905	ND	2,220	NA	Fixed
	8/4/2005	3.8	ND	94	2100	ND	4,300	NA	Fixed
	11/9/2005	<0.50	ND	ND	100	ND	9,400	NA	Fixed
	3/1/2006	<1.0	<5.0	110	3,900	NS	10,000	NA	Fixed
	7/13/2006	Well dry	NS	NS	NS	NS	NS	NS	Fixed
	10/4/2006	<0.05	<5.0	2.7	100	<1.0	190	680	Fixed
	3/9/2007	NS	NS	NS	NS	NS	NS	NS	Fixed
	7/24/2007	<0.5	<0.5	0.55	1.93	<1.0	<100	NS	Fixed
	1/20/2010	<1.0	<1.0	<1.0	<3.0	<5.0	<100	180	Fixed
	1/12/2011	<1.0	<1.0	<1.0	23.4	<5.0	<100	2600	Fixed
	3/23/2011	<1.0	<1.0	<1.0	4.7	<5.0	<100	1610	Fixed
	6/8/2011	<1.0	<1.0	1.5	59.2	<5.0	218	2230	Fixed
	10/4/2011	<1.0	<1.0	8.6	272	<5.0	838	1960	Fixed
MW-3	3/1/2006	1,600	<5,000	<1,000	5,100	NS	260,000	NA	Fixed
	3/23/2011	159	209	46.9	777	ND	8,320	8270	Fixed
	6/8/2011	493	521	71.8	2,900	<50	15,600	12800	Fixed
	10/5/2011	2,420	1780	156	6,800	<50	22,600	7630	Fixed
MW-6	1/11/2002	3,600	3,100	680	1,200/490	<1.0	19,000	NA	Fixed
	6/24/2002	5,800	5,800	1,200	3,100/1,100	<50	27,000	NA	Fixed
	9/13/2002	1,600	1,100	360	1,100	NA	8,400 H	NA	Fixed
	12/26/2002	2,800	750	3,200	2,800	NA	16,000	NA	Fixed

Table 11
Analytical Results of Water Samples Collected from Wells[1]

Well Number	Date Sampled	Benzene	Toluene	Ethyl-benzene	Xylenes	MTBE	GRO	DRO	Lab Type[2]
	4/14/2003	3,500	2,600	830	2,750	<20	18,000	NA	Fixed
	7/7/2003	2,300	2,200	660	1,940	<50	16,000	NA	Fixed
	10/10/2003	1,500	1,600	450	1,400	<50	10,000	NA	Fixed
	2/6/2004	2700	2,200	1,000	2,540	ND	17,000	NA	Fixed
	3/18/2004	3,200	2,600	830	2,180	ND	17,000	NA	Fixed
	9/7/2004	3,600	2,800	1,200	4,130	ND	21,000	NA	Fixed
	12/20/2004	3,110	6,110	1,470	5,040	ND	25,200	NA	Fixed
	3/10/2005	4,030	7,650	1,610	6,340	ND	28,200	NA	Fixed
	6/9/2005	4,500	5,800	1,570	5,310	ND	25,800	NA	Fixed
	8/4/2005	4,900	2,400	950	2,870	420	18,000	NA	Fixed
	11/9/2005	3,700	4,400	970	100	ND	27,000	NA	Fixed
	3/1/2006	2,500	1,300	<100	3,500	NS	22,000	NA	Fixed
	7/13/2006	2,500	<500	<50	1,100	<100	<10,000	5,100	Fixed
	10/4/2006	3,500	2,100	1,100	2,260	350	18,000	4,300	Fixed
	3/9/2007	4,000	2,700	350	3,540	780	19,000	5,100	Fixed
	7/24/2007	740	480	72	730	<10	5,200	NS	Fixed
	1/20/2010	3,010	1,430	578	1,510	<50	13,700	4,600	Fixed
	1/12/2011	2,200	2,280	725	2,690	<50	14,300	2,670	Fixed
	3/23/2011	2,410	1,670	490	1,320	13.6	13,600	3,850	Fixed
	6/8/2011	1,890	484	272	748	<50	7,060	3,230	Fixed
	10/4/2011	2,810	3,500	913	4,110	<50	18,100	4,250	Fixed
MW-6A	1/11/2002	<1.0	<1.0	<1.0	<2.0/<1.0	3.4	<100	NA	Fixed
	6/24/2002	<1.0	<1.0	<1.0	<2.0/<1.0	<1.0	<100	NA	Fixed
	9/13/2002	<1.0	<1.0	<1.0	<1.0 total	<1.0	<100	NA	Fixed
	12/26/2002	<1.0	<1.0	<1.0	<1.0 total	<1.0	<100	NA	Fixed
	4/14/2003	<1.0	<1.0	<1.0	<2.0/<1.0	<1.0	<60	NA	Fixed
	7/7/2003	<1.0	<1.0	<1.0	<2.0/<1.0	<1.0	<60	NA	Fixed
	10/10/2003	<1.0	<1.0	<1.0	<2.0/<1.0	<1.0	<60	NA	Fixed
	2/6/2004	ND	ND	ND	ND	ND	ND	NA	Fixed
	3/18/2004	<0.5	<1.0	<1.0	<0.50/<0.50	<1.0	ND	NA	Fixed
	9/7/2004	ND	ND	ND	ND	ND	ND	NA	Fixed
	12/20/2004	ND	ND	ND	ND	ND	ND	NA	Fixed
	3/10/2005	ND	ND	ND	ND	ND	ND	NA	Fixed
	6/9/2005	ND	ND	ND	ND	ND	ND	NA	Fixed
	8/4/2005	ND	ND	ND	ND	ND	ND	NA	Fixed
	11/9/2005	ND	ND	ND	ND	ND	ND	NA	Fixed
	3/1/2006	<1.0	<5.0	<1.0	<3.0	NS	<100	NA	Fixed

Table 11
Analytical Results of Water Samples Collected from Wells[1]

Well Number	Date Sampled	Benzene	Toluene	Ethyl-benzene	Xylenes	MTBE	GRO	DRO	Lab Type[2]
	7/13/2006	<0.5	<5.0	<0.5	<1.0	<10.0	<100	140	Fixed
	10/4/2006	<0.5	<5.0	<0.5	<1.0	<10.0	<100	190	Fixed
	3/9/2007	<0.5	<5.0	<0.5	<1.0	<10.0	<100	170	Fixed
	7/24/2007	<0.5	<5.0	<0.5	<1.0	<10.0	<100	NS	Fixed
	1/20/2010	<1.0	<1.0	<1.0	<3.0	<5.0	<100	170	Fixed
	1/12/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<100	126	Fixed
	3/23/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<100	125	Fixed
	6/8/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<100	312	Fixed
	10/4/2011	<1.0	<1.0	<1.0	<3.0	<5.0	<100	146	Fixed
MW-7	11/9/2005	3900	8600	1200	7800	ND	37000	NA	Fixed
	3/1/2006	5,200	<12,000	<2,500	8,200	<2,500	42,000	NA	Fixed
	7/13/2006	2,200	6,000	1,400	7,700	<1.0	NA	6,900	Fixed
	10/4/2006	3,300	6,000	1,900	8,300	<50	NA	9,100	Fixed
	3/9/2007	3,900	7,300	1,500	7,000	<10	43,000	10,000	Fixed
	7/24/2007	3,700	7,600	1,700	8,600	1,300	<100,000	8,600	Fixed
	10/4/2011	4,540	8,050	1,910	10,200	572	10200	14,200	Fixed
Lab Blank	1/11/2002	ND	ND	ND	ND	NA	ND	NA	Fixed
	6/24/2002	ND	ND	ND	ND	NA	ND	NA	Fixed
	9/13/2002	ND	ND	ND	ND	NA	ND	NA	Fixed
	12/26/2002	ND	ND	ND	ND	NA	ND	NA	Fixed
	4/14/2003	ND	ND	ND	ND	NA	ND	NA	Fixed
	7/7/2003	ND	ND	ND	ND	NA	ND	NA	Fixed
	10/10/2003	ND	ND	ND	ND	NA	ND	NA	Fixed
	2/6/2004	ND	ND	ND	ND	NA	ND	NA	Fixed
	3/18/2004	ND	ND	ND	ND	NA	ND	NA	Fixed
	9/7/2004	ND	ND	ND	ND	NA	ND	NA	Fixed
	12/20/2004	ND	ND	ND	ND	NA	ND	NA	Fixed
	3/10/2005	ND	ND	ND	ND	NA	ND	NA	Fixed
	6/9/2005	ND	ND	ND	ND	NA	ND	NA	Fixed
	8/4/2005	ND	ND	ND	ND	NA	ND	NA	Fixed
	11/9/2005	ND	ND	ND	ND	NA	ND	NA	Fixed
	3/1/2006	ND	ND	ND	ND	NA	ND	NA	Fixed
	7/13/2006	ND	ND	ND	ND	ND	ND	NA	Fixed
	10/4/2006	ND	ND	ND	ND	ND	ND	NA	Fixed
	1/12/2011	ND	ND	ND	ND	ND	ND	NA	Fixed
	3/23/2011	ND	ND	ND	ND	ND	ND	NA	Fixed
	6/8/2011	ND	ND	ND	ND	ND	ND	NA	Fixed
	10/4/2011	ND	ND	ND	ND	ND	ND	NA	Fixed

Table 11
Analytical Results of Water Samples Collected from Wells[1]

Well Number	Date Sampled	Benzene	Toluene	Ethyl-benzene	Xylenes	MTBE	GRO	DRO	Lab Type[2]
HRL(ug/L)		10	1000	700	10000				

[1] Report results in µg/L. Use less than symbols to show detection limit.
[2] Indicate "mobile" or "fixed" in the lab type column.
[3] See http://www.health.state.mn.us/divs/eh/groundwater/hrltable.html for list of current HRLs.
Add additional rows as needed.
Notes:

~~Table 12~~
~~Other Contaminants Detected in Water Samples~~
~~Collected from Wells (Petroleum or Non-petroleum Derived)~~[1]

Well Number	Date Sampled								Lab Type[2]
MW-1									
MW-2									
MW-3									
MW-4									
Trip Blank									
Equip. Blank									
Lab Blank									
HRL[3]									

[1] Report results in µg/L. Use less than symbols to show detection limit.
[2] Indicate "mobile" or "fixed" in the lab type column.
[3] See http://www.health.state.mn.us/divs/eh/groundwater/hrltable.html for list of current HRLs.
Indicate other contaminants (either petroleum or non-petroleum derived) detected in water samples collected from wells.
Add additional rows as needed, and copy the entire table if more columns are needed.
Notes:

~~Table 13~~
~~Natural Attenuation Parameters~~

Well Number	Sample Date	Temp. °C	pH	Dissolved Oxygen (mg/L)	Nitrate (mg/L)	(Fe II) (mg/L)	(H_2S, HS^-) (mg/L)
MW-1							
MW-2							
MW-3							
MW-4							

Describe the methods and procedures used in Section 6. Add additional rows as needed
Notes:

Table 14 - Free Product Recovery MW-3 and MW-7

Monitoring Well	Date	Time	Product Recovered (ml)	Water Level Depth Below Grade	Product Interface Level - Notes
MW-3	1/11/2002	11:30	800	20.73'	0.3"- Gasoline Recovered
MW-3	1/23/2002	2:30	100	-	Gasoline Recovered
MW-3	3/20/2002	2:20	500	21'	0.5" - Gasoline Recovered
MW-3	3/29/2002	2:30	1000	-	Gasoline Recovered
MW-3	5/1/2002	1:50	800	21.22'	0.5" - Gasoline Recovered
MW-3	5/14/2002	2:45	1000	-	Gasoline Recovered
MW-3	6/7/2002	3:00	200	-	Gasoline Recovered
MW-3	6/24/2002	3:50	200	21.3'	None Recorded - Gasoline/Water Mixture
MW-3	8/12/2002	2:30	1000	-	Gasoline/Water Mixture
MW-3	8/28/2002	10:15	1000	-	Gasoline/Water Mixture
MW-3	9/13/2002	12:45	1000	20.0'	None Recorded - Gasoline/Water Mixture
MW-3	9/27/2002	2:00	1000	-	Gasoline/Water Mixture
MW-3	10/11/2002	1:40	1000	-	Gasoline/Water Mixture
MW-3	10/25/2002	3:00	1000	-	Gasoline/Water Mixture
MW-3	11/4/2002	1:00	1000	-	Gasoline/Water Mixture
MW-3	12/6/2002	2:30	1000	-	Gasoline/Water Mixture
MW-3	12/26/2002	11:15	1000	17.1'	None Recorded - Gasoline/Water Mixture
MW-3	1/14/2002	2:00	1000	-	Gasoline/Water Mixture
MW-3	2/6/2004	1:00	11356		Gasoline/Water Mixture
MW-3	3/18/2004	12:30	6435	20.21	DTP = 18.91, DTW = 20.21 (1.3' product)
MW-3	9/7/2004	10:30	10	18.97	
MW-3	9/14/2004	7:40	0	18.82	no measurable free product- after vac truck
MW-3	9/27/2004	12:00	0	18.83	well raiser tilted by car collision, could not send bailor down
MW-3	12/20/2004	9:00	200	19.18	
MW-3	2/23/2005	8:15	2250	10.94	0.77 inches of product in well
MW-3	2/28/2005	7:50	34360	19.72	vac truck removed apporx. 8 gal of free product
MW-3	3/10/2005	8:00	2300	19.61	balied product to a sheen/ waited for well to recover and repeated
MW-3	4/11/2005	13:10	2.7	20.13	bailed product, but well recharged and prod. Still remained
MW-3	6/9/2005	11:30	0.25	20.46	bailed product and well recharged leaving a sheen
MW-3	7/12/2005	11:30	0.2	20.22	bailed product
MW-3	8/4/2005	12:00	0	20.15	no product removed
MW-3	9/28/2005	12:30	4000	N/A	vac truck removed approximately 1 gallon of product from well
MW-3	10/5/2005	10:30	0	16.76	no product removed
MW-3	11/1/2005	11:00	0	17.44	no product present in well
MW-3	3/1/2006	NA	0	17.65	no product present in well
MW-3	7/13/2006	NA	1000	18.34	0.52 inches of product in well
MW-3	10/4/2006	NA	0	18.92	no product present in well
MW-3	3/9/2007	NA	1200	19.88	5.5 inches of product in well
MW-3	7/24/2007	NA	800	NA	0.8 inches of product in well
MW-3	1/20/2010	NA	1200	NA	4 inches of product in well
MW-3	1/12/2011	NA	0	NA	no product present in well
MW-3	3/21/2011	NA	0	17.89	no product present in well
MW-3	6/7/2011	NA	0	17.29	no product present in well
MW-3	10/4/2011	NA	0	15.77	no product present in well
MW-3 Total (ml)			**79714**		
MW-3 Total (Gal)			**21.1**		
MW-7	9/16/2005	NA	0	17.00	no product present in well
MW-7	11/1/2005	NA	0	17.72	no product present in well
MW-7	3/1/2006	NA	0	17.81	no product present in well
MW-7	7/13/2006	NA	0	18.14	no product present in well
MW-7	10/4/2006	NA	0	18.2	no product present in well
MW-7	3/9/2007	NA	0	18.6	no product present in well
MW-7	7/24/2007	NA	0	18.83	no product present in well
MW-7	1/20/2010	NA	2500	20.45	16 inches of product in well
MW-7	1/12/2011	NA	2000	18.5	1.8 inches of product in well
MW-7	3/21/2011	NA	1700	18.8	1.8 inches of product in well
MW-7	6/7/2011	NA	0	18.13	no product present in well
MW-7	10/4/2011	NA	0	16.53	no product present in well
MW-7 Total (ml)			**6,200**		
MW-7 Total (Gal)			1.6		

~~Table 15~~
~~Properties Located within 500 feet of the Release Source~~

Prop ID[1]	Property Address	Distance From Site (ft)	Water Supply Well			Public Water Supply		Base-ment (Y/N)	Sump (Y/N)	Possible Petroleum Sources (Y/N)	Comments (including property use)
			Well Present (Y/N)	How Determined[2]	Well Use[3]	Utilized (Y/N)	Confirmed by City (Y/N)				
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											

[1] Property IDs should correspond to labeled properties in the Potential Receptor Map.
[2] For example, visual observation, personal contact, telephone, returned postcard, assumed (i.e., no postcard returned).
[3] For example, domestic, industrial, municipal, livestock, lawn/gardening, irrigation.
Add additional rows as needed.
Notes:

~~Table 16~~
~~Water Supply Wells Located within 500 feet of the~~
~~Release Source and Municipal or Industrial Wells within ½ mile~~

Property ID[1]	MDH Unique Well Number	Ground Elevation	Total Depth (ft)	Base of Casing (ft)	Static Elevation	Aquifer	Use	Owner	Distance and Direction from Source (ft)

[1] Property IDs should correspond to properties listed in Table 15 and labeled properties in the Potential Receptor Map if known or applicable.

Add additional rows as needed.

Notes:

~~Table 17~~
~~Surface Water Receptor Information~~

Map ID[1]	Name and Type[2]	Distance and Direction from Plume Edge (ft)	Clean Boring/Well Between?[3] (Y or N)

[1] Map ID should correspond to a surface water feature ID on the Potential Receptor Map.
[2] Type includes, but is not limited to, lake, retention pond, infiltration pond, ditch, intermittent stream, river, creek, rain garden, etc.
[3] If the surface water feature is upgradient or cross-gradient from the site, indicate so with "NA" for not applicable.
Add additional rows as needed.
Notes:

Table 18
Utility Receptor Information

Utility ID[1]	Description	Construction Material	Depth to Top of Structure	Diameter	Flow Direction (for liquids)	Year Installed	Backfill Material	Distance to Water Table
1	*Sanitary sewer main beneath S. Buchanan Street between 1st Ave. E. and 2nd Ave SE*	*PVC*	*10'*	*21 inches*	*South*	*2001-2002*	*Native soil*	*8'*
2	*Water main beneath S. Buchanan Street between 1st Ave. E. and 2nd Ave SE*	*Ductile Iron*	*7-8'*	*16 inches*	*North*	*2001-2002*	*Native soil*	*10'*
3	*Storm sewer beneath S. Buchanan Street between 1st Ave. E. and 2nd Ave SE*	*Concrete*	*4.5-5' ft*	*21 inches*	*South*	*unknown*	*Native soil*	*13'*
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								

[1] ID should correspond to an identified utility line on the Potential Receptor Map.
Add more rows as needed.
Notes:

Utility ID[1]	Name, title, and telephone number for public entity contacted to obtain information or other source of information
1, 2, 3	As built drawings provided by utility locator with City of Cambridge.

[1] IDs should correspond to the same IDs in the above table.
Add more rows as needed.
Notes:

Table 19
Vapor Survey Results

Location ID[1]	Description[2]	Monitoring Date	PID Reading (ppm)	Percent of the LEL[3]
1	Storm Sewer catch basin	3/23/11	0	0
2	Storm Sewer manhole	3/23/11	0	0
3	Storm Sewer catch basin	3/23/11	0	0
4	Storm Sewer manhole	3/23/11	0	0
5	Storm Sewer catch basin	3/23/11	0	0
6	Storm Sewer catch basin	3/23/11	0	0
7	Storm Sewer catch basin	3/23/11	0	0
8	Storm Sewer manhole	3/23/11	0	0
9	Legion basement ambient	3/23/11	0	0

[1] Location IDs must match labeled locations on the Vapor Survey Map.
[2] Provide a brief description of the monitoring point (e.g., sump, basement corner, sanitary sewer manhole, storm sewer basin, etc.).
[3] LEL = Lower Explosive Limit.
Add additional rows as needed.
Notes:

Table 20
Results of Soil Gas Sampling for Vapor Intrusion Screening[1]

Sample ID[2]	Vapor Pt 1		Vapor Pt 2		Vapor Pt 3		Subslab-1				
Date	1/21/2010		1/21/2010		1/21/2010		3/22/2011				
Depth (feet)											
PID (ppm)											
COMPOUNDS	Result	Report Limit	Result	Report Limit	Result	Report Limit	Result	Report Limit	Result	Report Limit	Intrusion Screening Value[3]
Acetone	<0.64	0.64	83.6	0.64	<0.64	0.64	64.4	0.86			31,000
Benzene	<0.87	0.87	84.6	0.87	<0.87	0.87	1.5	1.2			4.5
2-Butanone (MEK)							5.1	1.1			5000
1,3-Butadiene	<0.6	0.6	64.5	0.6	<0.6	0.6	<0.81	0.81			0.3
Carbon Disulfide	<0.84	0.84	3.7	0.84	<0.84	0.84	<1.1	1.1			700
Chloroform							10.2	1.8			100
Cyclohexane	<0.91	0.91	12.8	0.91	<0.91	0.91	3.2	1.2			6,000
Dichlorodifluoromethane							14.5	1.8			200
Ethanol	<2.5	2.5	15.0	2.5	<2.5	2.5	341	3.4			15,000
Ethylbenzene	<1.2	1.2	42.1	1.2	<1.2	1.2	5.7	1.6			1,000
4-Ethyltoluene	<3.4	3.4	7.4	3.4	<3.4	3.4	<4.5	4.5			NA
n-Heptane	<1.1	1.1	78	1.1	<0.96	0.96	4.5	1.5			NA
n-Hexane							12.2	1.3			2000
Methylene Chloride							13.8	1.3			20
2-Propanol							18.1	4.5			7000
Propylene							2.7	0.63			3000
Styrene	<1.2	1.2	44.7	1.2	<1.2	1.2	<1.6	1.6			1,000
Tolunene	<1.0	1.0	132	1.0	<1.0	1.0	22	1.4			5,000
1,2,4-Trimethylbenzene	<1.3	1.3	9.3	3.4	<3.4	3.4	<1.8	1.8			4
M&p-Xylene	<2.4	2.4	88.9	2.4	<2.4	2.4	24.8	3.2			100
o-Xylene	<1.2	1.2	27	1.2	<1.2	1.2	5.1	1.6			100

[1] Report results in $\mu g/m^3$.
[2] Sample IDs should correspond to labeled locations on the Vapor Intrusion Assessment Map.
[3] The Intrusion Screening Values can be found in Guidance Document 4-01a *Vapor Intrusion Assessments Performed during Site Investigations*.
Add additional rows as needed, and copy the entire table if more columns are needed.
Notes:

Section 6: Appendices

Attach all required or applicable appendices in the following order. Indicate those appendices that are included in this report by marking the check box. The appendix section of the report contains sufficient information to document all activities completed since the last report. All reproduced data must be legible. Reports missing required documentation are subject to rejection.

☒	*Appendix A*	Copies of most recent laboratory analytical reports for Soil, Soil Gas/Sub-slab Vapor/Indoor Air/Ambient Air, and Ground Water samples, including a copy of the Chain of Custody. Include laboratory QA/QC data, Chromatograms, and MDH laboratory certification number.
☒	*Appendix B*	Methodologies and Procedures, Including Field Screening of Soil, Other Field Analyses, Soil Boring, Soil Sampling, Soil Gas/Sub-Slab/Indoor air/Ambient Air Sampling, Well Installation, and Water Sampling.
☐	*Appendix C*	Geologic Logs of Additional Soil Borings and Wells Installed. Include Well Construction Diagrams and Copies of the Minnesota Department of Health Well Record for new wells.
☒	*Appendix D*	Field or sampling data sheets (sampling forms, field crew notes, etc.).
☐	*Appendix E*	Guidance Document 1-03a *Spatial Data Reporting Form* (if not previously submitted or new site features need to be reported).
☐	*Appendix F*	Guidance Document 2-05 *Release Information Worksheet* (if not previously submitted).
☐	*Appendix G*	Guidance Document 4-19 *Conceptual Corrective Action Design Worksheet.*

Web pages and phone numbers	
MPCA staff	http://www.pca.state.mn.us/pca/staff/index.cfm
MPCA toll free	**1-800-657-3864**
Petroleum Remediation Program web page	http://www.pca.state.mn.us/programs/lust_p.html
MPCA Info. Request	http://www.pca.state.mn.us/about/inforequest.html
MPCA VIC program	http://www.pca.state.mn.us/cleanup/vic.html
MPCA Petroleum Brownfields Program	http://www.pca.state.mn.us/programs/vpic_p.html
MPCA SRS guidance documents	http://www.pca.state.mn.us/cleanup/riskbasedoc.html http://www.pca.state.mn.us/cleanup/riskbasedoc.html#surfacewaterpathway
MDH HRLs	http://www.health.state.mn.us/divs/eh/groundwater/hrltable.html
MDH DW hotline	**1-800-818-9318**
Petrofund Web Page	http://www.state.mn.us/cgi-bin/portal/mn/jsp/content.do?id=-536881377&agency=Commerce
Petrofund Phone	**651-215-1775 or 1-800-638-0418**
State Duty Officer	**651-649-5451 or 1-800-422-0798**

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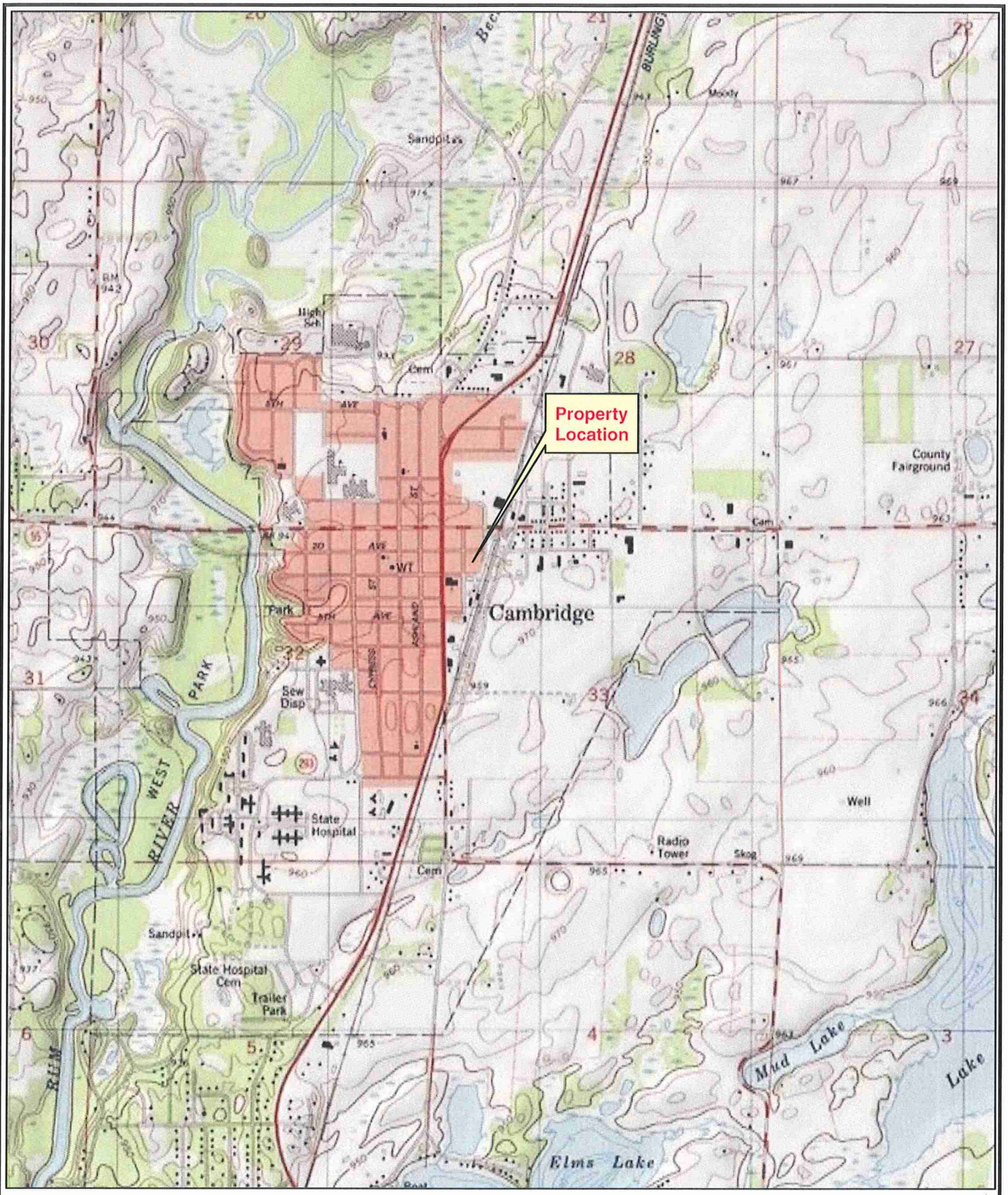

Source: MS Virtual Eath Topographic Quad
Projection: NAD83 UTM Zone 15N

0 2,000 4,000 Feet

N

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Former Union 76 Fuel Station **329 East First Avenue, Cambridge, Minnesota**	**Nov 11**
Property Location	**Figure 1**

LEGEND

- TH-7 SOIL BORING
- MW-7 MONITORING WELL
- L-8 LIF/EC PROBE
- SS SANITARY SEWER
- SW STORM SEWER
- T PHONE/FIBER OPTIC
- E ELECTRIC
- GAS GAS
- W WATER
- MANHOLE
- STORM SEWER CATCH BASIN
- (1) VAPOR SURVEY LOCATION
- SUBSLAB VAPOR SAMPLE

ALLEY

CASEY'S

NORDBERG ELECTRIC

SHED

AMERICAN LEGION

SUBLAB-1

UNION 76

SOUTH BUCHANAN STREET

RR ROW / PROPERTY BOUNDARY

RAILROAD TRACKS

2nd AVENUE

TH-12, TH-17, TH-15, TH-16, TH-13, TH-14, TH-22, TH-23, TH-24, TH-7, TH-9, TH-10, TH-11, MW-2/TH-6, MW-3/TH-8, MW-7

L-1 L-2 L-3 L-4 L-5 L-6 L-7 L-8 L-9 L-10 L-11 L-12 L-13 L-14 L-15 L-16 L-17 L-18 L-19 L-20 L-21 L-22 L-23 L-24 L-25 L-26 L-27 L-28 L-29 L-30 L-31 L-32 L-33 L-34 L-35 L-36 L-37 L-38 L-39 L-40 L-41

A B C D E F G H I J K L M N

1 2 3 4 5 6 7 8 9

N

LIESCH HYDROLOGISTS • ENGINEERS • ENVIRONMENTAL SCIENTISTS 6000 Gisholt Dr. Suite 203, Madison, WI 53713, (608) 223-1532 13400 15th Avenue N, Minneapolis, MN 55441, (763) 559-1423 4300 N. Miller Rd., Suite 211, Phoenix, Az 85251, (480) 421-0853	FORMER UNION 76 FUEL STATION CAMBIRDGE, MN SAMPLING AND UTILITY LOCATIONS	NOV 11 FIGURE 2

MK 11-22-2011=1 w:\ta\65677\cadd\fig-sampling and util locations

Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, MN 55155-4194

Vapor Intrusion Interior Building Survey Form

Remediation Program

Doc Type: Site Inspection Information

Part 1: Physical Building Inspection

Preparer's name: Dan Larson Date/Time prepared: March 21, 2011

Affiliation: Consultant Phone number: 763-489-3100

1. Occupant information

Occupant name(s): American Legion (Steve Lawrence) Interviewed: ☒ Yes ☐ No

Mailing address: 200 Second Ave. SE

City: Cambridge State: MN Zip code: 55008

Phone: 763.689.9936 Fax: E-mail:

Number of occupants at this location: 10 (employees) Age range of occupants: 23-60

2. Owner/Landlord information (Check if same as occupant: ☒)

Occupant name(s): Same as Above Interviewed: ☐ Yes ☐ No

Mailing address:

City: State: Zip code:

Home phone: Office phone:

3. Building type (Check appropriate response)

☐ Residential ☐ Industrial ☐ School ☐ Church ☐ Commercial/Multi-use

☒ Other (specify): Bar / Restaurant

If the property is residential, what type? (Check appropriate response)

☐ Ranch rambler ☐ Raised rambler ☐ Townhouses/Condos ☐ Duplex ☐ Modular ☐ 2-Family

☐ Split level ☐ Contemporary ☐ Apartment house ☐ Cape cod ☐ Log home ☐ 3-Family

☐ Colonial ☐ Mobile home ☐ Other (specify):

4. Building description

If the property is commercial or industrial, describe the business use(s):

Bar / Restaurant and event hall (weddings, banquets, etc.)

Indicate the number of floors and general use of each floor of the building beginning with lowest level:

Bar / Restaurant on main (upper) level. Lower level is used occasionally as an event hall (weddings, banquets, etc.)

If there are multiple residential units, indicate how many units: NA When was building constructed:

Type of insulation used in building: Fiberglass (assumed) Elevators or lifts: ☒ Yes ☐ No

Basement/Lowest level depth below grade: 10 (feet)

Observed basement characteristics (Check all that apply)

Is basement/lowest level occupied:	☐ Full time	☒ Occasionally	☐ Almost never	
Basement type:	☒ Full	☐ Crawlspace	☐ Slab	☐ Other:
Floor materials:	☒ Concrete	☐ Dirt	☐ Stone	☐ Other:
Floor covering:	☐ Uncovered	☐ Covered	☒ Covered with:	carpet, ceramic tile, parquet wood flooring
Concrete floor:	☐ Unsealed	☒ Sealed	☐ Sealed with:	Paint
Foundation walls:	☐ Poured	☒ Block	☐ Stone	☐ Other:
Basement finished:	☐ Unfinished	☐ Finished	☒ Partially finished	
Basement wetness:	☐ Wet	☐ Damp	☒ Seldom	☐ Moldy
Sump pump present:	☐ Yes ☒ No	If yes, was water present:	☐ Yes ☐ No	

Indicate sources of water supply sources (i.e., drinking, irrigation, etc.) and type of sewage disposal (Check all that apply)

Water supply:	☒ Public water	☐ Drilled well	☐ Driven well	☐ Dug well
Sewage disposal:	☒ Public sewer	☐ Septic tank	☐ Leach field	☐ Dry well:

5. Heating, venting, air conditioning, or other building controls (Check all that apply)

Type of heating system(s) used in this building (Check all that apply)

☒ Hot air circulation ☐ Space heaters ☐ Electric baseboard ☐ In-floor heating ☐ Heat pump

☐ Steam radiation ☐ Wood stove ☐ Hot water baseboard ☐ Radiant floor ☐ Outdoor wood boiler

☐ Other (specify): _____ **Primary type:** Forced Air (rooftop)

Primary type of fuel used (Check appropriate response)

☒ Natural gas ☐ Fuel oil ☐ Kerosene ☐ Electric ☐ Propane

☐ Solar ☐ Wood ☐ Coal

If hot water tank present, indicate fuel source: Natural Gas

Boiler/furnace is located in:	☐ Basement	☒ Outdoors	☐ Main floor	☒ Other:	Rooftop
Type of air conditioning:	☒ Central air	☐ Window units	☐ Open windows	☐ No mechanical system	

Are there air distribution ducts present: ☒ Yes ☐ No

Describe the supply and cold air return ductwork and its condition where visible, including whether there is a cold air return and the tightness of duct joints. Indicate the locations on the floor plan diagram.

The majority of air distribution ducts were in the ceiling in the basement, covered by ceiling tiles. The Manager reported that he was not aware of any damage to the ductwork and that they are in good conition.

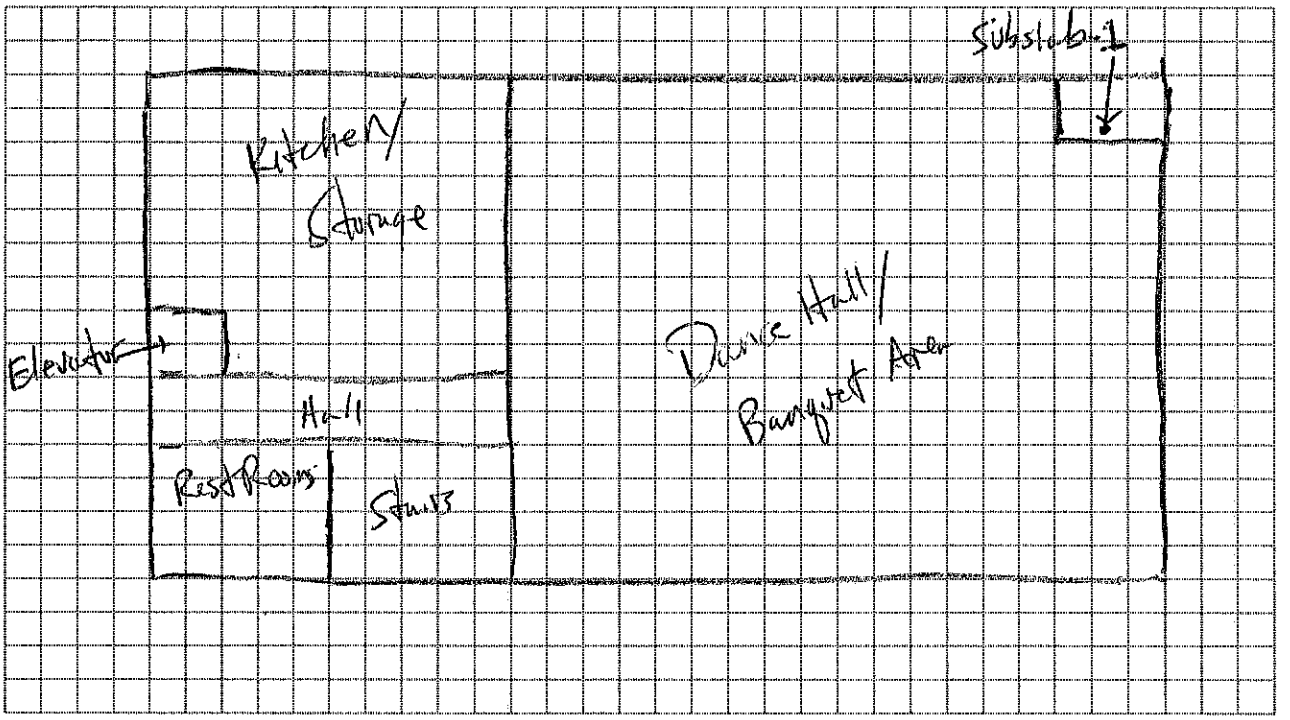
Describe the type of mechanical ventilation systems used within or for the building (e.g., air-to-air exchangers, HVAC, etc.). Indicate whether the interior spaces of the building use separate ventilation systems and/or controls. Provide information on any existing building mitigation system (e.g., radon mitigation, passive venting systems, etc.). If available, provide information on air exchange rates for any existing mechanical ventilation systems currently in use.

The only ventilation system is a vent in the cooking area.

6. Grid plans

Use grid plans to describe floor plans, locate potential soil vapor entry points (e.g., cracks, utility ports, drains); and if applicable, identify sample locations (sub-slab, indoor air, outdoor air sampling).

Floor plan for basement or lowest level:



Floor above lowest level:

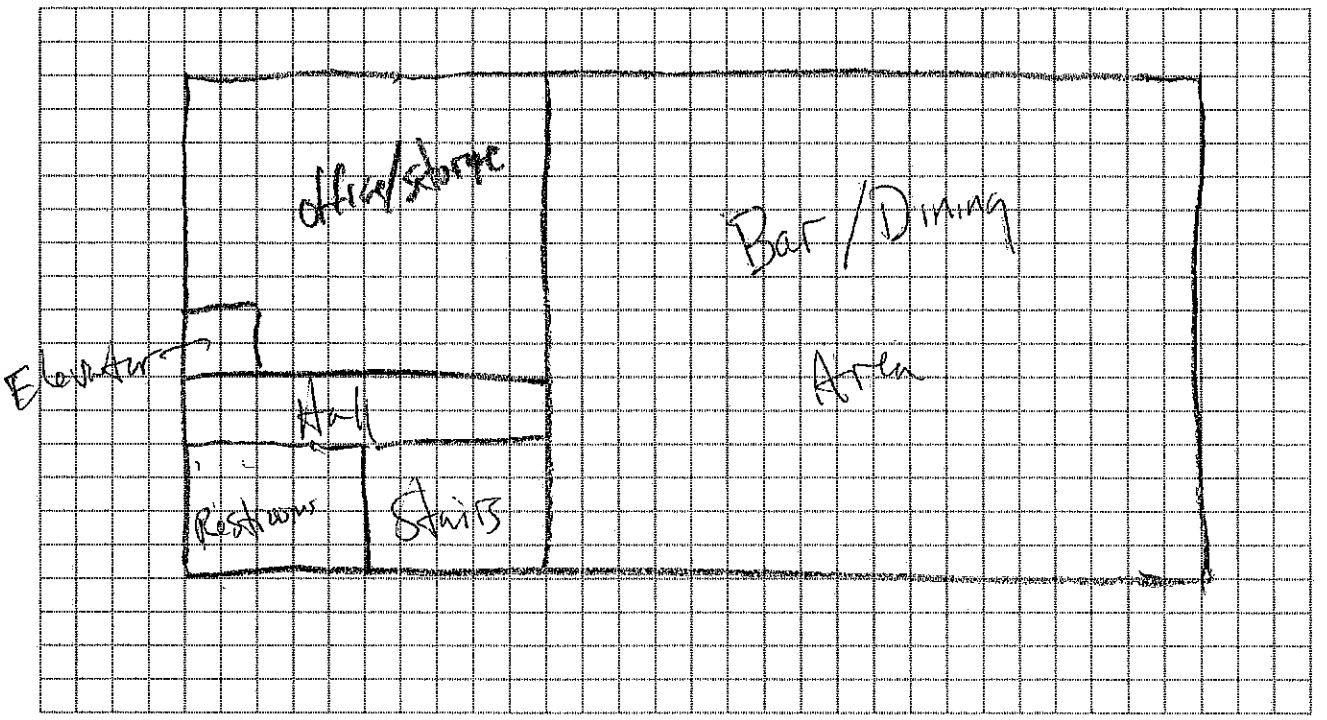
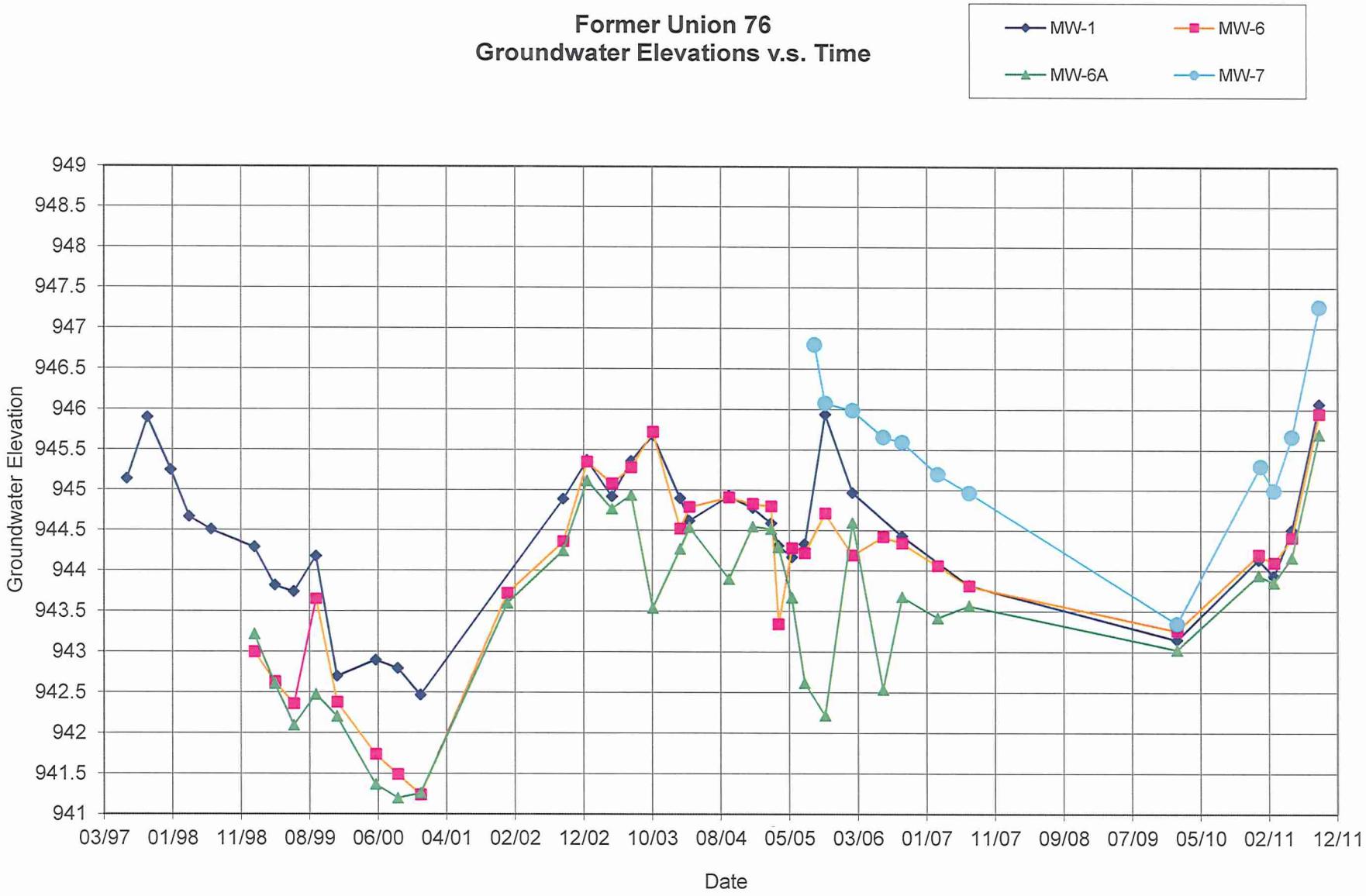
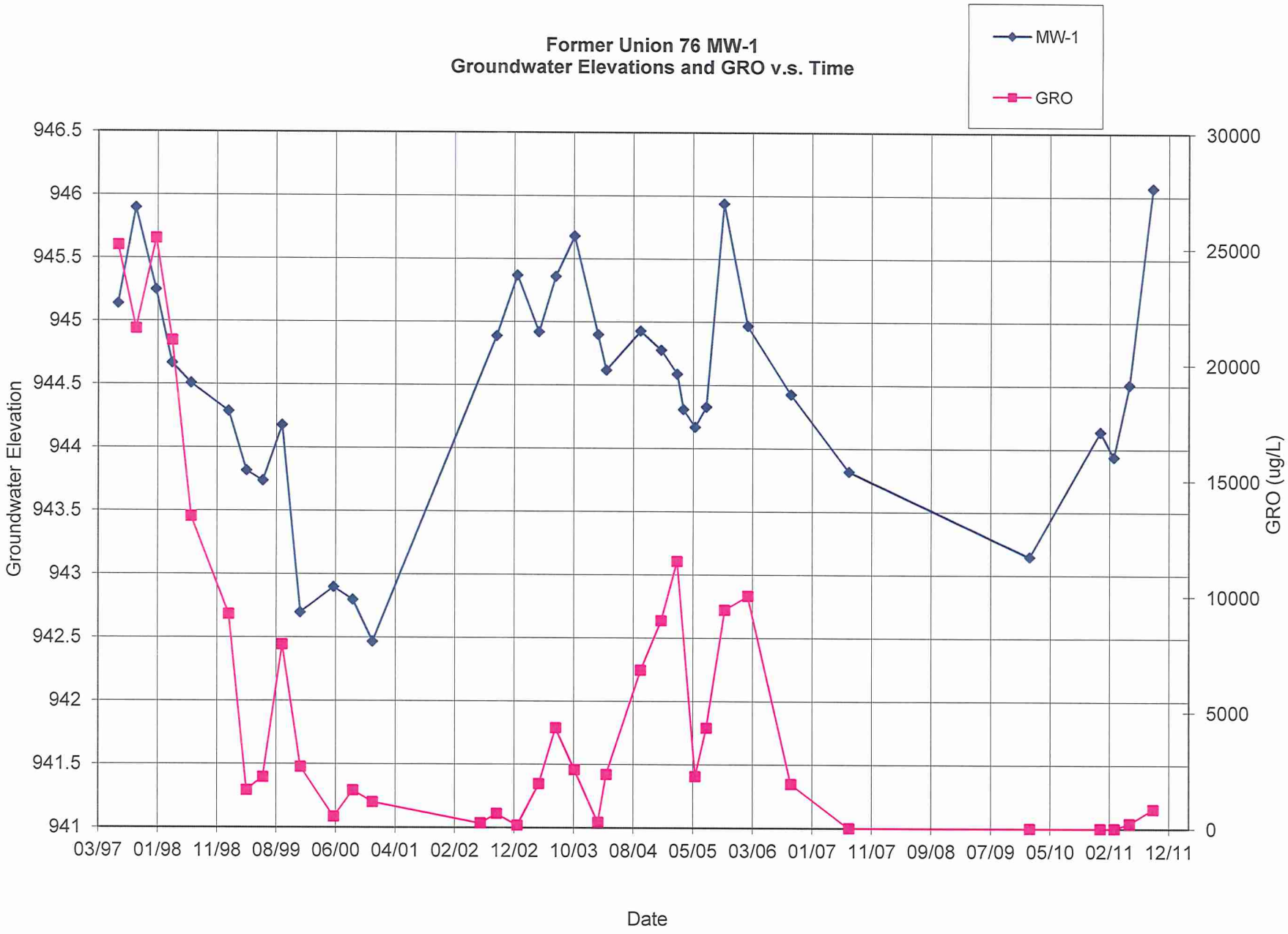
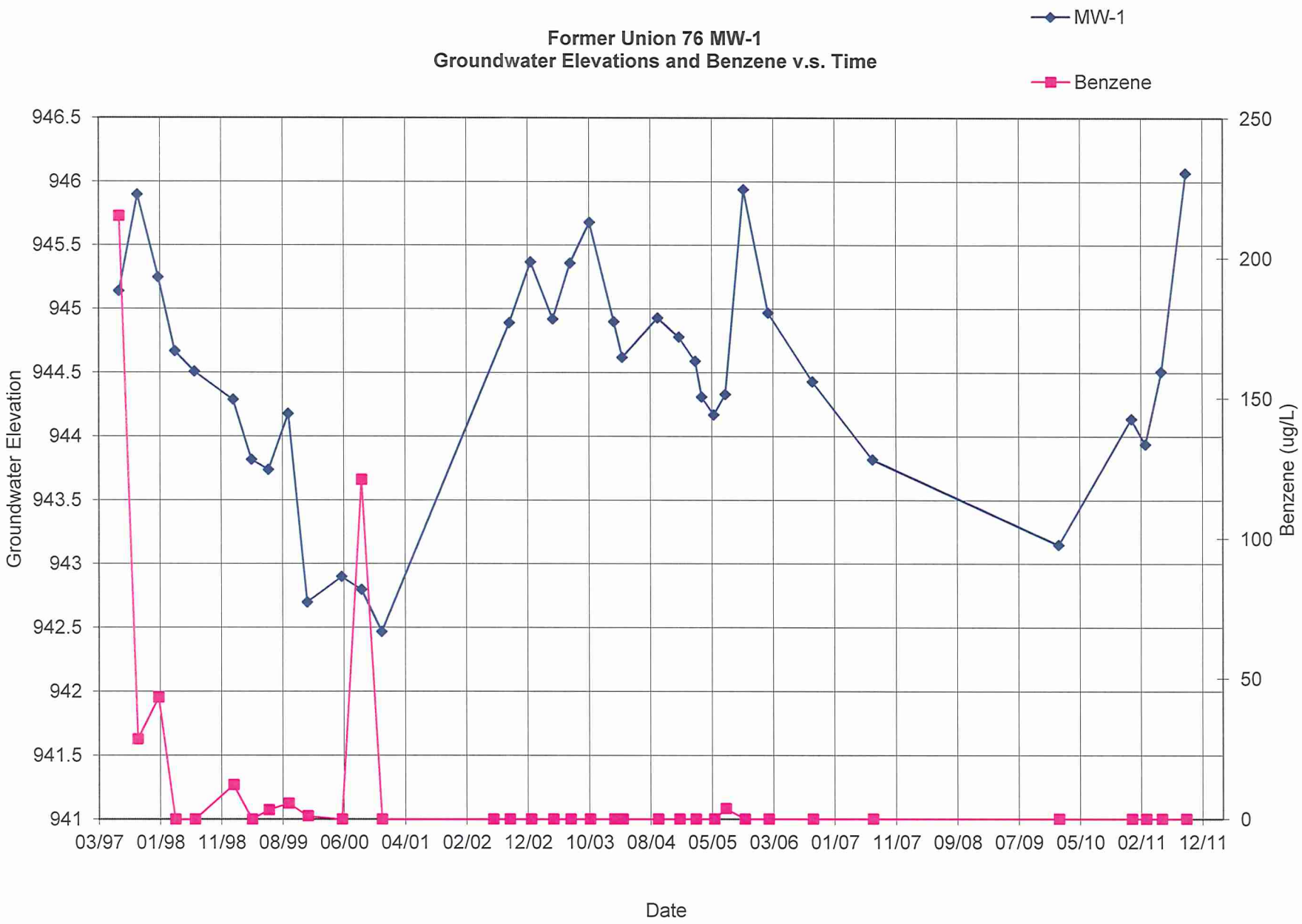


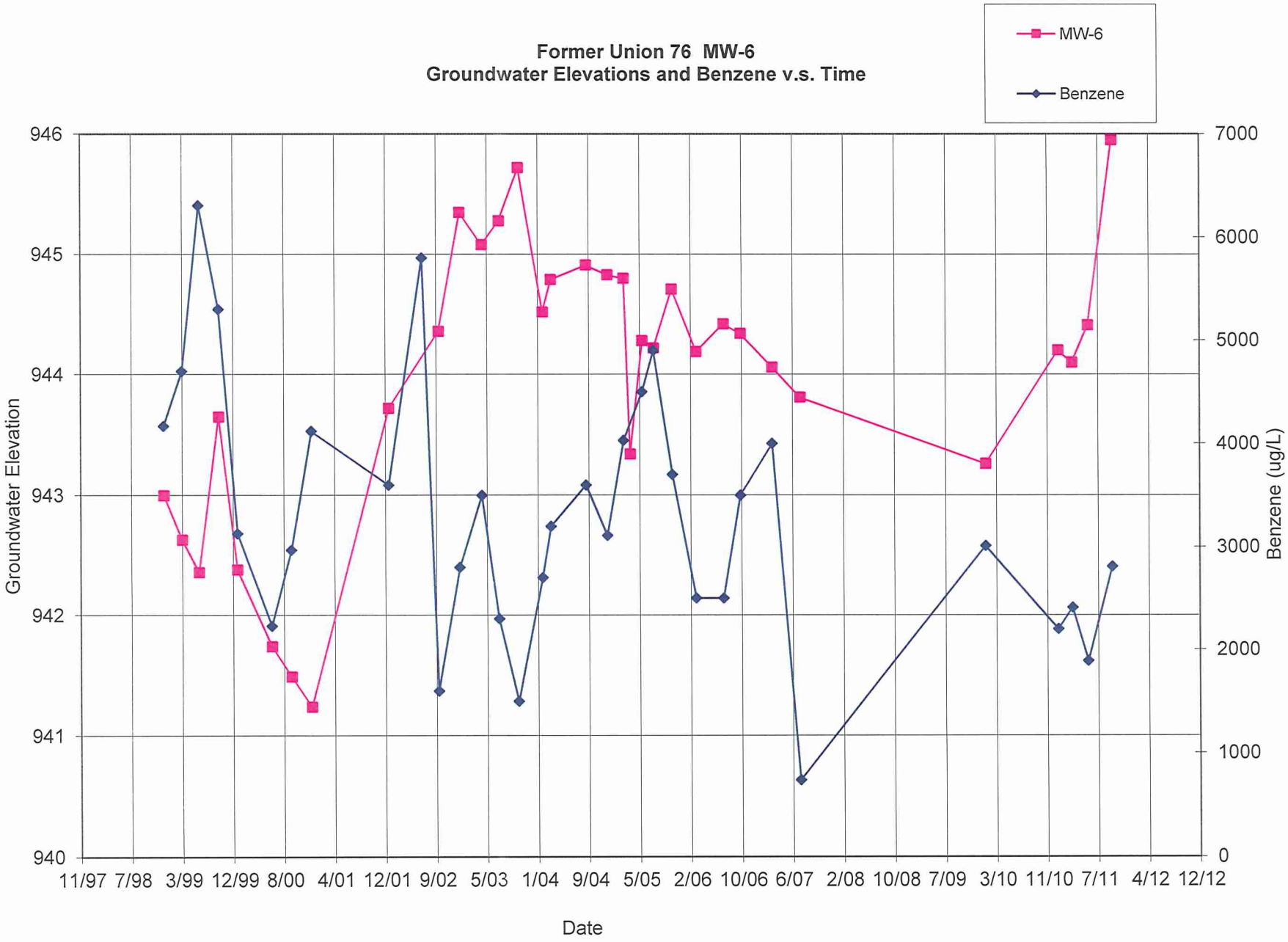
Table 14 - Free Product Recovery MW-3 and MW-7

Monitoring Well	Date	Time	Product Recovered (ml)	Water Level Depth Below Grade	Product Interface Level - Notes
MW-3	1/11/2002	11:30	800	20.73'	0.3"- Gasoline Recovered
MW-3	1/23/2002	2:30	100	-	Gasoline Recovered
MW-3	3/20/2002	2:20	500	21'	0.5" - Gasoline Recovered
MW-3	3/29/2002	2:30	1000	-	Gasoline Recovered
MW-3	5/1/2002	1:50	800	21.22'	0.5" - Gasoline Recovered
MW-3	5/14/2002	2:45	1000	-	Gasoline Recovered
MW-3	6/7/2002	3:00	200	-	Gasoline Recovered
MW-3	6/24/2002	3:50	200	21.3'	None Recorded - Gasoline/Water Mixture
MW-3	8/12/2002	2:30	1000	-	Gasoline/Water Mixture
MW-3	8/28/2002	10:15	1000	-	Gasoline/Water Mixture
MW-3	9/13/2002	12:45	1000	20.0'	None Recorded - Gasoline/Water Mixture
MW-3	9/27/2002	2:00	1000	-	Gasoline/Water Mixture
MW-3	10/11/2002	1:40	1000	-	Gasoline/Water Mixture
MW-3	10/25/2002	3:00	1000	-	Gasoline/Water Mixture
MW-3	11/4/2002	1:00	1000	-	Gasoline/Water Mixture
MW-3	12/6/2002	2:30	1000	-	Gasoline/Water Mixture
MW-3	12/26/2002	11:15	1000	17.1'	None Recorded - Gasoline/Water Mixture
MW-3	1/14/2002	2:00	1000	-	Gasoline/Water Mixture
MW-3	2/6/2004	1:00	11356		Gasoline/Water Mixture
MW-3	3/18/2004	12:30	6435	20.21	DTP = 18.91, DTW = 20.21 (1.3' product)
MW-3	9/7/2004	10:30	10	18.97	
MW-3	9/14/2004	7:40	0	18.82	no measurable free product- after vac truck
MW-3	9/27/2004	12:00	0	18.83	well raiser tilted by car collision, could not send bailor down
MW-3	12/20/2004	9:00	200	19.18	
MW-3	2/23/2005	8:15	2250	10.94	0.77 inches of product in well
MW-3	2/28/2005	7:50	34360	19.72	vac truck removed apporx. 8 gal of free product
MW-3	3/10/2005	8:00	2300	19.61	balied product to a sheen/ waited for well to recover and repeated
MW-3	4/11/2005	13:10	2.7	20.13	bailed product, but well recharged and prod. Still remained
MW-3	6/9/2005	11:30	0.25	20.46	bailed product and well recharged leaving a sheen
MW-3	7/12/2005	11:30	0.2	20.22	bailed product
MW-3	8/4/2005	12:00	0	20.15	no product removed
MW-3	9/28/2005	12:30	4000	N/A	vac truck removed approximately 1 gallon of product from well
MW-3	10/5/2005	10:30	0	16.76	no product removed
MW-3	11/1/2005	11:00	0	17.44	no product present in well
MW-3	3/1/2006	NA	0	17.65	no product present in well
MW-3	7/13/2006	NA	1000	18.34	0.52 inches of product in well
MW-3	10/4/2006	NA	0	18.92	no product present in well
MW-3	3/9/2007	NA	1200	19.88	5.5 inches of product in well
MW-3	7/24/2007	NA	800	NA	0.8 inches of product in well
MW-3	1/20/2010	NA	1200	NA	4 inches of product in well
MW-3	1/12/2011	NA	0	NA	no product present in well
MW-3	3/21/2011	NA	0	17.89	no product present in well
MW-3	6/7/2011	NA	0	17.29	no product present in well
MW-3	10/4/2011	NA	0	15.77	no product present in well
MW-3 Total (ml)			**79714**		
MW-3 Total (Gal)			**21.1**		
MW-7	9/16/2005	NA	0	17.00	no product present in well
MW-7	11/1/2005	NA	0	17.72	no product present in well
MW-7	3/1/2006	NA	0	17.81	no product present in well
MW-7	7/13/2006	NA	0	18.14	no product present in well
MW-7	10/4/2006	NA	0	18.2	no product present in well
MW-7	3/9/2007	NA	0	18.6	no product present in well
MW-7	7/24/2007	NA	0	18.83	no product present in well
MW-7	1/20/2010	NA	2500	20.45	16 inches of product in well
MW-7	1/12/2011	NA	2000	18.5	1.8 inches of product in well
MW-7	3/21/2011	NA	1700	18.8	1.8 inches of product in well
MW-7	6/7/2011	NA	0	18.13	no product present in well
MW-7	10/4/2011	NA	0	16.53	no product present in well
MW-7 Total (ml)			**6,200**		
MW-7 Total (Gal)			**1.6**		


Former Union 76
Groundwater Elevations v.s. Time
MW-1
MW-6
MW-6A
MW-7
Groundwater Elevation
949
948.5
948
947.5
947
946.5
946
945.5
945
944.5
944
943.5
943
942.5
942
941.5
941
03/97
01/98
11/98
08/99
06/00
04/01
02/02
12/02
10/03
08/04
05/05
03/06
01/07
11/07
09/08
07/09
05/10
02/11
12/11
Date


Former Union 76 MW-1
Groundwater Elevations and GRO v.s. Time
MW-1
GRO
Groundwater Elevation
GRO (ug/L)
946.5
946
945.5
945
944.5
944
943.5
943
942.5
942
941.5
941
30000
25000
20000
15000
10000
5000
0
03/97
01/98
11/98
08/99
06/00
04/01
02/02
12/02
10/03
08/04
05/05
03/06
01/07
11/07
09/08
07/09
05/10
02/11
12/11
Date


Former Union 76 MW-1
Groundwater Elevations and Benzene v.s. Time
MW-1
Benzene
Groundwater Elevation
Benzene (ug/L)
946.5
946
945.5
945
944.5
944
943.5
943
942.5
942
941.5
941
250
200
150
100
50
0
03/97
01/98
11/98
08/99
06/00
04/01
02/02
12/02
10/03
08/04
05/05
03/06
01/07
11/07
09/08
07/09
05/10
02/11
12/11
Date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Groundwater Elevations and Benzene v.s. Time
MW-6
Benzene
Groundwater Elevation
Benzene (ug/L)
Date
946
945
944
943
942
941
940
7000
6000
5000
4000
3000
2000
1000
0
11/97
7/98
3/99
12/99
8/00
4/01
12/01
9/02
5/03
1/04
9/04
5/05
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6/07
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10/08
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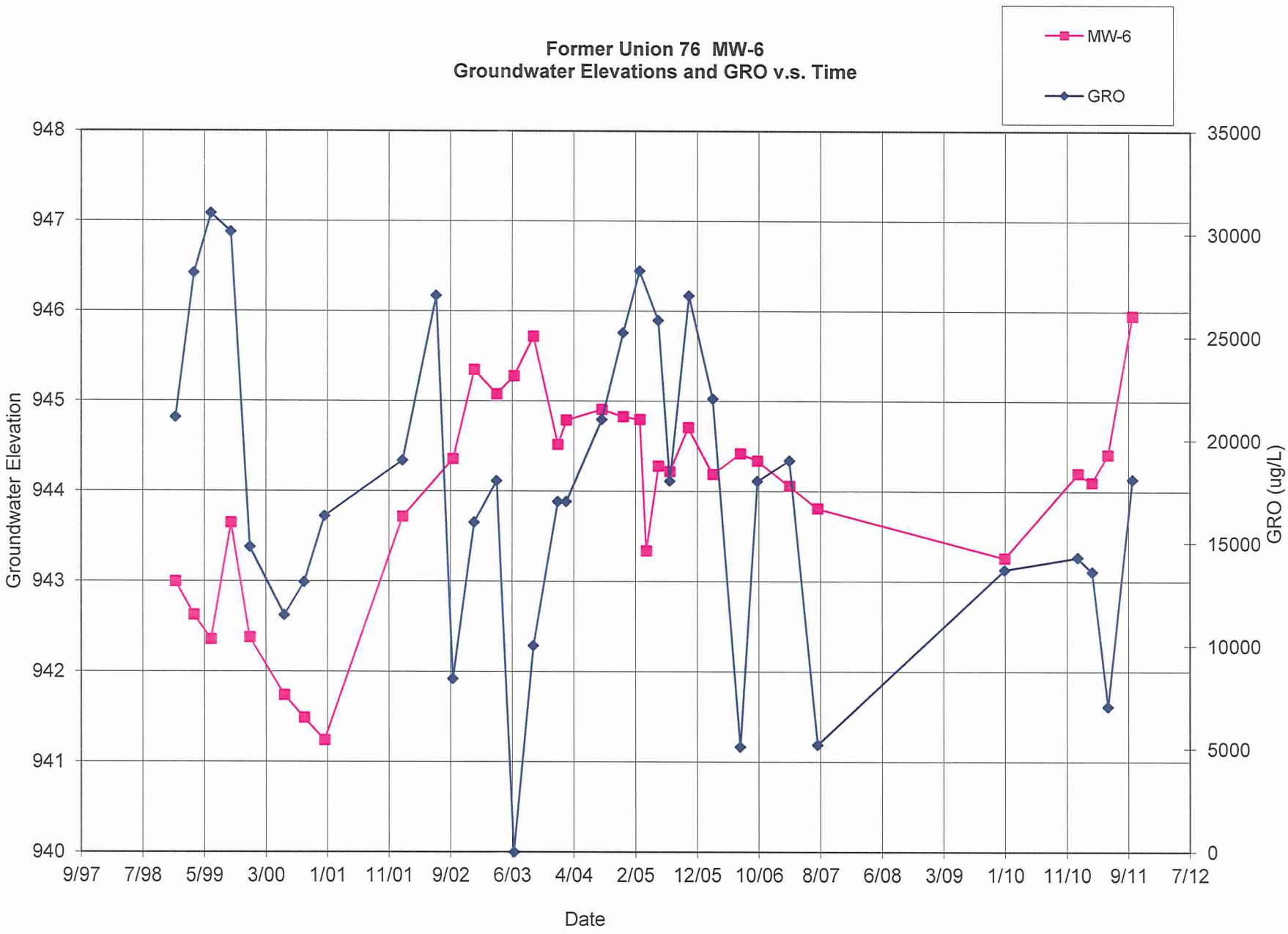
3/10
11/10
7/11
4/12
12/12


Former Union 76 MW-6
Groundwater Elevations and GRO v.s. Time
MW-6
GRO
Groundwater Elevation
GRO (ug/L)
Date
948
947
946
945
944
943
942
941
940
35000
30000
25000
20000
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10000
5000
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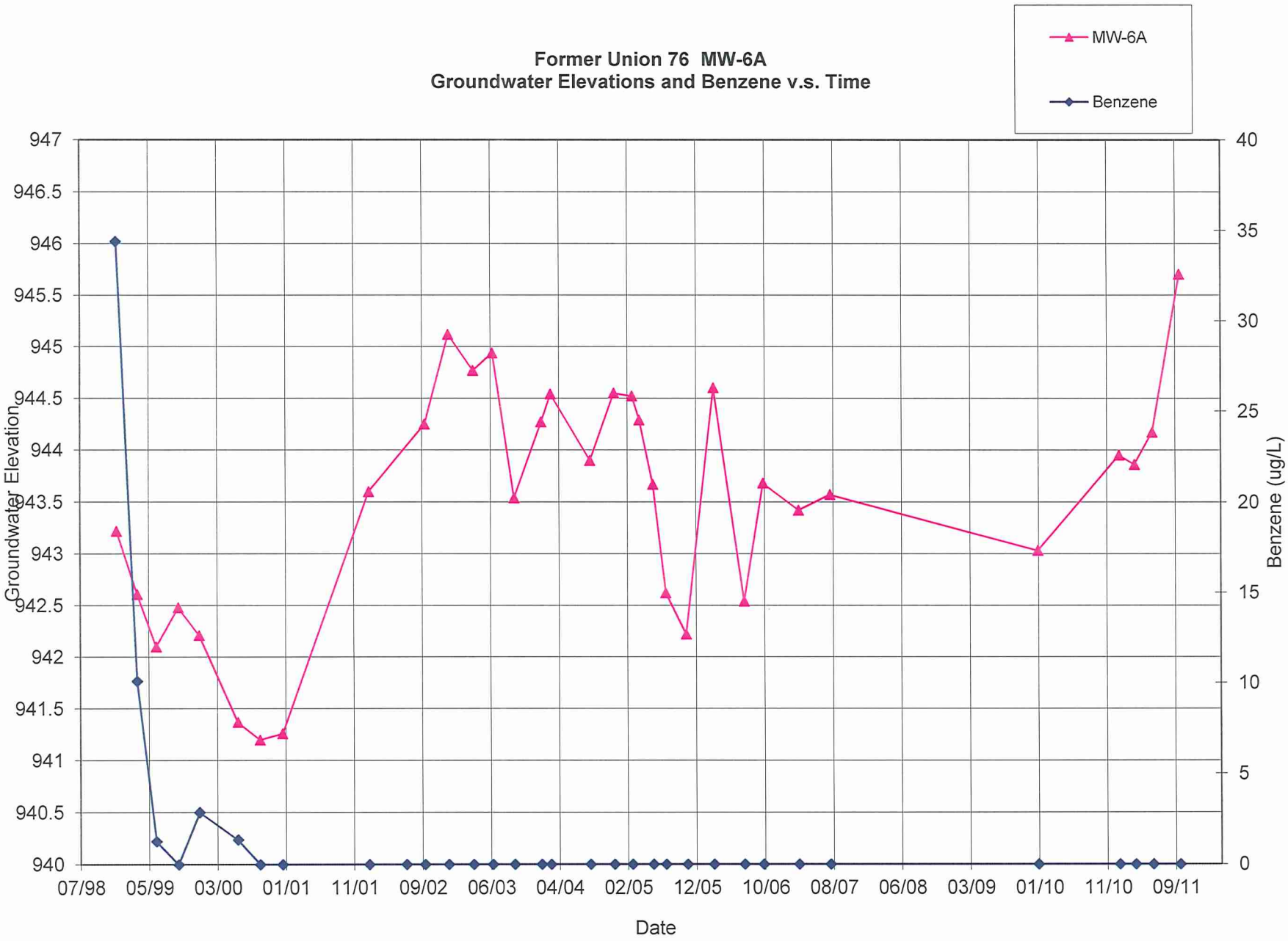
9/97
7/98
5/99
3/00
1/01
11/01
9/02
6/03
4/04
2/05
12/05
10/06
8/07
6/08
3/09
1/10
11/10
9/11
7/12


Former Union 76 MW-6A
Groundwater Elevations and Benzene v.s. Time
MW-6A
Benzene
Groundwater Elevation
Benzene (ug/L)
947
946.5
946
945.5
945
944.5
944
943.5
943
942.5
942
941.5
941
940.5
940
40
35
30
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20
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10
5
0
07/98
05/99
03/00
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11/01
09/02
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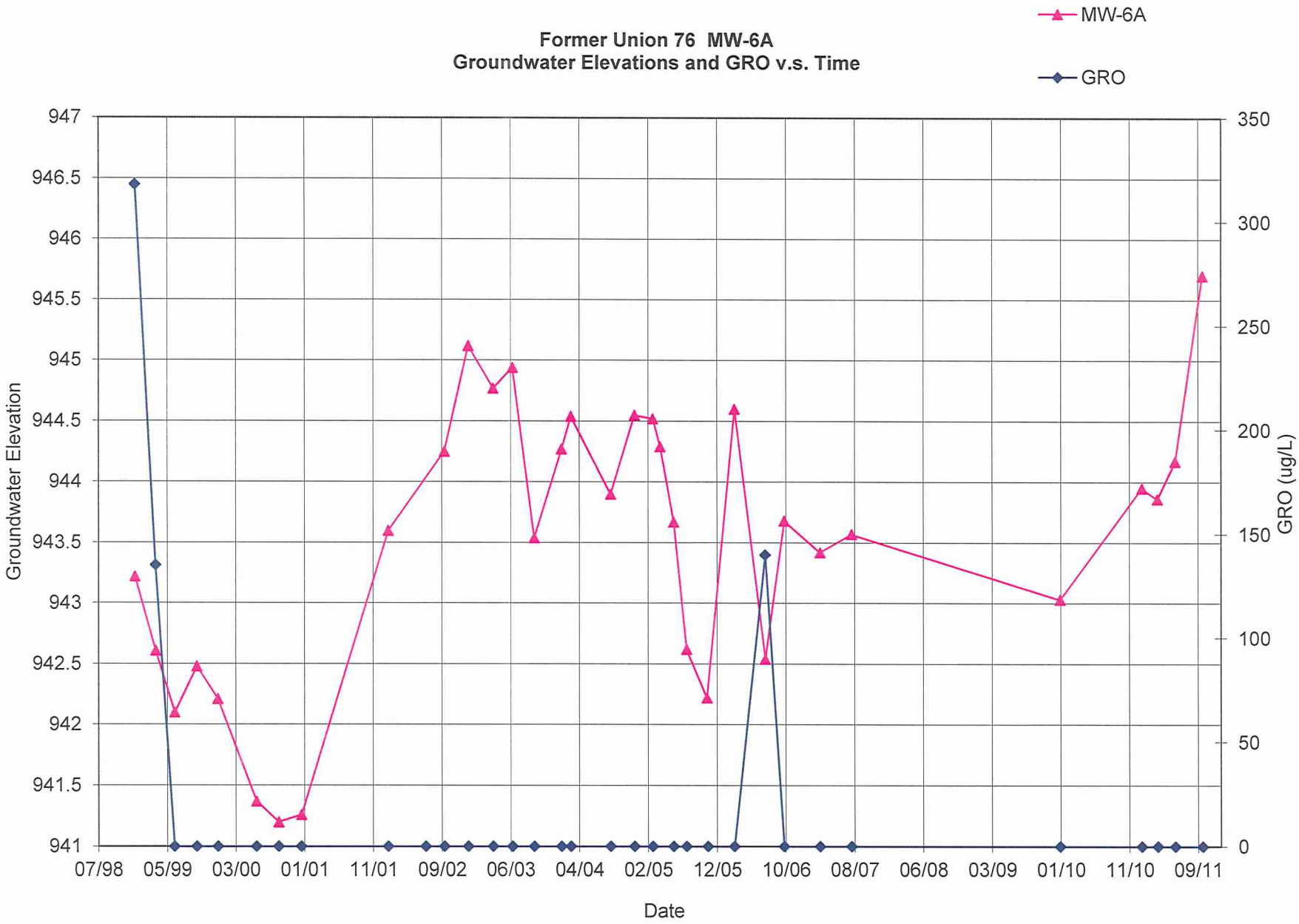
02/05
12/05
10/06
08/07
06/08
03/09
01/10
11/10
09/11
Date


Former Union 76 MW-6A
Groundwater Elevations and GRO v.s. Time
MW-6A
GRO
Groundwater Elevation
GRO (ug/L)
Date
947
946.5
946
945.5
945
944.5
944
943.5
943
942.5
942
941.5
941
350
300
250
200
150
100
50
0
07/98
05/99
03/00
01/01
11/01
09/02
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10/06
08/07
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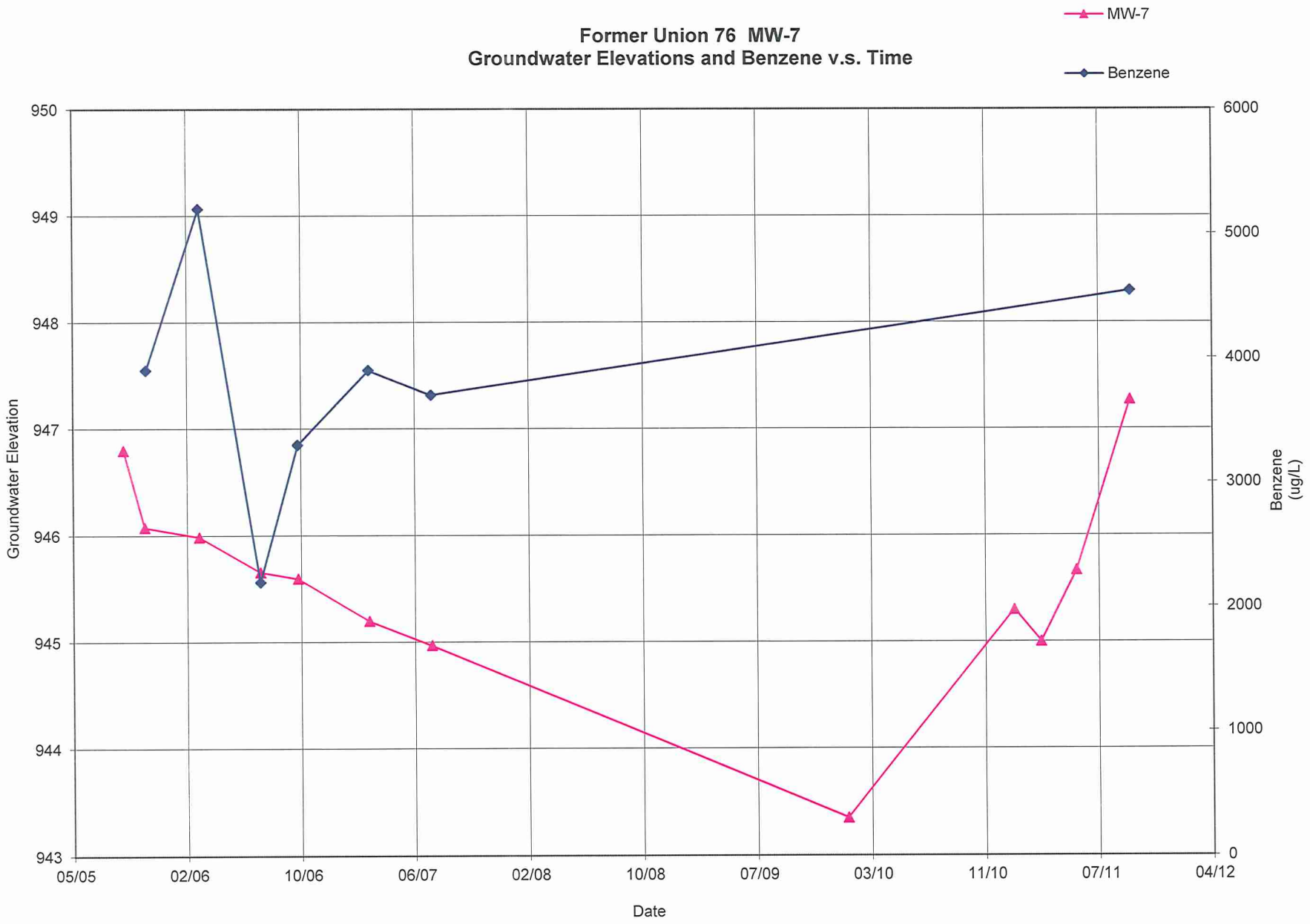
03/09
01/10
11/10
09/11


Former Union 76 MW-7
Groundwater Elevations and Benzene v.s. Time
MW-7
Benzene
Groundwater Elevation
Benzene (ug/L)
Date
950
949
948
947
946
945
944
943
6000
5000
4000
3000
2000
1000
0
05/05
02/06
10/06
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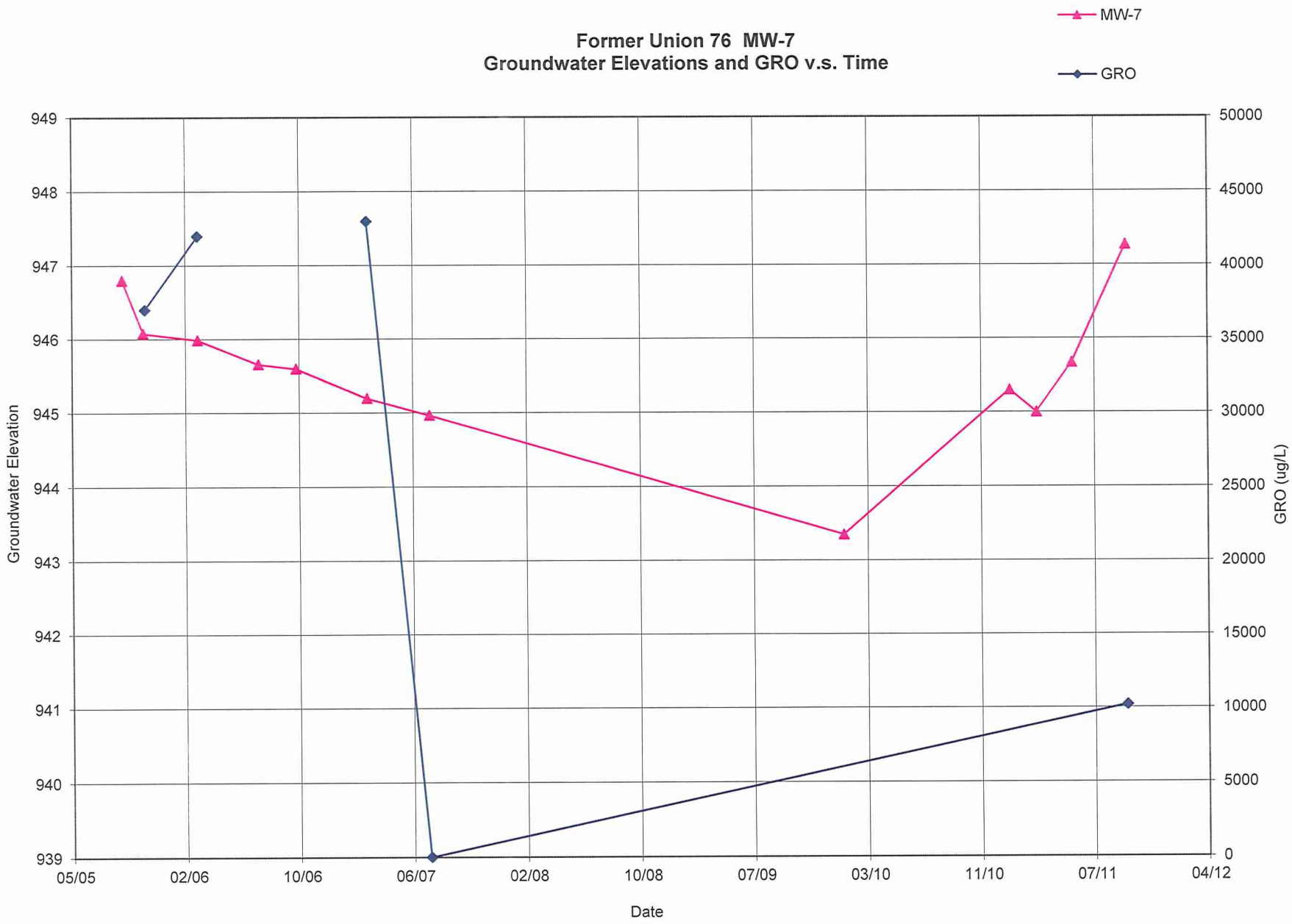
03/10
11/10
07/11
04/12


Former Union 76 MW-7
Groundwater Elevations and GRO v.s. Time
MW-7
GRO
Groundwater Elevation
GRO (ug/L)
Date
949
948
947
946
945
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04/12

APPENDIX A

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

January 19, 2011

Aaron Benker
Liesch Associates, Inc.
13400 15th Ave. N.
Minneapolis, MN 55441

RE: Project: 65677 Mille Lacs Oil
Pace Project No.: 10147159

Dear Aaron Benker:
Enclosed are the analytical results for sample(s) received by the laboratory on January 12, 2011. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Carol Davy

carol.davy@pacelabs.com
Project Manager

Enclosures

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: 65677 Mille Lacs Oil
Pace Project No.: 10147159

Minnesota Certification IDs
1700 Elm Street SE Suite 200, Minneapolis, MN 55414
Alaska Certification #: UST-078
Alaska Certification #MN00064
Arizona Certification #: AZ-0014
Arkansas Certification #: 88-0680
California Certification #: 01155CA
EPA Region 8 Certification #: Pace
Florida/NELAP Certification #: E87605
Georgia Certification #: 959
Idaho Certification #: MN00064
Illinois Certification #: 200011
Iowa Certification #: 368
Kansas Certification #: E-10167
Louisiana Certification #: 03086
Louisiana Certification #: LA080009
Maine Certification #: 2007029
Maryland Certification #: 322
Michigan DEQ Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: Pace
Montana Certification #: MT CERT0092
Nevada Certification #: MN_00064
Nebraska Certification #: Pace
New Jersey Certification #: MN-002
New Mexico Certification #: Pace
New York Certification #: 11647
North Carolina Certification #: 530
North Dakota Certification #: R-036
North Dakota Certification #: R-036A
Ohio VAP Certification #: CL101
Oklahoma Certification #: D9921
Oklahoma Certification #: 9507
Oregon Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification
Tennessee Certification #: 02818
Texas Certification #: T104704192
Washington Certification #: C754
Wisconsin Certification #: 999407970

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: 65677 Mille Lacs Oil
Pace Project No.: 10147159

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10147159001	**MW-6A**	Water	01/12/11 10:00	01/12/11 14:35
10147159002	**MW-6**	Water	01/12/11 10:45	01/12/11 14:35
10147159003	**MW-1**	Water	01/12/11 12:45	01/12/11 14:35
10147159004	**Trip Blank**	Water	01/12/11 00:00	01/12/11 14:35

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Minneapolis, MN 55414
(612)607-1700

SAMPLE ANALYTE COUNT

Project: 65677 Mille Lacs Oil
Pace Project No.: 10147159

Lab ID	Sample ID	Method	Analysts	Analytes Reported
10147159001	**MW-6A**	WI MOD DRO	KL1	2
		WI MOD GRO	KT1	2
		EPA 8260	ECB	73
10147159002	**MW-6**	WI MOD DRO	KL1	2
		WI MOD GRO	KT1	2
		EPA 8260	ECB, JMW	73
10147159003	**MW-1**	WI MOD DRO	KL1	2
		WI MOD GRO	KT1	2
		EPA 8260	ECB	73
10147159004	**Trip Blank**	EPA 8260	ECB	73

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 65677 Mille Lacs Oil
Pace Project No.: 10147159

Sample: MW-6A **Lab ID: 10147159001** Collected: 01/12/11 10:00 Received: 01/12/11 14:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO								
Diesel Range Organics	**126**	ug/L	105	45.3	1	01/13/11 07:23	01/14/11 19:34		
n-Triacontane (S)	64	%	50-150		1	01/13/11 07:23	01/14/11 19:34		
WIGRO GCV	Analytical Method: WI MOD GRO								
Gasoline Range Organics	ND	ug/L	100	6.8	1		01/13/11 17:09		
a,a,a-Trifluorotoluene (S)	97	%	80-125		1		01/13/11 17:09	98-08-8	
8260 VOC	Analytical Method: EPA 8260								
Acetone	ND	ug/L	10.0	5.0	1		01/13/11 13:02	67-64-1	
Allyl chloride	ND	ug/L	4.0	0.84	1		01/13/11 13:02	107-05-1	
Benzene	ND	ug/L	1.0	0.080	1		01/13/11 13:02	71-43-2	
Bromobenzene	ND	ug/L	1.0	0.11	1		01/13/11 13:02	108-86-1	
Bromochloromethane	ND	ug/L	1.0	0.21	1		01/13/11 13:02	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.15	1		01/13/11 13:02	75-27-4	
Bromoform	ND	ug/L	8.0	0.19	1		01/13/11 13:02	75-25-2	
Bromomethane	ND	ug/L	4.0	1.3	1		01/13/11 13:02	74-83-9	
2-Butanone (MEK)	ND	ug/L	4.0	2.0	1		01/13/11 13:02	78-93-3	
n-Butylbenzene	ND	ug/L	1.0	0.12	1		01/13/11 13:02	104-51-8	
sec-Butylbenzene	ND	ug/L	1.0	0.10	1		01/13/11 13:02	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	0.13	1		01/13/11 13:02	98-06-6	
Carbon tetrachloride	ND	ug/L	4.0	0.19	1		01/13/11 13:02	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		01/13/11 13:02	108-90-7	
Chloroethane	ND	ug/L	1.0	0.32	1		01/13/11 13:02	75-00-3	
Chloroform	ND	ug/L	1.0	0.090	1		01/13/11 13:02	67-66-3	
Chloromethane	ND	ug/L	4.0	0.36	1		01/13/11 13:02	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	0.50	1		01/13/11 13:02	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	0.10	1		01/13/11 13:02	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	4.0	0.48	1		01/13/11 13:02	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		01/13/11 13:02	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.10	1		01/13/11 13:02	106-93-4	
Dibromomethane	ND	ug/L	4.0	0.22	1		01/13/11 13:02	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.13	1		01/13/11 13:02	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.10	1		01/13/11 13:02	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.11	1		01/13/11 13:02	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	0.30	1		01/13/11 13:02	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.080	1		01/13/11 13:02	75-34-3	
1,2-Dichloroethane	**8.1**	ug/L	1.0	0.080	1		01/13/11 13:02	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.20	1		01/13/11 13:02	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.23	1		01/13/11 13:02	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.11	1		01/13/11 13:02	156-60-5	
Dichlorofluoromethane	ND	ug/L	1.0	0.29	1		01/13/11 13:02	75-43-4	
1,2-Dichloropropane	ND	ug/L	1.0	0.10	1		01/13/11 13:02	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.090	1		01/13/11 13:02	142-28-9	
2,2-Dichloropropane	ND	ug/L	4.0	0.13	1		01/13/11 13:02	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.11	1		01/13/11 13:02	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	4.0	0.090	1		01/13/11 13:02	10061-01-5	

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ANALYTICAL RESULTS

Project: 65677 Mille Lacs Oil
Pace Project No.: 10147159

Sample: MW-6A **Lab ID: 10147159001** Collected: 01/12/11 10:00 Received: 01/12/11 14:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 VOC	Analytical Method: EPA 8260								
trans-1,3-Dichloropropene	ND	ug/L	4.0	0.11	1		01/13/11 13:02	10061-02-6	
Diethyl ether (Ethyl ether)	ND	ug/L	4.0	0.26	1		01/13/11 13:02	60-29-7	
Ethylbenzene	ND	ug/L	1.0	0.080	1		01/13/11 13:02	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	4.0	0.51	1		01/13/11 13:02	87-68-3	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.10	1		01/13/11 13:02	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.0	0.090	1		01/13/11 13:02	99-87-6	
Methylene Chloride	ND	ug/L	4.0	2.0	1		01/13/11 13:02	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	4.0	2.0	1		01/13/11 13:02	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.11	1		01/13/11 13:02	1634-04-4	
Naphthalene	ND	ug/L	4.0	0.41	1		01/13/11 13:02	91-20-3	
n-Propylbenzene	ND	ug/L	1.0	0.10	1		01/13/11 13:02	103-65-1	
Styrene	ND	ug/L	1.0	0.090	1		01/13/11 13:02	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.16	1		01/13/11 13:02	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.14	1		01/13/11 13:02	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.15	1		01/13/11 13:02	127-18-4	
Tetrahydrofuran	ND	ug/L	10.0	1.5	1		01/13/11 13:02	109-99-9	
Toluene	ND	ug/L	1.0	0.11	1		01/13/11 13:02	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	0.16	1		01/13/11 13:02	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.16	1		01/13/11 13:02	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.090	1		01/13/11 13:02	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.11	1		01/13/11 13:02	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.14	1		01/13/11 13:02	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.14	1		01/13/11 13:02	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.14	1		01/13/11 13:02	96-18-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	0.13	1		01/13/11 13:02	76-13-1	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	0.080	1		01/13/11 13:02	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	0.10	1		01/13/11 13:02	108-67-8	
Vinyl chloride	ND	ug/L	0.40	0.11	1		01/13/11 13:02	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.25	1		01/13/11 13:02	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.15	1		01/13/11 13:02	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.10	1		01/13/11 13:02	95-47-6	
Dibromofluoromethane (S)	108	%	75-130		1		01/13/11 13:02	1868-53-7	
1,2-Dichloroethane-d4 (S)	105	%	75-131		1		01/13/11 13:02	17060-07-0	
Toluene-d8 (S)	93	%	75-125		1		01/13/11 13:02	2037-26-5	
4-Bromofluorobenzene (S)	101	%	75-125		1		01/13/11 13:02	460-00-4	

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ANALYTICAL RESULTS

Project: 65677 Mille Lacs Oil
Pace Project No.: 10147159

Sample: MW-6 Lab ID: **10147159002** Collected: 01/12/11 10:45 Received: 01/12/11 14:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO								
Diesel Range Organics	**2670**	ug/L	109	46.7	1	01/13/11 07:23	01/14/11 20:51		T6,T7
n-Triacontane (S)	54	%	50-150		1	01/13/11 07:23	01/14/11 20:51		
WIGRO GCV	Analytical Method: WI MOD GRO								
Gasoline Range Organics	**14300**	ug/L	1000	68.0	10		01/15/11 03:26		
a,a,a-Trifluorotoluene (S)	97	%	80-125		10		01/15/11 03:26	98-08-8	
8260 VOC	Analytical Method: EPA 8260								
Acetone	ND	ug/L	10.0	5.0	1		01/13/11 13:47	67-64-1	
Allyl chloride	ND	ug/L	4.0	0.84	1		01/13/11 13:47	107-05-1	
Benzene	**2200**	ug/L	10.0	0.80	10		01/14/11 22:12	71-43-2	
Bromobenzene	ND	ug/L	1.0	0.11	1		01/13/11 13:47	108-86-1	
Bromochloromethane	ND	ug/L	1.0	0.21	1		01/13/11 13:47	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.15	1		01/13/11 13:47	75-27-4	
Bromoform	ND	ug/L	8.0	0.19	1		01/13/11 13:47	75-25-2	
Bromomethane	ND	ug/L	4.0	1.3	1		01/13/11 13:47	74-83-9	
2-Butanone (MEK)	ND	ug/L	4.0	2.0	1		01/13/11 13:47	78-93-3	
n-Butylbenzene	**14.2**	ug/L	1.0	0.12	1		01/13/11 13:47	104-51-8	
sec-Butylbenzene	**6.2**	ug/L	1.0	0.10	1		01/13/11 13:47	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	0.13	1		01/13/11 13:47	98-06-6	
Carbon tetrachloride	ND	ug/L	4.0	0.19	1		01/13/11 13:47	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		01/13/11 13:47	108-90-7	
Chloroethane	ND	ug/L	1.0	0.32	1		01/13/11 13:47	75-00-3	
Chloroform	ND	ug/L	1.0	0.090	1		01/13/11 13:47	67-66-3	
Chloromethane	ND	ug/L	4.0	0.36	1		01/13/11 13:47	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	0.50	1		01/13/11 13:47	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	0.10	1		01/13/11 13:47	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	4.0	0.48	1		01/13/11 13:47	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		01/13/11 13:47	124-48-1	
1,2-Dibromoethane (EDB)	**17.4**	ug/L	1.0	0.10	1		01/13/11 13:47	106-93-4	
Dibromomethane	ND	ug/L	4.0	0.22	1		01/13/11 13:47	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.13	1		01/13/11 13:47	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.10	1		01/13/11 13:47	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.11	1		01/13/11 13:47	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	0.30	1		01/13/11 13:47	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.080	1		01/13/11 13:47	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.080	1		01/13/11 13:47	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.20	1		01/13/11 13:47	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.23	1		01/13/11 13:47	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.11	1		01/13/11 13:47	156-60-5	
Dichlorofluoromethane	ND	ug/L	1.0	0.29	1		01/13/11 13:47	75-43-4	
1,2-Dichloropropane	ND	ug/L	1.0	0.10	1		01/13/11 13:47	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.090	1		01/13/11 13:47	142-28-9	
2,2-Dichloropropane	ND	ug/L	4.0	0.13	1		01/13/11 13:47	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.11	1		01/13/11 13:47	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	4.0	0.090	1		01/13/11 13:47	10061-01-5	

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ANALYTICAL RESULTS

Project: 65677 Mille Lacs Oil
Pace Project No.: 10147159

Sample: MW-6 **Lab ID: 10147159002** Collected: 01/12/11 10:45 Received: 01/12/11 14:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 VOC	Analytical Method: EPA 8260								
trans-1,3-Dichloropropene	ND	ug/L	4.0	0.11	1		01/13/11 13:47	10061-02-6	
Diethyl ether (Ethyl ether)	ND	ug/L	4.0	0.26	1		01/13/11 13:47	60-29-7	
Ethylbenzene	**725**	ug/L	10.0	0.80	10		01/14/11 22:12	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	4.0	0.51	1		01/13/11 13:47	87-68-3	
Isopropylbenzene (Cumene)	**45.2**	ug/L	1.0	0.10	1		01/13/11 13:47	98-82-8	
p-Isopropyltoluene	**7.8**	ug/L	1.0	0.090	1		01/13/11 13:47	99-87-6	
Methylene Chloride	ND	ug/L	4.0	2.0	1		01/13/11 13:47	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	4.0	2.0	1		01/13/11 13:47	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.11	1		01/13/11 13:47	1634-04-4	
Naphthalene	**190**	ug/L	4.0	0.41	1		01/13/11 13:47	91-20-3	
n-Propylbenzene	**77.3**	ug/L	1.0	0.10	1		01/13/11 13:47	103-65-1	
Styrene	**5.8**	ug/L	1.0	0.090	1		01/13/11 13:47	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.16	1		01/13/11 13:47	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.14	1		01/13/11 13:47	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.15	1		01/13/11 13:47	127-18-4	
Tetrahydrofuran	ND	ug/L	10.0	1.5	1		01/13/11 13:47	109-99-9	
Toluene	**2280**	ug/L	10.0	1.1	10		01/14/11 22:12	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	0.16	1		01/13/11 13:47	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.16	1		01/13/11 13:47	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.090	1		01/13/11 13:47	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.11	1		01/13/11 13:47	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.14	1		01/13/11 13:47	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.14	1		01/13/11 13:47	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.14	1		01/13/11 13:47	96-18-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	0.13	1		01/13/11 13:47	76-13-1	
1,2,4-Trimethylbenzene	**456**	ug/L	10.0	0.80	10		01/14/11 22:12	95-63-6	
1,3,5-Trimethylbenzene	**121**	ug/L	1.0	0.10	1		01/13/11 13:47	108-67-8	
Vinyl chloride	ND	ug/L	0.40	0.11	1		01/13/11 13:47	75-01-4	
Xylene (Total)	**2690**	ug/L	30.0	2.5	10		01/14/11 22:12	1330-20-7	
m&p-Xylene	**2010**	ug/L	20.0	1.5	10		01/14/11 22:12	179601-23-1	
o-Xylene	**679**	ug/L	10.0	1.0	10		01/14/11 22:12	95-47-6	
Dibromofluoromethane (S)	93	%	75-130		1		01/13/11 13:47	1868-53-7	
1,2-Dichloroethane-d4 (S)	135	%	75-131		1		01/13/11 13:47	17060-07-0	1M
Toluene-d8 (S)	106	%	75-125		1		01/13/11 13:47	2037-26-5	
4-Bromofluorobenzene (S)	108	%	75-125		1		01/13/11 13:47	460-00-4	

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ANALYTICAL RESULTS

Project: 65677 Mille Lacs Oil
Pace Project No.: 10147159

Sample: MW-1 **Lab ID: 10147159003** Collected: 01/12/11 12:45 Received: 01/12/11 14:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO								
Diesel Range Organics	**2600**	ug/L	104	44.8	1	01/13/11 07:23	01/18/11 16:43		T7
n-Triacontane (S)	64	%	50-150		1	01/13/11 07:23	01/18/11 16:43		
WIGRO GCV	Analytical Method: WI MOD GRO								
Gasoline Range Organics	ND	ug/L	100	6.8	1		01/15/11 02:42		
a,a,a-Trifluorotoluene (S)	95	%	80-125		1		01/15/11 02:42	98-08-8	
8260 VOC	Analytical Method: EPA 8260								
Acetone	ND	ug/L	10.0	5.0	1		01/13/11 16:24	67-64-1	
Allyl chloride	ND	ug/L	4.0	0.84	1		01/13/11 16:24	107-05-1	
Benzene	ND	ug/L	1.0	0.080	1		01/13/11 16:24	71-43-2	
Bromobenzene	ND	ug/L	1.0	0.11	1		01/13/11 16:24	108-86-1	
Bromochloromethane	ND	ug/L	1.0	0.21	1		01/13/11 16:24	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.15	1		01/13/11 16:24	75-27-4	
Bromoform	ND	ug/L	8.0	0.19	1		01/13/11 16:24	75-25-2	
Bromomethane	ND	ug/L	4.0	1.3	1		01/13/11 16:24	74-83-9	
2-Butanone (MEK)	ND	ug/L	4.0	2.0	1		01/13/11 16:24	78-93-3	
n-Butylbenzene	ND	ug/L	1.0	0.12	1		01/13/11 16:24	104-51-8	
sec-Butylbenzene	ND	ug/L	1.0	0.10	1		01/13/11 16:24	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	0.13	1		01/13/11 16:24	98-06-6	
Carbon tetrachloride	ND	ug/L	4.0	0.19	1		01/13/11 16:24	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		01/13/11 16:24	108-90-7	
Chloroethane	ND	ug/L	1.0	0.32	1		01/13/11 16:24	75-00-3	
Chloroform	ND	ug/L	1.0	0.090	1		01/13/11 16:24	67-66-3	
Chloromethane	ND	ug/L	4.0	0.36	1		01/13/11 16:24	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	0.50	1		01/13/11 16:24	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	0.10	1		01/13/11 16:24	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	4.0	0.48	1		01/13/11 16:24	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		01/13/11 16:24	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.10	1		01/13/11 16:24	106-93-4	
Dibromomethane	ND	ug/L	4.0	0.22	1		01/13/11 16:24	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.13	1		01/13/11 16:24	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.10	1		01/13/11 16:24	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.11	1		01/13/11 16:24	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	0.30	1		01/13/11 16:24	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.080	1		01/13/11 16:24	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.080	1		01/13/11 16:24	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.20	1		01/13/11 16:24	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.23	1		01/13/11 16:24	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.11	1		01/13/11 16:24	156-60-5	
Dichlorofluoromethane	ND	ug/L	1.0	0.29	1		01/13/11 16:24	75-43-4	
1,2-Dichloropropane	ND	ug/L	1.0	0.10	1		01/13/11 16:24	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.090	1		01/13/11 16:24	142-28-9	
2,2-Dichloropropane	ND	ug/L	4.0	0.13	1		01/13/11 16:24	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.11	1		01/13/11 16:24	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	4.0	0.090	1		01/13/11 16:24	10061-01-5	

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ANALYTICAL RESULTS

Project: 65677 Mille Lacs Oil
Pace Project No.: 10147159

Sample: MW-1 **Lab ID: 10147159003** Collected: 01/12/11 12:45 Received: 01/12/11 14:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 VOC	Analytical Method: EPA 8260								
trans-1,3-Dichloropropene	ND	ug/L	4.0	0.11	1		01/13/11 16:24	10061-02-6	
Diethyl ether (Ethyl ether)	ND	ug/L	4.0	0.26	1		01/13/11 16:24	60-29-7	
Ethylbenzene	ND	ug/L	1.0	0.080	1		01/13/11 16:24	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	4.0	0.51	1		01/13/11 16:24	87-68-3	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.10	1		01/13/11 16:24	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.0	0.090	1		01/13/11 16:24	99-87-6	
Methylene Chloride	ND	ug/L	4.0	2.0	1		01/13/11 16:24	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	4.0	2.0	1		01/13/11 16:24	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.11	1		01/13/11 16:24	1634-04-4	
Naphthalene	ND	ug/L	4.0	0.41	1		01/13/11 16:24	91-20-3	
n-Propylbenzene	ND	ug/L	1.0	0.10	1		01/13/11 16:24	103-65-1	
Styrene	ND	ug/L	1.0	0.090	1		01/13/11 16:24	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.16	1		01/13/11 16:24	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.14	1		01/13/11 16:24	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.15	1		01/13/11 16:24	127-18-4	
Tetrahydrofuran	ND	ug/L	10.0	1.5	1		01/13/11 16:24	109-99-9	
Toluene	ND	ug/L	1.0	0.11	1		01/13/11 16:24	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	0.16	1		01/13/11 16:24	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.16	1		01/13/11 16:24	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.090	1		01/13/11 16:24	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.11	1		01/13/11 16:24	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.14	1		01/13/11 16:24	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.14	1		01/13/11 16:24	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.14	1		01/13/11 16:24	96-18-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	0.13	1		01/13/11 16:24	76-13-1	
1,2,4-Trimethylbenzene	**9.2**	ug/L	1.0	0.080	1		01/13/11 16:24	95-63-6	
1,3,5-Trimethylbenzene	**5.0**	ug/L	1.0	0.10	1		01/13/11 16:24	108-67-8	
Vinyl chloride	ND	ug/L	0.40	0.11	1		01/13/11 16:24	75-01-4	
Xylene (Total)	**23.4**	ug/L	3.0	0.25	1		01/13/11 16:24	1330-20-7	
m&p-Xylene	**14.4**	ug/L	2.0	0.15	1		01/13/11 16:24	179601-23-1	
o-Xylene	**8.9**	ug/L	1.0	0.10	1		01/13/11 16:24	95-47-6	
Dibromofluoromethane (S)	105	%	75-130		1		01/13/11 16:24	1868-53-7	
1,2-Dichloroethane-d4 (S)	102	%	75-131		1		01/13/11 16:24	17060-07-0	
Toluene-d8 (S)	93	%	75-125		1		01/13/11 16:24	2037-26-5	
4-Bromofluorobenzene (S)	99	%	75-125		1		01/13/11 16:24	460-00-4	

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ANALYTICAL RESULTS

Project: 65677 Mille Lacs Oil
Pace Project No.: 10147159

Sample: Trip Blank **Lab ID: 10147159004** Collected: 01/12/11 00:00 Received: 01/12/11 14:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 VOC	Analytical Method: EPA 8260								
Acetone	ND	ug/L	10.0	5.0	1		01/13/11 12:17	67-64-1	
Allyl chloride	ND	ug/L	4.0	0.84	1		01/13/11 12:17	107-05-1	
Benzene	ND	ug/L	1.0	0.080	1		01/13/11 12:17	71-43-2	
Bromobenzene	ND	ug/L	1.0	0.11	1		01/13/11 12:17	108-86-1	
Bromochloromethane	ND	ug/L	1.0	0.21	1		01/13/11 12:17	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.15	1		01/13/11 12:17	75-27-4	
Bromoform	ND	ug/L	8.0	0.19	1		01/13/11 12:17	75-25-2	
Bromomethane	ND	ug/L	4.0	1.3	1		01/13/11 12:17	74-83-9	
2-Butanone (MEK)	ND	ug/L	4.0	2.0	1		01/13/11 12:17	78-93-3	
n-Butylbenzene	ND	ug/L	1.0	0.12	1		01/13/11 12:17	104-51-8	
sec-Butylbenzene	ND	ug/L	1.0	0.10	1		01/13/11 12:17	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	0.13	1		01/13/11 12:17	98-06-6	
Carbon tetrachloride	ND	ug/L	4.0	0.19	1		01/13/11 12:17	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		01/13/11 12:17	108-90-7	
Chloroethane	ND	ug/L	1.0	0.32	1		01/13/11 12:17	75-00-3	
Chloroform	ND	ug/L	1.0	0.090	1		01/13/11 12:17	67-66-3	
Chloromethane	ND	ug/L	4.0	0.36	1		01/13/11 12:17	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	0.50	1		01/13/11 12:17	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	0.10	1		01/13/11 12:17	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	4.0	0.48	1		01/13/11 12:17	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		01/13/11 12:17	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.10	1		01/13/11 12:17	106-93-4	
Dibromomethane	ND	ug/L	4.0	0.22	1		01/13/11 12:17	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.13	1		01/13/11 12:17	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.10	1		01/13/11 12:17	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.11	1		01/13/11 12:17	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	0.30	1		01/13/11 12:17	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.080	1		01/13/11 12:17	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.080	1		01/13/11 12:17	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.20	1		01/13/11 12:17	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.23	1		01/13/11 12:17	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.11	1		01/13/11 12:17	156-60-5	
Dichlorofluoromethane	ND	ug/L	1.0	0.29	1		01/13/11 12:17	75-43-4	
1,2-Dichloropropane	ND	ug/L	1.0	0.10	1		01/13/11 12:17	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.090	1		01/13/11 12:17	142-28-9	
2,2-Dichloropropane	ND	ug/L	4.0	0.13	1		01/13/11 12:17	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.11	1		01/13/11 12:17	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	4.0	0.090	1		01/13/11 12:17	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	4.0	0.11	1		01/13/11 12:17	10061-02-6	
Diethyl ether (Ethyl ether)	ND	ug/L	4.0	0.26	1		01/13/11 12:17	60-29-7	
Ethylbenzene	ND	ug/L	1.0	0.080	1		01/13/11 12:17	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	4.0	0.51	1		01/13/11 12:17	87-68-3	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	0.10	1		01/13/11 12:17	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.0	0.090	1		01/13/11 12:17	99-87-6	
Methylene Chloride	ND	ug/L	4.0	2.0	1		01/13/11 12:17	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	4.0	2.0	1		01/13/11 12:17	108-10-1	

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ANALYTICAL RESULTS

Project: 65677 Mille Lacs Oil
Pace Project No.: 10147159

Sample: Trip Blank **Lab ID: 10147159004** Collected: 01/12/11 00:00 Received: 01/12/11 14:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 VOC	Analytical Method: EPA 8260								
Methyl-tert-butyl ether	ND	ug/L	1.0	0.11	1		01/13/11 12:17	1634-04-4	
Naphthalene	ND	ug/L	4.0	0.41	1		01/13/11 12:17	91-20-3	
n-Propylbenzene	ND	ug/L	1.0	0.10	1		01/13/11 12:17	103-65-1	
Styrene	ND	ug/L	1.0	0.090	1		01/13/11 12:17	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.16	1		01/13/11 12:17	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.14	1		01/13/11 12:17	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.15	1		01/13/11 12:17	127-18-4	
Tetrahydrofuran	ND	ug/L	10.0	1.5	1		01/13/11 12:17	109-99-9	
Toluene	ND	ug/L	1.0	0.11	1		01/13/11 12:17	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	0.16	1		01/13/11 12:17	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.16	1		01/13/11 12:17	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.090	1		01/13/11 12:17	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.11	1		01/13/11 12:17	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.14	1		01/13/11 12:17	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.14	1		01/13/11 12:17	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.14	1		01/13/11 12:17	96-18-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	0.13	1		01/13/11 12:17	76-13-1	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	0.080	1		01/13/11 12:17	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	0.10	1		01/13/11 12:17	108-67-8	
Vinyl chloride	ND	ug/L	0.40	0.11	1		01/13/11 12:17	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.25	1		01/13/11 12:17	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.15	1		01/13/11 12:17	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.10	1		01/13/11 12:17	95-47-6	
Dibromofluoromethane (S)	108	%	75-130		1		01/13/11 12:17	1868-53-7	
1,2-Dichloroethane-d4 (S)	104	%	75-131		1		01/13/11 12:17	17060-07-0	
Toluene-d8 (S)	97	%	75-125		1		01/13/11 12:17	2037-26-5	
4-Bromofluorobenzene (S)	99	%	75-125		1		01/13/11 12:17	460-00-4	

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QUALITY CONTROL DATA

Project: 65677 Mille Lacs Oil
Pace Project No.: 10147159

QC Batch: OEXT/14656 Analysis Method: WI MOD DRO
QC Batch Method: WI MOD DRO Analysis Description: WIDRO GCS
Associated Lab Samples: 10147159001, 10147159002, 10147159003

METHOD BLANK: 918181 Matrix: Water
Associated Lab Samples: 10147159001, 10147159002, 10147159003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Range Organics	ug/L	ND	100	01/14/11 19:20	
n-Triacontane (S)	%	72	50-150	01/14/11 19:20	

LABORATORY CONTROL SAMPLE & LCSD: 918182 918183

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Range Organics	ug/L	2000	1510	1700	76	85	75-115	12	20	
n-Triacontane (S)	%				72	78	50-150			

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QUALITY CONTROL DATA

Project: 65677 Mille Lacs Oil
Pace Project No.: 10147159

QC Batch: GCV/7772
QC Batch Method: WI MOD GRO
Analysis Method: WI MOD GRO
Analysis Description: WIGRO GCV Water
Associated Lab Samples: 10147159001

METHOD BLANK: 918495 Matrix: Water
Associated Lab Samples: 10147159001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	ug/L	ND	100	01/13/11 16:25	
a,a,a-Trifluorotoluene (S)	%	100	80-125	01/13/11 16:25	

LABORATORY CONTROL SAMPLE & LCSD: 918496 918497

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Gasoline Range Organics	ug/L	1000	1050	1060	105	106	80-120	.6	20	
a,a,a-Trifluorotoluene (S)	%				98	99	80-125			

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QUALITY CONTROL DATA

Project: 65677 Mille Lacs Oil
Pace Project No.: 10147159

QC Batch: GCV/7777 Analysis Method: WI MOD GRO
QC Batch Method: WI MOD GRO Analysis Description: WIGRO GCV Water
Associated Lab Samples: 10147159002, 10147159003

METHOD BLANK: 919139 Matrix: Water
Associated Lab Samples: 10147159002, 10147159003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	ug/L	ND	100	01/14/11 18:39	
a,a,a-Trifluorotoluene (S)	%	98	80-125	01/14/11 18:39	

LABORATORY CONTROL SAMPLE & LCSD: 919140 919141

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Gasoline Range Organics	ug/L	1000	1040	1080	104	108	80-120	4	20	
a,a,a-Trifluorotoluene (S)	%				97	97	80-125			

MATRIX SPIKE SAMPLE: 919142

Parameter	Units	10147160007 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	ug/L	ND	1000	1010	101	80-120	
a,a,a-Trifluorotoluene (S)	%				97	80-125	

SAMPLE DUPLICATE: 919143

Parameter	Units	10147160008 Result	Dup Result	RPD	Max RPD	Qualifiers
Gasoline Range Organics	ug/L	ND	ND		20	
a,a,a-Trifluorotoluene (S)	%	97	102	4		

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QUALITY CONTROL DATA

Project: 65677 Mille Lacs Oil
Pace Project No.: 10147159

QC Batch: MSV/16212 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV 465 W
Associated Lab Samples: 10147159001, 10147159002, 10147159003, 10147159004

METHOD BLANK: 918223 Matrix: Water
Associated Lab Samples: 10147159001, 10147159002, 10147159003, 10147159004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	01/13/11 11:32	
1,1,1-Trichloroethane	ug/L	ND	1.0	01/13/11 11:32	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	01/13/11 11:32	
1,1,2-Trichloroethane	ug/L	ND	1.0	01/13/11 11:32	
1,1,2-Trichlorotrifluoroethane	ug/L	ND	1.0	01/13/11 11:32	
1,1-Dichloroethane	ug/L	ND	1.0	01/13/11 11:32	
1,1-Dichloroethene	ug/L	ND	1.0	01/13/11 11:32	
1,1-Dichloropropene	ug/L	ND	1.0	01/13/11 11:32	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	01/13/11 11:32	
1,2,3-Trichloropropane	ug/L	ND	1.0	01/13/11 11:32	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	01/13/11 11:32	
1,2,4-Trimethylbenzene	ug/L	ND	1.0	01/13/11 11:32	
1,2-Dibromo-3-chloropropane	ug/L	ND	4.0	01/13/11 11:32	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	01/13/11 11:32	
1,2-Dichlorobenzene	ug/L	ND	1.0	01/13/11 11:32	
1,2-Dichloroethane	ug/L	ND	1.0	01/13/11 11:32	
1,2-Dichloropropane	ug/L	ND	1.0	01/13/11 11:32	
1,3,5-Trimethylbenzene	ug/L	ND	1.0	01/13/11 11:32	
1,3-Dichlorobenzene	ug/L	ND	1.0	01/13/11 11:32	
1,3-Dichloropropane	ug/L	ND	1.0	01/13/11 11:32	
1,4-Dichlorobenzene	ug/L	ND	1.0	01/13/11 11:32	
2,2-Dichloropropane	ug/L	ND	4.0	01/13/11 11:32	
2-Butanone (MEK)	ug/L	ND	4.0	01/13/11 11:32	
2-Chlorotoluene	ug/L	ND	1.0	01/13/11 11:32	
4-Chlorotoluene	ug/L	ND	1.0	01/13/11 11:32	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	4.0	01/13/11 11:32	
Acetone	ug/L	ND	10.0	01/13/11 11:32	
Allyl chloride	ug/L	ND	4.0	01/13/11 11:32	
Benzene	ug/L	ND	1.0	01/13/11 11:32	
Bromobenzene	ug/L	ND	1.0	01/13/11 11:32	
Bromochloromethane	ug/L	ND	1.0	01/13/11 11:32	
Bromodichloromethane	ug/L	ND	1.0	01/13/11 11:32	
Bromoform	ug/L	ND	8.0	01/13/11 11:32	
Bromomethane	ug/L	ND	4.0	01/13/11 11:32	
Carbon tetrachloride	ug/L	ND	4.0	01/13/11 11:32	
Chlorobenzene	ug/L	ND	1.0	01/13/11 11:32	
Chloroethane	ug/L	ND	1.0	01/13/11 11:32	
Chloroform	ug/L	ND	1.0	01/13/11 11:32	
Chloromethane	ug/L	ND	4.0	01/13/11 11:32	
cis-1,2-Dichloroethene	ug/L	ND	1.0	01/13/11 11:32	
cis-1,3-Dichloropropene	ug/L	ND	4.0	01/13/11 11:32	
Dibromochloromethane	ug/L	ND	1.0	01/13/11 11:32	
Dibromomethane	ug/L	ND	4.0	01/13/11 11:32	

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QUALITY CONTROL DATA

Project: 65677 Mille Lacs Oil
Pace Project No.: 10147159

METHOD BLANK: 918223 Matrix: Water

Associated Lab Samples: 10147159001, 10147159002, 10147159003, 10147159004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dichlorodifluoromethane	ug/L	ND	1.0	01/13/11 11:32	
Dichlorofluoromethane	ug/L	ND	1.0	01/13/11 11:32	
Diethyl ether (Ethyl ether)	ug/L	ND	4.0	01/13/11 11:32	
Ethylbenzene	ug/L	ND	1.0	01/13/11 11:32	
Hexachloro-1,3-butadiene	ug/L	ND	4.0	01/13/11 11:32	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	01/13/11 11:32	
m&p-Xylene	ug/L	ND	2.0	01/13/11 11:32	
Methyl-tert-butyl ether	ug/L	ND	1.0	01/13/11 11:32	
Methylene Chloride	ug/L	ND	4.0	01/13/11 11:32	
n-Butylbenzene	ug/L	ND	1.0	01/13/11 11:32	
n-Propylbenzene	ug/L	ND	1.0	01/13/11 11:32	
Naphthalene	ug/L	ND	4.0	01/13/11 11:32	
o-Xylene	ug/L	ND	1.0	01/13/11 11:32	
p-Isopropyltoluene	ug/L	ND	1.0	01/13/11 11:32	
sec-Butylbenzene	ug/L	ND	1.0	01/13/11 11:32	
Styrene	ug/L	ND	1.0	01/13/11 11:32	
tert-Butylbenzene	ug/L	ND	1.0	01/13/11 11:32	
Tetrachloroethene	ug/L	ND	1.0	01/13/11 11:32	
Tetrahydrofuran	ug/L	ND	10.0	01/13/11 11:32	
Toluene	ug/L	ND	1.0	01/13/11 11:32	
trans-1,2-Dichloroethene	ug/L	ND	1.0	01/13/11 11:32	
trans-1,3-Dichloropropene	ug/L	ND	4.0	01/13/11 11:32	
Trichloroethene	ug/L	ND	1.0	01/13/11 11:32	
Trichlorofluoromethane	ug/L	ND	1.0	01/13/11 11:32	
Vinyl chloride	ug/L	ND	0.40	01/13/11 11:32	
Xylene (Total)	ug/L	ND	3.0	01/13/11 11:32	
1,2-Dichloroethane-d4 (S)	%	98	75-131	01/13/11 11:32	
4-Bromofluorobenzene (S)	%	99	75-125	01/13/11 11:32	
Dibromofluoromethane (S)	%	103	75-130	01/13/11 11:32	
Toluene-d8 (S)	%	97	75-125	01/13/11 11:32	

LABORATORY CONTROL SAMPLE: 918224

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	49.0	98	75-125	
1,1,1-Trichloroethane	ug/L	50	49.8	100	68-130	
1,1,2,2-Tetrachloroethane	ug/L	50	45.2	90	71-125	
1,1,2-Trichloroethane	ug/L	50	46.4	93	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	50	45.2	90	60-141	
1,1-Dichloroethane	ug/L	50	49.6	99	75-125	
1,1-Dichloroethene	ug/L	50	48.4	97	69-125	
1,1-Dichloropropene	ug/L	50	50.0	100	69-125	
1,2,3-Trichlorobenzene	ug/L	50	44.8	90	72-129	
1,2,3-Trichloropropane	ug/L	50	45.2	90	69-127	
1,2,4-Trichlorobenzene	ug/L	50	46.8	94	75-125	

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QUALITY CONTROL DATA

Project: 65677 Mille Lacs Oil
Pace Project No.: 10147159

LABORATORY CONTROL SAMPLE: 918224

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trimethylbenzene	ug/L	50	51.1	102	75-125	
1,2-Dibromo-3-chloropropane	ug/L	50	45.2	90	64-135	
1,2-Dibromoethane (EDB)	ug/L	50	46.9	94	75-126	
1,2-Dichlorobenzene	ug/L	50	48.1	96	75-125	
1,2-Dichloroethane	ug/L	50	47.9	96	75-125	
1,2-Dichloropropane	ug/L	50	50.6	101	75-125	
1,3,5-Trimethylbenzene	ug/L	50	50.7	101	75-125	
1,3-Dichlorobenzene	ug/L	50	48.7	97	75-125	
1,3-Dichloropropane	ug/L	50	47.2	94	75-125	
1,4-Dichlorobenzene	ug/L	50	48.0	96	75-125	
2,2-Dichloropropane	ug/L	50	51.4	103	54-149	
2-Butanone (MEK)	ug/L	50	52.5	105	55-140	
2-Chlorotoluene	ug/L	50	48.6	97	75-125	
4-Chlorotoluene	ug/L	50	49.5	99	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	50	44.3	89	65-132	
Acetone	ug/L	125	145	116	36-126	
Allyl chloride	ug/L	50	51.2	102	64-137	
Benzene	ug/L	50	50.3	101	75-125	
Bromobenzene	ug/L	50	49.0	98	75-125	
Bromochloromethane	ug/L	50	53.6	107	75-125	
Bromodichloromethane	ug/L	50	50.3	101	75-125	
Bromoform	ug/L	50	48.1	96	72-131	
Bromomethane	ug/L	50	42.4	85	30-150	
Carbon tetrachloride	ug/L	50	50.8	102	61-140	
Chlorobenzene	ug/L	50	47.8	96	75-125	
Chloroethane	ug/L	50	49.3	99	56-137	
Chloroform	ug/L	50	48.5	97	75-125	
Chloromethane	ug/L	50	47.2	94	62-128	
cis-1,2-Dichloroethene	ug/L	50	51.3	103	75-125	
cis-1,3-Dichloropropene	ug/L	50	51.9	104	75-125	
Dibromochloromethane	ug/L	50	49.1	98	75-125	
Dibromomethane	ug/L	50	49.0	98	75-125	
Dichlorodifluoromethane	ug/L	50	39.3	79	54-141	
Dichlorofluoromethane	ug/L	50	50.0	100	70-128	
Diethyl ether (Ethyl ether)	ug/L	50	48.3	97	75-125	
Ethylbenzene	ug/L	50	49.8	100	75-125	
Hexachloro-1,3-butadiene	ug/L	25	24.5	98	68-133	
Isopropylbenzene (Cumene)	ug/L	50	50.5	101	75-125	
m&p-Xylene	ug/L	100	98.6	99	75-125	
Methyl-tert-butyl ether	ug/L	50	46.3	93	73-132	
Methylene Chloride	ug/L	50	49.1	98	74-125	
n-Butylbenzene	ug/L	50	49.9	100	75-125	
n-Propylbenzene	ug/L	50	50.5	101	75-125	
Naphthalene	ug/L	50	45.5	91	69-130	
o-Xylene	ug/L	50	50.6	101	75-125	
p-Isopropyltoluene	ug/L	50	49.9	100	75-125	
sec-Butylbenzene	ug/L	50	49.8	100	75-125	
Styrene	ug/L	50	51.1	102	75-125	

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(612)607-1700

QUALITY CONTROL DATA

Project: 65677 Mille Lacs Oil
Pace Project No.: 10147159

LABORATORY CONTROL SAMPLE: 918224

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
tert-Butylbenzene	ug/L	50	49.8	100	73-125	
Tetrachloroethene	ug/L	50	47.1	94	72-125	
Tetrahydrofuran	ug/L	500	460	92	64-135	
Toluene	ug/L	50	49.1	98	75-125	
trans-1,2-Dichloroethene	ug/L	50	49.3	99	70-125	
trans-1,3-Dichloropropene	ug/L	50	49.4	99	75-125	
Trichloroethene	ug/L	50	49.8	100	75-125	
Trichlorofluoromethane	ug/L	50	48.5	97	68-132	
Vinyl chloride	ug/L	50	47.0	94	62-132	
Xylene (Total)	ug/L	150	149	99	75-125	
1,2-Dichloroethane-d4 (S)	%			95	75-131	
4-Bromofluorobenzene (S)	%			100	75-125	
Dibromofluoromethane (S)	%			101	75-130	
Toluene-d8 (S)	%			99	75-125	

MATRIX SPIKE SAMPLE: 919622

Parameter	Units	10147057015 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.16	50	53.3	107	72-133	
1,1,1-Trichloroethane	ug/L	<0.090	50	57.5	115	65-150	
1,1,2,2-Tetrachloroethane	ug/L	<0.14	50	50.4	101	63-138	
1,1,2-Trichloroethane	ug/L	<0.11	50	51.8	104	68-131	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.13	50	66.0	132	47-150	
1,1-Dichloroethane	ug/L	0.25J	50	55.4	110	71-131	
1,1-Dichloroethene	ug/L	<0.20	50	59.1	118	66-145	
1,1-Dichloropropene	ug/L	<0.11	50	57.4	115	62-144	
1,2,3-Trichlorobenzene	ug/L	<0.16	50	50.3	101	66-139	
1,2,3-Trichloropropane	ug/L	<0.14	50	49.5	99	61-139	
1,2,4-Trichlorobenzene	ug/L	<0.16	50	51.4	103	68-139	
1,2,4-Trimethylbenzene	ug/L	<0.080	50	53.3	107	69-130	
1,2-Dibromo-3-chloropropane	ug/L	<0.48	50	50.0	100	53-150	
1,2-Dibromoethane (EDB)	ug/L	<0.10	50	51.8	104	69-133	
1,2-Dichlorobenzene	ug/L	<0.13	50	51.8	104	72-131	
1,2-Dichloroethane	ug/L	<0.080	50	52.8	106	62-148	
1,2-Dichloropropane	ug/L	<0.10	50	54.3	109	74-128	
1,3,5-Trimethylbenzene	ug/L	<0.10	50	54.0	108	65-134	
1,3-Dichlorobenzene	ug/L	<0.10	50	51.9	104	73-130	
1,3-Dichloropropane	ug/L	<0.090	50	51.8	104	71-130	
1,4-Dichlorobenzene	ug/L	<0.11	50	51.9	104	71-132	
2,2-Dichloropropane	ug/L	<0.13	50	58.8	118	50-150	
2-Butanone (MEK)	ug/L	<2.0	50	50.4	101	46-140	
2-Chlorotoluene	ug/L	<0.50	50	52.4	105	74-131	
4-Chlorotoluene	ug/L	<0.10	50	53.4	107	70-139	
4-Methyl-2-pentanone (MIBK)	ug/L	<2.0	50	53.1	106	59-145	
Acetone	ug/L	<5.0	125	123	99	36-126	
Allyl chloride	ug/L	<0.84	50	56.9	114	50-148	
Benzene	ug/L	<0.080	50	56.1	112	70-133	

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QUALITY CONTROL DATA

Project: 65677 Mille Lacs Oil
Pace Project No.: 10147159

MATRIX SPIKE SAMPLE: 919622

Parameter	Units	10147057015 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Bromobenzene	ug/L	<0.11	50	52.4	105	72-129	
Bromochloromethane	ug/L	<0.21	50	57.1	114	69-137	
Bromodichloromethane	ug/L	<0.15	50	53.0	106	73-134	
Bromoform	ug/L	<0.19	50	53.7	107	56-144	
Bromomethane	ug/L	<1.3	50	47.6	95	30-150	
Carbon tetrachloride	ug/L	<0.19	50	59.6	119	55-150	
Chlorobenzene	ug/L	<0.13	50	52.6	105	71-132	
Chloroethane	ug/L	<0.32	50	55.5	111	50-150	
Chloroform	ug/L	0.23J	50	53.7	107	68-138	
Chloromethane	ug/L	<0.36	50	53.3	107	61-148	
cis-1,2-Dichloroethene	ug/L	1.3	50	57.8	113	68-135	
cis-1,3-Dichloropropene	ug/L	<0.090	50	53.3	107	70-134	
Dibromochloromethane	ug/L	<0.15	50	53.7	107	67-135	
Dibromomethane	ug/L	<0.22	50	52.3	105	74-130	
Dichlorodifluoromethane	ug/L	<0.30	50	57.9	116	44-150	
Dichlorofluoromethane	ug/L	<0.29	50	56.5	113	67-145	
Diethyl ether (Ethyl ether)	ug/L	<0.26	50	54.9	110	69-132	
Ethylbenzene	ug/L	<0.080	50	55.4	111	66-133	
Hexachloro-1,3-butadiene	ug/L	<0.51	25	27.8	111	59-150	
Isopropylbenzene (Cumene)	ug/L	<0.10	50	56.3	113	71-140	
m&p-Xylene	ug/L	<0.15	100	108	108	63-130	
Methyl-tert-butyl ether	ug/L	<0.11	50	52.4	105	62-143	
Methylene Chloride	ug/L	<2.0	50	53.9	108	69-126	
n-Butylbenzene	ug/L	<0.12	50	55.0	110	73-140	
n-Propylbenzene	ug/L	<0.10	50	55.6	111	71-136	
Naphthalene	ug/L	<0.41	50	52.3	105	55-147	
o-Xylene	ug/L	<0.10	50	54.5	109	66-132	
p-Isopropyltoluene	ug/L	<0.090	50	54.4	109	69-138	
sec-Butylbenzene	ug/L	<0.10	50	54.9	110	73-140	
Styrene	ug/L	<0.090	50	52.4	105	68-138	
tert-Butylbenzene	ug/L	<0.13	50	54.3	109	70-138	
Tetrachloroethene	ug/L	7.8	50	61.2	107	70-138	
Tetrahydrofuran	ug/L	<1.5	500	536	107	54-148	
Toluene	ug/L	0.14J	50	54.5	109	65-127	
trans-1,2-Dichloroethene	ug/L	<0.11	50	55.9	112	67-131	
trans-1,3-Dichloropropene	ug/L	<0.11	50	53.8	108	64-138	
Trichloroethene	ug/L	50.9	50	104	107	70-133	
Trichlorofluoromethane	ug/L	<0.14	50	61.9	124	59-150	
Vinyl chloride	ug/L	<0.11	50	55.4	111	59-150	
Xylene (Total)	ug/L	<0.25	150	163	109	65-130	
1,2-Dichloroethane-d4 (S)	%				96	75-131	
4-Bromofluorobenzene (S)	%				103	75-125	
Dibromofluoromethane (S)	%				104	75-130	
Toluene-d8 (S)	%				96	75-125	

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QUALITY CONTROL DATA

Project: 65677 Mille Lacs Oil
Pace Project No.: 10147159

SAMPLE DUPLICATE: 919623

Parameter	Units	10147159001 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	ND		30	
1,1,1-Trichloroethane	ug/L	ND	ND		30	
1,1,2,2-Tetrachloroethane	ug/L	ND	ND		30	
1,1,2-Trichloroethane	ug/L	ND	ND		30	
1,1,2-Trichlorotrifluoroethane	ug/L	ND	ND		30	
1,1-Dichloroethane	ug/L	ND	ND		30	
1,1-Dichloroethene	ug/L	ND	ND		30	
1,1-Dichloropropene	ug/L	ND	ND		30	
1,2,3-Trichlorobenzene	ug/L	ND	ND		30	
1,2,3-Trichloropropane	ug/L	ND	ND		30	
1,2,4-Trichlorobenzene	ug/L	ND	ND		30	
1,2,4-Trimethylbenzene	ug/L	ND	ND		30	
1,2-Dibromo-3-chloropropane	ug/L	ND	ND		30	
1,2-Dibromoethane (EDB)	ug/L	ND	ND		30	
1,2-Dichlorobenzene	ug/L	ND	ND		30	
1,2-Dichloroethane	ug/L	8.1	6.3	24	30	
1,2-Dichloropropane	ug/L	ND	ND		30	
1,3,5-Trimethylbenzene	ug/L	ND	ND		30	
1,3-Dichlorobenzene	ug/L	ND	ND		30	
1,3-Dichloropropane	ug/L	ND	ND		30	
1,4-Dichlorobenzene	ug/L	ND	ND		30	
2,2-Dichloropropane	ug/L	ND	ND		30	
2-Butanone (MEK)	ug/L	ND	ND		30	
2-Chlorotoluene	ug/L	ND	ND		30	
4-Chlorotoluene	ug/L	ND	ND		30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	ND		30	
Acetone	ug/L	ND	ND		30	
Allyl chloride	ug/L	ND	ND		30	
Benzene	ug/L	ND	ND		30	
Bromobenzene	ug/L	ND	ND		30	
Bromochloromethane	ug/L	ND	ND		30	
Bromodichloromethane	ug/L	ND	ND		30	
Bromoform	ug/L	ND	ND		30	
Bromomethane	ug/L	ND	ND		30	
Carbon tetrachloride	ug/L	ND	ND		30	
Chlorobenzene	ug/L	ND	ND		30	
Chloroethane	ug/L	ND	ND		30	
Chloroform	ug/L	ND	ND		30	
Chloromethane	ug/L	ND	ND		30	
cis-1,2-Dichloroethene	ug/L	ND	ND		30	
cis-1,3-Dichloropropene	ug/L	ND	ND		30	
Dibromochloromethane	ug/L	ND	ND		30	
Dibromomethane	ug/L	ND	ND		30	
Dichlorodifluoromethane	ug/L	ND	ND		30	
Dichlorofluoromethane	ug/L	ND	ND		30	
Diethyl ether (Ethyl ether)	ug/L	ND	ND		30	
Ethylbenzene	ug/L	ND	ND		30	
Hexachloro-1,3-butadiene	ug/L	ND	ND		30	

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QUALITY CONTROL DATA

Project: 65677 Mille Lacs Oil
Pace Project No.: 10147159

SAMPLE DUPLICATE: 919623

Parameter	Units	10147159001 Result	Dup Result	RPD	Max RPD	Qualifiers
Isopropylbenzene (Cumene)	ug/L	ND	ND		30	
m&p-Xylene	ug/L	ND	ND		30	
Methyl-tert-butyl ether	ug/L	ND	ND		30	
Methylene Chloride	ug/L	ND	ND		30	
n-Butylbenzene	ug/L	ND	ND		30	
n-Propylbenzene	ug/L	ND	ND		30	
Naphthalene	ug/L	ND	ND		30	
o-Xylene	ug/L	ND	ND		30	
p-Isopropyltoluene	ug/L	ND	ND		30	
sec-Butylbenzene	ug/L	ND	ND		30	
Styrene	ug/L	ND	ND		30	
tert-Butylbenzene	ug/L	ND	ND		30	
Tetrachloroethene	ug/L	ND	ND		30	
Tetrahydrofuran	ug/L	ND	ND		30	
Toluene	ug/L	ND	ND		30	
trans-1,2-Dichloroethene	ug/L	ND	ND		30	
trans-1,3-Dichloropropene	ug/L	ND	ND		30	
Trichloroethene	ug/L	ND	ND		30	
Trichlorofluoromethane	ug/L	ND	ND		30	
Vinyl chloride	ug/L	ND	ND		30	
Xylene (Total)	ug/L	ND	ND		30	
1,2-Dichloroethane-d4 (S)	%	105	108	3		
4-Bromofluorobenzene (S)	%	101	102	.8		
Dibromofluoromethane (S)	%	108	104	4		
Toluene-d8 (S)	%	93	92	.8		

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QUALIFIERS

Project: 65677 Mille Lacs Oil
Pace Project No.: 10147159

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

WORKORDER QUALIFIERS

WO: 10147159

[1] Samples were received outside of the recommended temperature range of 0-6 degrees Celsius. The samples were received from the field on ice, indicating the cool down process had begun.

ANALYTE QUALIFIERS

1M Surrogate recovery outside control limits due to matrix interferences.

T6 High boiling point hydrocarbons are present in the sample.

T7 Low boiling point hydrocarbons are present in the sample.

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

1131

ID147159

Page: 1 of 1

1229269

Section A Required Client Information:

Company: Liesch
Address: 13400 15th Ave N
Plymouth MN 55441
Email To:
Phone: 763 489 3147 Fax:
Requested Due Date/TAT: Standard

Section B Required Project Information:

Report To: Aaron Beaker
Copy To:
Purchase Order No.:
Project Name: 605677
Project Number: Miller Lake A.U.

Section C Invoice Information:

Attention:
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager:
Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☑ GROUND WATER ☐ DRINKING WATER
☑ UST ☐ RCRA ☐ OTHER

Site Location STATE:

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Matrix Codes (MATRIX / CODE): Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED: COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Y/N	Analysis Test: 6020 MET	VOCs	DRO	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW 6A	WT	G	1-12-11	10:00				5										X	X	X		
2	MW 6			1-12-11	10:45				5										X	X	X		
3	MW 13			1-12-11	12:45				5										X	X	X		
4																							
5																							
6																							
7																							
8																							
9																							
10																							
11																							
12																							

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
	Liesch	1-12-11	2:35	Pace	1/12/11	1435

SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
9.2	Y	N	Y

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Aaron Beaker

SIGNATURE of SAMPLER:

DATE Signed (MM/DD/YY): 1-12-2011

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Sample Condition Upon Receipt

Pace Analytical

Client Name: Hesch Project # 10147159

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☑ Commercial ☐ Pace Other _____

Tracking #: _____

Optional: Proj. Due Date: Proj. Name:

Custody Seal on Cooler/Box Present: ☐ yes ☑ no Seals Intact: ☐ yes ☐ no

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other _____ Temp Blank: Yes ✓ No _____

Thermometer Used: 80344042 or 179425 Type of Ice: (Wet) Blue None ☑ Samples on ice, cooling process has begun

Cooler Temperature: 9.2 Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Comments:

Date and initials of person examining contents: 1/12/14 SH

Chain of Custody Present:	☑Yes	☐No	☐N/A
Chain of Custody Filled Out:	☑Yes	☐No	☐N/A
Chain of Custody Relinquished:	☑Yes	☐No	☐N/A
Sampler Name & Signature on COC:	☑Yes	☐No	☐N/A
Samples Arrived within Hold Time:	☑Yes	☐No	☐N/A
Short Hold Time Analysis (<72hr):	☐Yes	☑No	☐N/A
Rush Turn Around Time Requested:	☐Yes	☑No	☐N/A
Sufficient Volume:	☑Yes	☐No	☐N/A
Correct Containers Used:	☑Yes	☐No	☐N/A
-Pace Containers Used:	☑Yes	☐No	☐N/A
Containers Intact:	☑Yes	☐No	☐N/A
Filtered volume received for Dissolved tests	☐Yes	☑No	☐N/A
Sample Labels match COC: -Includes date/time/ID/Analysis Matrix: WT	☑Yes	☐No	☐N/A
All containers needing acid/base preservation have been checked. Noncompliance are noted in 13.	☐Yes	☐No	☑N/A
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes	☐No	☑N/A
Exceptions: VOA,Coliform, TOC, Oil and Grease, WI-DRO (water)	☐Yes	☐No	
Samples checked for dechlorination:	☐Yes	☐No	☐N/A
Headspace in VOA Vials (>6mm):	☐Yes	☑No	☐N/A
Trip Blank Present:	☑Yes	☐No	☐N/A
Trip Blank Custody Seals Present	☐Yes	☐No	☐N/A
Pace Trip Blank Lot # (if purchased): 111616-1			

1.
2.
3.
4.
5.
6.
7.
8.
9.
10.
11.
12. TB not on the COC
13. ☐ HNO3 ☐ H2SO4 ☐ NaOH ☐ HCl Samp #

Initial when completed: AVS Lot # of added preservative

14.
15.
16. 2 WT TB (both have HS)

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ **Date:** 1-13-14

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DENR.

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1700 Elm Street SE, Suite 200, Minneapolis, MN 55414

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(612)607-1700

March 30, 2011

Aaron Benker
Liesch Associates, Inc.
13400 15th Ave. N.
Minneapolis, MN 55441

RE: Project: 65677 MILLE LACS OIL-CAMBRIDGE
Pace Project No.: 10152575

Dear Aaron Benker:
Enclosed are the analytical results for sample(s) received by the laboratory on March 23, 2011. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Carol Davy

carol.davy@pacelabs.com
Project Manager

Enclosures

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CERTIFICATIONS

Project: 65677 MILLE LACS OIL-CAMBRIDGE
Pace Project No.: 10152575

Minnesota Certification IDs
1700 Elm Street SE Suite 200, Minneapolis, MN 55414
A2LA Certification #: 2926.01
Alaska Certification #: UST-078
Alaska Certification #MN00064
Arizona Certification #: AZ-0014
Arkansas Certification #: 88-0680
California Certification #: 01155CA
EPA Region 8 Certification #: Pace
Florida/NELAP Certification #: E87605
Georgia Certification #: 959
Idaho Certification #: MN00064
Illinois Certification #: 200011
Iowa Certification #: 368
Kansas Certification #: E-10167
Louisiana Certification #: 03086
Louisiana Certification #: LA080009
Maine Certification #: 2007029
Maryland Certification #: 322
Michigan DEQ Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: Pace
Montana Certification #: MT CERT0092
Nevada Certification #: MN_00064
Nebraska Certification #: Pace
New Jersey Certification #: MN-002
New Mexico Certification #: Pace
New York Certification #: 11647
North Carolina Certification #: 530
North Dakota Certification #: R-036
North Dakota Certification #: R-036A
Ohio VAP Certification #: CL101
Oklahoma Certification #: D9921
Oklahoma Certification #: 9507
Oregon Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification
Tennessee Certification #: 02818
Texas Certification #: T104704192
Washington Certification #: C754
Wisconsin Certification #: 999407970

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SAMPLE SUMMARY

Project: 65677 MILLE LACS OIL-CAMBRIDGE
Pace Project No.: 10152575

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10152575001	**MW-1**	Water	03/21/11 10:00	03/23/11 12:35
10152575002	**MW-3**	Water	03/21/11 11:45	03/23/11 12:35
10152575003	**MW-6**	Water	03/21/11 08:55	03/23/11 12:35
10152575004	**MW-6A**	Water	03/21/11 08:20	03/23/11 12:35

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SAMPLE ANALYTE COUNT

Project: 65677 MILLE LACS OIL-CAMBRIDGE
Pace Project No.: 10152575

Lab ID	Sample ID	Method	Analysts	Analytes Reported
10152575001	**MW-1**	WI MOD DRO	JLR	2
		WI MOD GRO	KT1	9
10152575002	**MW-3**	WI MOD DRO	JLR	2
		WI MOD GRO	KT1	9
10152575003	**MW-6**	WI MOD DRO	JLR	2
		WI MOD GRO	KT1	9
10152575004	**MW-6A**	WI MOD DRO	JLR	2
		WI MOD GRO	KT1	9

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ANALYTICAL RESULTS

Project: 65677 MILLE LACS OIL-CAMBRIDGE
Pace Project No.: 10152575

Sample: MW-1 **Lab ID: 10152575001** Collected: 03/21/11 10:00 Received: 03/23/11 12:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO								
Diesel Range Organics	**1610**	ug/L	102	43.9	1	03/24/11 11:50	03/25/11 15:55		
n-Triacontane (S)	82	%	50-150		1	03/24/11 11:50	03/25/11 15:55		
WIGRO GCV	Analytical Method: WI MOD GRO								
Benzene	ND	ug/L	1.0	0.17	1		03/24/11 17:58	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.15	1		03/24/11 17:58	100-41-4	
Gasoline Range Organics	ND	ug/L	100	13.0	1		03/24/11 17:58		
Methyl-tert-butyl ether	ND	ug/L	5.0	0.37	1		03/24/11 17:58	1634-04-4	
Toluene	ND	ug/L	1.0	0.10	1		03/24/11 17:58	108-88-3	
1,2,4-Trimethylbenzene	**5.8**	ug/L	1.0	0.16	1		03/24/11 17:58	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	0.18	1		03/24/11 17:58	108-67-8	
Xylene (Total)	**4.7**	ug/L	3.0	0.48	1		03/24/11 17:58	1330-20-7	
a,a,a-Trifluorotoluene (S)	98	%	80-125		1		03/24/11 17:58	98-08-8	

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ANALYTICAL RESULTS

Project: 65677 MILLE LACS OIL-CAMBRIDGE
Pace Project No.: 10152575

Sample: MW-3 **Lab ID: 10152575002** Collected: 03/21/11 11:45 Received: 03/23/11 12:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO								
Diesel Range Organics	**8270**	ug/L	500	215	5	03/24/11 11:50	03/28/11 08:10		T7
n-Triacontane (S)	101	%	50-150		5	03/24/11 11:50	03/28/11 08:10		
WIGRO GCV	Analytical Method: WI MOD GRO								
Benzene	**159**	ug/L	2.0	0.34	2		03/25/11 23:10	71-43-2	
Ethylbenzene	**46.9**	ug/L	2.0	0.30	2		03/25/11 23:10	100-41-4	
Gasoline Range Organics	**8320**	ug/L	200	26.0	2		03/25/11 23:10		
Methyl-tert-butyl ether	ND	ug/L	10.0	0.74	2		03/25/11 23:10	1634-04-4	
Toluene	**209**	ug/L	2.0	0.20	2		03/25/11 23:10	108-88-3	
1,2,4-Trimethylbenzene	**325**	ug/L	2.0	0.32	2		03/25/11 23:10	95-63-6	
1,3,5-Trimethylbenzene	**114**	ug/L	2.0	0.36	2		03/25/11 23:10	108-67-8	
Xylene (Total)	**777**	ug/L	6.0	0.96	2		03/25/11 23:10	1330-20-7	
a,a,a-Trifluorotoluene (S)	112	%	80-125		2		03/25/11 23:10	98-08-8	

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ANALYTICAL RESULTS

Project: 65677 MILLE LACS OIL-CAMBRIDGE
Pace Project No.: 10152575

Sample: MW-6 **Lab ID: 10152575003** Collected: 03/21/11 08:55 Received: 03/23/11 12:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO								
Diesel Range Organics	**3850**	ug/L	101	43.2	1	03/24/11 11:50	03/25/11 16:16		T7
n-Triacontane (S)	99	%	50-150		1	03/24/11 11:50	03/25/11 16:16		
WIGRO GCV	Analytical Method: WI MOD GRO								
Benzene	**2410**	ug/L	10.0	1.7	10		03/27/11 23:29	71-43-2	
Ethylbenzene	**490**	ug/L	1.0	0.15	1		03/25/11 01:39	100-41-4	
Gasoline Range Organics	**13600**	ug/L	1000	130	10		03/27/11 23:29		
Methyl-tert-butyl ether	**13.6**	ug/L	5.0	0.37	1		03/25/11 01:39	1634-04-4	
Toluene	**1670**	ug/L	10.0	1.0	10		03/27/11 23:29	108-88-3	
1,2,4-Trimethylbenzene	**210**	ug/L	1.0	0.16	1		03/25/11 01:39	95-63-6	
1,3,5-Trimethylbenzene	**115**	ug/L	1.0	0.18	1		03/25/11 01:39	108-67-8	
Xylene (Total)	**1320**	ug/L	3.0	0.48	1		03/25/11 01:39	1330-20-7	
a,a,a-Trifluorotoluene (S)	84	%	80-125		1		03/25/11 01:39	98-08-8	

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ANALYTICAL RESULTS

Project: 65677 MILLE LACS OIL-CAMBRIDGE
Pace Project No.: 10152575

Sample: MW-6A **Lab ID: 10152575004** Collected: 03/21/11 08:20 Received: 03/23/11 12:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO								
Diesel Range Organics	**125**	ug/L	102	43.9	1	03/24/11 11:50	03/25/11 15:19		
n-Triacontane (S)	81	%	50-150		1	03/24/11 11:50	03/25/11 15:19		
WIGRO GCV	Analytical Method: WI MOD GRO								
Benzene	ND	ug/L	1.0	0.17	1		03/27/11 20:49	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.15	1		03/27/11 20:49	100-41-4	
Gasoline Range Organics	ND	ug/L	100	13.0	1		03/27/11 20:49		
Methyl-tert-butyl ether	ND	ug/L	5.0	0.37	1		03/27/11 20:49	1634-04-4	
Toluene	ND	ug/L	1.0	0.10	1		03/27/11 20:49	108-88-3	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	0.16	1		03/27/11 20:49	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	0.18	1		03/27/11 20:49	108-67-8	
Xylene (Total)	ND	ug/L	3.0	0.48	1		03/27/11 20:49	1330-20-7	
a,a,a-Trifluorotoluene (S)	107	%	80-125		1		03/27/11 20:49	98-08-8	

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QUALITY CONTROL DATA

Project: 65677 MILLE LACS OIL-CAMBRIDGE
Pace Project No.: 10152575

QC Batch: OEXT/15106 Analysis Method: WI MOD DRO
QC Batch Method: WI MOD DRO Analysis Description: WIDRO GCS
Associated Lab Samples: 10152575001, 10152575002, 10152575003, 10152575004

METHOD BLANK: 947968 Matrix: Water
Associated Lab Samples: 10152575001, 10152575002, 10152575003, 10152575004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Range Organics	ug/L	ND	100	03/25/11 14:57	
n-Triacontane (S)	%	65	50-150	03/25/11 14:57	

LABORATORY CONTROL SAMPLE & LCSD: 947969 947970

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Range Organics	ug/L	2000	1650	1790	83	89	75-115	8	20	
n-Triacontane (S)	%				85	91	50-150			

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QUALITY CONTROL DATA

Project: 65677 MILLE LACS OIL-CAMBRIDGE
Pace Project No.: 10152575

QC Batch: GCV/7886 Analysis Method: WI MOD GRO
QC Batch Method: WI MOD GRO Analysis Description: WIGRO GCV Water
Associated Lab Samples: 10152575001

METHOD BLANK: 947986 Matrix: Water
Associated Lab Samples: 10152575001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trimethylbenzene	ug/L	ND	1.0	03/24/11 11:49	
1,3,5-Trimethylbenzene	ug/L	ND	1.0	03/24/11 11:49	
Benzene	ug/L	ND	1.0	03/24/11 11:49	
Ethylbenzene	ug/L	ND	1.0	03/24/11 11:49	
Gasoline Range Organics	ug/L	ND	100	03/24/11 11:49	
Methyl-tert-butyl ether	ug/L	ND	5.0	03/24/11 11:49	
Toluene	ug/L	ND	1.0	03/24/11 11:49	
Xylene (Total)	ug/L	ND	3.0	03/24/11 11:49	
a,a,a-Trifluorotoluene (S)	%	102	80-125	03/24/11 11:49	

LABORATORY CONTROL SAMPLE & LCSD: 947987 947988

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,2,4-Trimethylbenzene	ug/L	100	95.4	100	95	100	80-120	5	20	
1,3,5-Trimethylbenzene	ug/L	100	93.4	99.7	93	100	80-120	7	20	
Benzene	ug/L	100	91.4	99.0	91	99	80-120	8	20	
Ethylbenzene	ug/L	100	93.2	100	93	100	80-120	7	20	
Gasoline Range Organics	ug/L	1000	941	994	94	99	80-120	5	20	
Methyl-tert-butyl ether	ug/L	100	89.9	102	90	102	80-120	13	20	
Toluene	ug/L	100	93.9	101	94	101	80-120	8	20	
Xylene (Total)	ug/L	300	285	300	95	100	80-120	5	20	
a,a,a-Trifluorotoluene (S)	%				101	102	80-125			

MATRIX SPIKE SAMPLE: 948363

Parameter	Units	10152433004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trimethylbenzene	ug/L	ND	100	105	105	80-120	
1,3,5-Trimethylbenzene	ug/L	ND	100	107	107	80-120	
Benzene	ug/L	ND	100	111	111	80-120	
Ethylbenzene	ug/L	ND	100	109	109	80-120	
Gasoline Range Organics	ug/L	101	1000	1210	111	80-120	
Methyl-tert-butyl ether	ug/L	ND	100	98.2	98	80-120	
Toluene	ug/L	ND	100	110	110	80-120	
Xylene (Total)	ug/L	ND	300	323	108	80-120	
a,a,a-Trifluorotoluene (S)	%				112	80-125	

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QUALITY CONTROL DATA

Project: 65677 MILLE LACS OIL-CAMBRIDGE
Pace Project No.: 10152575

SAMPLE DUPLICATE: 948364

Parameter	Units	10152433005 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2,4-Trimethylbenzene	ug/L	ND	ND		20	
1,3,5-Trimethylbenzene	ug/L	ND	ND		20	
Benzene	ug/L	ND	ND		20	
Ethylbenzene	ug/L	ND	ND		20	
Gasoline Range Organics	ug/L	ND	ND		20	
Methyl-tert-butyl ether	ug/L	ND	ND		20	
Toluene	ug/L	ND	ND		20	
Xylene (Total)	ug/L	ND	ND		20	
a,a,a-Trifluorotoluene (S)	%	100	101	.9		

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QUALITY CONTROL DATA

Project: 65677 MILLE LACS OIL-CAMBRIDGE
Pace Project No.: 10152575

QC Batch: GCV/7887 Analysis Method: WI MOD GRO
QC Batch Method: WI MOD GRO Analysis Description: WIGRO GCV Water
Associated Lab Samples: 10152575003

METHOD BLANK: 948012 Matrix: Water
Associated Lab Samples: 10152575003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trimethylbenzene	ug/L	ND	1.0	03/24/11 22:38	
1,3,5-Trimethylbenzene	ug/L	ND	1.0	03/24/11 22:38	
Benzene	ug/L	ND	1.0	03/24/11 22:38	
Ethylbenzene	ug/L	ND	1.0	03/24/11 22:38	
Gasoline Range Organics	ug/L	ND	100	03/24/11 22:38	
Methyl-tert-butyl ether	ug/L	ND	5.0	03/24/11 22:38	
Toluene	ug/L	ND	1.0	03/24/11 22:38	
Xylene (Total)	ug/L	ND	3.0	03/24/11 22:38	
a,a,a-Trifluorotoluene (S)	%	100	80-125	03/24/11 22:38	

LABORATORY CONTROL SAMPLE & LCSD: 948013 948014

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,2,4-Trimethylbenzene	ug/L	100	97.9	98.2	98	98	80-120	.3	20	
1,3,5-Trimethylbenzene	ug/L	100	98.8	98.7	99	99	80-120	.03	20	
Benzene	ug/L	100	99.3	98.4	99	98	80-120	.9	20	
Ethylbenzene	ug/L	100	100	100	100	100	80-120	.1	20	
Gasoline Range Organics	ug/L	1000	976	1020	98	102	80-120	5	20	
Methyl-tert-butyl ether	ug/L	100	94.0	99.0	94	99	80-120	5	20	
Toluene	ug/L	100	102	101	102	101	80-120	.3	20	
Xylene (Total)	ug/L	300	299	299	100	100	80-120	.2	20	
a,a,a-Trifluorotoluene (S)	%				101	100	80-125			

MATRIX SPIKE SAMPLE: 949255

Parameter	Units	10152258001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trimethylbenzene	ug/L	ND	100	102	102	80-120	
1,3,5-Trimethylbenzene	ug/L	ND	100	104	104	80-120	
Benzene	ug/L	ND	100	106	105	80-120	
Ethylbenzene	ug/L	ND	100	108	107	80-120	
Gasoline Range Organics	ug/L	ND	1000	1080	108	80-120	
Methyl-tert-butyl ether	ug/L	ND	100	93.4	93	80-120	
Toluene	ug/L	ND	100	109	108	80-120	
Xylene (Total)	ug/L	ND	300	317	105	80-120	
a,a,a-Trifluorotoluene (S)	%				101	80-125	

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QUALITY CONTROL DATA

Project: 65677 MILLE LACS OIL-CAMBRIDGE
Pace Project No.: 10152575

SAMPLE DUPLICATE: 949256

Parameter	Units	10152258002 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2,4-Trimethylbenzene	ug/L	ND	ND		20	
1,3,5-Trimethylbenzene	ug/L	ND	ND		20	
Benzene	ug/L	ND	ND		20	
Ethylbenzene	ug/L	ND	ND		20	
Gasoline Range Organics	ug/L	ND	ND		20	
Methyl-tert-butyl ether	ug/L	ND	ND		20	
Toluene	ug/L	ND	ND		20	
Xylene (Total)	ug/L	ND	ND		20	
a,a,a-Trifluorotoluene (S)	%	99	101	2		

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QUALITY CONTROL DATA

Project: 65677 MILLE LACS OIL-CAMBRIDGE
Pace Project No.: 10152575

QC Batch: GCV/7890 Analysis Method: WI MOD GRO
QC Batch Method: WI MOD GRO Analysis Description: WIGRO GCV Water
Associated Lab Samples: 10152575002

METHOD BLANK: 948705 Matrix: Water
Associated Lab Samples: 10152575002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trimethylbenzene	ug/L	ND	1.0	03/25/11 17:50	
1,3,5-Trimethylbenzene	ug/L	ND	1.0	03/25/11 17:50	
Benzene	ug/L	ND	1.0	03/25/11 17:50	
Ethylbenzene	ug/L	ND	1.0	03/25/11 17:50	
Gasoline Range Organics	ug/L	ND	100	03/25/11 17:50	
Methyl-tert-butyl ether	ug/L	ND	5.0	03/25/11 17:50	
Toluene	ug/L	ND	1.0	03/25/11 17:50	
Xylene (Total)	ug/L	ND	3.0	03/25/11 17:50	
a,a,a-Trifluorotoluene (S)	%	101	80-125	03/25/11 17:50	

LABORATORY CONTROL SAMPLE & LCSD: 948706 948707

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,2,4-Trimethylbenzene	ug/L	100	105	98.6	105	99	80-120	6	20	
1,3,5-Trimethylbenzene	ug/L	100	106	99.7	106	100	80-120	6	20	
Benzene	ug/L	100	108	103	108	103	80-120	5	20	
Ethylbenzene	ug/L	100	109	104	109	104	80-120	5	20	
Gasoline Range Organics	ug/L	1000	1090	1030	109	103	80-120	5	20	
Methyl-tert-butyl ether	ug/L	100	98.8	95.5	99	96	80-120	3	20	
Toluene	ug/L	100	111	106	111	106	80-120	5	20	
Xylene (Total)	ug/L	300	322	306	107	102	80-120	5	20	
a,a,a-Trifluorotoluene (S)	%				101	101	80-125			

MATRIX SPIKE SAMPLE: 949068

Parameter	Units	10152746011 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trimethylbenzene	ug/L	ND	100	104	104	80-120	
1,3,5-Trimethylbenzene	ug/L	ND	100	105	105	80-120	
Benzene	ug/L	5.8	100	111	105	80-120	
Ethylbenzene	ug/L	ND	100	109	109	80-120	
Gasoline Range Organics	ug/L	ND	1000	1120	112	80-120	
Methyl-tert-butyl ether	ug/L	ND	100	95.8	96	80-120	
Toluene	ug/L	ND	100	110	109	80-120	
Xylene (Total)	ug/L	ND	300	321	107	80-120	
a,a,a-Trifluorotoluene (S)	%				100	80-125	

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QUALITY CONTROL DATA

Project: 65677 MILLE LACS OIL-CAMBRIDGE
Pace Project No.: 10152575

SAMPLE DUPLICATE: 949069

Parameter	Units	10152746012 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2,4-Trimethylbenzene	ug/L	ND	ND		20	
1,3,5-Trimethylbenzene	ug/L	ND	ND		20	
Benzene	ug/L	ND	ND		20	
Ethylbenzene	ug/L	ND	ND		20	
Gasoline Range Organics	ug/L	ND	ND		20	
Methyl-tert-butyl ether	ug/L	ND	ND		20	
Toluene	ug/L	ND	ND		20	
Xylene (Total)	ug/L	ND	ND		20	
a,a,a-Trifluorotoluene (S)	%	102	101	1		

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QUALITY CONTROL DATA

Project: 65677 MILLE LACS OIL-CAMBRIDGE
Pace Project No.: 10152575

QC Batch: GCV/7891
QC Batch Method: WI MOD GRO
Analysis Method: WI MOD GRO
Analysis Description: WIGRO GCV Water
Associated Lab Samples: 10152575004

METHOD BLANK: 949065 Matrix: Water
Associated Lab Samples: 10152575004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trimethylbenzene	ug/L	ND	1.0	03/27/11 16:09	
1,3,5-Trimethylbenzene	ug/L	ND	1.0	03/27/11 16:09	
Benzene	ug/L	ND	1.0	03/27/11 16:09	
Ethylbenzene	ug/L	ND	1.0	03/27/11 16:09	
Gasoline Range Organics	ug/L	ND	100	03/27/11 16:09	
Methyl-tert-butyl ether	ug/L	ND	5.0	03/27/11 16:09	
Toluene	ug/L	ND	1.0	03/27/11 16:09	
Xylene (Total)	ug/L	ND	3.0	03/27/11 16:09	
a,a,a-Trifluorotoluene (S)	%	103	80-125	03/27/11 16:09	

LABORATORY CONTROL SAMPLE & LCSD: 949066 949067

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,2,4-Trimethylbenzene	ug/L	100	97.5	98.9	97	99	80-120	2	20	
1,3,5-Trimethylbenzene	ug/L	100	96.3	100	96	100	80-120	4	20	
Benzene	ug/L	100	95.8	101	96	101	80-120	6	20	
Ethylbenzene	ug/L	100	97.4	103	97	103	80-120	5	20	
Gasoline Range Organics	ug/L	1000	993	1050	99	105	80-120	5	20	
Methyl-tert-butyl ether	ug/L	100	100	97.5	100	98	80-120	3	20	
Toluene	ug/L	100	99.2	105	99	105	80-120	5	20	
Xylene (Total)	ug/L	300	297	304	99	101	80-120	2	20	
a,a,a-Trifluorotoluene (S)	%				101	102	80-125			

MATRIX SPIKE SAMPLE: 949327

Parameter	Units	10152350001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trimethylbenzene	ug/L	ND	100	105	105	80-120	
1,3,5-Trimethylbenzene	ug/L	ND	100	107	107	80-120	
Benzene	ug/L	ND	100	108	108	80-120	
Ethylbenzene	ug/L	ND	100	110	110	80-120	
Gasoline Range Organics	ug/L	ND	1000	1100	110	80-120	
Methyl-tert-butyl ether	ug/L	ND	100	101	101	80-120	
Toluene	ug/L	ND	100	112	112	80-120	
Xylene (Total)	ug/L	ND	300	327	109	80-120	
a,a,a-Trifluorotoluene (S)	%				101	80-125	

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QUALITY CONTROL DATA

Project: 65677 MILLE LACS OIL-CAMBRIDGE
Pace Project No.: 10152575

SAMPLE DUPLICATE: 949328

Parameter	Units	10152350002 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2,4-Trimethylbenzene	ug/L	ND	ND		20	
1,3,5-Trimethylbenzene	ug/L	ND	ND		20	
Benzene	ug/L	ND	ND		20	
Ethylbenzene	ug/L	ND	ND		20	
Gasoline Range Organics	ug/L	ND	ND		20	
Methyl-tert-butyl ether	ug/L	ND	ND		20	
Toluene	ug/L	ND	ND		20	
Xylene (Total)	ug/L	ND	ND		20	
a,a,a-Trifluorotoluene (S)	%	105	103	2		

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QUALIFIERS

Project: 65677 MILLE LACS OIL-CAMBRIDGE
Pace Project No.: 10152575

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

WORKORDER QUALIFIERS

WO: 10152575

[1] COC included a trip blank, but none were received.

ANALYTE QUALIFIERS

T7 Low boiling point hydrocarbons are present in the sample.

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

10152575

Page: 1 of 1

1443430

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: Liesch	Report To: Aaron Benker	Attention:
Address:	Copy To:	Company Name:
		Address:
Email To:	Purchase Order No.:	Pace Quote Reference:
Phone: 763 489 3100 Fax:	Project Name: Mille Lacs Oil-Cambridge	Pace Project Manager:
Requested Due Date/TAT: 5 d.	Project Number: 65677	Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER

☑ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: MN

9 of 20

Requested Analysis Filtered (Y/N)

ITEM #	Section D Required Client Information: SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE	Matrix Codes MATRIX / CODE: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Tissue TS, Other OT	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED: COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	DRO	GRO/PVOC	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-1		WT	G			3/21/11	10:00						5						X	X		001
2	MW-3			G				11:45						5						X	X		002
3	MW-6			G				8:55						5						X	X		003
4	MW-6A			G				8:20						5						X	X		004
5	Trip Blank		↓				↓														X		
6																							
7																							
8																							
9																							
10																							
11																							
12																							

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	Dan Larson/Liesch	3/23/11	1235		3/23/11	1235	4.4	Y	N	Y

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Dan Larson

SIGNATURE of SAMPLER: Dan Larson

DATE Signed (MM/DD/YY): 3/22/11

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Sample Condition Upon Receipt

Pace Analytical®

Client Name: Liesch **Project #** 10152575

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☒ Client ☐ Commercial ☐ Pace Other ________

Tracking #: ____________________

Optional: Proj. Due Date: Proj. Name:

Custody Seal on Cooler/Box Present: ☐ yes ☒ no **Seals intact:** ☐ yes ☒ no

Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other ________ **Temp Blank: Yes** ✓ **No** ____

Thermometer Used 80344042 or 179425 (circled) **Type of Ice:** Wet (circled) Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature 4.4 **Biological Tissue is Frozen:** Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 3-23-11 NB

Comments:

Chain of Custody Present:	☒Yes	☐No	☐N/A	1.
Chain of Custody Filled Out:	☒Yes	☐No	☐N/A	2.
Chain of Custody Relinquished:	☒Yes	☐No	☐N/A	3.
Sampler Name & Signature on COC:	☒Yes	☐No	☐N/A	4.
Samples Arrived within Hold Time:	☒Yes	☐No	☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes	☒No	☐N/A	6.
Rush Turn Around Time Requested:	☐Yes	☒No	☐N/A	7.
Sufficient Volume:	☒Yes	☐No	☐N/A	8.
Correct Containers Used:	☒Yes	☐No	☐N/A	9.
-Pace Containers Used:	☒Yes	☐No	☐N/A	
Containers Intact:	☒Yes	☐No	☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes	☒No	☐N/A	11.
Sample Labels match COC: -Includes date/time/ID/Analysis Matrix: WT	☐Yes	☒No	☐N/A	12. COC claims to have trip blanks, we received none
All containers needing acid/base preservation have been checked. Noncompliance are noted in 13.	☐Yes	☐No	☒N/A	13. ☐ HNO3 ☐ H2SO4 ☐ NaOH ☐ HCl Samp #
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes	☐No	☒N/A	
Exceptions: VOA (circled), Coliform, TOC, Oil and Grease, WI-DRO (water)	☒Yes	☐No		Initial when completed / Lot # of added preservative
Samples checked for dechlorination:	☐Yes	☐No	☒N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes	☒No	☐N/A	15.
Trip Blank Present:	☐Yes	☒No	☐N/A	16.
Trip Blank Custody Seals Present	☐Yes	☐No	☒N/A	
Pace Trip Blank Lot # (if purchased): ________				

Client Notification/ Resolution: **Field Data Required?** Y / N

Person Contacted: Aaron Parker Date/Time: ____________

Comments/ Resolution: notified client of missing TB. 3-23-11

Project Manager Review: [signature] **Date:** 3-23-11

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

F-L213Rev.00, 05Aug2009

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Pace Analytical Services, Inc.
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June 15, 2011

Aaron Benker
Liesch Associates, Inc.
13400 15th Ave. N.
Minneapolis, MN 55441

RE: Project: 65677.00 MILLELACS OIL CO.
Pace Project No.: 10159631

Dear Aaron Benker:
Enclosed are the analytical results for sample(s) received by the laboratory on June 08, 2011. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Carol Davy

carol.davy@pacelabs.com
Project Manager

Enclosures

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CERTIFICATIONS

Project: 65677.00 MILLELACS OIL CO.
Pace Project No.: 10159631

Minnesota Certification IDs
1700 Elm Street SE Suite 200, Minneapolis, MN 55414
A2LA Certification #: 2926.01
Alaska Certification #: UST-078
Alaska Certification #MN00064
Arizona Certification #: AZ-0014
Arkansas Certification #: 88-0680
California Certification #: 01155CA
EPA Region 8 Certification #: Pace
Florida/NELAP Certification #: E87605
Georgia Certification #: 959
Idaho Certification #: MN00064
Illinois Certification #: 200011
Iowa Certification #: 368
Kansas Certification #: E-10167
Louisiana Certification #: 03086
Louisiana Certification #: LA080009
Maine Certification #: 2007029
Maryland Certification #: 322
Michigan DEQ Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: Pace
Montana Certification #: MT CERT0092
Nebraska Certification #: Pace
Nevada Certification #: MN_00064
New Jersey Certification #: MN-002
New Mexico Certification #: Pace
New York Certification #: 11647
North Carolina Certification #: 530
North Dakota Certification #: R-036
North Dakota Certification #: R-036A
Ohio VAP Certification #: CL101
Oklahoma Certification #: D9921
Oklahoma Certification #: 9507
Oregon Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification
Tennessee Certification #: 02818
Texas Certification #: T104704192
Washington Certification #: C754
Wisconsin Certification #: 999407970

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SAMPLE SUMMARY

Project: 65677.00 MILLELACS OIL CO.
Pace Project No.: 10159631

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10159631001	**MW-1**	Water	06/07/11 11:00	06/08/11 10:07
10159631002	**MW-3**	Water	06/07/11 11:30	06/08/11 10:07
10159631003	**MW-6**	Water	06/07/11 09:40	06/08/11 10:07
10159631004	**MW-6A**	Water	06/07/11 09:00	06/08/11 10:07
10159631005	**TRIP BLANK**	Water	06/07/11 00:00	06/08/11 10:07

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SAMPLE ANALYTE COUNT

Project: 65677.00 MILLELACS OIL CO.
Pace Project No.: 10159631

Lab ID	Sample ID	Method	Analysts	Analytes Reported
10159631001	**MW-1**	WI MOD DRO	JRH	2
		WI MOD GRO	MJH	9
10159631002	**MW-3**	WI MOD DRO	JRH	2
		WI MOD GRO	MJH	9
10159631003	**MW-6**	WI MOD DRO	JRH	2
		WI MOD GRO	DJT	9
10159631004	**MW-6A**	WI MOD DRO	JRH	2
		WI MOD GRO	MJH	9
10159631005	**TRIP BLANK**	WI MOD GRO	MJH	9

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ANALYTICAL RESULTS

Project: 65677.00 MILLELACS OIL CO.
Pace Project No.: 10159631

Sample: MW-1 **Lab ID: 10159631001** Collected: 06/07/11 11:00 Received: 06/08/11 10:07 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO								
Diesel Range Organics	**2230**	ug/L	101	50.3	1	06/09/11 09:20	06/14/11 12:08		T7
n-Triacontane (S)	92	%	50-150		1	06/09/11 09:20	06/14/11 12:08		
WIGRO GCV	Analytical Method: WI MOD GRO								
Benzene	ND	ug/L	1.0	0.17	1		06/09/11 13:29	71-43-2	
Ethylbenzene	**1.5**	ug/L	1.0	0.15	1		06/09/11 13:29	100-41-4	
Gasoline Range Organics	**218**	ug/L	100	13.0	1		06/09/11 13:29		
Methyl-tert-butyl ether	ND	ug/L	5.0	0.37	1		06/09/11 13:29	1634-04-4	
Toluene	ND	ug/L	1.0	0.10	1		06/09/11 13:29	108-88-3	
1,2,4-Trimethylbenzene	**22.7**	ug/L	1.0	0.16	1		06/09/11 13:29	95-63-6	
1,3,5-Trimethylbenzene	**10.9**	ug/L	1.0	0.18	1		06/09/11 13:29	108-67-8	
Xylene (Total)	**59.2**	ug/L	3.0	0.48	1		06/09/11 13:29	1330-20-7	
a,a,a-Trifluorotoluene (S)	100	%	80-125		1		06/09/11 13:29	98-08-8	

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ANALYTICAL RESULTS

Project: 65677.00 MILLELACS OIL CO.
Pace Project No.: 10159631

Sample: MW-3 **Lab ID: 10159631002** Collected: 06/07/11 11:30 Received: 06/08/11 10:07 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO								
Diesel Range Organics	**12800**	ug/L	508	254	5	06/09/11 09:20	06/14/11 12:54		T7
n-Triacontane (S)	95	%	50-150		5	06/09/11 09:20	06/14/11 12:54		
WIGRO GCV	Analytical Method: WI MOD GRO								
Benzene	**493**	ug/L	10.0	1.7	10		06/09/11 14:09	71-43-2	
Ethylbenzene	**71.8**	ug/L	10.0	1.5	10		06/09/11 14:09	100-41-4	
Gasoline Range Organics	**15600**	ug/L	1000	130	10		06/09/11 14:09		
Methyl-tert-butyl ether	ND	ug/L	50.0	3.7	10		06/09/11 14:09	1634-04-4	
Toluene	**521**	ug/L	10.0	1.0	10		06/09/11 14:09	108-88-3	
1,2,4-Trimethylbenzene	**611**	ug/L	10.0	1.6	10		06/09/11 14:09	95-63-6	
1,3,5-Trimethylbenzene	**375**	ug/L	10.0	1.8	10		06/09/11 14:09	108-67-8	
Xylene (Total)	**2900**	ug/L	30.0	4.8	10		06/09/11 14:09	1330-20-7	
a,a,a-Trifluorotoluene (S)	101	%	80-125		10		06/09/11 14:09	98-08-8	

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ANALYTICAL RESULTS

Project: 65677.00 MILLELACS OIL CO.
Pace Project No.: 10159631

Sample: MW-6 **Lab ID: 10159631003** Collected: 06/07/11 09:40 Received: 06/08/11 10:07 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO								
Diesel Range Organics	**3230**	ug/L	102	50.8	1	06/09/11 09:20	06/14/11 12:15		T7
n-Triacontane (S)	87	%	50-150		1	06/09/11 09:20	06/14/11 12:15		
WIGRO GCV	Analytical Method: WI MOD GRO								
Benzene	**1890**	ug/L	10.0	1.7	10		06/14/11 03:43	71-43-2	
Ethylbenzene	**272**	ug/L	10.0	1.5	10		06/14/11 03:43	100-41-4	
Gasoline Range Organics	**7060**	ug/L	1000	130	10		06/14/11 03:43		
Methyl-tert-butyl ether	ND	ug/L	50.0	3.7	10		06/14/11 03:43	1634-04-4	
Toluene	**484**	ug/L	10.0	1.0	10		06/14/11 03:43	108-88-3	
1,2,4-Trimethylbenzene	**111**	ug/L	10.0	1.6	10		06/14/11 03:43	95-63-6	
1,3,5-Trimethylbenzene	**35.9**	ug/L	10.0	1.8	10		06/14/11 03:43	108-67-8	
Xylene (Total)	**748**	ug/L	30.0	4.8	10		06/14/11 03:43	1330-20-7	
a,a,a-Trifluorotoluene (S)	100	%	80-125		10		06/14/11 03:43	98-08-8	

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ANALYTICAL RESULTS

Project: 65677.00 MILLELACS OIL CO.
Pace Project No.: 10159631

Sample: MW-6A **Lab ID: 10159631004** Collected: 06/07/11 09:00 Received: 06/08/11 10:07 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO								
Diesel Range Organics	**312**	ug/L	101	50.5	1	06/09/11 09:20	06/14/11 11:37		
n-Triacontane (S)	89	%	50-150		1	06/09/11 09:20	06/14/11 11:37		
WIGRO GCV	Analytical Method: WI MOD GRO								
Benzene	ND	ug/L	1.0	0.17	1		06/09/11 13:49	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.15	1		06/09/11 13:49	100-41-4	
Gasoline Range Organics	ND	ug/L	100	13.0	1		06/09/11 13:49		
Methyl-tert-butyl ether	ND	ug/L	5.0	0.37	1		06/09/11 13:49	1634-04-4	
Toluene	ND	ug/L	1.0	0.10	1		06/09/11 13:49	108-88-3	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	0.16	1		06/09/11 13:49	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	0.18	1		06/09/11 13:49	108-67-8	
Xylene (Total)	ND	ug/L	3.0	0.48	1		06/09/11 13:49	1330-20-7	
a,a,a-Trifluorotoluene (S)	103	%	80-125		1		06/09/11 13:49	98-08-8	

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ANALYTICAL RESULTS

Project: 65677.00 MILLELACS OIL CO.
Pace Project No.: 10159631

Sample: TRIP BLANK **Lab ID: 10159631005** Collected: 06/07/11 00:00 Received: 06/08/11 10:07 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
WIGRO GCV	Analytical Method: WI MOD GRO								
Benzene	ND	ug/L	1.0	0.17	1		06/09/11 11:09	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.15	1		06/09/11 11:09	100-41-4	
Gasoline Range Organics	ND	ug/L	100	13.0	1		06/09/11 11:09		
Methyl-tert-butyl ether	ND	ug/L	5.0	0.37	1		06/09/11 11:09	1634-04-4	
Toluene	ND	ug/L	1.0	0.10	1		06/09/11 11:09	108-88-3	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	0.16	1		06/09/11 11:09	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	0.18	1		06/09/11 11:09	108-67-8	
Xylene (Total)	ND	ug/L	3.0	0.48	1		06/09/11 11:09	1330-20-7	
a,a,a-Trifluorotoluene (S)	95	%	80-125		1		06/09/11 11:09	98-08-8	

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QUALITY CONTROL DATA

Project: 65677.00 MILLELACS OIL CO.
Pace Project No.: 10159631

QC Batch: OEXT/15758 Analysis Method: WI MOD DRO
QC Batch Method: WI MOD DRO Analysis Description: WIDRO GCS
Associated Lab Samples: 10159631001, 10159631002, 10159631003, 10159631004

METHOD BLANK: 990774 Matrix: Water
Associated Lab Samples: 10159631001, 10159631002, 10159631003, 10159631004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Range Organics	ug/L	ND	100	06/14/11 10:29	
n-Triacontane (S)	%	99	50-150	06/14/11 10:29	

LABORATORY CONTROL SAMPLE & LCSD: 990775 990776

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Range Organics	ug/L	2000	1580	1600	79	80	75-115	1	20	
n-Triacontane (S)	%				83	85	50-150			

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QUALITY CONTROL DATA

Project: 65677.00 MILLELACS OIL CO.
Pace Project No.: 10159631

QC Batch: GCV/8095 Analysis Method: WI MOD GRO
QC Batch Method: WI MOD GRO Analysis Description: WIGRO GCV Water
Associated Lab Samples: 10159631001, 10159631002, 10159631004, 10159631005

METHOD BLANK: 990857 Matrix: Water
Associated Lab Samples: 10159631001, 10159631002, 10159631004, 10159631005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trimethylbenzene	ug/L	ND	1.0	06/09/11 10:48	
1,3,5-Trimethylbenzene	ug/L	ND	1.0	06/09/11 10:48	
Benzene	ug/L	ND	1.0	06/09/11 10:48	
Ethylbenzene	ug/L	ND	1.0	06/09/11 10:48	
Gasoline Range Organics	ug/L	ND	100	06/09/11 10:48	
Methyl-tert-butyl ether	ug/L	ND	5.0	06/09/11 10:48	
Toluene	ug/L	ND	1.0	06/09/11 10:48	
Xylene (Total)	ug/L	ND	3.0	06/09/11 10:48	
a,a,a-Trifluorotoluene (S)	%	97	80-125	06/09/11 10:48	

LABORATORY CONTROL SAMPLE & LCSD: 990858 990859

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,2,4-Trimethylbenzene	ug/L	100	98.3	99.5	98	100	80-120	1	20	
1,3,5-Trimethylbenzene	ug/L	100	99.1	100	99	100	80-120	1	20	
Benzene	ug/L	100	101	103	101	103	80-120	2	20	
Ethylbenzene	ug/L	100	99.8	97.3	100	97	80-120	2	20	
Gasoline Range Organics	ug/L	1000	1080	1050	108	105	80-120	2	20	
Methyl-tert-butyl ether	ug/L	100	105	110	105	110	80-120	5	20	CH
Toluene	ug/L	100	103	98.7	103	99	80-120	4	20	
Xylene (Total)	ug/L	300	287	283	96	94	80-120	1	20	
a,a,a-Trifluorotoluene (S)	%				100	105	80-125			

MATRIX SPIKE SAMPLE: 992324

Parameter	Units	10159662002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trimethylbenzene	ug/L	ND	100	105	105	80-120	
1,3,5-Trimethylbenzene	ug/L	ND	100	107	107	80-120	
Benzene	ug/L	312	100	388	77	80-120	M1
Ethylbenzene	ug/L	ND	100	108	107	80-120	
Gasoline Range Organics	ug/L	874	1000	1940	107	80-120	
Methyl-tert-butyl ether	ug/L	ND	100	62.1	60	80-120	CH,M1
Toluene	ug/L	1.9	100	106	104	80-120	
Xylene (Total)	ug/L	ND	300	310	103	80-120	
a,a,a-Trifluorotoluene (S)	%				94	80-125	

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QUALITY CONTROL DATA

Project: 65677.00 MILLELACS OIL CO.
Pace Project No.: 10159631

SAMPLE DUPLICATE: 992325

Parameter	Units	10159662004 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2,4-Trimethylbenzene	ug/L	ND	ND		20	
1,3,5-Trimethylbenzene	ug/L	ND	ND		20	
Benzene	ug/L	ND	ND		20	
Ethylbenzene	ug/L	ND	ND		20	
Gasoline Range Organics	ug/L	ND	ND		20	
Methyl-tert-butyl ether	ug/L	ND	ND		20	
Toluene	ug/L	ND	ND		20	
Xylene (Total)	ug/L	ND	ND		20	
a,a,a-Trifluorotoluene (S)	%	101	107	6		

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QUALITY CONTROL DATA

Project: 65677.00 MILLELACS OIL CO.
Pace Project No.: 10159631

QC Batch: GCV/8111 Analysis Method: WI MOD GRO
QC Batch Method: WI MOD GRO Analysis Description: WIGRO GCV Water
Associated Lab Samples: 10159631003

METHOD BLANK: 993673 Matrix: Water
Associated Lab Samples: 10159631003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trimethylbenzene	ug/L	ND	1.0	06/13/11 21:01	
1,3,5-Trimethylbenzene	ug/L	ND	1.0	06/13/11 21:01	
Benzene	ug/L	ND	1.0	06/13/11 21:01	
Ethylbenzene	ug/L	ND	1.0	06/13/11 21:01	
Gasoline Range Organics	ug/L	ND	100	06/13/11 21:01	
Methyl-tert-butyl ether	ug/L	ND	5.0	06/13/11 21:01	
Toluene	ug/L	ND	1.0	06/13/11 21:01	
Xylene (Total)	ug/L	ND	3.0	06/13/11 21:01	
a,a,a-Trifluorotoluene (S)	%	99	80-125	06/13/11 21:01	

LABORATORY CONTROL SAMPLE & LCSD: 993674 993675

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,2,4-Trimethylbenzene	ug/L	100	109	104	109	104	80-120	5	20	
1,3,5-Trimethylbenzene	ug/L	100	108	104	108	104	80-120	4	20	
Benzene	ug/L	100	96.1	98.3	96	98	80-120	2	20	
Ethylbenzene	ug/L	100	103	102	103	102	80-120	1	20	
Gasoline Range Organics	ug/L	1000	989	1030	99	103	80-120	4	20	
Methyl-tert-butyl ether	ug/L	100	90.3	94.4	90	94	80-120	4	20	
Toluene	ug/L	100	99.5	100	100	100	80-120	.6	20	
Xylene (Total)	ug/L	300	324	309	108	103	80-120	5	20	
a,a,a-Trifluorotoluene (S)	%				93	96	80-125			

MATRIX SPIKE SAMPLE: 994166

Parameter	Units	10159808004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4-Trimethylbenzene	ug/L	ND	100	104	104	80-120	
1,3,5-Trimethylbenzene	ug/L	ND	100	105	105	80-120	
Benzene	ug/L	ND	100	102	102	80-120	
Ethylbenzene	ug/L	ND	100	106	106	80-120	
Gasoline Range Organics	ug/L	ND	1000	1050	105	80-120	
Methyl-tert-butyl ether	ug/L	ND	100	88.6	89	80-120	
Toluene	ug/L	ND	100	104	104	80-120	
Xylene (Total)	ug/L	ND	300	318	106	80-120	
a,a,a-Trifluorotoluene (S)	%				95	80-125	

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QUALITY CONTROL DATA

Project: 65677.00 MILLELACS OIL CO.
Pace Project No.: 10159631

SAMPLE DUPLICATE: 994167

Parameter	Units	10159808005 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2,4-Trimethylbenzene	ug/L	ND	ND		20	
1,3,5-Trimethylbenzene	ug/L	ND	ND		20	
Benzene	ug/L	ND	ND		20	
Ethylbenzene	ug/L	ND	ND		20	
Gasoline Range Organics	ug/L	ND	ND		20	
Methyl-tert-butyl ether	ug/L	ND	ND		20	
Toluene	ug/L	ND	ND		20	
Xylene (Total)	ug/L	ND	ND		20	
a,a,a-Trifluorotoluene (S)	%	98	97	1		

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QUALIFIERS

Project: 65677.00 MILLELACS OIL CO.
Pace Project No.: 10159631

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

WORKORDER QUALIFIERS

WO: 10159631

[1]	The samples were received outside of required temperature range. Analysis was completed upon client approval.

ANALYTE QUALIFIERS

CH	The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
T7	Low boiling point hydrocarbons are present in the sample.

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

10159631

Page: 1 of 1

1450846

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: Liesch	Report To: Aaron Benker	Attention:
Address:	Copy To:	Company Name:
		Address:
Email To:	Purchase Order No.:	Pace Quote Reference:
Phone: Fax:	Project Name: Mille Lacs Oil Co.	Pace Project Manager:
Requested Due Date/TAT: Std.	Project Number: 65677.00	Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☒ UST ☐ RCRA ☐ OTHER

Site Location STATE: MN

Section D Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Matrix Codes — MATRIX / CODE
Drinking Water DW
Water WT
Waste Water WW
Product P
Soil/Solid SL
Oil OL
Wipe WP
Air AR
Tissue TS
Other OT

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Requested Analysis Filtered (Y/N) Y/N	Analysis Test: DRO	GRO/PVOC	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-1	WT	G			6/7/11	11:00												X	X		001
2	MW-3	WT	G				11:30												X	X		002
3	MW-6	WT	G				9:40												X	X		003
4	MW-6A	WT	G				9:00												X	X		004
5	Trip Blank																		X			005
6																						
7																						
8																						
9																						
10																						
11																						
12																						

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	Dan Lasson/Liesch	6/8/11	9:35	Aaron Wagner	6/8/11	9:35				
	Aaron Wagner	6/8/11	10:07	Shannon Davis/Pace	6-8-11	1007	8.7	Y	N	Y
					6/8/11	1007	8.7	Y	N	Y

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Dan Lasson

SIGNATURE of SAMPLER: Dan Lasson

DATE Signed (MM/DD/YY): 6/7/11

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Pace Analytical	Document Name: Sample Condition Upon Receipt Form	Revised Date: 02Jun2011 Page 1 of 1
	Document Number: F-L-213 Rev.01	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Liesch Project # 10159631

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☒ Pace Other _____

Optional: Proj. Due Date: Proj. Name:

Tracking #: _____

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals Intact: ☐ yes ☒ no

Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other _____ Temp Blank: Yes ☒ No _____

Thermometer Used 80344042 or 80512447 Type of Ice: (Wet) Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature 8.1° Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 6/8/11 F.M

Comments:

Chain of Custody Present:	☑Yes	☐No	☐N/A	1.
Chain of Custody Filled Out:	☑Yes	☐No	☐N/A	2.
Chain of Custody Relinquished:	☑Yes	☑No	☐N/A	3.
Sampler Name & Signature on COC:	☑Yes	☐No	☐N/A	4.
Samples Arrived within Hold Time:	☑Yes	☐No	☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes	☑No	☐N/A	6.
Rush Turn Around Time Requested:	☐Yes	☑No	☐N/A	7.
Sufficient Volume:	☑Yes	☐No	☐N/A	8.
Correct Containers Used:	☑Yes	☐No	☐N/A	9.
-Pace Containers Used:	☑Yes	☐No	☐N/A	
Containers Intact:	☑Yes	☐No	☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes	☐No	☑N/A	11.
Sample Labels match COC:	☑Yes	☐No	☐N/A	12.
-Includes date/time/ID/Analysis Matrix: WT				
All containers needing acid/base preservation have been checked. Noncompliance are noted in 13.	☐Yes	☐No	☑N/A	13. ☐ HNO3 ☐ H2SO4 ☐ NaOH ☐ HCl
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes	☐No	☑N/A	Samp #
Exceptions: VOA,Coliform, TOC, Oil and Grease (WI-DRO) (water)	☑Yes	☐No		Initial when completed F.M Lot # of added preservative
Samples checked for dechlorination:	☐Yes	☐No	☑N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes	☑No	☐N/A	15.
Trip Blank Present:	☑Yes	☐No	☐N/A	16.
Trip Blank Custody Seals Present	☑Yes	☐No	☐N/A	
Pace Trip Blank Lot # (if purchased): 050911-1				

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Aaron Barker Date/Time: 6-9-11

Comments/ Resolution:

run even though >6°C at receipt

Project Manager Review: _____ Date: 6-8-11

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

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October 12, 2011

Aaron Benker
Liesch Associates, Inc.
13400 15th Ave. N.
Minneapolis, MN 55441

RE: Project: 65677.00 Mille Lacs Oil- Cambr
Pace Project No.: 10171594

Dear Aaron Benker:
Enclosed are the analytical results for sample(s) received by the laboratory on October 05, 2011. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Carol Davy

carol.davy@pacelabs.com
Project Manager

Enclosures

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CERTIFICATIONS

Project: 65677.00 Mille Lacs Oil- Cambr
Pace Project No.: 10171594

Minnesota Certification IDs
1700 Elm Street SE Suite 200, Minneapolis, MN 55414
A2LA Certification #: 2926.01
Alaska Certification #: UST-078
Alaska Certification #MN00064
Arizona Certification #: AZ-0014
Arkansas Certification #: 88-0680
California Certification #: 01155CA
EPA Region 8 Certification #: Pace
Florida/NELAP Certification #: E87605
Georgia Certification #: 959
Idaho Certification #: MN00064
Illinois Certification #: 200011
Iowa Certification #: 368
Kansas Certification #: E-10167
Louisiana Certification #: 03086
Louisiana Certification #: LA080009
Maine Certification #: 2007029
Maryland Certification #: 322
Michigan DEQ Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: Pace
Montana Certification #: MT CERT0092
Nevada Certification #: MN_00064
Nebraska Certification #: Pace
New Jersey Certification #: MN-002
New Mexico Certification #: Pace
New York Certification #: 11647
North Carolina Certification #: 530
North Dakota Certification #: R-036
North Dakota Certification #: R-036A
Ohio VAP Certification #: CL101
Oklahoma Certification #: D9921
Oklahoma Certification #: 9507
Oregon Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification
Tennessee Certification #: 02818
Texas Certification #: T104704192
Washington Certification #: C754
Wisconsin Certification #: 999407970

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SAMPLE SUMMARY

Project: 65677.00 Mille Lacs Oil- Cambr
Pace Project No.: 10171594

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10171594001	**MW-1**	Water	10/04/11 09:30	10/05/11 09:07
10171594002	**MW-3**	Water	10/04/11 11:45	10/05/11 09:07
10171594003	**MW-6**	Water	10/04/11 11:00	10/05/11 09:07
10171594004	**MW-6A**	Water	10/04/11 10:15	10/05/11 09:07
10171594005	**MW-7**	Water	10/04/11 12:30	10/05/11 09:07
10171594006	**Trip Blank**	Water	10/04/11 00:00	10/05/11 09:07

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SAMPLE ANALYTE COUNT

Project: 65677.00 Mille Lacs Oil- Cambr
Pace Project No.: 10171594

Lab ID	Sample ID	Method	Analysts	Analytes Reported
10171594001	**MW-1**	WI MOD DRO	KL1	2
		WI MOD GRO	KT1	9
10171594002	**MW-3**	WI MOD DRO	KL1	2
		WI MOD GRO	KT1	9
10171594003	**MW-6**	WI MOD DRO	KL1	2
		WI MOD GRO	KT1	9
10171594004	**MW-6A**	WI MOD DRO	KL1	2
		WI MOD GRO	KT1	9
10171594005	**MW-7**	WI MOD DRO	KL1	2
		WI MOD GRO	KT1	9
10171594006	**Trip Blank**	WI MOD GRO	KT1	9

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ANALYTICAL RESULTS

Project: 65677.00 Mille Lacs Oil- Cambr
Pace Project No.: 10171594

Sample: MW-1 **Lab ID: 10171594001** Collected: 10/04/11 09:30 Received: 10/05/11 09:07 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO								
Diesel Range Organics	**1960**	ug/L	103	51.5	1	10/10/11 07:48	10/12/11 15:03		T7
n-Triacontane (S)	86	%	50-150		1	10/10/11 07:48	10/12/11 15:03		
WIGRO GCV	Analytical Method: WI MOD GRO								
Benzene	ND	ug/L	1.0	0.17	1		10/11/11 06:57	71-43-2	
Ethylbenzene	**8.6**	ug/L	1.0	0.15	1		10/11/11 06:57	100-41-4	
Gasoline Range Organics	**838**	ug/L	100	13.0	1		10/11/11 06:57		
Methyl-tert-butyl ether	ND	ug/L	5.0	0.37	1		10/11/11 06:57	1634-04-4	
Toluene	ND	ug/L	1.0	0.10	1		10/11/11 06:57	108-88-3	
1,2,4-Trimethylbenzene	**86.8**	ug/L	1.0	0.16	1		10/11/11 06:57	95-63-6	
1,3,5-Trimethylbenzene	**36.6**	ug/L	1.0	0.18	1		10/11/11 06:57	108-67-8	
Xylene (Total)	**272**	ug/L	3.0	0.48	1		10/11/11 06:57	1330-20-7	
a,a,a-Trifluorotoluene (S)	105	%	80-125		1		10/11/11 06:57	98-08-8	

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ANALYTICAL RESULTS

Project: 65677.00 Mille Lacs Oil- Cambr
Pace Project No.: 10171594

Sample: MW-3 **Lab ID: 10171594002** Collected: 10/04/11 11:45 Received: 10/05/11 09:07 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO								
Diesel Range Organics	**7630**	ug/L	521	260	5	10/10/11 07:48	10/12/11 15:56		T7
n-Triacontane (S)	35	%	50-150		5	10/10/11 07:48	10/12/11 15:56		S2
WIGRO GCV	Analytical Method: WI MOD GRO								
Benzene	**2420**	ug/L	20.0	3.4	20		10/11/11 04:45	71-43-2	M1
Ethylbenzene	**156**	ug/L	20.0	3.0	20		10/11/11 04:45	100-41-4	M1
Gasoline Range Organics	**22600**	ug/L	2000	260	20		10/11/11 04:45		
Methyl-tert-butyl ether	ND	ug/L	100	7.4	20		10/11/11 04:45	1634-04-4	M1
Toluene	**1780**	ug/L	20.0	2.0	20		10/11/11 04:45	108-88-3	M1
1,2,4-Trimethylbenzene	**1110**	ug/L	20.0	3.2	20		10/11/11 04:45	95-63-6	M1
1,3,5-Trimethylbenzene	**385**	ug/L	20.0	3.6	20		10/11/11 04:45	108-67-8	M1
Xylene (Total)	**6800**	ug/L	60.0	9.6	20		10/11/11 04:45	1330-20-7	
a,a,a-Trifluorotoluene (S)	118	%	80-125		20		10/11/11 04:45	98-08-8	

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ANALYTICAL RESULTS

Project: 65677.00 Mille Lacs Oil- Cambr
Pace Project No.: 10171594

Sample: MW-6 **Lab ID: 10171594003** Collected: 10/04/11 11:00 Received: 10/05/11 09:07 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO								
Diesel Range Organics	**4250**	ug/L	102	50.8	1	10/10/11 07:48	10/12/11 15:19		T7
n-Triacontane (S)	92	%	50-150		1	10/10/11 07:48	10/12/11 15:19		
WIGRO GCV	Analytical Method: WI MOD GRO								
Benzene	**2810**	ug/L	10.0	1.7	10		10/11/11 08:46	71-43-2	
Ethylbenzene	**913**	ug/L	10.0	1.5	10		10/11/11 08:46	100-41-4	
Gasoline Range Organics	**18100**	ug/L	1000	130	10		10/11/11 08:46		
Methyl-tert-butyl ether	ND	ug/L	50.0	3.7	10		10/11/11 08:46	1634-04-4	
Toluene	**3500**	ug/L	10.0	1.0	10		10/11/11 08:46	108-88-3	
1,2,4-Trimethylbenzene	**714**	ug/L	10.0	1.6	10		10/11/11 08:46	95-63-6	
1,3,5-Trimethylbenzene	**196**	ug/L	10.0	1.8	10		10/11/11 08:46	108-67-8	
Xylene (Total)	**4110**	ug/L	30.0	4.8	10		10/11/11 08:46	1330-20-7	
a,a,a-Trifluorotoluene (S)	99	%	80-125		10		10/11/11 08:46	98-08-8	

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ANALYTICAL RESULTS

Project: 65677.00 Mille Lacs Oil- Cambr
Pace Project No.: 10171594

Sample: MW-6A **Lab ID: 10171594004** Collected: 10/04/11 10:15 Received: 10/05/11 09:07 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO								
Diesel Range Organics	**146**	ug/L	104	52.1	1	10/10/11 07:48	10/12/11 14:55		
n-Triacontane (S)	92	%	50-150		1	10/10/11 07:48	10/12/11 14:55		
WIGRO GCV	Analytical Method: WI MOD GRO								
Benzene	ND	ug/L	1.0	0.17	1		10/11/11 02:12	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.15	1		10/11/11 02:12	100-41-4	
Gasoline Range Organics	ND	ug/L	100	13.0	1		10/11/11 02:12		
Methyl-tert-butyl ether	ND	ug/L	5.0	0.37	1		10/11/11 02:12	1634-04-4	
Toluene	ND	ug/L	1.0	0.10	1		10/11/11 02:12	108-88-3	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	0.16	1		10/11/11 02:12	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	0.18	1		10/11/11 02:12	108-67-8	
Xylene (Total)	ND	ug/L	3.0	0.48	1		10/11/11 02:12	1330-20-7	
a,a,a-Trifluorotoluene (S)	99	%	80-125		1		10/11/11 02:12	98-08-8	

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ANALYTICAL RESULTS

Project: 65677.00 Mille Lacs Oil- Cambr
Pace Project No.: 10171594

Sample: MW-7 Lab ID: **10171594005** Collected: 10/04/11 12:30 Received: 10/05/11 09:07 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO								
Diesel Range Organics	**14200**	ug/L	1040	518	10	10/10/11 07:48	10/12/11 16:03		T7
n-Triacontane (S)	98	%	50-150		10	10/10/11 07:48	10/12/11 16:03		
WIGRO GCV	Analytical Method: WI MOD GRO								
Benzene	**4540**	ug/L	25.0	4.2	25		10/11/11 08:24	71-43-2	
Ethylbenzene	**1940**	ug/L	25.0	3.8	25		10/11/11 08:24	100-41-4	
Gasoline Range Organics	**44100**	ug/L	2500	325	25		10/11/11 08:24		
Methyl-tert-butyl ether	**572**	ug/L	125	9.2	25		10/11/11 08:24	1634-04-4	
Toluene	**8050**	ug/L	25.0	2.5	25		10/11/11 08:24	108-88-3	
1,2,4-Trimethylbenzene	**1620**	ug/L	25.0	4.0	25		10/11/11 08:24	95-63-6	
1,3,5-Trimethylbenzene	**411**	ug/L	25.0	4.5	25		10/11/11 08:24	108-67-8	
Xylene (Total)	**10200**	ug/L	75.0	12.0	25		10/11/11 08:24	1330-20-7	
a,a,a-Trifluorotoluene (S)	124	%	80-125		25		10/11/11 08:24	98-08-8	

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ANALYTICAL RESULTS

Project: 65677.00 Mille Lacs Oil- Cambr
Pace Project No.: 10171594

Sample: Trip Blank **Lab ID: 10171594006** Collected: 10/04/11 00:00 Received: 10/05/11 09:07 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
WIGRO GCV	Analytical Method: WI MOD GRO								
Benzene	ND	ug/L	1.0	0.17	1		10/11/11 01:28	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.15	1		10/11/11 01:28	100-41-4	
Gasoline Range Organics	ND	ug/L	100	13.0	1		10/11/11 01:28		
Methyl-tert-butyl ether	ND	ug/L	5.0	0.37	1		10/11/11 01:28	1634-04-4	
Toluene	ND	ug/L	1.0	0.10	1		10/11/11 01:28	108-88-3	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	0.16	1		10/11/11 01:28	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	0.18	1		10/11/11 01:28	108-67-8	
Xylene (Total)	ND	ug/L	3.0	0.48	1		10/11/11 01:28	1330-20-7	
a,a,a-Trifluorotoluene (S)	97	%	80-125		1		10/11/11 01:28	98-08-8	

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QUALITY CONTROL DATA

Project: 65677.00 Mille Lacs Oil- Cambr
Pace Project No.: 10171594

QC Batch: OEXT/16895 Analysis Method: WI MOD DRO
QC Batch Method: WI MOD DRO Analysis Description: WIDRO GCS
Associated Lab Samples: 10171594001, 10171594002, 10171594003, 10171594004, 10171594005

METHOD BLANK: 1072211 Matrix: Water
Associated Lab Samples: 10171594001, 10171594002, 10171594003, 10171594004, 10171594005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Range Organics	ug/L	ND	100	10/12/11 14:40	
n-Triacontane (S)	%	84	50-150	10/12/11 14:40	

LABORATORY CONTROL SAMPLE & LCSD: 1072212 1072213

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Range Organics	ug/L	2000	1680	1680	84	84	75-115	.3	20	
n-Triacontane (S)	%				99	96	50-150			

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QUALITY CONTROL DATA

Project: 65677.00 Mille Lacs Oil- Cambr
Pace Project No.: 10171594

QC Batch: GCV/8480 Analysis Method: WI MOD GRO
QC Batch Method: WI MOD GRO Analysis Description: WIGRO GCV Water
Associated Lab Samples: 10171594001, 10171594002, 10171594003, 10171594004, 10171594005, 10171594006

METHOD BLANK: 1070617 Matrix: Water
Associated Lab Samples: 10171594001, 10171594002, 10171594003, 10171594004, 10171594005, 10171594006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trimethylbenzene	ug/L	ND	1.0	10/11/11 00:44	
1,3,5-Trimethylbenzene	ug/L	ND	1.0	10/11/11 00:44	
Benzene	ug/L	ND	1.0	10/11/11 00:44	
Ethylbenzene	ug/L	ND	1.0	10/11/11 00:44	
Gasoline Range Organics	ug/L	ND	100	10/11/11 00:44	
Methyl-tert-butyl ether	ug/L	ND	5.0	10/11/11 00:44	
Toluene	ug/L	ND	1.0	10/11/11 00:44	
Xylene (Total)	ug/L	ND	3.0	10/11/11 00:44	
a,a,a-Trifluorotoluene (S)	%	97	80-125	10/11/11 00:44	

LABORATORY CONTROL SAMPLE & LCSD: 1070618 1070619

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,2,4-Trimethylbenzene	ug/L	100	102	95.2	102	95	80-120	7	20	
1,3,5-Trimethylbenzene	ug/L	100	103	94.9	103	95	80-120	8	20	
Benzene	ug/L	100	107	99.2	107	99	80-120	7	20	
Ethylbenzene	ug/L	100	99.9	96.0	100	96	80-120	4	20	
Gasoline Range Organics	ug/L	1000	941	949	94	95	80-120	.8	20	
Methyl-tert-butyl ether	ug/L	100	93.5	114	93	114	80-120	20	20	
Toluene	ug/L	100	104	98.8	104	99	80-120	5	20	
Xylene (Total)	ug/L	300	309	295	103	98	80-120	5	20	
a,a,a-Trifluorotoluene (S)	%				101	99	80-125			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1073922 1073923

Parameter	Units	10171594002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,2,4-Trimethylbenzene	ug/L	1110	2000	2000	3530	4090	121	149	80-120	15	20	M1
1,3,5-Trimethylbenzene	ug/L	385	2000	2000	2700	3110	116	136	80-120	14	20	M1
Benzene	ug/L	2420	2000	2000	4840	5580	121	158	80-120	14	20	M1
Ethylbenzene	ug/L	156	2000	2000	2340	2680	109	126	80-120	14	20	M1
Gasoline Range Organics	ug/L	22600	20000	20000	39300	40700	84	90	80-120	3	20	
Methyl-tert-butyl ether	ug/L	ND	2000	2000	1360	1930	68	97	80-120	35	20	D6,M1
Toluene	ug/L	1780	2000	2000	4140	4860	118	154	80-120	16	20	M1
Xylene (Total)	ug/L	6800	6000	6000	14300	16400	124	159	80-120	14	20	ES
a,a,a-Trifluorotoluene (S)	%						109	118	80-125			

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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(612)607-1700

QUALIFIERS

Project: 65677.00 Mille Lacs Oil- Cambr
Pace Project No.: 10171594

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

ANALYTE QUALIFIERS

D6	The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits.
ES	The reported result is estimated because one or more of the constituent results are qualified as such.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
S2	Surrogate recovery outside laboratory control limits due to matrix interferences (confirmed by similar results from sample re-analysis).
T7	Low boiling point hydrocarbons are present in the sample.

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

1131

10171594

Page: 1 of 1

1501136

Section A Required Client Information:

Company: Lresch
Address: Plymouth, MN
Email To:
Phone: Fax:
Requested Due Date/TAT: STD.

Section B Required Project Information:

Report To: Aaron Benker
Copy To:
Purchase Order No.:
Project Name: Mille Lacs Oil-Cambridge
Project Number: 65677.00

Section C Invoice Information:

Attention: Accounting
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager:
Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☒ UST ☐ RCRA ☐ OTHER

Site Location STATE: MN

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Matrix Codes (MATRIX / CODE): Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	DRO	GRO/PVOC	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-1	WT				10/4/11	9:30		5				5						X	X		001
2	MW-3						11:45		5				5						X	X		002
3	MW-6						11:00		5				5						X	X		003
4	MW-6A						10:15		5				5						X	X		004
5	MW-7						12:30		5				5						X	X		005
6	Trip Blank								2				2							X		006
7																						
8																						
9																						
10																						
11																						
12																						

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	Dan Larson / Lresch	10/5/11	9:07	L. Cole / Pace	10/5/11	9:07	0.5	Y	N	Y

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Dan Larson

SIGNATURE of SAMPLER: Dan Larson

DATE Signed (MM/DD/YY): 10/5/11

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Pace Analytical®	Document Name: **Sample Condition Upon Receipt Form**	Revised Date: 02Jun2011 Page 1 of 1
	Document Number: **F-L-213 Rev.01**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Liesch Project # 10171594

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☑ Client ☐ Commercial ☐ Pace Other _____

Tracking #: _____

Optional: Proj. Due Date: Proj. Name:

Custody Seal on Cooler/Box Present: ☐ yes ☑ no Seals Intact: ☐ yes ☐ no

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other _____ Temp Blank: Yes ✓ No _____

Thermometer Used 80344042 or 80512447 **Type of Ice:** Wet Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature 0.3 **Biological Tissue is Frozen:** Yes No

Temp should be above freezing to 6°C **Comments:**

Date and initials of person examining contents: 10/31/11 SH

Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☑No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☑No ☐N/A	7.
Sufficient Volume:	☑Yes ☐No ☐N/A	8.
Correct Containers Used:	☑Yes ☐No ☐N/A	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
Containers Intact:	☑Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☑No ☐N/A	11.
Sample Labels match COC: -Includes date/time/ID/Analysis Matrix: WT	☑Yes ☐No ☐N/A	12.
All containers needing acid/base preservation have been checked. Noncompliance are noted in 13.	☐Yes ☐No ☑N/A	13. ☐ HNO3 ☐ H2SO4 ☐ NaOH ☐ HCl Samp #
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☐No ☑N/A	
Exceptions: VOA, Coliform, TOC, Oil and Grease, WI-DRO (water)	☐Yes ☐No	Initial when completed AH / Lot # of added preservative
Samples checked for dechlorination:	☐Yes ☐No ☑N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☑No ☐N/A	15.
Trip Blank Present:	☑Yes ☐No ☐N/A	16. 2 WT TBs
Trip Blank Custody Seals Present	☑Yes ☐No ☐N/A	
Pace Trip Blank Lot # (if purchased): 092011-1		

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: DBD **Date:** 10-31-11

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, Inc.
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(612)607-1700

March 30, 2011

Aaron Benker
Liesch Associates, Inc.
13400 15th Ave. N.
Minneapolis, MN 55441

RE: Project: 65677 Mille Lacs Oil-Cambridge
Pace Project No.: 10152563

Dear Aaron Benker:
Enclosed are the analytical results for sample(s) received by the laboratory on March 23, 2011. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Carol Davy

carol.davy@pacelabs.com
Project Manager

Enclosures

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: 65677 Mille Lacs Oil-Cambridge
Pace Project No.: 10152563

Minnesota Certification IDs
1700 Elm Street SE Suite 200, Minneapolis, MN 55414
A2LA Certification #: 2926.01
Alaska Certification #: UST-078
Alaska Certification #MN00064
Arizona Certification #: AZ-0014
Arkansas Certification #: 88-0680
California Certification #: 01155CA
EPA Region 8 Certification #: Pace
Florida/NELAP Certification #: E87605
Georgia Certification #: 959
Idaho Certification #: MN00064
Illinois Certification #: 200011
Iowa Certification #: 368
Kansas Certification #: E-10167
Louisiana Certification #: 03086
Louisiana Certification #: LA080009
Maine Certification #: 2007029
Maryland Certification #: 322
Michigan DEQ Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: Pace
Montana Certification #: MT CERT0092
Nevada Certification #: MN_00064
Nebraska Certification #: Pace
New Jersey Certification #: MN-002
New Mexico Certification #: Pace
New York Certification #: 11647
North Carolina Certification #: 530
North Dakota Certification #: R-036
North Dakota Certification #: R-036A
Ohio VAP Certification #: CL101
Oklahoma Certification #: D9921
Oklahoma Certification #: 9507
Oregon Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification
Tennessee Certification #: 02818
Texas Certification #: T104704192
Washington Certification #: C754
Wisconsin Certification #: 999407970

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SAMPLE SUMMARY

Project: 65677 Mille Lacs Oil-Cambridge
Pace Project No.: 10152563

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10152563001	**Subslab-1**	Air	03/22/11 10:35	03/23/11 12:35

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SAMPLE ANALYTE COUNT

Project: 65677 Mille Lacs Oil-Cambridge
Pace Project No.: 10152563

Lab ID	Sample ID	Method	Analysts	Analytes Reported
10152563001	**Subslab-1**	TO-15	DR1	61

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PROJECT NARRATIVE

Project: 65677 Mille Lacs Oil-Cambridge
Pace Project No.: 10152563

Method: TO-15
Description: TO15 MSV AIR
Client: Liesch
Date: March 30, 2011

General Information:
1 sample was analyzed for TO-15. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

QC Batch: AIR/11983

SS: This analyte did not meet the secondary source verification criteria for the initial calibration. The reported result should be considered an estimated value.

- DUP (Lab ID: 949825)
  - Naphthalene
- LCS (Lab ID: 949419)
  - 1,2,4-Trichlorobenzene
  - Hexachloro-1,3-butadiene
  - Naphthalene
  - Tetrahydrofuran

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

QC Batch: AIR/11983

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

- LCS (Lab ID: 949419)
  - Hexachloro-1,3-butadiene

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

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PROJECT NARRATIVE

Project: 65677 Mille Lacs Oil-Cambridge
Pace Project No.: 10152563

Method: **TO-15**
Description: TO15 MSV AIR
Client: Liesch
Date: March 30, 2011

Additional Comments:

Analyte Comments:

QC Batch: AIR/11983

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- Subslab-1 (Lab ID: 10152563001)
  - Ethanol

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 65677 Mille Lacs Oil-Cambridge
Pace Project No.: 10152563

Sample: Subslab-1 **Lab ID: 10152563001** Collected: 03/22/11 10:35 Received: 03/23/11 12:35 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
Acetone	**64.4**	ug/m3	0.86	1.8		03/29/11 02:06	67-64-1	
Benzene	**1.5**	ug/m3	1.2	1.8		03/29/11 02:06	71-43-2	
Benzyl chloride	ND	ug/m3	1.9	1.8		03/29/11 02:06	100-44-7	
Bromodichloromethane	ND	ug/m3	2.5	1.8		03/29/11 02:06	75-27-4	
Bromoform	ND	ug/m3	3.8	1.8		03/29/11 02:06	75-25-2	
Bromomethane	ND	ug/m3	1.4	1.8		03/29/11 02:06	74-83-9	
1,3-Butadiene	ND	ug/m3	0.81	1.8		03/29/11 02:06	106-99-0	
2-Butanone (MEK)	**5.1**	ug/m3	1.1	1.8		03/29/11 02:06	78-93-3	
Carbon disulfide	ND	ug/m3	1.1	1.8		03/29/11 02:06	75-15-0	
Carbon tetrachloride	ND	ug/m3	2.3	1.8		03/29/11 02:06	56-23-5	
Chlorobenzene	ND	ug/m3	1.7	1.8		03/29/11 02:06	108-90-7	
Chloroethane	ND	ug/m3	0.97	1.8		03/29/11 02:06	75-00-3	
Chloroform	**10.2**	ug/m3	1.8	1.8		03/29/11 02:06	67-66-3	
Chloromethane	ND	ug/m3	0.76	1.8		03/29/11 02:06	74-87-3	
Cyclohexane	**3.2**	ug/m3	1.2	1.8		03/29/11 02:06	110-82-7	
Dibromochloromethane	ND	ug/m3	3.1	1.8		03/29/11 02:06	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/m3	2.9	1.8		03/29/11 02:06	106-93-4	
1,2-Dichlorobenzene	ND	ug/m3	2.2	1.8		03/29/11 02:06	95-50-1	
1,3-Dichlorobenzene	ND	ug/m3	2.2	1.8		03/29/11 02:06	541-73-1	
1,4-Dichlorobenzene	ND	ug/m3	2.2	1.8		03/29/11 02:06	106-46-7	
Dichlorodifluoromethane	**14.5**	ug/m3	1.8	1.8		03/29/11 02:06	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.5	1.8		03/29/11 02:06	75-34-3	
1,2-Dichloroethane	ND	ug/m3	1.5	1.8		03/29/11 02:06	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.8		03/29/11 02:06	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/29/11 02:06	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		03/29/11 02:06	156-60-5	
1,2-Dichloropropane	ND	ug/m3	1.7	1.8		03/29/11 02:06	78-87-5	
cis-1,3-Dichloropropene	ND	ug/m3	1.7	1.8		03/29/11 02:06	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/m3	1.7	1.8		03/29/11 02:06	10061-02-6	
Dichlorotetrafluoroethane	ND	ug/m3	2.5	1.8		03/29/11 02:06	76-14-2	
Ethanol	**341**	ug/m3	3.4	1.8		03/29/11 02:06	64-17-5	E
Ethyl acetate	ND	ug/m3	1.3	1.8		03/29/11 02:06	141-78-6	
Ethylbenzene	**5.7**	ug/m3	1.6	1.8		03/29/11 02:06	100-41-4	
4-Ethyltoluene	ND	ug/m3	4.5	1.8		03/29/11 02:06	622-96-8	
n-Heptane	**4.5**	ug/m3	1.5	1.8		03/29/11 02:06	142-82-5	
Hexachloro-1,3-butadiene	ND	ug/m3	4.0	1.8		03/29/11 02:06	87-68-3	
n-Hexane	**12.2**	ug/m3	1.3	1.8		03/29/11 02:06	110-54-3	
2-Hexanone	ND	ug/m3	1.5	1.8		03/29/11 02:06	591-78-6	
Methylene Chloride	**13.8**	ug/m3	1.3	1.8		03/29/11 02:06	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/m3	1.5	1.8		03/29/11 02:06	108-10-1	
Methyl-tert-butyl ether	ND	ug/m3	1.3	1.8		03/29/11 02:06	1634-04-4	
Naphthalene	ND	ug/m3	4.9	1.8		03/29/11 02:06	91-20-3	
2-Propanol	**18.1**	ug/m3	4.5	1.8		03/29/11 02:06	67-63-0	
Propylene	**2.7**	ug/m3	0.63	1.8		03/29/11 02:06	115-07-1	
Styrene	ND	ug/m3	1.6	1.8		03/29/11 02:06	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/m3	2.5	1.8		03/29/11 02:06	79-34-5	
Tetrachloroethene	ND	ug/m3	2.5	1.8		03/29/11 02:06	127-18-4	

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ANALYTICAL RESULTS

Project: 65677 Mille Lacs Oil-Cambridge
Pace Project No.: 10152563

Sample: Subslab-1 **Lab ID: 10152563001** Collected: 03/22/11 10:35 Received: 03/23/11 12:35 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
Tetrahydrofuran	ND	ug/m3	1.1	1.8		03/29/11 02:06	109-99-9	
Toluene	**22.0**	ug/m3	1.4	1.8		03/29/11 02:06	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	1.8	1.8		03/29/11 02:06	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.0	1.8		03/29/11 02:06	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	2.0	1.8		03/29/11 02:06	79-00-5	
Trichloroethene	ND	ug/m3	2.0	1.8		03/29/11 02:06	79-01-6	
Trichlorofluoromethane	ND	ug/m3	2.0	1.8		03/29/11 02:06	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/m3	2.9	1.8		03/29/11 02:06	76-13-1	
1,2,4-Trimethylbenzene	ND	ug/m3	1.8	1.8		03/29/11 02:06	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	1.8	1.8		03/29/11 02:06	108-67-8	
Vinyl acetate	ND	ug/m3	1.3	1.8		03/29/11 02:06	108-05-4	
Vinyl chloride	ND	ug/m3	0.94	1.8		03/29/11 02:06	75-01-4	
m&p-Xylene	**24.8**	ug/m3	3.2	1.8		03/29/11 02:06	179601-23-1	
o-Xylene	**5.1**	ug/m3	1.6	1.8		03/29/11 02:06	95-47-6	

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QUALITY CONTROL DATA

Project: 65677 Mille Lacs Oil-Cambridge
Pace Project No.: 10152563

QC Batch: AIR/11983
QC Batch Method: TO-15
Analysis Method: TO-15
Analysis Description: TO15 MSV AIR Low Level
Associated Lab Samples: 10152563001

METHOD BLANK: 949418
Matrix: Air
Associated Lab Samples: 10152563001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	1.1	03/28/11 08:58	
1,1,2,2-Tetrachloroethane	ug/m3	ND	1.4	03/28/11 08:58	
1,1,2-Trichloroethane	ug/m3	ND	1.1	03/28/11 08:58	
1,1,2-Trichlorotrifluoroethane	ug/m3	ND	1.6	03/28/11 08:58	
1,1-Dichloroethane	ug/m3	ND	0.82	03/28/11 08:58	
1,1-Dichloroethene	ug/m3	ND	0.81	03/28/11 08:58	
1,2,4-Trichlorobenzene	ug/m3	ND	0.99	03/28/11 08:58	
1,2,4-Trimethylbenzene	ug/m3	ND	1.0	03/28/11 08:58	
1,2-Dibromoethane (EDB)	ug/m3	ND	1.6	03/28/11 08:58	
1,2-Dichlorobenzene	ug/m3	ND	1.2	03/28/11 08:58	
1,2-Dichloroethane	ug/m3	ND	0.82	03/28/11 08:58	
1,2-Dichloropropane	ug/m3	ND	0.94	03/28/11 08:58	
1,3,5-Trimethylbenzene	ug/m3	ND	1.0	03/28/11 08:58	
1,3-Butadiene	ug/m3	ND	0.45	03/28/11 08:58	
1,3-Dichlorobenzene	ug/m3	ND	1.2	03/28/11 08:58	
1,4-Dichlorobenzene	ug/m3	ND	1.2	03/28/11 08:58	
2-Butanone (MEK)	ug/m3	ND	0.60	03/28/11 08:58	
2-Hexanone	ug/m3	ND	0.83	03/28/11 08:58	
2-Propanol	ug/m3	ND	2.5	03/28/11 08:58	
4-Ethyltoluene	ug/m3	ND	2.5	03/28/11 08:58	
4-Methyl-2-pentanone (MIBK)	ug/m3	ND	0.83	03/28/11 08:58	
Acetone	ug/m3	ND	0.48	03/28/11 08:58	
Benzene	ug/m3	ND	0.65	03/28/11 08:58	
Benzyl chloride	ug/m3	ND	1.0	03/28/11 08:58	
Bromodichloromethane	ug/m3	ND	1.4	03/28/11 08:58	
Bromoform	ug/m3	ND	2.1	03/28/11 08:58	
Bromomethane	ug/m3	ND	0.79	03/28/11 08:58	
Carbon disulfide	ug/m3	ND	0.63	03/28/11 08:58	
Carbon tetrachloride	ug/m3	ND	1.3	03/28/11 08:58	
Chlorobenzene	ug/m3	ND	0.94	03/28/11 08:58	
Chloroethane	ug/m3	ND	0.54	03/28/11 08:58	
Chloroform	ug/m3	ND	0.99	03/28/11 08:58	
Chloromethane	ug/m3	ND	0.42	03/28/11 08:58	
cis-1,2-Dichloroethene	ug/m3	ND	0.81	03/28/11 08:58	
cis-1,3-Dichloropropene	ug/m3	ND	0.92	03/28/11 08:58	
Cyclohexane	ug/m3	ND	0.68	03/28/11 08:58	
Dibromochloromethane	ug/m3	ND	1.7	03/28/11 08:58	
Dichlorodifluoromethane	ug/m3	ND	1.0	03/28/11 08:58	
Dichlorotetrafluoroethane	ug/m3	ND	1.4	03/28/11 08:58	
Ethanol	ug/m3	ND	1.9	03/28/11 08:58	
Ethyl acetate	ug/m3	ND	0.73	03/28/11 08:58	
Ethylbenzene	ug/m3	ND	0.88	03/28/11 08:58	
Hexachloro-1,3-butadiene	ug/m3	ND	2.2	03/28/11 08:58	

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QUALITY CONTROL DATA

Project: 65677 Mille Lacs Oil-Cambridge
Pace Project No.: 10152563

METHOD BLANK: 949418 Matrix: Air

Associated Lab Samples: 10152563001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
m&p-Xylene	ug/m3	ND	1.8	03/28/11 08:58	
Methyl-tert-butyl ether	ug/m3	ND	0.73	03/28/11 08:58	
Methylene Chloride	ug/m3	ND	0.71	03/28/11 08:58	
n-Heptane	ug/m3	ND	0.83	03/28/11 08:58	
n-Hexane	ug/m3	ND	0.72	03/28/11 08:58	
Naphthalene	ug/m3	ND	2.7	03/28/11 08:58	
o-Xylene	ug/m3	ND	0.88	03/28/11 08:58	
Propylene	ug/m3	ND	0.35	03/28/11 08:58	
Styrene	ug/m3	ND	0.87	03/28/11 08:58	
Tetrachloroethene	ug/m3	ND	1.4	03/28/11 08:58	
Tetrahydrofuran	ug/m3	ND	0.60	03/28/11 08:58	
Toluene	ug/m3	ND	0.77	03/28/11 08:58	
trans-1,2-Dichloroethene	ug/m3	ND	0.81	03/28/11 08:58	
trans-1,3-Dichloropropene	ug/m3	ND	0.92	03/28/11 08:58	
Trichloroethene	ug/m3	ND	1.1	03/28/11 08:58	
Trichlorofluoromethane	ug/m3	ND	1.1	03/28/11 08:58	
Vinyl acetate	ug/m3	ND	0.71	03/28/11 08:58	
Vinyl chloride	ug/m3	ND	0.52	03/28/11 08:58	

LABORATORY CONTROL SAMPLE: 949419

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/m3	55.5	48.2	87	75-135	
1,1,2,2-Tetrachloroethane	ug/m3	69.8	62.8	90	69-131	
1,1,2-Trichloroethane	ug/m3	55.5	48.2	87	64-127	
1,1,2-Trichlorotrifluoroethane	ug/m3	77.9	76.5	98	53-125	
1,1-Dichloroethane	ug/m3	41.2	37.4	91	60-125	
1,1-Dichloroethene	ug/m3	40.3	37.3	93	69-128	
1,2,4-Trichlorobenzene	ug/m3	75.5	90.2	120	30-150	SS
1,2,4-Trimethylbenzene	ug/m3	50	46.2	92	61-150	
1,2-Dibromoethane (EDB)	ug/m3	78.1	70.1	90	68-136	
1,2-Dichlorobenzene	ug/m3	61.2	59.1	97	59-150	
1,2-Dichloroethane	ug/m3	41.2	34.1	83	66-127	
1,2-Dichloropropane	ug/m3	47	39.5	84	75-134	
1,3,5-Trimethylbenzene	ug/m3	50	46.8	94	71-150	
1,3-Butadiene	ug/m3	22.5	18.8	83	67-126	
1,3-Dichlorobenzene	ug/m3	61.2	57.3	94	58-147	
1,4-Dichlorobenzene	ug/m3	61.2	55.7	91	62-143	
2-Butanone (MEK)	ug/m3	30	24.6	82	52-139	
2-Hexanone	ug/m3	41.7	35.4	85	61-138	
2-Propanol	ug/m3	23.8	22.1	93	30-146	
4-Ethyltoluene	ug/m3	50	48.3	97	55-134	
4-Methyl-2-pentanone (MIBK)	ug/m3	41.7	35.2	85	60-135	
Acetone	ug/m3	24.2	21.1	87	61-135	
Benzene	ug/m3	32.5	30.3	93	71-125	

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QUALITY CONTROL DATA

Project: 65677 Mille Lacs Oil-Cambridge
Pace Project No.: 10152563

LABORATORY CONTROL SAMPLE: 949419

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzyl chloride	ug/m3	52.5	46.1	88	70-130	
Bromodichloromethane	ug/m3	68.2	64.7	95	66-136	
Bromoform	ug/m3	105	100	95	62-132	
Bromomethane	ug/m3	39.5	34.7	88	69-125	
Carbon disulfide	ug/m3	31.7	29.1	92	75-150	
Carbon tetrachloride	ug/m3	64	53.6	84	60-145	
Chlorobenzene	ug/m3	46.8	42.7	91	73-143	
Chloroethane	ug/m3	26.8	23.0	86	71-128	
Chloroform	ug/m3	49.7	46.9	95	73-137	
Chloromethane	ug/m3	21	19.1	91	64-125	
cis-1,2-Dichloroethene	ug/m3	40.3	35.2	87	67-131	
cis-1,3-Dichloropropene	ug/m3	46.2	41.6	90	75-150	
Cyclohexane	ug/m3	35	30.3	87	75-141	
Dibromochloromethane	ug/m3	86.6	81.5	94	64-127	
Dichlorodifluoromethane	ug/m3	50.3	38.5	77	69-124	
Dichlorotetrafluoroethane	ug/m3	71.1	55.0	77	59-125	
Ethanol	ug/m3	19.2	15.6	81	30-150	
Ethyl acetate	ug/m3	36.6	31.1	85	75-150	
Ethylbenzene	ug/m3	44.2	39.1	88	75-150	
Hexachloro-1,3-butadiene	ug/m3	108	153	141	30-150	CH,SS
m&p-Xylene	ug/m3	88.3	73.8	84	68-138	
Methyl-tert-butyl ether	ug/m3	36.7	35.5	97	75-134	
Methylene Chloride	ug/m3	35.3	30.8	87	45-125	
n-Heptane	ug/m3	41.7	34.7	83	65-125	
n-Hexane	ug/m3	35.8	29.7	83	67-141	
Naphthalene	ug/m3	53.3	61.0	114	30-150	SS
o-Xylene	ug/m3	44.2	41.5	94	69-143	
Propylene	ug/m3	17.5	14.6	84	65-140	
Styrene	ug/m3	43.3	39.1	90	62-137	
Tetrachloroethene	ug/m3	69	64.1	93	68-136	
Tetrahydrofuran	ug/m3	30	23.9	80	51-125	SS
Toluene	ug/m3	38.3	35.7	93	70-128	
trans-1,2-Dichloroethene	ug/m3	40.3	36.5	90	69-131	
trans-1,3-Dichloropropene	ug/m3	46.2	41.1	89	65-135	
Trichloroethene	ug/m3	54.6	49.8	91	75-147	
Trichlorofluoromethane	ug/m3	57.1	45.4	79	63-127	
Vinyl acetate	ug/m3	35.8	30.7	86	68-136	
Vinyl chloride	ug/m3	26	22.8	88	66-125	

SAMPLE DUPLICATE: 949825

Parameter	Units	9290136005 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	ND		30	
1,1,2,2-Tetrachloroethane	ug/m3	ND	ND		30	
1,1,2-Trichloroethane	ug/m3	ND	ND		30	
1,1,2-Trichlorotrifluoroethane	ug/m3	ND	ND		30	
1,1-Dichloroethane	ug/m3	ND	ND		30	

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 65677 Mille Lacs Oil-Cambridge
Pace Project No.: 10152563

SAMPLE DUPLICATE: 949825

Parameter	Units	9290136005 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1-Dichloroethene	ug/m3	ND	ND		30	
1,2,4-Trichlorobenzene	ug/m3	ND	ND		30	
1,2,4-Trimethylbenzene	ug/m3	113	110	3	30	
1,2-Dibromoethane (EDB)	ug/m3	ND	ND		30	
1,2-Dichlorobenzene	ug/m3	ND	ND		30	
1,2-Dichloroethane	ug/m3	ND	ND		30	
1,2-Dichloropropane	ug/m3	ND	ND		30	
1,3,5-Trimethylbenzene	ug/m3	23.6	23.4	.7	30	
1,3-Butadiene	ug/m3	ND	ND		30	
1,3-Dichlorobenzene	ug/m3	ND	ND		30	
1,4-Dichlorobenzene	ug/m3	ND	ND		30	
2-Butanone (MEK)	ug/m3	4.0	3.2	22	30	
2-Hexanone	ug/m3	ND	ND		30	
2-Propanol	ug/m3	ND	ND		30	
4-Ethyltoluene	ug/m3	16.9	16.7	1	30	
4-Methyl-2-pentanone (MIBK)	ug/m3	ND	ND		30	
Acetone	ug/m3	32.8	33.1	1	30	
Benzene	ug/m3	ND	ND		30	
Benzyl chloride	ug/m3	ND	ND		30	
Bromodichloromethane	ug/m3	ND	ND		30	
Bromoform	ug/m3	ND	ND		30	
Bromomethane	ug/m3	ND	ND		30	
Carbon disulfide	ug/m3	2.1	2.2	3	30	
Carbon tetrachloride	ug/m3	ND	ND		30	
Chlorobenzene	ug/m3	ND	ND		30	
Chloroethane	ug/m3	ND	ND		30	
Chloroform	ug/m3	18.6	17.9	4	30	
Chloromethane	ug/m3	ND	ND		30	
cis-1,2-Dichloroethene	ug/m3	ND	ND		30	
cis-1,3-Dichloropropene	ug/m3	ND	ND		30	
Cyclohexane	ug/m3	ND	ND		30	
Dibromochloromethane	ug/m3	ND	ND		30	
Dichlorodifluoromethane	ug/m3	2.3	2.2	4	30	
Dichlorotetrafluoroethane	ug/m3	ND	ND		30	
Ethanol	ug/m3	7.5	7.1	5	30	
Ethyl acetate	ug/m3	ND	ND		30	
Ethylbenzene	ug/m3	9.5	9.5	.2	30	
Hexachloro-1,3-butadiene	ug/m3	ND	ND		30	
m&p-Xylene	ug/m3	45.9	45.5	1	30	
Methyl-tert-butyl ether	ug/m3	ND	ND		30	
Methylene Chloride	ug/m3	207	209	.8	30	
n-Heptane	ug/m3	ND	ND		30	
n-Hexane	ug/m3	34.3	34.6	.8	30	
Naphthalene	ug/m3	10.5	10.3	2	30	SS
o-Xylene	ug/m3	32.5	32.5	.2	30	
Propylene	ug/m3	4.9	5.5	13	30	
Styrene	ug/m3	ND	ND		30	
Tetrachloroethene	ug/m3	49.0	48.9	.2	30	

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1700 Elm Street - Suite 200
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(612)607-1700

QUALITY CONTROL DATA

Project: 65677 Mille Lacs Oil-Cambridge
Pace Project No.: 10152563

SAMPLE DUPLICATE: 949825

Parameter	Units	9290136005 Result	Dup Result	RPD	Max RPD	Qualifiers
Tetrahydrofuran	ug/m3	ND	ND		30	
Toluene	ug/m3	28.1	28.3	.6	30	
trans-1,2-Dichloroethene	ug/m3	ND	ND		30	
trans-1,3-Dichloropropene	ug/m3	ND	ND		30	
Trichloroethene	ug/m3	ND	ND		30	
Trichlorofluoromethane	ug/m3	ND	1.3J		30	
Vinyl acetate	ug/m3	ND	ND		30	
Vinyl chloride	ug/m3	ND	ND		30	

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QUALIFIERS

Project: 65677 Mille Lacs Oil-Cambridge
Pace Project No.: 10152563

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

ANALYTE QUALIFIERS

CH	The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.
E	Analyte concentration exceeded the calibration range. The reported result is estimated.
SS	This analyte did not meet the secondary source verification criteria for the initial calibration. The reported result should be considered an estimated value.

Pace Analytical Services, Inc.
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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 65677 Mille Lacs Oil-Cambridge
Pace Project No.: 10152563

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10152563001	**Subslab-1**	TO-15	AIR/11983		

Pace Analytical®
www.pacelabs.com

AIR: CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

10152563

04304

Page: 1 of 1

16 of 17

Section A Required Client Information:

Company: Lesch
Address:
Email To:
Phone: 763 459 3100 Fax:
Requested Due Date/TAT: Std

Section B Required Project Information:

Report To: Aaron Benker
Copy To:
Purchase Order No.:
Project Name: Little Lacs DT - Cambridge
Project Number: 65677

Section C Invoice Information:

Attention:
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager/Sales Rep.
Pace Profile #:

Program: [X] UST [ ] Superfund [ ] Emissions [ ] Clean Air Act [ ] Voluntary Clean Up [ ] Dry Clean [ ] RCRA [ ] Other

Location of Sampling by State: MN

Reporting Units: ug/m³ ___ mg/m³ ___ PPBV ___ PPMV ___ Other ___

Report Level II.___ III.___ IV.___ Other ___

Section D Required Client Information

AIR SAMPLE ID
Sample IDs MUST BE UNIQUE

Valid Media Codes

MEDIA	CODE
Tedlar Bag	TB
1 Liter Summa Can	1LC
6 Liter Summa Can	6LC
Low Volume Puff	LVP
High Volume Puff	HVP
Other	PM10

ITEM #	Section D AIR SAMPLE ID	MEDIA CODE	PID Reading (Client only)	COLLECTED COMPOSITE START END/GRAB DATE	COLLECTED COMPOSITE START END/GRAB TIME	COLLECTED COMPOSITE END DATE	COLLECTED COMPOSITE END TIME	Canister Pressure (Initial Field - psig)	Canister Pressure (Final Field - psig)	Summa Can Number	Flow Control Number	Method: PM10	3C: Fixed Gas (%)	TO-3	TO-3M (Methane)	TO-4 (PCBs)	TO-13 (PAH)	TO-14	TO-15	TO15 Short List*	Pace Lab ID
1	Sub-lab-1	1LC		3/22/11	10:35			-25	-1.5	1444								X			10152563001
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					

Comments :

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Dan Larson				3/22/11	1235

SAMPLE CONDITIONS

AMB	Y/N	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N	Y/N
Temp in °C	Received on Ice	Custody Sealed Cooler	Samples Intact	

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Dan Larson
SIGNATURE of SAMPLER: Dan Larson
DATE Signed (MM / DD / YY): 3/22/11

ORIGINAL

AIR Sample Condition Upon Receipt

Pace Analytical™ Client Name: Liesch Project # 10152563

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☒ Client ☐ Commercial ☐ Pace Other_____

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals intact: ☐ yes ☐ no

Packing Material: ☒ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other_____

Optional
Proj. Due Date:
Proj. Name:

Tracking #:_____

		Comments:
Chain of Custody Present:	☒Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☒Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☒Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☒Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☒Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☒No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☒No ☐N/A	7.
Sufficient Volume:	☒Yes ☐No ☐N/A	8.
Correct Containers Used:	☒Yes ☐No ☐N/A	9.
-Pace Containers Used:	☒Yes ☐No ☐N/A	
Containers Intact:	☒Yes ☐No ☐N/A	10.
Media: AA (CAN)		11.
Sample Labels match COC:	☒Yes ☐No ☐N/A	12.

Samples Received: 1 CAN, 1 Grade

Date and Initials of person examining contents: 3-23-11 JK

Canisters		Flow Controllers		Stand Alone G		Tedlar Bags	
Sample Number	Can ID	Sample Number	Can ID	Sample Number	Can ID	Sample Number	Can ID
SebsLAB-1	1444				PA106		

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted:_____ Date/Time:_____

Comments/ Resolution:_____

Project Manager Review: _____ **Date:** 3-23-11

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

A106 Rev.01 (22May2009)

APPENDIX B

Standard Operating Procedures
No. 1310

Title: Groundwater Sample Collection

Application: Guidelines for collection of groundwater samples for laboratory analytical testing.

Equipment: Cooler
Sample containers, labels and preservatives
Bailer/string
Chain of custody forms

Procedure:

1. Use appropriate PPE, be certain that the groundwater monitoring point has been stabilized (see SOP No. 1300).

2. All samples should be collected with new, disposable bailers after the well has been stabilized. If field filtering is required, consult SOP No. 1320.

3. When collecting samples with a bailer, minimize agitation and aeration of water, this could effect sample. Lower bailer into well slowly. Do not allow string to contact any potentially contaminated surfaces.

4. Extract water sample with bailer. Fill sample bottles in order of decreasing volatilization potential, VOC vials first, SVOC next, inorganics last. Do not allow sample bottles to touch any potentially contaminated surfaces. Pour a slow, steady stream into each bottle. For VOC vials, fill container completely so a positive meniscus is formed, then affix cap. Make sure no air bubbles are present in vials.

5. Fill out appropriate information on sample bottle labels: Well identifier, site, date, time, preservative, sample collector, etc.

6. Place samples on ice in cooler. Fill out chain of custody form.

Standard Operating Procedures
No. 1302

Title: Use of Oil-Water Interface Probe

Application: For depth to petroleum liquid and depth to water measurements in wells, borings and drilling equipment. Used to determine petroleum-product thickness.

Description: Reel mounted, portable 100-foot, electronic tape. Water and petroleum product are detected with a stainless-steel probe attached to a 100-foot, plastic-coated engineers tape measure. The tape is graduated in 0.01-foot divisions. When the probe detects non-aqueous phase liquid (petroleum product) the instrument emits a steady audible and visible signal. When the probe detects water, the instrument emits a repeating audible and visual signal.

Equipment: Oil-Water Interface Probe
Standard Water Level Monitoring Forms
Clean Towels
Contaminant-Free Distilled Water
Laboratory Grade Detergent (LGD)

Operating Procedure:

1. Instrument does not require calibration.

2. Decontaminate instrument probe and tape by immersing in LGD and water solution. Rinse tape with distilled water and wipe with clean towels.

3. Turn instrument on by pressing "on" button. Instrument will emit an occasional audible and visual signal If no signals are apparent, replace 9-volt battery.

4. Lower tape into well, boring or drilling equipment by dispensing tape off reel until indicator beeper and light activate.

5. Move tape up and down until a consistent measurement is achieved. Use a fixed reference point (the top of well casing, top of ground surface or top of drilling equipment) and note the exact length of tape extended from the probe to the fixed reference point. If the signal is intermittent, the probe detected water - record depth to water measurement. If the signal is steady, the probe detected non-aqueous liquid - record depth to product measurement. Continue to lower probe to detect water under floating product.

6. Record the station identifier, date, time, depth to product and/or depth to water measurements on field form.

Standard Operating Procedures
No. 4100

Title: Monitoring Well Development

Application: This SOP is designed to provide guidelines for monitoring well development.

Equipment: Bailer
Submersible Pump
Water Level Tape
Field Notebook
Rope

Operating Procedure:

The purpose of monitoring well development is to ensure removal of fines from the vicinity of the well screen. This allows free flow of water from the formation into the well and also reduces the turbidity of the water during sampling events. The most common well development methods are: surging, jetting and overpumping. This procedure uses surging.

1. Refer to the Work Plan for direction on containerizing and disposing of development water.

2. Measure the depth to water and the depth of the well according to SOP 2400 or 2500 and record in the field notebook. Determine the well volume according to SOP 1202.

3. Attach a bailer to the rope with a secure knot.

4. Lower the bailer into the well.

5. Raise and lower the bailer through the water column in the well (surging). Remove the bailer from the well and empty into container noting the turbidity, odor and color.

6. Repeat steps 4 and 5 until sediment-free water is being removed from the well and at least 10 well volumes are removed.

7. The submersible pump can be used to surge and remove well volumes once the sediment has been removed from the well.

8. Record in the field notebook the final turbidity, color, odor, total gallons removed, development method and recharge rate observed during development.

9. Decontaminate the downhole equipment according to SOP 7001.

Standard Operating Procedures
No. 1400

Title: Use and Calibration of Photoionization Detector (PID)

Application: For quantification of organic vapors during vapor surveys, soil screening, headspace measurements and air safety monitoring.

Description: Hand-held, battery operated, electronic organic vapor detector. Uses a high-energy lamp to ionize and quantify organic vapors.

Equipment: Minirae 2000 PID
Calibration Apparatus
100 ppm Isobutylene Calibration Gas

Operating Procedure:

1. Turn instrument on by pressing the "mode" key for one second and release. Display will show "ON..." Allow instrument to warm-up.

Calibration:

1. Press and hold the "mode" and "N/-" keys for three seconds. **Calibrate/Select Gas Sub-Menu** will be displayed. Press the "Y/+" key to select this menu.

2. The first sub-menu shows: **Fresh Air Cal?** Connect charcoal filter to PID probe. Press the "Y/+" key. The instrument will zero itself. Press "Y/+" key to return to previous submenu.

3. Press the "N/-" key and scroll to the **Span Cal?** Submenu. Press the "Y/+" key to start calibration. The display shows the gas name and span value of the corresponding gas. Make sure span value is correct.

4. When display shows **Apply gas now!** Introduce span gas to instrument.

5. Wait until the display shows the calibrated value. Press "mode" key to exit.

Use:

1. For ambient air monitoring: Collect air sample by holding PID probe in air source.

2. For field screening: When performing headspace analysis, prepare samples according to SOP Nos. 1210-1211. Insert PID probe into headspace container or over sample to be screened.

3. Record sample identifier, date, time and PID reading on field form or notebook.

Shut-down:

1. Press and hold the "mode" key for five seconds. Display will show **OFF!** and instrument will shut off.

Contributing source: RAE Systems, Inc.

Standard Operating Procedures
No. 1300

Title: Groundwater Monitoring Well Stabilization

Application: Guidelines for well stabilization prior to collecting groundwater samples for laboratory analysis. Purpose is to provide representative aquifer samples.

Description: Collection of groundwater perimeters that indicate representative formation water.

Equipment: Well Purging Device
YSI Temperature/pH/ORP meter
Cole Parmer DSTmeter
YSI Dissolved Oxygen Meter
Solinst Electronic Water Level Indicator

Operating Procedure:

1. Use appropriate PPE as described in the Health and Safety Plan.

2. Locate well to be stabilized, remove lock, cover and cap.

3. If well does not contain free floating product, use solinst to collect water level measurement (see SOP No. 1301). Use oil-water interface probe in wells containing free product (see SOP No. 1302). Record measurements on field form.

4. Determine total well depth, if unknown, use weighted tape measure to determine well depth.

   Calculate water column volume in well by using formula: $V=\pi r2$
   V = Water Column Volume
   π = Pi
   r = Well casing radius (in feet)

   Multiply V (in cubic feet) by 7.48 gallons/cubic foot to convert to gallons of water.

5. Using purging device, extract groundwater from well. Check local regulations for number of volumes to be purged.

6. After each well volume extracted, measure the temperature, pH, TDS, ORP and dissolved oxygen of a representative sample. Refer to SOPs Nos. 1303, 1304, 1305, 1306, and 1307 for temperature, pH, TDS, ORP and dissolved oxygen measurement procedures. Record values on field form.

7. Continue purging well until three successive sets of readings fall with + or – 0.1 pH units, + or – 0.5°C and + or – 5% of full scale dissolved solids.

8. Decontaminate all above equipment before proceeding to next well. Refer to SOP No. 0000 for equipment decontamination.

9. Dispose of purge water to sanitary sewer or as directed by work plan.

APPENDIX C

APPENDIX D

Project Name: Mille Lacs Oil - Cambridge
Project No: 65677.00
Weather Conditions: NA (inside building)
Completed By: Dan Larson

VAPOR INTRUSION SAMPLE INFORMATION FORM

General				
Sample ID:	Subslab-1			
Date:	3/22/2011			
Time Started:	10:00AM			
Sample Location:	NE corner of Legion building in utility closet			
Ground Surface:	Concrete			
Sampling Method (i.e. Geoprobe PRT):	Subslab - with stainless steel sampling implant			
Sample Vessel (i.e. Summa Can):	One-liter Summa Can			
Summa Can Number:	1444			
Sample Depth Interval (Feet):	0-6 inches beneath concrete slab			
Purging				
Tubing Length:	2 feet			
Tubing Diameter (ID):	1/4"			
Purge method:	Syringe			
Sampling				
Vacuum Gauge (yes/no):	Yes			
Vacuum reading before opening valve (inHg)	0			
Initial Vacuum-immediately after opening valve (inHg):	-25			
vacuum end reading (inHg):	-1.5			
Fill time (seconds):	35			
Sample Collection Time:	10:35 AM			
PID reading (ppm):	1.2			
Notes:	Used hydrated granular bentonite to create seal between sample point and atmosphere.			

Project No. 65677.00
Project Name: Mille Lacs Oil Company
Weather Conditions
Completed By: Aaron Bunker

GROUNDWATER MONITORING DATA SHEET

Location ID	MW-1	MW-3	MW-6	MW-6A	MW-7			
Unique #	554377	554379	617203	617204	731591			
Date:	1-12-11		1-12-11	1-12-11				
Time:	12:40		10:45	10:00				
Chronology:	3	5	2	1	4			
Casing Diameter (in):	2"	2"	2"	2"	2"			
Static Depth (ft):	18.96		19.73	19.78				
Casing Length (ft):	24	29	29	41	24			
Column Length (ft):	24	29	29	41	24			
Column Volume (gal):	3.9	4.7	4.7	6.7	3.9			
Gallons Removed:	5	5	5	10	5			
TOC Elevation	963.1	963.72	963.93	963.73	963.8			
Ground Elevation	963.07	961.97	963.94	963.76	961.35			
Bottom of Screen Elevation	939.07	934.97	934.94	922.76	939.8			
Screen Elevation Interval	949.07-939.07	944.97-934.97	944.94-934.94	932.76-922.76	949.80-939.80			
Static Water Elevation	**963.1**	**963.72**	**963.93**	**963.73**	**963.8**			
Sample Appearance								
Color:								
Phases:		None						
Odor:								
Sample Parameters								
VOCs								
DRO	X		X	X				
GRO/PVOCs	X		X	X				
Notes:								

Prod
18.35

Water
18.5

GRO / PVOCs

Project No. 65677.00	
Project Name: Mille Lacs Oil Company	
Weather Conditions	
Completed By: ~~Aaron Benker~~	

GROUNDWATER MONITORING DATA SHEET

Location ID	MW-1	MW-3	MW-6	MW-6A	MW-7			
Unique #	554377	554379	617203	617204	731591			
Date:	3/21/11	3/21/11	3/21/11	3/21/11	3/21/11			
Time:	10:00	9:45	8:55 AM	8:20 AM	9:30			
Chronology:	3	5	2	1	4			
Casing Diameter (in):	2"	2"	2"	2"	2"			
Static Depth (ft):	19.16	17.89	19.83	19.87	18.80			
Casing Length (ft):	24	29	29	41	24			
Column Length (ft):	24	29	29	41	24			
Column Volume (gal):	3.9	4.7	4.7	6.7	3.9			
Gallons Removed:	5	5	5	10	5			
TOC Elevation	963.1	963.72	963.93	963.73	963.8			
Ground Elevation	963.07	961.97	963.94	963.76	961.35			
Bottom of Screen Elevation	939.07	934.97	934.94	922.76	939.8			
Screen Elevation Interval	949.07-939.07	944.97-934.97	944.94-934.94	932.76-922.76	949.80-939.80			
Static Water Elevation	**963.1**	**963.72**	**963.93**	**963.73**	**963.8**			
Sample Appearance								
Color:	--	Clear	~~Clear~~	Clear	Gray			
Phases:	--	~~4" Prod~~	None	None	~~16" Prod~~			
Odor:	--	Petroleum	None	None	Petroleum			
Sample Parameters			Slight Petro					
VOCs								
DRO	X		X	X				
GRO/PVOCs	X		X	X				
Notes:								

Cloudy/black

No prod

Sample 11:45

1.5' prod

Rem. 3 Gal for disposal

Project No. 65677.00	
Project Name: Mille Lacs Oil Company	
Weather Conditions	
Completed By: Dan Larson	

GROUNDWATER MONITORING DATA SHEET

Location ID	MW-1	MW-3	MW-6	MW-6A	MW-7			
Unique #	554377	554379	617203	617204	731591			
Date:	6/7/2011	6/7/2011	6/7/2011	6/7/2011	6/7/2011			
Times Sampled:	11:00	11:30	9:40	9:00	--			
Chronology:	3	5	2	1	4			
Casing Diameter (in):	2"	2"	2"	2"	2"			
Static Depth (ft):	18.59	17.29	19.52	19.56	18.13			
Casing Length (ft):	24	29	29	41	24			
Column Length (ft):	24	29	29	41	24			
Column Volume (gal):	3.9	4.7	4.7	6.7	3.9			
Gallons Removed:	5	5	5	10	5			
TOC Elevation	963.1	963.72	963.93	963.73	963.8			
Ground Elevation	963.07	961.97	963.94	963.76	961.35			
Bottom of Screen Elevation	939.07	934.97	934.94	922.76	939.8			
Screen Elevation Interval	949.07-939.07	944.97-934.97	944.94-934.94	932.76-922.76	949.80-939.80			
Static Water Elevation	**963.1**	**963.72**	**963.93**	**963.73**	**963.8**			
Sample Appearance								
Color:	Light Yellow	Clear	Clear	Clear	Clear to Gray			
Phases:	None	None	None	None	None			
Odor:	Petroleum	Petroleum	Slight Old Gas Odor	None	Petroleum			
Sample Parameters								
VOCs								
DRO	X		X	X				
GRO/PVOCs	X		X	X				
Notes:								

Project No. 65677.00	
Project Name: Mille Lacs Oil Company	
Weather Conditions	Sunny 65-75°
Completed By:	Dan L

GROUNDWATER MONITORING DATA SHEET

Location ID	MW-1	MW-3	MW-6	MW-6A	MW-7			
Unique #	554377	554379	617203	617204	731591			
Date:	10/4/11	→	→	→	→			
Time:	9:30	11:45	11:00	10:15	12:30			
Chronology:	~~1~~ 1	~~4~~ 4	~~3~~ 3	2	~~5~~ 5			
Casing Diameter (in):	2"	2"	2"	2"	2"			
Static Depth (ft):	17.03	15.77	17.98	18.03	16.53			
Casing Length (ft):	24	29	29	41	24			
Column Length (ft):	24	29	29	41	24			
Column Volume (gal):	3.9	4.7	4.7	6.7	3.9			
Gallons Removed:	5	5	5	10	5			
TOC Elevation	963.1	963.72	963.93	963.73	963.8			
Ground Elevation	963.07	961.97	963.94	963.76	961.35			
Bottom of Screen Elevation	939.07	934.97	934.94	922.76	939.8			
Screen Elevation Interval	949.07-939.07	944.97-934.97	944.94-934.94	932.76-922.76	949.80-939.80			
Static Water Elevation	**963.1**	**963.72**	**963.93**	**963.73**	**963.8**			
Sample Appearance								
Color:								
Phases:	NO PHASE	→	→	→	→			
Odor:	Slt. Petro	Sl. Petro	Petro	NO	Strader			
Sample Parameters								
VOCs								
DRO	X		X	X				
GRO/PVOCs	X		X	X				
Notes:	Clear	Lt gray to clear yellowish gray Sl. Sheen	Clear	Clear	Clear @ 5 NO PHASE			