Technical Memorandum

To: Brad Scott, LHB Corporation
From: Lynette Carney, Barr Engineering Company
Subject: Phase II Investigation Results
Date: February 3, 2015
Project: Superior Street Reconstruction Corridor

Barr Engineering Company (Barr) was contracted by LHB Corporation (LHB) to conduct a Phase II investigation along the Superior Street corridor from 6th Avenue West to 5th Avenue East in Duluth, Minnesota. This Technical Memorandum summarizes the field activities, findings, and conclusions of the environmental investigation completed by Barr. The environmental Phase II investigation was conducted in parallel with a geotechnical evaluation being conducted by LHB and Braun Intertec, in preparation for planned road reconstruction and replacement of underground utilities along the Superior Street corridor by the City of Duluth (City).

LHB is the lead engineer hired by the City for the Superior Street reconstruction design. LHB subcontracted Barr to complete the Phase II environmental work based on results of our Environmental Evaluation Report dated October 3, 2014 and subsequent update published January 30, 2015. The environmental Phase II investigation was completed to evaluate the potential for contamination to be encountered during street reconstruction activities.

Property Background

Property background information is summarized from Barr's Environmental Evaluation Report, January 2015. The section of Superior Street planned for reconstruction is located from 6th Avenue West to 5th Avenue East, positioned in the center of downtown Duluth located in Section 27, Township 50 North, Range 14 West, St. Louis County, Minnesota (Property) (Figure 1). The Property is approximately 75 feet wide by 5,200 feet (0.98 mile) long.

Historically, the Superior Street corridor has consisted of residential and commercial properties. It is currently made up of stores, residences, and office buildings zoned "F-7" for "Downtown Shopping" and "F-8" for "Downtown Mix". The City's 16-inch diameter water main is located along the entire length of the Property on the south side of Superior Street (Figures 2 through 8). The water main was installed in 1887. The City's sanitary main on Superior Street was installed in 1886. Buildings on the north side of Superior Street are connected to the sanitary main on Superior Street and buildings on the south side of the street are connected to the sanitary main on Michigan Street (Figures 2-8). Historic trolley rails and rail ties are present beneath the subsurface in the center of the roadway along the entire length of the Property.

Historic and existing subsurface electrical conduits and vaults are present from the western-most end of the Property to 6th Avenue West and from 4th Avenue West and to 5th Avenue East (Figures 2 through 8).

Topography of the Property slopes to the southeast from 1st Street to Michigan Street and shallow groundwater flow direction at the Property is considered to be to the southeast toward Lake Superior or the Harbor, based on surface topography. The depth to bedrock is expected to range from 10 to 20 feet. The unconsolidated sediment overlying the bedrock consists of fine-grained silty-clay of glacial till origin. In some locations groundwater may be perched in the clay-rich soil on top of bedrock. Otherwise the water table is expected to be in bedrock fractures at depths ranging from 25 to 35 feet below ground surface (bgs).

Environmental Evaluation Report Summary

Barr completed an Environmental Evaluation along the Superior Street corridor, from 6th Avenue West to 5th Avenue East. The Phase I ESA identified properties adjacent to the corridor with the potential to impact soil, groundwater, or vapor. Records review, site reconnaissance, interviews, reporting, and file reviews were used to assess the adjacent properties. The results of the assessment identified 25 sites with the potential to impact the Superior Street corridor. These sites either had a documented historical release or the likelihood of a past release. The sites were categorized into Level 1 and Level 2 Findings based on the probability of environmental impact. Level 1 Findings have a lower probability of environmental impact to the property and Level 2 Findings have a higher probability of environmental impact to the property. Of the 25 Findings, 9 were Level 1 Findings and 16 were Level 2 Findings (Figures 2 through 8).

Phase II Investigation Scope of Work

The environmental investigation field activities were conducted in conjunction with the geotechnical evaluation from November 2 through 7 and November 9 through 12, 2014 and took place during the overnight hours from 10:00 p.m. to 6:00 a.m. The investigative field activities were based on a work plan and service proposal entitled *Proposal for Environmental Support Service* (Work Plan), dated October 30, 2014. The Work Plan outlined the scope of work and the procedures necessary to safely and effectively conduct soil screening, soil sampling, groundwater sampling and documentation of borings.

The Work Plan outlined the following key tasks:

- Identify boring locations for environmental sampling,
- Prepare a project health and safety plan (PHASP), and target sampling matrix,
- Screen soils using a photoionization detector (PID) and collect samples for laboratory analysis,

- Observe boring advancement, classify soil samples, and record additional geologic information during drilling.

The work plan was followed as written with the exception of the following: an additional 11 geotechnical borings were added by LHB to the original 55 borings, and all borings were drilled using hollow stem auger instead of the original plan for 20 of the proposed locations to be cored using a flight auger. Boring B-52 was not completed due to the uncertainty of underlying utilities at that location (Figure 7). Additionally, numerous borings were moved a few feet from the proposed position while in the field to avoid utilities and other underground infrastructure.

Investigation Activities Summary

Project Health and Safety Plan

A project health and safety plan (PHASP) was prepared for the investigation.

Borings

Braun Intertec was contracted by LHB as the geotechnical drilling contractor. Borings were drilled using a hollow stem auger drilling rig. Each boring was advanced to a depth of 15 feet or until auger refusal occurred due to the presence of rock or other underground obstruction. Barr observed the boring advancement of those borings designated for environmental observation and sampling, and classified soil samples in accordance with the Unified Soil Classification System (USCS) - ASTM D-2488, *Standard Practice for Description and Identification of Soils (Visual/Manual Method)* and recorded other relevant geologic information. Samples were collected every 2.5 feet to a depth of 15 feet using a standard penetration split spoon method. Copies of Barr environmental boring logs are in Attachment B.

Environmental sample collection locations along the corridor were selected based on the Environmental Evaluation Findings. The Braun geotechnical borings were labeled sequentially starting at B-1 at the west end of the corridor to B-66 at the east end of the corridor (Figures 2 through 8). Of the 66 geotechnical boring locations, 40 of those locations were selected by Barr for environmental sampling based on proximity to Level 1 and/or Level 2 Findings. The select environmental boring locations are listed on Table 1 and shown on Figures 2-8. The other 26 locations were borings selected by LHB solely for geotechnical engineering and design purposes. Barr sampled and screened 39 of the proposed 40 environmental borings and field screened 10 additional geotechnical borings. The remaining geotechnical borings completed by Braun were not observed or screened by Barr staff. Representative photographs of field activities are presented in Attachment A. It should be noted that due to the nature of two utility types, electrical vaults and steam piping; evaluation of potential contamination associated with these utilities was not possible using drilling methods. Therefore the scope of this investigation cannot and did

not evaluate potential impacts associated with electrical vaults or steam pipe insulation (i.e. potential asbestos-containing materials).

Sediment Screening and Sampling

Environmental screening and sampling was completed in order to evaluate the potential for contamination in the subsurface. Field tasks and documentation were conducted in accordance with Barr's standard operating procedures (SOPs). Soil was screened for organic vapor measurements using an 11.7eV lamp PID. Other evidence of potential soil impacts such as odor, discoloration, and sheen were documented, if encountered.

Soil samples were collected for analysis of one or more of the following: gasoline range organics (GRO), diesel range organics (DRO), petroleum volatile organic compounds (PVOC), volatile organic compounds (VOC), semivolatile organic compounds (SVOC), polycyclic aromatic hydrocarbons (PAH), and Resource Conservation and Recovery Act (RCRA) metals (Table 1). Analytical results from the soil samples were compared to Minnesota Pollution Control Agency (MPCA) published soil standards. The specific sample types and sample depth selected for each boring were based on the nearby Level 1 and/or Level 2 Findings. The selected laboratory analysis at each location was identified based on the contaminate type most likely to be associated with the Level 1 or Level 2 Finding. The target sample interval was selected based on the most likely potential subsurface migration pathway associated with the Level 1 or Level 2 source and was adjusted as needed based on real-time in-field soil screening results. Most laboratory samples were collected at depths greater than 6 feet, but a few borings were sampled between 2 and 4 feet in order to capture potential impacts associated with the historic trolley tracks and rail ties that run the length of the corridor.

Legend Technical Services, Inc. (Legend) located in St. Paul, Minnesota provided sample jars and sample preservatives (where applicable) and performed all laboratory analyses with the exception of mercury analysis. Mercury analysis was subcontracted by Legend to TestAmerica in Cedar Falls, Iowa. Samples were shipped to Legend on ice under chain of custody within three days of collection.

Investigation Results

The soil encountered within environmental borings was observed to be primarily red-brown clay interlayered with silty-sand or sandy-silt. In some instances, the soil encountered was comprised entirely of alternating units of less than 3-4 feet thick of silty-sand, sandy-silt and clay. The soil encountered is likely representative of fill soils that have been placed or disturbed during previous utility and roadway construction activities. Bedrock was expected to be relatively shallow and based on boring refusal at B-26 through B-30 may be close as 5 feet below ground surface.

Field Screening

The PID headspace soil screening results are reported on the environmental boring logs in Attachment B. Due to cold winter temperatures, soil samples collected for headspace measurements were placed inside a heated vehicle for 10 minutes before readings were measured. During this 10 minute period, humidity build up in the headspace bags can cause artificially elevated PID headspace readings. In order to obtain a background PID measurement, each day a PID measurement was recorded for an empty headspace bag under the same temperature and humidity conditions as the actual soil samples. Background readings ranged from 2.9 to 8.8 ppm. When the background values were taken into account, the only boring with a reading greater than 10 ppm was B-66, the final boring on the eastern-most end of the corridor (Figure 8).

B-66 (9.5-11 feet) had a PID measurement of 89.5 ppm. The analytical sample collected from this boring was from a depth of 7.5 to 9.0 feet and no analytes in exceedance of MPCA criteria were detected. Boring B-66 is located adjacent to a former filling station characterized as a Level 2 Finding and approximately 80 feet from a Level 1 Finding to the northeast and within approximately 130 feet of two Level 1 Findings to the northwest (Figure 7).

Analytical Results

Soil sample analytical results were compared to MPCA Petroleum Remediation Program Guidance for GRO and DRO, MPCA Tier I Residential Soil Reference Values (SRVs), and MPCA Screening Soil Leachate Values (SLVs). The SRVs are risk-based criteria developed for evaluating possible risk to human health, and the SLVs were developed for evaluating the risk of contaminants to soil and groundwater though a leaching pathway. Table 2 summarizes analytical results for those concentrations that exceeded soil screening criteria. The complete analytical results for all borings are summarized in Attachment C. Laboratory reports are included in Attachment D.

Soil samples from two borings had concentrations exceeding the above-listed criteria and are discussed below:

B-31 (9.5 – 11 feet bgs) had a DRO concentration of 1,000 mg/kg by method C10-C28 and a concentration of 140 mg/kg after an organics-silica gel cleanup was run. These values exceed the MPCA DRO reference value of 100 mg/kg. Boring B-31 is located adjacent to the US Bank Building, a Level 2 Finding with a potential fuel oil underground storage tank (UST) (Figure 5). Additionally, the boring was completed in the centerline of the road below the anticipated trolley line tracks. Petroleum impacts were not encountered at nearby borings B-28 and B-29, located to the west and southwest, but analytical samples for B-28 were collected at a shallower depth, and no analytical sample was collected at B-29. Samples were not collected from borings to the northeast.

B-65 (7.5 – 9 feet bgs) had a benzene concentration of 0.21 mg/kg, which is greater than the MPCA SLV of 0.017 mg/kg. B-65 is located adjacent to the Voyageurs Motel, a Level 1 Finding on the northwest side of the road. The Voyageur Motel is identified as an MPCA underground storage tank leak site. A Level 2 Finding also exists on the northeast side of the corridor and was the site of an old filling station. No soil impacts were encountered at nearby borings, although analytical samples were not collected at these borings due to auger refusal at shallow depths and low recoveries.

Conclusions and Recommendations

As previously discussed, the purpose of the Phase II investigation was to evaluate for the potential presence of contamination in connection with the Property which may be encountered during the reconstruction of the Superior Street corridor. Low level petroleum impacts were discovered in soil at three boring locations along the corridor: B-31, B-65 and B-66.

- Soil boring B-66 had an elevated PID headspace reading of 89.5 ppm at the depth of 9.5-11.0 ft. which may be indicative of the presence of petroleum compounds in soil. This boring was completed near a former filling station.
- Soil boring B-31 (9.5-11 feet bgs) had a DRO-silica gel cleanup detection of 140 mg/kg which is greater than the MPCA PRP guidance document criteria of 100 mg/kg. This boring was completed in the centerline of the road below the anticipated location of the trolley line tracks and in relatively close proximity to the US Bank Building which was identified as a Level 2 site due to the potential presence of an abandoned in-place fuel oil underground storage tank.
- Soil boring B-65 had a benzene concentration of 0.21 mg/kg which is greater than the MPCA SLV criteria of 0.017 mg/kg. This boring was completed at the intersection of 4th Avenue East and downgradient from the Voyageurs Motel which was identified as a Level 1 Finding in the regulatory listing due to an MPCA underground storage tank leaksite listing.

The detections summarized above were located in the vicinity of documented petroleum sources and may indicate the potential for additional contamination to be encountered in the area surrounding the identified borings. Due to a limited number of sampling points, this report does not define the lateral or vertical extent of contamination that may be present, however the findings of the investigation do indicate evidence of a release of petroleum or hazardous materials to the environment.

This investigation is by no means an exhaustive evaluation of the soil impacts along the Superior Street corridor. The Superior Street corridor is downgradient of numerous other properties and historical activities that were not analyzed under the scope of this project and have the potential to impact soil along the length of the corridor. Based on the contaminants encountered and the potential for additional impacts to be encountered along the corridor, it is recommended that the project be entered into the

MPCA Voluntary Investigation Cleanup (VIC) program and a response action and construction contingency plan (RAP/CCP) be developed for MPCA approval. In addition to entering the project into the VIC program, we recommend reporting the identified releases to the State Duty officer in accordance with Minnesota Statute 1115.061.

The advantage to entering the VIC program prior to initiating the construction work is to obtain agency approval and support during the planned construction work and to streamline or minimize the coordination and approvals that may be necessary if / when petroleum or hazardous substances are encountered. In addition, this Phase II evaluation did not include inspection of electrical vaults or possible asbestos-containing pipe insulation material associated with steam lines. It is anticipated that these items can be addressed within a future RAP/CCP.

I look forward to talking to you about these results and recommendations with you in more detail. After your review of the results presented in this memorandum, please call me to schedule a time to discuss and outline a plan for future activities.

Sincerely,

Barr Engineering Company

Lynette Carney
Project Manager

cc: Patrick Loomis, City of Duluth

Enclosures:

Table 1	Sampling Matrix
Table 2	Soil Sample Analytical Results, Parameters that Exceed Screening Concentrations
Figure 1	Site Location and Project Overview
Figure 2	Blocks 6th & 7th Avenues West
Figure 3	Blocks 4th & 5th Avenues West
Figure 4	Blocks 2nd & 3rd Avenues West
Figure 5	Blocks Lake & 1st Avenues West
Figure 6	Blocks Lake & 1st Avenues East
Figure 7	Blocks 2nd & 3rd Avenues East
Figure 8	Block 4th Avenue East
Attachment A	Representative Photographs
Attachment B	Boring Logs
Attachment C	Soil Sample Analytical Results, Complete
Attachment D	Legend Technical Services Laboratory Reports

Tables

Table 1
Sampling Matrix
Superior Street Reconstruction Project
Duluth, Minnesota

Boring Name	Boring Type	Analyses						
		GRO/PVOC	DRO	GRO	VOC	PAH	RCRA Metals	SVOC
B-01	Env	1	1					
B-02	Geotech							
B-03	Env	1	1					
B-04	Env		1	1	1	1	1	
B-05	Geotech							
B-06	Geotech							
B-07	Geotech							
B-08	Env	1	1					
B-09	Env	1	1					
B-10	Env	1	1					
B-11	Geotech							
B-12	Geotech							
B-13	Geotech							
B-14	Geotech							
B-15	Geotech							
B-16	Geotech							
B-17	Env	1	1					
***B-17**	Env				1	1	1	1
B-18	Env	1	1					
B-19	Env	1	1					
B-20	Env			1	1			
B-21	Env			1	1			
B-22	Geotech							
B-23	Geotech							
B-24	Geotech							
B-25	Geotech							
B-26	Env				1			
B-27	Env				1			
B-28	Env	1	1					
B-29	Env	1	1					
***B-29**	Env				1	1	1	1
B-30	Env	1	1					
B-31	Env	1	1					
B-32	Geotech							
B-33	Geotech							
B-34	Geotech							
B-35	Geotech							
B-36	Geotech							
B-37	Geotech							
B-38	Env			1	1			

Table 1, continued
Sampling Matrix
Superior Street Reconstruction Project
Duluth, Minnesota

Boring Name	Boring Type	Analyses						
		GRO/PVOC	DRO	GRO	VOC	PAH	RCRA Metals	SVOC
B-39	Env			1	1			
B-40	Env	1	1					
B-41	Env		1	1	1			
B-42	Env		1	1	1			
B-43	Env	1	1					
B-44	Env	1	1					
B-45	Env	1	1					
B-46	Env	1	1					
B-47	Env	1	1				1	1
B-48	Geotech							
B-49	Geotech							
B-50	Env	1	1					
B-51	Env	1	1					
B-52	Env	1	1					
B-53	Geotech							
B-54	Env	1	1				1	
B-55	Env	1	1				1	
B-56	Env	1	1					
B-57	Env	1	1					
B-58	Geotech							
B-59	Env	1	1					
B-60	Env		1	1	1	1	1	1
B-61	Geotech							
B-62	Geotech							
B-63	Env	1	1					
B-64	Env			1	1			
B-65	Env	1	1					
B-66	Env	1	1				1	
***B-66**	Env						1	
Total		**29**	**33**	**9**	**13**	**4**	**9**	**4**

Borings were conducted during November 2 through 11, 2014
*B-17, B-29, and B-66 each were sampled at two depths
Env = Environmental boring
Geotech = Geotechnical boring completed for engineering and design purposes

Table 2

Parameters that Exceed Screening Concentrations
Soil Sample Analytical Results
Superior Street Reconstruction Project
Duluth, Minnesota

			Location Date Depth	B-31 11/06/2014 9.5 - 11 feet	B-65 11/11/2014 7.5 - 9 feet
	MPCA Petroleum Remediation Program Guidance	Minnesota Screening Soil Leaching Values	Minnesota Tier 1 Soil Reference Values		
Effective Date	3/7/2012	06/01/2013	06/22/2009		
Exceedance Key	**Bold**	Underline	No Exceedance		
PARAMETER					
VOCs					
Benzene		0.017 mg/kg	6 mg/kg	--	0.21 mg/kg
Total Petroleum Hydrocarbons					
Diesel Range Organics, C10-C28	**100 mg/kg**			**1000 mg/kg**	--
Diesel Range Organics-silica gel cleanup	**100 mg/kg**			**140 mg/kg**	--

MPCA = Minnesota Pollution Control Agency
VOCs = volatile organic compounds
Mg/kg = milligrams per kilogram
-- = no exceedance

Figures

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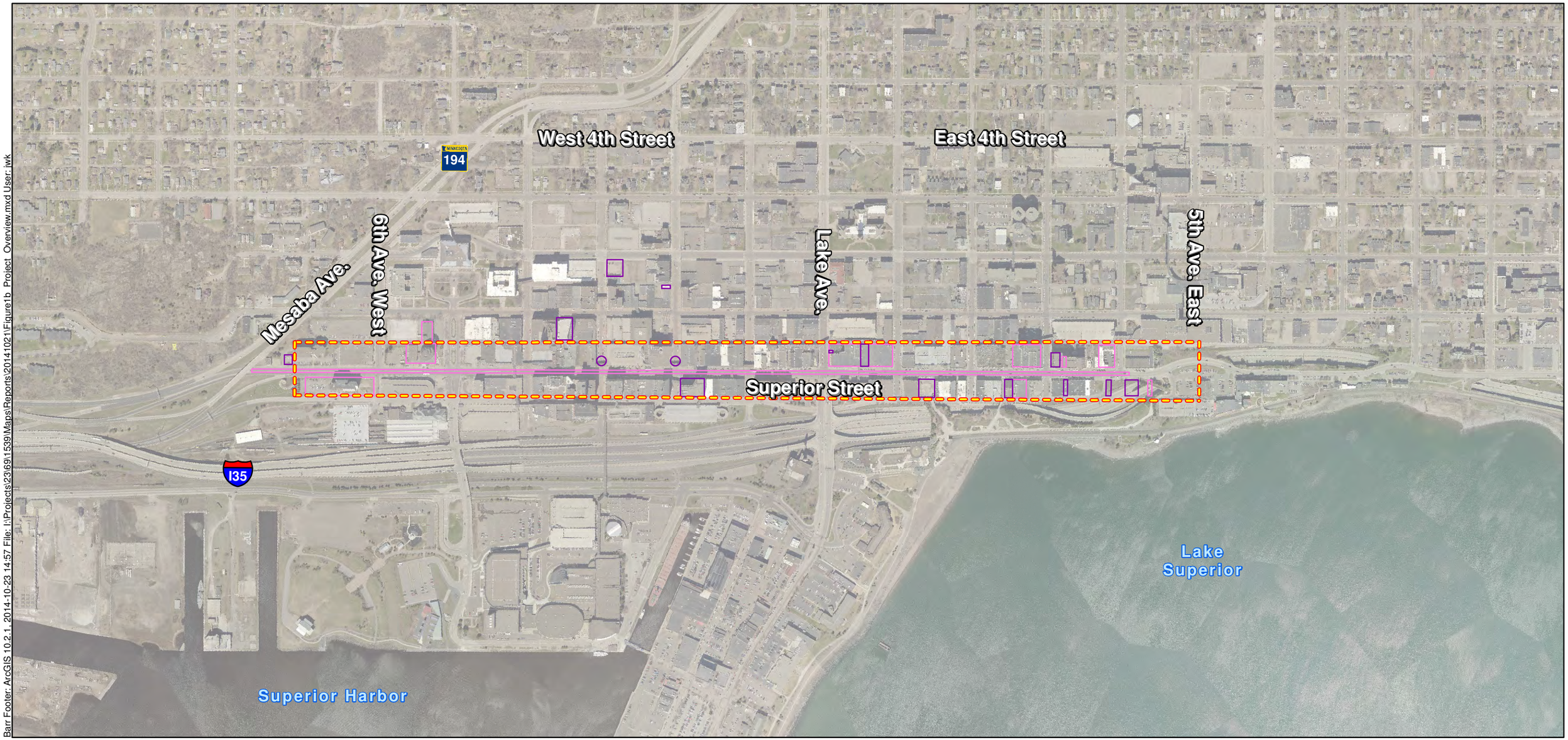
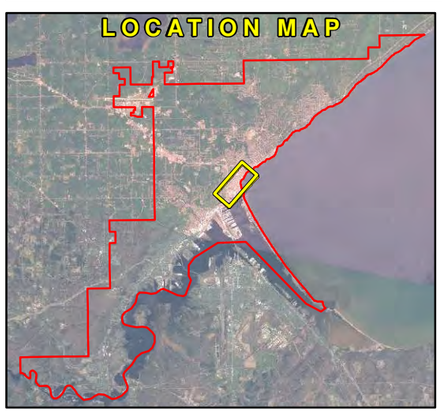




Project Area

Findings

Level 1 - Lower Probability of Environmental Impact to Property

Level 2 - Higher Probability of Environmental Impact to Property

City of Duluth Boundary

0 600 1,200

Feet

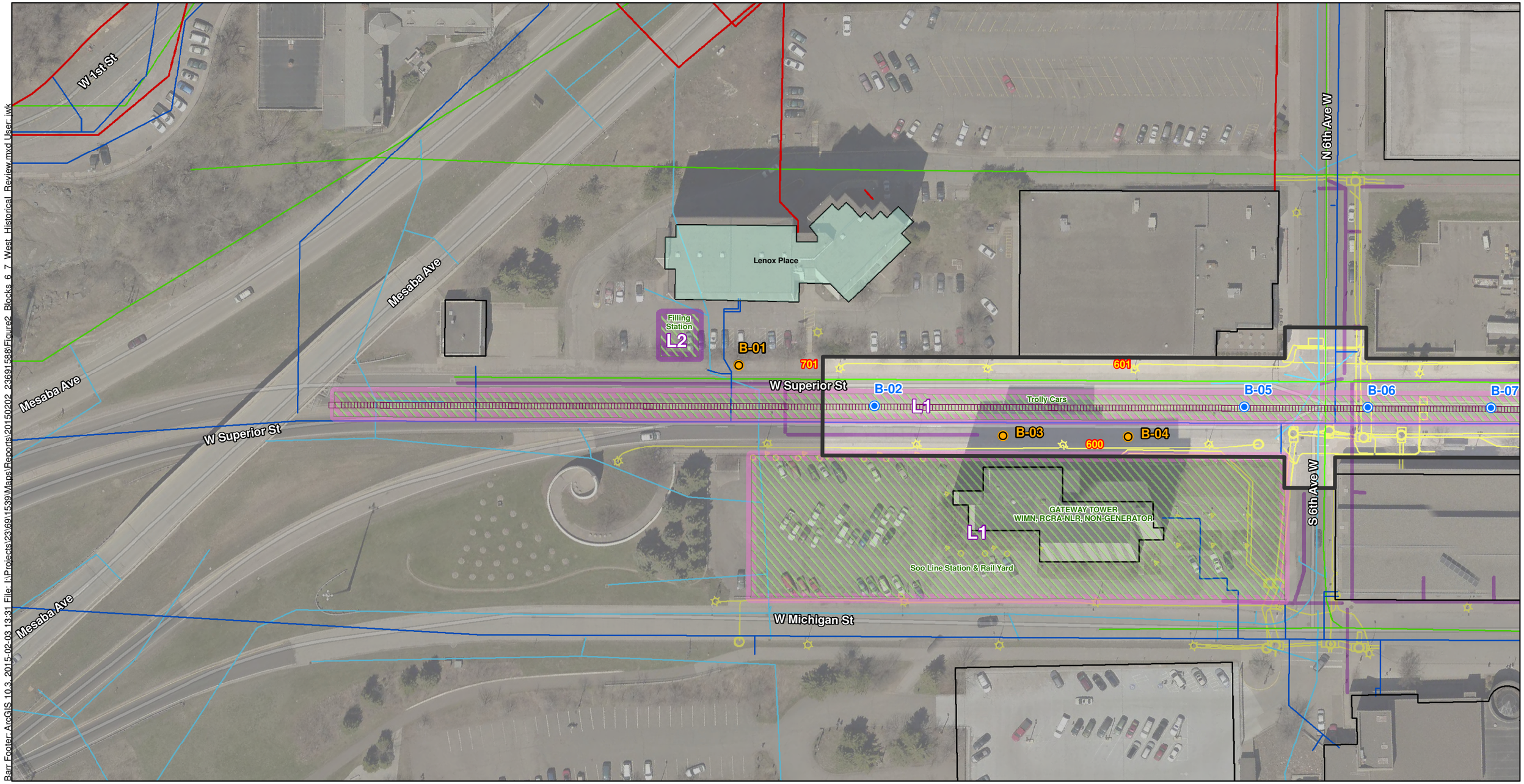
1 Inch = 600 Feet

St. Louis County Imagery Circa May, 2013

Figure 1b

PROJECT OVERVIEW
SUPERIOR STREET RECONSTRUCTION PROJECT
Duluth, Minnesota

BARR



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Superior Street Property Boundary

Sites of Interest

MPCA Regulatory Report Listing

Historic Record Review

Findings

L1 Level 1 - Lower Probability of Environmental Impact to Property

L2 Level 2 - Higher Probability of Environmental Impact to Property

Former Trolly Line (Tracks and ties likely still present below roadway)

Existing Buildings & Structures

220 Existing Superior Street Addresses

Skywalk System

Approximate Geotechnical Boring Location

Geotechnical Only

Geotechnical with Environmental Sampling

Existing Utilities

Storm Sewer Main

Sanitary Sewer Main

Water Main

Gas Mains and Service Lines

Level 2 - Steam Main and Service Lines

Electrical

Approximate Utilities

Approximate Electrical (Vacant)

Approximate Electical Manhole (In Service)

Approximate Electical Manhole (Vacant)

W N S E

0 75 150

Feet

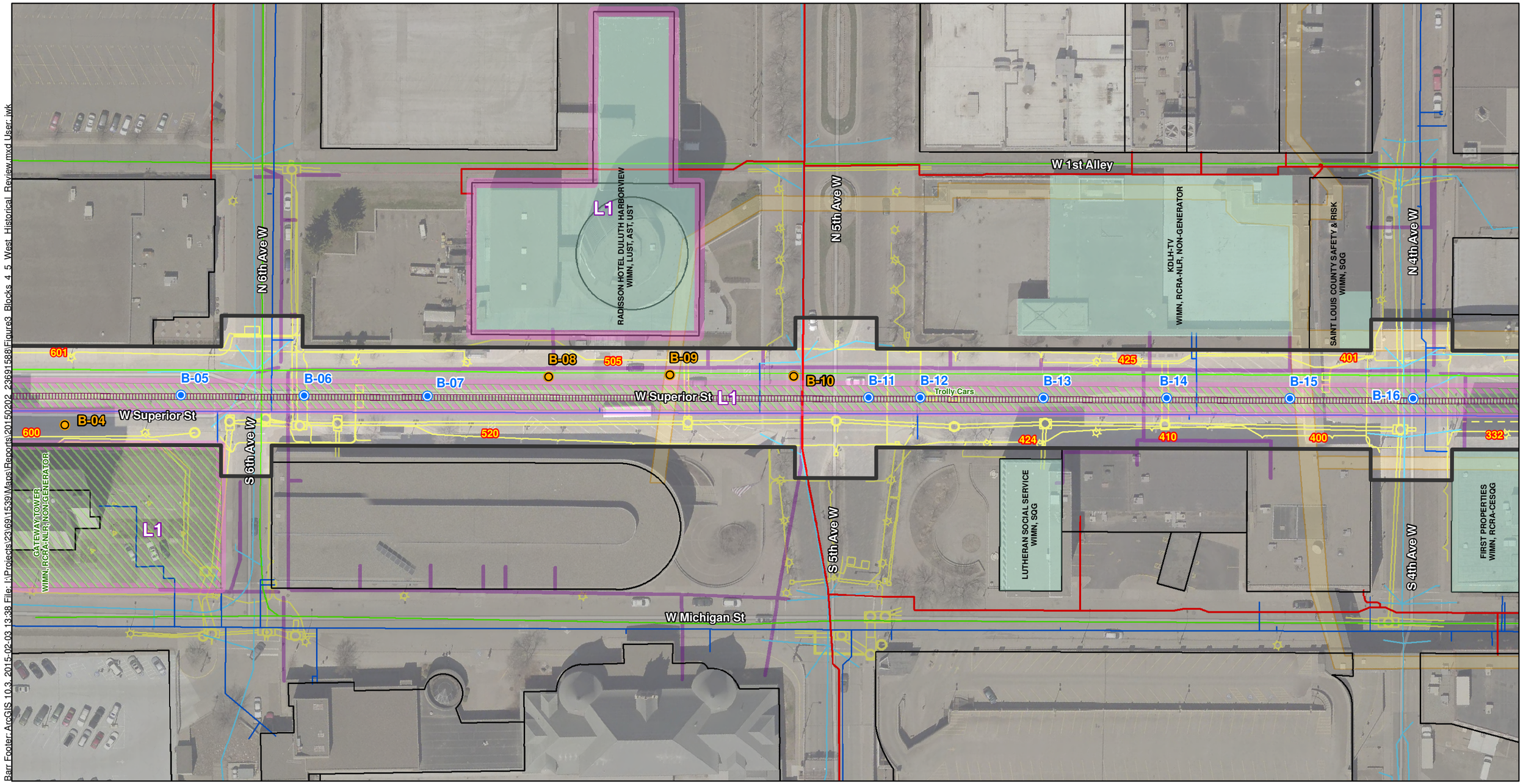
1 Inch = 75 Feet

St. Louis County Imagery Circa May, 2013

FIGURE 2

BLOCKS 6TH & 7TH WEST
SUPERIOR STREET RECONSTRUCTION PROJECT
Duluth, Minnesota

BARR



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Superior Street Property Boundary

Sites of Interest

MPCA Regulatory Report Listing

Historic Record Review

Findings

L1 Level 1 - Lower Probability of Environmental Impact to Property

L2 Level 2 - Higher Probability of Environmental Impact to Property

Former Trolly Line (Tracks and ties likely still present below roadway)

Existing Buildings & Structures

220 Existing Superior Street Addresses

Skywalk System

Approximate Geotechnical Boring Location

Geotechnical Only

Geotechnical with Environmental Sampling

Existing Utilities

Storm Sewer Main

Sanitary Sewer Main

Water Main

Gas Mains and Service Lines

Level 2 - Steam Main and Service Lines

Electrical

Approximate Utilities

Approximate Electrical (Vacant)

Approximate Electical Manhole (In Service)

Approximate Electical Manhole (Vacant)

W N E S

0 75 150

Feet

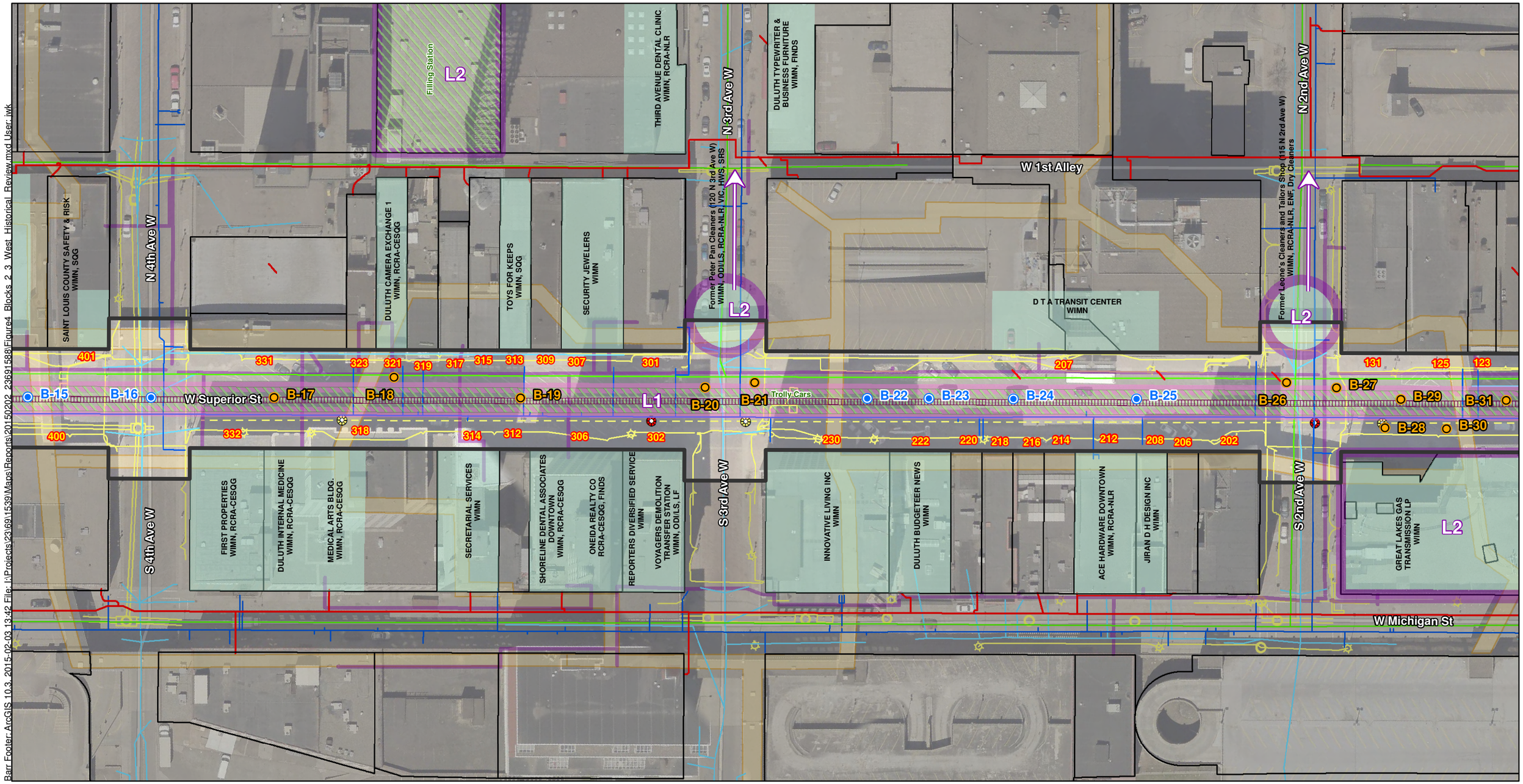
1 Inch = 75 Feet

St. Louis County Imagery Circa May, 2013

FIGURE 3

BLOCKS 4TH & 5TH WEST
SUPERIOR STREET RECONSTRUCTION PROJECT
Duluth, Minnesota

BARR



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Superior Street Property Boundary

Sites of Interest

- MPCA Regulatory Report Listing
- Historic Record Review

Findings

- L1 — Level 1 - Lower Probability of Environmental Impact to Property
- L2 — Level 2 - Higher Probability of Environmental Impact to Property

Former Trolly Line (Tracks and ties likely still present below roadway)

Existing Buildings & Structures

220 Existing Superior Street Addresses

Skywalk System

Approximate Geotechnical Boring Location

- Geotechnical Only
- Geotechnical with Environmental Sampling

Existing Utilities

- Storm Sewer Main
- Sanitary Sewer Main
- Water Main
- Gas Mains and Service Lines
- Level 2 - Steam Main and Service Lines
- Electrical

Approximate Utilities

- Approximate Electrical (Vacant)
- Approximate Electical Manhole (In Service)
- Approximate Electical Manhole (Vacant)

W N S E

0 75 150

Feet

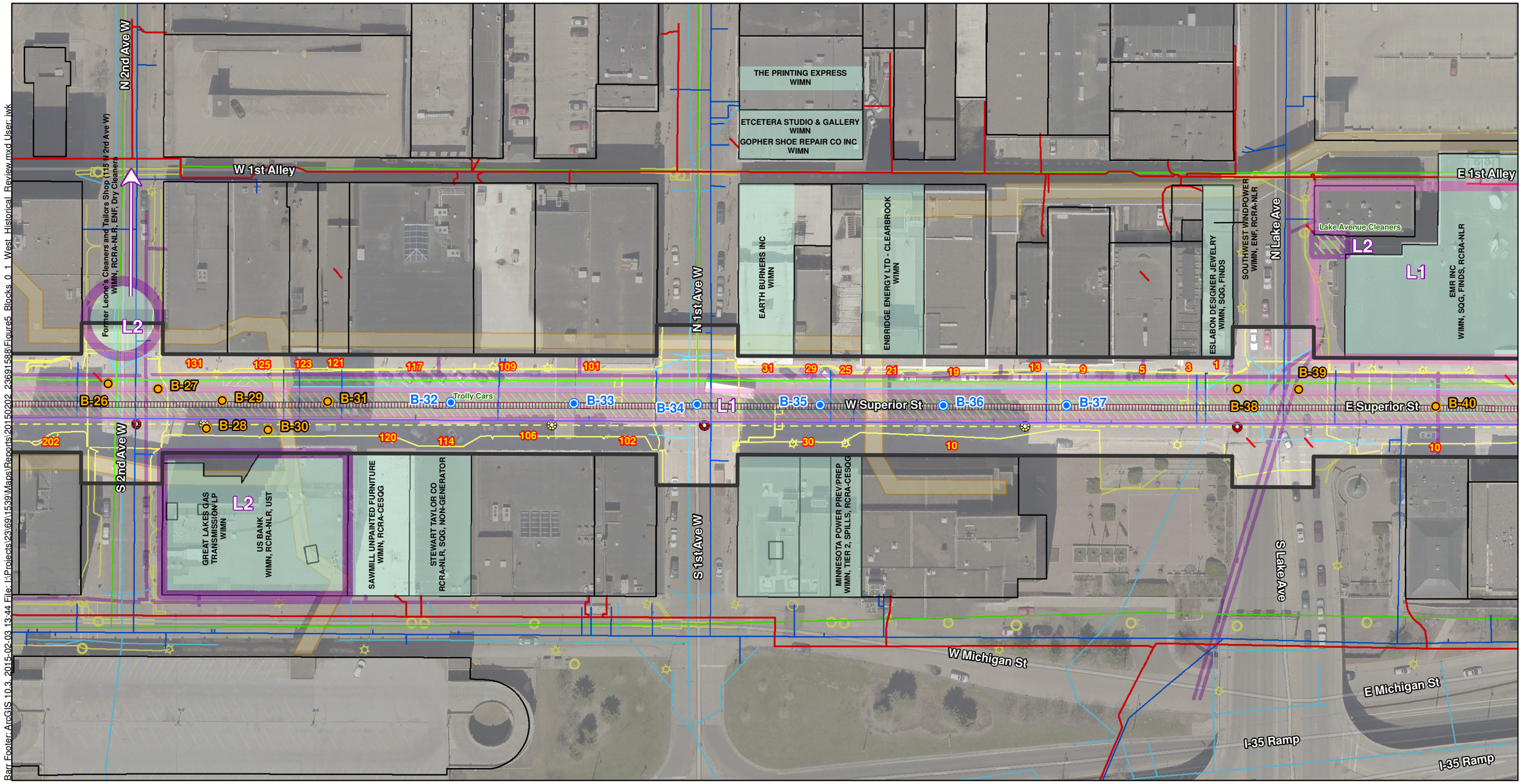
1 Inch = 75 Feet

St. Louis County Imagery Circa May, 2013

FIGURE 4

BLOCKS 2ND & 3RD WEST
SUPERIOR STREET RECONSTRUCTION PROJECT
Duluth, Minnesota

BARR



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Superior Street Property Boundary

Sites of Interest

MPCA Regulatory Report Listing

Historic Record Review

Findings

L1 Level 1 - Lower Probability of Environmental Impact to Property

L2 Level 2 - Higher Probability of Environmental Impact to Property

Former Trolly Line (Tracks and ties likely still present below roadway)

Existing Buildings & Structures

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Skywalk System

Approximate Geotechnical Boring Location

Geotechnical Only

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Level 2 - Steam Main and Service Lines

Electrical

Approximate Utilities

Approximate Electrical (Vacant)

Approximate Electical Manhole (In Service)

Approximate Electical Manhole (Vacant)

W N S E

0 75 150

Feet

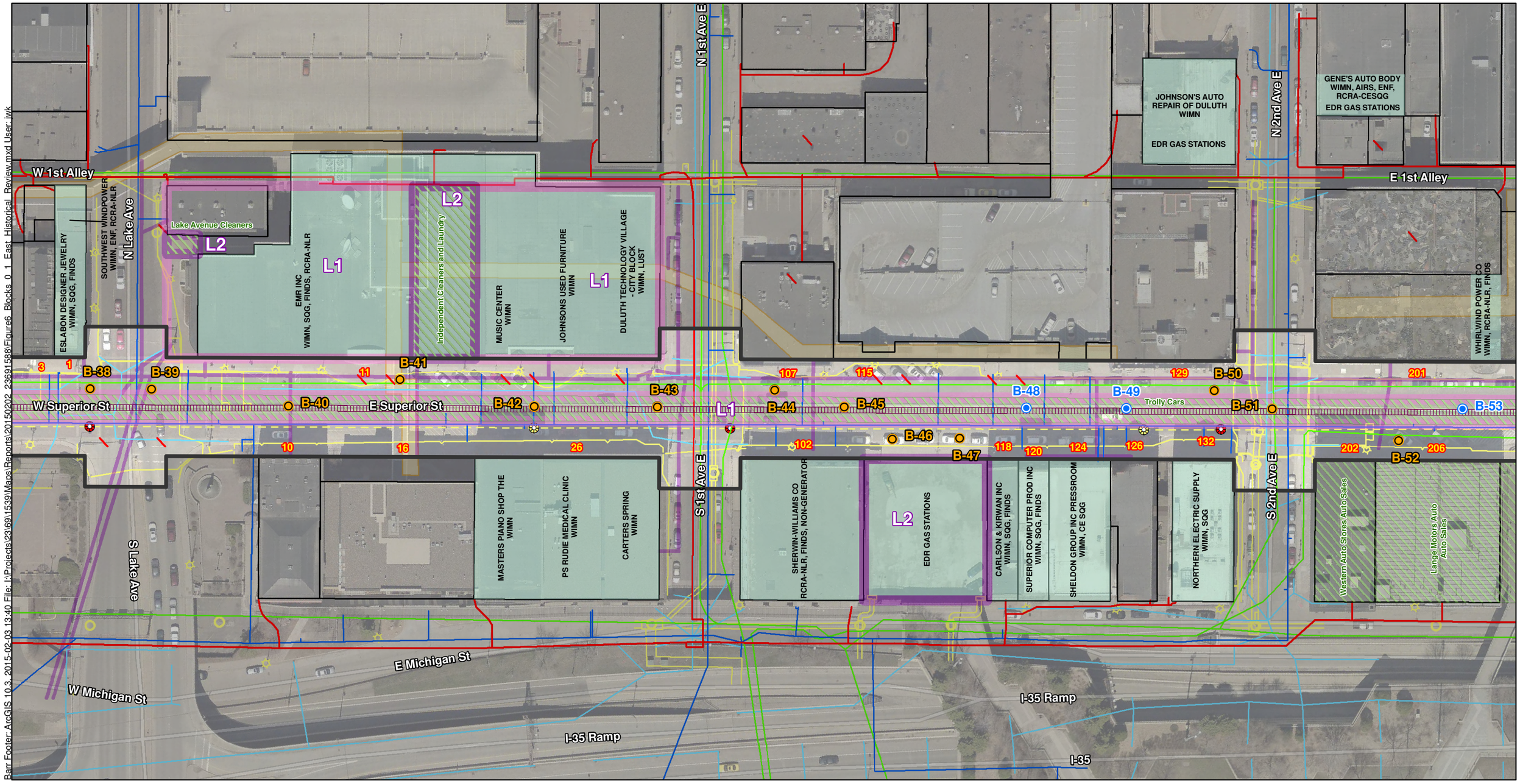
1 Inch = 75 Feet

St. Louis County Imagery Circa May, 2013

FIGURE 5

BLOCKS LAKE AVE & 1ST WEST
SUPERIOR STREET RECONSTRUCTION PROJECT
Duluth, Minnesota

BARR



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Superior Street Property Boundary

Sites of Interest

- MPCA Regulatory Report Listing
- Historic Record Review

Findings

- L1 — Level 1 - Lower Probability of Environmental Impact to Property
- L2 — Level 2 - Higher Probability of Environmental Impact to Property

Former Trolly Line (Tracks and ties likely still present below roadway)

Existing Buildings & Structures

220 Existing Superior Street Addresses

Skywalk System

Approximate Geotechnical Boring Location

- Geotechnical Only
- Geotechnical with Environmental Sampling

Existing Utilities

- Storm Sewer Main
- Sanitary Sewer Main
- Water Main
- Gas Mains and Service Lines
- Level 2 - Steam Main and Service Lines
- Electrical

Approximate Utilities

- Approximate Electrical (Vacant)
- Approximate Electical Manhole (In Service)
- Approximate Electical Manhole (Vacant)

W N S E

0 75 150

Feet

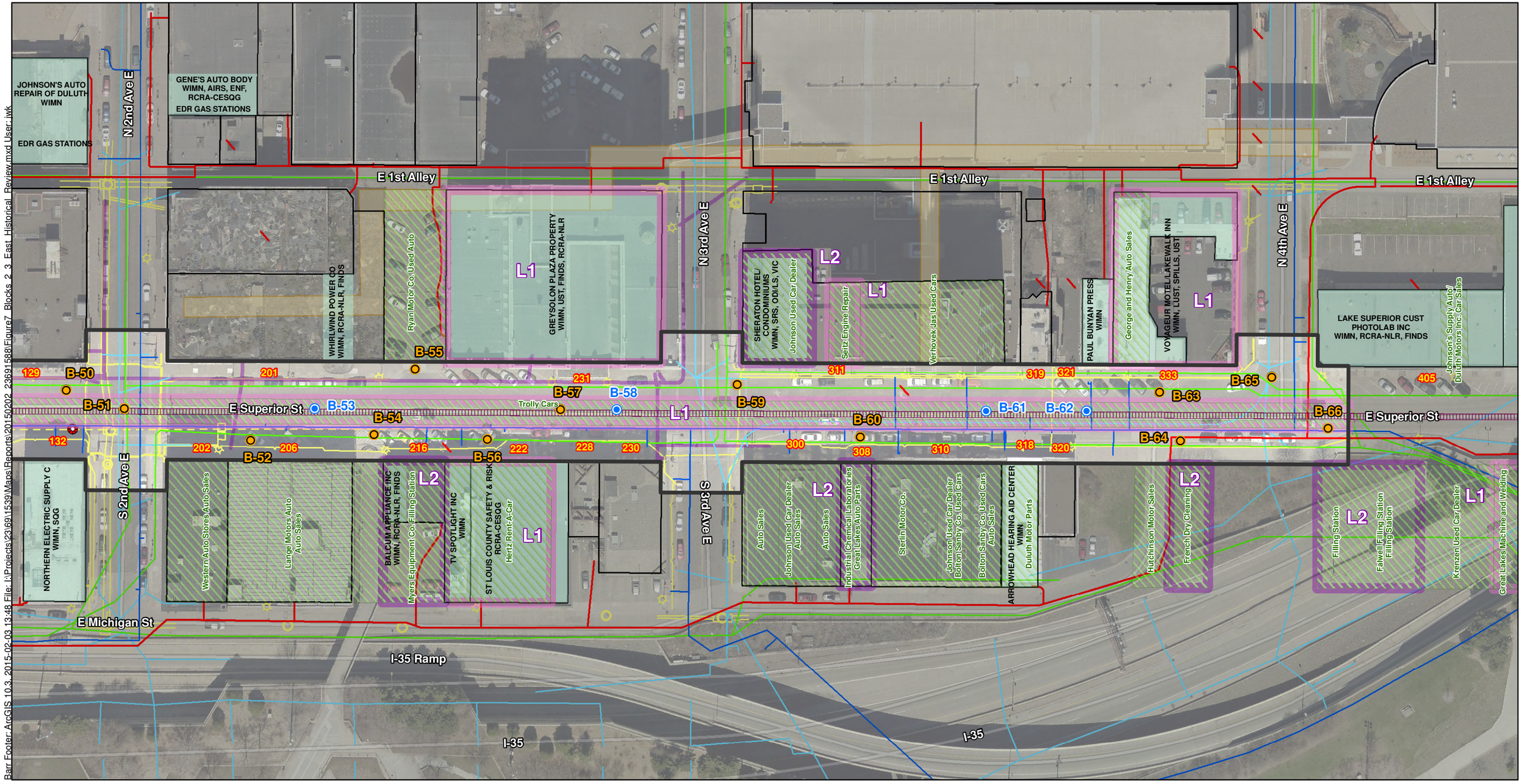
1 Inch = 75 Feet

St. Louis County Imagery Circa May, 2013

FIGURE 6

BLOCKS LAKE AVE & 1ST EAST
SUPERIOR STREET RECONSTRUCTION PROJECT
Duluth, Minnesota

BARR



Barr Footer: ArcGIS 10.3, 2015-02-03 13:48 File: I:\Projects\23\69\1539\Maps\Reports\2015\20150202_2369\1588\Figure7_Blocks_2_3_East_Historical_Review.mxd User: jwk

Superior Street Property Boundary

Sites of Interest

MPCA Regulatory Report Listing

Historic Record Review

Findings

L1 Level 1 - Lower Probability of Environmental Impact to Property

L2 Level 2 - Higher Probability of Environmental Impact to Property

Former Trolly Line (Tracks and ties likely still present below roadway)

Existing Buildings & Structures

220 Existing Superior Street Addresses

Skywalk System

Approximate Geotechnical Boring Location

Geotechnical Only

Geotechnical with Environmental Sampling

Existing Utilities

Storm Sewer Main

Sanitary Sewer Main

Water Main

Gas Mains and Service Lines

Level 2 - Steam Main and Service Lines

Electrical

Approximate Utilities

Approximate Electrical (Vacant)

Approximate Electical Manhole (In Service)

Approximate Electical Manhole (Vacant)

W N S E

0 75 150

Feet

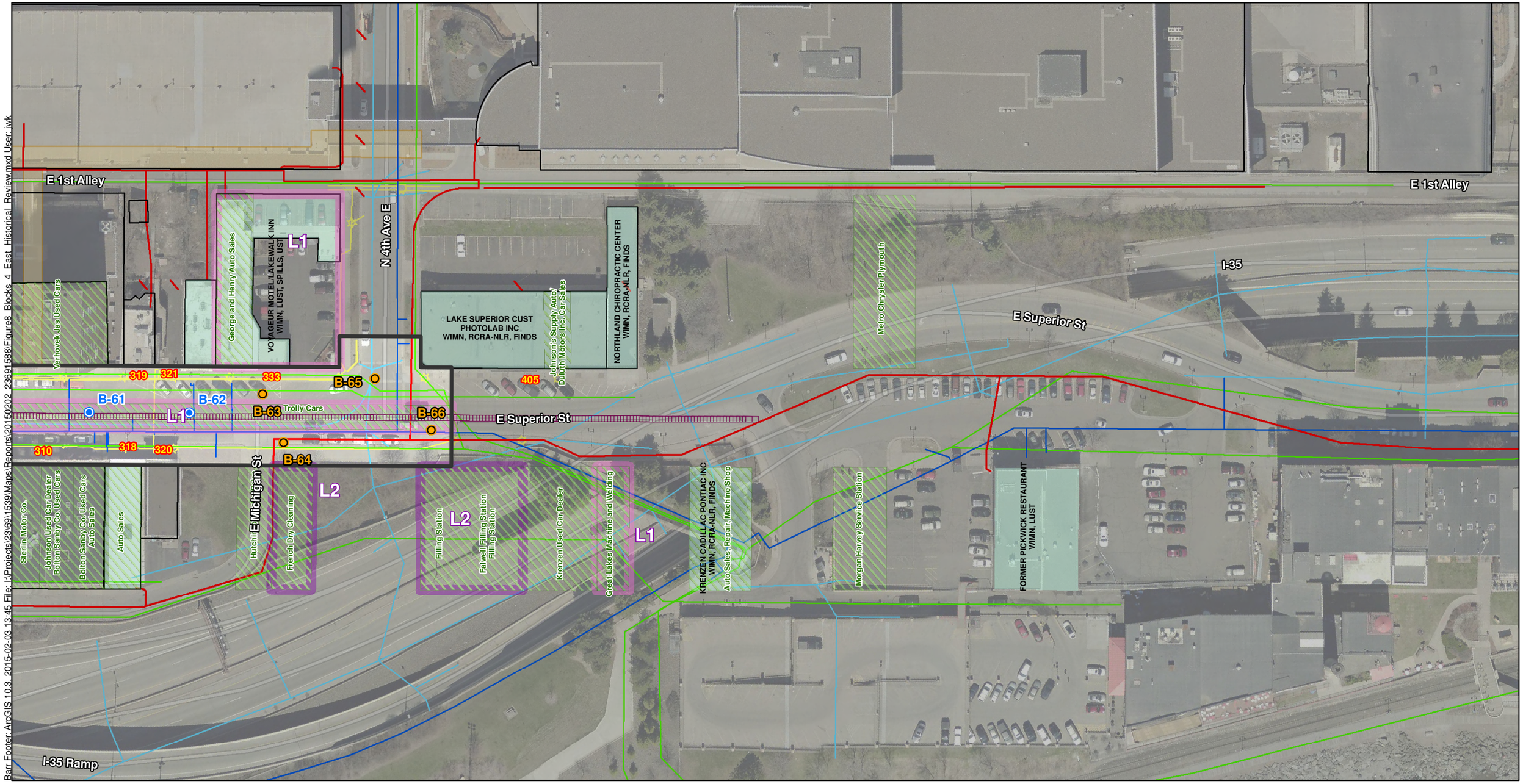
1 Inch = 75 Feet

St. Louis County Imagery Circa May, 2013

FIGURE 7

BLOCKS 2ND & 3RD EAST
SUPERIOR STREET RECONSTRUCTION PROJECT
Duluth, Minnesota

BARR



Barr Footer: ArcGIS 10.3, 2015-02-03 13:45 File: I:\Projects\23\69\1539\Maps\Reports\20150202_23691588\Figure8_Blocks_4_East_Historical_Review.mxd User: jwk

Superior Street Property Boundary

Sites of Interest

- MPCA Regulatory Report Listing
- Historic Record Review

Findings

- L1 Level 1 - Lower Probability of Environmental Impact to Property
- L2 Level 2 - Higher Probability of Environmental Impact to Property

Former Trolly Line (Tracks and ties likely still present below roadway)

Existing Buildings & Structures

220 Existing Superior Street Addresses

Skywalk System

Approximate Geotechnical Boring Location

- Geotechnical Only
- Geotechnical with Environmental Sampling

Existing Utilities

- Storm Sewer Main
- Sanitary Sewer Main
- Water Main
- Gas Mains and Service Lines
- Level 2 - Steam Main and Service Lines
- Electrical

Approximate Utilities

- Approximate Electrical (Vacant)
- Approximate Electical Manhole (In Service)
- Approximate Electical Manhole (Vacant)

W N S E

0 75 150

Feet

1 Inch = 75 Feet

St. Louis County Imagery Circa May, 2013

FIGURE 8

BLOCK 4TH EAST
SUPERIOR STREET RECONSTRUCTION PROJECT
Duluth, Minnesota

BARR

Attachment A

Representative Photographs

Attachment A
Representative Photographs

Soil boring between 1st Ave East and 2nd Ave .West.

Soil boring SB- 4 near 6th Ave. West

Attachment A
Representative Photographs

Soil Borings near 6th Ave. West.

Attachment B

Soil Boring Logs

Barr Engineering Company
325 South Lake Avenue, Suite 700
Duluth, MN 55802
Telephone: 218-529-8200

LOG OF BORING B-01
DRAFT

Project: Superior Street Reconstruction Corridor
Project No.: 23691588.00
Location: Superior Street Duluth, Minnesota
Coordinates:
Datum:

Surface Elevation:
Drilling Method:3 1/4" Hollow Stem Auger
Sampling Method: Split Spoon
Completion Depth:9.9 ft

Depth, feet	Sample Type & Recovery	Sample No.	ENVIRONMENTAL DATA	USCS	Graphic Log	LITHOLOGIC DESCRIPTION	Elevation, feet
0.0						CONCRETE.	
				ML		SANDY SILT (ML): dark grayish brown; dry to wet; medium dense; non-plastic plasticity.	
2.5			**PID:**15.6 **D/O/S:**None/ None/ None				
				CL		SILTY CLAY (CL): dark yellowish brown; dry; loose; medium plasticity.	
5.0			**PID:**7.2 **D/O/S:**None/ None/ None				
				SM		SITLY SAND (SM): reddish brown; dry; loose; non-plastic plasticity.	
7.5			**PID:**13.2 **D/O/S:**None/ None/ None				
				SM		SILTY SAND (SM): brown; dry; medium dense; non-plastic plasticity.	
10.0			**PID:**7.5 **D/O/S:**None/ None/ None			Auger Refusal	
12.5							
15.0							
17.5							
20.0							

Date Boring Started: 11/2/14 11:20 pm
Date Boring Completed: 11/2/14 12:05 am
Logged By: NRS2
Drilling Contractor: Braun Intertec
Drill Rig:

Remarks: Sample collected at 7.5-9' Analyses: GRO/PVOC and DRO

PID = Headspace; D/O/S = Discoloration/Odor/Sheen; FID/MC = FID/Methane Corrected
Additional data may have been collected in the field which is not included on this log.
Weather: 30-35 degree F. Clear

O:\GINT\PROJECTS\23691588_SUPERIOR STREET BORINGS\23691588.00 SUPERIOR ST BORINGS.GPJ BARRLIBRARY.GLB ENVIRO LOG BARR TEMPLATE.GDT

Barr Engineering Company
325 South Lake Avenue, Suite 700
Duluth, MN 55802
Telephone: 218-529-8200

LOG OF BORING B-02
DRAFT

Project: Superior Street Reconstruction Corridor
Project No.: 23691588.00
Location: Superior Street Duluth, Minnesota
Coordinates:
Datum:

Surface Elevation:
Drilling Method:3 1/4" Hollow Stem Auger
Sampling Method: Split Spoon
Completion Depth:16.0 ft

Depth, feet	Sample Type & Recovery	Sample No.	ENVIRONMENTAL DATA	USCS	Graphic Log	LITHOLOGIC DESCRIPTION	Elevation, feet
0.0						CONCRETE.	
						ASPHALT.	
						CONCRETE.	
2.5			**PID:**no sample **D/O/S:**None/ None/ None	SM		SILTY SAND (SM): medium grained; dark brown; dry; loose; non-plastic plasticity; massive.	
5.0			**PID:**6.6 **D/O/S:**None/ None/ None	SC		CLAYEY SAND (SC): very fine to fine grained; dark brown; moist; medium dense; trace small gravel; low plasticity; massive.	
7.5			**PID:**6.7 **D/O/S:**None/ None/ None	CH		FAT CLAY (CH): brown; moist; medium stiff; trace very fine sand; medium to high plasticity; massive.	
10.0			**PID:**6.9 **D/O/S:**None/ None/ None				
12.5			**PID:**7.1 **D/O/S:**None/ None/ None				
15.0			**D/O/S:**None/ None/ None	SC		CLAYEY SAND (SC): brown; dry to moist; dense; trace small gravel, greenish gray mottling; low plasticity; massive.	
17.5						Target Depth Reached	
20.0							

Date Boring Started: 11/3/14 12:15 am
Date Boring Completed: 11/3/14 1:05 am
Logged By: NRS2
Drilling Contractor: Braun Intertec
Drill Rig:

Remarks:

PID = Headspace; D/O/S = Discoloration/Odor/Sheen; FID/MC = FID/Methane Corrected
Additional data may have been collected in the field which is not included on this log.
Weather: 30-35 degree F. Clear

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325 South Lake Avenue, Suite 700
Duluth, MN 55802
Telephone: 218-529-8200

LOG OF BORING B-03
DRAFT

Project: Superior Street Reconstruction Corridor
Project No.: 23691588.00
Location: Superior Street Duluth, Minnesota
Coordinates:
Datum:

Surface Elevation:
Drilling Method:3 1/4" Hollow Stem Auger
Sampling Method: Split Spoon
Completion Depth:16.0 ft

Depth, feet	Sample Type & Recovery	Sample No.	Blows/6in.	ENVIRONMENTAL DATA	USCS	Graphic Log	LITHOLOGIC DESCRIPTION	Elevation, feet
0.0							ASPHALT.	
							CONCRETE.	
							LEAN CLAY (CL): reddish brown; moist; soft; trace sand; medium plasticity; massive.	
2.5			4-3-3-.	**PID:**no sample **D/O/S:**None/ None/ None	CL			
5.0			2-3-3-.	**PID:**9.8 **D/O/S:**None/ None/ None				
							LEAN CLAY (CL): reddish brown; moist; soft; trace sand and gravel, black mottling; medium plasticity; massive;	
7.5			3-2-3-.	**PID:**10.9 **D/O/S:**None/ None/ None				
10.0				**PID:**7.9 **D/O/S:**None/ Petroleum/ None	CL			
12.5			2-3-4-.	**PID:**12.4 **D/O/S:**None/ None/ None				
							Wood fragements 13-15'.	
							SILTY SAND (SM): reddish brown; moist; dense; intermixed with stiff clay; low plasticity; massive.	
15.0				**PID:**13.7 **D/O/S:**None/ Petroleum/ None	SM			
							Target Depth Reached	
17.5								
20.0								

Date Boring Started: 11/3/14 11:00 pm
Date Boring Completed: 11/3/14 11:50 pm
Logged By: NRS2
Drilling Contractor: Braun Intertec
Drill Rig:

Remarks: Sample collected at 9.5-11' Analyses: GRO/PVOC and DRO

PID = Headspace; D/O/S = Discoloration/Odor/Sheen; FID/MC = FID/Methane Corrected
Additional data may have been collected in the field which is not included on this log.
Weather: 30-35 degree F. Clear

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325 South Lake Avenue, Suite 700
Duluth, MN 55802
Telephone: 218-529-8200

LOG OF BORING B-04
DRAFT

Project: Superior Street Reconstruction Corridor
Project No.: 23691588.00
Location: Superior Street Duluth, Minnesota
Coordinates:
Datum:

Surface Elevation:
Drilling Method:3 1/4" Hollow Stem Auger
Sampling Method: Split Spoon
Completion Depth:16.0 ft

Depth, feet	Sample Type & Recovery	Sample No.	Blows/6in.	ENVIRONMENTAL DATA	USCS	Graphic Log	LITHOLOGIC DESCRIPTION	Elevation, feet
0.0							ASPHALT.	
							CONCRETE.	
2.5			3-3-4-.	**PID:**5.4 **D/O/S:**None/ None/ None	CL		LEAN CLAY (CL): brown (7.5YR 4/2); dry to moist; medium dense; little gravel, gray mottling; low plasticity; massive.	
5.0			2-1-8-.	**PID:**8.5 **D/O/S:**None/ None/ None	CL		LEAN CLAY (CL): brown (7.5YR 4/2); moist; soft; trace gravel, lenses of black silty sand; lensed.	
7.5			3-2-2-.	**PID:**no sample **D/O/S:**None/ None/ None				
10.0			2-1-1-.	**PID:**no sample **D/O/S:**None/ None/ None				
12.5			13-16-.	**PID:**8.7 **D/O/S:**None/ None/ None	CL		LEAN CLAY (CL): brown (7.5YR 4/2); moist; stiff; trace gravel, some black mottling; massive.	
15.0				**PID:**9.4 **D/O/S:**None/ None/ None				
17.5							Target Depth Reached	
20.0								

Date Boring Started: 11/3/14 11:53 pm
Date Boring Completed: 11/3/14 12:48 am
Logged By: NRS2
Drilling Contractor: Braun Intertec
Drill Rig:

Remarks: Sample collected at 11.5-14' Analyses: DRO, GRO, VOC, PAH, and RCRA Metals.

PID = Headspace; D/O/S = Discoloration/Odor/Sheen; FID/MC = FID/Methane Corrected
Additional data may have been collected in the field which is not included on this log.
Weather: 30-35 degree F. Clear

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Barr Engineering Company
325 South Lake Avenue, Suite 700
Duluth, MN 55802
Telephone: 218-529-8200

LOG OF BORING B-05
DRAFT

Project: Superior Street Reconstruction Corridor
Project No.: 23691588.00
Location: Superior Street Duluth, Minnesota
Coordinates:
Datum:

Surface Elevation:
Drilling Method:3 1/4" Hollow Stem Auger
Sampling Method: Split Spoon
Completion Depth:16.0 ft

Depth, feet	Sample Type & Recovery	Sample No.	ENVIRONMENTAL DATA	USCS	Graphic Log	LITHOLOGIC DESCRIPTION	Elevation, feet
0.0						ASPHALT.	
						CONCRETE.	
				SM		SILTY SAND (SM): brown; dry; loose; little gravel; non-plastic plasticity; massive.	
2.5			**PID:**no sample **D/O/S:**None/ None/ None	CL		LEAN CLAY (CL): brown; dry to moist; stiff; trace gravel; low plasticity; massive.	
5.0			**PID:**14.5 **D/O/S:**None/ None/ None				
7.5			**PID:**7.5 **D/O/S:**None/ None/ None				
10.0			**PID:**15.1 **D/O/S:**None/ None/ None	CH		FAT CLAY (CH): dark brown; dry to moist; soft; high plasticity; massive.	
12.5			**PID:**15.7 **D/O/S:**None/ None/ None	CL		LEAN CLAY (CL): dark brown; dry; stiff; trace gravel, lenses of medium grained sand; low plasticity; massive.	
15.0			**D/O/S:**None/ None/ None				
						Target Depth Reached	
17.5							
20.0							

Date Boring Started: 11/7/14 1:22 am
Date Boring Completed: 11/7/14 2:20 am
Logged By: NRS2
Drilling Contractor: Braun Intertec
Drill Rig:

Remarks:

PID = Headspace; D/O/S = Discoloration/Odor/Sheen; FID/MC = FID/Methane Corrected
Additional data may have been collected in the field which is not included on this log.
Weather: 30-35 degree F. Cloudy

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325 South Lake Avenue, Suite 700
Duluth, MN 55802
Telephone: 218-529-8200

LOG OF BORING B-06
DRAFT

Project: Superior Street Reconstruction Corridor
Project No.: 23691588.00
Location: Superior Street Duluth, Minnesota
Coordinates:
Datum:

Surface Elevation:
Drilling Method:3 1/4" Hollow Stem Auger
Sampling Method: Split Spoon
Completion Depth:16.0 ft

Depth, feet	Sample Type & Recovery	Sample No.	Blows/6in.	ENVIRONMENTAL DATA	USCS	Graphic Log	LITHOLOGIC DESCRIPTION	Elevation, feet
0.0							BRICK.	
							ASPHALT.	
							CONCRETE.	
					CL		LEAN CLAY (CL): reddish brown; dry to moist; stiff; trace gravel, small amount of light gray green mottling (native), trace pyrite; medium plasticity; massive.	
2.5			4-8-5-.					
5.0								
7.5			5-7-9-.	**PID:**2.5 **D/O/S:**None/ None/ None				
10.0				**PID:**5.8 **D/O/S:**None/ None/ None				
12.5			6-5-7-.	**PID:**4.5 **D/O/S:**None/ None/ None				
15.0			3-4-5-.	**PID:**4.3 **D/O/S:**None/ None/ None	CH		FAT CLAY (CH): reddish brown; moist; medium stiff; gray green and black mottling (native); high plasticity; massive.	
							Target Depth Reached	
17.5								
20.0								

Date Boring Started: 11/4/14 1:06 am
Date Boring Completed: 11/4/14 1:55 am
Logged By: NRS2
Drilling Contractor: Braun Intertec
Drill Rig:

Remarks:

PID = Headspace; D/O/S = Discoloration/Odor/Sheen; FID/MC = FID/Methane Corrected
Additional data may have been collected in the field which is not included on this log.
Weather: 30-35 degree F. Clear

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Barr Engineering Company
325 South Lake Avenue, Suite 700
Duluth, MN 55802
Telephone: 218-529-8200

LOG OF BORING B-07
DRAFT

Project: Superior Street Reconstruction Corridor
Project No.: 23691588.00
Location: Superior Street Duluth, Minnesota
Coordinates:
Datum:

Surface Elevation:
Drilling Method:3 1/4" Hollow Stem Auger
Sampling Method: Split Spoon
Completion Depth:16.0 ft

Depth, feet	Sample Type & Recovery	Sample No.	Blows/6in.	ENVIRONMENTAL DATA	USCS	Graphic Log	LITHOLOGIC DESCRIPTION	Elevation, feet
0.0							BRICK.	
							ASPHALT.	
							CONCRETE.	
							FAT CLAY (CH): reddish brown (5YR 4/3); dry to moist; stiff; trace small gravel, trace amount of light gray green mottling (native); high plasticity; massive; granular and crumbly.	
2.5				**PID:**no sample **D/O/S:**None/ None/ None				
5.0			5-5-7-.	**PID:**5.5 **D/O/S:**None/ None/ None				
7.5			3-3-3-.	**PID:**1.2 **D/O/S:**None/ None/ None	CH			
10.0			2-4-6-.	**PID:**3.6 **D/O/S:**None/ None/ None				
12.5			4-5-5-.	**PID:**3.7 **D/O/S:**None/ None/ None				
15.0				**PID:**no sample **D/O/S:**None/ None/ None	CH		FAT CLAY (CH): reddish brown (5YR 4/3); moist; stiff; few large gravel; high plasticity; massive.	
							Target Depth Reached	
17.5								
20.0								

Date Boring Started: 11/4/14 3:20 am
Date Boring Completed: 11/4/14 4:10 am
Logged By: NRS2
Drilling Contractor: Braun Intertec
Drill Rig:

Remarks:

PID = Headspace; D/O/S = Discoloration/Odor/Sheen; FID/MC = FID/Methane Corrected
Additional data may have been collected in the field which is not included on this log.
Weather: 30-35 degree F. Clear

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Barr Engineering Company
325 South Lake Avenue, Suite 700
Duluth, MN 55802
Telephone: 218-529-8200

LOG OF BORING B-08
DRAFT

Project: Superior Street Reconstruction Corridor
Project No.: 23691588.00
Location: Superior Street Duluth, Minnesota
Coordinates:
Datum:

Surface Elevation:
Drilling Method:3 1/4" Hollow Stem Auger
Sampling Method: Split Spoon
Completion Depth:16.0 ft

Depth, feet	Sample Type & Recovery	Sample No.	ENVIRONMENTAL DATA	USCS	Graphic Log	LITHOLOGIC DESCRIPTION	Elevation, feet
0.0						BRICK.	
						ASPHALT.	
						CONCRETE.	
						SILTY SAND (SM): coarse grained; dark grayish brown (10YR 4/2); moist; very loose; trace gravel; non-plastic plasticity; massive.	
2.5			**PID:**6.1 **D/O/S:**None/ None/ None				
5.0			**PID:**6.4 **D/O/S:**None/ None/ None	SM			
7.5			**PID:**no sample **D/O/S:**None/ None/ None				
10.0			**PID:**3.5 **D/O/S:**None/ None/ None			FAT CLAY (CH): reddish brown; moist; stiff; few gravel; high plasticity; massive;	
12.5			**PID:**3.8 **D/O/S:**None/ None/ None	CH		Dark gray to black mottling present at 14'.	
15.0			**PID:**no sample **D/O/S:**None/ None/ None				
						Target Depth Reached	
17.5							
20.0							

Date Boring Started: 11/4/14 3:45 am
Date Boring Completed: 11/4/14 4:40 am
Logged By: NRS2
Drilling Contractor: Braun Intertec
Drill Rig:

Remarks: Sample collected at 9.5-11.0' Analyses: GRO/PVOC and DRO

PID = Headspace; D/O/S = Discoloration/Odor/Sheen; FID/MC = FID/Methane Corrected
Additional data may have been collected in the field which is not included on this log.
Weather: 30-35 degree F. Clear

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Barr Engineering Company
325 South Lake Avenue, Suite 700
Duluth, MN 55802
Telephone: 218-529-8200

LOG OF BORING B-09
DRAFT

Project: Superior Street Reconstruction Corridor
Project No.: 23691588.00
Location: Superior Street Duluth, Minnesota
Coordinates:
Datum:

Surface Elevation:
Drilling Method:3 1/4" Hollow Stem Auger
Sampling Method: Split Spoon
Completion Depth:16.0 ft

Depth, feet	Sample Type & Recovery	Sample No.	Blows/6in.	ENVIRONMENTAL DATA	USCS	Graphic Log	LITHOLOGIC DESCRIPTION	Elevation, feet
0.0							BRICK.	
							ASPHALT.	
							CONCRETE.	
							FAT CLAY (CH): reddish brown (5YR 4/3); moist; stiff; little small to large gravel; high plasticity; massive;	
2.5				**PID:**no sample **D/O/S:**None/ None/ None			granular at 3'	
5.0			5-6-7-.	**PID:**5.5 **D/O/S:**None/ None/ None				
7.5			7-10-7-.	**PID:**5.5 **D/O/S:**None/ None/ None	CH			
10.0			4-4-5-.	**PID:**4.6 **D/O/S:**None/ None/ None			Medium density at 11.5-16'	
12.5			3-4-5-.	**PID:**1.6 **D/O/S:**None/ None/ None			Gray mottling present from 14.5-16'.	
15.0			2-3-3-.	**PID:**4.6 **D/O/S:**None/ None/ None				
							Target Depth Reached	
17.5								
20.0								

Date Boring Started: 11/4/14 4:35 am
Date Boring Completed: 11/4/14 5:30 am
Logged By: NRS2
Drilling Contractor: Braun Intertec
Drill Rig:

Remarks: Sample collected at 9.5-11.0' Analyses: GRO/PVOC and DRO

PID = Headspace; D/O/S = Discoloration/Odor/Sheen; FID/MC = FID/Methane Corrected
Additional data may have been collected in the field which is not included on this log.
Weather: 30-35 degree F. Clear

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Barr Engineering Company
325 South Lake Avenue, Suite 700
Duluth, MN 55802
Telephone: 218-529-8200

LOG OF BORING B-10
DRAFT

Project: Superior Street Reconstruction Corridor
Project No.: 23691588.00
Location: Superior Street Duluth, Minnesota
Coordinates:
Datum:

Surface Elevation:
Drilling Method:3 1/4" Hollow Stem Auger
Sampling Method: Split Spoon
Completion Depth:16.0 ft

Depth, feet	Sample Type & Recovery	Sample No.	Blows/6in.	ENVIRONMENTAL DATA	USCS	Graphic Log	LITHOLOGIC DESCRIPTION	Elevation, feet
0.0							BRICK.	
							ASPHALT.	
							CONCRETE.	
					CL		LEAN CLAY (CL): reddish brown (5YR 4/3); moist; medium stiff; few gravel and sand; low plasticity; massive.	
2.5			8-3-5-.					
5.0			2-3-2-.					
7.5			3-5-6-.	**PID:**3.3 **D/O/S:**None/ None/ None				
					CH		FAT CLAY (CH): reddish brown (5YR 4/3); moist; stiff; little gravel, some drak gray to black mottling (native); high plasticity; massive.	
10.0			2-3-3-.	**PID:**3.5 **D/O/S:**None/ None/ None				
12.5			9-9-9-.	**D/O/S:**None/ None/ None				
15.0				**PID:**4.3 **D/O/S:**None/ None/ None				
							Target Depth Reached	
17.5								
20.0								

Date Boring Started: 11/4/14 5:30 am
Date Boring Completed: 11/4/14 6:30 am
Logged By: NRS2
Drilling Contractor: Braun Intertec
Drill Rig:

Remarks: Sample collected at 8.5-9.0 feet. Analyses: GRO/PVOC and PAH.

PID = Headspace; D/O/S = Discoloration/Odor/Sheen; FID/MC = FID/Methane Corrected
Additional data may have been collected in the field which is not included on this log.
Weather: 30-35 degree F. Clear

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Barr Engineering Company
325 South Lake Avenue, Suite 700
Duluth, MN 55802
Telephone: 218-529-8200

LOG OF BORING B-11
DRAFT

Project: Superior Street Reconstruction Corridor
Project No.: 23691588.00
Location: Superior Street Duluth, Minnesota
Coordinates:
Datum:

Surface Elevation:
Drilling Method:3 1/4" Hollow Stem Auger
Sampling Method: Split Spoon
Completion Depth:16.0 ft

Depth, feet	Sample Type & Recovery	Sample No.	ENVIRONMENTAL DATA	USCS	Graphic Log	LITHOLOGIC DESCRIPTION	Elevation, feet
0.0						BRICK.	
						ASPHALT.	
						CONCREETE.	
				SM		SILTY SAND WITH GRAVEL (SM): dry to moist; loose; few gravel; non-plastic plasticity; massive; (fill).	
2.5			**PID:**no sample **D/O/S:**None/ None/ None	CH		FAT CLAY (CH): dry to moist; stiff; little gravel; high plasticity; massive; (native).	
5.0			**PID:**0.3 **D/O/S:**None/ None/ None				
7.5			**PID:**0.6 **D/O/S:**None/ None/ None				
10.0			**PID:**0.4 **D/O/S:**None/ None/ None				
12.5			**PID:**0.8 **D/O/S:**None/ None/ None	CH		FAT CLAY (CH): moist; medium stiff; little fine gravel and medium sand; high plasticity; massive; (native).	
15.0			**PID:**0.8 **D/O/S:**None/ None/ None	SM		SILTY SAND WITH GRAVEL (SM): moist; medium dense; few small gravel; low plasticity; massive; (native).	
17.5						Target Depth Reached	
20.0							

Date Boring Started: 11/4/14 9:40 pm
Date Boring Completed: 11/4/14 10:25 pm
Logged By: NRS2
Drilling Contractor: Braun Intertec
Drill Rig:

Remarks:

PID = Headspace; D/O/S = Discoloration/Odor/Sheen; FID/MC = FID/Methane Corrected
Additional data may have been collected in the field which is not included on this log.
Weather: 30-35 degree F. Cloudy

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Barr Engineering Company
325 South Lake Avenue, Suite 700
Duluth, MN 55802
Telephone: 218-529-8200

LOG OF BORING B-15
DRAFT

Project: Superior Street Reconstruction Corridor
Project No.: 23691588.00
Location: Superior Street Duluth, Minnesota
Coordinates:
Datum:

Surface Elevation:
Drilling Method:3 1/4" Hollow Stem Auger
Sampling Method: Split Spoon
Completion Depth:16.0 ft

Depth, feet	Sample Type & Recovery	Sample No.	ENVIRONMENTAL DATA	USCS	Graphic Log	LITHOLOGIC DESCRIPTION	Elevation, feet
0.0						ASPHALT.	
						CONCRETE.	
				SM		SILTY SAND (SM): dark brown; dry to moist; loose; non-plastic plasticity; massive.	
2.5			**PID:**10.2 **D/O/S:**None/ None/ None	SC		CLAYEY SAND (SC): brown; dry to moist; dense; trace gravel; low plasticity.	
5.0			**PID:**10..4 **D/O/S:**None/ None/ None				
7.5			**PID:**11.2 **D/O/S:**None/ None/ None	CH		FAT CLAY (CH): brown; moist; soft; high plasticity.	
10.0			**PID:**13.2 **D/O/S:**None/ None/ None				
12.5			**PID:**7.5 **D/O/S:**None/ None/ None				
15.0							
						Target Depth Reached	
17.5							
20.0							

Date Boring Started: 11/3/14 2:35 am
Date Boring Completed: 11/3/14 3:18 am
Logged By: NRS2
Drilling Contractor: Braun Intertec
Drill Rig:

Remarks:

PID = Headspace; D/O/S = Discoloration/Odor/Sheen; FID/MC = FID/Methane Corrected
Additional data may have been collected in the field which is not included on this log.
Weather: 30-35 degree F. Clear

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Barr Engineering Company
325 South Lake Avenue, Suite 700
Duluth, MN 55802
Telephone: 218-529-8200

LOG OF BORING B-16
DRAFT

Project: Superior Street Reconstruction Corridor
Project No.: 23691588.00
Location: Superior Street Duluth, Minnesota
Coordinates:
Datum:

Surface Elevation:
Drilling Method:3 1/4" Hollow Stem Auger
Sampling Method: Split Spoon
Completion Depth:21.0 ft

Depth, feet	Sample Type & Recovery	Sample No.	ENVIRONMENTAL DATA	USCS	Graphic Log	LITHOLOGIC DESCRIPTION	Elevation, feet
0						BRICK.	
						CONCRETE.	
				SM		SILTY SAND WITH GRAVEL (SM): reddish brown (5YR 4/3); dry; few small gravel; non-plastic plasticity; massive.	
			PID:9.8 **D/O/S:**None/ None/ None				
5			**PID:**9.7 **D/O/S:**None/ None/ None	SC		CLAYEY SAND (SC): reddish brown (5YR 4/3); dry to moist; trace small gravel; low plasticity; massive.	
			PID:15.8 **D/O/S:**None/ None/ None	CL		LEAN CLAY (CL): reddish brown (5YR 4/3); moist; trace gravel; medium plasticity; massive;	
10			**PID:**10.2 **D/O/S:**None/ None/ None				
			PID:12.2 **D/O/S:**None/ None/ None			Wood fragments present from 11.5 to 14 feet and at 15 feet. Wood is pine colored with black and brown discoloration.	
15			**PID:**10.9 **D/O/S:**None/ None/ None				
			PID:12.5 **D/O/S:**None/ None/ None	ML		SILT (ML): dark gray (5YR 4/1); dry to moist; trace gravel; non-plastic plasticity; massive.	
20						Target Depth Reached	

Date Boring Started: 11/3/14 3:35 am
Date Boring Completed: 11/3/14 4:30 am
Logged By: NRS2
Drilling Contractor: Braun Intertec
Drill Rig:

Remarks:

PID = Headspace; D/O/S = Discoloration/Odor/Sheen; FID/MC = FID/Methane Corrected
Additional data may have been collected in the field which is not included on this log.
Weather: 30-35 degree F. Clear

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325 South Lake Avenue, Suite 700
Duluth, MN 55802
Telephone: 218-529-8200

LOG OF BORING B-17
DRAFT

Project: Superior Street Reconstruction Corridor
Project No.: 23691588.00
Location: Superior Street Duluth, Minnesota
Coordinates:
Datum:

Surface Elevation:
Drilling Method:3 1/4" Hollow Stem Auger
Sampling Method: Split Spoon
Completion Depth:16.0 ft

Depth, feet	Sample Type & Recovery	Sample No.	ENVIRONMENTAL DATA	USCS	Graphic Log	LITHOLOGIC DESCRIPTION	Elevation, feet
0.0						BRICK.	
						CONCRETE.	
				SM		SILTY SAND (SM): fine grained; brown; dry to moist; medium dense; little gravel; non-plastic plasticity; massive.	
2.5			**PID:**10.5 **D/O/S:**None/ None/ None				
				SC		CLAYEY SAND (SC): brown; dry to moist; medium dense; trace gravel; non-plastic plasticity; massive.	
5.0			**PID:**9.3 **D/O/S:**None/ None/ None				
				CL		LEAN CLAY (CL): dark yellowish brown; moist; stiff; trace gravel, some gray/green mottling (native); low plasticity; massive.	
7.5			**PID:**5.2 **D/O/S:**None/ None/ None				
10.0			**PID:**6.6 **D/O/S:**None/ None/ None				
12.5			**PID:**5.2 **D/O/S:**None/ None/ None	CH		FAT CLAY (CH): brown (7.5YR 4/3); moist; medium stiff; high plasticity; massive.	
15.0			**PID:**5.2 **D/O/S:**None/ None/ None				
						Target Depth Reached	
17.5							
20.0							

Date Boring Started: 11/3/14 5:00 am
Date Boring Completed: 11/3/14 6:00 am
Logged By: NRS2
Drilling Contractor: Braun Intertec
Drill Rig:

Remarks: Sample collected at 2.5-4' Analyses: VOC, PAH, RCRA Metals, and SVOC
Sample collected at 9.5-11' Analyses: GRO/PVOC and DRO

PID = Headspace; D/O/S = Discoloration/Odor/Sheen; FID/MC = FID/Methane Corrected
Additional data may have been collected in the field which is not included on this log.
Weather: 30-35 degree F. Clear

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325 South Lake Avenue, Suite 700
Duluth, MN 55802
Telephone: 218-529-8200

LOG OF BORING B-18
DRAFT

Project: Superior Street Reconstruction Corridor
Project No.: 23691588.00
Location: Superior Street Duluth, Minnesota
Coordinates:
Datum:

Surface Elevation:
Drilling Method:3 1/4" Hollow Stem Auger
Sampling Method: Split Spoon
Completion Depth:16.0 ft

Depth, feet	Sample Type & Recovery	Sample No.	ENVIRONMENTAL DATA	USCS	Graphic Log	LITHOLOGIC DESCRIPTION	Elevation, feet
0.0						BRICK.	
						ASPHALT.	
						CONCRETE.	
				SM		SILTY SAND WITH GRAVEL (SM): medium grained; reddish brown with brown and black mottling; moist; loose; few large gravel; non-plastic plasticity; massive; possibly fill.	
2.5			**PID:**11.7 **D/O/S:**None/ None/ None				
5.0			**PID:**No Sample **D/O/S:**None/ None/ None				
				CH		FAT CLAY (CH): reddish brown with black and dark gray mottling; moist; soft; trace large gravel; high plasticity; massive.	
7.5			**PID:**No Sample **D/O/S:**None/ None/ None				
10.0			**PID:**No Sample **D/O/S:**None/ None/ None				
12.5			**PID:**5.9 **D/O/S:**None/ None/ None				
15.0			**PID:**4.9 **D/O/S:**None/ None/ None				
						Target Depth Reached	
17.5							
20.0							

Date Boring Started: 11/5/14 1:40 am
Date Boring Completed: 11/5/14 2:10 am
Logged By: NRS2
Drilling Contractor: Braun Intertec
Drill Rig:

Remarks: Sample collected at 9.5-11.0' Analyses: GRO/PVOC and DRO

PID = Headspace; D/O/S = Discoloration/Odor/Sheen; FID/MC = FID/Methane Corrected
Additional data may have been collected in the field which is not included on this log.
Weather: 30-35 degree F. Clear

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325 South Lake Avenue, Suite 700
Duluth, MN 55802
Telephone: 218-529-8200

LOG OF BORING B-19
DRAFT

Project: Superior Street Reconstruction Corridor
Project No.: 23691588.00
Location: Superior Street Duluth, Minnesota
Coordinates:
Datum:

Surface Elevation:
Drilling Method:3 1/4" Hollow Stem Auger
Sampling Method: Split Spoon
Completion Depth:16.0 ft

Depth, feet	Sample Type & Recovery	Sample No.	Blows/6in.	ENVIRONMENTAL DATA	USCS	Graphic Log	LITHOLOGIC DESCRIPTION	Elevation, feet
0.0							ASPHALT.	
							CONCRETE.	
					CH		FAT CLAY (CH): yellowish red; dry to moist; stiff; little small gravel; high plasticity; massive.	
2.5			2-5-3-.	**PID:**11.7 **D/O/S:**None/ None/ None				
5.0			2-3-3-.	**D/O/S:**None/ None/ None				
7.5			2-1-2-.	**D/O/S:**None/ None/ None				
10.0			2-2-2-.	**D/O/S:**None/ None/ None	SC		CLAYEY SAND (SC): brown; moist; medium dense; little small gravel; low plasticity; massive.	
					CH		FAT CLAY (CH): yellowish red; moist; medium stiff; trace small gravel; high plasticity; massive;	
12.5			2-3-6-.	**PID:**5.9 **D/O/S:**None/ None/ None			Wood fragments present at 13'.	
15.0			5-6-10-.	**PID:**4.9 **D/O/S:**None/ None/ None				
							Target Depth Reached	
17.5								
20.0								

Date Boring Started: 11/5/14 3:00 am
Date Boring Completed: 11/5/14 3:30 am
Logged By: NRS2
Drilling Contractor: Braun Intertec
Drill Rig:

Remarks: Sample collected at 11.5-14' Analyses: GRO/PVOC and DRO

PID = Headspace; D/O/S = Discoloration/Odor/Sheen; FID/MC = FID/Methane Corrected
Additional data may have been collected in the field which is not included on this log.
Weather: 30-35 degree F. Cloudy

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325 South Lake Avenue, Suite 700
Duluth, MN 55802
Telephone: 218-529-8200

LOG OF BORING B-20
DRAFT

Project: Superior Street Reconstruction Corridor
Project No.: 23691588.00
Location: Superior Street Duluth, Minnesota
Coordinates:
Datum:

Surface Elevation:
Drilling Method:3 1/4" Hollow Stem Auger
Sampling Method: Split Spoon
Completion Depth:16.0 ft

Depth, feet	Sample Type & Recovery	Sample No.	Blows/6in.	ENVIRONMENTAL DATA	USCS	Graphic Log	LITHOLOGIC DESCRIPTION	Elevation, feet
0.0							ASPHALT.	
							CONCRETE.	
					SM		SILTY SAND (SM): fine grained; reddish brown; moist; loose; trace small gravel; non-plastic plasticity; massive.	
2.5			5-4-5-.	**PID:**5.7 **D/O/S:**None/ None/ None				
5.0			1-4-8-.	**PID:**4.5 **D/O/S:**None/ None/ None				
7.5			5-5-8-.	**PID:**3.7 **D/O/S:**None/ None/ None	CL		LEAN CLAY (CL): reddish brown; dry to moist; medium stiff; trace small gravel; low plasticity; massive.	
10.0			3-6-10-.	**PID:**5.2 **D/O/S:**None/ None/ None				
12.5			8-10-28-.	**PID:**6.8 **D/O/S:**None/ None/ None				
15.0			12-23-28-.	**PID:**4.2 **D/O/S:**None/ None/ None	SC		CLAYEY SAND (SC): fine grained; dark reddish gray; moist; medium dense; trace small to large gravel; low plasticity; massive.	
							Target Depth Reached	
17.5								
20.0								

Date Boring Started: 11/5/14 4:00 am
Date Boring Completed: 11/5/14 5:30 am
Logged By: NRS2
Drilling Contractor: Braun Intertec
Drill Rig:

Remarks: Sample collected at 9.5-11' Analyses: GRO and VOC

PID = Headspace; D/O/S = Discoloration/Odor/Sheen; FID/MC = FID/Methane Corrected
Additional data may have been collected in the field which is not included on this log.
Weather: 30-35 degree F. Cloudy

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325 South Lake Avenue, Suite 700
Duluth, MN 55802
Telephone: 218-529-8200

LOG OF BORING B-21
DRAFT

Project: Superior Street Reconstruction Corridor
Project No.: 23691588.00
Location: Superior Street Duluth, Minnesota
Coordinates:
Datum:

Surface Elevation:
Drilling Method:3 1/4" Hollow Stem Auger
Sampling Method: Split Spoon
Completion Depth:16.0 ft

Depth, feet	Sample Type & Recovery	Sample No.	Blows/6in.	ENVIRONMENTAL DATA	USCS	Graphic Log	LITHOLOGIC DESCRIPTION	Elevation, feet
0.0							ASPHALT.	
							CONCRETE.	
							GRAVEL AND SILTY SAND: (based on cuttings).	
2.5			6-3-4-.	**PID:**13.9 **D/O/S:**None/ None/ None	SC		CLAYEY SAND (SC): dark reddish gray; moist; medium dense; wood fragments; trace small gravel; low plasticity; massive.	
5.0			3-3-5-.	**PID:**4.4 **D/O/S:**None/ None/ None	CH		FAT CLAY (CH): reddish brown; moist; stiff; wood fragments; little small gravel; high plasticity; massive;	
7.5			4-5-6-.	**PID:**4.6 **D/O/S:**None/ None/ None			9-10' wood fragments.	
10.0			4-4-7-.	**PID:**4.6 **D/O/S:**None/ None/ None	SC		CLAYEY SAND (SC): dark reddish gray; moist; medium dense; little gravel; low plasticity; massive.	
12.5			15-21-22-.	**PID:**3.9 **D/O/S:**None/ None/ None				
					CH		FAT CLAY (CH): reddish brown; dry to moist; stiff; wood fragments and trace small gravel; high plasticity; massive.	
15.0			8-23-25-.	**PID:**4.4 **D/O/S:**None/ None/ None	SC		CLAYEY SAND (SC): dark reddish gray; moist; medium dense; wood fragments and trace small gravel; low plasticity; massive.	
							Target Depth Reached	
17.5								
20.0								

Date Boring Started: 11/5/14 5:45 am
Date Boring Completed: 11/5/14 6:15 am
Logged By: NRS2
Drilling Contractor: Braun Intertec
Drill Rig:

Remarks: Sample collected at 7.5-9.0'. Analyses: GRO and VOC

PID = Headspace; D/O/S = Discoloration/Odor/Sheen; FID/MC = FID/Methane Corrected
Additional data may have been collected in the field which is not included on this log.
Weather: 30-35 degree F. Cloudy

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Barr Engineering Company
325 South Lake Avenue, Suite 700
Duluth, MN 55802
Telephone: 218-529-8200

LOG OF BORING B-26
DRAFT

Project: Superior Street Reconstruction Corridor
Project No.: 23691588.00
Location: Superior Street Duluth, Minnesota
Coordinates:
Datum:

Surface Elevation:
Drilling Method:3 1/4" Hollow Stem Auger
Sampling Method: Split Spoon
Completion Depth:7.8 ft

Depth, feet	Sample Type & Recovery	Sample No.	Blows/6in.	ENVIRONMENTAL DATA	USCS	Graphic Log	LITHOLOGIC DESCRIPTION	Elevation, feet
0.0							BRICK.	
							ASPHALT.	
							CONCRETE.	
							CLAYEY SAND (SC): dark reddish brown; moist; medium dense; trace small gravel; low plasticity; massive.	
2.5			8-8-4-.	**PID:**5.2 **D/O/S:**None/ None/ None	SC			
							SILTY SAND (SM): fine grained; dark reddish brown; moist; medium dense; trace small gravel; low plasticity; massive.	
5.0			6-3-3-.	**PID:**4.7 **D/O/S:**None/ None/ None	SM			
7.5			50/3"-.				Auger Refusal	
10.0								
12.5								
15.0								
17.5								
20.0								

Date Boring Started: 11/5/14 9:50 pm
Date Boring Completed: 11/5/14 10:20 pm
Logged By: NRS2
Drilling Contractor: Braun Intertec
Drill Rig:

Remarks: No sample collected due to auger refusal at shallow depth.

PID = Headspace; D/O/S = Discoloration/Odor/Sheen; FID/MC = FID/Methane Corrected
Additional data may have been collected in the field which is not included on this log.
Weather: 30-35 degree F. Cloudy

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325 South Lake Avenue, Suite 700
Duluth, MN 55802
Telephone: 218-529-8200

LOG OF BORING B-27
DRAFT

Project: Superior Street Reconstruction Corridor
Project No.: 23691588.00
Location: Superior Street Duluth, Minnesota
Coordinates:
Datum:

Surface Elevation:
Drilling Method:3 1/4" Hollow Stem Auger
Sampling Method: Split Spoon
Completion Depth:5.0 ft

Depth, feet	Sample Type & Recovery	Sample No.	Blows/6in.	ENVIRONMENTAL DATA	USCS	Graphic Log	LITHOLOGIC DESCRIPTION	Elevation, feet
0.0							BRICK.	
							ASPHALT.	
							CONCRETE.	
					GP		GRAVEL AND SILTY SAND (GP): Fill (based on cuttings).	
2.5			3-5-9-.	**PID:**5.8 **D/O/S:**None/ None/ None	CL		LEAN CLAY (CL): reddish brown; dry to moist; medium stiff; few fine grained sand; medium plasticity; massive.	
5.0			50/4"-.				Auger Refusal	
7.5								
10.0								
12.5								
15.0								
17.5								
20.0								

Date Boring Started: 11/5/14 10:35 pm
Date Boring Completed: 11/5/14 10:56 pm
Logged By: NRS2
Drilling Contractor: Braun Intertec
Drill Rig:

Remarks: No sample collected due to auger refusal at shallow depth.

PID = Headspace; D/O/S = Discoloration/Odor/Sheen; FID/MC = FID/Methane Corrected
Additional data may have been collected in the field which is not included on this log.
Weather: 30-35 degree F. Cloudy

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325 South Lake Avenue, Suite 700
Duluth, MN 55802
Telephone: 218-529-8200

LOG OF BORING B-28
DRAFT

Project: Superior Street Reconstruction Corridor
Project No.: 23691588.00
Location: Superior Street Duluth, Minnesota
Coordinates:
Datum:

Surface Elevation:
Drilling Method:3 1/4" Hollow Stem Auger
Sampling Method: Split Spoon
Completion Depth:4.2 ft

Depth, feet	Sample Type & Recovery	Sample No.	Blows/6in.	ENVIRONMENTAL DATA	USCS	Graphic Log	LITHOLOGIC DESCRIPTION	Elevation, feet
0.0							BRICK.	
							ASPHALT.	
							CONCRETE.	
					GP		GRAVEL (GP).	
2.5			3-4-5-.	**PID:**no sample	CH		FAT CLAY (CH): dark reddish brown; moist; medium stiff; few fine sand; high plasticity; massive.	
							Auger Refusal	
5.0								
7.5								
10.0								
12.5								
15.0								
17.5								
20.0								

Date Boring Started: 11/5/14 11:00 pm
Date Boring Completed: 11/5/14 11:24 pm
Logged By: NRS2
Drilling Contractor: Braun Intertec
Drill Rig:

Remarks: Sample collected at 2.5-4'. Analysis: GRO, PVOC, and DRO (results reported as C10-C28)

PID = Headspace; D/O/S = Discoloration/Odor/Sheen; FID/MC = FID/Methane Corrected
Additional data may have been collected in the field which is not included on this log.
Weather: 30-35 degree F. Cloudy

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325 South Lake Avenue, Suite 700
Duluth, MN 55802
Telephone: 218-529-8200

LOG OF BORING B-29
DRAFT

Project: Superior Street Reconstruction Corridor
Project No.: 23691588.00
Location: Superior Street Duluth, Minnesota
Coordinates:
Datum:

Surface Elevation:
Drilling Method:3 1/4" Hollow Stem Auger
Sampling Method: Split Spoon
Completion Depth:5.0 ft

Depth, feet	Sample Type & Recovery	Sample No.	Blows/6in.	ENVIRONMENTAL DATA	USCS	Graphic Log	LITHOLOGIC DESCRIPTION	Elevation, feet
0.0							ASPHALT.	
							CONCRETE.	
							SILTY SAND (SM): dark reddish brown; loose; trace gravel; non-plastic plasticity; massive.	
2.5			6-8-6-.	**PID:**no sample **D/O/S:**None/ None/ None	SM			
			50/5"-.					
5.0							Auger Refusal	
7.5								
10.0								
12.5								
15.0								
17.5								
20.0								

Date Boring Started: 11/5/14 11:45 pm
Date Boring Completed: 11/6/14 12:25 am
Logged By: NRS2
Drilling Contractor: Braun Intertec
Drill Rig:

Remarks: No sample collected due to auger refusal at shallow depth.

PID = Headspace; D/O/S = Discoloration/Odor/Sheen; FID/MC = FID/Methane Corrected
Additional data may have been collected in the field which is not included on this log.
Weather: 30-35 degree F. Cloudy

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325 South Lake Avenue, Suite 700
Duluth, MN 55802
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LOG OF BORING B-30
DRAFT

Project: Superior Street Reconstruction Corridor
Project No.: 23691588.00
Location: Superior Street Duluth, Minnesota
Coordinates:
Datum:

Surface Elevation:
Drilling Method:3 1/4" Hollow Stem Auger
Sampling Method: Split Spoon
Completion Depth:3.5 ft

Depth, feet	Sample Type & Recovery	Sample No.	Blows/6in.	ENVIRONMENTAL DATA	USCS	Graphic Log	LITHOLOGIC DESCRIPTION	Elevation, feet
0.0							BRICK.	
							ASPHALT.	
							CONCRETE.	
					GP		LARGE GRAVEL (GP): fill (based on cuttings).	
2.5			4-5-8-.	**PID:**4.7 **D/O/S:**None/ None/ None	CH		FAT CLAY (CH): dark reddish brown; medium stiff; few small gravel; high plasticity; massive.	
							Auger Refusal	
5.0								
7.5								
10.0								
12.5								
15.0								
17.5								
20.0								

Date Boring Started: 11/6/14 12:35 am
Date Boring Completed: 11/6/14 12:55 am
Logged By: NRS2
Drilling Contractor: Braun Intertec
Drill Rig:

Remarks: No sample collected due to auger refusal at shallow depth.

PID = Headspace; D/O/S = Discoloration/Odor/Sheen; FID/MC = FID/Methane Corrected
Additional data may have been collected in the field which is not included on this log.
Weather: 30-35 degree F. Cloudy

O:\GINT\PROJECTS\23691588_SUPERIOR STREET BORINGS\23691588.00 SUPERIOR ST BORINGS.GPJ BARRLIBRARY.GLB ENVIRO LOG BARR TEMPLATE.GDT

Barr Engineering Company
325 South Lake Avenue, Suite 700
Duluth, MN 55802
Telephone: 218-529-8200

LOG OF BORING B-31
DRAFT

Project: Superior Street Reconstruction Corridor
Project No.: 23691588.00
Location: Superior Street Duluth, Minnesota
Coordinates:
Datum:

Surface Elevation:
Drilling Method:3 1/4" Hollow Stem Auger
Sampling Method: Split Spoon
Completion Depth:13.0 ft

Depth, feet	Sample Type & Recovery	Sample No.	Blows/6in.	ENVIRONMENTAL DATA	USCS	Graphic Log	LITHOLOGIC DESCRIPTION	Elevation, feet
0.0							ASPHALT.	
							CONCRETE.	
							LARGE GRAVEL.	
2.5			8-8-5-.	**D/O/S:**None/ None/ None	SM		SILTY SAND (SM): medium grained; dark reddish brown; dry to moist; loose; few small gravel; massive.	
5.0			3-5-5-.	**PID:**4.3 **D/O/S:**None/ None/ None	SC		CLAYEY SAND (SC): medium grained; reddish brown with little black mottling; moist; medium dense; trace small gravel and wood fragments; massive.	
7.5			5-5-8-.	**PID:**5.4 **D/O/S:**None/ None/ None	CL		LEAN CLAY WITH FEW SAND (CL): reddish brown with little black mottling; moist; medium stiff; trace small gravel and wood fragments; massive.	
10.0			5-8-11-.	**PID:**8.1 **D/O/S:**None/ None/ None				
12.5			18-50/5"-.	**PID:**4.7 **D/O/S:**None/ None/ None				
							Auger Refusal	
15.0								
17.5								
20.0								

Date Boring Started: 11/6/14 1:25 am
Date Boring Completed: 11/6/14 1:40 am
Logged By: NRS2
Drilling Contractor: Braun Intertec
Drill Rig:

Remarks: Sample collected at 9.5-11'. Analyses: GRO, PVOC, and DRO

PID = Headspace; D/O/S = Discoloration/Odor/Sheen; FID/MC = FID/Methane Corrected
Additional data may have been collected in the field which is not included on this log.
Weather: 30-35 degree F. Cloudy

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Barr Engineering Company
325 South Lake Avenue, Suite 700
Duluth, MN 55802
Telephone: 218-529-8200

LOG OF BORING B-38
DRAFT

Project: Superior Street Reconstruction Corridor
Project No.: 23691588.00
Location: Superior Street Duluth, Minnesota
Coordinates:
Datum:

Surface Elevation:
Drilling Method:3 1/4" Hollow Stem Auger
Sampling Method: Split Spoon
Completion Depth:13.4 ft

Depth, feet	Sample Type & Recovery	Sample No.	Blows/6in.	ENVIRONMENTAL DATA	USCS	Graphic Log	LITHOLOGIC DESCRIPTION	Elevation, feet
0.0							BRICK.	
							ASPHALT.	
							CONCRETE.	
					GP		LARGE GRAVEL (GP).	
2.5			5-8-4-.	**PID:**7.4 **D/O/S:**None/ None/ None	SC		CLAYEY SAND (SC): fine grained; medium dense; little small gravel; medium plasticity; massive.	
5.0			2-1-1-.	**PID:**5.7 **D/O/S:**None/ None/ None				
7.5			2-3-7-.	**PID:**3.8 **D/O/S:**None/ None/ None	CH		FAT CLAY (CH): stiff; little small to medium gravel; high plasticity; massive.	
10.0			6-9-11-.	**PID:**4.4 **D/O/S:**None/ None/ None				
12.5			50/3"-.	**PID:**4.6 **D/O/S:**None/ None/ None				
							Auger Refusal	
15.0								
17.5								
20.0								

Date Boring Started: 11/6/14 2:20 am
Date Boring Completed: 11/6/14 2:42 am
Logged By: NRS2
Drilling Contractor: Braun Intertec
Drill Rig:

Remarks: Sample collected at 7.5-9.0'. Analyses: GRO and VOC

PID = Headspace; D/O/S = Discoloration/Odor/Sheen; FID/MC = FID/Methane Corrected
Additional data may have been collected in the field which is not included on this log.
Weather: 30-35 degree F. Cloudy

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Barr Engineering Company
325 South Lake Avenue, Suite 700
Duluth, MN 55802
Telephone: 218-529-8200

LOG OF BORING B-39
DRAFT

Project: Superior Street Reconstruction Corridor
Project No.: 23691588.00
Location: Superior Street Duluth, Minnesota
Coordinates:
Datum:

Surface Elevation:
Drilling Method:3 1/4" Hollow Stem Auger
Sampling Method: Split Spoon
Completion Depth:16.0 ft

Depth, feet	Sample Type & Recovery	Sample No.	Blows/6in.	ENVIRONMENTAL DATA	USCS	Graphic Log	LITHOLOGIC DESCRIPTION	Elevation, feet
0.0							BRICK.	
							ASPHALT.	
							CONCRETE.	
					GP		LARGE GRAVEL (GP).	
					CL		LEAN CLAY (CL): dry to moist; few fine sand and little small gravel; medium plasticity; massive.	
2.5			3-6-7-.	**PID:**9.6 **D/O/S:**None/ None/ None				
5.0			8-7-9-.	**PID:**8.4 **D/O/S:**None/ None/ None	SP		SAND WITH SILT (SP): fine grained; dry to moist; non-plastic plasticity; massive.	
					CL		LEAN CLAY (CL): dry to moist; few fine sand and little small gravel; medium plasticity; massive.	
					CH		FAT CLAY (CH): dry to moist; trace small gravel; high plasticity; massive.	
7.5			5-4-5-.	**PID:**7.4 **D/O/S:**None/ None/ None				
10.0			6-6-7-.	**PID:**6.9 **D/O/S:**None/ None/ None				
12.5			3-4-43-.	**PID:**7.9 **D/O/S:**None/ None/ None				
15.0			50/5"-.	**PID:**8.7 **D/O/S:**None/ None/ None				
							Target Depth Reacehd and Refusal to Auger	
17.5								
20.0								

Date Boring Started: 11/6/14 3:45 am
Date Boring Completed: 11/6/14 4:05 am
Logged By: NRS2
Drilling Contractor: Braun Intertec
Drill Rig:

Remarks: Sample collected at 9.5-11'. Analyses: GRO and VOC

PID = Headspace; D/O/S = Discoloration/Odor/Sheen; FID/MC = FID/Methane Corrected
Additional data may have been collected in the field which is not included on this log.
Weather: 30-35 degree F. Cloudy

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Barr Engineering Company
325 South Lake Avenue, Suite 700
Duluth, MN 55802
Telephone: 218-529-8200

LOG OF BORING B-40
DRAFT

Project: Superior Street Reconstruction Corridor
Project No.: 23691588.00
Location: Superior Street Duluth, Minnesota
Coordinates:
Datum:

Surface Elevation:
Drilling Method:3 1/4" Hollow Stem Auger
Sampling Method: Split Spoon
Completion Depth:16.0 ft

Depth, feet	Sample Type & Recovery	Sample No.	Blows/6in.	ENVIRONMENTAL DATA	USCS	Graphic Log	LITHOLOGIC DESCRIPTION	Elevation, feet
0.0							BRICK.	
							ASPHALT.	
							CONCRETE.	
					SM		SILTY SAND (SM): strong brown; dry to moist; loose; some small gravel; non-plastic plasticity; massive.	
2.5			6-7-5-.	**PID:**14.9 **D/O/S:**None/ None/ None				
5.0			6-5-7-.	**PID:**10 **D/O/S:**None/ None/ None	CH		FAT CLAY (CH): reddish brown; moist; medium stiff; little small gravel; high plasticity; massive.	
7.5			6-5-8-.	**D/O/S:**None/ None/ None				
10.0			5-4-7-.	**PID:**9.4 **D/O/S:**None/ None/ None				
12.5			10-50/3"-.	**PID:**16.2 **D/O/S:**None/ None/ None				
15.0			8-10-23-.	**PID:**10.5 **D/O/S:**None/ None/ None				
							Target Depth Reached	
17.5								
20.0								

Date Boring Started: 11/6/14 4:45 am
Date Boring Completed: 11/6/14 5:28 am
Logged By: NRS2
Drilling Contractor: Braun Intertec
Drill Rig:

Remarks: Sample collected at 9.5-11'. Analyses: GRO, PVOC, and DRO

PID = Headspace; D/O/S = Discoloration/Odor/Sheen; FID/MC = FID/Methane Corrected
Additional data may have been collected in the field which is not included on this log.
Weather: 30-35 degree F. Cloudy

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Barr Engineering Company
325 South Lake Avenue, Suite 700
Duluth, MN 55802
Telephone: 218-529-8200

LOG OF BORING B-41
DRAFT

Project: Superior Street Reconstruction Corridor
Project No.: 23691588.00
Location: Superior Street Duluth, Minnesota
Coordinates:
Datum:

Surface Elevation:
Drilling Method:3 1/4" Hollow Stem Auger
Sampling Method: Split Spoon
Completion Depth:16.0 ft

Depth, feet	Sample Type & Recovery	Sample No.	Blows/6in.	ENVIRONMENTAL DATA	USCS	Graphic Log	LITHOLOGIC DESCRIPTION	Elevation, feet
0.0							BRICK.	
							ASPHALT.	
							CONCRETE.	
					GP		GRAVEL (GP): loose.	
2.5			6-12-7-.	**PID:**6.3 **D/O/S:**None/ None/ None	SM		SILTY SAND (SM): brown; moist; loose; non-plastic plasticity; massive.	
5.0			4-7-6-.	**PID:**6.1 **D/O/S:**None/ None/ None	CH		FAT CLAY (CH): reddish brown; moist; stiff; trace gravel; high plasticity; massive.	
7.5			2-3-6-.	**PID:**5.5 **D/O/S:**None/ None/ None	SC		CLAYEY SAND (SC): reddish brown; moist; medium dense; low plasticity; massive.	
10.0			8-44-22-.	**PID:**6.4 **D/O/S:**None/ None/ None	CH		FAT CLAY (CH): reddish brown; dry to moist; stiff; trace gravel; high plasticity; massive.	
12.5			34-50/6"-.	**PID:**7.4 **D/O/S:**None/ None/ None				
15.0			30-37/6"-50/4"-.	**PID:**6.5 **D/O/S:**None/ None/ None	SM		SILTY SAND (SM): reddish brown; moist; dense; non-plastic plasticity; massive.	
17.5							Target Depth Reached	
20.0								

Date Boring Started: 11/6/14 5:45 am
Date Boring Completed: 11/6/14 6:10 am
Logged By: NRS2
Drilling Contractor: Braun Intertec
Drill Rig:

Remarks: Sample collected at 7.5-9.0'. Analyses: GRO, DRO, and VOC

PID = Headspace; D/O/S = Discoloration/Odor/Sheen; FID/MC = FID/Methane Corrected
Additional data may have been collected in the field which is not included on this log.
Weather: 30-35 degree F. Cloudy

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325 South Lake Avenue, Suite 700
Duluth, MN 55802
Telephone: 218-529-8200

LOG OF BORING B-42
DRAFT

Project: Superior Street Reconstruction Corridor
Project No.: 23691588.00
Location: Superior Street Duluth, Minnesota
Coordinates:
Datum:

Surface Elevation:
Drilling Method:3 1/4" Hollow Stem Auger
Sampling Method: Split Spoon
Completion Depth:15.3 ft

Depth, feet	Sample Type & Recovery	Sample No.	Blows/6in.	ENVIRONMENTAL DATA	USCS	Graphic Log	LITHOLOGIC DESCRIPTION	Elevation, feet
0.0							BRICK.	
							ASPHALT.	
							CONCRETE: CONCRETE.	
2.5			8-4-8-.	**PID:**8.0 **D/O/S:**None/ None/ None	CL		LEAN CLAY (CL): dark reddish gray; dry to moist; stiff; trace small gravel; medium plasticity; massive; native.	
5.0			6-5-7-.	**PID:**8.4 **D/O/S:**None/ None/ None	SC		CLAYEY SAND (SC): fine grained; reddish brown; moist; medium dense; trace small gravel; low plasticity; massive.	
7.5			4-9-8-.	**PID:**5.9 **D/O/S:**None/ None/ None	SC		CLAYEY SAND (SC): very dark gray; moist; medium dense; little small gravel, wood fragments; medium plasticity; massive.	
10.0			2-4-5-.	**PID:**5.5 **D/O/S:**None/ None/ None				
12.5				**PID:**4.8 **D/O/S:**None/ None/ None	CL		LEAN CLAY (CL): dark reddish gray; moist; stiff; trace small gravel; medium plasticity; massive; native.	
15.0			13-50/3"-.	**PID:**5.5 **D/O/S:**None/ None/ None	SC		CLAYEY SAND (SC): very dark gray; moist; medium dense; little small gravel, wood fragments; medium plasticity; massive.	
							Auger Refusal	
17.5								
20.0								

Date Boring Started: 11/7/14 3:00 am
Date Boring Completed: 11/7/14 4:22 am
Logged By: NRS2
Drilling Contractor: Braun Intertec
Drill Rig:

Remarks: Sample collected at 7.5-9.0'. Analyses: GRO, DRO, and VOC

PID = Headspace; D/O/S = Discoloration/Odor/Sheen; FID/MC = FID/Methane Corrected
Additional data may have been collected in the field which is not included on this log.
Weather: 30-35 degree F. Cloudy

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Barr Engineering Company
325 South Lake Avenue, Suite 700
Duluth, MN 55802
Telephone: 218-529-8200

LOG OF BORING B-43
DRAFT

Project: Superior Street Reconstruction Corridor
Project No.: 23691588.00
Location: Superior Street Duluth, Minnesota
Coordinates:
Datum:

Surface Elevation:
Drilling Method:3 1/4" Hollow Stem Auger
Sampling Method: Split Spoon
Completion Depth:16.0 ft

Depth, feet	Sample Type & Recovery	Sample No.	Blows/6in.	ENVIRONMENTAL DATA	USCS	Graphic Log	LITHOLOGIC DESCRIPTION	Elevation, feet
0.0							BRICK.	
							ASPHALT.	
							CONCRETE.	
							CLAYEY SAND (SC): fine grained; reddish brown; moist; medium dense; little small gravel; low plasticity; massive;	
2.5			5-8-5-.	**D/O/S:**None/ None/ None				
5.0			5-3-2-.	**PID:**7.1 **D/O/S:**None/ None/ None				
							4.5-7.5 little large gravel and wood fragments.	
7.5			4-3-2-.	**D/O/S:**None/ None/ None	SC			
10.0			6-4-5-.	**D/O/S:**None/ None/ None				
12.5			13-13-16-.	**D/O/S:**None/ None/ None				
15.0			31-28-31-.	**PID:**6.1 **D/O/S:**None/ None/ None				
							Target Depth Reached	
17.5								
20.0								

Date Boring Started: 11/7/14 4:50 am
Date Boring Completed: 11/7/14 5:25 am
Logged By: NRS2
Drilling Contractor: Braun Intertec
Drill Rig:

Remarks: Sample collected at 11.5-14'. Analyses: GRO/PVOC and DRO

PID = Headspace; D/O/S = Discoloration/Odor/Sheen; FID/MC = FID/Methane Corrected
Additional data may have been collected in the field which is not included on this log.
Weather: Low of 33 degrees F. and off and on precipitation

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Barr Engineering Company
325 South Lake Avenue, Suite 700
Duluth, MN 55802
Telephone: 218-529-8200

LOG OF BORING B-44
DRAFT

Project: Superior Street Reconstruction Corridor
Project No.: 23691588.00
Location: Superior Street Duluth, Minnesota
Coordinates:
Datum:

Surface Elevation:
Drilling Method:3 1/4" Hollow Stem Auger
Sampling Method: Split Spoon
Completion Depth:15.0 ft

Depth, feet	Sample Type & Recovery	Sample No.	Blows/6in.	ENVIRONMENTAL DATA	USCS	Graphic Log	LITHOLOGIC DESCRIPTION	Elevation, feet
0.0							BRICK.	
							ASPHALT.	
							CONCRETE.	
					SM		SILTY SAND (SM): reddish brown; moist; loose; little small gravel; non-plastic plasticity; massive.	
2.5			7-9-17-.	**PID:**8.3 **D/O/S:**None/ None/ None	CL		LEAN CLAY (CL): reddish brown with some pink mottling; dry to moist; stiff; little small gravel; medium plasticity; massive.	
5.0			19-21-18-.	**PID:**6.7 **D/O/S:**None/ None/ None	SC		CLAYEY SAND (SC): reddish brown; dry; very dense; little small gravel; low plasticity; massive.	
7.5			17-35-44-.	**PID:**5.4 **D/O/S:**None/ None/ None				
10.0			31-37-35-.	**PID:**4.6 **D/O/S:**None/ None/ None	SM		SILTY SAND (SM): brown; dry; medium dense; little small gravel; non-plastic plasticity; massive.	
12.5			21-42-21-.	**PID:**4.6 **D/O/S:**None/ None/ None				
15.0			50/5"-.	**D/O/S:**None/ None/ None			Target Depth Reached	
17.5								
20.0								

Date Boring Started: 11/6/14 9:45 pm
Date Boring Completed: 11/6/14 10:15 pm
Logged By: NRS2
Drilling Contractor: Braun Intertec
Drill Rig:

Remarks: Sample collected at 7.5-9.0'. Analyses: GRO/PVOC and DRO

PID = Headspace; D/O/S = Discoloration/Odor/Sheen; FID/MC = FID/Methane Corrected
Additional data may have been collected in the field which is not included on this log.
Weather: Low of 33 degrees F. and off and on precipitation

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Barr Engineering Company
325 South Lake Avenue, Suite 700
Duluth, MN 55802
Telephone: 218-529-8200

LOG OF BORING B-45
DRAFT

Project: Superior Street Reconstruction Corridor
Project No.: 23691588.00
Location: Superior Street Duluth, Minnesota
Coordinates:
Datum:

Surface Elevation:
Drilling Method:3 1/4" Hollow Stem Auger
Sampling Method: Split Spoon
Completion Depth:14.3 ft

Depth, feet	Sample Type & Recovery	Sample No.	Blows/6in.	ENVIRONMENTAL DATA	USCS	Graphic Log	LITHOLOGIC DESCRIPTION	Elevation, feet
0.0							BRICK.	
							ASPHALT.	
							CONCRETE.	
					GP		LARGE GRAVEL AND SILTY SAND (GP): dark brown; dry; non-plastic plasticity; massive.	
2.5			3-5-7-.	**PID:**7.0 **D/O/S:**None/ None/ None	SC		CLAYEY SAND (SC): reddish brown; dry; dense; little small gravel and wood fragments; low plasticity; massive;	
5.0			9-20-22-.	**PID:**5.4 **D/O/S:**None/ None/ None				
							4.5-7.5 pink (5YR 7/4) mottling.	
7.5			22-35-37-.	**PID:**6.9 **D/O/S:**None/ None/ None				
10.0			32-44-50/5"-.	**PID:**5.8 **D/O/S:**None/ None/ None				
12.5			33-50/1"-.	**PID:**3.9 **D/O/S:**None/ None/ None	SM		SILTY SAND (SM): fine grained; brown; moist; medium dense; non-plastic plasticity; massive; very uniform.	
							Auger Refusal	
15.0								
17.5								
20.0								

Date Boring Started: 11/6/14 10:55 pm
Date Boring Completed: 11/7/14 12:10 am
Logged By: NRS2
Drilling Contractor: Braun Intertec
Drill Rig:

Remarks: Sample collected at 2.5-4'. Analyses: RCRA metals, SVOC, PAH, and VOC
Sample collected at 7.5-9. Analyses: GRO/PVOC and DRO

PID = Headspace; D/O/S = Discoloration/Odor/Sheen; FID/MC = FID/Methane Corrected
Additional data may have been collected in the field which is not included on this log.
Weather: Low of 33 degrees F. and off and on precipitation

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Barr Engineering Company
325 South Lake Avenue, Suite 700
Duluth, MN 55802
Telephone: 218-529-8200

LOG OF BORING B-46
DRAFT

Project: Superior Street Reconstruction Corridor
Project No.: 23691588.00
Location: Superior Street Duluth, Minnesota
Coordinates:
Datum:

Surface Elevation:
Drilling Method:3 1/4" Hollow Stem Auger
Sampling Method: Split Spoon
Completion Depth:10.0 ft

Depth, feet	Sample Type & Recovery	Sample No.	Blows/6in.	ENVIRONMENTAL DATA	USCS	Graphic Log	LITHOLOGIC DESCRIPTION	Elevation, feet
0.0							BRICK.	
							ASPHALT.	
							CONCRETE.	
					GP		LARGE GRAVEL AND SILTY SAND (GP): brown; moist; loose.	
2.5			5-4-3-.	**PID:**4.6 **D/O/S:**None/ None/ None	SM		SILTY SAND (SM): brown; moist; loose; non-plastic plasticity; massive.	
5.0			7-6-6-.	**PID:**4.2 **D/O/S:**None/ None/ None	CH		FAT CLAY (CH): reddish brown; dry to moist; stiff; trace small gravel; high plasticity; massive.	
7.5			12-26-42-.	**PID:**4.8 **D/O/S:**None/ None/ None	SM		SITLY SAND (SM): reddish brown; dry; medium dense; trace small gravel; non-plastic plasticity; massive.	
10.0			50/4"-.				Auger Refusal	
12.5								
15.0								
17.5								
20.0								

Date Boring Started: 11/7/14 12:50 am
Date Boring Completed: 11/7/14 1:19 am
Logged By: NRS2
Drilling Contractor: Braun Intertec
Drill Rig:

Remarks: Sample collected at 7.5-9.0'. Analyses: GRO/PVOC and DRO

PID = Headspace; D/O/S = Discoloration/Odor/Sheen; FID/MC = FID/Methane Corrected
Additional data may have been collected in the field which is not included on this log.
Weather: Low of 33 degrees F. and off and on precipitation

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325 South Lake Avenue, Suite 700
Duluth, MN 55802
Telephone: 218-529-8200

LOG OF BORING B-47
DRAFT

Project: Superior Street Reconstruction Corridor
Project No.: 23691588.00
Location: Superior Street Duluth, Minnesota
Coordinates:
Datum:

Surface Elevation:
Drilling Method:3 1/4" Hollow Stem Auger
Sampling Method: Split Spoon
Completion Depth:9.8 ft

Depth, feet	Sample Type & Recovery	Sample No.	Blows/6in.	ENVIRONMENTAL DATA	USCS	Graphic Log	LITHOLOGIC DESCRIPTION	Elevation, feet
0.0							BRICK.	
							ASPHALT.	
							CONCRETE.	
					GP		GRAVEL AND SILTY SAND (GP): massive.	
2.5			4-5-6-.	**PID:**2.8 **D/O/S:**None/ None/ None	SM		SILTY SAND FILL (SM): very fine to fine grained; brown; moist; loose; non-plastic plasticity; massive.	
					CH		FAT CLAY (CH): dark reddish gray; moist; medium stiff; trace gravel; high plasticity; massive.	
5.0			4-5-6-.	**D/O/S:**None/ None/ None	SM		SILTY SAND (SM): very fine to fine grained; brown; moist; medium dense; low plasticity; massive.	
7.5			2-28-24-.	**PID:**4.3 **D/O/S:**None/ None/ None				
			50/1"-.					
10.0							Auger Refusal	
12.5								
15.0								
17.5								
20.0								

Date Boring Started: 11/7/14 1:00 am
Date Boring Completed: 11/7/14 2:13 am
Logged By: NRS2
Drilling Contractor: Braun Intertec
Drill Rig:

Remarks: Sample collected at 7.5-9'. Analyses: GRO/PVOC, DRO, SVOC, and RCRA metals

PID = Headspace; D/O/S = Discoloration/Odor/Sheen; FID/MC = FID/Methane Corrected
Additional data may have been collected in the field which is not included on this log.
Weather: Low of 33 degrees F. and off and on precipitation

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Barr Engineering Company
325 South Lake Avenue, Suite 700
Duluth, MN 55802
Telephone: 218-529-8200

LOG OF BORING B-50
DRAFT

Project: Superior Street Reconstruction Corridor
Project No.: 23691588.00
Location: Superior Street Duluth, Minnesota
Coordinates:
Datum:

Surface Elevation:
Drilling Method:3 1/4" Hollow Stem Auger
Sampling Method: Split Spoon
Completion Depth:5.6 ft

Depth, feet	Sample Type & Recovery	Sample No.	Blows/6in.	ENVIRONMENTAL DATA	USCS	Graphic Log	LITHOLOGIC DESCRIPTION	Elevation, feet
0.0							BRICK.	
							ASPHALT.	
							CONCRETE.	
					SM		SILTY SAND (SM): dark brown; moist; medium dense; wood fragments; non-plastic plasticity; massive.	
2.5			4-4-18-.	**PID:**2.2 **D/O/S:**None/ None/ None	CL		LEAN CLAY (CL): reddish brown; moist; medium stiff; trace small gravel; medium plasticity; massive.	
5.0			3-50/3"-.	**PID:**1.4 **D/O/S:**None/ None/ None				
							Auger Refusal	
7.5								
10.0								
12.5								
15.0								
17.5								
20.0								

Date Boring Started: 11/9/14 9:20 pm
Date Boring Completed: 11/9/14 10:11 pm
Logged By: NRS2
Drilling Contractor: Braun Intertec
Drill Rig:

Remarks:

PID = Headspace; D/O/S = Discoloration/Odor/Sheen; FID/MC = FID/Methane Corrected
Additional data may have been collected in the field which is not included on this log.
Weather: Low of 20 degrees F. and Clear.

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Barr Engineering Company
325 South Lake Avenue, Suite 700
Duluth, MN 55802
Telephone: 218-529-8200

LOG OF BORING B-51
DRAFT

Project: Superior Street Reconstruction Corridor
Project No.: 23691588.00
Location: Superior Street Duluth, Minnesota
Coordinates:
Datum:

Surface Elevation:
Drilling Method:3 1/4" Hollow Stem Auger
Sampling Method: Split Spoon
Completion Depth:8.5 ft

Depth, feet	Sample Type & Recovery	Sample No.	Blows/6in.	ENVIRONMENTAL DATA	USCS	Graphic Log	LITHOLOGIC DESCRIPTION	Elevation, feet
0.0							BRICK.	
							ASPHALT.	
							CONCRETE.	
							POORLY GRADED SAND (SP): fine grained; brown; moist; loose; non-plastic plasticity; massive.	
2.5			11-15-14-.	**PID:**2.8 **D/O/S:**None/ None/ None	SP			
5.0			2-4-3-.	**PID:**4.0 **D/O/S:**None/ None/ None			POORLY GRADED SAND (SP): medium grained; reddish brown; moist; loose; non-plastic plasticity; massive.	
7.5				**PID:**3.8 **D/O/S:**None/ None/ None	SP			
							Boring abandoned due to utility concern.	
10.0								
12.5								
15.0								
17.5								
20.0								

Date Boring Started: 11/9/14 10:25 pm
Date Boring Completed: 11/9/14 11:00 am
Logged By: NRS2
Drilling Contractor: Braun Intertec
Drill Rig:

Remarks: Sample collected at 7.5-9'. Analyses: GRO/PVOC and DRO

PID = Headspace; D/O/S = Discoloration/Odor/Sheen; FID/MC = FID/Methane Corrected
Additional data may have been collected in the field which is not included on this log.
Weather: Low of 20 degrees F. and Clear.

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Barr Engineering Company
325 South Lake Avenue, Suite 700
Duluth, MN 55802
Telephone: 218-529-8200

LOG OF BORING B-54
DRAFT

Project: Superior Street Reconstruction Corridor
Project No.: 23691588.00
Location: Superior Street Duluth, Minnesota
Coordinates:
Datum:

Surface Elevation:
Drilling Method:3 1/4" Hollow Stem Auger
Sampling Method: Split Spoon
Completion Depth:12.0 ft

Depth, feet	Sample Type & Recovery	Sample No.	Blows/6in.	ENVIRONMENTAL DATA	USCS	Graphic Log	LITHOLOGIC DESCRIPTION	Elevation, feet
0.0							BRICK.	
							ASPHALT.	
							CONCRETE.	
					GP		POORLY GRADED GRAVEL AND SILTY SAND (GP): moist; loose; non-plastic plasticity; massive.	
							POORLY GRADED SAND (SP): fine grained; brown; moist; loose; non-plastic plasticity; massive.	
2.5			7-7-7-.	**PID:**4.3 **D/O/S:**None/ None/ None	SP			
5.0			8-4-6-.	**PID:**5.3 **D/O/S:**None/ None/ None				
					CH		FAT CLAY (CH): reddish brown; moist; stiff; little small gravel; high plasticity; massive.	
7.5			7-6-22-.	**PID:**6.1 **D/O/S:**None/ None/ None				
					SM		SILTY SAND (SM): fine grained; brown; moist; loose; trace small gravel; non-plastic plasticity; massive.	
10.0			45-66-65-.	**PID:**4.6 **D/O/S:**None/ None/ None				
			50/1"-.	**D/O/S:**None/ None/ None				
							Auger Refusal	
12.5								
15.0								
17.5								
20.0								

Date Boring Started: 11/9/14 11:47 pm
Date Boring Completed: 11/10/14 1:05 am
Logged By: NRS2
Drilling Contractor: Braun Intertec
Drill Rig:

Remarks: Sample collected at 7.5-9'. Analyses: GRO/PVOC, DRO, and RCRA metals

PID = Headspace; D/O/S = Discoloration/Odor/Sheen; FID/MC = FID/Methane Corrected
Additional data may have been collected in the field which is not included on this log.
Weather: Low of 20 degrees F. and Clear.

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Barr Engineering Company
325 South Lake Avenue, Suite 700
Duluth, MN 55802
Telephone: 218-529-8200

LOG OF BORING B-55
DRAFT

Project: Superior Street Reconstruction Corridor
Project No.: 23691588.00
Location: Superior Street Duluth, Minnesota
Coordinates:
Datum:

Surface Elevation:
Drilling Method:3 1/4" Hollow Stem Auger
Sampling Method: Split Spoon
Completion Depth:7.2 ft

Depth, feet	Sample Type & Recovery	Sample No.	ENVIRONMENTAL DATA	USCS	Graphic Log	LITHOLOGIC DESCRIPTION	Elevation, feet
0.0						BRICK.	
						ASPHALT.	
						CONCRETE.	
				CL		LEAN CLAY (CL): brown; moist; stiff; some fine grained sand and trace small gravel; low plasticity; massive.	
2.5			**PID:**3.6 **D/O/S:**None/ None/ None				
				SP		POORLY GRADED SAND (SP): coarse grained; brown to black; moist to wet; loose; trace small gravel; non-plastic plasticity; massive.	
5.0			**D/O/S:**None/ None/ None	SC		CLAYEY SAND (SC): brown; moist to wet; medium dense; non-plastic plasticity; massive; (discription based on cuttings).	
7.5						Auger Refusal	
10.0							
12.5							
15.0							
17.5							
20.0							

Date Boring Started: 11/10/14 1:10 am
Date Boring Completed: 11/10/14 1:40 am
Logged By: NRS2
Drilling Contractor: Braun Intertec
Drill Rig:

Remarks: no sample due to low recovery.

PID = Headspace; D/O/S = Discoloration/Odor/Sheen; FID/MC = FID/Methane Corrected
Additional data may have been collected in the field which is not included on this log.
Weather: Low of 20 degrees F. and Clear.

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325 South Lake Avenue, Suite 700
Duluth, MN 55802
Telephone: 218-529-8200

LOG OF BORING B-56
DRAFT

Project: Superior Street Reconstruction Corridor
Project No.: 23691588.00
Location: Superior Street Duluth, Minnesota
Coordinates:
Datum:

Surface Elevation:
Drilling Method:3 1/4" Hollow Stem Auger
Sampling Method: Split Spoon
Completion Depth:14.0 ft

Depth, feet	Sample Type & Recovery	Sample No.	Blows/6in.	ENVIRONMENTAL DATA	USCS	Graphic Log	LITHOLOGIC DESCRIPTION	Elevation, feet
0.0							BRICK.	
							ASPHALT.	
							CONCRETE.	
							SILTY SAND (SM): fine grained; brown; moist; loose; trace small gravel; non-plastic plasticity; massive;	
2.5				**PID:**4.3 **D/O/S:**None/ None/ None				
5.0				**PID:**3.8 **D/O/S:**None/ None/ None				
7.5				**PID:**3.7 **D/O/S:**None/ None/ None	SM		9.5-14 large gravel.	
10.0			23-60/6"-50/4"-.	**PID:**3.9 **D/O/S:**None/ None/ None				
12.5			100/6"-.	**D/O/S:**None/ None/ None				
							Auger Refusal	
15.0								
17.5								
20.0								

Date Boring Started: 11/10/14 2:15 am
Date Boring Completed: 11/10/14 3:10 am
Logged By: NRS2
Drilling Contractor: Braun Intertec
Drill Rig:

Remarks: Sample collected at 7.5-9'. Analyses: GRO/PVOC and DRO

PID = Headspace; D/O/S = Discoloration/Odor/Sheen; FID/MC = FID/Methane Corrected
Additional data may have been collected in the field which is not included on this log.
Weather: Low of 20 degrees F. and Clear.

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325 South Lake Avenue, Suite 700
Duluth, MN 55802
Telephone: 218-529-8200

LOG OF BORING B-57
DRAFT

Project: Superior Street Reconstruction Corridor
Project No.: 23691588.00
Location: Superior Street Duluth, Minnesota
Coordinates:
Datum:

Surface Elevation:
Drilling Method:3 1/4" Hollow Stem Auger
Sampling Method: Split Spoon
Completion Depth:11.8 ft

Depth, feet	Sample Type & Recovery	Sample No.	Blows/6in.	ENVIRONMENTAL DATA	USCS	Graphic Log	LITHOLOGIC DESCRIPTION	Elevation, feet
0.0							BRICK.	
							ASPHALT.	
							CONCRETE.	
							SILTY SAND AND GRAVEL.	
2.5			7-6-7-.	**PID:**9.9 **D/O/S:**None/ None/ None	CL		LEAN CLAY (CL): reddish brown; moist; medium stiff; some fine grained sand and trace gravel; medium plasticity; massive.	
5.0			7-6-10-.	**PID:**6.0 **D/O/S:**None/ None/ None	SC		CLAYEY SAND (SC): fine grained; reddish brown; moist; medium dense; trace large gravel; low plasticity; massive.	
7.5			16-36-60-.	**PID:**5.6 **D/O/S:**None/ None/ None	CL		LEAN CLAY (CL): reddish brown; moist; medium stiff; some fine grained sand and trace gravel; medium plasticity; massive.	
10.0			18-42/6"-50/4"-.	**PID:**5.0 **D/O/S:**None/ None/ None			Auger Refusal	
12.5								
15.0								
17.5								
20.0								

Date Boring Started: 11/10/14 3:30 am
Date Boring Completed: 11/10/14 3:40 am
Logged By: NRS2
Drilling Contractor: Braun Intertec
Drill Rig:

Remarks: Sample collected at 7.5-9'. Analyses: GRO/PVOC and DRO

PID = Headspace; D/O/S = Discoloration/Odor/Sheen; FID/MC = FID/Methane Corrected
Additional data may have been collected in the field which is not included on this log.
Weather: Low of 20 degrees F. and Clear.

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Duluth, MN 55802
Telephone: 218-529-8200

LOG OF BORING B-58
DRAFT

Project: Superior Street Reconstruction Corridor
Project No.: 23691588.00
Location: Superior Street Duluth, Minnesota
Coordinates:
Datum:

Surface Elevation:
Drilling Method:3 1/4" Hollow Stem Auger
Sampling Method: Split Spoon
Completion Depth:9.0 ft

Depth, feet	Sample Type & Recovery	Sample No.	Blows/6in.	ENVIRONMENTAL DATA	USCS	Graphic Log	LITHOLOGIC DESCRIPTION	Elevation, feet
0.0							BRICK.	
							ASPHALT.	
							CONCRETE.	
					GP		LARGE GRAVEL AND SILTY SAND (GP).	
2.5							LEAN CLAY (CL): reddish brown; moist; stiff; trace small gravel and lenses of coarse sand; medium plasticity; lensed.	
5.0			3-5-6-.	**PID:**6.2 **D/O/S:**None/ None/ None	CL			
7.5				**PID:**6.9 **D/O/S:**None/ None/ None	SM		SILTY SAND (SM): brown; moist; loose; trace small to large gravel and lenses of coarse sand; non-plastic plasticity; lensed.	
							Auger Refusal	
10.0								
12.5								
15.0								
17.5								
20.0								

Date Boring Started: 11/12/14 5:15 am
Date Boring Completed: 11/12/14 5:50 am
Logged By: NRS2
Drilling Contractor: Braun Intertec
Drill Rig:

Remarks:

PID = Headspace; D/O/S = Discoloration/Odor/Sheen; FID/MC = FID/Methane Corrected
Additional data may have been collected in the field which is not included on this log.
Weather: 20 degrees F. Light snow.

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325 South Lake Avenue, Suite 700
Duluth, MN 55802
Telephone: 218-529-8200

LOG OF BORING B-59
DRAFT

Project: Superior Street Reconstruction Corridor
Project No.: 23691588.00
Location: Superior Street Duluth, Minnesota
Coordinates:
Datum:

Surface Elevation:
Drilling Method:3 1/4" Hollow Stem Auger
Sampling Method: Split Spoon
Completion Depth:12.0 ft

Depth, feet	Sample Type & Recovery	Sample No.	Blows/6in.	ENVIRONMENTAL DATA	USCS	Graphic Log	LITHOLOGIC DESCRIPTION	Elevation, feet
0.0							BRICK.	
							ASPHALT.	
							CONCRETE.	
					CL		LEAN CLAY (CL): reddish brown; moist; medium stiff; some fine sand; low plasticity; massive.	
2.5			5-7-10-.	**PID:**4.9 **D/O/S:**None/ None/ None				
5.0			7-4-7-.	**PID:**10.2 **D/O/S:**None/ None/ None				
7.5			8-26-40-.	**PID:**6.7 **D/O/S:**None/ None/ None	SM		SILTY SAND (SM): fine grained; reddish brown; moist; medium dense; low plasticity; massive;	
10.0			8-25-45-.	**PID:**7.9 **D/O/S:**None/ None/ None			10-11' large gravel.	
			100/2"-.					
							Auger Refusal	
12.5								
15.0								
17.5								
20.0								

Date Boring Started: 11/10/14 4:00 am
Date Boring Completed: 11/10/14 5:35 am
Logged By: NRS2
Drilling Contractor: Braun Intertec
Drill Rig:

Remarks: Sample collected at 7.5-9'. Analyses: GRO/PVOC and DRO

PID = Headspace; D/O/S = Discoloration/Odor/Sheen; FID/MC = FID/Methane Corrected
Additional data may have been collected in the field which is not included on this log.
Weather: Low of 20 degrees F. and Clear.

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325 South Lake Avenue, Suite 700
Duluth, MN 55802
Telephone: 218-529-8200

LOG OF BORING B-60
DRAFT

Project: Superior Street Reconstruction Corridor
Project No.: 23691588.00
Location: Superior Street Duluth, Minnesota
Coordinates:
Datum:

Surface Elevation:
Drilling Method:3 1/4" Hollow Stem Auger
Sampling Method: Split Spoon
Completion Depth:15.0 ft

Depth, feet	Sample Type & Recovery	Sample No.	Blows/6in.	ENVIRONMENTAL DATA	USCS	Graphic Log	LITHOLOGIC DESCRIPTION	Elevation, feet
0.0							BRICK.	
							ASPHALT.	
							CONCRETE.	
					SP		POORLY GRADED SAND (SP): very fine to fine grained; brown; moist; loose; non-plastic plasticity; massive.	
2.5			9-8-6-.	**PID:**4.2 **D/O/S:**None/ None/ None				
5.0			5-4-4-.	**PID:**4.3 **D/O/S:**None/ None/ None	CH		FAT CLAY (CH): reddish brown; moist; medium stiff; trace small gravel; high plasticity; massive; 4.5-4.7' lens of pinkish gray silt.	
7.5			5-4-4-.	**PID:**5.0 **D/O/S:**None/ None/ None				
10.0			10-20-63-.	**PID:**4.6 **D/O/S:**None/ None/ None	SM		SILTY SAND (SM): brown; moist; loose; little small gravel and trace coarse sand; non-plastic plasticity; massive.	
12.5			15-50/1"-50/5"-.	**PID:**1.7 **D/O/S:**None/ None/ None				
15.0							Auger Refusal	
17.5								
20.0								

Date Boring Started: 11/12/14 3:55 am
Date Boring Completed: 11/12/14 5:00 am
Logged By: NRS2
Drilling Contractor: Braun Intertec
Drill Rig:

Remarks: Sample collected at 9.5-11'. Analyses: DRO, GRO, VOC, PAH, RCRA Metals, and SVOC

PID = Headspace; D/O/S = Discoloration/Odor/Sheen; FID/MC = FID/Methane Corrected
Additional data may have been collected in the field which is not included on this log.
Weather: 20 degrees F. Light snow.

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325 South Lake Avenue, Suite 700
Duluth, MN 55802
Telephone: 218-529-8200

LOG OF BORING B-61
DRAFT

Project: Superior Street Reconstruction Corridor
Project No.: 23691588.00
Location: Superior Street Duluth, Minnesota
Coordinates:
Datum:

Surface Elevation:
Drilling Method:3 1/4" Hollow Stem Auger
Sampling Method: Split Spoon
Completion Depth:10.8 ft

Depth, feet	Sample Type & Recovery	Sample No.	Blows/6in.	ENVIRONMENTAL DATA	USCS	Graphic Log	LITHOLOGIC DESCRIPTION	Elevation, feet
0.0							BRICK.	
							ASPHALT.	
							CONCRETE.	
							LARGE GRAVEL AND SILTY SAND.	
2.5			6-4-3-.	**PID:**7.5 **D/O/S:**None/ None/ None	SP		POORLY GRADED SAND (SP): medium grained; brown; moist; very loose; non-plastic plasticity; massive.	
5.0			5-4-6-.	**PID:**6.1 **D/O/S:**None/ None/ None	CL		LEAN CLAY (CL): reddish brown; moist; stiff; trace small gravel; medium plasticity; massive.	
7.5			6-10-12-.	**PID:**7.3 **D/O/S:**None/ None/ None				
10.0			15-30-50/4"-.	**PID:**5.3 **D/O/S:**None/ None/ None	SM		SILTY SAND (SM): fine grained; reddish brown; moist; loose; some dark brown coarse sand and trace small to large gravel; non-plastic plasticity; massive.	
							Auger Refusal	
12.5								
15.0								
17.5								
20.0								

Date Boring Started: 11/12/14 2:50 am
Date Boring Completed: 11/12/14 3:30 am
Logged By: NRS2
Drilling Contractor: Braun Intertec
Drill Rig:

Remarks:

PID = Headspace; D/O/S = Discoloration/Odor/Sheen; FID/MC = FID/Methane Corrected
Additional data may have been collected in the field which is not included on this log.
Weather: 20 degrees F. Light snow.

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Barr Engineering Company
325 South Lake Avenue, Suite 700
Duluth, MN 55802
Telephone: 218-529-8200

LOG OF BORING B-62
DRAFT

Project: Superior Street Reconstruction Corridor
Project No.: 23691588.00
Location: Superior Street Duluth, Minnesota
Coordinates:
Datum:

Surface Elevation:
Drilling Method:3 1/4" Hollow Stem Auger
Sampling Method: Split Spoon
Completion Depth:10.2 ft

Depth, feet	Sample Type & Recovery	Sample No.	Blows/6in.	ENVIRONMENTAL DATA	USCS	Graphic Log	LITHOLOGIC DESCRIPTION	Elevation, feet
0.0							BRICK.	
							ASPHALT.	
							CONCRETE.	
							LARGE GRAVEL AND SILTY SAND: moist.	
2.5			6-4-6-.	**PID:**6.9 **D/O/S:**None/ None/ None	CL		LEAN CLAY (CL): reddish brown; moist; some fine grained sand and little small gravel; low plasticity; massive.	
5.0			8-9-7-.	**PID:**8.9 **D/O/S:**None/ None/ None				
7.5			8-12-20-.	**PID:**3.6 **D/O/S:**None/ None/ None	SM		SILTY SAND (SM): fine grained; reddish brown; moist; trace small gravel; non-plastic plasticity; massive.	
10.0			12-50/2"-.	**PID:**5.6 **D/O/S:**None/ None/ None	CL		LEAN CLAY (CL): reddish brown with pinkish gray mottling; moist; some fine grained sand and little small gravel; low plasticity; massive.	
							Auger Refusal	
12.5								
15.0								
17.5								
20.0								

Date Boring Started: 11/12/14 1:30 am
Date Boring Completed: 11/12/14 2:10 am
Logged By: NRS2
Drilling Contractor: Braun Intertec
Drill Rig:

Remarks:

PID = Headspace; D/O/S = Discoloration/Odor/Sheen; FID/MC = FID/Methane Corrected
Additional data may have been collected in the field which is not included on this log.
Weather: 20 degrees F. Light snow.

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325 South Lake Avenue, Suite 700
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LOG OF BORING B-63
DRAFT

Project: Superior Street Reconstruction Corridor
Project No.: 23691588.00
Location: Superior Street Duluth, Minnesota
Coordinates:
Datum:

Surface Elevation:
Drilling Method:3 1/4" Hollow Stem Auger
Sampling Method: Split Spoon
Completion Depth:11.5 ft

Depth, feet	Sample Type & Recovery	Sample No.	Blows/6in.	ENVIRONMENTAL DATA	USCS	Graphic Log	LITHOLOGIC DESCRIPTION	Elevation, feet
0.0							BRICK.	
							ASPHALT.	
							CONCRETE.	
							LARGE GRAVEL AND SILTY SAND: (discription based on cuttings).	
							SILTY SAND (SM): fine grained; reddish brown; moist; loose; trace small gravel; non-plastic plasticity; massive.	
2.5				**D/O/S:**None/ None/ None				
5.0			5-20-35-.	**PID:**3.8 **D/O/S:**None/ None/ None	SM			
7.5			30-36-38-.	**PID:**2.5 **D/O/S:**None/ None/ None				
10.0			30-55-50/2"-.	**PID:**2.8 **D/O/S:**None/ None/ None				
							Auger Refusal	
12.5								
15.0								
17.5								
20.0								

Date Boring Started: 11/12/14 12:20 am
Date Boring Completed: 11/12/14 1:10 am
Logged By: NRS2
Drilling Contractor: Braun Intertec
Drill Rig:

Remarks: Sample collected at 7.5-9'. Analyses: GRO/PVOC and DRO

PID = Headspace; D/O/S = Discoloration/Odor/Sheen; FID/MC = FID/Methane Corrected
Additional data may have been collected in the field which is not included on this log.
Weather: 20 degrees F. Light snow.

O:\GINT\PROJECTS\23691588_SUPERIOR STREET BORINGS\23691588.00 SUPERIOR ST BORINGS.GPJ BARRLIBRARY.GLB ENVIRO LOG BARR TEMPLATE.GDT

Barr Engineering Company
325 South Lake Avenue, Suite 700
Duluth, MN 55802
Telephone: 218-529-8200

LOG OF BORING B-64
DRAFT

Project: Superior Street Reconstruction Corridor
Project No.: 23691588.00
Location: Superior Street Duluth, Minnesota
Coordinates:
Datum:

Surface Elevation:
Drilling Method:3 1/4" Hollow Stem Auger
Sampling Method: Split Spoon
Completion Depth:11.5 ft

Depth, feet	Sample Type & Recovery	Sample No.	Blows/6in.	ENVIRONMENTAL DATA	USCS	Graphic Log	LITHOLOGIC DESCRIPTION	Elevation, feet
0.0							BRICK.	
							ASPHALT.	
							CONCRETE.	
							SILTY SAND AND GRAVEL FILL.	
2.5			7-8-8-.	**PID:**5.1 **D/O/S:**None/ None/ None	SP		POORLY GRADED SAND (SP): medium grained; brown; moist; very loose; non-plastic plasticity; massive.	
5.0			3-2-2-.	**PID:**6.1 **D/O/S:**None/ None/ None	SC		CLAYEY SAND (SC): dark reddish gray; moist; medium dense; trace small gravel; low plasticity; massive.	
7.5			6-50/3"-.	**PID:**5.7 **D/O/S:**None/ None/ None	SP		POORLY GRADED SAND WITH GRAVEL (SP): brown; wet; loose; few large gravel; non-plastic plasticity; massive.	
10.0			16-60-50/4"-.	**PID:**4.6 **D/O/S:**None/ None/ None	SM		SILTY SAND (SM): fine grained; brown; moist; loose; trace small gravel; non-plastic plasticity; massive.	
							Auger Refusal	
12.5								
15.0								
17.5								
20.0								

Date Boring Started: 11/11/14 11:00 pm
Date Boring Completed: 11/12/14 12:00 am
Logged By: NRS2
Drilling Contractor: Braun Intertec
Drill Rig:

Remarks: Sample collected at 7.5-9'. Analyses: GRO and VOC

PID = Headspace; D/O/S = Discoloration/Odor/Sheen; FID/MC = FID/Methane Corrected
Additional data may have been collected in the field which is not included on this log.
Weather: 20 degrees F. Light snow.

O:\GINT\PROJECTS\23691588_SUPERIOR STREET BORINGS\23691588.00 SUPERIOR ST BORINGS.GPJ BARRLIBRARY.GLB ENVIRO LOG BARR TEMPLATE.GDT

Barr Engineering Company
325 South Lake Avenue, Suite 700
Duluth, MN 55802
Telephone: 218-529-8200

LOG OF BORING B-65
DRAFT

Project: Superior Street Reconstruction Corridor
Project No.: 23691588.00
Location: Superior Street Duluth, Minnesota
Coordinates:
Datum:

Surface Elevation:
Drilling Method:3 1/4" Hollow Stem Auger
Sampling Method: Split Spoon
Completion Depth:9.0 ft

Depth, feet	Sample Type & Recovery	Sample No.	Blows/6in.	ENVIRONMENTAL DATA	USCS	Graphic Log	LITHOLOGIC DESCRIPTION	Elevation, feet
0.0							BRICK.	
							ASPHALT.	
							SILTY SAND AND GRAVEL.	
							CONCRETE.	
2.5				**PID:**4.3 **D/O/S:**None/ None/ None	SM		SILTY SAND (SM): fine grained; brown; moist; loose; trace small gravel; non-plastic plasticity; massive;	
5.0				**PID:**7.1 **D/O/S:**None/ None/ None				
7.5			16-50/4"-.	**PID:**7.1 **D/O/S:**dark gray/ None/ None			8.5-9' soil color dark gray.	
							Auger Refusal	
10.0								
12.5								
15.0								
17.5								
20.0								

Date Boring Started: 11/11/14 10:10 pm
Date Boring Completed: 11/11/14 11:00 am
Logged By: NRS2
Drilling Contractor: Braun Intertec
Drill Rig:

Remarks: Sample collected at 7.5-9'. Analyses: GRO/PVOC and DRO

PID = Headspace; D/O/S = Discoloration/Odor/Sheen; FID/MC = FID/Methane Corrected
Additional data may have been collected in the field which is not included on this log.
Weather: 20 degrees F. Light snow.

O:\GINT\PROJECTS\23691588_SUPERIOR STREET BORINGS\23691588.00 SUPERIOR ST BORINGS.GPJ BARRLIBRARY.GLB ENVIRO LOG BARR TEMPLATE.GDT

Barr Engineering Company
325 South Lake Avenue, Suite 700
Duluth, MN 55802
Telephone: 218-529-8200

LOG OF BORING B-66
DRAFT

Project: Superior Street Reconstruction Corridor
Project No.: 23691588.00
Location: Superior Street Duluth, Minnesota
Coordinates:
Datum:

Surface Elevation:
Drilling Method:3 1/4" Hollow Stem Auger
Sampling Method: Split Spoon
Completion Depth:12.0 ft

Depth, feet	Sample Type & Recovery	Sample No.	Blows/6in.	ENVIRONMENTAL DATA	USCS	Graphic Log	LITHOLOGIC DESCRIPTION	Elevation, feet
0.0							CONCRETE.	
							SAND WITH GRAVEL: (discription based on cuttings).	
2.5			8-11-12-.	**PID:**2.8 **D/O/S:**None/ None/ None	SP		POORLY GRADED SAND (SP): medium grained; moist; very loose; non-plastic plasticity; massive.	
5.0			8-50/3"-.	**PID:**3.5 **D/O/S:**None/ None/ None				
7.5			11-22-70-.	**PID:**4.1 **D/O/S:**None/ None/ None	SM		SILTY SAND (SM): moist; loose; little large gravel; non-plastic plasticity; massive.	
10.0			12-22-23-.	**PID:**89.5 **D/O/S:**None/ None/ None				
12.5							Auger Refusal	
15.0								
17.5								
20.0								

Date Boring Started: 11/11/14 8:50 pm
Date Boring Completed: 11/11/14 9:50 pm
Logged By: NRS2
Drilling Contractor: Braun Intertec
Drill Rig:

Remarks: Sample collected at 7.5-9'. Analyses: GRO/PVOC, DRO, and RCRA metals

PID = Headspace; D/O/S = Discoloration/Odor/Sheen; FID/MC = FID/Methane Corrected
Additional data may have been collected in the field which is not included on this log.
Weather: 20 degrees F. Light snow.

O:\GINT\PROJECTS\23691588_SUPERIOR STREET BORINGS\23691588.00 SUPERIOR ST BORINGS.GPJ BARRLIBRARY.GLB ENVIRO LOG BARR TEMPLATE.GDT

Attachment C

Soil Sample Analytical Results, Complete

Attachment C
Soil Boring Analysis Results

				Location	B-01	B-03	B-04	B-08	B-09	B-10	B-17	B-17	B-18	B-19	B-20	B-21	B-28	B-31
				Date	11/02/2014	11/03/2014	11/03/2014	11/04/2014	11/04/2014	11/04/2014	11/03/2014	11/03/2014	11/05/2014	11/05/2014	11/05/2014	11/05/2014	11/05/2014	11/06/2014
				Depth	7.5 - 9 ft	9.5 - 11 ft	11.5 - 14 ft	9.5 - 11 ft	9.5 - 11 ft	8.5 - 9 ft	2.5 - 4 ft	9.5 - 11 ft	9.5 - 11 ft	11.5 - 14 ft	9.5 - 11 ft	7.5 - 9 ft	2.5 - 4 ft	9.5 - 11 ft
				Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Parameter	Total or Dissolved	MPCA Petroleum Remediation Progrogram Guidance	Minnesota Screening Soil Leaching Values	Minnesota Tier 1 Soil Reference Values														
Effective Date		3/7/2012	06/01/2013	06/22/2009														
Exceedance Key		**Bold**	Underline	No Exceed														
General Parameters																		
Solids, percent	NA				93%	83%	83%	78%	86%	85%	90%	79%	76%	80%	84%	86%	84%	89%
Metals																		
Arsenic	NA		5.8 mg/kg	9 mg/kg	--	--	4.5 mg/kg	--	--	--	1.7 mg/kg	--	--	--	--	--	--	--
Barium	NA		1700 mg/kg	1100 mg/kg	--	--	79 mg/kg	--	--	--	30 mg/kg	--	--	--	--	--	--	--
Cadmium	NA		8.8 mg/kg	25 mg/kg	--	--	< 0.30 mg/kg	--	--	--	< 0.28 mg/kg	--	--	--	--	--	--	--
Chromium	NA		100000000 CR3 mg/kg	44000 CR3 mg/kg	--	--	29 mg/kg	--	--	--	15 mg/kg	--	--	--	--	--	--	--
Lead	NA		2700 mg/kg	300 mg/kg	--	--	5.6 mg/kg	--	--	--	3.4 mg/kg	--	--	--	--	--	--	--
Mercury	NA		3.3 MC mg/kg	0.5 mg/kg	--	--	0.0329 mg/kg	--	--	--	< 0.0219 mg/kg	--	--	--	--	--	--	--
Selenium	NA		2.6 mg/kg	160 mg/kg	--	--	< 1.2 mg/kg	--	--	--	< 1.1 mg/kg	--	--	--	--	--	--	--
Silver	NA		7.9 mg/kg	160 mg/kg	--	--	< 0.30 mg/kg	--	--	--	< 0.28 mg/kg	--	--	--	--	--	--	--
SVOCs																		
1,2,4-Trichlorobenzene	NA		0.23 mg/kg	200 mg/kg	--	--	--	--	--	--	< 0.37 mg/kg	--	--	--	--	--	--	--
1,2-Dichlorobenzene	NA		11 mg/kg	26 mg/kg	--	--	--	--	--	--	< 0.37 mg/kg	--	--	--	--	--	--	--
1,3-Dichlorobenzene	NA		10 mg/kg	26 mg/kg	--	--	--	--	--	--	< 0.37 mg/kg	--	--	--	--	--	--	--
1,4-Dichlorobenzene	NA		0.17 mg/kg	30 mg/kg	--	--	--	--	--	--	< 0.37 mg/kg	--	--	--	--	--	--	--
2,3,4,6-Tetrachlorophenol	NA		NA	636 mg/kg	--	--	--	--	--	--	< 0.74 mg/kg	--	--	--	--	--	--	--
2,4,5-Trichlorophenol	NA		NA	1920 mg/kg	--	--	--	--	--	--	< 0.74 mg/kg	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	NA		0.42 mg/kg	595 mg/kg	--	--	--	--	--	--	< 0.74 mg/kg	--	--	--	--	--	--	--
2,4-Dichlorophenol	NA		0.15 mg/kg	48 mg/kg	--	--	--	--	--	--	< 0.74 mg/kg	--	--	--	--	--	--	--
2,4-Dimethylphenol	NA		2.2 mg/kg	390 mg/kg	--	--	--	--	--	--	< 0.74 mg/kg	--	--	--	--	--	--	--
2,4-Dinitrophenol	NA		0.020 mg/kg		--	--	--	--	--	--	< 0.74 mg/kg	--	--	--	--	--	--	--
2,4-Dinitrotoluene	NA		0.013 mg/kg	50 mg/kg	--	--	--	--	--	--	< 0.37 mg/kg	--	--	--	--	--	--	--
2,6-Dichlorophenol	NA				--	--	--	--	--	--	< 0.74 mg/kg	--	--	--	--	--	--	--
2,6-Dinitrotoluene	NA		0.013 mg/kg	25 mg/kg	--	--	--	--	--	--	< 0.37 mg/kg	--	--	--	--	--	--	--
2-Chloronaphthalene	NA				--	--	< 0.40 mg/kg	--	--	--	< 0.37 mg/kg < 0.37 mg/kg	--	--	--	--	--	--	--
2-Chlorophenol	NA		0.52 mg/kg		--	--	--	--	--	--	< 0.74 mg/kg	--	--	--	--	--	--	--
2-Methyl-4,6-dinitrophenol	NA				--	--	--	--	--	--	< 0.74 mg/kg	--	--	--	--	--	--	--
2-Methylnaphthalene	NA			100 mg/kg	--	--	< 0.40 mg/kg	--	--	--	< 0.37 mg/kg < 0.37 mg/kg	--	--	--	--	--	--	--
2-Methylphenol (o-cresol)	NA		0.43 mg/kg	75 mg/kg	--	--	--	--	--	--	< 0.74 mg/kg	--	--	--	--	--	--	--
2-Nitroaniline	NA				--	--	--	--	--	--	< 0.37 mg/kg	--	--	--	--	--	--	--
2-Nitrophenol	NA				--	--	--	--	--	--	< 0.74 mg/kg	--	--	--	--	--	--	--
3,3`-Dichlorobenzidine	NA		0.10 mg/kg	25 mg/kg	--	--	--	--	--	--	< 1.8 mg/kg	--	--	--	--	--	--	--
3,4-Methylphenol (m,p cresols)	NA		0.042 MP mg/kg	10 MP mg/kg	--	--	--	--	--	--	< 0.74 mg/kg	--	--	--	--	--	--	--
3-Nitroaniline	NA				--	--	--	--	--	--	< 0.37 mg/kg	--	--	--	--	--	--	--
4-Bromophenyl phenyl ether	NA				--	--	--	--	--	--	< 0.37 mg/kg	--	--	--	--	--	--	--
4-Chloro-3-methylphenol	NA				--	--	--	--	--	--	< 0.74 mg/kg	--	--	--	--	--	--	--
4-Chloroaniline	NA				--	--	--	--	--	--	< 0.74 mg/kg	--	--	--	--	--	--	--
4-Chlorophenyl phenyl ether	NA				--	--	--	--	--	--	< 0.37 mg/kg	--	--	--	--	--	--	--
4-Nitroaniline	NA				--	--	--	--	--	--	< 0.37 mg/kg	--	--	--	--	--	--	--
4-Nitrophenol	NA				--	--	--	--	--	--	< 0.74 mg/kg	--	--	--	--	--	--	--
Acenaphthene	NA		81 mg/kg	1200 mg/kg	--	--	< 0.40 mg/kg	--	--	--	< 0.37 mg/kg < 0.37 mg/kg	--	--	--	--	--	--	--
Acenaphthylene	NA		NA		--	--	< 0.40 mg/kg	--	--	--	< 0.37 mg/kg < 0.37 mg/kg	--	--	--	--	--	--	--
Aniline	NA				--	--	--	--	--	--	< 0.74 mg/kg	--	--	--	--	--	--	--
Anthracene	NA		1300 mg/kg	7880 mg/kg	--	--	< 0.40 mg/kg	--	--	--	< 0.37 mg/kg < 0.37 mg/kg	--	--	--	--	--	--	--
Azobenzene	NA				--	--	--	--	--	--	< 0.37 mg/kg	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	NA		NA		--	--	< 0.40 mg/kg	--	--	--	< 0.37 mg/kg < 0.37 mg/kg	--	--	--	--	--	--	--
Benzoic acid	NA		61 mg/kg	50000 mg/kg	--	--	--	--	--	--	< 0.37 mg/kg	--	--	--	--	--	--	--
Benzyl alcohol	NA			8700 mg/kg	--	--	--	--	--	--	< 0.74 mg/kg	--	--	--	--	--	--	--
Bis(2-chloroethoxy)methane	NA				--	--	--	--	--	--	< 0.37 mg/kg	--	--	--	--	--	--	--
Bis(2-chloroethyl)ether	NA		0.00099 mg/kg	2.5 mg/kg	--	--	--	--	--	--	< 0.37 mg/kg	--	--	--	--	--	--	--
Bis(2-chloroisopropyl)ether	NA				--	--	--	--	--	--	< 0.37 mg/kg	--	--	--	--	--	--	--

Attachment C
Soil Boring Analysis Results

				Location	B-01	B-03	B-04	B-08	B-09	B-10	B-17	B-17	B-18	B-19	B-20	B-21	B-28	B-31
				Date	11/02/2014	11/03/2014	11/03/2014	11/04/2014	11/04/2014	11/04/2014	11/03/2014	11/03/2014	11/05/2014	11/05/2014	11/05/2014	11/05/2014	11/05/2014	11/06/2014
				Depth	7.5 - 9 ft	9.5 - 11 ft	11.5 - 14 ft	9.5 - 11 ft	9.5 - 11 ft	8.5 - 9 ft	2.5 - 4 ft	9.5 - 11 ft	9.5 - 11 ft	11.5 - 14 ft	9.5 - 11 ft	7.5 - 9 ft	2.5 - 4 ft	9.5 - 11 ft
				Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Parameter	Total or Dissolved	MPCA Petroleum Remediation Progrogram Guidance	Minnesota Screening Soil Leaching Values	Minnesota Tier 1 Soil Reference Values														
Effective Date		3/7/2012	06/01/2013	06/22/2009														
Exceedance Key		**Bold**	Underline	No Exceed														
Bis(2-ethylhexyl)phthalate	NA		29 mg/kg	570 mg/kg	--	--	--	--	--	--	< 0.37 mg/kg	--	--	--	--	--	--	--
Butyl benzyl phthalate	NA		29 mg/kg	580 mg/kg	--	--	--	--	--	--	< 0.37 mg/kg	--	--	--	--	--	--	--
Carbazole	NA			700 mg/kg	--	--	--	--	--	--	< 0.37 mg/kg	--	--	--	--	--	--	--
Dibenzofuran	NA		NA	104 mg/kg	--	--	--	--	--	--	< 0.37 mg/kg	--	--	--	--	--	--	--
Diethyl phthalate	NA		37 mg/kg		--	--	--	--	--	--	< 0.37 mg/kg	--	--	--	--	--	--	--
Dimethyl phthalate	NA		230 mg/kg		--	--	--	--	--	--	< 0.37 mg/kg	--	--	--	--	--	--	--
Di-n-butyl phthalate	NA		34 mg/kg	2440 mg/kg	--	--	--	--	--	--	< 0.37 mg/kg	--	--	--	--	--	--	--
Di-n-octyl phthalate	NA		NA	520 mg/kg	--	--	--	--	--	--	< 0.37 mg/kg	--	--	--	--	--	--	--
Fluoranthene	NA		670 mg/kg	1080 mg/kg	--	--	< 0.40 mg/kg	--	--	--	0.81 mg/kg < 0.37 mg/kg	--	--	--	--	--	--	--
Fluorene	NA		110 mg/kg	850 mg/kg	--	--	< 0.40 mg/kg	--	--	--	< 0.37 mg/kg < 0.37 mg/kg	--	--	--	--	--	--	--
Hexachlorobenzene	NA			5 mg/kg	--	--	--	--	--	--	< 0.37 mg/kg	--	--	--	--	--	--	--
Hexachlorobutadiene	NA		0.037 mg/kg	6 mg/kg	--	--	--	--	--	--	< 0.37 mg/kg	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	NA		3.1 mg/kg	2 mg/kg	--	--	--	--	--	--	< 0.37 mg/kg	--	--	--	--	--	--	--
Hexachloroethane	NA		0.010 mg/kg		--	--	--	--	--	--	< 0.37 mg/kg	--	--	--	--	--	--	--
Isophorone	NA		0.46 mg/kg		--	--	--	--	--	--	< 0.37 mg/kg	--	--	--	--	--	--	--
Naphthalene	NA		4.5 mg/kg	10 mg/kg	--	--	< 0.40 mg/kg	--	--	--	< 0.37 mg/kg < 0.37 mg/kg	--	--	--	--	--	--	--
Nitrobenzene	NA				--	--	--	--	--	--	< 0.37 mg/kg	--	--	--	--	--	--	--
N-Nitrosodimethylamine	NA				--	--	--	--	--	--	< 0.37 mg/kg	--	--	--	--	--	--	--
N-Nitrosodi-n-propylamine	NA			0.7 mg/kg	--	--	--	--	--	--	< 0.37 mg/kg	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	NA		7.5 mg/kg	1950 mg/kg	--	--	--	--	--	--	< 0.37 mg/kg	--	--	--	--	--	--	--
Pentachlorophenol	NA		0.023 mg/kg	80 mg/kg	--	--	--	--	--	--	< 0.74 mg/kg	--	--	--	--	--	--	--
Phenanthrene	NA		NA		--	--	< 0.40 mg/kg	--	--	--	1.1 mg/kg < 0.37 mg/kg	--	--	--	--	--	--	--
Phenol	NA		38 mg/kg	1500 mg/kg	--	--	--	--	--	--	< 0.74 mg/kg	--	--	--	--	--	--	--
Pyrene	NA		440 mg/kg	890 mg/kg	--	--	< 0.40 mg/kg	--	--	--	0.69 mg/kg < 0.37 mg/kg	--	--	--	--	--	--	--
Benz(a)anthracene	NA		T	T	--	--	< 0.40 mg/kg	--	--	--	< 0.37 mg/kg < 0.37 mg/kg	--	--	--	--	--	--	--
Benzidine	NA				--	--	--	--	--	--	< 2.8 mg/kg	--	--	--	--	--	--	--
Benzo(a)pyrene	NA		T	T	--	--	< 0.40 mg/kg	--	--	--	< 0.37 mg/kg < 0.37 mg/kg	--	--	--	--	--	--	--
Benzo(b)fluoranthene	NA		T	T	--	--	< 0.40 mg/kg	--	--	--	0.44 mg/kg < 0.37 mg/kg	--	--	--	--	--	--	--
Benzo(k)fluoranthene	NA		T	T	--	--	< 0.40 mg/kg	--	--	--	< 0.37 mg/kg < 0.37 mg/kg	--	--	--	--	--	--	--
Chrysene	NA		T	T	--	--	< 0.40 mg/kg	--	--	--	< 0.37 mg/kg < 0.37 mg/kg	--	--	--	--	--	--	--
Dibenz(a,h)anthracene	NA		T	T	--	--	< 0.40 mg/kg	--	--	--	< 0.37 mg/kg < 0.37 mg/kg	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	NA		T	T	--	--	< 0.40 mg/kg	--	--	--	< 0.37 mg/kg < 0.37 mg/kg	--	--	--	--	--	--	--
B(a)P Equivalent, non-detects at 0	Barr Calculation		1.4 T mg/kg	2 T mg/kg	--	--	ND	--	--	--	0.044 mg/kg	--	--	--	--	--	--	--
B(a)P Equivalent, non-detects at 1/2	Barr Calculation		1.4 T mg/kg	2 T mg/kg	--	--	0.39 mg/kg	--	--	--	0.39 mg/kg	--	--	--	--	--	--	--
B(a)P Equivalent, non-detects at 1x	Barr Calculation		1.4 T mg/kg	2 T mg/kg	--	--	0.79 mg/kg	--	--	--	0.74 mg/kg	--	--	--	--	--	--	--
VOCs																		
1,1,1,2-Tetrachloroethane	NA		0.41 mg/kg	31 mg/kg	--	--	< 0.30 mg/kg	--	--	--	< 0.28 mg/kg	--	--	--	< 0.30 mg/kg	< 0.29 mg/kg	--	--
1,1,1-Trichloroethane	NA		56 mg/kg	140 mg/kg	--	--	< 0.30 mg/kg	--	--	--	< 0.28 mg/kg	--	--	--	< 0.30 mg/kg	< 0.29 mg/kg	--	--
1,1,2,2-Tetrachloroethane	NA		0.012 mg/kg	3.5 mg/kg	--	--	< 0.30 mg/kg	--	--	--	< 0.28 mg/kg	--	--	--	< 0.30 mg/kg	< 0.29 mg/kg	--	--
1,1,2-Trichloroethane	NA		0.014 mg/kg	9 mg/kg	--	--	< 0.30 mg/kg	--	--	--	< 0.28 mg/kg	--	--	--	< 0.30 mg/kg	< 0.29 mg/kg	--	--
1,1-Dichloro-1-propene	NA				--	--	< 0.30 mg/kg	--	--	--	< 0.28 mg/kg	--	--	--	< 0.30 mg/kg	< 0.29 mg/kg	--	--
1,1-Dichloroethane	NA		0.41 mg/kg	34 mg/kg	--	--	< 0.30 mg/kg	--	--	--	< 0.28 mg/kg	--	--	--	< 0.30 mg/kg	< 0.29 mg/kg	--	--
1,1-Dichloroethylene	NA		1.4 mg/kg	20 mg/kg	--	--	< 0.30 mg/kg	--	--	--	< 0.28 mg/kg	--	--	--	< 0.30 mg/kg	< 0.29 mg/kg	--	--

Attachment C
Soil Boring Analysis Results

				Location	B-01	B-03	B-04	B-08	B-09	B-10	B-17	B-17	B-18	B-19	B-20	B-21	B-28	B-31
				Date	11/02/2014	11/03/2014	11/03/2014	11/04/2014	11/04/2014	11/04/2014	11/03/2014	11/03/2014	11/05/2014	11/05/2014	11/05/2014	11/05/2014	11/05/2014	11/06/2014
				Depth	7.5 - 9 ft	9.5 - 11 ft	11.5 - 14 ft	9.5 - 11 ft	9.5 - 11 ft	8.5 - 9 ft	2.5 - 4 ft	9.5 - 11 ft	9.5 - 11 ft	11.5 - 14 ft	9.5 - 11 ft	7.5 - 9 ft	2.5 - 4 ft	9.5 - 11 ft
				Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Parameter	Total or Dissolved	MPCA Petroleum Remediation Progrogram Guidance	Minnesota Screening Soil Leaching Values	Minnesota Tier 1 Soil Reference Values														
Effective Date		3/7/2012	06/01/2013	06/22/2009														
Exceedance Key		**Bold**	Underline	No Exceed														
1,2,3-Trichlorobenzene	NA				--	--	< 0.60 mg/kg	--	--	--	< 0.56 mg/kg	--	--	--	< 0.60 mg/kg	< 0.58 mg/kg	--	--
1,2,3-Trichloropropane	NA		0.27 mg/kg		--	--	< 0.30 mg/kg	--	--	--	< 0.28 mg/kg	--	--	--	< 0.30 mg/kg	< 0.29 mg/kg	--	--
1,2,4-Trichlorobenzene	NA		0.23 mg/kg	200 mg/kg	--	--	< 0.60 mg/kg	--	--	--	< 0.56 mg/kg	--	--	--	< 0.60 mg/kg	< 0.58 mg/kg	--	--
1,2,4-Trimethylbenzene	NA		2.7 mg/kg	8 mg/kg	< 0.030 mg/kg	< 0.030 mg/kg	< 0.30 mg/kg	< 0.032 mg/kg	< 0.029 mg/kg	< 0.029 mg/kg	< 0.28 mg/kg	< 0.032 mg/kg	< 0.033 mg/kg	< 0.031 mg/kg	< 0.30 mg/kg	< 0.29 mg/kg	< 0.030 mg/kg	< 0.028 mg/kg
1,2-Dibromo-3-chloropropane	NA				--	--	< 0.60 mg/kg	--	--	--	< 0.56 mg/kg	--	--	--	< 0.60 mg/kg	< 0.58 mg/kg	--	--
1,2-Dibromoethane	NA		0.000015 mg/kg	0.3 mg/kg	--	--	< 0.30 mg/kg	--	--	--	< 0.28 mg/kg	--	--	--	< 0.30 mg/kg	< 0.29 mg/kg	--	--
1,2-Dichlorobenzene	NA		11 mg/kg	26 mg/kg	--	--	< 0.30 mg/kg	--	--	--	< 0.28 mg/kg	--	--	--	< 0.30 mg/kg	< 0.29 mg/kg	--	--
1,2-Dichloroethane	NA		0.0038 mg/kg	4 mg/kg	--	--	< 0.30 mg/kg	--	--	--	< 0.28 mg/kg	--	--	--	< 0.30 mg/kg	< 0.29 mg/kg	--	--
1,2-Dichloroethylene, cis	NA		0.21 mg/kg	8 mg/kg	--	--	< 0.30 mg/kg	--	--	--	< 0.28 mg/kg	--	--	--	< 0.30 mg/kg	< 0.29 mg/kg	--	--
1,2-Dichloroethylene, trans	NA		0.42 mg/kg	11 mg/kg	--	--	< 0.30 mg/kg	--	--	--	< 0.28 mg/kg	--	--	--	< 0.30 mg/kg	< 0.29 mg/kg	--	--
1,2-Dichloropropane	NA		0.024 mg/kg	4 mg/kg	--	--	< 0.30 mg/kg	--	--	--	< 0.28 mg/kg	--	--	--	< 0.30 mg/kg	< 0.29 mg/kg	--	--
1,3,5-Trimethylbenzene	NA		2.7 mg/kg	3 mg/kg	< 0.030 mg/kg	< 0.030 mg/kg	< 0.30 mg/kg	< 0.032 mg/kg	< 0.029 mg/kg	< 0.029 mg/kg	< 0.28 mg/kg	< 0.032 mg/kg	< 0.033 mg/kg	< 0.031 mg/kg	< 0.30 mg/kg	< 0.29 mg/kg	< 0.030 mg/kg	< 0.028 mg/kg
1,3-Dichloro-1-propene, cis	NA		0.011 DCP mg/kg		--	--	< 0.30 mg/kg	--	--	--	< 0.28 mg/kg	--	--	--	< 0.30 mg/kg	< 0.29 mg/kg	--	--
1,3-Dichloro-1-propene, trans	NA		0.011 DCP mg/kg		--	--	< 0.30 mg/kg	--	--	--	< 0.28 mg/kg	--	--	--	< 0.30 mg/kg	< 0.29 mg/kg	--	--
1,3-Dichlorobenzene	NA		10 mg/kg	26 mg/kg	--	--	< 0.30 mg/kg	--	--	--	< 0.28 mg/kg	--	--	--	< 0.30 mg/kg	< 0.29 mg/kg	--	--
1,3-Dichloropropane	NA				--	--	< 0.30 mg/kg	--	--	--	< 0.28 mg/kg	--	--	--	< 0.30 mg/kg	< 0.29 mg/kg	--	--
1,4-Dichlorobenzene	NA		0.17 mg/kg	30 mg/kg	--	--	< 0.30 mg/kg	--	--	--	< 0.28 mg/kg	--	--	--	< 0.30 mg/kg	< 0.29 mg/kg	--	--
2,2-Dichloropropane	NA				--	--	< 0.60 mg/kg	--	--	--	< 0.56 mg/kg	--	--	--	< 0.60 mg/kg	< 0.58 mg/kg	--	--
Acetone	NA		8.4 mg/kg	340 mg/kg	--	--	< 2.4 mg/kg	--	--	--	< 2.2 mg/kg	--	--	--	< 2.4 mg/kg	< 2.3 mg/kg	--	--
Allyl Chloride	NA		0.15 mg/kg		--	--	< 0.60 mg/kg	--	--	--	< 0.56 mg/kg	--	--	--	< 0.60 mg/kg	< 0.58 mg/kg	--	--
Benzene	NA		0.017 mg/kg	6 mg/kg	< 0.030 mg/kg	< 0.030 mg/kg	< 0.30 mg/kg	< 0.032 mg/kg	< 0.029 mg/kg	< 0.029 mg/kg	< 0.28 mg/kg	< 0.032 mg/kg	< 0.033 mg/kg	< 0.031 mg/kg	< 0.30 mg/kg	< 0.29 mg/kg	< 0.030 mg/kg	< 0.028 mg/kg
Bromobenzene	NA				--	--	< 0.30 mg/kg	--	--	--	< 0.28 mg/kg	--	--	--	< 0.30 mg/kg	< 0.29 mg/kg	--	--
Bromochloromethane	NA		0.28 mg/kg		--	--	< 0.30 mg/kg	--	--	--	< 0.28 mg/kg	--	--	--	< 0.30 mg/kg	< 0.29 mg/kg	--	--
Bromodichloromethane	NA		0.021 mg/kg	10 mg/kg	--	--	< 0.30 mg/kg	--	--	--	< 0.28 mg/kg	--	--	--	< 0.30 mg/kg	< 0.29 mg/kg	--	--
Bromoform	NA		0.13 mg/kg	370 mg/kg	--	--	< 0.60 mg/kg	--	--	--	< 0.56 mg/kg	--	--	--	< 0.60 mg/kg	< 0.58 mg/kg	--	--
Bromomethane	NA		0.036 mg/kg	0.7 mg/kg	--	--	< 0.60 mg/kg	--	--	--	< 0.56 mg/kg	--	--	--	< 0.60 mg/kg	< 0.58 mg/kg	--	--
Butyl benzene	NA		NA	30 mg/kg	--	--	< 0.30 mg/kg	--	--	--	< 0.28 mg/kg	--	--	--	< 0.30 mg/kg	< 0.29 mg/kg	--	--
Butylbenzene, sec	NA		NA	25 mg/kg	--	--	< 0.30 mg/kg	--	--	--	< 0.28 mg/kg	--	--	--	< 0.30 mg/kg	< 0.29 mg/kg	--	--
Butylbenzene, tert	NA		NA	30 mg/kg	--	--	< 0.30 mg/kg	--	--	--	< 0.28 mg/kg	--	--	--	< 0.30 mg/kg	< 0.29 mg/kg	--	--
Carbon tetrachloride	NA		0.0077 mg/kg	0.3 mg/kg	--	--	< 0.30 mg/kg	--	--	--	< 0.28 mg/kg	--	--	--	< 0.30 mg/kg	< 0.29 mg/kg	--	--
Chlorobenzene	NA		1.2 mg/kg	11 mg/kg	--	--	< 0.30 mg/kg	--	--	--	< 0.28 mg/kg	--	--	--	< 0.30 mg/kg	< 0.29 mg/kg	--	--
Chlorodibromomethane	NA		0.034 mg/kg	12 mg/kg	--	--	< 0.30 mg/kg	--	--	--	< 0.28 mg/kg	--	--	--	< 0.30 mg/kg	< 0.29 mg/kg	--	--
Chloroethane	NA		NA	1000 mg/kg	--	--	< 0.30 mg/kg	--	--	--	< 0.28 mg/kg	--	--	--	< 0.30 mg/kg	< 0.29 mg/kg	--	--
Chloroform	NA		0.11 mg/kg	2.5 mg/kg	--	--	< 0.30 mg/kg	--	--	--	< 0.28 mg/kg	--	--	--	< 0.30 mg/kg	< 0.29 mg/kg	--	--
Chloromethane	NA		0.11 mg/kg	8 mg/kg	--	--	< 0.30 mg/kg	--	--	--	< 0.28 mg/kg	--	--	--	< 0.30 mg/kg	< 0.29 mg/kg	--	--
Chlorotoluene, o	NA			436 mg/kg	--	--	< 0.30 mg/kg	--	--	--	< 0.28 mg/kg	--	--	--	< 0.30 mg/kg	< 0.29 mg/kg	--	--
Chlorotoluene, p	NA				--	--	< 0.30 mg/kg	--	--	--	< 0.28 mg/kg	--	--	--	< 0.30 mg/kg	< 0.29 mg/kg	--	--
Cumene (isopropyl benzene)	NA		9.5 mg/kg	30 mg/kg	--	--	< 0.30 mg/kg	--	--	--	< 0.28 mg/kg	--	--	--	< 0.30 mg/kg	< 0.29 mg/kg	--	--
Cymene p- (Toluene isopropyl p-)	NA				--	--	< 0.30 mg/kg	--	--	--	< 0.28 mg/kg	--	--	--	< 0.30 mg/kg	< 0.29 mg/kg	--	--
Dibromomethane (methylene bromide)	NA			260 mg/kg	--	--	< 0.30 mg/kg	--	--	--	< 0.28 mg/kg	--	--	--	< 0.30 mg/kg	< 0.29 mg/kg	--	--
Dichlorodifluoromethane (CFC-12)	NA		37 mg/kg	16 mg/kg	--	--	< 0.60 mg/kg	--	--	--	< 0.56 mg/kg	--	--	--	< 0.60 mg/kg	< 0.58 mg/kg	--	--
Dichlorofluoromethane (CFC-21)	NA		NA		--	--	< 0.30 mg/kg	--	--	--	< 0.28 mg/kg	--	--	--	< 0.30 mg/kg	< 0.29 mg/kg	--	--
Ethyl benzene	NA		1.0 mg/kg	200 mg/kg	< 0.030 mg/kg	< 0.030 mg/kg	< 0.30 mg/kg	< 0.032 mg/kg	< 0.029 mg/kg	< 0.029 mg/kg	< 0.28 mg/kg	< 0.032 mg/kg	< 0.033 mg/kg	< 0.031 mg/kg	< 0.30 mg/kg	< 0.29 mg/kg	< 0.030 mg/kg	< 0.028 mg/kg
Ethyl ether	NA		0.51 mg/kg		--	--	< 0.60 mg/kg	--	--	--	< 0.56 mg/kg	--	--	--	< 0.60 mg/kg	< 0.58 mg/kg	--	--
Hexachlorobutadiene	NA		0.037 mg/kg	6 mg/kg	--	--	< 1.2 mg/kg	--	--	--	< 1.1 mg/kg	--	--	--	< 1.2 mg/kg	< 1.2 mg/kg	--	--
Methyl ethyl ketone	NA		8.8 mg/kg	5500 mg/kg	--	--	< 2.4 mg/kg	--	--	--	< 2.2 mg/kg	--	--	--	< 2.4 mg/kg	< 2.3 mg/kg	--	--
Methyl isobutyl ketone	NA		0.76 mg/kg	1700 mg/kg	--	--	< 0.60 mg/kg	--	--	--	< 0.56 mg/kg	--	--	--	< 0.60 mg/kg	< 0.58 mg/kg	--	--
Methyl tertiary butyl ether (MTBE)	NA		NA		< 0.030 mg/kg	< 0.030 mg/kg	< 0.30 mg/kg	< 0.032 mg/kg	< 0.029 mg/kg	< 0.029 mg/kg	< 0.28 mg/kg	< 0.032 mg/kg	< 0.033 mg/kg	< 0.031 mg/kg	< 0.30 mg/kg	< 0.29 mg/kg	< 0.030 mg/kg	< 0.028 mg/kg
Methylene chloride	NA		0.017 mg/kg	97 mg/kg	--	--	< 1.2 mg/kg	--	--	--	< 1.1 mg/kg	--	--	--	< 1.2 mg/kg	< 1.2 mg/kg	--	--
Naphthalene	NA		4.5 mg/kg	10 mg/kg	--	--	0.91 mg/kg	--	--	--	< 0.56 mg/kg	--	--	--	< 0.60 mg/kg	< 0.58 mg/kg	--	--
Propylbenzene	NA		NA	30 mg/kg	--	--	< 0.30 mg/kg	--	--	--	< 0.28 mg/kg	--	--	--	< 0.30 mg/kg	< 0.29 mg/kg	--	--
Styrene	NA		2.0 mg/kg	210 mg/kg	--	--	< 0.30 mg/kg	--	--	--	< 0.28 mg/kg	--	--	--	< 0.30 mg/kg	< 0.29 mg/kg	--	--
Tetrachloroethylene	NA		0.042 mg/kg	72 mg/kg	--	--	< 0.30 mg/kg	--	--	--	< 0.28 mg/kg	--	--	--	< 0.30 mg/kg	< 0.29 mg/kg	--	--
Tetrahydrofuran	NA		0.24 mg/kg		--	--	< 2.4 mg/kg	--	--	--	< 2.2 mg/kg	--	--	--	< 2.4 mg/kg	< 2.3 mg/kg	--	--
Toluene	NA		2.5 mg/kg	107 mg/kg	< 0.030 mg/kg	< 0.030 mg/kg	< 0.30 mg/kg	< 0.032 mg/kg	< 0.029 mg/kg	< 0.029 mg/kg	< 0.28 mg/kg	< 0.032 mg/kg	< 0.033 mg/kg	< 0.031 mg/kg	< 0.30 mg/kg	< 0.29 mg/kg	< 0.030 mg/kg	< 0.028 mg/kg
Trichloroethylene	NA		0.0023 mg/kg	29 mg/kg	--	--	< 0.30 mg/kg	--	--	--	< 0.28 mg/kg	--	--	--	< 0.30 mg/kg	< 0.29 mg/kg	--	--
Trichlorofluoromethane	NA		35 mg/kg	67 mg/kg	--	--	< 0.30 mg/kg	--	--	--	< 0.28 mg/kg	--	--	--	< 0.30 mg/kg	< 0.29 mg/kg	--	--
Trichlorotrifluoroethane (Freon 113)	NA		17000 mg/kg	3745 mg/kg	--	--	< 0.30 mg/kg	--	--	--	< 0.28 mg/kg	--	--	--	< 0.30 mg/kg	< 0.29 mg/kg	--	--

Attachment C
Soil Boring Analysis Results

				Location	B-01	B-03	B-04	B-08	B-09	B-10	B-17	B-17	B-18	B-19	B-20	B-21	B-28	B-31
				Date	**11/02/2014**	**11/03/2014**	**11/03/2014**	**11/04/2014**	**11/04/2014**	**11/04/2014**	**11/03/2014**	**11/03/2014**	**11/05/2014**	**11/05/2014**	**11/05/2014**	**11/05/2014**	**11/05/2014**	**11/06/2014**
				Depth	**7.5 - 9 ft**	**9.5 - 11 ft**	**11.5 - 14 ft**	**9.5 - 11 ft**	**9.5 - 11 ft**	**8.5 - 9 ft**	**2.5 - 4 ft**	**9.5 - 11 ft**	**9.5 - 11 ft**	**11.5 - 14 ft**	**9.5 - 11 ft**	**7.5 - 9 ft**	**2.5 - 4 ft**	**9.5 - 11 ft**
				Sample Type	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**
Parameter	Total or Dissolved	MPCA Petroleum Remediation Progrogram Guidance	Minnesota Screening Soil Leaching Values	Minnesota Tier 1 Soil Reference Values														
Effective Date		3/7/2012	06/01/2013	06/22/2009														
Exceedance Key		**Bold**	Underline	No Exceed														
Vinyl chloride	NA		0.0014 mg/kg	0.8 mg/kg	--	--	< 0.30 mg/kg	--	--	--	< 0.28 mg/kg	--	--	--	< 0.30 mg/kg	< 0.29 mg/kg	--	--
Xylene, m & p	NA		M	M	--	--	< 0.60 mg/kg	--	--	--	< 0.56 mg/kg	--	--	--	< 0.60 mg/kg	< 0.58 mg/kg	--	--
Xylene, o	NA		M	M	--	--	< 0.30 mg/kg	--	--	--	< 0.28 mg/kg	--	--	--	< 0.30 mg/kg	< 0.29 mg/kg	--	--
Xylene, total	NA		5.4 M mg/kg	45 M mg/kg	< 0.090 mg/kg	< 0.090 mg/kg	ND mg/kg	< 0.096 mg/kg	< 0.087 mg/kg	< 0.088 mg/kg	ND mg/kg	< 0.095 mg/kg	< 0.099 mg/kg	< 0.094 mg/kg	ND mg/kg	ND mg/kg	< 0.089 mg/kg	< 0.084 mg/kg
Total Petroleum Hydrocarbons																		
Diesel Range Organics, C10-C28	NA	**100 mg/kg**			< 8.6 mg/kg	27 mg/kg	< 9.6 mg/kg	< 9.7 mg/kg	35 mg/kg	39 mg/kg	--	< 10 mg/kg	66 mg/kg	< 10 mg/kg	--	--	23 mg/kg	**1000 mg/kg**
Diesel Range Organics-silica gel cleanup	NA	**100 mg/kg**			--	--	--	--	--	--	--	--	--	--	--	--	--	**140 mg/kg**
Gasoline Range Organics, C6-C10	NA	100 mg/kg			< 6.0 mg/kg	< 6.0 mg/kg	< 6.0 mg/kg	< 6.4 mg/kg	< 5.8 mg/kg	< 5.9 mg/kg	--	< 6.3 mg/kg	< 6.6 mg/kg	< 6.2 mg/kg	< 6.0 mg/kg	< 5.8 mg/kg	< 6.0 mg/kg	< 5.6 mg/kg

Attachment C
Soil Boring Analysis Results

				Location	B-38	B-39	B-40	B-41	B-42	B-43	B-44	B-45	B-45	B-46	B-47	B-51	B-54
				Date	11/06/2014	11/06/2014	11/06/2014	11/06/2014	11/07/2014	11/07/2014	11/06/2014	11/06/2014	11/06/2014	11/07/2014	11/07/2014	11/09/2014	11/10/2014
				Depth	7.5 - 9 ft	9.5 - 11 ft	9.5 - 11 ft	7.5 - 9 ft	7.5 - 9 ft	11.5 - 14 ft	7.5 - 9 ft	2.5 - 4 ft	7.5 - 9 ft	7.5 - 9 ft	7.5 - 9 ft	7.5 - 9 ft	7.5 - 9 ft
				Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N
Parameter	Total or Dissolved	MPCA Petroleum Remediation Progrogram Guidance	Minnesota Screening Soil Leaching Values	Minnesota Tier 1 Soil Reference Values													
Effective Date		3/7/2012	06/01/2013	06/22/2009													
Exceedance Key		**Bold**	Underline	No Exceed													
General Parameters																	
Solids, percent	NA				85%	81%	82%	83%	82%	89%	91%	84%	89%	90%	89%	97%	81%
Metals																	
Arsenic	NA		5.8 mg/kg	9 mg/kg	--	--	--	--	--	--	--	4.1 mg/kg	--	--	2.4 mg/kg	--	4.4 mg/kg
Barium	NA		1700 mg/kg	1100 mg/kg	--	--	--	--	--	--	--	120 mg/kg	--	--	51 mg/kg	--	110 mg/kg
Cadmium	NA		8.8 mg/kg	25 mg/kg	--	--	--	--	--	--	--	< 0.30 mg/kg	--	--	< 0.28 mg/kg	--	< 0.31 mg/kg
Chromium	NA		100000000 CR3 mg/kg	44000 CR3 mg/kg	--	--	--	--	--	--	--	37 mg/kg	--	--	22 mg/kg	--	37 mg/kg
Lead	NA		2700 mg/kg	300 mg/kg	--	--	--	--	--	--	--	8.7 mg/kg	--	--	2.9 mg/kg	--	7.4 mg/kg
Mercury	NA		3.3 MC mg/kg	0.5 mg/kg	--	--	--	--	--	--	--	< 0.0231 mg/kg	--	--	< 0.0212 mg/kg	--	0.0245 mg/kg
Selenium	NA		2.6 mg/kg	160 mg/kg	--	--	--	--	--	--	--	< 1.2 mg/kg	--	--	< 1.1 mg/kg	--	< 1.2 mg/kg
Silver	NA		7.9 mg/kg	160 mg/kg	--	--	--	--	--	--	--	< 0.30 mg/kg	--	--	< 0.28 mg/kg	--	< 0.31 mg/kg
SVOCs																	
1,2,4-Trichlorobenzene	NA		0.23 mg/kg	200 mg/kg	--	--	--	--	--	--	--	< 0.39 mg/kg	--	--	< 0.37 mg/kg	--	--
1,2-Dichlorobenzene	NA		11 mg/kg	26 mg/kg	--	--	--	--	--	--	--	< 0.39 mg/kg	--	--	< 0.37 mg/kg	--	--
1,3-Dichlorobenzene	NA		10 mg/kg	26 mg/kg	--	--	--	--	--	--	--	< 0.39 mg/kg	--	--	< 0.37 mg/kg	--	--
1,4-Dichlorobenzene	NA		0.17 mg/kg	30 mg/kg	--	--	--	--	--	--	--	< 0.39 mg/kg	--	--	< 0.37 mg/kg	--	--
2,3,4,6-Tetrachlorophenol	NA		NA	636 mg/kg	--	--	--	--	--	--	--	< 0.80 mg/kg	--	--	< 0.75 mg/kg	--	--
2,4,5-Trichlorophenol	NA		NA	1920 mg/kg	--	--	--	--	--	--	--	< 0.80 mg/kg	--	--	< 0.75 mg/kg	--	--
2,4,6-Trichlorophenol	NA		0.42 mg/kg	595 mg/kg	--	--	--	--	--	--	--	< 0.80 mg/kg	--	--	< 0.75 mg/kg	--	--
2,4-Dichlorophenol	NA		0.15 mg/kg	48 mg/kg	--	--	--	--	--	--	--	< 0.80 mg/kg	--	--	< 0.75 mg/kg	--	--
2,4-Dimethylphenol	NA		2.2 mg/kg	390 mg/kg	--	--	--	--	--	--	--	< 0.80 mg/kg	--	--	< 0.75 mg/kg	--	--
2,4-Dinitrophenol	NA		0.020 mg/kg		--	--	--	--	--	--	--	< 0.80 mg/kg	--	--	< 0.75 mg/kg	--	--
2,4-Dinitrotoluene	NA		0.013 mg/kg	50 mg/kg	--	--	--	--	--	--	--	< 0.39 mg/kg	--	--	< 0.37 mg/kg	--	--
2,6-Dichlorophenol	NA				--	--	--	--	--	--	--	< 0.80 mg/kg	--	--	< 0.75 mg/kg	--	--
2,6-Dinitrotoluene	NA		0.013 mg/kg	25 mg/kg	--	--	--	--	--	--	--	< 0.39 mg/kg	--	--	< 0.37 mg/kg	--	--
2-Chloronaphthalene	NA				--	--	--	--	--	--	--	< 0.39 mg/kg < 0.39 mg/kg	--	--	< 0.37 mg/kg	--	--
2-Chlorophenol	NA		0.52 mg/kg		--	--	--	--	--	--	--	< 0.80 mg/kg	--	--	< 0.75 mg/kg	--	--
2-Methyl-4,6-dinitrophenol	NA				--	--	--	--	--	--	--	< 0.80 mg/kg	--	--	< 0.75 mg/kg	--	--
2-Methylnaphthalene	NA			100 mg/kg	--	--	--	--	--	--	--	< 0.39 mg/kg < 0.39 mg/kg	--	--	< 0.37 mg/kg	--	--
2-Methylphenol (o-cresol)	NA		0.43 mg/kg	75 mg/kg	--	--	--	--	--	--	--	< 0.80 mg/kg	--	--	< 0.75 mg/kg	--	--
2-Nitroaniline	NA				--	--	--	--	--	--	--	< 0.39 mg/kg	--	--	< 0.37 mg/kg	--	--
2-Nitrophenol	NA				--	--	--	--	--	--	--	< 0.80 mg/kg	--	--	< 0.75 mg/kg	--	--
3,3`-Dichlorobenzidine	NA		0.10 mg/kg	25 mg/kg	--	--	--	--	--	--	--	< 1.9 mg/kg	--	--	< 1.8 mg/kg	--	--
3,4-Methylphenol (m,p cresols)	NA		0.042 MP mg/kg	10 MP mg/kg	--	--	--	--	--	--	--	< 0.80 mg/kg	--	--	< 0.75 mg/kg	--	--
3-Nitroaniline	NA				--	--	--	--	--	--	--	< 0.39 mg/kg	--	--	< 0.37 mg/kg	--	--
4-Bromophenyl phenyl ether	NA				--	--	--	--	--	--	--	< 0.39 mg/kg	--	--	< 0.37 mg/kg	--	--
4-Chloro-3-methylphenol	NA				--	--	--	--	--	--	--	< 0.80 mg/kg	--	--	< 0.75 mg/kg	--	--
4-Chloroaniline	NA				--	--	--	--	--	--	--	< 0.80 mg/kg	--	--	< 0.75 mg/kg	--	--
4-Chlorophenyl phenyl ether	NA				--	--	--	--	--	--	--	< 0.39 mg/kg	--	--	< 0.37 mg/kg	--	--
4-Nitroaniline	NA				--	--	--	--	--	--	--	< 0.39 mg/kg	--	--	< 0.37 mg/kg	--	--
4-Nitrophenol	NA				--	--	--	--	--	--	--	< 0.80 mg/kg	--	--	< 0.75 mg/kg	--	--
Acenaphthene	NA		81 mg/kg	1200 mg/kg	--	--	--	--	--	--	--	< 0.39 mg/kg < 0.39 mg/kg	--	--	< 0.37 mg/kg	--	--
Acenaphthylene	NA		NA		--	--	--	--	--	--	--	< 0.39 mg/kg < 0.39 mg/kg	--	--	< 0.37 mg/kg	--	--
Aniline	NA				--	--	--	--	--	--	--	< 0.80 mg/kg	--	--	< 0.75 mg/kg	--	--
Anthracene	NA		1300 mg/kg	7880 mg/kg	--	--	--	--	--	--	--	< 0.39 mg/kg < 0.39 mg/kg	--	--	< 0.37 mg/kg	--	--
Azobenzene	NA				--	--	--	--	--	--	--	< 0.39 mg/kg	--	--	< 0.37 mg/kg	--	--
Benzo(g,h,i)perylene	NA		NA		--	--	--	--	--	--	--	< 0.39 mg/kg < 0.39 mg/kg	--	--	< 0.37 mg/kg	--	--
Benzoic acid	NA		61 mg/kg	50000 mg/kg	--	--	--	--	--	--	--	< 0.39 mg/kg	--	--	< 0.37 mg/kg	--	--
Benzyl alcohol	NA			8700 mg/kg	--	--	--	--	--	--	--	< 0.80 mg/kg	--	--	< 0.75 mg/kg	--	--
Bis(2-chloroethoxy)methane	NA				--	--	--	--	--	--	--	< 0.39 mg/kg	--	--	< 0.37 mg/kg	--	--
Bis(2-chloroethyl)ether	NA		0.00099 mg/kg	2.5 mg/kg	--	--	--	--	--	--	--	< 0.39 mg/kg	--	--	< 0.37 mg/kg	--	--
Bis(2-chloroisopropyl)ether	NA				--	--	--	--	--	--	--	< 0.39 mg/kg	--	--	< 0.37 mg/kg	--	--

Attachment C
Soil Boring Analysis Results

				Location	B-38	B-39	B-40	B-41	B-42	B-43	B-44	B-45	B-45	B-46	B-47	B-51	B-54
				Date	11/06/2014	11/06/2014	11/06/2014	11/06/2014	11/07/2014	11/07/2014	11/06/2014	11/06/2014	11/06/2014	11/07/2014	11/07/2014	11/09/2014	11/10/2014
				Depth	7.5 - 9 ft	9.5 - 11 ft	9.5 - 11 ft	7.5 - 9 ft	7.5 - 9 ft	11.5 - 14 ft	7.5 - 9 ft	2.5 - 4 ft	7.5 - 9 ft	7.5 - 9 ft	7.5 - 9 ft	7.5 - 9 ft	7.5 - 9 ft
				Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N
Parameter	Total or Dissolved	MPCA Petroleum Remediation Progrogram Guidance	Minnesota Screening Soil Leaching Values	Minnesota Tier 1 Soil Reference Values													
Effective Date		3/7/2012	06/01/2013	06/22/2009													
Exceedance Key		**Bold**	Underline	No Exceed													
Bis(2-ethylhexyl)phthalate	NA		29 mg/kg	570 mg/kg	--	--	--	--	--	--	--	< 0.39 mg/kg	--	--	< 0.37 mg/kg	--	--
Butyl benzyl phthalate	NA		29 mg/kg	580 mg/kg	--	--	--	--	--	--	--	< 0.39 mg/kg	--	--	< 0.37 mg/kg	--	--
Carbazole	NA			700 mg/kg	--	--	--	--	--	--	--	< 0.39 mg/kg	--	--	< 0.37 mg/kg	--	--
Dibenzofuran	NA		NA	104 mg/kg	--	--	--	--	--	--	--	< 0.39 mg/kg	--	--	< 0.37 mg/kg	--	--
Diethyl phthalate	NA		37 mg/kg		--	--	--	--	--	--	--	< 0.39 mg/kg	--	--	< 0.37 mg/kg	--	--
Dimethyl phthalate	NA		230 mg/kg		--	--	--	--	--	--	--	< 0.39 mg/kg	--	--	< 0.37 mg/kg	--	--
Di-n-butyl phthalate	NA		34 mg/kg	2440 mg/kg	--	--	--	--	--	--	--	< 0.39 mg/kg	--	--	< 0.37 mg/kg	--	--
Di-n-octyl phthalate	NA		NA	520 mg/kg	--	--	--	--	--	--	--	< 0.39 mg/kg	--	--	< 0.37 mg/kg	--	--
Fluoranthene	NA		670 mg/kg	1080 mg/kg	--	--	--	--	--	--	--	< 0.39 mg/kg < 0.39 mg/kg	--	--	< 0.37 mg/kg	--	--
Fluorene	NA		110 mg/kg	850 mg/kg	--	--	--	--	--	--	--	< 0.39 mg/kg < 0.39 mg/kg	--	--	< 0.37 mg/kg	--	--
Hexachlorobenzene	NA			5 mg/kg	--	--	--	--	--	--	--	< 0.39 mg/kg	--	--	< 0.37 mg/kg	--	--
Hexachlorobutadiene	NA		0.037 mg/kg	6 mg/kg	--	--	--	--	--	--	--	< 0.39 mg/kg	--	--	< 0.37 mg/kg	--	--
Hexachlorocyclopentadiene	NA		3.1 mg/kg	2 mg/kg	--	--	--	--	--	--	--	< 0.39 mg/kg	--	--	< 0.37 mg/kg	--	--
Hexachloroethane	NA		0.010 mg/kg		--	--	--	--	--	--	--	< 0.39 mg/kg	--	--	< 0.37 mg/kg	--	--
Isophorone	NA		0.46 mg/kg		--	--	--	--	--	--	--	< 0.39 mg/kg	--	--	< 0.37 mg/kg	--	--
Naphthalene	NA		4.5 mg/kg	10 mg/kg	--	--	--	--	--	--	--	< 0.39 mg/kg < 0.39 mg/kg	--	--	< 0.37 mg/kg	--	--
Nitrobenzene	NA				--	--	--	--	--	--	--	< 0.39 mg/kg	--	--	< 0.37 mg/kg	--	--
N-Nitrosodimethylamine	NA				--	--	--	--	--	--	--	< 0.39 mg/kg	--	--	< 0.37 mg/kg	--	--
N-Nitrosodi-n-propylamine	NA			0.7 mg/kg	--	--	--	--	--	--	--	< 0.39 mg/kg	--	--	< 0.37 mg/kg	--	--
N-Nitrosodiphenylamine	NA		7.5 mg/kg	1950 mg/kg	--	--	--	--	--	--	--	< 0.39 mg/kg	--	--	< 0.37 mg/kg	--	--
Pentachlorophenol	NA		0.023 mg/kg	80 mg/kg	--	--	--	--	--	--	--	< 0.80 mg/kg	--	--	< 0.75 mg/kg	--	--
Phenanthrene	NA		NA		--	--	--	--	--	--	--	< 0.39 mg/kg < 0.39 mg/kg	--	--	< 0.37 mg/kg	--	--
Phenol	NA		38 mg/kg	1500 mg/kg	--	--	--	--	--	--	--	< 0.80 mg/kg	--	--	< 0.75 mg/kg	--	--
Pyrene	NA		440 mg/kg	890 mg/kg	--	--	--	--	--	--	--	< 0.39 mg/kg < 0.39 mg/kg	--	--	< 0.37 mg/kg	--	--
Benz(a)anthracene	NA		T	T	--	--	--	--	--	--	--	< 0.39 mg/kg < 0.39 mg/kg	--	--	< 0.37 mg/kg	--	--
Benzidine	NA				--	--	--	--	--	--	--	< 3.0 mg/kg	--	--	< 2.8 mg/kg	--	--
Benzo(a)pyrene	NA		T	T	--	--	--	--	--	--	--	< 0.39 mg/kg < 0.39 mg/kg	--	--	< 0.37 mg/kg	--	--
Benzo(b)fluoranthene	NA		T	T	--	--	--	--	--	--	--	< 0.39 mg/kg < 0.39 mg/kg	--	--	< 0.37 mg/kg	--	--
Benzo(k)fluoranthene	NA		T	T	--	--	--	--	--	--	--	< 0.39 mg/kg < 0.39 mg/kg	--	--	< 0.37 mg/kg	--	--
Chrysene	NA		T	T	--	--	--	--	--	--	--	< 0.39 mg/kg < 0.39 mg/kg	--	--	< 0.37 mg/kg	--	--
Dibenz(a,h)anthracene	NA		T	T	--	--	--	--	--	--	--	< 0.39 mg/kg < 0.39 mg/kg	--	--	< 0.37 mg/kg	--	--
Indeno(1,2,3-cd)pyrene	NA		T	T	--	--	--	--	--	--	--	< 0.39 mg/kg < 0.39 mg/kg	--	--	< 0.37 mg/kg	--	--
B(a)P Equivalent, non-detects at 0	Barr Calculation		1.4 T mg/kg	2 T mg/kg	--	--	--	--	--	--	--	ND mg/kg	--	--	ND mg/kg	--	--
B(a)P Equivalent, non-detects at 1/2	Barr Calculation		1.4 T mg/kg	2 T mg/kg	--	--	--	--	--	--	--	0.38 mg/kg	--	--	0.36 mg/kg	--	--
B(a)P Equivalent, non-detects at 1x	Barr Calculation		1.4 T mg/kg	2 T mg/kg	--	--	--	--	--	--	--	0.77 mg/kg	--	--	0.73 mg/kg	--	--
VOCs																	
1,1,1,2-Tetrachloroethane	NA		0.41 mg/kg	31 mg/kg	< 0.29 mg/kg	< 0.31 mg/kg	--	< 0.30 mg/kg	< 0.30 mg/kg	--	--	< 0.30 mg/kg	--	--	--	--	--
1,1,1-Trichloroethane	NA		56 mg/kg	140 mg/kg	< 0.29 mg/kg	< 0.31 mg/kg	--	< 0.30 mg/kg	< 0.30 mg/kg	--	--	< 0.30 mg/kg	--	--	--	--	--
1,1,2,2-Tetrachloroethane	NA		0.012 mg/kg	3.5 mg/kg	< 0.29 mg/kg	< 0.31 mg/kg	--	< 0.30 mg/kg	< 0.30 mg/kg	--	--	< 0.30 mg/kg	--	--	--	--	--
1,1,2-Trichloroethane	NA		0.014 mg/kg	9 mg/kg	< 0.29 mg/kg	< 0.31 mg/kg	--	< 0.30 mg/kg	< 0.30 mg/kg	--	--	< 0.30 mg/kg	--	--	--	--	--
1,1-Dichloro-1-propene	NA				< 0.29 mg/kg	< 0.31 mg/kg	--	< 0.30 mg/kg	< 0.30 mg/kg	--	--	< 0.30 mg/kg	--	--	--	--	--
1,1-Dichloroethane	NA		0.41 mg/kg	34 mg/kg	< 0.29 mg/kg	< 0.31 mg/kg	--	< 0.30 mg/kg	< 0.30 mg/kg	--	--	< 0.30 mg/kg	--	--	--	--	--
1,1-Dichloroethylene	NA		1.4 mg/kg	20 mg/kg	< 0.29 mg/kg	< 0.31 mg/kg	--	< 0.30 mg/kg	< 0.30 mg/kg	--	--	< 0.30 mg/kg	--	--	--	--	--

Attachment C
Soil Boring Analysis Results

				Location	B-38	B-39	B-40	B-41	B-42	B-43	B-44	B-45	B-45	B-46	B-47	B-51	B-54
				Date	11/06/2014	11/06/2014	11/06/2014	11/06/2014	11/07/2014	11/07/2014	11/06/2014	11/06/2014	11/06/2014	11/07/2014	11/07/2014	11/09/2014	11/10/2014
				Depth	7.5 - 9 ft	9.5 - 11 ft	9.5 - 11 ft	7.5 - 9 ft	7.5 - 9 ft	11.5 - 14 ft	7.5 - 9 ft	2.5 - 4 ft	7.5 - 9 ft	7.5 - 9 ft	7.5 - 9 ft	7.5 - 9 ft	7.5 - 9 ft
				Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N
Parameter	Total or Dissolved	MPCA Petroleum Remediation Progrogram Guidance	Minnesota Screening Soil Leaching Values	Minnesota Tier 1 Soil Reference Values													
Effective Date		3/7/2012	06/01/2013	06/22/2009													
Exceedance Key		**Bold**	Underline	No Exceed													
1,2,3-Trichlorobenzene	NA				< 0.59 mg/kg	< 0.62 mg/kg	--	< 0.60 mg/kg	< 0.61 mg/kg	--	--	< 0.60 mg/kg	--	--	--	--	--
1,2,3-Trichloropropane	NA		0.27 mg/kg		< 0.29 mg/kg	< 0.31 mg/kg	--	< 0.30 mg/kg	< 0.30 mg/kg	--	--	< 0.30 mg/kg	--	--	--	--	--
1,2,4-Trichlorobenzene	NA		0.23 mg/kg	200 mg/kg	< 0.59 mg/kg	< 0.62 mg/kg	--	< 0.60 mg/kg	< 0.61 mg/kg	--	--	< 0.60 mg/kg	--	--	--	--	--
1,2,4-Trimethylbenzene	NA		2.7 mg/kg	8 mg/kg	< 0.29 mg/kg	< 0.31 mg/kg	< 0.028 mg/kg	< 0.30 mg/kg	< 0.30 mg/kg	< 0.028 mg/kg	< 0.027 mg/kg	< 0.30 mg/kg	< 0.028 mg/kg	< 0.028 mg/kg	< 0.000027 mg/kg	< 0.000026 mg/kg	< 0.000031 mg/kg
1,2-Dibromo-3-chloropropane	NA				< 0.59 mg/kg	< 0.62 mg/kg	--	< 0.60 mg/kg	< 0.61 mg/kg	--	--	< 0.60 mg/kg	--	--	--	--	--
1,2-Dibromoethane	NA		0.000015 mg/kg	0.3 mg/kg	< 0.29 mg/kg	< 0.31 mg/kg	--	< 0.30 mg/kg	< 0.30 mg/kg	--	--	< 0.30 mg/kg	--	--	--	--	--
1,2-Dichlorobenzene	NA		11 mg/kg	26 mg/kg	< 0.29 mg/kg	< 0.31 mg/kg	--	< 0.30 mg/kg	< 0.30 mg/kg	--	--	< 0.30 mg/kg	--	--	--	--	--
1,2-Dichloroethane	NA		0.0038 mg/kg	4 mg/kg	< 0.29 mg/kg	< 0.31 mg/kg	--	< 0.30 mg/kg	< 0.30 mg/kg	--	--	< 0.30 mg/kg	--	--	--	--	--
1,2-Dichloroethylene, cis	NA		0.21 mg/kg	8 mg/kg	< 0.29 mg/kg	< 0.31 mg/kg	--	< 0.30 mg/kg	< 0.30 mg/kg	--	--	< 0.30 mg/kg	--	--	--	--	--
1,2-Dichloroethylene, trans	NA		0.42 mg/kg	11 mg/kg	< 0.29 mg/kg	< 0.31 mg/kg	--	< 0.30 mg/kg	< 0.30 mg/kg	--	--	< 0.30 mg/kg	--	--	--	--	--
1,2-Dichloropropane	NA		0.024 mg/kg	4 mg/kg	< 0.29 mg/kg	< 0.31 mg/kg	--	< 0.30 mg/kg	< 0.30 mg/kg	--	--	< 0.30 mg/kg	--	--	--	--	--
1,3,5-Trimethylbenzene	NA		2.7 mg/kg	3 mg/kg	< 0.29 mg/kg	< 0.31 mg/kg	< 0.028 mg/kg	< 0.30 mg/kg	< 0.30 mg/kg	< 0.028 mg/kg	< 0.027 mg/kg	< 0.30 mg/kg	< 0.028 mg/kg	< 0.028 mg/kg	< 0.000027 mg/kg	< 0.000026 mg/kg	< 0.000031 mg/kg
1,3-Dichloro-1-propene, cis	NA		0.011 DCP mg/kg		< 0.29 mg/kg	< 0.31 mg/kg	--	< 0.30 mg/kg	< 0.30 mg/kg	--	--	< 0.30 mg/kg	--	--	--	--	--
1,3-Dichloro-1-propene, trans	NA		0.011 DCP mg/kg		< 0.29 mg/kg	< 0.31 mg/kg	--	< 0.30 mg/kg	< 0.30 mg/kg	--	--	< 0.30 mg/kg	--	--	--	--	--
1,3-Dichlorobenzene	NA		10 mg/kg	26 mg/kg	< 0.29 mg/kg	< 0.31 mg/kg	--	< 0.30 mg/kg	< 0.30 mg/kg	--	--	< 0.30 mg/kg	--	--	--	--	--
1,3-Dichloropropane	NA				< 0.29 mg/kg	< 0.31 mg/kg	--	< 0.30 mg/kg	< 0.30 mg/kg	--	--	< 0.30 mg/kg	--	--	--	--	--
1,4-Dichlorobenzene	NA		0.17 mg/kg	30 mg/kg	< 0.29 mg/kg	< 0.31 mg/kg	--	< 0.30 mg/kg	< 0.30 mg/kg	--	--	< 0.30 mg/kg	--	--	--	--	--
2,2-Dichloropropane	NA				< 0.59 mg/kg	< 0.62 mg/kg	--	< 0.60 mg/kg	< 0.61 mg/kg	--	--	< 0.60 mg/kg	--	--	--	--	--
Acetone	NA		8.4 mg/kg	340 mg/kg	< 2.4 mg/kg	< 2.5 mg/kg	--	< 2.4 mg/kg	< 2.4 mg/kg	--	--	< 2.4 mg/kg	--	--	--	--	--
Allyl Chloride	NA		0.15 mg/kg		< 0.59 mg/kg	< 0.62 mg/kg	--	< 0.60 mg/kg	< 0.61 mg/kg	--	--	< 0.60 mg/kg	--	--	--	--	--
Benzene	NA		0.017 mg/kg	6 mg/kg	< 0.29 mg/kg	< 0.31 mg/kg	< 0.028 mg/kg	< 0.30 mg/kg	< 0.30 mg/kg	< 0.028 mg/kg	< 0.027 mg/kg	< 0.30 mg/kg	< 0.028 mg/kg	< 0.028 mg/kg	< 0.000027 mg/kg	< 0.000026 mg/kg	< 0.000031 mg/kg
Bromobenzene	NA				< 0.29 mg/kg	< 0.31 mg/kg	--	< 0.30 mg/kg	< 0.30 mg/kg	--	--	< 0.30 mg/kg	--	--	--	--	--
Bromochloromethane	NA		0.28 mg/kg		< 0.29 mg/kg	< 0.31 mg/kg	--	< 0.30 mg/kg	< 0.30 mg/kg	--	--	< 0.30 mg/kg	--	--	--	--	--
Bromodichloromethane	NA		0.021 mg/kg	10 mg/kg	< 0.29 mg/kg	< 0.31 mg/kg	--	< 0.30 mg/kg	< 0.30 mg/kg	--	--	< 0.30 mg/kg	--	--	--	--	--
Bromoform	NA		0.13 mg/kg	370 mg/kg	< 0.59 mg/kg	< 0.62 mg/kg	--	< 0.60 mg/kg	< 0.61 mg/kg	--	--	< 0.60 mg/kg	--	--	--	--	--
Bromomethane	NA		0.036 mg/kg	0.7 mg/kg	< 0.59 mg/kg	< 0.62 mg/kg	--	< 0.60 mg/kg	< 0.61 mg/kg	--	--	< 0.60 mg/kg	--	--	--	--	--
Butyl benzene	NA		NA	30 mg/kg	< 0.29 mg/kg	< 0.31 mg/kg	--	< 0.30 mg/kg	< 0.30 mg/kg	--	--	< 0.30 mg/kg	--	--	--	--	--
Butylbenzene, sec	NA		NA	25 mg/kg	< 0.29 mg/kg	< 0.31 mg/kg	--	< 0.30 mg/kg	< 0.30 mg/kg	--	--	< 0.30 mg/kg	--	--	--	--	--
Butylbenzene, tert	NA		NA	30 mg/kg	< 0.29 mg/kg	< 0.31 mg/kg	--	< 0.30 mg/kg	< 0.30 mg/kg	--	--	< 0.30 mg/kg	--	--	--	--	--
Carbon tetrachloride	NA		0.0077 mg/kg	0.3 mg/kg	< 0.29 mg/kg	< 0.31 mg/kg	--	< 0.30 mg/kg	< 0.30 mg/kg	--	--	< 0.30 mg/kg	--	--	--	--	--
Chlorobenzene	NA		1.2 mg/kg	11 mg/kg	< 0.29 mg/kg	< 0.31 mg/kg	--	< 0.30 mg/kg	< 0.30 mg/kg	--	--	< 0.30 mg/kg	--	--	--	--	--
Chlorodibromomethane	NA		0.034 mg/kg	12 mg/kg	< 0.29 mg/kg	< 0.31 mg/kg	--	< 0.30 mg/kg	< 0.30 mg/kg	--	--	< 0.30 mg/kg	--	--	--	--	--
Chloroethane	NA		NA	1000 mg/kg	< 0.29 mg/kg	< 0.31 mg/kg	--	< 0.30 mg/kg	< 0.30 mg/kg	--	--	< 0.30 mg/kg	--	--	--	--	--
Chloroform	NA		0.11 mg/kg	2.5 mg/kg	< 0.29 mg/kg	< 0.31 mg/kg	--	< 0.30 mg/kg	< 0.30 mg/kg	--	--	< 0.30 mg/kg	--	--	--	--	--
Chloromethane	NA		0.11 mg/kg	8 mg/kg	< 0.29 mg/kg	< 0.31 mg/kg	--	< 0.30 mg/kg	< 0.30 mg/kg	--	--	< 0.30 mg/kg	--	--	--	--	--
Chlorotoluene, o	NA			436 mg/kg	< 0.29 mg/kg	< 0.31 mg/kg	--	< 0.30 mg/kg	< 0.30 mg/kg	--	--	< 0.30 mg/kg	--	--	--	--	--
Chlorotoluene, p	NA				< 0.29 mg/kg	< 0.31 mg/kg	--	< 0.30 mg/kg	< 0.30 mg/kg	--	--	< 0.30 mg/kg	--	--	--	--	--
Cumene (isopropyl benzene)	NA		9.5 mg/kg	30 mg/kg	< 0.29 mg/kg	< 0.31 mg/kg	--	< 0.30 mg/kg	< 0.30 mg/kg	--	--	< 0.30 mg/kg	--	--	--	--	--
Cymene p- (Toluene isopropyl p-)	NA				< 0.29 mg/kg	< 0.31 mg/kg	--	< 0.30 mg/kg	< 0.30 mg/kg	--	--	< 0.30 mg/kg	--	--	--	--	--
Dibromomethane (methylene bromide)	NA			260 mg/kg	< 0.29 mg/kg	< 0.31 mg/kg	--	< 0.30 mg/kg	< 0.30 mg/kg	--	--	< 0.30 mg/kg	--	--	--	--	--
Dichlorodifluoromethane (CFC-12)	NA		37 mg/kg	16 mg/kg	< 0.59 mg/kg	< 0.62 mg/kg	--	< 0.60 mg/kg	< 0.61 mg/kg	--	--	< 0.60 mg/kg	--	--	--	--	--
Dichlorofluoromethane (CFC-21)	NA		NA		< 0.29 mg/kg	< 0.31 mg/kg	--	< 0.30 mg/kg	< 0.30 mg/kg	--	--	< 0.30 mg/kg	--	--	--	--	--
Ethyl benzene	NA		1.0 mg/kg	200 mg/kg	< 0.29 mg/kg	< 0.31 mg/kg	< 0.028 mg/kg	< 0.30 mg/kg	< 0.30 mg/kg	< 0.028 mg/kg	< 0.027 mg/kg	< 0.30 mg/kg	< 0.028 mg/kg	< 0.028 mg/kg	< 0.000027 mg/kg	< 0.000026 mg/kg	< 0.000031 mg/kg
Ethyl ether	NA		0.51 mg/kg		< 0.59 mg/kg	< 0.62 mg/kg	--	< 0.60 mg/kg	< 0.61 mg/kg	--	--	< 0.60 mg/kg	--	--	--	--	--
Hexachlorobutadiene	NA		0.037 mg/kg	6 mg/kg	< 1.2 mg/kg	< 1.2 mg/kg	--	< 1.2 mg/kg	< 1.2 mg/kg	--	--	< 1.2 mg/kg	--	--	--	--	--
Methyl ethyl ketone	NA		8.8 mg/kg	5500 mg/kg	< 2.4 mg/kg	< 2.5 mg/kg	--	< 2.4 mg/kg	< 2.4 mg/kg	--	--	< 2.4 mg/kg	--	--	--	--	--
Methyl isobutyl ketone	NA		0.76 mg/kg	1700 mg/kg	< 0.59 mg/kg	< 0.62 mg/kg	--	< 0.60 mg/kg	< 0.61 mg/kg	--	--	< 0.60 mg/kg	--	--	--	--	--
Methyl tertiary butyl ether (MTBE)	NA		NA		< 0.29 mg/kg	< 0.31 mg/kg	< 0.028 mg/kg	< 0.30 mg/kg	< 0.30 mg/kg	< 0.028 mg/kg	< 0.027 mg/kg	< 0.30 mg/kg	< 0.028 mg/kg	< 0.028 mg/kg	< 0.000027 mg/kg	< 0.000026 mg/kg	< 0.000031 mg/kg
Methylene chloride	NA		0.017 mg/kg	97 mg/kg	< 1.2 mg/kg	< 1.2 mg/kg	--	< 1.2 mg/kg	< 1.2 mg/kg	--	--	< 1.2 mg/kg	--	--	--	--	--
Naphthalene	NA		4.5 mg/kg	10 mg/kg	< 0.59 mg/kg	< 0.62 mg/kg	--	< 0.60 mg/kg	< 0.61 mg/kg	--	--	< 0.60 mg/kg	--	--	--	--	--
Propylbenzene	NA		NA	30 mg/kg	< 0.29 mg/kg	< 0.31 mg/kg	--	< 0.30 mg/kg	< 0.30 mg/kg	--	--	< 0.30 mg/kg	--	--	--	--	--
Styrene	NA		2.0 mg/kg	210 mg/kg	< 0.29 mg/kg	< 0.31 mg/kg	--	< 0.30 mg/kg	< 0.30 mg/kg	--	--	< 0.30 mg/kg	--	--	--	--	--
Tetrachloroethylene	NA		0.042 mg/kg	72 mg/kg	< 0.29 mg/kg	< 0.31 mg/kg	--	< 0.30 mg/kg	< 0.30 mg/kg	--	--	< 0.30 mg/kg	--	--	--	--	--
Tetrahydrofuran	NA		0.24 mg/kg		< 2.4 mg/kg	< 2.5 mg/kg	--	< 2.4 mg/kg	< 2.4 mg/kg	--	--	< 2.4 mg/kg	--	--	--	--	--
Toluene	NA		2.5 mg/kg	107 mg/kg	< 0.29 mg/kg	< 0.31 mg/kg	< 0.028 mg/kg	< 0.30 mg/kg	< 0.30 mg/kg	< 0.028 mg/kg	< 0.027 mg/kg	< 0.30 mg/kg	< 0.028 mg/kg	< 0.028 mg/kg	< 0.000027 mg/kg	< 0.000026 mg/kg	< 0.000031 mg/kg
Trichloroethylene	NA		0.0023 mg/kg	29 mg/kg	< 0.29 mg/kg	< 0.31 mg/kg	--	< 0.30 mg/kg	< 0.30 mg/kg	--	--	< 0.30 mg/kg	--	--	--	--	--
Trichlorofluoromethane	NA		35 mg/kg	67 mg/kg	< 0.29 mg/kg	< 0.31 mg/kg	--	< 0.30 mg/kg	< 0.30 mg/kg	--	--	< 0.30 mg/kg	--	--	--	--	--
Trichlorotrifluoroethane (Freon 113)	NA		17000 mg/kg	3745 mg/kg	< 0.29 mg/kg	< 0.31 mg/kg	--	< 0.30 mg/kg	< 0.30 mg/kg	--	--	< 0.30 mg/kg	--	--	--	--	--

Attachment C
Soil Boring Analysis Results

				Location	B-38	B-39	B-40	B-41	B-42	B-43	B-44	B-45	B-45	B-46	B-47	B-51	B-54
				Date	**11/06/2014**	**11/06/2014**	**11/06/2014**	**11/06/2014**	**11/07/2014**	**11/07/2014**	**11/06/2014**	**11/06/2014**	**11/06/2014**	**11/07/2014**	**11/07/2014**	**11/09/2014**	**11/10/2014**
				Depth	**7.5 - 9 ft**	**9.5 - 11 ft**	**9.5 - 11 ft**	**7.5 - 9 ft**	**7.5 - 9 ft**	**11.5 - 14 ft**	**7.5 - 9 ft**	**2.5 - 4 ft**	**7.5 - 9 ft**	**7.5 - 9 ft**	**7.5 - 9 ft**	**7.5 - 9 ft**	**7.5 - 9 ft**
				Sample Type	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**
Parameter	Total or Dissolved	MPCA Petroleum Remediation Progrogram Guidance	Minnesota Screening Soil Leaching Values	Minnesota Tier 1 Soil Reference Values													
Effective Date		3/7/2012	06/01/2013	06/22/2009													
Exceedance Key		**Bold**	Underline	No Exceed													
Vinyl chloride	NA		0.0014 mg/kg	0.8 mg/kg	< 0.29 mg/kg	< 0.31 mg/kg	--	< 0.30 mg/kg	< 0.30 mg/kg	--	--	< 0.30 mg/kg	--	--	--	--	--
Xylene, m & p	NA		M	M	< 0.59 mg/kg	< 0.62 mg/kg	--	< 0.60 mg/kg	< 0.61 mg/kg	--	--	< 0.60 mg/kg	--	--	--	--	--
Xylene, o	NA		M	M	< 0.29 mg/kg	< 0.31 mg/kg	--	< 0.30 mg/kg	< 0.30 mg/kg	--	--	< 0.30 mg/kg	--	--	--	--	--
Xylene, total	NA		5.4 M mg/kg	45 M mg/kg	ND mg/kg	ND mg/kg	< 0.085 mg/kg	ND mg/kg	ND mg/kg	< 0.084 mg/kg	< 0.082 mg/kg	ND mg/kg	< 0.084 mg/kg	< 0.083 mg/kg	< 0.000080 mg/kg	< 0.000077 mg/kg	< 0.000093 mg/kg
Total Petroleum Hydrocarbons																	
Diesel Range Organics, C10-C28	NA	**100 mg/kg**			--	--	< 9.8 mg/kg	< 9.6 mg/kg	17 mg/kg	37 mg/kg	16 h mg/kg	--	< 9.0 h mg/kg	< 8.9 mg/kg	< 9.0 mg/kg	34 mg/kg	< 9.9 mg/kg
Diesel Range Organics-silica gel cleanup	NA	**100 mg/kg**			--	--	--	--	--	--	--	--	--	--	--	--	--
Gasoline Range Organics, C6-C10	NA	100 mg/kg			< 5.9 mg/kg	< 6.2 mg/kg	< 5.7 mg/kg	< 6.0 mg/kg	< 6.1 mg/kg	< 5.6 mg/kg	< 5.5 mg/kg	--	< 5.6 mg/kg	< 5.6 mg/kg	< 0.0053 mg/kg	< 0.0052 mg/kg	< 0.0062 mg/kg

Attachment C
Soil Boring Analysis Results

				Location	B-56	B-57	B-59	B-60	B-63	B-64	B-65	B-66	B-66
				Date	11/10/2014	11/10/2014	11/10/2014	11/12/2014	11/12/2014	11/11/2014	11/11/2014	11/11/2014	11/11/2014
				Depth	7.5 - 9 ft	7.5 - 9 ft	7.5 - 9 ft	9.5 - 11 ft	7.5 - 9 ft	7.5 - 9 ft	7.5 - 9 ft	7.5 - 9 ft	9.5 - 11 ft
				Sample Type	N	N	N	N	N	N	N	N	N
Parameter	Total or Dissolved	MPCA Petroleum Remediation Progrogram Guidance	Minnesota Screening Soil Leaching Values	Minnesota Tier 1 Soil Reference Values									
Effective Date		3/7/2012	06/01/2013	06/22/2009									
Exceedance Key		**Bold**	Underline	No Exceed									
General Parameters													
Solids, percent	NA				87%	89%	84%	88%	90%	82%	89%	89%	91%
Metals													
Arsenic	NA		5.8 mg/kg	9 mg/kg	--	--	--	2.7 mg/kg	--	--	--	3.4 mg/kg	3.6 mg/kg
Barium	NA		1700 mg/kg	1100 mg/kg	--	--	--	36 mg/kg	--	--	--	48 mg/kg	45 mg/kg
Cadmium	NA		8.8 mg/kg	25 mg/kg	--	--	--	< 0.28 mg/kg	--	--	--	< 0.28 mg/kg	< 0.27 mg/kg
Chromium	NA		100000000 CR3 mg/kg	44000 CR3 mg/kg	--	--	--	18 mg/kg	--	--	--	17 mg/kg	20 mg/kg
Lead	NA		2700 mg/kg	300 mg/kg	--	--	--	2.6 mg/kg	--	--	--	4.2 mg/kg	3.3 mg/kg
Mercury	NA		3.3 MC mg/kg	0.5 mg/kg	--	--	--	< 0.0209 mg/kg	--	--	--	< 0.0207 mg/kg	< 0.0208 mg/kg
Selenium	NA		2.6 mg/kg	160 mg/kg	--	--	--	< 1.1 mg/kg	--	--	--	< 1.1 mg/kg	< 1.1 mg/kg
Silver	NA		7.9 mg/kg	160 mg/kg	--	--	--	< 0.28 mg/kg	--	--	--	< 0.28 mg/kg	< 0.27 mg/kg
SVOCs													
1,2,4-Trichlorobenzene	NA		0.23 mg/kg	200 mg/kg	--	--	--	< 0.38 mg/kg	--	--	--	--	--
1,2-Dichlorobenzene	NA		11 mg/kg	26 mg/kg	--	--	--	< 0.38 mg/kg	--	--	--	--	--
1,3-Dichlorobenzene	NA		10 mg/kg	26 mg/kg	--	--	--	< 0.38 mg/kg	--	--	--	--	--
1,4-Dichlorobenzene	NA		0.17 mg/kg	30 mg/kg	--	--	--	< 0.38 mg/kg	--	--	--	--	--
2,3,4,6-Tetrachlorophenol	NA		NA	636 mg/kg	--	--	--	< 0.76 mg/kg	--	--	--	--	--
2,4,5-Trichlorophenol	NA		NA	1920 mg/kg	--	--	--	< 0.76 mg/kg	--	--	--	--	--
2,4,6-Trichlorophenol	NA		0.42 mg/kg	595 mg/kg	--	--	--	< 0.76 mg/kg	--	--	--	--	--
2,4-Dichlorophenol	NA		0.15 mg/kg	48 mg/kg	--	--	--	< 0.76 mg/kg	--	--	--	--	--
2,4-Dimethylphenol	NA		2.2 mg/kg	390 mg/kg	--	--	--	< 0.76 mg/kg	--	--	--	--	--
2,4-Dinitrophenol	NA		0.020 mg/kg		--	--	--	< 0.76 mg/kg	--	--	--	--	--
2,4-Dinitrotoluene	NA		0.013 mg/kg	50 mg/kg	--	--	--	< 0.38 mg/kg	--	--	--	--	--
2,6-Dichlorophenol	NA				--	--	--	< 0.76 mg/kg	--	--	--	--	--
2,6-Dinitrotoluene	NA		0.013 mg/kg	25 mg/kg	--	--	--	< 0.38 mg/kg	--	--	--	--	--
2-Chloronaphthalene	NA				--	--	--	< 0.38 mg/kg < 0.38 mg/kg	--	--	--	--	--
2-Chlorophenol	NA		0.52 mg/kg		--	--	--	< 0.76 mg/kg	--	--	--	--	--
2-Methyl-4,6-dinitrophenol	NA				--	--	--	< 0.76 mg/kg	--	--	--	--	--
2-Methylnaphthalene	NA			100 mg/kg	--	--	--	< 0.38 mg/kg < 0.38 mg/kg	--	--	--	--	--
2-Methylphenol (o-cresol)	NA		0.43 mg/kg	75 mg/kg	--	--	--	< 0.76 mg/kg	--	--	--	--	--
2-Nitroaniline	NA				--	--	--	< 0.38 mg/kg	--	--	--	--	--
2-Nitrophenol	NA				--	--	--	< 0.76 mg/kg	--	--	--	--	--
3,3`-Dichlorobenzidine	NA		0.10 mg/kg	25 mg/kg	--	--	--	< 1.8 mg/kg	--	--	--	--	--
3,4-Methylphenol (m,p cresols)	NA		0.042 MP mg/kg	10 MP mg/kg	--	--	--	< 0.76 mg/kg	--	--	--	--	--
3-Nitroaniline	NA				--	--	--	< 0.38 mg/kg	--	--	--	--	--
4-Bromophenyl phenyl ether	NA				--	--	--	< 0.38 mg/kg	--	--	--	--	--
4-Chloro-3-methylphenol	NA				--	--	--	< 0.76 mg/kg	--	--	--	--	--
4-Chloroaniline	NA				--	--	--	< 0.76 mg/kg	--	--	--	--	--
4-Chlorophenyl phenyl ether	NA				--	--	--	< 0.38 mg/kg	--	--	--	--	--
4-Nitroaniline	NA				--	--	--	< 0.38 mg/kg	--	--	--	--	--
4-Nitrophenol	NA				--	--	--	< 0.76 mg/kg	--	--	--	--	--
Acenaphthene	NA		81 mg/kg	1200 mg/kg	--	--	--	< 0.38 mg/kg < 0.38 mg/kg	--	--	--	--	--
Acenaphthylene	NA		NA		--	--	--	< 0.38 mg/kg < 0.38 mg/kg	--	--	--	--	--
Aniline	NA				--	--	--	< 0.76 mg/kg	--	--	--	--	--
Anthracene	NA		1300 mg/kg	7880 mg/kg	--	--	--	< 0.38 mg/kg < 0.38 mg/kg	--	--	--	--	--
Azobenzene	NA				--	--	--	< 0.38 mg/kg	--	--	--	--	--
Benzo(g,h,i)perylene	NA		NA		--	--	--	< 0.38 mg/kg < 0.38 mg/kg	--	--	--	--	--
Benzoic acid	NA		61 mg/kg	50000 mg/kg	--	--	--	< 0.38 mg/kg	--	--	--	--	--
Benzyl alcohol	NA			8700 mg/kg	--	--	--	< 0.76 mg/kg	--	--	--	--	--
Bis(2-chloroethoxy)methane	NA				--	--	--	< 0.38 mg/kg	--	--	--	--	--
Bis(2-chloroethyl)ether	NA		0.00099 mg/kg	2.5 mg/kg	--	--	--	< 0.38 mg/kg	--	--	--	--	--
Bis(2-chloroisopropyl)ether	NA				--	--	--	< 0.38 mg/kg	--	--	--	--	--

Attachment C
Soil Boring Analysis Results

				Location	B-56	B-57	B-59	B-60	B-63	B-64	B-65	B-66	B-66
				Date	11/10/2014	11/10/2014	11/10/2014	11/12/2014	11/12/2014	11/11/2014	11/11/2014	11/11/2014	11/11/2014
				Depth	7.5 - 9 ft	7.5 - 9 ft	7.5 - 9 ft	9.5 - 11 ft	7.5 - 9 ft	7.5 - 9 ft	7.5 - 9 ft	7.5 - 9 ft	9.5 - 11 ft
				Sample Type	N	N	N	N	N	N	N	N	N
Parameter	Total or Dissolved	MPCA Petroleum Remediation Progrogram Guidance	Minnesota Screening Soil Leaching Values	Minnesota Tier 1 Soil Reference Values									
Effective Date		3/7/2012	06/01/2013	06/22/2009									
Exceedance Key		**Bold**	Underline	No Exceed									
Bis(2-ethylhexyl)phthalate	NA		29 mg/kg	570 mg/kg	--	--	--	< 0.38 mg/kg	--	--	--	--	--
Butyl benzyl phthalate	NA		29 mg/kg	580 mg/kg	--	--	--	< 0.38 mg/kg	--	--	--	--	--
Carbazole	NA			700 mg/kg	--	--	--	< 0.38 mg/kg	--	--	--	--	--
Dibenzofuran	NA		NA	104 mg/kg	--	--	--	< 0.38 mg/kg	--	--	--	--	--
Diethyl phthalate	NA		37 mg/kg		--	--	--	< 0.38 mg/kg	--	--	--	--	--
Dimethyl phthalate	NA		230 mg/kg		--	--	--	< 0.38 mg/kg	--	--	--	--	--
Di-n-butyl phthalate	NA		34 mg/kg	2440 mg/kg	--	--	--	< 0.38 mg/kg	--	--	--	--	--
Di-n-octyl phthalate	NA		NA	520 mg/kg	--	--	--	< 0.38 mg/kg	--	--	--	--	--
Fluoranthene	NA		670 mg/kg	1080 mg/kg	--	--	--	< 0.38 mg/kg < 0.38 mg/kg	--	--	--	--	--
Fluorene	NA		110 mg/kg	850 mg/kg	--	--	--	< 0.38 mg/kg < 0.38 mg/kg	--	--	--	--	--
Hexachlorobenzene	NA			5 mg/kg	--	--	--	< 0.38 mg/kg	--	--	--	--	--
Hexachlorobutadiene	NA		0.037 mg/kg	6 mg/kg	--	--	--	< 0.38 mg/kg	--	--	--	--	--
Hexachlorocyclopentadiene	NA		3.1 mg/kg	2 mg/kg	--	--	--	< 0.38 mg/kg	--	--	--	--	--
Hexachloroethane	NA		0.010 mg/kg		--	--	--	< 0.38 mg/kg	--	--	--	--	--
Isophorone	NA		0.46 mg/kg		--	--	--	< 0.38 mg/kg	--	--	--	--	--
Naphthalene	NA		4.5 mg/kg	10 mg/kg	--	--	--	< 0.38 mg/kg < 0.38 mg/kg	--	--	--	--	--
Nitrobenzene	NA				--	--	--	< 0.38 mg/kg	--	--	--	--	--
N-Nitrosodimethylamine	NA				--	--	--	< 0.38 mg/kg	--	--	--	--	--
N-Nitrosodi-n-propylamine	NA			0.7 mg/kg	--	--	--	< 0.38 mg/kg	--	--	--	--	--
N-Nitrosodiphenylamine	NA		7.5 mg/kg	1950 mg/kg	--	--	--	< 0.38 mg/kg	--	--	--	--	--
Pentachlorophenol	NA		0.023 mg/kg	80 mg/kg	--	--	--	< 0.76 mg/kg	--	--	--	--	--
Phenanthrene	NA		NA		--	--	--	< 0.38 mg/kg < 0.38 mg/kg	--	--	--	--	--
Phenol	NA		38 mg/kg	1500 mg/kg	--	--	--	< 0.76 mg/kg	--	--	--	--	--
Pyrene	NA		440 mg/kg	890 mg/kg	--	--	--	< 0.38 mg/kg < 0.38 mg/kg	--	--	--	--	--
Benz(a)anthracene	NA		T	T	--	--	--	< 0.38 mg/kg < 0.38 mg/kg	--	--	--	--	--
Benzidine	NA				--	--	--	< 2.8 mg/kg	--	--	--	--	--
Benzo(a)pyrene	NA		T	T	--	--	--	< 0.38 mg/kg < 0.38 mg/kg	--	--	--	--	--
Benzo(b)fluoranthene	NA		T	T	--	--	--	< 0.38 mg/kg < 0.38 mg/kg	--	--	--	--	--
Benzo(k)fluoranthene	NA		T	T	--	--	--	< 0.38 mg/kg < 0.38 mg/kg	--	--	--	--	--
Chrysene	NA		T	T	--	--	--	< 0.38 mg/kg < 0.38 mg/kg	--	--	--	--	--
Dibenz(a,h)anthracene	NA		T	T	--	--	--	< 0.38 mg/kg < 0.38 mg/kg	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	NA		T	T	--	--	--	< 0.38 mg/kg < 0.38 mg/kg	--	--	--	--	--
B(a)P Equivalent, non-detects at 0	Barr Calculation		1.4 T mg/kg	2 T mg/kg	--	--	--	ND mg/kg	--	--	--	--	--
B(a)P Equivalent, non-detects at 1/2	Barr Calculation		1.4 T mg/kg	2 T mg/kg	--	--	--	0.37 mg/kg	--	--	--	--	--
B(a)P Equivalent, non-detects at 1x	Barr Calculation		1.4 T mg/kg	2 T mg/kg	--	--	--	0.75 mg/kg	--	--	--	--	--
VOCs													
1,1,1,2-Tetrachloroethane	NA		0.41 mg/kg	31 mg/kg	--	--	--	< 0.28 mg/kg	--	< 0.30 mg/kg	--	--	--
1,1,1-Trichloroethane	NA		56 mg/kg	140 mg/kg	--	--	--	< 0.28 mg/kg	--	< 0.30 mg/kg	--	--	--
1,1,2,2-Tetrachloroethane	NA		0.012 mg/kg	3.5 mg/kg	--	--	--	< 0.28 mg/kg	--	< 0.30 mg/kg	--	--	--
1,1,2-Trichloroethane	NA		0.014 mg/kg	9 mg/kg	--	--	--	< 0.28 mg/kg	--	< 0.30 mg/kg	--	--	--
1,1-Dichloro-1-propene	NA				--	--	--	< 0.28 mg/kg	--	< 0.30 mg/kg	--	--	--
1,1-Dichloroethane	NA		0.41 mg/kg	34 mg/kg	--	--	--	< 0.28 mg/kg	--	< 0.30 mg/kg	--	--	--
1,1-Dichloroethylene	NA		1.4 mg/kg	20 mg/kg	--	--	--	< 0.28 mg/kg	--	< 0.30 mg/kg	--	--	--

Attachment C
Soil Boring Analysis Results

				Location	B-56	B-57	B-59	B-60	B-63	B-64	B-65	B-66	B-66
				Date	11/10/2014	11/10/2014	11/10/2014	11/12/2014	11/12/2014	11/11/2014	11/11/2014	11/11/2014	11/11/2014
				Depth	7.5 - 9 ft	7.5 - 9 ft	7.5 - 9 ft	9.5 - 11 ft	7.5 - 9 ft	7.5 - 9 ft	7.5 - 9 ft	7.5 - 9 ft	9.5 - 11 ft
				Sample Type	N	N	N	N	N	N	N	N	N
Parameter	Total or Dissolved	MPCA Petroleum Remediation Progrogram Guidance	Minnesota Screening Soil Leaching Values	Minnesota Tier 1 Soil Reference Values									
Effective Date		3/7/2012	06/01/2013	06/22/2009									
Exceedance Key		**Bold**	Underline	No Exceed									
1,2,3-Trichlorobenzene	NA				--	--	--	< 0.57 mg/kg	--	< 0.61 mg/kg	--	--	--
1,2,3-Trichloropropane	NA		0.27 mg/kg		--	--	--	< 0.28 mg/kg	--	< 0.30 mg/kg	--	--	--
1,2,4-Trichlorobenzene	NA		0.23 mg/kg	200 mg/kg	--	--	--	< 0.57 mg/kg	--	< 0.61 mg/kg	--	--	--
1,2,4-Trimethylbenzene	NA		2.7 mg/kg	8 mg/kg	< 0.000029 mg/kg	< 0.000028 mg/kg	< 0.000034 mg/kg	< 0.28 mg/kg	< 0.028 mg/kg	< 0.30 mg/kg	< 0.028 mg/kg	< 0.028 mg/kg	--
1,2-Dibromo-3-chloropropane	NA				--	--	--	< 0.57 mg/kg	--	< 0.61 mg/kg	--	--	--
1,2-Dibromoethane	NA		0.000015 mg/kg	0.3 mg/kg	--	--	--	< 0.28 mg/kg	--	< 0.30 mg/kg	--	--	--
1,2-Dichlorobenzene	NA		11 mg/kg	26 mg/kg	--	--	--	< 0.28 mg/kg	--	< 0.30 mg/kg	--	--	--
1,2-Dichloroethane	NA		0.0038 mg/kg	4 mg/kg	--	--	--	< 0.28 mg/kg	--	< 0.30 mg/kg	--	--	--
1,2-Dichloroethylene, cis	NA		0.21 mg/kg	8 mg/kg	--	--	--	< 0.28 mg/kg	--	< 0.30 mg/kg	--	--	--
1,2-Dichloroethylene, trans	NA		0.42 mg/kg	11 mg/kg	--	--	--	< 0.28 mg/kg	--	< 0.30 mg/kg	--	--	--
1,2-Dichloropropane	NA		0.024 mg/kg	4 mg/kg	--	--	--	< 0.28 mg/kg	--	< 0.30 mg/kg	--	--	--
1,3,5-Trimethylbenzene	NA		2.7 mg/kg	3 mg/kg	< 0.000029 mg/kg	< 0.000028 mg/kg	< 0.000034 mg/kg	< 0.28 mg/kg	< 0.028 mg/kg	< 0.30 mg/kg	< 0.028 mg/kg	< 0.028 mg/kg	--
1,3-Dichloro-1-propene, cis	NA		0.011 DCP mg/kg		--	--	--	< 0.28 mg/kg	--	< 0.30 mg/kg	--	--	--
1,3-Dichloro-1-propene, trans	NA		0.011 DCP mg/kg		--	--	--	< 0.28 mg/kg	--	< 0.30 mg/kg	--	--	--
1,3-Dichlorobenzene	NA		10 mg/kg	26 mg/kg	--	--	--	< 0.28 mg/kg	--	< 0.30 mg/kg	--	--	--
1,3-Dichloropropane	NA				--	--	--	< 0.28 mg/kg	--	< 0.30 mg/kg	--	--	--
1,4-Dichlorobenzene	NA		0.17 mg/kg	30 mg/kg	--	--	--	< 0.28 mg/kg	--	< 0.30 mg/kg	--	--	--
2,2-Dichloropropane	NA				--	--	--	< 0.57 mg/kg	--	< 0.61 mg/kg	--	--	--
Acetone	NA		8.4 mg/kg	340 mg/kg	--	--	--	< 2.3 mg/kg	--	< 2.4 mg/kg	--	--	--
Allyl Chloride	NA		0.15 mg/kg		--	--	--	< 0.57 mg/kg	--	< 0.61 mg/kg	--	--	--
Benzene	NA		0.017 mg/kg	6 mg/kg	< 0.000029 mg/kg	< 0.000028 mg/kg	< 0.000034 mg/kg	< 0.28 mg/kg	< 0.028 mg/kg	< 0.30 mg/kg	0.21 mg/kg	< 0.028 mg/kg	--
Bromobenzene	NA				--	--	--	< 0.28 mg/kg	--	< 0.30 mg/kg	--	--	--
Bromochloromethane	NA		0.28 mg/kg		--	--	--	< 0.28 mg/kg	--	< 0.30 mg/kg	--	--	--
Bromodichloromethane	NA		0.021 mg/kg	10 mg/kg	--	--	--	< 0.28 mg/kg	--	< 0.30 mg/kg	--	--	--
Bromoform	NA		0.13 mg/kg	370 mg/kg	--	--	--	< 0.57 mg/kg	--	< 0.61 mg/kg	--	--	--
Bromomethane	NA		0.036 mg/kg	0.7 mg/kg	--	--	--	< 0.57 mg/kg	--	< 0.61 mg/kg	--	--	--
Butyl benzene	NA		NA	30 mg/kg	--	--	--	< 0.28 mg/kg	--	< 0.30 mg/kg	--	--	--
Butylbenzene, sec	NA		NA	25 mg/kg	--	--	--	< 0.28 mg/kg	--	< 0.30 mg/kg	--	--	--
Butylbenzene, tert	NA		NA	30 mg/kg	--	--	--	< 0.28 mg/kg	--	< 0.30 mg/kg	--	--	--
Carbon tetrachloride	NA		0.0077 mg/kg	0.3 mg/kg	--	--	--	< 0.28 mg/kg	--	< 0.30 mg/kg	--	--	--
Chlorobenzene	NA		1.2 mg/kg	11 mg/kg	--	--	--	< 0.28 mg/kg	--	< 0.30 mg/kg	--	--	--
Chlorodibromomethane	NA		0.034 mg/kg	12 mg/kg	--	--	--	< 0.28 mg/kg	--	< 0.30 mg/kg	--	--	--
Chloroethane	NA		NA	1000 mg/kg	--	--	--	< 0.28 mg/kg	--	< 0.30 mg/kg	--	--	--
Chloroform	NA		0.11 mg/kg	2.5 mg/kg	--	--	--	< 0.28 mg/kg	--	< 0.30 mg/kg	--	--	--
Chloromethane	NA		0.11 mg/kg	8 mg/kg	--	--	--	< 0.28 mg/kg	--	< 0.30 mg/kg	--	--	--
Chlorotoluene, o	NA			436 mg/kg	--	--	--	< 0.28 mg/kg	--	< 0.30 mg/kg	--	--	--
Chlorotoluene, p	NA				--	--	--	< 0.28 mg/kg	--	< 0.30 mg/kg	--	--	--
Cumene (isopropyl benzene)	NA		9.5 mg/kg	30 mg/kg	--	--	--	< 0.28 mg/kg	--	< 0.30 mg/kg	--	--	--
Cymene p- (Toluene isopropyl p-)	NA				--	--	--	< 0.28 mg/kg	--	< 0.30 mg/kg	--	--	--
Dibromomethane (methylene bromide)	NA			260 mg/kg	--	--	--	< 0.28 mg/kg	--	< 0.30 mg/kg	--	--	--
Dichlorodifluoromethane (CFC-12)	NA		37 mg/kg	16 mg/kg	--	--	--	< 0.57 mg/kg	--	< 0.61 mg/kg	--	--	--
Dichlorofluoromethane (CFC-21)	NA		NA		--	--	--	< 0.28 mg/kg	--	< 0.30 mg/kg	--	--	--
Ethyl benzene	NA		1.0 mg/kg	200 mg/kg	< 0.000029 mg/kg	< 0.000028 mg/kg	< 0.000034 mg/kg	< 0.28 mg/kg	< 0.028 mg/kg	< 0.30 mg/kg	0.033 mg/kg	< 0.028 mg/kg	--
Ethyl ether	NA		0.51 mg/kg		--	--	--	< 0.57 mg/kg	--	< 0.61 mg/kg	--	--	--
Hexachlorobutadiene	NA		0.037 mg/kg	6 mg/kg	--	--	--	< 1.1 mg/kg	--	< 1.2 mg/kg	--	--	--
Methyl ethyl ketone	NA		8.8 mg/kg	5500 mg/kg	--	--	--	< 2.3 mg/kg	--	< 2.4 mg/kg	--	--	--
Methyl isobutyl ketone	NA		0.76 mg/kg	1700 mg/kg	--	--	--	< 0.57 mg/kg	--	< 0.61 mg/kg	--	--	--
Methyl tertiary butyl ether (MTBE)	NA		NA		< 0.000029 mg/kg	< 0.000028 mg/kg	< 0.000034 mg/kg	< 0.28 mg/kg	< 0.028 mg/kg	< 0.30 mg/kg	< 0.028 mg/kg	< 0.028 mg/kg	--
Methylene chloride	NA		0.017 mg/kg	97 mg/kg	--	--	--	< 1.1 mg/kg	--	< 1.2 mg/kg	--	--	--
Naphthalene	NA		4.5 mg/kg	10 mg/kg	--	--	--	< 0.57 mg/kg	--	< 0.61 mg/kg	--	--	--
Propylbenzene	NA		NA	30 mg/kg	--	--	--	< 0.28 mg/kg	--	< 0.30 mg/kg	--	--	--
Styrene	NA		2.0 mg/kg	210 mg/kg	--	--	--	< 0.28 mg/kg	--	< 0.30 mg/kg	--	--	--
Tetrachloroethylene	NA		0.042 mg/kg	72 mg/kg	--	--	--	< 0.28 mg/kg	--	< 0.30 mg/kg	--	--	--
Tetrahydrofuran	NA		0.24 mg/kg		--	--	--	< 2.3 mg/kg	--	< 2.4 mg/kg	--	--	--
Toluene	NA		2.5 mg/kg	107 mg/kg	< 0.000029 mg/kg	< 0.000028 mg/kg	< 0.000034 mg/kg	< 0.28 mg/kg	< 0.028 mg/kg	< 0.30 mg/kg	0.040 mg/kg	< 0.028 mg/kg	--
Trichloroethylene	NA		0.0023 mg/kg	29 mg/kg	--	--	--	< 0.28 mg/kg	--	< 0.30 mg/kg	--	--	--
Trichlorofluoromethane	NA		35 mg/kg	67 mg/kg	--	--	--	< 0.28 mg/kg	--	< 0.30 mg/kg	--	--	--
Trichlorotrifluoroethane (Freon 113)	NA		17000 mg/kg	3745 mg/kg	--	--	--	< 0.28 mg/kg	--	< 0.30 mg/kg	--	--	--

Attachment C
Soil Boring Analysis Results

				Location	B-56	B-57	B-59	B-60	B-63	B-64	B-65	B-66	B-66
				Date	11/10/2014	11/10/2014	11/10/2014	11/12/2014	11/12/2014	11/11/2014	11/11/2014	11/11/2014	11/11/2014
				Depth	7.5 - 9 ft	7.5 - 9 ft	7.5 - 9 ft	9.5 - 11 ft	7.5 - 9 ft	7.5 - 9 ft	7.5 - 9 ft	7.5 - 9 ft	9.5 - 11 ft
				Sample Type	N	N	N	N	N	N	N	N	N
Parameter	Total or Dissolved	MPCA Petroleum Remediation Progrogram Guidance	Minnesota Screening Soil Leaching Values	Minnesota Tier 1 Soil Reference Values									
Effective Date		3/7/2012	06/01/2013	06/22/2009									
Exceedance Key		**Bold**	Underline	No Exceed									
Vinyl chloride	NA		0.0014 mg/kg	0.8 mg/kg	--	--	--	< 0.28 mg/kg	--	< 0.30 mg/kg	--	--	--
Xylene, m & p	NA		M	M	--	--	--	< 0.57 mg/kg	--	< 0.61 mg/kg	--	--	--
Xylene, o	NA		M	M	--	--	--	< 0.28 mg/kg	--	< 0.30 mg/kg	--	--	--
Xylene, total	NA		5.4 M mg/kg	45 M mg/kg	< 0.000086 mg/kg	< 0.000084 mg/kg	< 0.00010 mg/kg	ND mg/kg	< 0.083 mg/kg	ND mg/kg	< 0.084 mg/kg	< 0.084 mg/kg	--
Total Petroleum Hydrocarbons													
Diesel Range Organics, C10-C28	NA	**100 mg/kg**			< 9.2 mg/kg	< 9.0 mg/kg	< 9.5 mg/kg	< 9.1 mg/kg	< 8.5 mg/kg	--	< 9.0 mg/kg	< 9.0 mg/kg	--
Diesel Range Organics-silica gel cleanup	NA	**100 mg/kg**			--	--	--	--	--	--	--	--	--
Gasoline Range Organics, C6-C10	NA	100 mg/kg			< 0.0057 mg/kg	< 0.0056 mg/kg	< 0.0067 mg/kg	< 5.4 mg/kg	< 5.6 mg/kg	< 6.1 mg/kg	< 5.6 mg/kg	< 5.6 mg/kg	--

Attachment D

Legend Technical Services Laboratory Reports

88 Empire Drive
St Paul, MN 55103
Tel: 651-642-1150
Fax: 651-642-1239

November 21, 2014

Mr. James E. Taraldsen
Barr Engineering Co.
4700 W 77th St
Minneapolis, MN 55435

Work Order Number: 1405054
RE: 23691588

Enclosed are the results of analyses for samples received by the laboratory on 11/05/14. If you have any questions concerning this report, please feel free to contact me.

Results are not blank corrected unless noted within the report. Additionally, all QC results meet requirements unless noted.

All samples will be retained by Legend Technical Services, Inc., unless consumed in the analysis, at ambient conditions for 30 days from the date of this report and then discarded unless other arrangements are made. All samples were received in acceptable condition unless otherwise noted.

All test results and QC meet requirements of the 2003 NELAC standard.

MDH (NELAP) Accreditation #027-123-295

Prepared by,
LEGEND TECHNICAL SERVICES, INC

Bach Pham
Client Manager II
bpham@legend-group.com

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

88 Empire Drive
St Paul, MN 55103
Tel: 651-642-1150
Fax: 651-642-1239

Barr Engineering Co.	Project:	23691588		
4700 W 77th St	Project Number:	23691588.00	Work Order #:	1405054
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported:	11/21/14

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B-01_7.5-9	1405054-01	Soil	11/02/14 23:30	11/05/14 09:05
B-03_9.5-11	1405054-02	Soil	11/03/14 23:17	11/05/14 09:05
B-04_11.5-14	1405054-03	Soil	11/03/14 00:35	11/05/14 09:05
B-08_9.5-11	1405054-04	Soil	11/04/14 04:05	11/05/14 09:05
B-09_9.5-11	1405054-05	Soil	11/04/14 05:00	11/05/14 09:05
B-10_8.5-9	1405054-06	Soil	11/04/14 06:00	11/05/14 09:05
B-17_9.5-11	1405054-07	Soil	11/03/14 05:30	11/05/14 09:05
B-17_2.5-4	1405054-08	Soil	11/03/14 05:10	11/05/14 09:05

Shipping Container Information

Default Cooler Temperature (°C): 5.2

Received on ice: Yes
Temperature blank was present
Received on ice pack: No
Received on melt water: No
Ambient: No
Acceptable (IH/ISO only): No
Custody seals: Yes

Case Narrative:

This report contains data that were produced by a subcontracted laboratory certified for the field of testing performed. The mercury analysis was performed by TestAmerica Laboratories, Inc., Cedar Falls, IA, #019-999-319.

The MS recovery for chromium, and the MSD recoveries for barium and lead were outside the method control limits for the 6010C batch B4K0527. The LCS, LCS duplicate, and % RPD were within the control limits. The source sample was not associated with this work order.

Recovery for the 8270 PAH surrogate terphenyl-d14 was above laboratory limits in sample B-04_11.5-14.

Recoveries for the 8270 PAH compounds benzo(a)pyrene, benzo(b)fluoranthene, and benzo(k)fluoranthene were above laboratory limits in the batch B4K1304 MS/MSD. The MS/MSD source sample was not associated with this work order. All compounds were within limits in the LCS.

Recovery for the 8270 SVOC compound benzo(a)pyrene was above laboratory limits in the batch B4K1706 MS/MSD. The MS/MSD source sample was not associated with this work order. All compounds were within limits in the LCS.

The DRO chromatograms are attached for samples B-03_9.5-11, B-09_9.5-11, and B-10_8.5-9.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

88 Empire Drive
St Paul, MN 55103
Tel: 651-642-1150
Fax: 651-642-1239

Barr Engineering Co.	Project:	23691588	
4700 W 77th St	Project Number:	23691588.00	Work Order #: 1405054
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported: 11/21/14

DRO/8015D
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B-01_7.5-9 (1405054-01) Soil Sampled: 11/02/14 23:30 Received: 11/05/14 9:05										
Diesel Range Organics	<8.6	8.6	1.4	mg/kg dry	1	B4K1102	11/11/14	11/13/14	WI(95) DRO	
Surrogate: Triacontane (C-30)	*86.1*			*70-130 %*		"	"	"	"	
B-03_9.5-11 (1405054-02) Soil Sampled: 11/03/14 23:17 Received: 11/05/14 9:05										
Diesel Range Organics	**27**	9.6	1.6	mg/kg dry	1	B4K1102	11/11/14	11/13/14	WI(95) DRO	L1
Surrogate: Triacontane (C-30)	*97.3*			*70-130 %*		"	"	"	"	
B-04_11.5-14 (1405054-03) Soil Sampled: 11/03/14 00:35 Received: 11/05/14 9:05										
Diesel Range Organics	<9.6	9.6	1.6	mg/kg dry	1	B4K1102	11/11/14	11/13/14	WI(95) DRO	
Surrogate: Triacontane (C-30)	*87.1*			*70-130 %*		"	"	"	"	
B-08_9.5-11 (1405054-04) Soil Sampled: 11/04/14 04:05 Received: 11/05/14 9:05										
Diesel Range Organics	<9.7	9.7	1.6	mg/kg dry	1	B4K1102	11/11/14	11/13/14	WI(95) DRO	
Surrogate: Triacontane (C-30)	*91.6*			*70-130 %*		"	"	"	"	
B-09_9.5-11 (1405054-05) Soil Sampled: 11/04/14 05:00 Received: 11/05/14 9:05										
Diesel Range Organics	**35**	9.3	1.5	mg/kg dry	1	B4K1102	11/11/14	11/14/14	WI(95) DRO	L1
Surrogate: Triacontane (C-30)	*85.2*			*70-130 %*		"	"	"	"	
B-10_8.5-9 (1405054-06) Soil Sampled: 11/04/14 06:00 Received: 11/05/14 9:05										
Diesel Range Organics	**39**	9.4	1.5	mg/kg dry	1	B4K1102	11/11/14	11/14/14	WI(95) DRO	L1
Surrogate: Triacontane (C-30)	*94.0*			*70-130 %*		"	"	"	"	
B-17_9.5-11 (1405054-07) Soil Sampled: 11/03/14 05:30 Received: 11/05/14 9:05										
Diesel Range Organics	<10	10	1.6	mg/kg dry	1	B4K1102	11/11/14	11/14/14	WI(95) DRO	
Surrogate: Triacontane (C-30)	*101*			*70-130 %*		"	"	"	"	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

LEGEND Technical Services, Inc.
www.legend-group.com

88 Empire Drive
St Paul, MN 55103
Tel: 651-642-1150
Fax: 651-642-1239

Barr Engineering Co.	Project:	23691588			
4700 W 77th St	Project Number:	23691588.00		Work Order #:	1405054
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen		Date Reported:	11/21/14

WI(95) GRO/8015D
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B-01_7.5-9 (1405054-01) Soil Sampled: 11/02/14 23:30 Received: 11/05/14 9:05										
1,2,4-Trimethylbenzene	<0.030	0.030	0.0032	mg/kg dry	1	B4K0614	11/06/14	11/06/14	WI(95) GRO	
1,3,5-Trimethylbenzene	<0.030	0.030	0.0074	mg/kg dry	1	"	"	"	"	
Benzene	<0.030	0.030	0.0035	mg/kg dry	1	"	"	"	"	
Ethylbenzene	<0.030	0.030	0.0076	mg/kg dry	1	"	"	"	"	
Gasoline range organics	<6.0	6.0	0.65	mg/kg dry	1	"	"	"	"	
Methyl tert-butyl ether	<0.030	0.030	0.0065	mg/kg dry	1	"	"	"	"	
Toluene	<0.030	0.030	0.0049	mg/kg dry	1	"	"	"	"	
Xylenes (total)	<0.090	0.090	0.017	mg/kg dry	1	"	"	"	"	
Surrogate: 4-Fluorochlorobenzene	*100*			*80-150 %*		"	"	"	"	
B-03_9.5-11 (1405054-02) Soil Sampled: 11/03/14 23:17 Received: 11/05/14 9:05										
1,2,4-Trimethylbenzene	<0.030	0.030	0.0033	mg/kg dry	1	B4K0614	11/06/14	11/06/14	WI(95) GRO	
1,3,5-Trimethylbenzene	<0.030	0.030	0.0075	mg/kg dry	1	"	"	"	"	
Benzene	<0.030	0.030	0.0035	mg/kg dry	1	"	"	"	"	
Ethylbenzene	<0.030	0.030	0.0077	mg/kg dry	1	"	"	"	"	
Gasoline range organics	<6.0	6.0	0.65	mg/kg dry	1	"	"	"	"	
Methyl tert-butyl ether	<0.030	0.030	0.0065	mg/kg dry	1	"	"	"	"	
Toluene	<0.030	0.030	0.0049	mg/kg dry	1	"	"	"	"	
Xylenes (total)	<0.090	0.090	0.017	mg/kg dry	1	"	"	"	"	
Surrogate: 4-Fluorochlorobenzene	*100*			*80-150 %*		"	"	"	"	
B-04_11.5-14 (1405054-03) Soil Sampled: 11/03/14 00:35 Received: 11/05/14 9:05										
Gasoline range organics	<6.0	6.0	0.65	mg/kg dry	1	B4K0614	11/06/14	11/06/14	WI(95) GRO	
Surrogate: 4-Fluorochlorobenzene	*99.7*			*80-150 %*		"	"	"	"	
B-08_9.5-11 (1405054-04) Soil Sampled: 11/04/14 04:05 Received: 11/05/14 9:05										
1,2,4-Trimethylbenzene	<0.032	0.032	0.0035	mg/kg dry	1	B4K0614	11/06/14	11/06/14	WI(95) GRO	
1,3,5-Trimethylbenzene	<0.032	0.032	0.0079	mg/kg dry	1	"	"	"	"	
Benzene	<0.032	0.032	0.0037	mg/kg dry	1	"	"	"	"	
Ethylbenzene	<0.032	0.032	0.0082	mg/kg dry	1	"	"	"	"	
Gasoline range organics	<6.4	6.4	0.69	mg/kg dry	1	"	"	"	"	
Methyl tert-butyl ether	<0.032	0.032	0.0069	mg/kg dry	1	"	"	"	"	
Toluene	<0.032	0.032	0.0053	mg/kg dry	1	"	"	"	"	
Xylenes (total)	<0.096	0.096	0.018	mg/kg dry	1	"	"	"	"	
Surrogate: 4-Fluorochlorobenzene	*101*			*80-150 %*		"	"	"	"	
B-09_9.5-11 (1405054-05) Soil Sampled: 11/04/14 05:00 Received: 11/05/14 9:05										
1,2,4-Trimethylbenzene	<0.029	0.029	0.0031	mg/kg dry	1	B4K0614	11/06/14	11/06/14	WI(95) GRO	
1,3,5-Trimethylbenzene	<0.029	0.029	0.0072	mg/kg dry	1	"	"	"	"	
Benzene	<0.029	0.029	0.0034	mg/kg dry	1	"	"	"	"	
Ethylbenzene	<0.029	0.029	0.0074	mg/kg dry	1	"	"	"	"	
Gasoline range organics	<5.8	5.8	0.63	mg/kg dry	1	"	"	"	"	

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Barr Engineering Co.	Project:	23691588	
4700 W 77th St	Project Number:	23691588.00	Work Order #: 1405054
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported: 11/21/14

WI(95) GRO/8015D
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B-09_9.5-11 (1405054-05) Soil Sampled: 11/04/14 05:00 Received: 11/05/14 9:05										
Methyl tert-butyl ether	<0.029	0.029	0.0063	mg/kg dry	1	B4K0614	11/06/14	11/06/14	WI(95) GRO	
Toluene	<0.029	0.029	0.0048	mg/kg dry	1	"	"	"	"	
Xylenes (total)	<0.087	0.087	0.017	mg/kg dry	1	"	"	"	"	
Surrogate: 4-Fluorochlorobenzene	*99.7*			*80-150 %*		"	"	"	"	
B-10_8.5-9 (1405054-06) Soil Sampled: 11/04/14 06:00 Received: 11/05/14 9:05										
1,2,4-Trimethylbenzene	<0.029	0.029	0.0032	mg/kg dry	1	B4K0614	11/06/14	11/06/14	WI(95) GRO	
1,3,5-Trimethylbenzene	<0.029	0.029	0.0073	mg/kg dry	1	"	"	"	"	
Benzene	<0.029	0.029	0.0034	mg/kg dry	1	"	"	"	"	
Ethylbenzene	<0.029	0.029	0.0075	mg/kg dry	1	"	"	"	"	
Gasoline range organics	<5.9	5.9	0.64	mg/kg dry	1	"	"	"	"	
Methyl tert-butyl ether	<0.029	0.029	0.0064	mg/kg dry	1	"	"	"	"	
Toluene	<0.029	0.029	0.0048	mg/kg dry	1	"	"	"	"	
Xylenes (total)	<0.088	0.088	0.017	mg/kg dry	1	"	"	"	"	
Surrogate: 4-Fluorochlorobenzene	*100*			*80-150 %*		"	"	"	"	
B-17_9.5-11 (1405054-07) Soil Sampled: 11/03/14 05:30 Received: 11/05/14 9:05										
1,2,4-Trimethylbenzene	<0.032	0.032	0.0034	mg/kg dry	1	B4K0614	11/06/14	11/06/14	WI(95) GRO	
1,3,5-Trimethylbenzene	<0.032	0.032	0.0078	mg/kg dry	1	"	"	"	"	
Benzene	<0.032	0.032	0.0037	mg/kg dry	1	"	"	"	"	
Ethylbenzene	<0.032	0.032	0.0081	mg/kg dry	1	"	"	"	"	
Gasoline range organics	<6.3	6.3	0.68	mg/kg dry	1	"	"	"	"	
Methyl tert-butyl ether	<0.032	0.032	0.0068	mg/kg dry	1	"	"	"	"	
Toluene	<0.032	0.032	0.0052	mg/kg dry	1	"	"	"	"	
Xylenes (total)	<0.095	0.095	0.018	mg/kg dry	1	"	"	"	"	
Surrogate: 4-Fluorochlorobenzene	*99.7*			*80-150 %*		"	"	"	"	

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4700 W 77th St	Project Number:	23691588.00	Work Order #: 1405054
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported: 11/21/14

TOTAL METALS ANALYSIS
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B-04_11.5-14 (1405054-03) Soil Sampled: 11/03/14 00:35 Received: 11/05/14 9:05										
Arsenic	**4.5**	0.60	0.15	mg/kg dry	1	B4K0527	11/05/14	11/10/14	EPA 6010C	
Barium	**79**	1.2	0.066	mg/kg dry	1	"	"	"	"	
Cadmium	<0.30	0.30	0.040	mg/kg dry	1	"	"	"	"	
Chromium	**29**	0.60	0.16	mg/kg dry	1	"	"	"	"	
Lead	**5.6**	1.2	0.17	mg/kg dry	1	"	"	"	"	
Selenium	<1.2	1.2	0.20	mg/kg dry	1	"	"	"	"	
Silver	<0.30	0.30	0.033	mg/kg dry	1	"	"	"	"	
B-17_2.5-4 (1405054-08) Soil Sampled: 11/03/14 05:10 Received: 11/05/14 9:05										
Arsenic	**1.7**	0.56	0.14	mg/kg dry	1	B4K0527	11/05/14	11/10/14	EPA 6010C	
Barium	**30**	1.1	0.061	mg/kg dry	1	"	"	"	"	
Cadmium	<0.28	0.28	0.037	mg/kg dry	1	"	"	"	"	
Chromium	**15**	0.56	0.15	mg/kg dry	1	"	"	"	"	
Lead	**3.4**	1.1	0.16	mg/kg dry	1	"	"	"	"	
Selenium	<1.1	1.1	0.18	mg/kg dry	1	"	"	"	"	
Silver	<0.28	0.28	0.031	mg/kg dry	1	"	"	"	"	

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Barr Engineering Co.	Project:	23691588	
4700 W 77th St	Project Number:	23691588.00	Work Order #: 1405054
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported: 11/21/14

PAH 8270D
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B-04_11.5-14 (1405054-03) Soil Sampled: 11/03/14 00:35 Received: 11/05/14 9:05										
2-Chloronaphthalene	<0.40	0.40	0.082	mg/kg dry	1	B4K1304	11/13/14	11/13/14	EPA 8270D	
2-Methylnaphthalene	<0.40	0.40	0.096	mg/kg dry	1	"	"	"	"	
Acenaphthene	<0.40	0.40	0.076	mg/kg dry	1	"	"	"	"	
Acenaphthylene	<0.40	0.40	0.086	mg/kg dry	1	"	"	"	"	
Anthracene	<0.40	0.40	0.083	mg/kg dry	1	"	"	"	"	
Benzo(a)anthracene	<0.40	0.40	0.078	mg/kg dry	1	"	"	"	"	
Benzo(a)pyrene	<0.40	0.40	0.084	mg/kg dry	1	"	"	"	"	
Benzo(b)fluoranthene	<0.40	0.40	0.071	mg/kg dry	1	"	"	"	"	
Benzo(g,h,i)perylene	<0.40	0.40	0.086	mg/kg dry	1	"	"	"	"	
Benzo(k)fluoranthene	<0.40	0.40	0.084	mg/kg dry	1	"	"	"	"	
Chrysene	<0.40	0.40	0.077	mg/kg dry	1	"	"	"	"	
Dibenz(a,h)anthracene	<0.40	0.40	0.099	mg/kg dry	1	"	"	"	"	
Fluoranthene	<0.40	0.40	0.082	mg/kg dry	1	"	"	"	"	
Fluorene	<0.40	0.40	0.078	mg/kg dry	1	"	"	"	"	
Indeno (1,2,3-cd) pyrene	<0.40	0.40	0.087	mg/kg dry	1	"	"	"	"	
Naphthalene	<0.40	0.40	0.086	mg/kg dry	1	"	"	"	"	
Phenanthrene	<0.40	0.40	0.080	mg/kg dry	1	"	"	"	"	
Pyrene	<0.40	0.40	0.071	mg/kg dry	1	"	"	"	"	
Surrogate: 2-Fluorobiphenyl	*78.0*			*46.3-96.2 %*		"	"	"	"	
Surrogate: Nitrobenzene-d5	*75.3*			*49.3-94 %*		"	"	"	"	
Surrogate: Terphenyl-d14	*110*			*51.5-94.6 %*		"	"	"	"	*S-BN*
B-17_2.5-4 (1405054-08) Soil Sampled: 11/03/14 05:10 Received: 11/05/14 9:05										
2-Chloronaphthalene	<0.37	0.37	0.076	mg/kg dry	1	B4K1304	11/13/14	11/13/14	EPA 8270D	
2-Methylnaphthalene	<0.37	0.37	0.089	mg/kg dry	1	"	"	"	"	
Acenaphthene	<0.37	0.37	0.070	mg/kg dry	1	"	"	"	"	
Acenaphthylene	<0.37	0.37	0.079	mg/kg dry	1	"	"	"	"	
Anthracene	<0.37	0.37	0.077	mg/kg dry	1	"	"	"	"	
Benzo(a)anthracene	<0.37	0.37	0.072	mg/kg dry	1	"	"	"	"	
Benzo(a)pyrene	<0.37	0.37	0.078	mg/kg dry	1	"	"	"	"	
Benzo(b)fluoranthene	**0.44**	0.37	0.066	mg/kg dry	1	"	"	"	"	
Benzo(g,h,i)perylene	<0.37	0.37	0.079	mg/kg dry	1	"	"	"	"	
Benzo(k)fluoranthene	<0.37	0.37	0.078	mg/kg dry	1	"	"	"	"	
Chrysene	<0.37	0.37	0.071	mg/kg dry	1	"	"	"	"	
Dibenz(a,h)anthracene	<0.37	0.37	0.091	mg/kg dry	1	"	"	"	"	
Fluoranthene	**0.81**	0.37	0.076	mg/kg dry	1	"	"	"	"	
Fluorene	<0.37	0.37	0.072	mg/kg dry	1	"	"	"	"	
Indeno (1,2,3-cd) pyrene	<0.37	0.37	0.080	mg/kg dry	1	"	"	"	"	
Naphthalene	<0.37	0.37	0.079	mg/kg dry	1	"	"	"	"	
Phenanthrene	**1.1**	0.37	0.073	mg/kg dry	1	"	"	"	"	

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Barr Engineering Co.	Project:	23691588	
4700 W 77th St	Project Number:	23691588.00	Work Order #: 1405054
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported: 11/21/14

PAH 8270D
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B-17_2.5-4 (1405054-08) Soil Sampled: 11/03/14 05:10 Received: 11/05/14 9:05										
Pyrene	**0.69**	0.37	0.066	mg/kg dry	1	B4K1304	11/13/14	11/13/14	EPA 8270D	
Surrogate: 2-Fluorobiphenyl	*83.1*			*46.3-96.2 %*		"	"	"	"	
Surrogate: Nitrobenzene-d5	*77.9*			*49.3-94 %*		"	"	"	"	
Surrogate: Terphenyl-d14	*84.6*			*51.5-94.6 %*		"	"	"	"	

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Barr Engineering Co.	Project:	23691588	
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Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported: 11/21/14

PERCENT SOLIDS
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B-01_7.5-9 (1405054-01) Soil Sampled: 11/02/14 23:30 Received: 11/05/14 9:05										
% Solids	**93**			%	1	B4K1108	11/11/14	11/11/14	% calculation	
B-03_9.5-11 (1405054-02) Soil Sampled: 11/03/14 23:17 Received: 11/05/14 9:05										
% Solids	**83**			%	1	B4K1108	11/11/14	11/11/14	% calculation	
B-04_11.5-14 (1405054-03) Soil Sampled: 11/03/14 00:35 Received: 11/05/14 9:05										
% Solids	**83**			%	1	B4K1108	11/11/14	11/11/14	% calculation	
B-08_9.5-11 (1405054-04) Soil Sampled: 11/04/14 04:05 Received: 11/05/14 9:05										
% Solids	**78**			%	1	B4K1108	11/11/14	11/11/14	% calculation	
B-09_9.5-11 (1405054-05) Soil Sampled: 11/04/14 05:00 Received: 11/05/14 9:05										
% Solids	**86**			%	1	B4K1108	11/11/14	11/11/14	% calculation	
B-10_8.5-9 (1405054-06) Soil Sampled: 11/04/14 06:00 Received: 11/05/14 9:05										
% Solids	**85**			%	1	B4K1108	11/11/14	11/11/14	% calculation	
B-17_9.5-11 (1405054-07) Soil Sampled: 11/03/14 05:30 Received: 11/05/14 9:05										
% Solids	**79**			%	1	B4K1108	11/11/14	11/11/14	% calculation	
B-17_2.5-4 (1405054-08) Soil Sampled: 11/03/14 05:10 Received: 11/05/14 9:05										
% Solids	**90**			%	1	B4K1108	11/11/14	11/11/14	% calculation	

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Barr Engineering Co.	Project:	23691588	
4700 W 77th St	Project Number:	23691588.00	Work Order #: 1405054
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported: 11/21/14

SVOC 8270D
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B-17_2.5-4 (1405054-08) Soil Sampled: 11/03/14 05:10 Received: 11/05/14 9:05										
1,2,4-Trichlorobenzene	<0.37	0.37	0.083	mg/kg dry	1	B4K1706	11/17/14	11/18/14	EPA 8270D	
1,2-Dichlorobenzene	<0.37	0.37	0.074	mg/kg dry	1	"	"	"	"	
1,2-Diphenylhydrazine as Azobenzene	<0.37	0.37	0.064	mg/kg dry	1	"	"	"	"	
1,3-Dichlorobenzene	<0.37	0.37	0.077	mg/kg dry	1	"	"	"	"	
1,4-Dichlorobenzene	<0.37	0.37	0.076	mg/kg dry	1	"	"	"	"	
2,3,4,6-Tetrachlorophenol	<0.74	0.74	0.21	mg/kg dry	1	"	"	"	"	
2,4,5-Trichlorophenol	<0.74	0.74	0.079	mg/kg dry	1	"	"	"	"	
2,4,6-Trichlorophenol	<0.74	0.74	0.18	mg/kg dry	1	"	"	"	"	
2,4-Dichlorophenol	<0.74	0.74	0.17	mg/kg dry	1	"	"	"	"	
2,4-Dimethylphenol	<0.74	0.74	0.14	mg/kg dry	1	"	"	"	"	
2,4-Dinitrophenol	<0.74	0.74	0.079	mg/kg dry	1	"	"	"	"	
2,4-Dinitrotoluene	<0.37	0.37	0.076	mg/kg dry	1	"	"	"	"	
2,6-Dichlorophenol	<0.74	0.74	0.14	mg/kg dry	1	"	"	"	"	
2,6-Dinitrotoluene	<0.37	0.37	0.086	mg/kg dry	1	"	"	"	"	
2-Chloronaphthalene	<0.37	0.37	0.076	mg/kg dry	1	"	"	"	"	
2-Chlorophenol	<0.74	0.74	0.17	mg/kg dry	1	"	"	"	"	
2-Methylnaphthalene	<0.37	0.37	0.089	mg/kg dry	1	"	"	"	"	
2-Methylphenol	<0.74	0.74	0.091	mg/kg dry	1	"	"	"	"	
2-Nitroaniline	<0.37	0.37	0.077	mg/kg dry	1	"	"	"	"	
2-Nitrophenol	<0.74	0.74	0.20	mg/kg dry	1	"	"	"	"	
3&4-Methylphenol	<0.74	0.74	0.091	mg/kg dry	1	"	"	"	"	
3,3´-Dichlorobenzidine	<1.8	1.8	0.50	mg/kg dry	1	"	"	"	"	
3-Nitroaniline	<0.37	0.37	0.080	mg/kg dry	1	"	"	"	"	
4,6-Dinitro-2-methylphenol	<0.74	0.74	0.12	mg/kg dry	1	"	"	"	"	
4-Bromophenyl phenyl ether	<0.37	0.37	0.076	mg/kg dry	1	"	"	"	"	
4-Chloro-3-methylphenol	<0.74	0.74	0.16	mg/kg dry	1	"	"	"	"	
4-Chloroaniline	<0.74	0.74	0.074	mg/kg dry	1	"	"	"	"	
4-Chlorophenyl phenyl ether	<0.37	0.37	0.076	mg/kg dry	1	"	"	"	"	
4-Nitroaniline	<0.37	0.37	0.092	mg/kg dry	1	"	"	"	"	
4-Nitrophenol	<0.74	0.74	0.19	mg/kg dry	1	"	"	"	"	
Acenaphthene	<0.37	0.37	0.070	mg/kg dry	1	"	"	"	"	
Acenaphthylene	<0.37	0.37	0.079	mg/kg dry	1	"	"	"	"	
Aniline	<0.74	0.74	0.073	mg/kg dry	1	"	"	"	"	
Anthracene	<0.37	0.37	0.077	mg/kg dry	1	"	"	"	"	
Benzidine	<2.8	2.8	0.49	mg/kg dry	1	"	"	"	"	
Benzo(a)anthracene	<0.37	0.37	0.072	mg/kg dry	1	"	"	"	"	
Benzo(a)pyrene	<0.37	0.37	0.078	mg/kg dry	1	"	"	"	"	
Benzo(b)fluoranthene	<0.37	0.37	0.066	mg/kg dry	1	"	"	"	"	
Benzo(g,h,i)perylene	<0.37	0.37	0.079	mg/kg dry	1	"	"	"	"	

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4700 W 77th St	Project Number:	23691588.00	Work Order #: 1405054
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported: 11/21/14

SVOC 8270D
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B-17_2.5-4 (1405054-08) Soil Sampled: 11/03/14 05:10 Received: 11/05/14 9:05										
Benzo(k)fluoranthene	<0.37	0.37	0.078	mg/kg dry	1	B4K1706	11/17/14	11/18/14	EPA 8270D	
Benzoic acid	<0.37	0.37	0.071	mg/kg dry	1	"	"	"	"	
Benzyl alcohol	<0.74	0.74	0.17	mg/kg dry	1	"	"	"	"	
Bis(2-chloroethoxy)methane	<0.37	0.37	0.086	mg/kg dry	1	"	"	"	"	
Bis(2-chloroethyl)ether	<0.37	0.37	0.077	mg/kg dry	1	"	"	"	"	
Bis(2-chloroisopropyl)ether	<0.37	0.37	0.087	mg/kg dry	1	"	"	"	"	
Bis(2-ethylhexyl)phthalate	<0.37	0.37	0.090	mg/kg dry	1	"	"	"	"	
Butyl benzyl phthalate	<0.37	0.37	0.092	mg/kg dry	1	"	"	"	"	
Carbazole	<0.37	0.37	0.084	mg/kg dry	1	"	"	"	"	
Chrysene	<0.37	0.37	0.071	mg/kg dry	1	"	"	"	"	
Dibenz(a,h)anthracene	<0.37	0.37	0.091	mg/kg dry	1	"	"	"	"	
Dibenzofuran	<0.37	0.37	0.076	mg/kg dry	1	"	"	"	"	
Diethyl phthalate	<0.37	0.37	0.070	mg/kg dry	1	"	"	"	"	
Dimethyl phthalate	<0.37	0.37	0.077	mg/kg dry	1	"	"	"	"	
Di-n-butyl phthalate	<0.37	0.37	0.088	mg/kg dry	1	"	"	"	"	
Di-n-octyl phthalate	<0.37	0.37	0.11	mg/kg dry	1	"	"	"	"	
Fluoranthene	<0.37	0.37	0.076	mg/kg dry	1	"	"	"	"	
Fluorene	<0.37	0.37	0.072	mg/kg dry	1	"	"	"	"	
Hexachlorobenzene	<0.37	0.37	0.069	mg/kg dry	1	"	"	"	"	
Hexachlorobutadiene	<0.37	0.37	0.086	mg/kg dry	1	"	"	"	"	
Hexachlorocyclopentadiene	<0.37	0.37	0.077	mg/kg dry	1	"	"	"	"	
Hexachloroethane	<0.37	0.37	0.091	mg/kg dry	1	"	"	"	"	
Indeno (1,2,3-cd) pyrene	<0.37	0.37	0.080	mg/kg dry	1	"	"	"	"	
Isophorone	<0.37	0.37	0.084	mg/kg dry	1	"	"	"	"	
Naphthalene	<0.37	0.37	0.079	mg/kg dry	1	"	"	"	"	
Nitrobenzene	<0.37	0.37	0.089	mg/kg dry	1	"	"	"	"	
N-Nitrosodimethylamine	<0.37	0.37	0.078	mg/kg dry	1	"	"	"	"	
N-Nitrosodi-n-propylamine	<0.37	0.37	0.081	mg/kg dry	1	"	"	"	"	
N-Nitrosodiphenylamine	<0.37	0.37	0.074	mg/kg dry	1	"	"	"	"	
Pentachlorophenol	<0.74	0.74	0.21	mg/kg dry	1	"	"	"	"	
Phenanthrene	<0.37	0.37	0.073	mg/kg dry	1	"	"	"	"	
Phenol	<0.74	0.74	0.16	mg/kg dry	1	"	"	"	"	
Pyrene	<0.37	0.37	0.066	mg/kg dry	1	"	"	"	"	
Surrogate: 2,4,6-Tribromophenol	*91.9*			*53-107 %*		"	"	"	"	
Surrogate: 2-Fluorobiphenyl	*75.4*			*53.9-97.9 %*		"	"	"	"	
Surrogate: 2-Fluorophenol	*65.1*			*42.5-94.9 %*		"	"	"	"	
Surrogate: Nitrobenzene-d5	*70.3*			*48.9-100 %*		"	"	"	"	
Surrogate: Phenol-d6	*73.2*			*50.4-99.6 %*		"	"	"	"	
Surrogate: Terphenyl-d14	*74.1*			*51-99.6 %*		"	"	"	"	

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LEGEND Technical Services, Inc.
www.legend-group.com

88 Empire Drive
St Paul, MN 55103
Tel: 651-642-1150
Fax: 651-642-1239

Barr Engineering Co.	Project:	23691588			
4700 W 77th St	Project Number:	23691588.00		Work Order #:	1405054
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen		Date Reported:	11/21/14

VOC 8260B
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B-04_11.5-14 (1405054-03) Soil Sampled: 11/03/14 00:35 Received: 11/05/14 9:05										
1,1,1,2-Tetrachloroethane	<0.30	0.30	0.0061	mg/kg dry	1	B4K1109	11/10/14	11/11/14	EPA 8260B	
1,1,1-Trichloroethane	<0.30	0.30	0.0067	mg/kg dry	1	"	"	"	"	
1,1,2,2-Tetrachloroethane	<0.30	0.30	0.0069	mg/kg dry	1	"	"	"	"	
1,1,2-Trichloroethane	<0.30	0.30	0.0088	mg/kg dry	1	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	<0.30	0.30	0.011	mg/kg dry	1	"	"	"	"	T-1
1,1-Dichloroethane	<0.30	0.30	0.0040	mg/kg dry	1	"	"	"	"	
1,1-Dichloroethene	<0.30	0.30	0.0070	mg/kg dry	1	"	"	"	"	
1,1-Dichloropropene	<0.30	0.30	0.0066	mg/kg dry	1	"	"	"	"	
1,2,3-Trichlorobenzene	<0.60	0.60	0.0061	mg/kg dry	1	"	"	"	"	
1,2,3-Trichloropropane	<0.30	0.30	0.0055	mg/kg dry	1	"	"	"	"	
1,2,4-Trichlorobenzene	<0.60	0.60	0.0065	mg/kg dry	1	"	"	"	"	
1,2,4-Trimethylbenzene	<0.30	0.30	0.0040	mg/kg dry	1	"	"	"	"	
1,2-Dibromo-3-chloropropane	<0.60	0.60	0.010	mg/kg dry	1	"	"	"	"	
1,2-Dibromoethane (EDB)	<0.30	0.30	0.0087	mg/kg dry	1	"	"	"	"	
1,2-Dichlorobenzene	<0.30	0.30	0.0041	mg/kg dry	1	"	"	"	"	
1,2-Dichloroethane	<0.30	0.30	0.0066	mg/kg dry	1	"	"	"	"	
1,2-Dichloropropane	<0.30	0.30	0.0058	mg/kg dry	1	"	"	"	"	
1,3,5-Trimethylbenzene	<0.30	0.30	0.0030	mg/kg dry	1	"	"	"	"	
1,3-Dichlorobenzene	<0.30	0.30	0.0046	mg/kg dry	1	"	"	"	"	
1,3-Dichloropropane	<0.30	0.30	0.0066	mg/kg dry	1	"	"	"	"	
1,4-Dichlorobenzene	<0.30	0.30	0.0060	mg/kg dry	1	"	"	"	"	
2,2-Dichloropropane	<0.60	0.60	0.010	mg/kg dry	1	"	"	"	"	
2-Butanone	<2.4	2.4	0.017	mg/kg dry	1	"	"	"	"	
2-Chlorotoluene	<0.30	0.30	0.0027	mg/kg dry	1	"	"	"	"	
4-Chlorotoluene	<0.30	0.30	0.0043	mg/kg dry	1	"	"	"	"	
Acetone	<2.4	2.4	0.12	mg/kg dry	1	"	"	"	"	
Allyl chloride	<0.60	0.60	0.010	mg/kg dry	1	"	"	"	"	
Benzene	<0.30	0.30	0.0033	mg/kg dry	1	"	"	"	"	
Bromobenzene	<0.30	0.30	0.0063	mg/kg dry	1	"	"	"	"	
Bromochloromethane	<0.30	0.30	0.0089	mg/kg dry	1	"	"	"	"	
Bromodichloromethane	<0.30	0.30	0.0052	mg/kg dry	1	"	"	"	"	
Bromoform	<0.60	0.60	0.0084	mg/kg dry	1	"	"	"	"	
Bromomethane	<0.60	0.60	0.0072	mg/kg dry	1	"	"	"	"	
Carbon tetrachloride	<0.30	0.30	0.0072	mg/kg dry	1	"	"	"	"	
Chlorobenzene	<0.30	0.30	0.0031	mg/kg dry	1	"	"	"	"	
Chloroethane	<0.30	0.30	0.0087	mg/kg dry	1	"	"	"	"	
Chloroform	<0.30	0.30	0.0028	mg/kg dry	1	"	"	"	"	
Chloromethane	<0.30	0.30	0.0081	mg/kg dry	1	"	"	"	"	
cis-1,2-Dichloroethene	<0.30	0.30	0.0022	mg/kg dry	1	"	"	"	"	

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Barr Engineering Co.	Project:	23691588	
4700 W 77th St	Project Number:	23691588.00	Work Order #: 1405054
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported: 11/21/14

VOC 8260B
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B-04_11.5-14 (1405054-03) Soil Sampled: 11/03/14 00:35 Received: 11/05/14 9:05										
cis-1,3-Dichloropropene	<0.30	0.30	0.0059	mg/kg dry	1	B4K1109	11/10/14	11/11/14	EPA 8260B	
Dibromochloromethane	<0.30	0.30	0.0055	mg/kg dry	1	"	"	"	"	
Dibromomethane	<0.30	0.30	0.0055	mg/kg dry	1	"	"	"	"	
Dichlorodifluoromethane	<0.60	0.60	0.011	mg/kg dry	1	"	"	"	"	
Dichlorofluoromethane	<0.30	0.30	0.0095	mg/kg dry	1	"	"	"	"	T-1
Ethyl ether	<0.60	0.60	0.0060	mg/kg dry	1	"	"	"	"	
Ethylbenzene	<0.30	0.30	0.0031	mg/kg dry	1	"	"	"	"	
Hexachlorobutadiene	<1.2	1.2	0.22	mg/kg dry	1	"	"	"	"	
Isopropylbenzene	<0.30	0.30	0.0020	mg/kg dry	1	"	"	"	"	
m,p-Xylene	<0.60	0.60	0.012	mg/kg dry	1	"	"	"	"	
Methyl isobutyl ketone	<0.60	0.60	0.017	mg/kg dry	1	"	"	"	"	
Methyl tert-butyl ether	<0.30	0.30	0.0066	mg/kg dry	1	"	"	"	"	
Methylene chloride	<1.2	1.2	0.0047	mg/kg dry	1	"	"	"	"	
Naphthalene	**0.91**	0.60	0.014	mg/kg dry	1	"	"	"	"	
n-Butylbenzene	<0.30	0.30	0.0066	mg/kg dry	1	"	"	"	"	
n-Propylbenzene	<0.30	0.30	0.0037	mg/kg dry	1	"	"	"	"	
o-Xylene	<0.30	0.30	0.0047	mg/kg dry	1	"	"	"	"	
p-Isopropyltoluene	<0.30	0.30	0.0036	mg/kg dry	1	"	"	"	"	
sec-Butylbenzene	<0.30	0.30	0.0042	mg/kg dry	1	"	"	"	"	
Styrene	<0.30	0.30	0.0065	mg/kg dry	1	"	"	"	"	
tert-Butylbenzene	<0.30	0.30	0.0033	mg/kg dry	1	"	"	"	"	
Tetrachloroethene	<0.30	0.30	0.0060	mg/kg dry	1	"	"	"	"	
Tetrahydrofuran	<2.4	2.4	0.039	mg/kg dry	1	"	"	"	"	T-1
Toluene	<0.30	0.30	0.0042	mg/kg dry	1	"	"	"	"	
trans-1,2-Dichloroethene	<0.30	0.30	0.0054	mg/kg dry	1	"	"	"	"	
trans-1,3-Dichloropropene	<0.30	0.30	0.0076	mg/kg dry	1	"	"	"	"	
Trichloroethene	<0.30	0.30	0.0046	mg/kg dry	1	"	"	"	"	
Trichlorofluoromethane	<0.30	0.30	0.0075	mg/kg dry	1	"	"	"	"	
Vinyl chloride	<0.30	0.30	0.0073	mg/kg dry	1	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	*94.0*			*80-124 %*		"	"	"	"	
Surrogate: Dibromofluoromethane	*93.9*			*77.1-123 %*		"	"	"	"	
Surrogate: Toluene-d8	*94.3*			*78.1-125 %*		"	"	"	"	
B-17_2.5-4 (1405054-08) Soil Sampled: 11/03/14 05:10 Received: 11/05/14 9:05										
1,1,1,2-Tetrachloroethane	<0.28	0.28	0.0057	mg/kg dry	1	B4K1116	11/11/14	11/11/14	EPA 8260B	
1,1,1-Trichloroethane	<0.28	0.28	0.0062	mg/kg dry	1	"	"	"	"	
1,1,2,2-Tetrachloroethane	<0.28	0.28	0.0063	mg/kg dry	1	"	"	"	"	
1,1,2-Trichloroethane	<0.28	0.28	0.0081	mg/kg dry	1	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	<0.28	0.28	0.010	mg/kg dry	1	"	"	"	"	T-1
1,1-Dichloroethane	<0.28	0.28	0.0037	mg/kg dry	1	"	"	"	"	

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Barr Engineering Co.	Project:	23691588			
4700 W 77th St	Project Number:	23691588.00		Work Order #:	1405054
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen		Date Reported:	11/21/14

VOC 8260B
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B-17_2.5-4 (1405054-08) Soil Sampled: 11/03/14 05:10 Received: 11/05/14 9:05										
1,1-Dichloroethene	<0.28	0.28	0.0064	mg/kg dry	1	B4K1116	11/11/14	11/11/14	EPA 8260B	
1,1-Dichloropropene	<0.28	0.28	0.0061	mg/kg dry	1	"	"	"	"	
1,2,3-Trichlorobenzene	<0.56	0.56	0.0057	mg/kg dry	1	"	"	"	"	
1,2,3-Trichloropropane	<0.28	0.28	0.0051	mg/kg dry	1	"	"	"	"	
1,2,4-Trichlorobenzene	<0.56	0.56	0.0060	mg/kg dry	1	"	"	"	"	
1,2,4-Trimethylbenzene	<0.28	0.28	0.0037	mg/kg dry	1	"	"	"	"	
1,2-Dibromo-3-chloropropane	<0.56	0.56	0.0092	mg/kg dry	1	"	"	"	"	
1,2-Dibromoethane (EDB)	<0.28	0.28	0.0080	mg/kg dry	1	"	"	"	"	
1,2-Dichlorobenzene	<0.28	0.28	0.0038	mg/kg dry	1	"	"	"	"	
1,2-Dichloroethane	<0.28	0.28	0.0061	mg/kg dry	1	"	"	"	"	
1,2-Dichloropropane	<0.28	0.28	0.0053	mg/kg dry	1	"	"	"	"	
1,3,5-Trimethylbenzene	<0.28	0.28	0.0028	mg/kg dry	1	"	"	"	"	
1,3-Dichlorobenzene	<0.28	0.28	0.0042	mg/kg dry	1	"	"	"	"	
1,3-Dichloropropane	<0.28	0.28	0.0061	mg/kg dry	1	"	"	"	"	
1,4-Dichlorobenzene	<0.28	0.28	0.0056	mg/kg dry	1	"	"	"	"	
2,2-Dichloropropane	<0.56	0.56	0.0097	mg/kg dry	1	"	"	"	"	
2-Butanone	<2.2	2.2	0.016	mg/kg dry	1	"	"	"	"	
2-Chlorotoluene	<0.28	0.28	0.0024	mg/kg dry	1	"	"	"	"	
4-Chlorotoluene	<0.28	0.28	0.0040	mg/kg dry	1	"	"	"	"	
Acetone	<2.2	2.2	0.11	mg/kg dry	1	"	"	"	"	
Allyl chloride	<0.56	0.56	0.0092	mg/kg dry	1	"	"	"	"	
Benzene	<0.28	0.28	0.0030	mg/kg dry	1	"	"	"	"	
Bromobenzene	<0.28	0.28	0.0058	mg/kg dry	1	"	"	"	"	
Bromochloromethane	<0.28	0.28	0.0082	mg/kg dry	1	"	"	"	"	
Bromodichloromethane	<0.28	0.28	0.0048	mg/kg dry	1	"	"	"	"	
Bromoform	<0.56	0.56	0.0078	mg/kg dry	1	"	"	"	"	
Bromomethane	<0.56	0.56	0.0067	mg/kg dry	1	"	"	"	"	
Carbon tetrachloride	<0.28	0.28	0.0067	mg/kg dry	1	"	"	"	"	
Chlorobenzene	<0.28	0.28	0.0029	mg/kg dry	1	"	"	"	"	
Chloroethane	<0.28	0.28	0.0080	mg/kg dry	1	"	"	"	"	
Chloroform	<0.28	0.28	0.0026	mg/kg dry	1	"	"	"	"	
Chloromethane	<0.28	0.28	0.0074	mg/kg dry	1	"	"	"	"	
cis-1,2-Dichloroethene	<0.28	0.28	0.0020	mg/kg dry	1	"	"	"	"	
cis-1,3-Dichloropropene	<0.28	0.28	0.0054	mg/kg dry	1	"	"	"	"	
Dibromochloromethane	<0.28	0.28	0.0051	mg/kg dry	1	"	"	"	"	
Dibromomethane	<0.28	0.28	0.0051	mg/kg dry	1	"	"	"	"	
Dichlorodifluoromethane	<0.56	0.56	0.010	mg/kg dry	1	"	"	"	"	
Dichlorofluoromethane	<0.28	0.28	0.0088	mg/kg dry	1	"	"	"	"	T-1
Ethyl ether	<0.56	0.56	0.0056	mg/kg dry	1	"	"	"	"	

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Barr Engineering Co.	Project:	23691588	
4700 W 77th St	Project Number:	23691588.00	Work Order #: 1405054
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported: 11/21/14

VOC 8260B
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B-17_2.5-4 (1405054-08) Soil Sampled: 11/03/14 05:10 Received: 11/05/14 9:05										
Ethylbenzene	<0.28	0.28	0.0029	mg/kg dry	1	B4K1116	11/11/14	11/11/14	EPA 8260B	
Hexachlorobutadiene	<1.1	1.1	0.20	mg/kg dry	1	"	"	"	"	
Isopropylbenzene	<0.28	0.28	0.0019	mg/kg dry	1	"	"	"	"	
m,p-Xylene	<0.56	0.56	0.011	mg/kg dry	1	"	"	"	"	
Methyl isobutyl ketone	<0.56	0.56	0.016	mg/kg dry	1	"	"	"	"	
Methyl tert-butyl ether	<0.28	0.28	0.0061	mg/kg dry	1	"	"	"	"	
Methylene chloride	<1.1	1.1	0.0043	mg/kg dry	1	"	"	"	"	
Naphthalene	<0.56	0.56	0.013	mg/kg dry	1	"	"	"	"	
n-Butylbenzene	<0.28	0.28	0.0061	mg/kg dry	1	"	"	"	"	
n-Propylbenzene	<0.28	0.28	0.0034	mg/kg dry	1	"	"	"	"	
o-Xylene	<0.28	0.28	0.0043	mg/kg dry	1	"	"	"	"	
p-Isopropyltoluene	<0.28	0.28	0.0033	mg/kg dry	1	"	"	"	"	
sec-Butylbenzene	<0.28	0.28	0.0039	mg/kg dry	1	"	"	"	"	
Styrene	<0.28	0.28	0.0060	mg/kg dry	1	"	"	"	"	
tert-Butylbenzene	<0.28	0.28	0.0030	mg/kg dry	1	"	"	"	"	
Tetrachloroethene	<0.28	0.28	0.0056	mg/kg dry	1	"	"	"	"	
Tetrahydrofuran	<2.2	2.2	0.036	mg/kg dry	1	"	"	"	"	T-1
Toluene	<0.28	0.28	0.0039	mg/kg dry	1	"	"	"	"	
trans-1,2-Dichloroethene	<0.28	0.28	0.0050	mg/kg dry	1	"	"	"	"	
trans-1,3-Dichloropropene	<0.28	0.28	0.0070	mg/kg dry	1	"	"	"	"	
Trichloroethene	<0.28	0.28	0.0042	mg/kg dry	1	"	"	"	"	
Trichlorofluoromethane	<0.28	0.28	0.0069	mg/kg dry	1	"	"	"	"	
Vinyl chloride	<0.28	0.28	0.0068	mg/kg dry	1	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	*94.2*			*80-124 %*		"	"	"	"	
Surrogate: Dibromofluoromethane	*91.2*			*77.1-123 %*		"	"	"	"	
Surrogate: Toluene-d8	*93.9*			*78.1-125 %*		"	"	"	"	

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Barr Engineering Co.	Project:	23691588	
4700 W 77th St	Project Number:	23691588.00	Work Order #: 1405054
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported: 11/21/14

7471B
TestAmerica Cedar Falls

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B-04_11.5-14 (1405054-03) Soil Sampled: 11/03/14 00:35 Received: 11/05/14 9:05										
Mercury	**0.0329**	0.0230	0.00418	mg/Kg dry	1	67497	11/07/14	11/07/14	7471B Mercury in Solid or Semisolid Waste (Manual	
B-17_2.5-4 (1405054-08) Soil Sampled: 11/03/14 05:10 Received: 11/05/14 9:05										
Mercury	<0.0219	0.0219	0.00399	mg/Kg dry	1	67497	11/07/14	11/07/14	7471B Mercury in Solid or Semisolid Waste (Manual	

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Barr Engineering Co.	Project:	23691588		
4700 W 77th St	Project Number:	23691588.00	Work Order #:	1405054
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported:	11/21/14

DRO/8015D - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1102 - Sonication (Wisc DRO)											
Blank (B4K1102-BLK1)					Prepared: 11/11/14		Analyzed: 11/13/14				
Diesel Range Organics	< 8.0	8.0	1.3	mg/kg wet							
Surrogate: Triacontane (C-30)	*12.7*			*mg/kg wet*	*16.0*		*79.2*	*70-130*			
LCS (B4K1102-BS1)					Prepared: 11/11/14		Analyzed: 11/13/14				
Diesel Range Organics	59.3	8.0	1.3	mg/kg wet	64.0		92.7	70-120			
Surrogate: Triacontane (C-30)	*14.0*			*mg/kg wet*	*16.0*		*87.5*	*70-130*			
LCS Dup (B4K1102-BSD1)					Prepared: 11/11/14		Analyzed: 11/14/14				
Diesel Range Organics	58.6	8.0	1.3	mg/kg wet	64.0		91.5	70-120	1.24	20	
Surrogate: Triacontane (C-30)	*14.8*			*mg/kg wet*	*16.0*		*92.7*	*70-130*			

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Barr Engineering Co.	Project:	23691588		
4700 W 77th St	Project Number:	23691588.00	Work Order #:	1405054
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported:	11/21/14

WI(95) GRO/8015D - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K0614 - EPA 5035 Soil (Purge and Trap)											
Blank (B4K0614-BLK1)					Prepared & Analyzed: 11/06/14						
1,2,4-Trimethylbenzene	< 0.025	0.025	0.0027	mg/kg wet							
1,3,5-Trimethylbenzene	< 0.025	0.025	0.0062	mg/kg wet							
Benzene	< 0.025	0.025	0.0029	mg/kg wet							
Ethylbenzene	< 0.025	0.025	0.0064	mg/kg wet							B-02
Gasoline range organics	< 5.0	5.0	0.54	mg/kg wet							
Methyl tert-butyl ether	< 0.025	0.025	0.0054	mg/kg wet							
Toluene	< 0.025	0.025	0.0041	mg/kg wet							
Xylenes (total)	< 0.075	0.075	0.014	mg/kg wet							
Surrogate: 4-Fluorochlorobenzene	*24.9*			*ug/L*	*25.0*		*99.5*	*80-150*			
LCS (B4K0614-BS1)					Prepared & Analyzed: 11/06/14						
1,2,4-Trimethylbenzene	106			ug/L	100		106	80-120			
1,3,5-Trimethylbenzene	100			ug/L	100		100	80-120			
Benzene	103			ug/L	100		103	80-120			
Ethylbenzene	104			ug/L	100		104	80-120			
Gasoline range organics	968			ug/L	1000		96.8	80-120			
Methyl tert-butyl ether	88.6			ug/L	100		88.6	80-120			
Toluene	104			ug/L	100		104	80-120			
Xylenes (total)	315			ug/L	300		105	80-120			
Surrogate: 4-Fluorochlorobenzene	*25.2*			*ug/L*	*25.0*		*101*	*80-150*			
LCS Dup (B4K0614-BSD1)					Prepared: 11/06/14 Analyzed: 11/07/14						
1,2,4-Trimethylbenzene	115			ug/L	100		115	80-120	7.79	20	
1,3,5-Trimethylbenzene	105			ug/L	100		105	80-120	5.20	20	
Benzene	102			ug/L	100		102	80-120	1.61	20	
Ethylbenzene	103			ug/L	100		103	80-120	0.820	20	
Gasoline range organics	983			ug/L	1000		98.3	80-120	1.47	20	
Methyl tert-butyl ether	88.8			ug/L	100		88.8	80-120	0.230	20	
Toluene	102			ug/L	100		102	80-120	2.23	20	
Xylenes (total)	311			ug/L	300		104	80-120	1.23	20	
Surrogate: 4-Fluorochlorobenzene	*25.1*			*ug/L*	*25.0*		*101*	*80-150*			
Duplicate (B4K0614-DUP1)		**Source: 1405054-01**			Prepared & Analyzed: 11/06/14						
Gasoline range organics	1.69	6.0	0.65	mg/kg dry		<6.0			NA	20	
Surrogate: 4-Fluorochlorobenzene	*25.1*			*ug/L*	*25.0*		*100*	*80-150*			
Matrix Spike (B4K0614-MS1)		**Source: 1405054-07**			Prepared: 11/06/14 Analyzed: 11/07/14						
1,2,4-Trimethylbenzene	87.2			ug/L	100	<	87.2	80-120			
1,3,5-Trimethylbenzene	88.0			ug/L	100	<	88.0	80-120			
Benzene	100			ug/L	100	<	100	80-120			
Ethylbenzene	101			ug/L	100	0.291	100	80-120			
Methyl tert-butyl ether	117			ug/L	100	<	117	80-120			

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Barr Engineering Co.	Project:	23691588		
4700 W 77th St	Project Number:	23691588.00	Work Order #:	1405054
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported:	11/21/14

WI(95) GRO/8015D - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K0614 - EPA 5035 Soil (Purge and Trap)											
Matrix Spike (B4K0614-MS1)		**Source: 1405054-07**			Prepared: 11/06/14		Analyzed: 11/07/14				
Toluene	100			ug/L	100	<	100	80-120			
Xylenes (total)	302			ug/L	300	0.127	101	80-120			
Surrogate: 4-Fluorochlorobenzene	*24.8*			*ug/L*	*25.0*		*99.2*	*80-150*			

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4700 W 77th St	Project Number:	23691588.00	Work Order #: 1405054
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported: 11/21/14

TOTAL METALS ANALYSIS - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K0527 - EPA 3050B											
Blank (B4K0527-BLK1)					Prepared: 11/05/14		Analyzed: 11/10/14				
Arsenic	< 0.50	0.50	0.12	mg/kg wet							
Barium	< 1.0	1.0	0.055	mg/kg wet							
Cadmium	< 0.25	0.25	0.033	mg/kg wet							
Chromium	< 0.50	0.50	0.13	mg/kg wet							
Lead	< 1.0	1.0	0.14	mg/kg wet							
Selenium	< 1.0	1.0	0.16	mg/kg wet							
Silver	< 0.25	0.25	0.028	mg/kg wet							
LCS (B4K0527-BS1)					Prepared: 11/05/14		Analyzed: 11/10/14				
Arsenic	43.2	0.50	0.12	mg/kg wet	39.9		108	80-120			
Barium	42.9	1.0	0.055	mg/kg wet	39.9		107	80-120			
Cadmium	43.5	0.25	0.033	mg/kg wet	39.9		109	80-120			
Chromium	42.3	0.50	0.13	mg/kg wet	39.9		106	80-120			
Lead	44.3	1.0	0.14	mg/kg wet	39.9		111	80-120			
Selenium	45.6	1.0	0.16	mg/kg wet	39.9		114	80-120			
Silver	4.39	0.25	0.028	mg/kg wet	3.99		110	80-120			
LCS Dup (B4K0527-BSD1)					Prepared: 11/05/14		Analyzed: 11/10/14				
Arsenic	42.5	0.50	0.12	mg/kg wet	39.9		106	80-120	1.64	20	
Barium	42.5	1.0	0.055	mg/kg wet	39.9		107	80-120	0.787	20	
Cadmium	42.7	0.25	0.033	mg/kg wet	39.9		107	80-120	2.04	20	
Chromium	41.8	0.50	0.13	mg/kg wet	39.9		105	80-120	1.22	20	
Lead	43.4	1.0	0.14	mg/kg wet	39.9		109	80-120	1.99	20	
Selenium	44.8	1.0	0.16	mg/kg wet	39.9		112	80-120	1.66	20	
Silver	4.32	0.25	0.028	mg/kg wet	3.99		108	80-120	1.60	20	
Matrix Spike (B4K0527-MS1)		**Source: 1405038-01**			Prepared: 11/05/14		Analyzed: 11/10/14				
Arsenic	50.8	0.60	0.15	mg/kg dry	47.1	2.92	102	75-125			
Barium	114	1.2	0.065	mg/kg dry	47.1	56.8	122	75-125			
Cadmium	47.9	0.30	0.039	mg/kg dry	47.1	0.380	101	75-125			
Chromium	58.5	0.60	0.16	mg/kg dry	47.1	10.6	102	75-125			
Lead	752	1.2	0.17	mg/kg dry	47.1	63.0	NR	75-125			M3
Selenium	46.1	1.2	0.20	mg/kg dry	47.1	<1.2	96.1	75-125			
Silver	4.89	0.30	0.033	mg/kg dry	4.71	<0.30	101	75-125			
Matrix Spike Dup (B4K0527-MSD1)		**Source: 1405038-01**			Prepared: 11/05/14		Analyzed: 11/10/14				
Arsenic	52.6	0.60	0.15	mg/kg dry	46.6	2.92	106	75-125	3.38	20	
Barium	135	1.2	0.065	mg/kg dry	46.6	56.8	167	75-125	16.5	20	M1
Cadmium	49.1	0.30	0.039	mg/kg dry	46.6	0.380	105	75-125	2.60	20	
Chromium	61.5	0.60	0.16	mg/kg dry	46.6	10.6	109	75-125	5.04	20	
Lead	348	1.2	0.17	mg/kg dry	46.6	63.0	611	75-125	73.4	20	M3, QR-04
Selenium	43.1	1.2	0.20	mg/kg dry	46.6	<1.2	90.6	75-125	6.81	20	

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Barr Engineering Co.	Project:	23691588		
4700 W 77th St	Project Number:	23691588.00	Work Order #:	1405054
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported:	11/21/14

TOTAL METALS ANALYSIS - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K0527 - EPA 3050B											
Matrix Spike Dup (B4K0527-MSD1)		**Source: 1405038-01**			Prepared: 11/05/14		Analyzed: 11/10/14				
Silver	4.87	0.30	0.033	mg/kg dry	4.66	<0.30	102	75-125	0.366	20	

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Barr Engineering Co.	Project:	23691588			
4700 W 77th St	Project Number:	23691588.00		Work Order #:	1405054
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen		Date Reported:	11/21/14

PAH 8270D - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1304 - EPA 3545 ASE Extraction											
Blank (B4K1304-BLK1)					Prepared & Analyzed: 11/13/14						
2-Chloronaphthalene	< 0.33	0.33	0.068	mg/kg wet							
2-Methylnaphthalene	< 0.33	0.33	0.080	mg/kg wet							
Acenaphthene	< 0.33	0.33	0.063	mg/kg wet							
Acenaphthylene	< 0.33	0.33	0.071	mg/kg wet							
Anthracene	< 0.33	0.33	0.069	mg/kg wet							
Benzo(a)anthracene	< 0.33	0.33	0.065	mg/kg wet							
Benzo(a)pyrene	< 0.33	0.33	0.070	mg/kg wet							
Benzo(b)fluoranthene	< 0.33	0.33	0.059	mg/kg wet							
Benzo(g,h,i)perylene	< 0.33	0.33	0.071	mg/kg wet							
Benzo(k)fluoranthene	< 0.33	0.33	0.070	mg/kg wet							
Chrysene	< 0.33	0.33	0.064	mg/kg wet							
Dibenz(a,h)anthracene	< 0.33	0.33	0.082	mg/kg wet							
Fluoranthene	< 0.33	0.33	0.068	mg/kg wet							
Fluorene	< 0.33	0.33	0.065	mg/kg wet							
Indeno (1,2,3-cd) pyrene	< 0.33	0.33	0.072	mg/kg wet							
Naphthalene	< 0.33	0.33	0.071	mg/kg wet							
Phenanthrene	< 0.33	0.33	0.066	mg/kg wet							
Pyrene	< 0.33	0.33	0.059	mg/kg wet							
Surrogate: 2-Fluorobiphenyl	*4.80*			*mg/kg wet*	*6.67*		*71.9*	*46.3-96.2*			
Surrogate: Nitrobenzene-d5	*4.45*			*mg/kg wet*	*6.67*		*66.8*	*49.3-94*			
Surrogate: Terphenyl-d14	*5.37*			*mg/kg wet*	*6.67*		*80.5*	*51.5-94.6*			
LCS (B4K1304-BS1)					Prepared: 11/13/14		Analyzed: 11/14/14				
Acenaphthylene	2.51	0.33	0.071	mg/kg wet	3.33		75.2	55-95			
Anthracene	2.67	0.33	0.069	mg/kg wet	3.33		80.2	60-100			
Benzo(a)anthracene	2.65	0.33	0.065	mg/kg wet	3.33		79.4	55-100			
Benzo(a)pyrene	3.05	0.33	0.070	mg/kg wet	3.33		91.6	55-100			
Benzo(b)fluoranthene	2.86	0.33	0.059	mg/kg wet	3.33		85.8	55-100			
Benzo(g,h,i)perylene	3.12	0.33	0.071	mg/kg wet	3.33		93.6	50-100			
Benzo(k)fluoranthene	3.02	0.33	0.070	mg/kg wet	3.33		90.6	55-100			
Chrysene	2.71	0.33	0.064	mg/kg wet	3.33		81.4	50-100			
Dibenz(a,h)anthracene	3.04	0.33	0.082	mg/kg wet	3.33		91.1	50-100			
Fluoranthene	2.61	0.33	0.068	mg/kg wet	3.33		78.2	55-100			
Fluorene	2.63	0.33	0.065	mg/kg wet	3.33		78.9	55-95			
Indeno (1,2,3-cd) pyrene	2.96	0.33	0.072	mg/kg wet	3.33		88.7	55-110			
Naphthalene	2.32	0.33	0.071	mg/kg wet	3.33		69.5	50-95			
Phenanthrene	2.67	0.33	0.066	mg/kg wet	3.33		80.2	60-100			
Surrogate: 2-Fluorobiphenyl	*4.35*			*mg/kg wet*	*6.67*		*65.3*	*46.3-96.2*			
Surrogate: Nitrobenzene-d5	*4.31*			*mg/kg wet*	*6.67*		*64.6*	*49.3-94*			
Surrogate: Terphenyl-d14	*5.26*			*mg/kg wet*	*6.67*		*79.0*	*51.5-94.6*			

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Barr Engineering Co.	Project:	23691588			
4700 W 77th St	Project Number:	23691588.00		Work Order #:	1405054
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen		Date Reported:	11/21/14

PAH 8270D - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1304 - EPA 3545 ASE Extraction											
Matrix Spike (B4K1304-MS1)		**Source: 1405071-13**			Prepared & Analyzed: 11/13/14						
Acenaphthylene	3.22	0.37	0.080	mg/kg dry	3.74	<0.37	86.2	40-100			
Anthracene	3.38	0.37	0.078	mg/kg dry	3.74	<0.37	90.4	45-100			
Benzo(a)anthracene	3.40	0.37	0.073	mg/kg dry	3.74	<0.37	90.8	45-100			
Benzo(a)pyrene	3.97	0.37	0.079	mg/kg dry	3.74	<0.37	106	40-100			M1
Benzo(b)fluoranthene	4.03	0.37	0.066	mg/kg dry	3.74	<0.37	104	40-100			M1
Benzo(g,h,i)perylene	3.52	0.37	0.080	mg/kg dry	3.74	<0.37	91.7	35-110			
Benzo(k)fluoranthene	4.21	0.37	0.079	mg/kg dry	3.74	<0.37	113	40-100			M1
Chrysene	3.63	0.37	0.072	mg/kg dry	3.74	<0.37	97.1	40-100			
Dibenz(a,h)anthracene	3.49	0.37	0.092	mg/kg dry	3.74	<0.37	93.3	35-110			
Fluoranthene	3.26	0.37	0.076	mg/kg dry	3.74	<0.37	87.1	45-100			
Fluorene	3.38	0.37	0.073	mg/kg dry	3.74	<0.37	90.3	45-100			
Indeno (1,2,3-cd) pyrene	3.35	0.37	0.081	mg/kg dry	3.74	<0.37	89.5	35-110			
Naphthalene	3.03	0.37	0.080	mg/kg dry	3.74	<0.37	81.0	35-100			
Phenanthrene	3.44	0.37	0.074	mg/kg dry	3.74	<0.37	92.1	45-100			
Surrogate: 2-Fluorobiphenyl	*5.61*			*mg/kg dry*	*7.48*		*75.0*	*46.3-96.2*			
Surrogate: Nitrobenzene-d5	*5.62*			*mg/kg dry*	*7.48*		*75.1*	*49.3-94*			
Surrogate: Terphenyl-d14	*6.85*			*mg/kg dry*	*7.48*		*91.6*	*51.5-94.6*			
Matrix Spike Dup (B4K1304-MSD1)		**Source: 1405071-13**			Prepared & Analyzed: 11/13/14						
Acenaphthylene	3.13	0.37	0.080	mg/kg dry	3.74	<0.37	83.6	40-100	3.08	20	
Anthracene	3.43	0.37	0.078	mg/kg dry	3.74	<0.37	91.8	45-100	1.40	20	
Benzo(a)anthracene	3.39	0.37	0.073	mg/kg dry	3.74	<0.37	90.6	45-100	0.226	20	
Benzo(a)pyrene	4.04	0.37	0.079	mg/kg dry	3.74	<0.37	108	40-100	1.69	20	M1
Benzo(b)fluoranthene	4.03	0.37	0.066	mg/kg dry	3.74	<0.37	105	40-100	0.0573	20	M1
Benzo(g,h,i)perylene	3.52	0.37	0.080	mg/kg dry	3.74	<0.37	91.9	35-110	0.182	20	
Benzo(k)fluoranthene	4.08	0.37	0.079	mg/kg dry	3.74	<0.37	109	40-100	3.18	20	M1
Chrysene	3.62	0.37	0.072	mg/kg dry	3.74	<0.37	96.7	40-100	0.389	20	
Dibenz(a,h)anthracene	3.50	0.37	0.092	mg/kg dry	3.74	<0.37	93.7	35-110	0.348	20	
Fluoranthene	3.27	0.37	0.076	mg/kg dry	3.74	<0.37	87.4	45-100	0.285	20	
Fluorene	3.31	0.37	0.073	mg/kg dry	3.74	<0.37	88.7	45-100	1.86	20	
Indeno (1,2,3-cd) pyrene	3.32	0.37	0.081	mg/kg dry	3.74	<0.37	88.9	35-110	0.784	20	
Naphthalene	2.83	0.37	0.080	mg/kg dry	3.74	<0.37	75.6	35-100	6.96	20	
Phenanthrene	3.49	0.37	0.074	mg/kg dry	3.74	<0.37	93.2	45-100	1.20	20	
Surrogate: 2-Fluorobiphenyl	*5.40*			*mg/kg dry*	*7.48*		*72.3*	*46.3-96.2*			
Surrogate: Nitrobenzene-d5	*5.34*			*mg/kg dry*	*7.48*		*71.4*	*49.3-94*			
Surrogate: Terphenyl-d14	*6.78*			*mg/kg dry*	*7.48*		*90.7*	*51.5-94.6*			

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Barr Engineering Co.	Project:	23691588		
4700 W 77th St	Project Number:	23691588.00	Work Order #:	1405054
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported:	11/21/14

PERCENT SOLIDS - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1108 - General Preparation											
Duplicate (B4K1108-DUP1)		**Source: 1405054-08**			Prepared & Analyzed: 11/11/14						
% Solids	89.0			%		90.0			1.12	20	
Duplicate (B4K1108-DUP2)		**Source: 1405086-03**			Prepared & Analyzed: 11/11/14						
% Solids	91.0			%		91.0			0.00	20	

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Barr Engineering Co.	Project:	23691588		
4700 W 77th St	Project Number:	23691588.00	Work Order #:	1405054
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported:	11/21/14

SVOC 8270D - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1706 - EPA 3545 ASE Extraction											
Blank (B4K1706-BLK1)					Prepared: 11/17/14 Analyzed: 11/18/14						
1,2,4-Trichlorobenzene	< 0.33	0.33	0.075	mg/kg wet							
1,2-Dichlorobenzene	< 0.33	0.33	0.067	mg/kg wet							
1,2-Diphenylhydrazine as Azobenzene	< 0.33	0.33	0.058	mg/kg wet							
1,3-Dichlorobenzene	< 0.33	0.33	0.069	mg/kg wet							
1,4-Dichlorobenzene	< 0.33	0.33	0.068	mg/kg wet							
2,3,4,6-Tetrachlorophenol	< 0.67	0.67	0.19	mg/kg wet							
2,4,5-Trichlorophenol	< 0.67	0.67	0.071	mg/kg wet							
2,4,6-Trichlorophenol	< 0.67	0.67	0.16	mg/kg wet							
2,4-Dichlorophenol	< 0.67	0.67	0.15	mg/kg wet							
2,4-Dimethylphenol	< 0.67	0.67	0.13	mg/kg wet							
2,4-Dinitrophenol	< 0.67	0.67	0.071	mg/kg wet							
2,4-Dinitrotoluene	< 0.33	0.33	0.068	mg/kg wet							
2,6-Dichlorophenol	< 0.67	0.67	0.13	mg/kg wet							
2,6-Dinitrotoluene	< 0.33	0.33	0.077	mg/kg wet							
2-Chloronaphthalene	< 0.33	0.33	0.068	mg/kg wet							
2-Chlorophenol	< 0.67	0.67	0.15	mg/kg wet							
2-Methylnaphthalene	< 0.33	0.33	0.080	mg/kg wet							
2-Methylphenol	< 0.67	0.67	0.082	mg/kg wet							
2-Nitroaniline	< 0.33	0.33	0.069	mg/kg wet							
2-Nitrophenol	< 0.67	0.67	0.18	mg/kg wet							
3&4-Methylphenol	< 0.67	0.67	0.082	mg/kg wet							
3,3´-Dichlorobenzidine	< 1.6	1.6	0.45	mg/kg wet							
3-Nitroaniline	< 0.33	0.33	0.072	mg/kg wet							
4,6-Dinitro-2-methylphenol	< 0.67	0.67	0.11	mg/kg wet							
4-Bromophenyl phenyl ether	< 0.33	0.33	0.068	mg/kg wet							
4-Chloro-3-methylphenol	< 0.67	0.67	0.14	mg/kg wet							
4-Chloroaniline	< 0.67	0.67	0.067	mg/kg wet							
4-Chlorophenyl phenyl ether	< 0.33	0.33	0.068	mg/kg wet							
4-Nitroaniline	< 0.33	0.33	0.083	mg/kg wet							
4-Nitrophenol	< 0.67	0.67	0.17	mg/kg wet							
Acenaphthene	< 0.33	0.33	0.063	mg/kg wet							
Acenaphthylene	< 0.33	0.33	0.071	mg/kg wet							
Aniline	< 0.67	0.67	0.066	mg/kg wet							
Anthracene	< 0.33	0.33	0.069	mg/kg wet							
Benzidine	< 2.5	2.5	0.44	mg/kg wet							
Benzo(a)anthracene	< 0.33	0.33	0.065	mg/kg wet							
Benzo(a)pyrene	< 0.33	0.33	0.070	mg/kg wet							
Benzo(b)fluoranthene	< 0.33	0.33	0.059	mg/kg wet							
Benzo(g,h,i)perylene	< 0.33	0.33	0.071	mg/kg wet							

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Barr Engineering Co.	Project:	23691588			
4700 W 77th St	Project Number:	23691588.00		Work Order #:	1405054
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen		Date Reported:	11/21/14

SVOC 8270D - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1706 - EPA 3545 ASE Extraction											
Blank (B4K1706-BLK1)					Prepared: 11/17/14	Analyzed: 11/18/14					
Benzo(k)fluoranthene	< 0.33	0.33	0.070	mg/kg wet							
Benzoic acid	< 0.33	0.33	0.064	mg/kg wet							
Benzyl alcohol	< 0.67	0.67	0.15	mg/kg wet							
Bis(2-chloroethoxy)methane	< 0.33	0.33	0.077	mg/kg wet							
Bis(2-chloroethyl)ether	< 0.33	0.33	0.069	mg/kg wet							
Bis(2-chloroisopropyl)ether	< 0.33	0.33	0.078	mg/kg wet							
Bis(2-ethylhexyl)phthalate	< 0.33	0.33	0.081	mg/kg wet							
Butyl benzyl phthalate	< 0.33	0.33	0.083	mg/kg wet							
Carbazole	< 0.33	0.33	0.076	mg/kg wet							
Chrysene	< 0.33	0.33	0.064	mg/kg wet							
Dibenz(a,h)anthracene	< 0.33	0.33	0.082	mg/kg wet							
Dibenzofuran	< 0.33	0.33	0.068	mg/kg wet							
Diethyl phthalate	< 0.33	0.33	0.063	mg/kg wet							
Dimethyl phthalate	< 0.33	0.33	0.069	mg/kg wet							
Di-n-butyl phthalate	< 0.33	0.33	0.079	mg/kg wet							
Di-n-octyl phthalate	< 0.33	0.33	0.10	mg/kg wet							
Fluoranthene	< 0.33	0.33	0.068	mg/kg wet							
Fluorene	< 0.33	0.33	0.065	mg/kg wet							
Hexachlorobenzene	< 0.33	0.33	0.062	mg/kg wet							
Hexachlorobutadiene	< 0.33	0.33	0.077	mg/kg wet							
Hexachlorocyclopentadiene	< 0.33	0.33	0.069	mg/kg wet							
Hexachloroethane	< 0.33	0.33	0.082	mg/kg wet							
Indeno (1,2,3-cd) pyrene	< 0.33	0.33	0.072	mg/kg wet							
Isophorone	< 0.33	0.33	0.076	mg/kg wet							
Naphthalene	< 0.33	0.33	0.071	mg/kg wet							
Nitrobenzene	< 0.33	0.33	0.080	mg/kg wet							
N-Nitrosodimethylamine	< 0.33	0.33	0.070	mg/kg wet							
N-Nitrosodi-n-propylamine	< 0.33	0.33	0.073	mg/kg wet							
N-Nitrosodiphenylamine	< 0.33	0.33	0.067	mg/kg wet							
Pentachlorophenol	< 0.67	0.67	0.19	mg/kg wet							
Phenanthrene	< 0.33	0.33	0.066	mg/kg wet							
Phenol	< 0.67	0.67	0.14	mg/kg wet							
Pyrene	< 0.33	0.33	0.059	mg/kg wet							
Surrogate: 2,4,6-Tribromophenol	*5.62*			*mg/kg wet*	*6.67*		*84.3*	*53-107*			
Surrogate: 2-Fluorobiphenyl	*5.16*			*mg/kg wet*	*6.67*		*77.3*	*53.9-97.9*			
Surrogate: 2-Fluorophenol	*4.28*			*mg/kg wet*	*6.67*		*64.3*	*42.5-94.9*			
Surrogate: Nitrobenzene-d5	*4.80*			*mg/kg wet*	*6.67*		*71.9*	*48.9-100*			
Surrogate: Phenol-d6	*4.78*			*mg/kg wet*	*6.67*		*71.7*	*50.4-99.6*			
Surrogate: Terphenyl-d14	*4.91*			*mg/kg wet*	*6.67*		*73.6*	*51-99.6*			

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LEGEND Technical Services, Inc.
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Barr Engineering Co.	Project:	23691588			
4700 W 77th St	Project Number:	23691588.00		Work Order #:	1405054
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen		Date Reported:	11/21/14

SVOC 8270D - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1706 - EPA 3545 ASE Extraction											
LCS (B4K1706-BS1)					Prepared: 11/17/14		Analyzed: 11/18/14				
1,2,4-Trichlorobenzene	2.13	0.33	0.075	mg/kg wet	3.33		63.9	50-100			
1,4-Dichlorobenzene	2.05	0.33	0.068	mg/kg wet	3.33		61.5	40-80			
2,4-Dinitrotoluene	2.46	0.33	0.068	mg/kg wet	3.33		73.9	50-90			
2-Chlorophenol	2.14	0.67	0.15	mg/kg wet	3.33		64.2	50-85			
4-Chloro-3-methylphenol	2.18	0.67	0.14	mg/kg wet	3.33		65.3	55-90			
4-Nitrophenol	2.68	0.67	0.17	mg/kg wet	3.33		80.3	45-100			
Anthracene	2.44	0.33	0.069	mg/kg wet	3.33		73.1	55-95			
Benzo(a)anthracene	2.41	0.33	0.065	mg/kg wet	3.33		72.3	55-100			
Benzo(a)pyrene	3.03	0.33	0.070	mg/kg wet	3.33		90.8	55-100			
Chrysene	2.49	0.33	0.064	mg/kg wet	3.33		74.6	55-100			
Fluoranthene	2.30	0.33	0.068	mg/kg wet	3.33		68.9	55-95			
Fluorene	2.40	0.33	0.065	mg/kg wet	3.33		71.9	55-95			
N-Nitrosodi-n-propylamine	2.17	0.33	0.073	mg/kg wet	3.33		65.2	50-90			
Pentachlorophenol	2.07	0.67	0.19	mg/kg wet	3.33		62.1	35-95			
Phenanthrene	2.44	0.33	0.066	mg/kg wet	3.33		73.2	55-95			
Phenol	1.99	0.67	0.14	mg/kg wet	3.33		59.6	50-85			
Surrogate: 2,4,6-Tribromophenol	*4.55*			*mg/kg wet*	*6.67*		*68.3*	*53-107*			
Surrogate: 2-Fluorobiphenyl	*4.19*			*mg/kg wet*	*6.67*		*62.9*	*53.9-97.9*			
Surrogate: 2-Fluorophenol	*3.93*			*mg/kg wet*	*6.67*		*59.0*	*42.5-94.9*			
Surrogate: Nitrobenzene-d5	*4.07*			*mg/kg wet*	*6.67*		*61.0*	*48.9-100*			
Surrogate: Phenol-d6	*4.01*			*mg/kg wet*	*6.67*		*60.2*	*50.4-99.6*			
Surrogate: Terphenyl-d14	*3.70*			*mg/kg wet*	*6.67*		*55.5*	*51-99.6*			
Matrix Spike (B4K1706-MS1)		**Source: 1405115-01**			Prepared: 11/17/14		Analyzed: 11/18/14				
1,2,4-Trichlorobenzene	2.70	0.35	0.079	mg/kg dry	3.51	<0.35	77.0	35-100			
1,4-Dichlorobenzene	2.55	0.35	0.072	mg/kg dry	3.51	<0.35	72.7	30-85			
2,4-Dinitrotoluene	3.05	0.35	0.072	mg/kg dry	3.51	<0.35	86.9	45-95			
2-Chlorophenol	2.72	0.71	0.16	mg/kg dry	3.51	<0.71	77.4	35-100			
4-Chloro-3-methylphenol	2.71	0.71	0.15	mg/kg dry	3.51	<0.71	77.0	35-100			
4-Nitrophenol	3.35	0.71	0.18	mg/kg dry	3.51	<0.71	95.3	40-100			
Anthracene	3.02	0.35	0.073	mg/kg dry	3.51	<0.35	85.9	55-100			
Benzo(a)anthracene	2.95	0.35	0.068	mg/kg dry	3.51	<0.35	84.0	50-100			
Benzo(a)pyrene	3.87	0.35	0.074	mg/kg dry	3.51	<0.35	110	50-100			M1
Chrysene	3.20	0.35	0.067	mg/kg dry	3.51	<0.35	91.0	50-100			
Fluoranthene	2.81	0.35	0.072	mg/kg dry	3.51	<0.35	80.0	50-100			
Fluorene	3.02	0.35	0.068	mg/kg dry	3.51	<0.35	85.9	50-100			
N-Nitrosodi-n-propylamine	2.77	0.35	0.077	mg/kg dry	3.51	<0.35	78.8	35-100			
Pentachlorophenol	2.88	0.71	0.20	mg/kg dry	3.51	<0.71	82.0	30-100			
Phenanthrene	3.09	0.35	0.069	mg/kg dry	3.51	<0.35	88.0	55-100			
Phenol	2.55	0.71	0.15	mg/kg dry	3.51	<0.71	72.5	35-100			

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Barr Engineering Co.	Project:	23691588		
4700 W 77th St	Project Number:	23691588.00	Work Order #:	1405054
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported:	11/21/14

SVOC 8270D - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1706 - EPA 3545 ASE Extraction											
Matrix Spike (B4K1706-MS1)		**Source: 1405115-01**			Prepared: 11/17/14		Analyzed: 11/18/14				
Surrogate: 2,4,6-Tribromophenol	*5.57*			*mg/kg dry*	*7.03*		*79.3*	*53-107*			
Surrogate: 2-Fluorobiphenyl	*5.20*			*mg/kg dry*	*7.03*		*73.9*	*53.9-97.9*			
Surrogate: 2-Fluorophenol	*4.94*			*mg/kg dry*	*7.03*		*70.3*	*42.5-94.9*			
Surrogate: Nitrobenzene-d5	*5.03*			*mg/kg dry*	*7.03*		*71.7*	*48.9-100*			
Surrogate: Phenol-d6	*5.05*			*mg/kg dry*	*7.03*		*71.9*	*50.4-99.6*			
Surrogate: Terphenyl-d14	*4.97*			*mg/kg dry*	*7.03*		*70.8*	*51-99.6*			
Matrix Spike Dup (B4K1706-MSD1)		**Source: 1405115-01**			Prepared: 11/17/14		Analyzed: 11/18/14				
1,2,4-Trichlorobenzene	2.69	0.35	0.079	mg/kg dry	3.52	<0.35	76.6	35-100	0.366	20	
1,4-Dichlorobenzene	2.57	0.35	0.072	mg/kg dry	3.52	<0.35	73.0	30-85	0.512	20	
2,4-Dinitrotoluene	2.97	0.35	0.072	mg/kg dry	3.52	<0.35	84.3	45-95	2.81	20	
2-Chlorophenol	2.71	0.71	0.16	mg/kg dry	3.52	<0.71	77.1	35-100	0.174	20	
4-Chloro-3-methylphenol	2.63	0.71	0.15	mg/kg dry	3.52	<0.71	74.7	35-100	2.90	20	
4-Nitrophenol	3.20	0.71	0.18	mg/kg dry	3.52	<0.71	91.1	40-100	4.37	20	
Anthracene	3.00	0.35	0.073	mg/kg dry	3.52	<0.35	85.2	55-100	0.691	20	
Benzo(a)anthracene	2.85	0.35	0.068	mg/kg dry	3.52	<0.35	81.0	50-100	3.44	20	
Benzo(a)pyrene	3.66	0.35	0.074	mg/kg dry	3.52	<0.35	104	50-100	5.48	20	M1
Chrysene	3.19	0.35	0.067	mg/kg dry	3.52	<0.35	90.7	50-100	0.214	20	
Fluoranthene	2.74	0.35	0.072	mg/kg dry	3.52	<0.35	77.8	50-100	2.58	20	
Fluorene	2.95	0.35	0.068	mg/kg dry	3.52	<0.35	83.9	50-100	2.12	20	
N-Nitrosodi-n-propylamine	2.73	0.35	0.077	mg/kg dry	3.52	<0.35	77.7	35-100	1.25	20	
Pentachlorophenol	2.85	0.71	0.20	mg/kg dry	3.52	<0.71	81.0	30-100	1.04	20	
Phenanthrene	3.05	0.35	0.069	mg/kg dry	3.52	<0.35	86.8	55-100	1.24	20	
Phenol	2.53	0.71	0.15	mg/kg dry	3.52	<0.71	71.9	35-100	0.656	20	
Surrogate: 2,4,6-Tribromophenol	*5.54*			*mg/kg dry*	*7.04*		*78.8*	*53-107*			
Surrogate: 2-Fluorobiphenyl	*5.21*			*mg/kg dry*	*7.04*		*74.0*	*53.9-97.9*			
Surrogate: 2-Fluorophenol	*4.98*			*mg/kg dry*	*7.04*		*70.8*	*42.5-94.9*			
Surrogate: Nitrobenzene-d5	*5.12*			*mg/kg dry*	*7.04*		*72.8*	*48.9-100*			
Surrogate: Phenol-d6	*4.98*			*mg/kg dry*	*7.04*		*70.8*	*50.4-99.6*			
Surrogate: Terphenyl-d14	*5.66*			*mg/kg dry*	*7.04*		*80.5*	*51-99.6*			

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Barr Engineering Co.	Project:	23691588		
4700 W 77th St	Project Number:	23691588.00	Work Order #:	1405054
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported:	11/21/14

VOC 8260B - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1109 - EPA 5035 Soil (Purge and Trap)											
Blank (B4K1109-BLK1)					Prepared: 11/10/14 Analyzed: 11/11/14						
1,1,1,2-Tetrachloroethane	< 0.25	0.25	0.0051	mg/kg wet							
1,1,1-Trichloroethane	< 0.25	0.25	0.0056	mg/kg wet							
1,1,2,2-Tetrachloroethane	< 0.25	0.25	0.0057	mg/kg wet							
1,1,2-Trichloroethane	< 0.25	0.25	0.0073	mg/kg wet							
1,1,2-Trichlorotrifluoroethane	< 0.25	0.25	0.0091	mg/kg wet							
1,1-Dichloroethane	< 0.25	0.25	0.0033	mg/kg wet							
1,1-Dichloroethene	< 0.25	0.25	0.0058	mg/kg wet							
1,1-Dichloropropene	< 0.25	0.25	0.0055	mg/kg wet							
1,2,3-Trichlorobenzene	< 0.50	0.50	0.0051	mg/kg wet							
1,2,3-Trichloropropane	< 0.25	0.25	0.0046	mg/kg wet							
1,2,4-Trichlorobenzene	< 0.50	0.50	0.0054	mg/kg wet							
1,2,4-Trimethylbenzene	< 0.25	0.25	0.0033	mg/kg wet							
1,2-Dibromo-3-chloropropane	< 0.50	0.50	0.0083	mg/kg wet							
1,2-Dibromoethane (EDB)	< 0.25	0.25	0.0072	mg/kg wet							
1,2-Dichlorobenzene	< 0.25	0.25	0.0034	mg/kg wet							
1,2-Dichloroethane	< 0.25	0.25	0.0055	mg/kg wet							
1,2-Dichloropropane	< 0.25	0.25	0.0048	mg/kg wet							
1,3,5-Trimethylbenzene	< 0.25	0.25	0.0025	mg/kg wet							
1,3-Dichlorobenzene	< 0.25	0.25	0.0038	mg/kg wet							
1,3-Dichloropropane	< 0.25	0.25	0.0055	mg/kg wet							
1,4-Dichlorobenzene	< 0.25	0.25	0.0050	mg/kg wet							
2,2-Dichloropropane	< 0.50	0.50	0.0087	mg/kg wet							
2-Butanone	< 2.0	2.0	0.014	mg/kg wet							
2-Chlorotoluene	< 0.25	0.25	0.0022	mg/kg wet							
4-Chlorotoluene	< 0.25	0.25	0.0036	mg/kg wet							
Acetone	< 2.0	2.0	0.10	mg/kg wet							
Allyl chloride	< 0.50	0.50	0.0083	mg/kg wet							
Benzene	< 0.25	0.25	0.0027	mg/kg wet							
Bromobenzene	< 0.25	0.25	0.0052	mg/kg wet							
Bromochloromethane	< 0.25	0.25	0.0074	mg/kg wet							
Bromodichloromethane	< 0.25	0.25	0.0043	mg/kg wet							
Bromoform	< 0.50	0.50	0.0070	mg/kg wet							
Bromomethane	< 0.50	0.50	0.0060	mg/kg wet							
Carbon tetrachloride	< 0.25	0.25	0.0060	mg/kg wet							
Chlorobenzene	< 0.25	0.25	0.0026	mg/kg wet							
Chloroethane	< 0.25	0.25	0.0072	mg/kg wet							
Chloroform	< 0.25	0.25	0.0023	mg/kg wet							
Chloromethane	< 0.25	0.25	0.0067	mg/kg wet							
cis-1,2-Dichloroethene	< 0.25	0.25	0.0018	mg/kg wet							

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Barr Engineering Co.	Project:	23691588			
4700 W 77th St	Project Number:	23691588.00		Work Order #:	1405054
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen		Date Reported:	11/21/14

VOC 8260B - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1109 - EPA 5035 Soil (Purge and Trap)											
Blank (B4K1109-BLK1)					Prepared: 11/10/14	Analyzed: 11/11/14					
cis-1,3-Dichloropropene	< 0.25	0.25	0.0049	mg/kg wet							
Dibromochloromethane	< 0.25	0.25	0.0046	mg/kg wet							
Dibromomethane	< 0.25	0.25	0.0046	mg/kg wet							
Dichlorodifluoromethane	< 0.50	0.50	0.0094	mg/kg wet							
Dichlorofluoromethane	< 0.25	0.25	0.0079	mg/kg wet							
Ethyl ether	< 0.50	0.50	0.0050	mg/kg wet							
Ethylbenzene	< 0.25	0.25	0.0026	mg/kg wet							
Hexachlorobutadiene	< 1.0	1.0	0.18	mg/kg wet							
Isopropylbenzene	< 0.25	0.25	0.0017	mg/kg wet							
m,p-Xylene	< 0.50	0.50	0.0097	mg/kg wet							
Methyl isobutyl ketone	< 0.50	0.50	0.014	mg/kg wet							
Methyl tert-butyl ether	< 0.25	0.25	0.0055	mg/kg wet							
Methylene chloride	< 1.0	1.0	0.0039	mg/kg wet							
Naphthalene	< 0.50	0.50	0.012	mg/kg wet							
n-Butylbenzene	< 0.25	0.25	0.0055	mg/kg wet							
n-Propylbenzene	< 0.25	0.25	0.0031	mg/kg wet							
o-Xylene	< 0.25	0.25	0.0039	mg/kg wet							
p-Isopropyltoluene	< 0.25	0.25	0.0030	mg/kg wet							
sec-Butylbenzene	< 0.25	0.25	0.0035	mg/kg wet							
Styrene	< 0.25	0.25	0.0054	mg/kg wet							
tert-Butylbenzene	< 0.25	0.25	0.0027	mg/kg wet							
Tetrachloroethene	< 0.25	0.25	0.0050	mg/kg wet							
Tetrahydrofuran	< 2.0	2.0	0.032	mg/kg wet							
Toluene	< 0.25	0.25	0.0035	mg/kg wet							
trans-1,2-Dichloroethene	< 0.25	0.25	0.0045	mg/kg wet							
trans-1,3-Dichloropropene	< 0.25	0.25	0.0063	mg/kg wet							
Trichloroethene	< 0.25	0.25	0.0038	mg/kg wet							
Trichlorofluoromethane	< 0.25	0.25	0.0062	mg/kg wet							
Vinyl chloride	< 0.25	0.25	0.0061	mg/kg wet							
Surrogate: 4-Bromofluorobenzene	*46.6*			*ug/L*	*50.0*		*93.1*	*80-124*			
Surrogate: Dibromofluoromethane	*46.4*			*ug/L*	*50.0*		*92.7*	*77.1-123*			
Surrogate: Toluene-d8	*47.3*			*ug/L*	*50.0*		*94.7*	*78.1-125*			
LCS (B4K1109-BS1)					Prepared: 11/10/14	Analyzed: 11/11/14					
1,1,2,2-Tetrachloroethane	50.6			ug/L	50.0		101	75-120			
1,1-Dichloroethane	50.2			ug/L	50.0		100	79.6-120			
1,1-Dichloroethene	48.0			ug/L	50.0		96.1	78.3-120			
1,3,5-Trimethylbenzene	50.5			ug/L	50.0		101	77-120			
1,4-Dichlorobenzene	52.0			ug/L	50.0		104	75-125			
2-Chlorotoluene	50.3			ug/L	50.0		101	75.9-120			

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Barr Engineering Co.	Project:	23691588		
4700 W 77th St	Project Number:	23691588.00	Work Order #:	1405054
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported:	11/21/14

VOC 8260B - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1109 - EPA 5035 Soil (Purge and Trap)											
LCS (B4K1109-BS1)					Prepared: 11/10/14		Analyzed: 11/11/14				
Benzene	50.1			ug/L	50.0		100	80-120			
Bromoform	50.9			ug/L	50.0		102	80-120			
Chlorobenzene	49.9			ug/L	50.0		99.9	80-120			
Chloroform	48.7			ug/L	50.0		97.3	80-120			
Ethylbenzene	49.4			ug/L	50.0		98.8	80-120			
n-Butylbenzene	53.7			ug/L	50.0		107	75-125			
n-Propylbenzene	49.8			ug/L	50.0		99.7	75-120			
Toluene	50.2			ug/L	50.0		100	80-120			
Trichloroethene	49.3			ug/L	50.0		98.7	80-120			
Vinyl chloride	45.6			ug/L	50.0		91.3	75-130			
Surrogate: 4-Bromofluorobenzene	*48.2*			*ug/L*	*50.0*		*96.5*	*80-124*			
Surrogate: Dibromofluoromethane	*47.4*			*ug/L*	*50.0*		*94.8*	*77.1-123*			
Surrogate: Toluene-d8	*48.0*			*ug/L*	*50.0*		*96.1*	*78.1-125*			
Matrix Spike (B4K1109-MS1)		**Source: 1405086-01**			Prepared: 11/10/14		Analyzed: 11/11/14				
1,1,2,2-Tetrachloroethane	51.3			ug/L	50.0	<	103	75-125			
1,1-Dichloroethane	51.6			ug/L	50.0	<	103	78.7-123			
1,1-Dichloroethene	48.8			ug/L	50.0	<	97.5	75.8-121			
1,3,5-Trimethylbenzene	50.8			ug/L	50.0	<	102	75-120			
1,4-Dichlorobenzene	51.1			ug/L	50.0	<	102	75-125			
2-Chlorotoluene	50.5			ug/L	50.0	<	101	75-120			
Benzene	49.8			ug/L	50.0	<	99.6	80-120			
Bromoform	52.0			ug/L	50.0	<	104	80-120			
Chlorobenzene	51.1			ug/L	50.0	<	102	80-120			
Chloroform	49.6			ug/L	50.0	<	99.3	80-120			
Ethylbenzene	50.9			ug/L	50.0	<	102	80-120			
n-Butylbenzene	50.5			ug/L	50.0	<	101	73.8-125			
n-Propylbenzene	50.0			ug/L	50.0	<	100	75-120			
Toluene	49.9			ug/L	50.0	<	99.7	80-120			
Trichloroethene	50.3			ug/L	50.0	<	101	80-120			
Vinyl chloride	43.9			ug/L	50.0	<	87.8	74.8-130			
Surrogate: 4-Bromofluorobenzene	*47.8*			*ug/L*	*50.0*		*95.5*	*80-124*			
Surrogate: Dibromofluoromethane	*46.2*			*ug/L*	*50.0*		*92.5*	*77.1-123*			
Surrogate: Toluene-d8	*46.9*			*ug/L*	*50.0*		*93.8*	*78.1-125*			
Matrix Spike Dup (B4K1109-MSD1)		**Source: 1405086-01**			Prepared: 11/10/14		Analyzed: 11/11/14				
1,1,2,2-Tetrachloroethane	51.0			ug/L	50.0	<	102	75-125	0.611	20	
1,1-Dichloroethane	50.5			ug/L	50.0	<	101	78.7-123	2.07	20	
1,1-Dichloroethene	47.8			ug/L	50.0	<	95.6	75.8-121	2.02	20	
1,3,5-Trimethylbenzene	51.4			ug/L	50.0	<	103	75-120	1.28	20	

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Barr Engineering Co.	Project:	23691588		
4700 W 77th St	Project Number:	23691588.00	Work Order #:	1405054
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported:	11/21/14

VOC 8260B - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1109 - EPA 5035 Soil (Purge and Trap)											
Matrix Spike Dup (B4K1109-MSD1)		**Source: 1405086-01**			Prepared: 11/10/14		Analyzed: 11/11/14				
1,4-Dichlorobenzene	51.4			ug/L	50.0	<	103	75-125	0.710	20	
2-Chlorotoluene	50.3			ug/L	50.0	<	101	75-120	0.450	20	
Benzene	50.5			ug/L	50.0	<	101	80-120	1.44	20	
Bromoform	51.5			ug/L	50.0	<	103	80-120	0.835	20	
Chlorobenzene	50.9			ug/L	50.0	<	102	80-120	0.502	20	
Chloroform	48.3			ug/L	50.0	<	96.6	80-120	2.74	20	
Ethylbenzene	50.3			ug/L	50.0	<	101	80-120	1.07	20	
n-Butylbenzene	52.2			ug/L	50.0	<	104	73.8-125	3.31	20	
n-Propylbenzene	50.1			ug/L	50.0	<	100	75-120	0.0657	20	
Toluene	49.2			ug/L	50.0	<	98.5	80-120	1.31	20	
Trichloroethene	49.6			ug/L	50.0	<	99.1	80-120	1.51	20	
Vinyl chloride	43.8			ug/L	50.0	<	87.6	74.8-130	0.329	20	
Surrogate: 4-Bromofluorobenzene	*47.2*			*ug/L*	*50.0*		*94.4*	*80-124*			
Surrogate: Dibromofluoromethane	*46.2*			*ug/L*	*50.0*		*92.5*	*77.1-123*			
Surrogate: Toluene-d8	*47.5*			*ug/L*	*50.0*		*95.1*	*78.1-125*			
Batch B4K1116 - EPA 5035 Soil (Purge and Trap)											
Blank (B4K1116-BLK1)					Prepared & Analyzed: 11/11/14						
1,1,1,2-Tetrachloroethane	< 0.25	0.25	0.0051	mg/kg wet							
1,1,1-Trichloroethane	< 0.25	0.25	0.0056	mg/kg wet							
1,1,2,2-Tetrachloroethane	< 0.25	0.25	0.0057	mg/kg wet							
1,1,2-Trichloroethane	< 0.25	0.25	0.0073	mg/kg wet							
1,1,2-Trichlorotrifluoroethane	< 0.25	0.25	0.0091	mg/kg wet							
1,1-Dichloroethane	< 0.25	0.25	0.0033	mg/kg wet							
1,1-Dichloroethene	< 0.25	0.25	0.0058	mg/kg wet							
1,1-Dichloropropene	< 0.25	0.25	0.0055	mg/kg wet							
1,2,3-Trichlorobenzene	< 0.50	0.50	0.0051	mg/kg wet							
1,2,3-Trichloropropane	< 0.25	0.25	0.0046	mg/kg wet							
1,2,4-Trichlorobenzene	< 0.50	0.50	0.0054	mg/kg wet							
1,2,4-Trimethylbenzene	< 0.25	0.25	0.0033	mg/kg wet							
1,2-Dibromo-3-chloropropane	< 0.50	0.50	0.0083	mg/kg wet							
1,2-Dibromoethane (EDB)	< 0.25	0.25	0.0072	mg/kg wet							
1,2-Dichlorobenzene	< 0.25	0.25	0.0034	mg/kg wet							
1,2-Dichloroethane	< 0.25	0.25	0.0055	mg/kg wet							
1,2-Dichloropropane	< 0.25	0.25	0.0048	mg/kg wet							
1,3,5-Trimethylbenzene	< 0.25	0.25	0.0025	mg/kg wet							
1,3-Dichlorobenzene	< 0.25	0.25	0.0038	mg/kg wet							
1,3-Dichloropropane	< 0.25	0.25	0.0055	mg/kg wet							
1,4-Dichlorobenzene	< 0.25	0.25	0.0050	mg/kg wet							
2,2-Dichloropropane	< 0.50	0.50	0.0087	mg/kg wet							

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Barr Engineering Co.	Project:	23691588			
4700 W 77th St	Project Number:	23691588.00		Work Order #:	1405054
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen		Date Reported:	11/21/14

VOC 8260B - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1116 - EPA 5035 Soil (Purge and Trap)											
Blank (B4K1116-BLK1)					Prepared & Analyzed: 11/11/14						
2-Butanone	< 2.0	2.0	0.014	mg/kg wet							
2-Chlorotoluene	< 0.25	0.25	0.0022	mg/kg wet							
4-Chlorotoluene	< 0.25	0.25	0.0036	mg/kg wet							
Acetone	< 2.0	2.0	0.10	mg/kg wet							
Allyl chloride	< 0.50	0.50	0.0083	mg/kg wet							
Benzene	< 0.25	0.25	0.0027	mg/kg wet							
Bromobenzene	< 0.25	0.25	0.0052	mg/kg wet							
Bromochloromethane	< 0.25	0.25	0.0074	mg/kg wet							
Bromodichloromethane	< 0.25	0.25	0.0043	mg/kg wet							
Bromoform	< 0.50	0.50	0.0070	mg/kg wet							
Bromomethane	< 0.50	0.50	0.0060	mg/kg wet							
Carbon tetrachloride	< 0.25	0.25	0.0060	mg/kg wet							
Chlorobenzene	< 0.25	0.25	0.0026	mg/kg wet							
Chloroethane	< 0.25	0.25	0.0072	mg/kg wet							
Chloroform	< 0.25	0.25	0.0023	mg/kg wet							
Chloromethane	< 0.25	0.25	0.0067	mg/kg wet							
cis-1,2-Dichloroethene	< 0.25	0.25	0.0018	mg/kg wet							
cis-1,3-Dichloropropene	< 0.25	0.25	0.0049	mg/kg wet							
Dibromochloromethane	< 0.25	0.25	0.0046	mg/kg wet							
Dibromomethane	< 0.25	0.25	0.0046	mg/kg wet							
Dichlorodifluoromethane	< 0.50	0.50	0.0094	mg/kg wet							
Dichlorofluoromethane	< 0.25	0.25	0.0079	mg/kg wet							
Ethyl ether	< 0.50	0.50	0.0050	mg/kg wet							
Ethylbenzene	< 0.25	0.25	0.0026	mg/kg wet							
Hexachlorobutadiene	< 1.0	1.0	0.18	mg/kg wet							
Isopropylbenzene	< 0.25	0.25	0.0017	mg/kg wet							
m,p-Xylene	< 0.50	0.50	0.0097	mg/kg wet							
Methyl isobutyl ketone	< 0.50	0.50	0.014	mg/kg wet							
Methyl tert-butyl ether	< 0.25	0.25	0.0055	mg/kg wet							
Methylene chloride	< 1.0	1.0	0.0039	mg/kg wet							
Naphthalene	< 0.50	0.50	0.012	mg/kg wet							
n-Butylbenzene	< 0.25	0.25	0.0055	mg/kg wet							
n-Propylbenzene	< 0.25	0.25	0.0031	mg/kg wet							
o-Xylene	< 0.25	0.25	0.0039	mg/kg wet							
p-Isopropyltoluene	< 0.25	0.25	0.0030	mg/kg wet							
sec-Butylbenzene	< 0.25	0.25	0.0035	mg/kg wet							
Styrene	< 0.25	0.25	0.0054	mg/kg wet							
tert-Butylbenzene	< 0.25	0.25	0.0027	mg/kg wet							
Tetrachloroethene	< 0.25	0.25	0.0050	mg/kg wet							

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Barr Engineering Co.	Project:	23691588			
4700 W 77th St	Project Number:	23691588.00		Work Order #:	1405054
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen		Date Reported:	11/21/14

VOC 8260B - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1116 - EPA 5035 Soil (Purge and Trap)											
Blank (B4K1116-BLK1)					Prepared & Analyzed: 11/11/14						
Tetrahydrofuran	< 2.0	2.0	0.032	mg/kg wet							
Toluene	< 0.25	0.25	0.0035	mg/kg wet							
trans-1,2-Dichloroethene	< 0.25	0.25	0.0045	mg/kg wet							
trans-1,3-Dichloropropene	< 0.25	0.25	0.0063	mg/kg wet							
Trichloroethene	< 0.25	0.25	0.0038	mg/kg wet							
Trichlorofluoromethane	< 0.25	0.25	0.0062	mg/kg wet							
Vinyl chloride	< 0.25	0.25	0.0061	mg/kg wet							
Surrogate: 4-Bromofluorobenzene	*46.9*			*ug/L*	*50.0*		*93.7*	*80-124*			
Surrogate: Dibromofluoromethane	*44.9*			*ug/L*	*50.0*		*89.7*	*77.1-123*			
Surrogate: Toluene-d8	*46.7*			*ug/L*	*50.0*		*93.4*	*78.1-125*			
LCS (B4K1116-BS1)					Prepared & Analyzed: 11/11/14						
1,1,2,2-Tetrachloroethane	49.9			ug/L	50.0		99.9	75-120			
1,1-Dichloroethane	48.3			ug/L	50.0		96.6	79.6-120			
1,1-Dichloroethene	46.2			ug/L	50.0		92.3	78.3-120			
1,3,5-Trimethylbenzene	50.7			ug/L	50.0		101	77-120			
1,4-Dichlorobenzene	49.7			ug/L	50.0		99.5	75-125			
2-Chlorotoluene	49.0			ug/L	50.0		98.1	75.9-120			
Benzene	50.1			ug/L	50.0		100	80-120			
Bromoform	52.0			ug/L	50.0		104	80-120			
Chlorobenzene	50.2			ug/L	50.0		100	80-120			
Chloroform	47.4			ug/L	50.0		94.8	80-120			
Ethylbenzene	49.6			ug/L	50.0		99.2	80-120			
n-Butylbenzene	51.4			ug/L	50.0		103	75-125			
n-Propylbenzene	49.6			ug/L	50.0		99.2	75-120			
Toluene	48.5			ug/L	50.0		96.9	80-120			
Trichloroethene	49.2			ug/L	50.0		98.4	80-120			
Vinyl chloride	48.5			ug/L	50.0		97.0	75-130			
Surrogate: 4-Bromofluorobenzene	*48.4*			*ug/L*	*50.0*		*96.9*	*80-124*			
Surrogate: Dibromofluoromethane	*46.1*			*ug/L*	*50.0*		*92.2*	*77.1-123*			
Surrogate: Toluene-d8	*46.9*			*ug/L*	*50.0*		*93.8*	*78.1-125*			
Matrix Spike (B4K1116-MS1)		**Source: 1405054-08**			Prepared & Analyzed: 11/11/14						
1,1,2,2-Tetrachloroethane	50.0			ug/L	50.0	<	99.9	75-125			
1,1-Dichloroethane	49.1			ug/L	50.0	<	98.1	78.7-123			
1,1-Dichloroethene	46.8			ug/L	50.0	<	93.6	75.8-121			
1,3,5-Trimethylbenzene	49.7			ug/L	50.0	<	99.5	75-120			
1,4-Dichlorobenzene	50.7			ug/L	50.0	<	101	75-125			
2-Chlorotoluene	49.3			ug/L	50.0	<	98.7	75-120			
Benzene	51.1			ug/L	50.0	<	102	80-120			

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Barr Engineering Co.	Project:	23691588		
4700 W 77th St	Project Number:	23691588.00	Work Order #:	1405054
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported:	11/21/14

VOC 8260B - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1116 - EPA 5035 Soil (Purge and Trap)											
Matrix Spike (B4K1116-MS1)		**Source: 1405054-08**			Prepared & Analyzed: 11/11/14						
Bromoform	50.0			ug/L	50.0	<	100	80-120			
Chlorobenzene	49.3			ug/L	50.0	<	98.5	80-120			
Chloroform	47.0			ug/L	50.0	<	94.0	80-120			
Ethylbenzene	49.0			ug/L	50.0	<	98.0	80-120			
n-Butylbenzene	50.4			ug/L	50.0	<	101	73.8-125			
n-Propylbenzene	49.0			ug/L	50.0	<	97.9	75-120			
Toluene	51.3			ug/L	50.0	<	103	80-120			
Trichloroethene	49.7			ug/L	50.0	<	99.3	80-120			
Vinyl chloride	47.0			ug/L	50.0	<	93.9	74.8-130			
Surrogate: 4-Bromofluorobenzene	*49.2*			*ug/L*	*50.0*		*98.5*	*80-124*			
Surrogate: Dibromofluoromethane	*45.8*			*ug/L*	*50.0*		*91.7*	*77.1-123*			
Surrogate: Toluene-d8	*47.9*			*ug/L*	*50.0*		*95.8*	*78.1-125*			
Matrix Spike Dup (B4K1116-MSD1)		**Source: 1405054-08**			Prepared & Analyzed: 11/11/14						
1,1,2,2-Tetrachloroethane	50.8			ug/L	50.0	<	102	75-125	1.66	20	
1,1-Dichloroethane	48.5			ug/L	50.0	<	97.0	78.7-123	1.09	20	
1,1-Dichloroethene	46.4			ug/L	50.0	<	92.8	75.8-121	0.858	20	
1,3,5-Trimethylbenzene	50.0			ug/L	50.0	<	99.9	75-120	0.455	20	
1,4-Dichlorobenzene	51.5			ug/L	50.0	<	103	75-125	1.55	20	
2-Chlorotoluene	49.6			ug/L	50.0	<	99.2	75-120	0.479	20	
Benzene	50.8			ug/L	50.0	<	102	80-120	0.708	20	
Bromoform	52.9			ug/L	50.0	<	106	80-120	5.57	20	
Chlorobenzene	50.7			ug/L	50.0	<	101	80-120	2.83	20	
Chloroform	46.8			ug/L	50.0	<	93.7	80-120	0.341	20	
Ethylbenzene	49.9			ug/L	50.0	<	99.9	80-120	1.95	20	
n-Butylbenzene	51.7			ug/L	50.0	<	103	73.8-125	2.56	20	
n-Propylbenzene	49.9			ug/L	50.0	<	99.7	75-120	1.80	20	
Toluene	50.8			ug/L	50.0	<	102	80-120	1.04	20	
Trichloroethene	49.6			ug/L	50.0	<	99.2	80-120	0.141	20	
Vinyl chloride	46.1			ug/L	50.0	<	92.3	74.8-130	1.76	20	
Surrogate: 4-Bromofluorobenzene	*48.5*			*ug/L*	*50.0*		*97.0*	*80-124*			
Surrogate: Dibromofluoromethane	*46.1*			*ug/L*	*50.0*		*92.3*	*77.1-123*			
Surrogate: Toluene-d8	*47.1*			*ug/L*	*50.0*		*94.2*	*78.1-125*			

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88 Empire Drive
St Paul, MN 55103
Tel: 651-642-1150
Fax: 651-642-1239

Barr Engineering Co.	Project:	23691588		
4700 W 77th St	Project Number:	23691588.00	Work Order #:	1405054
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported:	11/21/14

7471B - Quality Control
TestAmerica Cedar Falls

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch 67497 - 7471B_Prep											
MS (310-43229-B-1-B)		**Source: 310-43229-B-1-A**			Prepared & Analyzed: 11/07/14						
Mercury	0.1996	0.0213	0.00387	mg/Kg dry	0.177	<0.0213	104	80-120			
MSD (310-43229-B-1-C)		**Source: 310-43229-B-1-A**			Prepared & Analyzed: 11/07/14						
Mercury	0.1975	0.0211	0.00384	mg/Kg dry	0.176	<0.0211	103	80-120	1	20	
LCS (LCS 310-67497/2)					Prepared & Analyzed: 11/07/14						
Mercury	0.1395	0.0182	0.00330	mg/Kg	0.151	<0.0182	92	80-120			
MB (MB 310-67497/1-)					Prepared & Analyzed: 11/07/14						
Mercury	<0.0200	0.0200	0.00363	mg/Kg		<0.0200		-			

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Barr Engineering Co.	Project:	23691588		
4700 W 77th St	Project Number:	23691588.00	Work Order #:	1405054
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported:	11/21/14

Notes and Definitions

T-1	MDH does not offer certification for this parameter.
S-BN	Base/Neutral surrogate recovery outside of control limits. The data was accepted based on valid recovery of remaining two base/neutral surrogates.
QR-04	The RPD value for the MS/MSD was outside of QC acceptance limits. Data was accepted based on LCS and/or LCSD recovery and/or RPD values.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The associated blank spike recovery was acceptable.
M1	Matrix spike recovery was high, the associated blank spike recovery was acceptable.
L1	Results in the diesel organics range are primarily due to overlap from a heavy oil range product.
B-02	Target analyte was present in the method blank between the MDL and RL.
<	Less than value listed
dry	Sample results reported on a dry weight basis
NA	Not applicable. The %RPD is not calculated from values less than the reporting limit.
MDL	Method Detection Limit
RL	Reporting Limit
RPD	Relative Percent Difference
LCS	Laboratory Control Spike = Blank Spike (BS) = Laboratory Fortified Blank (LFB)
MS	Matrix Spike = Laboratory Fortified Matrix (LFM)

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St Paul, MN 55103
Tel: 651-642-1150
Fax: 651-642-1239

BARR

Chain of Custody

4700 West 77th Street
Minneapolis, MN 55435-4803
(952) 832-2600

1405054

Project Number: 23691588.00

Project Name: Superior Street

Sample Origination State MN (use two letter postal state abbreviation)

COC Number: № 44732

COC 1 of 1

Project Manager: LMC

Project QC Contact: JET

Sampled by: NRS2

Laboratory: Legend

Number of Containers/Preservative — Water: VOCs (HCl) #1; SVOCs (unpreserved) #2; Dissolved Metals (HNO_3); Total Metals (HNO_3); General (unpreserved) #3; Diesel Range Organics (HCl); Nutrients (H_2SO_4) #4. Soil: VOCs (tared MeOH) #1; GRO ~~+BTEX~~ (tared MeOH) #1; DRO (tared unpreserved); Metals (unpreserved) RCRA; SVOCs (unpreserved) #2; % Solids (plastic vial, unpres.); GRO/PVOC; PAH; Total Number Of Containers

	Location	Start Depth (feet)	Stop Depth (feet)	Depth Unit (m./ft. or in.)	Collection Date (mm/dd/yyyy)	Collection Time (hh:mm)	Matrix: Water	Matrix: Soil	Type: Grab	Type: Comp.	Type: QC	VOCs (HCl) #1	SVOCs (unpreserved) #2	Dissolved Metals (HNO_3)	Total Metals (HNO_3)	General (unpreserved) #3	Diesel Range Organics (HCl)	Nutrients (H_2SO_4) #4	VOCs (tared MeOH) #1	GRO ~~+BTEX~~ (tared MeOH) #1	DRO (tared unpreserved)	Metals (unpreserved) RCRA	SVOCs (unpreserved) #2	% Solids (plastic vial, unpres.)	GRO/PVOC	PAH	Total Number Of Containers	
01	1. B-01	7.5	9		11/02/14	2330		X	X												1			1	1		3	
02	2. B-03	9.5	11		11/03/14	2317		X	X												1			1	1		3	
03	3. B-04	11.5	14		11/03/14	0035		X	X										1	1	1	1		1		1	6	
04	4. B-08	9.5	11		11/4/14	0405		X	X												1			1	1		3	
05	5. B-09	9.5	11		11/4/14	0500		X	X												1			1	1		3	
06	6. B-10	8.5	9		11/4/14	0600		X	X												1			1	1		3	
07	7. B-17	9.5	11		11/3/14	0520		X	X										3	1	3	3		1	1	3		GRO/PVOC DRO
08	8. B-17	2.5	4		11/3/14	0510		X	X										1			1		1		1	3	Don't have SVOC jar
09	9. Trip Blank										X																1	
10	10. Temp Blank										X																1	

Common Parameter/Container - Preservation Key

- #1 - Volatile Organics = BTEX, GRO, TPH, 8260 Full List
- #2 - Semivolatile Organics = PAHs, PCP, Dioxins, 8270 Full List, Herbicide/Pesticide/PCBs
- #3 - General = pH, Chloride, Fluoride, Alkalinity, TSS, TDS, TS, Sulfate
- #4 - Nutrients = COD, TOC, Phenols, Ammonia Nitrogen, TKN

Relinquished By:	On Ice?	Date	Time	Received by:	Date	Time
[signature]	(Y) N	11-4-14	7:30			
Relinquished By:	On Ice?	Date	Time	Received by:	Date	Time
	(Y)			[signature]	11/5/14	1105

Samples Shipped VIA: ☐ Air Freight ☑ Federal Express ☐ Sampler ☐ Other:

Air Bill Number: Cust. 5.2°C

Distribution: White-Original Accompanies Shipment to Lab; Yellow - Field Copy; Pink - Lab Coordinator

H:\RLG\STDFORMS\Chain Of Custody Form 2009 RLG Rev. 09-01-09

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L E G E N D
Technical Services, Inc.
www.legend-group.com

88 Empire Drive
St Paul, MN 55103
Tel: 651-642-1150
Fax: 651-642-1239

Data File: \\LTS-TARGET\targetdata\chem\FID5.i\141113.b\013.d
Date : 13-NOV-2014 21:34
Client ID:
Sample Info: 1405084-02

B-03_9.5-11

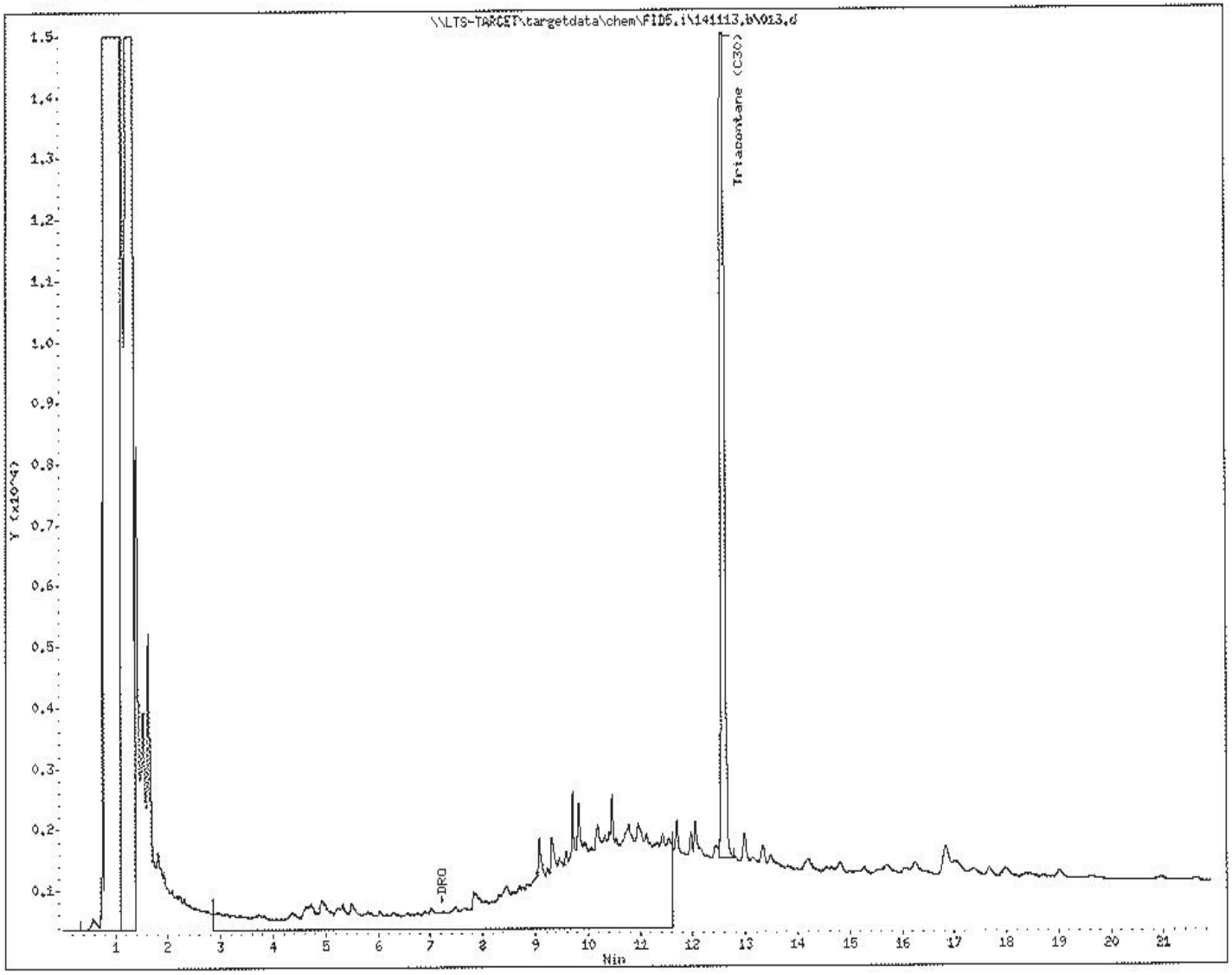
11/24/14 BP

Column phase:

Page 1

Instrument: FID5.i

Operator: gp
Column diameter: 0.53



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88 Empire Drive
St Paul, MN 55103
Tel: 651-642-1150
Fax: 651-642-1239

Data File: \\LTS-TARGET\targetdata\chem\FID5.i\141113.b\029.d
Date : 14-NOV-2014 04:19
Client ID:
Sample Info: 1405054-05

11/20/19 BP

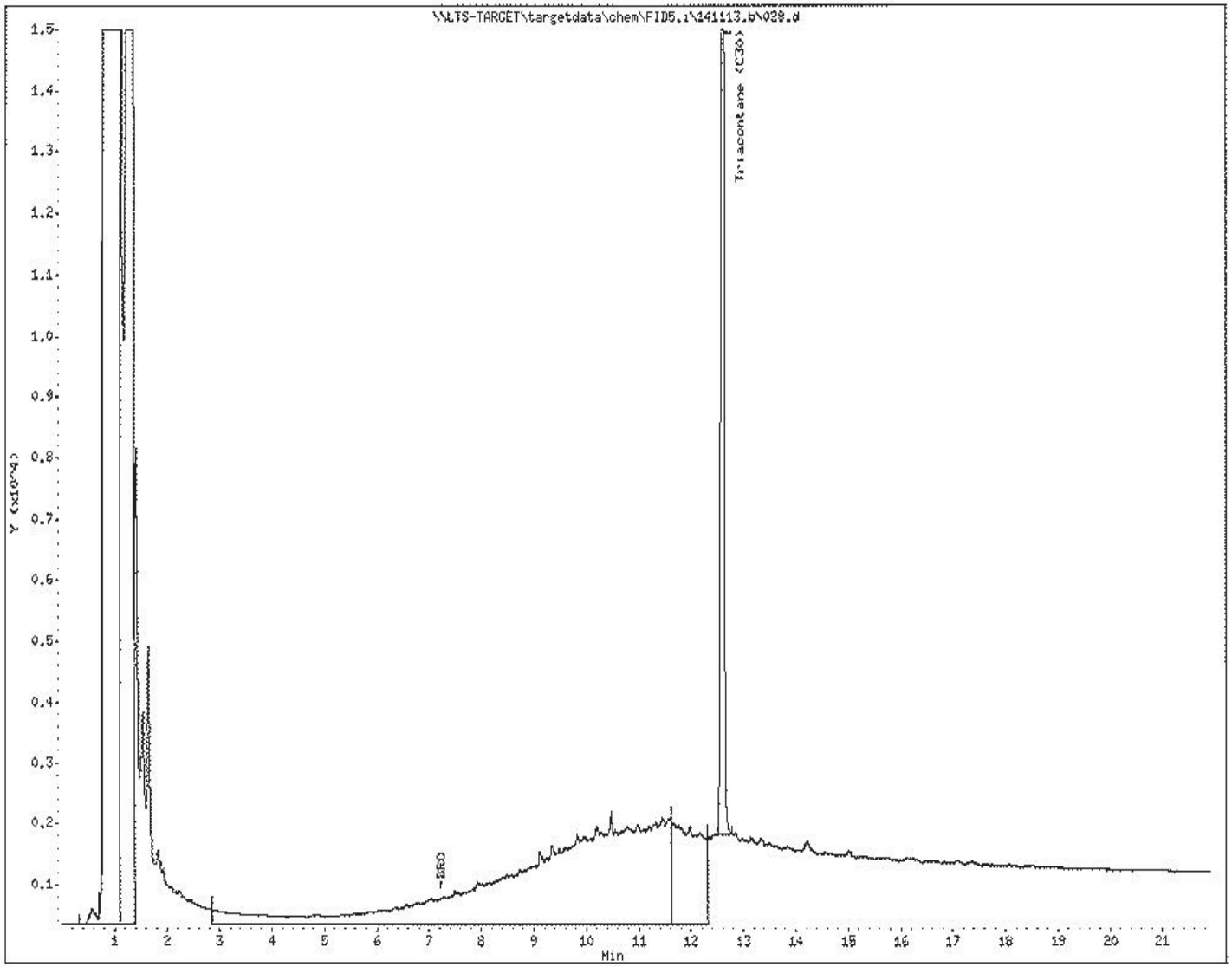
B-09_9.5-11

Page 1

Instrument: FID5.i

Operator: yy
Column diameter: 0.53

Column phase:



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St Paul, MN 55103
Tel: 651-642-1150
Fax: 651-642-1239

Data File: \\LTS-TARGET\targetdata\chem\FID5.i\141113.b\031.d
Date : 14-NOV-2014 05:40
Client ID:
Sample Info: 1405054-06

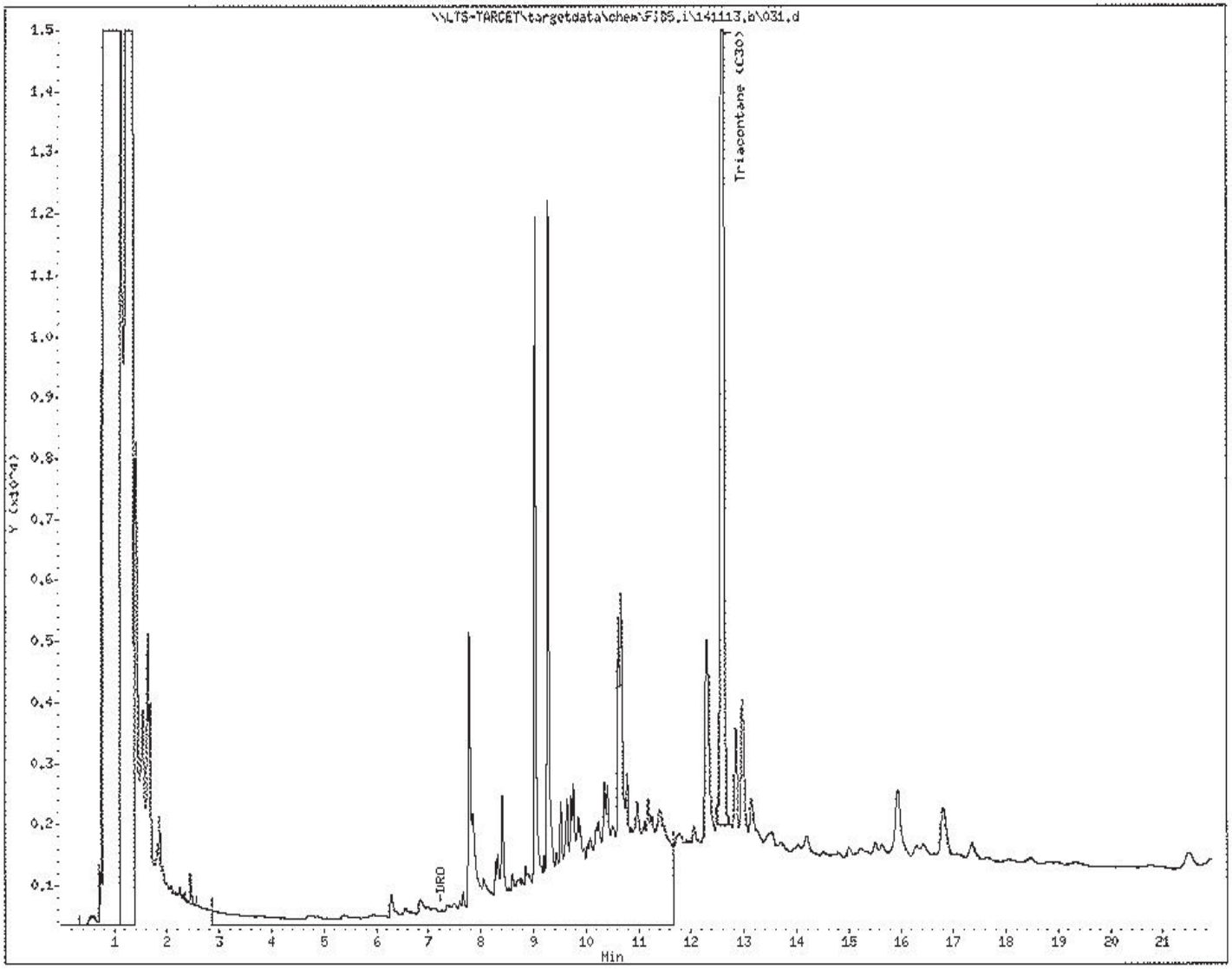
11/20/15 BP

B-10_8.5-9

Page 1

Instrument: FID5.i
Operator: gp
Column diameter: 0.53

Column phase:



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December 02, 2014

REVISION

Mr. James E. Taraldsen
Barr Engineering Co.
4700 W 77th St
Minneapolis, MN 55435

Work Order Number: 1405100
RE: 23691588

This is a revised report. The details of the revision are listed in the case narrative on the following page.

Enclosed are the results of analyses for samples received by the laboratory on 11/07/14. If you have any questions concerning this report, please feel free to contact me.

Results are not blank corrected unless noted within the report. Additionally, all QC results meet requirements unless noted.

All samples will be retained by Legend Technical Services, Inc., unless consumed in the analysis, at ambient conditions for 30 days from the date of this report and then discarded unless other arrangements are made. All samples were received in acceptable condition unless otherwise noted.

All test results and QC meet requirements of the 2003 NELAC standard.

MDH (NELAC) Certification #027-123-295

Prepared by,
LEGEND TECHNICAL SERVICES, INC

Bach Pham
Client Manager II
bpham@legend-group.com

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

88 Empire Drive
St Paul, MN 55103
Tel: 651-642-1150
Fax: 651-642-1239

Barr Engineering Co.	Project:	23691588		
4700 W 77th St	Project Number:	23691588.00	Work Order #:	1405100
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported:	12/02/14

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B-18_9.5-11	1405100-01	Soil	11/05/14 02:10	11/07/14 09:35
B-19_11.5-14	1405100-02	Soil	11/05/14 03:30	11/07/14 09:35
B-20_9.5-11	1405100-03	Soil	11/05/14 05:15	11/07/14 09:35
B-21_7.5-9	1405100-04	Soil	11/05/14 05:55	11/07/14 09:35
B-28_2.5-4	1405100-05	Soil	11/05/14 23:25	11/07/14 09:35
B-31_9.5-11	1405100-06	Soil	11/06/14 01:40	11/07/14 09:35
B-38_7.5-9	1405100-07	Soil	11/06/14 02:42	11/07/14 09:35
B-39_9.5-11	1405100-08	Soil	11/06/14 04:05	11/07/14 09:35
B-40_9.5-11	1405100-09	Soil	11/06/14 05:10	11/07/14 09:35
B-41_7.5-9	1405100-10	Soil	11/06/14 06:08	11/07/14 09:35

Shipping Container Information

Default Cooler Temperature (°C): 3.4

Received on ice: Yes
Received on melt water: No
Custody seals: Yes

Temperature blank was present
Ambient: No

Received on ice pack: No
Acceptable (IH/ISO only): No

Case Narrative:

The DRO chromatograms are attached for samples B-18_9.5-11, B-28_2.5-4, and B-31_9.5-11.

Per the client's request, this report was revised on December 2, 2014 to include DRO (Silica Gel Cleanup) analysis for sample B-31_9.5-11. This report was also revised to include in the narrative that per the client's instructions, sample B-28_2.5-4 was subsampled for % solids analysis. Since the DRO sample was subsequently weighed by the lab, the result was reported as C10-C28 because a sample weighed in the lab can no longer be reported as DRO per the Minnesota Department of Health. This report supersedes the report dated November 24, 2014.

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LEGEND Technical Services, Inc.
www.legend-group.com

88 Empire Drive
St Paul, MN 55103
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Fax: 651-642-1239

Barr Engineering Co.	Project:	23691588	
4700 W 77th St	Project Number:	23691588.00	Work Order #: 1405100
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported: 12/02/14

DRO/8015D
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B-18_9.5-11 (1405100-01) Soil Sampled: 11/05/14 02:10 Received: 11/07/14 9:35										
Diesel Range Organics	**66**	11	1.7	mg/kg dry	1	B4K1404	11/14/14	11/17/14	WI(95) DRO	L1
Surrogate: Triacontane (C-30)	*99.6*			*70-130 %*		"	"	"	"	
B-19_11.5-14 (1405100-02) Soil Sampled: 11/05/14 03:30 Received: 11/07/14 9:35										
Diesel Range Organics	<10	10	1.6	mg/kg dry	1	B4K1404	11/14/14	11/17/14	WI(95) DRO	
Surrogate: Triacontane (C-30)	*78.0*			*70-130 %*		"	"	"	"	
B-28_2.5-4 (1405100-05) Soil Sampled: 11/05/14 23:25 Received: 11/07/14 9:35										
C10-C28	**23**	9.5	1.5	mg/kg dry	1	B4K1404	11/14/14	11/15/14	WI(95) DRO	L1, W-09
Surrogate: Triacontane (C-30)	*99.0*			*70-130 %*		"	"	"	"	
B-31_9.5-11 (1405100-06) Soil Sampled: 11/06/14 01:40 Received: 11/07/14 9:35										
Diesel Range Organics	**1000**	90	15	mg/kg dry	10	B4K1404	11/14/14	11/17/14	WI(95) DRO	L1
DRO (Silica Gel Cleanup)	**140**	9.0	1.5	mg/kg dry	1	"	"	12/01/14	WI(95)DRO(M)	L1
Surrogate: Triacontane (C-30)	*93.7*			*70-130 %*		"	"	*11/17/14*	*WI(95) DRO*	
Surrogate: Triacontane (C-30) (Silica Gel)	*96.6*			*70-130 %*		"	"	*12/01/14*	*WI(95)DRO(M)*	
B-40_9.5-11 (1405100-09) Soil Sampled: 11/06/14 05:10 Received: 11/07/14 9:35										
Diesel Range Organics	<9.8	9.8	1.6	mg/kg dry	1	B4K1404	11/14/14	11/15/14	WI(95) DRO	
Surrogate: Triacontane (C-30)	*95.6*			*70-130 %*		"	"	"	"	
B-41_7.5-9 (1405100-10) Soil Sampled: 11/06/14 06:08 Received: 11/07/14 9:35										
Diesel Range Organics	<9.6	9.6	1.6	mg/kg dry	1	B4K1404	11/14/14	11/15/14	WI(95) DRO	
Surrogate: Triacontane (C-30)	*93.7*			*70-130 %*		"	"	"	"	

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Barr Engineering Co.	Project:	23691588	
4700 W 77th St	Project Number:	23691588.00	Work Order #: 1405100
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported: 12/02/14

WI(95) GRO/8015D
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B-18_9.5-11 (1405100-01) Soil Sampled: 11/05/14 02:10 Received: 11/07/14 9:35										
1,2,4-Trimethylbenzene	<0.033	0.033	0.0036	mg/kg dry	1	B4K1003	11/10/14	11/10/14	WI(95) GRO	
1,3,5-Trimethylbenzene	<0.033	0.033	0.0082	mg/kg dry	1	"	"	"	"	
Benzene	<0.033	0.033	0.0038	mg/kg dry	1	"	"	"	"	
Ethylbenzene	<0.033	0.033	0.0084	mg/kg dry	1	"	"	"	"	
Gasoline range organics	<6.6	6.6	0.71	mg/kg dry	1	"	"	"	"	
Methyl tert-butyl ether	<0.033	0.033	0.0071	mg/kg dry	1	"	"	"	"	
Toluene	<0.033	0.033	0.0054	mg/kg dry	1	"	"	"	"	
Xylenes (total)	<0.099	0.099	0.019	mg/kg dry	1	"	"	"	"	
Surrogate: 4-Fluorochlorobenzene	*92.1*			*80-150 %*		"	"	"	"	
B-19_11.5-14 (1405100-02) Soil Sampled: 11/05/14 03:30 Received: 11/07/14 9:35										
1,2,4-Trimethylbenzene	<0.031	0.031	0.0034	mg/kg dry	1	B4K1003	11/10/14	11/10/14	WI(95) GRO	
1,3,5-Trimethylbenzene	<0.031	0.031	0.0078	mg/kg dry	1	"	"	"	"	
Benzene	<0.031	0.031	0.0036	mg/kg dry	1	"	"	"	"	
Ethylbenzene	<0.031	0.031	0.0080	mg/kg dry	1	"	"	"	"	
Gasoline range organics	<6.2	6.2	0.68	mg/kg dry	1	"	"	"	"	
Methyl tert-butyl ether	<0.031	0.031	0.0068	mg/kg dry	1	"	"	"	"	
Toluene	<0.031	0.031	0.0051	mg/kg dry	1	"	"	"	"	
Xylenes (total)	<0.094	0.094	0.018	mg/kg dry	1	"	"	"	"	
Surrogate: 4-Fluorochlorobenzene	*93.6*			*80-150 %*		"	"	"	"	
B-20_9.5-11 (1405100-03) Soil Sampled: 11/05/14 05:15 Received: 11/07/14 9:35										
Gasoline range organics	<6.0	6.0	0.64	mg/kg dry	1	B4K1003	11/10/14	11/10/14	WI(95) GRO	
Surrogate: 4-Fluorochlorobenzene	*95.2*			*80-150 %*		"	"	"	"	
B-21_7.5-9 (1405100-04) Soil Sampled: 11/05/14 05:55 Received: 11/07/14 9:35										
Gasoline range organics	<5.8	5.8	0.63	mg/kg dry	1	B4K1003	11/10/14	11/10/14	WI(95) GRO	
Surrogate: 4-Fluorochlorobenzene	*92.6*			*80-150 %*		"	"	"	"	
B-28_2.5-4 (1405100-05) Soil Sampled: 11/05/14 23:25 Received: 11/07/14 9:35										
1,2,4-Trimethylbenzene	<0.030	0.030	0.0032	mg/kg dry	1	B4K1003	11/10/14	11/10/14	WI(95) GRO	
1,3,5-Trimethylbenzene	<0.030	0.030	0.0074	mg/kg dry	1	"	"	"	"	
Benzene	<0.030	0.030	0.0035	mg/kg dry	1	"	"	"	"	
Ethylbenzene	<0.030	0.030	0.0076	mg/kg dry	1	"	"	"	"	
Gasoline range organics	<6.0	6.0	0.64	mg/kg dry	1	"	"	"	"	
Methyl tert-butyl ether	<0.030	0.030	0.0064	mg/kg dry	1	"	"	"	"	
Toluene	<0.030	0.030	0.0049	mg/kg dry	1	"	"	"	"	
Xylenes (total)	<0.089	0.089	0.017	mg/kg dry	1	"	"	"	"	
Surrogate: 4-Fluorochlorobenzene	*93.2*			*80-150 %*		"	"	"	"	

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St Paul, MN 55103
Tel: 651-642-1150
Fax: 651-642-1239

Barr Engineering Co.	Project:	23691588	
4700 W 77th St	Project Number:	23691588.00	Work Order #: 1405100
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported: 12/02/14

WI(95) GRO/8015D
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B-31_9.5-11 (1405100-06) Soil Sampled: 11/06/14 01:40 Received: 11/07/14 9:35										
1,2,4-Trimethylbenzene	<0.028	0.028	0.0030	mg/kg dry	1	B4K1003	11/10/14	11/10/14	WI(95) GRO	
1,3,5-Trimethylbenzene	<0.028	0.028	0.0070	mg/kg dry	1	"	"	"	"	
Benzene	<0.028	0.028	0.0033	mg/kg dry	1	"	"	"	"	
Ethylbenzene	<0.028	0.028	0.0072	mg/kg dry	1	"	"	"	"	
Gasoline range organics	<5.6	5.6	0.61	mg/kg dry	1	"	"	"	"	
Methyl tert-butyl ether	<0.028	0.028	0.0061	mg/kg dry	1	"	"	"	"	
Toluene	<0.028	0.028	0.0046	mg/kg dry	1	"	"	"	"	
Xylenes (total)	<0.084	0.084	0.016	mg/kg dry	1	"	"	"	"	
Surrogate: 4-Fluorochlorobenzene	*93.4*			*80-150 %*		"	"	"	"	
B-38_7.5-9 (1405100-07) Soil Sampled: 11/06/14 02:42 Received: 11/07/14 9:35										
Gasoline range organics	<5.9	5.9	0.64	mg/kg dry	1	B4K1003	11/10/14	11/10/14	WI(95) GRO	
Surrogate: 4-Fluorochlorobenzene	*92.8*			*80-150 %*		"	"	"	"	
B-39_9.5-11 (1405100-08) Soil Sampled: 11/06/14 04:05 Received: 11/07/14 9:35										
Gasoline range organics	<6.2	6.2	0.67	mg/kg dry	1	B4K1003	11/10/14	11/10/14	WI(95) GRO	
Surrogate: 4-Fluorochlorobenzene	*93.5*			*80-150 %*		"	"	"	"	
B-40_9.5-11 (1405100-09) Soil Sampled: 11/06/14 05:10 Received: 11/07/14 9:35										
1,2,4-Trimethylbenzene	<0.028	0.028	0.0031	mg/kg dry	1	B4K1003	11/10/14	11/10/14	WI(95) GRO	
1,3,5-Trimethylbenzene	<0.028	0.028	0.0070	mg/kg dry	1	"	"	"	"	
Benzene	<0.028	0.028	0.0033	mg/kg dry	1	"	"	"	"	
Ethylbenzene	<0.028	0.028	0.0072	mg/kg dry	1	"	"	"	"	
Gasoline range organics	<5.7	5.7	0.61	mg/kg dry	1	"	"	"	"	
Methyl tert-butyl ether	<0.028	0.028	0.0061	mg/kg dry	1	"	"	"	"	
Toluene	<0.028	0.028	0.0046	mg/kg dry	1	"	"	"	"	
Xylenes (total)	<0.085	0.085	0.016	mg/kg dry	1	"	"	"	"	
Surrogate: 4-Fluorochlorobenzene	*94.9*			*80-150 %*		"	"	"	"	
B-41_7.5-9 (1405100-10) Soil Sampled: 11/06/14 06:08 Received: 11/07/14 9:35										
Gasoline range organics	<6.0	6.0	0.65	mg/kg dry	1	B4K1003	11/10/14	11/10/14	WI(95) GRO	
Surrogate: 4-Fluorochlorobenzene	*94.0*			*80-150 %*		"	"	"	"	

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88 Empire Drive
St Paul, MN 55103
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Barr Engineering Co.	Project:	23691588	
4700 W 77th St	Project Number:	23691588.00	Work Order #: 1405100
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported: 12/02/14

PERCENT SOLIDS
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B-18_9.5-11 (1405100-01) Soil Sampled: 11/05/14 02:10 Received: 11/07/14 9:35										
% Solids	**76**			%	1	B4K1408	11/14/14	11/14/14	% calculation	
B-19_11.5-14 (1405100-02) Soil Sampled: 11/05/14 03:30 Received: 11/07/14 9:35										
% Solids	**80**			%	1	B4K1408	11/14/14	11/14/14	% calculation	
B-20_9.5-11 (1405100-03) Soil Sampled: 11/05/14 05:15 Received: 11/07/14 9:35										
% Solids	**84**			%	1	B4K1408	11/14/14	11/14/14	% calculation	
B-21_7.5-9 (1405100-04) Soil Sampled: 11/05/14 05:55 Received: 11/07/14 9:35										
% Solids	**86**			%	1	B4K1408	11/14/14	11/14/14	% calculation	
B-28_2.5-4 (1405100-05) Soil Sampled: 11/05/14 23:25 Received: 11/07/14 9:35										
% Solids	**84**			%	1	B4K1408	11/14/14	11/14/14	% calculation	
B-31_9.5-11 (1405100-06) Soil Sampled: 11/06/14 01:40 Received: 11/07/14 9:35										
% Solids	**89**			%	1	B4K1408	11/14/14	11/14/14	% calculation	
B-38_7.5-9 (1405100-07) Soil Sampled: 11/06/14 02:42 Received: 11/07/14 9:35										
% Solids	**85**			%	1	B4K1408	11/14/14	11/14/14	% calculation	
B-39_9.5-11 (1405100-08) Soil Sampled: 11/06/14 04:05 Received: 11/07/14 9:35										
% Solids	**81**			%	1	B4K1408	11/14/14	11/14/14	% calculation	
B-40_9.5-11 (1405100-09) Soil Sampled: 11/06/14 05:10 Received: 11/07/14 9:35										
% Solids	**82**			%	1	B4K1408	11/14/14	11/14/14	% calculation	
B-41_7.5-9 (1405100-10) Soil Sampled: 11/06/14 06:08 Received: 11/07/14 9:35										
% Solids	**83**			%	1	B4K1408	11/14/14	11/14/14	% calculation	

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Barr Engineering Co.	Project:	23691588			
4700 W 77th St	Project Number:	23691588.00		Work Order #:	1405100
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen		Date Reported:	12/02/14

VOC 8260B
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B-20_9.5-11 (1405100-03) Soil Sampled: 11/05/14 05:15 Received: 11/07/14 9:35										
1,1,1,2-Tetrachloroethane	<0.30	0.30	0.0061	mg/kg dry	1	B4K1315	11/13/14	11/13/14	EPA 8260B	
1,1,1-Trichloroethane	<0.30	0.30	0.0067	mg/kg dry	1	"	"	"	"	
1,1,2,2-Tetrachloroethane	<0.30	0.30	0.0068	mg/kg dry	1	"	"	"	"	
1,1,2-Trichloroethane	<0.30	0.30	0.0087	mg/kg dry	1	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	<0.30	0.30	0.011	mg/kg dry	1	"	"	"	"	T-1
1,1-Dichloroethane	<0.30	0.30	0.0039	mg/kg dry	1	"	"	"	"	
1,1-Dichloroethene	<0.30	0.30	0.0069	mg/kg dry	1	"	"	"	"	
1,1-Dichloropropene	<0.30	0.30	0.0065	mg/kg dry	1	"	"	"	"	
1,2,3-Trichlorobenzene	<0.60	0.60	0.0061	mg/kg dry	1	"	"	"	"	
1,2,3-Trichloropropane	<0.30	0.30	0.0055	mg/kg dry	1	"	"	"	"	
1,2,4-Trichlorobenzene	<0.60	0.60	0.0064	mg/kg dry	1	"	"	"	"	
1,2,4-Trimethylbenzene	<0.30	0.30	0.0039	mg/kg dry	1	"	"	"	"	
1,2-Dibromo-3-chloropropane	<0.60	0.60	0.0099	mg/kg dry	1	"	"	"	"	
1,2-Dibromoethane (EDB)	<0.30	0.30	0.0086	mg/kg dry	1	"	"	"	"	
1,2-Dichlorobenzene	<0.30	0.30	0.0040	mg/kg dry	1	"	"	"	"	
1,2-Dichloroethane	<0.30	0.30	0.0065	mg/kg dry	1	"	"	"	"	
1,2-Dichloropropane	<0.30	0.30	0.0057	mg/kg dry	1	"	"	"	"	
1,3,5-Trimethylbenzene	<0.30	0.30	0.0030	mg/kg dry	1	"	"	"	"	
1,3-Dichlorobenzene	<0.30	0.30	0.0045	mg/kg dry	1	"	"	"	"	
1,3-Dichloropropane	<0.30	0.30	0.0065	mg/kg dry	1	"	"	"	"	
1,4-Dichlorobenzene	<0.30	0.30	0.0060	mg/kg dry	1	"	"	"	"	
2,2-Dichloropropane	<0.60	0.60	0.010	mg/kg dry	1	"	"	"	"	
2-Butanone	<2.4	2.4	0.017	mg/kg dry	1	"	"	"	"	
2-Chlorotoluene	<0.30	0.30	0.0026	mg/kg dry	1	"	"	"	"	
4-Chlorotoluene	<0.30	0.30	0.0043	mg/kg dry	1	"	"	"	"	
Acetone	<2.4	2.4	0.12	mg/kg dry	1	"	"	"	"	
Allyl chloride	<0.60	0.60	0.0099	mg/kg dry	1	"	"	"	"	
Benzene	<0.30	0.30	0.0032	mg/kg dry	1	"	"	"	"	
Bromobenzene	<0.30	0.30	0.0062	mg/kg dry	1	"	"	"	"	
Bromochloromethane	<0.30	0.30	0.0088	mg/kg dry	1	"	"	"	"	
Bromodichloromethane	<0.30	0.30	0.0051	mg/kg dry	1	"	"	"	"	
Bromoform	<0.60	0.60	0.0083	mg/kg dry	1	"	"	"	"	
Bromomethane	<0.60	0.60	0.0071	mg/kg dry	1	"	"	"	"	
Carbon tetrachloride	<0.30	0.30	0.0071	mg/kg dry	1	"	"	"	"	
Chlorobenzene	<0.30	0.30	0.0031	mg/kg dry	1	"	"	"	"	
Chloroethane	<0.30	0.30	0.0086	mg/kg dry	1	"	"	"	"	
Chloroform	<0.30	0.30	0.0027	mg/kg dry	1	"	"	"	"	
Chloromethane	<0.30	0.30	0.0080	mg/kg dry	1	"	"	"	"	
cis-1,2-Dichloroethene	<0.30	0.30	0.0021	mg/kg dry	1	"	"	"	"	

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Barr Engineering Co.	Project:	23691588	
4700 W 77th St	Project Number:	23691588.00	Work Order #: 1405100
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported: 12/02/14

VOC 8260B
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B-20_9.5-11 (1405100-03) Soil Sampled: 11/05/14 05:15 Received: 11/07/14 9:35										
cis-1,3-Dichloropropene	<0.30	0.30	0.0058	mg/kg dry	1	B4K1315	11/13/14	11/13/14	EPA 8260B	
Dibromochloromethane	<0.30	0.30	0.0055	mg/kg dry	1	"	"	"	"	
Dibromomethane	<0.30	0.30	0.0055	mg/kg dry	1	"	"	"	"	
Dichlorodifluoromethane	<0.60	0.60	0.011	mg/kg dry	1	"	"	"	"	
Dichlorofluoromethane	<0.30	0.30	0.0094	mg/kg dry	1	"	"	"	"	T-1
Ethyl ether	<0.60	0.60	0.0060	mg/kg dry	1	"	"	"	"	
Ethylbenzene	<0.30	0.30	0.0031	mg/kg dry	1	"	"	"	"	
Hexachlorobutadiene	<1.2	1.2	0.21	mg/kg dry	1	"	"	"	"	
Isopropylbenzene	<0.30	0.30	0.0020	mg/kg dry	1	"	"	"	"	
m,p-Xylene	<0.60	0.60	0.012	mg/kg dry	1	"	"	"	"	
Methyl isobutyl ketone	<0.60	0.60	0.017	mg/kg dry	1	"	"	"	"	
Methyl tert-butyl ether	<0.30	0.30	0.0065	mg/kg dry	1	"	"	"	"	
Methylene chloride	<1.2	1.2	0.0046	mg/kg dry	1	"	"	"	"	
Naphthalene	<0.60	0.60	0.014	mg/kg dry	1	"	"	"	"	
n-Butylbenzene	<0.30	0.30	0.0065	mg/kg dry	1	"	"	"	"	
n-Propylbenzene	<0.30	0.30	0.0037	mg/kg dry	1	"	"	"	"	
o-Xylene	<0.30	0.30	0.0046	mg/kg dry	1	"	"	"	"	
p-Isopropyltoluene	<0.30	0.30	0.0036	mg/kg dry	1	"	"	"	"	
sec-Butylbenzene	<0.30	0.30	0.0042	mg/kg dry	1	"	"	"	"	
Styrene	<0.30	0.30	0.0064	mg/kg dry	1	"	"	"	"	
tert-Butylbenzene	<0.30	0.30	0.0032	mg/kg dry	1	"	"	"	"	
Tetrachloroethene	<0.30	0.30	0.0060	mg/kg dry	1	"	"	"	"	
Tetrahydrofuran	<2.4	2.4	0.038	mg/kg dry	1	"	"	"	"	T-1
Toluene	<0.30	0.30	0.0042	mg/kg dry	1	"	"	"	"	
trans-1,2-Dichloroethene	<0.30	0.30	0.0054	mg/kg dry	1	"	"	"	"	
trans-1,3-Dichloropropene	<0.30	0.30	0.0075	mg/kg dry	1	"	"	"	"	
Trichloroethene	<0.30	0.30	0.0045	mg/kg dry	1	"	"	"	"	
Trichlorofluoromethane	<0.30	0.30	0.0074	mg/kg dry	1	"	"	"	"	
Vinyl chloride	<0.30	0.30	0.0073	mg/kg dry	1	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	*95.6*			*80-124 %*		"	"	"	"	
Surrogate: Dibromofluoromethane	*91.6*			*77.1-123 %*		"	"	"	"	
Surrogate: Toluene-d8	*93.8*			*78.1-125 %*		"	"	"	"	
B-21_7.5-9 (1405100-04) Soil Sampled: 11/05/14 05:55 Received: 11/07/14 9:35										
1,1,1,2-Tetrachloroethane	<0.29	0.29	0.0059	mg/kg dry	1	B4K1315	11/13/14	11/13/14	EPA 8260B	
1,1,1-Trichloroethane	<0.29	0.29	0.0065	mg/kg dry	1	"	"	"	"	
1,1,2,2-Tetrachloroethane	<0.29	0.29	0.0066	mg/kg dry	1	"	"	"	"	
1,1,2-Trichloroethane	<0.29	0.29	0.0085	mg/kg dry	1	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	<0.29	0.29	0.011	mg/kg dry	1	"	"	"	"	T-1
1,1-Dichloroethane	<0.29	0.29	0.0038	mg/kg dry	1	"	"	"	"	

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Barr Engineering Co.	Project:	23691588			
4700 W 77th St	Project Number:	23691588.00		Work Order #:	1405100
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen		Date Reported:	12/02/14

VOC 8260B
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B-21_7.5-9 (1405100-04) Soil Sampled: 11/05/14 05:55 Received: 11/07/14 9:35										
1,1-Dichloroethene	<0.29	0.29	0.0067	mg/kg dry	1	B4K1315	11/13/14	11/13/14	EPA 8260B	
1,1-Dichloropropene	<0.29	0.29	0.0064	mg/kg dry	1	"	"	"	"	
1,2,3-Trichlorobenzene	<0.58	0.58	0.0059	mg/kg dry	1	"	"	"	"	
1,2,3-Trichloropropane	<0.29	0.29	0.0053	mg/kg dry	1	"	"	"	"	
1,2,4-Trichlorobenzene	<0.58	0.58	0.0063	mg/kg dry	1	"	"	"	"	
1,2,4-Trimethylbenzene	<0.29	0.29	0.0038	mg/kg dry	1	"	"	"	"	
1,2-Dibromo-3-chloropropane	<0.58	0.58	0.0097	mg/kg dry	1	"	"	"	"	
1,2-Dibromoethane (EDB)	<0.29	0.29	0.0084	mg/kg dry	1	"	"	"	"	
1,2-Dichlorobenzene	<0.29	0.29	0.0040	mg/kg dry	1	"	"	"	"	
1,2-Dichloroethane	<0.29	0.29	0.0064	mg/kg dry	1	"	"	"	"	
1,2-Dichloropropane	<0.29	0.29	0.0056	mg/kg dry	1	"	"	"	"	
1,3,5-Trimethylbenzene	<0.29	0.29	0.0029	mg/kg dry	1	"	"	"	"	
1,3-Dichlorobenzene	<0.29	0.29	0.0044	mg/kg dry	1	"	"	"	"	
1,3-Dichloropropane	<0.29	0.29	0.0064	mg/kg dry	1	"	"	"	"	
1,4-Dichlorobenzene	<0.29	0.29	0.0058	mg/kg dry	1	"	"	"	"	
2,2-Dichloropropane	<0.58	0.58	0.010	mg/kg dry	1	"	"	"	"	
2-Butanone	<2.3	2.3	0.016	mg/kg dry	1	"	"	"	"	
2-Chlorotoluene	<0.29	0.29	0.0026	mg/kg dry	1	"	"	"	"	
4-Chlorotoluene	<0.29	0.29	0.0042	mg/kg dry	1	"	"	"	"	
Acetone	<2.3	2.3	0.12	mg/kg dry	1	"	"	"	"	
Allyl chloride	<0.58	0.58	0.0097	mg/kg dry	1	"	"	"	"	
Benzene	<0.29	0.29	0.0031	mg/kg dry	1	"	"	"	"	
Bromobenzene	<0.29	0.29	0.0060	mg/kg dry	1	"	"	"	"	
Bromochloromethane	<0.29	0.29	0.0086	mg/kg dry	1	"	"	"	"	
Bromodichloromethane	<0.29	0.29	0.0050	mg/kg dry	1	"	"	"	"	
Bromoform	<0.58	0.58	0.0081	mg/kg dry	1	"	"	"	"	
Bromomethane	<0.58	0.58	0.0070	mg/kg dry	1	"	"	"	"	
Carbon tetrachloride	<0.29	0.29	0.0070	mg/kg dry	1	"	"	"	"	
Chlorobenzene	<0.29	0.29	0.0030	mg/kg dry	1	"	"	"	"	
Chloroethane	<0.29	0.29	0.0084	mg/kg dry	1	"	"	"	"	
Chloroform	<0.29	0.29	0.0027	mg/kg dry	1	"	"	"	"	
Chloromethane	<0.29	0.29	0.0078	mg/kg dry	1	"	"	"	"	
cis-1,2-Dichloroethene	<0.29	0.29	0.0021	mg/kg dry	1	"	"	"	"	
cis-1,3-Dichloropropene	<0.29	0.29	0.0057	mg/kg dry	1	"	"	"	"	
Dibromochloromethane	<0.29	0.29	0.0053	mg/kg dry	1	"	"	"	"	
Dibromomethane	<0.29	0.29	0.0053	mg/kg dry	1	"	"	"	"	
Dichlorodifluoromethane	<0.58	0.58	0.011	mg/kg dry	1	"	"	"	"	
Dichlorofluoromethane	<0.29	0.29	0.0092	mg/kg dry	1	"	"	"	"	T-1
Ethyl ether	<0.58	0.58	0.0058	mg/kg dry	1	"	"	"	"	

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Barr Engineering Co.	Project:	23691588	
4700 W 77th St	Project Number:	23691588.00	Work Order #: 1405100
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported: 12/02/14

VOC 8260B
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B-21_7.5-9 (1405100-04) Soil Sampled: 11/05/14 05:55 Received: 11/07/14 9:35										
Ethylbenzene	<0.29	0.29	0.0030	mg/kg dry	1	B4K1315	11/13/14	11/13/14	EPA 8260B	
Hexachlorobutadiene	<1.2	1.2	0.21	mg/kg dry	1	"	"	"	"	
Isopropylbenzene	<0.29	0.29	0.0020	mg/kg dry	1	"	"	"	"	
m,p-Xylene	<0.58	0.58	0.011	mg/kg dry	1	"	"	"	"	
Methyl isobutyl ketone	<0.58	0.58	0.016	mg/kg dry	1	"	"	"	"	
Methyl tert-butyl ether	<0.29	0.29	0.0064	mg/kg dry	1	"	"	"	"	
Methylene chloride	<1.2	1.2	0.0045	mg/kg dry	1	"	"	"	"	
Naphthalene	<0.58	0.58	0.014	mg/kg dry	1	"	"	"	"	
n-Butylbenzene	<0.29	0.29	0.0064	mg/kg dry	1	"	"	"	"	
n-Propylbenzene	<0.29	0.29	0.0036	mg/kg dry	1	"	"	"	"	
o-Xylene	<0.29	0.29	0.0045	mg/kg dry	1	"	"	"	"	
p-Isopropyltoluene	<0.29	0.29	0.0035	mg/kg dry	1	"	"	"	"	
sec-Butylbenzene	<0.29	0.29	0.0041	mg/kg dry	1	"	"	"	"	
Styrene	<0.29	0.29	0.0063	mg/kg dry	1	"	"	"	"	
tert-Butylbenzene	<0.29	0.29	0.0031	mg/kg dry	1	"	"	"	"	
Tetrachloroethene	<0.29	0.29	0.0058	mg/kg dry	1	"	"	"	"	
Tetrahydrofuran	<2.3	2.3	0.037	mg/kg dry	1	"	"	"	"	T-1
Toluene	<0.29	0.29	0.0041	mg/kg dry	1	"	"	"	"	
trans-1,2-Dichloroethene	<0.29	0.29	0.0052	mg/kg dry	1	"	"	"	"	
trans-1,3-Dichloropropene	<0.29	0.29	0.0073	mg/kg dry	1	"	"	"	"	
Trichloroethene	<0.29	0.29	0.0044	mg/kg dry	1	"	"	"	"	
Trichlorofluoromethane	<0.29	0.29	0.0072	mg/kg dry	1	"	"	"	"	
Vinyl chloride	<0.29	0.29	0.0071	mg/kg dry	1	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	*96.8*			*80-124 %*		"	"	"	"	
Surrogate: Dibromofluoromethane	*91.1*			*77.1-123 %*		"	"	"	"	
Surrogate: Toluene-d8	*94.7*			*78.1-125 %*		"	"	"	"	
B-38_7.5-9 (1405100-07) Soil Sampled: 11/06/14 02:42 Received: 11/07/14 9:35										
1,1,1,2-Tetrachloroethane	<0.29	0.29	0.0060	mg/kg dry	1	B4K1315	11/13/14	11/13/14	EPA 8260B	
1,1,1-Trichloroethane	<0.29	0.29	0.0066	mg/kg dry	1	"	"	"	"	
1,1,2,2-Tetrachloroethane	<0.29	0.29	0.0067	mg/kg dry	1	"	"	"	"	
1,1,2-Trichloroethane	<0.29	0.29	0.0086	mg/kg dry	1	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	<0.29	0.29	0.011	mg/kg dry	1	"	"	"	"	T-1
1,1-Dichloroethane	<0.29	0.29	0.0039	mg/kg dry	1	"	"	"	"	
1,1-Dichloroethene	<0.29	0.29	0.0068	mg/kg dry	1	"	"	"	"	
1,1-Dichloropropene	<0.29	0.29	0.0065	mg/kg dry	1	"	"	"	"	
1,2,3-Trichlorobenzene	<0.59	0.59	0.0060	mg/kg dry	1	"	"	"	"	
1,2,3-Trichloropropane	<0.29	0.29	0.0054	mg/kg dry	1	"	"	"	"	
1,2,4-Trichlorobenzene	<0.59	0.59	0.0064	mg/kg dry	1	"	"	"	"	
1,2,4-Trimethylbenzene	<0.29	0.29	0.0039	mg/kg dry	1	"	"	"	"	

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88 Empire Drive
St Paul, MN 55103
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Fax: 651-642-1239

Barr Engineering Co.	Project:	23691588			
4700 W 77th St	Project Number:	23691588.00		Work Order #:	1405100
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen		Date Reported:	12/02/14

VOC 8260B
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B-38_7.5-9 (1405100-07) Soil Sampled: 11/06/14 02:42 Received: 11/07/14 9:35										
1,2-Dibromo-3-chloropropane	<0.59	0.59	0.0098	mg/kg dry	1	B4K1315	11/13/14	11/13/14	EPA 8260B	
1,2-Dibromoethane (EDB)	<0.29	0.29	0.0085	mg/kg dry	1	"	"	"	"	
1,2-Dichlorobenzene	<0.29	0.29	0.0040	mg/kg dry	1	"	"	"	"	
1,2-Dichloroethane	<0.29	0.29	0.0065	mg/kg dry	1	"	"	"	"	
1,2-Dichloropropane	<0.29	0.29	0.0056	mg/kg dry	1	"	"	"	"	
1,3,5-Trimethylbenzene	<0.29	0.29	0.0029	mg/kg dry	1	"	"	"	"	
1,3-Dichlorobenzene	<0.29	0.29	0.0045	mg/kg dry	1	"	"	"	"	
1,3-Dichloropropane	<0.29	0.29	0.0065	mg/kg dry	1	"	"	"	"	
1,4-Dichlorobenzene	<0.29	0.29	0.0059	mg/kg dry	1	"	"	"	"	
2,2-Dichloropropane	<0.59	0.59	0.010	mg/kg dry	1	"	"	"	"	
2-Butanone	<2.4	2.4	0.016	mg/kg dry	1	"	"	"	"	
2-Chlorotoluene	<0.29	0.29	0.0026	mg/kg dry	1	"	"	"	"	
4-Chlorotoluene	<0.29	0.29	0.0042	mg/kg dry	1	"	"	"	"	
Acetone	<2.4	2.4	0.12	mg/kg dry	1	"	"	"	"	
Allyl chloride	<0.59	0.59	0.0098	mg/kg dry	1	"	"	"	"	
Benzene	<0.29	0.29	0.0032	mg/kg dry	1	"	"	"	"	
Bromobenzene	<0.29	0.29	0.0061	mg/kg dry	1	"	"	"	"	
Bromochloromethane	<0.29	0.29	0.0087	mg/kg dry	1	"	"	"	"	
Bromodichloromethane	<0.29	0.29	0.0051	mg/kg dry	1	"	"	"	"	
Bromoform	<0.59	0.59	0.0082	mg/kg dry	1	"	"	"	"	
Bromomethane	<0.59	0.59	0.0071	mg/kg dry	1	"	"	"	"	
Carbon tetrachloride	<0.29	0.29	0.0071	mg/kg dry	1	"	"	"	"	
Chlorobenzene	<0.29	0.29	0.0031	mg/kg dry	1	"	"	"	"	
Chloroethane	<0.29	0.29	0.0085	mg/kg dry	1	"	"	"	"	
Chloroform	<0.29	0.29	0.0027	mg/kg dry	1	"	"	"	"	
Chloromethane	<0.29	0.29	0.0079	mg/kg dry	1	"	"	"	"	
cis-1,2-Dichloroethene	<0.29	0.29	0.0021	mg/kg dry	1	"	"	"	"	
cis-1,3-Dichloropropene	<0.29	0.29	0.0058	mg/kg dry	1	"	"	"	"	
Dibromochloromethane	<0.29	0.29	0.0054	mg/kg dry	1	"	"	"	"	
Dibromomethane	<0.29	0.29	0.0054	mg/kg dry	1	"	"	"	"	
Dichlorodifluoromethane	<0.59	0.59	0.011	mg/kg dry	1	"	"	"	"	
Dichlorofluoromethane	<0.29	0.29	0.0093	mg/kg dry	1	"	"	"	"	T-1
Ethyl ether	<0.59	0.59	0.0059	mg/kg dry	1	"	"	"	"	
Ethylbenzene	<0.29	0.29	0.0031	mg/kg dry	1	"	"	"	"	
Hexachlorobutadiene	<1.2	1.2	0.21	mg/kg dry	1	"	"	"	"	
Isopropylbenzene	<0.29	0.29	0.0020	mg/kg dry	1	"	"	"	"	
m,p-Xylene	<0.59	0.59	0.011	mg/kg dry	1	"	"	"	"	
Methyl isobutyl ketone	<0.59	0.59	0.016	mg/kg dry	1	"	"	"	"	
Methyl tert-butyl ether	<0.29	0.29	0.0065	mg/kg dry	1	"	"	"	"	

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LEGEND Technical Services, Inc.
www.legend-group.com

88 Empire Drive
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Barr Engineering Co.	Project:	23691588			
4700 W 77th St	Project Number:	23691588.00		Work Order #:	1405100
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen		Date Reported:	12/02/14

VOC 8260B
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B-38_7.5-9 (1405100-07) Soil Sampled: 11/06/14 02:42 Received: 11/07/14 9:35										
Methylene chloride	<1.2	1.2	0.0046	mg/kg dry	1	B4K1315	11/13/14	11/13/14	EPA 8260B	
Naphthalene	<0.59	0.59	0.014	mg/kg dry	1	"	"	"	"	
n-Butylbenzene	<0.29	0.29	0.0065	mg/kg dry	1	"	"	"	"	
n-Propylbenzene	<0.29	0.29	0.0036	mg/kg dry	1	"	"	"	"	
o-Xylene	<0.29	0.29	0.0046	mg/kg dry	1	"	"	"	"	
p-Isopropyltoluene	<0.29	0.29	0.0035	mg/kg dry	1	"	"	"	"	
sec-Butylbenzene	<0.29	0.29	0.0041	mg/kg dry	1	"	"	"	"	
Styrene	<0.29	0.29	0.0064	mg/kg dry	1	"	"	"	"	
tert-Butylbenzene	<0.29	0.29	0.0032	mg/kg dry	1	"	"	"	"	
Tetrachloroethene	<0.29	0.29	0.0059	mg/kg dry	1	"	"	"	"	
Tetrahydrofuran	<2.4	2.4	0.038	mg/kg dry	1	"	"	"	"	T-1
Toluene	<0.29	0.29	0.0041	mg/kg dry	1	"	"	"	"	
trans-1,2-Dichloroethene	<0.29	0.29	0.0053	mg/kg dry	1	"	"	"	"	
trans-1,3-Dichloropropene	<0.29	0.29	0.0074	mg/kg dry	1	"	"	"	"	
Trichloroethene	<0.29	0.29	0.0045	mg/kg dry	1	"	"	"	"	
Trichlorofluoromethane	<0.29	0.29	0.0073	mg/kg dry	1	"	"	"	"	
Vinyl chloride	<0.29	0.29	0.0072	mg/kg dry	1	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	*95.1*			*80-124 %*		"	"	"	"	
Surrogate: Dibromofluoromethane	*89.8*			*77.1-123 %*		"	"	"	"	
Surrogate: Toluene-d8	*91.2*			*78.1-125 %*		"	"	"	"	
B-39_9.5-11 (1405100-08) Soil Sampled: 11/06/14 04:05 Received: 11/07/14 9:35										
1,1,1,2-Tetrachloroethane	<0.31	0.31	0.0063	mg/kg dry	1	B4K1315	11/13/14	11/13/14	EPA 8260B	
1,1,1-Trichloroethane	<0.31	0.31	0.0069	mg/kg dry	1	"	"	"	"	
1,1,2,2-Tetrachloroethane	<0.31	0.31	0.0070	mg/kg dry	1	"	"	"	"	
1,1,2-Trichloroethane	<0.31	0.31	0.0090	mg/kg dry	1	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	<0.31	0.31	0.011	mg/kg dry	1	"	"	"	"	T-1
1,1-Dichloroethane	<0.31	0.31	0.0041	mg/kg dry	1	"	"	"	"	
1,1-Dichloroethene	<0.31	0.31	0.0072	mg/kg dry	1	"	"	"	"	
1,1-Dichloropropene	<0.31	0.31	0.0068	mg/kg dry	1	"	"	"	"	
1,2,3-Trichlorobenzene	<0.62	0.62	0.0063	mg/kg dry	1	"	"	"	"	
1,2,3-Trichloropropane	<0.31	0.31	0.0057	mg/kg dry	1	"	"	"	"	
1,2,4-Trichlorobenzene	<0.62	0.62	0.0067	mg/kg dry	1	"	"	"	"	
1,2,4-Trimethylbenzene	<0.31	0.31	0.0041	mg/kg dry	1	"	"	"	"	
1,2-Dibromo-3-chloropropane	<0.62	0.62	0.010	mg/kg dry	1	"	"	"	"	
1,2-Dibromoethane (EDB)	<0.31	0.31	0.0089	mg/kg dry	1	"	"	"	"	
1,2-Dichlorobenzene	<0.31	0.31	0.0042	mg/kg dry	1	"	"	"	"	
1,2-Dichloroethane	<0.31	0.31	0.0068	mg/kg dry	1	"	"	"	"	
1,2-Dichloropropane	<0.31	0.31	0.0059	mg/kg dry	1	"	"	"	"	
1,3,5-Trimethylbenzene	<0.31	0.31	0.0031	mg/kg dry	1	"	"	"	"	

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88 Empire Drive
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Barr Engineering Co.	Project:	23691588			
4700 W 77th St	Project Number:	23691588.00		Work Order #:	1405100
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen		Date Reported:	12/02/14

VOC 8260B
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B-39_9.5-11 (1405100-08) Soil Sampled: 11/06/14 04:05 Received: 11/07/14 9:35										
1,3-Dichlorobenzene	<0.31	0.31	0.0047	mg/kg dry	1	B4K1315	11/13/14	11/13/14	EPA 8260B	
1,3-Dichloropropane	<0.31	0.31	0.0068	mg/kg dry	1	"	"	"	"	
1,4-Dichlorobenzene	<0.31	0.31	0.0062	mg/kg dry	1	"	"	"	"	
2,2-Dichloropropane	<0.62	0.62	0.011	mg/kg dry	1	"	"	"	"	
2-Butanone	<2.5	2.5	0.017	mg/kg dry	1	"	"	"	"	
2-Chlorotoluene	<0.31	0.31	0.0027	mg/kg dry	1	"	"	"	"	
4-Chlorotoluene	<0.31	0.31	0.0044	mg/kg dry	1	"	"	"	"	
Acetone	<2.5	2.5	0.12	mg/kg dry	1	"	"	"	"	
Allyl chloride	<0.62	0.62	0.010	mg/kg dry	1	"	"	"	"	
Benzene	<0.31	0.31	0.0033	mg/kg dry	1	"	"	"	"	
Bromobenzene	<0.31	0.31	0.0064	mg/kg dry	1	"	"	"	"	
Bromochloromethane	<0.31	0.31	0.0091	mg/kg dry	1	"	"	"	"	
Bromodichloromethane	<0.31	0.31	0.0053	mg/kg dry	1	"	"	"	"	
Bromoform	<0.62	0.62	0.0086	mg/kg dry	1	"	"	"	"	
Bromomethane	<0.62	0.62	0.0074	mg/kg dry	1	"	"	"	"	
Carbon tetrachloride	<0.31	0.31	0.0074	mg/kg dry	1	"	"	"	"	
Chlorobenzene	<0.31	0.31	0.0032	mg/kg dry	1	"	"	"	"	
Chloroethane	<0.31	0.31	0.0089	mg/kg dry	1	"	"	"	"	
Chloroform	<0.31	0.31	0.0028	mg/kg dry	1	"	"	"	"	
Chloromethane	<0.31	0.31	0.0083	mg/kg dry	1	"	"	"	"	
cis-1,2-Dichloroethene	<0.31	0.31	0.0022	mg/kg dry	1	"	"	"	"	
cis-1,3-Dichloropropene	<0.31	0.31	0.0060	mg/kg dry	1	"	"	"	"	
Dibromochloromethane	<0.31	0.31	0.0057	mg/kg dry	1	"	"	"	"	
Dibromomethane	<0.31	0.31	0.0057	mg/kg dry	1	"	"	"	"	
Dichlorodifluoromethane	<0.62	0.62	0.012	mg/kg dry	1	"	"	"	"	
Dichlorofluoromethane	<0.31	0.31	0.0098	mg/kg dry	1	"	"	"	"	T-1
Ethyl ether	<0.62	0.62	0.0062	mg/kg dry	1	"	"	"	"	
Ethylbenzene	<0.31	0.31	0.0032	mg/kg dry	1	"	"	"	"	
Hexachlorobutadiene	<1.2	1.2	0.22	mg/kg dry	1	"	"	"	"	
Isopropylbenzene	<0.31	0.31	0.0021	mg/kg dry	1	"	"	"	"	
m,p-Xylene	<0.62	0.62	0.012	mg/kg dry	1	"	"	"	"	
Methyl isobutyl ketone	<0.62	0.62	0.017	mg/kg dry	1	"	"	"	"	
Methyl tert-butyl ether	<0.31	0.31	0.0068	mg/kg dry	1	"	"	"	"	
Methylene chloride	<1.2	1.2	0.0048	mg/kg dry	1	"	"	"	"	
Naphthalene	<0.62	0.62	0.015	mg/kg dry	1	"	"	"	"	
n-Butylbenzene	<0.31	0.31	0.0068	mg/kg dry	1	"	"	"	"	
n-Propylbenzene	<0.31	0.31	0.0038	mg/kg dry	1	"	"	"	"	
o-Xylene	<0.31	0.31	0.0048	mg/kg dry	1	"	"	"	"	
p-Isopropyltoluene	<0.31	0.31	0.0037	mg/kg dry	1	"	"	"	"	

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St Paul, MN 55103
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Barr Engineering Co.	Project:	23691588	
4700 W 77th St	Project Number:	23691588.00	Work Order #: 1405100
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported: 12/02/14

VOC 8260B
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B-39_9.5-11 (1405100-08) Soil Sampled: 11/06/14 04:05 Received: 11/07/14 9:35										
sec-Butylbenzene	<0.31	0.31	0.0043	mg/kg dry	1	B4K1315	11/13/14	11/13/14	EPA 8260B	
Styrene	<0.31	0.31	0.0067	mg/kg dry	1	"	"	"	"	
tert-Butylbenzene	<0.31	0.31	0.0033	mg/kg dry	1	"	"	"	"	
Tetrachloroethene	<0.31	0.31	0.0062	mg/kg dry	1	"	"	"	"	
Tetrahydrofuran	<2.5	2.5	0.040	mg/kg dry	1	"	"	"	"	T-1
Toluene	<0.31	0.31	0.0043	mg/kg dry	1	"	"	"	"	
trans-1,2-Dichloroethene	<0.31	0.31	0.0056	mg/kg dry	1	"	"	"	"	
trans-1,3-Dichloropropene	<0.31	0.31	0.0078	mg/kg dry	1	"	"	"	"	
Trichloroethene	<0.31	0.31	0.0047	mg/kg dry	1	"	"	"	"	
Trichlorofluoromethane	<0.31	0.31	0.0077	mg/kg dry	1	"	"	"	"	
Vinyl chloride	<0.31	0.31	0.0075	mg/kg dry	1	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	*93.4*			*80-124 %*		"	"	"	"	
Surrogate: Dibromofluoromethane	*91.4*			*77.1-123 %*		"	"	"	"	
Surrogate: Toluene-d8	*93.1*			*78.1-125 %*		"	"	"	"	
B-41_7.5-9 (1405100-10) Soil Sampled: 11/06/14 06:08 Received: 11/07/14 9:35										
1,1,1,2-Tetrachloroethane	<0.30	0.30	0.0061	mg/kg dry	1	B4K1315	11/13/14	11/13/14	EPA 8260B	
1,1,1-Trichloroethane	<0.30	0.30	0.0067	mg/kg dry	1	"	"	"	"	
1,1,2,2-Tetrachloroethane	<0.30	0.30	0.0069	mg/kg dry	1	"	"	"	"	
1,1,2-Trichloroethane	<0.30	0.30	0.0088	mg/kg dry	1	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	<0.30	0.30	0.011	mg/kg dry	1	"	"	"	"	T-1
1,1-Dichloroethane	<0.30	0.30	0.0040	mg/kg dry	1	"	"	"	"	
1,1-Dichloroethene	<0.30	0.30	0.0070	mg/kg dry	1	"	"	"	"	
1,1-Dichloropropene	<0.30	0.30	0.0066	mg/kg dry	1	"	"	"	"	
1,2,3-Trichlorobenzene	<0.60	0.60	0.0061	mg/kg dry	1	"	"	"	"	
1,2,3-Trichloropropane	<0.30	0.30	0.0055	mg/kg dry	1	"	"	"	"	
1,2,4-Trichlorobenzene	<0.60	0.60	0.0065	mg/kg dry	1	"	"	"	"	
1,2,4-Trimethylbenzene	<0.30	0.30	0.0040	mg/kg dry	1	"	"	"	"	
1,2-Dibromo-3-chloropropane	<0.60	0.60	0.010	mg/kg dry	1	"	"	"	"	
1,2-Dibromoethane (EDB)	<0.30	0.30	0.0087	mg/kg dry	1	"	"	"	"	
1,2-Dichlorobenzene	<0.30	0.30	0.0041	mg/kg dry	1	"	"	"	"	
1,2-Dichloroethane	<0.30	0.30	0.0066	mg/kg dry	1	"	"	"	"	
1,2-Dichloropropane	<0.30	0.30	0.0058	mg/kg dry	1	"	"	"	"	
1,3,5-Trimethylbenzene	<0.30	0.30	0.0030	mg/kg dry	1	"	"	"	"	
1,3-Dichlorobenzene	<0.30	0.30	0.0046	mg/kg dry	1	"	"	"	"	
1,3-Dichloropropane	<0.30	0.30	0.0066	mg/kg dry	1	"	"	"	"	
1,4-Dichlorobenzene	<0.30	0.30	0.0060	mg/kg dry	1	"	"	"	"	
2,2-Dichloropropane	<0.60	0.60	0.010	mg/kg dry	1	"	"	"	"	
2-Butanone	<2.4	2.4	0.017	mg/kg dry	1	"	"	"	"	
2-Chlorotoluene	<0.30	0.30	0.0027	mg/kg dry	1	"	"	"	"	

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Barr Engineering Co.	Project:	23691588			
4700 W 77th St	Project Number:	23691588.00		Work Order #:	1405100
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen		Date Reported:	12/02/14

VOC 8260B
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B-41_7.5-9 (1405100-10) Soil Sampled: 11/06/14 06:08 Received: 11/07/14 9:35										
4-Chlorotoluene	<0.30	0.30	0.0043	mg/kg dry	1	B4K1315	11/13/14	11/13/14	EPA 8260B	
Acetone	<2.4	2.4	0.12	mg/kg dry	1	"	"	"	"	
Allyl chloride	<0.60	0.60	0.010	mg/kg dry	1	"	"	"	"	
Benzene	<0.30	0.30	0.0033	mg/kg dry	1	"	"	"	"	
Bromobenzene	<0.30	0.30	0.0063	mg/kg dry	1	"	"	"	"	
Bromochloromethane	<0.30	0.30	0.0089	mg/kg dry	1	"	"	"	"	
Bromodichloromethane	<0.30	0.30	0.0052	mg/kg dry	1	"	"	"	"	
Bromoform	<0.60	0.60	0.0084	mg/kg dry	1	"	"	"	"	
Bromomethane	<0.60	0.60	0.0072	mg/kg dry	1	"	"	"	"	
Carbon tetrachloride	<0.30	0.30	0.0072	mg/kg dry	1	"	"	"	"	
Chlorobenzene	<0.30	0.30	0.0031	mg/kg dry	1	"	"	"	"	
Chloroethane	<0.30	0.30	0.0087	mg/kg dry	1	"	"	"	"	
Chloroform	<0.30	0.30	0.0028	mg/kg dry	1	"	"	"	"	
Chloromethane	<0.30	0.30	0.0081	mg/kg dry	1	"	"	"	"	
cis-1,2-Dichloroethene	<0.30	0.30	0.0022	mg/kg dry	1	"	"	"	"	
cis-1,3-Dichloropropene	<0.30	0.30	0.0059	mg/kg dry	1	"	"	"	"	
Dibromochloromethane	<0.30	0.30	0.0055	mg/kg dry	1	"	"	"	"	
Dibromomethane	<0.30	0.30	0.0055	mg/kg dry	1	"	"	"	"	
Dichlorodifluoromethane	<0.60	0.60	0.011	mg/kg dry	1	"	"	"	"	
Dichlorofluoromethane	<0.30	0.30	0.0095	mg/kg dry	1	"	"	"	"	T-1
Ethyl ether	<0.60	0.60	0.0060	mg/kg dry	1	"	"	"	"	
Ethylbenzene	<0.30	0.30	0.0031	mg/kg dry	1	"	"	"	"	
Hexachlorobutadiene	<1.2	1.2	0.22	mg/kg dry	1	"	"	"	"	
Isopropylbenzene	<0.30	0.30	0.0020	mg/kg dry	1	"	"	"	"	
m,p-Xylene	<0.60	0.60	0.012	mg/kg dry	1	"	"	"	"	
Methyl isobutyl ketone	<0.60	0.60	0.017	mg/kg dry	1	"	"	"	"	
Methyl tert-butyl ether	<0.30	0.30	0.0066	mg/kg dry	1	"	"	"	"	
Methylene chloride	<1.2	1.2	0.0047	mg/kg dry	1	"	"	"	"	
Naphthalene	<0.60	0.60	0.014	mg/kg dry	1	"	"	"	"	
n-Butylbenzene	<0.30	0.30	0.0066	mg/kg dry	1	"	"	"	"	
n-Propylbenzene	<0.30	0.30	0.0037	mg/kg dry	1	"	"	"	"	
o-Xylene	<0.30	0.30	0.0047	mg/kg dry	1	"	"	"	"	
p-Isopropyltoluene	<0.30	0.30	0.0036	mg/kg dry	1	"	"	"	"	
sec-Butylbenzene	<0.30	0.30	0.0042	mg/kg dry	1	"	"	"	"	
Styrene	<0.30	0.30	0.0065	mg/kg dry	1	"	"	"	"	
tert-Butylbenzene	<0.30	0.30	0.0033	mg/kg dry	1	"	"	"	"	
Tetrachloroethene	<0.30	0.30	0.0060	mg/kg dry	1	"	"	"	"	
Tetrahydrofuran	<2.4	2.4	0.039	mg/kg dry	1	"	"	"	"	T-1
Toluene	<0.30	0.30	0.0042	mg/kg dry	1	"	"	"	"	

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Barr Engineering Co.	Project:	23691588	
4700 W 77th St	Project Number:	23691588.00	Work Order #: 1405100
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported: 12/02/14

VOC 8260B
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B-41_7.5-9 (1405100-10) Soil Sampled: 11/06/14 06:08 Received: 11/07/14 9:35										
trans-1,2-Dichloroethene	<0.30	0.30	0.0054	mg/kg dry	1	B4K1315	11/13/14	11/13/14	EPA 8260B	
trans-1,3-Dichloropropene	<0.30	0.30	0.0076	mg/kg dry	1	"	"	"	"	
Trichloroethene	<0.30	0.30	0.0046	mg/kg dry	1	"	"	"	"	
Trichlorofluoromethane	<0.30	0.30	0.0075	mg/kg dry	1	"	"	"	"	
Vinyl chloride	<0.30	0.30	0.0073	mg/kg dry	1	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	*98.0*			*80-124 %*		"	"	"	"	
Surrogate: Dibromofluoromethane	*91.6*			*77.1-123 %*		"	"	"	"	
Surrogate: Toluene-d8	*95.8*			*78.1-125 %*		"	"	"	"	

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Barr Engineering Co.	Project:	23691588		
4700 W 77th St	Project Number:	23691588.00	Work Order #:	1405100
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported:	12/02/14

DRO/8015D - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1404 - Sonication (Wisc DRO)											
Blank (B4K1404-BLK1)					Prepared & Analyzed: 11/14/14						
Diesel Range Organics	< 8.0	8.0	1.3	mg/kg wet							
DRO (Silica Gel Cleanup)	< 8.0	8.0	1.3	mg/kg wet							
Surrogate: Triacontane (C-30)	*14.9*			*mg/kg wet*	*16.0*		*93.1*	*70-130*			
Surrogate: Triacontane (C-30) (Silica Gel)	*16.0*			*mg/kg wet*	*16.0*		*100*	*70-130*			
LCS (B4K1404-BS1)					Prepared & Analyzed: 11/14/14						
Diesel Range Organics	59.2	8.0	1.3	mg/kg wet	64.0		92.5	70-120			
DRO (Silica Gel Cleanup)	67.0	8.0	1.3	mg/kg wet	64.0		105	70-130			
Surrogate: Triacontane (C-30)	*15.6*			*mg/kg wet*	*16.0*		*97.6*	*70-130*			
Surrogate: Triacontane (C-30) (Silica Gel)	*16.8*			*mg/kg wet*	*16.0*		*105*	*70-130*			
LCS Dup (B4K1404-BSD1)					Prepared: 11/14/14 Analyzed: 11/15/14						
Diesel Range Organics	54.1	8.0	1.3	mg/kg wet	64.0		84.5	70-120	9.06	20	
DRO (Silica Gel Cleanup)	69.5	8.0	1.3	mg/kg wet	64.0		109	70-130	3.67	20	
Surrogate: Triacontane (C-30)	*15.1*			*mg/kg wet*	*16.0*		*94.2*	*70-130*			
Surrogate: Triacontane (C-30) (Silica Gel)	*17.9*			*mg/kg wet*	*16.0*		*112*	*70-130*			

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Barr Engineering Co.	Project:	23691588			
4700 W 77th St	Project Number:	23691588.00		Work Order #:	1405100
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen		Date Reported:	12/02/14

WI(95) GRO/8015D - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1003 - EPA 5035 Soil (Purge and Trap)											
Blank (B4K1003-BLK1)					Prepared & Analyzed: 11/10/14						
1,2,4-Trimethylbenzene	< 0.025	0.025	0.0027	mg/kg wet							
1,3,5-Trimethylbenzene	< 0.025	0.025	0.0062	mg/kg wet							
Benzene	< 0.025	0.025	0.0029	mg/kg wet							
Ethylbenzene	< 0.025	0.025	0.0064	mg/kg wet							
Gasoline range organics	< 5.0	5.0	0.54	mg/kg wet							
Methyl tert-butyl ether	< 0.025	0.025	0.0054	mg/kg wet							
Toluene	< 0.025	0.025	0.0041	mg/kg wet							
Xylenes (total)	< 0.075	0.075	0.014	mg/kg wet							
Surrogate: 4-Fluorochlorobenzene	*23.0*			*ug/L*	*25.0*		*91.9*	*80-150*			
LCS (B4K1003-BS1)					Prepared & Analyzed: 11/10/14						
1,2,4-Trimethylbenzene	99.2			ug/L	100		99.2	80-120			
1,3,5-Trimethylbenzene	95.4			ug/L	100		95.4	80-120			
Benzene	100			ug/L	100		100	80-120			
Ethylbenzene	100			ug/L	100		100	80-120			
Gasoline range organics	957			ug/L	1000		95.7	80-120			
Methyl tert-butyl ether	87.4			ug/L	100		87.4	80-120			
Toluene	100			ug/L	100		100	80-120			
Xylenes (total)	303			ug/L	300		101	80-120			
Surrogate: 4-Fluorochlorobenzene	*23.5*			*ug/L*	*25.0*		*93.9*	*80-150*			
LCS Dup (B4K1003-BSD1)					Prepared: 11/10/14 Analyzed: 11/11/14						
1,2,4-Trimethylbenzene	101			ug/L	100		101	80-120	1.79	20	
1,3,5-Trimethylbenzene	96.1			ug/L	100		96.1	80-120	0.764	20	
Benzene	101			ug/L	100		101	80-120	0.659	20	
Ethylbenzene	101			ug/L	100		101	80-120	1.24	20	
Gasoline range organics	955			ug/L	1000		95.5	80-120	0.281	20	
Methyl tert-butyl ether	88.3			ug/L	100		88.3	80-120	1.06	20	
Toluene	102			ug/L	100		102	80-120	1.21	20	
Xylenes (total)	304			ug/L	300		101	80-120	0.578	20	
Surrogate: 4-Fluorochlorobenzene	*24.1*			*ug/L*	*25.0*		*96.5*	*80-150*			
Duplicate (B4K1003-DUP1)		**Source: 1405100-10**			Prepared & Analyzed: 11/10/14						
Gasoline range organics	1.49	6.0	0.65	mg/kg dry		<6.0			NA	20	
Surrogate: 4-Fluorochlorobenzene	*23.4*			*ug/L*	*25.0*		*93.5*	*80-150*			
Matrix Spike (B4K1003-MS1)		**Source: 1405100-03**			Prepared: 11/10/14 Analyzed: 11/11/14						
1,2,4-Trimethylbenzene	105			ug/L	100	<	105	80-120			
1,3,5-Trimethylbenzene	99.2			ug/L	100	<	99.2	80-120			
Benzene	98.7			ug/L	100	<	98.7	80-120			
Ethylbenzene	99.6			ug/L	100	0.296	99.3	80-120			
Methyl tert-butyl ether	87.4			ug/L	100	<	87.4	80-120			

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Barr Engineering Co.	Project:	23691588		
4700 W 77th St	Project Number:	23691588.00	Work Order #:	1405100
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported:	12/02/14

WI(95) GRO/8015D - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1003 - EPA 5035 Soil (Purge and Trap)											
Matrix Spike (B4K1003-MS1)		**Source: 1405100-03**			Prepared: 11/10/14		Analyzed: 11/11/14				
Toluene	99.6			ug/L	100	<	99.6	80-120			
Xylenes (total)	300			ug/L	300	0.192	99.9	80-120			
Surrogate: 4-Fluorochlorobenzene	*23.6*			*ug/L*	*25.0*		*94.5*	*80-150*			

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Barr Engineering Co.	Project:	23691588		
4700 W 77th St	Project Number:	23691588.00	Work Order #:	1405100
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported:	12/02/14

PERCENT SOLIDS - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1408 - General Preparation											
Duplicate (B4K1408-DUP1)		**Source: 1405100-10**			Prepared & Analyzed: 11/14/14						
% Solids	85.0			%		83.0			2.38	20	
Duplicate (B4K1408-DUP2)		**Source: 1405114-03**			Prepared & Analyzed: 11/14/14						
% Solids	91.0			%		92.0			1.09	20	
Duplicate (B4K1408-DUP3)		**Source: 1405141-02**			Prepared & Analyzed: 11/14/14						
% Solids	82.0			%		81.0			1.23	20	
Duplicate (B4K1408-DUP4)		**Source: 1405166-02**			Prepared & Analyzed: 11/14/14						
% Solids	61.0			%		62.0			1.63	20	

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Barr Engineering Co.	Project:	23691588			
4700 W 77th St	Project Number:	23691588.00		Work Order #:	1405100
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen		Date Reported:	12/02/14

VOC 8260B - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1315 - EPA 5035 Soil (Purge and Trap)											
Blank (B4K1315-BLK1)					Prepared & Analyzed: 11/13/14						
1,1,1,2-Tetrachloroethane	< 0.25	0.25	0.0051	mg/kg wet							
1,1,1-Trichloroethane	< 0.25	0.25	0.0056	mg/kg wet							
1,1,2,2-Tetrachloroethane	< 0.25	0.25	0.0057	mg/kg wet							
1,1,2-Trichloroethane	< 0.25	0.25	0.0073	mg/kg wet							
1,1,2-Trichlorotrifluoroethane	< 0.25	0.25	0.0091	mg/kg wet							
1,1-Dichloroethane	< 0.25	0.25	0.0033	mg/kg wet							
1,1-Dichloroethene	< 0.25	0.25	0.0058	mg/kg wet							
1,1-Dichloropropene	< 0.25	0.25	0.0055	mg/kg wet							
1,2,3-Trichlorobenzene	< 0.50	0.50	0.0051	mg/kg wet							
1,2,3-Trichloropropane	< 0.25	0.25	0.0046	mg/kg wet							
1,2,4-Trichlorobenzene	< 0.50	0.50	0.0054	mg/kg wet							
1,2,4-Trimethylbenzene	< 0.25	0.25	0.0033	mg/kg wet							
1,2-Dibromo-3-chloropropane	< 0.50	0.50	0.0083	mg/kg wet							
1,2-Dibromoethane (EDB)	< 0.25	0.25	0.0072	mg/kg wet							
1,2-Dichlorobenzene	< 0.25	0.25	0.0034	mg/kg wet							
1,2-Dichloroethane	< 0.25	0.25	0.0055	mg/kg wet							
1,2-Dichloropropane	< 0.25	0.25	0.0048	mg/kg wet							
1,3,5-Trimethylbenzene	< 0.25	0.25	0.0025	mg/kg wet							
1,3-Dichlorobenzene	< 0.25	0.25	0.0038	mg/kg wet							
1,3-Dichloropropane	< 0.25	0.25	0.0055	mg/kg wet							
1,4-Dichlorobenzene	< 0.25	0.25	0.0050	mg/kg wet							
2,2-Dichloropropane	< 0.50	0.50	0.0087	mg/kg wet							
2-Butanone	< 2.0	2.0	0.014	mg/kg wet							
2-Chlorotoluene	< 0.25	0.25	0.0022	mg/kg wet							
4-Chlorotoluene	< 0.25	0.25	0.0036	mg/kg wet							
Acetone	< 2.0	2.0	0.10	mg/kg wet							
Allyl chloride	< 0.50	0.50	0.0083	mg/kg wet							
Benzene	< 0.25	0.25	0.0027	mg/kg wet							
Bromobenzene	< 0.25	0.25	0.0052	mg/kg wet							
Bromochloromethane	< 0.25	0.25	0.0074	mg/kg wet							
Bromodichloromethane	< 0.25	0.25	0.0043	mg/kg wet							
Bromoform	< 0.50	0.50	0.0070	mg/kg wet							
Bromomethane	< 0.50	0.50	0.0060	mg/kg wet							
Carbon tetrachloride	< 0.25	0.25	0.0060	mg/kg wet							
Chlorobenzene	< 0.25	0.25	0.0026	mg/kg wet							
Chloroethane	< 0.25	0.25	0.0072	mg/kg wet							
Chloroform	< 0.25	0.25	0.0023	mg/kg wet							
Chloromethane	< 0.25	0.25	0.0067	mg/kg wet							
cis-1,2-Dichloroethene	< 0.25	0.25	0.0018	mg/kg wet							

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Barr Engineering Co.	Project:	23691588	
4700 W 77th St	Project Number:	23691588.00	Work Order #: 1405100
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported: 12/02/14

VOC 8260B - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1315 - EPA 5035 Soil (Purge and Trap)											
Blank (B4K1315-BLK1)					Prepared & Analyzed: 11/13/14						
cis-1,3-Dichloropropene	< 0.25	0.25	0.0049	mg/kg wet							
Dibromochloromethane	< 0.25	0.25	0.0046	mg/kg wet							
Dibromomethane	< 0.25	0.25	0.0046	mg/kg wet							
Dichlorodifluoromethane	< 0.50	0.50	0.0094	mg/kg wet							
Dichlorofluoromethane	< 0.25	0.25	0.0079	mg/kg wet							
Ethyl ether	< 0.50	0.50	0.0050	mg/kg wet							
Ethylbenzene	< 0.25	0.25	0.0026	mg/kg wet							
Hexachlorobutadiene	< 1.0	1.0	0.18	mg/kg wet							
Isopropylbenzene	< 0.25	0.25	0.0017	mg/kg wet							
m,p-Xylene	< 0.50	0.50	0.0097	mg/kg wet							
Methyl isobutyl ketone	< 0.50	0.50	0.014	mg/kg wet							
Methyl tert-butyl ether	< 0.25	0.25	0.0055	mg/kg wet							
Methylene chloride	< 1.0	1.0	0.0039	mg/kg wet							
Naphthalene	< 0.50	0.50	0.012	mg/kg wet							
n-Butylbenzene	< 0.25	0.25	0.0055	mg/kg wet							
n-Propylbenzene	< 0.25	0.25	0.0031	mg/kg wet							
o-Xylene	< 0.25	0.25	0.0039	mg/kg wet							
p-Isopropyltoluene	< 0.25	0.25	0.0030	mg/kg wet							
sec-Butylbenzene	< 0.25	0.25	0.0035	mg/kg wet							
Styrene	< 0.25	0.25	0.0054	mg/kg wet							
tert-Butylbenzene	< 0.25	0.25	0.0027	mg/kg wet							
Tetrachloroethene	< 0.25	0.25	0.0050	mg/kg wet							
Tetrahydrofuran	< 2.0	2.0	0.032	mg/kg wet							
Toluene	< 0.25	0.25	0.0035	mg/kg wet							
trans-1,2-Dichloroethene	< 0.25	0.25	0.0045	mg/kg wet							
trans-1,3-Dichloropropene	< 0.25	0.25	0.0063	mg/kg wet							
Trichloroethene	< 0.25	0.25	0.0038	mg/kg wet							
Trichlorofluoromethane	< 0.25	0.25	0.0062	mg/kg wet							
Vinyl chloride	< 0.25	0.25	0.0061	mg/kg wet							
Surrogate: 4-Bromofluorobenzene	*47.5*			*ug/L*	*50.0*		*95.1*	*80-124*			
Surrogate: Dibromofluoromethane	*46.0*			*ug/L*	*50.0*		*92.1*	*77.1-123*			
Surrogate: Toluene-d8	*46.8*			*ug/L*	*50.0*		*93.6*	*78.1-125*			
LCS (B4K1315-BS1)					Prepared & Analyzed: 11/13/14						
1,1,2,2-Tetrachloroethane	49.6			ug/L	50.0		99.1	75-120			
1,1-Dichloroethane	51.0			ug/L	50.0		102	79.6-120			
1,1-Dichloroethene	49.3			ug/L	50.0		98.5	78.3-120			
1,3,5-Trimethylbenzene	50.8			ug/L	50.0		102	77-120			
1,4-Dichlorobenzene	52.1			ug/L	50.0		104	75-125			
2-Chlorotoluene	50.7			ug/L	50.0		101	75.9-120			

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LEGEND Technical Services, Inc.
www.legend-group.com

88 Empire Drive
St Paul, MN 55103
Tel: 651-642-1150
Fax: 651-642-1239

Barr Engineering Co.	Project:	23691588			
4700 W 77th St	Project Number:	23691588.00		Work Order #:	1405100
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen		Date Reported:	12/02/14

VOC 8260B - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1315 - EPA 5035 Soil (Purge and Trap)											
LCS (B4K1315-BS1)					Prepared & Analyzed: 11/13/14						
Benzene	51.7			ug/L	50.0		103	80-120			
Bromoform	52.3			ug/L	50.0		105	80-120			
Chlorobenzene	51.1			ug/L	50.0		102	80-120			
Chloroform	51.0			ug/L	50.0		102	80-120			
Ethylbenzene	51.5			ug/L	50.0		103	80-120			
n-Butylbenzene	52.3			ug/L	50.0		105	75-125			
n-Propylbenzene	50.6			ug/L	50.0		101	75-120			
Toluene	51.7			ug/L	50.0		103	80-120			
Trichloroethene	51.9			ug/L	50.0		104	80-120			
Vinyl chloride	44.6			ug/L	50.0		89.1	75-130			
Surrogate: 4-Bromofluorobenzene	*49.5*			*ug/L*	*50.0*		*99.1*	*80-124*			
Surrogate: Dibromofluoromethane	*48.8*			*ug/L*	*50.0*		*97.7*	*77.1-123*			
Surrogate: Toluene-d8	*48.2*			*ug/L*	*50.0*		*96.5*	*78.1-125*			
Matrix Spike (B4K1315-MS1)		**Source: 1405094-01**			Prepared & Analyzed: 11/13/14						
1,1,2,2-Tetrachloroethane	52.0			ug/L	50.0	<	104	75-125			
1,1-Dichloroethane	50.2			ug/L	50.0	<	100	78.7-123			
1,1-Dichloroethene	47.9			ug/L	50.0	<	95.9	75.8-121			
1,3,5-Trimethylbenzene	51.4			ug/L	50.0	<	103	75-120			
1,4-Dichlorobenzene	50.3			ug/L	50.0	<	101	75-125			
2-Chlorotoluene	51.1			ug/L	50.0	<	102	75-120			
Benzene	50.2			ug/L	50.0	<	100	80-120			
Bromoform	51.1			ug/L	50.0	<	102	80-120			
Chlorobenzene	49.8			ug/L	50.0	<	99.7	80-120			
Chloroform	50.0			ug/L	50.0	<	100	80-120			
Ethylbenzene	50.1			ug/L	50.0	<	100	80-120			
n-Butylbenzene	52.7			ug/L	50.0	<	105	73.8-125			
n-Propylbenzene	51.4			ug/L	50.0	<	103	75-120			
Toluene	50.3			ug/L	50.0	<	101	80-120			
Trichloroethene	50.5			ug/L	50.0	<	101	80-120			
Vinyl chloride	39.7			ug/L	50.0	<	79.5	74.8-130			
Surrogate: 4-Bromofluorobenzene	*49.8*			*ug/L*	*50.0*		*99.7*	*80-124*			
Surrogate: Dibromofluoromethane	*46.3*			*ug/L*	*50.0*		*92.7*	*77.1-123*			
Surrogate: Toluene-d8	*48.2*			*ug/L*	*50.0*		*96.5*	*78.1-125*			
Matrix Spike Dup (B4K1315-MSD1)		**Source: 1405094-01**			Prepared & Analyzed: 11/13/14						
1,1,2,2-Tetrachloroethane	52.7			ug/L	50.0	<	105	75-125	1.30	20	
1,1-Dichloroethane	51.6			ug/L	50.0	<	103	78.7-123	2.70	20	
1,1-Dichloroethene	50.1			ug/L	50.0	<	100	75.8-121	4.43	20	
1,3,5-Trimethylbenzene	50.4			ug/L	50.0	<	101	75-120	1.91	20	

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Barr Engineering Co.	Project:	23691588		
4700 W 77th St	Project Number:	23691588.00	Work Order #:	1405100
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported:	12/02/14

VOC 8260B - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1315 - EPA 5035 Soil (Purge and Trap)											
Matrix Spike Dup (B4K1315-MSD1)		**Source: 1405094-01**			Prepared & Analyzed: 11/13/14						
1,4-Dichlorobenzene	50.7			ug/L	50.0	<	101	75-125	0.826	20	
2-Chlorotoluene	50.6			ug/L	50.0	<	101	75-120	0.971	20	
Benzene	50.0			ug/L	50.0	<	100	80-120	0.303	20	
Bromoform	52.1			ug/L	50.0	<	104	80-120	1.92	20	
Chlorobenzene	49.4			ug/L	50.0	<	98.8	80-120	0.890	20	
Chloroform	51.1			ug/L	50.0	<	102	80-120	2.12	20	
Ethylbenzene	50.2			ug/L	50.0	<	100	80-120	0.185	20	
n-Butylbenzene	53.0			ug/L	50.0	<	106	73.8-125	0.558	20	
n-Propylbenzene	51.2			ug/L	50.0	<	102	75-120	0.310	20	
Toluene	50.4			ug/L	50.0	<	101	80-120	0.189	20	
Trichloroethene	50.7			ug/L	50.0	<	101	80-120	0.391	20	
Vinyl chloride	41.0			ug/L	50.0	<	82.0	74.8-130	3.18	20	
Surrogate: 4-Bromofluorobenzene	*50.4*			*ug/L*	*50.0*		*101*	*80-124*			
Surrogate: Dibromofluoromethane	*46.2*			*ug/L*	*50.0*		*92.5*	*77.1-123*			
Surrogate: Toluene-d8	*48.3*			*ug/L*	*50.0*		*96.7*	*78.1-125*			

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4700 W 77th St	Project Number:	23691588.00	Work Order #:	1405100
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported:	12/02/14

Notes and Definitions

W-09	The sample was weighed and preserved in the laboratory.
T-1	MDH does not offer certification for this parameter.
L1	Results in the diesel organics range are primarily due to overlap from a heavy oil range product.
<	Less than value listed
dry	Sample results reported on a dry weight basis
NA	Not applicable. The %RPD is not calculated from values less than the reporting limit.
MDL	Method Detection Limit
RL	Reporting Limit
RPD	Relative Percent Difference
LCS	Laboratory Control Spike = Blank Spike (BS) = Laboratory Fortified Blank (LFB)
MS	Matrix Spike = Laboratory Fortified Matrix (LFM)

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www.legend-group.com

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Fax: 651-642-1239

BARR *Chain of Custody*

4700 West 77th Street
Minneapolis, MN 55435-4803
(952) 832-2600

1405100

COC 1 of 1

Project Number: 23691588.00

Project Name: Superior Street

Sample Origination State MN (use two letter postal state abbreviation)

COC Number: № 44708

Project Manager: LMC

Project QC Contact: JET

Sampled by: NBS2

Laboratory: Legend

	Location	Start Depth	Stop Depth	Depth Unit (m./ft. or in.)	Collection Date (mm/dd/yyyy)	Collection Time (hh:mm)	Matrix: Water	Matrix: Soil	Type: Grab	Type: Comp.	Type: QC	VOCs (HCl) #1	SVOCs (unpreserved) #2	Dissolved Metals (HNO_3)	Total Metals (HNO_3)	General (unpreserved) #3	Diesel Range Organics (HCl)	Nutrients (H_2SO_4) #4	VOCs (tared MeOH) #1	GRO (tared MeOH) #1	DRO (tared unpreserved)	Metals (unpreserved)	SVOCs (unpreserved) #2	% Solids (plastic vial, unpres.)	GRO/PVOC	Total Number Of Containers	
1.	B-18		9.5'	11'	11/05/2014	0210		X	X												1			1	1	3	
2.	B-19		11.5'	14'	11/05/2014	0330		X	X												1			1	1	3	
3.	B-20		9.5'	11'	11/05/2014	0515		X	X										1	1				1		3	
4.	B-21		7.5'	9'	11/05/2014	0555		X	X										1	1				1		3	
5.	B-28		2.5'	4'	11/05/2014	2325		X	X												1			1	1	3	
6.	B-31		9.5'	11'	11/06/2014	0140		X	X												1			1	1	3	Standard TAT
7.	B-38		7.5'	9'	11/06/2014	0242		X	X										1	1				1		3	Temp Blank
8.	B-39		9.5'	11'	11/06/2014	0405		X	X										1	1				1		3	and Trip Blank included.
9.	B-40		9.5'	11'	11/06/2014	0510		X	X												1			1	1	3	
10.	B-41		7.5'	9'	11/06/2014	0608		X	X										1	1	1			1		4	

Common Parameter/Container - Preservation Key

#1 - Volatile Organics = BTEX, GRO, TPH, 8260 Full List
#2 - Semivolatile Organics = PAHs, PCP, Dioxins, 8270 Full List, Herbicide/Pesticide/PCBs
#3 - General = pH, Chloride, Fluoride, Alkalinity, TSS, TDS, TS, Sulfate
#4 - Nutrients = COD, TOC, Phenols, Ammonia Nitrogen, TKN

Relinquished By:	On Ice?	Date	Time	Received by:	Date	Time
[signature]	Y N	11-6-14	8:00 am			
Relinquished By:	**On Ice?**	**Date**	**Time**	**Received by:**	**Date**	**Time**
	Y			[signature]	11/7/14	935

Samples Shipped VIA: ☐ Air Freight ☑ Federal Express ☐ Sampler ☐ Other:

Air Bill Number: Cust, 3.4°C

Distribution: White-Original Accompanies Shipment to Lab; Yellow - Field Copy; Pink - Lab Coordinator

H:\LG\STDFORMS\Chain Of Custody Form 2009 RLG Rev. 09/01/09

L E G E N D
Technical Services, Inc.
www.legend-group.com

88 Empire Drive
St Paul, MN 55103
Tel: 651-642-1150
Fax: 651-642-1239

Data File: \\lts-target\targetdata\chem\FID5.i\141117.b\009.d
Date : 17-NOV-2014 12:44
Client ID:
Sample Info: 1405100-01

B-18-9.5-11

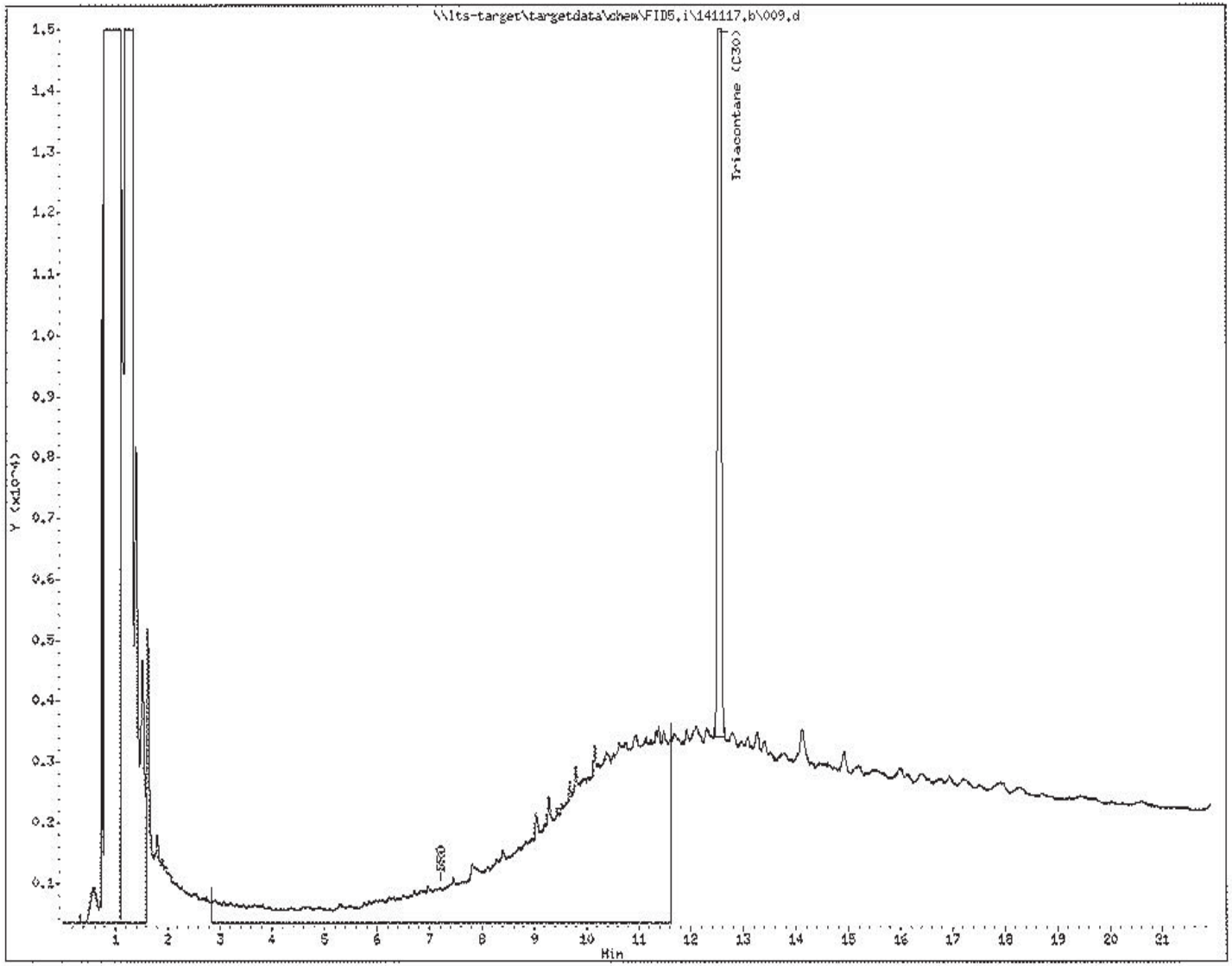
11/24/14 BP

Column phase:

Page 1

Instrument: FID5.i

Operator: yp
Column diameter: 0.53



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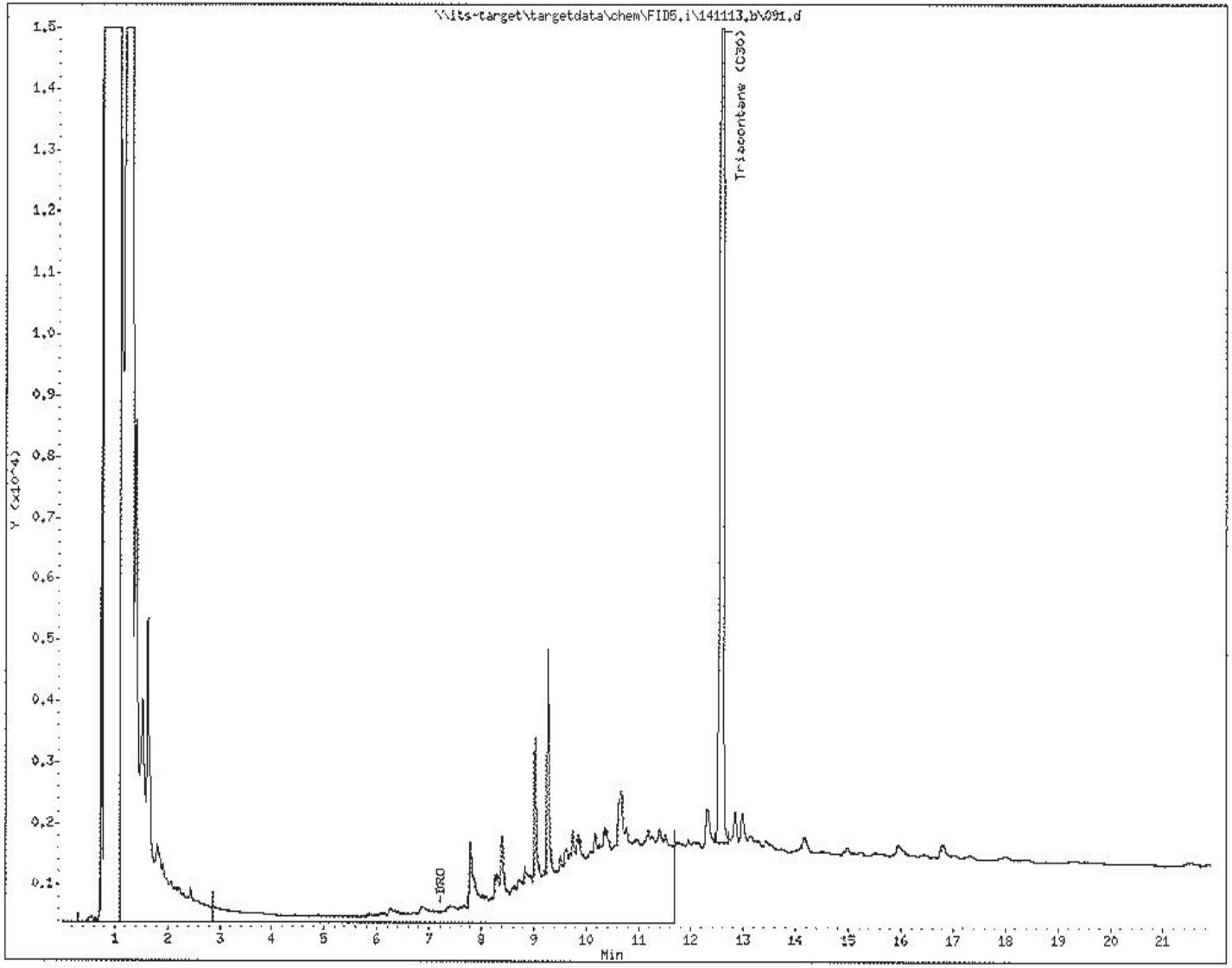
St Paul, MN 55103
Tel: 651-642-1150
Fax: 651-642-1239

Data File: \\lts-target\targetdata\chem\FID5.i\141113.b\091.d
Date : 15-NOV-2014 09:20
Client ID:
Sample Info: 1405100-05 B-28_2.5-4
Column phase:

Page 1

Instrument: FID5.i
Operator: yp
Column diameter: 0.53



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St Paul, MN 55103
Tel: 651-642-1150
Fax: 651-642-1239

Data File: \\lts-target\targetdata\chem\FID5.i\141117.b\012.d
Date : 17-NOV-2014 14:05
Client ID:
Sample Info: 1405100-06 x10

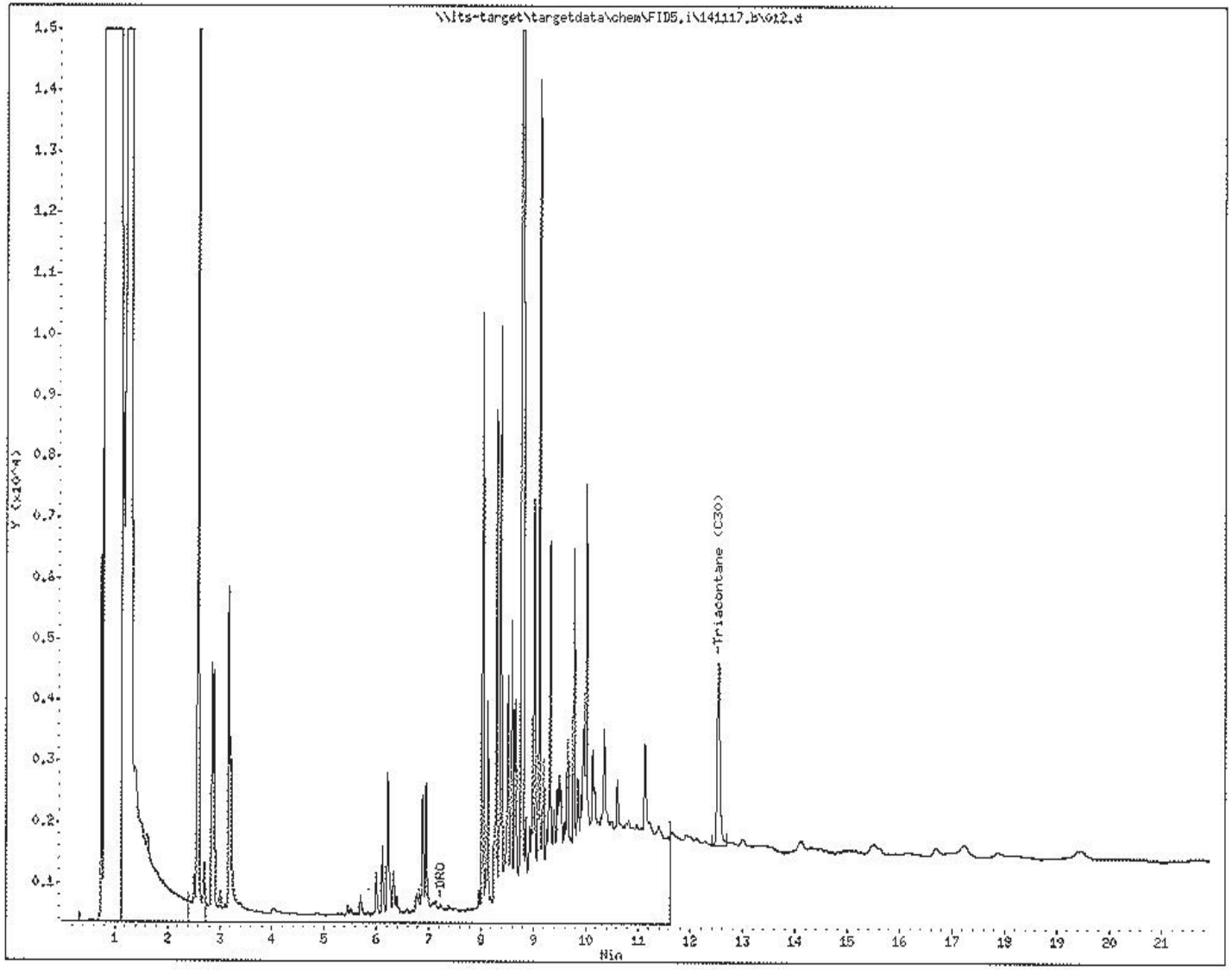
B-31_9.5-11 11/24/14 BP

Column phase:

Page 1

Instrument: FID5.i

Operator: yp
Column diameter: 0.53



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Fax: 651-642-1239

December 02, 2014

Mr. James E. Taraldsen
Barr Engineering Co.
4700 W 77th St
Minneapolis, MN 55435

Work Order Number: 1405158
RE: 23691588

Enclosed are the results of analyses for samples received by the laboratory on 11/11/14. If you have any questions concerning this report, please feel free to contact me.

Results are not blank corrected unless noted within the report. Additionally, all QC results meet requirements unless noted.

All samples will be retained by Legend Technical Services, Inc., unless consumed in the analysis, at ambient conditions for 30 days from the date of this report and then discarded unless other arrangements are made. All samples were received in acceptable condition unless otherwise noted.

All test results and QC meet requirements of the 2003 NELAC standard.

MDH (NELAP) Accreditation #027-123-295

Prepared by,
LEGEND TECHNICAL SERVICES, INC

Bach Pham
Client Manager II
bpham@legend-group.com

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88 Empire Drive
St Paul, MN 55103
Tel: 651-642-1150
Fax: 651-642-1239

Barr Engineering Co.	Project:	23691588		
4700 W 77th St	Project Number:	23691588.00	Work Order #:	1405158
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported:	12/02/14

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B-42_7.5-9	1405158-01	Soil	11/07/14 03:58	11/11/14 13:30
B-43_11.5-14	1405158-02	Soil	11/07/14 05:25	11/11/14 13:30
B-44_7.5-9	1405158-03	Soil	11/06/14 22:15	11/11/14 13:30
B-45_2.5-4	1405158-04	Soil	11/06/14 23:34	11/11/14 13:30
B-45_7.5-9	1405158-05	Soil	11/06/14 23:50	11/11/14 13:30
B-47_7.5-9	1405158-06	Soil	11/07/14 02:10	11/11/14 13:30
B-51_7.5-9	1405158-08	Soil	11/09/14 23:00	11/11/14 13:30
B-54_7.5-9	1405158-09	Soil	11/10/14 00:15	11/11/14 13:30
B-56_7.5-9	1405158-10	Soil	11/10/14 02:45	11/11/14 13:30
B-57_7.5-9	1405158-11	Soil	11/10/14 04:15	11/11/14 13:30
B-59_7.5-9	1405158-12	Soil	11/10/14 05:20	11/11/14 13:30
B-46_7.5-9	1405158-13	Soil	11/07/14 01:19	11/11/14 13:30

Shipping Container Information

Default Cooler Temperature (°C): 1.2

Received on ice: Yes
Received on melt water: No
Custody seals: Yes

Temperature blank was present
Ambient: No

Received on ice pack: No
Acceptable (IH/ISO only): No

Case Narrative:

This report contains data that were produced by a subcontracted laboratory certified for the field of testing performed. The mercury analysis was performed by TestAmerica Laboratories, Inc., Cedar Falls, IA, #019-999-319.

Recoveries for the 8270 PAH compounds benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, dibenz(a,h)anthracene, and benzo(k)fluoranthene in the batch B4K1706 MS along with benzo(a)pyrene and benzo(k)fluoranthene in the MSD were above laboratory limits. The MS/MSD source sample was not associated with this work order. All compounds were within limits in the LCS.

Recovery for the 8270 SVOC compound benzo(a)pyrene was above laboratory limits in the batch B4K1706 MS/MSD. The MS/MSD source sample was not associated with this work order. All compounds were within limits in the LCS.

Samples B-44_7.5-9 and B-45_7.5-9 were extracted past required extraction holding time for DRO analysis, but were analyzed within required analysis holding time. The DRO chomatograms are attached for samples B-42_7.5-9, B-43_11.5-14, B-44_7.5-9, and B-51_7.5-9.

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Barr Engineering Co.	Project:	23691588	
4700 W 77th St	Project Number:	23691588.00	Work Order #: 1405158
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported: 12/02/14

DRO/8015D
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B-42_7.5-9 (1405158-01) Soil Sampled: 11/07/14 03:58 Received: 11/11/14 13:30										
Diesel Range Organics	**17**	9.8	1.6	mg/kg dry	1	B4K1704	11/17/14	11/19/14	WI(95) DRO	L1
Surrogate: Triacontane (C-30)	*99.0*			*70-130 %*		"	"	"	"	
B-43_11.5-14 (1405158-02) Soil Sampled: 11/07/14 05:25 Received: 11/11/14 13:30										
Diesel Range Organics	**37**	9.0	1.5	mg/kg dry	1	B4K1704	11/17/14	11/19/14	WI(95) DRO	L1
Surrogate: Triacontane (C-30)	*99.8*			*70-130 %*		"	"	"	"	
B-44_7.5-9 (1405158-03) Soil Sampled: 11/06/14 22:15 Received: 11/11/14 13:30										H4
Diesel Range Organics	**16**	8.8	1.4	mg/kg dry	1	B4K1704	11/17/14	11/19/14	WI(95) DRO	L1
Surrogate: Triacontane (C-30)	*93.5*			*70-130 %*		"	"	"	"	
B-45_7.5-9 (1405158-05) Soil Sampled: 11/06/14 23:50 Received: 11/11/14 13:30										H4
Diesel Range Organics	<9.0	9.0	1.5	mg/kg dry	1	B4K1704	11/17/14	11/19/14	WI(95) DRO	
Surrogate: Triacontane (C-30)	*89.0*			*70-130 %*		"	"	"	"	
B-47_7.5-9 (1405158-06) Soil Sampled: 11/07/14 02:10 Received: 11/11/14 13:30										
Diesel Range Organics	<9.0	9.0	1.5	mg/kg dry	1	B4K1704	11/17/14	11/19/14	WI(95) DRO	
Surrogate: Triacontane (C-30)	*95.2*			*70-130 %*		"	"	"	"	
B-51_7.5-9 (1405158-08) Soil Sampled: 11/09/14 23:00 Received: 11/11/14 13:30										
Diesel Range Organics	**34**	8.2	1.3	mg/kg dry	1	B4K1704	11/17/14	11/19/14	WI(95) DRO	L1
Surrogate: Triacontane (C-30)	*92.7*			*70-130 %*		"	"	"	"	
B-54_7.5-9 (1405158-09) Soil Sampled: 11/10/14 00:15 Received: 11/11/14 13:30										
Diesel Range Organics	<9.9	9.9	1.6	mg/kg dry	1	B4K1924	11/19/14	11/19/14	WI(95) DRO	
Surrogate: Triacontane (C-30)	*77.5*			*70-130 %*		"	"	"	"	
B-56_7.5-9 (1405158-10) Soil Sampled: 11/10/14 02:45 Received: 11/11/14 13:30										
Diesel Range Organics	<9.2	9.2	1.5	mg/kg dry	1	B4K1924	11/19/14	11/19/14	WI(95) DRO	
Surrogate: Triacontane (C-30)	*88.2*			*70-130 %*		"	"	"	"	
B-57_7.5-9 (1405158-11) Soil Sampled: 11/10/14 04:15 Received: 11/11/14 13:30										
Diesel Range Organics	<9.0	9.0	1.5	mg/kg dry	1	B4K1924	11/19/14	11/19/14	WI(95) DRO	
Surrogate: Triacontane (C-30)	*89.4*			*70-130 %*		"	"	"	"	
B-59_7.5-9 (1405158-12) Soil Sampled: 11/10/14 05:20 Received: 11/11/14 13:30										
Diesel Range Organics	<9.5	9.5	1.5	mg/kg dry	1	B4K1924	11/19/14	11/19/14	WI(95) DRO	
Surrogate: Triacontane (C-30)	*89.6*			*70-130 %*		"	"	"	"	
B-46_7.5-9 (1405158-13) Soil Sampled: 11/07/14 01:19 Received: 11/11/14 13:30										
Diesel Range Organics	<8.9	8.9	1.4	mg/kg dry	1	B4K1704	11/17/14	11/19/14	WI(95) DRO	
Surrogate: Triacontane (C-30)	*88.9*			*70-130 %*		"	"	"	"	

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LEGEND Technical Services, Inc.
www.legend-group.com

88 Empire Drive
St Paul, MN 55103
Tel: 651-642-1150
Fax: 651-642-1239

Barr Engineering Co.	Project:	23691588	
4700 W 77th St	Project Number:	23691588.00	Work Order #: 1405158
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported: 12/02/14

WI(95) GRO/8015D
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B-42_7.5-9 (1405158-01) Soil Sampled: 11/07/14 03:58 Received: 11/11/14 13:30										
Gasoline range organics	<6.1	6.1	0.66	mg/kg dry	1	B4K1302	11/13/14	11/13/14	WI(95) GRO	
Surrogate: 4-Fluorochlorobenzene	*96.1*			*80-150 %*		"	"	"	"	
B-43_11.5-14 (1405158-02) Soil Sampled: 11/07/14 05:25 Received: 11/11/14 13:30										
1,2,4-Trimethylbenzene	<0.028	0.028	0.0030	mg/kg dry	1	B4K1302	11/13/14	11/13/14	WI(95) GRO	R7
1,3,5-Trimethylbenzene	<0.028	0.028	0.0070	mg/kg dry	1	"	"	"	"	
Benzene	<0.028	0.028	0.0033	mg/kg dry	1	"	"	"	"	
Ethylbenzene	<0.028	0.028	0.0072	mg/kg dry	1	"	"	"	"	
Gasoline range organics	<5.6	5.6	0.61	mg/kg dry	1	"	"	"	"	
Methyl tert-butyl ether	<0.028	0.028	0.0061	mg/kg dry	1	"	"	"	"	QM-11, R7
Toluene	<0.028	0.028	0.0046	mg/kg dry	1	"	"	"	"	
Xylenes (total)	<0.084	0.084	0.016	mg/kg dry	1	"	"	"	"	
Surrogate: 4-Fluorochlorobenzene	*97.0*			*80-150 %*		"	"	"	"	
B-44_7.5-9 (1405158-03) Soil Sampled: 11/06/14 22:15 Received: 11/11/14 13:30										
1,2,4-Trimethylbenzene	<0.027	0.027	0.0030	mg/kg dry	1	B4K1302	11/13/14	11/13/14	WI(95) GRO	R7
1,3,5-Trimethylbenzene	<0.027	0.027	0.0068	mg/kg dry	1	"	"	"	"	
Benzene	<0.027	0.027	0.0032	mg/kg dry	1	"	"	"	"	
Ethylbenzene	<0.027	0.027	0.0070	mg/kg dry	1	"	"	"	"	
Gasoline range organics	<5.5	5.5	0.59	mg/kg dry	1	"	"	"	"	
Methyl tert-butyl ether	<0.027	0.027	0.0059	mg/kg dry	1	"	"	"	"	R7
Toluene	<0.027	0.027	0.0045	mg/kg dry	1	"	"	"	"	
Xylenes (total)	<0.082	0.082	0.016	mg/kg dry	1	"	"	"	"	
Surrogate: 4-Fluorochlorobenzene	*94.9*			*80-150 %*		"	"	"	"	
B-45_7.5-9 (1405158-05) Soil Sampled: 11/06/14 23:50 Received: 11/11/14 13:30										
1,2,4-Trimethylbenzene	<0.028	0.028	0.0030	mg/kg dry	1	B4K1302	11/13/14	11/13/14	WI(95) GRO	R7
1,3,5-Trimethylbenzene	<0.028	0.028	0.0070	mg/kg dry	1	"	"	"	"	
Benzene	<0.028	0.028	0.0033	mg/kg dry	1	"	"	"	"	
Ethylbenzene	<0.028	0.028	0.0072	mg/kg dry	1	"	"	"	"	
Gasoline range organics	<5.6	5.6	0.61	mg/kg dry	1	"	"	"	"	
Methyl tert-butyl ether	<0.028	0.028	0.0061	mg/kg dry	1	"	"	"	"	R7
Toluene	<0.028	0.028	0.0046	mg/kg dry	1	"	"	"	"	
Xylenes (total)	<0.084	0.084	0.016	mg/kg dry	1	"	"	"	"	
Surrogate: 4-Fluorochlorobenzene	*93.4*			*80-150 %*		"	"	"	"	
B-47_7.5-9 (1405158-06) Soil Sampled: 11/07/14 02:10 Received: 11/11/14 13:30										
1,2,4-Trimethylbenzene	<0.000027	0.000027	0.0000029	mg/kg dry	0.001	B4K1302	11/13/14	11/13/14	WI(95) GRO	R7
1,3,5-Trimethylbenzene	<0.000027	0.000027	0.0000066	mg/kg dry	0.001	"	"	"	"	
Benzene	<0.000027	0.000027	0.0000031	mg/kg dry	0.001	"	"	"	"	
Ethylbenzene	<0.000027	0.000027	0.0000068	mg/kg dry	0.001	"	"	"	"	
Gasoline range organics	<0.0053	0.0053	0.00058	mg/kg dry	0.001	"	"	"	"	

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Barr Engineering Co.	Project:	23691588	
4700 W 77th St	Project Number:	23691588.00	Work Order #: 1405158
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported: 12/02/14

WI(95) GRO/8015D
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B-47_7.5-9 (1405158-06) Soil	**Sampled: 11/07/14 02:10**		**Received: 11/11/14 13:30**							
Methyl tert-butyl ether	<0.000027	0.000027	0.0000058	mg/kg dry	0.001	B4K1302	11/13/14	11/13/14	WI(95) GRO	R7
Toluene	<0.000027	0.000027	0.0000044	mg/kg dry	0.001	"	"	"	"	
Xylenes (total)	<0.000080	0.000080	0.000015	mg/kg dry	0.001	"	"	"	"	
Surrogate: 4-Fluorochlorobenzene	*94.1*			*80-150 %*		"	"	"	"	
B-51_7.5-9 (1405158-08) Soil	**Sampled: 11/09/14 23:00**		**Received: 11/11/14 13:30**							
1,2,4-Trimethylbenzene	<0.000026	0.000026	0.0000028	mg/kg dry	0.001	B4K1302	11/13/14	11/13/14	WI(95) GRO	R7
1,3,5-Trimethylbenzene	<0.000026	0.000026	0.0000064	mg/kg dry	0.001	"	"	"	"	
Benzene	<0.000026	0.000026	0.0000030	mg/kg dry	0.001	"	"	"	"	
Ethylbenzene	<0.000026	0.000026	0.0000066	mg/kg dry	0.001	"	"	"	"	
Gasoline range organics	<0.0052	0.0052	0.00056	mg/kg dry	0.001	"	"	"	"	
Methyl tert-butyl ether	<0.000026	0.000026	0.0000056	mg/kg dry	0.001	"	"	"	"	R7
Toluene	<0.000026	0.000026	0.0000042	mg/kg dry	0.001	"	"	"	"	
Xylenes (total)	<0.000077	0.000077	0.000015	mg/kg dry	0.001	"	"	"	"	
Surrogate: 4-Fluorochlorobenzene	*96.4*			*80-150 %*		"	"	"	"	
B-54_7.5-9 (1405158-09) Soil	**Sampled: 11/10/14 00:15**		**Received: 11/11/14 13:30**							
1,2,4-Trimethylbenzene	<0.000031	0.000031	0.0000033	mg/kg dry	0.001	B4K1302	11/13/14	11/13/14	WI(95) GRO	R7
1,3,5-Trimethylbenzene	<0.000031	0.000031	0.0000077	mg/kg dry	0.001	"	"	"	"	
Benzene	<0.000031	0.000031	0.0000036	mg/kg dry	0.001	"	"	"	"	
Ethylbenzene	<0.000031	0.000031	0.0000079	mg/kg dry	0.001	"	"	"	"	
Gasoline range organics	<0.0062	0.0062	0.00067	mg/kg dry	0.001	"	"	"	"	
Methyl tert-butyl ether	<0.000031	0.000031	0.0000067	mg/kg dry	0.001	"	"	"	"	R7
Toluene	<0.000031	0.000031	0.0000051	mg/kg dry	0.001	"	"	"	"	
Xylenes (total)	<0.000093	0.000093	0.000018	mg/kg dry	0.001	"	"	"	"	
Surrogate: 4-Fluorochlorobenzene	*95.6*			*80-150 %*		"	"	"	"	
B-56_7.5-9 (1405158-10) Soil	**Sampled: 11/10/14 02:45**		**Received: 11/11/14 13:30**							
1,2,4-Trimethylbenzene	<0.000029	0.000029	0.0000031	mg/kg dry	0.001	B4K1302	11/13/14	11/13/14	WI(95) GRO	R7
1,3,5-Trimethylbenzene	<0.000029	0.000029	0.0000071	mg/kg dry	0.001	"	"	"	"	
Benzene	<0.000029	0.000029	0.0000033	mg/kg dry	0.001	"	"	"	"	
Ethylbenzene	<0.000029	0.000029	0.0000074	mg/kg dry	0.001	"	"	"	"	
Gasoline range organics	<0.0057	0.0057	0.00062	mg/kg dry	0.001	"	"	"	"	
Methyl tert-butyl ether	<0.000029	0.000029	0.0000062	mg/kg dry	0.001	"	"	"	"	R7
Toluene	<0.000029	0.000029	0.0000047	mg/kg dry	0.001	"	"	"	"	
Xylenes (total)	<0.000086	0.000086	0.000016	mg/kg dry	0.001	"	"	"	"	
Surrogate: 4-Fluorochlorobenzene	*95.0*			*80-150 %*		"	"	"	"	
B-57_7.5-9 (1405158-11) Soil	**Sampled: 11/10/14 04:15**		**Received: 11/11/14 13:30**							
1,2,4-Trimethylbenzene	<0.000028	0.000028	0.0000030	mg/kg dry	0.001	B4K1302	11/13/14	11/13/14	WI(95) GRO	R7
1,3,5-Trimethylbenzene	<0.000028	0.000028	0.0000070	mg/kg dry	0.001	"	"	"	"	
Benzene	<0.000028	0.000028	0.0000033	mg/kg dry	0.001	"	"	"	"	

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Barr Engineering Co.	Project:	23691588	
4700 W 77th St	Project Number:	23691588.00	Work Order #: 1405158
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported: 12/02/14

WI(95) GRO/8015D
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B-57_7.5-9 (1405158-11) Soil Sampled: 11/10/14 04:15 Received: 11/11/14 13:30										
Ethylbenzene	<0.000028	0.000028	0.0000072	mg/kg dry	0.001	B4K1302	11/13/14	11/13/14	WI(95) GRO	
Gasoline range organics	<0.0056	0.0056	0.00061	mg/kg dry	0.001	"	"	"	"	
Methyl tert-butyl ether	<0.000028	0.000028	0.0000061	mg/kg dry	0.001	"	"	"	"	R7
Toluene	<0.000028	0.000028	0.0000046	mg/kg dry	0.001	"	"	"	"	
Xylenes (total)	<0.000084	0.000084	0.000016	mg/kg dry	0.001	"	"	"	"	
Surrogate: 4-Fluorochlorobenzene	*95.6*			*80-150 %*		"	"	"	"	
B-59_7.5-9 (1405158-12) Soil Sampled: 11/10/14 05:20 Received: 11/11/14 13:30										
1,2,4-Trimethylbenzene	<0.000034	0.000034	0.0000036	mg/kg dry	0.001	B4K1302	11/13/14	11/13/14	WI(95) GRO	R7
1,3,5-Trimethylbenzene	<0.000034	0.000034	0.0000083	mg/kg dry	0.001	"	"	"	"	
Benzene	<0.000034	0.000034	0.0000039	mg/kg dry	0.001	"	"	"	"	
Ethylbenzene	<0.000034	0.000034	0.0000086	mg/kg dry	0.001	"	"	"	"	
Gasoline range organics	<0.0067	0.0067	0.00073	mg/kg dry	0.001	"	"	"	"	
Methyl tert-butyl ether	<0.000034	0.000034	0.0000073	mg/kg dry	0.001	"	"	"	"	R7
Toluene	<0.000034	0.000034	0.0000055	mg/kg dry	0.001	"	"	"	"	
Xylenes (total)	<0.00010	0.00010	0.000019	mg/kg dry	0.001	"	"	"	"	
Surrogate: 4-Fluorochlorobenzene	*96.4*			*80-150 %*		"	"	"	"	
B-46_7.5-9 (1405158-13) Soil Sampled: 11/07/14 01:19 Received: 11/11/14 13:30										
1,2,4-Trimethylbenzene	<0.028	0.028	0.0030	mg/kg dry	1	B4K1302	11/13/14	11/13/14	WI(95) GRO	R7
1,3,5-Trimethylbenzene	<0.028	0.028	0.0069	mg/kg dry	1	"	"	"	"	
Benzene	<0.028	0.028	0.0032	mg/kg dry	1	"	"	"	"	
Ethylbenzene	<0.028	0.028	0.0071	mg/kg dry	1	"	"	"	"	
Gasoline range organics	<5.6	5.6	0.60	mg/kg dry	1	"	"	"	"	
Methyl tert-butyl ether	<0.028	0.028	0.0060	mg/kg dry	1	"	"	"	"	R7
Toluene	<0.028	0.028	0.0046	mg/kg dry	1	"	"	"	"	
Xylenes (total)	<0.083	0.083	0.016	mg/kg dry	1	"	"	"	"	
Surrogate: 4-Fluorochlorobenzene	*96.1*			*80-150 %*		"	"	"	"	

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Barr Engineering Co.	Project:	23691588	
4700 W 77th St	Project Number:	23691588.00	Work Order #: 1405158
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported: 12/02/14

TOTAL METALS ANALYSIS
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B-45_2.5-4 (1405158-04) Soil Sampled: 11/06/14 23:34 Received: 11/11/14 13:30										
Arsenic	**4.1**	0.60	0.15	mg/kg dry	1	B4K1401	11/14/14	11/14/14	EPA 6010C	
Barium	**120**	1.2	0.065	mg/kg dry	1	"	"	"	"	
Cadmium	<0.30	0.30	0.039	mg/kg dry	1	"	"	"	"	
Chromium	**37**	0.60	0.16	mg/kg dry	1	"	"	"	"	
Lead	**8.7**	1.2	0.17	mg/kg dry	1	"	"	"	"	
Selenium	<1.2	1.2	0.20	mg/kg dry	1	"	"	"	"	
Silver	<0.30	0.30	0.033	mg/kg dry	1	"	"	"	"	
B-47_7.5-9 (1405158-06) Soil Sampled: 11/07/14 02:10 Received: 11/11/14 13:30										
Arsenic	**2.4**	0.56	0.14	mg/kg dry	1	B4K1401	11/14/14	11/14/14	EPA 6010C	
Barium	**51**	1.1	0.062	mg/kg dry	1	"	"	"	"	
Cadmium	<0.28	0.28	0.037	mg/kg dry	1	"	"	"	"	
Chromium	**22**	0.56	0.15	mg/kg dry	1	"	"	"	"	
Lead	**2.9**	1.1	0.16	mg/kg dry	1	"	"	"	"	
Selenium	<1.1	1.1	0.19	mg/kg dry	1	"	"	"	"	
Silver	<0.28	0.28	0.031	mg/kg dry	1	"	"	"	"	
B-54_7.5-9 (1405158-09) Soil Sampled: 11/10/14 00:15 Received: 11/11/14 13:30										
Arsenic	**4.4**	0.62	0.15	mg/kg dry	1	B4K1401	11/14/14	11/14/14	EPA 6010C	
Barium	**110**	1.2	0.068	mg/kg dry	1	"	"	"	"	
Cadmium	<0.31	0.31	0.041	mg/kg dry	1	"	"	"	"	
Chromium	**37**	0.62	0.17	mg/kg dry	1	"	"	"	"	
Lead	**7.4**	1.2	0.17	mg/kg dry	1	"	"	"	"	
Selenium	<1.2	1.2	0.20	mg/kg dry	1	"	"	"	"	
Silver	<0.31	0.31	0.034	mg/kg dry	1	"	"	"	"	

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Barr Engineering Co.	Project:	23691588	
4700 W 77th St	Project Number:	23691588.00	Work Order #: 1405158
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported: 12/02/14

PAH 8270D
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B-45_2.5-4 (1405158-04) Soil Sampled: 11/06/14 23:34 Received: 11/11/14 13:30										
2-Chloronaphthalene	<0.39	0.39	0.081	mg/kg dry	1	B4K1706	11/17/14	11/18/14	EPA 8270D	
2-Methylnaphthalene	<0.39	0.39	0.095	mg/kg dry	1	"	"	"	"	
Acenaphthene	<0.39	0.39	0.075	mg/kg dry	1	"	"	"	"	
Acenaphthylene	<0.39	0.39	0.085	mg/kg dry	1	"	"	"	"	
Anthracene	<0.39	0.39	0.082	mg/kg dry	1	"	"	"	"	
Benzo(a)anthracene	<0.39	0.39	0.077	mg/kg dry	1	"	"	"	"	
Benzo(a)pyrene	<0.39	0.39	0.083	mg/kg dry	1	"	"	"	"	
Benzo(b)fluoranthene	<0.39	0.39	0.070	mg/kg dry	1	"	"	"	"	
Benzo(g,h,i)perylene	<0.39	0.39	0.085	mg/kg dry	1	"	"	"	"	
Benzo(k)fluoranthene	<0.39	0.39	0.083	mg/kg dry	1	"	"	"	"	
Chrysene	<0.39	0.39	0.076	mg/kg dry	1	"	"	"	"	
Dibenz(a,h)anthracene	<0.39	0.39	0.098	mg/kg dry	1	"	"	"	"	
Fluoranthene	<0.39	0.39	0.081	mg/kg dry	1	"	"	"	"	
Fluorene	<0.39	0.39	0.077	mg/kg dry	1	"	"	"	"	
Indeno (1,2,3-cd) pyrene	<0.39	0.39	0.086	mg/kg dry	1	"	"	"	"	
Naphthalene	<0.39	0.39	0.085	mg/kg dry	1	"	"	"	"	
Phenanthrene	<0.39	0.39	0.079	mg/kg dry	1	"	"	"	"	
Pyrene	<0.39	0.39	0.070	mg/kg dry	1	"	"	"	"	
Surrogate: 2-Fluorobiphenyl	*70.4*			*46.3-96.2 %*		"	"	"	"	
Surrogate: Nitrobenzene-d5	*65.8*			*49.3-94 %*		"	"	"	"	
Surrogate: Terphenyl-d14	*63.7*			*51.5-94.6 %*		"	"	"	"	

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Barr Engineering Co.	Project:	23691588	
4700 W 77th St	Project Number:	23691588.00	Work Order #: 1405158
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported: 12/02/14

PERCENT SOLIDS
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B-42_7.5-9 (1405158-01) Soil Sampled: 11/07/14 03:58 Received: 11/11/14 13:30										
% Solids	**82**			%	1	B4K1720	11/17/14	11/18/14	% calculation	
B-43_11.5-14 (1405158-02) Soil Sampled: 11/07/14 05:25 Received: 11/11/14 13:30										
% Solids	**89**			%	1	B4K1720	11/17/14	11/18/14	% calculation	
B-44_7.5-9 (1405158-03) Soil Sampled: 11/06/14 22:15 Received: 11/11/14 13:30										
% Solids	**91**			%	1	B4K1720	11/17/14	11/18/14	% calculation	
B-45_2.5-4 (1405158-04) Soil Sampled: 11/06/14 23:34 Received: 11/11/14 13:30										
% Solids	**84**			%	1	B4K1720	11/17/14	11/18/14	% calculation	
B-45_7.5-9 (1405158-05) Soil Sampled: 11/06/14 23:50 Received: 11/11/14 13:30										
% Solids	**89**			%	1	B4K1720	11/17/14	11/18/14	% calculation	
B-47_7.5-9 (1405158-06) Soil Sampled: 11/07/14 02:10 Received: 11/11/14 13:30										
% Solids	**89**			%	1	B4K1720	11/17/14	11/18/14	% calculation	
B-51_7.5-9 (1405158-08) Soil Sampled: 11/09/14 23:00 Received: 11/11/14 13:30										
% Solids	**97**			%	1	B4K1720	11/17/14	11/18/14	% calculation	
B-54_7.5-9 (1405158-09) Soil Sampled: 11/10/14 00:15 Received: 11/11/14 13:30										
% Solids	**81**			%	1	B4K1720	11/17/14	11/18/14	% calculation	
B-56_7.5-9 (1405158-10) Soil Sampled: 11/10/14 02:45 Received: 11/11/14 13:30										
% Solids	**87**			%	1	B4K1720	11/17/14	11/18/14	% calculation	
B-57_7.5-9 (1405158-11) Soil Sampled: 11/10/14 04:15 Received: 11/11/14 13:30										
% Solids	**89**			%	1	B4K1720	11/17/14	11/18/14	% calculation	
B-59_7.5-9 (1405158-12) Soil Sampled: 11/10/14 05:20 Received: 11/11/14 13:30										
% Solids	**84**			%	1	B4K1720	11/17/14	11/18/14	% calculation	
B-46_7.5-9 (1405158-13) Soil Sampled: 11/07/14 01:19 Received: 11/11/14 13:30										
% Solids	**90**			%	1	B4K1720	11/17/14	11/18/14	% calculation	

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88 Empire Drive
St Paul, MN 55103
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Barr Engineering Co.	Project:	23691588			
4700 W 77th St	Project Number:	23691588.00		Work Order #:	1405158
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen		Date Reported:	12/02/14

SVOC 8270D
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B-45_2.5-4 (1405158-04) Soil Sampled: 11/06/14 23:34 Received: 11/11/14 13:30										
1,2,4-Trichlorobenzene	<0.39	0.39	0.089	mg/kg dry	1	B4K1706	11/17/14	11/18/14	EPA 8270D	
1,2-Dichlorobenzene	<0.39	0.39	0.080	mg/kg dry	1	"	"	"	"	
1,2-Diphenylhydrazine as Azobenzene	<0.39	0.39	0.069	mg/kg dry	1	"	"	"	"	
1,3-Dichlorobenzene	<0.39	0.39	0.082	mg/kg dry	1	"	"	"	"	
1,4-Dichlorobenzene	<0.39	0.39	0.081	mg/kg dry	1	"	"	"	"	
2,3,4,6-Tetrachlorophenol	<0.80	0.80	0.23	mg/kg dry	1	"	"	"	"	
2,4,5-Trichlorophenol	<0.80	0.80	0.085	mg/kg dry	1	"	"	"	"	
2,4,6-Trichlorophenol	<0.80	0.80	0.19	mg/kg dry	1	"	"	"	"	
2,4-Dichlorophenol	<0.80	0.80	0.18	mg/kg dry	1	"	"	"	"	
2,4-Dimethylphenol	<0.80	0.80	0.15	mg/kg dry	1	"	"	"	"	
2,4-Dinitrophenol	<0.80	0.80	0.085	mg/kg dry	1	"	"	"	"	
2,4-Dinitrotoluene	<0.39	0.39	0.081	mg/kg dry	1	"	"	"	"	
2,6-Dichlorophenol	<0.80	0.80	0.15	mg/kg dry	1	"	"	"	"	
2,6-Dinitrotoluene	<0.39	0.39	0.092	mg/kg dry	1	"	"	"	"	
2-Chloronaphthalene	<0.39	0.39	0.081	mg/kg dry	1	"	"	"	"	
2-Chlorophenol	<0.80	0.80	0.18	mg/kg dry	1	"	"	"	"	
2-Methylnaphthalene	<0.39	0.39	0.095	mg/kg dry	1	"	"	"	"	
2-Methylphenol	<0.80	0.80	0.098	mg/kg dry	1	"	"	"	"	
2-Nitroaniline	<0.39	0.39	0.082	mg/kg dry	1	"	"	"	"	
2-Nitrophenol	<0.80	0.80	0.21	mg/kg dry	1	"	"	"	"	
3&4-Methylphenol	<0.80	0.80	0.098	mg/kg dry	1	"	"	"	"	
3,3´-Dichlorobenzidine	<1.9	1.9	0.54	mg/kg dry	1	"	"	"	"	
3-Nitroaniline	<0.39	0.39	0.086	mg/kg dry	1	"	"	"	"	
4,6-Dinitro-2-methylphenol	<0.80	0.80	0.13	mg/kg dry	1	"	"	"	"	
4-Bromophenyl phenyl ether	<0.39	0.39	0.081	mg/kg dry	1	"	"	"	"	
4-Chloro-3-methylphenol	<0.80	0.80	0.17	mg/kg dry	1	"	"	"	"	
4-Chloroaniline	<0.80	0.80	0.080	mg/kg dry	1	"	"	"	"	
4-Chlorophenyl phenyl ether	<0.39	0.39	0.081	mg/kg dry	1	"	"	"	"	
4-Nitroaniline	<0.39	0.39	0.099	mg/kg dry	1	"	"	"	"	
4-Nitrophenol	<0.80	0.80	0.20	mg/kg dry	1	"	"	"	"	
Acenaphthene	<0.39	0.39	0.075	mg/kg dry	1	"	"	"	"	
Acenaphthylene	<0.39	0.39	0.085	mg/kg dry	1	"	"	"	"	
Aniline	<0.80	0.80	0.079	mg/kg dry	1	"	"	"	"	
Anthracene	<0.39	0.39	0.082	mg/kg dry	1	"	"	"	"	
Benzidine	<3.0	3.0	0.52	mg/kg dry	1	"	"	"	"	
Benzo(a)anthracene	<0.39	0.39	0.077	mg/kg dry	1	"	"	"	"	
Benzo(a)pyrene	<0.39	0.39	0.083	mg/kg dry	1	"	"	"	"	
Benzo(b)fluoranthene	<0.39	0.39	0.070	mg/kg dry	1	"	"	"	"	
Benzo(g,h,i)perylene	<0.39	0.39	0.085	mg/kg dry	1	"	"	"	"	

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Barr Engineering Co.	Project:	23691588	
4700 W 77th St	Project Number:	23691588.00	Work Order #: 1405158
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported: 12/02/14

SVOC 8270D
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B-45_2.5-4 (1405158-04) Soil Sampled: 11/06/14 23:34 Received: 11/11/14 13:30										
Benzo(k)fluoranthene	<0.39	0.39	0.083	mg/kg dry	1	B4K1706	11/17/14	11/18/14	EPA 8270D	
Benzoic acid	<0.39	0.39	0.076	mg/kg dry	1	"	"	"	"	
Benzyl alcohol	<0.80	0.80	0.18	mg/kg dry	1	"	"	"	"	
Bis(2-chloroethoxy)methane	<0.39	0.39	0.092	mg/kg dry	1	"	"	"	"	
Bis(2-chloroethyl)ether	<0.39	0.39	0.082	mg/kg dry	1	"	"	"	"	
Bis(2-chloroisopropyl)ether	<0.39	0.39	0.093	mg/kg dry	1	"	"	"	"	
Bis(2-ethylhexyl)phthalate	<0.39	0.39	0.096	mg/kg dry	1	"	"	"	"	
Butyl benzyl phthalate	<0.39	0.39	0.099	mg/kg dry	1	"	"	"	"	
Carbazole	<0.39	0.39	0.090	mg/kg dry	1	"	"	"	"	
Chrysene	<0.39	0.39	0.076	mg/kg dry	1	"	"	"	"	
Dibenz(a,h)anthracene	<0.39	0.39	0.098	mg/kg dry	1	"	"	"	"	
Dibenzofuran	<0.39	0.39	0.081	mg/kg dry	1	"	"	"	"	
Diethyl phthalate	<0.39	0.39	0.075	mg/kg dry	1	"	"	"	"	
Dimethyl phthalate	<0.39	0.39	0.082	mg/kg dry	1	"	"	"	"	
Di-n-butyl phthalate	<0.39	0.39	0.094	mg/kg dry	1	"	"	"	"	
Di-n-octyl phthalate	<0.39	0.39	0.12	mg/kg dry	1	"	"	"	"	
Fluoranthene	<0.39	0.39	0.081	mg/kg dry	1	"	"	"	"	
Fluorene	<0.39	0.39	0.077	mg/kg dry	1	"	"	"	"	
Hexachlorobenzene	<0.39	0.39	0.074	mg/kg dry	1	"	"	"	"	
Hexachlorobutadiene	<0.39	0.39	0.092	mg/kg dry	1	"	"	"	"	
Hexachlorocyclopentadiene	<0.39	0.39	0.082	mg/kg dry	1	"	"	"	"	
Hexachloroethane	<0.39	0.39	0.098	mg/kg dry	1	"	"	"	"	
Indeno (1,2,3-cd) pyrene	<0.39	0.39	0.086	mg/kg dry	1	"	"	"	"	
Isophorone	<0.39	0.39	0.090	mg/kg dry	1	"	"	"	"	
Naphthalene	<0.39	0.39	0.085	mg/kg dry	1	"	"	"	"	
Nitrobenzene	<0.39	0.39	0.095	mg/kg dry	1	"	"	"	"	
N-Nitrosodimethylamine	<0.39	0.39	0.083	mg/kg dry	1	"	"	"	"	
N-Nitrosodi-n-propylamine	<0.39	0.39	0.087	mg/kg dry	1	"	"	"	"	
N-Nitrosodiphenylamine	<0.39	0.39	0.080	mg/kg dry	1	"	"	"	"	
Pentachlorophenol	<0.80	0.80	0.23	mg/kg dry	1	"	"	"	"	
Phenanthrene	<0.39	0.39	0.079	mg/kg dry	1	"	"	"	"	
Phenol	<0.80	0.80	0.17	mg/kg dry	1	"	"	"	"	
Pyrene	<0.39	0.39	0.070	mg/kg dry	1	"	"	"	"	
Surrogate: 2,4,6-Tribromophenol	*84.8*			*53-107 %*		"	"	"	"	
Surrogate: 2-Fluorobiphenyl	*70.4*			*53.9-97.9 %*		"	"	"	"	
Surrogate: 2-Fluorophenol	*64.2*			*42.5-94.9 %*		"	"	"	"	
Surrogate: Nitrobenzene-d5	*65.8*			*48.9-100 %*		"	"	"	"	
Surrogate: Phenol-d6	*70.2*			*50.4-99.6 %*		"	"	"	"	
Surrogate: Terphenyl-d14	*63.7*			*51-99.6 %*		"	"	"	"	

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88 Empire Drive
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Barr Engineering Co.	Project:	23691588			
4700 W 77th St	Project Number:	23691588.00		Work Order #:	1405158
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen		Date Reported:	12/02/14

SVOC 8270D
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B-47_7.5-9 (1405158-06) Soil Sampled: 11/07/14 02:10 Received: 11/11/14 13:30										
1,2,4-Trichlorobenzene	<0.37	0.37	0.084	mg/kg dry	1	B4K1706	11/17/14	11/18/14	EPA 8270D	
1,2-Dichlorobenzene	<0.37	0.37	0.075	mg/kg dry	1	"	"	"	"	
1,2-Diphenylhydrazine as Azobenzene	<0.37	0.37	0.065	mg/kg dry	1	"	"	"	"	
1,3-Dichlorobenzene	<0.37	0.37	0.078	mg/kg dry	1	"	"	"	"	
1,4-Dichlorobenzene	<0.37	0.37	0.076	mg/kg dry	1	"	"	"	"	
2,3,4,6-Tetrachlorophenol	<0.75	0.75	0.21	mg/kg dry	1	"	"	"	"	
2,4,5-Trichlorophenol	<0.75	0.75	0.080	mg/kg dry	1	"	"	"	"	
2,4,6-Trichlorophenol	<0.75	0.75	0.18	mg/kg dry	1	"	"	"	"	
2,4-Dichlorophenol	<0.75	0.75	0.17	mg/kg dry	1	"	"	"	"	
2,4-Dimethylphenol	<0.75	0.75	0.15	mg/kg dry	1	"	"	"	"	
2,4-Dinitrophenol	<0.75	0.75	0.080	mg/kg dry	1	"	"	"	"	
2,4-Dinitrotoluene	<0.37	0.37	0.076	mg/kg dry	1	"	"	"	"	
2,6-Dichlorophenol	<0.75	0.75	0.15	mg/kg dry	1	"	"	"	"	
2,6-Dinitrotoluene	<0.37	0.37	0.087	mg/kg dry	1	"	"	"	"	
2-Chloronaphthalene	<0.37	0.37	0.076	mg/kg dry	1	"	"	"	"	
2-Chlorophenol	<0.75	0.75	0.17	mg/kg dry	1	"	"	"	"	
2-Methylnaphthalene	<0.37	0.37	0.090	mg/kg dry	1	"	"	"	"	
2-Methylphenol	<0.75	0.75	0.092	mg/kg dry	1	"	"	"	"	
2-Nitroaniline	<0.37	0.37	0.078	mg/kg dry	1	"	"	"	"	
2-Nitrophenol	<0.75	0.75	0.20	mg/kg dry	1	"	"	"	"	
3&4-Methylphenol	<0.75	0.75	0.092	mg/kg dry	1	"	"	"	"	
3,3´-Dichlorobenzidine	<1.8	1.8	0.51	mg/kg dry	1	"	"	"	"	
3-Nitroaniline	<0.37	0.37	0.081	mg/kg dry	1	"	"	"	"	
4,6-Dinitro-2-methylphenol	<0.75	0.75	0.12	mg/kg dry	1	"	"	"	"	
4-Bromophenyl phenyl ether	<0.37	0.37	0.076	mg/kg dry	1	"	"	"	"	
4-Chloro-3-methylphenol	<0.75	0.75	0.16	mg/kg dry	1	"	"	"	"	
4-Chloroaniline	<0.75	0.75	0.075	mg/kg dry	1	"	"	"	"	
4-Chlorophenyl phenyl ether	<0.37	0.37	0.076	mg/kg dry	1	"	"	"	"	
4-Nitroaniline	<0.37	0.37	0.093	mg/kg dry	1	"	"	"	"	
4-Nitrophenol	<0.75	0.75	0.19	mg/kg dry	1	"	"	"	"	
Acenaphthene	<0.37	0.37	0.071	mg/kg dry	1	"	"	"	"	
Acenaphthylene	<0.37	0.37	0.080	mg/kg dry	1	"	"	"	"	
Aniline	<0.75	0.75	0.074	mg/kg dry	1	"	"	"	"	
Anthracene	<0.37	0.37	0.078	mg/kg dry	1	"	"	"	"	
Benzidine	<2.8	2.8	0.49	mg/kg dry	1	"	"	"	"	
Benzo(a)anthracene	<0.37	0.37	0.073	mg/kg dry	1	"	"	"	"	
Benzo(a)pyrene	<0.37	0.37	0.079	mg/kg dry	1	"	"	"	"	
Benzo(b)fluoranthene	<0.37	0.37	0.066	mg/kg dry	1	"	"	"	"	
Benzo(g,h,i)perylene	<0.37	0.37	0.080	mg/kg dry	1	"	"	"	"	

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Barr Engineering Co.	Project:	23691588	
4700 W 77th St	Project Number:	23691588.00	Work Order #: 1405158
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported: 12/02/14

SVOC 8270D
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B-47_7.5-9 (1405158-06) Soil Sampled: 11/07/14 02:10 Received: 11/11/14 13:30										
Benzo(k)fluoranthene	<0.37	0.37	0.079	mg/kg dry	1	B4K1706	11/17/14	11/18/14	EPA 8270D	
Benzoic acid	<0.37	0.37	0.072	mg/kg dry	1	"	"	"	"	
Benzyl alcohol	<0.75	0.75	0.17	mg/kg dry	1	"	"	"	"	
Bis(2-chloroethoxy)methane	<0.37	0.37	0.087	mg/kg dry	1	"	"	"	"	
Bis(2-chloroethyl)ether	<0.37	0.37	0.078	mg/kg dry	1	"	"	"	"	
Bis(2-chloroisopropyl)ether	<0.37	0.37	0.088	mg/kg dry	1	"	"	"	"	
Bis(2-ethylhexyl)phthalate	<0.37	0.37	0.091	mg/kg dry	1	"	"	"	"	
Butyl benzyl phthalate	<0.37	0.37	0.093	mg/kg dry	1	"	"	"	"	
Carbazole	<0.37	0.37	0.085	mg/kg dry	1	"	"	"	"	
Chrysene	<0.37	0.37	0.072	mg/kg dry	1	"	"	"	"	
Dibenz(a,h)anthracene	<0.37	0.37	0.092	mg/kg dry	1	"	"	"	"	
Dibenzofuran	<0.37	0.37	0.076	mg/kg dry	1	"	"	"	"	
Diethyl phthalate	<0.37	0.37	0.071	mg/kg dry	1	"	"	"	"	
Dimethyl phthalate	<0.37	0.37	0.078	mg/kg dry	1	"	"	"	"	
Di-n-butyl phthalate	<0.37	0.37	0.089	mg/kg dry	1	"	"	"	"	
Di-n-octyl phthalate	<0.37	0.37	0.11	mg/kg dry	1	"	"	"	"	
Fluoranthene	<0.37	0.37	0.076	mg/kg dry	1	"	"	"	"	
Fluorene	<0.37	0.37	0.073	mg/kg dry	1	"	"	"	"	
Hexachlorobenzene	<0.37	0.37	0.070	mg/kg dry	1	"	"	"	"	
Hexachlorobutadiene	<0.37	0.37	0.087	mg/kg dry	1	"	"	"	"	
Hexachlorocyclopentadiene	<0.37	0.37	0.078	mg/kg dry	1	"	"	"	"	
Hexachloroethane	<0.37	0.37	0.092	mg/kg dry	1	"	"	"	"	
Indeno (1,2,3-cd) pyrene	<0.37	0.37	0.081	mg/kg dry	1	"	"	"	"	
Isophorone	<0.37	0.37	0.085	mg/kg dry	1	"	"	"	"	
Naphthalene	<0.37	0.37	0.080	mg/kg dry	1	"	"	"	"	
Nitrobenzene	<0.37	0.37	0.090	mg/kg dry	1	"	"	"	"	
N-Nitrosodimethylamine	<0.37	0.37	0.079	mg/kg dry	1	"	"	"	"	
N-Nitrosodi-n-propylamine	<0.37	0.37	0.082	mg/kg dry	1	"	"	"	"	
N-Nitrosodiphenylamine	<0.37	0.37	0.075	mg/kg dry	1	"	"	"	"	
Pentachlorophenol	<0.75	0.75	0.21	mg/kg dry	1	"	"	"	"	
Phenanthrene	<0.37	0.37	0.074	mg/kg dry	1	"	"	"	"	
Phenol	<0.75	0.75	0.16	mg/kg dry	1	"	"	"	"	
Pyrene	<0.37	0.37	0.066	mg/kg dry	1	"	"	"	"	
Surrogate: 2,4,6-Tribromophenol	*88.9*			*53-107 %*		"	"	"	"	
Surrogate: 2-Fluorobiphenyl	*77.9*			*53.9-97.9 %*		"	"	"	"	
Surrogate: 2-Fluorophenol	*61.0*			*42.5-94.9 %*		"	"	"	"	
Surrogate: Nitrobenzene-d5	*71.4*			*48.9-100 %*		"	"	"	"	
Surrogate: Phenol-d6	*73.6*			*50.4-99.6 %*		"	"	"	"	
Surrogate: Terphenyl-d14	*62.7*			*51-99.6 %*		"	"	"	"	

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Barr Engineering Co.	Project:	23691588	
4700 W 77th St	Project Number:	23691588.00	Work Order #: 1405158
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported: 12/02/14

VOC 8260B
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B-42_7.5-9 (1405158-01) Soil Sampled: 11/07/14 03:58 Received: 11/11/14 13:30										
1,1,1,2-Tetrachloroethane	<0.30	0.30	0.0062	mg/kg dry	1	B4K1315	11/13/14	11/13/14	EPA 8260B	
1,1,1-Trichloroethane	<0.30	0.30	0.0068	mg/kg dry	1	"	"	"	"	
1,1,2,2-Tetrachloroethane	<0.30	0.30	0.0070	mg/kg dry	1	"	"	"	"	
1,1,2-Trichloroethane	<0.30	0.30	0.0089	mg/kg dry	1	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	<0.30	0.30	0.011	mg/kg dry	1	"	"	"	"	T-1
1,1-Dichloroethane	<0.30	0.30	0.0040	mg/kg dry	1	"	"	"	"	
1,1-Dichloroethene	<0.30	0.30	0.0071	mg/kg dry	1	"	"	"	"	
1,1-Dichloropropene	<0.30	0.30	0.0067	mg/kg dry	1	"	"	"	"	
1,2,3-Trichlorobenzene	<0.61	0.61	0.0062	mg/kg dry	1	"	"	"	"	
1,2,3-Trichloropropane	<0.30	0.30	0.0056	mg/kg dry	1	"	"	"	"	
1,2,4-Trichlorobenzene	<0.61	0.61	0.0066	mg/kg dry	1	"	"	"	"	
1,2,4-Trimethylbenzene	<0.30	0.30	0.0040	mg/kg dry	1	"	"	"	"	
1,2-Dibromo-3-chloropropane	<0.61	0.61	0.010	mg/kg dry	1	"	"	"	"	
1,2-Dibromoethane (EDB)	<0.30	0.30	0.0088	mg/kg dry	1	"	"	"	"	
1,2-Dichlorobenzene	<0.30	0.30	0.0041	mg/kg dry	1	"	"	"	"	
1,2-Dichloroethane	<0.30	0.30	0.0067	mg/kg dry	1	"	"	"	"	
1,2-Dichloropropane	<0.30	0.30	0.0059	mg/kg dry	1	"	"	"	"	
1,3,5-Trimethylbenzene	<0.30	0.30	0.0030	mg/kg dry	1	"	"	"	"	
1,3-Dichlorobenzene	<0.30	0.30	0.0046	mg/kg dry	1	"	"	"	"	
1,3-Dichloropropane	<0.30	0.30	0.0067	mg/kg dry	1	"	"	"	"	
1,4-Dichlorobenzene	<0.30	0.30	0.0061	mg/kg dry	1	"	"	"	"	
2,2-Dichloropropane	<0.61	0.61	0.011	mg/kg dry	1	"	"	"	"	
2-Butanone	<2.4	2.4	0.017	mg/kg dry	1	"	"	"	"	
2-Chlorotoluene	<0.30	0.30	0.0027	mg/kg dry	1	"	"	"	"	
4-Chlorotoluene	<0.30	0.30	0.0044	mg/kg dry	1	"	"	"	"	
Acetone	<2.4	2.4	0.12	mg/kg dry	1	"	"	"	"	
Allyl chloride	<0.61	0.61	0.010	mg/kg dry	1	"	"	"	"	
Benzene	<0.30	0.30	0.0033	mg/kg dry	1	"	"	"	"	
Bromobenzene	<0.30	0.30	0.0063	mg/kg dry	1	"	"	"	"	
Bromochloromethane	<0.30	0.30	0.0090	mg/kg dry	1	"	"	"	"	
Bromodichloromethane	<0.30	0.30	0.0052	mg/kg dry	1	"	"	"	"	
Bromoform	<0.61	0.61	0.0085	mg/kg dry	1	"	"	"	"	
Bromomethane	<0.61	0.61	0.0073	mg/kg dry	1	"	"	"	"	
Carbon tetrachloride	<0.30	0.30	0.0073	mg/kg dry	1	"	"	"	"	
Chlorobenzene	<0.30	0.30	0.0032	mg/kg dry	1	"	"	"	"	
Chloroethane	<0.30	0.30	0.0088	mg/kg dry	1	"	"	"	"	
Chloroform	<0.30	0.30	0.0028	mg/kg dry	1	"	"	"	"	
Chloromethane	<0.30	0.30	0.0082	mg/kg dry	1	"	"	"	"	
cis-1,2-Dichloroethene	<0.30	0.30	0.0022	mg/kg dry	1	"	"	"	"	

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88 Empire Drive
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Tel: 651-642-1150
Fax: 651-642-1239

Barr Engineering Co.	Project:	23691588	
4700 W 77th St	Project Number:	23691588.00	Work Order #: 1405158
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported: 12/02/14

VOC 8260B
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B-42_7.5-9 (1405158-01) Soil Sampled: 11/07/14 03:58 Received: 11/11/14 13:30										
cis-1,3-Dichloropropene	<0.30	0.30	0.0060	mg/kg dry	1	B4K1315	11/13/14	11/13/14	EPA 8260B	
Dibromochloromethane	<0.30	0.30	0.0056	mg/kg dry	1	"	"	"	"	
Dibromomethane	<0.30	0.30	0.0056	mg/kg dry	1	"	"	"	"	
Dichlorodifluoromethane	<0.61	0.61	0.011	mg/kg dry	1	"	"	"	"	
Dichlorofluoromethane	<0.30	0.30	0.0096	mg/kg dry	1	"	"	"	"	T-1
Ethyl ether	<0.61	0.61	0.0061	mg/kg dry	1	"	"	"	"	
Ethylbenzene	<0.30	0.30	0.0032	mg/kg dry	1	"	"	"	"	
Hexachlorobutadiene	<1.2	1.2	0.22	mg/kg dry	1	"	"	"	"	
Isopropylbenzene	<0.30	0.30	0.0021	mg/kg dry	1	"	"	"	"	
m,p-Xylene	<0.61	0.61	0.012	mg/kg dry	1	"	"	"	"	
Methyl isobutyl ketone	<0.61	0.61	0.017	mg/kg dry	1	"	"	"	"	
Methyl tert-butyl ether	<0.30	0.30	0.0067	mg/kg dry	1	"	"	"	"	
Methylene chloride	<1.2	1.2	0.0048	mg/kg dry	1	"	"	"	"	
Naphthalene	<0.61	0.61	0.015	mg/kg dry	1	"	"	"	"	
n-Butylbenzene	<0.30	0.30	0.0067	mg/kg dry	1	"	"	"	"	
n-Propylbenzene	<0.30	0.30	0.0038	mg/kg dry	1	"	"	"	"	
o-Xylene	<0.30	0.30	0.0048	mg/kg dry	1	"	"	"	"	
p-Isopropyltoluene	<0.30	0.30	0.0037	mg/kg dry	1	"	"	"	"	
sec-Butylbenzene	<0.30	0.30	0.0043	mg/kg dry	1	"	"	"	"	
Styrene	<0.30	0.30	0.0066	mg/kg dry	1	"	"	"	"	
tert-Butylbenzene	<0.30	0.30	0.0033	mg/kg dry	1	"	"	"	"	
Tetrachloroethene	<0.30	0.30	0.0061	mg/kg dry	1	"	"	"	"	
Tetrahydrofuran	<2.4	2.4	0.039	mg/kg dry	1	"	"	"	"	T-1
Toluene	<0.30	0.30	0.0043	mg/kg dry	1	"	"	"	"	
trans-1,2-Dichloroethene	<0.30	0.30	0.0055	mg/kg dry	1	"	"	"	"	
trans-1,3-Dichloropropene	<0.30	0.30	0.0077	mg/kg dry	1	"	"	"	"	
Trichloroethene	<0.30	0.30	0.0046	mg/kg dry	1	"	"	"	"	
Trichlorofluoromethane	<0.30	0.30	0.0076	mg/kg dry	1	"	"	"	"	
Vinyl chloride	<0.30	0.30	0.0074	mg/kg dry	1	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	*95.4*			*80-124 %*		"	"	"	"	
Surrogate: Dibromofluoromethane	*90.0*			*77.1-123 %*		"	"	"	"	
Surrogate: Toluene-d8	*93.4*			*78.1-125 %*		"	"	"	"	
B-45_2.5-4 (1405158-04) Soil Sampled: 11/06/14 23:34 Received: 11/11/14 13:30										
1,1,1,2-Tetrachloroethane	<0.30	0.30	0.0061	mg/kg dry	1	B4K1419	11/14/14	11/17/14	EPA 8260B	
1,1,1-Trichloroethane	<0.30	0.30	0.0067	mg/kg dry	1	"	"	"	"	
1,1,2,2-Tetrachloroethane	<0.30	0.30	0.0068	mg/kg dry	1	"	"	"	"	
1,1,2-Trichloroethane	<0.30	0.30	0.0087	mg/kg dry	1	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	<0.30	0.30	0.011	mg/kg dry	1	"	"	"	"	T-1
1,1-Dichloroethane	<0.30	0.30	0.0039	mg/kg dry	1	"	"	"	"	

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Barr Engineering Co.	Project:	23691588	
4700 W 77th St	Project Number:	23691588.00	Work Order #: 1405158
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported: 12/02/14

VOC 8260B
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B-45_2.5-4 (1405158-04) Soil Sampled: 11/06/14 23:34 Received: 11/11/14 13:30										
1,1-Dichloroethene	<0.30	0.30	0.0069	mg/kg dry	1	B4K1419	11/14/14	11/17/14	EPA 8260B	
1,1-Dichloropropene	<0.30	0.30	0.0065	mg/kg dry	1	"	"	"	"	
1,2,3-Trichlorobenzene	<0.60	0.60	0.0061	mg/kg dry	1	"	"	"	"	
1,2,3-Trichloropropane	<0.30	0.30	0.0055	mg/kg dry	1	"	"	"	"	
1,2,4-Trichlorobenzene	<0.60	0.60	0.0064	mg/kg dry	1	"	"	"	"	
1,2,4-Trimethylbenzene	<0.30	0.30	0.0039	mg/kg dry	1	"	"	"	"	
1,2-Dibromo-3-chloropropane	<0.60	0.60	0.0099	mg/kg dry	1	"	"	"	"	
1,2-Dibromoethane (EDB)	<0.30	0.30	0.0086	mg/kg dry	1	"	"	"	"	
1,2-Dichlorobenzene	<0.30	0.30	0.0040	mg/kg dry	1	"	"	"	"	
1,2-Dichloroethane	<0.30	0.30	0.0065	mg/kg dry	1	"	"	"	"	
1,2-Dichloropropane	<0.30	0.30	0.0057	mg/kg dry	1	"	"	"	"	
1,3,5-Trimethylbenzene	<0.30	0.30	0.0030	mg/kg dry	1	"	"	"	"	
1,3-Dichlorobenzene	<0.30	0.30	0.0045	mg/kg dry	1	"	"	"	"	
1,3-Dichloropropane	<0.30	0.30	0.0065	mg/kg dry	1	"	"	"	"	
1,4-Dichlorobenzene	<0.30	0.30	0.0060	mg/kg dry	1	"	"	"	"	
2,2-Dichloropropane	<0.60	0.60	0.010	mg/kg dry	1	"	"	"	"	
2-Butanone	<2.4	2.4	0.017	mg/kg dry	1	"	"	"	"	
2-Chlorotoluene	<0.30	0.30	0.0026	mg/kg dry	1	"	"	"	"	
4-Chlorotoluene	<0.30	0.30	0.0043	mg/kg dry	1	"	"	"	"	
Acetone	<2.4	2.4	0.12	mg/kg dry	1	"	"	"	"	
Allyl chloride	<0.60	0.60	0.0099	mg/kg dry	1	"	"	"	"	
Benzene	<0.30	0.30	0.0032	mg/kg dry	1	"	"	"	"	
Bromobenzene	<0.30	0.30	0.0062	mg/kg dry	1	"	"	"	"	
Bromochloromethane	<0.30	0.30	0.0088	mg/kg dry	1	"	"	"	"	
Bromodichloromethane	<0.30	0.30	0.0051	mg/kg dry	1	"	"	"	"	
Bromoform	<0.60	0.60	0.0083	mg/kg dry	1	"	"	"	"	
Bromomethane	<0.60	0.60	0.0071	mg/kg dry	1	"	"	"	"	
Carbon tetrachloride	<0.30	0.30	0.0071	mg/kg dry	1	"	"	"	"	
Chlorobenzene	<0.30	0.30	0.0031	mg/kg dry	1	"	"	"	"	
Chloroethane	<0.30	0.30	0.0086	mg/kg dry	1	"	"	"	"	
Chloroform	<0.30	0.30	0.0027	mg/kg dry	1	"	"	"	"	
Chloromethane	<0.30	0.30	0.0080	mg/kg dry	1	"	"	"	"	
cis-1,2-Dichloroethene	<0.30	0.30	0.0021	mg/kg dry	1	"	"	"	"	
cis-1,3-Dichloropropene	<0.30	0.30	0.0058	mg/kg dry	1	"	"	"	"	
Dibromochloromethane	<0.30	0.30	0.0055	mg/kg dry	1	"	"	"	"	
Dibromomethane	<0.30	0.30	0.0055	mg/kg dry	1	"	"	"	"	
Dichlorodifluoromethane	<0.60	0.60	0.011	mg/kg dry	1	"	"	"	"	
Dichlorofluoromethane	<0.30	0.30	0.0094	mg/kg dry	1	"	"	"	"	T-1
Ethyl ether	<0.60	0.60	0.0060	mg/kg dry	1	"	"	"	"	

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Barr Engineering Co.	Project:	23691588	
4700 W 77th St	Project Number:	23691588.00	Work Order #: 1405158
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported: 12/02/14

VOC 8260B
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B-45_2.5-4 (1405158-04) Soil Sampled: 11/06/14 23:34 Received: 11/11/14 13:30										
Ethylbenzene	<0.30	0.30	0.0031	mg/kg dry	1	B4K1419	11/14/14	11/17/14	EPA 8260B	
Hexachlorobutadiene	<1.2	1.2	0.21	mg/kg dry	1	"	"	"	"	
Isopropylbenzene	<0.30	0.30	0.0020	mg/kg dry	1	"	"	"	"	
m,p-Xylene	<0.60	0.60	0.012	mg/kg dry	1	"	"	"	"	
Methyl isobutyl ketone	<0.60	0.60	0.017	mg/kg dry	1	"	"	"	"	
Methyl tert-butyl ether	<0.30	0.30	0.0065	mg/kg dry	1	"	"	"	"	
Methylene chloride	<1.2	1.2	0.0046	mg/kg dry	1	"	"	"	"	
Naphthalene	<0.60	0.60	0.014	mg/kg dry	1	"	"	"	"	
n-Butylbenzene	<0.30	0.30	0.0065	mg/kg dry	1	"	"	"	"	
n-Propylbenzene	<0.30	0.30	0.0037	mg/kg dry	1	"	"	"	"	
o-Xylene	<0.30	0.30	0.0046	mg/kg dry	1	"	"	"	"	
p-Isopropyltoluene	<0.30	0.30	0.0036	mg/kg dry	1	"	"	"	"	
sec-Butylbenzene	<0.30	0.30	0.0042	mg/kg dry	1	"	"	"	"	
Styrene	<0.30	0.30	0.0064	mg/kg dry	1	"	"	"	"	
tert-Butylbenzene	<0.30	0.30	0.0032	mg/kg dry	1	"	"	"	"	
Tetrachloroethene	<0.30	0.30	0.0060	mg/kg dry	1	"	"	"	"	
Tetrahydrofuran	<2.4	2.4	0.038	mg/kg dry	1	"	"	"	"	T-1
Toluene	<0.30	0.30	0.0042	mg/kg dry	1	"	"	"	"	
trans-1,2-Dichloroethene	<0.30	0.30	0.0054	mg/kg dry	1	"	"	"	"	
trans-1,3-Dichloropropene	<0.30	0.30	0.0075	mg/kg dry	1	"	"	"	"	
Trichloroethene	<0.30	0.30	0.0045	mg/kg dry	1	"	"	"	"	
Trichlorofluoromethane	<0.30	0.30	0.0074	mg/kg dry	1	"	"	"	"	
Vinyl chloride	<0.30	0.30	0.0073	mg/kg dry	1	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	*96.0*			*80-124 %*		"	"	"	"	
Surrogate: Dibromofluoromethane	*100*			*77.1-123 %*		"	"	"	"	
Surrogate: Toluene-d8	*98.2*			*78.1-125 %*		"	"	"	"	

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Barr Engineering Co.	Project:	23691588	
4700 W 77th St	Project Number:	23691588.00	Work Order #: 1405158
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported: 12/02/14

7471B
TestAmerica Cedar Falls

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B-45_2.5-4 (1405158-04) Soil Sampled: 11/06/14 23:34 Received: 11/11/14 13:30										
Mercury	<0.0231	0.0231	0.00420	mg/Kg dry	1	68666	11/18/14	11/19/14	7471B Mercury in Solid or Semisolid Waste (Manual	
B-47_7.5-9 (1405158-06) Soil Sampled: 11/07/14 02:10 Received: 11/11/14 13:30										
Mercury	<0.0212	0.0212	0.00386	mg/Kg dry	1	68666	11/18/14	11/19/14	7471B Mercury in Solid or Semisolid Waste (Manual	
B-54_7.5-9 (1405158-09) Soil Sampled: 11/10/14 00:15 Received: 11/11/14 13:30										
Mercury	**0.0245**	0.0236	0.00429	mg/Kg dry	1	68666	11/18/14	11/19/14	7471B Mercury in Solid or Semisolid Waste (Manual	

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LEGEND Technical Services, Inc.
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Barr Engineering Co.	Project:	23691588			
4700 W 77th St	Project Number:	23691588.00		Work Order #:	1405158
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen		Date Reported:	12/02/14

DRO/8015D - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1704 - Sonication (Wisc DRO)											
Blank (B4K1704-BLK1)					Prepared & Analyzed: 11/17/14						
Diesel Range Organics	< 8.0	8.0	1.3	mg/kg wet							
Surrogate: Triacontane (C-30)	*12.4*			*mg/kg wet*	*16.0*		*77.4*	*70-130*			
LCS (B4K1704-BS1)					Prepared & Analyzed: 11/17/14						
Diesel Range Organics	57.9	8.0	1.3	mg/kg wet	64.0		90.5	70-120			
Surrogate: Triacontane (C-30)	*14.7*			*mg/kg wet*	*16.0*		*91.8*	*70-130*			
LCS Dup (B4K1704-BSD1)					Prepared: 11/17/14 Analyzed: 11/18/14						
Diesel Range Organics	61.3	8.0	1.3	mg/kg wet	64.0		95.8	70-120	5.62	20	
Surrogate: Triacontane (C-30)	*15.7*			*mg/kg wet*	*16.0*		*97.9*	*70-130*			
Batch B4K1924 - Sonication (Wisc DRO)											
Blank (B4K1924-BLK1)					Prepared & Analyzed: 11/19/14						
Diesel Range Organics	< 8.0	8.0	1.3	mg/kg wet							
Surrogate: Triacontane (C-30)	*12.5*			*mg/kg wet*	*16.0*		*78.1*	*70-130*			
LCS (B4K1924-BS1)					Prepared & Analyzed: 11/19/14						
Diesel Range Organics	53.1	8.0	1.3	mg/kg wet	64.0		82.9	70-120			
Surrogate: Triacontane (C-30)	*14.5*			*mg/kg wet*	*16.0*		*90.9*	*70-130*			
LCS Dup (B4K1924-BSD1)					Prepared: 11/19/14 Analyzed: 11/20/14						
Diesel Range Organics	51.2	8.0	1.3	mg/kg wet	64.0		80.0	70-120	3.58	20	
Surrogate: Triacontane (C-30)	*14.0*			*mg/kg wet*	*16.0*		*87.5*	*70-130*			

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Barr Engineering Co.	Project:	23691588			
4700 W 77th St	Project Number:	23691588.00		Work Order #:	1405158
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen		Date Reported:	12/02/14

WI(95) GRO/8015D - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1302 - EPA 5035 Soil (Purge and Trap)											
Blank (B4K1302-BLK1)					Prepared & Analyzed: 11/13/14						
1,2,4-Trimethylbenzene	< 0.025	0.025	0.0027	mg/kg wet							
1,3,5-Trimethylbenzene	< 0.025	0.025	0.0062	mg/kg wet							
Benzene	< 0.025	0.025	0.0029	mg/kg wet							
Ethylbenzene	< 0.025	0.025	0.0064	mg/kg wet							
Gasoline range organics	< 5.0	5.0	0.54	mg/kg wet							
Methyl tert-butyl ether	< 0.025	0.025	0.0054	mg/kg wet							
Toluene	< 0.025	0.025	0.0041	mg/kg wet							
Xylenes (total)	< 0.075	0.075	0.014	mg/kg wet							
Surrogate: 4-Fluorochlorobenzene	*23.9*			*ug/L*	*25.0*		*95.7*	*80-150*			
LCS (B4K1302-BS1)					Prepared & Analyzed: 11/13/14						
1,2,4-Trimethylbenzene	102			ug/L	100		102	80-120			
1,3,5-Trimethylbenzene	98.5			ug/L	100		98.5	80-120			
Benzene	104			ug/L	100		104	80-120			
Ethylbenzene	105			ug/L	100		105	80-120			
Gasoline range organics	949			ug/L	1000		94.9	80-120			
Methyl tert-butyl ether	89.1			ug/L	100		89.1	80-120			
Toluene	105			ug/L	100		105	80-120			
Xylenes (total)	316			ug/L	300		105	80-120			
Surrogate: 4-Fluorochlorobenzene	*24.8*			*ug/L*	*25.0*		*99.1*	*80-150*			
LCS Dup (B4K1302-BSD1)					Prepared: 11/13/14 Analyzed: 11/14/14						
1,2,4-Trimethylbenzene	83.4			ug/L	100		83.4	80-120	20.3	20	R7
1,3,5-Trimethylbenzene	84.5			ug/L	100		84.5	80-120	15.3	20	
Benzene	95.4			ug/L	100		95.4	80-120	8.62	20	
Ethylbenzene	98.8			ug/L	100		98.8	80-120	5.64	20	
Gasoline range organics	917			ug/L	1000		91.7	80-120	3.46	20	
Methyl tert-butyl ether	120			ug/L	100		120	80-120	29.8	20	R-1
Toluene	94.9			ug/L	100		94.9	80-120	9.67	20	
Xylenes (total)	286			ug/L	300		95.3	80-120	10.0	20	
Surrogate: 4-Fluorochlorobenzene	*21.5*			*ug/L*	*25.0*		*85.9*	*80-150*			
Duplicate (B4K1302-DUP1)		**Source: 1405158-13**			Prepared & Analyzed: 11/13/14						
Gasoline range organics	1.48	5.6	0.60	mg/kg dry		<5.6			NA	20	
Surrogate: 4-Fluorochlorobenzene	*23.9*			*ug/L*	*25.0*		*95.6*	*80-150*			
Matrix Spike (B4K1302-MS1)		**Source: 1405158-02**			Prepared: 11/13/14 Analyzed: 11/14/14						
1,2,4-Trimethylbenzene	87.3			ug/L	100	<	87.3	80-120			
1,3,5-Trimethylbenzene	87.4			ug/L	100	<	87.4	80-120			
Benzene	98.7			ug/L	100	<	98.7	80-120			
Ethylbenzene	100			ug/L	100	0.316	100	80-120			
Methyl tert-butyl ether	138			ug/L	100	<	138	80-120			QM-11

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Barr Engineering Co.	Project:	23691588		
4700 W 77th St	Project Number:	23691588.00	Work Order #:	1405158
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported:	12/02/14

WI(95) GRO/8015D - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1302 - EPA 5035 Soil (Purge and Trap)											
Matrix Spike (B4K1302-MS1)		**Source: 1405158-02**			Prepared: 11/13/14		Analyzed: 11/14/14				
Toluene	97.8			ug/L	100	<	97.8	80-120			
Xylenes (total)	297			ug/L	300	0.255	99.0	80-120			
Surrogate: 4-Fluorochlorobenzene	*22.7*			*ug/L*	*25.0*		*91.0*	*80-150*			

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Barr Engineering Co.	Project:	23691588	
4700 W 77th St	Project Number:	23691588.00	Work Order #: 1405158
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported: 12/02/14

TOTAL METALS ANALYSIS - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1401 - EPA 3050B											
Blank (B4K1401-BLK1)					Prepared & Analyzed: 11/14/14						
Arsenic	< 0.50	0.50	0.12	mg/kg wet							
Barium	< 1.0	1.0	0.055	mg/kg wet							
Cadmium	< 0.25	0.25	0.033	mg/kg wet							
Chromium	< 0.50	0.50	0.13	mg/kg wet							
Lead	< 1.0	1.0	0.14	mg/kg wet							
Selenium	< 1.0	1.0	0.16	mg/kg wet							
Silver	< 0.25	0.25	0.028	mg/kg wet							
LCS (B4K1401-BS1)					Prepared & Analyzed: 11/14/14						
Arsenic	39.8	0.50	0.12	mg/kg wet	39.9		99.7	80-120			
Barium	43.6	1.0	0.055	mg/kg wet	39.9		109	80-120			
Cadmium	41.3	0.25	0.033	mg/kg wet	39.9		103	80-120			
Chromium	40.1	0.50	0.13	mg/kg wet	39.9		101	80-120			
Lead	41.3	1.0	0.14	mg/kg wet	39.9		104	80-120			
Selenium	39.5	1.0	0.16	mg/kg wet	39.9		99.1	80-120			
Silver	4.07	0.25	0.028	mg/kg wet	3.99		102	80-120			
LCS Dup (B4K1401-BSD1)					Prepared & Analyzed: 11/14/14						
Arsenic	37.4	0.50	0.12	mg/kg wet	39.9		93.8	80-120	6.14	20	
Barium	40.7	1.0	0.055	mg/kg wet	39.9		102	80-120	6.80	20	
Cadmium	38.7	0.25	0.033	mg/kg wet	39.9		97.1	80-120	6.32	20	
Chromium	38.0	0.50	0.13	mg/kg wet	39.9		95.3	80-120	5.33	20	
Lead	38.7	1.0	0.14	mg/kg wet	39.9		97.0	80-120	6.54	20	
Selenium	37.2	1.0	0.16	mg/kg wet	39.9		93.2	80-120	6.11	20	
Silver	3.77	0.25	0.028	mg/kg wet	3.99		94.5	80-120	7.63	20	
Matrix Spike (B4K1401-MS1)		**Source: 1405158-04**			Prepared & Analyzed: 11/14/14						
Arsenic	44.0	0.60	0.15	mg/kg dry	46.9	4.12	85.1	75-125			
Barium	162	1.2	0.065	mg/kg dry	46.9	118	93.4	75-125			
Cadmium	40.0	0.30	0.039	mg/kg dry	46.9	<0.30	85.2	75-125			
Chromium	74.2	0.60	0.16	mg/kg dry	46.9	37.1	79.0	75-125			
Lead	48.2	1.2	0.17	mg/kg dry	46.9	8.73	84.2	75-125			
Selenium	38.4	1.2	0.20	mg/kg dry	46.9	<1.2	81.8	75-125			
Silver	4.38	0.30	0.033	mg/kg dry	4.69	<0.30	90.6	75-125			
Matrix Spike Dup (B4K1401-MSD1)		**Source: 1405158-04**			Prepared & Analyzed: 11/14/14						
Arsenic	43.2	0.60	0.15	mg/kg dry	47.1	4.12	82.9	75-125	1.96	20	
Barium	171	1.2	0.065	mg/kg dry	47.1	118	112	75-125	5.34	20	
Cadmium	39.8	0.30	0.039	mg/kg dry	47.1	<0.30	84.5	75-125	0.424	20	
Chromium	76.9	0.60	0.16	mg/kg dry	47.1	37.1	84.5	75-125	3.61	20	
Lead	49.8	1.2	0.17	mg/kg dry	47.1	8.73	87.2	75-125	3.25	20	
Selenium	38.0	1.2	0.20	mg/kg dry	47.1	<1.2	80.6	75-125	1.12	20	

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Barr Engineering Co.	Project:	23691588		
4700 W 77th St	Project Number:	23691588.00	Work Order #:	1405158
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported:	12/02/14

TOTAL METALS ANALYSIS - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1401 - EPA 3050B											
Matrix Spike Dup (B4K1401-MSD1)		**Source: 1405158-04**			Prepared & Analyzed: 11/14/14						
Silver	4.37	0.30	0.033	mg/kg dry	4.71	<0.30	90.0	75-125	0.283	20	

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Barr Engineering Co.	Project:	23691588			
4700 W 77th St	Project Number:	23691588.00		Work Order #:	1405158
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen		Date Reported:	12/02/14

PAH 8270D - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1706 - EPA 3545 ASE Extraction											
Blank (B4K1706-BLK1)					Prepared: 11/17/14		Analyzed: 11/18/14				
2-Chloronaphthalene	< 0.33	0.33	0.068	mg/kg wet							
2-Methylnaphthalene	< 0.33	0.33	0.080	mg/kg wet							
Acenaphthene	< 0.33	0.33	0.063	mg/kg wet							
Acenaphthylene	< 0.33	0.33	0.071	mg/kg wet							
Anthracene	< 0.33	0.33	0.069	mg/kg wet							
Benzo(a)anthracene	< 0.33	0.33	0.065	mg/kg wet							
Benzo(a)pyrene	< 0.33	0.33	0.070	mg/kg wet							
Benzo(b)fluoranthene	< 0.33	0.33	0.059	mg/kg wet							
Benzo(g,h,i)perylene	< 0.33	0.33	0.071	mg/kg wet							
Benzo(k)fluoranthene	< 0.33	0.33	0.070	mg/kg wet							
Chrysene	< 0.33	0.33	0.064	mg/kg wet							
Dibenz(a,h)anthracene	< 0.33	0.33	0.082	mg/kg wet							
Fluoranthene	< 0.33	0.33	0.068	mg/kg wet							
Fluorene	< 0.33	0.33	0.065	mg/kg wet							
Indeno (1,2,3-cd) pyrene	< 0.33	0.33	0.072	mg/kg wet							
Naphthalene	< 0.33	0.33	0.071	mg/kg wet							
Phenanthrene	< 0.33	0.33	0.066	mg/kg wet							
Pyrene	< 0.33	0.33	0.059	mg/kg wet							
Surrogate: 2-Fluorobiphenyl	*5.16*			*mg/kg wet*	*6.67*		*77.3*	*46.3-96.2*			
Surrogate: Nitrobenzene-d5	*4.80*			*mg/kg wet*	*6.67*		*71.9*	*49.3-94*			
Surrogate: Terphenyl-d14	*4.91*			*mg/kg wet*	*6.67*		*73.6*	*51.5-94.6*			
LCS (B4K1706-BS1)					Prepared: 11/17/14		Analyzed: 11/18/14				
Acenaphthylene	2.34	0.33	0.071	mg/kg wet	3.33		70.2	55-95			
Anthracene	2.44	0.33	0.069	mg/kg wet	3.33		73.1	60-100			
Benzo(a)anthracene	2.41	0.33	0.065	mg/kg wet	3.33		72.3	55-100			
Benzo(a)pyrene	3.03	0.33	0.070	mg/kg wet	3.33		90.8	55-100			
Benzo(b)fluoranthene	2.83	0.33	0.059	mg/kg wet	3.33		85.0	55-100			
Benzo(g,h,i)perylene	3.20	0.33	0.071	mg/kg wet	3.33		96.0	50-100			
Benzo(k)fluoranthene	3.02	0.33	0.070	mg/kg wet	3.33		90.6	55-100			
Chrysene	2.49	0.33	0.064	mg/kg wet	3.33		74.6	50-100			
Dibenz(a,h)anthracene	3.15	0.33	0.082	mg/kg wet	3.33		94.6	50-100			
Fluoranthene	2.30	0.33	0.068	mg/kg wet	3.33		68.9	55-100			
Fluorene	2.40	0.33	0.065	mg/kg wet	3.33		71.9	55-95			
Indeno (1,2,3-cd) pyrene	3.00	0.33	0.072	mg/kg wet	3.33		89.9	55-110			
Naphthalene	2.21	0.33	0.071	mg/kg wet	3.33		66.4	50-95			
Phenanthrene	2.44	0.33	0.066	mg/kg wet	3.33		73.2	60-100			
Surrogate: 2-Fluorobiphenyl	*4.19*			*mg/kg wet*	*6.67*		*62.9*	*46.3-96.2*			
Surrogate: Nitrobenzene-d5	*4.07*			*mg/kg wet*	*6.67*		*61.0*	*49.3-94*			
Surrogate: Terphenyl-d14	*3.70*			*mg/kg wet*	*6.67*		*55.5*	*51.5-94.6*			

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Barr Engineering Co.	Project:	23691588			
4700 W 77th St	Project Number:	23691588.00		Work Order #:	1405158
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen		Date Reported:	12/02/14

PAH 8270D - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1706 - EPA 3545 ASE Extraction											
Matrix Spike (B4K1706-MS1)		**Source: 1405115-01**			Prepared: 11/17/14		Analyzed: 11/18/14				
Acenaphthylene	2.93	0.35	0.075	mg/kg dry	3.51	<0.35	83.3	40-100			
Anthracene	3.02	0.35	0.073	mg/kg dry	3.51	<0.35	85.9	45-100			
Benzo(a)anthracene	2.95	0.35	0.068	mg/kg dry	3.51	<0.35	84.0	45-100			
Benzo(a)pyrene	3.87	0.35	0.074	mg/kg dry	3.51	<0.35	110	40-100			M1
Benzo(b)fluoranthene	3.73	0.35	0.062	mg/kg dry	3.51	<0.35	106	40-100			M1
Benzo(g,h,i)perylene	4.17	0.35	0.075	mg/kg dry	3.51	<0.35	119	35-110			M1
Benzo(k)fluoranthene	3.91	0.35	0.074	mg/kg dry	3.51	<0.35	111	40-100			M1
Chrysene	3.20	0.35	0.067	mg/kg dry	3.51	<0.35	91.0	40-100			
Dibenz(a,h)anthracene	4.06	0.35	0.086	mg/kg dry	3.51	<0.35	116	35-110			M1
Fluoranthene	2.81	0.35	0.072	mg/kg dry	3.51	<0.35	80.0	45-100			
Fluorene	3.02	0.35	0.068	mg/kg dry	3.51	<0.35	85.9	45-100			
Indeno (1,2,3-cd) pyrene	3.82	0.35	0.076	mg/kg dry	3.51	<0.35	109	35-110			
Naphthalene	2.82	0.35	0.075	mg/kg dry	3.51	<0.35	80.2	35-100			
Phenanthrene	3.09	0.35	0.069	mg/kg dry	3.51	<0.35	88.0	45-100			
Surrogate: 2-Fluorobiphenyl	*5.20*			*mg/kg dry*	*7.03*		*73.9*	*46.3-96.2*			
Surrogate: Nitrobenzene-d5	*5.03*			*mg/kg dry*	*7.03*		*71.7*	*49.3-94*			
Surrogate: Terphenyl-d14	*4.97*			*mg/kg dry*	*7.03*		*70.8*	*51.5-94.6*			
Matrix Spike Dup (B4K1706-MSD1)		**Source: 1405115-01**			Prepared: 11/17/14		Analyzed: 11/18/14				
Acenaphthylene	2.92	0.35	0.075	mg/kg dry	3.52	<0.35	83.0	40-100	0.199	20	
Anthracene	3.00	0.35	0.073	mg/kg dry	3.52	<0.35	85.2	45-100	0.691	20	
Benzo(a)anthracene	2.85	0.35	0.068	mg/kg dry	3.52	<0.35	81.0	45-100	3.44	20	
Benzo(a)pyrene	3.66	0.35	0.074	mg/kg dry	3.52	<0.35	104	40-100	5.48	20	M1
Benzo(b)fluoranthene	3.49	0.35	0.062	mg/kg dry	3.52	<0.35	99.1	40-100	6.75	20	
Benzo(g,h,i)perylene	3.77	0.35	0.075	mg/kg dry	3.52	<0.35	107	35-110	10.0	20	
Benzo(k)fluoranthene	3.70	0.35	0.074	mg/kg dry	3.52	<0.35	105	40-100	5.66	20	M1
Chrysene	3.19	0.35	0.067	mg/kg dry	3.52	<0.35	90.7	40-100	0.214	20	
Dibenz(a,h)anthracene	3.83	0.35	0.086	mg/kg dry	3.52	<0.35	109	35-110	5.96	20	
Fluoranthene	2.74	0.35	0.072	mg/kg dry	3.52	<0.35	77.8	45-100	2.58	20	
Fluorene	2.95	0.35	0.068	mg/kg dry	3.52	<0.35	83.9	45-100	2.12	20	
Indeno (1,2,3-cd) pyrene	3.49	0.35	0.076	mg/kg dry	3.52	<0.35	99.3	35-110	8.97	20	
Naphthalene	2.80	0.35	0.075	mg/kg dry	3.52	<0.35	79.5	35-100	0.712	20	
Phenanthrene	3.05	0.35	0.069	mg/kg dry	3.52	<0.35	86.8	45-100	1.24	20	
Surrogate: 2-Fluorobiphenyl	*5.21*			*mg/kg dry*	*7.04*		*74.0*	*46.3-96.2*			
Surrogate: Nitrobenzene-d5	*5.12*			*mg/kg dry*	*7.04*		*72.8*	*49.3-94*			
Surrogate: Terphenyl-d14	*5.66*			*mg/kg dry*	*7.04*		*80.5*	*51.5-94.6*			

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Barr Engineering Co.	Project:	23691588		
4700 W 77th St	Project Number:	23691588.00	Work Order #:	1405158
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported:	12/02/14

PERCENT SOLIDS - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1720 - General Preparation											
Duplicate (B4K1720-DUP1)		**Source: 1405158-11**			Prepared: 11/17/14		Analyzed: 11/18/14				
% Solids	89.0			%		89.0			0.00	20	
Duplicate (B4K1720-DUP2)		**Source: 1405158-13**			Prepared: 11/17/14		Analyzed: 11/18/14				
% Solids	91.0			%		90.0			1.10	20	

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Barr Engineering Co.	Project:	23691588		
4700 W 77th St	Project Number:	23691588.00	Work Order #:	1405158
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported:	12/02/14

SVOC 8270D - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1706 - EPA 3545 ASE Extraction											
Blank (B4K1706-BLK1)					Prepared: 11/17/14 Analyzed: 11/18/14						
1,2,4-Trichlorobenzene	< 0.33	0.33	0.075	mg/kg wet							
1,2-Dichlorobenzene	< 0.33	0.33	0.067	mg/kg wet							
1,2-Diphenylhydrazine as Azobenzene	< 0.33	0.33	0.058	mg/kg wet							
1,3-Dichlorobenzene	< 0.33	0.33	0.069	mg/kg wet							
1,4-Dichlorobenzene	< 0.33	0.33	0.068	mg/kg wet							
2,3,4,6-Tetrachlorophenol	< 0.67	0.67	0.19	mg/kg wet							
2,4,5-Trichlorophenol	< 0.67	0.67	0.071	mg/kg wet							
2,4,6-Trichlorophenol	< 0.67	0.67	0.16	mg/kg wet							
2,4-Dichlorophenol	< 0.67	0.67	0.15	mg/kg wet							
2,4-Dimethylphenol	< 0.67	0.67	0.13	mg/kg wet							
2,4-Dinitrophenol	< 0.67	0.67	0.071	mg/kg wet							
2,4-Dinitrotoluene	< 0.33	0.33	0.068	mg/kg wet							
2,6-Dichlorophenol	< 0.67	0.67	0.13	mg/kg wet							
2,6-Dinitrotoluene	< 0.33	0.33	0.077	mg/kg wet							
2-Chloronaphthalene	< 0.33	0.33	0.068	mg/kg wet							
2-Chlorophenol	< 0.67	0.67	0.15	mg/kg wet							
2-Methylnaphthalene	< 0.33	0.33	0.080	mg/kg wet							
2-Methylphenol	< 0.67	0.67	0.082	mg/kg wet							
2-Nitroaniline	< 0.33	0.33	0.069	mg/kg wet							
2-Nitrophenol	< 0.67	0.67	0.18	mg/kg wet							
3&4-Methylphenol	< 0.67	0.67	0.082	mg/kg wet							
3,3´-Dichlorobenzidine	< 1.6	1.6	0.45	mg/kg wet							
3-Nitroaniline	< 0.33	0.33	0.072	mg/kg wet							
4,6-Dinitro-2-methylphenol	< 0.67	0.67	0.11	mg/kg wet							
4-Bromophenyl phenyl ether	< 0.33	0.33	0.068	mg/kg wet							
4-Chloro-3-methylphenol	< 0.67	0.67	0.14	mg/kg wet							
4-Chloroaniline	< 0.67	0.67	0.067	mg/kg wet							
4-Chlorophenyl phenyl ether	< 0.33	0.33	0.068	mg/kg wet							
4-Nitroaniline	< 0.33	0.33	0.083	mg/kg wet							
4-Nitrophenol	< 0.67	0.67	0.17	mg/kg wet							
Acenaphthene	< 0.33	0.33	0.063	mg/kg wet							
Acenaphthylene	< 0.33	0.33	0.071	mg/kg wet							
Aniline	< 0.67	0.67	0.066	mg/kg wet							
Anthracene	< 0.33	0.33	0.069	mg/kg wet							
Benzidine	< 2.5	2.5	0.44	mg/kg wet							
Benzo(a)anthracene	< 0.33	0.33	0.065	mg/kg wet							
Benzo(a)pyrene	< 0.33	0.33	0.070	mg/kg wet							
Benzo(b)fluoranthene	< 0.33	0.33	0.059	mg/kg wet							
Benzo(g,h,i)perylene	< 0.33	0.33	0.071	mg/kg wet							

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Barr Engineering Co.	Project:	23691588			
4700 W 77th St	Project Number:	23691588.00		Work Order #:	1405158
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen		Date Reported:	12/02/14

SVOC 8270D - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1706 - EPA 3545 ASE Extraction											
Blank (B4K1706-BLK1)					Prepared: 11/17/14	Analyzed: 11/18/14					
Benzo(k)fluoranthene	< 0.33	0.33	0.070	mg/kg wet							
Benzoic acid	< 0.33	0.33	0.064	mg/kg wet							
Benzyl alcohol	< 0.67	0.67	0.15	mg/kg wet							
Bis(2-chloroethoxy)methane	< 0.33	0.33	0.077	mg/kg wet							
Bis(2-chloroethyl)ether	< 0.33	0.33	0.069	mg/kg wet							
Bis(2-chloroisopropyl)ether	< 0.33	0.33	0.078	mg/kg wet							
Bis(2-ethylhexyl)phthalate	< 0.33	0.33	0.081	mg/kg wet							
Butyl benzyl phthalate	< 0.33	0.33	0.083	mg/kg wet							
Carbazole	< 0.33	0.33	0.076	mg/kg wet							
Chrysene	< 0.33	0.33	0.064	mg/kg wet							
Dibenz(a,h)anthracene	< 0.33	0.33	0.082	mg/kg wet							
Dibenzofuran	< 0.33	0.33	0.068	mg/kg wet							
Diethyl phthalate	< 0.33	0.33	0.063	mg/kg wet							
Dimethyl phthalate	< 0.33	0.33	0.069	mg/kg wet							
Di-n-butyl phthalate	< 0.33	0.33	0.079	mg/kg wet							
Di-n-octyl phthalate	< 0.33	0.33	0.10	mg/kg wet							
Fluoranthene	< 0.33	0.33	0.068	mg/kg wet							
Fluorene	< 0.33	0.33	0.065	mg/kg wet							
Hexachlorobenzene	< 0.33	0.33	0.062	mg/kg wet							
Hexachlorobutadiene	< 0.33	0.33	0.077	mg/kg wet							
Hexachlorocyclopentadiene	< 0.33	0.33	0.069	mg/kg wet							
Hexachloroethane	< 0.33	0.33	0.082	mg/kg wet							
Indeno (1,2,3-cd) pyrene	< 0.33	0.33	0.072	mg/kg wet							
Isophorone	< 0.33	0.33	0.076	mg/kg wet							
Naphthalene	< 0.33	0.33	0.071	mg/kg wet							
Nitrobenzene	< 0.33	0.33	0.080	mg/kg wet							
N-Nitrosodimethylamine	< 0.33	0.33	0.070	mg/kg wet							
N-Nitrosodi-n-propylamine	< 0.33	0.33	0.073	mg/kg wet							
N-Nitrosodiphenylamine	< 0.33	0.33	0.067	mg/kg wet							
Pentachlorophenol	< 0.67	0.67	0.19	mg/kg wet							
Phenanthrene	< 0.33	0.33	0.066	mg/kg wet							
Phenol	< 0.67	0.67	0.14	mg/kg wet							
Pyrene	< 0.33	0.33	0.059	mg/kg wet							
Surrogate: 2,4,6-Tribromophenol	*5.62*			*mg/kg wet*	*6.67*		*84.3*	*53-107*			
Surrogate: 2-Fluorobiphenyl	*5.16*			*mg/kg wet*	*6.67*		*77.3*	*53.9-97.9*			
Surrogate: 2-Fluorophenol	*4.28*			*mg/kg wet*	*6.67*		*64.3*	*42.5-94.9*			
Surrogate: Nitrobenzene-d5	*4.80*			*mg/kg wet*	*6.67*		*71.9*	*48.9-100*			
Surrogate: Phenol-d6	*4.78*			*mg/kg wet*	*6.67*		*71.7*	*50.4-99.6*			
Surrogate: Terphenyl-d14	*4.91*			*mg/kg wet*	*6.67*		*73.6*	*51-99.6*			

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LEGEND Technical Services, Inc.
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Barr Engineering Co.	Project:	23691588			
4700 W 77th St	Project Number:	23691588.00		Work Order #:	1405158
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen		Date Reported:	12/02/14

SVOC 8270D - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1706 - EPA 3545 ASE Extraction											
LCS (B4K1706-BS1)					Prepared: 11/17/14		Analyzed: 11/18/14				
1,2,4-Trichlorobenzene	2.13	0.33	0.075	mg/kg wet	3.33		63.9	50-100			
1,4-Dichlorobenzene	2.05	0.33	0.068	mg/kg wet	3.33		61.5	40-80			
2,4-Dinitrotoluene	2.46	0.33	0.068	mg/kg wet	3.33		73.9	50-90			
2-Chlorophenol	2.14	0.67	0.15	mg/kg wet	3.33		64.2	50-85			
4-Chloro-3-methylphenol	2.18	0.67	0.14	mg/kg wet	3.33		65.3	55-90			
4-Nitrophenol	2.68	0.67	0.17	mg/kg wet	3.33		80.3	45-100			
Anthracene	2.44	0.33	0.069	mg/kg wet	3.33		73.1	55-95			
Benzo(a)anthracene	2.41	0.33	0.065	mg/kg wet	3.33		72.3	55-100			
Benzo(a)pyrene	3.03	0.33	0.070	mg/kg wet	3.33		90.8	55-100			
Chrysene	2.49	0.33	0.064	mg/kg wet	3.33		74.6	55-100			
Fluoranthene	2.30	0.33	0.068	mg/kg wet	3.33		68.9	55-95			
Fluorene	2.40	0.33	0.065	mg/kg wet	3.33		71.9	55-95			
N-Nitrosodi-n-propylamine	2.17	0.33	0.073	mg/kg wet	3.33		65.2	50-90			
Pentachlorophenol	2.07	0.67	0.19	mg/kg wet	3.33		62.1	35-95			
Phenanthrene	2.44	0.33	0.066	mg/kg wet	3.33		73.2	55-95			
Phenol	1.99	0.67	0.14	mg/kg wet	3.33		59.6	50-85			
Surrogate: 2,4,6-Tribromophenol	*4.55*			*mg/kg wet*	*6.67*		*68.3*	*53-107*			
Surrogate: 2-Fluorobiphenyl	*4.19*			*mg/kg wet*	*6.67*		*62.9*	*53.9-97.9*			
Surrogate: 2-Fluorophenol	*3.93*			*mg/kg wet*	*6.67*		*59.0*	*42.5-94.9*			
Surrogate: Nitrobenzene-d5	*4.07*			*mg/kg wet*	*6.67*		*61.0*	*48.9-100*			
Surrogate: Phenol-d6	*4.01*			*mg/kg wet*	*6.67*		*60.2*	*50.4-99.6*			
Surrogate: Terphenyl-d14	*3.70*			*mg/kg wet*	*6.67*		*55.5*	*51-99.6*			
Matrix Spike (B4K1706-MS1)		**Source: 1405115-01**			Prepared: 11/17/14		Analyzed: 11/18/14				
1,2,4-Trichlorobenzene	2.70	0.35	0.079	mg/kg dry	3.51	<0.35	77.0	35-100			
1,4-Dichlorobenzene	2.55	0.35	0.072	mg/kg dry	3.51	<0.35	72.7	30-85			
2,4-Dinitrotoluene	3.05	0.35	0.072	mg/kg dry	3.51	<0.35	86.9	45-95			
2-Chlorophenol	2.72	0.71	0.16	mg/kg dry	3.51	<0.71	77.4	35-100			
4-Chloro-3-methylphenol	2.71	0.71	0.15	mg/kg dry	3.51	<0.71	77.0	35-100			
4-Nitrophenol	3.35	0.71	0.18	mg/kg dry	3.51	<0.71	95.3	40-100			
Anthracene	3.02	0.35	0.073	mg/kg dry	3.51	<0.35	85.9	55-100			
Benzo(a)anthracene	2.95	0.35	0.068	mg/kg dry	3.51	<0.35	84.0	50-100			
Benzo(a)pyrene	3.87	0.35	0.074	mg/kg dry	3.51	<0.35	110	50-100			M1
Chrysene	3.20	0.35	0.067	mg/kg dry	3.51	<0.35	91.0	50-100			
Fluoranthene	2.81	0.35	0.072	mg/kg dry	3.51	<0.35	80.0	50-100			
Fluorene	3.02	0.35	0.068	mg/kg dry	3.51	<0.35	85.9	50-100			
N-Nitrosodi-n-propylamine	2.77	0.35	0.077	mg/kg dry	3.51	<0.35	78.8	35-100			
Pentachlorophenol	2.88	0.71	0.20	mg/kg dry	3.51	<0.71	82.0	30-100			
Phenanthrene	3.09	0.35	0.069	mg/kg dry	3.51	<0.35	88.0	55-100			
Phenol	2.55	0.71	0.15	mg/kg dry	3.51	<0.71	72.5	35-100			

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Barr Engineering Co.	Project:	23691588			
4700 W 77th St	Project Number:	23691588.00		Work Order #:	1405158
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen		Date Reported:	12/02/14

SVOC 8270D - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1706 - EPA 3545 ASE Extraction											
Matrix Spike (B4K1706-MS1)		**Source: 1405115-01**			Prepared: 11/17/14		Analyzed: 11/18/14				
Surrogate: 2,4,6-Tribromophenol	*5.57*			*mg/kg dry*	*7.03*		*79.3*	*53-107*			
Surrogate: 2-Fluorobiphenyl	*5.20*			*mg/kg dry*	*7.03*		*73.9*	*53.9-97.9*			
Surrogate: 2-Fluorophenol	*4.94*			*mg/kg dry*	*7.03*		*70.3*	*42.5-94.9*			
Surrogate: Nitrobenzene-d5	*5.03*			*mg/kg dry*	*7.03*		*71.7*	*48.9-100*			
Surrogate: Phenol-d6	*5.05*			*mg/kg dry*	*7.03*		*71.9*	*50.4-99.6*			
Surrogate: Terphenyl-d14	*4.97*			*mg/kg dry*	*7.03*		*70.8*	*51-99.6*			
Matrix Spike Dup (B4K1706-MSD1)		**Source: 1405115-01**			Prepared: 11/17/14		Analyzed: 11/18/14				
1,2,4-Trichlorobenzene	2.69	0.35	0.079	mg/kg dry	3.52	<0.35	76.6	35-100	0.366	20	
1,4-Dichlorobenzene	2.57	0.35	0.072	mg/kg dry	3.52	<0.35	73.0	30-85	0.512	20	
2,4-Dinitrotoluene	2.97	0.35	0.072	mg/kg dry	3.52	<0.35	84.3	45-95	2.81	20	
2-Chlorophenol	2.71	0.71	0.16	mg/kg dry	3.52	<0.71	77.1	35-100	0.174	20	
4-Chloro-3-methylphenol	2.63	0.71	0.15	mg/kg dry	3.52	<0.71	74.7	35-100	2.90	20	
4-Nitrophenol	3.20	0.71	0.18	mg/kg dry	3.52	<0.71	91.1	40-100	4.37	20	
Anthracene	3.00	0.35	0.073	mg/kg dry	3.52	<0.35	85.2	55-100	0.691	20	
Benzo(a)anthracene	2.85	0.35	0.068	mg/kg dry	3.52	<0.35	81.0	50-100	3.44	20	
Benzo(a)pyrene	3.66	0.35	0.074	mg/kg dry	3.52	<0.35	104	50-100	5.48	20	M1
Chrysene	3.19	0.35	0.067	mg/kg dry	3.52	<0.35	90.7	50-100	0.214	20	
Fluoranthene	2.74	0.35	0.072	mg/kg dry	3.52	<0.35	77.8	50-100	2.58	20	
Fluorene	2.95	0.35	0.068	mg/kg dry	3.52	<0.35	83.9	50-100	2.12	20	
N-Nitrosodi-n-propylamine	2.73	0.35	0.077	mg/kg dry	3.52	<0.35	77.7	35-100	1.25	20	
Pentachlorophenol	2.85	0.71	0.20	mg/kg dry	3.52	<0.71	81.0	30-100	1.04	20	
Phenanthrene	3.05	0.35	0.069	mg/kg dry	3.52	<0.35	86.8	55-100	1.24	20	
Phenol	2.53	0.71	0.15	mg/kg dry	3.52	<0.71	71.9	35-100	0.656	20	
Surrogate: 2,4,6-Tribromophenol	*5.54*			*mg/kg dry*	*7.04*		*78.8*	*53-107*			
Surrogate: 2-Fluorobiphenyl	*5.21*			*mg/kg dry*	*7.04*		*74.0*	*53.9-97.9*			
Surrogate: 2-Fluorophenol	*4.98*			*mg/kg dry*	*7.04*		*70.8*	*42.5-94.9*			
Surrogate: Nitrobenzene-d5	*5.12*			*mg/kg dry*	*7.04*		*72.8*	*48.9-100*			
Surrogate: Phenol-d6	*4.98*			*mg/kg dry*	*7.04*		*70.8*	*50.4-99.6*			
Surrogate: Terphenyl-d14	*5.66*			*mg/kg dry*	*7.04*		*80.5*	*51-99.6*			

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Barr Engineering Co.	Project:	23691588			
4700 W 77th St	Project Number:	23691588.00		Work Order #:	1405158
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen		Date Reported:	12/02/14

VOC 8260B - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1315 - EPA 5035 Soil (Purge and Trap)											
Blank (B4K1315-BLK1)					Prepared & Analyzed: 11/13/14						
1,1,1,2-Tetrachloroethane	< 0.25	0.25	0.0051	mg/kg wet							
1,1,1-Trichloroethane	< 0.25	0.25	0.0056	mg/kg wet							
1,1,2,2-Tetrachloroethane	< 0.25	0.25	0.0057	mg/kg wet							
1,1,2-Trichloroethane	< 0.25	0.25	0.0073	mg/kg wet							
1,1,2-Trichlorotrifluoroethane	< 0.25	0.25	0.0091	mg/kg wet							
1,1-Dichloroethane	< 0.25	0.25	0.0033	mg/kg wet							
1,1-Dichloroethene	< 0.25	0.25	0.0058	mg/kg wet							
1,1-Dichloropropene	< 0.25	0.25	0.0055	mg/kg wet							
1,2,3-Trichlorobenzene	< 0.50	0.50	0.0051	mg/kg wet							
1,2,3-Trichloropropane	< 0.25	0.25	0.0046	mg/kg wet							
1,2,4-Trichlorobenzene	< 0.50	0.50	0.0054	mg/kg wet							
1,2,4-Trimethylbenzene	< 0.25	0.25	0.0033	mg/kg wet							
1,2-Dibromo-3-chloropropane	< 0.50	0.50	0.0083	mg/kg wet							
1,2-Dibromoethane (EDB)	< 0.25	0.25	0.0072	mg/kg wet							
1,2-Dichlorobenzene	< 0.25	0.25	0.0034	mg/kg wet							
1,2-Dichloroethane	< 0.25	0.25	0.0055	mg/kg wet							
1,2-Dichloropropane	< 0.25	0.25	0.0048	mg/kg wet							
1,3,5-Trimethylbenzene	< 0.25	0.25	0.0025	mg/kg wet							
1,3-Dichlorobenzene	< 0.25	0.25	0.0038	mg/kg wet							
1,3-Dichloropropane	< 0.25	0.25	0.0055	mg/kg wet							
1,4-Dichlorobenzene	< 0.25	0.25	0.0050	mg/kg wet							
2,2-Dichloropropane	< 0.50	0.50	0.0087	mg/kg wet							
2-Butanone	< 2.0	2.0	0.014	mg/kg wet							
2-Chlorotoluene	< 0.25	0.25	0.0022	mg/kg wet							
4-Chlorotoluene	< 0.25	0.25	0.0036	mg/kg wet							
Acetone	< 2.0	2.0	0.10	mg/kg wet							
Allyl chloride	< 0.50	0.50	0.0083	mg/kg wet							
Benzene	< 0.25	0.25	0.0027	mg/kg wet							
Bromobenzene	< 0.25	0.25	0.0052	mg/kg wet							
Bromochloromethane	< 0.25	0.25	0.0074	mg/kg wet							
Bromodichloromethane	< 0.25	0.25	0.0043	mg/kg wet							
Bromoform	< 0.50	0.50	0.0070	mg/kg wet							
Bromomethane	< 0.50	0.50	0.0060	mg/kg wet							
Carbon tetrachloride	< 0.25	0.25	0.0060	mg/kg wet							
Chlorobenzene	< 0.25	0.25	0.0026	mg/kg wet							
Chloroethane	< 0.25	0.25	0.0072	mg/kg wet							
Chloroform	< 0.25	0.25	0.0023	mg/kg wet							
Chloromethane	< 0.25	0.25	0.0067	mg/kg wet							
cis-1,2-Dichloroethene	< 0.25	0.25	0.0018	mg/kg wet							

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Barr Engineering Co.	Project:	23691588	
4700 W 77th St	Project Number:	23691588.00	Work Order #: 1405158
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported: 12/02/14

VOC 8260B - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1315 - EPA 5035 Soil (Purge and Trap)											
Blank (B4K1315-BLK1)					Prepared & Analyzed: 11/13/14						
cis-1,3-Dichloropropene	< 0.25	0.25	0.0049	mg/kg wet							
Dibromochloromethane	< 0.25	0.25	0.0046	mg/kg wet							
Dibromomethane	< 0.25	0.25	0.0046	mg/kg wet							
Dichlorodifluoromethane	< 0.50	0.50	0.0094	mg/kg wet							
Dichlorofluoromethane	< 0.25	0.25	0.0079	mg/kg wet							
Ethyl ether	< 0.50	0.50	0.0050	mg/kg wet							
Ethylbenzene	< 0.25	0.25	0.0026	mg/kg wet							
Hexachlorobutadiene	< 1.0	1.0	0.18	mg/kg wet							
Isopropylbenzene	< 0.25	0.25	0.0017	mg/kg wet							
m,p-Xylene	< 0.50	0.50	0.0097	mg/kg wet							
Methyl isobutyl ketone	< 0.50	0.50	0.014	mg/kg wet							
Methyl tert-butyl ether	< 0.25	0.25	0.0055	mg/kg wet							
Methylene chloride	< 1.0	1.0	0.0039	mg/kg wet							
Naphthalene	< 0.50	0.50	0.012	mg/kg wet							
n-Butylbenzene	< 0.25	0.25	0.0055	mg/kg wet							
n-Propylbenzene	< 0.25	0.25	0.0031	mg/kg wet							
o-Xylene	< 0.25	0.25	0.0039	mg/kg wet							
p-Isopropyltoluene	< 0.25	0.25	0.0030	mg/kg wet							
sec-Butylbenzene	< 0.25	0.25	0.0035	mg/kg wet							
Styrene	< 0.25	0.25	0.0054	mg/kg wet							
tert-Butylbenzene	< 0.25	0.25	0.0027	mg/kg wet							
Tetrachloroethene	< 0.25	0.25	0.0050	mg/kg wet							
Tetrahydrofuran	< 2.0	2.0	0.032	mg/kg wet							
Toluene	< 0.25	0.25	0.0035	mg/kg wet							
trans-1,2-Dichloroethene	< 0.25	0.25	0.0045	mg/kg wet							
trans-1,3-Dichloropropene	< 0.25	0.25	0.0063	mg/kg wet							
Trichloroethene	< 0.25	0.25	0.0038	mg/kg wet							
Trichlorofluoromethane	< 0.25	0.25	0.0062	mg/kg wet							
Vinyl chloride	< 0.25	0.25	0.0061	mg/kg wet							
Surrogate: 4-Bromofluorobenzene	*47.5*			*ug/L*	*50.0*		*95.1*	*80-124*			
Surrogate: Dibromofluoromethane	*46.0*			*ug/L*	*50.0*		*92.1*	*77.1-123*			
Surrogate: Toluene-d8	*46.8*			*ug/L*	*50.0*		*93.6*	*78.1-125*			
LCS (B4K1315-BS1)					Prepared & Analyzed: 11/13/14						
1,1,2,2-Tetrachloroethane	49.6			ug/L	50.0		99.1	75-120			
1,1-Dichloroethane	51.0			ug/L	50.0		102	79.6-120			
1,1-Dichloroethene	49.3			ug/L	50.0		98.5	78.3-120			
1,3,5-Trimethylbenzene	50.8			ug/L	50.0		102	77-120			
1,4-Dichlorobenzene	52.1			ug/L	50.0		104	75-125			
2-Chlorotoluene	50.7			ug/L	50.0		101	75.9-120			

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Barr Engineering Co.	Project:	23691588		
4700 W 77th St	Project Number:	23691588.00	Work Order #:	1405158
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported:	12/02/14

VOC 8260B - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1315 - EPA 5035 Soil (Purge and Trap)											
LCS (B4K1315-BS1)					Prepared & Analyzed: 11/13/14						
Benzene	51.7			ug/L	50.0		103	80-120			
Bromoform	52.3			ug/L	50.0		105	80-120			
Chlorobenzene	51.1			ug/L	50.0		102	80-120			
Chloroform	51.0			ug/L	50.0		102	80-120			
Ethylbenzene	51.5			ug/L	50.0		103	80-120			
n-Butylbenzene	52.3			ug/L	50.0		105	75-125			
n-Propylbenzene	50.6			ug/L	50.0		101	75-120			
Toluene	51.7			ug/L	50.0		103	80-120			
Trichloroethene	51.9			ug/L	50.0		104	80-120			
Vinyl chloride	44.6			ug/L	50.0		89.1	75-130			
Surrogate: 4-Bromofluorobenzene	*49.5*			*ug/L*	*50.0*		*99.1*	*80-124*			
Surrogate: Dibromofluoromethane	*48.8*			*ug/L*	*50.0*		*97.7*	*77.1-123*			
Surrogate: Toluene-d8	*48.2*			*ug/L*	*50.0*		*96.5*	*78.1-125*			
Matrix Spike (B4K1315-MS1)		**Source: 1405094-01**			Prepared & Analyzed: 11/13/14						
1,1,2,2-Tetrachloroethane	52.0			ug/L	50.0	<	104	75-125			
1,1-Dichloroethane	50.2			ug/L	50.0	<	100	78.7-123			
1,1-Dichloroethene	47.9			ug/L	50.0	<	95.9	75.8-121			
1,3,5-Trimethylbenzene	51.4			ug/L	50.0	<	103	75-120			
1,4-Dichlorobenzene	50.3			ug/L	50.0	<	101	75-125			
2-Chlorotoluene	51.1			ug/L	50.0	<	102	75-120			
Benzene	50.2			ug/L	50.0	<	100	80-120			
Bromoform	51.1			ug/L	50.0	<	102	80-120			
Chlorobenzene	49.8			ug/L	50.0	<	99.7	80-120			
Chloroform	50.0			ug/L	50.0	<	100	80-120			
Ethylbenzene	50.1			ug/L	50.0	<	100	80-120			
n-Butylbenzene	52.7			ug/L	50.0	<	105	73.8-125			
n-Propylbenzene	51.4			ug/L	50.0	<	103	75-120			
Toluene	50.3			ug/L	50.0	<	101	80-120			
Trichloroethene	50.5			ug/L	50.0	<	101	80-120			
Vinyl chloride	39.7			ug/L	50.0	<	79.5	74.8-130			
Surrogate: 4-Bromofluorobenzene	*49.8*			*ug/L*	*50.0*		*99.7*	*80-124*			
Surrogate: Dibromofluoromethane	*46.3*			*ug/L*	*50.0*		*92.7*	*77.1-123*			
Surrogate: Toluene-d8	*48.2*			*ug/L*	*50.0*		*96.5*	*78.1-125*			
Matrix Spike Dup (B4K1315-MSD1)		**Source: 1405094-01**			Prepared & Analyzed: 11/13/14						
1,1,2,2-Tetrachloroethane	52.7			ug/L	50.0	<	105	75-125	1.30	20	
1,1-Dichloroethane	51.6			ug/L	50.0	<	103	78.7-123	2.70	20	
1,1-Dichloroethene	50.1			ug/L	50.0	<	100	75.8-121	4.43	20	
1,3,5-Trimethylbenzene	50.4			ug/L	50.0	<	101	75-120	1.91	20	

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Barr Engineering Co.	Project:	23691588		
4700 W 77th St	Project Number:	23691588.00	Work Order #:	1405158
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported:	12/02/14

VOC 8260B - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1315 - EPA 5035 Soil (Purge and Trap)											
Matrix Spike Dup (B4K1315-MSD1)		**Source: 1405094-01**			Prepared & Analyzed: 11/13/14						
1,4-Dichlorobenzene	50.7			ug/L	50.0	<	101	75-125	0.826	20	
2-Chlorotoluene	50.6			ug/L	50.0	<	101	75-120	0.971	20	
Benzene	50.0			ug/L	50.0	<	100	80-120	0.303	20	
Bromoform	52.1			ug/L	50.0	<	104	80-120	1.92	20	
Chlorobenzene	49.4			ug/L	50.0	<	98.8	80-120	0.890	20	
Chloroform	51.1			ug/L	50.0	<	102	80-120	2.12	20	
Ethylbenzene	50.2			ug/L	50.0	<	100	80-120	0.185	20	
n-Butylbenzene	53.0			ug/L	50.0	<	106	73.8-125	0.558	20	
n-Propylbenzene	51.2			ug/L	50.0	<	102	75-120	0.310	20	
Toluene	50.4			ug/L	50.0	<	101	80-120	0.189	20	
Trichloroethene	50.7			ug/L	50.0	<	101	80-120	0.391	20	
Vinyl chloride	41.0			ug/L	50.0	<	82.0	74.8-130	3.18	20	
Surrogate: 4-Bromofluorobenzene	*50.4*			*ug/L*	*50.0*		*101*	*80-124*			
Surrogate: Dibromofluoromethane	*46.2*			*ug/L*	*50.0*		*92.5*	*77.1-123*			
Surrogate: Toluene-d8	*48.3*			*ug/L*	*50.0*		*96.7*	*78.1-125*			
Batch B4K1419 - EPA 5035 Soil (Purge and Trap)											
Blank (B4K1419-BLK1)					Prepared: 11/14/14 Analyzed: 11/17/14						
1,1,1,2-Tetrachloroethane	< 0.25	0.25	0.0051	mg/kg wet							
1,1,1-Trichloroethane	< 0.25	0.25	0.0056	mg/kg wet							
1,1,2,2-Tetrachloroethane	< 0.25	0.25	0.0057	mg/kg wet							
1,1,2-Trichloroethane	< 0.25	0.25	0.0073	mg/kg wet							
1,1,2-Trichlorotrifluoroethane	< 0.25	0.25	0.0091	mg/kg wet							
1,1-Dichloroethane	< 0.25	0.25	0.0033	mg/kg wet							
1,1-Dichloroethene	< 0.25	0.25	0.0058	mg/kg wet							
1,1-Dichloropropene	< 0.25	0.25	0.0055	mg/kg wet							
1,2,3-Trichlorobenzene	< 0.50	0.50	0.0051	mg/kg wet							
1,2,3-Trichloropropane	< 0.25	0.25	0.0046	mg/kg wet							
1,2,4-Trichlorobenzene	< 0.50	0.50	0.0054	mg/kg wet							
1,2,4-Trimethylbenzene	< 0.25	0.25	0.0033	mg/kg wet							
1,2-Dibromo-3-chloropropane	< 0.50	0.50	0.0083	mg/kg wet							
1,2-Dibromoethane (EDB)	< 0.25	0.25	0.0072	mg/kg wet							
1,2-Dichlorobenzene	< 0.25	0.25	0.0034	mg/kg wet							
1,2-Dichloroethane	< 0.25	0.25	0.0055	mg/kg wet							
1,2-Dichloropropane	< 0.25	0.25	0.0048	mg/kg wet							
1,3,5-Trimethylbenzene	< 0.25	0.25	0.0025	mg/kg wet							
1,3-Dichlorobenzene	< 0.25	0.25	0.0038	mg/kg wet							
1,3-Dichloropropane	< 0.25	0.25	0.0055	mg/kg wet							
1,4-Dichlorobenzene	< 0.25	0.25	0.0050	mg/kg wet							
2,2-Dichloropropane	< 0.50	0.50	0.0087	mg/kg wet							

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Barr Engineering Co.	Project:	23691588	
4700 W 77th St	Project Number:	23691588.00	Work Order #: 1405158
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported: 12/02/14

VOC 8260B - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1419 - EPA 5035 Soil (Purge and Trap)											
Blank (B4K1419-BLK1)					Prepared: 11/14/14 Analyzed: 11/17/14						
2-Butanone	< 2.0	2.0	0.014	mg/kg wet							
2-Chlorotoluene	< 0.25	0.25	0.0022	mg/kg wet							
4-Chlorotoluene	< 0.25	0.25	0.0036	mg/kg wet							
Acetone	< 2.0	2.0	0.10	mg/kg wet							
Allyl chloride	< 0.50	0.50	0.0083	mg/kg wet							
Benzene	< 0.25	0.25	0.0027	mg/kg wet							
Bromobenzene	< 0.25	0.25	0.0052	mg/kg wet							
Bromochloromethane	< 0.25	0.25	0.0074	mg/kg wet							
Bromodichloromethane	< 0.25	0.25	0.0043	mg/kg wet							
Bromoform	< 0.50	0.50	0.0070	mg/kg wet							
Bromomethane	< 0.50	0.50	0.0060	mg/kg wet							
Carbon tetrachloride	< 0.25	0.25	0.0060	mg/kg wet							
Chlorobenzene	< 0.25	0.25	0.0026	mg/kg wet							
Chloroethane	< 0.25	0.25	0.0072	mg/kg wet							
Chloroform	< 0.25	0.25	0.0023	mg/kg wet							
Chloromethane	< 0.25	0.25	0.0067	mg/kg wet							
cis-1,2-Dichloroethene	< 0.25	0.25	0.0018	mg/kg wet							
cis-1,3-Dichloropropene	< 0.25	0.25	0.0049	mg/kg wet							
Dibromochloromethane	< 0.25	0.25	0.0046	mg/kg wet							
Dibromomethane	< 0.25	0.25	0.0046	mg/kg wet							
Dichlorodifluoromethane	< 0.50	0.50	0.0094	mg/kg wet							
Dichlorofluoromethane	< 0.25	0.25	0.0079	mg/kg wet							
Ethyl ether	< 0.50	0.50	0.0050	mg/kg wet							
Ethylbenzene	< 0.25	0.25	0.0026	mg/kg wet							
Hexachlorobutadiene	< 1.0	1.0	0.18	mg/kg wet							
Isopropylbenzene	< 0.25	0.25	0.0017	mg/kg wet							
m,p-Xylene	< 0.50	0.50	0.0097	mg/kg wet							
Methyl isobutyl ketone	< 0.50	0.50	0.014	mg/kg wet							
Methyl tert-butyl ether	< 0.25	0.25	0.0055	mg/kg wet							
Methylene chloride	< 1.0	1.0	0.0039	mg/kg wet							
Naphthalene	< 0.50	0.50	0.012	mg/kg wet							
n-Butylbenzene	< 0.25	0.25	0.0055	mg/kg wet							
n-Propylbenzene	< 0.25	0.25	0.0031	mg/kg wet							
o-Xylene	< 0.25	0.25	0.0039	mg/kg wet							
p-Isopropyltoluene	< 0.25	0.25	0.0030	mg/kg wet							
sec-Butylbenzene	< 0.25	0.25	0.0035	mg/kg wet							
Styrene	< 0.25	0.25	0.0054	mg/kg wet							
tert-Butylbenzene	< 0.25	0.25	0.0027	mg/kg wet							
Tetrachloroethene	< 0.25	0.25	0.0050	mg/kg wet							

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Barr Engineering Co.	Project:	23691588	
4700 W 77th St	Project Number:	23691588.00	Work Order #: 1405158
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported: 12/02/14

VOC 8260B - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1419 - EPA 5035 Soil (Purge and Trap)											
Blank (B4K1419-BLK1)					Prepared: 11/14/14		Analyzed: 11/17/14				
Tetrahydrofuran	< 2.0	2.0	0.032	mg/kg wet							
Toluene	< 0.25	0.25	0.0035	mg/kg wet							
trans-1,2-Dichloroethene	< 0.25	0.25	0.0045	mg/kg wet							
trans-1,3-Dichloropropene	< 0.25	0.25	0.0063	mg/kg wet							
Trichloroethene	< 0.25	0.25	0.0038	mg/kg wet							
Trichlorofluoromethane	< 0.25	0.25	0.0062	mg/kg wet							
Vinyl chloride	< 0.25	0.25	0.0061	mg/kg wet							
Surrogate: 4-Bromofluorobenzene	*49.5*			*ug/L*	*50.0*		*99.1*	*80-124*			
Surrogate: Dibromofluoromethane	*49.2*			*ug/L*	*50.0*		*98.3*	*77.1-123*			
Surrogate: Toluene-d8	*49.7*			*ug/L*	*50.0*		*99.5*	*78.1-125*			
LCS (B4K1419-BS1)					Prepared: 11/14/14		Analyzed: 11/17/14				
1,1,2,2-Tetrachloroethane	49.5			ug/L	50.0		98.9	75-120			
1,1-Dichloroethane	52.1			ug/L	50.0		104	79.6-120			
1,1-Dichloroethene	51.8			ug/L	50.0		104	78.3-120			
1,3,5-Trimethylbenzene	49.2			ug/L	50.0		98.4	77-120			
1,4-Dichlorobenzene	49.7			ug/L	50.0		99.5	75-125			
2-Chlorotoluene	48.5			ug/L	50.0		97.0	75.9-120			
Benzene	52.3			ug/L	50.0		105	80-120			
Bromoform	51.5			ug/L	50.0		103	80-120			
Chlorobenzene	50.0			ug/L	50.0		99.9	80-120			
Chloroform	50.9			ug/L	50.0		102	80-120			
Ethylbenzene	49.9			ug/L	50.0		99.9	80-120			
n-Butylbenzene	51.2			ug/L	50.0		102	75-125			
n-Propylbenzene	49.0			ug/L	50.0		98.0	75-120			
Toluene	52.4			ug/L	50.0		105	80-120			
Trichloroethene	52.5			ug/L	50.0		105	80-120			
Vinyl chloride	51.0			ug/L	50.0		102	75-130			
Surrogate: 4-Bromofluorobenzene	*51.7*			*ug/L*	*50.0*		*103*	*80-124*			
Surrogate: Dibromofluoromethane	*50.9*			*ug/L*	*50.0*		*102*	*77.1-123*			
Surrogate: Toluene-d8	*51.7*			*ug/L*	*50.0*		*103*	*78.1-125*			
Matrix Spike (B4K1419-MS1)		**Source: 1405127-02**			Prepared: 11/14/14		Analyzed: 11/17/14				
1,1,2,2-Tetrachloroethane	47.9			ug/L	50.0	<	95.8	75-125			
1,1-Dichloroethane	51.6			ug/L	50.0	<	103	78.7-123			
1,1-Dichloroethene	51.4			ug/L	50.0	<	103	75.8-121			
1,3,5-Trimethylbenzene	47.9			ug/L	50.0	<	95.8	75-120			
1,4-Dichlorobenzene	48.2			ug/L	50.0	<	96.4	75-125			
2-Chlorotoluene	47.3			ug/L	50.0	<	94.6	75-120			
Benzene	51.2			ug/L	50.0	<	102	80-120			

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Barr Engineering Co.	Project:	23691588		
4700 W 77th St	Project Number:	23691588.00	Work Order #:	1405158
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported:	12/02/14

VOC 8260B - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1419 - EPA 5035 Soil (Purge and Trap)											
Matrix Spike (B4K1419-MS1)		**Source: 1405127-02**			Prepared: 11/14/14		Analyzed: 11/17/14				
Bromoform	50.4			ug/L	50.0	<	101	80-120			
Chlorobenzene	48.7			ug/L	50.0	<	97.4	80-120			
Chloroform	49.9			ug/L	50.0	<	99.9	80-120			
Ethylbenzene	49.1			ug/L	50.0	<	98.2	80-120			
n-Butylbenzene	49.4			ug/L	50.0	<	98.8	73.8-125			
n-Propylbenzene	47.8			ug/L	50.0	<	95.6	75-120			
Toluene	51.8			ug/L	50.0	<	104	80-120			
Trichloroethene	51.7			ug/L	50.0	<	103	80-120			
Vinyl chloride	50.6			ug/L	50.0	<	101	74.8-130			
Surrogate: 4-Bromofluorobenzene	*50.8*			*ug/L*	*50.0*		*102*	*80-124*			
Surrogate: Dibromofluoromethane	*50.5*			*ug/L*	*50.0*		*101*	*77.1-123*			
Surrogate: Toluene-d8	*51.0*			*ug/L*	*50.0*		*102*	*78.1-125*			
Matrix Spike Dup (B4K1419-MSD1)		**Source: 1405127-02**			Prepared: 11/14/14		Analyzed: 11/17/14				
1,1,2,2-Tetrachloroethane	47.8			ug/L	50.0	<	95.6	75-125	0.133	20	
1,1-Dichloroethane	52.6			ug/L	50.0	<	105	78.7-123	1.88	20	
1,1-Dichloroethene	52.5			ug/L	50.0	<	105	75.8-121	2.13	20	
1,3,5-Trimethylbenzene	49.3			ug/L	50.0	<	98.7	75-120	2.92	20	
1,4-Dichlorobenzene	49.6			ug/L	50.0	<	99.2	75-125	2.89	20	
2-Chlorotoluene	48.7			ug/L	50.0	<	97.5	75-120	2.99	20	
Benzene	52.8			ug/L	50.0	<	106	80-120	3.17	20	
Bromoform	50.3			ug/L	50.0	<	101	80-120	0.0886	20	
Chlorobenzene	49.5			ug/L	50.0	<	99.0	80-120	1.57	20	
Chloroform	52.2			ug/L	50.0	<	104	80-120	4.46	20	
Ethylbenzene	49.6			ug/L	50.0	<	99.3	80-120	1.11	20	
n-Butylbenzene	51.0			ug/L	50.0	<	102	73.8-125	3.30	20	
n-Propylbenzene	49.0			ug/L	50.0	<	98.0	75-120	2.51	20	
Toluene	51.9			ug/L	50.0	<	104	80-120	0.108	20	
Trichloroethene	52.4			ug/L	50.0	<	105	80-120	1.47	20	
Vinyl chloride	50.9			ug/L	50.0	<	102	74.8-130	0.683	20	
Surrogate: 4-Bromofluorobenzene	*50.6*			*ug/L*	*50.0*		*101*	*80-124*			
Surrogate: Dibromofluoromethane	*49.8*			*ug/L*	*50.0*		*99.7*	*77.1-123*			
Surrogate: Toluene-d8	*50.6*			*ug/L*	*50.0*		*101*	*78.1-125*			

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Fax: 651-642-1239

Barr Engineering Co.	Project:	23691588		
4700 W 77th St	Project Number:	23691588.00	Work Order #:	1405158
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported:	12/02/14

7471B - Quality Control
TestAmerica Cedar Falls

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch 68666 - 7471B_Prep											
MS (310-43626-C-1-F)		**Source: 310-43626-C-1-E**			Prepared: 11/18/14		Analyzed: 11/19/14				
Mercury	0.1652	0.0210	0.00382	mg/Kg dry	0.175	<0.0210	91	80-120			
MSD (310-43626-C-1-G)		**Source: 310-43626-C-1-E**			Prepared: 11/18/14		Analyzed: 11/19/14				
Mercury	0.1615	0.0195	0.00354	mg/Kg dry	0.162	<0.0195	96	80-120	2	20	
LCS (LCS 310-68666/2)					Prepared: 11/18/14		Analyzed: 11/19/14				
Mercury	0.1520	0.0196	0.00357	mg/Kg	0.163	<0.0196	93	80-120			
MB (MB 310-68666/1-)					Prepared: 11/18/14		Analyzed: 11/19/14				
Mercury	<0.0195	0.0195	0.00356	mg/Kg		<0.0195		-			

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Barr Engineering Co.	Project:	23691588		
4700 W 77th St	Project Number:	23691588.00	Work Order #:	1405158
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported:	12/02/14

Notes and Definitions

T-1	MDH does not offer certification for this parameter.
R7	LFB/LFBD (LCS/LCSD) RPD exceeded laboratory acceptance limit. Recoveries met acceptance criteria.
R-1	The LCS/LCSD %RPD exceeded method limits.
QM-11	Spike recovery was outside of laboratory limits
M1	Matrix spike recovery was high, the associated blank spike recovery was acceptable.
L1	Results in the diesel organics range are primarily due to overlap from a heavy oil range product.
H4	Sample was extracted past required extraction holding time, but analyzed within analysis holding time.
<	Less than value listed
dry	Sample results reported on a dry weight basis
NA	Not applicable. The %RPD is not calculated from values less than the reporting limit.
MDL	Method Detection Limit
RL	Reporting Limit
RPD	Relative Percent Difference
LCS	Laboratory Control Spike = Blank Spike (BS) = Laboratory Fortified Blank (LFB)
MS	Matrix Spike = Laboratory Fortified Matrix (LFM)

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L E G E N D
Technical Services, Inc.
www.legend-group.com

88 Empire Drive
St Paul, MN 55103
Tel: 651-642-1150
Fax: 651-642-1239

Chain of Custody

BARR
4700 West 77th Street
Minneapolis, MN 55435-4803
(952) 832-2600

1405158

Project Number: 23691588.00

Project Name: Superior St.

Sample Origination State MN (use two letter postal state abbreviation)

COC Number: № 44709

COC 1 of 2

Project Manager: LMC

Project QC Contact: JET

Sampled by: NRS2

Laboratory: Legend

Number of Containers/Preservative — Water: VOCs (HCl) #1; SVOCs (unpreserved) #2; Dissolved Metals (HNO_3); Total Metals (HNO_3); General (unpreserved) #3; Diesel Range Organics (HCl); Nutrients (H_2SO_4) #4. Soil: VOCs (tared MeOH) #1; GRO (tared MeOH) #1; DRO (tared unpreserved); Metals (unpreserved) RCRA; SVOCs (unpreserved) #2; % Solids (plastic vial, unpres.); GRO/PVOC; PAH; Total Number Of Containers.

Location	Start Depth	Stop Depth	Depth Unit (m./ft. or in.)	Collection Date (mm/dd/yyyy)	Collection Time (hh:mm)	Matrix: Water	Matrix: Soil	Type: Grab	Type: Comp.	Type: QC	VOCs (HCl) #1	SVOCs (unpreserved) #2	Dissolved Metals (HNO_3)	Total Metals (HNO_3)	General (unpreserved) #3	Diesel Range Organics (HCl)	Nutrients (H_2SO_4) #4	VOCs (tared MeOH) #1	GRO (tared MeOH) #1	DRO (tared unpreserved)	Metals (unpreserved) RCRA	SVOCs (unpreserved) #2	% Solids (plastic vial, unpres.)	GRO/PVOC	PAH	Total Number Of Containers	
1. B-42	7.5'	9'		11-7-14	0358		Y	X										1	1	1			1			4	
2. B-43	11.5'	14'		11/07/2014	0525		Y	X												1			1	1		3	
3. B-44	7.5'	9'		11/06/2014	2215		Y	X												1			1	1		3	
4. B-45	2.5'	4'		11/06/2014	2334		Y	X										1			1	1	1		1	5	
5. B-46	7.5'	9'		11/06/2014	2350		Y	X												1			1	1		3	
6. B-47	7.5'	9'		11/07/2014	0210		Y	X												1	1	1	1	1		5	
7. Temp Blank										X																1	Standard TAT
8. Trip Blank Water										X																1	
9.																											
10.																											

Common Parameter/Container - Preservation Key

#1 - Volatile Organics = BTEX, GRO, TPH, 8260 Full List
#2 - Semivolatile Organics = PAHs, PCP, Dioxins, 8270 Full List, Herbicide/Pesticide/PCBs
#3 - General = pH, Chloride, Fluoride, Alkalinity, TSS, TDS, TS, Sulfate
#4 - Nutrients = COD, TOC, Phenols, Ammonia Nitrogen, TKN

Relinquished By:	On Ice?	Date	Time	Received by:	Date	Time
Matt Sola	(Y) N	11-10-14	0800			
Relinquished By:	On Ice?	Date	Time	Received by:	Date	Time
	(Y) N				11/11/14	13:30

Samples Shipped VIA: ☐ Air Freight ☐ Federal Express ☐ Sampler ☐ Other:

Air Bill Number: Cool 1.2°C

Distribution: White-Original Accompanies Shipment to Lab; Yellow - Field Copy; Pink - Lab Coordinator

H:RLG\STDFORMS\Chain Of Custody Form 2009 RLG 09/01/09

L E G E N D
Technical Services, Inc.
www.legend-group.com

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Chain of Custody

BARR
4700 West 77th Street
Minneapolis, MN 55435-4803
(952) 832-2600

1405758

COC 2 of 2

Project Number: 23691588.00

Project Name: Superior St.

Sample Origination State MN (use two letter postal state abbreviation)

COC Number: № 44710

Project Manager: LMC

Project QC Contact: JET

Sampled by: NBS2

Laboratory: Legend

	Location	Start Depth	Stop Depth	Depth Unit (m./ft. or in.)	Collection Date (mm/dd/yyyy)	Collection Time (hh:mm)	Matrix: Water	Matrix: Soil	Type: Grab	Type: Comp.	Type: QC	VOCs (HCl) #1	SVOCs (unpreserved) #2	Dissolved Metals (HNO_3)	Total Metals (HNO_3)	General (unpreserved) #3	Diesel Range Organics (HCl)	Nutrients (H_2SO_4) #4	VOCs (tared MeOH) #1	GRO, BTEX (tared MeOH) #1	DRO (tared unpreserved)	Metals (unpreserved) RCRA	SVOCs (unpreserved) #2	% Solids (plastic vial, unpres.)	GRO/pVOC	Total Number Of Containers	
1.	B-51	7.5'	9'		11/09/14	2300		X	X												1			1	1	3	
2.	B-54	7.5'	9'		11/10/14	0015		X	X												1	1		1	1	4	
3.	B-56	7.5'	9'		11/10/14	0245		X	X												1			1	1	3	
4.	B-57	7.5'	9'		11/10/14	0415		X	X												1			1	1	3	
5.	B-59	7.5'	9'		11/10/14	0520		X	X												1			1	1	3	
6.																											
7.																											Standard TAT
8.																											
9.																											
10.																											

Common Parameter/Container - Preservation Key

#1 - Volatile Organics = BTEX, GRO, TPH, 8260 Full List
#2 - Semivolatile Organics = PAHs, PCP, Dioxins, 8270 Full List, Herbicide/Pesticide/PCBs
#3 - General = pH, Chloride, Fluoride, Alkalinity, TSS, TDS, TS, Sulfate
#4 - Nutrients = COD, TOC, Phenols, Ammonia Nitrogen, TKN

Relinquished By:	On Ice?	Date	Time	Received by:	Date	Time
Nolan Bell	Y N	11-10-14	0500			
Relinquished By:	On Ice?	Date	Time	Received by:	Date	Time
	Y				11/11/14	13:20

Samples Shipped VIA: ☐ Air Freight ☑ Federal Express ☐ Sampler ☐ Other:

Air Bill Number: Cust 1.2°2

Distribution: White-Original Accompanies Shipment to Lab; Yellow - Field Copy; Pink - Lab Coordinator

H:RLG\STDFORMS\Chain Of Custody Form 2009 RLG Rev. 09/01/09

L E G E N D
Technical Services, Inc.
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88 Empire Drive
St Paul, MN 55103
Tel: 651-642-1150
Fax: 651-642-1239

Data File: \\lts-target\targetdata\chem\FID5.i\141117.b\094.d
Date : 19-NOV-2014 04:45
Client ID:
Sample Info: 1406158-01

B-42-7.5-9

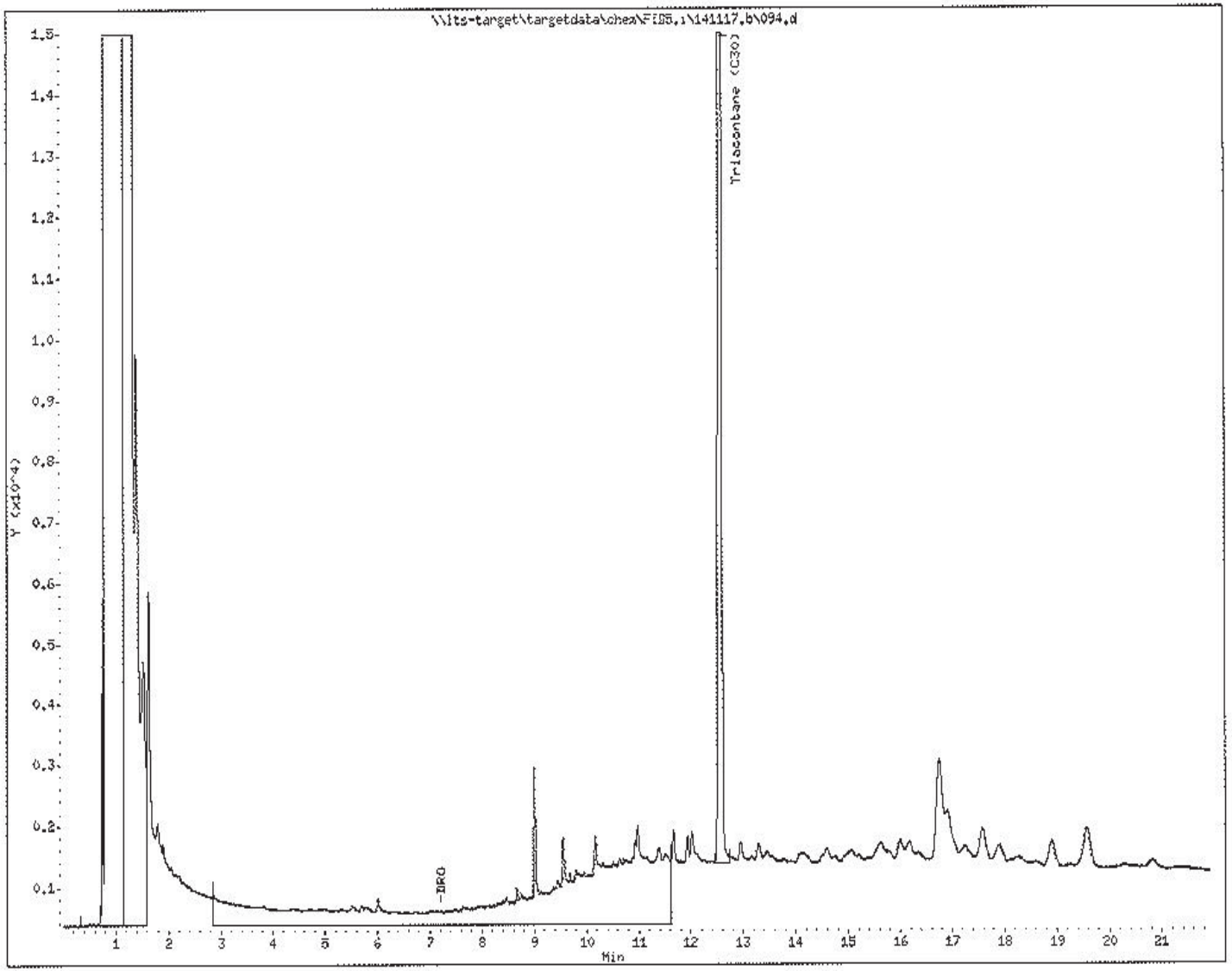
12/2/14 BP

Page 1

Instrument: FID5.i

Operator: yp
Column diameter: 0.53

Column phase:



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Data File: \\lts-target\targetdata\chem\FID5.i\141117.b\106.d
Date : 19-NOV-2014 10:10
Client ID:
Sample Info: 1405158-02

B-43_11.5-14

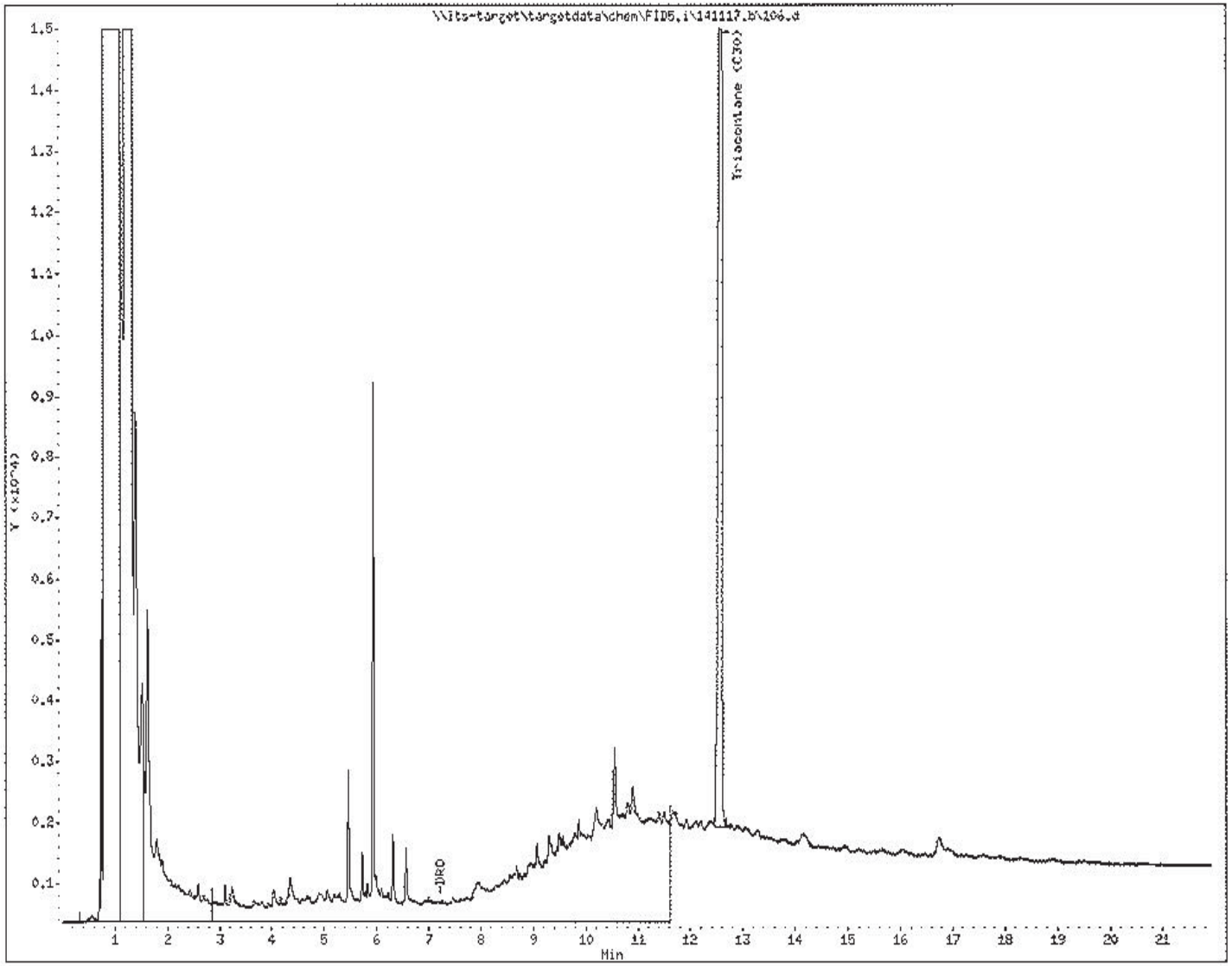
12/2/14 BP

Column phase:

Page 1

Instrument: FID5.i

Operator: yp
Column diameter: 0.53



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Data File: \\lts-target\targetdata\chem\FID5.i\141117.b\108.d
Date : 19-NOV-2014 11:04
Client ID:
Sample Info: 1405158-03

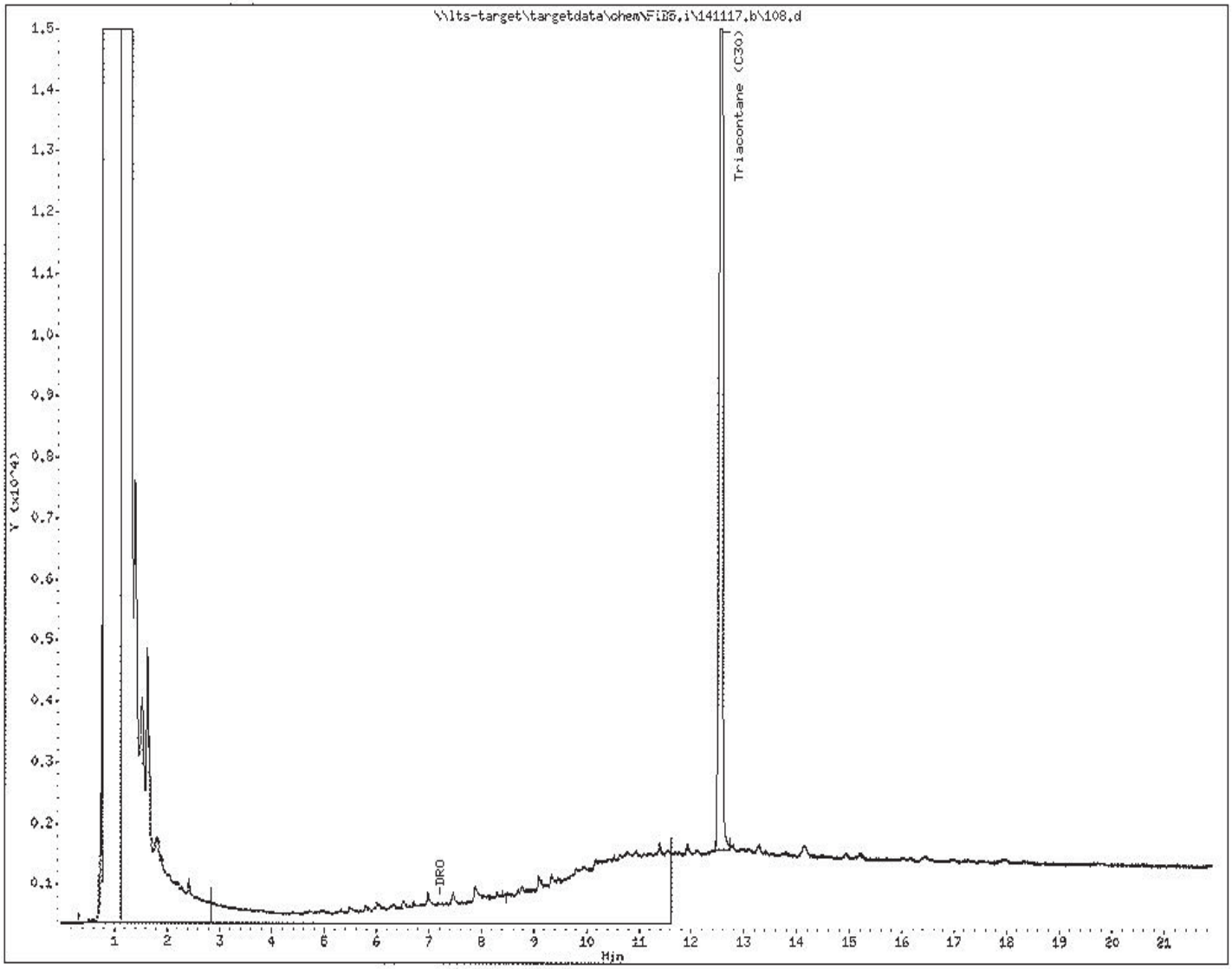
B-44_7.5-9

12/2/14 BP

Page 1

Instrument: FID5.:

Operator: yp
Column phase:
Column diameter: 0.53



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Tel: 651-642-1150
Fax: 651-642-1239

Data File: \\lts-target\targetdata\chem\FID5.i\141117.b\110.d
Date : 19-NOV-2014 11:58
Client ID:
Sample Info: 1405158-08

B-51_7.5-9

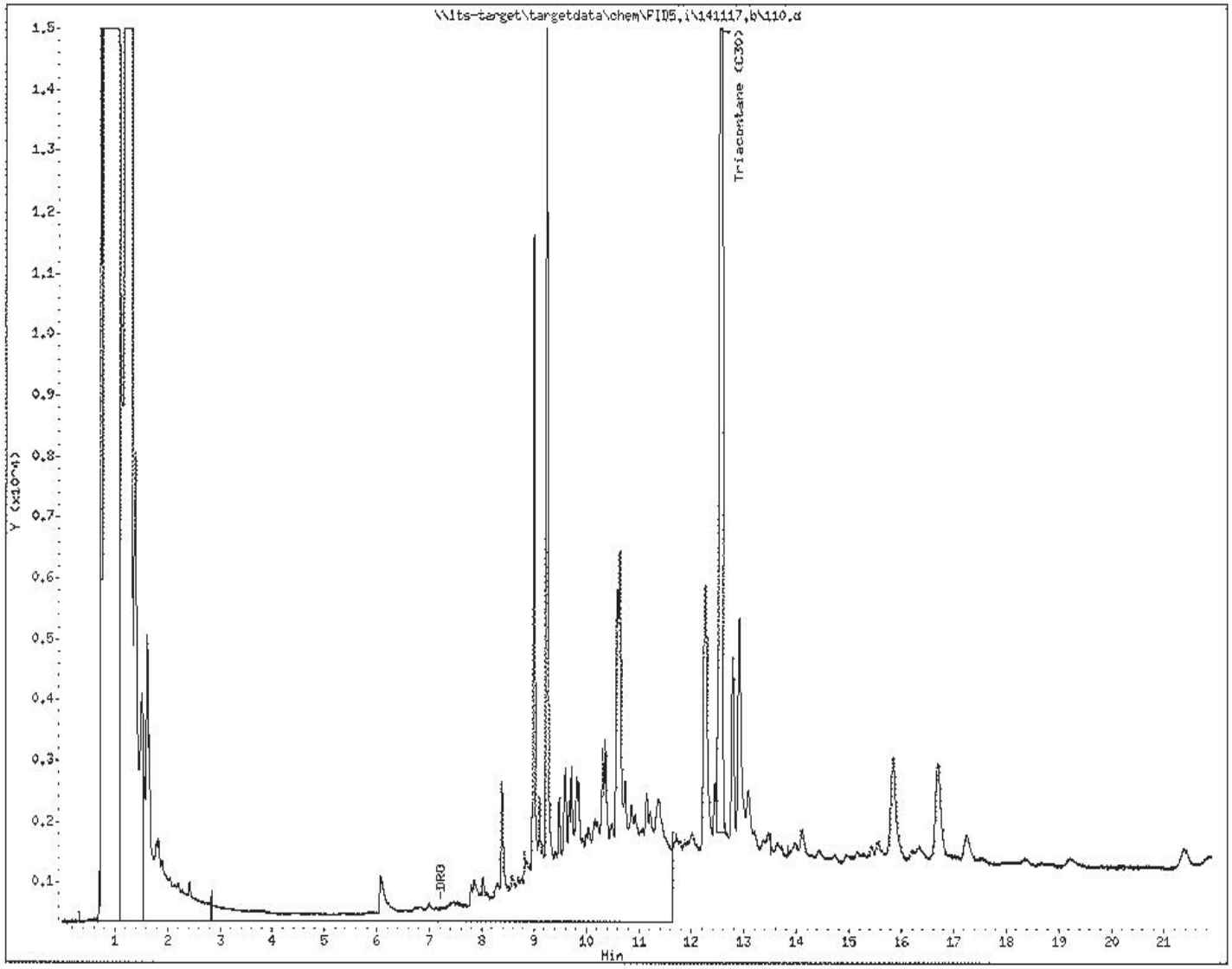
12/2/14 BP

Page 1

Instrument: FID5.i

Operator: yp
Column diameter: 0.53

Column phase:



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December 03, 2014

REVISION

Mr. James E. Taraldsen
Barr Engineering Co.
4700 W 77th St
Minneapolis, MN 55435

Work Order Number: 1405209
RE: 23691588

This is a revised report. The details of the revision are listed in the case narrative on the following page.

Enclosed are the results of analyses for samples received by the laboratory on 11/14/14. If you have any questions concerning this report, please feel free to contact me.

Results are not blank corrected unless noted within the report. Additionally, all QC results meet requirements unless noted.

All samples will be retained by Legend Technical Services, Inc., unless consumed in the analysis, at ambient conditions for 30 days from the date of this report and then discarded unless other arrangements are made. All samples were received in acceptable condition unless otherwise noted.

All test results and QC meet requirements of the 2003 NELAC standard.

MDH (NELAC) Certification #027-123-295

Prepared by,
LEGEND TECHNICAL SERVICES, INC

Bach Pham
Client Manager II
bpham@legend-group.com

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88 Empire Drive
St Paul, MN 55103
Tel: 651-642-1150
Fax: 651-642-1239

Barr Engineering Co.	Project:	23691588		
4700 W 77th St	Project Number:	23691588.00	Work Order #:	1405209
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported:	12/03/14

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B-60_9.5-11	1405209-01	Soil	11/12/14 04:30	11/14/14 09:25
B-63_7.5-9	1405209-02	Soil	11/12/14 00:50	11/14/14 09:25
B-64_7.5-9	1405209-03	Soil	11/11/14 23:38	11/14/14 09:25
B-65_7.5-9	1405209-04	Soil	11/11/14 22:48	11/14/14 09:25
B-66_9.5-11	1405209-05	Soil	11/11/14 21:35	11/14/14 09:25
B-66_7.5-9	1405209-06	Soil	11/11/14 21:30	11/14/14 09:25

Shipping Container Information

Default Cooler Temperature (°C): 0.7

Received on ice: Yes
Received on melt water: No
Custody seals: Yes

Temperature blank was present
Ambient: No

Received on ice pack: No
Acceptable (IH/ISO only): No

Case Narrative:

This report was revised on December 3, 2014 to include missing data produced by a subcontracted laboratory certified for the field of testing performed. The mercury analysis was performed by TestAmerica Laboratories, Inc., Cedar Falls, IA, #019-999-319. This report supersedes the report dated December 2, 2014.

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St Paul, MN 55103
Tel: 651-642-1150
Fax: 651-642-1239

Barr Engineering Co.	Project:	23691588	
4700 W 77th St	Project Number:	23691588.00	Work Order #: 1405209
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported: 12/03/14

DRO/8015D
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B-60_9.5-11 (1405209-01) Soil Sampled: 11/12/14 04:30 Received: 11/14/14 9:25										
Diesel Range Organics	<9.1	9.1	1.5	mg/kg dry	1	B4K1924	11/19/14	11/20/14	WI(95) DRO	
Surrogate: Triacontane (C-30)	*78.6*			*70-130 %*		"	"	"	"	
B-63_7.5-9 (1405209-02) Soil Sampled: 11/12/14 00:50 Received: 11/14/14 9:25										
Diesel Range Organics	<8.5	8.5	1.4	mg/kg dry	1	B4K2012	11/20/14	11/21/14	WI(95) DRO	
Surrogate: Triacontane (C-30)	*93.5*			*70-130 %*		"	"	"	"	
B-65_7.5-9 (1405209-04) Soil Sampled: 11/11/14 22:48 Received: 11/14/14 9:25										
Diesel Range Organics	<9.0	9.0	1.5	mg/kg dry	1	B4K2012	11/20/14	11/21/14	WI(95) DRO	
Surrogate: Triacontane (C-30)	*93.6*			*70-130 %*		"	"	"	"	
B-66_7.5-9 (1405209-06) Soil Sampled: 11/11/14 21:30 Received: 11/14/14 9:25										
Diesel Range Organics	<9.0	9.0	1.5	mg/kg dry	1	B4K2012	11/20/14	11/21/14	WI(95) DRO	
Surrogate: Triacontane (C-30)	*99.4*			*70-130 %*		"	"	"	"	

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St Paul, MN 55103
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Barr Engineering Co.	Project:	23691588	
4700 W 77th St	Project Number:	23691588.00	Work Order #: 1405209
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported: 12/03/14

WI(95) GRO/8015D
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B-60_9.5-11 (1405209-01) Soil Sampled: 11/12/14 04:30 Received: 11/14/14 9:25										
Gasoline range organics	<5.4	5.4	0.58	mg/kg dry	1	B4K1814	11/18/14	11/18/14	WI(95) GRO	
Surrogate: 4-Fluorochlorobenzene	*95.7*			*80-150 %*		"	"	"	"	
B-63_7.5-9 (1405209-02) Soil Sampled: 11/12/14 00:50 Received: 11/14/14 9:25										
1,2,4-Trimethylbenzene	<0.028	0.028	0.0030	mg/kg dry	1	B4K1814	11/18/14	11/18/14	WI(95) GRO	
1,3,5-Trimethylbenzene	<0.028	0.028	0.0069	mg/kg dry	1	"	"	"	"	
Benzene	<0.028	0.028	0.0032	mg/kg dry	1	"	"	"	"	
Ethylbenzene	<0.028	0.028	0.0071	mg/kg dry	1	"	"	"	"	
Gasoline range organics	<5.6	5.6	0.60	mg/kg dry	1	"	"	"	"	
Methyl tert-butyl ether	<0.028	0.028	0.0060	mg/kg dry	1	"	"	"	"	
Toluene	<0.028	0.028	0.0046	mg/kg dry	1	"	"	"	"	
Xylenes (total)	<0.083	0.083	0.016	mg/kg dry	1	"	"	"	"	
Surrogate: 4-Fluorochlorobenzene	*96.4*			*80-150 %*		"	"	"	"	
B-64_7.5-9 (1405209-03) Soil Sampled: 11/11/14 23:38 Received: 11/14/14 9:25										
Gasoline range organics	<6.1	6.1	0.66	mg/kg dry	1	B4K1814	11/18/14	11/18/14	WI(95) GRO	
Surrogate: 4-Fluorochlorobenzene	*95.7*			*80-150 %*		"	"	"	"	
B-65_7.5-9 (1405209-04) Soil Sampled: 11/11/14 22:48 Received: 11/14/14 9:25										
1,2,4-Trimethylbenzene	<0.028	0.028	0.0030	mg/kg dry	1	B4K1814	11/18/14	11/18/14	WI(95) GRO	
1,3,5-Trimethylbenzene	<0.028	0.028	0.0070	mg/kg dry	1	"	"	"	"	
Benzene	**0.21**	0.028	0.0033	mg/kg dry	1	"	"	"	"	
Ethylbenzene	**0.033**	0.028	0.0072	mg/kg dry	1	"	"	"	"	
Gasoline range organics	<5.6	5.6	0.61	mg/kg dry	1	"	"	"	"	
Methyl tert-butyl ether	<0.028	0.028	0.0061	mg/kg dry	1	"	"	"	"	
Toluene	**0.040**	0.028	0.0046	mg/kg dry	1	"	"	"	"	
Xylenes (total)	<0.084	0.084	0.016	mg/kg dry	1	"	"	"	"	
Surrogate: 4-Fluorochlorobenzene	*95.4*			*80-150 %*		"	"	"	"	
B-66_7.5-9 (1405209-06) Soil Sampled: 11/11/14 21:30 Received: 11/14/14 9:25										
1,2,4-Trimethylbenzene	<0.028	0.028	0.0030	mg/kg dry	1	B4K1814	11/18/14	11/18/14	WI(95) GRO	
1,3,5-Trimethylbenzene	<0.028	0.028	0.0070	mg/kg dry	1	"	"	"	"	
Benzene	<0.028	0.028	0.0033	mg/kg dry	1	"	"	"	"	
Ethylbenzene	<0.028	0.028	0.0072	mg/kg dry	1	"	"	"	"	
Gasoline range organics	<5.6	5.6	0.61	mg/kg dry	1	"	"	"	"	
Methyl tert-butyl ether	<0.028	0.028	0.0061	mg/kg dry	1	"	"	"	"	
Toluene	<0.028	0.028	0.0046	mg/kg dry	1	"	"	"	"	
Xylenes (total)	<0.084	0.084	0.016	mg/kg dry	1	"	"	"	"	
Surrogate: 4-Fluorochlorobenzene	*94.2*			*80-150 %*		"	"	"	"	

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Barr Engineering Co.	Project:	23691588	
4700 W 77th St	Project Number:	23691588.00	Work Order #: 1405209
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported: 12/03/14

TOTAL METALS ANALYSIS
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B-60_9.5-11 (1405209-01) Soil Sampled: 11/12/14 04:30 Received: 11/14/14 9:25										
Arsenic	**2.7**	0.57	0.14	mg/kg dry	1	B4K1711	11/17/14	11/19/14	EPA 6010C	
Barium	**36**	1.1	0.062	mg/kg dry	1	"	"	"	"	
Cadmium	<0.28	0.28	0.038	mg/kg dry	1	"	"	"	"	
Chromium	**18**	0.57	0.15	mg/kg dry	1	"	"	"	"	
Lead	**2.6**	1.1	0.16	mg/kg dry	1	"	"	"	"	
Selenium	<1.1	1.1	0.19	mg/kg dry	1	"	"	"	"	
Silver	<0.28	0.28	0.031	mg/kg dry	1	"	"	"	"	
B-66_9.5-11 (1405209-05) Soil Sampled: 11/11/14 21:35 Received: 11/14/14 9:25										
Arsenic	**3.6**	0.55	0.14	mg/kg dry	1	B4K1711	11/17/14	11/19/14	EPA 6010C	
Barium	**45**	1.1	0.060	mg/kg dry	1	"	"	"	"	
Cadmium	<0.27	0.27	0.036	mg/kg dry	1	"	"	"	"	
Chromium	**20**	0.55	0.15	mg/kg dry	1	"	"	"	"	
Lead	**3.3**	1.1	0.15	mg/kg dry	1	"	"	"	"	
Selenium	<1.1	1.1	0.18	mg/kg dry	1	"	"	"	"	
Silver	<0.27	0.27	0.030	mg/kg dry	1	"	"	"	"	
B-66_7.5-9 (1405209-06) Soil Sampled: 11/11/14 21:30 Received: 11/14/14 9:25										
Arsenic	**3.4**	0.56	0.14	mg/kg dry	1	B4K1711	11/17/14	11/19/14	EPA 6010C	
Barium	**48**	1.1	0.062	mg/kg dry	1	"	"	"	"	
Cadmium	<0.28	0.28	0.037	mg/kg dry	1	"	"	"	"	
Chromium	**17**	0.56	0.15	mg/kg dry	1	"	"	"	"	
Lead	**4.2**	1.1	0.16	mg/kg dry	1	"	"	"	"	
Selenium	<1.1	1.1	0.19	mg/kg dry	1	"	"	"	"	
Silver	<0.28	0.28	0.031	mg/kg dry	1	"	"	"	"	

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88 Empire Drive
St Paul, MN 55103
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Fax: 651-642-1239

Barr Engineering Co.	Project:	23691588	
4700 W 77th St	Project Number:	23691588.00	Work Order #: 1405209
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported: 12/03/14

PAH 8270D
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B-60_9.5-11 (1405209-01) Soil Sampled: 11/12/14 04:30 Received: 11/14/14 9:25										
2-Chloronaphthalene	<0.38	0.38	0.077	mg/kg dry	1	B4K1902	11/19/14	11/19/14	EPA 8270D	
2-Methylnaphthalene	<0.38	0.38	0.091	mg/kg dry	1	"	"	"	"	
Acenaphthene	<0.38	0.38	0.072	mg/kg dry	1	"	"	"	"	
Acenaphthylene	<0.38	0.38	0.081	mg/kg dry	1	"	"	"	"	
Anthracene	<0.38	0.38	0.078	mg/kg dry	1	"	"	"	"	
Benzo(a)anthracene	<0.38	0.38	0.074	mg/kg dry	1	"	"	"	"	
Benzo(a)pyrene	<0.38	0.38	0.080	mg/kg dry	1	"	"	"	"	
Benzo(b)fluoranthene	<0.38	0.38	0.067	mg/kg dry	1	"	"	"	"	
Benzo(g,h,i)perylene	<0.38	0.38	0.081	mg/kg dry	1	"	"	"	"	
Benzo(k)fluoranthene	<0.38	0.38	0.080	mg/kg dry	1	"	"	"	"	
Chrysene	<0.38	0.38	0.073	mg/kg dry	1	"	"	"	"	
Dibenz(a,h)anthracene	<0.38	0.38	0.093	mg/kg dry	1	"	"	"	"	
Fluoranthene	<0.38	0.38	0.077	mg/kg dry	1	"	"	"	"	
Fluorene	<0.38	0.38	0.074	mg/kg dry	1	"	"	"	"	
Indeno (1,2,3-cd) pyrene	<0.38	0.38	0.082	mg/kg dry	1	"	"	"	"	
Naphthalene	<0.38	0.38	0.081	mg/kg dry	1	"	"	"	"	
Phenanthrene	<0.38	0.38	0.075	mg/kg dry	1	"	"	"	"	
Pyrene	<0.38	0.38	0.067	mg/kg dry	1	"	"	"	"	
Surrogate: 2-Fluorobiphenyl	*76.3*			*46.3-96.2 %*		"	"	"	"	
Surrogate: Nitrobenzene-d5	*72.6*			*49.3-94 %*		"	"	"	"	
Surrogate: Terphenyl-d14	*71.6*			*51.5-94.6 %*		"	"	"	"	

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Barr Engineering Co.	Project:	23691588	
4700 W 77th St	Project Number:	23691588.00	Work Order #: 1405209
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported: 12/03/14

PERCENT SOLIDS
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B-60_9.5-11 (1405209-01) Soil Sampled: 11/12/14 04:30 Received: 11/14/14 9:25										
% Solids	**88**			%	1	B4K2005	11/20/14	11/20/14	% calculation	
B-63_7.5-9 (1405209-02) Soil Sampled: 11/12/14 00:50 Received: 11/14/14 9:25										
% Solids	**90**			%	1	B4K2005	11/20/14	11/20/14	% calculation	
B-64_7.5-9 (1405209-03) Soil Sampled: 11/11/14 23:38 Received: 11/14/14 9:25										
% Solids	**82**			%	1	B4K2005	11/20/14	11/20/14	% calculation	
B-65_7.5-9 (1405209-04) Soil Sampled: 11/11/14 22:48 Received: 11/14/14 9:25										
% Solids	**89**			%	1	B4K2005	11/20/14	11/20/14	% calculation	
B-66_9.5-11 (1405209-05) Soil Sampled: 11/11/14 21:35 Received: 11/14/14 9:25										
% Solids	**91**			%	1	B4K2005	11/20/14	11/20/14	% calculation	
B-66_7.5-9 (1405209-06) Soil Sampled: 11/11/14 21:30 Received: 11/14/14 9:25										
% Solids	**89**			%	1	B4K2005	11/20/14	11/20/14	% calculation	

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Barr Engineering Co.	Project:	23691588			
4700 W 77th St	Project Number:	23691588.00		Work Order #:	1405209
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen		Date Reported:	12/03/14

SVOC 8270D
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B-60_9.5-11 (1405209-01) Soil Sampled: 11/12/14 04:30 Received: 11/14/14 9:25										
1,2,4-Trichlorobenzene	<0.38	0.38	0.085	mg/kg dry	1	B4K1902	11/19/14	11/19/14	EPA 8270D	
1,2-Dichlorobenzene	<0.38	0.38	0.076	mg/kg dry	1	"	"	"	"	
1,2-Diphenylhydrazine as Azobenzene	<0.38	0.38	0.066	mg/kg dry	1	"	"	"	"	
1,3-Dichlorobenzene	<0.38	0.38	0.078	mg/kg dry	1	"	"	"	"	
1,4-Dichlorobenzene	<0.38	0.38	0.077	mg/kg dry	1	"	"	"	"	
2,3,4,6-Tetrachlorophenol	<0.76	0.76	0.22	mg/kg dry	1	"	"	"	"	
2,4,5-Trichlorophenol	<0.76	0.76	0.081	mg/kg dry	1	"	"	"	"	
2,4,6-Trichlorophenol	<0.76	0.76	0.18	mg/kg dry	1	"	"	"	"	
2,4-Dichlorophenol	<0.76	0.76	0.17	mg/kg dry	1	"	"	"	"	
2,4-Dimethylphenol	<0.76	0.76	0.15	mg/kg dry	1	"	"	"	"	
2,4-Dinitrophenol	<0.76	0.76	0.081	mg/kg dry	1	"	"	"	"	
2,4-Dinitrotoluene	<0.38	0.38	0.077	mg/kg dry	1	"	"	"	"	
2,6-Dichlorophenol	<0.76	0.76	0.15	mg/kg dry	1	"	"	"	"	
2,6-Dinitrotoluene	<0.38	0.38	0.088	mg/kg dry	1	"	"	"	"	
2-Chloronaphthalene	<0.38	0.38	0.077	mg/kg dry	1	"	"	"	"	
2-Chlorophenol	<0.76	0.76	0.17	mg/kg dry	1	"	"	"	"	
2-Methylnaphthalene	<0.38	0.38	0.091	mg/kg dry	1	"	"	"	"	
2-Methylphenol	<0.76	0.76	0.093	mg/kg dry	1	"	"	"	"	
2-Nitroaniline	<0.38	0.38	0.078	mg/kg dry	1	"	"	"	"	
2-Nitrophenol	<0.76	0.76	0.20	mg/kg dry	1	"	"	"	"	
3&4-Methylphenol	<0.76	0.76	0.093	mg/kg dry	1	"	"	"	"	
3,3´-Dichlorobenzidine	<1.8	1.8	0.51	mg/kg dry	1	"	"	"	"	
3-Nitroaniline	<0.38	0.38	0.082	mg/kg dry	1	"	"	"	"	
4,6-Dinitro-2-methylphenol	<0.76	0.76	0.12	mg/kg dry	1	"	"	"	"	
4-Bromophenyl phenyl ether	<0.38	0.38	0.077	mg/kg dry	1	"	"	"	"	
4-Chloro-3-methylphenol	<0.76	0.76	0.16	mg/kg dry	1	"	"	"	"	
4-Chloroaniline	<0.76	0.76	0.076	mg/kg dry	1	"	"	"	"	
4-Chlorophenyl phenyl ether	<0.38	0.38	0.077	mg/kg dry	1	"	"	"	"	
4-Nitroaniline	<0.38	0.38	0.094	mg/kg dry	1	"	"	"	"	
4-Nitrophenol	<0.76	0.76	0.19	mg/kg dry	1	"	"	"	"	
Acenaphthene	<0.38	0.38	0.072	mg/kg dry	1	"	"	"	"	
Acenaphthylene	<0.38	0.38	0.081	mg/kg dry	1	"	"	"	"	
Aniline	<0.76	0.76	0.075	mg/kg dry	1	"	"	"	"	
Anthracene	<0.38	0.38	0.078	mg/kg dry	1	"	"	"	"	
Benzidine	<2.8	2.8	0.50	mg/kg dry	1	"	"	"	"	
Benzo(a)anthracene	<0.38	0.38	0.074	mg/kg dry	1	"	"	"	"	
Benzo(a)pyrene	<0.38	0.38	0.080	mg/kg dry	1	"	"	"	"	
Benzo(b)fluoranthene	<0.38	0.38	0.067	mg/kg dry	1	"	"	"	"	
Benzo(g,h,i)perylene	<0.38	0.38	0.081	mg/kg dry	1	"	"	"	"	

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Barr Engineering Co.	Project:	23691588			
4700 W 77th St	Project Number:	23691588.00		Work Order #:	1405209
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen		Date Reported:	12/03/14

SVOC 8270D
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B-60_9.5-11 (1405209-01) Soil Sampled: 11/12/14 04:30 Received: 11/14/14 9:25										
Benzo(k)fluoranthene	<0.38	0.38	0.080	mg/kg dry	1	B4K1902	11/19/14	11/19/14	EPA 8270D	
Benzoic acid	<0.38	0.38	0.073	mg/kg dry	1	"	"	"	"	
Benzyl alcohol	<0.76	0.76	0.17	mg/kg dry	1	"	"	"	"	
Bis(2-chloroethoxy)methane	<0.38	0.38	0.088	mg/kg dry	1	"	"	"	"	
Bis(2-chloroethyl)ether	<0.38	0.38	0.078	mg/kg dry	1	"	"	"	"	
Bis(2-chloroisopropyl)ether	<0.38	0.38	0.089	mg/kg dry	1	"	"	"	"	
Bis(2-ethylhexyl)phthalate	<0.38	0.38	0.092	mg/kg dry	1	"	"	"	"	
Butyl benzyl phthalate	<0.38	0.38	0.094	mg/kg dry	1	"	"	"	"	
Carbazole	<0.38	0.38	0.086	mg/kg dry	1	"	"	"	"	
Chrysene	<0.38	0.38	0.073	mg/kg dry	1	"	"	"	"	
Dibenz(a,h)anthracene	<0.38	0.38	0.093	mg/kg dry	1	"	"	"	"	
Dibenzofuran	<0.38	0.38	0.077	mg/kg dry	1	"	"	"	"	
Diethyl phthalate	<0.38	0.38	0.072	mg/kg dry	1	"	"	"	"	
Dimethyl phthalate	<0.38	0.38	0.078	mg/kg dry	1	"	"	"	"	
Di-n-butyl phthalate	<0.38	0.38	0.090	mg/kg dry	1	"	"	"	"	
Di-n-octyl phthalate	<0.38	0.38	0.11	mg/kg dry	1	"	"	"	"	
Fluoranthene	<0.38	0.38	0.077	mg/kg dry	1	"	"	"	"	
Fluorene	<0.38	0.38	0.074	mg/kg dry	1	"	"	"	"	
Hexachlorobenzene	<0.38	0.38	0.070	mg/kg dry	1	"	"	"	"	
Hexachlorobutadiene	<0.38	0.38	0.088	mg/kg dry	1	"	"	"	"	
Hexachlorocyclopentadiene	<0.38	0.38	0.078	mg/kg dry	1	"	"	"	"	
Hexachloroethane	<0.38	0.38	0.093	mg/kg dry	1	"	"	"	"	
Indeno (1,2,3-cd) pyrene	<0.38	0.38	0.082	mg/kg dry	1	"	"	"	"	
Isophorone	<0.38	0.38	0.086	mg/kg dry	1	"	"	"	"	
Naphthalene	<0.38	0.38	0.081	mg/kg dry	1	"	"	"	"	
Nitrobenzene	<0.38	0.38	0.091	mg/kg dry	1	"	"	"	"	
N-Nitrosodimethylamine	<0.38	0.38	0.080	mg/kg dry	1	"	"	"	"	
N-Nitrosodi-n-propylamine	<0.38	0.38	0.083	mg/kg dry	1	"	"	"	"	
N-Nitrosodiphenylamine	<0.38	0.38	0.076	mg/kg dry	1	"	"	"	"	
Pentachlorophenol	<0.76	0.76	0.22	mg/kg dry	1	"	"	"	"	
Phenanthrene	<0.38	0.38	0.075	mg/kg dry	1	"	"	"	"	
Phenol	<0.76	0.76	0.16	mg/kg dry	1	"	"	"	"	
Pyrene	<0.38	0.38	0.067	mg/kg dry	1	"	"	"	"	
Surrogate: 2,4,6-Tribromophenol	*91.3*			*53-107 %*		"	"	"	"	
Surrogate: 2-Fluorobiphenyl	*76.3*			*53.9-97.9 %*		"	"	"	"	
Surrogate: 2-Fluorophenol	*68.5*			*42.5-94.9 %*		"	"	"	"	
Surrogate: Nitrobenzene-d5	*72.6*			*48.9-100 %*		"	"	"	"	
Surrogate: Phenol-d6	*77.5*			*50.4-99.6 %*		"	"	"	"	
Surrogate: Terphenyl-d14	*71.6*			*51-99.6 %*		"	"	"	"	

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LEGEND Technical Services, Inc.
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88 Empire Drive
St Paul, MN 55103
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Barr Engineering Co.	Project:	23691588			
4700 W 77th St	Project Number:	23691588.00		Work Order #:	1405209
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen		Date Reported:	12/03/14

VOC 8260B
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B-60_9.5-11 (1405209-01) Soil Sampled: 11/12/14 04:30 Received: 11/14/14 9:25										
1,1,1,2-Tetrachloroethane	<0.28	0.28	0.0058	mg/kg dry	1	B4K1811	11/17/14	11/18/14	EPA 8260B	
1,1,1-Trichloroethane	<0.28	0.28	0.0064	mg/kg dry	1	"	"	"	"	
1,1,2,2-Tetrachloroethane	<0.28	0.28	0.0065	mg/kg dry	1	"	"	"	"	
1,1,2-Trichloroethane	<0.28	0.28	0.0083	mg/kg dry	1	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	<0.28	0.28	0.010	mg/kg dry	1	"	"	"	"	T-1
1,1-Dichloroethane	<0.28	0.28	0.0038	mg/kg dry	1	"	"	"	"	
1,1-Dichloroethene	<0.28	0.28	0.0066	mg/kg dry	1	"	"	"	"	
1,1-Dichloropropene	<0.28	0.28	0.0062	mg/kg dry	1	"	"	"	"	
1,2,3-Trichlorobenzene	<0.57	0.57	0.0058	mg/kg dry	1	"	"	"	"	
1,2,3-Trichloropropane	<0.28	0.28	0.0052	mg/kg dry	1	"	"	"	"	
1,2,4-Trichlorobenzene	<0.57	0.57	0.0061	mg/kg dry	1	"	"	"	"	
1,2,4-Trimethylbenzene	<0.28	0.28	0.0038	mg/kg dry	1	"	"	"	"	
1,2-Dibromo-3-chloropropane	<0.57	0.57	0.0094	mg/kg dry	1	"	"	"	"	
1,2-Dibromoethane (EDB)	<0.28	0.28	0.0082	mg/kg dry	1	"	"	"	"	
1,2-Dichlorobenzene	<0.28	0.28	0.0039	mg/kg dry	1	"	"	"	"	
1,2-Dichloroethane	<0.28	0.28	0.0062	mg/kg dry	1	"	"	"	"	
1,2-Dichloropropane	<0.28	0.28	0.0055	mg/kg dry	1	"	"	"	"	
1,3,5-Trimethylbenzene	<0.28	0.28	0.0028	mg/kg dry	1	"	"	"	"	
1,3-Dichlorobenzene	<0.28	0.28	0.0043	mg/kg dry	1	"	"	"	"	
1,3-Dichloropropane	<0.28	0.28	0.0062	mg/kg dry	1	"	"	"	"	
1,4-Dichlorobenzene	<0.28	0.28	0.0057	mg/kg dry	1	"	"	"	"	
2,2-Dichloropropane	<0.57	0.57	0.0099	mg/kg dry	1	"	"	"	"	
2-Butanone	<2.3	2.3	0.016	mg/kg dry	1	"	"	"	"	
2-Chlorotoluene	<0.28	0.28	0.0025	mg/kg dry	1	"	"	"	"	
4-Chlorotoluene	<0.28	0.28	0.0041	mg/kg dry	1	"	"	"	"	
Acetone	<2.3	2.3	0.11	mg/kg dry	1	"	"	"	"	
Allyl chloride	<0.57	0.57	0.0094	mg/kg dry	1	"	"	"	"	
Benzene	<0.28	0.28	0.0031	mg/kg dry	1	"	"	"	"	
Bromobenzene	<0.28	0.28	0.0059	mg/kg dry	1	"	"	"	"	
Bromochloromethane	<0.28	0.28	0.0084	mg/kg dry	1	"	"	"	"	
Bromodichloromethane	<0.28	0.28	0.0049	mg/kg dry	1	"	"	"	"	
Bromoform	<0.57	0.57	0.0080	mg/kg dry	1	"	"	"	"	
Bromomethane	<0.57	0.57	0.0068	mg/kg dry	1	"	"	"	"	
Carbon tetrachloride	<0.28	0.28	0.0068	mg/kg dry	1	"	"	"	"	
Chlorobenzene	<0.28	0.28	0.0030	mg/kg dry	1	"	"	"	"	
Chloroethane	<0.28	0.28	0.0082	mg/kg dry	1	"	"	"	"	
Chloroform	<0.28	0.28	0.0026	mg/kg dry	1	"	"	"	"	
Chloromethane	<0.28	0.28	0.0076	mg/kg dry	1	"	"	"	"	
cis-1,2-Dichloroethene	<0.28	0.28	0.0020	mg/kg dry	1	"	"	"	"	

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Barr Engineering Co.	Project:	23691588	
4700 W 77th St	Project Number:	23691588.00	Work Order #: 1405209
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported: 12/03/14

VOC 8260B
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B-60_9.5-11 (1405209-01) Soil Sampled: 11/12/14 04:30 Received: 11/14/14 9:25										
cis-1,3-Dichloropropene	<0.28	0.28	0.0056	mg/kg dry	1	B4K1811	11/17/14	11/18/14	EPA 8260B	
Dibromochloromethane	<0.28	0.28	0.0052	mg/kg dry	1	"	"	"	"	
Dibromomethane	<0.28	0.28	0.0052	mg/kg dry	1	"	"	"	"	
Dichlorodifluoromethane	<0.57	0.57	0.011	mg/kg dry	1	"	"	"	"	
Dichlorofluoromethane	<0.28	0.28	0.0090	mg/kg dry	1	"	"	"	"	T-1
Ethyl ether	<0.57	0.57	0.0057	mg/kg dry	1	"	"	"	"	
Ethylbenzene	<0.28	0.28	0.0030	mg/kg dry	1	"	"	"	"	
Hexachlorobutadiene	<1.1	1.1	0.20	mg/kg dry	1	"	"	"	"	
Isopropylbenzene	<0.28	0.28	0.0019	mg/kg dry	1	"	"	"	"	
m,p-Xylene	<0.57	0.57	0.011	mg/kg dry	1	"	"	"	"	
Methyl isobutyl ketone	<0.57	0.57	0.016	mg/kg dry	1	"	"	"	"	
Methyl tert-butyl ether	<0.28	0.28	0.0062	mg/kg dry	1	"	"	"	"	
Methylene chloride	<1.1	1.1	0.0044	mg/kg dry	1	"	"	"	"	
Naphthalene	<0.57	0.57	0.014	mg/kg dry	1	"	"	"	"	
n-Butylbenzene	<0.28	0.28	0.0062	mg/kg dry	1	"	"	"	"	
n-Propylbenzene	<0.28	0.28	0.0035	mg/kg dry	1	"	"	"	"	
o-Xylene	<0.28	0.28	0.0044	mg/kg dry	1	"	"	"	"	
p-Isopropyltoluene	<0.28	0.28	0.0034	mg/kg dry	1	"	"	"	"	
sec-Butylbenzene	<0.28	0.28	0.0040	mg/kg dry	1	"	"	"	"	
Styrene	<0.28	0.28	0.0061	mg/kg dry	1	"	"	"	"	
tert-Butylbenzene	<0.28	0.28	0.0031	mg/kg dry	1	"	"	"	"	
Tetrachloroethene	<0.28	0.28	0.0057	mg/kg dry	1	"	"	"	"	
Tetrahydrofuran	<2.3	2.3	0.036	mg/kg dry	1	"	"	"	"	T-1
Toluene	<0.28	0.28	0.0040	mg/kg dry	1	"	"	"	"	
trans-1,2-Dichloroethene	<0.28	0.28	0.0051	mg/kg dry	1	"	"	"	"	
trans-1,3-Dichloropropene	<0.28	0.28	0.0072	mg/kg dry	1	"	"	"	"	
Trichloroethene	<0.28	0.28	0.0043	mg/kg dry	1	"	"	"	"	
Trichlorofluoromethane	<0.28	0.28	0.0070	mg/kg dry	1	"	"	"	"	
Vinyl chloride	<0.28	0.28	0.0069	mg/kg dry	1	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	*97.4*			*80-124 %*		"	"	"	"	
Surrogate: Dibromofluoromethane	*98.8*			*77.1-123 %*		"	"	"	"	
Surrogate: Toluene-d8	*99.1*			*78.1-125 %*		"	"	"	"	
B-64_7.5-9 (1405209-03) Soil Sampled: 11/11/14 23:38 Received: 11/14/14 9:25										
1,1,1,2-Tetrachloroethane	<0.30	0.30	0.0062	mg/kg dry	1	B4K1811	11/17/14	11/18/14	EPA 8260B	
1,1,1-Trichloroethane	<0.30	0.30	0.0068	mg/kg dry	1	"	"	"	"	
1,1,2,2-Tetrachloroethane	<0.30	0.30	0.0070	mg/kg dry	1	"	"	"	"	
1,1,2-Trichloroethane	<0.30	0.30	0.0089	mg/kg dry	1	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	<0.30	0.30	0.011	mg/kg dry	1	"	"	"	"	T-1
1,1-Dichloroethane	<0.30	0.30	0.0040	mg/kg dry	1	"	"	"	"	

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Barr Engineering Co.	Project:	23691588			
4700 W 77th St	Project Number:	23691588.00		Work Order #:	1405209
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen		Date Reported:	12/03/14

VOC 8260B
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B-64_7.5-9 (1405209-03) Soil Sampled: 11/11/14 23:38 Received: 11/14/14 9:25										
1,1-Dichloroethene	<0.30	0.30	0.0071	mg/kg dry	1	B4K1811	11/17/14	11/18/14	EPA 8260B	
1,1-Dichloropropene	<0.30	0.30	0.0067	mg/kg dry	1	"	"	"	"	
1,2,3-Trichlorobenzene	<0.61	0.61	0.0062	mg/kg dry	1	"	"	"	"	
1,2,3-Trichloropropane	<0.30	0.30	0.0056	mg/kg dry	1	"	"	"	"	
1,2,4-Trichlorobenzene	<0.61	0.61	0.0066	mg/kg dry	1	"	"	"	"	
1,2,4-Trimethylbenzene	<0.30	0.30	0.0040	mg/kg dry	1	"	"	"	"	
1,2-Dibromo-3-chloropropane	<0.61	0.61	0.010	mg/kg dry	1	"	"	"	"	
1,2-Dibromoethane (EDB)	<0.30	0.30	0.0088	mg/kg dry	1	"	"	"	"	
1,2-Dichlorobenzene	<0.30	0.30	0.0041	mg/kg dry	1	"	"	"	"	
1,2-Dichloroethane	<0.30	0.30	0.0067	mg/kg dry	1	"	"	"	"	
1,2-Dichloropropane	<0.30	0.30	0.0059	mg/kg dry	1	"	"	"	"	
1,3,5-Trimethylbenzene	<0.30	0.30	0.0030	mg/kg dry	1	"	"	"	"	
1,3-Dichlorobenzene	<0.30	0.30	0.0046	mg/kg dry	1	"	"	"	"	
1,3-Dichloropropane	<0.30	0.30	0.0067	mg/kg dry	1	"	"	"	"	
1,4-Dichlorobenzene	<0.30	0.30	0.0061	mg/kg dry	1	"	"	"	"	
2,2-Dichloropropane	<0.61	0.61	0.011	mg/kg dry	1	"	"	"	"	
2-Butanone	<2.4	2.4	0.017	mg/kg dry	1	"	"	"	"	
2-Chlorotoluene	<0.30	0.30	0.0027	mg/kg dry	1	"	"	"	"	
4-Chlorotoluene	<0.30	0.30	0.0044	mg/kg dry	1	"	"	"	"	
Acetone	<2.4	2.4	0.12	mg/kg dry	1	"	"	"	"	
Allyl chloride	<0.61	0.61	0.010	mg/kg dry	1	"	"	"	"	
Benzene	<0.30	0.30	0.0033	mg/kg dry	1	"	"	"	"	
Bromobenzene	<0.30	0.30	0.0063	mg/kg dry	1	"	"	"	"	
Bromochloromethane	<0.30	0.30	0.0090	mg/kg dry	1	"	"	"	"	
Bromodichloromethane	<0.30	0.30	0.0052	mg/kg dry	1	"	"	"	"	
Bromoform	<0.61	0.61	0.0085	mg/kg dry	1	"	"	"	"	
Bromomethane	<0.61	0.61	0.0073	mg/kg dry	1	"	"	"	"	
Carbon tetrachloride	<0.30	0.30	0.0073	mg/kg dry	1	"	"	"	"	
Chlorobenzene	<0.30	0.30	0.0032	mg/kg dry	1	"	"	"	"	
Chloroethane	<0.30	0.30	0.0088	mg/kg dry	1	"	"	"	"	
Chloroform	<0.30	0.30	0.0028	mg/kg dry	1	"	"	"	"	
Chloromethane	<0.30	0.30	0.0082	mg/kg dry	1	"	"	"	"	
cis-1,2-Dichloroethene	<0.30	0.30	0.0022	mg/kg dry	1	"	"	"	"	
cis-1,3-Dichloropropene	<0.30	0.30	0.0060	mg/kg dry	1	"	"	"	"	
Dibromochloromethane	<0.30	0.30	0.0056	mg/kg dry	1	"	"	"	"	
Dibromomethane	<0.30	0.30	0.0056	mg/kg dry	1	"	"	"	"	
Dichlorodifluoromethane	<0.61	0.61	0.011	mg/kg dry	1	"	"	"	"	
Dichlorofluoromethane	<0.30	0.30	0.0096	mg/kg dry	1	"	"	"	"	T-1
Ethyl ether	<0.61	0.61	0.0061	mg/kg dry	1	"	"	"	"	

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Barr Engineering Co.	Project:	23691588	
4700 W 77th St	Project Number:	23691588.00	Work Order #: 1405209
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported: 12/03/14

VOC 8260B
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B-64_7.5-9 (1405209-03) Soil Sampled: 11/11/14 23:38 Received: 11/14/14 9:25										
Ethylbenzene	<0.30	0.30	0.0032	mg/kg dry	1	B4K1811	11/17/14	11/18/14	EPA 8260B	
Hexachlorobutadiene	<1.2	1.2	0.22	mg/kg dry	1	"	"	"	"	
Isopropylbenzene	<0.30	0.30	0.0021	mg/kg dry	1	"	"	"	"	
m,p-Xylene	<0.61	0.61	0.012	mg/kg dry	1	"	"	"	"	
Methyl isobutyl ketone	<0.61	0.61	0.017	mg/kg dry	1	"	"	"	"	
Methyl tert-butyl ether	<0.30	0.30	0.0067	mg/kg dry	1	"	"	"	"	
Methylene chloride	<1.2	1.2	0.0048	mg/kg dry	1	"	"	"	"	
Naphthalene	<0.61	0.61	0.015	mg/kg dry	1	"	"	"	"	
n-Butylbenzene	<0.30	0.30	0.0067	mg/kg dry	1	"	"	"	"	
n-Propylbenzene	<0.30	0.30	0.0038	mg/kg dry	1	"	"	"	"	
o-Xylene	<0.30	0.30	0.0048	mg/kg dry	1	"	"	"	"	
p-Isopropyltoluene	<0.30	0.30	0.0037	mg/kg dry	1	"	"	"	"	
sec-Butylbenzene	<0.30	0.30	0.0043	mg/kg dry	1	"	"	"	"	
Styrene	<0.30	0.30	0.0066	mg/kg dry	1	"	"	"	"	
tert-Butylbenzene	<0.30	0.30	0.0033	mg/kg dry	1	"	"	"	"	
Tetrachloroethene	<0.30	0.30	0.0061	mg/kg dry	1	"	"	"	"	
Tetrahydrofuran	<2.4	2.4	0.039	mg/kg dry	1	"	"	"	"	T-1
Toluene	<0.30	0.30	0.0043	mg/kg dry	1	"	"	"	"	
trans-1,2-Dichloroethene	<0.30	0.30	0.0055	mg/kg dry	1	"	"	"	"	
trans-1,3-Dichloropropene	<0.30	0.30	0.0077	mg/kg dry	1	"	"	"	"	
Trichloroethene	<0.30	0.30	0.0046	mg/kg dry	1	"	"	"	"	
Trichlorofluoromethane	<0.30	0.30	0.0076	mg/kg dry	1	"	"	"	"	
Vinyl chloride	<0.30	0.30	0.0074	mg/kg dry	1	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	*97.5*			*80-124 %*		"	"	"	"	
Surrogate: Dibromofluoromethane	*101*			*77.1-123 %*		"	"	"	"	
Surrogate: Toluene-d8	*99.1*			*78.1-125 %*		"	"	"	"	

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Barr Engineering Co.	Project:	23691588			
4700 W 77th St	Project Number:	23691588.00		Work Order #:	1405209
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen		Date Reported:	12/03/14

7471B
TestAmerica Cedar Falls

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B-60_9.5-11 (1405209-01) Soil Sampled: 11/12/14 04:30 Received: 11/14/14 9:25										
Mercury	<0.0209	0.0209	0.00381	mg/Kg dry	1	68670	11/18/14	11/19/14	7471B Mercury in Solid or Semisolid Waste (Manual	
B-66_9.5-11 (1405209-05) Soil Sampled: 11/11/14 21:35 Received: 11/14/14 9:25										
Mercury	<0.0208	0.0208	0.00379	mg/Kg dry	1	68670	11/18/14	11/19/14	7471B Mercury in Solid or Semisolid Waste (Manual	
B-66_7.5-9 (1405209-06) Soil Sampled: 11/11/14 21:30 Received: 11/14/14 9:25										
Mercury	<0.0207	0.0207	0.00378	mg/Kg dry	1	68670	11/18/14	11/19/14	7471B Mercury in Solid or Semisolid Waste (Manual	

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Barr Engineering Co.	Project:	23691588			
4700 W 77th St	Project Number:	23691588.00		Work Order #:	1405209
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen		Date Reported:	12/03/14

DRO/8015D - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1924 - Sonication (Wisc DRO)											
Blank (B4K1924-BLK1)					Prepared & Analyzed: 11/19/14						
Diesel Range Organics	< 8.0	8.0	1.3	mg/kg wet							
Surrogate: Triacontane (C-30)	*12.5*			*mg/kg wet*	*16.0*		*78.1*	*70-130*			
LCS (B4K1924-BS1)					Prepared & Analyzed: 11/19/14						
Diesel Range Organics	53.1	8.0	1.3	mg/kg wet	64.0		82.9	70-120			
Surrogate: Triacontane (C-30)	*14.5*			*mg/kg wet*	*16.0*		*90.9*	*70-130*			
LCS Dup (B4K1924-BSD1)					Prepared: 11/19/14 Analyzed: 11/20/14						
Diesel Range Organics	51.2	8.0	1.3	mg/kg wet	64.0		80.0	70-120	3.58	20	
Surrogate: Triacontane (C-30)	*14.0*			*mg/kg wet*	*16.0*		*87.5*	*70-130*			
Batch B4K2012 - Sonication (Wisc DRO)											
Blank (B4K2012-BLK1)					Prepared & Analyzed: 11/20/14						
Diesel Range Organics	< 8.0	8.0	1.3	mg/kg wet							
Surrogate: Triacontane (C-30)	*14.6*			*mg/kg wet*	*16.0*		*91.3*	*70-130*			
LCS (B4K2012-BS1)					Prepared & Analyzed: 11/20/14						
Diesel Range Organics	62.8	8.0	1.3	mg/kg wet	64.0		98.1	70-120			
Surrogate: Triacontane (C-30)	*16.4*			*mg/kg wet*	*16.0*		*103*	*70-130*			
LCS Dup (B4K2012-BSD1)					Prepared: 11/20/14 Analyzed: 11/21/14						
Diesel Range Organics	56.8	8.0	1.3	mg/kg wet	64.0		88.7	70-120	10.0	20	
Surrogate: Triacontane (C-30)	*15.7*			*mg/kg wet*	*16.0*		*98.0*	*70-130*			

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Barr Engineering Co.	Project:	23691588			
4700 W 77th St	Project Number:	23691588.00		Work Order #:	1405209
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen		Date Reported:	12/03/14

WI(95) GRO/8015D - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1814 - EPA 5035 Soil (Purge and Trap)											
Blank (B4K1814-BLK1)					Prepared & Analyzed: 11/18/14						
1,2,4-Trimethylbenzene	< 0.025	0.025	0.0027	mg/kg wet							
1,3,5-Trimethylbenzene	< 0.025	0.025	0.0062	mg/kg wet							
Benzene	< 0.025	0.025	0.0029	mg/kg wet							
Ethylbenzene	< 0.025	0.025	0.0064	mg/kg wet							
Gasoline range organics	< 5.0	5.0	0.54	mg/kg wet							
Methyl tert-butyl ether	< 0.025	0.025	0.0054	mg/kg wet							
Toluene	< 0.025	0.025	0.0041	mg/kg wet							
Xylenes (total)	< 0.075	0.075	0.014	mg/kg wet							
Surrogate: 4-Fluorochlorobenzene	*23.7*			*ug/L*	*25.0*		*94.9*	*80-150*			
LCS (B4K1814-BS1)					Prepared & Analyzed: 11/18/14						
1,2,4-Trimethylbenzene	90.5			ug/L	100		90.5	80-120			
1,3,5-Trimethylbenzene	87.5			ug/L	100		87.5	80-120			
Benzene	99.3			ug/L	100		99.3	80-120			
Ethylbenzene	99.3			ug/L	100		99.3	80-120			
Gasoline range organics	926			ug/L	1000		92.6	80-120			
Methyl tert-butyl ether	84.4			ug/L	100		84.4	80-120			
Toluene	100			ug/L	100		100	80-120			
Xylenes (total)	301			ug/L	300		100	80-120			
Surrogate: 4-Fluorochlorobenzene	*23.6*			*ug/L*	*25.0*		*94.4*	*80-150*			
LCS Dup (B4K1814-BSD1)					Prepared & Analyzed: 11/18/14						
1,2,4-Trimethylbenzene	93.7			ug/L	100		93.7	80-120	3.45	20	
1,3,5-Trimethylbenzene	90.8			ug/L	100		90.8	80-120	3.76	20	
Benzene	101			ug/L	100		101	80-120	1.56	20	
Ethylbenzene	100			ug/L	100		100	80-120	0.989	20	
Gasoline range organics	955			ug/L	1000		95.5	80-120	3.07	20	
Methyl tert-butyl ether	85.9			ug/L	100		85.9	80-120	1.65	20	
Toluene	101			ug/L	100		101	80-120	1.19	20	
Xylenes (total)	304			ug/L	300		101	80-120	1.06	20	
Surrogate: 4-Fluorochlorobenzene	*23.7*			*ug/L*	*25.0*		*94.7*	*80-150*			
Duplicate (B4K1814-DUP1)		**Source: 1405209-06**			Prepared & Analyzed: 11/18/14						
Gasoline range organics	1.21	5.6	0.61	mg/kg dry		<5.6			NA	20	
Surrogate: 4-Fluorochlorobenzene	*23.6*			*ug/L*	*25.0*		*94.4*	*80-150*			
Matrix Spike (B4K1814-MS1)		**Source: 1405209-01**			Prepared & Analyzed: 11/18/14						
1,2,4-Trimethylbenzene	90.4			ug/L	100	0.139	90.2	80-120			
1,3,5-Trimethylbenzene	87.7			ug/L	100	<	87.7	80-120			
Benzene	99.1			ug/L	100	<	99.1	80-120			
Ethylbenzene	98.5			ug/L	100	0.349	98.2	80-120			
Methyl tert-butyl ether	84.8			ug/L	100	<	84.8	80-120			

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Barr Engineering Co.	Project:	23691588		
4700 W 77th St	Project Number:	23691588.00	Work Order #:	1405209
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported:	12/03/14

WI(95) GRO/8015D - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1814 - EPA 5035 Soil (Purge and Trap)											
Matrix Spike (B4K1814-MS1)		**Source: 1405209-01**			Prepared & Analyzed: 11/18/14						
Toluene	99.5			ug/L	100	<	99.5	80-120			
Xylenes (total)	299			ug/L	300	0.288	99.6	80-120			
Surrogate: 4-Fluorochlorobenzene	*24.1*			*ug/L*	*25.0*		*96.5*	*80-150*			

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Barr Engineering Co.	Project:	23691588	
4700 W 77th St	Project Number:	23691588.00	Work Order #: 1405209
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported: 12/03/14

TOTAL METALS ANALYSIS - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1711 - EPA 3050B											
Blank (B4K1711-BLK1)					Prepared: 11/17/14		Analyzed: 11/19/14				
Arsenic	< 0.50	0.50	0.12	mg/kg wet							
Barium	< 1.0	1.0	0.055	mg/kg wet							
Cadmium	< 0.25	0.25	0.033	mg/kg wet							
Chromium	< 0.50	0.50	0.13	mg/kg wet							
Lead	< 1.0	1.0	0.14	mg/kg wet							
Selenium	< 1.0	1.0	0.16	mg/kg wet							
Silver	< 0.25	0.25	0.028	mg/kg wet							
LCS (B4K1711-BS1)					Prepared: 11/17/14		Analyzed: 11/19/14				
Arsenic	40.0	0.50	0.12	mg/kg wet	39.9		100	80-120			
Barium	40.7	1.0	0.055	mg/kg wet	39.9		102	80-120			
Cadmium	40.1	0.25	0.033	mg/kg wet	39.9		101	80-120			
Chromium	40.6	0.50	0.13	mg/kg wet	39.9		102	80-120			
Lead	42.5	1.0	0.14	mg/kg wet	39.9		106	80-120			
Selenium	40.3	1.0	0.16	mg/kg wet	39.9		101	80-120			
Silver	4.08	0.25	0.028	mg/kg wet	3.99		102	80-120			
LCS Dup (B4K1711-BSD1)					Prepared: 11/17/14		Analyzed: 11/19/14				
Arsenic	39.1	0.50	0.12	mg/kg wet	39.9		98.1	80-120	2.22	20	
Barium	40.1	1.0	0.055	mg/kg wet	39.9		101	80-120	1.42	20	
Cadmium	39.6	0.25	0.033	mg/kg wet	39.9		99.2	80-120	1.30	20	
Chromium	39.8	0.50	0.13	mg/kg wet	39.9		99.9	80-120	1.84	20	
Lead	41.7	1.0	0.14	mg/kg wet	39.9		104	80-120	1.85	20	
Selenium	39.6	1.0	0.16	mg/kg wet	39.9		99.2	80-120	1.91	20	
Silver	4.00	0.25	0.028	mg/kg wet	3.99		100	80-120	2.04	20	
Matrix Spike (B4K1711-MS1)		**Source: 1405209-01**			Prepared: 11/17/14		Analyzed: 11/19/14				
Arsenic	42.5	0.57	0.14	mg/kg dry	45.1	2.68	88.4	75-125			
Barium	79.6	1.1	0.062	mg/kg dry	45.1	35.5	97.8	75-125			
Cadmium	41.3	0.28	0.038	mg/kg dry	45.1	<0.28	91.4	75-125			
Chromium	59.5	0.57	0.15	mg/kg dry	45.1	17.6	93.0	75-125			
Lead	43.4	1.1	0.16	mg/kg dry	45.1	2.55	90.6	75-125			
Selenium	39.6	1.1	0.19	mg/kg dry	45.1	<1.1	87.3	75-125			
Silver	4.33	0.28	0.031	mg/kg dry	4.51	<0.28	93.0	75-125			
Matrix Spike Dup (B4K1711-MSD1)		**Source: 1405209-01**			Prepared: 11/17/14		Analyzed: 11/19/14				
Arsenic	44.1	0.57	0.14	mg/kg dry	45.2	2.68	91.8	75-125	3.73	20	
Barium	79.1	1.1	0.062	mg/kg dry	45.2	35.5	96.5	75-125	0.621	20	
Cadmium	42.2	0.28	0.038	mg/kg dry	45.2	<0.28	93.2	75-125	2.11	20	
Chromium	58.6	0.57	0.15	mg/kg dry	45.2	17.6	90.8	75-125	1.56	20	
Lead	44.5	1.1	0.16	mg/kg dry	45.2	2.55	92.8	75-125	2.44	20	
Selenium	41.1	1.1	0.19	mg/kg dry	45.2	<1.1	90.4	75-125	3.65	20	

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Barr Engineering Co.	Project:	23691588		
4700 W 77th St	Project Number:	23691588.00	Work Order #:	1405209
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported:	12/03/14

TOTAL METALS ANALYSIS - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1711 - EPA 3050B											
Matrix Spike Dup (B4K1711-MSD1)		**Source: 1405209-01**			Prepared: 11/17/14		Analyzed: 11/19/14				
Silver	4.37	0.28	0.031	mg/kg dry	4.52	<0.28	93.8	75-125	1.04	20	

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Barr Engineering Co.	Project:	23691588			
4700 W 77th St	Project Number:	23691588.00		Work Order #:	1405209
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen		Date Reported:	12/03/14

PAH 8270D - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1902 - EPA 3545 ASE Extraction											
Blank (B4K1902-BLK1)					Prepared & Analyzed: 11/19/14						
2-Chloronaphthalene	< 0.33	0.33	0.068	mg/kg wet							
2-Methylnaphthalene	< 0.33	0.33	0.080	mg/kg wet							
Acenaphthene	< 0.33	0.33	0.063	mg/kg wet							
Acenaphthylene	< 0.33	0.33	0.071	mg/kg wet							
Anthracene	< 0.33	0.33	0.069	mg/kg wet							
Benzo(a)anthracene	< 0.33	0.33	0.065	mg/kg wet							
Benzo(a)pyrene	< 0.33	0.33	0.070	mg/kg wet							
Benzo(b)fluoranthene	< 0.33	0.33	0.059	mg/kg wet							
Benzo(g,h,i)perylene	< 0.33	0.33	0.071	mg/kg wet							
Benzo(k)fluoranthene	< 0.33	0.33	0.070	mg/kg wet							
Chrysene	< 0.33	0.33	0.064	mg/kg wet							
Dibenz(a,h)anthracene	< 0.33	0.33	0.082	mg/kg wet							
Fluoranthene	< 0.33	0.33	0.068	mg/kg wet							
Fluorene	< 0.33	0.33	0.065	mg/kg wet							
Indeno (1,2,3-cd) pyrene	< 0.33	0.33	0.072	mg/kg wet							
Naphthalene	< 0.33	0.33	0.071	mg/kg wet							
Phenanthrene	< 0.33	0.33	0.066	mg/kg wet							
Pyrene	< 0.33	0.33	0.059	mg/kg wet							
Surrogate: 2-Fluorobiphenyl	*4.30*			*mg/kg wet*	*6.67*		*64.5*	*46.3-96.2*			
Surrogate: Nitrobenzene-d5	*4.17*			*mg/kg wet*	*6.67*		*62.5*	*49.3-94*			
Surrogate: Terphenyl-d14	*4.44*			*mg/kg wet*	*6.67*		*66.6*	*51.5-94.6*			
LCS (B4K1902-BS1)					Prepared & Analyzed: 11/19/14						
Acenaphthylene	2.43	0.33	0.071	mg/kg wet	3.33		72.8	55-95			
Anthracene	2.66	0.33	0.069	mg/kg wet	3.33		79.8	60-100			
Benzo(a)anthracene	2.69	0.33	0.065	mg/kg wet	3.33		80.7	55-100			
Benzo(a)pyrene	2.35	0.33	0.070	mg/kg wet	3.33		70.5	55-100			
Benzo(b)fluoranthene	2.34	0.33	0.059	mg/kg wet	3.33		70.3	55-100			
Benzo(g,h,i)perylene	2.37	0.33	0.071	mg/kg wet	3.33		71.1	50-100			
Benzo(k)fluoranthene	2.34	0.33	0.070	mg/kg wet	3.33		70.3	55-100			
Chrysene	2.69	0.33	0.064	mg/kg wet	3.33		80.6	50-100			
Dibenz(a,h)anthracene	2.37	0.33	0.082	mg/kg wet	3.33		71.2	50-100			
Fluoranthene	2.66	0.33	0.068	mg/kg wet	3.33		79.8	55-100			
Fluorene	2.53	0.33	0.065	mg/kg wet	3.33		76.0	55-95			
Indeno (1,2,3-cd) pyrene	2.37	0.33	0.072	mg/kg wet	3.33		71.1	55-110			
Naphthalene	2.33	0.33	0.071	mg/kg wet	3.33		69.9	50-95			
Phenanthrene	2.57	0.33	0.066	mg/kg wet	3.33		77.2	60-100			
Surrogate: 2-Fluorobiphenyl	*4.72*			*mg/kg wet*	*6.67*		*70.8*	*46.3-96.2*			
Surrogate: Nitrobenzene-d5	*4.57*			*mg/kg wet*	*6.67*		*68.5*	*49.3-94*			
Surrogate: Terphenyl-d14	*4.54*			*mg/kg wet*	*6.67*		*68.0*	*51.5-94.6*			

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LEGEND Technical Services, Inc.
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Barr Engineering Co.	Project:	23691588			
4700 W 77th St	Project Number:	23691588.00		Work Order #:	1405209
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen		Date Reported:	12/03/14

PAH 8270D - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1902 - EPA 3545 ASE Extraction											
Matrix Spike (B4K1902-MS1)		**Source: 1405209-01**			Prepared & Analyzed: 11/19/14						
Acenaphthylene	3.28	0.38	0.081	mg/kg dry	3.78	<0.38	86.7	40-100			
Anthracene	3.55	0.38	0.078	mg/kg dry	3.78	<0.38	93.9	45-100			
Benzo(a)anthracene	3.59	0.38	0.074	mg/kg dry	3.78	<0.38	94.9	45-100			
Benzo(a)pyrene	3.05	0.38	0.080	mg/kg dry	3.78	<0.38	80.7	40-100			
Benzo(b)fluoranthene	3.01	0.38	0.067	mg/kg dry	3.78	<0.38	79.5	40-100			
Benzo(g,h,i)perylene	3.08	0.38	0.081	mg/kg dry	3.78	<0.38	81.5	35-110			
Benzo(k)fluoranthene	3.02	0.38	0.080	mg/kg dry	3.78	<0.38	79.9	40-100			
Chrysene	3.47	0.38	0.073	mg/kg dry	3.78	<0.38	91.6	40-100			
Dibenz(a,h)anthracene	3.09	0.38	0.093	mg/kg dry	3.78	<0.38	81.7	35-110			
Fluoranthene	3.59	0.38	0.077	mg/kg dry	3.78	<0.38	94.9	45-100			
Fluorene	3.41	0.38	0.074	mg/kg dry	3.78	<0.38	90.0	45-100			
Indeno (1,2,3-cd) pyrene	3.11	0.38	0.082	mg/kg dry	3.78	<0.38	82.3	35-110			
Naphthalene	3.09	0.38	0.081	mg/kg dry	3.78	<0.38	81.7	35-100			
Phenanthrene	3.49	0.38	0.075	mg/kg dry	3.78	<0.38	92.2	45-100			
Surrogate: 2-Fluorobiphenyl	*6.36*			*mg/kg dry*	*7.57*		*84.1*	*46.3-96.2*			
Surrogate: Nitrobenzene-d5	*5.99*			*mg/kg dry*	*7.57*		*79.2*	*49.3-94*			
Surrogate: Terphenyl-d14	*6.03*			*mg/kg dry*	*7.57*		*79.7*	*51.5-94.6*			
Matrix Spike Dup (B4K1902-MSD1)		**Source: 1405209-01**			Prepared & Analyzed: 11/19/14						
Acenaphthylene	3.23	0.38	0.081	mg/kg dry	3.78	<0.38	85.5	40-100	1.42	20	
Anthracene	3.55	0.38	0.078	mg/kg dry	3.78	<0.38	93.9	45-100	0.0373	20	
Benzo(a)anthracene	3.59	0.38	0.074	mg/kg dry	3.78	<0.38	94.9	45-100	0.00337	20	
Benzo(a)pyrene	3.12	0.38	0.080	mg/kg dry	3.78	<0.38	82.5	40-100	2.23	20	
Benzo(b)fluoranthene	3.12	0.38	0.067	mg/kg dry	3.78	<0.38	82.5	40-100	3.71	20	
Benzo(g,h,i)perylene	3.21	0.38	0.081	mg/kg dry	3.78	<0.38	84.9	35-110	4.04	20	
Benzo(k)fluoranthene	3.09	0.38	0.080	mg/kg dry	3.78	<0.38	81.8	40-100	2.35	20	
Chrysene	3.52	0.38	0.073	mg/kg dry	3.78	<0.38	92.9	40-100	1.43	20	
Dibenz(a,h)anthracene	3.21	0.38	0.093	mg/kg dry	3.78	<0.38	84.7	35-110	3.61	20	
Fluoranthene	3.51	0.38	0.077	mg/kg dry	3.78	<0.38	92.7	45-100	2.29	20	
Fluorene	3.34	0.38	0.074	mg/kg dry	3.78	<0.38	88.2	45-100	2.06	20	
Indeno (1,2,3-cd) pyrene	3.28	0.38	0.082	mg/kg dry	3.78	<0.38	86.7	35-110	5.17	20	
Naphthalene	3.08	0.38	0.081	mg/kg dry	3.78	<0.38	81.5	35-100	0.286	20	
Phenanthrene	3.45	0.38	0.075	mg/kg dry	3.78	<0.38	91.3	45-100	0.973	20	
Surrogate: 2-Fluorobiphenyl	*6.26*			*mg/kg dry*	*7.57*		*82.8*	*46.3-96.2*			
Surrogate: Nitrobenzene-d5	*5.98*			*mg/kg dry*	*7.57*		*79.0*	*49.3-94*			
Surrogate: Terphenyl-d14	*6.06*			*mg/kg dry*	*7.57*		*80.1*	*51.5-94.6*			

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Barr Engineering Co.	Project:	23691588		
4700 W 77th St	Project Number:	23691588.00	Work Order #:	1405209
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported:	12/03/14

PERCENT SOLIDS - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K2005 - General Preparation											
Duplicate (B4K2005-DUP1)		**Source: 1405209-01**			Prepared & Analyzed: 11/20/14						
% Solids	87.0			%		88.0			1.14	20	
Duplicate (B4K2005-DUP2)		**Source: 1405264-01**			Prepared & Analyzed: 11/20/14						
% Solids	84.0			%		81.0			3.64	20	

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Barr Engineering Co.	Project:	23691588		
4700 W 77th St	Project Number:	23691588.00	Work Order #:	1405209
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported:	12/03/14

SVOC 8270D - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1902 - EPA 3545 ASE Extraction											
Blank (B4K1902-BLK1)					Prepared & Analyzed: 11/19/14						
1,2,4-Trichlorobenzene	< 0.33	0.33	0.075	mg/kg wet							
1,2-Dichlorobenzene	< 0.33	0.33	0.067	mg/kg wet							
1,2-Diphenylhydrazine as Azobenzene	< 0.33	0.33	0.058	mg/kg wet							
1,3-Dichlorobenzene	< 0.33	0.33	0.069	mg/kg wet							
1,4-Dichlorobenzene	< 0.33	0.33	0.068	mg/kg wet							
2,3,4,6-Tetrachlorophenol	< 0.67	0.67	0.19	mg/kg wet							
2,4,5-Trichlorophenol	< 0.67	0.67	0.071	mg/kg wet							
2,4,6-Trichlorophenol	< 0.67	0.67	0.16	mg/kg wet							
2,4-Dichlorophenol	< 0.67	0.67	0.15	mg/kg wet							
2,4-Dimethylphenol	< 0.67	0.67	0.13	mg/kg wet							
2,4-Dinitrophenol	< 0.67	0.67	0.071	mg/kg wet							
2,4-Dinitrotoluene	< 0.33	0.33	0.068	mg/kg wet							
2,6-Dichlorophenol	< 0.67	0.67	0.13	mg/kg wet							
2,6-Dinitrotoluene	< 0.33	0.33	0.077	mg/kg wet							
2-Chloronaphthalene	< 0.33	0.33	0.068	mg/kg wet							
2-Chlorophenol	< 0.67	0.67	0.15	mg/kg wet							
2-Methylnaphthalene	< 0.33	0.33	0.080	mg/kg wet							
2-Methylphenol	< 0.67	0.67	0.082	mg/kg wet							
2-Nitroaniline	< 0.33	0.33	0.069	mg/kg wet							
2-Nitrophenol	< 0.67	0.67	0.18	mg/kg wet							
3&4-Methylphenol	< 0.67	0.67	0.082	mg/kg wet							
3,3´-Dichlorobenzidine	< 1.6	1.6	0.45	mg/kg wet							
3-Nitroaniline	< 0.33	0.33	0.072	mg/kg wet							
4,6-Dinitro-2-methylphenol	< 0.67	0.67	0.11	mg/kg wet							
4-Bromophenyl phenyl ether	< 0.33	0.33	0.068	mg/kg wet							
4-Chloro-3-methylphenol	< 0.67	0.67	0.14	mg/kg wet							
4-Chloroaniline	< 0.67	0.67	0.067	mg/kg wet							
4-Chlorophenyl phenyl ether	< 0.33	0.33	0.068	mg/kg wet							
4-Nitroaniline	< 0.33	0.33	0.083	mg/kg wet							
4-Nitrophenol	< 0.67	0.67	0.17	mg/kg wet							
Acenaphthene	< 0.33	0.33	0.063	mg/kg wet							
Acenaphthylene	< 0.33	0.33	0.071	mg/kg wet							
Aniline	< 0.67	0.67	0.066	mg/kg wet							
Anthracene	< 0.33	0.33	0.069	mg/kg wet							
Benzidine	< 2.5	2.5	0.44	mg/kg wet							
Benzo(a)anthracene	< 0.33	0.33	0.065	mg/kg wet							
Benzo(a)pyrene	< 0.33	0.33	0.070	mg/kg wet							
Benzo(b)fluoranthene	< 0.33	0.33	0.059	mg/kg wet							
Benzo(g,h,i)perylene	< 0.33	0.33	0.071	mg/kg wet							

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Barr Engineering Co.	Project:	23691588			
4700 W 77th St	Project Number:	23691588.00		Work Order #:	1405209
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen		Date Reported:	12/03/14

SVOC 8270D - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1902 - EPA 3545 ASE Extraction											
Blank (B4K1902-BLK1)					Prepared & Analyzed: 11/19/14						
Benzo(k)fluoranthene	< 0.33	0.33	0.070	mg/kg wet							
Benzoic acid	< 0.33	0.33	0.064	mg/kg wet							
Benzyl alcohol	< 0.67	0.67	0.15	mg/kg wet							
Bis(2-chloroethoxy)methane	< 0.33	0.33	0.077	mg/kg wet							
Bis(2-chloroethyl)ether	< 0.33	0.33	0.069	mg/kg wet							
Bis(2-chloroisopropyl)ether	< 0.33	0.33	0.078	mg/kg wet							
Bis(2-ethylhexyl)phthalate	< 0.33	0.33	0.081	mg/kg wet							
Butyl benzyl phthalate	< 0.33	0.33	0.083	mg/kg wet							
Carbazole	< 0.33	0.33	0.076	mg/kg wet							
Chrysene	< 0.33	0.33	0.064	mg/kg wet							
Dibenz(a,h)anthracene	< 0.33	0.33	0.082	mg/kg wet							
Dibenzofuran	< 0.33	0.33	0.068	mg/kg wet							
Diethyl phthalate	< 0.33	0.33	0.063	mg/kg wet							
Dimethyl phthalate	< 0.33	0.33	0.069	mg/kg wet							
Di-n-butyl phthalate	< 0.33	0.33	0.079	mg/kg wet							
Di-n-octyl phthalate	< 0.33	0.33	0.10	mg/kg wet							
Fluoranthene	< 0.33	0.33	0.068	mg/kg wet							
Fluorene	< 0.33	0.33	0.065	mg/kg wet							
Hexachlorobenzene	< 0.33	0.33	0.062	mg/kg wet							
Hexachlorobutadiene	< 0.33	0.33	0.077	mg/kg wet							
Hexachlorocyclopentadiene	< 0.33	0.33	0.069	mg/kg wet							
Hexachloroethane	< 0.33	0.33	0.082	mg/kg wet							
Indeno (1,2,3-cd) pyrene	< 0.33	0.33	0.072	mg/kg wet							
Isophorone	< 0.33	0.33	0.076	mg/kg wet							
Naphthalene	< 0.33	0.33	0.071	mg/kg wet							
Nitrobenzene	< 0.33	0.33	0.080	mg/kg wet							
N-Nitrosodimethylamine	< 0.33	0.33	0.070	mg/kg wet							
N-Nitrosodi-n-propylamine	< 0.33	0.33	0.073	mg/kg wet							
N-Nitrosodiphenylamine	< 0.33	0.33	0.067	mg/kg wet							
Pentachlorophenol	< 0.67	0.67	0.19	mg/kg wet							
Phenanthrene	< 0.33	0.33	0.066	mg/kg wet							
Phenol	< 0.67	0.67	0.14	mg/kg wet							
Pyrene	< 0.33	0.33	0.059	mg/kg wet							
Surrogate: 2,4,6-Tribromophenol	*5.04*			*mg/kg wet*	*6.67*		*75.6*	*53-107*			
Surrogate: 2-Fluorobiphenyl	*4.30*			*mg/kg wet*	*6.67*		*64.5*	*53.9-97.9*			
Surrogate: 2-Fluorophenol	*3.87*			*mg/kg wet*	*6.67*		*58.0*	*42.5-94.9*			
Surrogate: Nitrobenzene-d5	*4.17*			*mg/kg wet*	*6.67*		*62.5*	*48.9-100*			
Surrogate: Phenol-d6	*4.21*			*mg/kg wet*	*6.67*		*63.2*	*50.4-99.6*			
Surrogate: Terphenyl-d14	*4.44*			*mg/kg wet*	*6.67*		*66.6*	*51-99.6*			

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Barr Engineering Co.	Project:	23691588			
4700 W 77th St	Project Number:	23691588.00		Work Order #:	1405209
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen		Date Reported:	12/03/14

SVOC 8270D - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1902 - EPA 3545 ASE Extraction											
LCS (B4K1902-BS1)					Prepared & Analyzed: 11/19/14						
1,2,4-Trichlorobenzene	2.28	0.33	0.075	mg/kg wet	3.33		68.3	50-100			
1,4-Dichlorobenzene	2.15	0.33	0.068	mg/kg wet	3.33		64.4	40-80			
2,4-Dinitrotoluene	2.62	0.33	0.068	mg/kg wet	3.33		78.6	50-90			
2-Chlorophenol	2.28	0.67	0.15	mg/kg wet	3.33		68.4	50-85			
4-Chloro-3-methylphenol	2.47	0.67	0.14	mg/kg wet	3.33		74.0	55-90			
4-Nitrophenol	2.65	0.67	0.17	mg/kg wet	3.33		79.5	45-100			
Anthracene	2.66	0.33	0.069	mg/kg wet	3.33		79.8	55-95			
Benzo(a)anthracene	2.69	0.33	0.065	mg/kg wet	3.33		80.7	55-100			
Benzo(a)pyrene	2.35	0.33	0.070	mg/kg wet	3.33		70.5	55-100			
Chrysene	2.69	0.33	0.064	mg/kg wet	3.33		80.6	55-100			
Fluoranthene	2.66	0.33	0.068	mg/kg wet	3.33		79.8	55-95			
Fluorene	2.53	0.33	0.065	mg/kg wet	3.33		76.0	55-95			
N-Nitrosodi-n-propylamine	2.34	0.33	0.073	mg/kg wet	3.33		70.3	50-90			
Pentachlorophenol	2.40	0.67	0.19	mg/kg wet	3.33		72.0	35-95			
Phenanthrene	2.57	0.33	0.066	mg/kg wet	3.33		77.2	55-95			
Phenol	2.32	0.67	0.14	mg/kg wet	3.33		69.7	50-85			
Surrogate: 2,4,6-Tribromophenol	*5.28*			*mg/kg wet*	*6.67*		*79.3*	*53-107*			
Surrogate: 2-Fluorobiphenyl	*4.72*			*mg/kg wet*	*6.67*		*70.8*	*53.9-97.9*			
Surrogate: 2-Fluorophenol	*4.68*			*mg/kg wet*	*6.67*		*70.2*	*42.5-94.9*			
Surrogate: Nitrobenzene-d5	*4.57*			*mg/kg wet*	*6.67*		*68.5*	*48.9-100*			
Surrogate: Phenol-d6	*4.80*			*mg/kg wet*	*6.67*		*72.0*	*50.4-99.6*			
Surrogate: Terphenyl-d14	*4.54*			*mg/kg wet*	*6.67*		*68.0*	*51-99.6*			
Matrix Spike (B4K1902-MS1)		**Source: 1405209-01**			Prepared & Analyzed: 11/19/14						
1,2,4-Trichlorobenzene	2.99	0.38	0.085	mg/kg dry	3.78	<0.38	79.1	35-100			
1,4-Dichlorobenzene	2.80	0.38	0.077	mg/kg dry	3.78	<0.38	73.9	30-85			
2,4-Dinitrotoluene	3.51	0.38	0.077	mg/kg dry	3.78	<0.38	92.8	45-95			
2-Chlorophenol	3.01	0.76	0.17	mg/kg dry	3.78	<0.76	79.6	35-100			
4-Chloro-3-methylphenol	3.29	0.76	0.16	mg/kg dry	3.78	<0.76	87.0	35-100			
4-Nitrophenol	3.40	0.76	0.19	mg/kg dry	3.78	<0.76	89.8	40-100			
Anthracene	3.55	0.38	0.078	mg/kg dry	3.78	<0.38	93.9	55-100			
Benzo(a)anthracene	3.59	0.38	0.074	mg/kg dry	3.78	<0.38	94.9	50-100			
Benzo(a)pyrene	3.05	0.38	0.080	mg/kg dry	3.78	<0.38	80.7	50-100			
Chrysene	3.47	0.38	0.073	mg/kg dry	3.78	<0.38	91.6	50-100			
Fluoranthene	3.59	0.38	0.077	mg/kg dry	3.78	<0.38	94.9	50-100			
Fluorene	3.41	0.38	0.074	mg/kg dry	3.78	<0.38	90.0	50-100			
N-Nitrosodi-n-propylamine	3.07	0.38	0.083	mg/kg dry	3.78	<0.38	81.1	35-100			
Pentachlorophenol	3.13	0.76	0.22	mg/kg dry	3.78	<0.76	82.9	30-100			
Phenanthrene	3.49	0.38	0.075	mg/kg dry	3.78	<0.38	92.2	55-100			
Phenol	3.09	0.76	0.16	mg/kg dry	3.78	<0.76	81.8	35-100			

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Barr Engineering Co.	Project:	23691588			
4700 W 77th St	Project Number:	23691588.00		Work Order #:	1405209
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen		Date Reported:	12/03/14

SVOC 8270D - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1902 - EPA 3545 ASE Extraction											
Matrix Spike (B4K1902-MS1)		**Source: 1405209-01**			Prepared & Analyzed: 11/19/14						
Surrogate: 2,4,6-Tribromophenol	*6.90*			*mg/kg dry*	*7.57*		*91.2*	*53-107*			
Surrogate: 2-Fluorobiphenyl	*6.36*			*mg/kg dry*	*7.57*		*84.1*	*53.9-97.9*			
Surrogate: 2-Fluorophenol	*6.12*			*mg/kg dry*	*7.57*		*80.9*	*42.5-94.9*			
Surrogate: Nitrobenzene-d5	*5.99*			*mg/kg dry*	*7.57*		*79.2*	*48.9-100*			
Surrogate: Phenol-d6	*6.41*			*mg/kg dry*	*7.57*		*84.7*	*50.4-99.6*			
Surrogate: Terphenyl-d14	*6.03*			*mg/kg dry*	*7.57*		*79.7*	*51-99.6*			
Matrix Spike Dup (B4K1902-MSD1)		**Source: 1405209-01**			Prepared & Analyzed: 11/19/14						
1,2,4-Trichlorobenzene	3.02	0.38	0.085	mg/kg dry	3.78	<0.38	79.8	35-100	0.855	20	
1,4-Dichlorobenzene	2.74	0.38	0.077	mg/kg dry	3.78	<0.38	72.3	30-85	2.20	20	
2,4-Dinitrotoluene	3.49	0.38	0.077	mg/kg dry	3.78	<0.38	92.2	45-95	0.707	20	
2-Chlorophenol	2.93	0.76	0.17	mg/kg dry	3.78	<0.76	77.3	35-100	2.91	20	
4-Chloro-3-methylphenol	3.28	0.76	0.16	mg/kg dry	3.78	<0.76	86.7	35-100	0.322	20	
4-Nitrophenol	3.39	0.76	0.19	mg/kg dry	3.78	<0.76	89.7	40-100	0.0731	20	
Anthracene	3.55	0.38	0.078	mg/kg dry	3.78	<0.38	93.9	55-100	0.0373	20	
Benzo(a)anthracene	3.59	0.38	0.074	mg/kg dry	3.78	<0.38	94.9	50-100	0.00337	20	
Benzo(a)pyrene	3.12	0.38	0.080	mg/kg dry	3.78	<0.38	82.5	50-100	2.23	20	
Chrysene	3.52	0.38	0.073	mg/kg dry	3.78	<0.38	92.9	50-100	1.43	20	
Fluoranthene	3.51	0.38	0.077	mg/kg dry	3.78	<0.38	92.7	50-100	2.29	20	
Fluorene	3.34	0.38	0.074	mg/kg dry	3.78	<0.38	88.2	50-100	2.06	20	
N-Nitrosodi-n-propylamine	2.97	0.38	0.083	mg/kg dry	3.78	<0.38	78.6	35-100	3.13	20	
Pentachlorophenol	3.27	0.76	0.22	mg/kg dry	3.78	<0.76	86.5	30-100	4.31	20	
Phenanthrene	3.45	0.38	0.075	mg/kg dry	3.78	<0.38	91.3	55-100	0.973	20	
Phenol	3.01	0.76	0.16	mg/kg dry	3.78	<0.76	79.5	35-100	2.76	20	
Surrogate: 2,4,6-Tribromophenol	*6.90*			*mg/kg dry*	*7.57*		*91.2*	*53-107*			
Surrogate: 2-Fluorobiphenyl	*6.26*			*mg/kg dry*	*7.57*		*82.8*	*53.9-97.9*			
Surrogate: 2-Fluorophenol	*5.89*			*mg/kg dry*	*7.57*		*77.9*	*42.5-94.9*			
Surrogate: Nitrobenzene-d5	*5.98*			*mg/kg dry*	*7.57*		*79.0*	*48.9-100*			
Surrogate: Phenol-d6	*6.19*			*mg/kg dry*	*7.57*		*81.9*	*50.4-99.6*			
Surrogate: Terphenyl-d14	*6.06*			*mg/kg dry*	*7.57*		*80.1*	*51-99.6*			

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Barr Engineering Co.	Project:	23691588		
4700 W 77th St	Project Number:	23691588.00	Work Order #:	1405209
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported:	12/03/14

VOC 8260B - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1811 - EPA 5035 Soil (Purge and Trap)											
Blank (B4K1811-BLK1)					Prepared: 11/17/14 Analyzed: 11/18/14						
1,1,1,2-Tetrachloroethane	< 0.25	0.25	0.0051	mg/kg wet							
1,1,1-Trichloroethane	< 0.25	0.25	0.0056	mg/kg wet							
1,1,2,2-Tetrachloroethane	< 0.25	0.25	0.0057	mg/kg wet							
1,1,2-Trichloroethane	< 0.25	0.25	0.0073	mg/kg wet							
1,1,2-Trichlorotrifluoroethane	< 0.25	0.25	0.0091	mg/kg wet							
1,1-Dichloroethane	< 0.25	0.25	0.0033	mg/kg wet							
1,1-Dichloroethene	< 0.25	0.25	0.0058	mg/kg wet							
1,1-Dichloropropene	< 0.25	0.25	0.0055	mg/kg wet							
1,2,3-Trichlorobenzene	< 0.50	0.50	0.0051	mg/kg wet							
1,2,3-Trichloropropane	< 0.25	0.25	0.0046	mg/kg wet							
1,2,4-Trichlorobenzene	< 0.50	0.50	0.0054	mg/kg wet							
1,2,4-Trimethylbenzene	< 0.25	0.25	0.0033	mg/kg wet							
1,2-Dibromo-3-chloropropane	< 0.50	0.50	0.0083	mg/kg wet							
1,2-Dibromoethane (EDB)	< 0.25	0.25	0.0072	mg/kg wet							
1,2-Dichlorobenzene	< 0.25	0.25	0.0034	mg/kg wet							
1,2-Dichloroethane	< 0.25	0.25	0.0055	mg/kg wet							
1,2-Dichloropropane	< 0.25	0.25	0.0048	mg/kg wet							
1,3,5-Trimethylbenzene	< 0.25	0.25	0.0025	mg/kg wet							
1,3-Dichlorobenzene	< 0.25	0.25	0.0038	mg/kg wet							
1,3-Dichloropropane	< 0.25	0.25	0.0055	mg/kg wet							
1,4-Dichlorobenzene	< 0.25	0.25	0.0050	mg/kg wet							
2,2-Dichloropropane	< 0.50	0.50	0.0087	mg/kg wet							
2-Butanone	< 2.0	2.0	0.014	mg/kg wet							
2-Chlorotoluene	< 0.25	0.25	0.0022	mg/kg wet							
4-Chlorotoluene	< 0.25	0.25	0.0036	mg/kg wet							
Acetone	< 2.0	2.0	0.10	mg/kg wet							
Allyl chloride	< 0.50	0.50	0.0083	mg/kg wet							
Benzene	< 0.25	0.25	0.0027	mg/kg wet							
Bromobenzene	< 0.25	0.25	0.0052	mg/kg wet							
Bromochloromethane	< 0.25	0.25	0.0074	mg/kg wet							
Bromodichloromethane	< 0.25	0.25	0.0043	mg/kg wet							
Bromoform	< 0.50	0.50	0.0070	mg/kg wet							
Bromomethane	< 0.50	0.50	0.0060	mg/kg wet							
Carbon tetrachloride	< 0.25	0.25	0.0060	mg/kg wet							
Chlorobenzene	< 0.25	0.25	0.0026	mg/kg wet							
Chloroethane	< 0.25	0.25	0.0072	mg/kg wet							
Chloroform	< 0.25	0.25	0.0023	mg/kg wet							
Chloromethane	< 0.25	0.25	0.0067	mg/kg wet							
cis-1,2-Dichloroethene	< 0.25	0.25	0.0018	mg/kg wet							

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Barr Engineering Co.	Project:	23691588	
4700 W 77th St	Project Number:	23691588.00	Work Order #: 1405209
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported: 12/03/14

VOC 8260B - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1811 - EPA 5035 Soil (Purge and Trap)											
Blank (B4K1811-BLK1)					Prepared: 11/17/14 Analyzed: 11/18/14						
cis-1,3-Dichloropropene	< 0.25	0.25	0.0049	mg/kg wet							
Dibromochloromethane	< 0.25	0.25	0.0046	mg/kg wet							
Dibromomethane	< 0.25	0.25	0.0046	mg/kg wet							
Dichlorodifluoromethane	< 0.50	0.50	0.0094	mg/kg wet							
Dichlorofluoromethane	< 0.25	0.25	0.0079	mg/kg wet							
Ethyl ether	< 0.50	0.50	0.0050	mg/kg wet							
Ethylbenzene	< 0.25	0.25	0.0026	mg/kg wet							
Hexachlorobutadiene	< 1.0	1.0	0.18	mg/kg wet							
Isopropylbenzene	< 0.25	0.25	0.0017	mg/kg wet							
m,p-Xylene	< 0.50	0.50	0.0097	mg/kg wet							
Methyl isobutyl ketone	< 0.50	0.50	0.014	mg/kg wet							
Methyl tert-butyl ether	< 0.25	0.25	0.0055	mg/kg wet							
Methylene chloride	< 1.0	1.0	0.0039	mg/kg wet							
Naphthalene	< 0.50	0.50	0.012	mg/kg wet							
n-Butylbenzene	< 0.25	0.25	0.0055	mg/kg wet							
n-Propylbenzene	< 0.25	0.25	0.0031	mg/kg wet							
o-Xylene	< 0.25	0.25	0.0039	mg/kg wet							
p-Isopropyltoluene	< 0.25	0.25	0.0030	mg/kg wet							
sec-Butylbenzene	< 0.25	0.25	0.0035	mg/kg wet							
Styrene	< 0.25	0.25	0.0054	mg/kg wet							
tert-Butylbenzene	< 0.25	0.25	0.0027	mg/kg wet							
Tetrachloroethene	< 0.25	0.25	0.0050	mg/kg wet							
Tetrahydrofuran	< 2.0	2.0	0.032	mg/kg wet							
Toluene	< 0.25	0.25	0.0035	mg/kg wet							
trans-1,2-Dichloroethene	< 0.25	0.25	0.0045	mg/kg wet							
trans-1,3-Dichloropropene	< 0.25	0.25	0.0063	mg/kg wet							
Trichloroethene	< 0.25	0.25	0.0038	mg/kg wet							
Trichlorofluoromethane	< 0.25	0.25	0.0062	mg/kg wet							
Vinyl chloride	< 0.25	0.25	0.0061	mg/kg wet							
Surrogate: 4-Bromofluorobenzene	*48.9*			*ug/L*	*50.0*		*97.7*	*80-124*			
Surrogate: Dibromofluoromethane	*49.9*			*ug/L*	*50.0*		*99.8*	*77.1-123*			
Surrogate: Toluene-d8	*49.2*			*ug/L*	*50.0*		*98.4*	*78.1-125*			
LCS (B4K1811-BS1)					Prepared & Analyzed: 11/17/14						
1,1,2,2-Tetrachloroethane	49.7			ug/L	50.0		99.3	75-120			
1,1-Dichloroethane	54.8			ug/L	50.0		110	79.6-120			
1,1-Dichloroethene	53.5			ug/L	50.0		107	78.3-120			
1,3,5-Trimethylbenzene	49.0			ug/L	50.0		98.1	77-120			
1,4-Dichlorobenzene	50.1			ug/L	50.0		100	75-125			
2-Chlorotoluene	49.0			ug/L	50.0		98.0	75.9-120			

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Barr Engineering Co.	Project:	23691588		
4700 W 77th St	Project Number:	23691588.00	Work Order #:	1405209
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported:	12/03/14

VOC 8260B - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1811 - EPA 5035 Soil (Purge and Trap)											
LCS (B4K1811-BS1)					Prepared & Analyzed: 11/17/14						
Benzene	54.0			ug/L	50.0		108	80-120			
Bromoform	51.6			ug/L	50.0		103	80-120			
Chlorobenzene	51.1			ug/L	50.0		102	80-120			
Chloroform	53.2			ug/L	50.0		106	80-120			
Ethylbenzene	51.6			ug/L	50.0		103	80-120			
n-Butylbenzene	51.1			ug/L	50.0		102	75-125			
n-Propylbenzene	49.7			ug/L	50.0		99.4	75-120			
Toluene	53.5			ug/L	50.0		107	80-120			
Trichloroethene	53.8			ug/L	50.0		108	80-120			
Vinyl chloride	52.4			ug/L	50.0		105	75-130			
Surrogate: 4-Bromofluorobenzene	*51.2*			*ug/L*	*50.0*		*102*	*80-124*			
Surrogate: Dibromofluoromethane	*50.1*			*ug/L*	*50.0*		*100*	*77.1-123*			
Surrogate: Toluene-d8	*51.2*			*ug/L*	*50.0*		*102*	*78.1-125*			
Matrix Spike (B4K1811-MS1)		**Source: 1405192-01**			Prepared: 11/17/14		Analyzed: 11/18/14				
1,1,2,2-Tetrachloroethane	49.2			ug/L	50.0	<	98.4	75-125			
1,1-Dichloroethane	51.8			ug/L	50.0	<	104	78.7-123			
1,1-Dichloroethene	51.5			ug/L	50.0	<	103	75.8-121			
1,3,5-Trimethylbenzene	48.5			ug/L	50.0	<	96.9	75-120			
1,4-Dichlorobenzene	48.3			ug/L	50.0	<	96.6	75-125			
2-Chlorotoluene	48.5			ug/L	50.0	<	96.9	75-120			
Benzene	51.5			ug/L	50.0	<	103	80-120			
Bromoform	50.6			ug/L	50.0	<	101	80-120			
Chlorobenzene	50.1			ug/L	50.0	<	100	80-120			
Chloroform	51.9			ug/L	50.0	<	104	80-120			
Ethylbenzene	50.2			ug/L	50.0	<	100	80-120			
n-Butylbenzene	48.8			ug/L	50.0	<	97.6	73.8-125			
n-Propylbenzene	47.9			ug/L	50.0	<	95.9	75-120			
Toluene	51.0			ug/L	50.0	<	102	80-120			
Trichloroethene	50.9			ug/L	50.0	<	102	80-120			
Vinyl chloride	50.4			ug/L	50.0	<	101	74.8-130			
Surrogate: 4-Bromofluorobenzene	*50.2*			*ug/L*	*50.0*		*100*	*80-124*			
Surrogate: Dibromofluoromethane	*49.8*			*ug/L*	*50.0*		*99.6*	*77.1-123*			
Surrogate: Toluene-d8	*49.8*			*ug/L*	*50.0*		*99.6*	*78.1-125*			
Matrix Spike Dup (B4K1811-MSD1)		**Source: 1405192-01**			Prepared: 11/17/14		Analyzed: 11/18/14				
1,1,2,2-Tetrachloroethane	47.8			ug/L	50.0	<	95.6	75-125	2.86	20	
1,1-Dichloroethane	53.6			ug/L	50.0	<	107	78.7-123	3.36	20	
1,1-Dichloroethene	53.8			ug/L	50.0	<	108	75.8-121	4.37	20	
1,3,5-Trimethylbenzene	48.7			ug/L	50.0	<	97.3	75-120	0.369	20	

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LEGEND Technical Services, Inc.
www.legend-group.com

88 Empire Drive
St Paul, MN 55103
Tel: 651-642-1150
Fax: 651-642-1239

Barr Engineering Co.	Project:	23691588		
4700 W 77th St	Project Number:	23691588.00	Work Order #:	1405209
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported:	12/03/14

VOC 8260B - Quality Control
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4K1811 - EPA 5035 Soil (Purge and Trap)											
Matrix Spike Dup (B4K1811-MSD1)		**Source: 1405192-01**			Prepared: 11/17/14		Analyzed: 11/18/14				
1,4-Dichlorobenzene	47.9			ug/L	50.0	<	95.9	75-125	0.732	20	
2-Chlorotoluene	48.0			ug/L	50.0	<	96.0	75-120	0.993	20	
Benzene	52.4			ug/L	50.0	<	105	80-120	1.72	20	
Bromoform	51.1			ug/L	50.0	<	102	80-120	0.998	20	
Chlorobenzene	49.8			ug/L	50.0	<	99.6	80-120	0.569	20	
Chloroform	52.9			ug/L	50.0	<	106	80-120	1.80	20	
Ethylbenzene	49.7			ug/L	50.0	<	99.4	80-120	1.07	20	
n-Butylbenzene	49.5			ug/L	50.0	<	99.0	73.8-125	1.48	20	
n-Propylbenzene	48.4			ug/L	50.0	<	96.8	75-120	0.992	20	
Toluene	51.8			ug/L	50.0	<	104	80-120	1.71	20	
Trichloroethene	52.0			ug/L	50.0	<	104	80-120	2.13	20	
Vinyl chloride	52.4			ug/L	50.0	<	105	74.8-130	4.03	20	
Surrogate: 4-Bromofluorobenzene	*51.6*			*ug/L*	*50.0*		*103*	*80-124*			
Surrogate: Dibromofluoromethane	*49.9*			*ug/L*	*50.0*		*99.9*	*77.1-123*			
Surrogate: Toluene-d8	*51.0*			*ug/L*	*50.0*		*102*	*78.1-125*			

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Barr Engineering Co.	Project:	23691588		
4700 W 77th St	Project Number:	23691588.00	Work Order #:	1405209
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported:	12/03/14

7471B - Quality Control
TestAmerica Cedar Falls

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch 68670 - 7471B_Prep											
MS (310-43855-A-5-B)		**Source: 310-43855-A-5-A**			Prepared: 11/18/14		Analyzed: 11/19/14				
Mercury	0.2515	0.0263	0.00479	mg/Kg dry	0.219	0.0393	97	80-120			
MSD (310-43855-A-5-C)		**Source: 310-43855-A-5-A**			Prepared: 11/18/14		Analyzed: 11/19/14				
Mercury	0.2649	0.0267	0.00486	mg/Kg dry	0.223	0.0393	101	80-120	5	20	
LCS (LCS 310-68670/2)					Prepared: 11/18/14		Analyzed: 11/19/14				
Mercury	0.1412	0.0178	0.00324	mg/Kg	0.148	<0.0178	95	80-120			
MB (MB 310-68670/1-)					Prepared: 11/18/14		Analyzed: 11/19/14				
Mercury	<0.0196	0.0196	0.00357	mg/Kg		<0.0196		-			

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St Paul, MN 55103
Tel: 651-642-1150
Fax: 651-642-1239

Barr Engineering Co.	Project:	23691588		
4700 W 77th St	Project Number:	23691588.00	Work Order #:	1405209
Minneapolis, MN 55435	Project Manager:	Mr. James E. Taraldsen	Date Reported:	12/03/14

Notes and Definitions

T-1	MDH does not offer certification for this parameter.
<	Less than value listed
dry	Sample results reported on a dry weight basis
NA	Not applicable. The %RPD is not calculated from values less than the reporting limit.
MDL	Method Detection Limit
RL	Reporting Limit
RPD	Relative Percent Difference
LCS	Laboratory Control Spike = Blank Spike (BS) = Laboratory Fortified Blank (LFB)
MS	Matrix Spike = Laboratory Fortified Matrix (LFM)

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BARR *Chain of Custody*

4700 West 77th Street
Minneapolis, MN 55435-4803
(952) 832-2600

1405209

Project Number: 23691588.00

Project Name: Superior Street

Sample Origination State: MN (use two letter postal state abbreviation)

COC Number: № 44711

COC 1 of 1

Project Manager: LMC

Project QC Contact: JET

Sampled by: NRS2

Laboratory: Legend

Number of Containers/Preservative — Water: VOCs (HCl) #1; SVOCs (unpreserved) #2; Dissolved Metals (HNO_3); Total Metals (HNO_3); General (unpreserved) #3; Diesel Range Organics (HCl); Nutrients (H_2SO_4) #4. Soil: VOCs (tared MeOH) #1; GRO, ~~TPH~~ (tared MeOH) #1; DRO (tared unpreserved); Metals (unpreserved) RCRA; SVOCs (unpreserved) #2; % Solids (plastic vial, unpres.); GRO/PVOC; PAH; Total Number Of Containers.

	Location	Start Depth	Stop Depth	Depth Unit (m./ft. or in.)	Collection Date (mm/dd/yyyy)	Collection Time (hh:mm)	Matrix: Water	Matrix: Soil	Type: Grab	Type: Comp.	Type: QC	VOCs (HCl) #1	SVOCs (unpreserved) #2	Dissolved Metals (HNO_3)	Total Metals (HNO_3)	General (unpreserved) #3	Diesel Range Organics (HCl)	Nutrients (H_2SO_4) #4	VOCs (tared MeOH) #1	GRO, ~~TPH~~ (tared MeOH) #1	DRO (tared unpreserved)	Metals (unpreserved) RCRA	SVOCs (unpreserved) #2	% Solids (plastic vial, unpres.)	GRO/PVOC	PAH	Total Number Of Containers	
1.	B-60	9.5'	11'		11/12/14	0430		X	X										1	1	1	1	1	1	1		7	
2.	B-63	7.5	9'		11/12/14	0050		X	X												1			1	1		3	
3.	B-64	7.5'	9'		11/12/14	2338		X	X										1	1				1			3	
4.	B-65	7.5'	9'		11/11/14	2248		X	X												1			1	1		3	
5.	B-66	9.5'	11'		11/11/14	~~2248~~ 2135		X	X													1		1			2	
6.	B-66	7.5'	9'		11/11/14	2130		X	X												1	1		1	1		4	
7.	Temp Blank										X																1	Standard TAT
8.	Trip Blank Water LR 11/14/14										X																1	
9.																												
10.																												

Common Parameter/Container - Preservation Key

- #1 - Volatile Organics = BTEX, GRO, TPH, 8260 Full List
- #2 - Semivolatile Organics = PAHs, PCP, Dioxins, 8270 Full List, Herbicide/Pesticide/PCBs
- #3 - General = pH, Chloride, Fluoride, Alkalinity, TSS, TDS, TS, Sulfate
- #4 - Nutrients = COD, TOC, Phenols, Ammonia Nitrogen, TKN

Relinquished By:	On Ice?	Date	Time	Received by:	Date	Time
Natalie Seiler	(Y) N	11-13-14	9:00 am			
Relinquished By:	On Ice?	Date	Time	Received by:	Date	Time
	Y N			Abby Foeber	11/14/14	925

Samples Shipped VIA: ☐ Air Freight ☑ Federal Express ☐ Sampler ☐ Other:

Air Bill Number: CUR 0.70

Distribution: White-Original Accompanies Shipment to Lab; Yellow - Field Copy; Pink - Lab Coordinator

H:\RLG\STDFORMS\Chain Of Custody Form 2009 RLG Rev. 09/01/09

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