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Minnesota Pollution Control Agency

Investigation Report Form

Guidance Document 4-06

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Complete this form to document site investigation activities, including Limited Site Investigations (LSIs) and full Remedial Investigations (RIs). Do not revise or delete any text or questions from this report form. Include any additional information that is important for making a site cleanup decision. If only an LSI is necessary, you may skip Section 6 and Section 7 of this report form.

Refer to Minnesota Pollution Control Agency (MPCA) Guidance Document 1-01 *Petroleum Remediation Program General Policy* for the overall site investigation objectives, and to other MPCA guidance document for details on investigation methods. When a tank has been excavated, refer to Guidance Documents 3-01 *Excavation of Petroleum Contaminated Soil* and 3-02 *General Excavation Report Worksheet* for reporting requirements. Document the occurrence of free product using Guidance Document 2-02 *Free Product: Evaluation and Recovery,* and Guidance Document 2-03 *Free Product Recovery Report Worksheet.*

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MPCA Site ID: Leak: **00017141** Date: **12/11/08**

Responsible Party: **South Central Grain & Energy** R.P. phone #: **320-848-2273**

Responsible Party Address: **PO Box 338** City: **Hector**

County: **Renville** Zip Code: **55342**

Alternate Contact (if any) for Responsible Party: **Dan Filzen** phone #: **320-848-2273**

Consultant: **Glacial Lakes Environmental Consulting, Inc.** Consultant phone #: **320-235-8370**

Facility Name: **South Central Grain & Energy**

Facility Address: **212 Bryant Avenue** City: **Hector**

County: **Renville** Zip Code: **55342**

Glacial Lakes
GLEC
ENVIRONMENTAL CONSULTING INC.

320-235-8370
P.O. Box 1082, Willmar, MN 56201

December 12, 2008

Nancy Hennen-Blomme
Minnesota Pollution Control Agency
Market Street Mall
1420 East College Drive, Suite 900
Marshall, MN 56258

Re: MPCA Guidance Document 4-06, Investigation Report Form, South Central Grain & Energy, 212 Bryant Avenue, Hector, Minnesota, MPCA LEAK# 17141

Dear Ms. Blomme:

Glacial Lakes Environmental Consulting, Inc. has completed MPCA Guidance Document 4-06, Investigation Report Form, for the above referenced facility. A copy of the report is attached for your review. Please call me at 320-905-6070 with any questions regarding the report.

Sincerely,

Glacial Lakes Environmental Consulting, Inc.

Terry Sieck
Project Manager

Cc: Dan Filzen – SCG&E

Site Location Information: Complete Guidance Document 1-03a *Spatial Data Reporting Form* and include in Appendix G.

Section 1: Emergency and High Priority Sites

1.1 Is an existing drinking water well impacted or likely to be impacted within a two-year travel time? ☐*Yes*☒*No*

1.2 Are there any existing field-detectable vapor impacts (OVM, explosimeter, odors, etc.)? ☐*Yes*☒*No*

1.3 Is there an existing surface water impact as indicated by 1) a product sheen on the surface water or 2) a product sheen or volatile organic compounds in the part per million (ppm) range in ground water in a well located close to the surface water. ☐*Yes*☒*No*

1.4 Has the release occurred in the last 30 days? ☐*Yes*☒*No*

1.5 Has free product been detected at the site? **If *YES***, attach Guidance Document 2-03 *Free Product Recovery Report Worksheet.* ☐*Yes*☒*No*

1.6 Is a hydrogeologically sensitive aquifer impacted which is tapped by water wells within 500 feet from the release source? **If *YES***, explain: ☐*Yes*☒*No*

1.7 Has the public water supply risk assessment concluded that the site is a high priority site with respect to a public water supply well (see Guidance Document 4-18 *Public Water Supply Risk Assessment at Petroleum Remediation Sites*)? **If *YES***, provide the name of the public water supply system(s) at risk. ☐*Yes*☒*No*

1.8 Did the vapor intrusion assessment detect exceedences of soil gas action levels (see Guidance Document 4-01a *Vapor Intrusion Assessments Performed during Site Investigations*)? ☒*Yes*☐*No*

If you answered *YES* to any of questions 1 through 8 above describe below the actions taken to date to reduce or eliminate the risk posed by the release.

The only vapor receptor is a basement of a residential property located approximately 150 feet north of the former AST basin. The worst-case vapor boring (VB-1) was completed in the former AST basin, while the lone radial vapor boring (VB-2) was completed approximately 35 feet north of the former basin and 115 south of the lone receptor. Two of the targeted compounds were detected at concentrations above the 10x factor in the worst case boring, while none of the targeted compounds were detected above the 10x factor in the radial boring. Given the distance of the radial boring (VB-2) from the receptor and the low vapor concentrations detected in VB-2, it appears very unlikely that the basement of the adjacent

residential property is at any risk of vapor intrusion. Therefore, no action has been taken to reduce the apparent low risk of vapor intrusion.

Section 2: Site and Release Information

2.1 Attach Table 1 - Tank Information, listing all past and present tanks. Describe the status of the other components of the tank system(s), (i.e., piping and dispensers).

2.2 Describe the land use and pertinent geographic features within 1,000 feet of the site.

The site is located within the northeast quarter of the northeast quarter of Section 29, Township 115 North, Range 32 West in Hector, Renville County, Minnesota. The site was bordered on the south by Twin Cities and Western Railroad with a grain elevator beyond; on the east by a maintenance shop; on the north by Bryant Avenue with residential property beyond; and on the west by an outdoor grain bunker. Beyond the adjacent properties, land use within 1,000 feet of the site consists primarily of commercial and residential.

2.3 List other potential leak sources within 500 feet of the site.

No potential leak sources we identified during the investigation.

2.4 Identify and describe the source(s) or suspected source(s) of the release or contamination encountered, and how the release or contamination was discovered.

The site is currently occupied by a maintenance shop owned by South Central Grain & Energy. Soil samples collected near the AST earthen containment immediately following the removal of the ASTs indicated target compounds were present in the soil at concentrations above reporting limits. As a result, the Minnesota Duty Officer was contacted and the site was subsequently issued a leaksite file number. Please refer to Guidance Document 3-02 in Appendix A for the results of the AST closure sampling.

Check all that apply: ☐ Piping, ☒ Tank, ☐ Dispenser, ☐ Pump/Turbine, ☐ Spill/Overfill

2.5 Identify the cause of the release (tank and/or piping).

Check all that apply: ☐ Corrosion, ☐ Loose Component, ☐ Puncture,
☐ Mechanical or Physical Damage, ☐ Unknown

2.6 Identify the method the release was detected.
Check all that apply: ☒ Removal, ☐ Line Leak Detection, ☐ Tank Leak Detection,
☐ Visual/Olfactory, ☒ Site Assessment, ☐ Other

2.7 Has the site ever, at any point had an E-85 tank? ☐ Yes, ☒ No

2.8 What was the volume of the release? (if known): **unknown** gallons

2.9 When did the release occur? (if known): **unknown**

2.10 Provide aerial photos and Sanborn Maps of the area for the various time periods they are available (Section 14: Figures).

Section 3: Excavated Soil Information

3.1 Include the Guidance Document 3-02 *General Excavation Report Worksheet* in Appendix A.

3.2 Was soil excavated for off-site treatment? ☐*Yes*☒*No*

Date excavated:

Total Volume removed: cubic yards

How much of the Total Volume removed was petroleum saturated: cubic yards

3.3 Indicate soil treatment type:

☐land treatment
☐thermal treatment
☐composting/biopiling
☐ other ( )
Name and location of treatment facility:

Section 4: Extent and Magnitude of Soil Contamination

4.1 Were soil borings conducted in or immediately adjacent to all likely sources including: ☒ *YES* ☐ *NO*

dispensers,	☒ *yes*	☐ *no*	☐ *not present*
transfer areas,	☒ *yes*	☐ *no*	☐ *not present*
underground storage tank basins,	☐ *yes*	☐ *no*	☒ *not present*
above ground storage tank areas,	☒ *yes*	☐ *no*	☐ *not present*
piping,	☐ *yes*	☐ *no*	☒ *not present*
remote fill pipes,	☐ *yes*	☐ *no*	☒ *not present*
valves	☒ *yes*	☐ *no*	☐ *not present*
known spill areas	☒ *yes*	☐ *no*	☐ *not present*

4.2 To adequately define the vertical extent of contamination, borings should be completed at least ten feet below the deepest measurable (field screening and visual observation) contamination. If the water table is encountered, the boring should be completed a minimum of five feet below the surface of the water table. Were all soil borings completed to the required depth? ☒ *YES* ☐ *NO*

4.3 To adequately evaluate site stratigraphy complete at least one boring to 20 feet below the deepest site contamination. If the water table is encountered, the boring should be completed a minimum of 5 feet below the surface of the water table. If a confining layer is present, drill the boring in an uncontaminated area. Was this done? ☒ *YES* ☐ *NO*

If you answered *NO* to any of the three previous questions, explain why the borings were not conducted in the required locations or to the required depths (see Guidance Document 4-01 *Soil and Ground Water Assessments Performed during Site Investigations* regarding exceptions and MPCA approval for depth of drilling):

4.4 Indicate the drilling method:

- ☐ hollow-stem auger
- ☐ sonic drilling
- ☒ push probes
- ☐ other

Note: MPCA staff hydrologist approval is required before use of flight augers

4.5 Discuss soil borings drilled and provide rationale for their locations. Attach boring logs in Appendix D.

Five direct-push soil borings (GP-1 through GP-5) were completed at the site (Figure 2.0) during the LSI. GP-1 was completed through the source area, while GP-2, GP-3, GP-4 and GP-5 were completed outwardly from the source area in four directions to define the horizontal extent of soil and ground water contamination.

GP-2 was completed approximately 55 feet west of GP-1. GP-3 was completed approximately 40 feet north of GP-1. GP-4 was completed approximately 60 feet east of GP-1. GP-5 was completed approximately 65 feet south of GP-1.

In general, soils encountered in the soil borings consisted of granular fill underlain by sandy lean clay to the terminal depths of the borings. Water bearing soils were encountered at approximately 6 feet below land surface in GP-1, GP-4 and GP-5 and approximately 5 feet below land surface in GP-2 and GP-3.

4.6 Attach Table 2 - Results of Soil Headspace Screening. In Appendix C, discuss soil headspace screening method and describe any deviation from recommended and/or required methods and procedures.

4.7 Attach Table 3 - Analytical Results of Soil Samples. Provide analytical results in Appendix B. In Appendix C, discuss soil sampling and analytical methods used and describe any deviation from recommended and/or required methods and procedures

4.8 Describe the vertical and horizontal extent and magnitude of soil contamination. Provide a plan-view map and two cross-sections that illustrate both soil head space and laboratory analytical results (Section 14).

Continuous soil samples were collected from soil borings GP-1 through GP-5 and screened with a photoionization detector (PID). As indicated in the attached Table 2, soil samples were screened with the PID at 2-foot intervals. Elevated organic vapor concentrations were detected in the soil samples collected from near the surface in GP-1. No elevated organic vapor concentrations were detected in the soil samples screened with the PID from the remaining soil borings (GP-2 through GP-5).

In addition to the soil screening activities, soil samples from the apparent water table elevation were collected from each soil boring and submitted to a fixed-base laboratory for analysis of GRO, DRO, BETX, and MTBE. None of the targeted constituents were detected at concentrations above laboratory method detection limits in the GP-1 through GP-5 soil samples submitted for analyses.

The inferred extent of soil contamination greater than 1 ppm is depicted on Figure 2.1.

4.9 Is surface soil contamination present at the site (i.e., soil in the uppermost 2 feet that is visibly stained, contaminated at greater than 10 ppm (PID) or petroleum saturated)? ☒ *Yes* ☐ *No*

If *YES*, attach site map identifying extent(s) of surface soil contamination (Section 14). If borings were used to define extent, complete Table 4. **Refer to Figure 2.1**

4.10 Attach Table 5 - Other Contaminants Detected in Soils (Petroleum or Non-petroleum Derived). Discuss the possible sources of these compounds.

4.11 Is contaminated soil in contact with ground water? ☒ *Yes* ☐ *No*

If *YES* or if ground water contamination appears likely, then complete Section 5.

If *NO* (contaminated soil is not in contact with ground water), what is the distance separating the deepest contamination from the surface of the water table? Was this distance measured during site activities, referenced from geologic information, or estimated based on professional opinion during a site visit? feet

4.12 Describe observations of any evidence of a fluctuating water table and a seasonal high water table (e.g., mottling). Also, from other sources of information describe the range of natural water table fluctuations in the area.

Based on the soil screening results and observations made during the investigation, it appears that the water table fluctuation zone at the site ranges from 5 feet to 8 feet below ground surface at the site.

4.13 In your judgment, is there a sufficient distance separating the petroleum contaminated soil (or an impacted non- aquifer) from the underlying aquifer to prevent petroleum contamination of the aquifer? Please explain in detail. In your explanation, consider the data in this section as well as the nature of the petroleum release (i.e., volume, when it occurred, petroleum product). ☒ *Yes* ☐ *No*

If *YES*, a ground water contamination assessment is not necessary as part of the LSI.

If *NO*, a ground water contamination assessment is necessary. Complete Section 5.

As indicated above, the contaminated soil at the site appears to be located from the surface to the base of the water table fluctuation zone at approximately 8 feet bls. Soil boring GP-2 was completed to a depth of 26 feet bls. As noted on the GP-2 soil boring log, dense sandy lean clay was observed in the GP-2 soil boring from water table fluctuation zone to the terminal depth at 26 feet bls.

There were no wells noted within 500 feet of the site during the ground water receptor survey. In addition, Hector's municipal wells are no longer located within the city limits, rather they are located approximately 1.5 miles north of Hector. Given the lack of wells present in the area of the site, the underlying aquifer appears to be rather unproductive or difficult to utilize. In addition, the contaminant concentrations observed at the site are low. Therefore, the risk posed to the underlying aquifer appears to be very low.

Section 5: Aquifer Characteristics/Ground Water Contamination Assessment

Complete Section 5 if groundwater has been contaminated or may become contaminated. Aquifer determination is made during the LSI. It is based upon the stratigraphy and a hydraulic conductivity measurement calculated from grain size distribution analysis. The site stratigraphy gives the context within which the hydraulic conductivity measurement can be interpreted. Please refer to Guidance Document 4-01 *Soil and Ground Water Assessments Performed during Site Investigations* for methods and requirements.

5.1 Provide an average hydraulic conductivity value (K) measured:

K = **0.003** ft/day

Indicate the method of measurement (i.e., Hazen, Masch and Denny, Kozeny-Carmen, etc.): Grain-size distribution approximations by method(s).

Indicate the locations and depths of soil samples submitted for grain size analyses. Provide the results of grain size analyses and other information used for the determination of K-values in Appendix F.

Soil samples were collected for grain size analysis from the approximate water table depth in GP-1 (4'-6') and GP-3 (4'-6').

5.2 Calculate a range for aquifer transmissivity (T) using the equation T = Kb, where b is the thickness of the aquifer:

T_{High} = **0.31** ft^2/day
T_{Low} = **0.31** ft^2/day

Determine the aquifer thickness (b) from geologic logs of soil borings, water well logs, and available published information. Attach water well logs in Appendix D. If the transmissivity of a contaminated hydrogeologic unit is greater than 50 ft^2/day, it is considered an aquifer (for the purpose of the Petroleum Remediation Program), and monitoring wells will be necessary.

5.3 Discuss in detail the site geology and stratigraphy, including a discussion of local and regional hydrogeology, using soil boring data and cross sections, geologic logs of near-by water wells, and available published information.

According to the United States Geological Survey 7.5-minute topographic map series, the unconsolidated sedimentary deposits in the area of the Property consist of ground moraine associated with the Altamont Moraine of the Des Moines Lobe glacial advance. The ground moraine deposits consist of a body of till deposited mainly from the bottom of a glacier (Hobbs and Goebel, 1982).

The uppermost bedrock unit in the vicinity of the Property consists of Precambrian-age undifferentiated igneous and metamorphic rock. According to published geologic information, depth to bedrock in the area of the Property is likely greater than 300 feet below land surface (Lindholm et al., 1974).

According to published geologic and hydrologic information, shallow ground water flow direction in the area of the Property is northeast toward Buffalo Creek (Lindholm et al., 1974). Please note that shallow drainage features such as ditches, storm sewers, and underground utility trenches can influence the local shallow ground water flow direction.

Hobbs, Howard C. and Joseph E. Goebel, 1982, Geologic Map of Minnesota, Quaternary Geology: Minnesota Geological Survey, State Map Series S-1, scale 1:500,000.

Lindholm, G.F., D.F. Farrell, and J.O. Helgesen, 1974, Water Resources of the Crow River Watershed, South-Central Minnesota, U.S.G.S. Hydrogeologic Investigations Atlas HA-528.

5.4 Attach Table 6- Water Level Measurements and Depths of Water Samples Collected from Borings. Indicate the method used to measure the water levels in borings and the depth water samples were collected from borings. Allow water levels in borings to equilibrate to static conditions and then adjust the effective screened intervals in borings to intercept the static water table prior to water sample collection. Discuss groundwater flow direction.

As mentioned above, according to published hydrogeologic information, shallow ground water flow direction in the area of the site is likely northeast toward Buffalo Creek.

5.5 Attach Table 7 - Analytical Results of Water Samples Collected from Borings. Summarize the analytical results of groundwater samples collected as part of an LSI. Discuss the extent and magnitude of groundwater contamination. Also provide a discussion on QA/QC, including information on the samples collected and laboratory analyses performed.

Ground water samples were collected for laboratory analyses from all five borings. The ground water samples collected were laboratory analyzed for DRO, GRO and VOCs.

DRO was detected in the GP-1 (570 ppb), GP-2 (110 ppb), and GP-5 (140 ppb) soil borings. DRO was not detected at concentrations greater than laboratory method detection limits in the GP-3 and GP-4 soil borings. In addition, GRO was not detected in any of the ground water samples at concentrations greater than laboratory method detection limits.

Regarding VOCs, acetone, chloromethane, tetrahydrofluran and 1,2,4-trimethylbenzene were detected at various concentrations below their HRLs in the GP-1, GP-3 and GP-5 water

samples. None of the remaining VOCs were detected in the GP-1 through GP-5 ground water samples at concentrations greater than laboratory method detection limits.

Given that GP-1 was completed in the worst-case location and the contaminant concentrations is less than 1 ppm in the ground water, our inferred extent of ground water contamination sketch utilizes 500 ppb or 0.5 ppm as a target concentration. The inferred extent of ground water contamination greater than 0.5 ppm DRO and/or GRO is depicted on Figure 2.2.

5.6 Attach Table 8 - Other Contaminants Detected in Water Samples Collected from Borings (Petroleum or Non-petroleum Derived). Discuss the possible sources of these contaminants and provide a discussion of QA/QC information.

As noted above, acetone, chloromethane, tetrahydrofuran and 1,2,4-trimethylbenzene were detected at various concentrations below their HRLs in the GP-1, GP-3 and GP-5 water samples.

It is our experience that acetone is a common lab and/or field contaminant as it is used to clean both lab and field equipment in the environmental investigation field. Tetrahydrofuran is a solvent commonly utilized in the fabrication of articles for packaging, transporting, or storing foods. Chloromethane (methyl chloride) is utilized in the manufacturing of silicones. Finally, 1,2,4-trimethylbenzene is a petroleum-related VOC.

5.7 Laboratory certification number: ***027-053-137***

Additional Ground Water Investigation

Complete **Section 6** only if: 1*) an aquifer has been impacted at or above Minnesota Department of Health HRLs, 2) an aquifer has been impacted below the HRLs, but the levels are likely to reach the HRLs, or 3) there is an insufficient distance separating the petroleum contaminated soil (or an impacted non- aquifer) from the underlying aquifer.* Complete **Section 7** only if remediation is anticipated. Regardless of whether you are submitting an *LSI* or a *full RI*, all sections following Section 7 must be completed.

Section 6. Extent and Magnitude of Ground Water Contamination

6.1 Discuss drilling and installation of wells, including the rationale for their locations. Attach boring logs in Appendix D.

6.2 Attach Table 9 - Monitoring Well Completion Information.

6.3 Attach Table 10 - Summary of Water Levels Measured in Wells.

6.4 Attach Table 11 - Analytical Results of Water Samples Collected from Wells. Indicate here whether samples were purged or unpurged (see Guidance Document 4-05). If purged, indicate purging method.

6.5 Attach Table 12 - Other Contaminants Detected in Water Samples Collected from Wells (Petroleum or Non-Petroleum Derived). Indicate here whether samples were purged or unpurged (see Guidance Document 4-05). If purged, indicate purging method.

6.6 Describe the extent and magnitude of the ground water contamination. Discuss the presence of non-petroleum compounds, if detected, and identify possible sources of these compounds. Also provide a discussion on QA/QC, including information on the samples collected and laboratory analyses performed.

6.7 Is there a clean or nearly clean (below HRLs) down-gradient monitoring well located along the longitudinal axis of the contaminant plume? (approximately 20 degrees plus or minus the axis) ☐*Yes*☐*No*

6.8 Is there a worst case well completed through the source area(s) of the release? ☐*Yes*☐*No*

If you have answered *NO* to any of the above two questions, please explain why a well was not completed in the required location.

6.9 Provide an estimate of the longitudinal length of the dissolved contaminant plume: feet

6.10 Calculate groundwater flow velocity (based on Darcy's Law) using the average K-value, average horizontal hydraulic gradient, and effective porosity. Provide documentation in Appendix F.

Hydraulic Conductivity (K) = Method
Porosity (n) = method/reference
Average horizontal gradient (dh/dl) =
Calculated GW velocity (v) = cm/s ft/day

6.11 Using the calculated groundwater flow velocity (above), is there a receptor within a five-year travel time? ☐*Yes*☐*No*
If *YES*, provide the unique well number and identify the location of the receptor(s).

6.12 Were any deep monitoring wells completed at the site? ☐*Yes*☐*No*

If *YES*, list them and indicate their depths:

Contact the MPCA project hydrologist before installing a deep monitoring well. A deep monitoring well may be necessary if: 1) Contamination exists more than 10 feet below the water table or 2) the impacted aquifer is a drinking water aquifer or is hydraulically connected to the aquifer(s) presently utilized by a water supply well located within 500 feet of the release source.

If contamination is present at depth in the aquifer or in deeper aquifers, additional deep wells may be required. Provide the following information if deep wells are installed:

Vertical Gradient (dv/dl)
Inferred GW Flow Direction

Provide the following information for the deep aquifer unit if it appears to be hydrogeologically distinct from the upper unit.

Porosity (n):
Hydraulic Conductivity (K)

Submit this RI report after completing a minimum of *two quarterly sampling events*. Groundwater monitoring should continue until MPCA response is received.

Section 7: Evaluation of Natural Attenuation

Refer to the Guidance Document 4-03 *Assessment of Natural Attenuation at Petroleum Release Sites*. **Note**: Evaluation of natural attenuation is not required unless requested by MPCA staff.

7.1 Attach Table 13 - Natural Attenuation Parameters. Discuss the results. Specifically, compare the concentrations of the inorganic parameters inside and outside the plume.

7.2 In your judgment, is natural biodegradation occurring at this site? Please explain. ☐*Yes* ☐*No*

If active remediation is anticipated, discuss reasons why natural attenuation (including biodegradation) can not adequately remediate the contaminants to acceptable risk levels.

Section 8: Well Receptor Information/Assessment

Include in Appendix E, copies of the water supply well logs obtained from MGS, MDH, drillers, and where applicable, from County well management authorities.

8.1 Attach Table 14 - Properties Located Within 500 Feet of the Release Source. The Leak Site property must be included in Table 14. Provide a map (scale of 1inch = 50 to 100 ft.) centered on the release area, identifying the boundaries of the properties listed in Table 14, and associated pertinent features such as roads, buildings, water wells, utilities and surface water.

8.2 Were all property owners within 500 feet of the release source successfully contacted to determine if water wells are present? **If *NO***, please explain. ☒*Yes*☐*No*

8.3 Attach Table 15 - Water Supply Wells Located within 500 Feet of the Release Source and Municipal or Industrial Wells Within ½ Mile. All water wells within 500 ft. of the release source must be listed, even if construction information was not obtained or available. Any available water well logs or other construction documentation must be included in Appendix E.

8.4 Discuss the results of the ground water receptor survey and any analytical results from sampling conducted at nearby water wells. Comment on the risks to water supply wells identified within 500 feet from the release source as well as the risk posed by or to any municipal or industrial wells found within ½ mile. Specifically indicate whether water supply wells identified utilize the impacted aquifer. (Note: an impacted aquifer separated from another aquifer by a clay lens may not be considered a separate aquifer).

Thirty-six properties were located within 500 feet of the ground water contamination plume at the site. All of the properties were supplied with municipal water. No private water wells or active municipal water wells were noted during the well receptor survey. It therefore appears that the risk posed by the release to any water supply wells currently located in the area of the site is very low.

Regarding risk posed to possible future ground water supplies, the impacted aquifer is a shallow aquifer with very low yields. It appears very unlikely that the impacted aquifer would be tapped and/or utilized in the future. Specifically, Hector City Officials indicated that they have no ground water development plans in the area of the site and the current municipal wells are located approximately 1.5 miles north of Hector.

8.5 Is municipal water available in the area? ☒*Yes*☐*No*

8.6 Are there any plans for ground water development in the impacted aquifer within 1/2 mile of the site, or one mile down-gradient of the site if the aquifer is fractured? Please give the name, title and telephone number of ☐*Yes*☒*No*

the person that was contacted for this information (below).

Name: **Jerome Schuller**
Title: **City of Hector Water Superintendent**
Telephone: **320-848-2480 office, 320-583-3132 cell**

Section 9: Surface Water Risk Assessment

9.1 Are there any surface waters or wetlands located within ¼ mile of the site? ☐*Yes*☒*No*

If *YES*, list them:

Also list any potential pathway such as ditches, drain tiles, storm sewers, etc., that may lead to the identified surface water features.

9.2 If surface water is present down-gradient of the site, is there a clean down-gradient monitoring well (temporary or permanent) located between the site and the surface water? ☐*YES* ☐*NO* ☒*N/A*

9.3 If you answered ***NO*** to question 9.2, we assume that contamination discharges to surface water. Therefore, complete the following information:

Name of receiving water:	
Receiving water classification	
ORVW?	☐*Yes* ☐*No*
Plume width, (W):	feet
Plume thickness, (H):	feet
Hydraulic conductivity, (K):	gal/day/ft^2
Horizontal gradient, (dh/dl):	(unitless)
Discharge, (Q) = H*W*K*(dh/dl)/1440	gal/min
Applicable chronic standard (7050 or 7052)	
Applicable max. standard (7050 or 7052)	
Applicable FAV (7050 or 7052)	
Contaminant concentration in ground water	

9.4 If you answered ***YES*** to question 9.2, identify the clean down-gradient boring or monitoring well, the distance to the surface water feature, and discuss the contamination risk potential.

Section 10: Field-Detectable Vapor Risk Assessment/Survey

10.1 Is there a history of vapor impacts in the vicinity of the site ? ☐*Yes*☒*No*

If *YES*, describe:

10.2 Is there any indication that free product or contaminated ground water may be traveling off-site within the utility corridors? ☐*Yes*☒*No*

If *YES*, utility backfill investigation is required (refer to Guidance Document 4-01). Discuss the investigation rationale and results.

10.3 Discuss the potential for vapor migration/accumulation near the site. Your discussion should consider: Soil types, product type, presence and distribution of free product or high concentrations of dissolved product. Also, using cross-sections to illustrate the relationship, compare the depth of contamination with the location of underground utility lines, location and depth of storm and sanitary sewers, and location of nearby basements and sumps.

The potential for vapor migration/accumulation in the area of the petroleum release appears to be very low. As depicted on Figure 2.1, the inferred extent of the soil contamination at the site is a relatively small area. Also, surficial soil types in the area of the site consist primarily of fine-grained clay-based material. Finally, the only noted receptor consists of a residential basement located approximately 150 feet from the source area.

10.4 Conduct a vapor survey if the vapor risk assessment indicated a risk of vapor impacts to buildings or utilities. Ask occupants of nearby buildings if they have smelled petroleum odors. See Guidance Document 4-02 *Potential Receptor Surveys and Risk Evaluation Procedures at Petroleum Release Sites*. Identify all vapor monitoring locations on an attached site map by labeling each monitoring location with a number. Tabulate the list of vapor monitoring locations in Table 16. Vapor monitoring methods, including instruments used, must be discussed in Appendix C. Provide a detailed description of each vapor monitoring location and an interpretation of the vapor monitoring results below.

As required in Guidance Document 4-01a, a vapor survey was conducted as part of the LSI. Two soil gas samples were collected in the locations depicted on Figure 3.0 and laboratory analyzed for the analytes contained in the EPA's TO-15 scan. A summary of the results is included in Table 17, while a complete laboratory report is included in Appendix B.

As depicted in Table 17, some of the targeted analytes were detected at concentrations above their associated screening values in two vapor samples. Nevertheless, as noted in previous discussions it appears very unlikely that the lone observed receptor is at risk of vapor intrusion.

10.5 Attach Table 16 - Results of Vapor Monitoring.

Section 11: Soil Gas-Based Vapor Intrusion Screening Assessment

11.1 When significant contamination and receptors are present at a site, a vapor intrusion screening assessment must be conducted (See Guidance Document 4-01a *Vapor Intrusion Assessments Performed during Site Investigations*). Soil gas samples must be completed in the worst case area and at four radial points within a 100' radius. The radial points should be located near inhabited buildings, if there are four or less. If not, they should be located uniformly within the 100' radius. Was this done? ☐*Yes*☒*No*

If NO, explain why.
Two soil gas samples were collected. One in the source area (VB-1) and one near the north property boundary (VB-2). As there are no receptors to the west, east or south, no soil gas samples were collected in these directions.

11.2 Do any of the soil gas samples from points located near inhabited buildings exceed the action levels found in GD 4-01a? ☒*Yes*☐*No*
If *YES*, is sub-slab vapor or indoor air sampling needed for these buildings? ☐*Yes*☒*No*
Describe and discuss locations needing further assessment.

11.3 Has sufficient data been collected to propose a conceptual Corrective Action Design (CAD) for buildings that are likely to be impacted by elevated soil gas levels and/or field detectable vapor impacts? *Describe your justification for corrective action and proposed conceptual CAD.* ☐*Yes*☒*No*

11.4 Do any of the soil gas samples from the non-building specific samples within the 100' radius exceed action levels? ☒*Yes*☐*No*

If *YES*, and there are many inhabited buildings nearby, is additional building specific soil gas sampling recommended for all these buildings? *Describe your proposal for additional sampling. **If NO**, explain.* ☐*Yes*☒*No*

If *YES*, are additional soil gas samples recommended to assess the full extent of the soil gas cloud? *Describe your proposal for additional sampling. **If NO**, explain.* **Soil vapor results were only slightly above action levels and the site building has no basement and is only occupied occasionally during business hours.** ☐*Yes*☒*No*

11.5 Were recommended field sampling procedures and QA/QC from Guidance Document 4-01a followed? Were required laboratory QA/QC objectives met? ☒*Yes*☐*No*
***If NO**, explain why and discuss implications on data quality.*

11.6 Include a map (Section 14) which shows locations of all soil gas samples and buildings within and at the 100' radius and locations of all soil gas samples exceeding action levels. Include other locational information that may help in evaluating the questions above.

Section 12: Discussion

12.1 Discuss the risks associated with the remaining soil contamination:

Elevated PID readings were detected in only one of the soil borings completed during the LSI. In addition, no petroleum constituents were detected in the soil samples collected at the water table and submitted for laboratory analysis in any of the soil borings. It appears that the soil contamination present at the site is concentrated at the surface within the former AST earthen basin. As a result, the lone risk associated with the remaining soil contamination appears to be dermal contact and possible contaminated surface water runoff.

12.2 Discuss the risks associated with the impacted ground water:

Laboratory analyses of shallow ground water samples collected from the source-area soil borings at the site indicate that petroleum constituents have impacted the ground water. However, none of the ground water analytes were detected above their respective health risk limit and the ground water contamination appears to be confined to the site. Also, the underlying utilized aquifer does not appear to be at any risk. It therefore appears that the risks associated with the impacted ground water are low.

12.3 Discuss the risks for vapor intrusion associated with any soil gas impacts detected:

Soil gas samples were collected for laboratory analysis (TO-15) from the source area and at the north site boundary. Although constituents exceeded their associated screening values in these locations, the receptors in the area of the site appear to be located outside of the soil gas cloud. As a result, it appears that the risks associated with the soil gas are low.

12.4 Discuss other concerns not mentioned above:

Section 13: Conclusions and Recommendations

13.1 Recommendation for site:

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

13.2 Base the recommendation above on Guidance Document 1-01 *Petroleum Remediation Program General Policy*. Describe below how you applied the policy to support your recommendation. If closure is recommended, please summarize significant site investigative events and describe how site specific risk issues have been adequately addressed or minimized to acceptable low risk levels.

Surficial soil has been impacted within the former AST earthern basin. GLEC is proposing to conduct a corrective action excavation of surficial soils within the earthen berm. A Conceptual Corrective Action Design Worksheet summarizing the proposed corrective actions has been included with this report in Appendix H.

13.3 If additional ground water and/or vapor monitoring is recommended, indicate the proposed monitoring schedule and frequency. Conduct quarterly monitoring until the MPCA responds to this report.

13.4 If additional soil gas/vapor intrusion investigation is recommended, indicate whether there is risk to a specific building or whether additional soil gas definition is necessary. Provide a detailed analysis of the initial soil gas and receptor information leading to these recommendations. Provide details of proposed activities such as sub-slab vapor and/or indoor air sampling, or locations of additional borings for sampling soil gas. If vapor intrusion, or conditions indicative of a high risk of vapor intrusion, has already been established, then corrective action is required. Refer to 13.5 below.

13.5 If corrective action is recommended, provide a conceptual approach by completing Guidance Document 4-19 *Conceptual Corrective Action Design Worksheet* and include it as Appendix H. See Guidance Document 4-10 *Elements of the Corrective Action Design* for more information on the corrective action design process and other requirements. (Note: MPCA staff will review this report at a higher-than-normal priority to determine if corrective action is required.)

Section 14: Figures

Attach the following figures in order of discussion in the text:

☒ 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 surface soil contamination
- Soil gas sampling locations and extent of the soil gas cloud
- Horizontal extent of ground water contamination
- Location of end points for all geologic cross sections.
- Potential pathways to surface water features within ¼ mile of the site.

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

☐ Ground water gradient contour maps (for sites with monitoring wells) for each gauging event.

☒ Well receptor survey map showing 1/2 mile radius, 500 foot radius, water supply wells, other potential sources of contamination, using a U.S. Geological Survey 7.5 minute quadrangle.

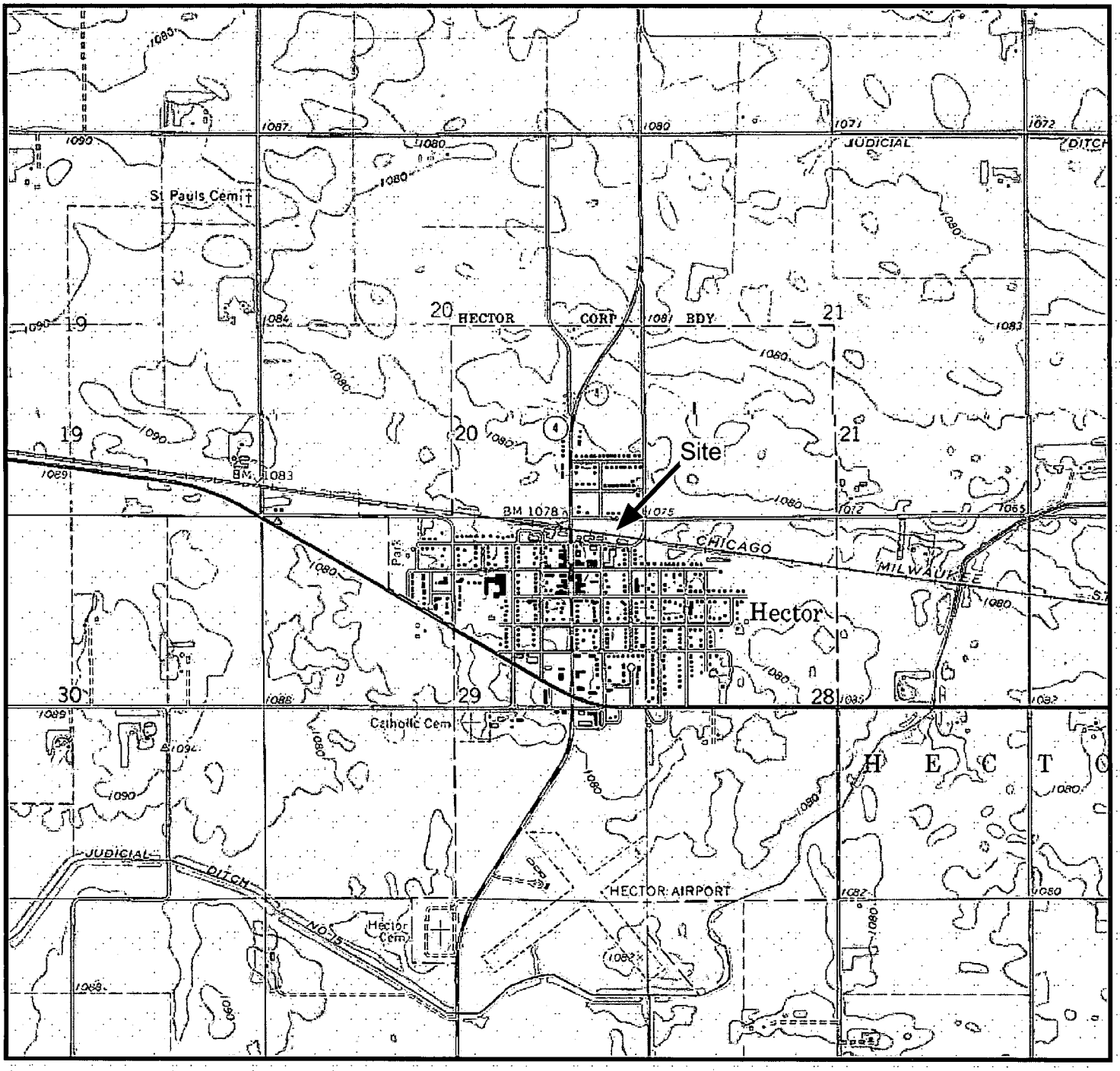
☐ Potential receptor map (scale 1 inch = 50 to 100 ft), showing property boundaries and roads, and potential receptors such as buildings, water wells, utilities (distinguish between water, storm sewer and sanitary sewer), surface waters, ditches and any other pertinent items within 500 ft of the release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

☐ Vapor survey map showing utilities and buildings with basements and monitoring locations within 500 feet (if a survey was required).

☒ Provide at least two (2) geologic cross sections, including utilities.

☒ Vapor intrusion assessment map showing all soil gas boring locations and buildings within and at a 100 feet radius of the worst case soil gas boring

☒ Aerial photos and Sanborn Maps of the immediate area.



Scale for Topo Map (1" = 2,000')

1 1/2 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

N W E S

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Figure 1.0

Property Location Map
South Central Grain & Energy
210 Bryant Avenue
Hector, MN

Date	Created by
6/25/08	TJS

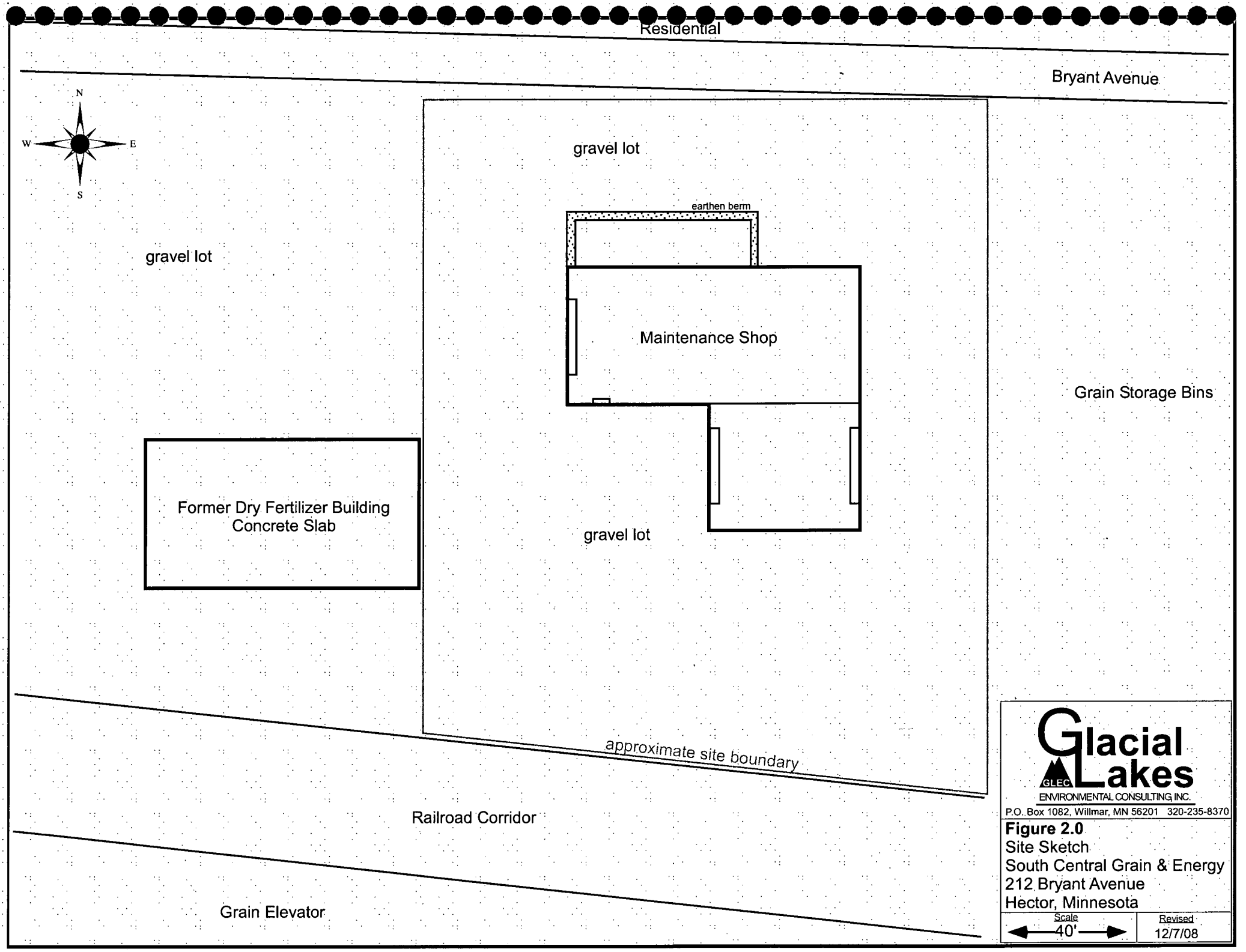

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Figure 2.0
Site Sketch
South Central Grain & Energy
212 Bryant Avenue
Hector, Minnesota

Scale 40'
Revised 12/7/08

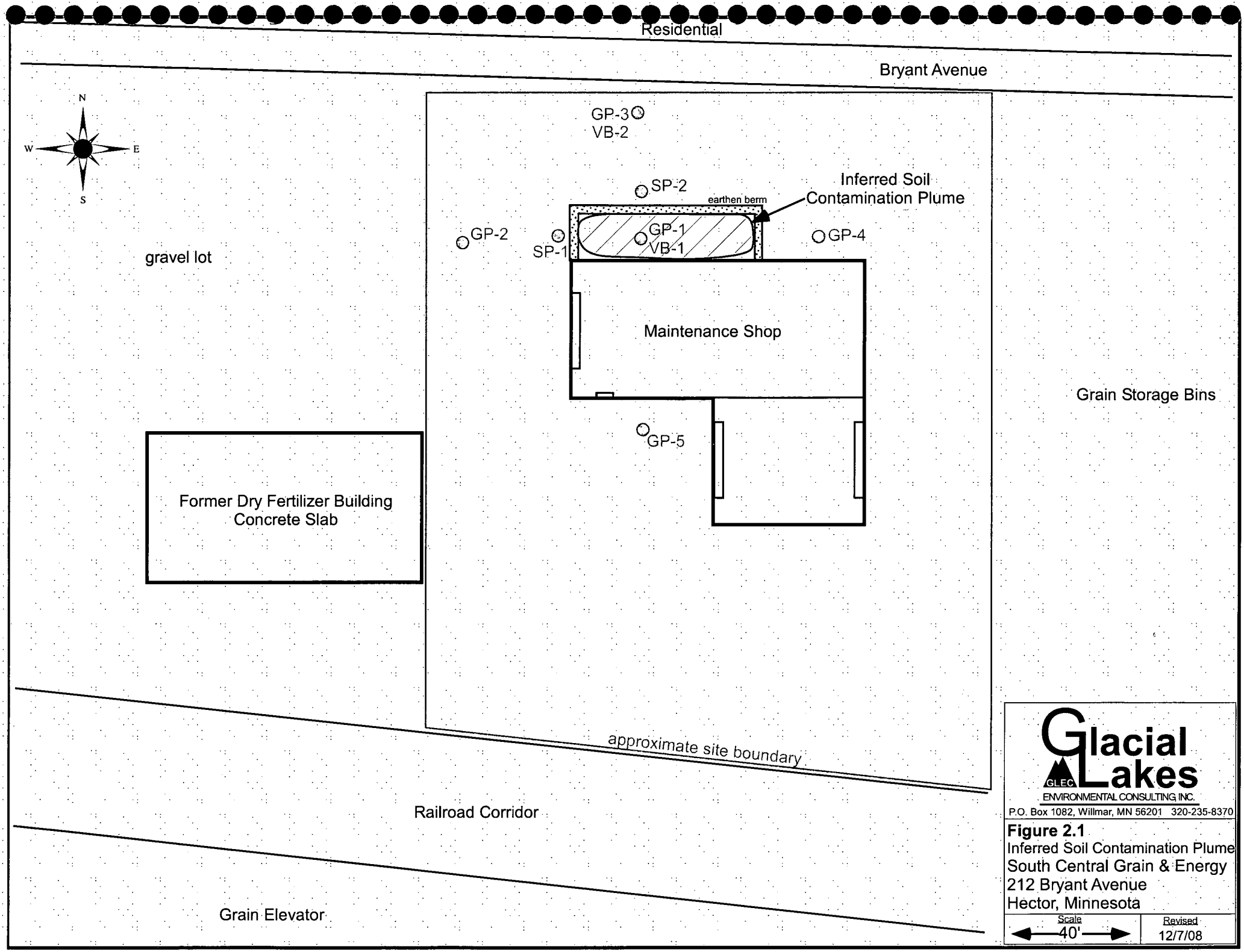

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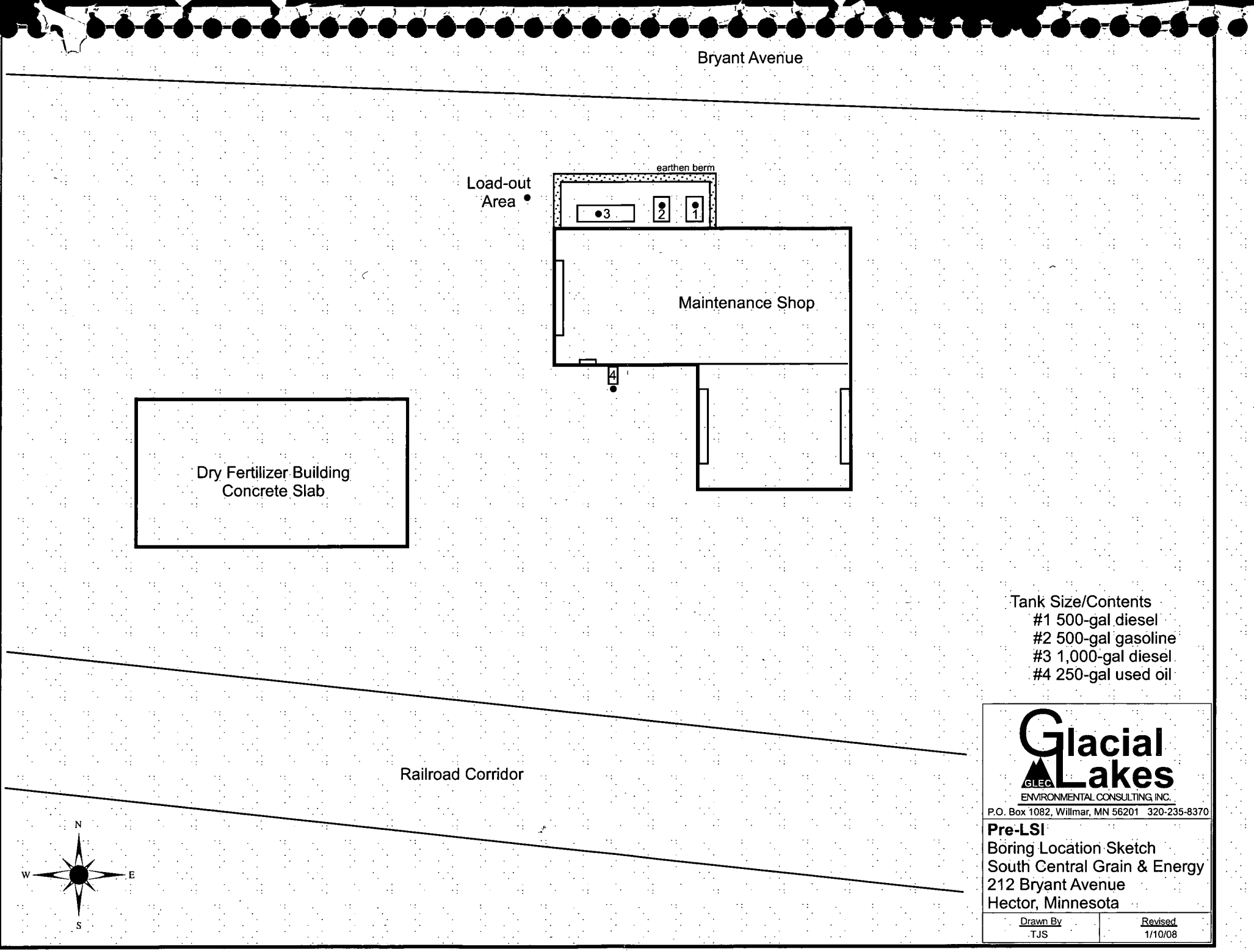
Figure 2.1
Inferred Soil Contamination Plume
South Central Grain & Energy
212 Bryant Avenue
Hector, Minnesota

Scale 40'
Revised 12/7/08



Tank Size/Contents
#1 500-gal diesel
#2 500-gal gasoline
#3 1,000-gal diesel
#4 250-gal used oil

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Pre-LSI
Boring Location Sketch
South Central Grain & Energy
212 Bryant Avenue
Hector, Minnesota

Drawn By	Revised
TJS	1/10/08

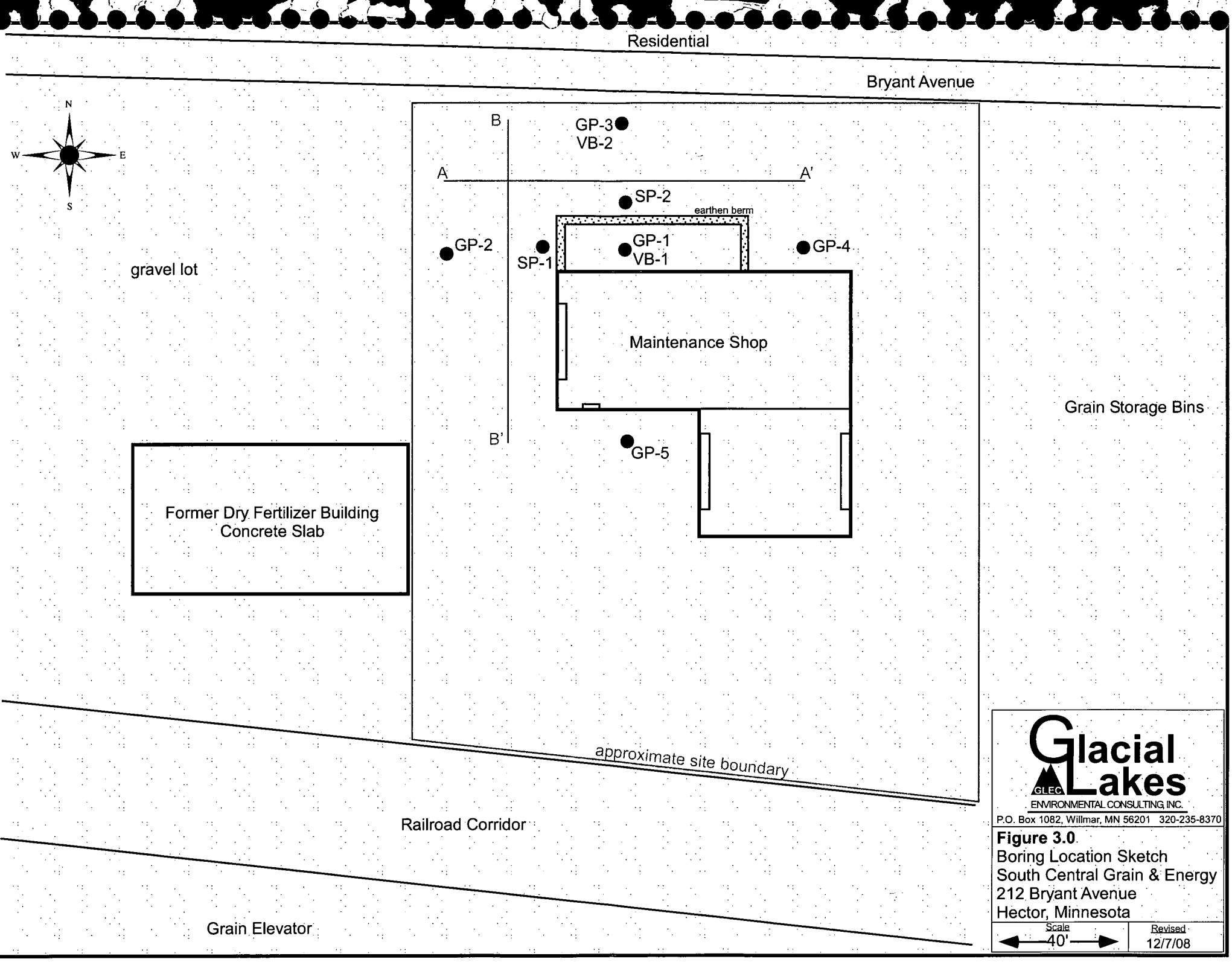

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Figure 3.0
Boring Location Sketch
South Central Grain & Energy
212 Bryant Avenue
Hector, Minnesota

Scale 40'

Revised 12/7/08

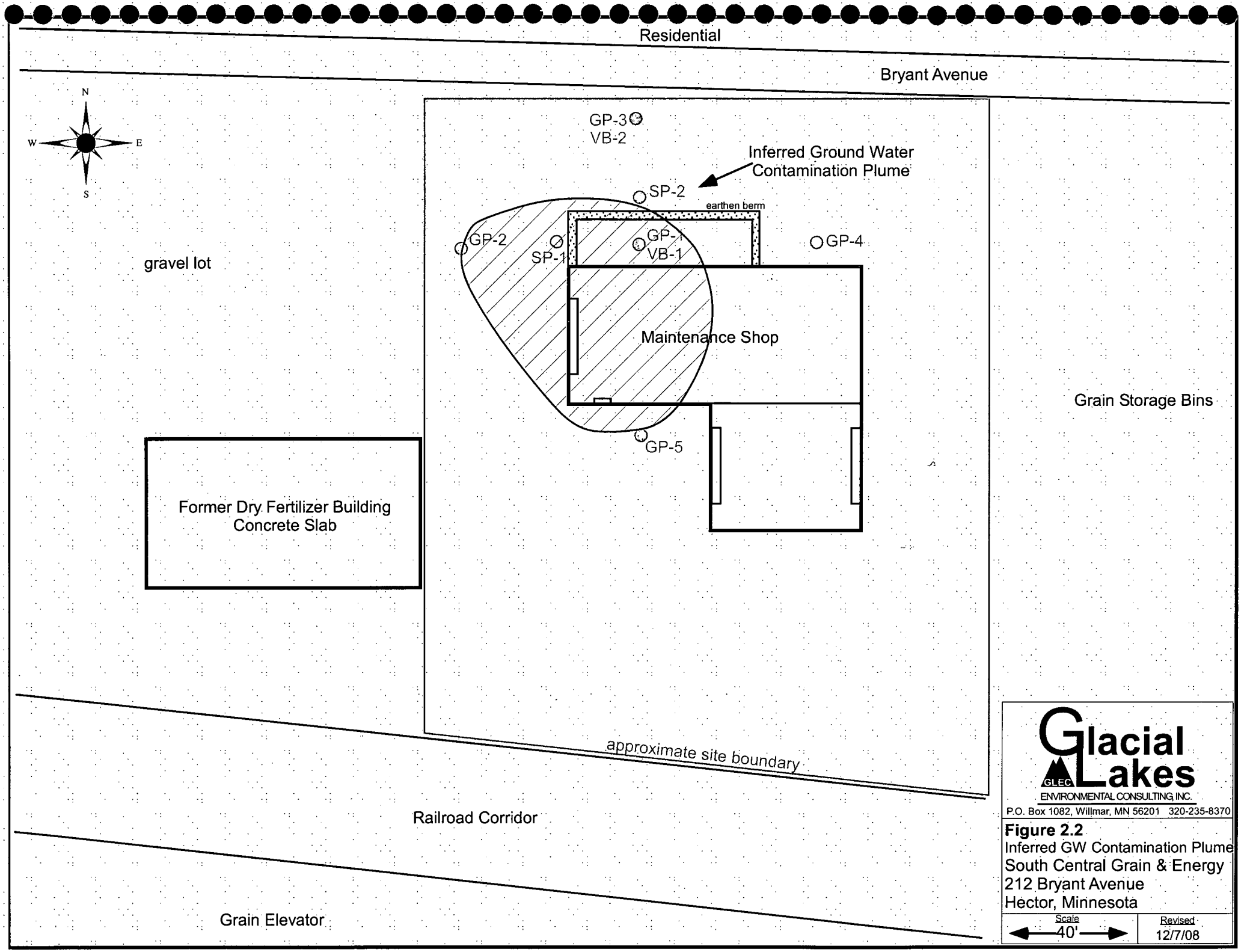

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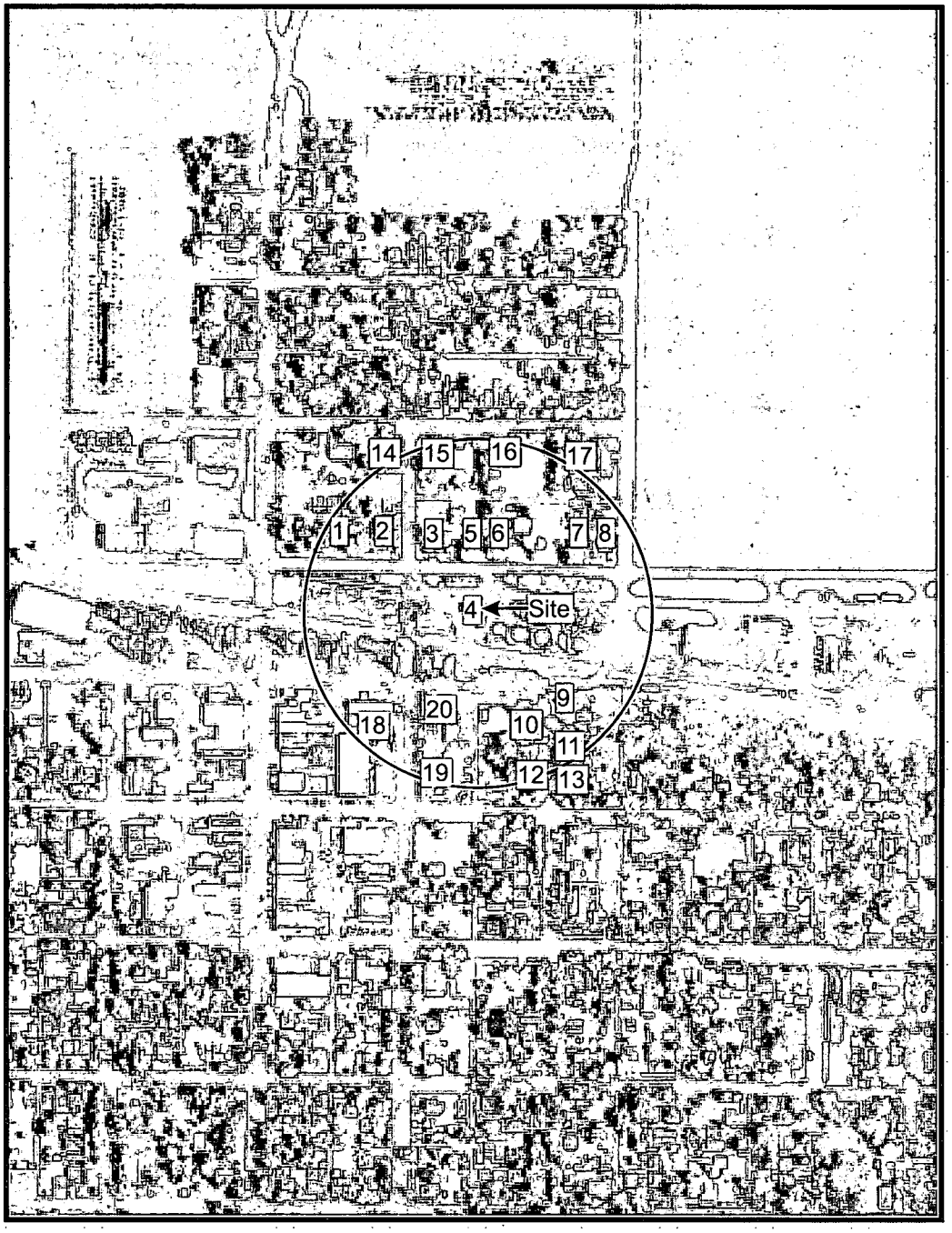
Figure 2.2
Inferred GW Contamination Plume
South Central Grain & Energy
212 Bryant Avenue
Hector, Minnesota

Scale 40'
Revised 12/7/08



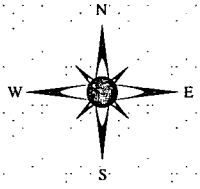


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Figure 3.1 **2004 Aerial**
500' Radius Map
South Central Grain & Energy
212 Bryant Avenue
Hector, MN

Date	Created by
12/4/08	TJS

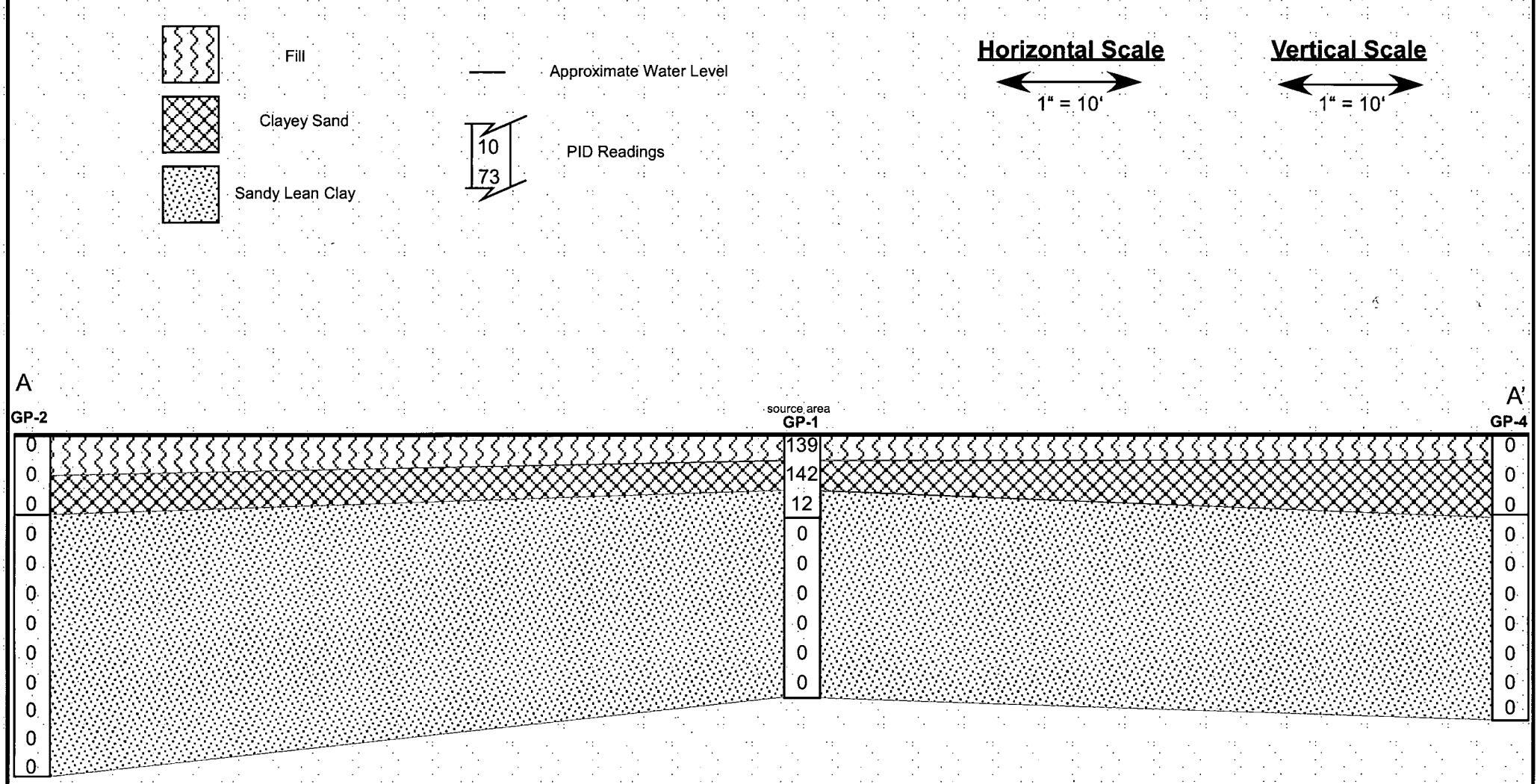

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Figure 4.0
Cross-Section - West to East
South Central Grain & Energy
212 Bryant Avenue
Hector, Minnesota

Created By	Date
TJS	12/8/08

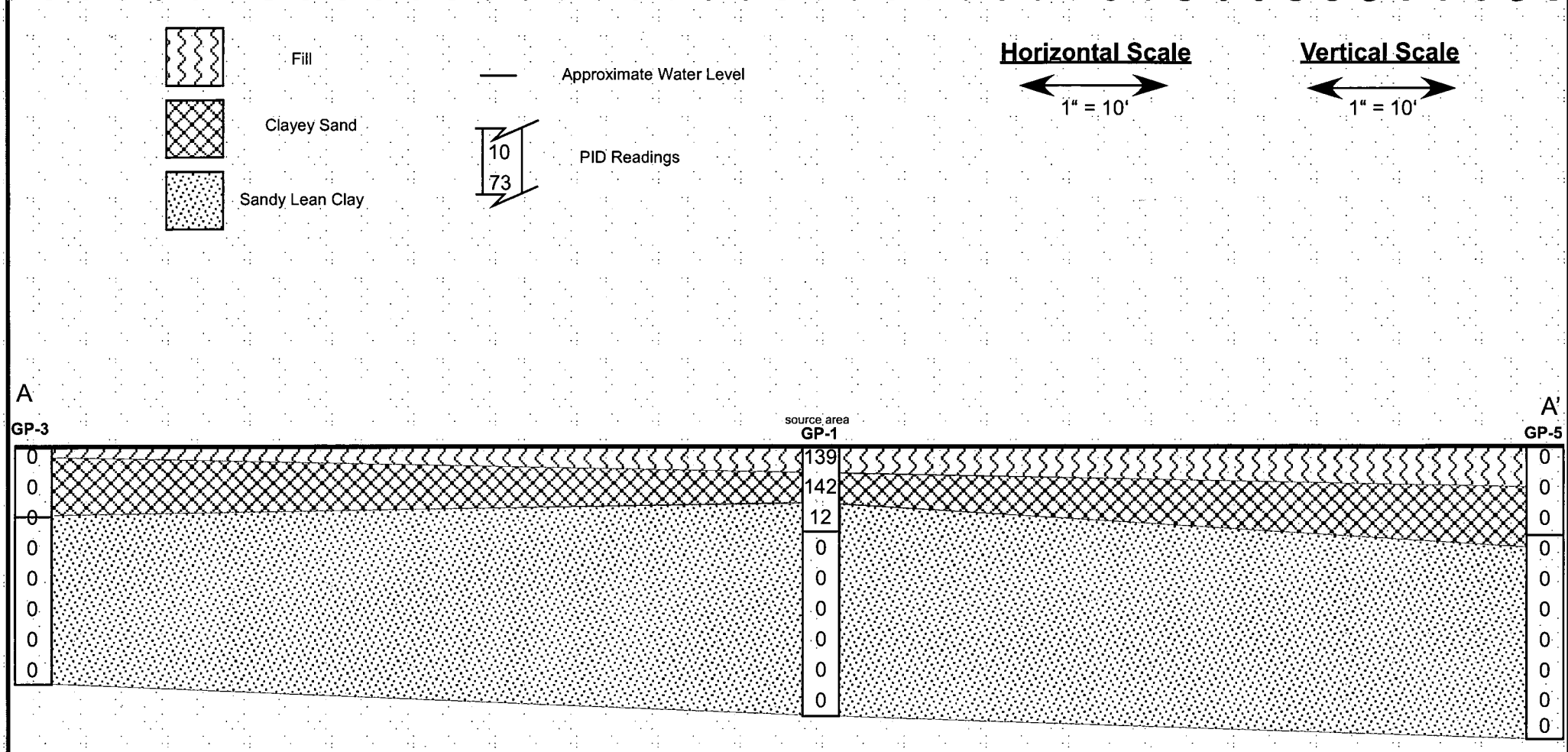

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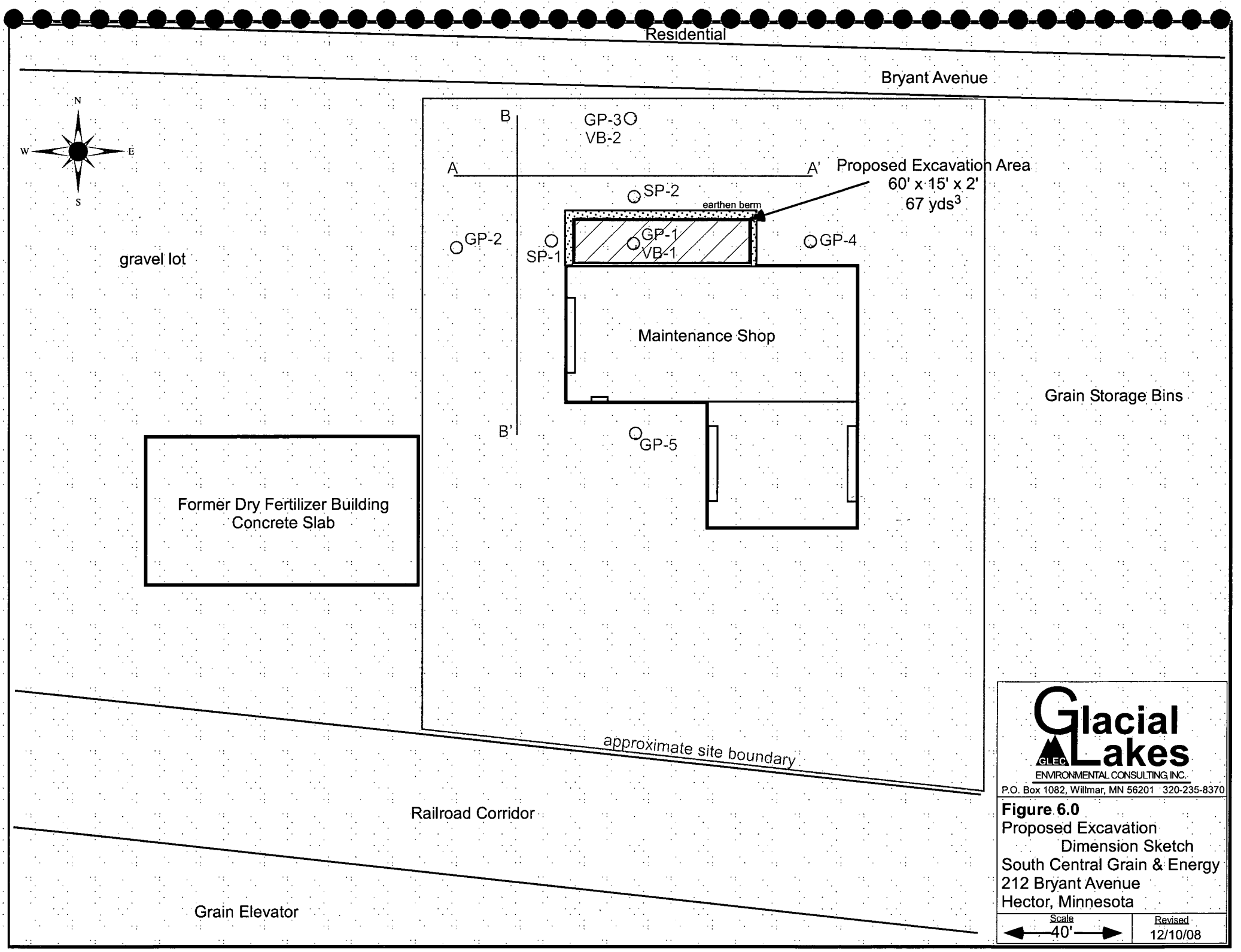
Figure 5.0
Cross-Section - North to South
South Central Grain & Energy
212 Bryant Avenue
Hector, Minnesota

Created By	Date
TJS	12/8/08



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P.O. Box 1082, Willmar, MN 56201 320-235-8370

Figure 6.0
Proposed Excavation
Dimension Sketch
South Central Grain & Energy
212 Bryant Avenue
Hector, Minnesota

Scale 40'
Revised 12/10/08

Section 15: Tables

Table 1
Tank Information

Tank #	Tank ** Material	UST or AST	Capacity (gallons)	Contents (product type)	Year installed	Tank Status*	Condition of Tank
1	S	AST	500	Diesel	1989	Removed 1/7/08	Good – no obvious signs of leaks
2	S	AST	500	Gasoline	1989	Removed 1/7/08	Good – no obvious signs of leaks
3	S	AST	1,000	Diesel	1989	Removed 1/7/08	Good – no obvious signs of leaks
4	S	AST	250	Used Oil	1989	Present-Not in Use	Good – no obvious signs of leaks

*Indicate: *removed (date), abandoned in place (date), or currently used, upgraded tank, installation of new tank. ** F for fiberglass or S for Steel*

Notes:

Piping Material (check all that apply): ☒ Steel, ☐ Fiberglass, ☐ Flexible Plastic

Table 2
Results of Soil Headspace Screening

Depth (ft)	Soil Boring ID				
	GP-1	GP-2	GP-3	GP-4	GP-5
0-2'	**139**	0	0	0	0
2'-4'	**142**	0	0	0	0
4'-6'	**12**	0	0	0	0
6'-8'	0	0	0	0	0
8'-10'	0	0	0	0	0
10'-12'	0	0	0	0	0
12'-14'	0	0	0	0	0
14'-16'	0	0	0	0	0
16'-18'	0	0		0	
18'-20'	--	0		0	
20'-22'	--	0			
22'-24'	--	0			
24'-26'	--	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:

Table 3
Analytical Results of Soil Samples

Boring, Depth(ft)	Date Sampled	Benzene	Toluene	Ethylbenzene	Xylenes	GRO	DRO	Lab Type
GP-1 4'-6'	8/7/08	<0.064	<0.064	<0.064	<0.19	<6.4	<12.7	Fixed
GP-2 4'-6'	8/7/08	<0.064	<0.064	<0.064	<0.19	<6.4	<12.8	Fixed
GP-3 4'-6'	8/7/08	<0.067	<0.067	<0.067	<0.20	<6.7	<13.0	Fixed
GP-4 4'-6'	8/7/08	<0.063	<0.063	<0.063	<0.19	<6.3	<12.1	Fixed
GP-5 4'-6'	8/7/08	<0.059	<0.059	<0.059	<0.18	<5.9	<11.5	Fixed

Report results in mg/kg. Use less than symbols to show detection limit. Indicate mobile or fixed based in the lab type column.

Table 4
Surface Soil Assessment

Sample #	Headspace > 10 ppm (Y/N)	Petroleum Saturated (Y/N)
GP-1 0-2'	Y (139)	N
GP-1 2-4'	Y (142)	N
GP-1 4-6'	Y (12)	N
SP-1 0-2'	N	N
SP-1 2'-4'	N	N
SP-2 0-2'	N	N
SP-2 2'-4'	N	N

***Notes:* GP-1 boring completed inside of earthen berm containment. SP-1 and SP-2 were completed immediately outside of earthen berm containment.**

Table 5
Other Contaminants Detected in Soils (Petroleum or Non-petroleum Derived)

Boring, Depth (ft)	Date Sampled	MTBE					Lab Type
GP-1 4'-6'	8/7/08	<0.26					Fixed
GP-2 4'-6'	8/7/08	<0.26					Fixed
GP-3 4'-6'	8/7/08	<0.26					Fixed
GP-4 4'-6'	8/7/08	<0.25					Fixed
GP-5 4'-6'	8/7/08	<0.23					Fixed

Report results in mg/kg. Indicate other contaminants (either petroleum or non-petroleum derived) detected in soil collected from borings.
Notes:

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
Static Water level depth (ft)	6.08	5.54	5.01	5.88	5.93
Sampled Depth (ft)	6-8	5.5-7.5	5-7	5.5-7.5	6-8

Describe in Appendix C, the methods and procedures used to measure water levels in borings.
Notes:

Table 7
Analytical Results of Water Samples Collected from Borings

Boring Number	Date Sampled	Sampled Depth	Benzene	Toluene	Ethyl benzene	Xylenes	MTBE	GRO	DRO	Lab Type
GP-1	8/7/08	6-8	<1.0	<1.0	<1.0	<3.0	<1.0	<100	**570**	Fixed
GP-2	8/7/08	5.5-7.5	<1.0	<1.0	<1.0	<3.0	<1.0	<100	**110**	Fixed
GP-3	8/7/08	5-7	<1.0	<1.0	<1.0	<3.0	<1.0	<100	<110	Fixed
GP-4	8/7/08	5.5-7.5	<1.0	<1.0	<1.0	<3.0	<1.0	<100	<110	Fixed
GP-5	8/7/08	6-8	<1.0	<1.0	<1.0	<3.0	<1.0	<100	**140**	Fixed
Trip Blank										
Lab Blank			<1.0	<1.0	<1.0	<3.0	<1.0			Fixed
HRL			5	1000	700	10000				

Report results in ug/L. Use less than symbols to show detection limit. Indicate mobile or fixed based in the lab type column.
Notes:

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

Boring Number	Date Sampled	Acetone	Chloro-methane	Tetra-hydrofuran	1,2,4-Trimethylbenzene	Lab Type
GP-1	8/7/08	**14.9**	**1.6**	**40.7**	**1.3**	Fixed
GP-2	8/7/08	<10.0	<1.0	<10.0	<1.0	Fixed
GP-3	8/7/08	<10.0	**1.6**	<10.0	<1.0	Fixed
GP-4	8/7/08	<10.0	<1.0	<10.0	<1.0	Fixed
GP-5	8/7/08	**11.3**	**2.0**	**20.0**	<1.0	Fixed
Trip Blank						
Lab Blank		<10.0	<1.0	<10.0	<1.0	Fixed
HRL (ug/L)		700				

Report results in ug/L. Indicate other contaminants (either petroleum or non-petroleum derived) detected in water samples collected from the borings, temporary wells or push probes.
Notes:

Table 9
Monitoring Well Completion Information

Well Number	Unique Well Number	Date Installed	Surface Elevation	Top of Riser Elevation	Bottom of Well (Elevation)	Screen Interval (Elev. - Elev.)

Notes: (location and elevation of benchmark)

Table 10
Water Level Measurements in Wells

Well Number	Date Sampled	Depth of Water from Top of Riser	Product Thickness	Depth of Water Below Grade	Relative Groundwater Elevation	Water Level Above Screen (Y/N)

Describe in Appendix C, the methods and procedures used to measure water levels.
Notes:

Table 11
Analytical Results of Water Samples Collected from Wells

Well #	Date Sampled	Benzene	Toluene	Ethyl benzene	Xylenes	MTBE	GRO	DRO	Lab Type
MW-1									
MW-2									
MW-3									
MW-4									
Trip Blank									
Field Blank									
Lab Blank HRL(ug/L)		10	1000	700	10000				

Report results in ug/L. Use less than symbols to show detection limit. Indicate mobile or fixed based in the lab type column.
Notes:

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

Well Number	Date Sampled	1,2 DCA	EDB				
MW-1							
MW-2							
MW-3							
Field Blank							
Trip Blank							
Lab Blank							
HRL (ug/L)		4	0.004				

Report results in ug/L. Indicate other contaminants (either petroleum or non-petroleum derived) detected in water samples collected from the borings, temporary wells or push probes.
Notes:

Table 13
Natural Attenuation Parameters

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

In Appendix C, describe the methods and procedures used.
Notes:

Table 14
Properties Located Within 500 Feet of the Release Source

# (From Map)	Property Address	Water Well (Y or N)	How Determined *	Well Use**	Public Water Supply Utilized (Y or N)	Confirmed By City (Y or N)	Basement /Sumps (Y or N)	Possible Petroleum Sources (Y or N)	Comments (including property use)
1	121 Bryant Ave NE	N	R.P.	NA	Y	Y	Y/N	N	Residential
2	141 Bryant Ave NE	N	R.P.	NA	Y	Y	N/N	N	Residential
3	211 Bryant Ave NE	N	R.P.	NA	Y	Y	Y/Y	N	Residential
4	212 Bryant Ave NE	N	R.P.	NA	Y	Y	N/N	N	**Site**
5	221 Bryant Ave NE	N	R.P.	NA	Y	Y	N/N	N	Residential
6	231 Bryant Ave NE	N	R.P.	NA	Y	Y	Y/Y	N	Residential
7	251 Bryant Ave NE	N	R.P.	NA	Y	Y	Y/Y	N	Residential
8	100 3rd Street NE	N	R.P.	NA	Y	Y	Y/Y	N	Residential
9	101 3rd Street NE	N	R.P.	NA	Y	Y	N/N	N	Residential
10	120 3rd Street NE	N	R.P.	NA	Y	Y	N/N	N	Residential
11	121 3rd Street NE	N	R.P.	NA	Y	Y	N/N	N	Residential
12	140 3rd Street NE	N	R.P.	NA	Y	Y	Y/Y	N	Residential
13	141 3rd Street NE	N	R.P.	NA	Y	Y	N/N	N	Residential
14	120 Colfax Ave NE	N	R.P.	NA	Y	Y	N/N	N	Residential
15	200 Colfax Ave NE	N	R.P.	NA	Y	Y	N/N	N	Residential
16	220 Colfax Ave NE	N	R.P.	NA	Y	Y	N/N	N	Residential
17	280 Colfax Ave NE	N	R.P.	NA	Y	Y	N/N	N	Residential
18	151 Birch Ave E	N	R.P.	NA	Y	Y	Y/Y	N	Country Wide Lumber
19	251 Birch Ave E	N	R.P.	NA	Y	Y	Y/Y	N	Residential
20	PO Box 457	Abandoned	R.P.	Muni.	Y	Y	N/N	N	Hector Street Dept

**E.g., visual observation (V.O.), personal contact (P.C.), telephone (T), returned postcard (R.P.), assumed (A) (i.e., no postcard returned).*
***E.g., domestic, industrial, municipal, livestock, lawn/gardening, irrigation.*

Table 15
Water Supply Wells Located Within 500 Feet of the Release Source and Municipal or Industrial Wells Within ½ Mile

Unique Well #	Ground Elevation	Total Depth (ft)	Base of Casing (ft)	Static Elevation	Aquifer	Use	Owner	Distance & Direction from source

Notes:

Table 16
Results of Field Instrumented Vapor Monitoring

Location # and description	Date	PID reading (ppm)	Percent of the LEL

Location numbers must match locations on the site map. Provide a brief description of the monitoring point (e.g., sump, basement corner, sanitary sewer manhole, storm sewer basin, etc.).
Notes:

Table 17
Results of Soil Gas Sampling for Vapor Intrusion Screening

Sample Location	Worst Case (VB-1)		Radial #1 (VB-2)		ISV:	
Date	8/7/08		8/7/08			
Depth (feet)	4'		4'			
COMPOUNDS	Result	Report Limit	Result	Report Limit	$\mu g/m^3$	Source:
Acetone	**87.9**	1.2	**23.1**	0.95	400	V
Benzene	**24.4**	1.6	**12.3**	1.3	4.5	M
2-Butanone (MEK)	**29.2**	1.5	**9.4**	1.2	5000	M
Carbon disulfide	**4.2**	1.5	**6.3**	1.2	700	M
Cyclohexane	**66.7**	1.6	**9.1**	1.3	6,000	
1,3-Dichlorobenzene	<2.9	2.9	**2.9**	2.4	100	
Dichlorodifluoromethane	**2.4**	2.4	**2.3**	2.0	200	
Ethanol	**44.3**	4.6	**30.5**	3.7	15,000	M
Ethylbenzene	**199**	2.1	**7.2**	1.7	1,000	M
4-Ethyltoluene	**233**	6.0	**6.2**	4.9	NA	
n-Heptane	**60.3**	2.0	**7.3**	1.6	NA	
n-Hexane	**47.0**	1.7	**25.8**	1.4	2,000	
Napthalene	**9.1**	6.5	<5.3	5.3	9	
Propylene	**20.6**	0.85	**22.1**	0.69	3,000	
Toluene	**57.5**	1.9	**37.5**	1.5	5,000	M
Trichloroethene	**22.1**	2.7	<2.2	<2.2		
1,2,4-Trimethylbenzene	**630**	30.2	**21.8**	4.9	7	
1,3,5-Trimethylbenzene	**719**	30.2	**7.1**	4.9	6	
m&p-Xylene	**304**	4.3	**32.7**	3.5	100	M
o-Xylene	**81.5**	2.1	**10.8**	1.7	100	M

Report results in $\mu g/m^3$. The Action Level should be indicated along with the source. When selecting the Action Level, keep in mind the priority of sources we have requested you use.

ISV = Intrusion Screening Value

Section 16: Appendices

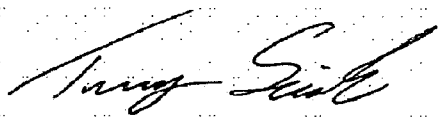
Attach the following appendices.

☒	*Appendix A*	Guidance Document 3-02 *General Excavation Report Worksheet.*
☒	*Appendix B*	Laboratory Analytical Reports for Soil, Soil Gas/Sub-slab Vapor/Indoor Air/Ambient Air, and Ground Water. Include laboratory QA/QC data, Chromatograms, and laboratory certification number.
☒	*Appendix C*	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 D*	Geologic Logs of Soil Borings, Including Construction Diagrams of Temporary and Permanent Wells, and Copies of the Minnesota Department of Health Well Record.
☒	*Appendix E*	Copies of Water Supply Well Logs With Legible Unique Numbers. (Copy of City of Hector Water Verification Letter)
☒	*Appendix F*	Grain Size Analysis, Hydraulic Conductivity Measurements, and Other Calculations.
☒	*Appendix G*	Guidance Document 1-03a *Spatial Data Reporting Form.*
☒	*Appendix H*	Guidance Document 4-19 *Conceptual Corrective Action Design Worksheet*

Section 17: Consultant (or other) 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 reduction of reimbursement awards. 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 (1994) 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 investigation reports or if the report form has been altered.

Name and Title:	Signature:	Date signed:
Terry Sieck – Project Manager		12/11/08

Company and mailing address: Glacial Lakes Environmental Consulting, Inc.
PO Box 1082
Willmar, MN 56201

Phone: 320-235-8370

Fax: 866-313-1692

Web pages and phone numbers	
MPCA staff	http://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 Infor. Request	http://www.pca.state.mn.us/about/inforequest.html
MPCA Petroleum Brownfields Program	http://www.pca.state.mn.us/programs/vpic_p.html
PetroFund Web Page	http://www.state.mn.us/cgi-bin/portal/mn/jsp/content.do?id=-536881377&agency=Commerce
PetroFund Phone	**651-297-1119**, or **1-800-638-0418**

State Duty Officer 651-649-5451 or 1-800-422-0798

Appendix A

Guidance Document 3-02 *General Excavation Report Worksheet*

Minnesota Pollution Control Agency

General Excavation Report Worksheet

Guidance Document 3-02

Complete the worksheet below to document excavation and treatment of petroleum contaminated soil removed **prior to** a Site Investigation and/or during tank removals and/or upgrades. If soil is excavated as an MPCA-approved corrective action **after** a Site Investigation is conducted, complete Guidance Document 3-02a *Corrective Action Excavation Report Worksheet.* Conduct excavations in accordance with Guidance Document 3-01 *Excavation of Petroleum Contaminated Soil.* Please type or print clearly. Do not revise or delete text or questions from this report form.

The excavation worksheet 3-02 deadline is 10 months from the date of receipt of the MPCA "Petroleum Storage Tank Release Investigation and Corrective Action" letter. MPCA staff may establish a shorter deadline for high priority sites.

PART I: BACKGROUND

A. Site: **South Central Grain & Energy**

MPCA Site ID#: 00017141

Street: **212 Bryant Avenue**
City, Zip: **Hector, 55342**
County: **Renville**

B. Tank Owner/Operator: **South Central Grain & Energy**

Mailing Address: **South Central Grain & Energy**

Street/Box: **PO Box 338**
City, Zip: **Hector, 55342**
Telephone: **320-848-2273**

C. Excavating Contractor:

Contact:
Telephone:
Tank Contractor Certification Number:

D. Consultant:**Glacial Lakes Environmental Con.**

Contact: **Terry Sieck**
Street/Box: **PO Box 1082**
City, Zip: **Willmar, 56201**
Telephone: **320-235-8370**

Others on-site during site work (e.g., fire marshal, local officials, MPCA staff, etc.): ***NA***

E. Site Location Information: Attach Guidance Document 1-03a *Spatial Data Reporting Form* if it has not already been submitted or will not be submitted as part of Guidance Document 4-06 *Investigation Report Form.*

Note: If person other than tank owner and/or operator is conducting the cleanup, provide name, address, and relationship to site on a separate attached sheet.

PART II: DATES

A. Date release reported to MPCA: January 21, 2008

B. Dates site work performed (tanks removed, piping removed, soil excavation, soil borings, etc.):

Work Performed	Date
Soil borings in former AST earthen containment	1/9/08

visual olfactory signs of release

PART III: SITE AND RELEASE INFORMATION

A. Describe the land use and pertinent geographic features within 1,000 feet of the site. (i.e. residential property, industrial, wetlands, etc.)

The site is located within the northeast quarter of the northeast quarter of Section 29, Township 115 North, Range 32 West in Hector, Renville County, Minnesota. The site was border on the south by Twin Cities and Western Railroad with a grain elevator beyond; on the east by a maintenance shop; on the north by Bryant Avenue with residential property beyond; and on the west by an outdoor grain bunker. Beyond the adjacent properties, land use within 1,000 feet of the site consists primarily of commercial and residential.

B. Provide the following information for all tanks removed and any remaining at the site:

Table 1

Tank #	Tank ** Material	UST or AST	Capacity (gallons)	Contents (product type)	Year installed	Tank Status*	Condition of Tank
1	S	AST	500	Diesel	1989	Removed 1/7/08	Good – no obvious signs of leaks
2	S	AST	500	Gasoline	1989	Removed 1/7/08	Good – no obvious signs of leaks
3	S	AST	1,000	Diesel	1989	Removed 1/7/08	Good – no obvious signs of leaks
4	S	AST	250	Used Oil	1989	In place- not in use	Good – no obvious signs of leaks

*Indicate: *removed (date), abandoned in place (date), or currently used, upgraded tank, installation of new tank. ** F for fiberglass or S for Steel*

Conditions of the tanks were observed after removal

Piping Material (check all that apply): ☒ Steel, ☐ Fiberglass, ☐ Flexible Plastic

C. Describe the location and status of the other components of the tank system(s) (i.e., transfer locations, valves, piping and dispensers) for those tanks listed above.

The piping associated with the AST system has been removed.

D. Identify and describe the source(s) or suspected source(s) of the release or contamination encountered, and how the release or contamination was discovered.

Check all that apply: ☐ Piping, ☐ Tank, ☐ Dispenser, ☐ Pump/Turbine, ☒ Spill/Overfill

E. Identify the cause of the release (tank and/or piping).
Check all that apply: ☐ Corrosion, ☐ Loose Component, ☐ Puncture, ☐ Mechanical or Physical Damage, ☒ Unknown

F. Identify the method the release was detected.
Check all that apply: ☒ Removal, ☐ Line Leak Detection, ☐ Tank Leak Detection, ☒ Visual/Olfactory, ☒ Site Assessment, ☐ Other

G. Identify any surface soil contamination. **Surface soil contamination was observed during the removal of the ASTs.**

H. What was the volume of the release? (if known): **Unknown** gallons

I. Historic contamination present (unknown origin?). ☐ Yes, ☒ No

J. When did the release occur? (if known): **Unknown**

K. Describe source of on-site drinking water. **Municipal water**

L. Has the site ever, at any point, had an E-85 tank? ☐ Yes, ☒ No

PART IV: EXCAVATION INFORMATION

A. Dimensions of excavation(s): Length Width Depth **NA**

B. Original tank backfill material (sand, gravel, etc.), if applicable: **NA**

C. Native soil type (clay, sand, etc.): **NA**

D. Quantity of contaminated soil removed for treatment (cubic yards): **NA**
(Indicate on the site map where the petroleum contaminated soil was excavated)

How many cubic yards of the removed soil was petroleum saturated? **NA**
(Indicate on the site map where the petroleum saturated soil was excavated)

[**Note**: If the volume removed is more than allowed in Guidance Document 3-01 *Excavation of Petroleum Contaminated Soil*, please document MPCA staff approval.]

E. Were new tanks and/or piping and dispensers installed? (yes/no) If yes, what volume of contaminated soil was excavated to accommodate the installation of the new tanks and piping?

No

F. If contaminated soil was removed to accommodate the installation of new tanks and/or piping, show your calculations for the amount of soil removal allowed using Table 3 in Guidance Document 3-01 *Excavation of Petroleum Contaminated Soil.*

NA

G. Was ground water encountered or a suspected perched water layer or was there evidence of a seasonally high ground water table (i.e. mottling)? (yes/no) At what depth?

Ground water was not encountered.

H. If ground water was not encountered during the excavation, what is the expected depth of ground water?

NA

I. Additional investigation to determine the need for a Limited Site Investigation is necessary at sites with sandy or silty sandy soil, a water table within 25 feet of the ground surface, and visual or other evidence of soil remaining contamination. See Table 2 in Guidance Document 3-01 *Excavation of Petroleum Contaminated Soil.* If a soil boring is necessary, describe the soil screening and analytical results. Attach the boring logs and laboratory results to this report.

J. If no soil boring was performed, explain.

NA

K. If ground water was encountered or if a soil boring was conducted, was there evidence of ground water contamination? (yes/no) Describe this evidence of contamination, e.g., free product (specify thickness), product sheen, ground water in contact with petroleum contaminated soil, water analytical results, etc. **Note**: If you observe free product, contact MPCA staff immediately, as outlined in Guidance Document 2-02 *Free Product: Evaluation and Recovery.*

NA

L. Was bedrock encountered in the excavation? (☐yes/ ☒no) At what depth?

M. Were other unique conditions associated with this site? (☐yes/ ☒no) If so, explain.

PART V: SAMPLING INFORMATION

A. Briefly describe the field screening methods used to distinguish contaminated from uncontaminated soil:

GLEC arrived at the site following the removal of the ASTs. Five soil samples were collected for organic vapor screening for tank closure purposes. The soil samples were collected directly into polyethylene bags. During the collection of the soil samples, they were observed for visual and/or olfactory indications of petroleum contamination.

The bag-headspace analytical procedure was used to field-screen the three soil samples for the presence of organic vapors. The procedure consisted of half-filling a new polyethylene freezer bag. Upon sealing the bag, headspace development was allowed to proceed for at least 10 minutes. The bag was shaken vigorously for 15 seconds, both at the beginning and the end of the headspace development period. After headspace development, the PID probe was pierced through the side of the bag and inserted to a point of one-half the headspace depth. The highest reading observed on the PID was then recorded.

B. List soil vapor headspace analysis results collected during excavation of tanks, lines and dispensers, valves, and transfer locations. (i.e., soils left in place when excavation is complete). Code the samples with sampling depths in parentheses as follows: sidewall samples S-1 (8 feet), S-2 (4 feet), etc.; bottom samples B-1 (13 feet), B-2 (14 feet), removed soil R-1 (4 feet), R-1 (8 feet), etc.; stockpile samples SP-1, etc; line samples L-1, L2, etc.; transfer locations T-1 (4 feet), T-1 (8 feet), etc.; dispensers D-1 (4 feet), etc. **Be sure the sample codes correspond with the site map in part VI, below.**

Sample Code	Soil Type	Reading ppm	Sample Code	Soil Type	Reading ppm
Tank #1 (1.5')	Clayey sand	106	Load-out (1.5')	Clayey sand	0
Tank #2 (1.5')	Clayey sand	0			
Tank #3 (1.5')	Clayey sand	24			
Tank #4 (1.5')	Clayey sand	0			

C. Was the "removed soil" placed back into the excavation basin? (☒yes/ ☐no)
If no, please complete Part VIII: Soil Treatment Information section. If yes, a Limited Site Investigation is necessary (see Guidance Document 4-01 *Soil and Ground Water Assessments Performed during Site Investigations*).

D. Briefly describe the soil analytical sampling and handling procedures used:

Soil samples for laboratory analyses were collected from each AST location and beneath the dispenser in the locations corresponding to those collected for organic vapor screening. The soil samples were placed in appropriate laboratory-cleaned jars and transported under standard chain-of-custody procedures to the laboratory. The soil samples were laboratory analyzed for DRO, GRO and BETX.

E. List below all soil sample analytical results from bottom and sidewall samples collected after excavation of tanks, lines and dispensers, valves, and transfer locations (i.e., soils left in place when excavation is complete). Code the samples with sampling depths in parentheses as follows: sidewall samples S-1 (8 feet), S-2 (4 feet), etc.; bottom samples B-1 (13 feet), B-2 (14 feet), removed soil R-1 (4 feet), R-1 (8 feet), etc.; stockpile samples SP-1, etc; line samples L-1, L2, etc.; transfer locations T-1 (4 feet), T-1 (8 feet), etc.; dispensers D-1 (4 feet), etc.; **Be sure the sample codes correspond to the site map required in part VI.**

Sample Code	DRO mg/kg	GRO mg/kg	Benzene mg/kg	Ethyl-benzene mg/kg	Toluene Mg/kg	Xylene mg/kg	MTBE mg/kg	Lead mg/kg
Tank #1 (1.5')	**3,800**	NA	<0.062	**0.46**	<0.062	**1.6**	NA	NA
Tank #2 (1.5')	NA	**7.2**	<0.062	<0.062	<0.062	<0. 19	<0.25	NA
Tank #3 (1.5')	**773**	NA	<0.062	<0.062	<0.062	**0.69**	NA	NA
Tank #4 (1.5')	<6.3	NA	<0.064	<0.064	<0.064	<0.97	<0.32	NA
Load-out (1.5')	<11.5	<6.0	<0.060	<0.060	<0.060	<0. 18	<0.25	NA

Note: Attach copies of laboratory reports and chain of custody forms.

PART VI: FIGURES

Attach the following figures to this report:

1. Site location map.
2. Site map(s) drawn to scale illustrating the following:
   a. Location of all present and former tanks, piping, and dispensers;
   b. Location of surface soil contamination
   c. Location of other structures (buildings, canopies, etc.);
   d. Adjacent city, township, or county roadways;
   e. Dimensions of excavation(s), including contour lines (maximum 2-foot contour intervals) to represent the depths of the final excavation(s);
   f. Location of soil screening samples (e.g. R-1), soil analytical samples (e.g., S-1 or B-1), and any soil borings (e.g., SB-1). Also, attach all boring logs.
   g. North arrow, bar scale and map legend.
   h. Provide location of any on-site water wells. If on-site water wells exist, please provide well logs and/or construction diagrams.
   i. Locations of new tanks, piping and dispensers, if installed.

PART VII: CONCLUSIONS AND RECOMMENDATIONS

Recommendation for site: ☐ site closure
☒ additional investigation

Justify the recommendations for the site. If no further action is necessary, the MPCA staff will review this report following notification of soil treatment.

GLEC was not present for the removal of the AST system. South Central Grain & Energy contacted GLEC to address visual and olfactory indications of petroleum-contaminated soil within the earthen containment. Field screening of soil samples collected from the borings taken beneath the ASTs indicated that elevated concentrations of organic vapors were present in the soil at the site. A limited site investigation was conducted at the site to determine the horizontal and vertical extent of soil and ground water contamination associated with the ASTs at the site.

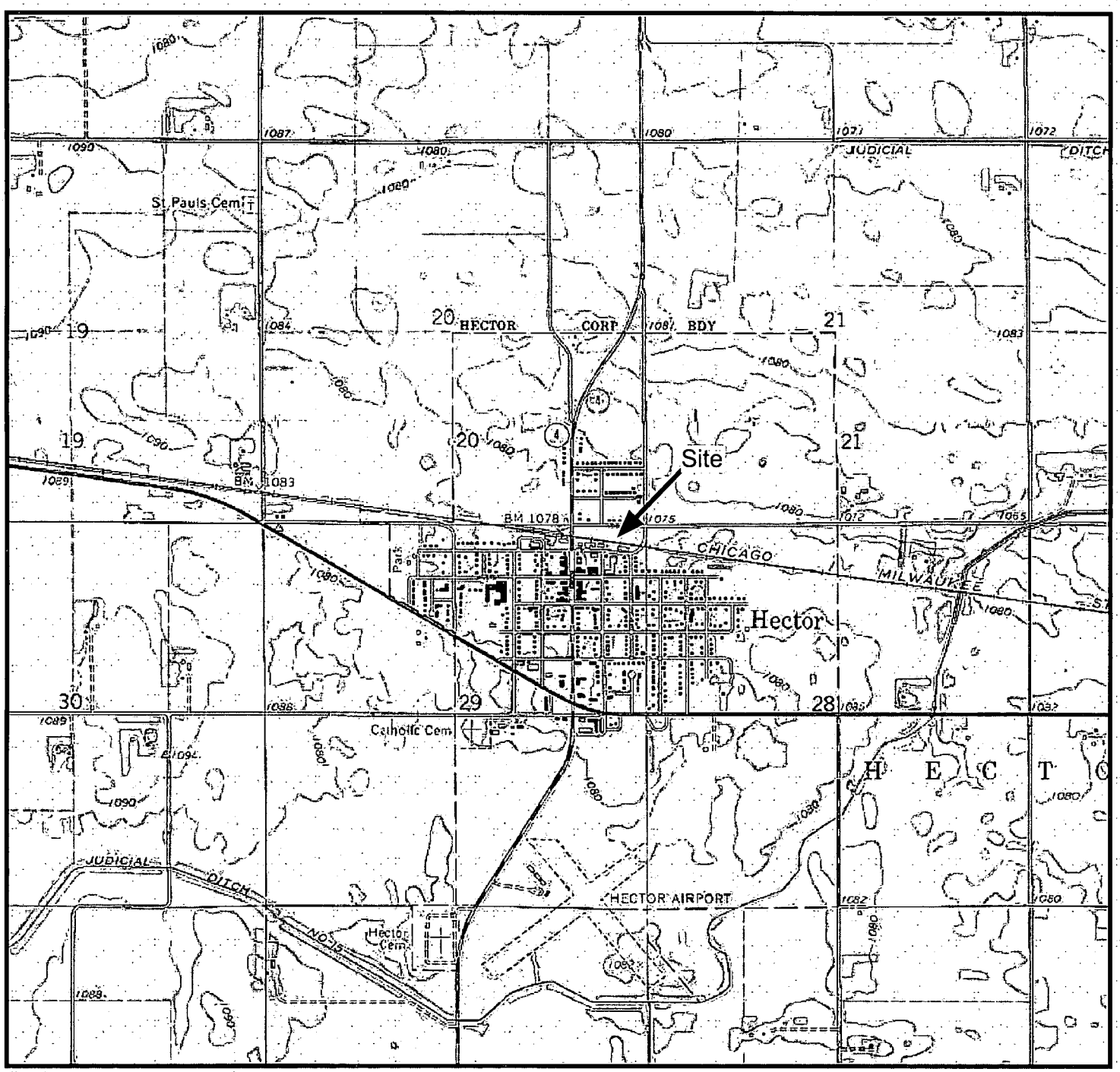
PART VIII: SOIL TREATMENT INFORMATION

A. Soil treatment method used (thermal, land application, composting, other). If you choose "other" specify treatment method:

B. Location of treatment site/facility:

C. Date MPCA approved soil treatment (if thermal treatment was used, indicate date that the MPCA-permitted thermal treatment facility agreed to accept soil):

D. Identify the location of stockpiled contaminated soil:



Scale for Topo Map (1" = 2,000')

1 1/2 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

N W E S

Glacial Lakes ENVIRONMENTAL CONSULTING INC.

P.O. Box 1082, Willmar, MN 56201 320-235-8370

Figure 1.0
Property Location Map
South Central Grain & Energy

Hector, MN

Date	Created by
1/4/08	TJS

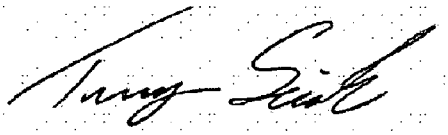
PART IX: CONSULTANT (OR OTHER) PREPARING THIS REPORT

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 reduction of reimbursement awards. 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 (1994) or Minn. 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 excavation reports or if the report form has been altered.

Name and Title:
Terry Sieck, Project Manager

Signature:



Date signed:
December 11, 2008

Company and mailing address:
Glacial Lakes Environmental Consulting, Inc.
PO Box 1082
Willmar, MN 56201

Telephone ***320-235-8370*** ***Fax: 866-313-1692***

If additional investigation is not necessary, please mail this form and all necessary attachments to the MPCA project manager. If additional investigation is necessary, include this form as an appendix to Guidance Document 4-06 *Investigation Report Form.* **MPCA staff will not review excavation reports indicating a limited site investigation is necessary unless the limited site investigation has been completed.**

Web pages and phone numbers

MPCA staff	http://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 Infor. Request	http://www.pca.state.mn.us/about/inforequest.html
MPCA Petroleum Brownfields Program	http://www.pca.state.mn.us/programs/vpic_p.html
PetroFund Web Page	http://www.state.mn.us/cgi-bin/portal/mn/jsp/content.do?id=-536881377&agency=Commerce
PetroFund Phone	**651-297-1119**, or **1-800-638-0418**
State Duty Officer	**651-649-5451 or 1-800-422-0798**

Upon request, this document can be made available in other formats, including Braille, large print and audio tape. TTY users call 651/282-5332 or 1-800-657-3864 (voice/TTY).

Printed on recycled paper containing at least 10 percent fibers from paper recycled by consumers.

Appendix B

Laboratory Analytical Results

Pace Analytical®
www.pacelabs.com

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

August 25, 2008

Terry Sieck
Glacial Lakes Environmental Consulting
PO Box 1082
1317 SW 7th Street
Willmar, MN 56201

RE: Project: Hector LSI
Pace Project No.: 1078686

Dear Terry Sieck:
Enclosed are the analytical results for sample(s) received by the laboratory on August 12, 2008. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

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

Sincerely,

Paul Kirchberg

paul.kirchberg@pacelabs.com
Project Manager

Florida (Nelap) Certification #: E87605
Illinois Certification #: 200011
Iowa Certification #: 368
Minnesota Certification #: 027-053-137
Wisconsin Certification #: 999407970

Enclosures

Pace Analytical®
www.pacelabs.com

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

SAMPLE SUMMARY

Project: Hector LSI
Pace Project No.: 1078686

Lab ID	Sample ID	Matrix	Date Collected	Date Received
1078686001	GP-1 4'-6'	Solid	08/07/08 14:20	08/12/08 09:33
1078686002	GP-2 4'-6'	Solid	08/07/08 09:30	08/12/08 09:33
1078686003	GP-3 4'-6'	Solid	08/07/08 11:00	08/12/08 09:33
1078686004	GP-4 4'-6'	Solid	08/07/08 12:30	08/12/08 09:33
1078686005	GP-5 4'-6'	Solid	08/07/08 13:30	08/12/08 09:33
1078686006	GP-1	Water	08/07/08 14:45	08/12/08 09:33
1078686007	GP-2	Water	08/07/08 10:15	08/12/08 09:33
1078686008	GP-3	Water	08/07/08 11:50	08/12/08 09:33
1078686009	GP-4	Water	08/07/08 13:15	08/12/08 09:33
1078686010	GP-5	Water	08/07/08 14:00	08/12/08 09:33

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

SAMPLE ANALYTE COUNT

Project: Hector LSI
Pace Project No.: 1078686

Lab ID	Sample ID	Method	Analysts	Analytes Reported
1078686001	GP-1 4'-6'	% Moisture	RRN	1
		TPH DRO Wisconsin	JLR	2
		TPH WI GRO/PVOC 8021	RTP	7
1078686002	GP-2 4'-6'	% Moisture	RRN	1
		TPH DRO Wisconsin	JLR	2
		TPH WI GRO/PVOC 8021	RTP	7
1078686003	GP-3 4'-6'	% Moisture	RRN	1
		TPH DRO Wisconsin	JLR	2
		TPH WI GRO/PVOC 8021	RTP	7
1078686004	GP-4 4'-6'	% Moisture	RRN	1
		TPH DRO Wisconsin	JLR	2
		TPH WI GRO/PVOC 8021	RTP	7
1078686005	GP-5 4'-6'	% Moisture	RRN	1
		TPH DRO Wisconsin	JLR	2
		TPH WI GRO/PVOC 8021	RTP	7
1078686006	GP-1	EPA 8260	CNC	73
		TPH DRO Wisconsin	KL1	2
		TPH WI GRO/PVOC 8021	DJT	2
1078686007	GP-2	EPA 8260	CNC	73
		TPH DRO Wisconsin	KL1	2
		TPH WI GRO/PVOC 8021	MJG	2
1078686008	GP-3	EPA 8260	CNC	73
		TPH DRO Wisconsin	KL1	2
		TPH WI GRO/PVOC 8021	MJG	2
1078686009	GP-4	EPA 8260	CNC	73
		TPH DRO Wisconsin	KL1	2
		TPH WI GRO/PVOC 8021	MJG	2
1078686010	GP-5	EPA 8260	CNC	73
		TPH DRO Wisconsin	KL1	2
		TPH WI GRO/PVOC 8021	MJG	2

Pace Analytical®
www.pacelabs.com

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

ANALYTICAL RESULTS

Project: Hector LSI
Pace Project No.: 1078686

Sample: GP-1 4'-6' **Lab ID: 1078686001** Collected: 08/07/08 14:20 Received: 08/12/08 09:33 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: TPH DRO Wisconsin Preparation Method: TPH DRO Wisconsin							
Diesel Range Organics	ND	mg/kg	12.7	1	08/13/08 15:04	08/15/08 17:57		
n-Triacontane (S)	83	%	50-150	1	08/13/08 15:04	08/15/08 17:57		
WIGRO GCV	Analytical Method: TPH WI GRO/PVOC 8021 Preparation Method: TPH GRO/PVOC WI ext.							
Benzene	ND	mg/kg	0.064	1	08/19/08 00:00	08/21/08 07:25	71-43-2	
Ethylbenzene	ND	mg/kg	0.064	1	08/19/08 00:00	08/21/08 07:25	100-41-4	
Gasoline Range Organics	ND	mg/kg	6.4	1	08/19/08 00:00	08/21/08 07:25		
Methyl-tert-butyl ether	ND	mg/kg	0.26	1	08/19/08 00:00	08/21/08 07:25	1634-04-4	
Toluene	ND	mg/kg	0.064	1	08/19/08 00:00	08/21/08 07:25	108-88-3	
Xylene (Total)	ND	mg/kg	0.19	1	08/19/08 00:00	08/21/08 07:25	1330-20-7	
a,a,a-Trifluorotoluene (S)	101	%	80-125	1	08/19/08 00:00	08/21/08 07:25	98-08-8	1M,CL
Dry Weight	Analytical Method: % Moisture							
Percent Moisture	**20.6**	%	0.10	1		08/13/08 00:00		

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ANALYTICAL RESULTS

Project: Hector LSI
Pace Project No.: 1078686

Sample: GP-2 4'-6' **Lab ID: 1078686002** Collected: 08/07/08 09:30 Received: 08/12/08 09:33 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: TPH DRO Wisconsin Preparation Method: TPH DRO Wisconsin							
Diesel Range Organics	ND	mg/kg	12.8	1	08/13/08 15:04	08/15/08 18:33		
n-Triacontane (S)	82	%	50-150	1	08/13/08 15:04	08/15/08 18:33		
WIGRO GCV	Analytical Method: TPH WI GRO/PVOC 8021 Preparation Method: TPH GRO/PVOC WI ext.							
Benzene	ND	mg/kg	0.064	1	08/19/08 00:00	08/21/08 07:47	71-43-2	
Ethylbenzene	ND	mg/kg	0.064	1	08/19/08 00:00	08/21/08 07:47	100-41-4	
Gasoline Range Organics	ND	mg/kg	6.4	1	08/19/08 00:00	08/21/08 07:47		
Methyl-tert-butyl ether	ND	mg/kg	0.26	1	08/19/08 00:00	08/21/08 07:47	1634-04-4	
Toluene	ND	mg/kg	0.064	1	08/19/08 00:00	08/21/08 07:47	108-88-3	
Xylene (Total)	ND	mg/kg	0.19	1	08/19/08 00:00	08/21/08 07:47	1330-20-7	
a,a,a-Trifluorotoluene (S)	108	%	80-125	1	08/19/08 00:00	08/21/08 07:47	98-08-8	1M,CL
Dry Weight	Analytical Method: % Moisture							
Percent Moisture	**20.1**	%	0.10	1		08/13/08 00:00		

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ANALYTICAL RESULTS

Project: Hector LSI
Pace Project No.: 1078686

Sample: GP-3 4'-6' **Lab ID: 1078686003** Collected: 08/07/08 11:00 Received: 08/12/08 09:33 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: TPH DRO Wisconsin Preparation Method: TPH DRO Wisconsin							
Diesel Range Organics	ND	mg/kg	13.0	1	08/13/08 15:04	08/15/08 20:24		
n-Triacontane (S)	90	%	50-150	1	08/13/08 15:04	08/15/08 20:24		
WIGRO GCV	Analytical Method: TPH WI GRO/PVOC 8021 Preparation Method: TPH GRO/PVOC WI ext.							
Benzene	ND	mg/kg	0.067	1	08/19/08 00:00	08/21/08 08:09	71-43-2	
Ethylbenzene	ND	mg/kg	0.067	1	08/19/08 00:00	08/21/08 08:09	100-41-4	
Gasoline Range Organics	ND	mg/kg	6.7	1	08/19/08 00:00	08/21/08 08:09		
Methyl-tert-butyl ether	ND	mg/kg	0.27	1	08/19/08 00:00	08/21/08 08:09	1634-04-4	
Toluene	ND	mg/kg	0.067	1	08/19/08 00:00	08/21/08 08:09	108-88-3	
Xylene (Total)	ND	mg/kg	0.20	1	08/19/08 00:00	08/21/08 08:09	1330-20-7	
a,a,a-Trifluorotoluene (S)	98	%	80-125	1	08/19/08 00:00	08/21/08 08:09	98-08-8	1M,CL
Dry Weight	Analytical Method: % Moisture							
Percent Moisture	**22.9**	%	0.10	1		08/13/08 00:00		

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ANALYTICAL RESULTS

Project: Hector LSI
Pace Project No.: 1078686

Sample: GP-4 4'-6' **Lab ID: 1078686004** Collected: 08/07/08 12:30 Received: 08/12/08 09:33 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: TPH DRO Wisconsin Preparation Method: TPH DRO Wisconsin							
Diesel Range Organics	ND	mg/kg	12.1	1	08/13/08 15:04	08/15/08 19:10		
n-Triacontane (S)	86	%	50-150	1	08/13/08 15:04	08/15/08 19:10		
WIGRO GCV	Analytical Method: TPH WI GRO/PVOC 8021 Preparation Method: TPH GRO/PVOC WI ext.							
Benzene	ND	mg/kg	0.063	1	08/19/08 00:00	08/21/08 08:31	71-43-2	
Ethylbenzene	ND	mg/kg	0.063	1	08/19/08 00:00	08/21/08 08:31	100-41-4	
Gasoline Range Organics	ND	mg/kg	6.3	1	08/19/08 00:00	08/21/08 08:31		
Methyl-tert-butyl ether	ND	mg/kg	0.25	1	08/19/08 00:00	08/21/08 08:31	1634-04-4	
Toluene	ND	mg/kg	0.063	1	08/19/08 00:00	08/21/08 08:31	108-88-3	
Xylene (Total)	ND	mg/kg	0.19	1	08/19/08 00:00	08/21/08 08:31	1330-20-7	
a,a,a-Trifluorotoluene (S)	103	%	80-125	1	08/19/08 00:00	08/21/08 08:31	98-08-8	1M,CL
Dry Weight	Analytical Method: % Moisture							
Percent Moisture	**17.2**	%	0.10	1		08/13/08 00:00		

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ANALYTICAL RESULTS

Project: Hector LSI
Pace Project No.: 1078686

Sample: GP-5 4'-6' **Lab ID: 1078686005** Collected: 08/07/08 13:30 Received: 08/12/08 09:33 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: TPH DRO Wisconsin Preparation Method: TPH DRO Wisconsin							
Diesel Range Organics	**22.5**	mg/kg	11.5	1	08/13/08 15:04	08/15/08 19:47		T6
n-Triacontane (S)	84	%	50-150	1	08/13/08 15:04	08/15/08 19:47		
WIGRO GCV	Analytical Method: TPH WI GRO/PVOC 8021 Preparation Method: TPH GRO/PVOC WI ext.							
Benzene	ND	mg/kg	0.059	1	08/19/08 00:00	08/21/08 08:53	71-43-2	
Ethylbenzene	ND	mg/kg	0.059	1	08/19/08 00:00	08/21/08 08:53	100-41-4	
Gasoline Range Organics	ND	mg/kg	5.9	1	08/19/08 00:00	08/21/08 08:53		
Methyl-tert-butyl ether	ND	mg/kg	0.23	1	08/19/08 00:00	08/21/08 08:53	1634-04-4	
Toluene	ND	mg/kg	0.059	1	08/19/08 00:00	08/21/08 08:53	108-88-3	
Xylene (Total)	ND	mg/kg	0.18	1	08/19/08 00:00	08/21/08 08:53	1330-20-7	
a,a,a-Trifluorotoluene (S)	99	%	80-125	1	08/19/08 00:00	08/21/08 08:53	98-08-8	1M,CL
Dry Weight	Analytical Method: % Moisture							
Percent Moisture	**13.3**	%	0.10	1		08/13/08 00:00		

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ANALYTICAL RESULTS

Project: Hector LSI
Pace Project No.: 1078686

Sample: GP-1 **Lab ID: 1078686006** Collected: 08/07/08 14:45 Received: 08/12/08 09:33 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: TPH DRO Wisconsin Preparation Method: TPH DRO Wisconsin							
Diesel Range Organics	**0.57**	mg/L	0.11	1	08/13/08 21:29	08/14/08 15:40		P4
n-Triacontane (S)	83	%	50-150	1	08/13/08 21:29	08/14/08 15:40		
WIGRO GCV	Analytical Method: TPH WI GRO/PVOC 8021							
Gasoline Range Organics	ND	ug/L	100	1		08/12/08 17:58		
a,a,a-Trifluorotoluene (S)	95	%	80-125	1		08/12/08 17:58	98-08-8	
8260 MSV MDH VOC	Analytical Method: EPA 8260							
Acetone	**14.9**	ug/L	10.0	1		08/19/08 02:05	67-64-1	
Allyl chloride	ND	ug/L	4.0	1		08/19/08 02:05	107-05-1	
Benzene	ND	ug/L	1.0	1		08/19/08 02:05	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		08/19/08 02:05	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		08/19/08 02:05	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		08/19/08 02:05	75-27-4	
Bromoform	ND	ug/L	8.0	1		08/19/08 02:05	75-25-2	
Bromomethane	ND	ug/L	4.0	1		08/19/08 02:05	74-83-9	
2-Butanone (MEK)	ND	ug/L	4.0	1		08/19/08 02:05	78-93-3	
n-Butylbenzene	ND	ug/L	1.0	1		08/19/08 02:05	104-51-8	
sec-Butylbenzene	ND	ug/L	1.0	1		08/19/08 02:05	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	1		08/19/08 02:05	98-06-6	
Carbon tetrachloride	ND	ug/L	1.0	1		08/19/08 02:05	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		08/19/08 02:05	108-90-7	
Chloroethane	ND	ug/L	1.0	1		08/19/08 02:05	75-00-3	
Chloroform	ND	ug/L	1.0	1		08/19/08 02:05	67-66-3	
Chloromethane	**1.6**	ug/L	1.0	1		08/19/08 02:05	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		08/19/08 02:05	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		08/19/08 02:05	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	4.0	1		08/19/08 02:05	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		08/19/08 02:05	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		08/19/08 02:05	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		08/19/08 02:05	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		08/19/08 02:05	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		08/19/08 02:05	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		08/19/08 02:05	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		08/19/08 02:05	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		08/19/08 02:05	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		08/19/08 02:05	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		08/19/08 02:05	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		08/19/08 02:05	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		08/19/08 02:05	156-60-5	
Dichlorofluoromethane	ND	ug/L	1.0	1		08/19/08 02:05	75-43-4	
1,2-Dichloropropane	ND	ug/L	1.0	1		08/19/08 02:05	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		08/19/08 02:05	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		08/19/08 02:05	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		08/19/08 02:05	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	4.0	1		08/19/08 02:05	10061-01-5	

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ANALYTICAL RESULTS

Project: Hector LSI
Pace Project No.: 1078686

Sample: GP-1 **Lab ID: 1078686006** Collected: 08/07/08 14:45 Received: 08/12/08 09:33 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV MDH VOC	Analytical Method: EPA 8260							
trans-1,3-Dichloropropene	ND	ug/L	4.0	1		08/19/08 02:05	10061-02-6	
Diethyl ether (Ethyl ether)	ND	ug/L	4.0	1		08/19/08 02:05	60-29-7	
Ethylbenzene	ND	ug/L	1.0	1		08/19/08 02:05	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	4.0	1		08/19/08 02:05	87-68-3	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		08/19/08 02:05	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.0	1		08/19/08 02:05	99-87-6	
Methylene Chloride	ND	ug/L	4.0	1		08/19/08 02:05	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	4.0	1		08/19/08 02:05	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		08/19/08 02:05	1634-04-4	
Naphthalene	ND	ug/L	4.0	1		08/19/08 02:05	91-20-3	
n-Propylbenzene	ND	ug/L	1.0	1		08/19/08 02:05	103-65-1	
Styrene	ND	ug/L	1.0	1		08/19/08 02:05	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		08/19/08 02:05	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		08/19/08 02:05	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		08/19/08 02:05	127-18-4	
Tetrahydrofuran	**40.7**	ug/L	10.0	1		08/19/08 02:05	109-99-9	
Toluene	ND	ug/L	1.0	1		08/19/08 02:05	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		08/19/08 02:05	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		08/19/08 02:05	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		08/19/08 02:05	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		08/19/08 02:05	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		08/19/08 02:05	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		08/19/08 02:05	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		08/19/08 02:05	96-18-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	1		08/19/08 02:05	76-13-1	
1,2,4-Trimethylbenzene	**1.3**	ug/L	1.0	1		08/19/08 02:05	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		08/19/08 02:05	108-67-8	
Vinyl chloride	ND	ug/L	0.40	1		08/19/08 02:05	75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		08/19/08 02:05	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		08/19/08 02:05	1330-20-7	
o-Xylene	ND	ug/L	1.0	1		08/19/08 02:05	95-47-6	
Dibromofluoromethane (S)	95	%	75-125	1		08/19/08 02:05	1868-53-7	H1,pH
Toluene-d8 (S)	96	%	75-125	1		08/19/08 02:05	2037-26-5	
4-Bromofluorobenzene (S)	89	%	75-125	1		08/19/08 02:05	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	75-125	1		08/19/08 02:05	17060-07-0	

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ANALYTICAL RESULTS

Project: Hector LSI
Pace Project No.: 1078686

Sample: GP-2 **Lab ID: 1078686007** Collected: 08/07/08 10:15 Received: 08/12/08 09:33 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: TPH DRO Wisconsin Preparation Method: TPH DRO Wisconsin							
Diesel Range Organics	**0.11**	mg/L	0.11	1	08/13/08 21:29	08/14/08 16:17		P4
n-Triacontane (S)	88	%	50-150	1	08/13/08 21:29	08/14/08 16:17		
WIGRO GCV	Analytical Method: TPH WI GRO/PVOC 8021							
Gasoline Range Organics	ND	ug/L	100	1		08/13/08 12:28		
a,a,a-Trifluorotoluene (S)	94	%	80-125	1		08/13/08 12:28	98-08-8	pH
8260 MSV MDH VOC	Analytical Method: EPA 8260							
Acetone	ND	ug/L	10.0	1		08/19/08 02:27	67-64-1	
Allyl chloride	ND	ug/L	4.0	1		08/19/08 02:27	107-05-1	
Benzene	ND	ug/L	1.0	1		08/19/08 02:27	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		08/19/08 02:27	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		08/19/08 02:27	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		08/19/08 02:27	75-27-4	
Bromoform	ND	ug/L	8.0	1		08/19/08 02:27	75-25-2	
Bromomethane	ND	ug/L	4.0	1		08/19/08 02:27	74-83-9	
2-Butanone (MEK)	ND	ug/L	4.0	1		08/19/08 02:27	78-93-3	
n-Butylbenzene	ND	ug/L	1.0	1		08/19/08 02:27	104-51-8	
sec-Butylbenzene	ND	ug/L	1.0	1		08/19/08 02:27	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	1		08/19/08 02:27	98-06-6	
Carbon tetrachloride	ND	ug/L	1.0	1		08/19/08 02:27	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		08/19/08 02:27	108-90-7	
Chloroethane	ND	ug/L	1.0	1		08/19/08 02:27	75-00-3	
Chloroform	ND	ug/L	1.0	1		08/19/08 02:27	67-66-3	
Chloromethane	ND	ug/L	1.0	1		08/19/08 02:27	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		08/19/08 02:27	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		08/19/08 02:27	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	4.0	1		08/19/08 02:27	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		08/19/08 02:27	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		08/19/08 02:27	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		08/19/08 02:27	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		08/19/08 02:27	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		08/19/08 02:27	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		08/19/08 02:27	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		08/19/08 02:27	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		08/19/08 02:27	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		08/19/08 02:27	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		08/19/08 02:27	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		08/19/08 02:27	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		08/19/08 02:27	156-60-5	
Dichlorofluoromethane	ND	ug/L	1.0	1		08/19/08 02:27	75-43-4	
1,2-Dichloropropane	ND	ug/L	1.0	1		08/19/08 02:27	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		08/19/08 02:27	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		08/19/08 02:27	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		08/19/08 02:27	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	4.0	1		08/19/08 02:27	10061-01-5	

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

ANALYTICAL RESULTS

Project: Hector LSI
Pace Project No.: 1078686

Sample: GP-2 **Lab ID: 1078686007** Collected: 08/07/08 10:15 Received: 08/12/08 09:33 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV MDH VOC	Analytical Method: EPA 8260							
trans-1,3-Dichloropropene	ND	ug/L	4.0	1		08/19/08 02:27	10061-02-6	
Diethyl ether (Ethyl ether)	ND	ug/L	4.0	1		08/19/08 02:27	60-29-7	
Ethylbenzene	ND	ug/L	1.0	1		08/19/08 02:27	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	4.0	1		08/19/08 02:27	87-68-3	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		08/19/08 02:27	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.0	1		08/19/08 02:27	99-87-6	
Methylene Chloride	ND	ug/L	4.0	1		08/19/08 02:27	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	4.0	1		08/19/08 02:27	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		08/19/08 02:27	1634-04-4	
Naphthalene	ND	ug/L	4.0	1		08/19/08 02:27	91-20-3	
n-Propylbenzene	ND	ug/L	1.0	1		08/19/08 02:27	103-65-1	
Styrene	ND	ug/L	1.0	1		08/19/08 02:27	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		08/19/08 02:27	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		08/19/08 02:27	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		08/19/08 02:27	127-18-4	
Tetrahydrofuran	ND	ug/L	10.0	1		08/19/08 02:27	109-99-9	
Toluene	ND	ug/L	1.0	1		08/19/08 02:27	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		08/19/08 02:27	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		08/19/08 02:27	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		08/19/08 02:27	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		08/19/08 02:27	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		08/19/08 02:27	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		08/19/08 02:27	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		08/19/08 02:27	96-18-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	1		08/19/08 02:27	76-13-1	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		08/19/08 02:27	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		08/19/08 02:27	108-67-8	
Vinyl chloride	ND	ug/L	0.40	1		08/19/08 02:27	75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		08/19/08 02:27	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		08/19/08 02:27	1330-20-7	
o-Xylene	ND	ug/L	1.0	1		08/19/08 02:27	95-47-6	
Dibromofluoromethane (S)	99	%	75-125	1		08/19/08 02:27	1868-53-7	H1,pH
Toluene-d8 (S)	98	%	75-125	1		08/19/08 02:27	2037-26-5	
4-Bromofluorobenzene (S)	92	%	75-125	1		08/19/08 02:27	460-00-4	
1,2-Dichloroethane-d4 (S)	108	%	75-125	1		08/19/08 02:27	17060-07-0	

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ANALYTICAL RESULTS

Project: Hector LSI
Pace Project No.: 1078686

Sample: GP-3 **Lab ID: 1078686008** Collected: 08/07/08 11:50 Received: 08/12/08 09:33 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: TPH DRO Wisconsin Preparation Method: TPH DRO Wisconsin							
Diesel Range Organics	ND	mg/L	0.11	1	08/13/08 21:29	08/14/08 16:54		P4
n-Triacontane (S)	46	%	50-150	1	08/13/08 21:29	08/14/08 16:54		2M,S1
WIGRO GCV	Analytical Method: TPH WI GRO/PVOC 8021							
Gasoline Range Organics	ND	ug/L	100	1		08/13/08 12:51		
a,a,a-Trifluorotoluene (S)	94	%	80-125	1		08/13/08 12:51	98-08-8	
8260 MSV MDH VOC	Analytical Method: EPA 8260							
Acetone	ND	ug/L	10.0	1		08/19/08 03:11	67-64-1	
Allyl chloride	ND	ug/L	4.0	1		08/19/08 03:11	107-05-1	
Benzene	ND	ug/L	1.0	1		08/19/08 03:11	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		08/19/08 03:11	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		08/19/08 03:11	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		08/19/08 03:11	75-27-4	
Bromoform	ND	ug/L	8.0	1		08/19/08 03:11	75-25-2	
Bromomethane	ND	ug/L	4.0	1		08/19/08 03:11	74-83-9	
2-Butanone (MEK)	ND	ug/L	4.0	1		08/19/08 03:11	78-93-3	
n-Butylbenzene	ND	ug/L	1.0	1		08/19/08 03:11	104-51-8	
sec-Butylbenzene	ND	ug/L	1.0	1		08/19/08 03:11	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	1		08/19/08 03:11	98-06-6	
Carbon tetrachloride	ND	ug/L	1.0	1		08/19/08 03:11	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		08/19/08 03:11	108-90-7	
Chloroethane	ND	ug/L	1.0	1		08/19/08 03:11	75-00-3	
Chloroform	ND	ug/L	1.0	1		08/19/08 03:11	67-66-3	
Chloromethane	**1.6**	ug/L	1.0	1		08/19/08 03:11	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		08/19/08 03:11	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		08/19/08 03:11	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	4.0	1		08/19/08 03:11	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		08/19/08 03:11	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		08/19/08 03:11	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		08/19/08 03:11	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		08/19/08 03:11	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		08/19/08 03:11	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		08/19/08 03:11	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		08/19/08 03:11	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		08/19/08 03:11	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		08/19/08 03:11	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		08/19/08 03:11	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		08/19/08 03:11	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		08/19/08 03:11	156-60-5	
Dichlorofluoromethane	ND	ug/L	1.0	1		08/19/08 03:11	75-43-4	
1,2-Dichloropropane	ND	ug/L	1.0	1		08/19/08 03:11	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		08/19/08 03:11	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		08/19/08 03:11	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		08/19/08 03:11	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	4.0	1		08/19/08 03:11	10061-01-5	

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ANALYTICAL RESULTS

Project: Hector LSI
Pace Project No.: 1078686

Sample: GP-3 **Lab ID: 1078686008** Collected: 08/07/08 11:50 Received: 08/12/08 09:33 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV MDH VOC	Analytical Method: EPA 8260							
trans-1,3-Dichloropropene	ND	ug/L	4.0	1		08/19/08 03:11	10061-02-6	
Diethyl ether (Ethyl ether)	ND	ug/L	4.0	1		08/19/08 03:11	60-29-7	
Ethylbenzene	ND	ug/L	1.0	1		08/19/08 03:11	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	4.0	1		08/19/08 03:11	87-68-3	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		08/19/08 03:11	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.0	1		08/19/08 03:11	99-87-6	
Methylene Chloride	ND	ug/L	4.0	1		08/19/08 03:11	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	4.0	1		08/19/08 03:11	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		08/19/08 03:11	1634-04-4	
Naphthalene	ND	ug/L	4.0	1		08/19/08 03:11	91-20-3	
n-Propylbenzene	ND	ug/L	1.0	1		08/19/08 03:11	103-65-1	
Styrene	ND	ug/L	1.0	1		08/19/08 03:11	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		08/19/08 03:11	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		08/19/08 03:11	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		08/19/08 03:11	127-18-4	
Tetrahydrofuran	ND	ug/L	10.0	1		08/19/08 03:11	109-99-9	
Toluene	ND	ug/L	1.0	1		08/19/08 03:11	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		08/19/08 03:11	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		08/19/08 03:11	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		08/19/08 03:11	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		08/19/08 03:11	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		08/19/08 03:11	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		08/19/08 03:11	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		08/19/08 03:11	96-18-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	1		08/19/08 03:11	76-13-1	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		08/19/08 03:11	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		08/19/08 03:11	108-67-8	
Vinyl chloride	ND	ug/L	0.40	1		08/19/08 03:11	75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		08/19/08 03:11	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		08/19/08 03:11	1330-20-7	
o-Xylene	ND	ug/L	1.0	1		08/19/08 03:11	95-47-6	
Dibromofluoromethane (S)	100	%	75-125	1		08/19/08 03:11	1868-53-7	H1,pH
Toluene-d8 (S)	94	%	75-125	1		08/19/08 03:11	2037-26-5	
4-Bromofluorobenzene (S)	96	%	75-125	1		08/19/08 03:11	460-00-4	
1,2-Dichloroethane-d4 (S)	111	%	75-125	1		08/19/08 03:11	17060-07-0	

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ANALYTICAL RESULTS

Project: Hector LSI
Pace Project No.: 1078686

Sample: GP-4 **Lab ID: 1078686009** Collected: 08/07/08 13:15 Received: 08/12/08 09:33 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: TPH DRO Wisconsin Preparation Method: TPH DRO Wisconsin							
Diesel Range Organics	ND	mg/L	0.11	1	08/13/08 21:29	08/14/08 17:31		P4
n-Triacontane (S)	81	%	50-150	1	08/13/08 21:29	08/14/08 17:31		
WIGRO GCV	Analytical Method: TPH WI GRO/PVOC 8021							
Gasoline Range Organics	ND	ug/L	100	1		08/13/08 13:38		
a,a,a-Trifluorotoluene (S)	98	%	80-125	1		08/13/08 13:38	98-08-8	
8260 MSV MDH VOC	Analytical Method: EPA 8260							
Acetone	ND	ug/L	10.0	1		08/19/08 03:34	67-64-1	
Allyl chloride	ND	ug/L	4.0	1		08/19/08 03:34	107-05-1	
Benzene	ND	ug/L	1.0	1		08/19/08 03:34	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		08/19/08 03:34	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		08/19/08 03:34	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		08/19/08 03:34	75-27-4	
Bromoform	ND	ug/L	8.0	1		08/19/08 03:34	75-25-2	
Bromomethane	ND	ug/L	4.0	1		08/19/08 03:34	74-83-9	
2-Butanone (MEK)	ND	ug/L	4.0	1		08/19/08 03:34	78-93-3	
n-Butylbenzene	ND	ug/L	1.0	1		08/19/08 03:34	104-51-8	
sec-Butylbenzene	ND	ug/L	1.0	1		08/19/08 03:34	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	1		08/19/08 03:34	98-06-6	
Carbon tetrachloride	ND	ug/L	1.0	1		08/19/08 03:34	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		08/19/08 03:34	108-90-7	
Chloroethane	ND	ug/L	1.0	1		08/19/08 03:34	75-00-3	
Chloroform	ND	ug/L	1.0	1		08/19/08 03:34	67-66-3	
Chloromethane	ND	ug/L	1.0	1		08/19/08 03:34	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		08/19/08 03:34	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		08/19/08 03:34	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	4.0	1		08/19/08 03:34	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		08/19/08 03:34	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		08/19/08 03:34	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		08/19/08 03:34	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		08/19/08 03:34	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		08/19/08 03:34	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		08/19/08 03:34	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		08/19/08 03:34	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		08/19/08 03:34	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		08/19/08 03:34	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		08/19/08 03:34	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		08/19/08 03:34	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		08/19/08 03:34	156-60-5	
Dichlorofluoromethane	ND	ug/L	1.0	1		08/19/08 03:34	75-43-4	
1,2-Dichloropropane	ND	ug/L	1.0	1		08/19/08 03:34	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		08/19/08 03:34	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		08/19/08 03:34	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		08/19/08 03:34	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	4.0	1		08/19/08 03:34	10061-01-5	

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ANALYTICAL RESULTS

Project: Hector LSI
Pace Project No.: 1078686

Sample: GP-4 **Lab ID: 1078686009** Collected: 08/07/08 13:15 Received: 08/12/08 09:33 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV MDH VOC	Analytical Method: EPA 8260							
trans-1,3-Dichloropropene	ND	ug/L	4.0	1		08/19/08 03:34	10061-02-6	
Diethyl ether (Ethyl ether)	ND	ug/L	4.0	1		08/19/08 03:34	60-29-7	
Ethylbenzene	ND	ug/L	1.0	1		08/19/08 03:34	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	4.0	1		08/19/08 03:34	87-68-3	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		08/19/08 03:34	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.0	1		08/19/08 03:34	99-87-6	
Methylene Chloride	ND	ug/L	4.0	1		08/19/08 03:34	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	4.0	1		08/19/08 03:34	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		08/19/08 03:34	1634-04-4	
Naphthalene	ND	ug/L	4.0	1		08/19/08 03:34	91-20-3	
n-Propylbenzene	ND	ug/L	1.0	1		08/19/08 03:34	103-65-1	
Styrene	ND	ug/L	1.0	1		08/19/08 03:34	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		08/19/08 03:34	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		08/19/08 03:34	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		08/19/08 03:34	127-18-4	
Tetrahydrofuran	ND	ug/L	10.0	1		08/19/08 03:34	109-99-9	
Toluene	ND	ug/L	1.0	1		08/19/08 03:34	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		08/19/08 03:34	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		08/19/08 03:34	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		08/19/08 03:34	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		08/19/08 03:34	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		08/19/08 03:34	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		08/19/08 03:34	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		08/19/08 03:34	96-18-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	1		08/19/08 03:34	76-13-1	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		08/19/08 03:34	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		08/19/08 03:34	108-67-8	
Vinyl chloride	ND	ug/L	0.40	1		08/19/08 03:34	75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		08/19/08 03:34	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		08/19/08 03:34	1330-20-7	
o-Xylene	ND	ug/L	1.0	1		08/19/08 03:34	95-47-6	
Dibromofluoromethane (S)	104	%	75-125	1		08/19/08 03:34	1868-53-7	
Toluene-d8 (S)	99	%	75-125	1		08/19/08 03:34	2037-26-5	
4-Bromofluorobenzene (S)	102	%	75-125	1		08/19/08 03:34	460-00-4	
1,2-Dichloroethane-d4 (S)	109	%	75-125	1		08/19/08 03:34	17060-07-0	

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ANALYTICAL RESULTS

Project: Hector LSI
Pace Project No.: 1078686

Sample: GP-5 **Lab ID: 1078686010** Collected: 08/07/08 14:00 Received: 08/12/08 09:33 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: TPH DRO Wisconsin Preparation Method: TPH DRO Wisconsin							
Diesel Range Organics	**0.14**	mg/L	0.10	1	08/13/08 21:29	08/14/08 18:08		
n-Triacontane (S)	78	%	50-150	1	08/13/08 21:29	08/14/08 18:08		
WIGRO GCV	Analytical Method: TPH WI GRO/PVOC 8021							
Gasoline Range Organics	ND	ug/L	100	1		08/13/08 14:01		
a,a,a-Trifluorotoluene (S)	98	%	80-125	1		08/13/08 14:01	98-08-8	
8260 MSV MDH VOC	Analytical Method: EPA 8260							
Acetone	**11.3**	ug/L	10.0	1		08/19/08 03:56	67-64-1	
Allyl chloride	ND	ug/L	4.0	1		08/19/08 03:56	107-05-1	
Benzene	ND	ug/L	1.0	1		08/19/08 03:56	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		08/19/08 03:56	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		08/19/08 03:56	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		08/19/08 03:56	75-27-4	
Bromoform	ND	ug/L	8.0	1		08/19/08 03:56	75-25-2	
Bromomethane	ND	ug/L	4.0	1		08/19/08 03:56	74-83-9	
2-Butanone (MEK)	ND	ug/L	4.0	1		08/19/08 03:56	78-93-3	
n-Butylbenzene	ND	ug/L	1.0	1		08/19/08 03:56	104-51-8	
sec-Butylbenzene	ND	ug/L	1.0	1		08/19/08 03:56	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	1		08/19/08 03:56	98-06-6	
Carbon tetrachloride	ND	ug/L	1.0	1		08/19/08 03:56	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		08/19/08 03:56	108-90-7	
Chloroethane	ND	ug/L	1.0	1		08/19/08 03:56	75-00-3	
Chloroform	ND	ug/L	1.0	1		08/19/08 03:56	67-66-3	
Chloromethane	**2.0**	ug/L	1.0	1		08/19/08 03:56	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		08/19/08 03:56	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		08/19/08 03:56	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	4.0	1		08/19/08 03:56	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		08/19/08 03:56	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		08/19/08 03:56	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		08/19/08 03:56	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		08/19/08 03:56	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		08/19/08 03:56	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		08/19/08 03:56	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		08/19/08 03:56	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		08/19/08 03:56	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		08/19/08 03:56	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		08/19/08 03:56	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		08/19/08 03:56	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		08/19/08 03:56	156-60-5	
Dichlorofluoromethane	ND	ug/L	1.0	1		08/19/08 03:56	75-43-4	
1,2-Dichloropropane	ND	ug/L	1.0	1		08/19/08 03:56	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		08/19/08 03:56	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		08/19/08 03:56	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		08/19/08 03:56	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	4.0	1		08/19/08 03:56	10061-01-5	

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ANALYTICAL RESULTS

Project: Hector LSI
Pace Project No.: 1078686

Sample: GP-5 **Lab ID: 1078686010** Collected: 08/07/08 14:00 Received: 08/12/08 09:33 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV MDH VOC	Analytical Method: EPA 8260							
trans-1,3-Dichloropropene	ND	ug/L	4.0	1		08/19/08 03:56	10061-02-6	
Diethyl ether (Ethyl ether)	ND	ug/L	4.0	1		08/19/08 03:56	60-29-7	
Ethylbenzene	ND	ug/L	1.0	1		08/19/08 03:56	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	4.0	1		08/19/08 03:56	87-68-3	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		08/19/08 03:56	98-82-8	
p-Isopropyltoluene	ND	ug/L	1.0	1		08/19/08 03:56	99-87-6	
Methylene Chloride	ND	ug/L	4.0	1		08/19/08 03:56	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	4.0	1		08/19/08 03:56	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		08/19/08 03:56	1634-04-4	
Naphthalene	ND	ug/L	4.0	1		08/19/08 03:56	91-20-3	
n-Propylbenzene	ND	ug/L	1.0	1		08/19/08 03:56	103-65-1	
Styrene	ND	ug/L	1.0	1		08/19/08 03:56	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		08/19/08 03:56	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		08/19/08 03:56	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		08/19/08 03:56	127-18-4	
Tetrahydrofuran	**20.0**	ug/L	10.0	1		08/19/08 03:56	109-99-9	
Toluene	ND	ug/L	1.0	1		08/19/08 03:56	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		08/19/08 03:56	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		08/19/08 03:56	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		08/19/08 03:56	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		08/19/08 03:56	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		08/19/08 03:56	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		08/19/08 03:56	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		08/19/08 03:56	96-18-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	1		08/19/08 03:56	76-13-1	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		08/19/08 03:56	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		08/19/08 03:56	108-67-8	
Vinyl chloride	ND	ug/L	0.40	1		08/19/08 03:56	75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		08/19/08 03:56	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		08/19/08 03:56	1330-20-7	
o-Xylene	ND	ug/L	1.0	1		08/19/08 03:56	95-47-6	
Dibromofluoromethane (S)	104	%	75-125	1		08/19/08 03:56	1868-53-7	
Toluene-d8 (S)	106	%	75-125	1		08/19/08 03:56	2037-26-5	
4-Bromofluorobenzene (S)	104	%	75-125	1		08/19/08 03:56	460-00-4	
1,2-Dichloroethane-d4 (S)	110	%	75-125	1		08/19/08 03:56	17060-07-0	

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QUALITY CONTROL DATA

Project: Hector LSI
Pace Project No.: 1078686

QC Batch: GCV/5382 Analysis Method: TPH WI GRO/PVOC 8021
QC Batch Method: TPH WI GRO/PVOC 8021 Analysis Description: WIGRO GCV Water
Associated Lab Samples: 1078686006

METHOD BLANK: 512397
Associated Lab Samples: 1078686006

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Gasoline Range Organics	ug/L	ND	100	
a,a,a-Trifluorotoluene (S)	%	97	80-125	

LABORATORY CONTROL SAMPLE & LCSD: 512398 512399

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Gasoline Range Organics	ug/L	1000	989	952	99	95	80-120	4	20	
a,a,a-Trifluorotoluene (S)	%				97	98	80-125			

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QUALITY CONTROL DATA

Project: Hector LSI
Pace Project No.: 1078686

QC Batch: GCV/5387 Analysis Method: TPH WI GRO/PVOC 8021
QC Batch Method: TPH WI GRO/PVOC 8021 Analysis Description: WIGRO GCV Water
Associated Lab Samples: 1078686007, 1078686008, 1078686009, 1078686010

METHOD BLANK: 512696
Associated Lab Samples: 1078686007, 1078686008, 1078686009, 1078686010

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Gasoline Range Organics	ug/L	ND	100	
a,a,a-Trifluorotoluene (S)	%	97	80-125	

LABORATORY CONTROL SAMPLE & LCSD: 512697 512698

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Gasoline Range Organics	ug/L	1000	1050	993	105	99	80-120	6	20	
a,a,a-Trifluorotoluene (S)	%				96	100	80-125			

MATRIX SPIKE SAMPLE: 512699

Parameter	Units	1078700005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	ug/L	ND	1000	1000	100	73-132	
a,a,a-Trifluorotoluene (S)	%				97	80-125	

SAMPLE DUPLICATE: 513412

Parameter	Units	1078700001 Result	Dup Result	RPD	Max RPD	Qualifiers
Gasoline Range Organics	ug/L	ND	ND	0	30	
a,a,a-Trifluorotoluene (S)	%	98	99	1		

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QUALITY CONTROL DATA

Project: Hector LSI
Pace Project No.: 1078686

QC Batch: OEXT/9240 Analysis Method: TPH DRO Wisconsin
QC Batch Method: TPH DRO Wisconsin Analysis Description: WIDRO GCS
Associated Lab Samples: 1078686006, 1078686007, 1078686008, 1078686009, 1078686010

METHOD BLANK: 512748
Associated Lab Samples: 1078686006, 1078686007, 1078686008, 1078686009, 1078686010

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Diesel Range Organics	mg/L	ND	0.10	
n-Triacontane (S)	%	95	50-150	

LABORATORY CONTROL SAMPLE & LCSD: 512749 512750

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Range Organics	mg/L	2	1.9	1.9	95	97	75-115	2	20	
n-Triacontane (S)	%				94	95	50-150			

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QUALITY CONTROL DATA

Project: Hector LSI
Pace Project No.: 1078686

QC Batch: MPRP/12946 Analysis Method: % Moisture
QC Batch Method: % Moisture Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 1078686001, 1078686002, 1078686003, 1078686004, 1078686005

SAMPLE DUPLICATE: 512966

Parameter	Units	1078743006 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	15.9	14.8	8	30	

SAMPLE DUPLICATE: 512967

Parameter	Units	1078686001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	20.6	20.5	4	30	

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QUALITY CONTROL DATA

Project: Hector LSI
Pace Project No.: 1078686

QC Batch: OEXT/9245 Analysis Method: TPH DRO Wisconsin
QC Batch Method: TPH DRO Wisconsin Analysis Description: WIDRO GCS
Associated Lab Samples: 1078686001, 1078686002, 1078686003, 1078686004, 1078686005

METHOD BLANK: 513150
Associated Lab Samples: 1078686001, 1078686002, 1078686003, 1078686004, 1078686005

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Diesel Range Organics	mg/kg	ND	5.0	
n-Triacontane (S)	%	80	50-150	

LABORATORY CONTROL SAMPLE & LCSD: 513151 513152

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Range Organics	mg/kg	80	70.4	64.0	88	80	70-120	10	20	
n-Triacontane (S)	%				87	77	50-150			

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QUALITY CONTROL DATA

Project: Hector LSI
Pace Project No.: 1078686

QC Batch: MSV/10664 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV 465 List
Associated Lab Samples: 1078686006, 1078686007, 1078686008, 1078686009, 1078686010

METHOD BLANK: 514964
Associated Lab Samples: 1078686006, 1078686007, 1078686008, 1078686009, 1078686010

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

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QUALITY CONTROL DATA

Project: Hector LSI
Pace Project No.: 1078686

METHOD BLANK: 514964

Associated Lab Samples: 1078686006, 1078686007, 1078686008, 1078686009, 1078686010

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Dichlorodifluoromethane	ug/L	ND	1.0	
Dichlorofluoromethane	ug/L	ND	1.0	
Diethyl ether (Ethyl ether)	ug/L	ND	4.0	
Ethylbenzene	ug/L	ND	1.0	
Hexachloro-1,3-butadiene	ug/L	ND	4.0	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	
m&p-Xylene	ug/L	ND	2.0	
Methyl-tert-butyl ether	ug/L	ND	1.0	
Methylene Chloride	ug/L	ND	4.0	
n-Butylbenzene	ug/L	ND	1.0	
n-Propylbenzene	ug/L	ND	1.0	
Naphthalene	ug/L	ND	4.0	
o-Xylene	ug/L	ND	1.0	
p-Isopropyltoluene	ug/L	ND	1.0	
sec-Butylbenzene	ug/L	ND	1.0	
Styrene	ug/L	ND	1.0	
tert-Butylbenzene	ug/L	ND	1.0	
Tetrachloroethene	ug/L	ND	1.0	
Tetrahydrofuran	ug/L	ND	10.0	
Toluene	ug/L	ND	1.0	
trans-1,2-Dichloroethene	ug/L	ND	1.0	
trans-1,3-Dichloropropene	ug/L	ND	4.0	
Trichloroethene	ug/L	ND	1.0	
Trichlorofluoromethane	ug/L	ND	1.0	
Vinyl chloride	ug/L	ND	0.40	
Xylene (Total)	ug/L	ND	3.0	
1,2-Dichloroethane-d4 (S)	%	110	75-125	
4-Bromofluorobenzene (S)	%	94	75-125	
Dibromofluoromethane (S)	%	100	75-125	
Toluene-d8 (S)	%	98	75-125	

LABORATORY CONTROL SAMPLE: 514965

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	20.0	100	75-135	
1,1,1-Trichloroethane	ug/L	20	19.6	98	75-132	
1,1,2,2-Tetrachloroethane	ug/L	20	17.9	89	75-125	
1,1,2-Trichloroethane	ug/L	20	21.3	106	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	20	20.9	105	73-141	
1,1-Dichloroethane	ug/L	20	20.8	104	75-125	
1,1-Dichloroethene	ug/L	20	20.5	103	75-127	
1,1-Dichloropropene	ug/L	20	20.1	100	75-126	
1,2,3-Trichlorobenzene	ug/L	20	19.3	97	75-125	
1,2,3-Trichloropropane	ug/L	20	19.7	99	75-125	
1,2,4-Trichlorobenzene	ug/L	20	18.6	93	75-125	

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QUALITY CONTROL DATA

Project: Hector LSI
Pace Project No.: 1078686

LABORATORY CONTROL SAMPLE: 514965

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trimethylbenzene	ug/L	20	20.5	103	75-125	
1,2-Dibromo-3-chloropropane	ug/L	20	18.0	90	67-125	
1,2-Dibromoethane (EDB)	ug/L	20	19.6	98	75-125	
1,2-Dichlorobenzene	ug/L	20	19.5	97	75-125	
1,2-Dichloroethane	ug/L	20	21.0	105	75-125	
1,2-Dichloropropane	ug/L	20	20.2	101	75-125	
1,3,5-Trimethylbenzene	ug/L	20	20.3	101	75-125	
1,3-Dichlorobenzene	ug/L	20	19.4	97	75-125	
1,3-Dichloropropane	ug/L	20	21.6	108	75-125	
1,4-Dichlorobenzene	ug/L	20	19.8	99	75-125	
2,2-Dichloropropane	ug/L	20	16.2	81	50-150	
2-Butanone (MEK)	ug/L	20	19.9	100	68-127	
2-Chlorotoluene	ug/L	20	19.5	98	75-125	
4-Chlorotoluene	ug/L	20	19.6	98	75-125	
4-Methyl-2-pentanone (MIBK)	ug/L	20	17.7	88	68-133	
Acetone	ug/L	50	50.6	101	65-139	
Allyl chloride	ug/L	20	21.2	106	55-145	
Benzene	ug/L	20	19.9	99	75-125	
Bromobenzene	ug/L	20	20.6	103	75-125	
Bromochloromethane	ug/L	20	19.5	98	75-127	
Bromodichloromethane	ug/L	20	20.3	102	75-125	
Bromoform	ug/L	40	37.2	93	67-125	
Bromomethane	ug/L	20	18.0	90	65-150	
Carbon tetrachloride	ug/L	20	19.5	97	67-133	
Chlorobenzene	ug/L	20	20.2	101	75-125	
Chloroethane	ug/L	20	16.5	82	75-129	
Chloroform	ug/L	20	20.5	103	75-125	
Chloromethane	ug/L	20	19.6	98	67-135	
cis-1,2-Dichloroethene	ug/L	20	19.1	96	75-125	
cis-1,3-Dichloropropene	ug/L	20	19.0	95	75-125	
Dibromochloromethane	ug/L	20	20.7	104	73-125	
Dibromomethane	ug/L	20	20.0	100	75-125	
Dichlorodifluoromethane	ug/L	20	18.8	94	55-150	
Dichlorofluoromethane	ug/L	20	21.2	106	75-129	
Diethyl ether (Ethyl ether)	ug/L	20	20.3	101	75-125	
Ethylbenzene	ug/L	20	20.3	101	75-125	
Hexachloro-1,3-butadiene	ug/L	20	21.2	106	75-132	
Isopropylbenzene (Cumene)	ug/L	20	19.6	98	75-125	
m&p-Xylene	ug/L	40	39.3	98	75-125	
Methyl-tert-butyl ether	ug/L	20	21.6	108	65-140	
Methylene Chloride	ug/L	20	19.9	99	63-125	
n-Butylbenzene	ug/L	20	18.7	94	75-125	
n-Propylbenzene	ug/L	20	20.3	102	75-125	
Naphthalene	ug/L	20	18.9	95	72-128	
o-Xylene	ug/L	20	19.8	99	75-125	
p-Isopropyltoluene	ug/L	20	19.9	99	75-125	
sec-Butylbenzene	ug/L	20	19.8	99	75-125	
Styrene	ug/L	20	19.9	100	75-125	

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QUALITY CONTROL DATA

Project: Hector LSI
Pace Project No.: 1078686

LABORATORY CONTROL SAMPLE: 514965

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
tert-Butylbenzene	ug/L	20	19.5	98	75-125	
Tetrachloroethene	ug/L	20	19.7	99	75-125	
Tetrahydrofuran	ug/L	200	211	105	60-147	
Toluene	ug/L	20	20.5	103	75-125	
trans-1,2-Dichloroethene	ug/L	20	20.0	100	75-125	
trans-1,3-Dichloropropene	ug/L	20	20.6	103	69-125	
Trichloroethene	ug/L	20	19.9	100	75-125	
Trichlorofluoromethane	ug/L	20	20.1	101	75-135	
Vinyl chloride	ug/L	20	20.4	102	71-133	
Xylene (Total)	ug/L	60	59.1	98	75-125	
1,2-Dichloroethane-d4 (S)	%			98	75-125	
4-Bromofluorobenzene (S)	%			98	75-125	
Dibromofluoromethane (S)	%			101	75-125	
Toluene-d8 (S)	%			106	75-125	

MATRIX SPIKE SAMPLE: 515357

Parameter	Units	1078686006 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	20	19.4	97	75-135	
1,1,1-Trichloroethane	ug/L	ND	20	21.1	106	75-140	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	18.2	91	75-130	
1,1,2-Trichloroethane	ug/L	ND	20	20.7	104	75-125	
1,1,2-Trichlorotrifluoroethane	ug/L	ND	20	28.8	144	69-150	
1,1-Dichloroethane	ug/L	ND	20	21.9	110	70-140	
1,1-Dichloroethene	ug/L	ND	20	21.5	107	75-141	
1,1-Dichloropropene	ug/L	ND	20	21.8	109	75-144	
1,2,3-Trichlorobenzene	ug/L	ND	20	19.3	96	68-125	
1,2,3-Trichloropropane	ug/L	ND	20	19.4	97	74-126	
1,2,4-Trichlorobenzene	ug/L	ND	20	19.4	97	70-125	
1,2,4-Trimethylbenzene	ug/L	1.3	20	21.3	100	61-136	
1,2-Dibromo-3-chloropropane	ug/L	ND	20	17.2	86	67-125	
1,2-Dibromoethane (EDB)	ug/L	ND	20	19.5	97	75-125	
1,2-Dichlorobenzene	ug/L	ND	20	18.9	95	75-125	
1,2-Dichloroethane	ug/L	ND	20	20.8	104	75-130	
1,2-Dichloropropane	ug/L	ND	20	20.5	102	75-126	
1,3,5-Trimethylbenzene	ug/L	ND	20	20.7	104	66-135	
1,3-Dichlorobenzene	ug/L	ND	20	19.7	98	75-125	
1,3-Dichloropropane	ug/L	ND	20	21.0	105	75-125	
1,4-Dichlorobenzene	ug/L	ND	20	20.0	100	75-125	
2,2-Dichloropropane	ug/L	ND	20	19.0	95	50-150	
2-Butanone (MEK)	ug/L	ND	20	20.1	100	68-127	
2-Chlorotoluene	ug/L	ND	20	20.3	102	66-148	
4-Chlorotoluene	ug/L	ND	20	19.7	99	68-136	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	20	19.4	97	68-133	
Acetone	ug/L	14.9	50	59.5	89	50-150	
Allyl chloride	ug/L	ND	20	19.6	98	50-147	
Benzene	ug/L	ND	20	20.9	104	75-126	

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QUALITY CONTROL DATA

Project: Hector LSI
Pace Project No.: 1078686

MATRIX SPIKE SAMPLE: 515357

Parameter	Units	1078686006 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Bromobenzene	ug/L	ND	20	20.4	102	75-125	
Bromochloromethane	ug/L	ND	20	19.5	97	75-127	
Bromodichloromethane	ug/L	ND	20	19.7	98	72-130	
Bromoform	ug/L	ND	40	31.2	78	56-125	
Bromomethane	ug/L	ND	20	19.8	99	50-150	
Carbon tetrachloride	ug/L	ND	20	21.2	106	68-144	
Chlorobenzene	ug/L	ND	20	19.8	99	75-125	
Chloroethane	ug/L	ND	20	16.1	81	75-142	
Chloroform	ug/L	ND	20	21.0	105	75-134	
Chloromethane	ug/L	1.6	20	23.1	107	61-148	
cis-1,2-Dichloroethene	ug/L	ND	20	20.4	102	65-148	
cis-1,3-Dichloropropene	ug/L	ND	20	17.7	89	59-132	
Dibromochloromethane	ug/L	ND	20	18.3	91	63-125	
Dibromomethane	ug/L	ND	20	20.9	105	75-125	
Dichlorodifluoromethane	ug/L	ND	20	24.8	124	50-150	
Dichlorofluoromethane	ug/L	ND	20	22.6	113	75-138	
Diethyl ether (Ethyl ether)	ug/L	ND	20	19.7	99	74-128	
Ethylbenzene	ug/L	ND	20	21.3	103	75-126	
Hexachloro-1,3-butadiene	ug/L	ND	20	20.3	101	63-146	
Isopropylbenzene (Cumene)	ug/L	ND	20	20.5	103	75-131	
m&p-Xylene	ug/L	ND	40	40.2	101	67-137	
Methyl-tert-butyl ether	ug/L	ND	20	20.8	104	59-140	
Methylene Chloride	ug/L	ND	20	19.8	99	62-133	
n-Butylbenzene	ug/L	ND	20	20.0	100	62-141	
n-Propylbenzene	ug/L	ND	20	21.1	105	73-139	
Naphthalene	ug/L	ND	20	19.1	96	69-129	
o-Xylene	ug/L	ND	20	19.9	100	75-126	
p-Isopropyltoluene	ug/L	ND	20	20.8	104	70-137	
sec-Butylbenzene	ug/L	ND	20	21.5	107	73-140	
Styrene	ug/L	ND	20	17.4	87	50-144	
tert-Butylbenzene	ug/L	ND	20	20.5	102	73-136	
Tetrachloroethene	ug/L	ND	20	21.0	105	75-133	
Tetrahydrofuran	ug/L	40.7	200	243	101	67-135	
Toluene	ug/L	ND	20	21.2	106	75-125	
trans-1,2-Dichloroethene	ug/L	ND	20	21.6	108	75-138	
trans-1,3-Dichloropropene	ug/L	ND	20	19.8	99	59-125	
Trichloroethene	ug/L	ND	20	21.4	107	75-130	
Trichlorofluoromethane	ug/L	ND	20	25.1	125	71-150	
Vinyl chloride	ug/L	ND	20	22.0	110	64-150	
Xylene (Total)	ug/L	ND	60	60.2	100	75-125	
1,2-Dichloroethane-d4 (S)	%				106	75-125	
4-Bromofluorobenzene (S)	%				98	75-125	
Dibromofluoromethane (S)	%				97	75-125	
Toluene-d8 (S)	%				107	75-125	

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QUALITY CONTROL DATA

Project: Hector LSI
Pace Project No.: 1078686

SAMPLE DUPLICATE: 515358

Parameter	Units	1078686007 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	ND	0	30	
1,1,1-Trichloroethane	ug/L	ND	ND	0	30	
1,1,2,2-Tetrachloroethane	ug/L	ND	ND	0	30	
1,1,2-Trichloroethane	ug/L	ND	ND	0	30	
1,1,2-Trichlorotrifluoroethane	ug/L	ND	ND	0	30	
1,1-Dichloroethane	ug/L	ND	ND	0	30	
1,1-Dichloroethene	ug/L	ND	ND	0	30	
1,1-Dichloropropene	ug/L	ND	ND	0	30	
1,2,3-Trichlorobenzene	ug/L	ND	ND	0	30	
1,2,3-Trichloropropane	ug/L	ND	ND	0	30	
1,2,4-Trichlorobenzene	ug/L	ND	ND	0	30	
1,2,4-Trimethylbenzene	ug/L	ND	ND	0	30	
1,2-Dibromo-3-chloropropane	ug/L	ND	ND	0	30	
1,2-Dibromoethane (EDB)	ug/L	ND	ND	0	30	
1,2-Dichlorobenzene	ug/L	ND	ND	0	30	
1,2-Dichloroethane	ug/L	ND	ND	0	30	
1,2-Dichloropropane	ug/L	ND	ND	0	30	
1,3,5-Trimethylbenzene	ug/L	ND	ND	0	30	
1,3-Dichlorobenzene	ug/L	ND	ND	0	30	
1,3-Dichloropropane	ug/L	ND	ND	0	30	
1,4-Dichlorobenzene	ug/L	ND	ND	0	30	
2,2-Dichloropropane	ug/L	ND	ND	0	30	
2-Butanone (MEK)	ug/L	ND	ND	0	30	
2-Chlorotoluene	ug/L	ND	ND	0	30	
4-Chlorotoluene	ug/L	ND	ND	0	30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	ND	0	30	
Acetone	ug/L	ND	ND	0	30	
Allyl chloride	ug/L	ND	ND	0	30	
Benzene	ug/L	ND	ND	0	30	
Bromobenzene	ug/L	ND	ND	0	30	
Bromochloromethane	ug/L	ND	ND	0	30	
Bromodichloromethane	ug/L	ND	ND	0	30	
Bromoform	ug/L	ND	ND	0	30	
Bromomethane	ug/L	ND	ND	0	30	
Carbon tetrachloride	ug/L	ND	ND	0	30	
Chlorobenzene	ug/L	ND	ND	0	30	
Chloroethane	ug/L	ND	ND	0	30	
Chloroform	ug/L	ND	ND	0	30	
Chloromethane	ug/L	ND	ND	0	30	
cis-1,2-Dichloroethene	ug/L	ND	ND	0	30	
cis-1,3-Dichloropropene	ug/L	ND	ND	0	30	
Dibromochloromethane	ug/L	ND	ND	0	30	
Dibromomethane	ug/L	ND	ND	0	30	
Dichlorodifluoromethane	ug/L	ND	ND	0	30	
Dichlorofluoromethane	ug/L	ND	ND	0	30	
Diethyl ether (Ethyl ether)	ug/L	ND	ND	0	30	
Ethylbenzene	ug/L	ND	ND	0	30	
Hexachloro-1,3-butadiene	ug/L	ND	ND	0	30	

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QUALITY CONTROL DATA

Project: Hector LSI
Pace Project No.: 1078686

SAMPLE DUPLICATE: 515358

Parameter	Units	1078686007 Result	Dup Result	RPD	Max RPD	Qualifiers
Isopropylbenzene (Cumene)	ug/L	ND	ND	0	30	
m&p-Xylene	ug/L	ND	ND	0	30	
Methyl-tert-butyl ether	ug/L	ND	ND	0	30	
Methylene Chloride	ug/L	ND	ND	0	30	
n-Butylbenzene	ug/L	ND	ND	0	30	
n-Propylbenzene	ug/L	ND	ND	0	30	
Naphthalene	ug/L	ND	ND	0	30	
o-Xylene	ug/L	ND	ND	0	30	
p-Isopropyltoluene	ug/L	ND	ND	0	30	
sec-Butylbenzene	ug/L	ND	ND	0	30	
Styrene	ug/L	ND	ND	0	30	
tert-Butylbenzene	ug/L	ND	ND	0	30	
Tetrachloroethene	ug/L	ND	ND	0	30	
Tetrahydrofuran	ug/L	ND	ND	0	30	
Toluene	ug/L	ND	ND	0	30	
trans-1,2-Dichloroethene	ug/L	ND	ND	0	30	
trans-1,3-Dichloropropene	ug/L	ND	ND	0	30	
Trichloroethene	ug/L	ND	ND	0	30	
Trichlorofluoromethane	ug/L	ND	ND	0	30	
Vinyl chloride	ug/L	ND	ND	0	30	
Xylene (Total)	ug/L	ND	ND	0	30	
1,2-Dichloroethane-d4 (S)	%	108	107	1		
4-Bromofluorobenzene (S)	%	92	100	8		
Dibromofluoromethane (S)	%	99	98	9		H1,pH
Toluene-d8 (S)	%	98	103	5		

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QUALITY CONTROL DATA

Project: Hector LSI
Pace Project No.: 1078686

QC Batch: GCV/5403 Analysis Method: TPH WI GRO/PVOC 8021
QC Batch Method: TPH GRO/PVOC WI ext. Analysis Description: WIGRO Solid GCV
Associated Lab Samples: 1078686001, 1078686002, 1078686003, 1078686004, 1078686005

METHOD BLANK: 515199
Associated Lab Samples: 1078686001, 1078686002, 1078686003, 1078686004, 1078686005

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Benzene	mg/kg	ND	0.050	
Ethylbenzene	mg/kg	ND	0.050	
Gasoline Range Organics	mg/kg	ND	5.0	
Methyl-tert-butyl ether	mg/kg	ND	0.20	
Toluene	mg/kg	ND	0.050	
Xylene (Total)	mg/kg	ND	0.15	
a,a,a-Trifluorotoluene (S)	%	83	80-125	

LABORATORY CONTROL SAMPLE & LCSD: 515200 515201

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Benzene	mg/kg	5	5.1	4.9	102	98	80-120	4	20	
Ethylbenzene	mg/kg	5	5.1	4.8	102	97	80-120	5	20	
Gasoline Range Organics	mg/kg	50	49.3	49.9	99	100	80-120	1	20	
Methyl-tert-butyl ether	mg/kg	5	4.9	4.6	99	93	80-120	6	20	
Toluene	mg/kg	5	5.0	4.7	99	94	80-120	6	20	
Xylene (Total)	mg/kg	15	15.2	14.5	102	96	80-120	5	20	
a,a,a-Trifluorotoluene (S)	%				106	99	80-125			

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QUALIFIERS

Project: Hector LSI
Pace Project No.: 1078686

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

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WORKORDER QUALIFIERS

WO: 1078686

[1] Samples in this workorder were received in the laboratory without an associated trip blank.

BATCH QUALIFIERS

Batch: GCV/5382

[1] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: GCV/5404

[1] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

1M	Results confirmed by second analysis.
2M	No sample left to re-extract.
CL	The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased low.
H1	Analysis conducted outside the EPA method holding time.
P4	Sample field preservation does not meet EPA or method recommendations for this analysis.
S1	Surrogate recovery outside laboratory control limits (confirmed by re-analysis).
T6	High boiling point hydrocarbons are present in the sample.
pH	Post-analysis pH measurement indicates insufficient VOA sample preservation.

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Quote: 20552

1159/1160

Sample Chain of Custody Record

Shipment/Delivery Method

UPS X — Ground X
Federal Express — 2nd Day Air
Hand Delivered — Next Day Air
Courier — Priority Next Day Air

Project Name: Hector LSI

Project Number: 08-006

Sampler's Signature: Terry Sieck

Item No.,	Sample ID (day/mo./year/time)	Area#	SB#	MW#	Sample Description	# Containers	Scheduled Analyses: DRO	GRO/BTEX/MTBE	GRO	VOCs	Sample Type: Soil	H_2O	Air	Container Type: 40 ml	500 ml	1000 ml	Voa Vile	Moisture Tube	4 oz. jar	Composite Item #'s
1	070808/1420				GP-1 4'-6'	3	X	X			X						1	1	1	
2	070808 0930				GP-2 "	3	X	X			X						1	1	1	
3	070808/1100				GP-3 "	3	X	X			X						1	1	1	
4	070808/1230				GP-4 "	3	X	X			X						1	1	1	
5	070808/1330				GP-5 "	3	X	X			X						1	1	1	
6	070808/1445				GP-1	7	X		X	X		X				1	6				
7	070808/1015				GP-2	7	X		X	X		X				1	6				
8	070808/1150				GP-3	7	X		X	X		X				1	6				
9	070808/1315				GP-4	7	X		X	X		X				1	6				
10	070808/1400				GP-5	7	X		X	X		X				1	6				
11																				
12																				
13																				
14																				
15																				
16																				

Packed/Relinquished by:	(day/mo./year/time)	Circled #s indicate which items are included in this shipment	Received by:	Date	Time
Terry Sieck	11/08/08/1400	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16		8/12/08	09:33
Relinquished by:	(day/mo./year/time)	Circled #s indicate which items are included in this shipment	Received by:	Date	Time
		1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16			

Send lab results to: Terry Sieck
Glacial Lakes Environmental Consulting, Inc.
P.O. Box 1082 • Willmar, MN 56201 • 320-235-8370
Email to: ☒ tsieck@gl-ec.com *or* ☐ tterhaar@gl-ec.com

Sample Receiving Notes:
Temp. inside shipping container _____
Chain of Custody seals intact _____

GLEC Chain of Custody
№ 10060

520

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August 21, 2008

Todd Terhaar
Glacial Lakes Environmental Consulting
PO Box 1082
1317 SW 7th Street
Willmar, MN 56201

RE: Project: 08-006 Hector LSI
Pace Project No.: 1078473

Dear Todd Terhaar:
Enclosed are the analytical results for sample(s) received by the laboratory on August 08, 2008. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

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

Sincerely,

Colin Schuft

Colin Schuft

colin.schuft@pacelabs.com
Project Manager

Florida (Nelap) Certification #: E87605
Illinois Certification #: 200011
Iowa Certification #: 368
Minnesota Certification #: 027-053-137
Wisconsin Certification #: 999407970

Enclosures

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SAMPLE SUMMARY

Project: 08-006 Hector LSI
Pace Project No.: 1078473

Lab ID	Sample ID	Matrix	Date Collected	Date Received
1078473001	VB-1 4'	Air	08/07/08 15:15	08/08/08 09:47
1078473002	VB-2 4'	Air	08/07/08 15:30	08/08/08 09:47

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SAMPLE ANALYTE COUNT

Project: 08-006 Hector LSI
Pace Project No.: 1078473

Lab ID	Sample ID	Method	Analysts	Analytes Reported
1078473001	VB-1 4'	TO-15	LCW	60
1078473002	VB-2 4'	TO-15	LCW	60

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PROJECT NARRATIVE

Project: 08-006 Hector LSI
Pace Project No.: 1078473

Method: TO-15
Description: TO15 MSV AIR
Client: Glacial Lakes Environmental Consulting
Date: August 21, 2008

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

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

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

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

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

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

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

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

QC Batch: AIR/7294

D6: The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits.
- DUP (Lab ID: 514035)
  - 2-Butanone (MEK)
  - Carbon disulfide
  - Hexachloro-1,3-butadiene

Additional Comments:

Sample Comments:

K2: The Total Hydrocarbon (THC) pattern occured in the second half of the chromatogram (after toluene).
- VB-1 4' (Lab ID: 1078473001)
- VB-2 4' (Lab ID: 1078473002)

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

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ANALYTICAL RESULTS

Project: 08-006 Hector LSI
Pace Project No.: 1078473

Sample: VB-1 4' **Lab ID: 1078473001** Collected: 08/07/08 15:15 Received: 08/08/08 09:47 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
Acetone	**87.9**	ug/m3	1.2	2.42		08/14/08 19:18	67-64-1	
Benzene	**24.4**	ug/m3	1.6	2.42		08/14/08 19:18	71-43-2	
Bromodichloromethane	ND	ug/m3	3.4	2.42		08/14/08 19:18	75-27-4	
Bromoform	ND	ug/m3	5.1	2.42		08/14/08 19:18	75-25-2	
Bromomethane	ND	ug/m3	1.9	2.42		08/14/08 19:18	74-83-9	
1,3-Butadiene	ND	ug/m3	1.1	2.42		08/14/08 19:18	106-99-0	
2-Butanone (MEK)	**29.2**	ug/m3	1.5	2.42		08/14/08 19:18	78-93-3	
Carbon disulfide	**4.2**	ug/m3	1.5	2.42		08/14/08 19:18	75-15-0	
Carbon tetrachloride	ND	ug/m3	3.1	2.42		08/14/08 19:18	56-23-5	
Chlorobenzene	ND	ug/m3	2.3	2.42		08/14/08 19:18	108-90-7	
Chloroethane	ND	ug/m3	1.3	2.42		08/14/08 19:18	75-00-3	
Chloroform	ND	ug/m3	2.4	2.42		08/14/08 19:18	67-66-3	
Chloromethane	ND	ug/m3	1.0	2.42		08/14/08 19:18	74-87-3	
Cyclohexane	**66.7**	ug/m3	1.6	2.42		08/14/08 19:18	110-82-7	
Dibromochloromethane	ND	ug/m3	4.1	2.42		08/14/08 19:18	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/m3	3.9	2.42		08/14/08 19:18	106-93-4	
1,2-Dichlorobenzene	ND	ug/m3	2.9	2.42		08/14/08 19:18	95-50-1	
1,3-Dichlorobenzene	ND	ug/m3	2.9	2.42		08/14/08 19:18	541-73-1	
1,4-Dichlorobenzene	ND	ug/m3	2.9	2.42		08/14/08 19:18	106-46-7	
Dichlorodifluoromethane	**2.4**	ug/m3	2.4	2.42		08/14/08 19:18	75-71-8	
1,1-Dichloroethane	ND	ug/m3	2.0	2.42		08/14/08 19:18	75-34-3	
1,2-Dichloroethane	ND	ug/m3	2.0	2.42		08/14/08 19:18	107-06-2	
1,1-Dichloroethene	ND	ug/m3	2.0	2.42		08/14/08 19:18	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	2.0	2.42		08/14/08 19:18	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	2.0	2.42		08/14/08 19:18	156-60-5	
1,2-Dichloropropane	ND	ug/m3	2.3	2.42		08/14/08 19:18	78-87-5	
cis-1,3-Dichloropropene	ND	ug/m3	2.2	2.42		08/14/08 19:18	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/m3	2.2	2.42		08/14/08 19:18	10061-02-6	
Dichlorotetrafluoroethane	ND	ug/m3	3.4	2.42		08/14/08 19:18	76-14-2	
Ethanol	**44.3**	ug/m3	4.6	2.42		08/14/08 19:18	64-17-5	
Ethyl acetate	ND	ug/m3	1.8	2.42		08/14/08 19:18	141-78-6	
Ethylbenzene	**199**	ug/m3	2.1	2.42		08/14/08 19:18	100-41-4	
4-Ethyltoluene	**233**	ug/m3	6.0	2.42		08/14/08 19:18	622-96-8	
n-Heptane	**60.3**	ug/m3	2.0	2.42		08/14/08 19:18	142-82-5	
Hexachloro-1,3-butadiene	ND	ug/m3	5.3	2.42		08/14/08 19:18	87-68-3	
n-Hexane	**47.0**	ug/m3	1.7	2.42		08/14/08 19:18	110-54-3	
2-Hexanone	ND	ug/m3	2.0	2.42		08/14/08 19:18	591-78-6	
Methylene Chloride	ND	ug/m3	1.7	2.42		08/14/08 19:18	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/m3	2.0	2.42		08/14/08 19:18	108-10-1	
Methyl-tert-butyl ether	ND	ug/m3	1.8	2.42		08/14/08 19:18	1634-04-4	
Naphthalene	**9.1**	ug/m3	6.5	2.42		08/14/08 19:18	91-20-3	CH
2-Propanol	ND	ug/m3	6.0	2.42		08/14/08 19:18	67-63-0	
Propylene	**20.6**	ug/m3	0.85	2.42		08/14/08 19:18	115-07-1	
Styrene	ND	ug/m3	2.1	2.42		08/14/08 19:18	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/m3	3.4	2.42		08/14/08 19:18	79-34-5	
Tetrachloroethene	ND	ug/m3	3.4	2.42		08/14/08 19:18	127-18-4	
Tetrahydrofuran	ND	ug/m3	1.5	2.42		08/14/08 19:18	109-99-9	

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ANALYTICAL RESULTS

Project: 08-006 Hector LSI
Pace Project No.: 1078473

Sample: VB-1 4' **Lab ID: 1078473001** Collected: 08/07/08 15:15 Received: 08/08/08 09:47 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
Toluene	**57.5**	ug/m3	1.9	2.42		08/14/08 19:18	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.4	2.42		08/14/08 19:18	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.7	2.42		08/14/08 19:18	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	2.7	2.42		08/14/08 19:18	79-00-5	
Trichloroethene	**22.1**	ug/m3	2.7	2.42		08/14/08 19:18	79-01-6	
Trichlorofluoromethane	ND	ug/m3	2.7	2.42		08/14/08 19:18	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/m3	3.9	2.42		08/14/08 19:18	76-13-1	
1,2,4-Trimethylbenzene	**630**	ug/m3	30.2	12.1		08/15/08 21:34	95-63-6	
1,3,5-Trimethylbenzene	**719**	ug/m3	30.2	12.1		08/15/08 21:34	108-67-8	
Vinyl acetate	ND	ug/m3	1.7	2.42		08/14/08 19:18	108-05-4	
Vinyl chloride	ND	ug/m3	1.3	2.42		08/14/08 19:18	75-01-4	
m&p-Xylene	**304**	ug/m3	4.3	2.42		08/14/08 19:18	1330-20-7	
o-Xylene	**81.5**	ug/m3	2.1	2.42		08/14/08 19:18	95-47-6	

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ANALYTICAL RESULTS

Project: 08-006 Hector LSI
Pace Project No.: 1078473

Sample: VB-2 4' **Lab ID: 1078473002** Collected: 08/07/08 15:30 Received: 08/08/08 09:47 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
Acetone	**23.1**	ug/m3	0.95	1.97		08/14/08 19:50	67-64-1	
Benzene	**12.3**	ug/m3	1.3	1.97		08/14/08 19:50	71-43-2	
Bromodichloromethane	ND	ug/m3	2.8	1.97		08/14/08 19:50	75-27-4	
Bromoform	ND	ug/m3	4.1	1.97		08/14/08 19:50	75-25-2	
Bromomethane	ND	ug/m3	1.6	1.97		08/14/08 19:50	74-83-9	
1,3-Butadiene	ND	ug/m3	0.89	1.97		08/14/08 19:50	106-99-0	
2-Butanone (MEK)	**9.4**	ug/m3	1.2	1.97		08/14/08 19:50	78-93-3	
Carbon disulfide	**6.3**	ug/m3	1.2	1.97		08/14/08 19:50	75-15-0	
Carbon tetrachloride	ND	ug/m3	2.6	1.97		08/14/08 19:50	56-23-5	
Chlorobenzene	ND	ug/m3	1.9	1.97		08/14/08 19:50	108-90-7	
Chloroethane	ND	ug/m3	1.1	1.97		08/14/08 19:50	75-00-3	
Chloroform	ND	ug/m3	2.0	1.97		08/14/08 19:50	67-66-3	
Chloromethane	ND	ug/m3	0.83	1.97		08/14/08 19:50	74-87-3	
Cyclohexane	**9.1**	ug/m3	1.3	1.97		08/14/08 19:50	110-82-7	
Dibromochloromethane	ND	ug/m3	3.3	1.97		08/14/08 19:50	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/m3	3.2	1.97		08/14/08 19:50	106-93-4	
1,2-Dichlorobenzene	ND	ug/m3	2.4	1.97		08/14/08 19:50	95-50-1	
1,3-Dichlorobenzene	**2.9**	ug/m3	2.4	1.97		08/14/08 19:50	541-73-1	
1,4-Dichlorobenzene	ND	ug/m3	2.4	1.97		08/14/08 19:50	106-46-7	
Dichlorodifluoromethane	**2.3**	ug/m3	2.0	1.97		08/14/08 19:50	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.6	1.97		08/14/08 19:50	75-34-3	
1,2-Dichloroethane	ND	ug/m3	1.6	1.97		08/14/08 19:50	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.6	1.97		08/14/08 19:50	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.6	1.97		08/14/08 19:50	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.6	1.97		08/14/08 19:50	156-60-5	
1,2-Dichloropropane	ND	ug/m3	1.9	1.97		08/14/08 19:50	78-87-5	
cis-1,3-Dichloropropene	ND	ug/m3	1.8	1.97		08/14/08 19:50	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/m3	1.8	1.97		08/14/08 19:50	10061-02-6	
Dichlorotetrafluoroethane	ND	ug/m3	2.8	1.97		08/14/08 19:50	76-14-2	
Ethanol	**30.5**	ug/m3	3.7	1.97		08/14/08 19:50	64-17-5	
Ethyl acetate	ND	ug/m3	1.4	1.97		08/14/08 19:50	141-78-6	
Ethylbenzene	**7.2**	ug/m3	1.7	1.97		08/14/08 19:50	100-41-4	
4-Ethyltoluene	**6.2**	ug/m3	4.9	1.97		08/14/08 19:50	622-96-8	
n-Heptane	**7.3**	ug/m3	1.6	1.97		08/14/08 19:50	142-82-5	
Hexachloro-1,3-butadiene	ND	ug/m3	4.3	1.97		08/14/08 19:50	87-68-3	
n-Hexane	**25.8**	ug/m3	1.4	1.97		08/14/08 19:50	110-54-3	
2-Hexanone	ND	ug/m3	1.6	1.97		08/14/08 19:50	591-78-6	
Methylene Chloride	ND	ug/m3	1.4	1.97		08/14/08 19:50	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/m3	1.6	1.97		08/14/08 19:50	108-10-1	
Methyl-tert-butyl ether	ND	ug/m3	1.4	1.97		08/14/08 19:50	1634-04-4	
Naphthalene	ND	ug/m3	5.3	1.97		08/14/08 19:50	91-20-3	
2-Propanol	ND	ug/m3	4.9	1.97		08/14/08 19:50	67-63-0	
Propylene	**22.1**	ug/m3	0.69	1.97		08/14/08 19:50	115-07-1	
Styrene	ND	ug/m3	1.7	1.97		08/14/08 19:50	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/m3	2.8	1.97		08/14/08 19:50	79-34-5	
Tetrachloroethene	ND	ug/m3	2.8	1.97		08/14/08 19:50	127-18-4	
Tetrahydrofuran	ND	ug/m3	1.2	1.97		08/14/08 19:50	109-99-9	

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ANALYTICAL RESULTS

Project: 08-006 Hector LSI
Pace Project No.: 1078473

Sample: VB-2 4' **Lab ID: 1078473002** Collected: 08/07/08 15:30 Received: 08/08/08 09:47 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
Toluene	**37.5**	ug/m3	1.5	1.97		08/14/08 19:50	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	2.0	1.97		08/14/08 19:50	120-82-1	
1,1,1-Trichloroethane	ND	ug/m3	2.2	1.97		08/14/08 19:50	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	2.2	1.97		08/14/08 19:50	79-00-5	
Trichloroethene	ND	ug/m3	2.2	1.97		08/14/08 19:50	79-01-6	
Trichlorofluoromethane	ND	ug/m3	2.2	1.97		08/14/08 19:50	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/m3	3.2	1.97		08/14/08 19:50	76-13-1	
1,2,4-Trimethylbenzene	**21.8**	ug/m3	4.9	1.97		08/14/08 19:50	95-63-6	
1,3,5-Trimethylbenzene	**7.1**	ug/m3	4.9	1.97		08/14/08 19:50	108-67-8	
Vinyl acetate	ND	ug/m3	1.4	1.97		08/14/08 19:50	108-05-4	
Vinyl chloride	ND	ug/m3	1.0	1.97		08/14/08 19:50	75-01-4	
m&p-Xylene	**32.7**	ug/m3	3.5	1.97		08/14/08 19:50	1330-20-7	
o-Xylene	**10.8**	ug/m3	1.7	1.97		08/14/08 19:50	95-47-6	

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QUALITY CONTROL DATA

Project: 08-006 Hector LSI
Pace Project No.: 1078473

QC Batch: AIR/7294
QC Batch Method: TO-15
Analysis Method: TO-15
Analysis Description: TO15 MSV AIR Low Level
Associated Lab Samples: 1078473001, 1078473002

METHOD BLANK: 513631
Associated Lab Samples: 1078473001, 1078473002

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	1.1	
1,1,2,2-Tetrachloroethane	ug/m3	ND	1.4	
1,1,2-Trichloroethane	ug/m3	ND	1.1	
1,1,2-Trichlorotrifluoroethane	ug/m3	ND	1.6	
1,1-Dichloroethane	ug/m3	ND	0.82	
1,1-Dichloroethene	ug/m3	ND	0.81	
1,2,4-Trichlorobenzene	ug/m3	ND	0.99	
1,2,4-Trimethylbenzene	ug/m3	ND	2.5	
1,2-Dibromoethane (EDB)	ug/m3	ND	1.6	
1,2-Dichlorobenzene	ug/m3	ND	1.2	
1,2-Dichloroethane	ug/m3	ND	0.82	
1,2-Dichloropropane	ug/m3	ND	0.94	
1,3,5-Trimethylbenzene	ug/m3	ND	2.5	
1,3-Butadiene	ug/m3	ND	0.45	
1,3-Dichlorobenzene	ug/m3	ND	1.2	
1,4-Dichlorobenzene	ug/m3	ND	1.2	
2-Butanone (MEK)	ug/m3	ND	0.60	
2-Hexanone	ug/m3	ND	0.83	
2-Propanol	ug/m3	ND	2.5	
4-Ethyltoluene	ug/m3	ND	2.5	
4-Methyl-2-pentanone (MIBK)	ug/m3	ND	0.83	
Acetone	ug/m3	ND	0.48	
Benzene	ug/m3	ND	0.65	
Bromodichloromethane	ug/m3	ND	1.4	
Bromoform	ug/m3	ND	2.1	
Bromomethane	ug/m3	ND	0.79	
Carbon disulfide	ug/m3	ND	0.63	
Carbon tetrachloride	ug/m3	ND	1.3	
Chlorobenzene	ug/m3	ND	0.94	
Chloroethane	ug/m3	ND	0.54	
Chloroform	ug/m3	ND	0.99	
Chloromethane	ug/m3	ND	0.42	
cis-1,2-Dichloroethene	ug/m3	ND	0.81	
cis-1,3-Dichloropropene	ug/m3	ND	0.92	
Cyclohexane	ug/m3	ND	0.68	
Dibromochloromethane	ug/m3	ND	1.7	
Dichlorodifluoromethane	ug/m3	ND	1.0	
Dichlorotetrafluoroethane	ug/m3	ND	1.4	
Ethanol	ug/m3	ND	1.9	
Ethyl acetate	ug/m3	ND	0.73	
Ethylbenzene	ug/m3	ND	0.88	
Hexachloro-1,3-butadiene	ug/m3	ND	2.2	
m&p-Xylene	ug/m3	ND	1.8	

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QUALITY CONTROL DATA

Project: 08-006 Hector LSI
Pace Project No.: 1078473

METHOD BLANK: 513631

Associated Lab Samples: 1078473001, 1078473002

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

LABORATORY CONTROL SAMPLE: 513632

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/m3	61	59.1	97	60-134	
1,1,2,2-Tetrachloroethane	ug/m3	71.2	67.8	95	55-141	
1,1,2-Trichloroethane	ug/m3	53.8	50.9	95	64-129	
1,1,2-Trichlorotrifluoroethane	ug/m3	60.8	58.2	96	55-137	
1,1-Dichloroethane	ug/m3	37	35.0	95	59-136	
1,1-Dichloroethene	ug/m3	41.5	39.2	94	60-137	
1,2,4-Trichlorobenzene	ug/m3	65.7	73.8	112	50-150	
1,2,4-Trimethylbenzene	ug/m3	49	48.7	99	63-137	
1,2-Dibromoethane (EDB)	ug/m3	80.5	76.9	96	61-136	
1,2-Dichlorobenzene	ug/m3	63	61.6	98	60-139	
1,2-Dichloroethane	ug/m3	44.9	43.2	96	56-141	
1,2-Dichloropropane	ug/m3	55	51.8	94	57-131	
1,3,5-Trimethylbenzene	ug/m3	52.5	50.0	95	61-134	
1,3-Butadiene	ug/m3	23.2	20.7	89	53-140	
1,3-Dichlorobenzene	ug/m3	61.1	60.5	99	59-136	
1,4-Dichlorobenzene	ug/m3	62.4	60.4	97	59-130	
2-Butanone (MEK)	ug/m3	31.5	30.9	98	54-133	
2-Hexanone	ug/m3	42.9	42.7	100	54-139	
2-Propanol	ug/m3	19.8	20.6	104	50-150	
4-Ethyltoluene	ug/m3	49	44.0	90	61-138	
4-Methyl-2-pentanone (MIBK)	ug/m3	42.1	41.5	99	53-139	
Acetone	ug/m3	17.4	18.3	105	50-139	
Benzene	ug/m3	32.5	30.7	95	64-125	
Bromodichloromethane	ug/m3	68.8	68.7	100	61-131	

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QUALITY CONTROL DATA

Project: 08-006 Hector LSI
Pace Project No.: 1078473

LABORATORY CONTROL SAMPLE: 513632

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Bromoform	ug/m3	109	98.5	90	66-138	
Bromomethane	ug/m3	38.7	37.4	97	55-135	
Carbon disulfide	ug/m3	32.9	35.7	108	50-150	
Carbon tetrachloride	ug/m3	67.2	66.8	99	58-135	
Chlorobenzene	ug/m3	48.7	45.4	93	62-139	
Chloroethane	ug/m3	26.3	25.3	96	56-140	
Chloroform	ug/m3	53.1	49.9	94	50-150	
Chloromethane	ug/m3	20.8	19.6	94	56-144	
cis-1,2-Dichloroethene	ug/m3	41.1	38.7	94	62-135	
cis-1,3-Dichloropropene	ug/m3	58.2	55.1	95	64-133	
Cyclohexane	ug/m3	40.3	38.2	95	54-139	
Dibromochloromethane	ug/m3	89.2	81.3	91	50-150	
Dichlorodifluoromethane	ug/m3	48.8	48.7	100	60-130	
Dichlorotetrafluoroethane	ug/m3	69	59.7	87	59-130	
Ethanol	ug/m3	19.2	17.8	93	50-150	
Ethyl acetate	ug/m3	39.2	43.6	111	60-132	
Ethylbenzene	ug/m3	50.3	47.1	93	65-140	
Hexachloro-1,3-butadiene	ug/m3	86.8	90.3	104	50-150	
m&p-Xylene	ug/m3	91.8	88.6	96	60-132	
Methyl-tert-butyl ether	ug/m3	38.9	36.5	94	50-150	
Methylene Chloride	ug/m3	30.4	28.0	92	56-138	
n-Heptane	ug/m3	39.6	38.4	97	62-135	
n-Hexane	ug/m3	40.5	41.5	102	62-134	
Naphthalene	ug/m3	46.9	59.6	127	70-130	
o-Xylene	ug/m3	45	43.6	97	64-132	
Propylene	ug/m3	18.7	18.6	99	56-125	
Styrene	ug/m3	42.5	41.0	97	69-134	
Tetrachloroethene	ug/m3	73.1	68.8	94	60-137	
Tetrahydrofuran	ug/m3	15.9	16.2	102	52-139	
Toluene	ug/m3	39.5	37.0	94	69-130	
trans-1,2-Dichloroethene	ug/m3	43.1	40.2	93	50-150	
trans-1,3-Dichloropropene	ug/m3	50.3	46.4	92	70-142	
Trichloroethene	ug/m3	55.2	61.5	111	60-134	
Trichlorofluoromethane	ug/m3	51.4	53.5	104	56-141	
Vinyl acetate	ug/m3	38.3	35.6	93	61-142	
Vinyl chloride	ug/m3	25.2	24.1	95	66-132	

SAMPLE DUPLICATE: 514035

Parameter	Units	1078366003 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	ND	0	25	
1,1,2,2-Tetrachloroethane	ug/m3	ND	ND	0	25	
1,1,2-Trichloroethane	ug/m3	ND	ND	0	25	
1,1,2-Trichlorotrifluoroethane	ug/m3	ND	ND	0	25	
1,1-Dichloroethane	ug/m3	ND	ND	0	25	
1,1-Dichloroethene	ug/m3	ND	ND	0	25	
1,2,4-Trichlorobenzene	ug/m3	ND	ND	0	25	

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QUALITY CONTROL DATA

Project: 08-006 Hector LSI
Pace Project No.: 1078473

SAMPLE DUPLICATE: 514035

Parameter	Units	1078366003 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2,4-Trimethylbenzene	ug/m3	23.7	19.1	22	25	
1,2-Dibromoethane (EDB)	ug/m3	ND	ND	0	25	
1,2-Dichlorobenzene	ug/m3	ND	ND	0	25	
1,2-Dichloroethane	ug/m3	ND	ND	0	25	
1,2-Dichloropropane	ug/m3	ND	ND	0	25	
1,3,5-Trimethylbenzene	ug/m3	7.3	6.5	12	25	
1,3-Butadiene	ug/m3	ND	ND	0	25	
1,3-Dichlorobenzene	ug/m3	ND	ND	0	25	
1,4-Dichlorobenzene	ug/m3	3.0	2.4	20	25	
2-Butanone (MEK)	ug/m3	7.0	4.6	40	25	D6
2-Hexanone	ug/m3	ND	ND	0	25	
2-Propanol	ug/m3	ND	ND	0	25	
4-Ethyltoluene	ug/m3	4.8	4J	20	25	
4-Methyl-2-pentanone (MIBK)	ug/m3	ND	ND	0	25	
Acetone	ug/m3	25.8	21.4	19	25	
Benzene	ug/m3	18.6	18.2	2	25	
Bromodichloromethane	ug/m3	ND	ND	0	25	
Bromoform	ug/m3	ND	ND	0	25	
Bromomethane	ug/m3	ND	ND	0	25	
Carbon disulfide	ug/m3	3.8	2.9	26	25	D6
Carbon tetrachloride	ug/m3	ND	ND	0	25	
Chlorobenzene	ug/m3	ND	ND	0	25	
Chloroethane	ug/m3	ND	ND	0	25	
Chloroform	ug/m3	ND	ND	0	25	
Chloromethane	ug/m3	ND	44J	13	25	
cis-1,2-Dichloroethene	ug/m3	ND	ND	0	25	
cis-1,3-Dichloropropene	ug/m3	ND	ND	0	25	
Cyclohexane	ug/m3	21.6	19.8	9	25	
Dibromochloromethane	ug/m3	ND	ND	0	25	
Dichlorodifluoromethane	ug/m3	2.7	2.3	16	25	
Dichlorotetrafluoroethane	ug/m3	ND	ND	0	25	
Ethanol	ug/m3	8.6	7.2	17	25	
Ethyl acetate	ug/m3	ND	ND	0	25	
Ethylbenzene	ug/m3	6.0	5.3	13	25	
Hexachloro-1,3-butadiene	ug/m3	ND	6.2	56	25	D6
m&p-Xylene	ug/m3	24.6	22.3	10	25	
Methyl-tert-butyl ether	ug/m3	ND	ND	0	25	
Methylene Chloride	ug/m3	14.4	12.9	11	25	
n-Heptane	ug/m3	8.2	8.2	9	25	
n-Hexane	ug/m3	40.9	40.5	9	25	
Naphthalene	ug/m3	ND	ND	0	25	
o-Xylene	ug/m3	9.5	8.2	14	25	
Propylene	ug/m3	ND	ND	0	25	
Styrene	ug/m3	ND	ND	0	25	
Tetrachloroethene	ug/m3	ND	1.3J	22	25	
Tetrahydrofuran	ug/m3	ND	ND	0	25	
Toluene	ug/m3	42.3	41.0	3	25	
trans-1,2-Dichloroethene	ug/m3	ND	ND	0	25	

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QUALITY CONTROL DATA

Project: 08-006 Hector LSI
Pace Project No.: 1078473

SAMPLE DUPLICATE: 514035

Parameter	Units	1078366003 Result	Dup Result	RPD	Max RPD	Qualifiers
trans-1,3-Dichloropropene	ug/m3	ND	ND	0	25	
Trichloroethene	ug/m3	ND	ND	0	25	
Trichlorofluoromethane	ug/m3	ND	1.2J	16	25	
Vinyl acetate	ug/m3	ND	ND	0	25	
Vinyl chloride	ug/m3	ND	ND	0	25	

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QUALIFIERS

Project: 08-006 Hector LSI
Pace Project No.: 1078473

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

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

SAMPLE QUALIFIERS

Sample: 1078473001

[1] The Total Hydrocarbon (THC) pattern occured in the second half of the chromatogram (after toluene).

Sample: 1078473002

[1] The Total Hydrocarbon (THC) pattern occured in the second half of the chromatogram (after toluene).

ANALYTE QUALIFIERS

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

D6 The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 08-006 Hector LSI
Pace Project No.: 1078473

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
1078473001	VB-1 4'	TO-15	AIR/7294		
1078473002	VB-2 4'	TO-15	AIR/7294		

1078473

Glacial Lakes ENVIRONMENTAL CONSULTING, INC.

Quote 20552

Sample Chain of Custody Record

Shipment/Delivery Method

UPS	X	Ground	X
Federal Express		2nd Day Air	
Hand Delivered		Next Day Air	
Courier		Priority Next Day Air	

Project Name: Hector LSI

Project Number: 08-006

Sampler's Signature: Terry Sieck

Item No.,	Sample ID (day/mo./year/time)	Area#	SB#	MW#	Sample Description	# Containers	Scheduled Analyses: TO-15	Sample Type: Soil	Sample Type: H_2O	Sample Type: Air	Container Type: 40 ml	Container Type: 500 ml	Container Type: 1000 ml	Container Type: Summa Can	Composite Item #'s
1	070808 1515				VB-1 4'	1	X			X				X	1078473001
2	070808 1530				VB-2 4'	1	X			X				X	002
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															
15															
16															

Packed/Relinquished by: Terry Sieck	(day/mo./year/time) 070808 1715	Circled #s indicate which items are included in this shipment: (1) 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	Received by: [signature]	Date 8-8-08	Time 09:47
Relinquished by:	(day/mo./year/time)	Circled #s indicate which items are included in this shipment: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	Received by:	Date	Time

Send lab results to: Terry Sieck

Glacial Lakes Environmental Consulting, Inc.
P.O. Box 1082 • Willmar, MN 56201 • 320-235-8370
Email to: ☒ tsieck@gl-ec.com *or* ☐ tterhaar@gl-ec.com

Sample Receiving Notes:
Temp. inside shipping container _____
Chain of Custody seals intact _____

Page 1 of 1

GLEC Chain of Custody
№ 10054

520

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January 17, 2008

Terry Sieck
Glacial Lakes Environmental Consulting
PO Box 1082
1317 SW 7th Street
Willmar, MN 56201

RE: Project: 07-021 HECTOR - SCG&E
Pace Project No.: 1066354

Dear Terry Sieck:
Enclosed are the analytical results for sample(s) received by the laboratory on January 14, 2008. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

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

Sincerely,

Paul Kirchberg

paul.kirchberg@pacelabs.com
Project Manager

Florida (Nelap) Certification #: E87605
Illinois Certification #: 200011
Iowa Certification #: 368
Minnesota Certification #: 027-053-137
Wisconsin Certification #: 999407970

Enclosures

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SAMPLE SUMMARY

Project: 07-021 HECTOR - SCG&E
Pace Project No.: 1066354

Lab ID	Sample ID	Matrix	Date Collected	Date Received
1066354001	TANK #1 1.5'	Solid	01/09/08 11:00	01/14/08 09:35
1066354002	TANK #2 1.5'	Solid	01/09/08 11:15	01/14/08 09:35
1066354003	TANK #3 1.5'	Solid	01/09/08 11:30	01/14/08 09:35
1066354004	TANK #4 1.5'	Solid	01/09/08 11:45	01/14/08 09:35
1066354005	LOAD-OUT 1.5'	Solid	01/09/08 12:00	01/14/08 09:35

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SAMPLE ANALYTE COUNT

Project: 07-021 HECTOR - SCG&E
Pace Project No.: 1066354

Lab ID	Sample ID	Method	Analysts	Analytes Reported
1066354001	TANK #1 1.5'	% Moisture	YT1	1
		TPH DRO Wisconsin	JLJ	2
		TPH WI GRO/PVOC 8021	RTP	5
1066354002	TANK #2 1.5'	% Moisture	YT1	1
		TPH WI GRO/PVOC 8021	RTP	7
1066354003	TANK #3 1.5'	% Moisture	YT1	1
		TPH DRO Wisconsin	JLJ	2
		TPH WI GRO/PVOC 8021	RTP	5
1066354004	TANK #4 1.5'	% Moisture	YT1	1
		EPA 8260	MJH	71
		TPH WI GRO/PVOC 8021	RTP	2
1066354005	LOAD-OUT 1.5'	% Moisture	YT1	1
		TPH DRO Wisconsin	JLJ	2
		TPH WI GRO/PVOC 8021	RTP	7

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ANALYTICAL RESULTS

Project: 07-021 HECTOR - SCG&E
Pace Project No.: 1066354

Sample: TANK #2 1.5' **Lab ID: 1066354002** Collected: 01/09/08 11:15 Received: 01/14/08 09:35 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
WIGRO GCV	Analytical Method: TPH WI GRO/PVOC 8021 Preparation Method: TPH GRO/PVOC WI ext.							
Benzene	ND	mg/kg	0.062	1	01/15/08 00:00	01/16/08 10:27	71-43-2	
Ethylbenzene	ND	mg/kg	0.062	1	01/15/08 00:00	01/16/08 10:27	100-41-4	
Gasoline Range Organics	**7.2**	mg/kg	6.2	1	01/15/08 00:00	01/16/08 10:27		T6
Methyl-tert-butyl ether	ND	mg/kg	0.25	1	01/15/08 00:00	01/16/08 10:27	1634-04-4	
Toluene	ND	mg/kg	0.062	1	01/15/08 00:00	01/16/08 10:27	108-88-3	
Xylene (Total)	ND	mg/kg	0.19	1	01/15/08 00:00	01/16/08 10:27	1330-20-7	
a,a,a-Trifluorotoluene (S)	97	%	80-150	1	01/15/08 00:00	01/16/08 10:27	98-08-8	
Dry Weight	Analytical Method: % Moisture							
Percent Moisture	**19.3**	%	0.10	1		01/15/08 00:00		

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ANALYTICAL RESULTS

Project: 07-021 HECTOR - SCG&E
Pace Project No.: 1066354

Sample: TANK #3 1.5' **Lab ID: 1066354003** Collected: 01/09/08 11:30 Received: 01/14/08 09:35 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: TPH DRO Wisconsin Preparation Method: TPH DRO Wisconsin							
Diesel Range Organics	**773**	mg/kg	59.0	5	01/14/08 11:13	01/16/08 11:06		
n-Triacontane (S)	83	%	50-150	5	01/14/08 11:13	01/16/08 11:06		
WIGRO GCV	Analytical Method: TPH WI GRO/PVOC 8021 Preparation Method: TPH GRO/PVOC WI ext.							
Benzene	ND	mg/kg	0.062	1	01/15/08 00:00	01/16/08 05:04	71-43-2	
Ethylbenzene	**0.15**	mg/kg	0.062	1	01/15/08 00:00	01/16/08 05:04	100-41-4	
Toluene	ND	mg/kg	0.062	1	01/15/08 00:00	01/16/08 05:04	108-88-3	
Xylene (Total)	**0.69**	mg/kg	0.18	1	01/15/08 00:00	01/16/08 05:04	1330-20-7	
a,a,a-Trifluorotoluene (S)	101	%	80-150	1	01/15/08 00:00	01/16/08 05:04	98-08-8	
Dry Weight	Analytical Method: % Moisture							
Percent Moisture	**18.8**	%	0.10	1		01/15/08 00:00		

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ANALYTICAL RESULTS

Project: 07-021 HECTOR - SCG&E
Pace Project No.: 1066354

Sample: TANK #1 1.5' **Lab ID: 1066354001** Collected: 01/09/08 11:00 Received: 01/14/08 09:35 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: TPH DRO Wisconsin Preparation Method: TPH DRO Wisconsin							
Diesel Range Organics	**3800**	mg/kg	238	20	01/14/08 11:13	01/16/08 11:42		
n-Triacontane (S)	0	%	50-150	20	01/14/08 11:13	01/16/08 11:42		S4
WIGRO GCV	Analytical Method: TPH WI GRO/PVOC 8021 Preparation Method: TPH GRO/PVOC WI ext.							
Benzene	ND	mg/kg	0.062	1	01/15/08 00:00	01/16/08 04:37	71-43-2	
Ethylbenzene	**0.46**	mg/kg	0.062	1	01/15/08 00:00	01/16/08 04:37	100-41-4	
Toluene	ND	mg/kg	0.062	1	01/15/08 00:00	01/16/08 04:37	108-88-3	
Xylene (Total)	**1.6**	mg/kg	0.19	1	01/15/08 00:00	01/16/08 04:37	1330-20-7	
a,a,a-Trifluorotoluene (S)	94	%	80-150	1	01/15/08 00:00	01/16/08 04:37	98-08-8	
Dry Weight	Analytical Method: % Moisture							
Percent Moisture	**19.2**	%	0.10	1		01/15/08 00:00		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 07-021 HECTOR - SCG&E
Pace Project No.: 1066354

Sample: TANK #4 1.5' **Lab ID: 1066354004** Collected: 01/09/08 11:45 Received: 01/14/08 09:35 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
WIGRO GCV	Analytical Method: TPH WI GRO/PVOC 8021 Preparation Method: TPH GRO/PVOC WI ext.							
Gasoline Range Organics	ND	mg/kg	6.3	1	01/15/08 00:00	01/16/08 00:35		
a,a,a-Trifluorotoluene (S)	98	%	80-150	1	01/15/08 00:00	01/16/08 00:35	98-08-8	
Dry Weight	Analytical Method: % Moisture							
Percent Moisture	**20.8**	%	0.10	1		01/15/08 00:00		
8260 MSV MDH VOC	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B							
Acetone	ND	ug/kg	1560	1	01/14/08 00:00	01/14/08 20:57	67-64-1	
Allyl chloride	ND	ug/kg	3250	1	01/14/08 00:00	01/14/08 20:57	107-05-1	
Benzene	ND	ug/kg	64.9	1	01/14/08 00:00	01/14/08 20:57	71-43-2	
Bromobenzene	ND	ug/kg	325	1	01/14/08 00:00	01/14/08 20:57	108-86-1	
Bromochloromethane	ND	ug/kg	325	1	01/14/08 00:00	01/14/08 20:57	74-97-5	
Bromodichloromethane	ND	ug/kg	325	1	01/14/08 00:00	01/14/08 20:57	75-27-4	
Bromoform	ND	ug/kg	325	1	01/14/08 00:00	01/14/08 20:57	75-25-2	
Bromomethane	ND	ug/kg	649	1	01/14/08 00:00	01/14/08 20:57	74-83-9	
2-Butanone (MEK)	ND	ug/kg	1560	1	01/14/08 00:00	01/14/08 20:57	78-93-3	
n-Butylbenzene	ND	ug/kg	325	1	01/14/08 00:00	01/14/08 20:57	104-51-8	
sec-Butylbenzene	ND	ug/kg	325	1	01/14/08 00:00	01/14/08 20:57	135-98-8	
tert-Butylbenzene	ND	ug/kg	325	1	01/14/08 00:00	01/14/08 20:57	98-06-6	
Carbon tetrachloride	ND	ug/kg	325	1	01/14/08 00:00	01/14/08 20:57	56-23-5	
Chlorobenzene	ND	ug/kg	325	1	01/14/08 00:00	01/14/08 20:57	108-90-7	
Chloroethane	ND	ug/kg	649	1	01/14/08 00:00	01/14/08 20:57	75-00-3	
Chloroform	ND	ug/kg	325	1	01/14/08 00:00	01/14/08 20:57	67-66-3	
Chloromethane	ND	ug/kg	649	1	01/14/08 00:00	01/14/08 20:57	74-87-3	
2-Chlorotoluene	ND	ug/kg	325	1	01/14/08 00:00	01/14/08 20:57	95-49-8	
4-Chlorotoluene	ND	ug/kg	325	1	01/14/08 00:00	01/14/08 20:57	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/kg	649	1	01/14/08 00:00	01/14/08 20:57	96-12-8	
Dibromochloromethane	ND	ug/kg	325	1	01/14/08 00:00	01/14/08 20:57	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/kg	325	1	01/14/08 00:00	01/14/08 20:57	106-93-4	
Dibromomethane	ND	ug/kg	325	1	01/14/08 00:00	01/14/08 20:57	74-95-3	
1,2-Dichlorobenzene	ND	ug/kg	325	1	01/14/08 00:00	01/14/08 20:57	95-50-1	
1,3-Dichlorobenzene	ND	ug/kg	325	1	01/14/08 00:00	01/14/08 20:57	541-73-1	
1,4-Dichlorobenzene	ND	ug/kg	325	1	01/14/08 00:00	01/14/08 20:57	106-46-7	
Dichlorodifluoromethane	ND	ug/kg	649	1	01/14/08 00:00	01/14/08 20:57	75-71-8	
1,1-Dichloroethane	ND	ug/kg	325	1	01/14/08 00:00	01/14/08 20:57	75-34-3	
1,2-Dichloroethane	ND	ug/kg	325	1	01/14/08 00:00	01/14/08 20:57	107-06-2	
1,1-Dichloroethene	ND	ug/kg	325	1	01/14/08 00:00	01/14/08 20:57	75-35-4	
cis-1,2-Dichloroethene	ND	ug/kg	325	1	01/14/08 00:00	01/14/08 20:57	156-59-2	
trans-1,2-Dichloroethene	ND	ug/kg	325	1	01/14/08 00:00	01/14/08 20:57	156-60-5	
Dichlorofluoromethane	ND	ug/kg	325	1	01/14/08 00:00	01/14/08 20:57	75-43-4	
1,2-Dichloropropane	ND	ug/kg	325	1	01/14/08 00:00	01/14/08 20:57	78-87-5	
1,3-Dichloropropane	ND	ug/kg	325	1	01/14/08 00:00	01/14/08 20:57	142-28-9	
2,2-Dichloropropane	ND	ug/kg	325	1	01/14/08 00:00	01/14/08 20:57	594-20-7	
1,1-Dichloropropene	ND	ug/kg	325	1	01/14/08 00:00	01/14/08 20:57	563-58-6	
cis-1,3-Dichloropropene	ND	ug/kg	325	1	01/14/08 00:00	01/14/08 20:57	10061-01-5	

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ANALYTICAL RESULTS

Project: 07-021 HECTOR - SCG&E
Pace Project No.: 1066354

Sample: TANK #4 1.5' **Lab ID: 1066354004** Collected: 01/09/08 11:45 Received: 01/14/08 09:35 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV MDH VOC	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B							
trans-1,3-Dichloropropene	ND	ug/kg	325	1	01/14/08 00:00	01/14/08 20:57	10061-02-6	
Diethyl ether (Ethyl ether)	ND	ug/kg	3250	1	01/14/08 00:00	01/14/08 20:57	60-29-7	
Ethylbenzene	ND	ug/kg	64.9	1	01/14/08 00:00	01/14/08 20:57	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/kg	325	1	01/14/08 00:00	01/14/08 20:57	87-68-3	
Isopropylbenzene (Cumene)	ND	ug/kg	325	1	01/14/08 00:00	01/14/08 20:57	98-82-8	
p-Isopropyltoluene	ND	ug/kg	325	1	01/14/08 00:00	01/14/08 20:57	99-87-6	
Methylene Chloride	ND	ug/kg	325	1	01/14/08 00:00	01/14/08 20:57	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	1560	1	01/14/08 00:00	01/14/08 20:57	108-10-1	
Methyl-tert-butyl ether	ND	ug/kg	325	1	01/14/08 00:00	01/14/08 20:57	1634-04-4	
Naphthalene	ND	ug/kg	325	1	01/14/08 00:00	01/14/08 20:57	91-20-3	
n-Propylbenzene	ND	ug/kg	325	1	01/14/08 00:00	01/14/08 20:57	103-65-1	
Styrene	ND	ug/kg	325	1	01/14/08 00:00	01/14/08 20:57	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/kg	325	1	01/14/08 00:00	01/14/08 20:57	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/kg	325	1	01/14/08 00:00	01/14/08 20:57	79-34-5	
Tetrachloroethene	ND	ug/kg	325	1	01/14/08 00:00	01/14/08 20:57	127-18-4	
Tetrahydrofuran	ND	ug/kg	3250	1	01/14/08 00:00	01/14/08 20:57	109-99-9	
Toluene	ND	ug/kg	64.9	1	01/14/08 00:00	01/14/08 20:57	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/kg	325	1	01/14/08 00:00	01/14/08 20:57	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/kg	325	1	01/14/08 00:00	01/14/08 20:57	120-82-1	
1,1,1-Trichloroethane	ND	ug/kg	325	1	01/14/08 00:00	01/14/08 20:57	71-55-6	
1,1,2-Trichloroethane	ND	ug/kg	325	1	01/14/08 00:00	01/14/08 20:57	79-00-5	
Trichloroethene	ND	ug/kg	325	1	01/14/08 00:00	01/14/08 20:57	79-01-6	
Trichlorofluoromethane	ND	ug/kg	649	1	01/14/08 00:00	01/14/08 20:57	75-69-4	
1,2,3-Trichloropropane	ND	ug/kg	325	1	01/14/08 00:00	01/14/08 20:57	96-18-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/kg	325	1	01/14/08 00:00	01/14/08 20:57	76-13-1	
1,2,4-Trimethylbenzene	ND	ug/kg	325	1	01/14/08 00:00	01/14/08 20:57	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/kg	325	1	01/14/08 00:00	01/14/08 20:57	108-67-8	
Vinyl chloride	ND	ug/kg	649	1	01/14/08 00:00	01/14/08 20:57	75-01-4	
Xylene (Total)	ND	ug/kg	974	1	01/14/08 00:00	01/14/08 20:57	1330-20-7	
Dibromofluoromethane (S)	114	%	50-150	1	01/14/08 00:00	01/14/08 20:57	1868-53-7	
Toluene-d8 (S)	106	%	50-150	1	01/14/08 00:00	01/14/08 20:57	2037-26-5	
4-Bromofluorobenzene (S)	97	%	50-150	1	01/14/08 00:00	01/14/08 20:57	460-00-4	
1,2-Dichloroethane-d4 (S)	112	%	50-150	1	01/14/08 00:00	01/14/08 20:57	17060-07-0	

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ANALYTICAL RESULTS

Project: 07-021 HECTOR - SCG&E
Pace Project No.: 1066354

Sample: LOAD-OUT 1.5' **Lab ID: 1066354005** Collected: 01/09/08 12:00 Received: 01/14/08 09:35 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: TPH DRO Wisconsin Preparation Method: TPH DRO Wisconsin							
Diesel Range Organics	ND	mg/kg	11.5	1	01/14/08 11:13	01/15/08 16:04		
n-Triacontane (S)	65	%	50-150	1	01/14/08 11:13	01/15/08 16:04		
WIGRO GCV	Analytical Method: TPH WI GRO/PVOC 8021 Preparation Method: TPH GRO/PVOC WI ext.							
Benzene	ND	mg/kg	0.060	1	01/15/08 00:00	01/16/08 01:02	71-43-2	
Ethylbenzene	ND	mg/kg	0.060	1	01/15/08 00:00	01/16/08 01:02	100-41-4	
Gasoline Range Organics	ND	mg/kg	6.0	1	01/15/08 00:00	01/16/08 01:02		
Methyl-tert-butyl ether	ND	mg/kg	0.24	1	01/15/08 00:00	01/16/08 01:02	1634-04-4	
Toluene	ND	mg/kg	0.060	1	01/15/08 00:00	01/16/08 01:02	108-88-3	
Xylene (Total)	ND	mg/kg	0.18	1	01/15/08 00:00	01/16/08 01:02	1330-20-7	
a,a,a-Trifluorotoluene (S)	99	%	80-150	1	01/15/08 00:00	01/16/08 01:02	98-08-8	
Dry Weight	Analytical Method: % Moisture							
Percent Moisture	**16.9**	%	0.10	1		01/15/08 00:00		

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QUALITY CONTROL DATA

Project: 07-021 HECTOR - SCG&E
Pace Project No.: 1066354

QC Batch: MSV/9419
QC Batch Method: EPA 5035/5030B
Analysis Method: EPA 8260
Analysis Description: 8260 MSV 466 List
Associated Lab Samples: 1066354004

METHOD BLANK: 433925
Associated Lab Samples: 1066354004

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	ND	250	
1,1,1-Trichloroethane	ug/kg	ND	250	
1,1,2,2-Tetrachloroethane	ug/kg	ND	250	
1,1,2-Trichloroethane	ug/kg	ND	250	
1,1,2-Trichlorotrifluoroethane	ug/kg	ND	250	
1,1-Dichloroethane	ug/kg	ND	250	
1,1-Dichloroethene	ug/kg	ND	250	
1,1-Dichloropropene	ug/kg	ND	250	
1,2,3-Trichlorobenzene	ug/kg	ND	250	
1,2,3-Trichloropropane	ug/kg	ND	250	
1,2,4-Trichlorobenzene	ug/kg	ND	250	
1,2,4-Trimethylbenzene	ug/kg	ND	250	
1,2-Dibromo-3-chloropropane	ug/kg	ND	500	
1,2-Dibromoethane (EDB)	ug/kg	ND	250	
1,2-Dichlorobenzene	ug/kg	ND	250	
1,2-Dichloroethane	ug/kg	ND	250	
1,2-Dichloropropane	ug/kg	ND	250	
1,3,5-Trimethylbenzene	ug/kg	ND	250	
1,3-Dichlorobenzene	ug/kg	ND	250	
1,3-Dichloropropane	ug/kg	ND	250	
1,4-Dichlorobenzene	ug/kg	ND	250	
2,2-Dichloropropane	ug/kg	ND	250	
2-Butanone (MEK)	ug/kg	ND	1200	
2-Chlorotoluene	ug/kg	ND	250	
4-Chlorotoluene	ug/kg	ND	250	
4-Methyl-2-pentanone (MIBK)	ug/kg	ND	1200	
Acetone	ug/kg	ND	1200	
Allyl chloride	ug/kg	ND	2500	
Benzene	ug/kg	ND	50.0	
Bromobenzene	ug/kg	ND	250	
Bromochloromethane	ug/kg	ND	250	
Bromodichloromethane	ug/kg	ND	250	
Bromoform	ug/kg	ND	250	
Bromomethane	ug/kg	ND	500	
Carbon tetrachloride	ug/kg	ND	250	
Chlorobenzene	ug/kg	ND	250	
Chloroethane	ug/kg	ND	500	
Chloroform	ug/kg	ND	250	
Chloromethane	ug/kg	ND	500	
cis-1,2-Dichloroethene	ug/kg	ND	250	
cis-1,3-Dichloropropene	ug/kg	ND	250	
Dibromochloromethane	ug/kg	ND	250	
Dibromomethane	ug/kg	ND	250	

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QUALITY CONTROL DATA

Project: 07-021 HECTOR - SCG&E
Pace Project No.: 1066354

METHOD BLANK: 433925

Associated Lab Samples: 1066354004

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Dichlorodifluoromethane	ug/kg	ND	500	
Dichlorofluoromethane	ug/kg	ND	250	
Diethyl ether (Ethyl ether)	ug/kg	ND	2500	
Ethylbenzene	ug/kg	ND	50.0	
Hexachloro-1,3-butadiene	ug/kg	ND	250	
Isopropylbenzene (Cumene)	ug/kg	ND	250	
Methyl-tert-butyl ether	ug/kg	ND	250	
Methylene Chloride	ug/kg	ND	250	
n-Butylbenzene	ug/kg	ND	250	
n-Propylbenzene	ug/kg	ND	250	
Naphthalene	ug/kg	ND	250	
p-Isopropyltoluene	ug/kg	ND	250	
sec-Butylbenzene	ug/kg	ND	250	
Styrene	ug/kg	ND	250	
tert-Butylbenzene	ug/kg	ND	250	
Tetrachloroethene	ug/kg	ND	250	
Tetrahydrofuran	ug/kg	ND	2500	
Toluene	ug/kg	ND	50.0	
trans-1,2-Dichloroethene	ug/kg	ND	250	
trans-1,3-Dichloropropene	ug/kg	ND	250	
Trichloroethene	ug/kg	ND	250	
Trichlorofluoromethane	ug/kg	ND	500	
Vinyl chloride	ug/kg	ND	500	
Xylene (Total)	ug/kg	ND	750	
1,2-Dichloroethane-d4 (S)	%	103	50-150	
4-Bromofluorobenzene (S)	%	89	50-150	
Dibromofluoromethane (S)	%	102	50-150	
Toluene-d8 (S)	%	98	50-150	

LABORATORY CONTROL SAMPLE & LCSD: 433926 433927

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	1000	1110	1170	111	117	60-125	5	20	
1,1,1-Trichloroethane	ug/kg	1000	1230	1260	123	126	71-125	2	20	L3
1,1,2,2-Tetrachloroethane	ug/kg	1000	1020	1150	102	115	71-125	12	20	
1,1,2-Trichloroethane	ug/kg	1000	1110	1160	111	116	74-125	4	20	
1,1,2-Trichlorotrifluoroethane	ug/kg	1000	1380	1080	138	108	64-133	24	20	L0,R1
1,1-Dichloroethane	ug/kg	1000	1210	1210	121	121	70-125	4	20	
1,1-Dichloroethene	ug/kg	1000	1220	1150	122	115	56-125	6	20	
1,1-Dichloropropene	ug/kg	1000	1180	1160	118	116	71-132	2	20	
1,2,3-Trichlorobenzene	ug/kg	1000	1060	1230	106	123	64-125	15	20	
1,2,3-Trichloropropane	ug/kg	1000	978	1090	98	109	50-150	11	20	
1,2,4-Trichlorobenzene	ug/kg	1000	1080	1160	108	116	64-125	7	20	
1,2,4-Trimethylbenzene	ug/kg	1000	1110	1110	111	111	75-125	2	20	
1,2-Dibromo-3-chloropropane	ug/kg	1000	913	1160	91	116	50-146	24	20	R1

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QUALITY CONTROL DATA

Project: 07-021 HECTOR - SCG&E
Pace Project No.: 1066354

LABORATORY CONTROL SAMPLE & LCSD: 433926 433927

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,2-Dibromoethane (EDB)	ug/kg	1000	1100	1170	110	117	72-125	6	20	
1,2-Dichlorobenzene	ug/kg	1000	1050	1070	105	107	71-125	2	20	
1,2-Dichloroethane	ug/kg	1000	1140	1160	114	116	71-125	2	20	
1,2-Dichloropropane	ug/kg	1000	1200	1220	120	122	74-125	.9	20	
1,3,5-Trimethylbenzene	ug/kg	1000	1110	1100	111	110	75-125	1	20	
1,3-Dichlorobenzene	ug/kg	1000	1060	1080	106	108	75-125	2	20	
1,3-Dichloropropane	ug/kg	1000	1070	1120	107	112	71-125	4	20	
1,4-Dichlorobenzene	ug/kg	1000	1070	1080	107	108	69-125	1	20	
2,2-Dichloropropane	ug/kg	1000	1090	1370	109	137	50-148	23	20	R1
2-Butanone (MEK)	ug/kg	1000	909J	1450	91	145	50-150	46	20	R1
2-Chlorotoluene	ug/kg	1000	1100	1100	110	110	74-125	.03	20	
4-Chlorotoluene	ug/kg	1000	1090	1110	109	111	75-125	1	20	
4-Methyl-2-pentanone (MIBK)	ug/kg	1000	1060J	1350	106	135	53-133	24	20	L3,R1
Acetone	ug/kg	2500	1690	4040	68	162	50-143	82	20	L3,R1
Allyl chloride	ug/kg	1000	ND	1350J	100	135	70-125	30	20	L3,R1
Benzene	ug/kg	1000	1190	1150	119	115	73-125	3	20	
Bromobenzene	ug/kg	1000	1070	1080	107	108	75-125	1	20	
Bromochloromethane	ug/kg	1000	1200	1250	120	125	75-127	4	20	
Bromodichloromethane	ug/kg	1000	1200	1230	120	123	67-125	2	20	
Bromoform	ug/kg	2000	2020	2260	101	113	50-126	11	20	
Bromomethane	ug/kg	1000	1160	1090	116	109	50-150	6	20	
Carbon tetrachloride	ug/kg	1000	1190	1160	119	116	64-127	2	20	
Chlorobenzene	ug/kg	1000	1120	1100	112	110	75-125	2	20	
Chloroethane	ug/kg	1000	1010	1040	101	104	50-125	3	20	
Chloroform	ug/kg	1000	1200	1170	120	117	75-125	2	20	
Chloromethane	ug/kg	1000	1070	1090	107	109	55-131	2	20	
cis-1,2-Dichloroethene	ug/kg	1000	1210	1210	121	121	75-125	.5	20	
cis-1,3-Dichloropropene	ug/kg	1000	1230	1310	123	131	68-125	6	20	L3
Dibromochloromethane	ug/kg	1000	1140	1230	114	123	67-125	8	20	
Dibromomethane	ug/kg	1000	1140	1160	114	116	75-125	1	20	
Dichlorodifluoromethane	ug/kg	1000	1030	864	103	86	50-144	18	20	
Dichlorofluoromethane	ug/kg	1000	1170	1150	117	115	50-125	2	20	
Diethyl ether (Ethyl ether)	ug/kg	1000	ND	ND	113	114	50-150	1	20	
Ethylbenzene	ug/kg	1000	1140	1120	114	112	75-125	1	20	
Hexachloro-1,3-butadiene	ug/kg	1000	1130	1140	113	114	75-131	.3	20	
Isopropylbenzene (Cumene)	ug/kg	1000	1150	1130	115	113	75-125	3	20	
Methyl-tert-butyl ether	ug/kg	1000	1070	1220	107	122	75-125	13	20	
Methylene Chloride	ug/kg	1000	1140	1300	114	130	68-125	14	20	L3
n-Butylbenzene	ug/kg	1000	1130	1140	113	114	74-125	.4	20	
n-Propylbenzene	ug/kg	1000	1100	1110	110	111	75-125	.7	20	
Naphthalene	ug/kg	1000	877	1140	88	114	69-125	26	20	R1
p-Isopropyltoluene	ug/kg	1000	1140	1100	114	110	75-125	4	20	
sec-Butylbenzene	ug/kg	1000	1140	1100	114	110	75-125	3	20	
Styrene	ug/kg	1000	1140	1130	114	113	75-132	.7	20	
tert-Butylbenzene	ug/kg	1000	1120	1070	112	107	73-134	4	20	
Tetrachloroethene	ug/kg	1000	1160	1090	116	109	66-125	7	20	
Tetrahydrofuran	ug/kg	10000	10700	13200	107	132	65-125	21	20	L3,R1
Toluene	ug/kg	1000	1140	1120	114	112	75-125	2	20	

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QUALITY CONTROL DATA

Project: 07-021 HECTOR - SCG&E
Pace Project No.: 1066354

LABORATORY CONTROL SAMPLE & LCSD: 433926 433927

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
trans-1,2-Dichloroethene	ug/kg	1000	1170	1240	117	124	63-129	6	20	
trans-1,3-Dichloropropene	ug/kg	1000	1000	1140	100	114	64-125	13	20	
Trichloroethene	ug/kg	1000	1160	1130	116	113	75-125	2	20	
Trichlorofluoromethane	ug/kg	1000	1130	1080	113	108	50-130	5	20	
Vinyl chloride	ug/kg	1000	1090	1070	109	107	63-125	2	20	
Xylene (Total)	ug/kg	3000	3410	3350	114	112	75-125	2	20	
1,2-Dichloroethane-d4 (S)	%				95	97	50-150			
4-Bromofluorobenzene (S)	%				91	91	50-150			
Dibromofluoromethane (S)	%				103	102	50-150			
Toluene-d8 (S)	%				95	93	50-150			

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QUALITY CONTROL DATA

Project: 07-021 HECTOR - SCG&E
Pace Project No.: 1066354

QC Batch: OEXT/7937 Analysis Method: TPH DRO Wisconsin
QC Batch Method: TPH DRO Wisconsin Analysis Description: WIDRO GCS
Associated Lab Samples: 1066354001, 1066354003, 1066354005

METHOD BLANK: 434093
Associated Lab Samples: 1066354001, 1066354003, 1066354005

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Diesel Range Organics	mg/kg	ND	5.0	
n-Triacontane (S)	%	64	50-150	

LABORATORY CONTROL SAMPLE & LCSD: 434094 434095

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Range Organics	mg/kg	80	68.4	69.4	85	87	70-120	1	20	
n-Triacontane (S)	%				72	72	50-150			

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QUALITY CONTROL DATA

Project: 07-021 HECTOR - SCG&E
Pace Project No.: 1066354

QC Batch: GCV/4762 Analysis Method: TPH WI GRO/PVOC 8021
QC Batch Method: TPH GRO/PVOC WI ext. Analysis Description: WIGRO Solid GCV
Associated Lab Samples: 1066354001, 1066354002, 1066354003, 1066354004, 1066354005

METHOD BLANK: 434107
Associated Lab Samples: 1066354001, 1066354002, 1066354003, 1066354004, 1066354005

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Benzene	mg/kg	ND	0.050	
Ethylbenzene	mg/kg	ND	0.050	
Gasoline Range Organics	mg/kg	ND	5.0	
Methyl-tert-butyl ether	mg/kg	ND	0.20	
Toluene	mg/kg	ND	0.050	
Xylene (Total)	mg/kg	ND	0.15	
a,a,a-Trifluorotoluene (S)	%	96	80-150	

LABORATORY CONTROL SAMPLE & LCSD: 434108 434109

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Benzene	mg/kg	5	5.3	5.3	105	107	80-120	1	20	
Ethylbenzene	mg/kg	5	5.0	5.0	100	100	80-120	.5	20	
Gasoline Range Organics	mg/kg	50	55.1	55.8	110	112	80-120	1	20	
Methyl-tert-butyl ether	mg/kg	5	4.8	4.9	96	98	80-120	1	20	
Toluene	mg/kg	5	5.2	5.2	103	103	80-120	.2	20	
Xylene (Total)	mg/kg	15	15.7	15.5	104	104	80-120	.8	20	
a,a,a-Trifluorotoluene (S)	%				97	98	80-150			

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QUALITY CONTROL DATA

Project: 07-021 HECTOR - SCG&E
Pace Project No.: 1066354

QC Batch: MPRP/11239 Analysis Method: % Moisture
QC Batch Method: % Moisture Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 1066354001, 1066354002, 1066354003, 1066354004, 1066354005

SAMPLE DUPLICATE: 434379

Parameter	Units	1066339001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	4.9	4.8	2	30	

SAMPLE DUPLICATE: 434380

Parameter	Units	1066354001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	19.2	19.5	1	30	

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QUALIFIERS

Project: 07-021 HECTOR - SCG&E
Pace Project No.: 1066354

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

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BATCH QUALIFIERS

Batch: MSV/9422

[1] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: GCV/4763

[1] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

L0	Analyte recovery in the laboratory control sample (LCS) was outside QC limits.
L3	Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.
R1	RPD value was outside control limits.
S4	Surrogate recovery not evaluated against control limits due to sample dilution.
T6	High boiling point hydrocarbons are present in the sample.

10003 51

Glacial Lakes
GLEC
ENVIRONMENTAL CONSULTING, INC.

Sample Chain of Custody Record

Shipment/Delivery Method

UPS ✓ Ground ✓
Federal Express ____ 2nd Day Air ____
Hand Delivered ____ Next Day Air ____
Courier ____ Priority Next Day Air ____

Project Name: Hector - SCG+E

Project Number: 07-021

Sampler's Signature: [signature]

Item No.,	Sample ID (day/mo./year/time)	Area#	SB#	MW#	Sample Description	# Containers	DRO/BETX	GRO/BETX/MTBE	VOCs	GRO	DRO		RCRA 8 Metals	PCBs (Hold)	Soil	H2O	Air	40 ml	500 ml	1000 ml	4oz	Vm Vile Encased	Moisture Tube	Composite Item #'s
1	090108 1100				Tank #1 1.5'	3	X								X						1	1	X	
2	090108 1115				" #2 1.5'	3		X							|						1	1	X	
3	090108 1130				" #3 1.5'	3	X								|						1	1	X	
4	090108 1145				" #4 1.5'	6			X	X			X	X	|						3	2	X	
5	090108 1200				Load-out 1.5'	3		X			X				|						1	1	X	
6																								
7																								
8																								
9					*																			
10					Run Tank #4 sample for																			
11					VOCs and GRO initially. If																			
12					any of the compounds are																			
13					detected, then analyze																			
14					for RCRA 8 metals and																			
15					PCBs.																			
16																								

Packed/Relinquished by:	(day/mo./year/time)	Circled #s indicate which items are included in this shipment	Received by:	Date	Time
[signature]	110108 1500	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	[signature] PACE	1/14/08	0935

Relinquished by:	(day/mo./year/time)	Circled #s indicate which items are included in this shipment	Received by:	Date	Time
		1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16			

Send lab results to: Terry Sieck

Glacial Lakes Environmental Consulting, Inc.
P.O. Box 1082 • Willmar, MN 56201 • 320-235-8370
Email to: ☒ tsieck@gl-ec.com *or* ☐ tterhaar@gl-ec.com

Sample Receiving Notes:
Temp. inside shipping container 3.4°C
Chain of Custody seals intact N/A

Page 1 of 1

GLEC Chain of Custody

№ 10046

520

Sample Condition Upon Receipt

Pace Analytical

Client Name: GLACIAL LAKES Project # 1066354

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

Tracking #: 125606140312656127

[redacted]

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

Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other _____

Thermometer Used 230194010, ~~72340129~~ Type of Ice: (Wet) Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature 3.4°C Biological Tissue is Frozen: Yes No

Date and initials of person examining contents: 1/14/08 TT

Temp should be above freezing to 6°C Comments:

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

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ **Date:** 1/14/08

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

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January 24, 2008

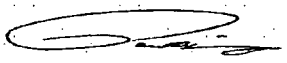
Terry Sieck
Glacial Lakes Environmental Consulting
PO Box 1082
1317 SW 7th Street
Willmar, MN 56201

RE: Project: 07-021 HECTOR-SCG+E
Pace Project No.: 1066608

Dear Terry Sieck:
Enclosed are the analytical results for sample(s) received by the laboratory on January 17, 2008. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

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

Sincerely,



Paul Kirchberg

paul.kirchberg@pacelabs.com
Project Manager

Florida (Nelap) Certification #: E87605
Illinois Certification #: 200011
Iowa Certification #: 368
Minnesota Certification #: 027-053-137
Wisconsin Certification #: 999407970

Enclosures

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 07-021 HECTOR-SCG+E
Pace Project No.: 1066608

Lab ID	Sample ID	Matrix	Date Collected	Date Received
1066608001	TANK #3-13'	Solid	01/09/08 11:40	01/17/08 09:35

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SAMPLE ANALYTE COUNT

Project: 07-021 HECTOR-SCG+E
Pace Project No.: 1066608

Lab ID	Sample ID	Method	Analysts	Analytes Reported
1066608001	**TANK #3-13'**	% Moisture	YT1	1
		TPH DRO Wisconsin	JLJ	2
		TPH WI GRO/PVOC 8021	RTP	7

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ANALYTICAL RESULTS

Project: 07-021 HECTOR-SCG+E
Pace Project No.: 1066608

Sample: TANK #3-13' **Lab ID: 1066608001** Collected: 01/09/08 11:40 Received: 01/17/08 09:35 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: TPH DRO Wisconsin Preparation Method: TPH DRO Wisconsin							
Diesel Range Organics	**15.7**	mg/kg	11.7	1	01/18/08 23:44	01/22/08 19:53		
n-Triacontane (S)	74	%	50-150	1	01/18/08 23:44	01/22/08 19:53		
WIGRO GCV	Analytical Method: TPH WI GRO/PVOC 8021 Preparation Method: TPH GRO/PVOC WI ext.							
Benzene	ND	mg/kg	0.060	1	01/22/08 00:00	01/23/08 03:12	71-43-2	
Ethylbenzene	ND	mg/kg	0.060	1	01/22/08 00:00	01/23/08 03:12	100-41-4	
Gasoline Range Organics	ND	mg/kg	6.0	1	01/22/08 00:00	01/23/08 03:12		
Methyl-tert-butyl ether	ND	mg/kg	0.24	1	01/22/08 00:00	01/23/08 03:12	1634-04-4	
Toluene	ND	mg/kg	0.060	1	01/22/08 00:00	01/23/08 03:12	108-88-3	
Xylene (Total)	ND	mg/kg	0.18	1	01/22/08 00:00	01/23/08 03:12	1330-20-7	
a,a,a-Trifluorotoluene (S)	105	%	80-150	1	01/22/08 00:00	01/23/08 03:12	98-08-8	
Dry Weight	Analytical Method: % Moisture							
Percent Moisture	**17.0**	%	0.10	1		01/18/08 00:00		

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QUALITY CONTROL DATA

Project: 07-021 HECTOR-SCG+E
Pace Project No.: 1066608

QC Batch: MPRP/11268
QC Batch Method: % Moisture
Analysis Method: % Moisture
Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 1066608001

SAMPLE DUPLICATE: 435873

Parameter	Units	1066626001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	23.7	20.4	15	30	

SAMPLE DUPLICATE: 435874

Parameter	Units	1066626012 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	14.3	14.6	2	30	

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QUALITY CONTROL DATA

Project: 07-021 HECTOR-SCG+E
Pace Project No.: 1066608

QC Batch: OEXT/7970
QC Batch Method: TPH DRO Wisconsin
Analysis Method: TPH DRO Wisconsin
Analysis Description: WIDRO GCS
Associated Lab Samples: 1066608001

METHOD BLANK: 435971
Associated Lab Samples: 1066608001

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Diesel Range Organics	mg/kg	ND	5.0	
n-Triacontane (S)	%	74	50-150	

LABORATORY CONTROL SAMPLE & LCSD: 435972 435973

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Range Organics	mg/kg	80	60.1	62.9	75	79	70-120	5	20	
n-Triacontane (S)	%				70	69	50-150			

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QUALITY CONTROL DATA

Project: 07-021 HECTOR-SCG+E
Pace Project No.: 1066608

QC Batch: GCV/4777
QC Batch Method: TPH GRO/PVOC WI ext.
Analysis Method: TPH WI GRO/PVOC 8021
Analysis Description: WIGRO Solid GCV
Associated Lab Samples: 1066608001

METHOD BLANK: 436081
Associated Lab Samples: 1066608001

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Benzene	mg/kg	ND	0.050	
Ethylbenzene	mg/kg	ND	0.050	
Gasoline Range Organics	mg/kg	ND	5.0	
Methyl-tert-butyl ether	mg/kg	ND	0.20	
Toluene	mg/kg	ND	0.050	
Xylene (Total)	mg/kg	ND	0.15	
a,a,a-Trifluorotoluene (S)	%	105	80-150	

LABORATORY CONTROL SAMPLE & LCSD: 436082 436083

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Benzene	mg/kg	5	5.6	5.4	112	109	80-120	3	20	
Ethylbenzene	mg/kg	5	5.3	5.2	105	104	80-120	.7	20	
Gasoline Range Organics	mg/kg	50	52.2	54.2	104	108	80-120	4	20	
Methyl-tert-butyl ether	mg/kg	5	5.4	5.2	107	104	80-120	3	20	
Toluene	mg/kg	5	5.4	5.3	108	107	80-120	1	20	
Xylene (Total)	mg/kg	15	16.5	16.3	110	109	80-120	.8	20	
a,a,a-Trifluorotoluene (S)	%				105	102	80-150			

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QUALIFIERS

Project: 07-021 HECTOR-SCG+E
Pace Project No.: 1066608

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

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WORKORDER QUALIFIERS

WO: 1066608

[1] Samples in this workorder were received in the laboratory without an associated trip blank.

BATCH QUALIFIERS

Batch: GCV/4778

[1] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Appendix C

Methodologies and Procedures

LSI METHODOLOGIES AND PROCEDURES

Soil Boring Procedures

The individual soil borings were completed using a direct-push Geoprobe® soil sampler. To collect soil samples, a continuous core sample barrel 48 inches in length was attached to a solid-shafted leading push rod. The sampler was advanced at 4.0-foot vertical intervals to collect a continuous soil sample 1.5 inches in diameter. The continuous sampler and push rods were advanced allowing soil to enter a plastic sleeve within the sample barrel as the sampler was driven. The sample barrel assembly was then retracted and the plastic sleeve containing the soil sample was removed. Sampling was conducted as such to the terminal depths of the borings.

Soils Classification

Soils encountered in the borings were visually and manually classified in the field by the crew chief in accordance with ASTM D 2487 "Standard Test Method for Classification of Soils for Engineering Purposes" and ASTM D 2488 "Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)." All samples were then returned to the laboratory for review of the field classifications by an environmental geologist.

Headspace Procedures

During the field investigation, soil samples were examined for visual or olfactory indications of contamination. In addition, the soil samples were screened for the presence and concentration of organic vapors with a photoionization detector (PID), using the bag-headspace procedure recommended by the Minnesota Pollution Control Agency (MPCA). The PID was equipped with a 10.6 eV lamp and calibrated to an isobutylene standard to provide direct readings of relative organic vapor concentrations in parts per million (ppm).

The bag-headspace analytical procedure was used to field-screen organic vapor levels in soils. The procedure consisted of half-filling a new polyethylene freezer bag. Upon sealing the bag, headspace development was allowed to proceed for at least 10 minutes. The bag was shaken vigorously for 15 seconds, both at the beginning and the end of the headspace development period. After headspace development, the PID probe was pierced through the side of the bag and inserted to a point of one-half the headspace depth. The highest reading observed on the PID was then recorded

Chemical Soil Sampling

Soil samples were collected from the depth interval exhibiting the highest PID reading and directly above the water table in each of the borings by an environmental geologist for chemical analysis. The samples were placed in laboratory-cleaned sample containers

with Teflon®-lined caps, labeled, and transported to GLEC's Willmar, Minnesota, office under refrigerated conditions using standard chain-of-custody procedures.

Ground Water Sampling Procedures (Temporary Wells)

Upon completion of soil sampling activities at ground water sampling locations, the stainless steel rods were retracted from the borehole. Then, a temporary well was constructed using 5-foot long, 1-inch diameter, polyvinyl chloride (PVC) riser and 5-foot long, 1-inch diameter, .01"-slot PVC screen. Ground water samples were then collected using new polyethylene tubing and a stainless steel check valve. New polyethylene tubing was used at each sample location.

Soil Gas Sampling Procedures

Soil gas samples were collected using Geoprobe® Systems post run tubing (PRT) system. As no structures were present at the site, the soil gas samples were collected from a depth of 5 feet. Soil gas samples were collected into laboratory-certified clean summa cans provided by Pace Analytical Services. Upon collection, the summa cans were shipped to Pace under standard chain-of-custody procedures.

Contamination Reduction

All downhole equipment was cleaned between sampling locations to minimize cross contamination. The cleaning procedure consisted of a soap (Alconox Detergent) and water wash, followed by an acetone rinse, followed by a deionized water rinse. The soap solution was changed between each discrete or composite boring location.

Chemical Analysis

Samples were shipped cooled to the analytical laboratory under standard chain of custody procedures. All analyses were performed using EPA or other recognized standard procedures. Data have been reviewed prior to release and all quality control guidelines have been met. Specific information on standard operating procedures, detection limits, and quality control measures is available upon request.

Appendix D

Geologic Logs of Soil Borings

FIELD BORING LOG (GP-1)

Date: 8/7/08
Project #: 08-006
Site: South Central Grain & Energy - Hector
Borehole ID: GP-1
Drilling Method/Sampler Type: Push-Probe
Driller: Thein Well
Logged By: TJS
Start Time/Date: 1350
Completion Time/Date: 1420
Backfilled Time/Date: 1630

Notes

Ground water measured 6.08' below ground surface in TMW

Water Observed
Boring Depth (ft) 18'
Time
Date

Sample I.D.		Blow Count (N Value)	USCS ASTM D-2487	OVM/ PID Result (ppm)	Feet **Depth** (below ground surface	Geological Description
GP-1			*CL*		0	*Lean clay, lt. brown*
				139	1	
			SC		2	*Clayey sand, brown*
				142	3	
					4	
			CLS	12	5	*Sandy lean clay, gray, water bearing*
					6	
				ND	7	
					8	
				ND	9	
					10	
				ND	11	
					12	
				ND	13	
					14	
				ND	15	
					16	
				ND	17	
					18	*End of boring at 18 feet below land surface.*
					19	
					20	
					21	
					22	
					23	
					24	

FIELD BORING LOG (GP-2)

Date: 8/7/08
Project #: 08-006
Site: South Central Grain & Energy - Hector
Borehole ID: GP-2
Drilling Method/Sampler Type: Push-Probe
Driller: Thein Well
Logged By: TJS
Start Time/Date: 0845
Completion Time/Date: 0930
Backfilled Time/Date: 1630

Notes

Ground water measured 5.54' below ground surface in TMW

Water Observed
Boring Depth (ft) 26'
Time
Date

Sample I.D.		Blow Count (N Value)	USCS ASTM D-2487	OVM/ PID Result (ppm)	Feet **Depth** (below ground surface	Geological Description
GP-2			*SM*		0	*Fill, sand and gravel, brown*
				ND	1	
					2	
			SC	ND	3	*Clayey sand, Brown*
					4	
				ND	5	
			CLS		6	*Sandy lean clay, gray, water bearing*
				ND	7	
					8	
				ND	9	
					10	
				ND	11	
					12	
				ND	13	
					14	
				ND	15	
					16	
				ND	17	
					18	
				ND	19	
					20	
				ND	21	
					22	
				ND	23	
					24	*End of boring at 26 feet below land surface.*

FIELD BORING LOG (GP-3)

Date: 8/7/08
Project #: 08-006
Site: South Central Grain & Energy - Hector
Borehole ID: GP-3
Drilling Method/Sampler Type: Push-Probe
Driller: Thein Well
Logged By: TJS
Start Time/Date: 1015
Completion Time/Date: 1100
Backfilled Time/Date: 1630

Notes

Ground water measured 5.01' below ground surface in TMW

Water Observed
Boring Depth (ft) 16'
Time
Date

Sample I.D.		Blow Count (N Value)	USCS ASTM D-2487	OVM/ PID Result (ppm)	Feet **Depth** (below ground surface	Geological Description
GP-3			*SM*		0	*Fill, sand and gravel, brown*
			SC	ND	1	*Clayey sand, Brown*
					2	
				ND	3	
					4	
			CLS	ND	5	*Sandy lean clay, gray, water bearing*
					6	
				ND	7	
					8	
				ND	9	
					10	
				ND	11	
					12	
				ND	13	
					14	
				ND	15	
					16	*End of boring at 16 feet below land surface.*
					17	
					18	
					19	
					20	
					21	
					22	
					23	
					24	

FIELD BORING LOG (GP-4)

Date: 8/7/08
Project #: 08-006
Site: South Central Grain & Energy - Hector
Borehole ID: GP-4
Drilling Method/Sampler Type: Push-Probe
Driller: Thein Well
Logged By: TJS
Start Time/Date: 1155
Completion Time/Date: 1230
Backfilled Time/Date: 1630

Notes

Ground water measured 5.88' below ground surface in TMW

Water Observed

Boring Depth (ft)	20'
Time	
Date	

Sample I.D.		Blow Count (N Value)	USCS ASTM D-2487	OVM/ PID Result (ppm)	Feet **Depth** (below ground surface	Geological Description
GP-4			*SM*		0	*Fill, sand and gravel, brown*
				ND	1	
			SC		2	*Clayey sand, Brown*
				ND	3	
					4	
				ND	5	
			CLS		6	*Sandy lean clay, gray, water bearing*
				ND	7	
					8	
				ND	9	
					10	
				ND	11	
					12	
				ND	13	
					14	
				ND	15	
					16	
				ND	17	
					18	
				ND	19	
					20	*End of boring at 20 feet below land surface.*
					21	
					22	
					23	
					24	

FIELD BORING LOG (GP-5)

Date: 8/7/08
Project #: 08-006
Site: South Central Grain & Energy - Hector
Borehole ID: GP-5
Drilling Method/Sampler Type: Push-Probe
Driller: Thein Well
Logged By: TJS
Start Time/Date: 1255
Completion Time/Date: 1330
Backfilled Time/Date: 1630

Notes

Ground water measured 5.93' below ground surface in TMW

Water Observed
Boring Depth (ft) 16'
Time
Date

Sample I.D.		Blow Count (N Value)	USCS ASTM D-2487	OVM/ PID Result (ppm)	Feet **Depth** (below ground surface	Geological Description
GP-5			*SM*		0	*Fill, sand and gravel, brown*
				ND	1	
					2	
			SC	ND	3	*Clayey sand, Brown*
					4	
				ND	5	
					6	
			CLS	ND	7	*Sandy lean clay, gray, water bearing*
					8	
				ND	9	
					10	
				ND	11	
					12	
				ND	13	
					14	
				ND	15	
					16	*End of boring at 16 feet below land surface.*
					17	
					18	
					19	
					20	
					21	
					22	
					23	
					24	

Appendix E

Copy of City of Hector Water Verification Letter

Glacial Lakes
GLEC ENVIRONMENTAL CONSULTING INC.

320-235-8370
P.O. Box 1082, Willmar, MN 56201

October 22, 2008

Jerome Schueller
City of Hector
PO Box 457
Hector, MN 55342

320-848-2480 Water Plant
320-583-3132 - cell

Dear Mr. Schueller:

Glacial Lakes Environmental Consulting, Inc. (GLEC) is currently conducting a petroleum release investigation at South Central Grain & Energy (212 Bryant Avenue NE) in Hector (site). At the request of the Minnesota Pollution Control Agency, we are conducting a water supply survey within a 500-foot radius of the site. The following address table lists all properties located within 500 feet of the site. We would appreciate it if you could check the appropriate column, indicating whether or not the identified address is supplied with municipal water services and return the completed tables to GLEC.

If you have any questions regarding this letter, please contact me at 320-905-6070.

Sincerely,

Terry Sieck
Project Manager

Glacial Lakes
GLEC
ENVIRONMENTAL CONSULTING INC.
320-235-8370
P.O. Box 1082, Willmar, MN 56201

ADDRESS TABLE

Address	Address *IS* supplied with municipal water services	Address *IS NOT* supplied with municipal water services
141 Bryant Ave NE	Yes	
121 Bryant Ave NE	Yes	
211 Bryant Ave NE	Yes	
212 Bryant Ave NE	Yes	
221 Bryant Ave NE	Yes	
231 Bryant Ave NE	Yes	
251 Bryant Ave NE	Yes	
100 3rd Street NE	Yes	
101 3rd Street NE	Yes	
120 3rd Street NE	Yes	
121 3rd Street NE	Yes	
140 3rd Street NE	Yes	
141 3rd Street NE	Yes	
120 Colfax Ave NE	Yes	
200 Colfax Ave NE	Yes	
220 Colfax Ave NE	Yes	
280 Colfax Ave NE	Yes	
151 Birch Ave E	Yes	
251 Birch Ave E	Yes	
Hector Street Dept	Yes	

Signature: Duane Schmidt

Date: 3 NOV 08

Appendix F

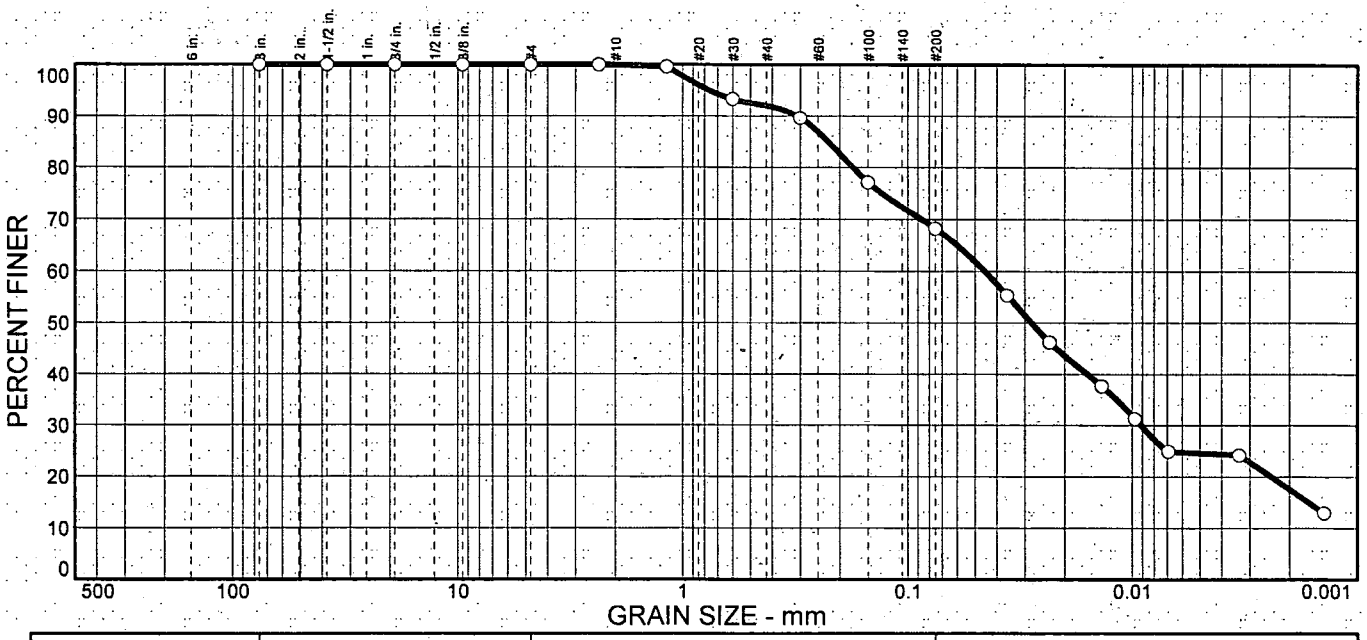
Grain Size Analysis and Hazen Method

Midwest Laboratories, Inc.®
13611 B Street • Omaha, Nebraska 68144-3693 • (402) 334-7770 • FAX (402) 334-9121 • www.midwestlabs.com

Particle Size Distribution Report

Project: 08-006 **Report No.:** 08-308-2019
Client: GLACIAL LAKES ENV CONSULTING

Sample No: 1498470 **Source of Sample:** **Date:** 10/22/2008
Location: 0708081420 GP-1 4'-6' **Elev./Depth:**



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.1	7.9	23.8	43.6	24.6

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3 in.	100.0		
1.5 in.	100.0		
.75 in.	100.0		
.375 in.	100.0		
#4	100.0		
#8	100.0		
#16	99.6		
#30	93.3		
#50	89.6		
#100	77.1		
#200	68.2		

* (no specification provided)

Soil Description

Atterberg Limits
PL= LL= PI=

Coefficients
D_{85}= 0.226 D_{60}= 0.0454 D_{50}= 0.0282
D_{30}= 0.0092 D_{15}= 0.0016 D_{10}=
C_u= C_c=

Classification
USCS= AASHTO=

Remarks

Figure

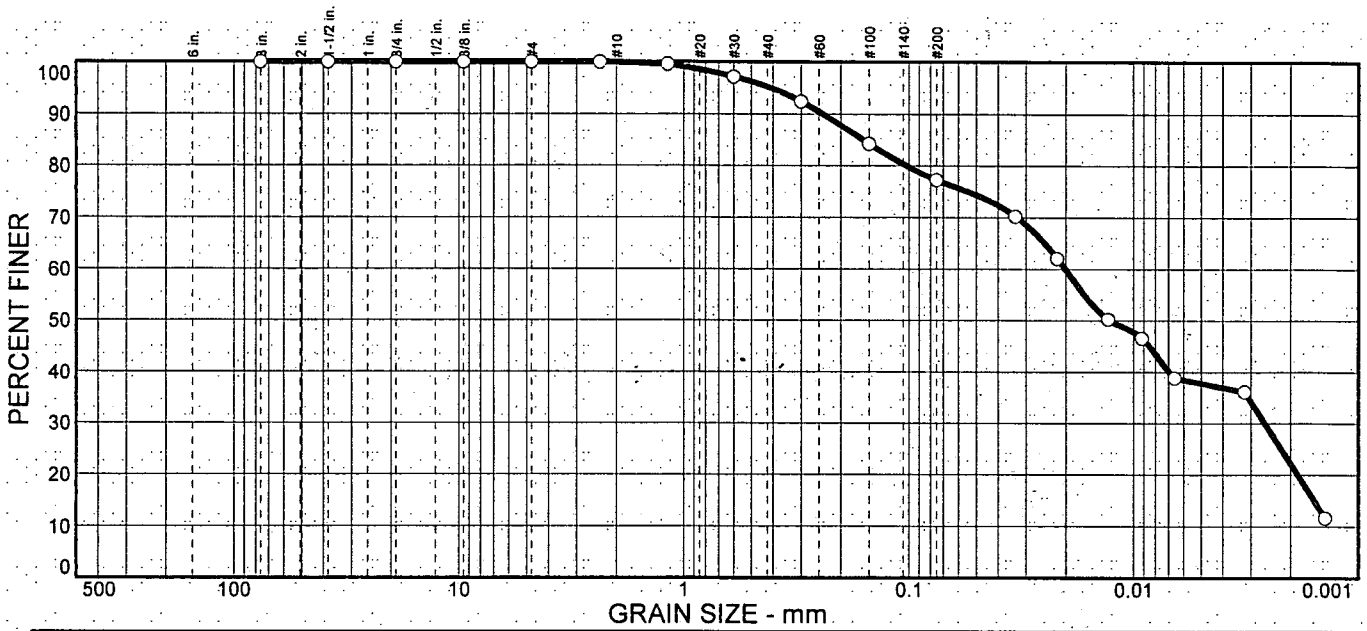
MJS 11-3-08

Midwest Laboratories, Inc.®
13611 B Street • Omaha, Nebraska 68144-3693 • (402) 334-7770 • FAX (402) 334-9121 • www.midwestlabs.com

Particle Size Distribution Report

Project: 08-006 **Report No.:** 08-308-2020
Client: GLACIAL LAKES ENV CONSULTING

Sample No: 1498471 **Source of Sample:** **Date:** 10/22/2008
Location: 0708081100 GP-3 4'-6' **Elev./Depth:**



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.1	4.7	18.0	39.4	37.8

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3 in.	100.0		
1.5 in.	100.0		
.75 in.	100.0		
.375 in.	100.0		
#4	100.0		
#8	100.0		
#16	99.6		
#30	97.2		
#50	92.4		
#100	84.2		
#200	77.2		

* (no specification provided)

Soil Description

Atterberg Limits
PL= LL= PI=

Coefficients
D_{85}= 0.160 D_{60}= 0.0202 D_{50}= 0.0128
D_{30}= 0.0026 D_{15}= 0.0016 D_{10}=
C_u= C_c=

Classification
USCS= AASHTO=

Remarks

Figure

MS 11-3-08

Hazen Method

K=Hydraulic Conductivity
$K=c(d_{10})^2$ where c is a constant such that $1<c<1.2$ and d_{10} is the soil particle size below which 10% of the cumulative sample has a smaller size.
For GP-2 and GP-3, d_{10} is actually less than 0.001. For calculating purposes, we will assume $d_{10} = 0.001$ and $c = 1.1$.

GP-2: $d_{10} =$ 0.001
GP-3: $d_{10} =$ 0.001

For GP-1 and GP-3, we have:

K= 1.1E-06 cm/sec or 0.003 ft/day

Transmissivity

T=Transmissivity
T=Kb where K is hydraulic conductivity and b is thickness of aquifer in feet. For purposes of our site, b= 100

For GP-1 and GP-3, we have:

T= 0.31 ft^2/day

For a site average of: 0.31 ft^2/day

Please note for both of the soil samples analyzed, d_{10} is actually less than 0.001. The actual d_{10} was not graphed due to the fine nature of the soils. Therefore, for calculating purposes we assumed $d_{10} = 0.001$ for the samples.

Appendix G

GD 1-03a Spatial Data Reporting Form

Send to ACS
12-16-08

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: **LEAK00017141**
Site Name: **South Central Grain & Energy**
Data Collection Date: **8/7/08**
Name of Person Who Collected Data: **Terry Sieck**
Organization Name: **Glacial Lakes Environmental Consulting, Inc.**
Organization Type: **Consultant**

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

Point Description: **Center of Plume**
Collection Method: **GPS**
Datum (circle/highlight): WGS84 **NAD83**
1) Longitude (dd mm ss.ss): **94° 42.808' W** Latitude (dd mm ss.ss): **44° 44.746' N**
2) Longitude (dd.dddddd): Latitude (dd.dddddd):
3) UTM - X (Easting): UTM - Y (Northing):
UTM Zone:

Part 3. Other Site Features

Point Description:
Collection Method:
Datum (circle/highlight): <u>WGS84</u> <u>NAD83</u>
1) Longitude (dd mm ss.ss): Latitude (dd mm ss.ss):
2) Longitude (dd.dddddd): Latitude (dd.dddddd):
3) UTM - X (Easting): UTM - Y (Northing):
UTM Zone:

Point Description:
Collection Method:
Datum (circle/highlight): <u>WGS84</u> <u>NAD83</u>
1) Longitude (dd mm ss.ss): Latitude (dd mm ss.ss):
2) Longitude (dd.dddddd): Latitude (dd.dddddd):
3) UTM - X (Easting): UTM - Y (Northing):
UTM Zone:

Point Description:
Collection Method:
Datum (circle/highlight): <u>WGS84</u> <u>NAD83</u>
1) Longitude (dd mm ss.ss): Latitude (dd mm ss.ss):
2) Longitude (dd.dddddd): Latitude (dd.dddddd):
3) UTM - X (Easting): UTM - Y (Northing):
UTM Zone:

Point Description:
Collection Method:
Datum (circle/highlight): <u>WGS84</u> <u>NAD83</u>
1) Longitude (dd mm ss.ss): Latitude (dd mm ss.ss):
2) Longitude (dd.dddddd): Latitude (dd.dddddd):
3) UTM - X (Easting): UTM - Y (Northing):
UTM Zone:

Point Description:
Collection Method:
Datum (circle/highlight): <u>WGS84</u> <u>NAD83</u>
1) Longitude (dd mm ss.ss): Latitude (dd mm ss.ss):
2) Longitude (dd.dddddd): Latitude (dd.dddddd):
3) UTM - X (Easting): UTM - Y (Northing):
UTM Zone:

Appendix H

Guidance Document 4-19 *Conceptual Corrective Action Design Worksheet*

Petroleum Remediation Program

Minnesota Pollution Control Agency

http://www.pca.state.mn.us/programs/lust_p.html

Conceptual Corrective Action Design Worksheet

Guidance Document 4-19

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Complete this worksheet and include as Appendix H in Guidance Document 4-06 *Investigation Report Form* when recommending any type of corrective action as part of an LSI/RI. In cases where corrective action is being recommended or requested any time after Minnesota Pollution Control Agency (MPCA) review of the *Investigation Report Form*, the worksheet should be submitted independently upon MPCA request. For non-mechanical corrective actions such as excavation, well replacement, etc., complete Part A only. For engineered mechanical remediation systems such as automated free product recovery, soil vapor extraction, air sparging, multiphase extraction, etc., complete Part B only. Do not revise or delete any text or questions from this report form. MPCA staff expect that corrective action will be evaluated by a qualified and experienced consultant so that, for most sites, it will be sufficient to provide answers to the following items in a paragraph or less.

Refer to Guidance Document 1-01 *Petroleum Remediation Program General Policy* for the overall corrective action goals, and to Guidance Document 4-10 *Elements of the Corrective Action Design* for a discussion of the corrective action design (CAD) process and other requirements.

==========

PART A. Non-Mechanical Corrective Actions

1. Identify the corrective action reason (i.e., why is corrective action necessary, what actual impacts and/or risk reduction must the CAD address?).

   Surficial petroleum-contaminated soils are present at the site within the former AST earthen secondary containment. The surficial contamination was discovered during the completion of the LSI soil borings. Figure 3.0, Soil Boring Location Sketch, depicts previous sampling locations in the earthen secondary containment area.

   Surface-contaminated soil can pose a risk for dermal contact or to cause contaminated run-off. The proposed CAD will address these two risks.

2. Identify the corrective action goal.

   The goal of the proposed corrective action is to limit the aforementioned risks associated with the surface-contaminated soil.

3. Identify the corrective action options considered.

   There are two basic corrective actions to consider regarding the surface-contaminated soil at the site – excavation and capping. As the soil appears to be accessible, GLEC proposes to implement excavation as a corrective action to limit the risks associated with the surface-contaminated soil.

4. Identify the recommended corrective action(s).

As indicated above, GLEC is proposing to excavate the surface-contaminated soils in an effort to limit the risks associated with it. GLEC proposes to excavate the upper two feet of soil in the most heavily impacted areas. The proposed excavation area is depicted on the attached Proposed Corrective Actions Sketch, Figure 6.0. As depicted on the sketch, GLEC is proposing to excavate the upper two feet of soil within the former AST earthen secondary containment.

After the initial excavation activities, GLEC proposes to conduct sidewall sampling and continue the excavation if sidewalls are visibly contaminated, field headspace screening concentrations exceed 10 ppm, or the soil is petroleum saturated.

As depicted on the Proposed Excavation Dimensions Sketch (Figure 6.0), GLEC is proposing to initially excavate approximately 67 cubic yards of contaminated soil.

5. Discuss how the recommended corrective action(s) will eliminate or reduce the risk.

Excavating the surface-contaminated soil will create a barrier between the surface and the contaminated soil, thus greatly decreasing the risk of dermal contact with the contaminated soil. Similarly, the likelihood of contaminated run-off leaving the site will be low following the excavation and backfilling activities.

6. Provide an outline of major tasks and milestones to be completed with a proposed schedule for their completion.

If approved, the excavation will be scheduled and completed during the spring/summer of 2009. Backfilling will immediately follow excavation activities. Following excavation activities, GLEC will collect stockpile samples for laboratory analyses to characterize the stockpile. Following receipt of the laboratory results, GLEC will coordinate soil disposal activities.

PART B. Engineered Mechanical Remediation Systems

1. Identify the corrective action reason (i.e., why is corrective action necessary, what actual impacts and/or risk reduction must the CAD address?).

2. Identify various technology options considered.

3. Identify the selected technology, provide a rationale for why it is the recommended option, and provide additional discussion about the CAD focus such as whether the selected CAD is for mass removal, pathway interruption (e.g., barrier trench), and/or stimulation of natural attenuation/biodegradation.

4. Identify the basic above and below ground components (e.g., wells, pumps, blowers, treatment equipment, discharges) of the selected CAD. Identify and provide justification for the general area being targeted for treatment and the likely screened intervals for injection and/or extraction points. Discuss any waste streams that will be generated by the system and how those could or will be handled.

5. Identify basic, measurable corrective action performance goals or milestones and how progress towards these goals will be measured.

6. Identify and provide a rationale for any required or recommended pilot testing, or additional work (e.g., LIF borings), that needs to be completed before a detailed CAD can be completed.

7. Describe where you plan to conduct the pilot test. Include a rationale for extraction, injection, and/or monitoring point locations and their screened intervals. Describe and justify how long various phases of the pilot test will be conducted.

8. Propose a schedule for completing the pilot test and submittal of the Detailed CAD Report.