Carlson McCain

ENVIRONMENTAL • ENGINEERING • LAND SURVEYING

March 15, 2013

Mr. Gary Zarling
Minnesota Pollution Control Agency
520 Lafayette Road
St. Paul, Minnesota 55155

Re: Monitoring Report Form (MPCA Guidance Document 4-08)
Former Sinclair #22020
223 East Larpenteur Avenue
Maplewood, MN 55117
MPCA LEAK #17952

Dear Mr. Zarling:

Carlson McCain, Inc. (Carlson McCain), on behalf of Mr. Paul Conrad of Sinclair Marketing, Inc. has completed the enclosed Monitoring Report Form (MPCA Guidance Document 4-08) in regards to the additional investigation (i.e. monitoring well installation and subsequent quarterly groundwater sampling) conducted at the above-referenced Site. Carlson McCain is recommending MPCA Site Closure. Investigation activities conducted at the Site appear to define the horizontal extent of residual groundwater impacts from a previously documented petroleum release (former MPCA Leak #2643). An electronic copy of the report is also included on the attached disk.

If you have any questions, you may contact me at (952) 346-3913 or email cloch@carlsonmccain.com.

Sincerely,

Carlson McCain, Inc.

Chris Loch
Project Manager

Enclosure

cc: Mr. Paul Conrad – Sinclair Marketing, Inc.

MONITORING REPORT FORM
(MPCA GUIDANCE DOCUMENT 4-08)

Sinclair #22020
223 East Larpenteur Avenue
Maplewood, MN 55117
Project #3327-00
MPCA Leak #17952

Prepared for:

Sinclair Marketing, Inc.
Attn: Mr. Paul Conrad
550 East South Temple
Salt Lake City, Utah 84102

March 15, 2013

Carlson McCain

PO Box 429, 5300 Highway 12
Maple Plain, MN 55359
Tel 952-346-3900
Fax 952-346-3901
www.carlsonmccain.com

ENVIRONMENTAL • ENGINEERING • LAND SURVEYING

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: **Leak00017952** Date: **March 15, 2013**

Responsible Party Information

Name: **Sinclair Marketing, Inc.** Phone #: **801-526-3825**

Mailing Address: **550 East South Temple**

City: **Salt Lake City** Zip Code: **84102**

Alternate Contact (if any) for Responsible Party: **Paul Conrad** Phone #: **801-526-3825**

Leak Site Information

Leak Site Name: **Sinclair #22020** Phone #: **NA**

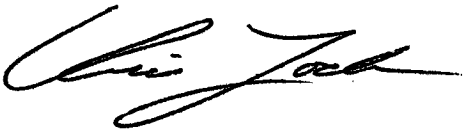
Leak Site Address: **223 East Larpenteur Avenue**

City: **Maplewood** Zip Code: **55117** County: **Ramsey**

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
Christopher J. Loch Project Manager		3/15/13

Name and Title of Report Reviewer(s)	Signature	Date Signed
Nick Bonow, P.G., P.E. Senior Geologist/Env. Engineer		3/15/13

Name(s) of Field Technician(s): **Chris Loch, Christy Steman and Aric Olsen**

Company and Mailing Address: **Carlson McCain, Inc.**
P.O Box 429
Maple Plain, MN 55359

Project Manager E-mail Address: **cloch@carlsonmccain.com**

Phone: **952-346-3913**

Fax: **952-346-3901**

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.

On behalf of Sinclair Marketing, Inc. (Sinclair), Carlson McCain, Inc. (Carlson McCain) has completed this Monitoring Report (MPCA Guidance Document 4-08) which addresses additional investigation activities conducted at the former Sinclair Station #22020 (Site) located at 223 East Larpenteur Avenue in Maplewood, Minnesota. The Site location is shown on Figure 1, attached. Subsequent to review of the Limited Site Investigation (LSI) report (MPCA Guidance Document 4-06), dated August 18, 2011, the Minnesota Pollution Control Agency (MPCA) requested Site and off-site monitoring well installation with a year of quarterly groundwater sampling in a letter dated October 3, 2011.

Subsequent to off-site access agreements with the City of St. Paul, a total of three monitoring wells (MW-1 through MW-3) were installed by Carlson McCain on January 7, 2012 and February 8, 2012. Monitoring well MW-1 was advanced at the Site, located between LSI soil boring GP-1 and Phase II soil boring GP-3; MW-2 was installed along the south side of Larpenteur Avenue East right-of-way (ROW), directly to the south of MW-1; and MW-3 was installed along the south side of Larpenteur Avenue East ROW, directly to the south of the former Site tank basin and southeast of MW-1. It should be noted that off-site access approval and permitting was necessary to install monitoring wells MW-2 and MW-3 along the City of St. Paul Larpenteur Avenue East ROW and underneath an overhead power line. Monitoring well locations are visually depicted on Figures 2a and 2b, attached. Monitoring well construction diagrams are attached in Appendix C.

Subsequent to monitoring well development conducted by Carlson McCain on February 15, 2012, groundwater samples were collected from each monitoring well during a total of four quarterly sampling events. Carlson McCain conducted quarterly groundwater sampling activities on February 21, 2012; June 22, 2012; August 20, 2012; and November 29, 2012. Groundwater samples were collected from each monitoring well and were submitted to a certified laboratory for analysis of gasoline range organics (GRO), diesel range organics (DRO) and volatile organic compounds (VOCs). Laboratory analytical reports for collected groundwater samples are attached in Appendix A.

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

N/A

Section 2: Monitoring Results

2.1 Groundwater

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

A total of four quarterly sampling events have been conducted from the Site and off-site monitoring wells (MW-1 through MW-3). Water level measurements were obtained from each monitoring well prior to groundwater sample collection. The direction and velocity of groundwater flow through the poorly graded sand unit was calculated from groundwater measurements and potentiometric surface maps completed during each quarterly groundwater sampling event and hydraulic conductivity calculations completed during previous LSI activities. Potentiometric surface maps illustrating groundwater flow direction and groundwater velocity calculated from collected water level measurements are attached as Figures 3a through 3d. A hydrograph illustrating water level elevations measured from each monitoring well during the quarterly sampling events is attached as Figure 4. Groundwater is estimated to flow to the southwest at approximately 0.076 feet per day. Potentiometric surface maps are somewhat inconsistent with southerly groundwater flow direction inferred by contamination concentrations. Due to the low hydraulic gradient, residual groundwater contaminant concentrations are believed a better indicator of plume migration, and therefore groundwater flow direction. In addition, groundwater flow has been historically calculated to flow towards the south during remedial investigation activities conducted for MPCA closed Leak #2643 and information interpolated with the previous LSI completed for this current Site release. Furthermore, the lack of petroleum impacts to the groundwater sample collected from LSI soil boring GP-4, advanced to the southwest of the release source area, appears to confirm this rationale.

After the monitoring wells were purged, groundwater samples were collected from each well during the quarterly sampling events conducted on February 21, June 22, August 20 and November 29 of 2012. Each collected groundwater sample was submitted to a certified laboratory for the analysis of GRO, DRO and VOCs. Laboratory analysis of groundwater samples collected from the "worst-case" monitoring well (MW-1) during each sampling event indicated elevated concentrations of GRO, DRO, benzene, toluene ethylbenzene, xylenes, naphthalene, trimethylbenzenes (TMBs), n-propylbenzene, isopropylbenzene, p-isopropyltoluene and tert-butylbenzene above laboratory detection limits. Concentrations of benzene, toluene, ethylbenzene, xylenes, naphthalene and TMBs were detected above their respective Minnesota Department of Health (MDH) Health Risk Limits (HRLs). Laboratory analysis of the groundwater samples collected from off-site monitoring wells MW-2 and MW-3 indicated compounds not present at concentrations above laboratory detection limits with the exception of relatively low concentrations of DRO present in each well during sampling events conducted on June 22, August 20 and November 29 of 2012. The DRO concentrations ranged from 110 to 240 milligrams per liter (ug/L) from the groundwater samples collected from monitoring wells MW-2 and MW-3. Laboratory analytical results of collected groundwater samples

are included with updated Tables 11 and 12, attached. Benzene, GRO and DRO contamination graphs showing concentrations over time are attached as Figures 5a, 5b and 5c.

Based on laboratory analytical results for groundwater samples collected from Phase II ESA soil borings, LSI soil borings and monitoring wells, groundwater contamination appears to be associated with the previous Site release (closed MPCA Leak #2643). The detected petroleum constituents appear to fluctuate in concentration with the subtle changes of groundwater levels measured during each quarterly sampling event conducted in monitoring well MW-1. In addition, concentrations are significantly lower than the groundwater sample collected from Phase II soil boring GP-3. Previous LSI activities indicated that soil boring GP-5, advanced to the south of the release source area and along the southern extent of the Site, exhibited significantly lower concentrations of respective petroleum constituents. LSI soil boring GP-5 and off-site monitoring wells MW-2 and MW-3 appear to define the horizontal extent of the impacted plume.

The dissolved contamination plume is estimated between 80 and 120 feet long throughout the Site, encompassing the former Site building and historical tank basin, and extending the southern section of the Site towards LSI soil boring GP-5. The longitudinal length of the dissolved contamination plume was estimated from data collected during LSI soil boring advancement activities conducted on June 29, 2011 and recent quarterly groundwater sampling events. The interpolated horizontal extents of GRO, DRO and benzene groundwater contamination plumes are depicted on Figures 5a through 5c, respectively. GRO, DRO and benzene concentration graphs from each quarterly sampling event are attached as Figures 6a through 6d.

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.

N/A

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.

N/A

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 was not observed during LSI and monitoring well sampling activities.

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.

N/A

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.

Soil and groundwater petroleum impacts discovered during Phase II Site Assessment, UST removal, initial LSI activities and recent monitoring well installation and subsequent quarterly groundwater sampling appear to pose a minimal risk to the immediate and surrounding environment. As documented in the previously submitted LSI report, soil and groundwater petroleum impacts are believed to be residual contamination associated with closed MPCA Leak #2643. It should be noted that Site and off-site conditions have not changed since the previously submitted LSI report dated August 18, 2011.

The primary risk associated with residual petroleum impacted soil and groundwater is the potential for horizontal groundwater migration towards nearby receptors (i.e. surface water and utility corridors). As documented in the previously submitted LSI report, impacted groundwater appears to be concentrated in the area surrounding Phase II Site Assessment soil boring GP-3 and LSI soil boring GP-1, each advanced to the south of the historical tank basin associated with closed MPCA Leak #2643. Monitoring well MW-1, installed directly to the north of Phase II soil boring GP-3 and LSI soil boring GP-1, provided "worst case" groundwater sampling results from within the interpolated historical release source area. The dissolved groundwater plume appears to extend to the south of the Site, towards LSI soil boring GP-5 and the north side of Larpenteur Avenue East. A total of two off-site, down-gradient monitoring wells (MW-2 and MW-3) were installed along the southern ROW of Larpenteur Avenue East, directly to the south of LSI soil boring GP-5 and the southeast corner of the Site boundary, respectively. Quarterly groundwater sampling events conducted from each monitoring well appear to define the horizontal extent of the groundwater plume from impacting down-gradient surface water features, underground utilities and residential homes

identified during previous LSI activities. As documented in the previously submitted LSI report, the groundwater contamination plume significantly decreases in concentration from the historical release source area to LSI soil boring GP-5.

Water level measurements collected from Site and off-site monitoring wells during a total of four quarterly groundwater sampling events identified groundwater fluctuating at depths ranging from 12.67 and 18.04 feet bgs. Potentiometric surface maps illustrate a relatively low hydraulic gradient throughout the Site. Hydraulic gradients were estimated between 0.002 and 0.008 (unit-less) from groundwater level measurements collected during the four groundwater sampling events.

The direction and velocity of groundwater flow through the poorly graded sand unit, identified during LSI soil boring advancement activities, was calculated from potentiometric surface maps completed during the four quarterly groundwater sampling events from each monitoring well. Groundwater was estimated to flow to the southwest at approximately 0.076 feet per day. The risk of the dissolved groundwater contamination plume contacting the nearest residential homes, underground utility corridors and the down-gradient surface water feature (unnamed pond) appears insignificant as groundwater concentrations have significantly decreased as the plume slowly migrated throughout time. Furthermore, an identified unnamed pond is located approximately 210 feet to the south of off-site monitoring wells MW-2 and MW-3.

Additional underground utilities identified off-site consist of a municipal water main and buried electric line transecting along the southern right-of-way of Larpenteur Avenue East. Groundwater sampling conducted from off-site monitoring wells MW-2 and MW-3, located between the additional identified underground utilities, suggests that the residual dissolved contaminant plume has not migrated below the off-site utility trenches. In addition, the off-site water main line is constructed of copper. Copper water lines are believed to resist corrosion associated with petroleum impacted soil.

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.

Carlson McCain is recommending MPCA Leak Site closure. Subsequent to the LSI dated August 18, 2011, the MPCA requested a total of three monitoring wells to be installed within the interpolated Site release source area and down-gradient, off-site locations. The monitoring wells (MW-1 through MW-3) were completed to conduct a total of four quarterly groundwater sampling events to assess the magnitude and horizontal extent of the impacted groundwater plume.

A total of four groundwater sampling events have been conducted from the Site and off-site monitoring wells (MW-1 through MW-3). Groundwater samples were submitted to a certified laboratory for the analysis of GRO, DRO and VOCs. Laboratory analysis of groundwater samples collected from the "worst-case" monitoring well (MW-1) indicated elevated concentrations of GRO, DRO, benzene, toluene, ethylbenzene, xylenes, naphthalene, TMBs, n-butylbenzene, sec-butylbenzene, isopropylbenzene, p-isopropyltoluene, tert-butylbenzene and n-propylbenzene above laboratory detection limits. Concentrations of benzene, toluene, ethylbenzene, xylenes, naphthalene and TMBs detected in groundwater samples collected from monitoring well MW-1 were above their respective MDH HRLs. Laboratory analysis of groundwater samples collected from monitoring wells MW-2 and MW-3 indicated compounds not present at concentrations above laboratory detection limits with the exception of relatively low DRO concentrations.

Based on laboratory analytical results for groundwater samples collected from Phase II ESA soil borings, LSI soil borings and monitoring wells, groundwater contamination appears to be associated with the previous Site release (closed MPCA Leak #2643). The detected petroleum constituents appear to fluctuate in concentration with the subtle changes of groundwater levels measured during each quarterly sampling event conducted in monitoring well MW-1. In addition, concentrations are significantly lower than the groundwater sample collected from Phase II soil boring GP-3, which was the cause of concern to re-assess groundwater impacts. Previous LSI activities indicated

that soil boring GP-5, advanced to the south of the release source area and along the southern extent of the Site, indicated significantly lower concentrations of respective petroleum constituents. The results of quarterly groundwater samples collected from monitoring wells MW-2 and MW-3 suggest the impacted groundwater plume is defined and not impacting down-gradient receptors (i.e. water and sanitary sewer mains, the down-gradient surface water feature, and a residential home located to the southwest of MW-2).

The Site closure recommendation is based on confirmatory information regarding the MPCA general policy.

- ***Impacted groundwater that has or may affect human health*: The Site is currently undeveloped. The City of Maplewood and St. Paul provide resource water to the Site, nearby homes and commercial properties acknowledged during previous LSI activities. LSI activities also indicated that private water supply wells were not identified within 500 feet of the Site, with the nearest domestic wells located approximately 900 and 1,160 feet to the west (side-gradient direction) of the Site. In addition, municipal or industrial wells were not identified within ½ mile of the Site release. LSI soil borings GP-4 and GP-5 and monitoring wells MW-2 and MW-3 appear to define horizontal residual groundwater impacts towards underground public water mains located along Larpenteur Avenue and Adolphus Street. The public water mains were interpolated to exist between 8.5 and 10 feet above the impacted groundwater plume.**
- ***Led or may lead to dangerous conditions due to petroleum vapor:* Previous LSI activities documented an insignificant threat of petroleum vapor intrusion throughout the Site and migrating off-site. Site and off-site conditions have not changed since the LSI report dated August 18, 2011.**
- ***Affect or may affect surface water quality*: As documented in the previously submitted LSI report, the nearest surface water bodies are two unnamed ponds located approximately 260 feet (0.05 mile) and 350 feet (0.07 mile) to the northwest and south of the Site, respectively. Groundwater samples collected from monitoring wells MW-2 and MW-3, advanced off-site and within the down-gradient direction, did not indicate the presence of petroleum impacted groundwater with the exception of very low DRO concentration detections. In addition, laboratory analysis of the groundwater sample collected from LSI soil boring GP-5, advanced along the southern extent of the Site within the interpolated down-gradient direction from the suspected historical release source area, reported significantly lower petroleum constituent concentrations. Based on the laboratory analytical results of groundwater samples collected during LSI soil boring advancement activities and recent quarterly monitoring events, the impacted groundwater plume is believed to be defined between LSI soil boring GP-5 and monitoring wells MW-2 and MW-3. The laboratory results indicated a significant decrease in concentrations from those identified within the source area, located approximately 35 feet to the north of LSI soil boring GP-5.**

Furthermore, a very low groundwater flow velocity was calculated throughout the Site. The risk of the dissolved groundwater contamination plume contacting the nearest down-gradient surface water feature (unnamed pond) appears insignificant as groundwater concentrations have significantly decreased as the plume slowly migrated throughout time. The down-gradient unnamed pond is located at least an additional 210 feet to the south of monitoring wells MW-2 and MW-3.

- ***Caused or may cause dermal contact*: Petroleum impacted surface soil, within a depth of at least two feet bgs, was not observed throughout the Site during previous Phase II and LSI activities. In addition, impacts near the water table are not expected to pose a risk for dermal contact.**

Based on Site conditions with respect to MPCA general Guidance Closure Criteria, previous LSI activities, and recent quarterly groundwater sampling activities, Carlson McCain recommends Leak Site closure.

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.

N/A

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.

N/A

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.)

N/A

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.

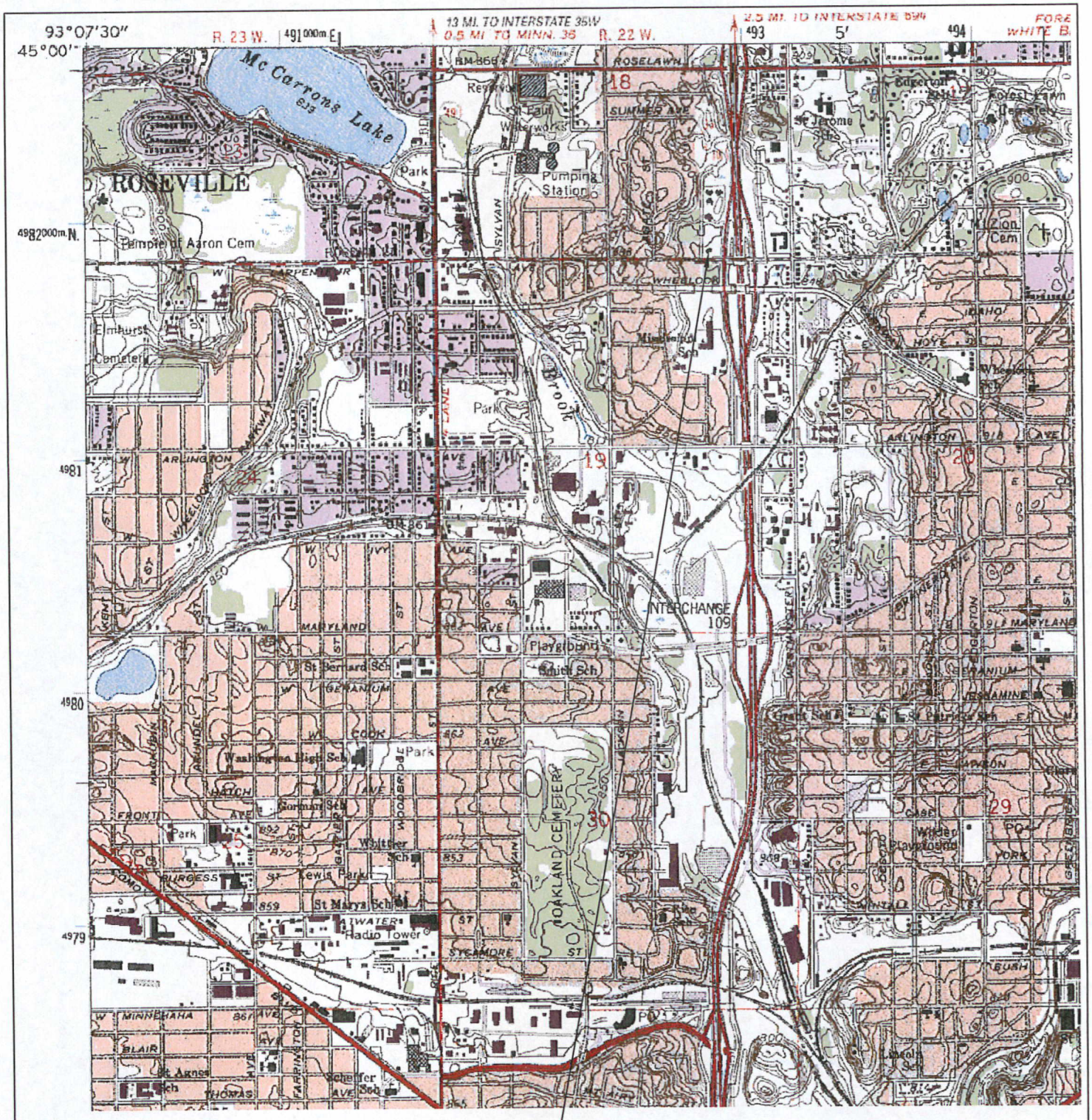
☐ Vapor Survey Map showing utilities and buildings with basements and monitoring locations within 500 feet (if a survey was required). If the survey area has been expanded beyond 500 feet, adjust the map to encompass the entire surveyed area.

☐ 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



SOURCE: USGS ST. PAUL EAST 7.5 MIN. QUADRANGLE

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ANNUAL MONITORING REPORT
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FIGURE 1
SITE LOCATION MAP

LEGEND

MONITORING WELL LOCATION

N

0 25 50

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FIGURE 2a
AERIAL VIEW

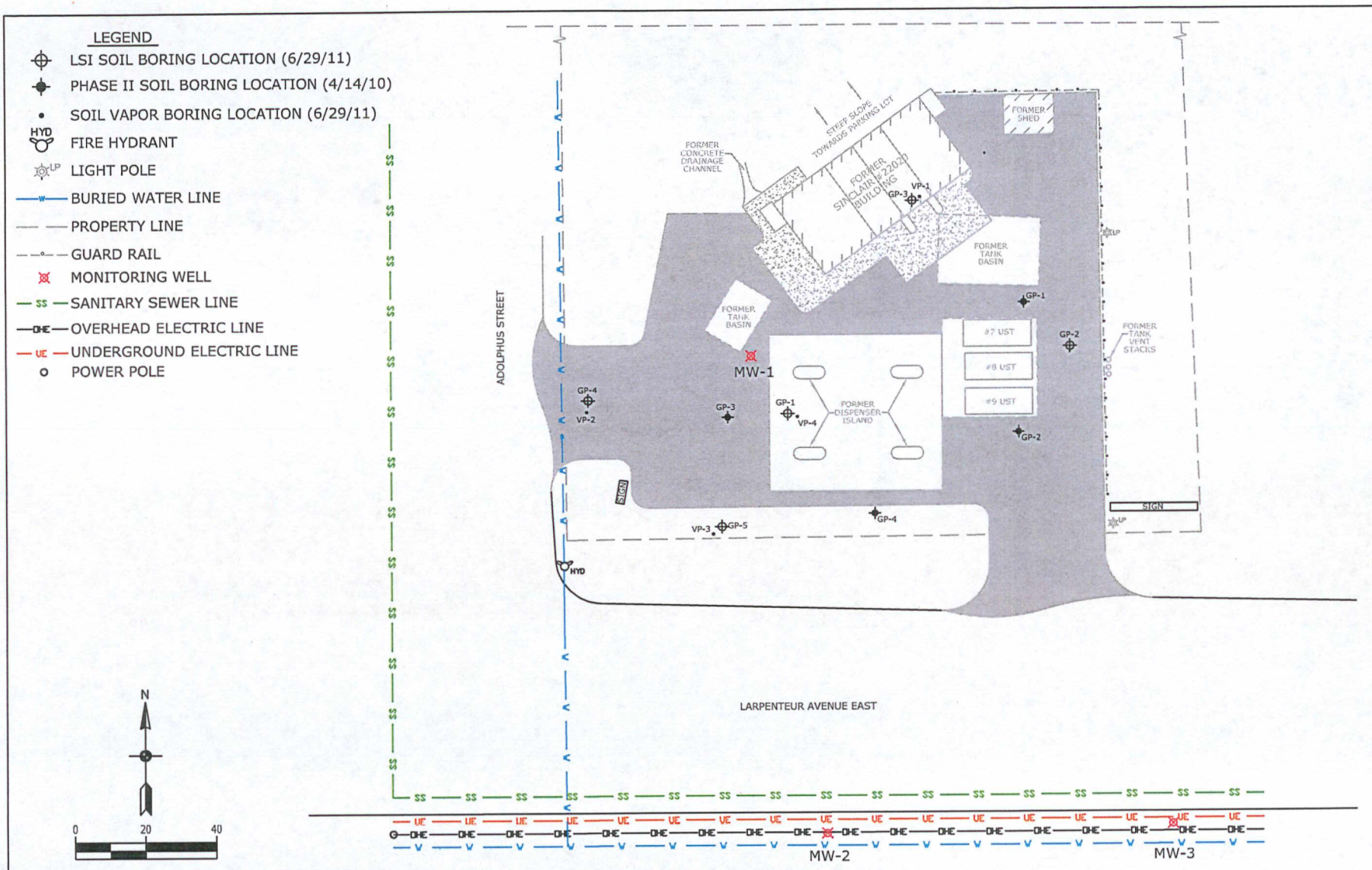

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FIGURE 2b
SITE PLAN VIEW

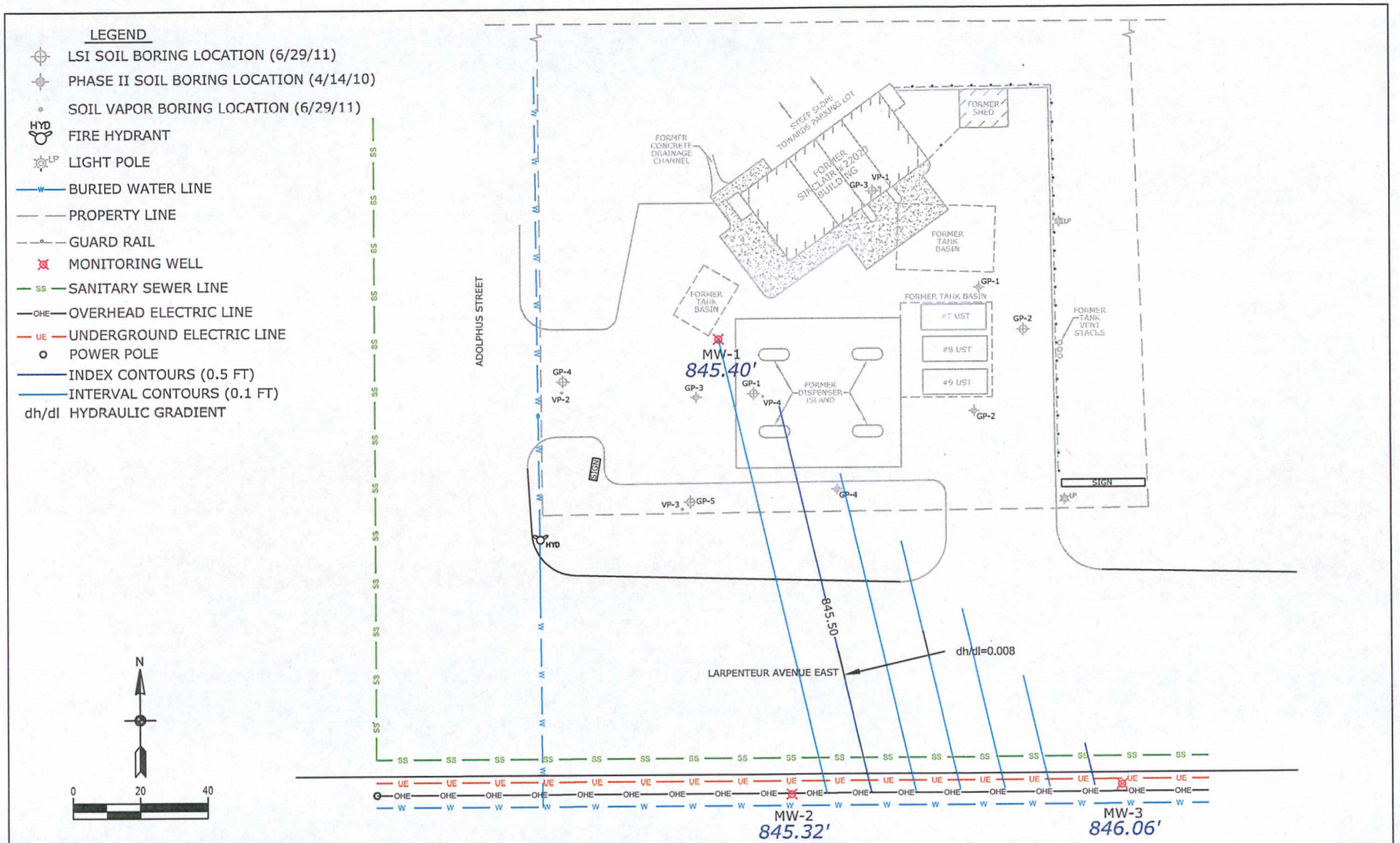

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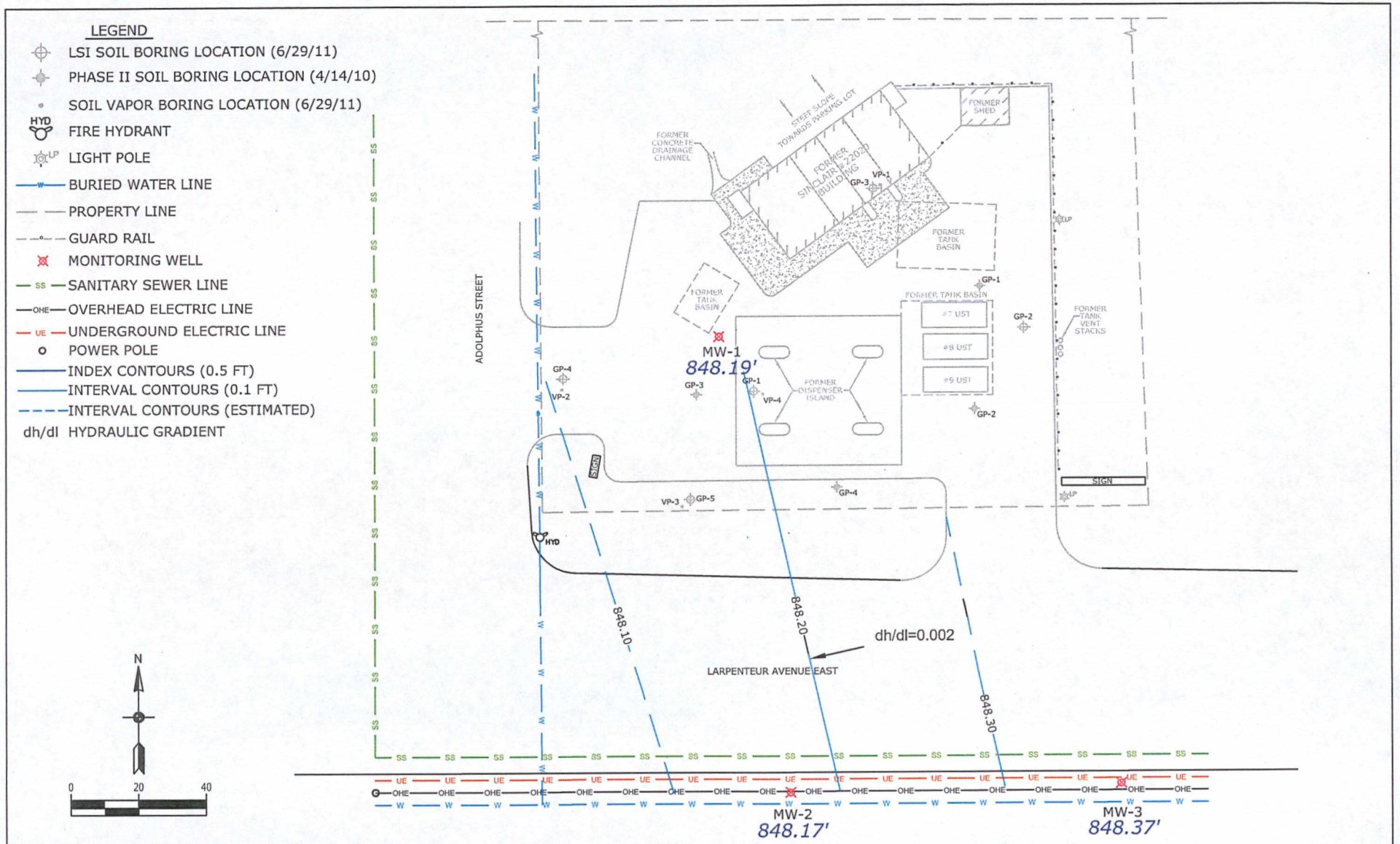
FIGURE 3a
POTENTIOMETRIC SURFACE MAP
(2/21/12)



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MPCA LEAK No.:17952

FIGURE 3b
POTENTIOMETRIC SURFACE MAP
(6/22/12)

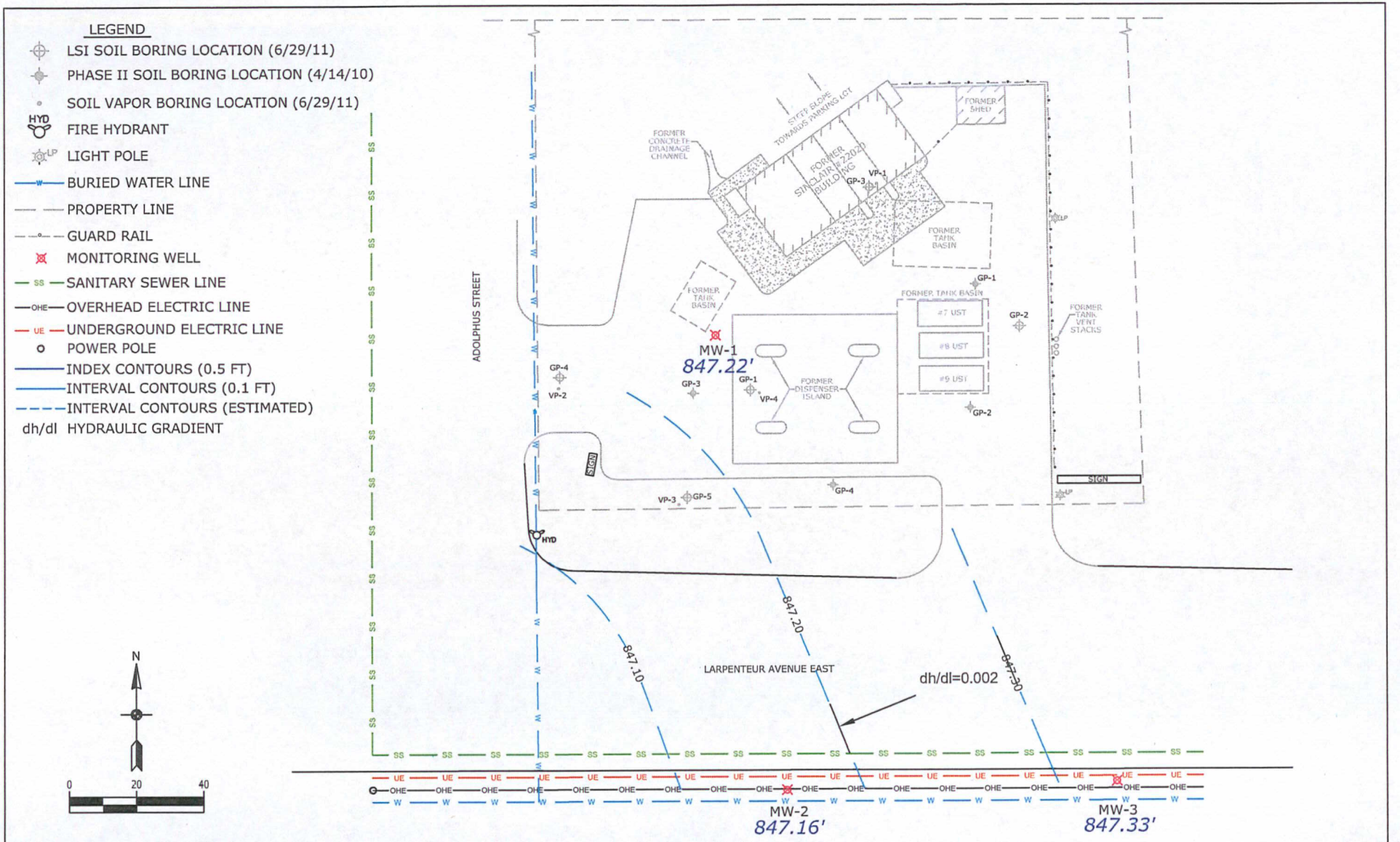

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FIGURE 3c
POTENTIOMETRIC SURFACE MAP
(8/20/12)

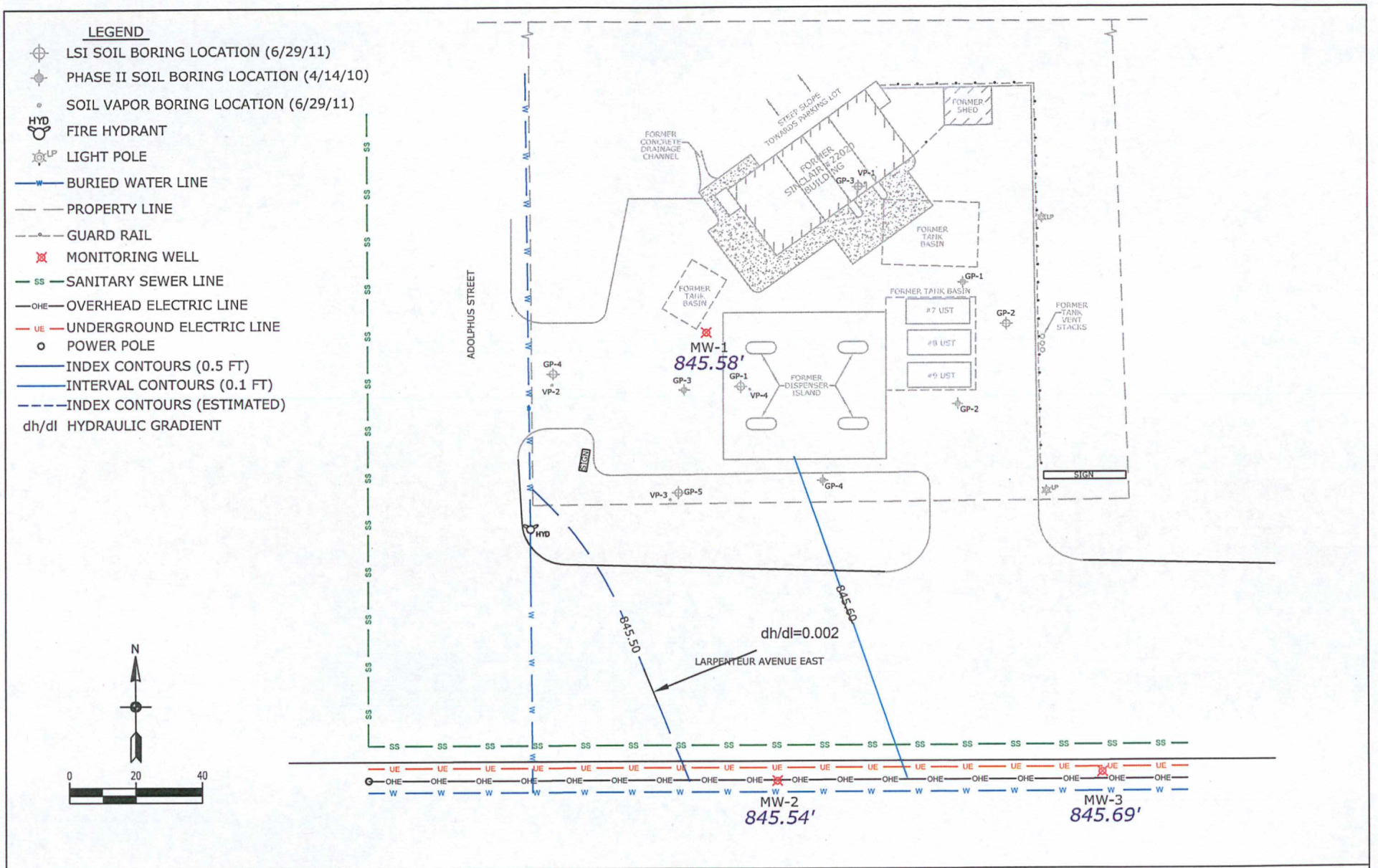

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FIGURE 3d
POTENTIOMETRIC SURFACE MAP
(11/29/12)

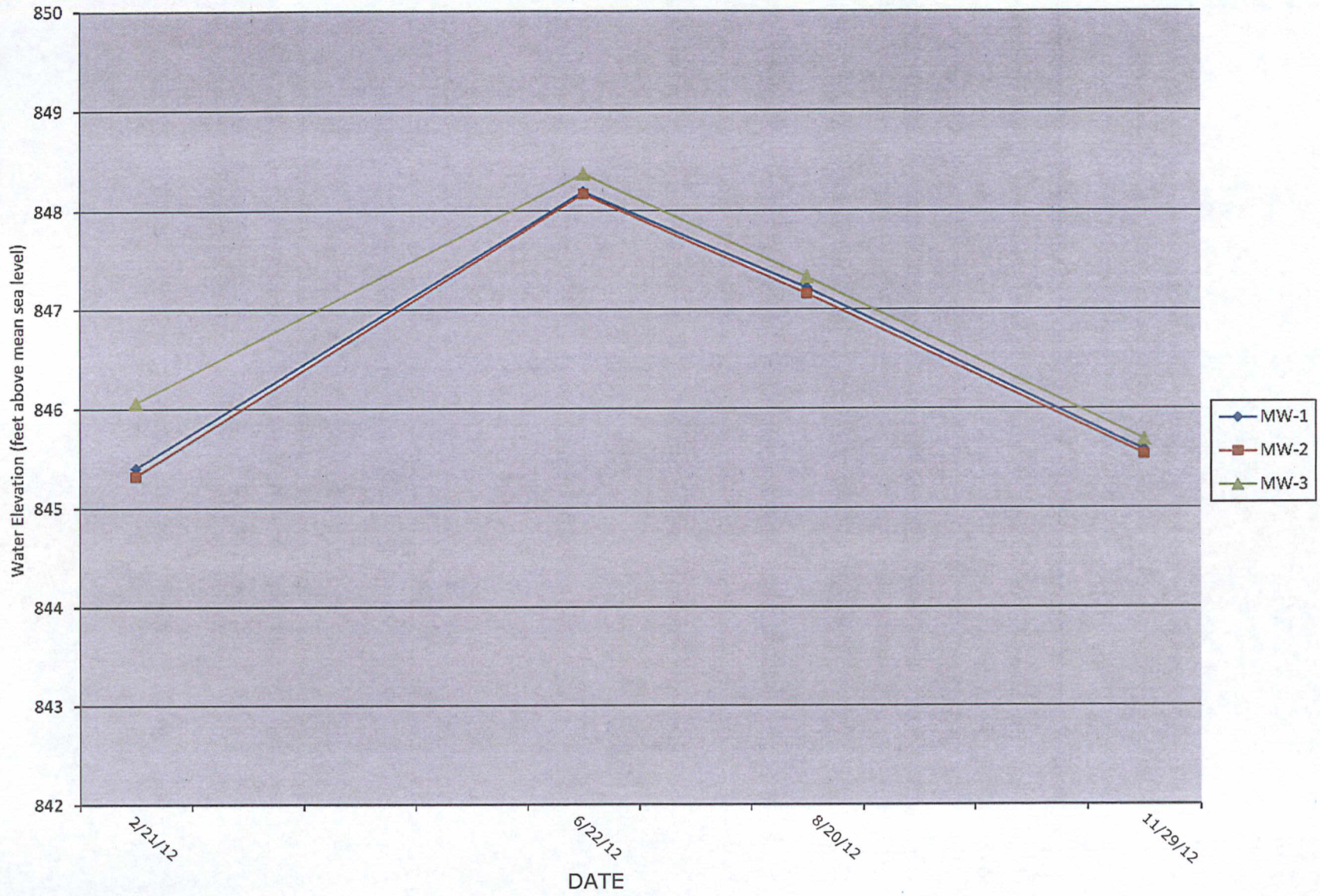

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FIGURE 4
HYDROGRAPH

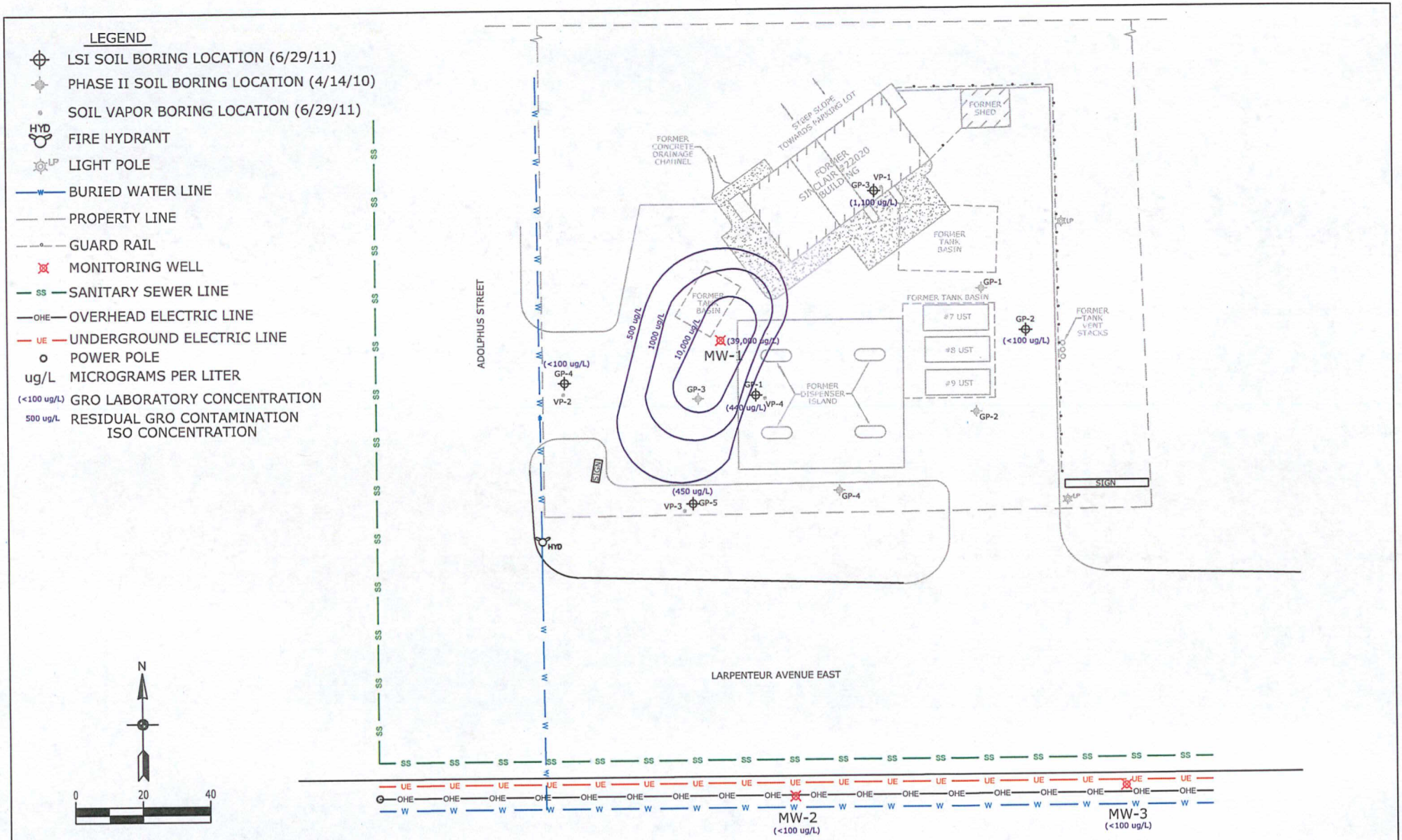

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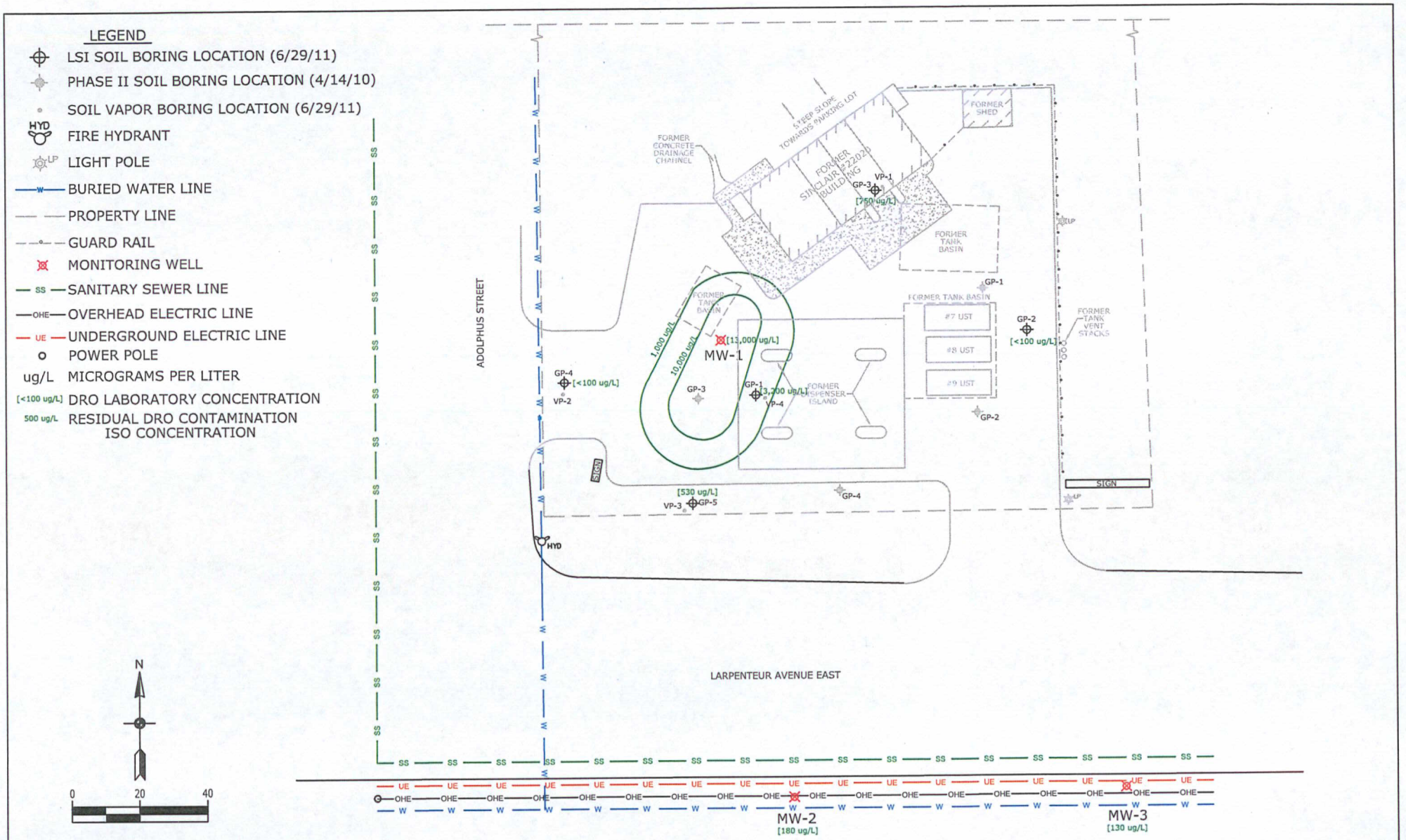
FIGURE 5a
HORIZONTAL GRO GROUNDWATER CONTAMINATION PLUME EXTENTS
(ESTIMATED FROM 6/29/11-11/29/12)

P:\Projects\CJL Projects\LSI Projects\3327-00 Sinclair 22020 Maplewood\Annual monitoring report\CAD\3327_Fig.1-6.dwg, Fig.5a, 3/15/2013 9:10:42 AM



Carlson McCain ENVIRONMENTAL • ENGINEERING • SURVEYING	ANNUAL MONITORING REPORT Former Sinclair #22020 223 Larpenteur Avenue Maplewood, Minnesota 55423 Carlson McCain Project No.: 3327-00 MPCA LEAK No.:17952	FIGURE 5b HORIZONTAL DRO GROUNDWATER CONTAMINATION PLUME EXTENTS (ESTIMATED FROM 6/29/11-11/29/12)

P:\Projects\CJL Projects\LSI Projects\3327-00 Sinclair 22020 Maplewood\Annual monitoring report\CAD\3327_Fig.1-6.dwg, Fig.5b, 3/15/2013 9:02:17 AM

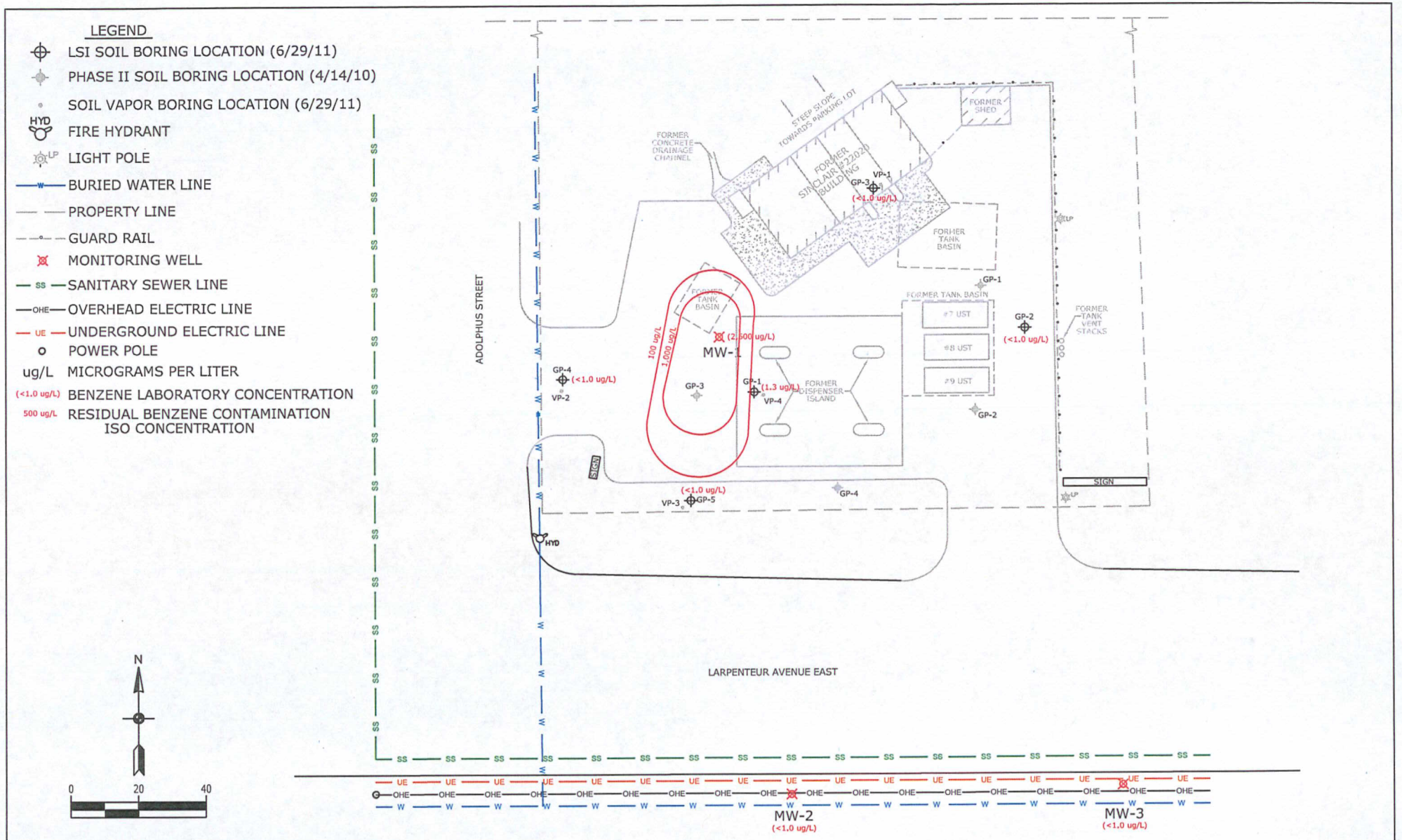


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FIGURE 5c
HORIZONTAL BENZENE GROUNDWATER CONTAMINATION PLUME EXTENTS
(ESTIMATED FROM 6/29/11-11/29/12)

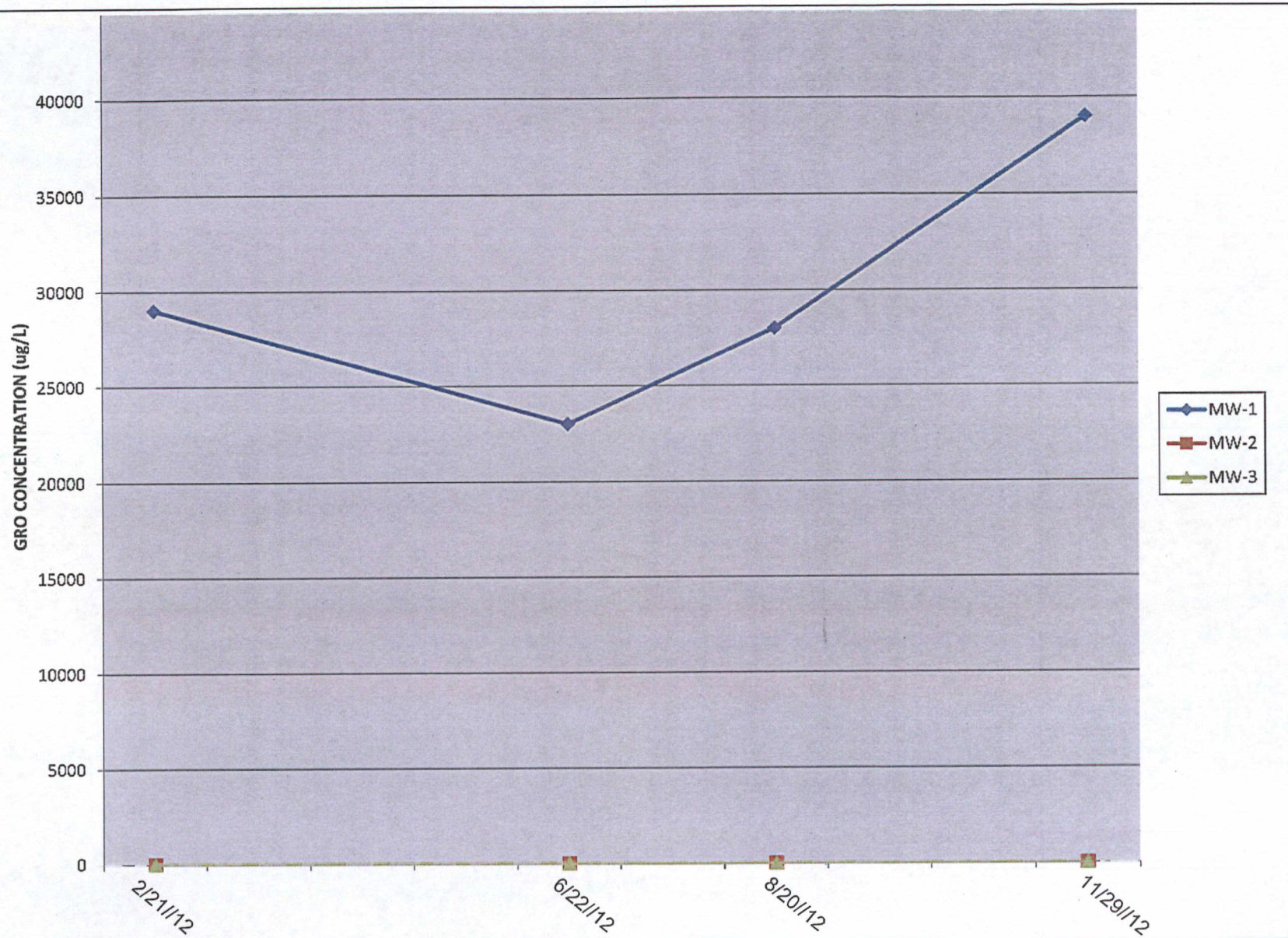

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FIGURE 6a
GRO CONCENTRATION GRAPH

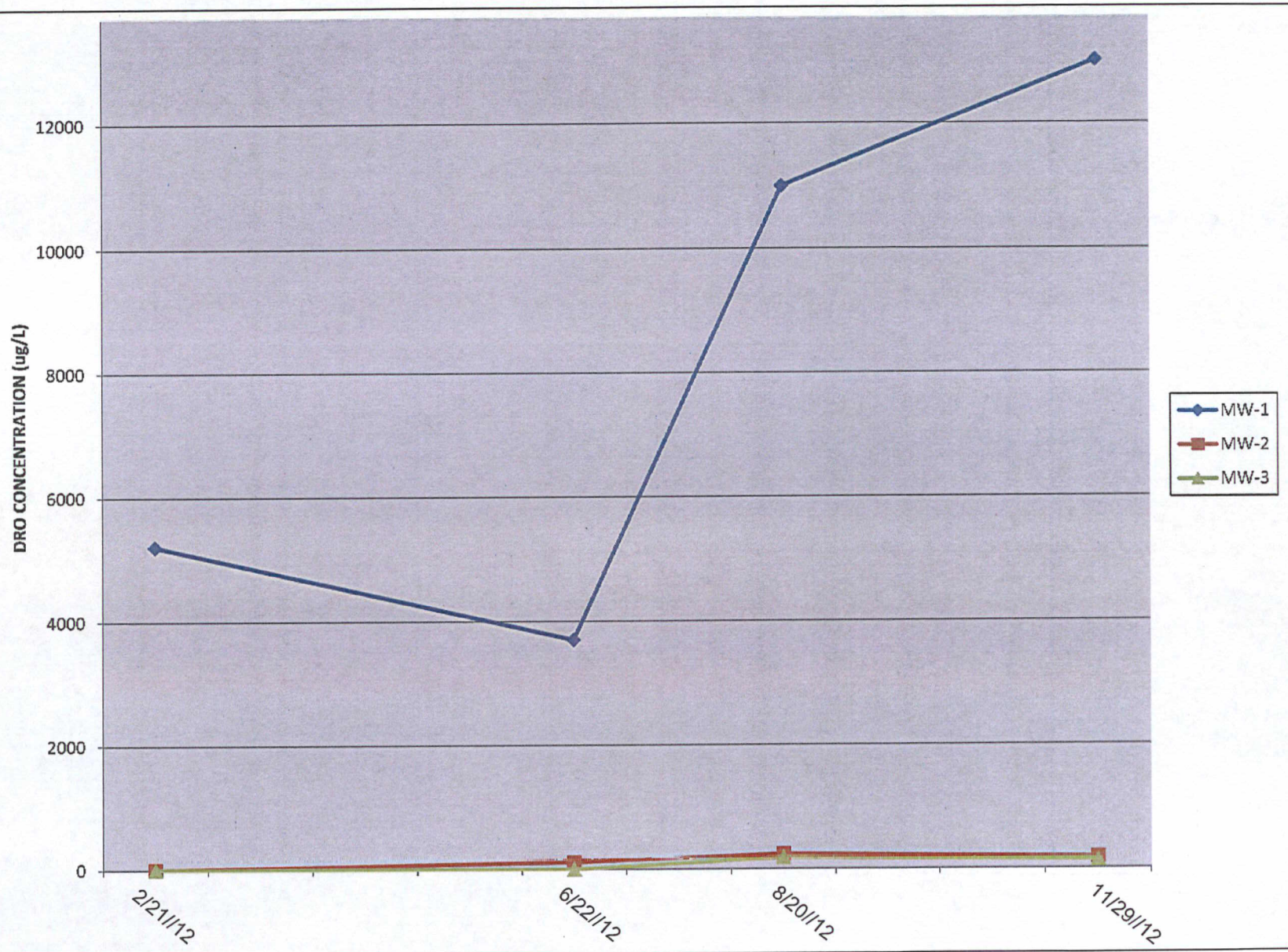

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FIGURE 6b
DRO CONCENTRATION GRAPH

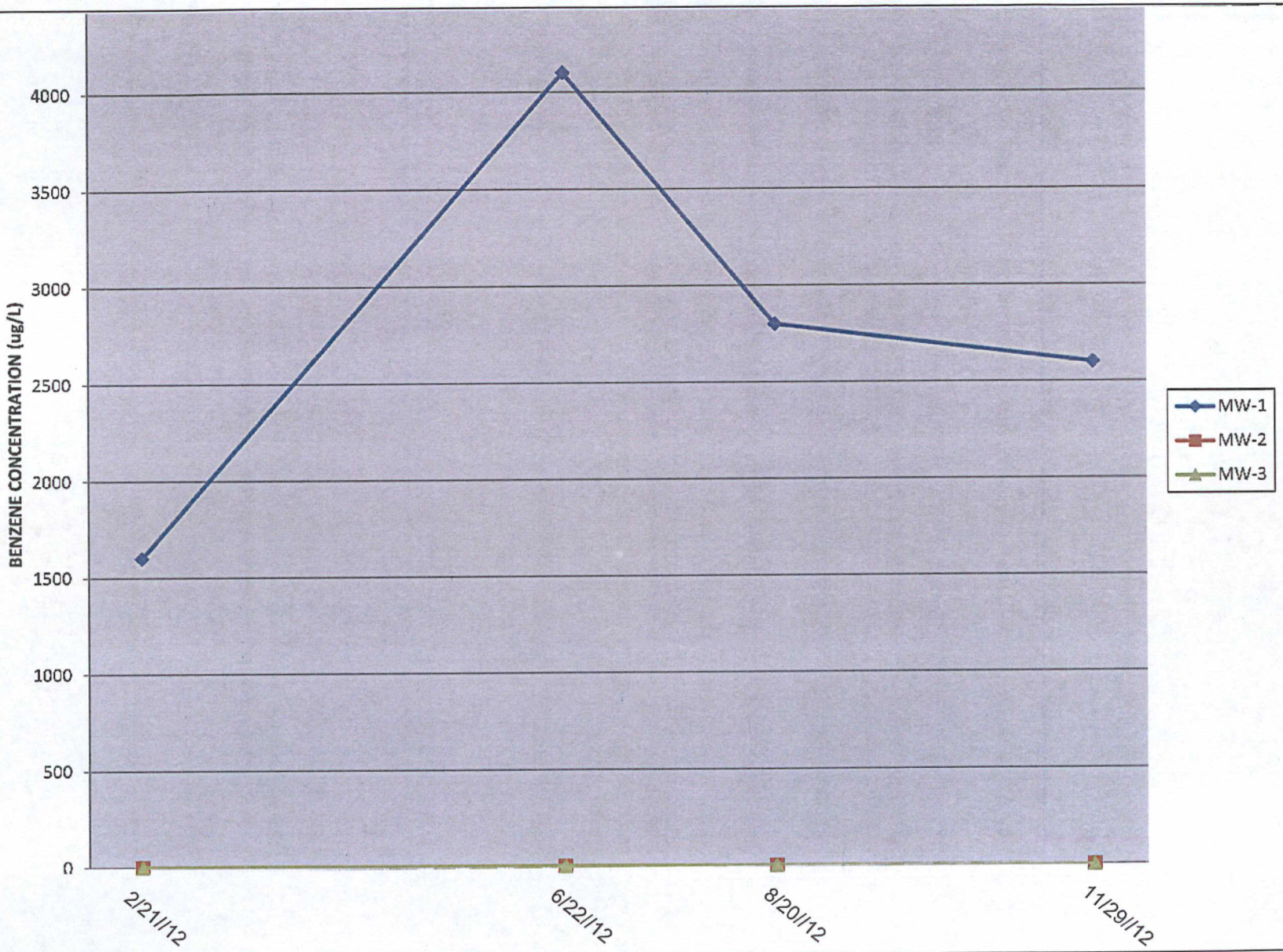

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FIGURE 6c
BENZENE CONCENTRATION GRAPH

Table 1
Tank Information

Tank #	Tank Material[1]	UST or AST	Capacity (gallons)	Contents (product type)	Year Installed	Tank Status[2]	Tank Condition
001	Steel	UST	4,000-gallons	Gasoline	Unknown	Removed (7/10/90)	Unknown
002	Steel	UST	6,000-gallons	Gasoline	Unknown	Removed (7/10/90)	Unknown
003	Steel	UST	5,000-gallons	Alcohol Blend	Unknown	Removed (7/10/90)	Unknown
004	Fiberglass	UST	8,000-gallons	Gasoline	Unknown	Removed (7/10/90)	Unknown
005	Steel	UST	1,000-gallons	Fuel Oil	Unknown	Removed (7/10/90)	Unknown
006	Steel	UST	560-gallons	Waste Oil	Unknown	Removed (7/10/90)	Unknown
007	STI-P3	UST	10,000-gallons	Gasoline	1990	Removed (11/10/10)	Good
008	STI-P3	UST	10,000-gallons	Gasoline	1990	Removed (11/10/10)	Good
009	STI-P3	UST	10,000-gallons	Diesel	1990	Removed (11/10/10)	Good
010	Steel	UST*	Unknown	Hydraulic oil	Unknown	Removed (11/10/10)	Good
011	Steel	UST*	Unknown	Hydraulic oil	Unknown	Removed (11/10/10)	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: *UST = underground storage tank; AST = aboveground storage tank. * indicates hydraulic hoist.*

Table 2
Results of Soil Headspace Screening

Depth (ft)	Soil Boring ID									
	GP-1	GP-2	GP-3	GP-4	GP-5	6	7	8	9	10
0-2'	0.0	0.0	0.0	0.0	0.0					
2-4'	769	0.0	0.0	0.0	0.0					
4-6'	>2,500	0.0	0.0	0.0	0.0					
6-8'	72.6	0.0	1,079	0.0	NR					
8-10'	714	0.0	155	0.0	0.0					
10-12'	>2,500	0.0	28.1	0.0	0.0					
12-14'	22.8	0.0	0.0	0.0	0.0					
14-16'	2.5	0.0	0.0	0.0	0.0					
16-18'	215	0.0	0.0	0.0	0.0					
18-20'	288	0.0	0.0	0.0*	0.0					
20-22'	186	0.0	0.0							
22-24'	25.8	0.0*	0.0*							
24-26'	0.0									
26-28'	0.0									
28-30'	0.0									
30-32'	0.0*									

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: * *indicates end of boring. NR = no recovery. Results reported in parts per million (ppm) and obtained by utilizing a MiniRae Photo-ionization detector equipped with a 10.6eV lamp.*

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]
GP-1*	17-19'	4/14/10	<0.060	<0.060	<0.060	<0.18	<0.30	<6.0	<6.7	Fixed
GP-2*	12-14'	4/14/10	<0.062	<0.062	<0.062	<0.18	<0.31	<6.2	<9.7	Fixed
GP-3*	15-17'	4/14/10	**4.9**	**24.1**	**26.5**	**187**	<2.9	**1,230**	**426**	Fixed
GP-4*	18-20'	4/14/10	<0.62	**9.1**	**33.2**	**194**	<3.1	**1,270**	**164**	Fixed
MeOH Blank*		4/14/10	<0.050	<0.050	<0.050	<0.15	<0.25	<5.0	NA	Fixed
GP-1	10-12'	6/29/11	**1.3**	**1.9**	**5.1**	**21.2**	**0.33**	**520**	**120**	Fixed
GP-1	30-32'	6/29/11	<0.030	<0.30	<0.030	<0.090	<0.060	<6.0	<10.0	Fixed
GP-2	14-16'	6/29/11	<0.029	<0.29	<0.029	<0.087	<0.058	<5.8	<9.3	Fixed
GP-3	6-8'	6/29/11	**0.10**	<0.32	**1.8**	**6.0**	<0.063	**1,200**	**800**	Fixed
GP-3	14-16'	6/29/11	<0.029	<0.29	<0.029	<0.086	<0.057	<5.7	<9.3	Fixed
GP-4	12-14'	6/29/11	<0.031	<0.31	<0.031	<0.093	<0.062	<6.2	<9.9	Fixed
GP-5	10-12'	6/29/11	<0.032	<0.32	<0.032	<0.096	<0.064	<6.4	<10.0	Fixed
MeOH Blank		6/29/11	6/29/11	<0.025	<0.25	<0.025	<0.050	<5.0	NA	Fixed

[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: * *indicates Phase II Site Assessment soil boring conducted by GES. mg/kg = milligrams per kilogram; GRO = gasoline range organics; DRO = diesel range organics; NA = not analyzed; and* ***Bold*** *indicates concentration above laboratory detection limits.*

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

Boring ID	Sampled Depth (ft)	Date Sampled	Naphthalene	1,2,4 TMB	1,3,5 TMB					Lab Type[2]
GP-1	10-12'	6/29/11	**6.6**	**29.0**	**9.6**					Fixed
GP-1	30-32'	6/29/11	<0.30	<0.060	<0.060					Fixed
GP-2	14-16	6/29/11	<0.29	<0.058	<0.058					Fixed
GP-3	6-8'	6/29/11	**4.7**	**50.0**	**11.0**					Fixed
GP-3	14-16'	6/29/11	<0.29	<0.057	<0.057					Fixed
GP-4	12-14'	6/29/11	<0.31	<0.062	<0.062					Fixed
GP-5	10-12'	6/29/11	<0.32	<0.064	<0.064					Fixed
MeOH Blank		6/29/11	<0.25	<0.050	<0.050					Fixed

[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: *TMB = trimethylbenzene. mg/kg = milligrams per kilogram; and* ***Bold*** *indicates concentration above laboratory detection limits.*

Table 5
Contaminated Surface Soil Results

Sample ID	Headspace 10 ppm or Greater[1] (Y/N)	Petroleum Saturated (Y/N)
GP-1 (0-2')	No (0.0 ppm)	No
GP-2 (0-2')	No (0.0 ppm)	No
GP-3 (0-2')	No (0.0 ppm)	No
GP-4 (0-2')	No (0.0 ppm)	No
GP-5 (0-2')	No (0.0 ppm)	No

[1] As measured with a photoionization detector (PID).
Add additional rows as needed.
Notes: *ppm = parts per million.*

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

	Soil Boring									
	GP-1	GP-2	GP-3	GP-4	GP-5	6	7	8	9	10
Static Water Level Depth[1] (ft)	16.4'	17.1'	17.9'	11.1'	17.1					
Sampled Depth (ft)	14-24'	15-20'	17-22'	8-18'	9-19'					
Sampling Method[2]	Check Valve	Check Valve	Check Valve	Check Valve	Check Valve					

[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: *All units are in feet below ground surface (bgs). Sample depth indicates the screened interval for ground water collection from each boring.*

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[2]
GP-1*	4/14/10	19'	<1.0	<1.0	<1.0	<3.0	<5.0	<100	<120	Fixed
GP-3*	4/14/10	17'	**21,300**	**22,400**	**4,570**	**25,700**	<500	**109,000**	**207,000**	Fixed
Trip Blank	4/14/10	N/A	<1.0	<1.0	<1.0	<3.0	<5.0	<100	NA	Fixed
GP-1W	6/29/11	14-24'	**1.3**	**7.8**	**15.0**	**82.0**	<1.0	**440**	**3,200**	Fixed
GP-2W	6/29/11	15-20'	<1.0	<5.0	<1.0	<3.0	<5.0	<100	<130	Fixed
GP-3W	6/29/11	17-22'	<1.0	<5.0	**3.7**	**20.0**	<1.0	**1,100**	**750**	Fixed
GP-4W	6/29/11	8-18'	<1.0	<5.0	<1.0	<3.0	<1.0	<100	<100	Fixed
GP-5W	6/29/11	9-19'	<1.0	<5.0	<1.0	<3.0	<1.0	**450**	**530**	Fixed
MN Department of Health HRL[3]			2.0	200	50	300	--	--	--	--

[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/ground water/hrltable.html for list of current HRLs.
Add additional rows as needed.
Notes: * *indicates Phase II Site Assessment soil boring conducted by GES.GRO = gasoline range organics; DRO = diesel range organics; MTBE = methyl-tert-butyl-ether; NA = not analyzed; ug/L = micrograms per liter;* ***Bold*** *indicates concentrations above or at laboratory detection limits; Highlighted cell indicates concentration exceeding Minnesota Department of Health (MDH) Health Risk Limits (HRLs). MDH HRLs are currently not established for GRO, DRO and MTBE.*

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

Boring ID	Date Sampled	Sampled Depth (ft)	Naph-thalene	1,2,4 TMB	1,3,5 TMB	n-Propyl benzene	Isopropyl - benzene	1,2,3 TMB	p-Isopropyl-toluene	Lab Type[2]
GP-1*	4/14/10	19'	NA	<1.0	<1.0	NA	NA	NA	NA	Fixed
GP-3*	4/14/10	17'	NA	**4,770**	**1,210**	NA	NA	NA	NA	Fixed
Trip Blank	4/14/10	N/A	NA	<1.0	<1.0	NA	NA	NA	NA	Fixed
GP-1W	6/29/11	14-24'	**6.8**	**22.0**	**4.5**	**4.3**	**1.3**	**5.1**	<1.0	Fixed
GP-2W	6/29/11	15-20'	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	Fixed
GP-3W	6/29/11	17-22'	**6.2**	**100**	**28.0**	**11.0**	**5.0**	**39.0**	**5.5**	Fixed
GP-4W	6/29/11	8-18'	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	Fixed
GP-5W	6/29/11	9-19'	<5.0	**45.0**	**2.6**	**12.0**	**5.8**	**4.7**	<1.0	Fixed
MN Department of Health HRL[3]			300	100	100	--	--	--	--	--

[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/ground water/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: * *indicates Phase II Site Assessment soil boring conducted by GES. NA = not analyzed; ug/L = micrograms per liter;* ***Bold*** *indicates concentrations above or at laboratory detection limits; Highlighted cell indicates concentration exceeding Minnesota Department of Health (MDH) Health Risk Limits (HRLs). MDH HRLs are currently not established for n-propylbenzene, isopropylbenzene, 1,2,3 TMB and p-isopropyltoluene. The ground water samples collected from LSI borings GP-3W and GP-5W also reported concentrations of 4.9 and 1.2 ug/L n-butylbenzene; and 5.0 ug/L and 3.0 sec-butylbenzene, respectively.*

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	#788734	1/7/12	862.09'	864.23'	840.73'	850.73 – 840.73'	21.36
MW-2	#788735	2/8/12	860.84'	862.59'	839.59'	849.59 – 839.59'	21.25
MW-3	#788736	2/8/12	863.73'	865.61'	840.61'	850.61 – 840.61'	23.12

[1] Include well construction diagrams and MDH well logs in Section 6.
Add additional rows as needed.
Notes: (location and elevation of benchmark) *MN Ramsey County Geoid 03.*

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	2/21/12	18.83'	N/A	16.69'	845.40'	No
	6/22/12	16.04'	N/A	13.90'	848.19'	No
	8/20/12	17.01'	N/A	14.87'	847.22'	No
	11/29/12	18.65'	N/A	16.51'	845.58'	No
MW-2	2/21/12	17.27'	N/A	15.52'	845.32'	No
	6/22/12	14.42'	N/A	12.67'	848.17'	No
	8/20/12	15.43'	N/A	13.68'	847.16'	No
	11/29/12	17.05'	N/A	15.30'	845.54'	No
MW-3	2/21/12	19.55'	N/A	17.67'	846.06'	No
	6/22/12	17.24'	N/A	15.36'	848.37'	No
	8/20/12	18.28'	N/A	16.40'	847.33'	No
	11/29/12	19.92'	N/A	18.04'	845.69'	No

[1] Describe the methods used to measure water levels in Section 6.
Add additional rows as needed.
Notes: *N/A (not applicable) free product was not observed during quarterly groundwater sampling events from each monitoring well.*

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	2/21/12	**1,600**	<2,500	**980**	**9,000**	<500	**29,000**	**5,200**	Fixed
	6/22/12	**4,100**	**1,600**	**1,100**	**4,300**	<20.0	**23,000**	**3,700**	Fixed
	8/20/12	**2,800**	**1,300**	**1,200**	**9,600**	<50.0	**28,000**	**11,000**	Fixed
	11/29/12	**2,600**	**2,400**	**1,500**	**13,000**	<50.0	**39,000**	**13,000**	Fixed
MW-2	2/21/12	<1.0	<5.0	<1.0	<3.0	<1.0	<100	<100	Fixed
	6/22/12	<1.0	<5.0	<1.0	<3.0	<1.0	<100	**110**	Fixed
	8/20/12	<1.0	<5.0	<1.0	<3.0	<1.0	<100	**240**	Fixed
	11/29/12	<1.0	<5.0	<1.0	<3.0	<1.0	<100	**180**	Fixed
MW-3	2/21/12	<1.0	<5.0	<1.0	<3.0	<1.0	<100	<100	Fixed
	6/22/12	<1.0	<5.0	<1.0	<3.0	<1.0	<100	<100	Fixed
	8/20/12	<1.0	<5.0	<1.0	<3.0	<1.0	<100	**180**	Fixed
	11/29/12	<1.0	<5.0	<1.0	<3.0	<1.0	<100	**130**	Fixed
MW-10*	2/21/12	**1,600**	**1,600**	**1,200**	**10,000**	<10.0	**28,000**	**5,400**	Fixed
Duplicate*	6/22/12	**5,000**	**1,400**	**1,100**	**4,200**	<50.0	**23,000**	**5,400**	Fixed
	8/20/12	**2,900**	**1,400**	**1,000**	**8,500**	<50.0	**28,000**	**12,000**	Fixed
	11/29/12	**2,300**	**2,400**	**1,400**	**12,000**	<50.0	**39,000**	**10,000**	Fixed
Trip Blank	2/21/12	<1.0	<5.0	<1.0	<3.0	<1.0	NA	NA	Fixed
	6/22/12	<1.0	<5.0	<1.0	<3.0	<1.0	NA	NA	Fixed
	8/20/12	<1.0	<5.0	<1.0	<3.0	<1.0	NA	NA	Fixed
	11/29/12	<1.0	<5.0	<1.0	<3.0	<1.0	NA	NA	Fixed
MN Department of Health HRL[3]		2	100	50	300	--	--	--	--

[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: * *indicates duplicate sample collected from MW-1. NA = not analyzed; MTBE = methyl-tert-butyl-ether; GRO = gasoline range organics; and DRO = diesel range organics; and ug/L = micrograms per liter.* ***Bold*** *indicates concentrations above or at laboratory reportable detection limits. Highlighted cell indicates concentration exceeding Minnesota Department of Health (MDH) Health Risk Limits (HRLs). MDH HRLs are currently not established for GRO, DRO and MTBE.*

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

Well Number	Date Sampled	Naphthalene	1,2,4 TMB	1,3,5 TMB	1,2,3 TMB	n-Butyl benzene	sec-Butyl benzene	n-Propyl benzene	Lab Type[2]
MW-1	2/21/12	<2,500	2,100	570	640	<500	<500	<500	Fixed
	6/22/12	330	1,000	260	250	<20.0	<20.0	100	Fixed
	8/20/12	870	2,800	740	720	<50.0	<50.0	150	Fixed
	11/29/12	580	3,100	780	630	<50.0	<50.0	180	Fixed
MW-2	2/21/12	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	Fixed
	6/22/12	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	Fixed
	8/20/12	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	Fixed
	11/29/12	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	Fixed
MW-3	2/21/12	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	Fixed
	6/22/12	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	Fixed
	8/20/12	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	Fixed
	11/29/12	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	Fixed
MW-10*	2/21/12	800	2,800	740	780	19.0	11.0	160	Fixed
Duplicate*	6/22/12	340	990	240	240	<50.0	<50.0	100	Fixed
	8/20/12	750	2,400	620	660	<50.0	<50.0	130	Fixed
	11/29/12	580	2,800	710	620	<50.0	<50.0	160	Fixed
Trip Blank	2/21/12	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	Fixed
	6/22/12	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	Fixed
	8/20/12	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	Fixed
	11/29/12	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	Fixed
MN Department of Health HRL[3]		300	100	100	--	--	--	--	--

[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: ** indicates duplicate sample collected from MW-1. TMB = trimethylbenzene; ug/L = micrograms per liter; and NA = not analyzed.* ***Bold*** *indicates concentrations above or at laboratory reportable detection limits. Highlighted cell indicates concentration exceeding Minnesota Department of Health (MDH) Health Risk Limits (HRLs). Concentrations of tert-butylbenzene, p-isopropyltoluene and isopropylbenzene were detected above laboratory reportable detection limits from groundwater samples collected from MW-1 and the duplicate sample during several quarterly sampling events. MDH HRLs are currently not established for p-isopropyltoluene, isopropylbenzene, n-butylbenzene, sec-butylbenzene, tert-butylbenzene, 1,2,3 TMB and n-propylbenzene.*

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	2/21/12	6.10	7.14	NA	NA	NA	NA
	6/22/12	11.98	6.73	0.00	NA	NA	NA
	8/20/12	11.99	5.93	0.00	NA	NA	NA
	11/29/12	12.91	7.29	0.94	NA	NA	NA
MW-2	2/21/12	9.50	7.47	NA	NA	NA	NA
	6/22/12	12.96	6.62	0.19	NA	NA	NA
	8/20/12	13.62	6.17	1.30	NA	NA	NA
	11/29/12	12.71	7.18	1.64	NA	NA	NA
MW-3	2/21/12	7.00	7.81	NA	NA	NA	NA
	6/22/12	13.37	6.91	1.99	NA	NA	NA
	8/20/12	12.25	6.46	2.68	NA	NA	NA
	11/29/12	12.43	7.43	0.12	NA	NA	NA

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

Notes: *parameters measured by Carlson McCain during LSI quarterly groundwater sampling events. NA = not analyzed.*

Table 14
Free Product Recovery

Recovery Location ID	Recovery Date	Pre-Recovery Measurements				Recovery Method	Event Recovery[3]		Cumulative Recovery[4]		Comments
		Depth to FP[1] (ft)	Depth to GW[2] (ft)	FP Thickness (ft)	FP Volume (gal)		FP (gal)	GW (gal)	FP (gal)	GW (gal)	
MW-1	N/A										
MW-2											
MW-3											

[1] FP = Free Product
[2] GW = Ground Water
[3] Volume recovered during individual recovery event for that location.
[4] Cumulative volume recovered at each recovery location (i.e., keep a running total for each recovery point).
Describe the methods and procedures used in Section 6. Add additional rows as needed.
Notes: *Free product was not observed during soil boring advancement or quarterly groundwater sampling events from each Site and off-site monitoring well.*

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	223 Larpenteur Ave E	Site	No	Personal contact	N/A	No*	Yes	No	No	Yes	Residual contamination remaining/currently undeveloped
2	1734 Adolphus St	400' N	No	Assumed	N/A	Yes	Yes	Yes	Unk.	No	Champps Restaurant
3	191 Larpenteur Ave E	160' W	No	Assumed	N/A	Yes	Yes	Yes	Unk.	No	Residential Town Home
4	181 Larpenteur Ave E	330' W	No	Assumed	N/A	Yes	Yes	Yes	Unk.	No	Residential Town Home
5	196 Larpenteur Ave E	440' SW	No	Survey Letter	N/A	Yes	Yes	Yes	Yes	No	Tillman Residence
6	200 Larpenteur Ave E	405' SW	No	Assumed	N/A	Yes	Yes	Yes	Unk.	No	Residential Home

[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: * *indicates that the Site did utilize public water and sewer services when the property was in operation. Unk. = unknown.*

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)
N/A									

[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: *Domestic, Municipal and Industrial wells were not identified within 500 feet or 0.5 mile from the Site.*

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	Unnamed Pond	350 feet South	No
2	Unnamed Pond	260 feet Northwest	NA

[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: *Surface water features are visually depicted on Figure 6, attached.*

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	Water Main along south side of Larpenteur Ave East*	Copper	6-8 feet	1 ½ inch	East	Unknown	Native soils	At least 8.5 feet above water table
2	Water Main along Adolphus Street	PVC	6-7'	6 inch	North	Unknown	Native soils	At least 10 feet above water table
3	Sanitary Sewer Main along Larpenteur Ave.	PVC	8 feet	12 inch	West	Unknown	Native soils	At least 8 feet above water table
4	Sanitary Sewer Main along Adolphus Street	PVC	8-10 feet	12 inch	South	Unknown	Native soils	At least 6 feet above water table
5	Sanitary Sewer east of Site	PVC	8-10 feet	10 inch	South	Unknown	Native soils	At least 6 feet above water table
6	Storm Sewer along Larpenteur Ave East	Concrete	5 feet	0.5 inch	N/A	Unknown	Native soils	At least 9 feet above water table
7	Buried Electric Line along south side of Larpenteur Ave East	Cable	4 feet	Unk.	N/A	Unknown	Native soils	At least 10 feet above water table

[1] ID should correspond to an identified utility line on the Potential Receptor Map.
Add more rows as needed.
Notes: *Utilities are visually depicted on Figures 2b.* ***** *indicates location change from LSI report. Unk. = unknown.*

Utility ID[1]	Name, title, and telephone number for public entity contacted to obtain information or other source of information
1 through 5	Maps provided by Michael Thompson, City Engineer/Deputy Director of Maplewood Public Works
6	Observed from open storm sewer grates
7	Location observed from utility locate and assumed information

Table 19
Vapor Survey Results

Location ID[1]	Description[2]	Monitoring Date	PID Reading (ppm)	Percent of the LEL[3]
1	Storm Sewer Grate	6/29/11	0.0	N/A
2	Storm Sewer Grate	6/29/11	0.0	N/A
3	Storm Sewer Grate	6/29/11	0.0	N/A
4	Storm Sewer Grate	6/29/11	0.0	N/A
5	Storm Sewer Grate	6/29/11	0.0	N/A

[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: *Underground corridors, basements or utilities were not observed or identified at the Site.*

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

Sample ID[2]											
Date											
Depth (feet)											
PID (ppm)											Intrusion Screening Value[3]
COMPOUNDS	Result	Report Limit	Result	Report Limit	Result	Report Limit	Result	Report Limit	Result	Report Limit	
See Attached Table 20											

[1] Report results in µg/m³.
[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:

Table 20
Results of Soil Gas Sampling for Vapor Intrusion Screening

Sample Location	VP-1		VP-2		VP-3		VP-4		Intrusion Screening Values (ISVs)	Acute Intrusion Screening Values (ISVs)
Date	6/29/2011		6/29/2011		6/29/2011		6/29/2011			
Depth (ft)	4.0'		6.0'		6.0'		6.0'			
PPM	10.2		0.0		0.0		20.3		--	--
COMPOUNDS	Result (ug/m³)	Report Limit	Result (ug/m³)	Report Limit	Result (ug/m³)	Report Limit	Result (ug/m³)	Report Limit	(ug/m³)	(ug/m³)
Acetone	<59	59.0	**81**	48.0	**38.0**	24.0	<12,000	12,000	31,000	60,000
Benzene	<13.0	13.0	**11.0**	1.3	**9.6**	5.1	**3,100***	2,600	4.5	1,000
Benzyl chloride	<21.0	21.0	<2.1	2.1	<8.3	8.3	<4,200	4,200	1.0	240
Bromodichloromethane	<27.0	27.0	<2.7	2.7	<11.0	11.0	<5,400	5,400	NE	NE
Bromoform	<120	120	<12.0	12.0	<50.0	50.0	<25,000	25,000	9	NE
Bromomethane (Methyl bromide)	<16.0	16.0	<1.6	1.6	<6.2	6.2	<3,100	3,100	5	2,000
1,3-Butadiene	<89.0	89.0	**14.0**	8.9	<35.0	35.0	<18,000	18,000	0.3	NE
2-Butanone (Methyl ethyl ketone, MEK)	<74.0	74.0	**25.0**	7.4	<29.0	29.0	<15,000	15,000	5,000	10,000
Carbon disulfide	<12.0	12.0	**19.0**	1.2	**5.9**	5.0	<2,500	2,500	700	6,000
Carbon tetrachloride	<25.0	25.0	<2.5	2.5	<10.0	10.0	<5,000	5,000	0.7	1,900
Chlorobenzene	<18.0	18.0	<1.8	1.8	<7.4	7.4	<3,700	3,700	50	NE
Chloroethane (Ethyl chloride)	<11.0	11.0	<1.1	1.1	<4.2	4.2	<2,100	2,100	10,000	100,000
Chloroform	<19.0	19.0	<1.9	1.9	<7.8	7.8	<3,900	3,900	100	150
Chloromethane (Methyl chloride)	<8.3	8.3	**3.50**	0.83	<3.3	3.3	<1,700	1,700	90	1,000
2-Chlorotoluene	<21.0	21.0	<2.1	2.1	<8.2	8.2	<4,100	4,100	NE	NE
Cyclohexane	**55.0**	14.0	**2.1**	1.4	<5.5	5.5	**18,000**	2,800	6,000	NE
Dibromochloromethane	<34.0	34.0	<3.4	3.4	<14.0	14.0	<6,800	6,800	NE	NE
1,2-Dibromoethane (Ethylene dibromide)	<31.0	31.0	<3.1	3.1	<12.0	12.0	<6,200	6,200	0.02	NE
1,2-Dichlorobenzene	<24.0	24.0	<2.4	2.4	<9.6	9.6	<4,800	4,800	200	NE
1,3-Dichlorobenzene	<24.0	24.0	<2.4	2.4	<9.6	9.6	<4,800	4,800	NE	NE
1,4-Dichlorobenzene	<24.0	24.0	<2.4	2.4	<9.6	9.6	<4,800	4,800	60	10,000
1,1-Dichloroethane	<16.0	16.0	<1.6	1.6	<6.5	6.5	<3,200	3,200	500	NE
1,2-Dichloroethane	<16.0	16.0	<1.6	1.6	<6.4	6.4	<3,200	3,200	0.4	NE
1,1-Dichloroethene (DCE)	<16.0	16.0	<1.6	1.6	<6.3	6.3	<3,200	3,200	200	NE
cis-1,2-Dichloroethene	<16.0	16.0	<1.6	1.6	<6.3	6.3	<3,200	3,200	NE	NE
trans-1,2-Dichloroethene	<16.0	16.0	<1.6	1.6	<6.3	6.3	<3,200	3,200	60	800
Dichlorodifluoromethane (Freon 12)	<20.0	20.0	**3.3**	2.0	<7.9	7.9	<4,000	4,000	200	NE
1,2-Dichloropropane	<18.0	18.0	<1.8	1.8	<7.4	7.4	<3,700	3,700	4	200
cis-1,3-Dichloropropene	<18.0	18.0	<1.8	1.8	<7.3	7.3	<3,600	3,600	20	NE
trans-1,3-Dichloropropene	<18.0	18.0	<1.8	1.8	<7.3	7.3	<3,600	3,600	20	NE
1,4 Dioxane	<14.0	14.0	<1.4	1.4	<5.8	5.8	<2,900	2,900	NE	NE
Ethanol	<24.0	24.0	**6.4**	2.4	<9.5	9.5	<4,800	4,800	15,000	180,000
Ethylbenzene	<17.0	17.0	**2.6**	1.7	<6.9	6.9	**42,000***	3,500	1,000	10,000
4-Ethyltoluene	<20.0	20.0	**3.1**	2.0	<7.9	7.9	**17,000**	3,900	NE	NE
Heptane	**110**	16.0	**4.9**	1.6	<6.5	6.5	**33,000**	3,300	NE	NE
Hexachloro-1,3-butadiene	<130	130	<13.0	13.0	<54.0	54.0	<27,000	27,000	0.5	NE
n-Hexane	**130**	14.0	**6.7**	1.4	**9.5**	5.6	**21,000**	2,800	2,000	NE
Isopropylbenzene	<20.0	20.0	<2.0	2.0	<7.9	7.9	**4,000**	3,900	NE	NE
Methyl Butyl Ketone	<100	100	<10.0	10.0	<41.0	41.0	<20,000	20,000	NE	NE
4-Methyl-2-pentanone (Methyl isobutyl ketone)	<100	100	<10.0	10.0	<41.0	41.0	<20,000	20,000	3,000	NE
Methylene Chloride (Dichloromethane)	<14.0	14.0	<1.4	1.4	<5.6	5.6	<2,800	2,800	20	10,000
Methyl methacrylate	<16.0	16.0	**4.5**	1.6	<6.6	6.6	<3,300	3,300	NE	NE
Methyl-tert-butyl ether (MTBE)	<14.0	14.0	<1.4	1.4	<5.8	5.8	<2,900	2,900	3000	7,000
Naphthalene	<66.0	66.0	<6.6	6.6	<26.0	26.0	<13,000	13,000	9.0	NE
2-Propanol (Isopropyl alcohol)	<61.0	61.0	<6.1	6.1	<25.0	25.0	<12,000	12,000	7,000	3,200
Propene	**40.0**	14.0	**55**	1.4	**130**	5.5	<2,800	2,800	3,000	NE
Styrene	<17.0	17.0	**2.0**	1.7	<6.8	6.8	<3,400	3,400	1,000	21,000
1,1,2,2-Tetrachloroethane	<27.0	27.0	<2.7	2.7	<11.0	11.0	<5,500	5,500	0.2	NE
Tetrachloroethylene (PCE)	**880**	27.0	<2.7	2.7	<11.0	11.0	<5,400	5,400	20	20,000
Tetrahydrofuran	<12.0	12.0	<1.2	1.2	<4.7	4.7	<2,400	2,400	NE	NE
Toluene (Methylbenzene)	<15.0	15.0	**9.0**	1.5	**9.0**	6.0	**45,000***	3,000	5,000	37,000
1,2,4-Trichlorobenzene	<93.0	93.0	<9.3	9.3	<37.0	37.0	<19000	19,000	4	NE
1,1,1-Trichloroethane (Methyl chloroform)	<22.0	22.0	**11.0**	2.2	<8.7	8.7	<4,400	4,400	1,000	140,000
1,1,2-Trichloroethane	<22.0	22.0	<2.2	2.2	<8.7	8.7	<4,400	4,400	0.6	NE
Trichloroethylene (TCE)	<21.0	21.0	<2.1	2.1	<8.6	8.6	<4,300	4,300	3	2,000
Trichlorofluoromethane (Freon 11)	<22.0	22.0	**3.9**	2.2	<9.0	9.0	<4,500	4,500	700	NE
1,1,2-Trichlorotrifluoroethane	<31.0	31.0	<3.1	3.1	<12.0	12.0	<6,100	6,100	30,000	NE
1,2,4-Trimethylbenzene	<20.0	20.0	**19.0**	2.0	<7.9	7.9	**49,000**	3,900	7	NE
1,3,5-Trimethylbenzene	<20.0	20.0	**6.9**	2.0	<7.9	7.9	**21,000**	3,900	6	NE
2,2,4 Trimethylpentane	**200**	19.0	<1.9	1.9	<7.5	7.5	**70,000**	3,700	NE	NE
Vinyl acetate	<14.0	14.0	<1.4	1.4	<5.6	5.6	<2,800	2,800	200	NE
Vinyl Bromide	<17.0	17.0	<1.7	1.7	<7.0	7.0	<3,500	3,500	NE	NE
Vinyl chloride	<10.0	10.0	<1.0	1.0	<4.1	4.1	<2,000	2,000	1.0	180,000
m&p-Xylene	<35.0	35.0	**6.5**	3.5	<14.0	14.0	**160,000***	6,900	100	43,000
o-Xylene	<17.0	17.0	**3.1**	1.7	<6.9	6.9	**48,000***	3,500	100	43,000
Total Petroleum Hydrocarbons (TPH)	**20,000**	4,100	**2,400**	410	<1700	1,700	**2,000,000**	830,000	NE	NE

Notes:
NE = Not Established
Shaded *indicates exceedance of 10x the ISVs*
ISV = Minnesota Pollution Control Agency (MPCA) Interim Intrusion Screening Values
Bold indicates concentration above laboratory reporting limit
* inidcates Acute screening ISV exceedance

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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Chris Loch
Carlson McCain
248 Apollo Dr: Suite 100
Lino Lakes, MN 55014

Report Summary

Tuesday February 28, 2012

Report Number: L561621
Samples Received: 02/22/12
Client Project: 3327

Description: Sinclair Oil #22020

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By: John Hawkins

John Hawkins , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.
Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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Est. 1970

REPORT OF ANALYSIS

Chris Loch
Carlson McCain
248 Apollo Dr: Suite 100
Lino Lakes, MN 55014

February 28,2012

ESC Sample # : L561621-01

Site ID : MAPLEWOOD, MN

Project # : 3327

Date Received : February 22, 2012
Description : Sinclair 22020

Sample ID : MW-1

Collected By : Christy Steman
Collection Date : 02/21/12 11:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
WI DNR						
Gasoline (C6-C10)	29000	2500	ug/l	GROWM/8015	02/27/12	25
Surrogate recovery-%						
a,a,a-Trifluorotoluene(PID)	105.		% Rec.	8021	02/27/12	25
Volatile Organics						
Acetone	BDL	25000	ug/l	8260B	02/23/12	500
Acrolein	BDL	25000	ug/l	8260B	02/23/12	500
Acrylonitrile	BDL	5000	ug/l	8260B	02/23/12	500
Allyl chloride	BDL	2500	ug/l	8260B	02/23/12	500
Benzene	1600	500	ug/l	8260B	02/23/12	500
Bromobenzene	BDL	500	ug/l	8260B	02/23/12	500
Bromodichloromethane	BDL	500	ug/l	8260B	02/23/12	500
Bromoform	BDL	500	ug/l	8260B	02/23/12	500
Bromomethane	BDL	2500	ug/l	8260B	02/23/12	500
n-Butylbenzene	BDL	500	ug/l	8260B	02/23/12	500
sec-Butylbenzene	BDL	500	ug/l	8260B	02/23/12	500
tert-Butylbenzene	BDL	500	ug/l	8260B	02/23/12	500
Carbon tetrachloride	BDL	500	ug/l	8260B	02/23/12	500
Chlorobenzene	BDL	500	ug/l	8260B	02/23/12	500
Chlorodibromomethane	BDL	500	ug/l	8260B	02/23/12	500
Chloroethane	BDL	2500	ug/l	8260B	02/23/12	500
2-Chloroethyl vinyl ether	BDL	25000	ug/l	8260B	02/23/12	500
Chloroform	BDL	2500	ug/l	8260B	02/23/12	500
Chloromethane	BDL	1200	ug/l	8260B	02/23/12	500
2-Chlorotoluene	BDL	500	ug/l	8260B	02/23/12	500
4-Chlorotoluene	BDL	500	ug/l	8260B	02/23/12	500
1,2-Dibromo-3-Chloropropane	BDL	2500	ug/l	8260B	02/23/12	500
1,2-Dibromoethane	BDL	500	ug/l	8260B	02/23/12	500
Dibromomethane	BDL	500	ug/l	8260B	02/23/12	500
1,2-Dichlorobenzene	BDL	500	ug/l	8260B	02/23/12	500
1,3-Dichlorobenzene	BDL	500	ug/l	8260B	02/23/12	500
1,4-Dichlorobenzene	BDL	500	ug/l	8260B	02/23/12	500
Dichlorodifluoromethane	BDL	2500	ug/l	8260B	02/23/12	500
Dichlorofluoromethane	BDL	2500	ug/l	8260B	02/23/12	500
1,1-Dichloroethane	BDL	500	ug/l	8260B	02/23/12	500
1,2-Dichloroethane	BDL	500	ug/l	8260B	02/23/12	500
1,1-Dichloroethene	BDL	500	ug/l	8260B	02/23/12	500
cis-1,2-Dichloroethene	BDL	500	ug/l	8260B	02/23/12	500
trans-1,2-Dichloroethene	BDL	500	ug/l	8260B	02/23/12	500
1,2-Dichloropropane	BDL	500	ug/l	8260B	02/23/12	500
1,1-Dichloropropene	BDL	500	ug/l	8260B	02/23/12	500
1,3-Dichloropropane	BDL	500	ug/l	8260B	02/23/12	500
cis-1,3-Dichloropropene	BDL	500	ug/l	8260B	02/23/12	500

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Chris Loch
Carlson McCain
248 Apollo Dr: Suite 100
Lino Lakes, MN 55014

February 28,2012

Date Received : February 22, 2012
Description : Sinclair 22020

ESC Sample # : L561621-01

Site ID : MAPLEWOOD, MN

Project # : 3327

Sample ID : MW-1

Collected By : Christy Steman
Collection Date : 02/21/12 11:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
trans-1,3-Dichloropropene	BDL	500	ug/l	8260B	02/23/12	500
2,2-Dichloropropane	BDL	500	ug/l	8260B	02/23/12	500
Di-isopropyl ether	BDL	500	ug/l	8260B	02/23/12	500
Ethylbenzene	980	500	ug/l	8260B	02/23/12	500
Ethyl ether	BDL	500	ug/l	8260B	02/23/12	500
Hexachloro-1,3-butadiene	BDL	500	ug/l	8260B	02/23/12	500
Isopropylbenzene	BDL	500	ug/l	8260B	02/23/12	500
p-Isopropyltoluene	BDL	500	ug/l	8260B	02/23/12	500
2-Butanone (MEK)	BDL	5000	ug/l	8260B	02/23/12	500
Methylene Chloride	BDL	2500	ug/l	8260B	02/23/12	500
2-Hexanone	BDL	5000	ug/l	8260B	02/23/12	500
4-Methyl-2-pentanone (MIBK)	BDL	5000	ug/l	8260B	02/23/12	500
Methyl tert-butyl ether	BDL	500	ug/l	8260B	02/23/12	500
Naphthalene	BDL	2500	ug/l	8260B	02/23/12	500
n-Propylbenzene	BDL	500	ug/l	8260B	02/23/12	500
Styrene	BDL	500	ug/l	8260B	02/23/12	500
1,1,1,2-Tetrachloroethane	BDL	500	ug/l	8260B	02/23/12	500
1,1,2,2-Tetrachloroethane	BDL	500	ug/l	8260B	02/23/12	500
1,1,2-Trichlorotrifluoroethane	BDL	500	ug/l	8260B	02/23/12	500
Tetrachloroethene	BDL	500	ug/l	8260B	02/23/12	500
Tetrahydrofuran	BDL	2500	ug/l	8260B	02/23/12	500
Toluene	BDL	2500	ug/l	8260B	02/23/12	500
1,2,3-Trichlorobenzene	BDL	500	ug/l	8260B	02/23/12	500
1,2,4-Trichlorobenzene	BDL	500	ug/l	8260B	02/23/12	500
1,1,1-Trichloroethane	BDL	500	ug/l	8260B	02/23/12	500
1,1,2-Trichloroethane	BDL	500	ug/l	8260B	02/23/12	500
Trichloroethene	BDL	500	ug/l	8260B	02/23/12	500
Trichlorofluoromethane	BDL	2500	ug/l	8260B	02/23/12	500
1,2,3-Trichloropropane	BDL	1200	ug/l	8260B	02/23/12	500
1,2,4-Trimethylbenzene	2100	500	ug/l	8260B	02/23/12	500
1,2,3-Trimethylbenzene	640	500	ug/l	8260B	02/23/12	500
1,3,5-Trimethylbenzene	570	500	ug/l	8260B	02/23/12	500
Vinyl chloride	BDL	500	ug/l	8260B	02/23/12	500
Xylenes, Total	9000	1500	ug/l	8260B	02/23/12	500
Surrogate Recovery						
Toluene-d8	97.4		% Rec.	8260B	02/23/12	500
Dibromofluoromethane	96.2		% Rec.	8260B	02/23/12	500
a,a,a-Trifluorotoluene	100.		% Rec.	8260B	02/23/12	500
4-Bromofluorobenzene	94.3		% Rec.	8260B	02/23/12	500
TPH (GC/FID) High Fraction	5200	500	ug/l	DROWM/8015	02/24/12	5
Surrogate recovery(%)						
Triacontane	85.1		% Rec.	DROWM/8015	02/24/12	5

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

Reported: 02/28/12 10:32 Printed: 02/28/12 10:32

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REPORT OF ANALYSIS

Chris Loch
Carlson McCain
248 Apollo Dr: Suite 100
Lino Lakes, MN 55014

February 28,2012

ESC Sample # : L561621-02

Site ID : MAPLEWOOD, MN

Project # : 3327

Date Received : February 22, 2012
Description : Sinclair 22020

Sample ID : MW-2

Collected By : Christy Steman
Collection Date : 02/21/12 12:25

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
WI DNR						
Gasoline (C6-C10)	BDL	100	ug/l	GROWM/8015	02/22/12	1
Surrogate recovery-%						
a,a,a-Trifluorotoluene(PID)	106.		% Rec.	8021	02/22/12	1
Volatile Organics						
Acetone	BDL	50.	ug/l	8260B	02/23/12	1
Acrolein	BDL	50.	ug/l	8260B	02/23/12	1
Acrylonitrile	BDL	10.	ug/l	8260B	02/23/12	1
Allyl chloride	BDL	5.0	ug/l	8260B	02/23/12	1
Benzene	BDL	1.0	ug/l	8260B	02/23/12	1
Bromobenzene	BDL	1.0	ug/l	8260B	02/23/12	1
Bromodichloromethane	BDL	1.0	ug/l	8260B	02/23/12	1
Bromoform	BDL	1.0	ug/l	8260B	02/23/12	1
Bromomethane	BDL	5.0	ug/l	8260B	02/23/12	1
n-Butylbenzene	BDL	1.0	ug/l	8260B	02/23/12	1
sec-Butylbenzene	BDL	1.0	ug/l	8260B	02/23/12	1
tert-Butylbenzene	BDL	1.0	ug/l	8260B	02/23/12	1
Carbon tetrachloride	BDL	1.0	ug/l	8260B	02/23/12	1
Chlorobenzene	BDL	1.0	ug/l	8260B	02/23/12	1
Chlorodibromomethane	BDL	1.0	ug/l	8260B	02/23/12	1
Chloroethane	BDL	5.0	ug/l	8260B	02/23/12	1
2-Chloroethyl vinyl ether	BDL	50.	ug/l	8260B	02/23/12	1
Chloroform	BDL	5.0	ug/l	8260B	02/23/12	1
Chloromethane	BDL	2.5	ug/l	8260B	02/23/12	1
2-Chlorotoluene	BDL	1.0	ug/l	8260B	02/23/12	1
4-Chlorotoluene	BDL	1.0	ug/l	8260B	02/23/12	1
1,2-Dibromo-3-Chloropropane	BDL	5.0	ug/l	8260B	02/23/12	1
1,2-Dibromoethane	BDL	1.0	ug/l	8260B	02/23/12	1
Dibromomethane	BDL	1.0	ug/l	8260B	02/23/12	1
1,2-Dichlorobenzene	BDL	1.0	ug/l	8260B	02/23/12	1
1,3-Dichlorobenzene	BDL	1.0	ug/l	8260B	02/23/12	1
1,4-Dichlorobenzene	BDL	1.0	ug/l	8260B	02/23/12	1
Dichlorodifluoromethane	BDL	5.0	ug/l	8260B	02/23/12	1
Dichlorofluoromethane	BDL	5.0	ug/l	8260B	02/23/12	1
1,1-Dichloroethane	BDL	1.0	ug/l	8260B	02/23/12	1
1,2-Dichloroethane	BDL	1.0	ug/l	8260B	02/23/12	1
1,1-Dichloroethene	BDL	1.0	ug/l	8260B	02/23/12	1
cis-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	02/23/12	1
trans-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	02/23/12	1
1,2-Dichloropropane	BDL	1.0	ug/l	8260B	02/23/12	1
1,1-Dichloropropene	BDL	1.0	ug/l	8260B	02/23/12	1
1,3-Dichloropropane	BDL	1.0	ug/l	8260B	02/23/12	1
cis-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	02/23/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Chris Loch
Carlson McCain
248 Apollo Dr: Suite 100
Lino Lakes, MN 55014

February 28,2012

ESC Sample # : L561621-02

Site ID : MAPLEWOOD, MN

Project # : 3327

Date Received : February 22, 2012
Description : Sinclair 22020

Sample ID : MW-2

Collected By : Christy Steman
Collection Date : 02/21/12 12:25

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
trans-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	02/23/12	1
2,2-Dichloropropane	BDL	1.0	ug/l	8260B	02/23/12	1
Di-isopropyl ether	BDL	1.0	ug/l	8260B	02/23/12	1
Ethylbenzene	BDL	1.0	ug/l	8260B	02/23/12	1
Ethyl ether	BDL	1.0	ug/l	8260B	02/23/12	1
Hexachloro-1,3-butadiene	BDL	1.0	ug/l	8260B	02/23/12	1
Isopropylbenzene	BDL	1.0	ug/l	8260B	02/23/12	1
p-Isopropyltoluene	BDL	1.0	ug/l	8260B	02/23/12	1
2-Butanone (MEK)	BDL	10.	ug/l	8260B	02/23/12	1
Methylene Chloride	BDL	5.0	ug/l	8260B	02/23/12	1
2-Hexanone	BDL	10.	ug/l	8260B	02/23/12	1
4-Methyl-2-pentanone (MIBK)	BDL	10.	ug/l	8260B	02/23/12	1
Methyl tert-butyl ether	BDL	1.0	ug/l	8260B	02/23/12	1
Naphthalene	BDL	5.0	ug/l	8260B	02/23/12	1
n-Propylbenzene	BDL	1.0	ug/l	8260B	02/23/12	1
Styrene	BDL	1.0	ug/l	8260B	02/23/12	1
1,1,1,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	02/23/12	1
1,1,2,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	02/23/12	1
1,1,2-Trichlorotrifluoroethane	BDL	1.0	ug/l	8260B	02/23/12	1
Tetrachloroethene	BDL	1.0	ug/l	8260B	02/23/12	1
Tetrahydrofuran	BDL	5.0	ug/l	8260B	02/23/12	1
Toluene	BDL	5.0	ug/l	8260B	02/23/12	1
1,2,3-Trichlorobenzene	BDL	1.0	ug/l	8260B	02/23/12	1
1,2,4-Trichlorobenzene	BDL	1.0	ug/l	8260B	02/23/12	1
1,1,1-Trichloroethane	BDL	1.0	ug/l	8260B	02/23/12	1
1,1,2-Trichloroethane	BDL	1.0	ug/l	8260B	02/23/12	1
Trichloroethene	BDL	1.0	ug/l	8260B	02/23/12	1
Trichlorofluoromethane	BDL	5.0	ug/l	8260B	02/23/12	1
1,2,3-Trichloropropane	BDL	2.5	ug/l	8260B	02/23/12	1
1,2,4-Trimethylbenzene	BDL	1.0	ug/l	8260B	02/23/12	1
1,2,3-Trimethylbenzene	BDL	1.0	ug/l	8260B	02/23/12	1
1,3,5-Trimethylbenzene	BDL	1.0	ug/l	8260B	02/23/12	1
Vinyl chloride	BDL	1.0	ug/l	8260B	02/23/12	1
Xylenes, Total	BDL	3.0	ug/l	8260B	02/23/12	1
Surrogate Recovery						
Toluene-d8	98.0		% Rec.	8260B	02/23/12	1
Dibromofluoromethane	104.		% Rec.	8260B	02/23/12	1
a,a,a-Trifluorotoluene	99.9		% Rec.	8260B	02/23/12	1
4-Bromofluorobenzene	89.9		% Rec.	8260B	02/23/12	1
TPH (GC/FID) High Fraction	BDL	100	ug/l	DROWM/8015	02/23/12	1
Surrogate recovery(%)						
Triacontane	82.2		% Rec.	DROWM/8015	02/23/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

Reported: 02/28/12 10:32 Printed: 02/28/12 10:32

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REPORT OF ANALYSIS

Chris Loch
Carlson McCain
248 Apollo Dr: Suite 100
Lino Lakes, MN 55014

February 28,2012

ESC Sample # : L561621-03

Site ID : MAPLEWOOD, MN

Project # : 3327

Date Received : February 22, 2012
Description : Sinclair 22020

Sample ID : MW-3

Collected By : Christy Steman
Collection Date : 02/21/12 13:25

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
WI DNR						
Gasoline (C6-C10)	BDL	100	ug/l	GROWM/8015	02/22/12	1
Surrogate recovery-%						
a,a,a-Trifluorotoluene(PID)	105.		% Rec.	8021	02/22/12	1
Volatile Organics						
Acetone	BDL	50.	ug/l	8260B	02/23/12	1
Acrolein	BDL	50.	ug/l	8260B	02/23/12	1
Acrylonitrile	BDL	10.	ug/l	8260B	02/23/12	1
Allyl chloride	BDL	5.0	ug/l	8260B	02/23/12	1
Benzene	BDL	1.0	ug/l	8260B	02/23/12	1
Bromobenzene	BDL	1.0	ug/l	8260B	02/23/12	1
Bromodichloromethane	BDL	1.0	ug/l	8260B	02/23/12	1
Bromoform	BDL	1.0	ug/l	8260B	02/23/12	1
Bromomethane	BDL	5.0	ug/l	8260B	02/23/12	1
n-Butylbenzene	BDL	1.0	ug/l	8260B	02/23/12	1
sec-Butylbenzene	BDL	1.0	ug/l	8260B	02/23/12	1
tert-Butylbenzene	BDL	1.0	ug/l	8260B	02/23/12	1
Carbon tetrachloride	BDL	1.0	ug/l	8260B	02/23/12	1
Chlorobenzene	BDL	1.0	ug/l	8260B	02/23/12	1
Chlorodibromomethane	BDL	1.0	ug/l	8260B	02/23/12	1
Chloroethane	BDL	5.0	ug/l	8260B	02/23/12	1
2-Chloroethyl vinyl ether	BDL	50.	ug/l	8260B	02/23/12	1
Chloroform	BDL	5.0	ug/l	8260B	02/23/12	1
Chloromethane	BDL	2.5	ug/l	8260B	02/23/12	1
2-Chlorotoluene	BDL	1.0	ug/l	8260B	02/23/12	1
4-Chlorotoluene	BDL	1.0	ug/l	8260B	02/23/12	1
1,2-Dibromo-3-Chloropropane	BDL	5.0	ug/l	8260B	02/23/12	1
1,2-Dibromoethane	BDL	1.0	ug/l	8260B	02/23/12	1
Dibromomethane	BDL	1.0	ug/l	8260B	02/23/12	1
1,2-Dichlorobenzene	BDL	1.0	ug/l	8260B	02/23/12	1
1,3-Dichlorobenzene	BDL	1.0	ug/l	8260B	02/23/12	1
1,4-Dichlorobenzene	BDL	1.0	ug/l	8260B	02/23/12	1
Dichlorodifluoromethane	BDL	5.0	ug/l	8260B	02/23/12	1
Dichlorofluoromethane	BDL	5.0	ug/l	8260B	02/23/12	1
1,1-Dichloroethane	BDL	1.0	ug/l	8260B	02/23/12	1
1,2-Dichloroethane	BDL	1.0	ug/l	8260B	02/23/12	1
1,1-Dichloroethene	BDL	1.0	ug/l	8260B	02/23/12	1
cis-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	02/23/12	1
trans-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	02/23/12	1
1,2-Dichloropropane	BDL	1.0	ug/l	8260B	02/23/12	1
1,1-Dichloropropene	BDL	1.0	ug/l	8260B	02/23/12	1
1,3-Dichloropropane	BDL	1.0	ug/l	8260B	02/23/12	1
cis-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	02/23/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Chris Loch
Carlson McCain
248 Apollo Dr: Suite 100
Lino Lakes, MN 55014

February 28,2012

ESC Sample # : L561621-03

Site ID : MAPLEWOOD, MN

Project # : 3327

Date Received : February 22, 2012
Description : Sinclair 22020

Sample ID : MW-3

Collected By : Christy Steman
Collection Date : 02/21/12 13:25

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
trans-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	02/23/12	1
2,2-Dichloropropane	BDL	1.0	ug/l	8260B	02/23/12	1
Di-isopropyl ether	BDL	1.0	ug/l	8260B	02/23/12	1
Ethylbenzene	BDL	1.0	ug/l	8260B	02/23/12	1
Ethyl ether	BDL	1.0	ug/l	8260B	02/23/12	1
Hexachloro-1,3-butadiene	BDL	1.0	ug/l	8260B	02/23/12	1
Isopropylbenzene	BDL	1.0	ug/l	8260B	02/23/12	1
p-Isopropyltoluene	BDL	1.0	ug/l	8260B	02/23/12	1
2-Butanone (MEK)	BDL	10.	ug/l	8260B	02/23/12	1
Methylene Chloride	BDL	5.0	ug/l	8260B	02/23/12	1
2-Hexanone	BDL	10.	ug/l	8260B	02/23/12	1
4-Methyl-2-pentanone (MIBK)	BDL	10.	ug/l	8260B	02/23/12	1
Methyl tert-butyl ether	BDL	1.0	ug/l	8260B	02/23/12	1
Naphthalene	BDL	5.0	ug/l	8260B	02/23/12	1
n-Propylbenzene	BDL	1.0	ug/l	8260B	02/23/12	1
Styrene	BDL	1.0	ug/l	8260B	02/23/12	1
1,1,1,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	02/23/12	1
1,1,2,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	02/23/12	1
1,1,2-Trichlorotrifluoroethane	BDL	1.0	ug/l	8260B	02/23/12	1
Tetrachloroethene	BDL	1.0	ug/l	8260B	02/23/12	1
Tetrahydrofuran	BDL	5.0	ug/l	8260B	02/23/12	1
Toluene	BDL	5.0	ug/l	8260B	02/23/12	1
1,2,3-Trichlorobenzene	BDL	1.0	ug/l	8260B	02/23/12	1
1,2,4-Trichlorobenzene	BDL	1.0	ug/l	8260B	02/23/12	1
1,1,1-Trichloroethane	BDL	1.0	ug/l	8260B	02/23/12	1
1,1,2-Trichloroethane	BDL	1.0	ug/l	8260B	02/23/12	1
Trichloroethene	BDL	1.0	ug/l	8260B	02/23/12	1
Trichlorofluoromethane	BDL	5.0	ug/l	8260B	02/23/12	1
1,2,3-Trichloropropane	BDL	2.5	ug/l	8260B	02/23/12	1
1,2,4-Trimethylbenzene	BDL	1.0	ug/l	8260B	02/23/12	1
1,2,3-Trimethylbenzene	BDL	1.0	ug/l	8260B	02/23/12	1
1,3,5-Trimethylbenzene	BDL	1.0	ug/l	8260B	02/23/12	1
Vinyl chloride	BDL	1.0	ug/l	8260B	02/23/12	1
Xylenes, Total	BDL	3.0	ug/l	8260B	02/23/12	1
Surrogate Recovery						
Toluene-d8	98.1		% Rec.	8260B	02/23/12	1
Dibromofluoromethane	99.9		% Rec.	8260B	02/23/12	1
a,a,a-Trifluorotoluene	101.		% Rec.	8260B	02/23/12	1
4-Bromofluorobenzene	90.2		% Rec.	8260B	02/23/12	1
TPH (GC/FID) High Fraction	BDL	100	ug/l	DROWM/8015	02/23/12	1
Surrogate recovery(%)						
Triacontane	84.9		% Rec.	DROWM/8015	02/23/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

Reported: 02/28/12 10:32 Printed: 02/28/12 10:32

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Est. 1970

REPORT OF ANALYSIS

Chris Loch
Carlson McCain
248 Apollo Dr: Suite 100
Lino Lakes, MN 55014

February 28,2012

ESC Sample # : L561621-04

Site ID : MAPLEWOOD, MN

Project # : 3327

Date Received : February 22, 2012
Description : Sinclair 22020

Sample ID : MW-10

Collected By : Christy Steman
Collection Date : 02/21/12 11:10

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
WI DNR						
Gasoline (C6-C10)	28000	2500	ug/l	GROWM/8015	02/22/12	25
Surrogate recovery-%						
a,a,a-Trifluorotoluene(PID)	104.		% Rec.	8021	02/22/12	25
Volatile Organics						
Acetone	BDL	500	ug/l	8260B	02/23/12	10
Acrolein	BDL	500	ug/l	8260B	02/23/12	10
Acrylonitrile	BDL	100	ug/l	8260B	02/23/12	10
Allyl chloride	BDL	50.	ug/l	8260B	02/23/12	10
Benzene	1600	10.	ug/l	8260B	02/23/12	10
Bromobenzene	BDL	10.	ug/l	8260B	02/23/12	10
Bromodichloromethane	BDL	10.	ug/l	8260B	02/23/12	10
Bromoform	BDL	10.	ug/l	8260B	02/23/12	10
Bromomethane	BDL	50.	ug/l	8260B	02/23/12	10
n-Butylbenzene	19.	10.	ug/l	8260B	02/23/12	10
sec-Butylbenzene	11.	10.	ug/l	8260B	02/23/12	10
tert-Butylbenzene	BDL	10.	ug/l	8260B	02/23/12	10
Carbon tetrachloride	BDL	10.	ug/l	8260B	02/23/12	10
Chlorobenzene	BDL	10.	ug/l	8260B	02/23/12	10
Chlorodibromomethane	BDL	10.	ug/l	8260B	02/23/12	10
Chloroethane	BDL	50.	ug/l	8260B	02/23/12	10
2-Chloroethyl vinyl ether	BDL	500	ug/l	8260B	02/23/12	10
Chloroform	BDL	50.	ug/l	8260B	02/23/12	10
Chloromethane	BDL	25.	ug/l	8260B	02/23/12	10
2-Chlorotoluene	BDL	10.	ug/l	8260B	02/23/12	10
4-Chlorotoluene	BDL	10.	ug/l	8260B	02/23/12	10
1,2-Dibromo-3-Chloropropane	BDL	50.	ug/l	8260B	02/23/12	10
1,2-Dibromoethane	BDL	10.	ug/l	8260B	02/23/12	10
Dibromomethane	BDL	10.	ug/l	8260B	02/23/12	10
1,2-Dichlorobenzene	BDL	10.	ug/l	8260B	02/23/12	10
1,3-Dichlorobenzene	BDL	10.	ug/l	8260B	02/23/12	10
1,4-Dichlorobenzene	BDL	10.	ug/l	8260B	02/23/12	10
Dichlorodifluoromethane	BDL	50.	ug/l	8260B	02/23/12	10
Dichlorofluoromethane	BDL	50.	ug/l	8260B	02/23/12	10
1,1-Dichloroethane	BDL	10.	ug/l	8260B	02/23/12	10
1,2-Dichloroethane	BDL	10.	ug/l	8260B	02/23/12	10
1,1-Dichloroethene	BDL	10.	ug/l	8260B	02/23/12	10
cis-1,2-Dichloroethene	BDL	10.	ug/l	8260B	02/23/12	10
trans-1,2-Dichloroethene	BDL	10.	ug/l	8260B	02/23/12	10
1,2-Dichloropropane	BDL	10.	ug/l	8260B	02/23/12	10
1,1-Dichloropropene	BDL	10.	ug/l	8260B	02/23/12	10
1,3-Dichloropropane	BDL	10.	ug/l	8260B	02/23/12	10
cis-1,3-Dichloropropene	BDL	10.	ug/l	8260B	02/23/12	10

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Chris Loch
Carlson McCain
248 Apollo Dr: Suite 100
Lino Lakes, MN 55014

February 28,2012

ESC Sample # : L561621-04

Site ID : MAPLEWOOD, MN

Project # : 3327

Date Received : February 22, 2012
Description : Sinclair 22020

Sample ID : MW-10

Collected By : Christy Steman
Collection Date : 02/21/12 11:10

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
trans-1,3-Dichloropropene	BDL	10.	ug/l	8260B	02/23/12	10
2,2-Dichloropropane	BDL	10.	ug/l	8260B	02/23/12	10
Di-isopropyl ether	BDL	10.	ug/l	8260B	02/23/12	10
Ethylbenzene	1200	10.	ug/l	8260B	02/23/12	10
Ethyl ether	BDL	10.	ug/l	8260B	02/23/12	10
Hexachloro-1,3-butadiene	BDL	10.	ug/l	8260B	02/23/12	10
Isopropylbenzene	68.	10.	ug/l	8260B	02/23/12	10
p-Isopropyltoluene	BDL	10.	ug/l	8260B	02/23/12	10
2-Butanone (MEK)	BDL	100	ug/l	8260B	02/23/12	10
Methylene Chloride	BDL	50.	ug/l	8260B	02/23/12	10
2-Hexanone	BDL	100	ug/l	8260B	02/23/12	10
4-Methyl-2-pentanone (MIBK)	BDL	100	ug/l	8260B	02/23/12	10
Methyl tert-butyl ether	BDL	10.	ug/l	8260B	02/23/12	10
Naphthalene	800	50.	ug/l	8260B	02/23/12	10
n-Propylbenzene	160	10.	ug/l	8260B	02/23/12	10
Styrene	BDL	10.	ug/l	8260B	02/23/12	10
1,1,1,2-Tetrachloroethane	BDL	10.	ug/l	8260B	02/23/12	10
1,1,2,2-Tetrachloroethane	BDL	10.	ug/l	8260B	02/23/12	10
1,1,2-Trichlorotrifluoroethane	BDL	10.	ug/l	8260B	02/23/12	10
Tetrachloroethene	BDL	10.	ug/l	8260B	02/23/12	10
Tetrahydrofuran	BDL	50.	ug/l	8260B	02/23/12	10
Toluene	1600	50.	ug/l	8260B	02/23/12	10
1,2,3-Trichlorobenzene	BDL	10.	ug/l	8260B	02/23/12	10
1,2,4-Trichlorobenzene	BDL	10.	ug/l	8260B	02/23/12	10
1,1,1-Trichloroethane	BDL	10.	ug/l	8260B	02/23/12	10
1,1,2-Trichloroethane	BDL	10.	ug/l	8260B	02/23/12	10
Trichloroethene	BDL	10.	ug/l	8260B	02/23/12	10
Trichlorofluoromethane	BDL	50.	ug/l	8260B	02/23/12	10
1,2,3-Trichloropropane	BDL	25.	ug/l	8260B	02/23/12	10
1,2,4-Trimethylbenzene	2800	50.	ug/l	8260B	02/23/12	50
1,2,3-Trimethylbenzene	780	10.	ug/l	8260B	02/23/12	10
1,3,5-Trimethylbenzene	740	10.	ug/l	8260B	02/23/12	10
Vinyl chloride	BDL	10.	ug/l	8260B	02/23/12	10
Xylenes, Total	10000	150	ug/l	8260B	02/23/12	50
Surrogate Recovery						
Toluene-d8	96.8		% Rec.	8260B	02/23/12	10
Dibromofluoromethane	95.5		% Rec.	8260B	02/23/12	10
a,a,a-Trifluorotoluene	98.9		% Rec.	8260B	02/23/12	10
4-Bromofluorobenzene	94.7		% Rec.	8260B	02/23/12	10
TPH (GC/FID) High Fraction	5400	500	ug/l	DROWM/8015	02/24/12	5
Surrogate recovery(%)						
Triacontane	88.3		% Rec.	DROWM/8015	02/24/12	5

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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REPORT OF ANALYSIS

Chris Loch
Carlson McCain
248 Apollo Dr: Suite 100
Lino Lakes, MN 55014

February 28,2012

ESC Sample # : L561621-05

Site ID : MAPLEWOOD, MN

Project # : 3327

Date Received : February 22, 2012
Description : Sinclair 22020

Sample ID : TRIPBLANK

Collected By : Christy Steman
Collection Date : 02/21/12 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	50.	ug/l	8260B	02/23/12	1
Acrolein	BDL	50.	ug/l	8260B	02/23/12	1
Acrylonitrile	BDL	10.	ug/l	8260B	02/23/12	1
Allyl chloride	BDL	5.0	ug/l	8260B	02/23/12	1
Benzene	BDL	1.0	ug/l	8260B	02/23/12	1
Bromobenzene	BDL	1.0	ug/l	8260B	02/23/12	1
Bromodichloromethane	BDL	1.0	ug/l	8260B	02/23/12	1
Bromoform	BDL	1.0	ug/l	8260B	02/23/12	1
Bromomethane	BDL	5.0	ug/l	8260B	02/23/12	1
n-Butylbenzene	BDL	1.0	ug/l	8260B	02/23/12	1
sec-Butylbenzene	BDL	1.0	ug/l	8260B	02/23/12	1
tert-Butylbenzene	BDL	1.0	ug/l	8260B	02/23/12	1
Carbon tetrachloride	BDL	1.0	ug/l	8260B	02/23/12	1
Chlorobenzene	BDL	1.0	ug/l	8260B	02/23/12	1
Chlorodibromomethane	BDL	1.0	ug/l	8260B	02/23/12	1
Chloroethane	BDL	5.0	ug/l	8260B	02/23/12	1
2-Chloroethyl vinyl ether	BDL	50.	ug/l	8260B	02/23/12	1
Chloroform	BDL	5.0	ug/l	8260B	02/23/12	1
Chloromethane	BDL	2.5	ug/l	8260B	02/23/12	1
2-Chlorotoluene	BDL	1.0	ug/l	8260B	02/23/12	1
4-Chlorotoluene	BDL	1.0	ug/l	8260B	02/23/12	1
1,2-Dibromo-3-Chloropropane	BDL	5.0	ug/l	8260B	02/23/12	1
1,2-Dibromoethane	BDL	1.0	ug/l	8260B	02/23/12	1
Dibromomethane	BDL	1.0	ug/l	8260B	02/23/12	1
1,2-Dichlorobenzene	BDL	1.0	ug/l	8260B	02/23/12	1
1,3-Dichlorobenzene	BDL	1.0	ug/l	8260B	02/23/12	1
1,4-Dichlorobenzene	BDL	1.0	ug/l	8260B	02/23/12	1
Dichlorodifluoromethane	BDL	5.0	ug/l	8260B	02/23/12	1
Dichlorofluoromethane	BDL	5.0	ug/l	8260B	02/23/12	1
1,1-Dichloroethane	BDL	1.0	ug/l	8260B	02/23/12	1
1,2-Dichloroethane	BDL	1.0	ug/l	8260B	02/23/12	1
1,1-Dichloroethene	BDL	1.0	ug/l	8260B	02/23/12	1
cis-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	02/23/12	1
trans-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	02/23/12	1
1,2-Dichloropropane	BDL	1.0	ug/l	8260B	02/23/12	1
1,1-Dichloropropene	BDL	1.0	ug/l	8260B	02/23/12	1
1,3-Dichloropropane	BDL	1.0	ug/l	8260B	02/23/12	1
cis-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	02/23/12	1
trans-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	02/23/12	1
2,2-Dichloropropane	BDL	1.0	ug/l	8260B	02/23/12	1
Di-isopropyl ether	BDL	1.0	ug/l	8260B	02/23/12	1
Ethylbenzene	BDL	1.0	ug/l	8260B	02/23/12	1
Ethyl ether	BDL	1.0	ug/l	8260B	02/23/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Chris Loch
Carlson McCain
248 Apollo Dr: Suite 100
Lino Lakes, MN 55014

February 28,2012

ESC Sample # : L561621-05

Site ID : MAPLEWOOD, MN

Project # : 3327

Date Received : February 22, 2012
Description : Sinclair 22020

Sample ID : TRIPBLANK

Collected By : Christy Steman
Collection Date : 02/21/12 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Hexachloro-1,3-butadiene	BDL	1.0	ug/l	8260B	02/23/12	1
Isopropylbenzene	BDL	1.0	ug/l	8260B	02/23/12	1
p-Isopropyltoluene	BDL	1.0	ug/l	8260B	02/23/12	1
2-Butanone (MEK)	BDL	10.	ug/l	8260B	02/23/12	1
Methylene Chloride	BDL	5.0	ug/l	8260B	02/23/12	1
2-Hexanone	BDL	10.	ug/l	8260B	02/23/12	1
4-Methyl-2-pentanone (MIBK)	BDL	10.	ug/l	8260B	02/23/12	1
Methyl tert-butyl ether	BDL	1.0	ug/l	8260B	02/23/12	1
Naphthalene	BDL	5.0	ug/l	8260B	02/23/12	1
n-Propylbenzene	BDL	1.0	ug/l	8260B	02/23/12	1
Styrene	BDL	1.0	ug/l	8260B	02/23/12	1
1,1,1,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	02/23/12	1
1,1,2,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	02/23/12	1
1,1,2-Trichlorotrifluoroethane	BDL	1.0	ug/l	8260B	02/23/12	1
Tetrachloroethene	BDL	1.0	ug/l	8260B	02/23/12	1
Tetrahydrofuran	BDL	5.0	ug/l	8260B	02/23/12	1
Toluene	BDL	5.0	ug/l	8260B	02/23/12	1
1,2,3-Trichlorobenzene	BDL	1.0	ug/l	8260B	02/23/12	1
1,2,4-Trichlorobenzene	BDL	1.0	ug/l	8260B	02/23/12	1
1,1,1-Trichloroethane	BDL	1.0	ug/l	8260B	02/23/12	1
1,1,2-Trichloroethane	BDL	1.0	ug/l	8260B	02/23/12	1
Trichloroethene	BDL	1.0	ug/l	8260B	02/23/12	1
Trichlorofluoromethane	BDL	5.0	ug/l	8260B	02/23/12	1
1,2,3-Trichloropropane	BDL	2.5	ug/l	8260B	02/23/12	1
1,2,4-Trimethylbenzene	BDL	1.0	ug/l	8260B	02/23/12	1
1,2,3-Trimethylbenzene	BDL	1.0	ug/l	8260B	02/23/12	1
1,3,5-Trimethylbenzene	BDL	1.0	ug/l	8260B	02/23/12	1
Vinyl chloride	BDL	1.0	ug/l	8260B	02/23/12	1
Xylenes, Total	BDL	3.0	ug/l	8260B	02/23/12	1
Surrogate Recovery						
Toluene-d8	98.6		% Rec.	8260B	02/23/12	1
Dibromofluoromethane	101.		% Rec.	8260B	02/23/12	1
a,a,a-Trifluorotoluene	100.		% Rec.	8260B	02/23/12	1
4-Bromofluorobenzene	90.6		% Rec.	8260B	02/23/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

Reported: 02/28/12 10:32 Printed: 02/28/12 10:33

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L561621-02	WG579779	SAMP	2-Chloroethyl vinyl ether	R2046692	J6J3

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed
02/28/12 at 10:33:04

TSR Signing Reports: 341
R5 - Desired TAT

CL 10K CL 10K Check with Melanie Belcher or Wes Vance prior to approving any data. 10/14/11
TAH

Sample: L561621-01 Account: CARPROLLMN Received: 02/22/12 09:00 Due Date: 02/29/12 00:00 RPT Date: 02/28/12 10:32

Sample: L561621-02 Account: CARPROLLMN Received: 02/22/12 09:00 Due Date: 02/29/12 00:00 RPT Date: 02/28/12 10:32

Sample: L561621-03 Account: CARPROLLMN Received: 02/22/12 09:00 Due Date: 02/29/12 00:00 RPT Date: 02/28/12 10:32

Sample: L561621-04 Account: CARPROLLMN Received: 02/22/12 09:00 Due Date: 02/29/12 00:00 RPT Date: 02/28/12 10:32

Sample: L561621-05 Account: CARPROLLMN Received: 02/22/12 09:00 Due Date: 02/29/12 00:00 RPT Date: 02/28/12 10:32

C167

Chain of Custody Page 1 of 1

ESC LABS SCIENCES
12065 Lebanon Road
Mt. Juliet, TN 37122
Phone: (800) 767-5859
Phone: (615) 758-5858
Fax: (615) 758-5859

Company Name/Address: Carlson McLain, 248 Apollo Drive Suite 100, Lino Lakes, MN 55014

Billing Information:

Analysis/Container/Preservati

Report to: Chris Loch

Email to: cloch@carlsonmclain.com

Project Description: Sinclair 22020

City/State Collected: Maplewood, MN

Phone: 952-346-3900

FAX: 952-346-3901

Client Project #: 3327

ESC Key:

Collected by: (print) Christy Sleman

Site/Facility ID#:

P.O.#:

Collected by (signature):

Immediately Packed on Ice N X Y

Rush? (Lab MUST Be Notified)
___ Same Day..... 200%
___ Next Day..... 100%
___ Two Day..... 50%
___ Three Day..... 25%

Date Results Needed:

Email? __No X Yes

FAX? __No __Yes

CoCode (lab use only)

Template/Prelogin

Shipped Via: ESC 621

Sample ID	Comp/Grab	Matrix*	Depth	Date (CS)	Time	No. of Cntrs	VOCs	GRO	DRO	Remarks/Contaminant	Sample # (lab only)
MW-1	Grab	GW		2-21-12	11:00	6	2	2	2	*Highly Impacted	-01
MW-2	Grab	GW		2-21-12	12:25pm	6	2	2	2		-02
MW-3	Grab	GW		2-21-12	1:25pm	6	2	2	2		-03
MW-10	Grab	GW		2-21-12	11:10	6	2	2	2	*Highly Impacted	-04
Trip Blank						1	1				-05

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other_____

pH _____ Temp _____

Remarks:

Flow _____ Other _____

4916345932619

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
	2-21-12	3:00 pm	
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)

Samples returned via: ☐ UPS X FedEx ☐ Courier ☐ _____

Temp: 3.6 Bottles Received: 25

Date: 2/22/12 Time: 0800

Condition: OK (lab use only)

CoC Seals Intact: ___ Y ___ N ___ NA

pH Checked: ___ NCF: ___

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Chris Loch
Carlson McCain
248 Apollo Dr: Suite 100
Lino Lakes, MN 55014

Report Summary

Friday July 06, 2012

Report Number: L581933
Samples Received: 06/23/12
Client Project: 3327

Description: Sinclair Oil #22020

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By: John Hawkins

John Hawkins , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.
Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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REPORT OF ANALYSIS

Chris Loch
Carlson McCain
248 Apollo Dr: Suite 100
Lino Lakes, MN 55014

July 06,2012

ESC Sample # : L581933-01

Date Received : June 23, 2012
Description : Sinclair #22020

Site ID : MAPLEWOOD, MN

Sample ID : MW-1

Project # : 3327

Collected By : Aric Olsen
Collection Date : 06/22/12 11:38

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
WI DNR						
Gasoline (C6-C10)	23000	2500	ug/l	GROWM/8015	06/24/12	25
Surrogate recovery-%						
a,a,a-Trifluorotoluene(PID)	99.8		% Rec.	8021	06/24/12	25
Volatile Organics						
Acetone	BDL	1000	ug/l	8260B	06/24/12	20
Acrolein	BDL	1000	ug/l	8260B	06/24/12	20
Acrylonitrile	BDL	200	ug/l	8260B	06/24/12	20
Allyl chloride	BDL	100	ug/l	8260B	06/24/12	20
Benzene	4100	100	ug/l	8260B	06/25/12	100
Bromobenzene	BDL	20.	ug/l	8260B	06/24/12	20
Bromodichloromethane	BDL	20.	ug/l	8260B	06/24/12	20
Bromoform	BDL	20.	ug/l	8260B	06/24/12	20
Bromomethane	BDL	100	ug/l	8260B	06/24/12	20
n-Butylbenzene	BDL	20.	ug/l	8260B	06/24/12	20
sec-Butylbenzene	BDL	20.	ug/l	8260B	06/24/12	20
tert-Butylbenzene	170	20.	ug/l	8260B	06/24/12	20
Carbon tetrachloride	BDL	20.	ug/l	8260B	06/24/12	20
Chlorobenzene	BDL	20.	ug/l	8260B	06/24/12	20
Chlorodibromomethane	BDL	20.	ug/l	8260B	06/24/12	20
Chloroethane	BDL	100	ug/l	8260B	06/24/12	20
2-Chloroethyl vinyl ether	BDL	1000	ug/l	8260B	06/24/12	20
Chloroform	BDL	100	ug/l	8260B	06/24/12	20
Chloromethane	BDL	50.	ug/l	8260B	06/24/12	20
2-Chlorotoluene	BDL	20.	ug/l	8260B	06/24/12	20
4-Chlorotoluene	BDL	20.	ug/l	8260B	06/24/12	20
1,2-Dibromo-3-Chloropropane	BDL	100	ug/l	8260B	06/24/12	20
1,2-Dibromoethane	BDL	20.	ug/l	8260B	06/24/12	20
Dibromomethane	BDL	20.	ug/l	8260B	06/24/12	20
1,2-Dichlorobenzene	BDL	20.	ug/l	8260B	06/24/12	20
1,3-Dichlorobenzene	BDL	20.	ug/l	8260B	06/24/12	20
1,4-Dichlorobenzene	BDL	20.	ug/l	8260B	06/24/12	20
Dichlorodifluoromethane	BDL	100	ug/l	8260B	06/24/12	20
Dichlorofluoromethane	BDL	100	ug/l	8260B	06/24/12	20
1,1-Dichloroethane	BDL	20.	ug/l	8260B	06/24/12	20
1,2-Dichloroethane	BDL	20.	ug/l	8260B	06/24/12	20
1,1-Dichloroethene	BDL	20.	ug/l	8260B	06/24/12	20
cis-1,2-Dichloroethene	BDL	20.	ug/l	8260B	06/24/12	20
trans-1,2-Dichloroethene	BDL	20.	ug/l	8260B	06/24/12	20
1,2-Dichloropropane	BDL	20.	ug/l	8260B	06/24/12	20
1,1-Dichloropropene	BDL	20.	ug/l	8260B	06/24/12	20
1,3-Dichloropropane	BDL	20.	ug/l	8260B	06/24/12	20
cis-1,3-Dichloropropene	BDL	20.	ug/l	8260B	06/24/12	20

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

July 06,2012

Chris Loch
Carlson McCain
248 Apollo Dr: Suite 100
Lino Lakes, MN 55014

ESC Sample # : L581933-01

Date Received : June 23, 2012
Description : Sinclair #22020

Site ID : MAPLEWOOD, MN

Sample ID : MW-1

Project # : 3327

Collected By : Aric Olsen
Collection Date : 06/22/12 11:38

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
trans-1,3-Dichloropropene	BDL	20.	ug/l	8260B	06/24/12	20
2,2-Dichloropropane	BDL	20.	ug/l	8260B	06/24/12	20
Di-isopropyl ether	BDL	20.	ug/l	8260B	06/24/12	20
Ethylbenzene	1100	20.	ug/l	8260B	06/24/12	20
Ethyl ether	BDL	20.	ug/l	8260B	06/24/12	20
Hexachloro-1,3-butadiene	BDL	20.	ug/l	8260B	06/24/12	20
Isopropylbenzene	37.	20.	ug/l	8260B	06/24/12	20
p-Isopropyltoluene	20.	20.	ug/l	8260B	06/24/12	20
2-Butanone (MEK)	BDL	200	ug/l	8260B	06/24/12	20
Methylene Chloride	BDL	100	ug/l	8260B	06/24/12	20
2-Hexanone	BDL	200	ug/l	8260B	06/24/12	20
4-Methyl-2-pentanone (MIBK)	BDL	200	ug/l	8260B	06/24/12	20
Methyl tert-butyl ether	BDL	20.	ug/l	8260B	06/24/12	20
Naphthalene	330	100	ug/l	8260B	06/24/12	20
n-Propylbenzene	100	20.	ug/l	8260B	06/24/12	20
Styrene	BDL	20.	ug/l	8260B	06/24/12	20
1,1,1,2-Tetrachloroethane	BDL	20.	ug/l	8260B	06/24/12	20
1,1,2,2-Tetrachloroethane	BDL	20.	ug/l	8260B	06/24/12	20
1,1,2-Trichlorotrifluoroethane	BDL	20.	ug/l	8260B	06/24/12	20
Tetrachloroethene	BDL	20.	ug/l	8260B	06/24/12	20
Tetrahydrofuran	BDL	100	ug/l	8260B	06/24/12	20
Toluene	1600	100	ug/l	8260B	06/24/12	20
1,2,3-Trichlorobenzene	BDL	20.	ug/l	8260B	06/24/12	20
1,2,4-Trichlorobenzene	BDL	20.	ug/l	8260B	06/24/12	20
1,1,1-Trichloroethane	BDL	20.	ug/l	8260B	06/24/12	20
1,1,2-Trichloroethane	BDL	20.	ug/l	8260B	06/24/12	20
Trichloroethene	BDL	20.	ug/l	8260B	06/24/12	20
Trichlorofluoromethane	BDL	100	ug/l	8260B	06/24/12	20
1,2,3-Trichloropropane	BDL	50.	ug/l	8260B	06/24/12	20
1,2,4-Trimethylbenzene	1000	20.	ug/l	8260B	06/24/12	20
1,2,3-Trimethylbenzene	250	20.	ug/l	8260B	06/24/12	20
1,3,5-Trimethylbenzene	260	20.	ug/l	8260B	06/24/12	20
Vinyl chloride	BDL	20.	ug/l	8260B	06/24/12	20
Xylenes, Total	4300	60.	ug/l	8260B	06/24/12	20
Surrogate Recovery						
Toluene-d8	101.		% Rec.	8260B	06/24/12	20
Dibromofluoromethane	95.6		% Rec.	8260B	06/24/12	20
a,a,a-Trifluorotoluene	97.5		% Rec.	8260B	06/24/12	20
4-Bromofluorobenzene	98.2		% Rec.	8260B	06/24/12	20
TPH (GC/FID) High Fraction	3700	100	ug/l	DROWM / 80	06/30/12	1
Surrogate recovery(%)						
Triacontane	66.7		% Rec.	DROWM / 80	06/30/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

Reported: 07/05/12 20:10 Revised: 07/06/12 09:31

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REPORT OF ANALYSIS

July 06,2012

Chris Loch
Carlson McCain
248 Apollo Dr: Suite 100
Lino Lakes, MN 55014

ESC Sample # : L581933-02

Date Received : June 23, 2012
Description : Sinclair #22020

Site ID : MAPLEWOOD, MN

Sample ID : MW-2

Project # : 3327

Collected By : Aric Olsen
Collection Date : 06/22/12 11:04

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
WI DNR						
Gasoline (C6-C10)	BDL	100	ug/l	GROWM/8015	06/24/12	1
Surrogate recovery-%						
a,a,a-Trifluorotoluene(PID)	101.		% Rec.	8021	06/24/12	1
Volatile Organics						
Acetone	BDL	50.	ug/l	8260B	06/24/12	1
Acrolein	BDL	50.	ug/l	8260B	06/24/12	1
Acrylonitrile	BDL	10.	ug/l	8260B	06/24/12	1
Allyl chloride	BDL	5.0	ug/l	8260B	06/24/12	1
Benzene	BDL	1.0	ug/l	8260B	06/24/12	1
Bromobenzene	BDL	1.0	ug/l	8260B	06/24/12	1
Bromodichloromethane	BDL	1.0	ug/l	8260B	06/24/12	1
Bromoform	BDL	1.0	ug/l	8260B	06/24/12	1
Bromomethane	BDL	5.0	ug/l	8260B	06/24/12	1
n-Butylbenzene	BDL	1.0	ug/l	8260B	06/24/12	1
sec-Butylbenzene	BDL	1.0	ug/l	8260B	06/24/12	1
tert-Butylbenzene	BDL	1.0	ug/l	8260B	06/24/12	1
Carbon tetrachloride	BDL	1.0	ug/l	8260B	06/24/12	1
Chlorobenzene	BDL	1.0	ug/l	8260B	06/24/12	1
Chlorodibromomethane	BDL	1.0	ug/l	8260B	06/24/12	1
Chloroethane	BDL	5.0	ug/l	8260B	06/24/12	1
2-Chloroethyl vinyl ether	BDL	50.	ug/l	8260B	06/24/12	1
Chloroform	BDL	5.0	ug/l	8260B	06/24/12	1
Chloromethane	BDL	2.5	ug/l	8260B	06/24/12	1
2-Chlorotoluene	BDL	1.0	ug/l	8260B	06/24/12	1
4-Chlorotoluene	BDL	1.0	ug/l	8260B	06/24/12	1
1,2-Dibromo-3-Chloropropane	BDL	5.0	ug/l	8260B	06/24/12	1
1,2-Dibromoethane	BDL	1.0	ug/l	8260B	06/24/12	1
Dibromomethane	BDL	1.0	ug/l	8260B	06/24/12	1
1,2-Dichlorobenzene	BDL	1.0	ug/l	8260B	06/24/12	1
1,3-Dichlorobenzene	BDL	1.0	ug/l	8260B	06/24/12	1
1,4-Dichlorobenzene	BDL	1.0	ug/l	8260B	06/24/12	1
Dichlorodifluoromethane	BDL	5.0	ug/l	8260B	06/24/12	1
Dichlorofluoromethane	BDL	5.0	ug/l	8260B	06/24/12	1
1,1-Dichloroethane	BDL	1.0	ug/l	8260B	06/24/12	1
1,2-Dichloroethane	BDL	1.0	ug/l	8260B	06/24/12	1
1,1-Dichloroethene	BDL	1.0	ug/l	8260B	06/24/12	1
cis-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	06/24/12	1
trans-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	06/24/12	1
1,2-Dichloropropane	BDL	1.0	ug/l	8260B	06/24/12	1
1,1-Dichloropropene	BDL	1.0	ug/l	8260B	06/24/12	1
1,3-Dichloropropane	BDL	1.0	ug/l	8260B	06/24/12	1
cis-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	06/24/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

July 06,2012

Chris Loch
Carlson McCain
248 Apollo Dr: Suite 100
Lino Lakes, MN 55014

ESC Sample # : L581933-02

Date Received : June 23, 2012
Description : Sinclair #22020

Site ID : MAPLEWOOD, MN

Sample ID : MW-2

Project # : 3327

Collected By : Aric Olsen
Collection Date : 06/22/12 11:04

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
trans-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	06/24/12	1
2,2-Dichloropropane	BDL	1.0	ug/l	8260B	06/24/12	1
Di-isopropyl ether	BDL	1.0	ug/l	8260B	06/24/12	1
Ethylbenzene	BDL	1.0	ug/l	8260B	06/24/12	1
Ethyl ether	BDL	1.0	ug/l	8260B	06/24/12	1
Hexachloro-1,3-butadiene	BDL	1.0	ug/l	8260B	06/24/12	1
Isopropylbenzene	BDL	1.0	ug/l	8260B	06/24/12	1
p-Isopropyltoluene	BDL	1.0	ug/l	8260B	06/24/12	1
2-Butanone (MEK)	BDL	10.	ug/l	8260B	06/24/12	1
Methylene Chloride	BDL	5.0	ug/l	8260B	06/24/12	1
2-Hexanone	BDL	10.	ug/l	8260B	06/24/12	1
4-Methyl-2-pentanone (MIBK)	BDL	10.	ug/l	8260B	06/24/12	1
Methyl tert-butyl ether	BDL	1.0	ug/l	8260B	06/24/12	1
Naphthalene	BDL	5.0	ug/l	8260B	06/24/12	1
n-Propylbenzene	BDL	1.0	ug/l	8260B	06/24/12	1
Styrene	BDL	1.0	ug/l	8260B	06/24/12	1
1,1,1,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	06/24/12	1
1,1,2,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	06/24/12	1
1,1,2-Trichlorotrifluoroethane	BDL	1.0	ug/l	8260B	06/24/12	1
Tetrachloroethene	BDL	1.0	ug/l	8260B	06/24/12	1
Tetrahydrofuran	BDL	5.0	ug/l	8260B	06/24/12	1
Toluene	BDL	5.0	ug/l	8260B	06/24/12	1
1,2,3-Trichlorobenzene	BDL	1.0	ug/l	8260B	06/24/12	1
1,2,4-Trichlorobenzene	BDL	1.0	ug/l	8260B	06/24/12	1
1,1,1-Trichloroethane	BDL	1.0	ug/l	8260B	06/24/12	1
1,1,2-Trichloroethane	BDL	1.0	ug/l	8260B	06/24/12	1
Trichloroethene	BDL	1.0	ug/l	8260B	06/24/12	1
Trichlorofluoromethane	BDL	5.0	ug/l	8260B	06/24/12	1
1,2,3-Trichloropropane	BDL	2.5	ug/l	8260B	06/24/12	1
1,2,4-Trimethylbenzene	BDL	1.0	ug/l	8260B	06/24/12	1
1,2,3-Trimethylbenzene	BDL	1.0	ug/l	8260B	06/24/12	1
1,3,5-Trimethylbenzene	BDL	1.0	ug/l	8260B	06/24/12	1
Vinyl chloride	BDL	1.0	ug/l	8260B	06/24/12	1
Xylenes, Total	BDL	3.0	ug/l	8260B	06/24/12	1
Surrogate Recovery						
Toluene-d8	99.6		% Rec.	8260B	06/24/12	1
Dibromofluoromethane	95.1		% Rec.	8260B	06/24/12	1
a,a,a-Trifluorotoluene	100.		% Rec.	8260B	06/24/12	1
4-Bromofluorobenzene	99.1		% Rec.	8260B	06/24/12	1
TPH (GC/FID) High Fraction	110	100	ug/l	DROWM / 80	06/30/12	1
Surrogate recovery(%)						
Triacontane	65.8		% Rec.	DROWM / 80	06/30/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

Reported: 07/05/12 20:10 Revised: 07/06/12 09:31

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Tax I.D. 62-0814289

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REPORT OF ANALYSIS

Chris Loch
Carlson McCain
248 Apollo Dr: Suite 100
Lino Lakes, MN 55014

July 06,2012

ESC Sample # : L581933-03

Date Received : June 23, 2012
Description : Sinclair #22020

Site ID : MAPLEWOOD, MN

Sample ID : MW-3

Project # : 3327

Collected By : Aric Olsen
Collection Date : 06/22/12 10:24

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
WI DNR						
Gasoline (C6-C10)	BDL	100	ug/l	GROWM/8015	06/24/12	1
Surrogate recovery-%						
a,a,a-Trifluorotoluene(PID)	101.		% Rec.	8021	06/24/12	1
Volatile Organics						
Acetone	BDL	50.	ug/l	8260B	06/25/12	1
Acrolein	BDL	50.	ug/l	8260B	06/25/12	1
Acrylonitrile	BDL	10.	ug/l	8260B	06/25/12	1
Allyl chloride	BDL	5.0	ug/l	8260B	06/25/12	1
Benzene	BDL	1.0	ug/l	8260B	06/25/12	1
Bromobenzene	BDL	1.0	ug/l	8260B	06/25/12	1
Bromodichloromethane	BDL	1.0	ug/l	8260B	06/25/12	1
Bromoform	BDL	1.0	ug/l	8260B	06/25/12	1
Bromomethane	BDL	5.0	ug/l	8260B	06/25/12	1
n-Butylbenzene	BDL	1.0	ug/l	8260B	06/25/12	1
sec-Butylbenzene	BDL	1.0	ug/l	8260B	06/25/12	1
tert-Butylbenzene	BDL	1.0	ug/l	8260B	06/25/12	1
Carbon tetrachloride	BDL	1.0	ug/l	8260B	06/25/12	1
Chlorobenzene	BDL	1.0	ug/l	8260B	06/25/12	1
Chlorodibromomethane	BDL	1.0	ug/l	8260B	06/25/12	1
Chloroethane	BDL	5.0	ug/l	8260B	06/25/12	1
2-Chloroethyl vinyl ether	BDL	50.	ug/l	8260B	06/25/12	1
Chloroform	BDL	5.0	ug/l	8260B	06/25/12	1
Chloromethane	BDL	2.5	ug/l	8260B	06/25/12	1
2-Chlorotoluene	BDL	1.0	ug/l	8260B	06/25/12	1
4-Chlorotoluene	BDL	1.0	ug/l	8260B	06/25/12	1
1,2-Dibromo-3-Chloropropane	BDL	5.0	ug/l	8260B	06/25/12	1
1,2-Dibromoethane	BDL	1.0	ug/l	8260B	06/25/12	1
Dibromomethane	BDL	1.0	ug/l	8260B	06/25/12	1
1,2-Dichlorobenzene	BDL	1.0	ug/l	8260B	06/25/12	1
1,3-Dichlorobenzene	BDL	1.0	ug/l	8260B	06/25/12	1
1,4-Dichlorobenzene	BDL	1.0	ug/l	8260B	06/25/12	1
Dichlorodifluoromethane	BDL	5.0	ug/l	8260B	06/25/12	1
Dichlorofluoromethane	BDL	5.0	ug/l	8260B	06/25/12	1
1,1-Dichloroethane	BDL	1.0	ug/l	8260B	06/25/12	1
1,2-Dichloroethane	BDL	1.0	ug/l	8260B	06/25/12	1
1,1-Dichloroethene	BDL	1.0	ug/l	8260B	06/25/12	1
cis-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	06/25/12	1
trans-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	06/25/12	1
1,2-Dichloropropane	BDL	1.0	ug/l	8260B	06/25/12	1
1,1-Dichloropropene	BDL	1.0	ug/l	8260B	06/25/12	1
1,3-Dichloropropane	BDL	1.0	ug/l	8260B	06/25/12	1
cis-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	06/25/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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Tax I.D. 62-0814289

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REPORT OF ANALYSIS

July 06,2012

Chris Loch
Carlson McCain
248 Apollo Dr: Suite 100
Lino Lakes, MN 55014

ESC Sample # : L581933-03

Date Received : June 23, 2012
Description : Sinclair #22020

Site ID : MAPLEWOOD, MN

Sample ID : MW-3

Project # : 3327

Collected By : Aric Olsen
Collection Date : 06/22/12 10:24

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
trans-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	06/25/12	1
2,2-Dichloropropane	BDL	1.0	ug/l	8260B	06/25/12	1
Di-isopropyl ether	BDL	1.0	ug/l	8260B	06/25/12	1
Ethylbenzene	BDL	1.0	ug/l	8260B	06/25/12	1
Ethyl ether	BDL	1.0	ug/l	8260B	06/25/12	1
Hexachloro-1,3-butadiene	BDL	1.0	ug/l	8260B	06/25/12	1
Isopropylbenzene	BDL	1.0	ug/l	8260B	06/25/12	1
p-Isopropyltoluene	BDL	1.0	ug/l	8260B	06/25/12	1
2-Butanone (MEK)	BDL	10.	ug/l	8260B	06/25/12	1
Methylene Chloride	BDL	5.0	ug/l	8260B	06/25/12	1
2-Hexanone	BDL	10.	ug/l	8260B	06/25/12	1
4-Methyl-2-pentanone (MIBK)	BDL	10.	ug/l	8260B	06/25/12	1
Methyl tert-butyl ether	BDL	1.0	ug/l	8260B	06/25/12	1
Naphthalene	BDL	5.0	ug/l	8260B	06/25/12	1
n-Propylbenzene	BDL	1.0	ug/l	8260B	06/25/12	1
Styrene	BDL	1.0	ug/l	8260B	06/25/12	1
1,1,1,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	06/25/12	1
1,1,2,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	06/25/12	1
1,1,2-Trichlorotrifluoroethane	BDL	1.0	ug/l	8260B	06/25/12	1
Tetrachloroethene	BDL	1.0	ug/l	8260B	06/25/12	1
Tetrahydrofuran	BDL	5.0	ug/l	8260B	06/25/12	1
Toluene	BDL	5.0	ug/l	8260B	06/25/12	1
1,2,3-Trichlorobenzene	BDL	1.0	ug/l	8260B	06/25/12	1
1,2,4-Trichlorobenzene	BDL	1.0	ug/l	8260B	06/25/12	1
1,1,1-Trichloroethane	BDL	1.0	ug/l	8260B	06/25/12	1
1,1,2-Trichloroethane	BDL	1.0	ug/l	8260B	06/25/12	1
Trichloroethene	BDL	1.0	ug/l	8260B	06/25/12	1
Trichlorofluoromethane	BDL	5.0	ug/l	8260B	06/25/12	1
1,2,3-Trichloropropane	BDL	2.5	ug/l	8260B	06/25/12	1
1,2,4-Trimethylbenzene	BDL	1.0	ug/l	8260B	06/25/12	1
1,2,3-Trimethylbenzene	BDL	1.0	ug/l	8260B	06/25/12	1
1,3,5-Trimethylbenzene	BDL	1.0	ug/l	8260B	06/25/12	1
Vinyl chloride	BDL	1.0	ug/l	8260B	06/25/12	1
Xylenes, Total	BDL	3.0	ug/l	8260B	06/25/12	1
Surrogate Recovery						
Toluene-d8	102.		% Rec.	8260B	06/25/12	1
Dibromofluoromethane	115.		% Rec.	8260B	06/25/12	1
a,a,a-Trifluorotoluene	106.		% Rec.	8260B	06/25/12	1
4-Bromofluorobenzene	100.		% Rec.	8260B	06/25/12	1
TPH (GC/FID) High Fraction	BDL	100	ug/l	DROWM / 80	06/30/12	1
Surrogate recovery(%)						
Triacontane	60.0		% Rec.	DROWM / 80	06/30/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

Reported: 07/05/12 20:10 Revised: 07/06/12 09:31

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REPORT OF ANALYSIS

Chris Loch
Carlson McCain
248 Apollo Dr: Suite 100
Lino Lakes, MN 55014

July 06,2012

ESC Sample # : L581933-04

Date Received : June 23, 2012
Description : Sinclair #22020

Site ID : MAPLEWOOD, MN

Sample ID : DUPLICATE

Project # : 3327

Collected By : Aric Olsen
Collection Date : 06/22/12 09:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
WI DNR						
Gasoline (C6-C10)	23000	5000	ug/l	GROWM/8015	06/24/12	50
Surrogate recovery-%						
a,a,a-Trifluorotoluene(PID)	99.2		% Rec.	8021	06/24/12	50
Volatile Organics						
Acetone	BDL	2500	ug/l	8260B	06/25/12	50
Acrolein	BDL	2500	ug/l	8260B	06/25/12	50
Acrylonitrile	BDL	500	ug/l	8260B	06/25/12	50
Allyl chloride	BDL	250	ug/l	8260B	06/25/12	50
Benzene	5000	50.	ug/l	8260B	06/25/12	50
Bromobenzene	BDL	50.	ug/l	8260B	06/25/12	50
Bromodichloromethane	BDL	50.	ug/l	8260B	06/25/12	50
Bromoform	BDL	50.	ug/l	8260B	06/25/12	50
Bromomethane	BDL	250	ug/l	8260B	06/25/12	50
n-Butylbenzene	BDL	50.	ug/l	8260B	06/25/12	50
sec-Butylbenzene	BDL	50.	ug/l	8260B	06/25/12	50
tert-Butylbenzene	150	50.	ug/l	8260B	06/25/12	50
Carbon tetrachloride	BDL	50.	ug/l	8260B	06/25/12	50
Chlorobenzene	BDL	50.	ug/l	8260B	06/25/12	50
Chlorodibromomethane	BDL	50.	ug/l	8260B	06/25/12	50
Chloroethane	BDL	250	ug/l	8260B	06/25/12	50
2-Chloroethyl vinyl ether	BDL	2500	ug/l	8260B	06/25/12	50
Chloroform	BDL	250	ug/l	8260B	06/25/12	50
Chloromethane	BDL	120	ug/l	8260B	06/25/12	50
2-Chlorotoluene	BDL	50.	ug/l	8260B	06/25/12	50
4-Chlorotoluene	BDL	50.	ug/l	8260B	06/25/12	50
1,2-Dibromo-3-Chloropropane	BDL	250	ug/l	8260B	06/25/12	50
1,2-Dibromoethane	BDL	50.	ug/l	8260B	06/25/12	50
Dibromomethane	BDL	50.	ug/l	8260B	06/25/12	50
1,2-Dichlorobenzene	BDL	50.	ug/l	8260B	06/25/12	50
1,3-Dichlorobenzene	BDL	50.	ug/l	8260B	06/25/12	50
1,4-Dichlorobenzene	BDL	50.	ug/l	8260B	06/25/12	50
Dichlorodifluoromethane	BDL	250	ug/l	8260B	06/25/12	50
Dichlorofluoromethane	BDL	250	ug/l	8260B	06/25/12	50
1,1-Dichloroethane	BDL	50.	ug/l	8260B	06/25/12	50
1,2-Dichloroethane	BDL	50.	ug/l	8260B	06/25/12	50
1,1-Dichloroethene	BDL	50.	ug/l	8260B	06/25/12	50
cis-1,2-Dichloroethene	BDL	50.	ug/l	8260B	06/25/12	50
trans-1,2-Dichloroethene	BDL	50.	ug/l	8260B	06/25/12	50
1,2-Dichloropropane	BDL	50.	ug/l	8260B	06/25/12	50
1,1-Dichloropropene	BDL	50.	ug/l	8260B	06/25/12	50
1,3-Dichloropropane	BDL	50.	ug/l	8260B	06/25/12	50
cis-1,3-Dichloropropene	BDL	50.	ug/l	8260B	06/25/12	50

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

July 06,2012

Chris Loch
Carlson McCain
248 Apollo Dr: Suite 100
Lino Lakes, MN 55014

ESC Sample # : L581933-04

Date Received : June 23, 2012
Description : Sinclair #22020

Site ID : MAPLEWOOD, MN

Sample ID : DUPLICATE

Project # : 3327

Collected By : Aric Olsen
Collection Date : 06/22/12 09:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
trans-1,3-Dichloropropene	BDL	50.	ug/l	8260B	06/25/12	50
2,2-Dichloropropane	BDL	50.	ug/l	8260B	06/25/12	50
Di-isopropyl ether	BDL	50.	ug/l	8260B	06/25/12	50
Ethylbenzene	1100	50.	ug/l	8260B	06/25/12	50
Ethyl ether	BDL	50.	ug/l	8260B	06/25/12	50
Hexachloro-1,3-butadiene	BDL	50.	ug/l	8260B	06/25/12	50
Isopropylbenzene	BDL	50.	ug/l	8260B	06/25/12	50
p-Isopropyltoluene	BDL	50.	ug/l	8260B	06/25/12	50
2-Butanone (MEK)	BDL	500	ug/l	8260B	06/25/12	50
Methylene Chloride	BDL	250	ug/l	8260B	06/25/12	50
2-Hexanone	BDL	500	ug/l	8260B	06/25/12	50
4-Methyl-2-pentanone (MIBK)	BDL	500	ug/l	8260B	06/25/12	50
Methyl tert-butyl ether	BDL	50.	ug/l	8260B	06/25/12	50
Naphthalene	340	250	ug/l	8260B	06/25/12	50
n-Propylbenzene	100	50.	ug/l	8260B	06/25/12	50
Styrene	BDL	50.	ug/l	8260B	06/25/12	50
1,1,1,2-Tetrachloroethane	BDL	50.	ug/l	8260B	06/25/12	50
1,1,2,2-Tetrachloroethane	BDL	50.	ug/l	8260B	06/25/12	50
1,1,2-Trichlorotrifluoroethane	BDL	50.	ug/l	8260B	06/25/12	50
Tetrachloroethene	BDL	50.	ug/l	8260B	06/25/12	50
Tetrahydrofuran	BDL	250	ug/l	8260B	06/25/12	50
Toluene	1400	250	ug/l	8260B	06/25/12	50
1,2,3-Trichlorobenzene	BDL	50.	ug/l	8260B	06/25/12	50
1,2,4-Trichlorobenzene	BDL	50.	ug/l	8260B	06/25/12	50
1,1,1-Trichloroethane	BDL	50.	ug/l	8260B	06/25/12	50
1,1,2-Trichloroethane	BDL	50.	ug/l	8260B	06/25/12	50
Trichloroethene	BDL	50.	ug/l	8260B	06/25/12	50
Trichlorofluoromethane	BDL	250	ug/l	8260B	06/25/12	50
1,2,3-Trichloropropane	BDL	120	ug/l	8260B	06/25/12	50
1,2,4-Trimethylbenzene	990	50.	ug/l	8260B	06/25/12	50
1,2,3-Trimethylbenzene	240	50.	ug/l	8260B	06/25/12	50
1,3,5-Trimethylbenzene	240	50.	ug/l	8260B	06/25/12	50
Vinyl chloride	BDL	50.	ug/l	8260B	06/25/12	50
Xylenes, Total	4200	150	ug/l	8260B	06/25/12	50
Surrogate Recovery						
Toluene-d8	103.		% Rec.	8260B	06/25/12	50
Dibromofluoromethane	103.		% Rec.	8260B	06/25/12	50
a,a,a-Trifluorotoluene	105.		% Rec.	8260B	06/25/12	50
4-Bromofluorobenzene	101.		% Rec.	8260B	06/25/12	50
TPH (GC/FID) High Fraction	5400	500	ug/l	DROWM / 80	07/05/12	5
Surrogate recovery(%)						
Triacontane	73.8		% Rec.	DROWM / 80	07/05/12	5

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

Reported: 07/05/12 20:10 Revised: 07/06/12 09:31

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REPORT OF ANALYSIS

Chris Loch
Carlson McCain
248 Apollo Dr: Suite 100
Lino Lakes, MN 55014

July 06,2012

ESC Sample # : L581933-05

Site ID : MAPLEWOOD, MN

Project # : 3327

Date Received : June 23, 2012
Description : Sinclair #22020

Sample ID : TRIP BLANK

Collected By : Aric Olsen
Collection Date : 06/22/12 07:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	50.	ug/l	8260B	06/24/12	1
Acrolein	BDL	50.	ug/l	8260B	06/24/12	1
Acrylonitrile	BDL	10.	ug/l	8260B	06/24/12	1
Allyl chloride	BDL	5.0	ug/l	8260B	06/24/12	1
Benzene	BDL	1.0	ug/l	8260B	06/24/12	1
Bromobenzene	BDL	1.0	ug/l	8260B	06/24/12	1
Bromodichloromethane	BDL	1.0	ug/l	8260B	06/24/12	1
Bromoform	BDL	1.0	ug/l	8260B	06/24/12	1
Bromomethane	BDL	5.0	ug/l	8260B	06/24/12	1
n-Butylbenzene	BDL	1.0	ug/l	8260B	06/24/12	1
sec-Butylbenzene	BDL	1.0	ug/l	8260B	06/24/12	1
tert-Butylbenzene	BDL	1.0	ug/l	8260B	06/24/12	1
Carbon tetrachloride	BDL	1.0	ug/l	8260B	06/24/12	1
Chlorobenzene	BDL	1.0	ug/l	8260B	06/24/12	1
Chlorodibromomethane	BDL	1.0	ug/l	8260B	06/24/12	1
Chloroethane	BDL	5.0	ug/l	8260B	06/24/12	1
2-Chloroethyl vinyl ether	BDL	50.	ug/l	8260B	06/24/12	1
Chloroform	BDL	5.0	ug/l	8260B	06/24/12	1
Chloromethane	BDL	2.5	ug/l	8260B	06/24/12	1
2-Chlorotoluene	BDL	1.0	ug/l	8260B	06/24/12	1
4-Chlorotoluene	BDL	1.0	ug/l	8260B	06/24/12	1
1,2-Dibromo-3-Chloropropane	BDL	5.0	ug/l	8260B	06/24/12	1
1,2-Dibromoethane	BDL	1.0	ug/l	8260B	06/24/12	1
Dibromomethane	BDL	1.0	ug/l	8260B	06/24/12	1
1,2-Dichlorobenzene	BDL	1.0	ug/l	8260B	06/24/12	1
1,3-Dichlorobenzene	BDL	1.0	ug/l	8260B	06/24/12	1
1,4-Dichlorobenzene	BDL	1.0	ug/l	8260B	06/24/12	1
Dichlorodifluoromethane	BDL	5.0	ug/l	8260B	06/24/12	1
Dichlorofluoromethane	BDL	5.0	ug/l	8260B	06/24/12	1
1,1-Dichloroethane	BDL	1.0	ug/l	8260B	06/24/12	1
1,2-Dichloroethane	BDL	1.0	ug/l	8260B	06/24/12	1
1,1-Dichloroethene	BDL	1.0	ug/l	8260B	06/24/12	1
cis-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	06/24/12	1
trans-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	06/24/12	1
1,2-Dichloropropane	BDL	1.0	ug/l	8260B	06/24/12	1
1,1-Dichloropropene	BDL	1.0	ug/l	8260B	06/24/12	1
1,3-Dichloropropane	BDL	1.0	ug/l	8260B	06/24/12	1
cis-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	06/24/12	1
trans-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	06/24/12	1
2,2-Dichloropropane	BDL	1.0	ug/l	8260B	06/24/12	1
Di-isopropyl ether	BDL	1.0	ug/l	8260B	06/24/12	1
Ethylbenzene	BDL	1.0	ug/l	8260B	06/24/12	1
Ethyl ether	BDL	1.0	ug/l	8260B	06/24/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

July 06,2012

Chris Loch
Carlson McCain
248 Apollo Dr: Suite 100
Lino Lakes, MN 55014

ESC Sample # : L581933-05

Date Received : June 23, 2012
Description : Sinclair #22020

Site ID : MAPLEWOOD, MN

Sample ID : TRIP BLANK

Project # : 3327

Collected By : Aric Olsen
Collection Date : 06/22/12 07:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Hexachloro-1,3-butadiene	BDL	1.0	ug/l	8260B	06/24/12	1
Isopropylbenzene	BDL	1.0	ug/l	8260B	06/24/12	1
p-Isopropyltoluene	BDL	1.0	ug/l	8260B	06/24/12	1
2-Butanone (MEK)	BDL	10.	ug/l	8260B	06/24/12	1
Methylene Chloride	BDL	5.0	ug/l	8260B	06/24/12	1
2-Hexanone	BDL	10.	ug/l	8260B	06/24/12	1
4-Methyl-2-pentanone (MIBK)	BDL	10.	ug/l	8260B	06/24/12	1
Methyl tert-butyl ether	BDL	1.0	ug/l	8260B	06/24/12	1
Naphthalene	BDL	5.0	ug/l	8260B	06/24/12	1
n-Propylbenzene	BDL	1.0	ug/l	8260B	06/24/12	1
Styrene	BDL	1.0	ug/l	8260B	06/24/12	1
1,1,1,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	06/24/12	1
1,1,2,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	06/24/12	1
1,1,2-Trichlorotrifluoroethane	BDL	1.0	ug/l	8260B	06/24/12	1
Tetrachloroethene	BDL	1.0	ug/l	8260B	06/24/12	1
Tetrahydrofuran	BDL	5.0	ug/l	8260B	06/24/12	1
Toluene	BDL	5.0	ug/l	8260B	06/24/12	1
1,2,3-Trichlorobenzene	BDL	1.0	ug/l	8260B	06/24/12	1
1,2,4-Trichlorobenzene	BDL	1.0	ug/l	8260B	06/24/12	1
1,1,1-Trichloroethane	BDL	1.0	ug/l	8260B	06/24/12	1
1,1,2-Trichloroethane	BDL	1.0	ug/l	8260B	06/24/12	1
Trichloroethene	BDL	1.0	ug/l	8260B	06/24/12	1
Trichlorofluoromethane	BDL	5.0	ug/l	8260B	06/24/12	1
1,2,3-Trichloropropane	BDL	2.5	ug/l	8260B	06/24/12	1
1,2,4-Trimethylbenzene	BDL	1.0	ug/l	8260B	06/24/12	1
1,2,3-Trimethylbenzene	BDL	1.0	ug/l	8260B	06/24/12	1
1,3,5-Trimethylbenzene	BDL	1.0	ug/l	8260B	06/24/12	1
Vinyl chloride	BDL	1.0	ug/l	8260B	06/24/12	1
Xylenes, Total	BDL	3.0	ug/l	8260B	06/24/12	1
Surrogate Recovery						
Toluene-d8	95.7		% Rec.	8260B	06/24/12	1
Dibromofluoromethane	95.9		% Rec.	8260B	06/24/12	1
a,a,a-Trifluorotoluene	96.8		% Rec.	8260B	06/24/12	1
4-Bromofluorobenzene	95.3		% Rec.	8260B	06/24/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

Reported: 07/05/12 20:10 Revised: 07/06/12 09:31

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L581933-01	WG599524	SAMP	2-Chloroethyl vinyl ether	R2224515	J3
	WG599681	SAMP	TPH (GC/FID) High Fraction	R2240693	J4
L581933-02	WG599524	SAMP	2-Chloroethyl vinyl ether	R2224515	J6J3
	WG599681	SAMP	TPH (GC/FID) High Fraction	R2240693	J4
L581933-03	WG599681	SAMP	TPH (GC/FID) High Fraction	R2240693	J4
L581933-04	WG599681	SAMP	TPH (GC/FID) High Fraction	R2240693	J4
L581933-05	WG599524	SAMP	2-Chloroethyl vinyl ether	R2224515	J3

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Company Name/Address:	Billing Information:	Analysis/Container/Preservative	Chain of Custody Page 1 of 1
Carlson McCain, Inc. 248 Apollo Dr., Suite 100 Lino Lakes, MN 55014	Same	1154	ESC LAB SCIENCES 12065 Lebanon Road Mt. Juliet, TN 37122 Phone: (800) 767-5859 Phone: (615) 758-5858 Fax: (615) 758-5859

Report to: Chris Loch
Email to: cloch@carlsonmccain.com

Project Description: Sinclair 22020
City/State Collected: Maplewood, MN

Phone: 763-489-7900
FAX:
Client Project #: 3327
ESC Key:

Collected by: (print) Aric Olsen
Site/Facility ID#:
P.O.#:

Collected by (signature): [signature]
Immediately Packed on Ice N___ Y X

Rush? (Lab MUST Be Notified)
____ Same Day.......200%
____ Next Day........100%
____ Two Day.........50%
____ Three Day.......25%

Date Results Needed: Standard TAT
Email? __No X Yes
FAX? X No __Yes

CoCode (lab use only)
Template/Prelogin
Shipped Via: L581933

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	DRO	GRO	VOCs				Remarks/Contaminant	Sample # (lab only)
MW-1	Grab	GW	–	6-22-12	1138	6	X	X	X					L581933-01
MW-2	Grab	GW	–	6-22-12	1104	6	X	X	X					02
MW-3	Grab	GW	–	6-22-12	1024	6	X	X	X				Petro. Odor	03
DUPLICATE	Grab	GW	–	6-22-12	0900	6	X	X	X					04
Trip Blank	–	–	–	6-22-12	0700	1			X					05

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other________

pH ________ Temp ________

Remarks: 4963 4593 3545

Flow ________ Other ________

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☑ FedEx ☐ Courier ☐	Condition: (lab use only)
[signature]	6-22-12	1630			
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 2.5°C / Bottles Received: 25	CoC Seals Intact ___Y ___N ___NA
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature) [signature]	Date: 6-23-12 / Time: 0900	pH Checked: / NCF:

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Tax I.D. 62-0814289

Est. 1970

Chris Loch
Carlson McCain
PO Box 429
Maple Plain, MN 55359

Report Summary

Thursday August 30, 2012

Report Number: L591347
Samples Received: 08/22/12
Client Project: 3327

Description: Sinclair Station #22020

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By: John Hawkins

John Hawkins , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.
Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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REPORT OF ANALYSIS

Chris Loch
Carlson McCain
PO Box 429
Maple Plain, MN 55359

August 30,2012

ESC Sample # : L591347-01

Site ID :

Project # : 3327

Date Received : August 22, 2012
Description : Sinclair Station #22020

Sample ID : MW-1

Collected By : Aric Olsen
Collection Date : 08/20/12 14:02

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
WI DNR						
Gasoline (C6-C10)	28000	2000	ug/l	GROWM/8015	08/22/12	20
Surrogate recovery-%						
a,a,a-Trifluorotoluene(PID)	105.		% Rec.	8021	08/22/12	20
Volatile Organics						
Acetone	BDL	2500	ug/l	8260B	08/22/12	50
Acrolein	BDL	2500	ug/l	8260B	08/22/12	50
Acrylonitrile	BDL	500	ug/l	8260B	08/22/12	50
Allyl chloride	BDL	250	ug/l	8260B	08/22/12	50
Benzene	2800	50.	ug/l	8260B	08/22/12	50
Bromobenzene	BDL	50.	ug/l	8260B	08/22/12	50
Bromodichloromethane	BDL	50.	ug/l	8260B	08/22/12	50
Bromoform	BDL	50.	ug/l	8260B	08/22/12	50
Bromomethane	BDL	250	ug/l	8260B	08/22/12	50
n-Butylbenzene	BDL	50.	ug/l	8260B	08/22/12	50
sec-Butylbenzene	BDL	50.	ug/l	8260B	08/22/12	50
tert-Butylbenzene	BDL	50.	ug/l	8260B	08/22/12	50
Carbon tetrachloride	BDL	50.	ug/l	8260B	08/22/12	50
Chlorobenzene	BDL	50.	ug/l	8260B	08/22/12	50
Chlorodibromomethane	BDL	50.	ug/l	8260B	08/22/12	50
Chloroethane	BDL	250	ug/l	8260B	08/22/12	50
2-Chloroethyl vinyl ether	BDL	2500	ug/l	8260B	08/22/12	50
Chloroform	BDL	250	ug/l	8260B	08/22/12	50
Chloromethane	BDL	120	ug/l	8260B	08/22/12	50
2-Chlorotoluene	BDL	50.	ug/l	8260B	08/22/12	50
4-Chlorotoluene	BDL	50.	ug/l	8260B	08/22/12	50
1,2-Dibromo-3-Chloropropane	BDL	250	ug/l	8260B	08/22/12	50
1,2-Dibromoethane	BDL	50.	ug/l	8260B	08/22/12	50
Dibromomethane	BDL	50.	ug/l	8260B	08/22/12	50
1,2-Dichlorobenzene	BDL	50.	ug/l	8260B	08/22/12	50
1,3-Dichlorobenzene	BDL	50.	ug/l	8260B	08/22/12	50
1,4-Dichlorobenzene	BDL	50.	ug/l	8260B	08/22/12	50
Dichlorodifluoromethane	BDL	250	ug/l	8260B	08/22/12	50
Dichlorofluoromethane	BDL	250	ug/l	8260B	08/22/12	50
1,1-Dichloroethane	BDL	50.	ug/l	8260B	08/22/12	50
1,2-Dichloroethane	BDL	50.	ug/l	8260B	08/22/12	50
1,1-Dichloroethene	BDL	50.	ug/l	8260B	08/22/12	50
cis-1,2-Dichloroethene	BDL	50.	ug/l	8260B	08/22/12	50
trans-1,2-Dichloroethene	BDL	50.	ug/l	8260B	08/22/12	50
1,2-Dichloropropane	BDL	50.	ug/l	8260B	08/22/12	50
1,1-Dichloropropene	BDL	50.	ug/l	8260B	08/22/12	50
1,3-Dichloropropane	BDL	50.	ug/l	8260B	08/22/12	50
cis-1,3-Dichloropropene	BDL	50.	ug/l	8260B	08/22/12	50

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Chris Loch
Carlson McCain
PO Box 429
Maple Plain, MN 55359

August 30,2012

ESC Sample # : L591347-01

Site ID :

Project # : 3327

Date Received : August 22, 2012
Description : Sinclair Station #22020

Sample ID : MW-1

Collected By : Aric Olsen
Collection Date : 08/20/12 14:02

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
trans-1,3-Dichloropropene	BDL	50.	ug/l	8260B	08/22/12	50
2,2-Dichloropropane	BDL	50.	ug/l	8260B	08/22/12	50
Di-isopropyl ether	BDL	50.	ug/l	8260B	08/22/12	50
Ethylbenzene	1200	50.	ug/l	8260B	08/22/12	50
Ethyl ether	BDL	50.	ug/l	8260B	08/22/12	50
Hexachloro-1,3-butadiene	BDL	50.	ug/l	8260B	08/22/12	50
Isopropylbenzene	58.	50.	ug/l	8260B	08/22/12	50
p-Isopropyltoluene	BDL	50.	ug/l	8260B	08/22/12	50
2-Butanone (MEK)	BDL	500	ug/l	8260B	08/22/12	50
Methylene Chloride	BDL	250	ug/l	8260B	08/22/12	50
2-Hexanone	BDL	500	ug/l	8260B	08/22/12	50
4-Methyl-2-pentanone (MIBK)	BDL	500	ug/l	8260B	08/22/12	50
Methyl tert-butyl ether	BDL	50.	ug/l	8260B	08/22/12	50
Naphthalene	870	250	ug/l	8260B	08/22/12	50
n-Propylbenzene	150	50.	ug/l	8260B	08/22/12	50
Styrene	BDL	50.	ug/l	8260B	08/22/12	50
1,1,1,2-Tetrachloroethane	BDL	50.	ug/l	8260B	08/22/12	50
1,1,2,2-Tetrachloroethane	BDL	50.	ug/l	8260B	08/22/12	50
1,1,2-Trichlorotrifluoroethane	BDL	50.	ug/l	8260B	08/22/12	50
Tetrachloroethene	BDL	50.	ug/l	8260B	08/22/12	50
Tetrahydrofuran	BDL	250	ug/l	8260B	08/22/12	50
Toluene	1300	250	ug/l	8260B	08/22/12	50
1,2,3-Trichlorobenzene	BDL	50.	ug/l	8260B	08/22/12	50
1,2,4-Trichlorobenzene	BDL	50.	ug/l	8260B	08/22/12	50
1,1,1-Trichloroethane	BDL	50.	ug/l	8260B	08/22/12	50
1,1,2-Trichloroethane	BDL	50.	ug/l	8260B	08/22/12	50
Trichloroethene	BDL	50.	ug/l	8260B	08/22/12	50
Trichlorofluoromethane	BDL	250	ug/l	8260B	08/22/12	50
1,2,3-Trichloropropane	BDL	120	ug/l	8260B	08/22/12	50
1,2,4-Trimethylbenzene	2800	50.	ug/l	8260B	08/22/12	50
1,2,3-Trimethylbenzene	720	50.	ug/l	8260B	08/22/12	50
1,3,5-Trimethylbenzene	740	50.	ug/l	8260B	08/22/12	50
Vinyl chloride	BDL	50.	ug/l	8260B	08/22/12	50
Xylenes, Total	9600	150	ug/l	8260B	08/22/12	50
Surrogate Recovery						
Toluene-d8	103.		% Rec.	8260B	08/22/12	50
Dibromofluoromethane	102.		% Rec.	8260B	08/22/12	50
a,a,a-Trifluorotoluene	104.		% Rec.	8260B	08/22/12	50
4-Bromofluorobenzene	111.		% Rec.	8260B	08/22/12	50
TPH (GC/FID) High Fraction	11000	500	ug/l	DROWM/8015	08/29/12	5
Surrogate recovery(%)						
Triacontane	102.		% Rec.	DROWM/8015	08/29/12	5

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

Reported: 08/30/12 11:38 Printed: 08/30/12 11:39

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REPORT OF ANALYSIS

Chris Loch
Carlson McCain
PO Box 429
Maple Plain, MN 55359

August 30,2012

ESC Sample # : L591347-02

Site ID :

Project # : 3327

Date Received : August 22, 2012
Description : Sinclair Station #22020

Sample ID : MW-2

Collected By : Aric Olsen
Collection Date : 08/20/12 13:28

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
WI DNR						
Gasoline (C6-C10)	BDL	100	ug/l	GROWM/8015	08/22/12	1
Surrogate recovery-%						
a,a,a-Trifluorotoluene(PID)	103.		% Rec.	8021	08/22/12	1
Volatile Organics						
Acetone	BDL	50.	ug/l	8260B	08/22/12	1
Acrolein	BDL	50.	ug/l	8260B	08/22/12	1
Acrylonitrile	BDL	10.	ug/l	8260B	08/22/12	1
Allyl chloride	BDL	5.0	ug/l	8260B	08/22/12	1
Benzene	BDL	1.0	ug/l	8260B	08/22/12	1
Bromobenzene	BDL	1.0	ug/l	8260B	08/22/12	1
Bromodichloromethane	BDL	1.0	ug/l	8260B	08/22/12	1
Bromoform	BDL	1.0	ug/l	8260B	08/22/12	1
Bromomethane	BDL	5.0	ug/l	8260B	08/22/12	1
n-Butylbenzene	BDL	1.0	ug/l	8260B	08/22/12	1
sec-Butylbenzene	BDL	1.0	ug/l	8260B	08/22/12	1
tert-Butylbenzene	BDL	1.0	ug/l	8260B	08/22/12	1
Carbon tetrachloride	BDL	1.0	ug/l	8260B	08/22/12	1
Chlorobenzene	BDL	1.0	ug/l	8260B	08/22/12	1
Chlorodibromomethane	BDL	1.0	ug/l	8260B	08/22/12	1
Chloroethane	BDL	5.0	ug/l	8260B	08/22/12	1
2-Chloroethyl vinyl ether	BDL	50.	ug/l	8260B	08/22/12	1
Chloroform	BDL	5.0	ug/l	8260B	08/22/12	1
Chloromethane	BDL	2.5	ug/l	8260B	08/22/12	1
2-Chlorotoluene	BDL	1.0	ug/l	8260B	08/22/12	1
4-Chlorotoluene	BDL	1.0	ug/l	8260B	08/22/12	1
1,2-Dibromo-3-Chloropropane	BDL	5.0	ug/l	8260B	08/22/12	1
1,2-Dibromoethane	BDL	1.0	ug/l	8260B	08/22/12	1
Dibromomethane	BDL	1.0	ug/l	8260B	08/22/12	1
1,2-Dichlorobenzene	BDL	1.0	ug/l	8260B	08/22/12	1
1,3-Dichlorobenzene	BDL	1.0	ug/l	8260B	08/22/12	1
1,4-Dichlorobenzene	BDL	1.0	ug/l	8260B	08/22/12	1
Dichlorodifluoromethane	BDL	5.0	ug/l	8260B	08/22/12	1
Dichlorofluoromethane	BDL	5.0	ug/l	8260B	08/22/12	1
1,1-Dichloroethane	BDL	1.0	ug/l	8260B	08/22/12	1
1,2-Dichloroethane	BDL	1.0	ug/l	8260B	08/22/12	1
1,1-Dichloroethene	BDL	1.0	ug/l	8260B	08/22/12	1
cis-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	08/22/12	1
trans-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	08/22/12	1
1,2-Dichloropropane	BDL	1.0	ug/l	8260B	08/22/12	1
1,1-Dichloropropene	BDL	1.0	ug/l	8260B	08/22/12	1
1,3-Dichloropropane	BDL	1.0	ug/l	8260B	08/22/12	1
cis-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	08/22/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Chris Loch
Carlson McCain
PO Box 429
Maple Plain, MN 55359

August 30,2012

ESC Sample # : L591347-02

Site ID :

Project # : 3327

Date Received : August 22, 2012
Description : Sinclair Station #22020

Sample ID : MW-2

Collected By : Aric Olsen
Collection Date : 08/20/12 13:28

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
trans-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	08/22/12	1
2,2-Dichloropropane	BDL	1.0	ug/l	8260B	08/22/12	1
Di-isopropyl ether	BDL	1.0	ug/l	8260B	08/22/12	1
Ethylbenzene	BDL	1.0	ug/l	8260B	08/22/12	1
Ethyl ether	BDL	1.0	ug/l	8260B	08/22/12	1
Hexachloro-1,3-butadiene	BDL	1.0	ug/l	8260B	08/22/12	1
Isopropylbenzene	BDL	1.0	ug/l	8260B	08/22/12	1
p-Isopropyltoluene	BDL	1.0	ug/l	8260B	08/22/12	1
2-Butanone (MEK)	BDL	10.	ug/l	8260B	08/22/12	1
Methylene Chloride	BDL	5.0	ug/l	8260B	08/22/12	1
2-Hexanone	BDL	10.	ug/l	8260B	08/22/12	1
4-Methyl-2-pentanone (MIBK)	BDL	10.	ug/l	8260B	08/22/12	1
Methyl tert-butyl ether	BDL	1.0	ug/l	8260B	08/22/12	1
Naphthalene	BDL	5.0	ug/l	8260B	08/22/12	1
n-Propylbenzene	BDL	1.0	ug/l	8260B	08/22/12	1
Styrene	BDL	1.0	ug/l	8260B	08/22/12	1
1,1,1,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	08/22/12	1
1,1,2,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	08/22/12	1
1,1,2-Trichlorotrifluoroethane	BDL	1.0	ug/l	8260B	08/22/12	1
Tetrachloroethene	BDL	1.0	ug/l	8260B	08/22/12	1
Tetrahydrofuran	BDL	5.0	ug/l	8260B	08/22/12	1
Toluene	BDL	5.0	ug/l	8260B	08/22/12	1
1,2,3-Trichlorobenzene	BDL	1.0	ug/l	8260B	08/22/12	1
1,2,4-Trichlorobenzene	BDL	1.0	ug/l	8260B	08/22/12	1
1,1,1-Trichloroethane	BDL	1.0	ug/l	8260B	08/22/12	1
1,1,2-Trichloroethane	BDL	1.0	ug/l	8260B	08/22/12	1
Trichloroethene	BDL	1.0	ug/l	8260B	08/22/12	1
Trichlorofluoromethane	BDL	5.0	ug/l	8260B	08/22/12	1
1,2,3-Trichloropropane	BDL	2.5	ug/l	8260B	08/22/12	1
1,2,4-Trimethylbenzene	BDL	1.0	ug/l	8260B	08/22/12	1
1,2,3-Trimethylbenzene	BDL	1.0	ug/l	8260B	08/22/12	1
1,3,5-Trimethylbenzene	BDL	1.0	ug/l	8260B	08/22/12	1
Vinyl chloride	BDL	1.0	ug/l	8260B	08/22/12	1
Xylenes, Total	BDL	3.0	ug/l	8260B	08/22/12	1
Surrogate Recovery						
Toluene-d8	105.		% Rec.	8260B	08/22/12	1
Dibromofluoromethane	106.		% Rec.	8260B	08/22/12	1
a,a,a-Trifluorotoluene	99.3		% Rec.	8260B	08/22/12	1
4-Bromofluorobenzene	107.		% Rec.	8260B	08/22/12	1
TPH (GC/FID) High Fraction	240	100	ug/l	DROWM/8015	08/29/12	1
Surrogate recovery(%)						
Triacontane	112.		% Rec.	DROWM/8015	08/29/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

Reported: 08/30/12 11:38 Printed: 08/30/12 11:39

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REPORT OF ANALYSIS

Chris Loch
Carlson McCain
PO Box 429
Maple Plain, MN 55359

August 30,2012

ESC Sample # : L591347-03

Site ID :

Project # : 3327

Date Received : August 22, 2012
Description : Sinclair Station #22020

Sample ID : MW-3

Collected By : Aric Olsen
Collection Date : 08/20/12 12:59

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
WI DNR						
Gasoline (C6-C10)	BDL	100	ug/l	GROWM/8015	08/22/12	1
Surrogate recovery-%						
a,a,a-Trifluorotoluene(PID)	102.		% Rec.	8021	08/22/12	1
Volatile Organics						
Acetone	BDL	50.	ug/l	8260B	08/22/12	1
Acrolein	BDL	50.	ug/l	8260B	08/22/12	1
Acrylonitrile	BDL	10.	ug/l	8260B	08/22/12	1
Allyl chloride	BDL	5.0	ug/l	8260B	08/22/12	1
Benzene	BDL	1.0	ug/l	8260B	08/22/12	1
Bromobenzene	BDL	1.0	ug/l	8260B	08/22/12	1
Bromodichloromethane	BDL	1.0	ug/l	8260B	08/22/12	1
Bromoform	BDL	1.0	ug/l	8260B	08/22/12	1
Bromomethane	BDL	5.0	ug/l	8260B	08/22/12	1
n-Butylbenzene	BDL	1.0	ug/l	8260B	08/22/12	1
sec-Butylbenzene	BDL	1.0	ug/l	8260B	08/22/12	1
tert-Butylbenzene	BDL	1.0	ug/l	8260B	08/22/12	1
Carbon tetrachloride	BDL	1.0	ug/l	8260B	08/22/12	1
Chlorobenzene	BDL	1.0	ug/l	8260B	08/22/12	1
Chlorodibromomethane	BDL	1.0	ug/l	8260B	08/22/12	1
Chloroethane	BDL	5.0	ug/l	8260B	08/22/12	1
2-Chloroethyl vinyl ether	BDL	50.	ug/l	8260B	08/22/12	1
Chloroform	BDL	5.0	ug/l	8260B	08/22/12	1
Chloromethane	BDL	2.5	ug/l	8260B	08/22/12	1
2-Chlorotoluene	BDL	1.0	ug/l	8260B	08/22/12	1
4-Chlorotoluene	BDL	1.0	ug/l	8260B	08/22/12	1
1,2-Dibromo-3-Chloropropane	BDL	5.0	ug/l	8260B	08/22/12	1
1,2-Dibromoethane	BDL	1.0	ug/l	8260B	08/22/12	1
Dibromomethane	BDL	1.0	ug/l	8260B	08/22/12	1
1,2-Dichlorobenzene	BDL	1.0	ug/l	8260B	08/22/12	1
1,3-Dichlorobenzene	BDL	1.0	ug/l	8260B	08/22/12	1
1,4-Dichlorobenzene	BDL	1.0	ug/l	8260B	08/22/12	1
Dichlorodifluoromethane	BDL	5.0	ug/l	8260B	08/22/12	1
Dichlorofluoromethane	BDL	5.0	ug/l	8260B	08/22/12	1
1,1-Dichloroethane	BDL	1.0	ug/l	8260B	08/22/12	1
1,2-Dichloroethane	BDL	1.0	ug/l	8260B	08/22/12	1
1,1-Dichloroethene	BDL	1.0	ug/l	8260B	08/22/12	1
cis-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	08/22/12	1
trans-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	08/22/12	1
1,2-Dichloropropane	BDL	1.0	ug/l	8260B	08/22/12	1
1,1-Dichloropropene	BDL	1.0	ug/l	8260B	08/22/12	1
1,3-Dichloropropane	BDL	1.0	ug/l	8260B	08/22/12	1
cis-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	08/22/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Chris Loch
Carlson McCain
PO Box 429
Maple Plain, MN 55359

August 30,2012

ESC Sample # : L591347-03

Site ID :

Project # : 3327

Date Received : August 22, 2012
Description : Sinclair Station #22020

Sample ID : MW-3

Collected By : Aric Olsen
Collection Date : 08/20/12 12:59

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
trans-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	08/22/12	1
2,2-Dichloropropane	BDL	1.0	ug/l	8260B	08/22/12	1
Di-isopropyl ether	BDL	1.0	ug/l	8260B	08/22/12	1
Ethylbenzene	BDL	1.0	ug/l	8260B	08/22/12	1
Ethyl ether	BDL	1.0	ug/l	8260B	08/22/12	1
Hexachloro-1,3-butadiene	BDL	1.0	ug/l	8260B	08/22/12	1
Isopropylbenzene	BDL	1.0	ug/l	8260B	08/22/12	1
p-Isopropyltoluene	BDL	1.0	ug/l	8260B	08/22/12	1
2-Butanone (MEK)	BDL	10.	ug/l	8260B	08/22/12	1
Methylene Chloride	BDL	5.0	ug/l	8260B	08/22/12	1
2-Hexanone	BDL	10.	ug/l	8260B	08/22/12	1
4-Methyl-2-pentanone (MIBK)	BDL	10.	ug/l	8260B	08/22/12	1
Methyl tert-butyl ether	BDL	1.0	ug/l	8260B	08/22/12	1
Naphthalene	BDL	5.0	ug/l	8260B	08/22/12	1
n-Propylbenzene	BDL	1.0	ug/l	8260B	08/22/12	1
Styrene	BDL	1.0	ug/l	8260B	08/22/12	1
1,1,1,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	08/22/12	1
1,1,2,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	08/22/12	1
1,1,2-Trichlorotrifluoroethane	BDL	1.0	ug/l	8260B	08/22/12	1
Tetrachloroethene	BDL	1.0	ug/l	8260B	08/22/12	1
Tetrahydrofuran	BDL	5.0	ug/l	8260B	08/22/12	1
Toluene	BDL	5.0	ug/l	8260B	08/22/12	1
1,2,3-Trichlorobenzene	BDL	1.0	ug/l	8260B	08/22/12	1
1,2,4-Trichlorobenzene	BDL	1.0	ug/l	8260B	08/22/12	1
1,1,1-Trichloroethane	BDL	1.0	ug/l	8260B	08/22/12	1
1,1,2-Trichloroethane	BDL	1.0	ug/l	8260B	08/22/12	1
Trichloroethene	BDL	1.0	ug/l	8260B	08/22/12	1
Trichlorofluoromethane	BDL	5.0	ug/l	8260B	08/22/12	1
1,2,3-Trichloropropane	BDL	2.5	ug/l	8260B	08/22/12	1
1,2,4-Trimethylbenzene	BDL	1.0	ug/l	8260B	08/22/12	1
1,2,3-Trimethylbenzene	BDL	1.0	ug/l	8260B	08/22/12	1
1,3,5-Trimethylbenzene	BDL	1.0	ug/l	8260B	08/22/12	1
Vinyl chloride	BDL	1.0	ug/l	8260B	08/22/12	1
Xylenes, Total	BDL	3.0	ug/l	8260B	08/22/12	1
Surrogate Recovery						
Toluene-d8	105.		% Rec.	8260B	08/22/12	1
Dibromofluoromethane	101.		% Rec.	8260B	08/22/12	1
a,a,a-Trifluorotoluene	105.		% Rec.	8260B	08/22/12	1
4-Bromofluorobenzene	100.		% Rec.	8260B	08/22/12	1
TPH (GC/FID) High Fraction	180	100	ug/l	DROWM/8015	08/29/12	1
Surrogate recovery(%)						
Triacontane	109.		% Rec.	DROWM/8015	08/29/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

Reported: 08/30/12 11:38 Printed: 08/30/12 11:39

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REPORT OF ANALYSIS

Chris Loch
Carlson McCain
PO Box 429
Maple Plain, MN 55359

August 30,2012

ESC Sample # : L591347-04

Site ID :

Project # : 3327

Date Received : August 22, 2012
Description : Sinclair Station #22020

Sample ID : DUPLICATE

Collected By : Aric Olsen
Collection Date : 08/20/12 09:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
WI DNR						
Gasoline (C6-C10)	28000	2000	ug/l	GROWM/8015	08/22/12	20
Surrogate recovery-%						
a,a,a-Trifluorotoluene(PID)	102.		% Rec.	8021	08/22/12	20
Volatile Organics						
Acetone	BDL	2500	ug/l	8260B	08/22/12	50
Acrolein	BDL	2500	ug/l	8260B	08/22/12	50
Acrylonitrile	BDL	500	ug/l	8260B	08/22/12	50
Allyl chloride	BDL	250	ug/l	8260B	08/22/12	50
Benzene	2900	50.	ug/l	8260B	08/22/12	50
Bromobenzene	BDL	50.	ug/l	8260B	08/22/12	50
Bromodichloromethane	BDL	50.	ug/l	8260B	08/22/12	50
Bromoform	BDL	50.	ug/l	8260B	08/22/12	50
Bromomethane	BDL	250	ug/l	8260B	08/22/12	50
n-Butylbenzene	BDL	50.	ug/l	8260B	08/22/12	50
sec-Butylbenzene	BDL	50.	ug/l	8260B	08/22/12	50
tert-Butylbenzene	BDL	50.	ug/l	8260B	08/22/12	50
Carbon tetrachloride	BDL	50.	ug/l	8260B	08/22/12	50
Chlorobenzene	BDL	50.	ug/l	8260B	08/22/12	50
Chlorodibromomethane	BDL	50.	ug/l	8260B	08/22/12	50
Chloroethane	BDL	250	ug/l	8260B	08/22/12	50
2-Chloroethyl vinyl ether	BDL	2500	ug/l	8260B	08/22/12	50
Chloroform	BDL	250	ug/l	8260B	08/22/12	50
Chloromethane	BDL	120	ug/l	8260B	08/22/12	50
2-Chlorotoluene	BDL	50.	ug/l	8260B	08/22/12	50
4-Chlorotoluene	BDL	50.	ug/l	8260B	08/22/12	50
1,2-Dibromo-3-Chloropropane	BDL	250	ug/l	8260B	08/22/12	50
1,2-Dibromoethane	BDL	50.	ug/l	8260B	08/22/12	50
Dibromomethane	BDL	50.	ug/l	8260B	08/22/12	50
1,2-Dichlorobenzene	BDL	50.	ug/l	8260B	08/22/12	50
1,3-Dichlorobenzene	BDL	50.	ug/l	8260B	08/22/12	50
1,4-Dichlorobenzene	BDL	50.	ug/l	8260B	08/22/12	50
Dichlorodifluoromethane	BDL	250	ug/l	8260B	08/22/12	50
Dichlorofluoromethane	BDL	250	ug/l	8260B	08/22/12	50
1,1-Dichloroethane	BDL	50.	ug/l	8260B	08/22/12	50
1,2-Dichloroethane	BDL	50.	ug/l	8260B	08/22/12	50
1,1-Dichloroethene	BDL	50.	ug/l	8260B	08/22/12	50
cis-1,2-Dichloroethene	BDL	50.	ug/l	8260B	08/22/12	50
trans-1,2-Dichloroethene	BDL	50.	ug/l	8260B	08/22/12	50
1,2-Dichloropropane	BDL	50.	ug/l	8260B	08/22/12	50
1,1-Dichloropropene	BDL	50.	ug/l	8260B	08/22/12	50
1,3-Dichloropropane	BDL	50.	ug/l	8260B	08/22/12	50
cis-1,3-Dichloropropene	BDL	50.	ug/l	8260B	08/22/12	50

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Chris Loch
Carlson McCain
PO Box 429
Maple Plain, MN 55359

August 30,2012

ESC Sample # : L591347-04

Site ID :

Project # : 3327

Date Received : August 22, 2012
Description : Sinclair Station #22020

Sample ID : DUPLICATE

Collected By : Aric Olsen
Collection Date : 08/20/12 09:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
trans-1,3-Dichloropropene	BDL	50.	ug/l	8260B	08/22/12	50
2,2-Dichloropropane	BDL	50.	ug/l	8260B	08/22/12	50
Di-isopropyl ether	BDL	50.	ug/l	8260B	08/22/12	50
Ethylbenzene	1000	50.	ug/l	8260B	08/22/12	50
Ethyl ether	BDL	50.	ug/l	8260B	08/22/12	50
Hexachloro-1,3-butadiene	BDL	50.	ug/l	8260B	08/22/12	50
Isopropylbenzene	52.	50.	ug/l	8260B	08/22/12	50
p-Isopropyltoluene	BDL	50.	ug/l	8260B	08/22/12	50
2-Butanone (MEK)	BDL	500	ug/l	8260B	08/22/12	50
Methylene Chloride	BDL	250	ug/l	8260B	08/22/12	50
2-Hexanone	BDL	500	ug/l	8260B	08/22/12	50
4-Methyl-2-pentanone (MIBK)	BDL	500	ug/l	8260B	08/22/12	50
Methyl tert-butyl ether	BDL	50.	ug/l	8260B	08/22/12	50
Naphthalene	750	250	ug/l	8260B	08/22/12	50
n-Propylbenzene	130	50.	ug/l	8260B	08/22/12	50
Styrene	BDL	50.	ug/l	8260B	08/22/12	50
1,1,1,2-Tetrachloroethane	BDL	50.	ug/l	8260B	08/22/12	50
1,1,2,2-Tetrachloroethane	BDL	50.	ug/l	8260B	08/22/12	50
1,1,2-Trichlorotrifluoroethane	BDL	50.	ug/l	8260B	08/22/12	50
Tetrachloroethene	BDL	50.	ug/l	8260B	08/22/12	50
Tetrahydrofuran	BDL	250	ug/l	8260B	08/22/12	50
Toluene	1400	250	ug/l	8260B	08/22/12	50
1,2,3-Trichlorobenzene	BDL	50.	ug/l	8260B	08/22/12	50
1,2,4-Trichlorobenzene	BDL	50.	ug/l	8260B	08/22/12	50
1,1,1-Trichloroethane	BDL	50.	ug/l	8260B	08/22/12	50
1,1,2-Trichloroethane	BDL	50.	ug/l	8260B	08/22/12	50
Trichloroethene	BDL	50.	ug/l	8260B	08/22/12	50
Trichlorofluoromethane	BDL	250	ug/l	8260B	08/22/12	50
1,2,3-Trichloropropane	BDL	120	ug/l	8260B	08/22/12	50
1,2,4-Trimethylbenzene	2400	50.	ug/l	8260B	08/22/12	50
1,2,3-Trimethylbenzene	660	50.	ug/l	8260B	08/22/12	50
1,3,5-Trimethylbenzene	620	50.	ug/l	8260B	08/22/12	50
Vinyl chloride	BDL	50.	ug/l	8260B	08/22/12	50
Xylenes, Total	8500	150	ug/l	8260B	08/22/12	50
Surrogate Recovery						
Toluene-d8	103.		% Rec.	8260B	08/22/12	50
Dibromofluoromethane	98.6		% Rec.	8260B	08/22/12	50
a,a,a-Trifluorotoluene	106.		% Rec.	8260B	08/22/12	50
4-Bromofluorobenzene	104.		% Rec.	8260B	08/22/12	50
TPH (GC/FID) High Fraction	12000	500	ug/l	DROWM/8015	08/30/12	5
Surrogate recovery(%)						
Triacontane	110.		% Rec.	DROWM/8015	08/30/12	5

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

Reported: 08/30/12 11:38 Printed: 08/30/12 11:39

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REPORT OF ANALYSIS

Chris Loch
Carlson McCain
PO Box 429
Maple Plain, MN 55359

August 30,2012

ESC Sample # : L591347-05

Site ID :

Project # : 3327

Date Received : August 22, 2012
Description : Sinclair Station #22020

Sample ID : TRIP BLANK

Collected By : Aric Olsen
Collection Date : 08/20/12 07:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	50.	ug/l	8260B	08/23/12	1
Acrolein	BDL	50.	ug/l	8260B	08/23/12	1
Acrylonitrile	BDL	10.	ug/l	8260B	08/23/12	1
Allyl chloride	BDL	5.0	ug/l	8260B	08/23/12	1
Benzene	BDL	1.0	ug/l	8260B	08/23/12	1
Bromobenzene	BDL	1.0	ug/l	8260B	08/23/12	1
Bromodichloromethane	BDL	1.0	ug/l	8260B	08/23/12	1
Bromoform	BDL	1.0	ug/l	8260B	08/23/12	1
Bromomethane	BDL	5.0	ug/l	8260B	08/23/12	1
n-Butylbenzene	BDL	1.0	ug/l	8260B	08/23/12	1
sec-Butylbenzene	BDL	1.0	ug/l	8260B	08/23/12	1
tert-Butylbenzene	BDL	1.0	ug/l	8260B	08/23/12	1
Carbon tetrachloride	BDL	1.0	ug/l	8260B	08/23/12	1
Chlorobenzene	BDL	1.0	ug/l	8260B	08/23/12	1
Chlorodibromomethane	BDL	1.0	ug/l	8260B	08/23/12	1
Chloroethane	BDL	5.0	ug/l	8260B	08/23/12	1
2-Chloroethyl vinyl ether	BDL	50.	ug/l	8260B	08/23/12	1
Chloroform	BDL	5.0	ug/l	8260B	08/23/12	1
Chloromethane	BDL	2.5	ug/l	8260B	08/23/12	1
2-Chlorotoluene	BDL	1.0	ug/l	8260B	08/23/12	1
4-Chlorotoluene	BDL	1.0	ug/l	8260B	08/23/12	1
1,2-Dibromo-3-Chloropropane	BDL	5.0	ug/l	8260B	08/23/12	1
1,2-Dibromoethane	BDL	1.0	ug/l	8260B	08/23/12	1
Dibromomethane	BDL	1.0	ug/l	8260B	08/23/12	1
1,2-Dichlorobenzene	BDL	1.0	ug/l	8260B	08/23/12	1
1,3-Dichlorobenzene	BDL	1.0	ug/l	8260B	08/23/12	1
1,4-Dichlorobenzene	BDL	1.0	ug/l	8260B	08/23/12	1
Dichlorodifluoromethane	BDL	5.0	ug/l	8260B	08/23/12	1
Dichlorofluoromethane	BDL	5.0	ug/l	8260B	08/23/12	1
1,1-Dichloroethane	BDL	1.0	ug/l	8260B	08/23/12	1
1,2-Dichloroethane	BDL	1.0	ug/l	8260B	08/23/12	1
1,1-Dichloroethene	BDL	1.0	ug/l	8260B	08/23/12	1
cis-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	08/23/12	1
trans-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	08/23/12	1
1,2-Dichloropropane	BDL	1.0	ug/l	8260B	08/23/12	1
1,1-Dichloropropene	BDL	1.0	ug/l	8260B	08/23/12	1
1,3-Dichloropropane	BDL	1.0	ug/l	8260B	08/23/12	1
cis-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	08/23/12	1
trans-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	08/23/12	1
2,2-Dichloropropane	BDL	1.0	ug/l	8260B	08/23/12	1
Di-isopropyl ether	BDL	1.0	ug/l	8260B	08/23/12	1
Ethylbenzene	BDL	1.0	ug/l	8260B	08/23/12	1
Ethyl ether	BDL	1.0	ug/l	8260B	08/23/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Chris Loch
Carlson McCain
PO Box 429
Maple Plain, MN 55359

August 30,2012

ESC Sample # : L591347-05

Site ID :

Project # : 3327

Date Received : August 22, 2012
Description : Sinclair Station #22020

Sample ID : TRIP BLANK

Collected By : Aric Olsen
Collection Date : 08/20/12 07:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Hexachloro-1,3-butadiene	BDL	1.0	ug/l	8260B	08/23/12	1
Isopropylbenzene	BDL	1.0	ug/l	8260B	08/23/12	1
p-Isopropyltoluene	BDL	1.0	ug/l	8260B	08/23/12	1
2-Butanone (MEK)	BDL	10.	ug/l	8260B	08/23/12	1
Methylene Chloride	BDL	5.0	ug/l	8260B	08/23/12	1
2-Hexanone	BDL	10.	ug/l	8260B	08/23/12	1
4-Methyl-2-pentanone (MIBK)	BDL	10.	ug/l	8260B	08/23/12	1
Methyl tert-butyl ether	BDL	1.0	ug/l	8260B	08/23/12	1
Naphthalene	BDL	5.0	ug/l	8260B	08/23/12	1
n-Propylbenzene	BDL	1.0	ug/l	8260B	08/23/12	1
Styrene	BDL	1.0	ug/l	8260B	08/23/12	1
1,1,1,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	08/23/12	1
1,1,2,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	08/23/12	1
1,1,2-Trichlorotrifluoroethane	BDL	1.0	ug/l	8260B	08/23/12	1
Tetrachloroethene	BDL	1.0	ug/l	8260B	08/23/12	1
Tetrahydrofuran	BDL	5.0	ug/l	8260B	08/23/12	1
Toluene	BDL	5.0	ug/l	8260B	08/23/12	1
1,2,3-Trichlorobenzene	BDL	1.0	ug/l	8260B	08/23/12	1
1,2,4-Trichlorobenzene	BDL	1.0	ug/l	8260B	08/23/12	1
1,1,1-Trichloroethane	BDL	1.0	ug/l	8260B	08/23/12	1
1,1,2-Trichloroethane	BDL	1.0	ug/l	8260B	08/23/12	1
Trichloroethene	BDL	1.0	ug/l	8260B	08/23/12	1
Trichlorofluoromethane	BDL	5.0	ug/l	8260B	08/23/12	1
1,2,3-Trichloropropane	BDL	2.5	ug/l	8260B	08/23/12	1
1,2,4-Trimethylbenzene	BDL	1.0	ug/l	8260B	08/23/12	1
1,2,3-Trimethylbenzene	BDL	1.0	ug/l	8260B	08/23/12	1
1,3,5-Trimethylbenzene	BDL	1.0	ug/l	8260B	08/23/12	1
Vinyl chloride	BDL	1.0	ug/l	8260B	08/23/12	1
Xylenes, Total	BDL	3.0	ug/l	8260B	08/23/12	1
Surrogate Recovery						
Toluene-d8	103.		% Rec.	8260B	08/23/12	1
Dibromofluoromethane	101.		% Rec.	8260B	08/23/12	1
a,a,a-Trifluorotoluene	98.7		% Rec.	8260B	08/23/12	1
4-Bromofluorobenzene	95.1		% Rec:	8260B	08/23/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

Reported: 08/30/12 11:38 Printed: 08/30/12 11:39

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L591347-01	WG608948	SAMP	Acetone	R2313173	J3
	WG608948	SAMP	2-Chloroethyl vinyl ether	R2313173	J3
L591347-02	WG608948	SAMP	Acetone	R2313173	J3
	WG608948	SAMP	2-Chloroethyl vinyl ether	R2313173	J3
L591347-03	WG608948	SAMP	Acetone	R2313173	J3
	WG608948	SAMP	2-Chloroethyl vinyl ether	R2313173	J3
L591347-04	WG608948	SAMP	Acetone	R2313173	J3
	WG608948	SAMP	2-Chloroethyl vinyl ether	R2313173	J3

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J3	The associated batch QC was outside the established quality control range for precision.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

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Chris Loch
Carlson McCain
248 Apollo Dr: Suite 100
Lino Lakes, MN 55014

Report Summary

Thursday December 06, 2012

Report Number: L608581
Samples Received: 11/30/12
Client Project: 3327-00

Description: Sinclair Oil #22020

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By: John Hawkins

John Hawkins , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.
Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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REPORT OF ANALYSIS

Chris Loch
Carlson McCain
248 Apollo Dr: Suite 100
Lino Lakes, MN 55014

December 06,2012

ESC Sample # : L608581-01

Site ID : MAPLEWOOD, MN

Project # : 3327-00

Date Received : November 30, 2012
Description : Sinclair Oil #22020

Sample ID : MW-1

Collected By : Aric Olsen
Collection Date : 11/29/12 12:17

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
WI DNR						
Gasoline (C6-C10)	39000	2500	ug/l	GROWM/8015	12/03/12	25
Surrogate recovery-%						
a,a,a-Trifluorotoluene(PID)	106.		% Rec.	8021	12/03/12	25
Volatile Organics						
Acetone	BDL	2500	ug/l	8260B	12/01/12	50
Acrolein	BDL	2500	ug/l	8260B	12/01/12	50
Acrylonitrile	BDL	500	ug/l	8260B	12/01/12	50
Allyl chloride	BDL	250	ug/l	8260B	12/01/12	50
Benzene	2600	50.	ug/l	8260B	12/01/12	50
Bromobenzene	BDL	50.	ug/l	8260B	12/01/12	50
Bromodichloromethane	BDL	50.	ug/l	8260B	12/01/12	50
Bromoform	BDL	50.	ug/l	8260B	12/01/12	50
Bromomethane	BDL	250	ug/l	8260B	12/01/12	50
n-Butylbenzene	BDL	50.	ug/l	8260B	12/01/12	50
sec-Butylbenzene	BDL	50.	ug/l	8260B	12/01/12	50
tert-Butylbenzene	BDL	50.	ug/l	8260B	12/01/12	50
Carbon tetrachloride	BDL	50.	ug/l	8260B	12/01/12	50
Chlorobenzene	BDL	50.	ug/l	8260B	12/01/12	50
Chlorodibromomethane	BDL	50.	ug/l	8260B	12/01/12	50
Chloroethane	BDL	250	ug/l	8260B	12/01/12	50
2-Chloroethyl vinyl ether	BDL	2500	ug/l	8260B	12/01/12	50
Chloroform	BDL	250	ug/l	8260B	12/01/12	50
Chloromethane	BDL	120	ug/l	8260B	12/01/12	50
2-Chlorotoluene	BDL	50.	ug/l	8260B	12/01/12	50
4-Chlorotoluene	BDL	50.	ug/l	8260B	12/01/12	50
1,2-Dibromo-3-Chloropropane	BDL	250	ug/l	8260B	12/01/12	50
1,2-Dibromoethane	BDL	50.	ug/l	8260B	12/01/12	50
Dibromomethane	BDL	50.	ug/l	8260B	12/01/12	50
1,2-Dichlorobenzene	BDL	50.	ug/l	8260B	12/01/12	50
1,3-Dichlorobenzene	BDL	50.	ug/l	8260B	12/01/12	50
1,4-Dichlorobenzene	BDL	50.	ug/l	8260B	12/01/12	50
Dichlorodifluoromethane	BDL	250	ug/l	8260B	12/01/12	50
Dichlorofluoromethane	BDL	250	ug/l	8260B	12/01/12	50
1,1-Dichloroethane	BDL	50.	ug/l	8260B	12/01/12	50
1,2-Dichloroethane	BDL	50.	ug/l	8260B	12/01/12	50
1,1-Dichloroethene	BDL	50.	ug/l	8260B	12/01/12	50
cis-1,2-Dichloroethene	BDL	50.	ug/l	8260B	12/01/12	50
trans-1,2-Dichloroethene	BDL	50.	ug/l	8260B	12/01/12	50
1,2-Dichloropropane	BDL	50.	ug/l	8260B	12/01/12	50
1,1-Dichloropropene	BDL	50.	ug/l	8260B	12/01/12	50
1,3-Dichloropropane	BDL	50.	ug/l	8260B	12/01/12	50
cis-1,3-Dichloropropene	BDL	50.	ug/l	8260B	12/01/12	50

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Chris Loch
Carlson McCain
248 Apollo Dr: Suite 100
Lino Lakes, MN 55014

December 06,2012

ESC Sample # : L608581-01

Site ID : MAPLEWOOD, MN

Project # : 3327-00

Date Received : November 30, 2012
Description : Sinclair Oil #22020

Sample ID : MW-1

Collected By : Aric Olsen
Collection Date : 11/29/12 12:17

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
trans-1,3-Dichloropropene	BDL	50.	ug/l	8260B	12/01/12	50
2,2-Dichloropropane	BDL	50.	ug/l	8260B	12/01/12	50
Di-isopropyl ether	BDL	50.	ug/l	8260B	12/01/12	50
Ethylbenzene	1500	50.	ug/l	8260B	12/01/12	50
Ethyl ether	BDL	50.	ug/l	8260B	12/01/12	50
Hexachloro-1,3-butadiene	BDL	50.	ug/l	8260B	12/01/12	50
Isopropylbenzene	67.	50.	ug/l	8260B	12/01/12	50
p-Isopropyltoluene	BDL	50.	ug/l	8260B	12/01/12	50
2-Butanone (MEK)	BDL	500	ug/l	8260B	12/01/12	50
Methylene Chloride	BDL	250	ug/l	8260B	12/01/12	50
2-Hexanone	BDL	500	ug/l	8260B	12/01/12	50
4-Methyl-2-pentanone (MIBK)	BDL	500	ug/l	8260B	12/01/12	50
Methyl tert-butyl ether	BDL	50.	ug/l	8260B	12/01/12	50
Naphthalene	580	250	ug/l	8260B	12/01/12	50
n-Propylbenzene	180	50.	ug/l	8260B	12/01/12	50
Styrene	BDL	50.	ug/l	8260B	12/01/12	50
1,1,1,2-Tetrachloroethane	BDL	50.	ug/l	8260B	12/01/12	50
1,1,2,2-Tetrachloroethane	BDL	50.	ug/l	8260B	12/01/12	50
1,1,2-Trichlorotrifluoroethane	BDL	50.	ug/l	8260B	12/01/12	50
Tetrachloroethene	BDL	50.	ug/l	8260B	12/01/12	50
Tetrahydrofuran	BDL	250	ug/l	8260B	12/01/12	50
Toluene	2400	250	ug/l	8260B	12/01/12	50
1,2,3-Trichlorobenzene	BDL	50.	ug/l	8260B	12/01/12	50
1,2,4-Trichlorobenzene	BDL	50.	ug/l	8260B	12/01/12	50
1,1,1-Trichloroethane	BDL	50.	ug/l	8260B	12/01/12	50
1,1,2-Trichloroethane	BDL	50.	ug/l	8260B	12/01/12	50
Trichloroethene	BDL	50.	ug/l	8260B	12/01/12	50
Trichlorofluoromethane	BDL	250	ug/l	8260B	12/01/12	50
1,2,3-Trichloropropane	BDL	120	ug/l	8260B	12/01/12	50
1,2,4-Trimethylbenzene	3100	50.	ug/l	8260B	12/01/12	50
1,2,3-Trimethylbenzene	630	50.	ug/l	8260B	12/01/12	50
1,3,5-Trimethylbenzene	780	50.	ug/l	8260B	12/01/12	50
Vinyl chloride	BDL	50.	ug/l	8260B	12/01/12	50
Xylenes, Total	13000	150	ug/l	8260B	12/01/12	50
Surrogate Recovery						
Toluene-d8	97.8		% Rec.	8260B	12/01/12	50
Dibromofluoromethane	92.8		% Rec.	8260B	12/01/12	50
a,a,a-Trifluorotoluene	105.		% Rec.	8260B	12/01/12	50
4-Bromofluorobenzene	122.		% Rec.	8260B	12/01/12	50
TPH (GC/FID) High Fraction	13000	1000	ug/l	DROWM/8015	12/05/12	10
Surrogate recovery(%)						
Triacontane	76.0		% Rec.	DROWM/8015	12/05/12	10

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

.
Reported: 12/06/12 09:36 Printed: 12/06/12 10:51

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REPORT OF ANALYSIS

Chris Loch
Carlson McCain
248 Apollo Dr: Suite 100
Lino Lakes, MN 55014

December 06,2012

ESC Sample # : L608581-02

Site ID : MAPLEWOOD, MN

Project # : 3327-00

Date Received : November 30, 2012
Description : Sinclair Oil #22020

Sample ID : MW-2

Collected By : Aric Olsen
Collection Date : 11/29/12 11:34

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
WI DNR						
Gasoline (C6-C10)	BDL	100	ug/l	GROWM/8015	12/03/12	1
Surrogate recovery-%						
a,a,a-Trifluorotoluene(PID)	102.		% Rec.	8021	12/03/12	1
Volatile Organics						
Acetone	BDL	50.	ug/l	8260B	12/01/12	1
Acrolein	BDL	50.	ug/l	8260B	12/01/12	1
Acrylonitrile	BDL	10.	ug/l	8260B	12/01/12	1
Allyl chloride	BDL	5.0	ug/l	8260B	12/01/12	1
Benzene	BDL	1.0	ug/l	8260B	12/01/12	1
Bromobenzene	BDL	1.0	ug/l	8260B	12/01/12	1
Bromodichloromethane	BDL	1.0	ug/l	8260B	12/01/12	1
Bromoform	BDL	1.0	ug/l	8260B	12/01/12	1
Bromomethane	BDL	5.0	ug/l	8260B	12/01/12	1
n-Butylbenzene	BDL	1.0	ug/l	8260B	12/01/12	1
sec-Butylbenzene	BDL	1.0	ug/l	8260B	12/01/12	1
tert-Butylbenzene	BDL	1.0	ug/l	8260B	12/01/12	1
Carbon tetrachloride	BDL	1.0	ug/l	8260B	12/01/12	1
Chlorobenzene	BDL	1.0	ug/l	8260B	12/01/12	1
Chlorodibromomethane	BDL	1.0	ug/l	8260B	12/01/12	1
Chloroethane	BDL	5.0	ug/l	8260B	12/01/12	1
2-Chloroethyl vinyl ether	BDL	50.	ug/l	8260B	12/01/12	1
Chloroform	BDL	5.0	ug/l	8260B	12/01/12	1
Chloromethane	BDL	2.5	ug/l	8260B	12/01/12	1
2-Chlorotoluene	BDL	1.0	ug/l	8260B	12/01/12	1
4-Chlorotoluene	BDL	1.0	ug/l	8260B	12/01/12	1
1,2-Dibromo-3-Chloropropane	BDL	5.0	ug/l	8260B	12/01/12	1
1,2-Dibromoethane	BDL	1.0	ug/l	8260B	12/01/12	1
Dibromomethane	BDL	1.0	ug/l	8260B	12/01/12	1
1,2-Dichlorobenzene	BDL	1.0	ug/l	8260B	12/01/12	1
1,3-Dichlorobenzene	BDL	1.0	ug/l	8260B	12/01/12	1
1,4-Dichlorobenzene	BDL	1.0	ug/l	8260B	12/01/12	1
Dichlorodifluoromethane	BDL	5.0	ug/l	8260B	12/01/12	1
Dichlorofluoromethane	BDL	5.0	ug/l	8260B	12/01/12	1
1,1-Dichloroethane	BDL	1.0	ug/l	8260B	12/01/12	1
1,2-Dichloroethane	BDL	1.0	ug/l	8260B	12/01/12	1
1,1-Dichloroethene	BDL	1.0	ug/l	8260B	12/01/12	1
cis-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	12/01/12	1
trans-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	12/01/12	1
1,2-Dichloropropane	BDL	1.0	ug/l	8260B	12/01/12	1
1,1-Dichloropropene	BDL	1.0	ug/l	8260B	12/01/12	1
1,3-Dichloropropane	BDL	1.0	ug/l	8260B	12/01/12	1
cis-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	12/01/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

December 06,2012

Chris Loch
Carlson McCain
248 Apollo Dr: Suite 100
Lino Lakes, MN 55014

ESC Sample # : L608581-02

Date Received : November 30, 2012
Description : Sinclair Oil #22020

Site ID : MAPLEWOOD, MN

Sample ID : MW-2

Project # : 3327-00

Collected By : Aric Olsen
Collection Date : 11/29/12 11:34

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
trans-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	12/01/12	1
2,2-Dichloropropane	BDL	1.0	ug/l	8260B	12/01/12	1
Di-isopropyl ether	BDL	1.0	ug/l	8260B	12/01/12	1
Ethylbenzene	BDL	1.0	ug/l	8260B	12/01/12	1
Ethyl ether	BDL	1.0	ug/l	8260B	12/01/12	1
Hexachloro-1,3-butadiene	BDL	1.0	ug/l	8260B	12/01/12	1
Isopropylbenzene	BDL	1.0	ug/l	8260B	12/01/12	1
p-Isopropyltoluene	BDL	1.0	ug/l	8260B	12/01/12	1
2-Butanone (MEK)	BDL	10.	ug/l	8260B	12/01/12	1
Methylene Chloride	BDL	5.0	ug/l	8260B	12/01/12	1
2-Hexanone	BDL	10.	ug/l	8260B	12/01/12	1
4-Methyl-2-pentanone (MIBK)	BDL	10.	ug/l	8260B	12/01/12	1
Methyl tert-butyl ether	BDL	1.0	ug/l	8260B	12/01/12	1
Naphthalene	BDL	5.0	ug/l	8260B	12/01/12	1
n-Propylbenzene	BDL	1.0	ug/l	8260B	12/01/12	1
Styrene	BDL	1.0	ug/l	8260B	12/01/12	1
1,1,1,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	12/01/12	1
1,1,2,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	12/01/12	1
1,1,2-Trichlorotrifluoroethane	BDL	1.0	ug/l	8260B	12/01/12	1
Tetrachloroethene	BDL	1.0	ug/l	8260B	12/01/12	1
Tetrahydrofuran	BDL	5.0	ug/l	8260B	12/01/12	1
Toluene	BDL	5.0	ug/l	8260B	12/01/12	1
1,2,3-Trichlorobenzene	BDL	1.0	ug/l	8260B	12/01/12	1
1,2,4-Trichlorobenzene	BDL	1.0	ug/l	8260B	12/01/12	1
1,1,1-Trichloroethane	BDL	1.0	ug/l	8260B	12/01/12	1
1,1,2-Trichloroethane	BDL	1.0	ug/l	8260B	12/01/12	1
Trichloroethene	BDL	1.0	ug/l	8260B	12/01/12	1
Trichlorofluoromethane	BDL	5.0	ug/l	8260B	12/01/12	1
1,2,3-Trichloropropane	BDL	2.5	ug/l	8260B	12/01/12	1
1,2,4-Trimethylbenzene	BDL	1.0	ug/l	8260B	12/01/12	1
1,2,3-Trimethylbenzene	BDL	1.0	ug/l	8260B	12/01/12	1
1,3,5-Trimethylbenzene	BDL	1.0	ug/l	8260B	12/01/12	1
Vinyl chloride	BDL	1.0	ug/l	8260B	12/01/12	1
Xylenes, Total	BDL	3.0	ug/l	8260B	12/01/12	1
Surrogate Recovery						
Toluene-d8	99.4		% Rec.	8260B	12/01/12	1
Dibromofluoromethane	94.7		% Rec.	8260B	12/01/12	1
a,a,a-Trifluorotoluene	107.		% Rec.	8260B	12/01/12	1
4-Bromofluorobenzene	107.		% Rec.	8260B	12/01/12	1
TPH (GC/FID) High Fraction	180	100	ug/l	DROWM/8015	12/05/12	1
Surrogate recovery(%)						
Triacontane	86.4		% Rec.	DROWM/8015	12/05/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

Reported: 12/06/12 09:36 Printed: 12/06/12 10:51

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Est. 1970

REPORT OF ANALYSIS

Chris Loch
Carlson McCain
248 Apollo Dr: Suite 100
Lino Lakes, MN 55014

December 06,2012

ESC Sample # : L608581-03

Site ID : MAPLEWOOD, MN

Project # : 3327-00

Date Received : November 30, 2012
Description : Sinclair Oil #22020

Sample ID : MW-3

Collected By : Aric Olsen
Collection Date : 11/29/12 10:43

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
WI DNR						
Gasoline (C6-C10)	BDL	100	ug/l	GROWM/8015	12/03/12	1
Surrogate recovery-%						
a,a,a-Trifluorotoluene(PID)	102.		% Rec.	8021	12/03/12	1
Volatile Organics						
Acetone	BDL	50.	ug/l	8260B	12/01/12	1
Acrolein	BDL	50.	ug/l	8260B	12/01/12	1
Acrylonitrile	BDL	10.	ug/l	8260B	12/01/12	1
Allyl chloride	BDL	5.0	ug/l	8260B	12/01/12	1
Benzene	BDL	1.0	ug/l	8260B	12/01/12	1
Bromobenzene	BDL	1.0	ug/l	8260B	12/01/12	1
Bromodichloromethane	BDL	1.0	ug/l	8260B	12/01/12	1
Bromoform	BDL	1.0	ug/l	8260B	12/01/12	1
Bromomethane	BDL	5.0	ug/l	8260B	12/01/12	1
n-Butylbenzene	BDL	1.0	ug/l	8260B	12/01/12	1
sec-Butylbenzene	BDL	1.0	ug/l	8260B	12/01/12	1
tert-Butylbenzene	BDL	1.0	ug/l	8260B	12/01/12	1
Carbon tetrachloride	BDL	1.0	ug/l	8260B	12/01/12	1
Chlorobenzene	BDL	1.0	ug/l	8260B	12/01/12	1
Chlorodibromomethane	BDL	1.0	ug/l	8260B	12/01/12	1
Chloroethane	BDL	5.0	ug/l	8260B	12/01/12	1
2-Chloroethyl vinyl ether	BDL	50.	ug/l	8260B	12/01/12	1
Chloroform	BDL	5.0	ug/l	8260B	12/01/12	1
Chloromethane	BDL	2.5	ug/l	8260B	12/01/12	1
2-Chlorotoluene	BDL	1.0	ug/l	8260B	12/01/12	1
4-Chlorotoluene	BDL	1.0	ug/l	8260B	12/01/12	1
1,2-Dibromo-3-Chloropropane	BDL	5.0	ug/l	8260B	12/01/12	1
1,2-Dibromoethane	BDL	1.0	ug/l	8260B	12/01/12	1
Dibromomethane	BDL	1.0	ug/l	8260B	12/01/12	1
1,2-Dichlorobenzene	BDL	1.0	ug/l	8260B	12/01/12	1
1,3-Dichlorobenzene	BDL	1.0	ug/l	8260B	12/01/12	1
1,4-Dichlorobenzene	BDL	1.0	ug/l	8260B	12/01/12	1
Dichlorodifluoromethane	BDL	5.0	ug/l	8260B	12/01/12	1
Dichlorofluoromethane	BDL	5.0	ug/l	8260B	12/01/12	1
1,1-Dichloroethane	BDL	1.0	ug/l	8260B	12/01/12	1
1,2-Dichloroethane	BDL	1.0	ug/l	8260B	12/01/12	1
1,1-Dichloroethene	BDL	1.0	ug/l	8260B	12/01/12	1
cis-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	12/01/12	1
trans-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	12/01/12	1
1,2-Dichloropropane	BDL	1.0	ug/l	8260B	12/01/12	1
1,1-Dichloropropene	BDL	1.0	ug/l	8260B	12/01/12	1
1,3-Dichloropropane	BDL	1.0	ug/l	8260B	12/01/12	1
cis-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	12/01/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Chris Loch
Carlson McCain
248 Apollo Dr: Suite 100
Lino Lakes, MN 55014

December 06,2012

ESC Sample # : L608581-03

Site ID : MAPLEWOOD, MN

Project # : 3327-00

Date Received : November 30, 2012
Description : Sinclair Oil #22020

Sample ID : MW-3

Collected By : Aric Olsen
Collection Date : 11/29/12 10:43

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
trans-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	12/01/12	1
2,2-Dichloropropane	BDL	1.0	ug/l	8260B	12/01/12	1
Di-isopropyl ether	BDL	1.0	ug/l	8260B	12/01/12	1
Ethylbenzene	BDL	1.0	ug/l	8260B	12/01/12	1
Ethyl ether	BDL	1.0	ug/l	8260B	12/01/12	1
Hexachloro-1,3-butadiene	BDL	1.0	ug/l	8260B	12/01/12	1
Isopropylbenzene	BDL	1.0	ug/l	8260B	12/01/12	1
p-Isopropyltoluene	BDL	1.0	ug/l	8260B	12/01/12	1
2-Butanone (MEK)	BDL	10.	ug/l	8260B	12/01/12	1
Methylene Chloride	BDL	5.0	ug/l	8260B	12/01/12	1
2-Hexanone	BDL	10.	ug/l	8260B	12/01/12	1
4-Methyl-2-pentanone (MIBK)	BDL	10.	ug/l	8260B	12/01/12	1
Methyl tert-butyl ether	BDL	1.0	ug/l	8260B	12/01/12	1
Naphthalene	BDL	5.0	ug/l	8260B	12/01/12	1
n-Propylbenzene	BDL	1.0	ug/l	8260B	12/01/12	1
Styrene	BDL	1.0	ug/l	8260B	12/01/12	1
1,1,1,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	12/01/12	1
1,1,2,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	12/01/12	1
1,1,2-Trichlorotrifluoroethane	BDL	1.0	ug/l	8260B	12/01/12	1
Tetrachloroethene	BDL	1.0	ug/l	8260B	12/01/12	1
Tetrahydrofuran	BDL	5.0	ug/l	8260B	12/01/12	1
Toluene	BDL	5.0	ug/l	8260B	12/01/12	1
1,2,3-Trichlorobenzene	BDL	1.0	ug/l	8260B	12/01/12	1
1,2,4-Trichlorobenzene	BDL	1.0	ug/l	8260B	12/01/12	1
1,1,1-Trichloroethane	BDL	1.0	ug/l	8260B	12/01/12	1
1,1,2-Trichloroethane	BDL	1.0	ug/l	8260B	12/01/12	1
Trichloroethene	BDL	1.0	ug/l	8260B	12/01/12	1
Trichlorofluoromethane	BDL	5.0	ug/l	8260B	12/01/12	1
1,2,3-Trichloropropane	BDL	2.5	ug/l	8260B	12/01/12	1
1,2,4-Trimethylbenzene	BDL	1.0	ug/l	8260B	12/01/12	1
1,2,3-Trimethylbenzene	BDL	1.0	ug/l	8260B	12/01/12	1
1,3,5-Trimethylbenzene	BDL	1.0	ug/l	8260B	12/01/12	1
Vinyl chloride	BDL	1.0	ug/l	8260B	12/01/12	1
Xylenes, Total	BDL	3.0	ug/l	8260B	12/01/12	1
Surrogate Recovery						
Toluene-d8	99.6		% Rec.	8260B	12/01/12	1
Dibromofluoromethane	95.1		% Rec.	8260B	12/01/12	1
a,a,a-Trifluorotoluene	106.		% Rec.	8260B	12/01/12	1
4-Bromofluorobenzene	106.		% Rec.	8260B	12/01/12	1
TPH (GC/FID) High Fraction	130	100	ug/l	DROWM/8015	12/05/12	1
Surrogate recovery(%)						
Triacontane	83.5		% Rec.	DROWM/8015	12/05/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

Reported: 12/06/12 09:36 Printed: 12/06/12 10:51

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REPORT OF ANALYSIS

Chris Loch
Carlson McCain
248 Apollo Dr: Suite 100
Lino Lakes, MN 55014

December 06,2012

ESC Sample # : L608581-04

Site ID : MAPLEWOOD, MN

Project # : 3327-00

Date Received : November 30, 2012
Description : Sinclair Oil #22020

Sample ID : DUPLICATE

Collected By : Aric Olsen
Collection Date : 11/29/12 08:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
WI DNR						
Gasoline (C6-C10)	39000	2500	ug/l	GROWM/8015	12/03/12	25
Surrogate recovery-%						
a,a,a-Trifluorotoluene(PID)	103.		% Rec.	8021	12/03/12	25
Volatile Organics						
Acetone	BDL	2500	ug/l	8260B	12/01/12	50
Acrolein	BDL	2500	ug/l	8260B	12/01/12	50
Acrylonitrile	BDL	500	ug/l	8260B	12/01/12	50
Allyl chloride	BDL	250	ug/l	8260B	12/01/12	50
Benzene	2300	50.	ug/l	8260B	12/01/12	50
Bromobenzene	BDL	50.	ug/l	8260B	12/01/12	50
Bromodichloromethane	BDL	50.	ug/l	8260B	12/01/12	50
Bromoform	BDL	50.	ug/l	8260B	12/01/12	50
Bromomethane	BDL	250	ug/l	8260B	12/01/12	50
n-Butylbenzene	BDL	50.	ug/l	8260B	12/01/12	50
sec-Butylbenzene	BDL	50.	ug/l	8260B	12/01/12	50
tert-Butylbenzene	BDL	50.	ug/l	8260B	12/01/12	50
Carbon tetrachloride	BDL	50.	ug/l	8260B	12/01/12	50
Chlorobenzene	BDL	50.	ug/l	8260B	12/01/12	50
Chlorodibromomethane	BDL	50.	ug/l	8260B	12/01/12	50
Chloroethane	BDL	250	ug/l	8260B	12/01/12	50
2-Chloroethyl vinyl ether	BDL	2500	ug/l	8260B	12/01/12	50
Chloroform	BDL	250	ug/l	8260B	12/01/12	50
Chloromethane	BDL	120	ug/l	8260B	12/01/12	50
2-Chlorotoluene	BDL	50.	ug/l	8260B	12/01/12	50
4-Chlorotoluene	BDL	50.	ug/l	8260B	12/01/12	50
1,2-Dibromo-3-Chloropropane	BDL	250	ug/l	8260B	12/01/12	50
1,2-Dibromoethane	BDL	50.	ug/l	8260B	12/01/12	50
Dibromomethane	BDL	50.	ug/l	8260B	12/01/12	50
1,2-Dichlorobenzene	BDL	50.	ug/l	8260B	12/01/12	50
1,3-Dichlorobenzene	BDL	50.	ug/l	8260B	12/01/12	50
1,4-Dichlorobenzene	BDL	50.	ug/l	8260B	12/01/12	50
Dichlorodifluoromethane	BDL	250	ug/l	8260B	12/01/12	50
Dichlorofluoromethane	BDL	250	ug/l	8260B	12/01/12	50
1,1-Dichloroethane	BDL	50.	ug/l	8260B	12/01/12	50
1,2-Dichloroethane	BDL	50.	ug/l	8260B	12/01/12	50
1,1-Dichloroethene	BDL	50.	ug/l	8260B	12/01/12	50
cis-1,2-Dichloroethene	BDL	50.	ug/l	8260B	12/01/12	50
trans-1,2-Dichloroethene	BDL	50.	ug/l	8260B	12/01/12	50
1,2-Dichloropropane	BDL	50.	ug/l	8260B	12/01/12	50
1,1-Dichloropropene	BDL	50.	ug/l	8260B	12/01/12	50
1,3-Dichloropropane	BDL	50.	ug/l	8260B	12/01/12	50
cis-1,3-Dichloropropene	BDL	50.	ug/l	8260B	12/01/12	50

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Chris Loch
Carlson McCain
248 Apollo Dr: Suite 100
Lino Lakes, MN 55014

December 06,2012

ESC Sample # : L608581-04

Date Received : November 30, 2012
Description : Sinclair Oil #22020

Site ID : MAPLEWOOD, MN

Sample ID : DUPLICATE

Project # : 3327-00

Collected By : Aric Olsen
Collection Date : 11/29/12 08:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
trans-1,3-Dichloropropene	BDL	50.	ug/l	8260B	12/01/12	50
2,2-Dichloropropane	BDL	50.	ug/l	8260B	12/01/12	50
Di-isopropyl ether	BDL	50.	ug/l	8260B	12/01/12	50
Ethylbenzene	1400	50.	ug/l	8260B	12/01/12	50
Ethyl ether	BDL	50.	ug/l	8260B	12/01/12	50
Hexachloro-1,3-butadiene	BDL	50.	ug/l	8260B	12/01/12	50
Isopropylbenzene	61.	50.	ug/l	8260B	12/01/12	50
p-Isopropyltoluene	BDL	50.	ug/l	8260B	12/01/12	50
2-Butanone (MEK)	BDL	500	ug/l	8260B	12/01/12	50
Methylene Chloride	BDL	250	ug/l	8260B	12/01/12	50
2-Hexanone	BDL	500	ug/l	8260B	12/01/12	50
4-Methyl-2-pentanone (MIBK)	BDL	500	ug/l	8260B	12/01/12	50
Methyl tert-butyl ether	BDL	50.	ug/l	8260B	12/01/12	50
Naphthalene	580	250	ug/l	8260B	12/01/12	50
n-Propylbenzene	160	50.	ug/l	8260B	12/01/12	50
Styrene	BDL	50.	ug/l	8260B	12/01/12	50
1,1,1,2-Tetrachloroethane	BDL	50.	ug/l	8260B	12/01/12	50
1,1,2,2-Tetrachloroethane	BDL	50.	ug/l	8260B	12/01/12	50
1,1,2-Trichlorotrifluoroethane	BDL	50.	ug/l	8260B	12/01/12	50
Tetrachloroethene	BDL	50.	ug/l	8260B	12/01/12	50
Tetrahydrofuran	BDL	250	ug/l	8260B	12/01/12	50
Toluene	2400	250	ug/l	8260B	12/01/12	50
1,2,3-Trichlorobenzene	BDL	50.	ug/l	8260B	12/01/12	50
1,2,4-Trichlorobenzene	BDL	50.	ug/l	8260B	12/01/12	50
1,1,1-Trichloroethane	BDL	50.	ug/l	8260B	12/01/12	50
1,1,2-Trichloroethane	BDL	50.	ug/l	8260B	12/01/12	50
Trichloroethene	BDL	50.	ug/l	8260B	12/01/12	50
Trichlorofluoromethane	BDL	250	ug/l	8260B	12/01/12	50
1,2,3-Trichloropropane	BDL	120	ug/l	8260B	12/01/12	50
1,2,4-Trimethylbenzene	2800	50.	ug/l	8260B	12/01/12	50
1,2,3-Trimethylbenzene	620	50.	ug/l	8260B	12/01/12	50
1,3,5-Trimethylbenzene	710	50.	ug/l	8260B	12/01/12	50
Vinyl chloride	BDL	50.	ug/l	8260B	12/01/12	50
Xylenes, Total	12000	150	ug/l	8260B	12/01/12	50
Surrogate Recovery						
Toluene-d8	98.8		% Rec.	8260B	12/01/12	50
Dibromofluoromethane	94.2		% Rec.	8260B	12/01/12	50
a,a,a-Trifluorotoluene	105.		% Rec.	8260B	12/01/12	50
4-Bromofluorobenzene	113.		% Rec.	8260B	12/01/12	50
TPH (GC/FID) High Fraction	10000	1000	ug/l	DROWM/8015	12/05/12	10
Surrogate recovery(%)						
Triacontane	68.3		% Rec.	DROWM/8015	12/05/12	10

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

Reported: 12/06/12 09:36 Printed: 12/06/12 10:51

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REPORT OF ANALYSIS

Chris Loch
Carlson McCain
248 Apollo Dr: Suite 100
Lino Lakes, MN 55014

December 06,2012

ESC Sample # : L608581-05

Date Received : November 30, 2012
Description : Sinclair Oil #22020

Site ID : MAPLEWOOD, MN

Sample ID : TRIPBLANK

Project # : 3327-00

Collected By : Aric Olsen
Collection Date : 11/29/12 08:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	BDL	50.	ug/l	8260B	12/01/12	1
Acrolein	BDL	50.	ug/l	8260B	12/01/12	1
Acrylonitrile	BDL	10.	ug/l	8260B	12/01/12	1
Allyl chloride	BDL	5.0	ug/l	8260B	12/01/12	1
Benzene	BDL	1.0	ug/l	8260B	12/01/12	1
Bromobenzene	BDL	1.0	ug/l	8260B	12/01/12	1
Bromodichloromethane	BDL	1.0	ug/l	8260B	12/01/12	1
Bromoform	BDL	1.0	ug/l	8260B	12/01/12	1
Bromomethane	BDL	5.0	ug/l	8260B	12/01/12	1
n-Butylbenzene	BDL	1.0	ug/l	8260B	12/01/12	1
sec-Butylbenzene	BDL	1.0	ug/l	8260B	12/01/12	1
tert-Butylbenzene	BDL	1.0	ug/l	8260B	12/01/12	1
Carbon tetrachloride	BDL	1.0	ug/l	8260B	12/01/12	1
Chlorobenzene	BDL	1.0	ug/l	8260B	12/01/12	1
Chlorodibromomethane	BDL	1.0	ug/l	8260B	12/01/12	1
Chloroethane	BDL	5.0	ug/l	8260B	12/01/12	1
2-Chloroethyl vinyl ether	BDL	50.	ug/l	8260B	12/01/12	1
Chloroform	BDL	5.0	ug/l	8260B	12/01/12	1
Chloromethane	BDL	2.5	ug/l	8260B	12/01/12	1
2-Chlorotoluene	BDL	1.0	ug/l	8260B	12/01/12	1
4-Chlorotoluene	BDL	1.0	ug/l	8260B	12/01/12	1
1,2-Dibromo-3-Chloropropane	BDL	5.0	ug/l	8260B	12/01/12	1
1,2-Dibromoethane	BDL	1.0	ug/l	8260B	12/01/12	1
Dibromomethane	BDL	1.0	ug/l	8260B	12/01/12	1
1,2-Dichlorobenzene	BDL	1.0	ug/l	8260B	12/01/12	1
1,3-Dichlorobenzene	BDL	1.0	ug/l	8260B	12/01/12	1
1,4-Dichlorobenzene	BDL	1.0	ug/l	8260B	12/01/12	1
Dichlorodifluoromethane	BDL	5.0	ug/l	8260B	12/01/12	1
Dichlorofluoromethane	BDL	5.0	ug/l	8260B	12/01/12	1
1,1-Dichloroethane	BDL	1.0	ug/l	8260B	12/01/12	1
1,2-Dichloroethane	BDL	1.0	ug/l	8260B	12/01/12	1
1,1-Dichloroethene	BDL	1.0	ug/l	8260B	12/01/12	1
cis-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	12/01/12	1
trans-1,2-Dichloroethene	BDL	1.0	ug/l	8260B	12/01/12	1
1,2-Dichloropropane	BDL	1.0	ug/l	8260B	12/01/12	1
1,1-Dichloropropene	BDL	1.0	ug/l	8260B	12/01/12	1
1,3-Dichloropropane	BDL	1.0	ug/l	8260B	12/01/12	1
cis-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	12/01/12	1
trans-1,3-Dichloropropene	BDL	1.0	ug/l	8260B	12/01/12	1
2,2-Dichloropropane	BDL	1.0	ug/l	8260B	12/01/12	1
Di-isopropyl ether	BDL	1.0	ug/l	8260B	12/01/12	1
Ethylbenzene	BDL	1.0	ug/l	8260B	12/01/12	1
Ethyl ether	BDL	1.0	ug/l	8260B	12/01/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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Est. 1970

REPORT OF ANALYSIS

Chris Loch
Carlson McCain
248 Apollo Dr: Suite 100
Lino Lakes, MN 55014

December 06,2012

ESC Sample # : L608581-05

Site ID : MAPLEWOOD, MN

Project # : 3327-00

Date Received : November 30, 2012
Description : Sinclair Oil #22020

Sample ID : TRIPBLANK

Collected By : Aric Olsen
Collection Date : 11/29/12 08:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Hexachloro-1,3-butadiene	BDL	1.0	ug/l	8260B	12/01/12	1
Isopropylbenzene	BDL	1.0	ug/l	8260B	12/01/12	1
p-Isopropyltoluene	BDL	1.0	ug/l	8260B	12/01/12	1
2-Butanone (MEK)	BDL	10.	ug/l	8260B	12/01/12	1
Methylene Chloride	BDL	5.0	ug/l	8260B	12/01/12	1
2-Hexanone	BDL	10.	ug/l	8260B	12/01/12	1
4-Methyl-2-pentanone (MIBK)	BDL	10.	ug/l	8260B	12/01/12	1
Methyl tert-butyl ether	BDL	1.0	ug/l	8260B	12/01/12	1
Naphthalene	BDL	5.0	ug/l	8260B	12/01/12	1
n-Propylbenzene	BDL	1.0	ug/l	8260B	12/01/12	1
Styrene	BDL	1.0	ug/l	8260B	12/01/12	1
1,1,1,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	12/01/12	1
1,1,2,2-Tetrachloroethane	BDL	1.0	ug/l	8260B	12/01/12	1
1,1,2-Trichlorotrifluoroethane	BDL	1.0	ug/l	8260B	12/01/12	1
Tetrachloroethene	BDL	1.0	ug/l	8260B	12/01/12	1
Tetrahydrofuran	BDL	5.0	ug/l	8260B	12/01/12	1
Toluene	BDL	5.0	ug/l	8260B	12/01/12	1
1,2,3-Trichlorobenzene	BDL	1.0	ug/l	8260B	12/01/12	1
1,2,4-Trichlorobenzene	BDL	1.0	ug/l	8260B	12/01/12	1
1,1,1-Trichloroethane	BDL	1.0	ug/l	8260B	12/01/12	1
1,1,2-Trichloroethane	BDL	1.0	ug/l	8260B	12/01/12	1
Trichloroethene	BDL	1.0	ug/l	8260B	12/01/12	1
Trichlorofluoromethane	BDL	5.0	ug/l	8260B	12/01/12	1
1,2,3-Trichloropropane	BDL	2.5	ug/l	8260B	12/01/12	1
1,2,4-Trimethylbenzene	BDL	1.0	ug/l	8260B	12/01/12	1
1,2,3-Trimethylbenzene	BDL	1.0	ug/l	8260B	12/01/12	1
1,3,5-Trimethylbenzene	BDL	1.0	ug/l	8260B	12/01/12	1
Vinyl chloride	BDL	1.0	ug/l	8260B	12/01/12	1
Xylenes, Total	BDL	3.0	ug/l	8260B	12/01/12	1
Surrogate Recovery						
Toluene-d8	99.3		% Rec.	8260B	12/01/12	1
Dibromofluoromethane	97.4		% Rec.	8260B	12/01/12	1
a,a,a-Trifluorotoluene	107.		% Rec.	8260B	12/01/12	1
4-Bromofluorobenzene	109.		% Rec.	8260B	12/01/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

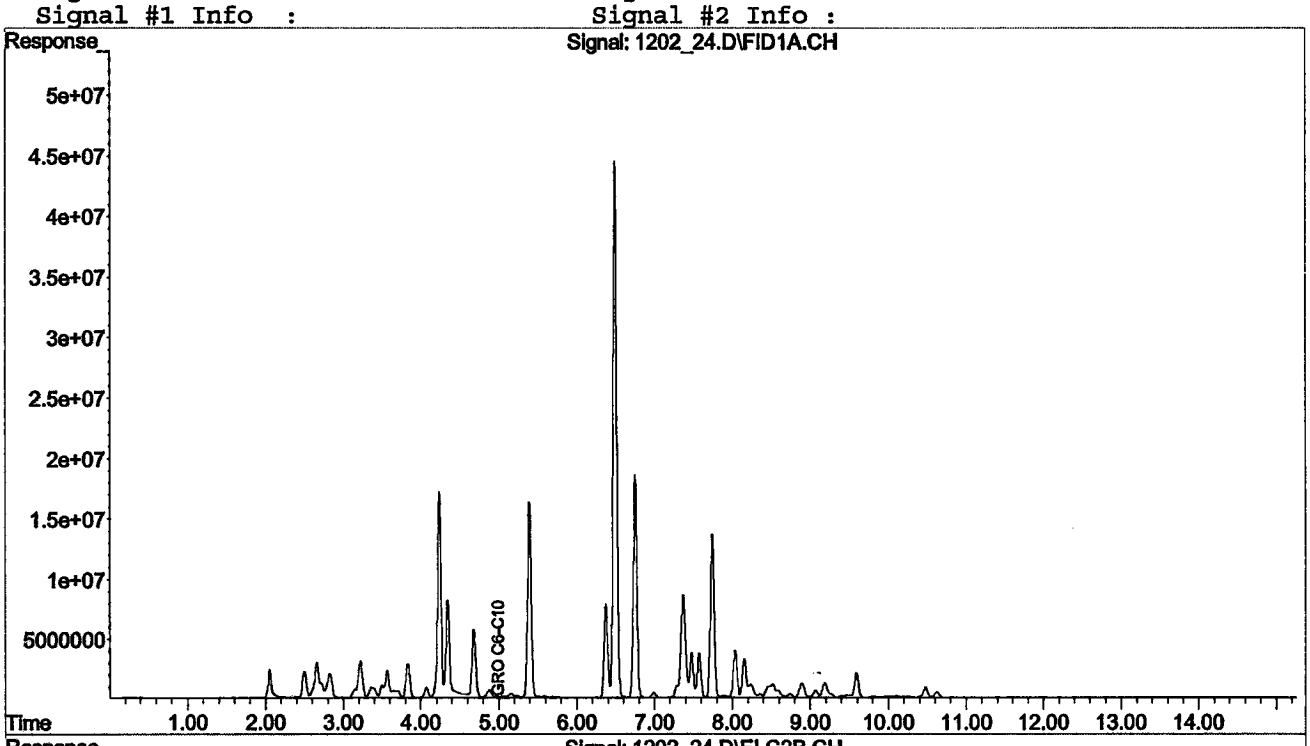
Reported: 12/06/12 09:36 Printed: 12/06/12 10:51

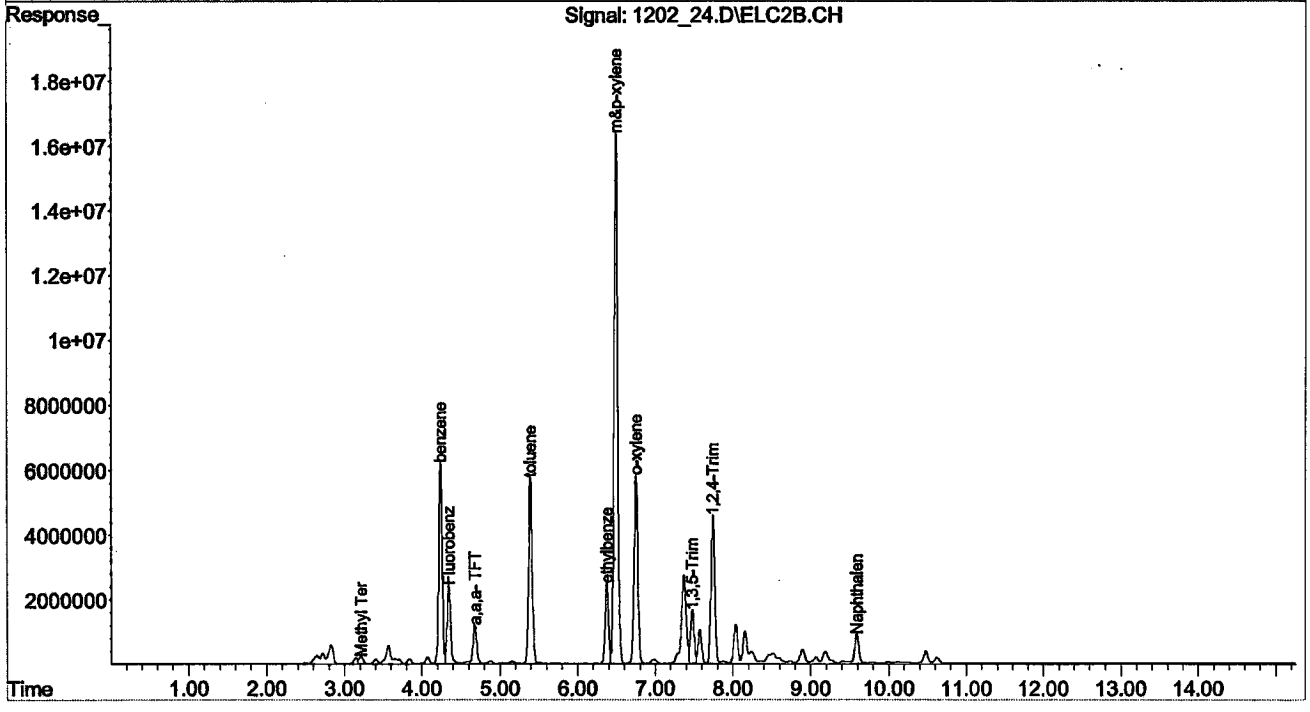
Quantitation Report (QT Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\120212\1202 24.D\FID1A.CH Vial: 24
Signal #2 : C:\MSDCHEM\1\DATA\120212\1202 24.D\ELC2B.CH
Acq On : 12-3-2012 08:40:32 AM Operator: 229
Sample : L608581-04 25x WG625887 GROWM Inst : VOCGC14
Misc : water SURIS12G24265 Multiplr: 25.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Dec 4 11:39 2012 Quant Results File: PV14K20L.RES

Quant Method : C:\MSDCHEM\1\METHODS\PV14K20L.M (Chemstation Integrator)
Title : WIS GRO VOCGC14
Last Update : Tue Nov 20 15:51:59 2012
Response via : Multiple Level Calibration
DataAcq Meth : BTEX.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

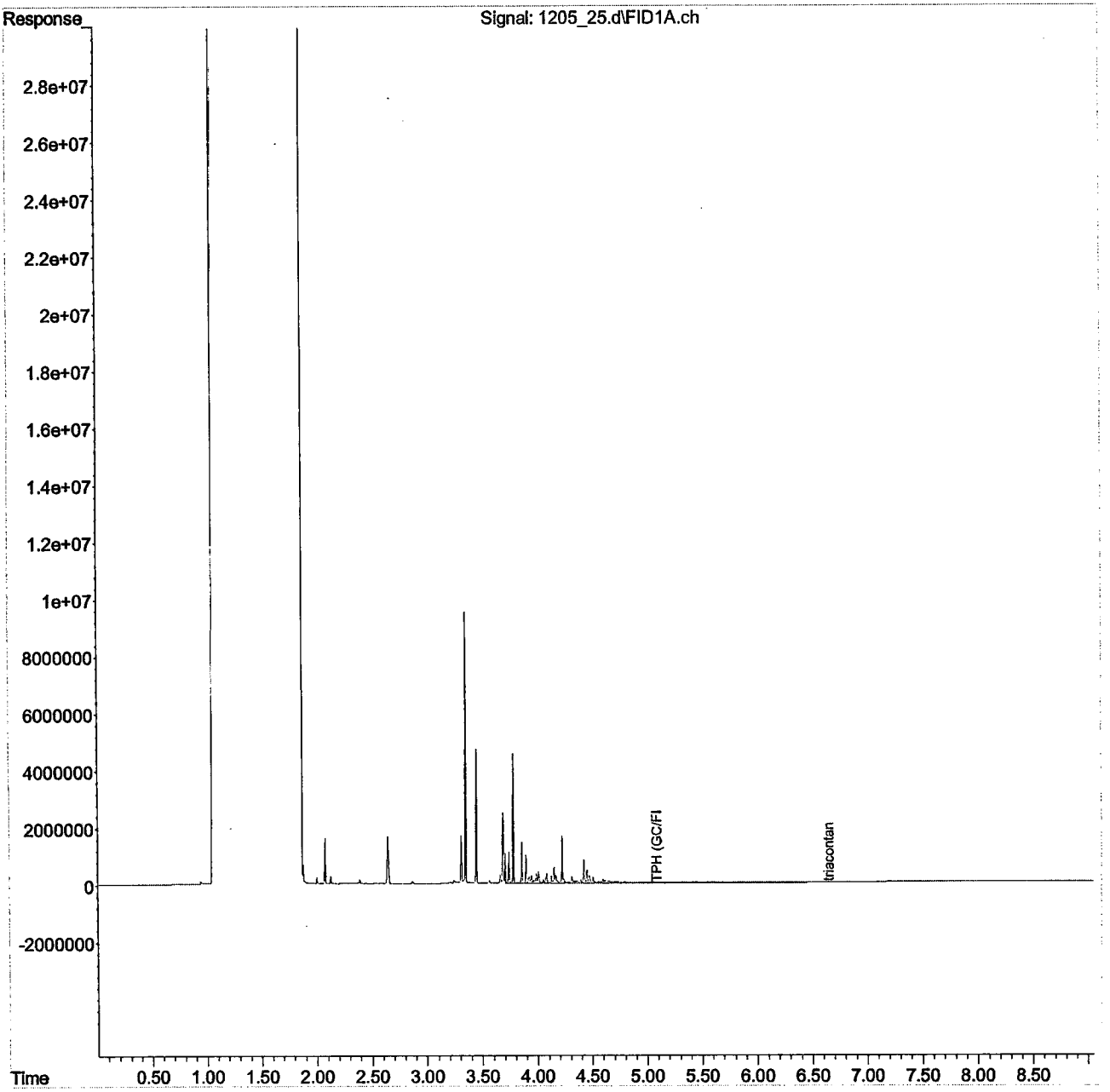




Data Path : C:\msdchem\1\DATA\120512\
Data File : 1205 25.d
Signal(s) : FID1A.ch
Acq On : 5 Dec 2012 6:19 pm
Operator : 280
Sample : L608581-04 10x WG625982 100-5 12/5/12
Misc : water sur12L05543/spk12J30930
ALS Vial : 9 Sample Multiplier: 0.5
InstName : SVGC25

Integration File: events.e
Quant Time: Dec 06 07:35:12 2012
Quant Method : C:\msdchem\1\METHODS\WM25J08L.M
Quant Title :
QLast Update : Mon Oct 08 15:28:37 2012
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

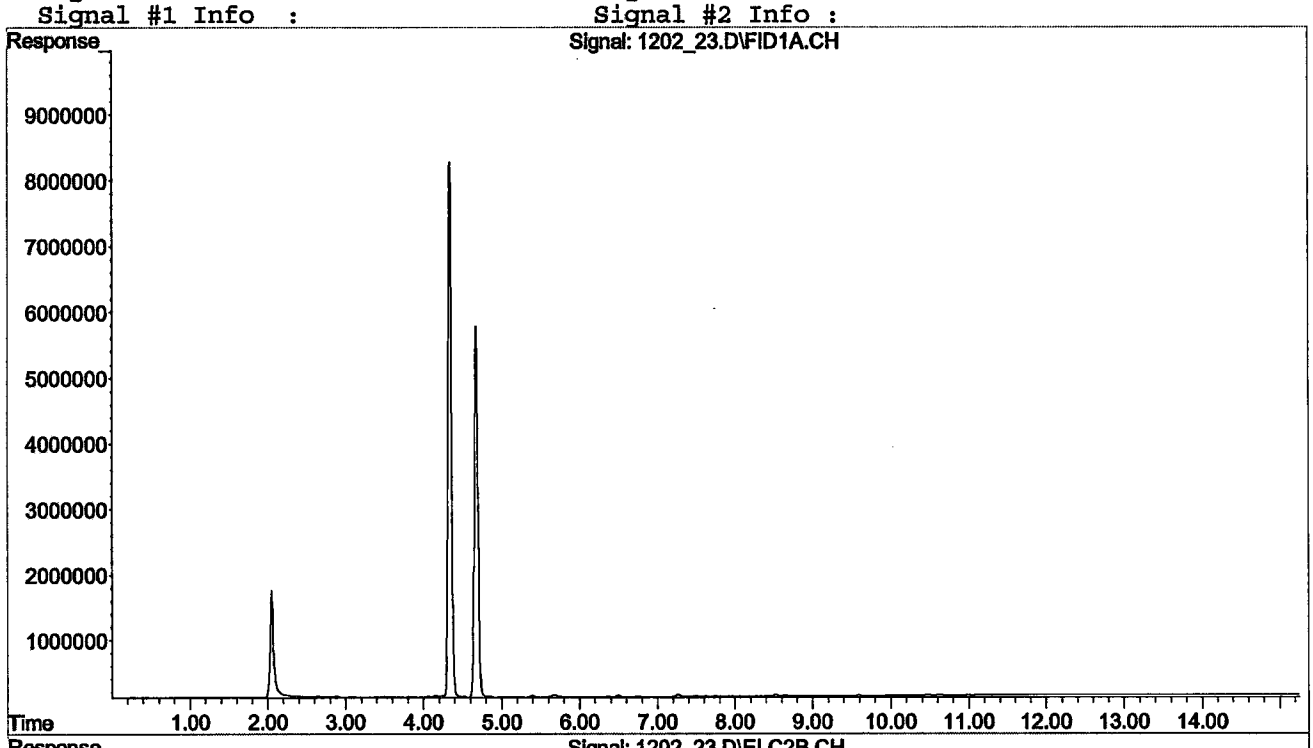


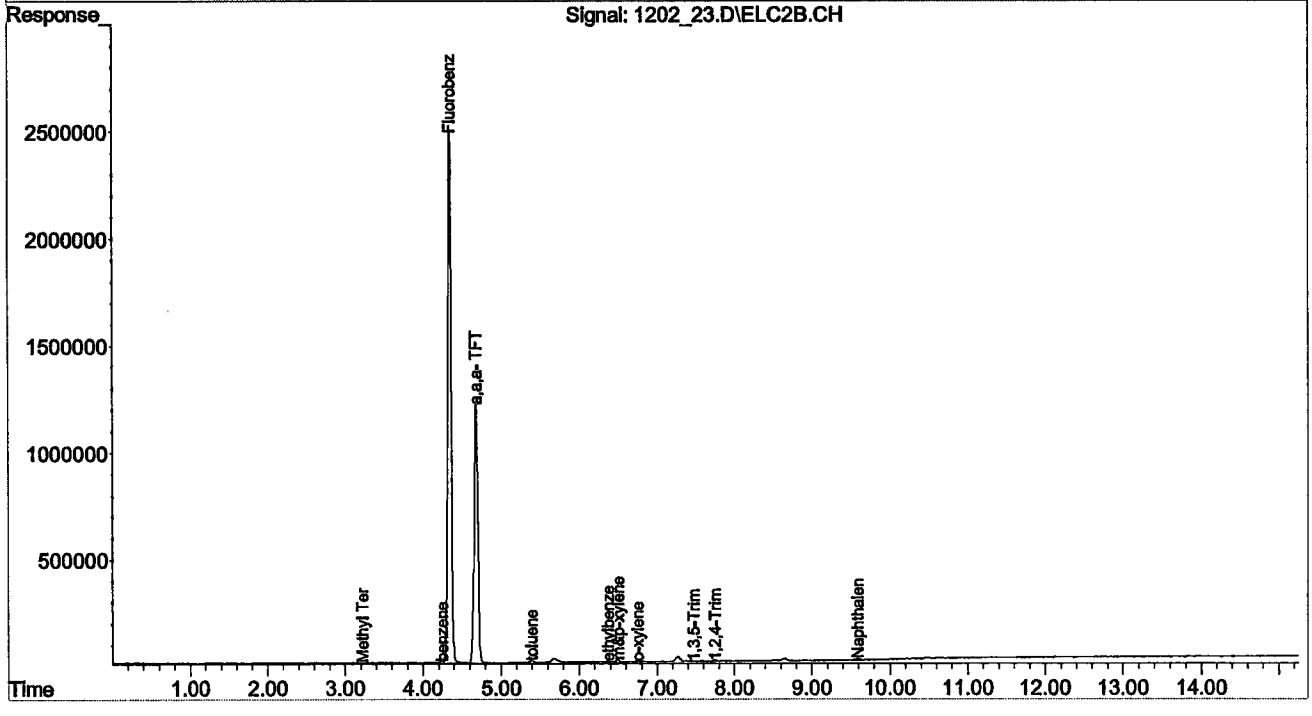
Quantitation Report (QT Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\120212\1202 23.D\FID1A.CH Vial: 23
Signal #2 : C:\MSDCHEM\1\DATA\120212\1202 23.D\ELC2B.CH
Acq On : 12-3-2012 08:18:49 AM Operator: 229
Sample : L608581-03 1x WG625887 GROWM Inst : VOCGC14
Misc : water SURIS12G24265 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Dec 4 11:38 2012 Quant Results File: PV14K20L.RES

Quant Method : C:\MSDCHEM\1\METHODS\PV14K20L.M (Chemstation Integrator)
Title : WIS GRO VOCGC14
Last Update : Tue Nov 20 15:51:59 2012
Response via : Multiple Level Calibration
DataAcq Meth : BTEX.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



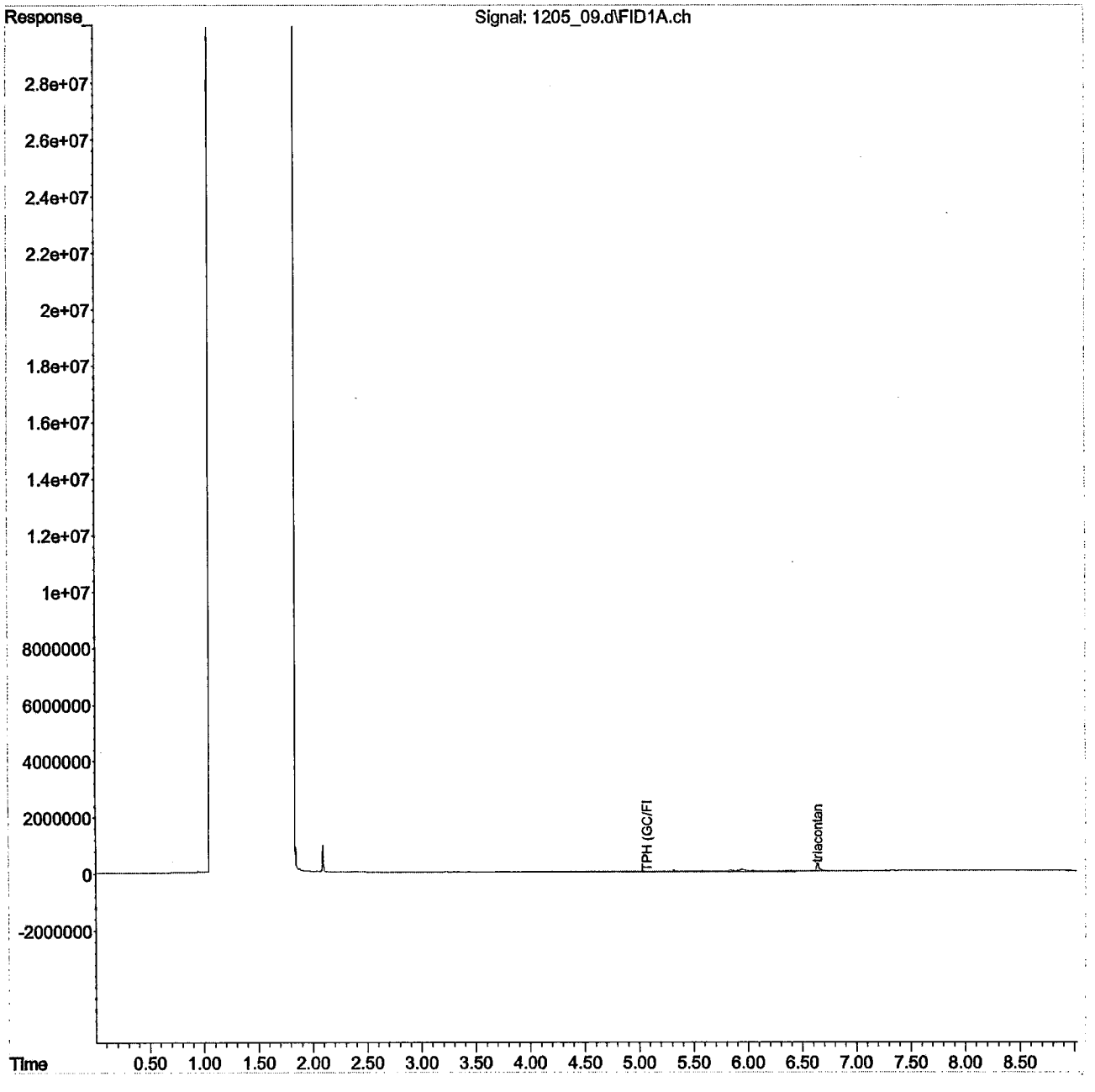


Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\120512\
Data File : 1205 09.d
Signal(s) : FID1A.ch
Acq On : 5 Dec 2012 2:17 pm
Operator : 280
Sample : L608581-03 1x WG625982 100-5 12/5/12
Misc : water sur12L05543/spk12J30930
ALS Vial : 8 Sample Multiplier: 0.05
InstName : SVGC25

Integration File: events.e
Quant Time: Dec 05 14:27:05 2012
Quant Method : C:\msdchem\1\METHODS\WM25J08L.M
Quant Title :
QLast Update : Mon Oct 08 15:28:37 2012
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

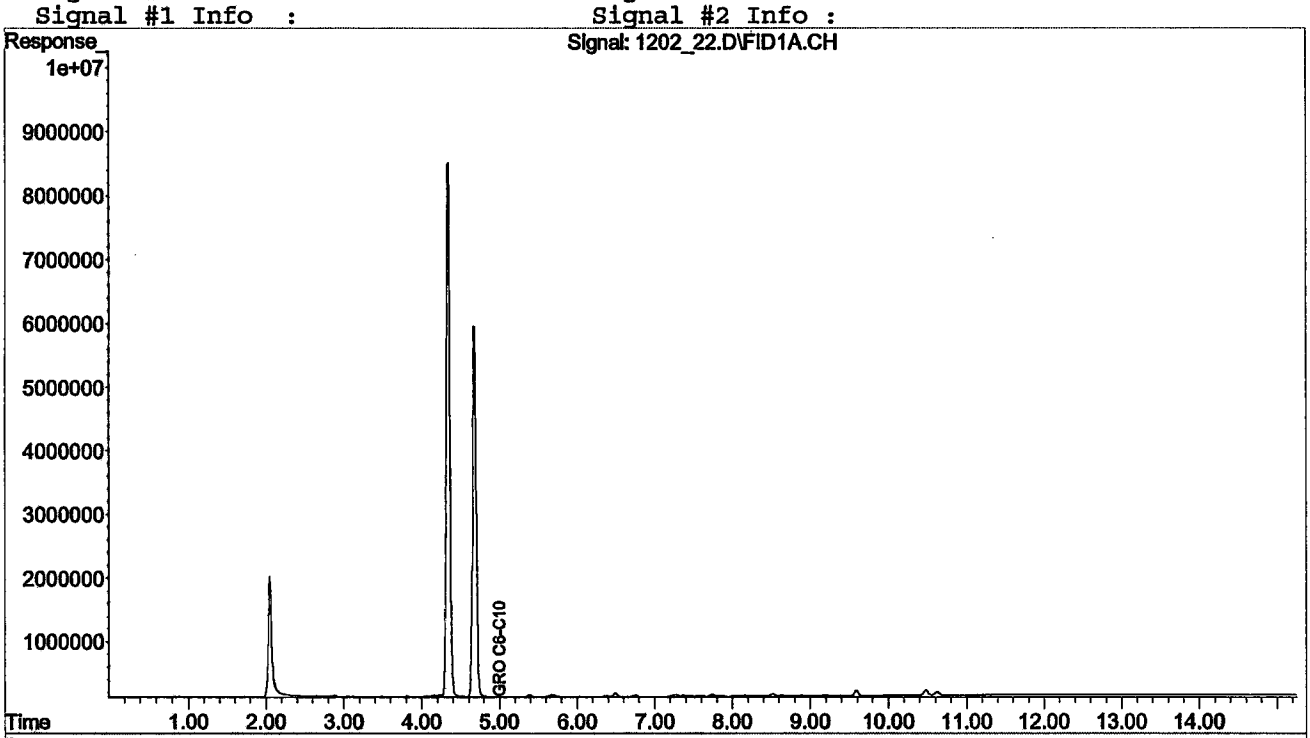


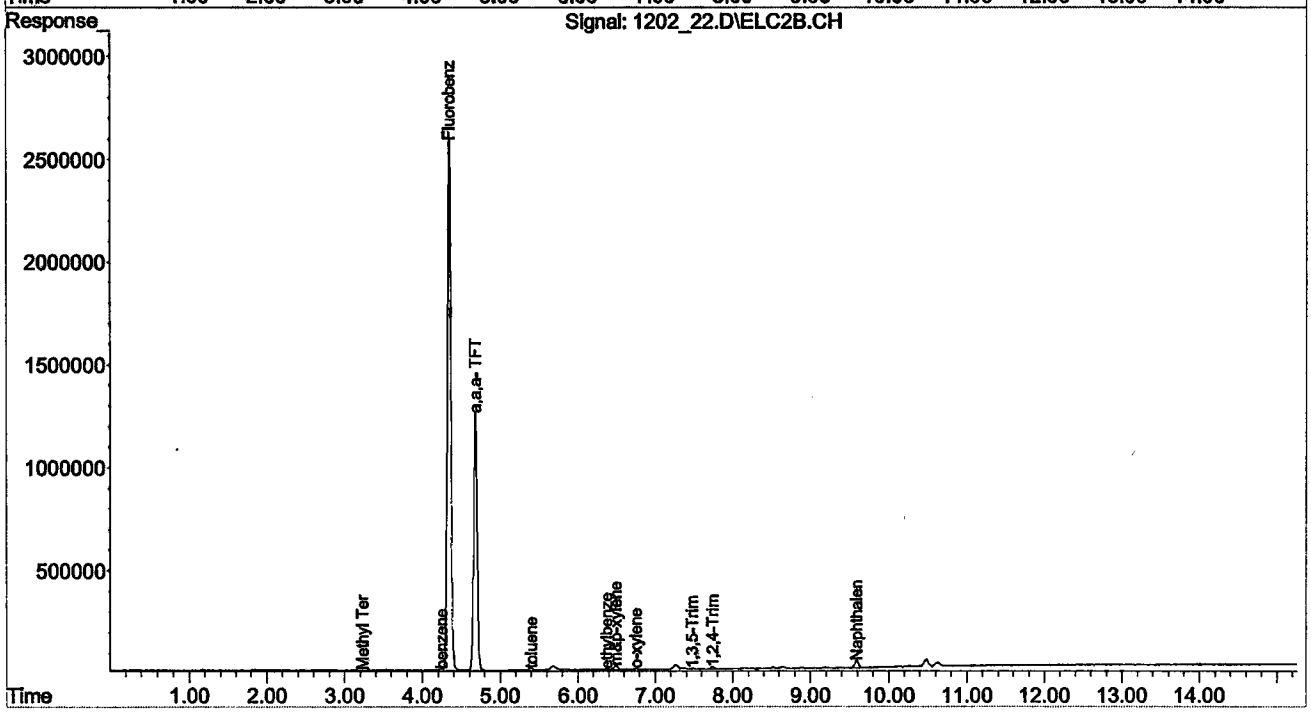
Quantitation Report (QT Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\120212\1202 22.D\FID1A.CH Vial: 22
Signal #2 : C:\MSDCHEM\1\DATA\120212\1202 22.D\ELC2B.CH
Acq On : 12-3-2012 07:57:04 AM Operator: 229
Sample : L608581-02 1x WG625887 GROWM Inst : VOCGC14
Misc : water SURIS12G24265 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Dec 4 11:38 2012 Quant Results File: PV14K20L.RES

Quant Method : C:\MSDCHEM\1\METHODS\PV14K20L.M (Chemstation Integrator)
Title : WIS GRO VOCGC14
Last Update : Tue Nov 20 15:51:59 2012
Response via : Multiple Level Calibration
DataAcq Meth : BTEX.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



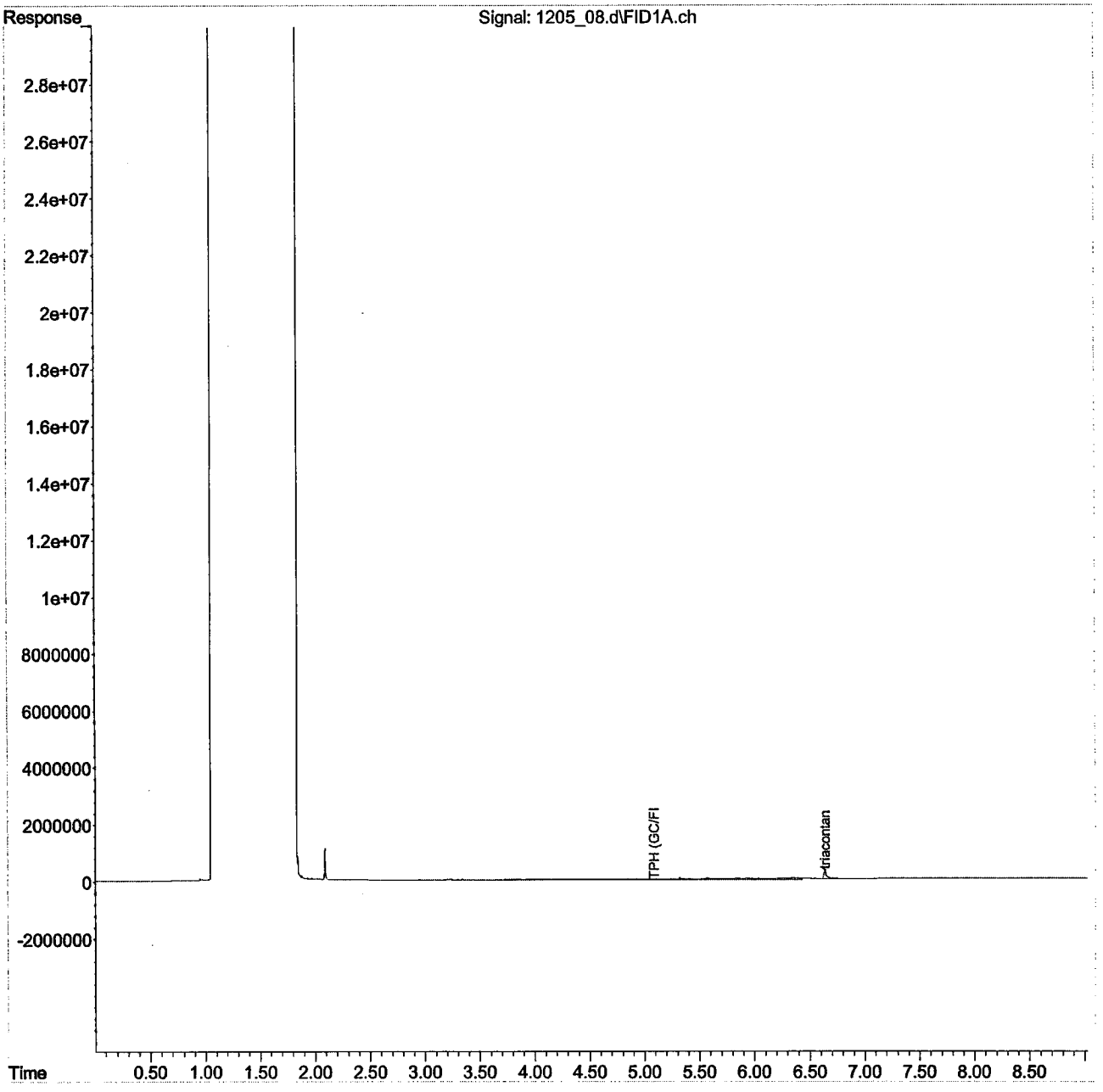


Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\120512\
Data File : 1205 08.d
Signal(s) : FID1A.ch
Acq On : 5 Dec 2012 2:02 pm
Operator : 280
Sample : L608581-02 1x WG625982 100-5 12/5/12
Misc : water sur12L05543/spk12J30930
ALS Vial : 7 Sample Multiplier: 0.05
InstName : SVGC25

Integration File: events.e
Quant Time: Dec 05 14:12:32 2012
Quant Method : C:\msdchem\1\METHODS\WM25J08L.M
Quant Title :
QLast Update : Mon Oct 08 15:28:37 2012
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

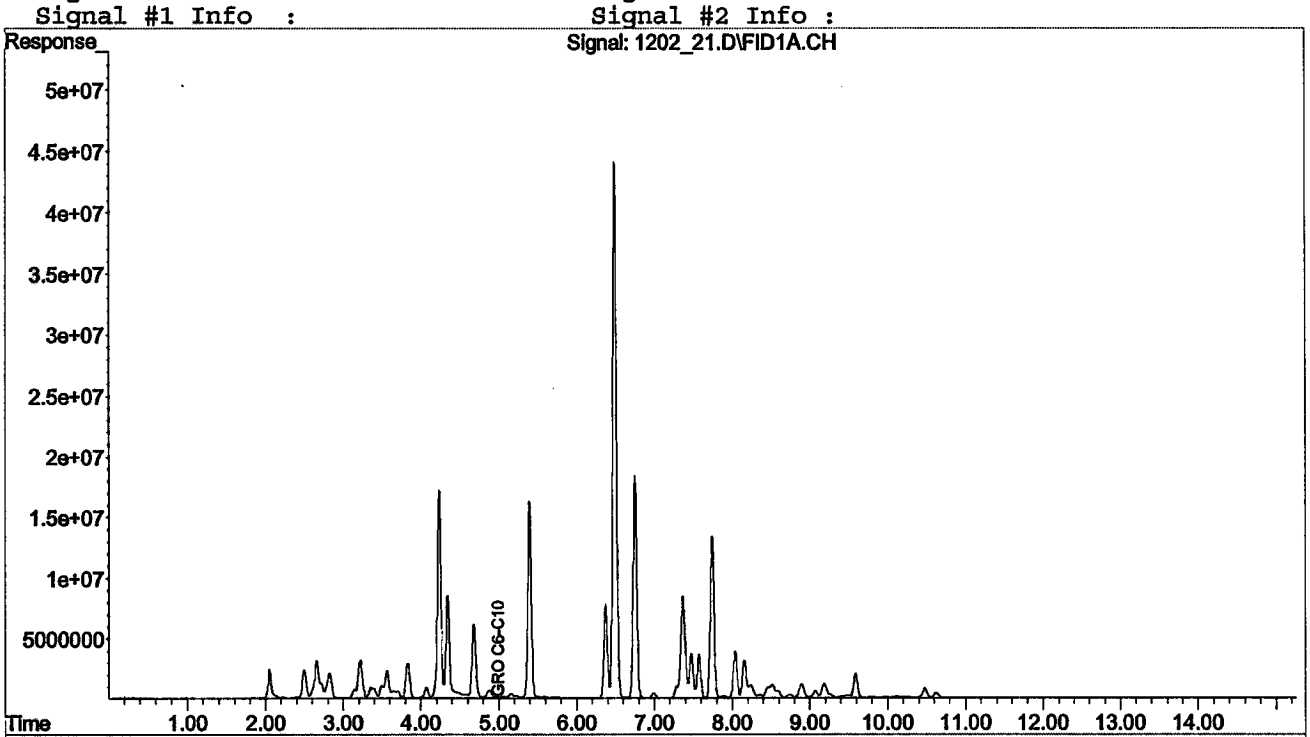


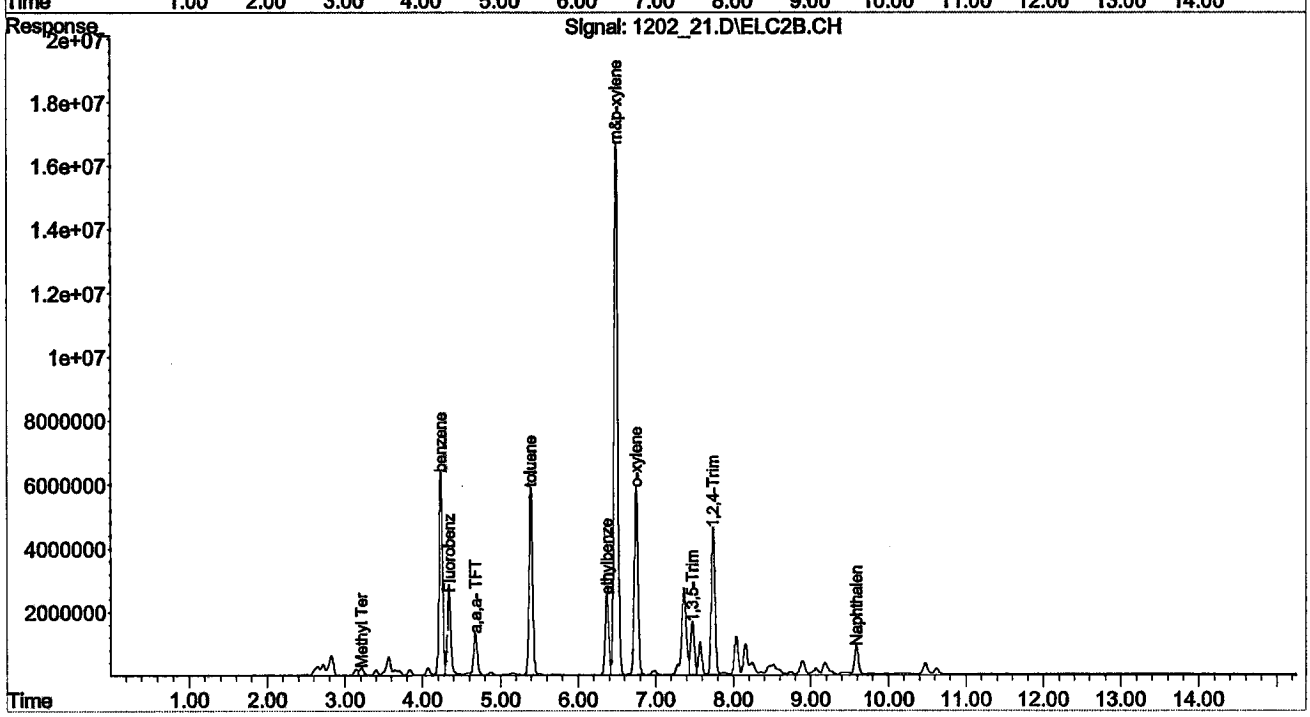
Quantitation Report (QT Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\120212\1202 21.D\FID1A.CH Vial: 21
Signal #2 : C:\MSDCHEM\1\DATA\120212\1202 21.D\ELC2B.CH
Acq On : 12-3-2012 07:35:21 AM Operator: 229
Sample : L608581-01 25x WG625887 GROWM Inst : VOCGC14
Misc : water SURIS12G24265 Multiplr: 25.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Dec 4 11:38 2012 Quant Results File: PV14K20L.RES

Quant Method : C:\MSDCHEM\1\METHODS\PV14K20L.M (Chemstation Integrator)
Title : WIS GRO VOCGC14
Last Update : Tue Nov 20 15:51:59 2012
Response via : Multiple Level Calibration
DataAcq Meth : BTEX.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



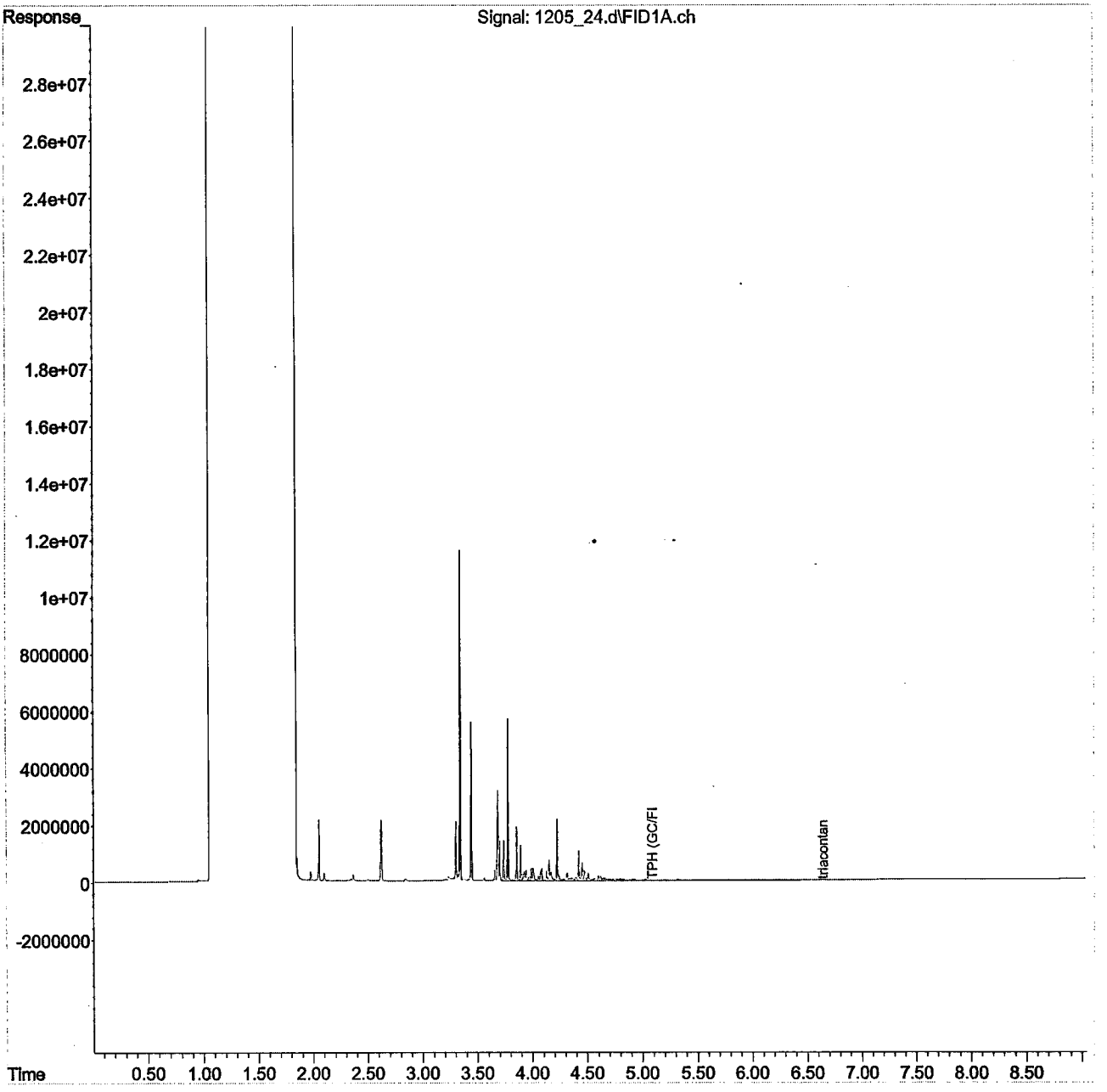


Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\120512\
Data File : 1205 24.d
Signal(s) : FID1A.ch
Acq On : 5 Dec 2012 6:04 pm
Operator : 280
Sample : L608581-01 10x WG625982 100-5 12/5/12
Misc : water sur12L05543/spk12J30930
ALS Vial : 6 Sample Multiplier: 0.5
InstName : SVGC25

Integration File: events.e
Quant Time: Dec 06 07:34:44 2012
Quant Method : C:\msdchem\1\METHODS\WM25J08L.M
Quant Title :
QLast Update : Mon Oct 08 15:28:37 2012
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Carlson McCain

248 Apollo Drive, Suite 100
Lino Lakes, MN 55014

Billing Information:

Accounts Payable
248 Apollo Dr: Suite 100

Lino Lakes, MN 55014

Analysis/Container/Preservative

H108

Chain of Custody Page 1 of 1

ESC LAB SCIENCES
12065 Lebanon Road
Mt. Juliet, TN 37122

Phone: (800) 767-5859
Phone: (615) 758-5858
Fax: (615) 758-5859

Report to: Chris Loch

Email: cloch@carlsonpsi.com

Project Description: Sinclair Oil #22020

City/State Collected: Maplewood, MN

Phone: (763) 489-7900
FAX: (763) 489-7959

Client Project #: 3327-00

Lab Project #: CARPROLLMN-SINCLAIR

Collected by (print): Aric Olsen

Site/Facility ID#: MAPLEWOOD, MN

P.O.#:

L608581

Acctnum: CARPROLLMN (lab use only)
Template/Prelogin: T83217/P412142
Cooler #: 11 30 MG
Shipped Via: FedEX Ground

Collected by (signature): [signature]

Immediately Packed on Ice N __ Y X

Rush? (Lab MUST Be Notified)
__ Same Day 200%
__ Next Day 100%
__ Two Day 50%
__ Three Day 25%

Date Results Needed: Standard TAT

Email? __No X Yes
FAX? __No __Yes

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	DROWM 100ml Amb-HCl ×2	GROWM 40mlAmb HCl	V8260/465 40mlAmb-HCl				Remarks/Contaminant	Sample # (lab only)
MW-1	Grab	GW	—	11-29-12	12:17	6	X	X	X				Petroleum odor	-01
MW-2	Grab	GW	—	11-29-12	11:34	6	X	X	X					02
MW-3	Grab	GW	—	11-29-12	10:43	6	X	X	X					03
DUPLICATE	Grab	GW	—	11-29-12	08:00	6	X	X	X					04
Trip Blank	—	—	—	11-29-12	07:00	3			X					05
Temp Blank	—	—	—	—	—	1								~~06~~

*Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other________

pH ________ Temp ________

Remarks:

Flow ________ Other ________

5413 4733 4740

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☑ FedEx ☐ Courier ☐	Condition: (lab use only)
[signature]	11-29-12	13:45			
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 4.1°C Bottles Received: 27	COC Seal Intact: __Y __N __NA
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature) [signature]	Date: 11/30/12 Time: 0930	pH Checked: NCF:

CARLSON MCCAIN, INC. METHODS and PROCEDURES

Monitoring Well Construction Details

A total of three 2-inch inner diameter (ID) water table monitoring wells (MW-1 through MW-3) were installed within the Site petroleum release source area and off-site within the down-gradient direction from previously advanced Phase II Environmental Assessment and Limited Site Investigation (LSI) soil boring locations. The monitoring wells were constructed and installed by a licensed and registered well contractor (Traut Companies) in accordance with Minnesota Department of Health (MDH) Well Code regulations. The water table wells were installed approximately 7 feet into the water table. The monitoring wells were constructed with a 10-foot factory slotted, No.10 slot (0.01 inches) poly vinyl chloride (PVC) screen connected to flush threaded, Schedule 40 PVC riser pipe to the surface.

Clean, pure-silica filter pack was placed around each screen approximately three feet above the top of the well screens. A two-foot thick granular bentonite seal was placed above the filter pack and followed by neat cement grout to within three feet below ground surface (bgs). The upper three feet of each monitoring well consisted of a concrete collar installed once the neat cement grout had cured. Surface protection consisted of a 6-inch diameter lockable, steel protective casing imbedded within the concrete. An expandable well seal cap was placed in these wells for flood protection. All well installation activities were supervised by a Carlson McCain field geologist and all well construction details entered onto a well construction log sheet.

Surveying

Following completion of monitoring well installation, the horizontal location and vertical elevation of the ground surface and top of casing for each Site and off-site monitoring well were surveyed to control points established on the south side of the site by Carlson McCain. Locations were measured to the nearest 1.0 foot and elevations were surveyed to the nearest 0.01 foot.

Well Development and Stabilization

All wells were developed after allowing the grout to set for at least 48 hours. Monitoring well development procedures for all of the wells consisted of temporarily installing a battery-operated, 2-inch diameter submersible pump and purging a minimum of five well volumes of water. Well development was considered complete when the water being removed was sediment-free and had the following characteristics:

- Water temperature was stabilized to $\pm$ 0.5 degrees C.
- pH was stabilized to $\pm$ 0.1 units.
- Specific conductance (temperature corrected) was stabilized to $\pm$ 5%.

Well development and stabilization procedures were conducted in accordance with applicable MPCA procedures and protocols. All field instruments used during well development was calibrated in the field prior to use and entered onto a calibration log sheet.

Quarterly Groundwater Sampling

Prior to sampling, the elevation of the water level from each monitoring well was measured. All measurements were made using an electronic water level indicator to the nearest 0.01 foot. The groundwater elevation for each monitoring well was measured after allowing the wells to stabilize for at least 48 hours following well development. All measurements were made using an electronic water level indicator and were measured to the nearest 0.01 foot. These measurements were taken from the top of casing (TOC) for each well. Measurements taken while drilling were made to the nearest 0.1 foot. Quarterly groundwater sampling events were conducted on February 21, June 22, August 20 and November 29 of 2012 from each monitoring well. All sampling and analysis was conducted in accordance with MPCA groundwater sampling protocol and is discussed in detail in the following sections.

Initially, a minimum of 3 well volumes were removed from each monitoring well prior to sampling. A peristaltic pump was utilized to purge groundwater from each well. During the purging process, field measurements of pH, temperature, and conductivity were obtained. All field instruments used during the purging process were calibrated in the field prior to use and entered onto a calibration log sheet. Sampling was conducted when the water being removed was sediment-free and had the following characteristics:

- Water temperature was stabilized to $\pm$ 0.5 degrees C.
- pH was stabilized to $\pm$ 0.1 units.
- Specific conductance (temperature corrected) was stabilized to $\pm$ 5%.

Upon completion of the purging and stabilization of each well, groundwater samples were collected, preserved, and placed into clean, laboratory supplied sample containers. Each sample was uniquely numbered and entered onto the sample label using indelible ink. Additional information included on the label were the analytical parameter(s), preservative(s), sampling personnel, date of sample collection, time of sample collection, sample type (grab or composite), and the project number. The sample label was then directly affixed to the appropriate sample container and covered using clear tape. In addition to the sample labels, all information regarding sample collection was entered onto a sample collection log sheet and chain of custody form provided by the laboratory.

Decontamination

Upon mobilization to the Site, sampling equipment was decontaminated to minimize the potential for cross-contamination. In addition, sampling equipment was decontaminated between sampling locations with Liquinox® or trisodium phosphate (TSP) and tap water wash followed by a tap-water rinse.

Laboratory Analysis

A total of four rounds of quarterly groundwater samples were collected from each Site and off-site monitoring well and submitted to a fixed-base laboratory for chemical analysis. All samples were prepared and analyzed in accordance with MDH and/or Environmental Protection Agency (EPA) methods and procedures. Collected

groundwater samples were analyzed for gasoline range organics (GRO), diesel range organics (DRO) and volatile organic compounds (VOCs).

Quality Assurance/Quality Control

As a quality assurance/quality control (QA/QC) measure, both field and laboratory samples were analyzed in an effort to evaluate procedures being used. For groundwater samples submitted to the fixed-base laboratory, one duplicate sample was collected during each groundwater sampling event from monitoring well MW-1 ("worst-case"). An equipment blank, consisting of de-ionized rinse water that was ran through the sampling equipment, was also collected during each ground water sampling event to determine if cross-contamination had occurred between sampling locations. A trip blank accompanied the samples that were analyzed for VOCs. Laboratory QA/QC included method blanks, surrogate spikes and/or matrix spikes/ matrix spike duplicates (MS/MSD).

After the data were received from the laboratory, the individual reports were reviewed for accuracy and completeness to make sure that specific data quality objectives had been met (i.e., comparing results from duplicate samples, verification that holding times were met, reviewing detection limits, trip/ equipment blank results, etc.).

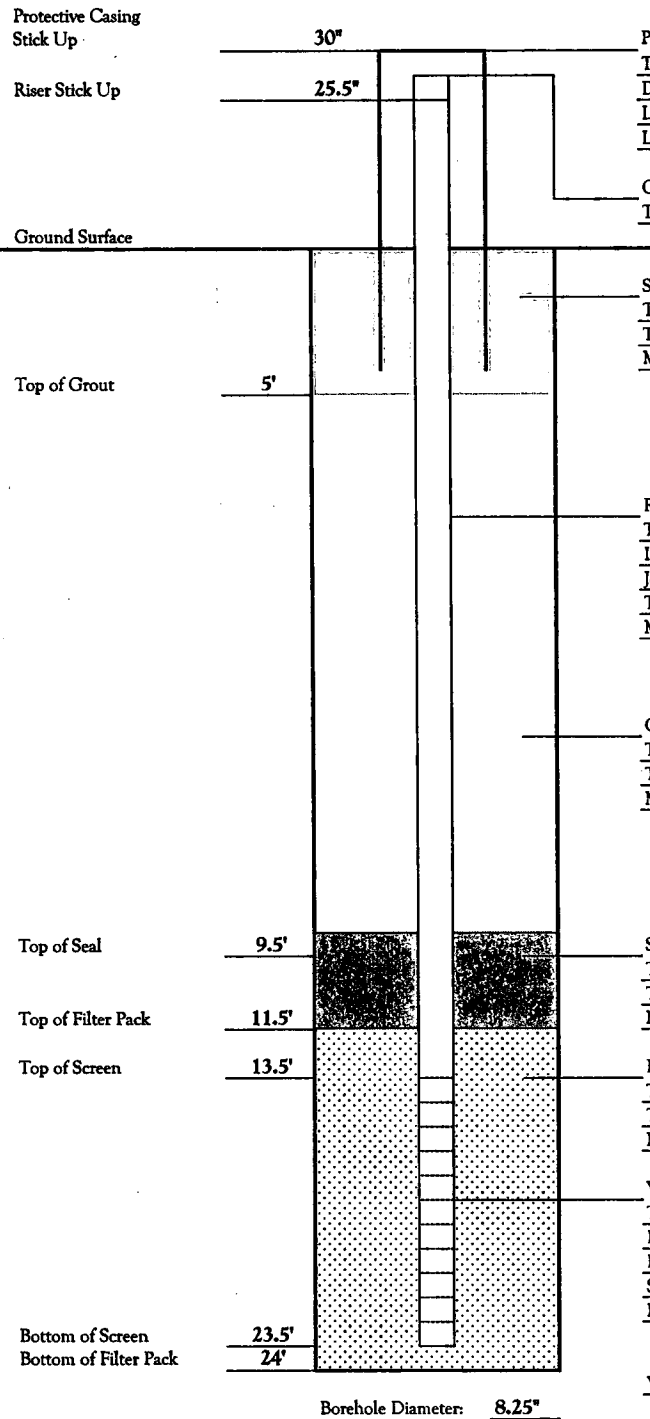
Carlson McCain

Monitoring Well Diagram
Above Grade Completion

MW-1

PROJECT NAME: Sinclair 22020
LOCATION:

Drilling Method:	Auger	Ground Surface Elevation:	862.09'
Company:	Traut Wells	MDH Unique Well No.:	#788734
Foreman:	Steve	Date/Time Started:	10:00
Rig Model:		Date/Time Completed:	12:30
Geol/Engr:	Jeff Neisse	Coordinates:	



PROTECTIVE CASING
Type: Pro Top | Bumper Posts: NA
Diameter: 6" | Casing Elevation:
Length: 6'
Locked: Yes | Key Number: 2121

CAP OR PLUG
Type: Expansion Cap | Vented: No

SURFACE BACKFILL MATERIAL
Type: Concrete
Total Volume: 1 Bag
Manufacturer:

RISER PIPE
Type: PVC
Inner Diameter: 2.0 inches
Joint Type: Flush Thread
Total Length: | No./Length of Sections: 2
Manufacturer: Mono-Flex

GROUT
Type:
Total Volume: | Mix Ratio:
Manufacturer:

SEAL
Type/Size: Bentonite Chips 3/8"
Total Volume: 1 Bag
Manufacturer: Hole Plug

FILTER PACK
Type/Size: Red Flint 40 Slot
Total Volume: 7 Pails (Bags)
Manufacturer:

WELL SCREEN
Type: PVC
Inner Diameter: 2.0"
Length: 10' | Effective Length:
Slot Size: 10-Slot
Manufacturer: Johnson

WATER SOURCE: Municipal

NOTES: Borrowed water from Champps Resteraunt to the north

PO Box 429, 5300 Highway 12 • Maple Plain, MN 55359 • Phone 952-346-3900 • Fax 952-346-3901 • www.carlsonmccain.com

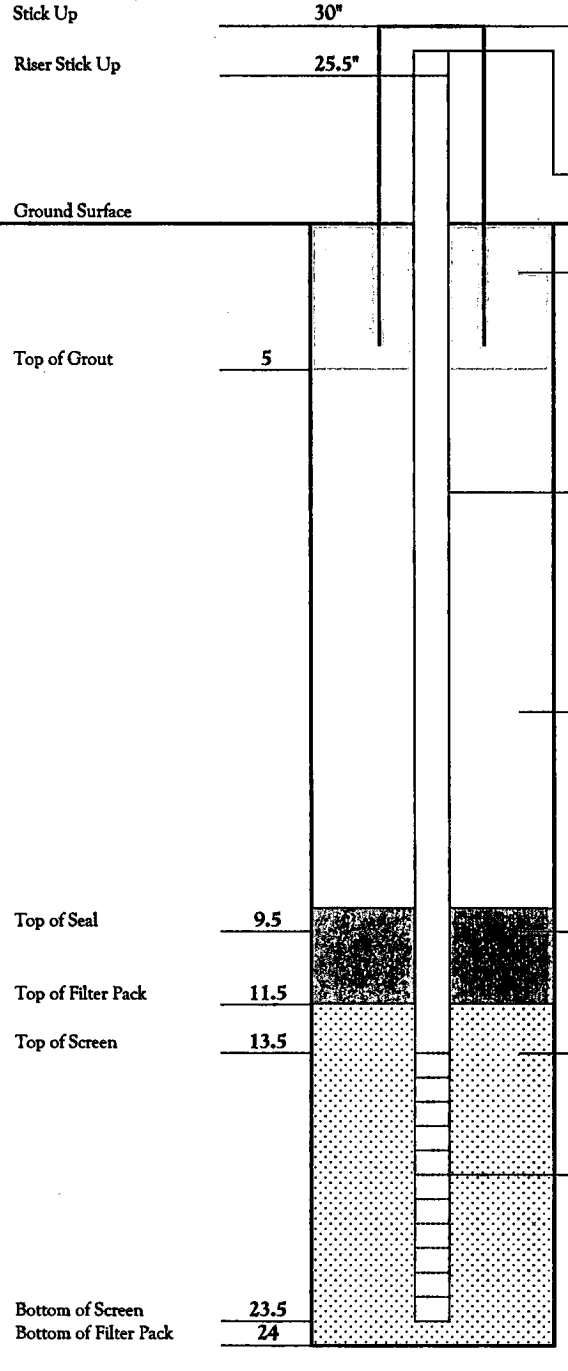
Carlson McCain

Monitoring Well Diagram
Above Grade Completion

MW-2

PROJECT NAME: Sinclair 22020
LOCATION:

Drilling Method:	Auger	Ground Surface Elevation:	862.09'
Company:	Traut Wells	MDH Unique Well No.:	#788734
Foreman:	Steve	Date/Time Started:	10:00
Rig Model:		Date/Time Completed:	12:30
Geol/Engr:	Jeff Neisse	Coordinates:	



Borehole Diameter: 8.25"

Total Depth of Boring: 24
Total Length of Well:

PROTECTIVE CASING
Type: Prolop | Bumper Posts: NA
Diameter: 6" | Casing Elevation:
Length: 6'
Locked: Yes | Key Number: 2121

CAP OR PLUG
Type: Expansion Cap | Vented: No

SURFACE BACKFILL MATERIAL
Type: Concrete
Total Volume: 1 Bag
Manufacturer:

RISER PIPE
Type: PVC
Inner Diameter: 2.0 inches
Joint Type: Flash Thread
Total Length: | No./Length of Sections: 2
Manufacturer: Mono-Flex

GROUT
Type:
Total Volume: | Mix Ratio:
Manufacturer:

SEAL
Type/Size: Bentonite Chips 3/8"
Total Volume: 1 Bag
Manufacturer: Hole Plug

FILTER PACK
Type/Size: Red Flint 40 Slot
Total Volume:
Manufacturer: 7 Pails (Bags)

WELL SCREEN
Type: PVC
Inner Diameter: 2.0"
Length: 10' | Effective Length:
Slot Size: 10-Slot
Manufacturer: Johnson

WATER SOURCE: Municipal

NOTES: Borrowed water from Champps Resteraunt to the north

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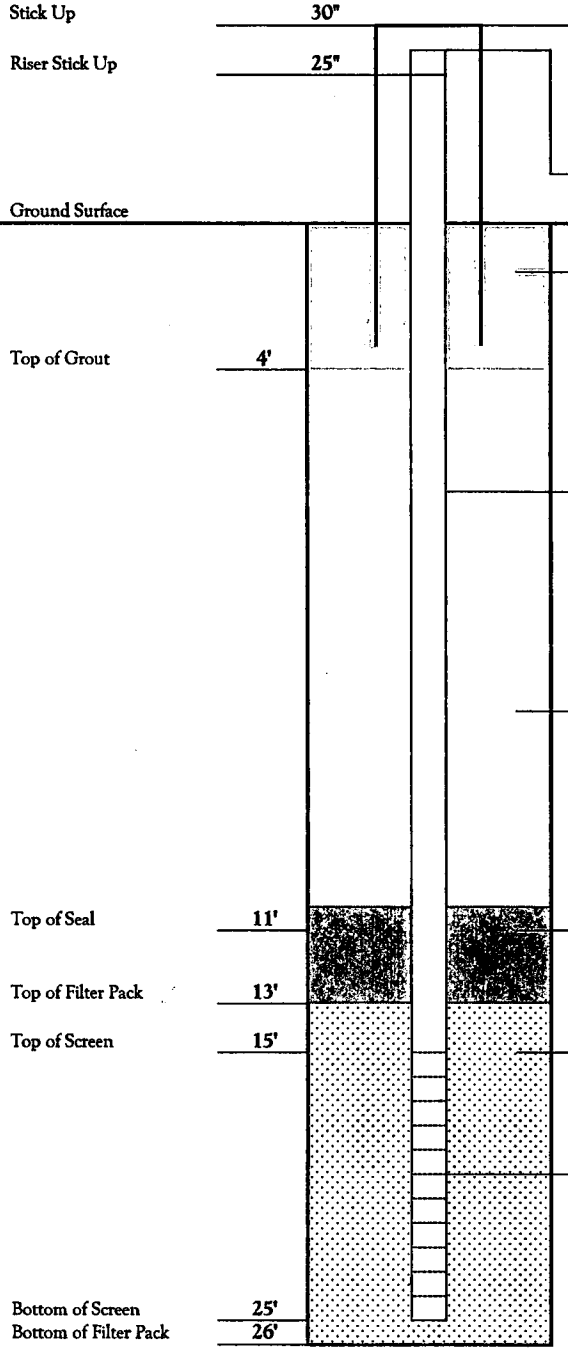
Monitoring Well Diagram
Above Grade Completion

MW-3

PROJECT NAME: Sinclair 22020
LOCATION:

Drilling Method:	HSA	Ground Surface Elevation:	863.73'
Company:	Traut Wells	MDH Unique Well No.:	#788736
Foreman:	Steve	Date/Time Started:	2/8/2012 9:28
Rig Model:	Skid Steer	Date/Time Completed:	2/8/2012 1:20
Geol/Engr:	Chris Loch	Coordinates:	



PROTECTIVE CASING
Type: Pro Top | Bumper Posts: NA
Diameter: 6" | Casing Elevation:
Length: 6'
Locked: Yes | Key Number: 2121

CAP OR PLUG
Type: Expansion Cap | Vented: No

SURFACE BACKFILL MATERIAL
Type: Concrete
Total Volume:
Manufacturer:

RISER PIPE
Type: PVC-Mono Flex
Inner Diameter: 2.0 inches
Joint Type: Flush Thread
Total Length: 17' | No./Length of Sections: 2
Manufacturer: Mono-Flex

GROUT
Type: Ben-seal
Total Volume: | Mix Ratio:
Manufacturer:

SEAL
Type/Size: Bentonite Chips 3/8"
Total Volume: 1 Bag
Manufacturer:

FILTER PACK
Type/Size: Red Flint 40 Slot
Total Volume: 7 Pails (Bags)
Manufacturer:

WELL SCREEN
Type: PVC-Mono Flex
Inner Diameter: 2.0"
Length: 10' | Effective Length:
Slot Size: 10-Slot
Manufacturer: Mono Flex

Borehole Diameter: 8.25"

WATER SOURCE: Municipal

NOTES: Water @ 18.2' (12:00)
Water @ 17.8' (12:58)

Total Depth of Boring 30'
Total Length of Well 25'

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MINNESOTA DEPARTMENT OF HEALTH

WELL AND BORING RECORD

Minnesota Statutes, Chapter 103I

MINNESOTA UNIQUE WELL AND BORING NO. **788734**

WELL OR BORING LOCATION

County Name: **Ramsey**

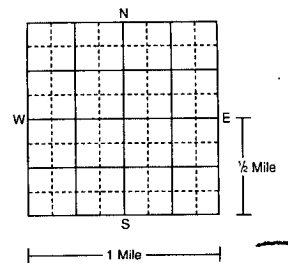
Township Name	Township No.	Range No.	Section No.	Fraction
Maplewood	29	22	18	SW SE, SE

GPS LOCATION: N Latitude 094 degrees 059 minutes 31 seconds 8; W Longitude 091 degrees 05 minutes 27 seconds 5

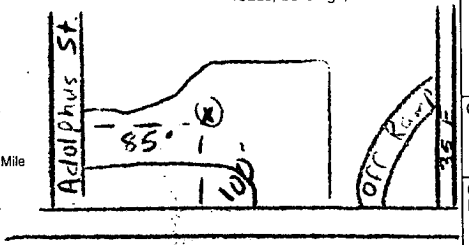
House Number, Street Name, City, and ZIP Code of Well Location: **223 E Larpenteur Ave. Maplewood 55117**

Fire Number:

Show exact location of well/boring in section grid with "X."



Sketch map of well/boring location. Showing property lines, roads, buildings, and direction.



PROPERTY OWNER'S NAME/COMPANY NAME: **Sinclair Marketing, Inc.**

Property owner's mailing address if different than well location address indicated above.

550 East South Temple
Salt Lake City, UT 84102

WELL OWNER'S NAME/COMPANY NAME: **Sinclair Marketing**

Well/boring owner's mailing address if different than property owner's address indicated above.

550 East South Temple
Salt Lake City, UT 84102

GEOLOGICAL MATERIALS	COLOR	HARDNESS OF MATERIAL	FROM	TO
Fill	Brown	S	0	10
Sand	Brn/Blk	S	10	24

Use a second sheet, if needed.

REMARKS, ELEVATION, SOURCE OF DATA, etc.

LOCAL COPY 788734

WELL/BORING DEPTH (completed): 24 ft. DATE WORK COMPLETED: 1-7-12

DRILLING METHOD: [X] Auger [ ] Cable Tool [ ] Driven [ ] Rotary [ ] Other

DRILLING FLUID: N/A

WELL HYDROFRACTURED? [ ] Yes [X] No From ft. To ft.

USE: [ ] Domestic [X] Monitoring [ ] Heating/Cooling [ ] Noncommunity PWS [ ] Environ. Bore Hole [ ] Industry/Commercial [ ] Community PWS [ ] Irrigation [ ] Remedial [ ] Elevator [ ] Dewatering [ ]

CASING MATERIAL: [ ] Steel [X] Plastic

Drive Shoe? [ ] Yes [X] No

[X] Threaded [ ] Welded [ ]

HOLE DIAM.

CASING Diameter / Weight / Specifications

2 in. To 14 ft.	16.8 lbs./ft.	0.20 ft	8¼ in. To 24 ft.
in. To ft.	lbs./ft.		in. To ft.
in. To ft.	lbs./ft.		in. To ft.

SCREEN: Make Monoflex; Type Johnson; Slot/Gauze PVC .10; Set between 14 ft. and 24 ft.

OPEN HOLE: From 2" ft. To ft. Diam. Length 10' FITTINGS FL+H

STATIC WATER LEVEL: 16 ft. [X] Below [ ] Above land surface Measured from grade Date measured 1-17-12

PUMPING LEVEL (below land surface): ft. after hrs. pumping g.p.m.

WELLHEAD COMPLETION: [ ] Pitless/adapter manufacturer Model [X] Casing protection 6" Steel [ ] 12 in. above grade [ ] At-grade [ ] Well House [ ] Hand Pump

GROUTING INFORMATION (specify bentonite, cement-sand, neat-cement, concrete, cuttings, or other)

Material HS Bentonite	From 1	To 10 ft.	2	[ ] Yds.	[X] Bags
Material	From	To ft.		[ ] Yds.	[ ] Bags
Material	From	To ft.		[ ] Yds.	[ ] Bags
Driven casing seal	From	To	Bags		

NEAREST KNOWN SOURCE OF CONTAMINATION: N/A feet direction type

Well disinfected upon completion? [ ] Yes [ ] No

PUMP: [X] Not installed Date installed

Manufacturer's name

Model Number HP Volts

Length of drop pipe ft. Capacity g.p.m.

Type: [ ] Submersible [ ] L.S. Turbine [ ] Reciprocating [ ] Jet [ ]

ABANDONED WELLS: Does property have any not in use and not sealed well(s)? [ ] Yes [X] No

VARIANCE: Was a variance granted from the MDH for this well? [ ] Yes [X] No TN#

WELL CONTRACTOR CERTIFICATION

This well was drilled under my supervision and in accordance with Minnesota Rules, Chapter 4725. The information contained in this report is true to the best of my knowledge.

Mark J. Traut Wells, Inc. 1404

Licensee Business Name Lic. or Reg. No.

Dan Traut 589 3-12-12

Certified Representative Signature Certified Rep. No. Date

Steve Weisbrich

Name of Driller

IC 140-0020

HE-01205-13 (Rev. 11/10)

MINNESOTA DEPARTMENT OF HEALTH

WELL AND BORING RECORD

Minnesota Statutes, Chapter 103I

MINNESOTA UNIQUE WELL AND BORING NO.: 788735

WELL OR BORING LOCATION

County Name: Ramsey

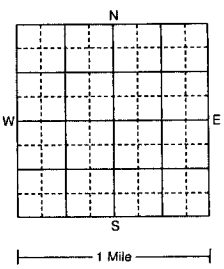
Township Name	Township No.	Range No.	Section No.	Fraction
Maplewood	29	22	18	SW ¼ SE ¼ SE ¼

GPS LOCATION: N Latitude 44 degrees 51 minutes 30 seconds 3; W Longitude 093 degrees 05 minutes 27 seconds 4

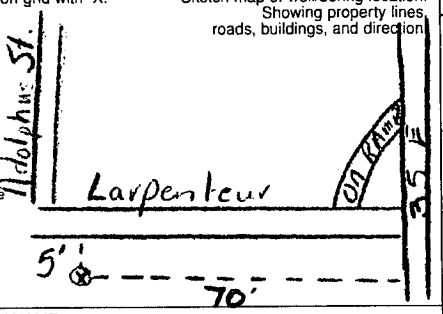
House Number, Street Name, City, and ZIP Code of Well Location: ROW 223 E Larpentuer Ave. Maplewood, 55117

Fire Number:

Show exact location of well/boring in section grid with "X."



Sketch map of well/boring location. Showing property lines, roads, buildings, and direction.



PROPERTY OWNER'S NAME/COMPANY NAME: City of St Paul - ROW Division

Property owner's mailing address if different than well location address indicated above.

889 Dale Street N.
St. Paul, MN 55103

WELL OWNER'S NAME/COMPANY NAME: Sinclair Marketing, Inc.

Well/boring owner's mailing address if different than property owner's address indicated above.

550 East South Temple
Salt Lake City, Utah 84102

GEOLOGICAL MATERIALS	COLOR	HARDNESS OF MATERIAL	FROM	TO
Clay/Rocks	Brown	S	0	6
Sand	Brown	S	6	25

Use a second sheet, if needed.

REMARKS, ELEVATION, SOURCE OF DATA, etc.

MW-2

LOCAL COPY 788735

WELL/BORING DEPTH (completed): 23 ft.

DATE WORK COMPLETED: 2-8-12

DRILLING METHOD: [X] Auger; [ ] Cable Tool; [ ] Driven; [ ] Rotary; [ ] Other

DRILLING FLUID: N/A

WELL HYDROFRACTURED? [ ] Yes [X] No From ft. To ft.

USE: [ ] Domestic; [X] Monitoring; [ ] Heating/Cooling; [ ] Noncommunity PWS; [ ] Environ. Bore Hole; [ ] Industry/Commercial; [ ] Community PWS; [ ] Irrigation; [ ] Remedial; [ ] Elevator; [ ] Dewatering; [ ]

CASING MATERIAL: [ ] Steel; [X] Plastic

Drive Shoe? [ ] Yes [X] No; [X] Threaded; [ ] Welded; [ ]

HOLE DIAM.

CASING Diameter / Weight / Specifications

				HOLE DIAM.
2 in. To 0 ft.	13 lbs./ft.			8¼ in. To 25 ft.
in. To ft.	lbs./ft.			in. To ft.
in. To ft.	lbs./ft.			in. To ft.

SCREEN: Make Monoflex; Type Johnson; Slot/Gauze PVC; Set between ft. and ft.

OPEN HOLE: From ft. To ft.

Diam. 2"; Length 10'; FITTINGS FL&H

STATIC WATER LEVEL: 15 ft. [X] Below [ ] Above land surface; Measured from; Date measured

PUMPING LEVEL (below land surface): N/A ft. after hrs. pumping g.p.m.

WELLHEAD COMPLETION: [ ] Pitless/adapter manufacturer; Model; [X] Casing protection 6" Steel; [ ] 12 in. above grade; [ ] At-grade; [ ] Well House; [ ] Hand Pump

GROUTING INFORMATION (specify bentonite, cement-sand, neat-cement, concrete, cuttings, or other)

Material Bentonite	From 2	To 11 ft.	3	[ ] Yds.	[X] Bags
Material Portland	From 0	To 2 ft.	1	[ ] Yds.	[X] Bags
Material	From	To ft.		[ ] Yds.	[ ] Bags
Driven casing seal	From	To	Bags		

NEAREST KNOWN SOURCE OF CONTAMINATION: N/A feet direction type

Well disinfected upon completion? [ ] Yes [ ] No

PUMP: [X] Not installed; Date installed

Manufacturer's name

Model Number HP Volts

Length of drop pipe ft. Capacity g.p.m.

Type: [ ] Submersible [ ] L.S. Turbine [ ] Reciprocating [ ] Jet [ ]

ABANDONED WELLS: Does property have any not in use and not sealed well(s)? [ ] Yes [X] No

VARIANCE: Was a variance granted from the MDH for this well? [ ] Yes [X] No TN#

WELL CONTRACTOR CERTIFICATION

This well was drilled under my supervision and in accordance with Minnesota Rules, Chapter 4725. The information contained in this report is true to the best of my knowledge.

Mark J. Traut Wells, Inc. — Licensee Business Name — Lic. or Reg. No. 1404

Paul Traut — Certified Representative Signature — Certified Rep. No. 589 — Date 3-12-12

Steve Weisbrich — Name of Driller

IC 140-0020

HE-01205-13 (Rev. 11/10)

MINNESOTA DEPARTMENT OF HEALTH

WELL AND BORING RECORD

Minnesota Statutes, Chapter 103I

MINNESOTA UNIQUE WELL AND BORING NO.: 788736

WELL OR BORING LOCATION

County Name: Ramsey

Township Name	Township No.	Range No.	Section No.	Fraction
Maplewood	29	22	18	SW ¼ SE ¼ SE ¼

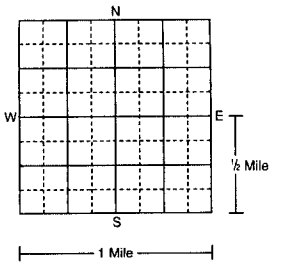
GPS LOCATION: [N] Latitude 44 degrees 51 minutes 30 seconds 2

[W] Longitude 093 degrees 05 minutes 26 seconds 3

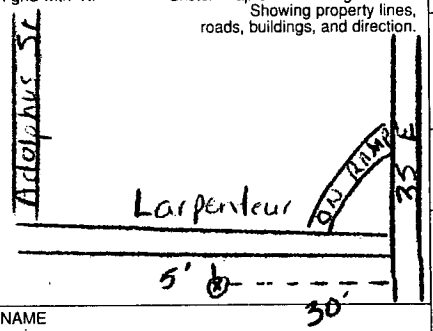
House Number, Street Name, City, and ZIP Code of Well Location: ROW 223 E Larpenteur Ave. Maplewood

Fire Number: 55117

Show exact location of well/boring in section grid with "X."



Sketch map of well/boring location. Showing property lines, roads, buildings, and direction.



PROPERTY OWNER'S NAME/COMPANY NAME: City of St. Paul - ROW Division

Property owner's mailing address if different than well location address indicated above.

869 Dale Street N.
St. Paul, MN 55103

WELL OWNER'S NAME/COMPANY NAME: Sinclair Marketing

Well/boring owner's mailing address if different than property owner's address indicated above.

550 East SOuth Temple
Salt Lake City, UT 84102

GEOLOGICAL MATERIALS	COLOR	HARDNESS OF MATERIAL	FROM	TO
Clay & Rocks	Brown	S	0	6
Sand	Brown	S	6	30

Use a second sheet, if needed.

REMARKS, ELEVATION, SOURCE OF DATA, etc.

mw-3

LOCAL COPY 788736

WELL/BORING DEPTH (completed): 25 ft.

DATE WORK COMPLETED: 2-8-12

DRILLING METHOD: [X] Auger [ ] Cable Tool [ ] Driven [ ] Rotary [ ] Other

DRILLING FLUID: N/A

WELL HYDROFRACTURED? [ ] Yes [X] No From ft. To ft.

USE: [ ] Domestic [X] Monitoring [ ] Heating/Cooling [ ] Noncommunity PWS [ ] Environ. Bore Hole [ ] Industry/Commercial [ ] Community PWS [ ] Irrigation [ ] Remedial [ ] Elevator [ ] Dewatering [ ]

CASING MATERIAL: [ ] Steel [X] Plastic [ ]

Drive Shoe? [ ] Yes [X] No

[X] Threaded [ ] Welded

HOLE DIAM.

CASING Diameter / Weight / Specifications

Diameter	in. To ft.	Weight	Specifications	HOLE DIAM. in. To ft.
2	in. To 0 ft.	15 lbs./ft.		8¼ in. To 30 ft.
	in. To ft.	lbs./ft.		in. To ft.
	in. To ft.	lbs./ft.		in. To ft.

SCREEN: Make Monoflex; Type Johnson; Slot/Gauze PVC .10; Set between 15 ft. and 25 ft.

OPEN HOLE: From ft. To ft.; Diam. 2"; Length 10'; FITTINGS FL+H

STATIC WATER LEVEL: 16 ft. [X] Below [ ] Above land surface; Measured from; Date measured

PUMPING LEVEL (below land surface): N/A ft. after hrs. pumping g.p.m.

WELLHEAD COMPLETION: [ ] Pitless/adapter manufacturer; Model; [X] Casing protection 6" Steel [ ] 12 in. above grade; [ ] At-grade [ ] Well House [ ] Hand Pump

GROUTING INFORMATION (specify bentonite, cement-sand, neat-cement, concrete, cuttings, or other)

		From	To			
Material	Bentonite	2	15 ft.	3	[ ] Yds.	[X] Bags
Material	Portland	0	2 ft.	1	[ ] Yds.	[X] Bags
Material		From	To ft.		[ ] Yds.	[ ] Bags
Driven casing seal		From	To	Bags		

NEAREST KNOWN SOURCE OF CONTAMINATION: N/A feet direction type

Well disinfected upon completion? [ ] Yes [ ] No

PUMP: [X] Not installed Date installed

Manufacturer's name

Model Number HP Volts

Length of drop pipe ft. Capacity g.p.m.

Type: [ ] Submersible [ ] L.S. Turbine [ ] Reciprocating [ ] Jet [ ]

ABANDONED WELLS: Does property have any not in use and not sealed well(s)? [ ] Yes [X] No

VARIANCE: Was a variance granted from the MDH for this well? [ ] Yes [X] No TN#

WELL CONTRACTOR CERTIFICATION

This well was drilled under my supervision and in accordance with Minnesota Rules, Chapter 4725. The information contained in this report is true to the best of my knowledge.

Mark J. Traut Wells, Inc. 1404

Licensee Business Name Lic. or Reg. No.

David Traut 589 3-12-12

Certified Representative Signature Certified Rep. No. Date

Steve Weisbrich

Name of Driller

IC 140-0020 HE-01205-13 (Rev. 11/10)

Project | Project No.

GROUNDWATER FLOW VELOCITY CALCULATION

$$V = K\left(\frac{dh}{dl}\right)/n$$

K = HYDRAULIC CONDUCTIVITY
dh/dl = HYDRAULIC GRADIENT
n = EFFECTIVE POROSITY

$K = 4.57$ feet/day → CALCULATED FROM ~~KRUMBEIN~~/MONK METHOD (GRAIN-SIZE APPROXIMATIONS DURING 2SI ACTIVITIES - AVERAGE OF 3 SAMPLING LOCATIONS - SECTION 1.23 AQUIFER DETERMINATION)

SAMPLING EVENT	
2/21/12 →	$dh/dl = 0.2/55' = 0.008$
6/22/12 →	$dh/dl = 0.1/46' = 0.002$
8/20/12 →	$dh/dl = 0.1/52' = 0.002$
11/29/12 →	$dh/dl = 0.1/60 = 0.002$

AVERAGE = 0.0035 (UNITLESS)

$n = 0.21$ (EFFECTIVE POROSITY) → REFERENCED FROM TABLE 4.4 - SPECIFIC YIELDS IN PERCENT (APPLIED HYDROGEOLOGY C.W. FETTER - 3rd EDITION)

$$V = 4.57(0.0035)/0.21 = 0.076 \text{ ft/day}$$

Signature | Date

Carlson McCain

Lino Lakes, MN 763-489-7900

Project	Sinclair # 22020	Project No.	3327-00

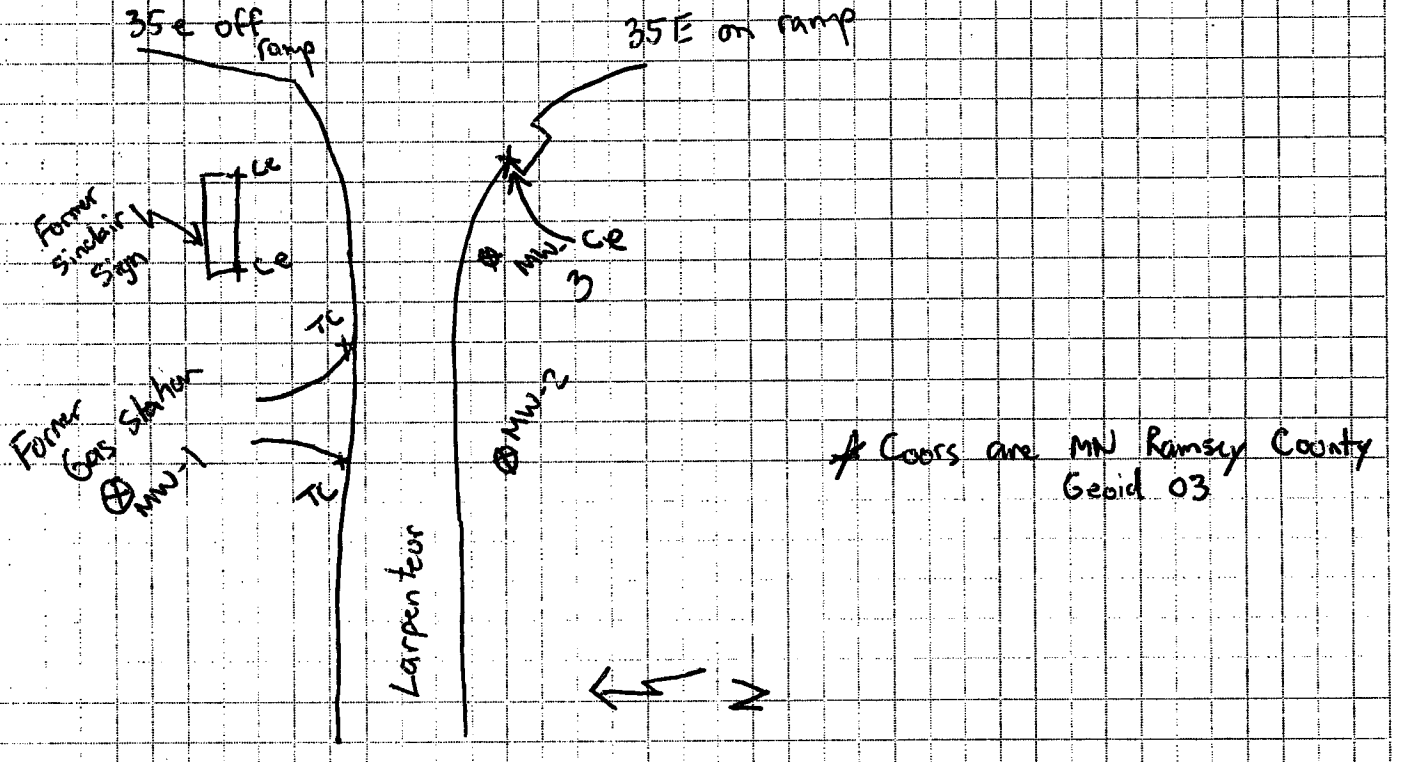
Maplewood
223 Larpenteur Ave
Maplewood, MN 55423

TOR marked on N side

MW-1 # 788734
18.75 DTW
N 173435.446 EL 864.227 (TOR) (.23)
E 575636.739 862.089 (GND) (0.09

MW-2 # 788736
17.11 DTW
N 173289.247 EL 862.591 (TOR) (.59)
E 575666.168 860.841 (GND) (.84)

MW-3 # 788735
19.96 DTW
N 173288.192 EL 865.608 (TOR) (.61)
E 575756.633 863.729 (GND) (.73



* Coors are MN Ramsey County Geoid 03

Signature

Date 2/14/12

Carlson McCain

WATER LEVEL LOG SHEET

Project Name/Location: Sinclair Station 22020 Project No.: 3327

Well Number	Depth to Water	Depth to Bottom	Elevation of Top of Pipe	Water Elevation	Comments
mw-1	17.01	23.5			
mw-2	15.43	23.0			
mw-3	18.28	25.0			

Comments:

Signature: Date: 8-20-12

248 Apollo Drive, Suite 100 • Lino Lakes, MN • Phone 763-489-7900 • Fax 763-489-7959 • www.carlsonmccain.com

Carlson McCain

WELL PURGING AND SAMPLE COLLECTION

Well No. MW-1

Project Name/Location: Sinclair Station 22020 Project No.: 3327

Date: 8-20-12 Weather: Sunny, 80's, calm

Purging Method ☒ Pumped ☐ Bailed Other —

Pump Type: Paristaltic Bailer Type: —

Depth to Water (D.T.W.) 17.01 Depth to Bottom (D.T.B.) 23.5

Volume Calculation: (23.5 - 17.01) 0.163 = 1.06 (6.49)

Gals./Well Volume: 1.0 [(D.T.B. – D.T.W.) gal./ft.] = Gals./well volume]

Time	Volume Removed (gal.)	pH	Cond. (uS/cm)	Temp. (°C)	ORP (mv)	DO (ppm)	Turbidity (ntu)	Odor Y/N	Color
13:47	Initial	6.40	3,100	13.11	-143	1.63	189	Y	Brown
13:52	1.0	5.96	3,120	12.39	-153	0.00	5.1	Y	Clear
13:57	2.0	5.93	3,120	12.09	-155	0.00	3.9	Y	Clear
14:02	3.0	5.93	3,120	11.99	-155	0.00	3.1	Y	Clear

Sample No.: MW-1 Time: 14:02

Field Blank ☒ Time: 07:00 Sample No.: Trip Blank

Well Duplicate ☒ Time: 09:00 Sample No.: Duplicate

Containers: 2-250mL Am. Gl. w/ HCL Analysis: DRO

4-40mL VOAs w/ HCL Analysis: GRO & VOCs

Analysis:

Signature: Date: 8 / 20 / 12

Inside Well Diameter	gal./ft.
2"	0.163
4"	0.653
6"	1.469
8"	2.611

Carlson McCain

WELL PURGING AND SAMPLE COLLECTION

Well No. MW-2

Project Name/Location: Sinclair Station 22020 Project No.: 3327

Date: 8-20-12 Weather: Sunny, 80's, calm

Purging Method ☒ Pumped ☐ Bailed Other

Pump Type: Peristaltic Bailer Type:

Depth to Water (D.T.W.) 15.43 Depth to Bottom (D.T.B.) 23.0

Volume Calculation: (23 - 15.43) 0.163 = 1.2 (7.57)

Gals./Well Volume: 1.2 [(D.T.B. – D.T.W.) gal./ft.] = Gals./well volume]

Time	Volume Removed (gal.)	pH	Cond. (uS/cm)	Temp. (°C)	ORP (mv)	DO (ppm)	Turbidity (ntu)	Odor Y/N	Color
13:16	Initial	6.44	3,040	12.63	190	1.48	18.2	N	Clear
13:20	1.2	6.24	2,810	13.53	191	1.19	3.7	N	Clear
13:24	2.4	6.19	2,820	13.59	197	1.33	0.6	N	Clear
13:28	3.6	6.17	2,830	13.62	199	1.30	0.5	N	Clear

Sample No.: MW-3 Time: 13:28

Field Blank ☐ Time: Sample No.:

Well Duplicate ☐ Time: Sample No.:

Containers: 2-250mL Am. Gl. w/HCL Analysis: DRO

4-40mL VOAs w/HCL Analysis: GRO + VOCs

Analysis:

Signature: Date: 8 / 20 / 12

Inside Well Diameter	gal./ft.
2"	0.163
4"	0.653
6"	1.469
8"	2.611

Carlson McCain

WELL PURGING AND SAMPLE COLLECTION

Well No. mw-3

Project Name/Location: Sinclair Station 22020 Project No.: 3327

Date: 8-20-12 Weather: Sunny, 80°s, calm

Purging Method ☒ Pumped ☐ Bailed Other —

Pump Type: Peristaltic Bailer Type: —

Depth to Water (D.T.W.) 18.28 Depth to Bottom (D.T.B.) 25.0

Volume Calculation: (25 - 18.28) 0.163 = 1.1 (6.72)

Gals./Well Volume: 1.1 [(D.T.B. – D.T.W.) gal./ft.] = Gals./well volume]

Time	Volume Removed (gal.)	pH	Cond. (uS/cm)	Temp. (°C)	ORP (mv)	DO (ppm)	Turbidity (ntu)	Odor Y/N	Color
12:46	Initial	7.93	2,080	12.52	71	3.87	>800	N	Brown
12:49	1.1	7.14	1,860	11.93	102	2.83	8.5	N	Clear
12:53	2.2	6.55	1,820	12.28	148	2.70	0.5	N	Clear
12:59	3.3	6.46	1,830	12.25	152	2.68	1.0	N	Clear

Sample No.: mw-3 Time: 12:59

Field Blank ☐ Time: — Sample No.: —

Well Duplicate ☐ Time: — Sample No.: —

Containers: 2-25mL Amber w/ HCl Analysis: DRO

4-40mL VOAs w/ HCl Analysis: GRO & VOCs

Analysis:

Signature: Date: 8 / 20 / 12

Inside Well Diameter	gal./ft.
2"	0.163
4"	0.653
6"	1.469
8"	2.611

Carlson McCain

Well Development Log Sheet

Well No. MW-1

Project Name/Location: Sinclair 22020 Project No.: 3327

Date: 2.13.18 Weather:

Pumping Method ☒ Pumped ☐ Other

Pump Type: Rem Stabilizer Bailer Type:

Depth to Water (D.T.W.) 18.75 Depth to Bottom (D.T.B.) 23.5

Volume Calculation:

23.5 18.75 0.163 0.744 0.30 5.25 0.25 4.50

{[(D.T.B. – D.T.W.) well gal./ft.. = Gals./well volume] + N* x H* x Annulus gal./ft)} = Total Well Volume 5.2

Time	Volume Removed (gal.)	pH	Cond. (uS/cm)	Temp. (°C)	ORP (mv)	DO (ppm)	Turbidity (ntu)	Odor Y/N	Color
9:50	5.5	7.04	3.85 mS	12.5			685	Y	grayish brown
10:15	11.0	7.03	3.76 mS	8.9			290	Y	gray
10:45	16.5	7.09	3.95 mS	7.0			45.7	Y	clear
11:10	22	7.04	3.90	8.5			23.5	Y	clear
11:40	27.5	7.01	3.95	7.9			9.06	Y	clear

Comments:

Well Annulus	gal./ft.	Inside Well Diameter	gal./ft.
8"	2.611	1"	0.041
10"	4.080	2"	0.163
12"	5.875	4"	0.653
14"	7.997	6"	1.469

N=Porosity=0.3

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WELL DEVELOPMENT LOG SHEET

Well No.: MW-2

Project Name/Location: Sinclair #20090 **Project No.:** 3327

Date: 2-15-12 **Weather:** 25° or <10°

Pumping Method ☒ Pumped ☐ Other

Pump Type: Peristaltic **Bailer Type:** Plastic 48"

Depth to Water (D.T.W.) 17.11 **Depth to Bottom (D.T.B.)** 23.0

Volume Calculation:

23 17.11 0.163 0.96 2.50 [illegible] 2.0 5.90 6.36

{[(D.T.B. – D.T.W.) well gal./ft.. = Gals./well volume] + N* x H* x Annulus gal./ft)} = Total Well Volume

Time	Volume Removed (gal.)	pH	Cond. (uS/cm)	Temp. (°C)	ORP (mv)	DO (ppm)	Turbidity (ntu)	Odor Y/N	Color
2:15	6.5	7.38	138.1	7.8			[illegible]	N	Dark Brown
2:40	13	7.4	62.3	6.9			30	N	cloudy
3:05	19.5	7.37	2.91 mS	7.8			6.34	N	Clear
3:30	26	7.5	2.90 mS	8.0			2.27	N	clear
4:00	32.5	7.37	2.98 mS	8.5			2.13	N	clear

Comments:

Well Annulus	gal./ft.	Inside Well Diameter	gal./ft.
8"	2.611	1"	0.041
10"	4.080	2"	0.163
12"	5.875	4"	0.653
14"	7.997	6"	1.469

N=Porosity=0.3

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WELL DEVELOPMENT LOG SHEET

Well No. MW-3

Project Name/Location: Sinclair 22000 Project No.: 3327

Date: 2-15-12 Weather: Clear ~40°

Pumping Method ☒ Pumped ☒ Other bail

Pump Type: Peristaltic Bailer Type: Plastic 48"

Depth to Water (D.T.W.) 19.96 Depth to Bottom (D.T.B.) 25 ft

Volume Calculation: 1.73

25 − 19.96 0.163 0.822 0.30 2.611 5.55

{[(D.T.B. – D.T.W.) well gal./ft.. = Gals./well volume] + N* x H* x Annulus gal./ft)} = Total Well Volume

Time	Volume Removed (gal.)	pH	Cond. (uS/cm)	Temp. (°C)	ORP (mv)	DO (ppm)	Turbidity (ntu)	Odor Y/N	Color
11:00	5.5	8.3	1926	9.0			1502	N	Brown
11:30	11.0	8.1	1892	8.1			635	N	cloudy
12:15	16.5	7.95	1831	7.0			7.08	N	Clear
12:50	22	7.9	1799	7.8			0.0	N	Clear
13:25	27.5	7.9	1828	6.6			121	N	clear

Comments:

Well Annulus	gal./ft.	Inside Well Diameter	gal./ft.
8"	2.611	1"	0.041
10"	4.080	(2")	0.163
12"	5.875	4"	0.653
14"	7.997	6"	1.469

N=Porosity=0.3

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WELL PURGING AND SAMPLE COLLECTION

Well No. MW-1

Project Name/Location: Sinclair 22020 Project No.: 3327

Date: 2-21-12 Weather: Cloudy -35°

Purging Method ☑ Pumped ☐ Bailed Other

Pump Type: Peristaltic Bailer Type:

Depth to Water (D.T.W.) Depth to Bottom (D.T.B.) 23.5'

Volume Calculation: (23.5 - 18.83) x 0.163 = 0.76

Gals./Well Volume: 1 gallon [(D.T.B. – D.T.W.) gal./ft.] = Gals./well volume]

Time	Volume Removed (gal.)	pH	Cond. (uS/cm)	Temp. (°C)	ORP (mv)	DO (ppm)	Turbidity (ntu)	Odor Y/N	Color
10:15	1	7.11	3.885	8.3			41.9	Y	Yellowish
10:25	2	7.13	3.93	9.8			18.5	Y	Yellowish
10:35	3	7.14	3.755	5.4			11.7	Y	Yellowish clear
10:45	4	7.17	3.685	6.1			8.96	Y	clear
10:55	5	7.14	3.545	6.1			8.69	Y	clear

Sample No.: MW-1 Time: 11:00 am

Field Blank ☐ Time: Sample No.: MW

Well Duplicate ☑ Time: Sample No.: MW-10

Containers: 4 VOAs Analysis: GRO, VOC

2 1 gallon jars Analysis: DRO

Analysis:

Signature: Chris Sor Date: 2/21/12

Inside Well Diameter	gal./ft.
2"	0.163
4"	0.653
6"	1.469
8"	2.611

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WELL PURGING AND SAMPLE COLLECTION

Well No. MW-2

Project Name/Location: Sinclair 22000 Project No.: 3327

Date: 2-21-12 Weather: Cloudy 35°

Purging Method ☒ Pumped ☐ Bailed Other

Pump Type: Peristaltic Bailer Type:

Depth to Water (D.T.W.) 17.27 Depth to Bottom (D.T.B.) 23

Volume Calculation: (23 - 17.27) 0.163 = 0.93

Gals./Well Volume: 1 gallon [(D.T.B. – D.T.W.) gal./ft.] = Gals./well volume]

Time	Volume Removed (gal.)	pH	Cond. (uS/cm)	Temp. (°C)	ORP (mv)	DO (ppm)	Turbidity (ntu)	Odor Y/N	Color
11:42	1	7.60	3.05 mS	6.3			312	N	reddish brown
11:52	2	7.61	2.69 mS	8.9			696	N	reddish Brown
12:02	3	7.56	2.03 mS	8.5			166	N	reddish brown
12:12	4	7.47	2.79	9.2			25.6	N	~~brown~~ ish
12:22	5	7.47	2.87	9.5			4.97	N	Brown ish

Sample No.: MW-2 Time: 12:25

Field Blank ☐ Time: Sample No.:

Well Duplicate ☐ Time: Sample No.:

Containers: 4 40 ml vials Analysis: VOCs, 6200

2 amber 1 L Analysis: DRO

Analysis:

Signature: Date: 2 / 21 / 12

Inside Well Diameter	gal./ft.
2"	0.163
4"	0.653
6"	1.469
8"	2.611

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WELL PURGING AND SAMPLE COLLECTION

Well No. MW-3

Project Name/Location: Sinclair 2020 Project No.: 3327

Date: 2-21-18 Weather: Cloudy - 30°

Purging Method ☑ Pumped ☐ Bailed Other

Pump Type: Reg Bailer Type:

Depth to Water (D.T.W.) 19.55 Depth to Bottom (D.T.B.) 25

Volume Calculation: 25-19.55 0.163 1.88

Gals./Well Volume: 1.9 gallons [(D.T.B. – D.T.W.) gal./ft.] = Gals./well volume]

Time	Volume Removed (gal.)	pH	Cond. (uS/cm)	Temp. (°C)	ORP (mv)	DO (ppm)	Turbidity (ntu)	Odor Y/N	Color
12:50	1	7.93	1642	8.1			29.2	N	clear
1:00	2	7.83	1609	7.9			4.86	N	clear
1:10	3	7.76	1603	7.8			0.0	N	clear
1:20	4	7.81	1614	7.8			0.0	N	clear
1:30	5								

Sample No.: MW-3 Time: 1:25

Field Blank ☐ Time: Sample No.:

Well Duplicate ☐ Time: Sample No.:

Containers: 4 40ml vials Analysis: GRO BTEX

2 ambers Analysis: DRO

Analysis:

Signature: Date: 2/21/18

Inside Well Diameter	gal./ft.
2"	0.163
4"	0.653
6"	1.469
8"	2.611

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WATER LEVEL LOG SHEET

Project Name/Location: Sinclair 2020 Project No.: 5307

Well Number	Depth to Water	Depth to Bottom	Elevation of Top of Pipe	Water Elevation	Comments
MW-1	18.83	235			
MW-2	17.27	23			
MW-3	19.55	25			

Comments:

Signature: [signature] Date: 2-21-12

Carlson McCain

WATER LEVEL LOG SHEET

Project Name/Location: Sinclair Station 22020 Project No.: 3327

Well Number	Depth to Water	Depth to Bottom	Elevation of Top of Pipe	Water Elevation	Comments
mw-1	16.04	23.5			
mw-2	14.42	23			
mw-3	17.24	25			

Comments:

Signature: Date: 6-22-12

Carlson McCain

WELL PURGING AND SAMPLE COLLECTION

Well No. MW-1

Project Name/Location: Sinclair Station 22020 Project No.: 3327

Date: June 22, 2012 Weather: Sunny, 80's, calm

Purging Method ☒ Pumped ☐ Bailed Other NA

Pump Type: Paristaltic Bailer Type: NA

Depth to Water (D.T.W.) 16.04 Depth to Bottom (D.T.B.) 23.5

Volume Calculation: $(23.5^{7.46} - 16.04)\ 0.163 = 1.22$

Gals./Well Volume: 1.22 [(D.T.B. – D.T.W.) gal./ft.] = Gals./well volume]

Time	Volume Removed (gal.)	pH	Cond. (uS/cm)	Temp. (°C)	ORP (mv)	DO (ppm)	Turbidity (ntu)	Odor Y/N	Color
1121	Initial	6.64	2,770	14.36	-101	0.00	297	Y	Cloudy-Clear
1128	1.22	6.40	2,890	11.93	-104	0.00	31.6	Y	Clear
1133	2.4	6.69	2,800	12.10	-114	0.00	13.4	Y	Clear
1138	3.6	6.73	2,800	11.98	-114	0.00	11.5	Y	Clear

Sample No.: MW-1 Time: 1138

Field Blank ☒ Time: 0700 Sample No.: Trip Blank

Well Duplicate ☒ Time: 0900 Sample No.: DUPLICATE

Containers: 4-40mL VOAs w/HCL Analysis: GRO and VOCs

2-1 L. Am. Gl. Analysis: DRO

Analysis:

Signature: Date: 6 / 22 / 12

Inside Well Diameter	gal./ft.
2"	0.163
4"	0.653
6"	1.469
8"	2.611

Carlson McCain

WELL PURGING AND SAMPLE COLLECTION

Well No. mw-2

Project Name/Location: Sinclair Station 22020 Project No.: 3327

Date: June 22, 2012 Weather: Sunny, 80's, calm

Purging Method ☒ Pumped ☐ Bailed Other NA

Pump Type: Paristaltic Bailer Type: NA

Depth to Water (D.T.W.) 14.42 Depth to Bottom (D.T.B.) 23.0

Volume Calculation: $(23 - 14.42)\ 0.163 = 1.4$ (8.58)

Gals./Well Volume: 1.4 [(D.T.B. – D.T.W.) gal./ft.] = Gals./well volume]

Time	Volume Removed (gal.)	pH	Cond. (uS/cm)	Temp. (°C)	ORP (mv)	DO (ppm)	Turbidity (ntu)	Odor Y/N	Color
1044	Initial	7.00	2,870	15.68	178	0.81	79.6	N	Clear
1052	1.4	6.65	2,980	12.58	174	0.56	48.7	N	Clear
1058	2.8	6.63	2,910	12.91	172	0.22	9.5	N	Clear
1104	4.2	6.62	2,910	12.96	171	0.19	7.4	N	Clear

Sample No.: mw-2 Time: 1104

Field Blank ☐ Time: — Sample No.: —

Well Duplicate ☐ Time: — Sample No.: —

Containers: 4-40mL VOAs w/HCL Analysis: GRO and VOCs

2-1 L. Am. Gl. Analysis: DRO

Analysis:

Signature: Date: 6 / 22 / 12

Inside Well Diameter	gal./ft.
2"	0.163
4"	0.653
6"	1.469
8"	2.611

Carlson McCain

WELL PURGING AND SAMPLE COLLECTION

Well No. MW-3

Project Name/Location: Sinclair Station 22020 Project No.: 3327

Date: June 22, 2012 Weather: Sunny, 80's, calm

Purging Method ☒ Pumped ☐ Bailed Other NA

Pump Type: Paristaltic Bailer Type: NA

Depth to Water (D.T.W.) 17.24 Depth to Bottom (D.T.B.) 25.0

Volume Calculation: (25 - 17.24) 0.163 = 1.26 (7.76)

Gals./Well Volume: 1.26 [(D.T.B. – D.T.W.) gal./ft.] = Gals./well volume]

Time	Volume Removed (gal.)	pH	Cond. (uS/cm)	Temp. (°C)	ORP (mv)	DO (ppm)	Turbidity (ntu)	Odor Y/N	Color
1003	Initial	8.55	2,040	20.85	173	2.61	>800	N	Brown
1009	1.26	7.14	2,100	14.02	142	1.12	157	N	Slightly Br.-Clear
1017	2.5	6.93	1,920	13.49	138	1.91	9.3	N	Clear
1024	3.8	6.91	1,930	13.37	142	1.99	5.6	N	Clear

Sample No.: MW-3 Time: 1024

Field Blank ☐ Time: — Sample No.: —

Well Duplicate ☐ Time: — Sample No.: —

Containers: 4-40mL VOAs w/HCL Analysis: GRO and VOCs

2-1 L. Am. Gl. Analysis: DRO

Analysis:

Signature: Date: 6 / 22 / 12

Inside Well Diameter	gal./ft.
2"	0.163
4"	0.653
6"	1.469
8"	2.611

Company Name/Address:
Carlson McCain, Inc.
248 Apollo Dr., Suite 100
Lino Lakes, MN 55014

Billing Information:
Same

Analysis/Container/Preservative

Chain of Custody
Page 1 of 1

ESC LABORATORIES
12065 Lebanon Road
Mt. Juliet, TN 37122
Phone: (800) 767-5859
Phone: (615) 758-5858
Fax: (615) 758-5859

Report to: Chris Loch
Email to: cloch@carlsonmccain.com

Project Description: Sinclair 22020
City/State Collected: Maplewood, MN

Phone: 763-489-7900
FAX:
Client Project #: 3327
ESC Key:

Collected by: (print) Aric Olsen
Site/Facility ID#:
P.O.#:

Collected by (signature):
Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day..... 200%
___ Next Day..... 100%
___ Two Day..... 50%
___ Three Day..... 25%

Date Results Needed: Standard TAT
Email? ___No X Yes
FAX? X No ___Yes

CoCode: (lab use only)
Template/Prelogin:
Shipped Via:

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	DRO	GRO	VOCs				Remarks/Contaminant	Sample # (lab only)
MW-1	Grab	GW	-	6-22-12	1138	6	X	X	X					
MW-2	Grab	GW	-	6-22-12	1104	6	X	X	X					
MW-3	Grab	GW	-	6-22-12	1024	6	X	X	X				Petro, Odor	
DUPLICATE	Grab	GW	-	6-22-12	0900	6	X	X	X					
Trip Blank	-	-	-	6-22-12	0700	1			X					

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other

pH ___ Temp ___

Remarks:

Other ___

Invoice:
Customer : ESCMN
Phone : (615)758-5858
Dept :
Date : 08Sep11
Weight : 10 LBS
COD :
DV :
Shipping : 0.00
Special : 0.00
0.00 Handling : 0.00
0.00 Total : 0.00
Svos: PRIORITY OVERNIGHT
TRCK: 4963 4593 3545

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	6-22-12	1630			
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date:	Time:

Condition: (lab use only)
Cool/Ambient: Y ___ N ___ NA
pH Checked: NCF:

Carlson McCain

DAILY TIME LOG

Project Name/Location: Sinclair Station No: 22020 Project No.: 3327
Date: 6-22-12 Weather: Sunny, 80's, calm
Task/Equipment: Groundwater Sampling / Van, peristaltic, WQ meter
Firm/Personnel: Carlson / Aric
Site Visitors:

0700 - 0800	0843-0925 Travel
0800 - 0900	
0900 - 1000	0925-0935 Measured water levels
	0935-1205 Collected groundwater samples from mw-3, mw-2 and mw-1 (in that order).
1000 - 1100	
1100 - 1200	
1200 - 1300	1205 - 1240 Travel
1300 - 1400	
1400 - 1500	1240-1340 Sample Shipping
1500 - 1600	
1600 - 1700	
1700 - 1800	

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WATER LEVEL LOG SHEET

Project Name/Location: Sinclair Station 22020 Project No.: 3327-00

Well Number	Depth to Water	Depth to Bottom	Elevation of Top of Pipe	Water Elevation	Comments
MW-1	18.65	23.5			
MW-2	17.05	23.0			
MW-3	19.92	25.0			

Comments:

Signature: Date: 11-29-12

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WELL PURGING AND SAMPLE COLLECTION

Well No. MW-1

Project Name/Location: Sinclair Station 22020 Project No.: 3327-00

Date: 11-29-12 Weather: Mostly Sunny, 30's, calm

Purging Method ☒ Pumped ☐ Bailed Other Disposable HDPE Tubing

Pump Type: Peristaltic Bailer Type: —

Depth to Water (D.T.W.) 18.65 Depth to Bottom (D.T.B.) 23.5

Volume Calculation: (23.5 - 18.65 = 4.85) 4.85 × 0.163 = 0.8

Gals./Well Volume: 1.0 [(D.T.B. – D.T.W.) gal./ft.] = Gals./well volume]

Time	Volume Removed (gal.)	pH	Cond. (µS/cm)	Temp. (°C)	ORP (mv)	DO (ppm)	Turbidity (ntu)	Odor Y/N	Color
11:54	Initial	5.98	3,380	13.16	-20	3.08	142	Y	Gray
11:59	1.0	7.33	3,360	13.37	-93	2.94	112	Y	Cloudy
12:08	2.0	7.29	3,370	12.88	-96	0.94	73.1	Y	Clear
12:17	3.0	7.29	3,370	12.91	-96	0.94	24.3	Y	Clear

Sample No.: MW-1 Time: 12:17

Field Blank ☐ Time: Sample No.:

Well Duplicate ☒ Time: 09:00 Sample No.: DUPLICATE

Containers: 2-250mL Am. Gl. w/HCL Analysis: DRO

4-40mL VOAs w/ HCL Analysis: VOCs + GRO

Analysis:

Signature: Date: 11 / 29 / 12

Inside Well Diameter	gal./ft.
2"	0.163
4"	0.653
6"	1.469
8"	2.611

Carlson McCain

WELL PURGING AND SAMPLE COLLECTION

Well No. MW-2

Project Name/Location: Sinclair Station 22020 Project No.: 3327-00

Date: 11-29-12 Weather: Mostly Sunny, 30's, calm

Purging Method ☑ Pumped ☐ Bailed Other Disposable HDPE Tubing

Pump Type: Paristaltic Bailer Type: —

Depth to Water (D.T.W.) 17.05 Depth to Bottom (D.T.B.) 23.0

Volume Calculation: (23.0 - 17.05) 0.163 = 0.97 (5.95)

Gals./Well Volume: 1.0 [(D.T.B. – D.T.W.) gal./ft.] = Gals./well volume]

Time	Volume Removed (gal.)	pH	Cond. (uS/cm)	Temp. (°C)	ORP (mv)	DO (ppm)	Turbidity (ntu)	Odor Y/N	Color
11:09	Initial	6.85	2,990	12.57	235	9.11	171	N	Cloudy - Clear
11:16	1.0	7.23	2,730	12.71	222	8.52	39.7	N	Clear
11:25	2.0	7.20	2,550	12.69	230	1.71	7.2	N	Clear
11:34	3.0	7.18	2,540	12.71	233	1.64	4.5	N	Clear

Sample No.: MW-2 Time: 11:34

Field Blank ☐ Time: Sample No.:

Well Duplicate ☐ Time: Sample No.:

Containers: Same as MW-1 Analysis:

Analysis:

Analysis:

Signature: Date: 11 / 29 / 12

Inside Well Diameter	gal./ft.
2"	0.163
4"	0.653
6"	1.469
8"	2.611

Carlson McCain

WELL PURGING AND SAMPLE COLLECTION

Well No. MW-3

Project Name/Location: Sinclair Station 22020 Project No.: 3327-00

Date: 11-29-12 Weather: Mostly Sunny, 30's, calm

Purging Method ☒ Pumped ☐ Bailed Other Disposable HDPE Tubing

Pump Type: Peristaltic Bailer Type: —

Depth to Water (D.T.W.) 19.92 Depth to Bottom (D.T.B.) 25.0

Volume Calculation: (25 - 19.92) 0.163 = 0.83 (5.08)

Gals./Well Volume: 1.0 [(D.T.B. – D.T.W.) gal./ft.] = Gals./well volume]

Time	Volume Removed (gal.)	pH	Cond. (uS/cm)	Temp. (°C)	ORP (mv)	DO (ppm)	Turbidity (ntu)	Odor Y/N	Color
10:20	Initial	9.05	2,260	12.80	101	4.02	7800	N	Brown
10:27	1.0	7.38	2,220	12.65	205	2.50	74.2	N	Cloudy-Clear
10:35	2.0	7.44	2,200	12.41	174	0.10	21.2	N	Clear
10:43	3.0	7.43	2,200	12.43	173	0.12	18.6	N	Clear

Sample No.: MW-3 Time: 10:43

Field Blank ☒ Time: 07:00 Sample No.: Trip Blank

Well Duplicate ☐ Time: Sample No.:

Containers: Same as MW-1 Analysis:

Analysis:

Analysis:

Signature: Date: 11 / 29 / 12

Inside Well Diameter	gal./ft.
2"	0.163
4"	0.653
6"	1.469
8"	2.611

Carlson McCain

248 Apollo Drive. Suite 100
Lino Lakes,MN 55014

Billing information:

Accounts Payable
248 Apollo Dr. Suite 100

Lino Lakes,MN 55014

Report to: **Chris Loch**

Email: **cloch@carlsonpsi.com**

Project Description: **Sinclair Oil #22020**

City/State Collected: **Maplewood, MN**

Phone: **(763) 489-7900**
FAX: **(763) 489-7959**

Client Project #: **3327-00**

Lab Project #: **CARPROLLMN-SINCLAIR**

Collected by (print): **Aric Olsen**

Site/Facility ID#: **MAPLEWOOD, MN**

P.O.#:

Collected by (signature):

Immediately Packed on Ice N__ Y X

Rush? (Lab MUST Be Notified)
__ Same Day.....200%
__ Next Day.....100%
__ Two Day.....50%
__ Three Day.....25%

Date Results Needed: Standard TAT

Email? __No X Yes
FAX? __No __Yes

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	DROWM 100ml Amb-HCl	GROWM 40mlAmb HCl	VB260/465 40mlAmb-HCl					Remarks/Contaminant	Sample # (lab only)
mw-1	Grab	GW	—	11-29-12	12:17	6	X	X	X					Petroleum odor	
mw-2	Grab	GW	—	11-29-12	11:34	6	X	X	X						
mw-3	Grab	GW	—	11-29-12	10:43	6	X	X	X						
DUPLICATE	Grab	GW	—	11-29-12	08:00	6	X	X	X						
Trip Blank	—	—	—	11-29-12	07:00	3			X						
Temp Blank	—	—	—	—	—	1									

Analysis/Container/Preservative

Chain of Custody
Page 1 of 1

ESC LABS
12065 Lebanon Road
Mt. Juliet, TN 37122
Phone: (800) 767-5859
Phone: (615) 758-5858
Fax: (615) 758-5859

Account: CARPROLLMN
Template/Prelogin: 183217 / P412142
Cooler #:
Shipped Via: FedEX Ground

Invo: CARPROLLMN-SINC Date : 20Nov12
Customer : P412142 Weight : 10 LBS
Phone : (615)758-5858 COD :
Sat Del : N DV :

Shipping :	0.00		
Special :	0.00		
Handling :	0.00	0.00	
Total :	0.00		

*Matrix: SS - Soil

Remarks:

Svos: STANDARD OVERNIGHT
TRCK: 5413 4733 4740

pH _____ Temp _____

Flow _____ Other _____

	Date:	Time:	
Relinquished by: (Signature)	11-29-12	13:45	Received by: (Signature)
Relinquished by: (Signature)			Received by: (Signature)
Relinquished by: (Signature)			Received for lab by: (Signature)

Samples returned via: ☐ UPS ☐ FedEx ☐ Courier ☐ _____

Condition: (lab use only)

Temp: _____ Bottles Received: _____

Date: _____ Time: _____

COC Seal Intact: ___ Y ___ N ___ NA

pH Checked: _____ NCF: _____

FIELD ENVIRONMENTAL INSTRUMENTS, INC.
www.fieldenvironmental.com

301 Brighton Avenue
Suite A
Pittsburgh PA 15221
800-393-4009 Toll Free
(412) 436-2600 Local
(412) 436-2618 Fax

Horiba Auto-Cal Solution		Lot #	Expiration	
		B082-13	3/28/2014	
Cal Standard			Reading	Acceptable Range
PH 4 @ 25°			4.00	(3.96 - 4.04)
Cal Standard			Reading ms/cm	Acceptable Range
Conductivity			4.45	(4.31 - 4.58)
Cal Standard			Reading NTU	Acceptable Range
Turbidity	0 NTU		0.0	(-2 - 2)
	800 NTU		800.0	(760 - 840)
Dissolved Oxygen			Reading mg/L	
100% Saturation			8.49	
0% Saturation			0.00	
Cal Standard		Lot #	Expiration	Reading	Acceptable Range
PH 7 @ 25°		B030-14	2/10/2014	7.00	(6.93 - 7.07)
Cal Standard		Lot #	Expiration	Reading	Acceptable Range
PH 10 @ 25°		B060-02	3/21/2013	10.00	(9.9 - 10.1)
Check Standard			Temp °	Relative Reading	Acceptable Range
ORP			20.5	237.5	(+/- 15mV)

☑ ORP pin in place

*Solutions provided by LabChem (412-826-5230)

Model	U-52-2
S/N	KJSRd655
Sonde	W4P51NP3
Barcode	U87689X
Order #	211545

Calibrated By: Brad Ebert

Date of Calibration: 11/28/2012

All calibrations performed by FEI conform to manufacturer's specifications. Please report any issues within 24 hours of receiving equipment.

All calibration solutions used are traceable to NIST. Additional documentation is available upon request.

Petroleum Remediation Program
Minnesota Pollution Control Agency
http://www.pca.state.mn.us/programs/lust_p.html

Spatial Data Reporting Form

Guidance Document 1-03a
(For complete instructions, see Guidance Document 1-03.)

Part 1. Background

Has a site location data point been submitted for this site (circle/highlight)? **YES** or NO
If yes, you do not need to complete Part 2 of this form but should complete Part 3 if there are additional site features to report. This form can be submitted electronically if desired (e.g., as an e-mail attachment to the project manager).

MPCA Site ID: LEAK00017952
Site Name: **Sinclair #22020**
Data Collection Date: **July 21, 2011 & February 20, 2013**
Name of Person Who Collected Data: **Chris Loch**
Organization Name: **Carlson McCain, Inc.**
Organization Type: **Environmental Consulting Firm**

Part 2. Site Location (use one of the three spatial data reporting formats provided)

Point Description: **Former tank basin**
Collection Method: **Map Interpolation**
Datum (circle/highlight): WGS84 **NAD83**

1) **Longitude (dd mm ss.ss): 93° 05' 26.54"**	**Latitude (dd mm ss.ss): 44° 59' 31.71"**
2) Longitude (dd.dddddd):	Latitude (dd.dddddd):
3) UTM - X (Easting):	UTM - Y (Northing):
UTM Zone:	

Part 3. Other Site Features

Point Description: **LSI soil boring GP-1 location**
Collection Method: **Map Interpolation**
Datum (circle/highlight): WGS84 NAD83
1) **Longitude (dd mm ss.ss): 93° 05' 27.23"** **Latitude (dd mm ss.ss): 44° 59' 31.71"**
2) Longitude (dd.dddddd): Latitude (dd.dddddd):
3) UTM - X (Easting): UTM - Y (Northing):
UTM Zone:

Point Description: **LSI soil boring GP-2 location**
Collection Method: **Map Interpolation**
Datum (circle/highlight): WGS84 NAD83
1) **Longitude (dd mm ss.ss): 93° 05' 26.10"** **Latitude (dd mm ss.ss): 44° 59' 31.76"**
2) Longitude (dd.dddddd): Latitude (dd.dddddd):
3) UTM - X (Easting): UTM - Y (Northing):
UTM Zone:

Point Description: **LSI soil boring GP-3 location**
Collection Method: **Map Interpolation**
Datum (circle/highlight): WGS84 NAD83
1) **Longitude (dd mm ss.ss): 93° 05' 27.03"** **Latitude (dd mm ss.ss): 44° 59' 32.24"**
2) Longitude (dd.dddddd): Latitude (dd.dddddd):
3) UTM - X (Easting): UTM - Y (Northing):
UTM Zone:

Point Description: **LSI soil boring GP-4 location**
Collection Method: **Map Interpolation**
Datum (circle/highlight): WGS84 NAD83
1) Longitude (dd mm ss.ss): 93° 05' 28.41" **Latitude (dd mm ss.ss): 44° 59' 33.39"**
2) Longitude (dd.dddddd): Latitude (dd.dddddd):
3) UTM - X (Easting): UTM - Y (Northing):
UTM Zone:

Point Description: **LSI soil boring GP-5 location**
Collection Method: **Map Interpolation**
Datum (circle/highlight): WGS84 NAD83
1) Longitude (dd mm ss.ss): 93° 05' 27.51" **Latitude (dd mm ss.ss): 44° 59' 31.05"**
2) Longitude (dd.dddddd): Latitude (dd.dddddd):
3) UTM - X (Easting): UTM - Y (Northing):
UTM Zone:

Point Description: **Monitoring Well MW-1 location**
Collection Method: **Surveyed**
Datum (circle/highlight): WGS84 NAD83
1) Longitude (dd mm ss.ss): Latitude (dd mm ss.ss):
2) Longitude (dd.dddddd): Latitude (dd.dddddd):
3) UTM - X (Easting): 575636.739 **UTM - Y (Northing): 173435.446**
UTM Zone: Ramsey County Geoid 3

Point Description: **Monitoring Well MW-2 location**
Collection Method: **Surveyed**
Datum (circle/highlight): WGS84 NAD83
1) Longitude (dd mm ss.ss): Latitude (dd mm ss.ss):
2) Longitude (dd.dddddd): Latitude (dd.dddddd):
3) UTM - X (Easting): 575666.168 **UTM - Y (Northing): 173289.247**
UTM Zone: Ramsey County Geoid 3

Point Description: **Monitoring Well MW-3 location**
Collection Method: **Surveyed**
Datum (circle/highlight): WGS84 NAD83
1) Longitude (dd mm ss.ss): Latitude (dd mm ss.ss):
2) Longitude (dd.dddddd): Latitude (dd.dddddd):
3) UTM - X (Easting): 575756.633 **UTM - Y (Northing): 173288.192**
UTM Zone: Ramsey County Geoid 3