

Technical Memorandum

To: Alex Smith, Enbridge Energy
From: Ryan Erickson and Heather Wright Wendel
Subject: Superior Terminal Pump House 5 Maintenance Excavation - Historical Crude Oil Impacts
Date: August 5, 2014
Project: 49161092

This memorandum summarizes the field screening, analytical sampling and soil and water management assistance conducted by Barr Engineering (Barr) at the request of Enbridge Energy (Enbridge) in response to the discovery of historical, crude oil impacted soil in a terminal pipeline maintenance excavation adjacent to Pump House 5 at the Enbridge Superior Terminal in Superior, Wisconsin (Figure 1).

Background and Response Activities

Enbridge conducted terminal pipeline maintenance activities on subsurface infrastructure to the north and east of the Pump House 5 building at the Enbridge Superior Terminal between November of 2013 and June of 2014 (Figure 2). An approximately 175 foot long by 25 foot wide by 8 foot deep maintenance excavation was excavated with hydro-vacuum (hydrovac) trucks (Photo 1) between November 1 and December 5, 2013. Infrastructure exposed within the maintenance excavation included; the northeast foundation of Pump House 5; eight Line 5 valves; and a Line 5 trap (Photos 1 and 2; Figure 3).

Crude oil impacted soil and water were first encountered in the maintenance excavation near the Pump House 5 valves by Enbridge excavation contractors on November 1, 2013. Additional crude oil impacts were observed in other sections of the excavation during the maintenance excavation activities. Crude oil impacts were primarily encountered near buried pipeline infrastructure, which included conduits, valves, the Line 5 trap and the Pump House 5 building foundation (Figure 3; Photos 1 through 3). Enbridge Environment was notified by the contractor when crude oil impacted soil was encountered.

Enbridge requested that Barr complete the following activities during the Pump House 5 excavation project:

- assess the environmental site conditions
- identify and segregate excavated crude oil impacted soil from un-impacted soil
- assist with waste characterization and off-site disposal of the impacted soil

To: Alex Smith
From: Ryan Erickson
Subject: Pump House 5 Excavation
Date: August 5, 2014
Page: 2

- assist with waste characterization and off-site disposal of impacted water
- document the residual crude-oil impacts left in place

Barr was onsite daily during the excavation work to carry out the above tasks. Crude oil impacted soil was generally not excavated beyond the construction excavation limits due to the presence of the Pump House 5 building and buried terminal infrastructure.

Enbridge indicated that the crude oil impacts encountered in the excavation were likely historical based on the location and characteristics of the contaminated soil. Barr checked the Wisconsin Department of Natural Resources (WDNR) Bureau for Remediation and Redevelopment Tracking System (BRRTS) database and identified the 2013 Line 5 trap maintenance excavation (WDNR BRRTS Activity #02-16-560841) that was closed by the WDNR on September 3, 2013. No identified reported releases could be definitively associated with the impacts observed along the Pump House 5 building; therefore Enbridge submitted a Notification for Hazardous Substance Discharge to the WDNR on December 20, 2013 (Attachment A).

Field Methods

From November 1, 2013 and December 5, 2013, Barr was onsite or checked in daily to document the Pump House 5 excavation progress, document observed crude oil impacts and assist with the management of contaminated soil and water. Crude oil impacted soil and water could only be identified through visual inspection from the excavation extents due to excavation safety restrictions and the hydrovac excavation methods. Crude oil impacted soil typically had petroleum staining and a rainbow sheen. Crude oil impacted water had a rainbow sheen and/or traces of free-product. All hydrovac trucks that had excavated soil or water with evidence of crude oil impacts emptied their loads into the contaminated soil roll-off containers located in the Superior Terminal Soil Management Area (SMA) (Figure 1) for storage until it could be solidified, characterized and approved for off-site disposal. Hydrovac trucks that did not observe any crude oil impacted soil or water during excavation activities emptied their slurry into the clean soil roll-off containers located in the terminal SMA where it was solidified, field screened and sampled for off-site disposal purposes.

To: Alex Smith
From: Ryan Erickson
Subject: Pump House 5 Excavation
Date: August 5, 2014
Page: 3

Water that accumulated in the excavation was removed with a vacuum tanker truck daily to facilitate excavation activities. Because crude oil impacts were consistently observed on the surface of the excavation water, the water was characterized and sent to an approved water treatment facility as described in the Waste Disposal Coordination and Documentation section of this memo.

On December 4, 2013, maintenance excavation activities were completed and Barr collected field screening soil samples from the excavation sidewalls and bottom to identify whether residual soil impacts were present. Barr field screened the soil for the presence of organic vapors using a photoionization detector (PID) and documented other potential indicators of crude oil impacts such as odor, discoloration and sheen. Residual soil impacts were considered present if a headspace greater than ten parts per million (ppm) was identified. If residual impacts were identified, analytical soil samples were collected from the excavation extent to document residual soil impacts. Soil samples were submitted to Legend Technical Services for laboratory analyses of petroleum volatile organic compounds (PVOCs), minus methyl tert-butyl ether and plus naphthalene. Soil screening and sampling locations are shown on Figure 3, field screening data is provided in Attachment B, analytical results are summarized Table 1 and the laboratory reports are provided in Attachment C.

Results

Field screening and analytical sampling results from the limits of the completed Pump House 5 maintenance excavation are described below. Analytical results from each location were input into the WDNR Web Calculator to compare analyte detections to groundwater residual contaminant levels (RCL) and industrial direct contact RCL and determine whether the soil passes the Cumulative Hazard Index criteria described in WDNR guidance document PUB-RR-890 (Table 1).

Northern excavation extent (Line 5 trap area)

Crude oil impacts were not identified in the nine field screening soil samples collected from the northern half of the maintenance excavation. Three analytical soil samples (Pump House 5-S-5, Pump House 5-S-6, Pump House 5-B-2) were collected to confirm field screening results from site grids N2, N6 and P15 (Figure 3; Attachment B).

To: Alex Smith
From: Ryan Erickson
Subject: Pump House 5 Excavation
Date: August 5, 2014
Page: 4

Analyte concentrations from analytical samples Pump House 5-S-5, Pump House 5-S-6 and Pump House 5-B-2 were below the groundwater RCL and the industrial direct contact pathway RCL and passed the Cumulative Hazard Index criteria (Table 1).

Southern excavation extent (adjacent to Pump House 5 building)

Crude oil impacted soil with headspace detections greater than ten ppm was identified in five of the twelve field screening locations within the southern half of the excavation (adjacent to the Pump House 5 building). The impacted soil was encountered in grids L16, N32, O28, O33 and R35 (Figure 3; Attachment B) at depths between approximately 2 to 7 feet below ground surface (bgs) along the excavation sidewalls and approximately 8 feet bgs on the base of the excavation. Additional remedial excavation work could not be completed due to the presence of terminal infrastructure and the Pump House 5 building. Analytical soil samples (Pump House 5-S-1, Pump House 5-S-2, Pump House 5-S-3, Pump House 5-S-4, and Pump House 5-B-1) were collected from the field screening sample locations with elevated headspace detections to document residual soil impacts (Figure 3).

Analyte concentrations from samples Pump House 5-S-1 and Pump House 5-S-3 exceeded the groundwater RCL for benzene and naphthalene and concentrations from samples Pump House 5-B-1, Pump House 5-S-2 and Pump House 5-S-4 exceeded groundwater RCL's for naphthalene (Table 1). All analyzed samples were below the industrial direct contact pathway RCL and passed the Cumulative Hazard Index criteria.

Discussion

Analyte concentrations in the northern excavation extent (Pump House 5-S-5, Pump House 5-S-6 and Pump House 5-B-2) were below the groundwater RCL and industrial direct contact RCL and passed the Cumulative Hazard Index criteria (Table 1). Analyte concentrations in the southern excavation extent exceeded groundwater RCL's for benzene (Pump House 5-S-1, 0.014 mg/kg; Pump House 5-S-3, 0.038 mg/kg) and naphthalene (Pump House 5-B-1, 0.53 mg/kg; Pump House 5-S-1, 0.86 mg/kg; Pump House 5-S-2, 0.40 mg/kg; Pump House 5-S-3, 1.1 mg/kg; Pump House 5-S-4, 0.73 mg/kg) but were below the industrial direct contact pathway RCL and passed the Cumulative Hazard Index criteria (Table 1).

To: Alex Smith
From: Ryan Erickson
Subject: Pump House 5 Excavation
Date: August 5, 2014
Page: 5

Following the completion of the maintenance activities, the excavation was backfilled with clean fill and no crude oil impacted soil is exposed at the ground surface (Photos 5 and 6).

Waste Disposal Coordination and Documentation

Barr collected four waste characterization samples from the crude oil impacted soil stockpiled in the Terminal SMA for laboratory analysis at Legend Technical Services (samples *Pump House 5-Stockpile-1*, *Pump House 5-Stockpile-2*, *Pump House 5-Stockpile-3*, and *Pump House 5-Stockpile-4*). Stockpile soil samples were analyzed for diesel range organics (DRO) and benzene, toluene, ethylbenzene, and xylenes (BTEX). The laboratory reports were submitted to the Shamrock Landfill near Cloquet, Minnesota as part of a waste profile application. The soil was accepted by the landfill under waste profile #CL13-0061 and a total of 2105.51 tons of crude oil impacted soil was hauled to the landfill between November of 2013 and May of 2014. The waste profile application documentation, the waste characterization laboratory reports and the landfill hauling summary are included in Attachment D.

Groundwater with crude oil impacts accumulated in the Pump House 5 maintenance excavation daily. Barr collected a water waste characterization sample (Pump House 5-Water-1) on November 5, 2013 for laboratory analysis at Legend Technical Services. The water sample was analyzed for DRO and BTEX. The laboratory report was submitted to Western Lake Superior Sanitary District (WLSSD) with a request to dispose of the Pump House 5 excavation water at their water treatment facility in Duluth, Minnesota. WLSSD approved the disposal request on November 8, 2013. After WLSSD approved the water disposal, OSI Environmental, Inc. vacuum tanker trucks dewatered the maintenance excavation and transported the water to the water treatment facility daily. Approximately 49,400 gallons of water were disposed of at WLSSD during maintenance project. The WLSSD discharge approval letter, the water characterization laboratory report and the OSI water disposal tracking ledgers are included in Attachment D.

Conclusions and Recommendations

Crude oil impacted soil was encountered in a terminal Line 5 maintenance excavation adjacent to Pump House 5. All soil and water removed from excavation with evidence of crude oil impacts was managed at an approved disposal facility.

To: Alex Smith
From: Ryan Erickson
Subject: Pump House 5 Excavation
Date: August 5, 2014
Page: 6

Crude oil impacts in the northern excavation (near the Line 5 trap) can be attributed to a previously reported and closed historical release (BRRTS #02-16-560841). Analyte concentrations in the northern excavation extent soil samples were below the groundwater RCL and the industrial direct contact pathway RCL and passed the Cumulative Hazard Index criteria. On this basis, Barr believes there is no need for the WDNR to reopen the historical site and recommends no further action at this time.

Crude oil impacts in the southern half of the Line 5 maintenance excavation to the northeast of the Pump House 5 building could not be attributed to a new release or a reported historical release. Field screening across the extent of the excavation generally indicated that impacted soil had been excavated. Soil samples, collected where field screening identified residual soil impacts, had groundwater pathway RCL exceedances for benzene and naphthalene. Analyte concentrations did not, however, exceed industrial direct contact RCLs and passed the Cumulative Hazard Index criteria. After the completion of the pipeline maintenance activities, the excavation was backfilled with clean fill and no crude oil impacted soil is exposed at the ground surface. The presence of clean fill and employee-awareness will prevent direct contact exposure.

The groundwater pathway for the Superior Terminal is currently being reviewed by the WDNR on a case by case site-wide basis. If the WDNR agrees that the risk to the groundwater pathway associated with this historical release can be addressed using the site-wide approach, no further response action for groundwater or documentation for the WDNR will be required. Assuming a site-wide GIS registry is established for the terminal, the figures and tables attached to this memo can be used to update the registry.

To: Alex Smith
From: Ryan Erickson
Subject: Pump House 5 Excavation
Date: August 5, 2014
Page: 7

Attachments:

Photos 1 through 6
Figure 1 Pump House #5 Site Location
Figure 2 Pump House #5 Site Layout Map
Figure 3 Pump House #5 Sample Locations
Table 1 Soil Analytical Data Summary
Attachment A WDNR Notification for Hazardous Substance Discharge
Attachment B Enbridge Site Investigation Field Sampling and Screening Logs
Attachment C Legend Technical Services Laboratory Reports for Excavation Soil Samples
Attachment D Waste Disposal Documentation

Site Photos:



Photo 1



Photo 2

Photo 1: Pump House 5 southern excavation. The Pump House 5 building and the line valves are shown in this photo.

Photo 2: The northern excavation near the Line 5 trap (white pipeline coming in to the excavation in the back left of photo).



Photo 3



Photo 4

Photo 3: Crude oil impacted soil and water in the southern half of the Pump House 5 maintenance excavation.

Photo 4: Final extent of the southern half of the Pump House 5 maintenance excavation.

To: Alex Smith
From: Ryan Erickson
Subject: Pump House 5 Excavation
Date: August 5, 2014
Page: 9

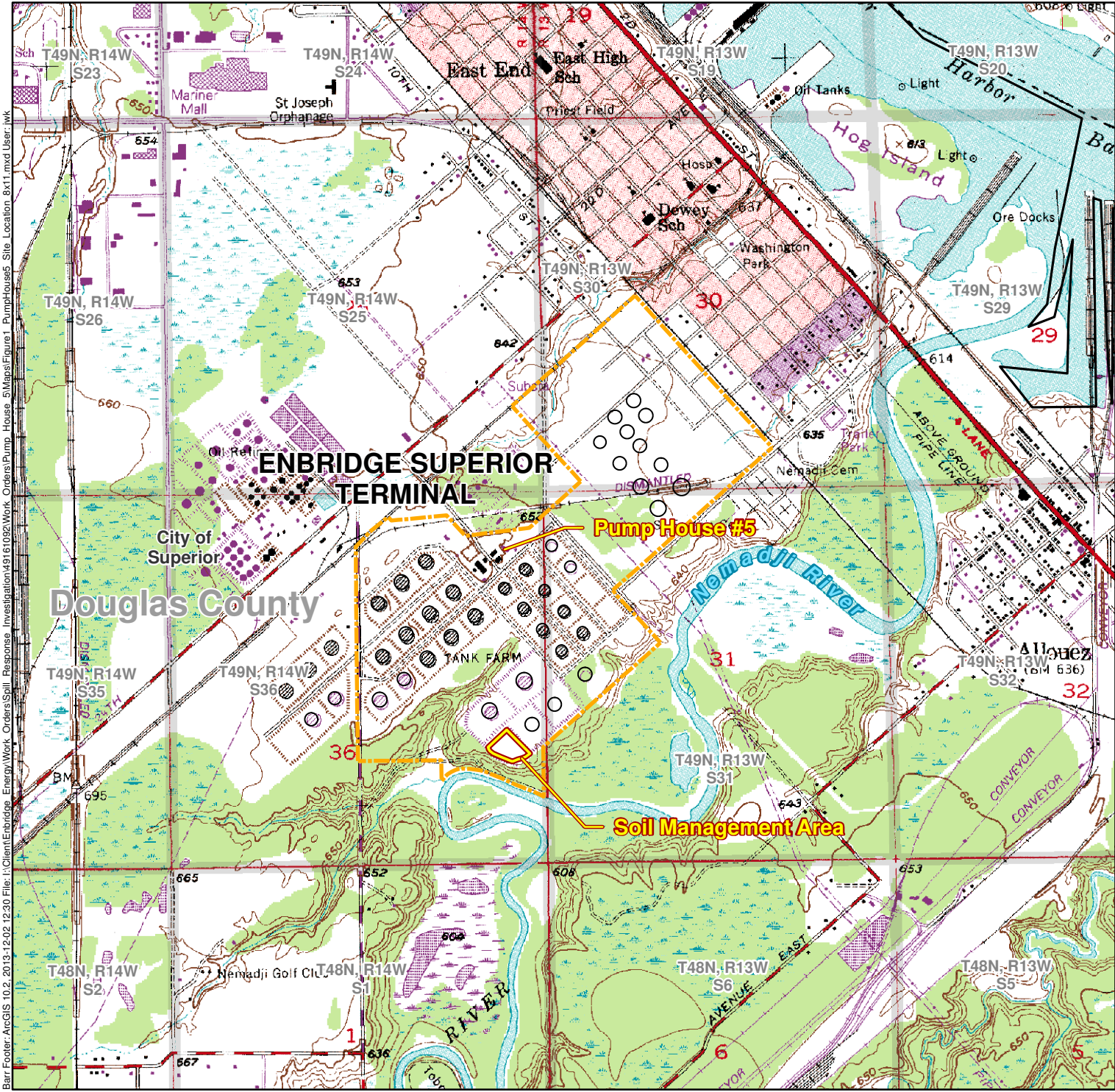


Photo 5

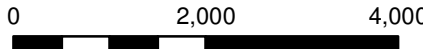


Photo 6

Photos 5 and 6: Backfilled Pump House 5 excavation.



- Soil Management Area
- Terminal Property Boundary



Feet
1 Inch = 2,000 Feet

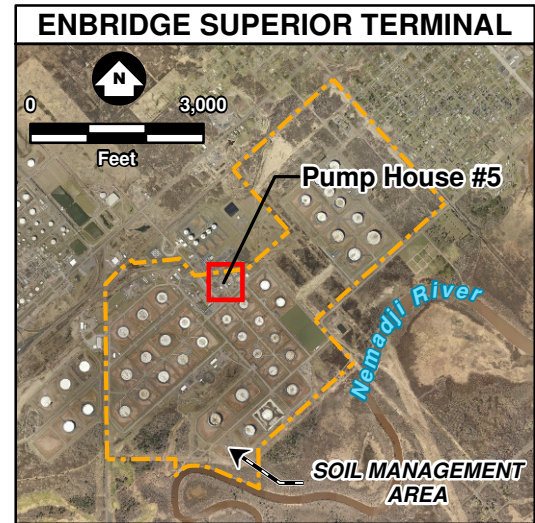
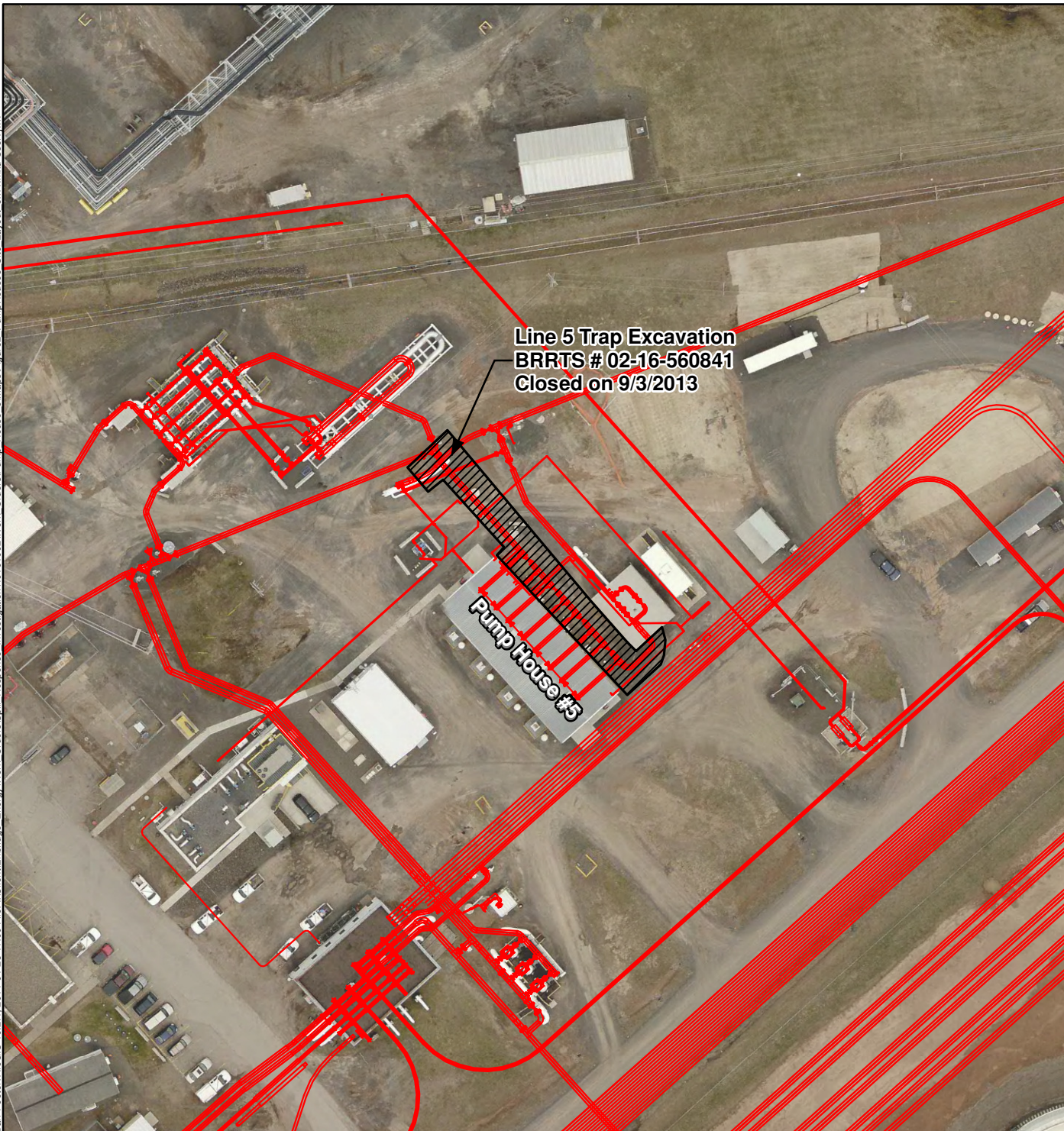
Figure 1




PUMP HOUSE #5 SITE LOCATION
SUPERIOR TERMINAL
 Enbridge Energy, L.P.
 Superior, Wisconsin

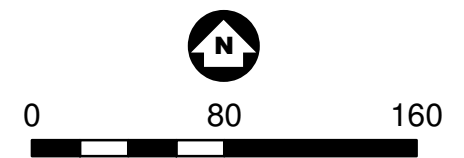


Barr Footer: ArcGIS 10.2, 2013-12-02 12:30 File: I:\Client\Enbridge Energy\Work Orders\Spill Response Investigation\4916102\Work Orders\Pump House 5\Maps\Figure1 PumpHouse5 Site Location 8x11.mxd User: lmk

Barr Footer: ArcGIS 10.2.1, 2014-01-28 11:00 File: I:\Client\Enbridge Energy\Work Orders\Spill Response Investigation\49161092\Work Orders\Pump_House 5\Maps\Figure2_PumpHouse5_Site Layout_8x11.mxd User: jwk



-  Excavation Extent
-  Pipeline Infrastructure
-  Terminal Property Boundary



Feet
1 Inch = 80 Feet

Figure 2

PUMP HOUSE #5 SITE LAYOUT MAP
SUPERIOR TERMINAL
Enbridge Energy, L.P.
Superior, Wisconsin



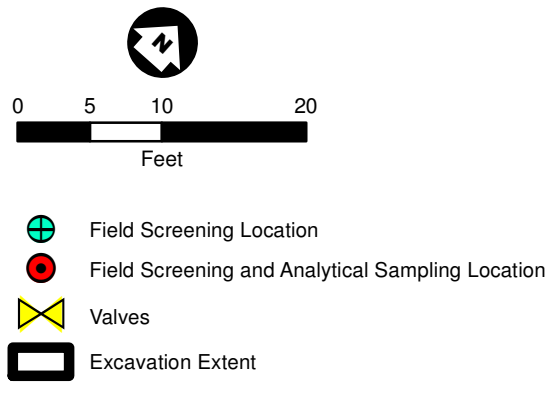
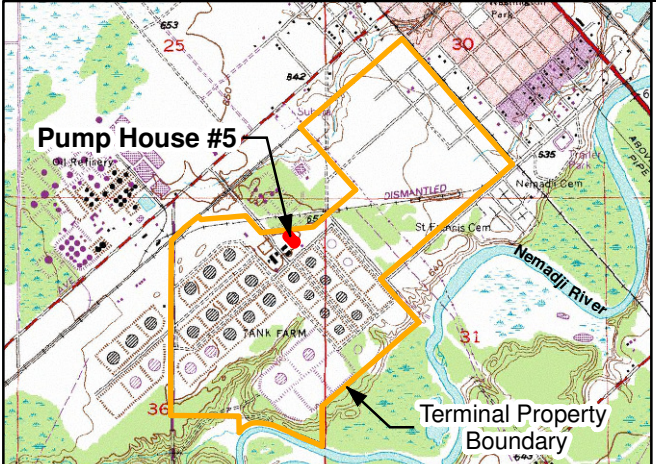
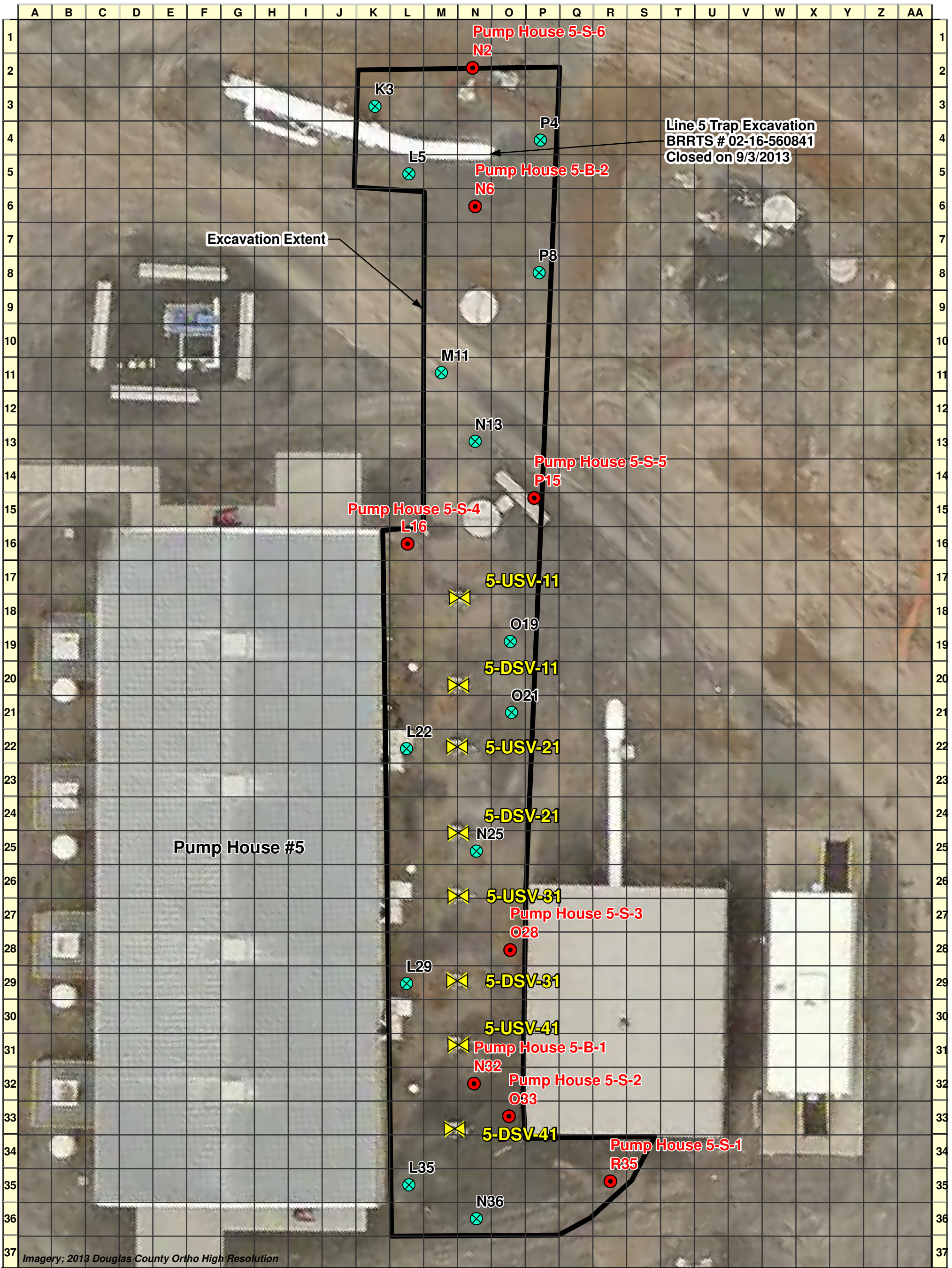


Figure 3
PUMP HOUSE #5 SAMPLE LOCATIONS
 SUPERIOR TERMINAL
 Enbridge Energy, L.P.
 Superior, Wisconsin



**Table 1
Soil Analytical Data Summary
Pump House 5
Enbridge Energy Terminal - Superior, Wisconsin
Units, mg/kg (unless otherwise noted)**

Parameter			Solids, percent	1,2,4-Trimethyl benzene	1,3,5-Trimethyl benzene	Benzene	Ethyl benzene	Toluene	Xylene, total	Naphthalene	WDNR RCL Determinations ¹			
											Exceedance Count	Hazard Index	Cumulative Cancer Risk	Pass or Fail
Effective Date	Exceedance Key													
Groundwater RCL		Bold		1.3793 TR	1.3793 TR	0.0051	0.785	0.5536	1.97 XYL	0.3294				
Industrial Direct Contact RCL	05/01/2012	No Exceed		219	182	7.41	37	818	258	26	0	1.0	0.00001	Pass
Location	Date	Depth (ft)												
Pump House 5-B-1	12/04/2013	8	76 %	< 0.0051	< 0.0056	< 0.0045	0.017 jb	< 0.0039	< 0.012	0.53 jb	0	0.0006	2.1E-08	Pass
Pump House 5-B-2	12/04/2013	7	70 %	< 0.0047	< 0.0052	< 0.0042	0.019 jb	< 0.0036	< 0.011	< 0.020	0	0	1.8E-09	Pass
Pump House 5-S-1	12/04/2013	2	86 %	0.15	< 0.0042	0.014 j	0.13	0.030	0.17	0.86 b	0	0.0015	3.8E-08	Pass
Pump House 5-S-2	12/04/2013	7	78 %	< 0.0045	< 0.0050	< 0.0040	0.027 jb	< 0.0035	< 0.010	0.40 jb	0	0.0005	1.7E-08	Pass
Pump House 5-S-3	12/04/2013	2.5	71 %	0.45	0.085	0.038	0.14	0.086	0.33	1.1 b	0	0.0026	5.1E-08	Pass
Pump House 5-S-4	12/04/2013	6	79 %	< 0.0044	< 0.0049	< 0.0039	0.043 b	0.0089 j	0.063 j	0.73 b	0	0.0009	3.0E-08	Pass
Pump House 5-S-5	12/04/2013	2	74 %	< 0.0047	< 0.0053	< 0.0042	0.019 jb	< 0.0036	< 0.011	< 0.020	0	0	1.8E-09	Pass
Pump House 5-S-6	12/04/2013	1.5	87 %	< 0.0040	< 0.0045	< 0.0036	< 0.0025	< 0.0031	< 0.0092	0.26 jb	0	0.0003	1.1E-08	Pass

¹WDNR RCL Determinations based on guidance criteria described in WDNR document PUB-RR-890. Hazard index is based a cumulative direct contact standard.

XYL - Based on Xylenes (m-, o-, p- combined).

TR - Based on Trimethylbenzenes (1,2,4 - and 1,3,5- combined).

j - Reported value is less than the stated laboratory quantitation limit and is considered an estimated value.

b - Potential false positive value based on blank data validation procedures.

Attachment A

WDNR Notification for Hazardous Substance Discharge

Notification For Hazardous Substance Discharge (Non-Emergency Only)

Form 4400-225 (05/12) Page 1 of 2

Emergency Discharges / Spills should be reported via the 24-Hour Hotline: 1-800-943-0003

Notice: Hazardous substance discharges must be reported immediately according to s. 292.11 Wis. Stats. Non-emergency hazardous substance discharges may be reported by telefaxing or e-mailing a completed report to the Department, or calling or visiting a Department office in person. If you choose to notify the Department by telefax or by email, you should use this form to be sure that all necessary information is included. However, use of this form is not mandatory. Under s. 292.99, Wis. Stats., the penalty for violating the reporting requirements of ch. 292 Wis. Stats., shall be no less than \$10 nor more than \$5000 for each violation. Each day of continued violation is a separate offense. It is not the Department's intention to use any personally identifiable information from this form for any purpose other than program administration. However, information submitted on this form may also be made available to requesters under Wisconsin's Open Records Law (ss. 19.31 – 19.39, Wis. Stats.).

Confirmatory laboratory data should be included with this form, to assist the DNR in processing this Hazardous Substance Release Notification.

Complete this form. **TYPE or PRINT LEGIBLY.** NOTIFY appropriate DNR region (see next page) **IMMEDIATELY** upon discovery of a potential release from (check one):

- Underground Petroleum Storage Tank System (additional information may be required for Item 6 below)
- Aboveground Petroleum Storage Tank System
- Dry Cleaner Facility
- Other - Describe: Historical crude oil impacts discovered in a terminal pipeline maintenance excavation adjacent to Pump House 5

ATTN DNR: **R & R Program Associate**

Date DNR Notified: **12/20/2013**

1. Discharge Reported By

Name Alex Smith	Firm Enbridge Energy	Phone No. (include area code) (715) 398-4795
Mailing Address 1320 Grand Ave., Superior, WI 54880		Email Address alex.smith@enbridge.com

2. Site Information

Name of site at which discharge occurred. Include local name of site/business, not responsible party name, unless a residence/vacant property. Enbridge Superior Terminal - Pump House 5 Maintenance Excavation

Location: Include street address, not PO Box. If no street address, describe as precisely as possible, i.e., 1/4 mile NW of CTHs 60 & 123 on E side of CTH 60. 2800 East 21st Street, Superior, WI 54880

Municipality: (City, Village, Township) Specify municipality in which the site is located, not mailing address/city.

Superior

County: Douglas	Legal Description: <u>NE</u> 1/4 <u>NE</u> 1/4 Sec <u>36</u> Tn <u>49N</u> Range <u>14</u> <input type="radio"/> E <input checked="" type="radio"/> W	WTM: <input checked="" type="checkbox"/> X <input type="checkbox"/> Y
--------------------	--	--

3. Responsible Party (RP) and/or RP Representative

Responsible Party Name: Business or owner name that is responsible for cleanup. If more than one, list all. Attach additional pages as necessary.

Enbridge Energy

- Reported in compliance with s. 292.11(2), Wis. Stats., by a local government exempt from liability under s. 292.11(9)(e), Wis. Stats.
- For more information see <http://dnr.wi.gov/org/aw/rr/lgu/liability.htm>.

Contact Person Name (if different) Alex Smith	Phone Number (715) 398-4795	Email Address alex.smith@enbridge.com	
Mailing Address 1320 Grand Ave., Superior, WI 54880	City Superior	State WI	ZIP Code 54880

Property owner if Different From RP: Business or owner name that is responsible for cleanup. If more than one, list all. Attach additional pages as necessary.

Contact Person Name (if different)	Phone Number	Email Address	
Mailing Address	City	State	ZIP Code

(continued)

4. Hazardous Substance Information

Identify hazardous substance discharged (check all that apply):

- | | | |
|--|---|---|
| <input checked="" type="checkbox"/> VOC's | <input type="checkbox"/> Diesel | <input type="checkbox"/> PERC (Dry Cleaners) |
| <input type="checkbox"/> PAH's | <input type="checkbox"/> Fuel Oil | <input type="checkbox"/> RCRA Hazardous Waste |
| <input type="checkbox"/> Metals (specify): _____ | <input type="checkbox"/> Gasoline | <input type="checkbox"/> Leachate |
| <input type="checkbox"/> Arsenic | <input type="checkbox"/> Hydraulic Oil | <input type="checkbox"/> Fertilizer |
| <input type="checkbox"/> Chromium | <input type="checkbox"/> Jet Fuel | <input type="checkbox"/> Pesticide/Herbicide/Insecticide(s) |
| <input type="checkbox"/> Cyanide | <input type="checkbox"/> Mineral Oil | <input checked="" type="checkbox"/> Other (specify): <u>Crude oil</u> |
| <input type="checkbox"/> Lead | <input type="checkbox"/> Waste Oil | <input type="checkbox"/> Unknown |
| <input type="checkbox"/> PCB's | <input type="checkbox"/> Petroleum-Unknown Type | |

5. Impacts to the Environment Information

Enter "K" for known/confirmed or "P" for potential for all that apply.

- | | | |
|---|---|--|
| <input type="checkbox"/> Air Contamination | <input type="checkbox"/> Sanitary Sewer Contamination | <input checked="" type="checkbox"/> Soil Contamination |
| <input type="checkbox"/> Co-Contamination (Petroleum & Non-Petroleum) | <input type="checkbox"/> Contamination in Right of Way | <input type="checkbox"/> Storm Sewer Contamination |
| <input type="checkbox"/> Contamination Within 1 Meter of Bedrock | <input type="checkbox"/> Fire Explosion Threat | <input type="checkbox"/> Surface Water Contamination |
| <input type="checkbox"/> Contaminated Private Well | <input type="checkbox"/> Free Product | <input type="checkbox"/> Within 100 ft of Private Well |
| <input type="checkbox"/> Contaminated Public Well | <input checked="" type="checkbox"/> Groundwater Contamination | <input type="checkbox"/> Within 1000 ft of Public Well |
| <input type="checkbox"/> Contamination in Fractured Bedrock | <input type="checkbox"/> Off-Site Contamination | |
| | <input type="checkbox"/> Other (specify): _____ | |

Contamination was discovered as a result of:

- | | | |
|--|--|---|
| <input type="checkbox"/> Tank closure assessment | <input type="checkbox"/> Site assessment | <input checked="" type="checkbox"/> Other - Describe: <u>Maintenance excavation</u> |
| Date <input type="text"/> | Date <input type="text"/> | Date <input type="text" value="11/01/2013"/> |

Lab results: Lab results will be faxed upon receipt Lab results are attached

Additional Comments: Include a brief description of immediate actions taken to halt the release and contain or cleanup hazardous substances that have been discharged.

Impacts were from historical releases

6. Federal Energy Act Requirements (Section 9002(d) of the Solid Waste Disposal Act (SWDA))

For all confirmed releases from UST's occurring after 9/30/2007 please provide the following information:

- | Source | Cause |
|---|--|
| <input type="checkbox"/> Tank | <input type="checkbox"/> Spill |
| <input type="checkbox"/> Piping | <input type="checkbox"/> Overfill |
| <input type="checkbox"/> Dispenser | <input type="checkbox"/> Corrosion |
| <input type="checkbox"/> Submersible Turbine Pump | <input type="checkbox"/> Physical or Mechanical Damage |
| <input type="checkbox"/> Delivery Problem | <input type="checkbox"/> Installation Problem |
| <input type="checkbox"/> Other (specify): _____ | <input type="checkbox"/> Other (does not fit any of above) |
| | <input type="checkbox"/> Unknown |

Contact information to report non-emergency releases in DNR's five regions are as follows:

Northeast Region (FAX: 920-662-5197); Attention -- R&R Program Associate: DNRRRNER@wisconsin.gov

Brown, Calumet, Door, Fond du Lac (except City of Waupun - see South Central Region), Green Lake, Kewaunee, Manitowoc, Marinette, Marquette, Menominee, Oconto, Outagamie, Shawano, Sheboygan, Waupaca, Waushara, Winnebago counties

Northern Region (FAX: 715-623-6773); Attention -- R&R Program Associate: DNRRRNOR@wisconsin.gov

Ashland, Barron, Bayfield, Burnett, Douglas, Forest, Florence, Iron, Langlade, Lincoln, Oneida, Polk, Price, Rusk, Sawyer, Taylor, Vilas, Washburn counties

South Central Region (FAX: 608-273-5610); Attention -- R&R Program Associate: DNRRRSCR@wisconsin.gov

Columbia, Dane, Dodge, Fond du Lac (City of Waupun only), Grant, Green, Iowa, Jefferson, Lafayette, Richland, Rock, Sauk, Walworth counties

Southeast Region (FAX: 414-263-8550); Attention -- R&R Program Associate: DNRRRSER@wisconsin.gov

Kenosha, Milwaukee, Ozaukee, Racine, Washington, Waukesha counties

West Central Region (FAX: 715-839-6076); Attention -- R&R Program Associate: DNRRRWCR@wisconsin.gov

Adams, Buffalo, Chippewa, Clark, Crawford, Dunn, Eau Claire, Jackson, Juneau, LaCrosse, Marathon, Monroe, Pepin, Pierce, Portage, St. Croix, Trempealeau, Vernon, Wood counties

Attachment B

Enbridge Site Investigation Field Sampling and Screening Logs

ENBRIDGE SITE INVESTIGATION FIELD SAMPLING AND SCREENING LOG

Location: Milepost or Facility Enbridge Pump House 5 excavation

Date: 12/4/13

Equipment used: PID -ionization detector with 10.6 eV lamp

Background Headspace: 0.0 ppm

Sampler: HEW

Calibration Time: 13:00

Sample Nomenclature (Location - sample type - #): Pump House 5

Soil Sample Types: R = Removed Sample ; S = Sidewall Sample ; B = Bottom Sample ; Stockpile = Stockpile Sample

Sample ID	Depth (FT)	Time (military)	Soil Type (USCS)	Color/Discolor	Odor/ Sheen	Headspace Reading (ppm)	Final Extent
Example: R-1	4	16:30	CL	Reddish brown	Petroleum/Rainbow	275	Y
N36	2	13:45	Clay + gravel	Reddish brown	none	6.6	Y
R35	2	↓	↓	↓	↓	46.2	Y
L35	3	↓	↓	↓	↓	0.7	Y
O33	7	↓	↓	Red	↓	10.3	Y
O28	2.5	↓	↓	Reddish brown	↓	242.6	Y
N25	8	↓	↓	Red	↓	0.2	Y
L16	6	14:50	↓	Reddish brown	↓	17.4	Y
L22	7	↓	↓	↓	↓	0.4	Y
L29	7	↓	↓	↓	↓	7.2	Y
O21	3.5	↓	↓	↓	↓	1.5	Y
P19	8	↓	↓	↓	↓	0.1	Y
N32	8	↓	↓	↓	↓	11.1	Y
P15	2	15:55	↓	↓	↓	0.5	Y
P8	2.5	↓	↓	↓	↓	0.4	Y
P4	3	↓	↓	↓	↓	0.1	Y
N13	6	↓	↓	↓	↓	0.2	Y
N6	7	↓	↓	↓	↓	0.3	Y
N2	1.5	↓	↓	↓	↓	0.1	Y
K3	2	↓	↓	↓	↓	0.1	Y
L9	2	↓	↓	↓	↓	0.0	Y
M11	3	16:20	↓	↓	↓	0.1	Y

SITE SKETCH: north is up; excavation extents & depths, impacted areas, sample locations, borings, wells, structures, utilities, natural features... **1 inch/grid = FEET**

See Figure 3

Attachment C

Legend Technical Services Laboratory Reports for Excavation Soil Samples



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

December 17, 2013

Ms. Andrea Nord
Barr Engineering Co.
4700 W 77th St
Minneapolis, MN 55435

Work Order Number: 1306023
RE: 49161092

Enclosed are the results of analyses for samples received by the laboratory on 12/06/13. 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.

WI Accreditation #998022410

Prepared by,
LEGEND TECHNICAL SERVICES, INC

A handwritten signature in black ink, appearing to read "Bach Pham".

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

A handwritten signature in blue ink, appearing to read "Samantha Jaworski".

Samantha Jaworski
Manager, Organics
sjaworski@legend-group.com

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161092 Project Number: 49161092.02 003 031 Project Manager: Ms. Andrea Nord	Work Order #: 1306023 Date Reported: 12/17/13
---	--	--

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Pump House 5-S-1_2-2	1306023-01	Soil	12/04/13 14:20	12/06/13 10:25
Pump House 5-S-2_7-7	1306023-02	Soil	12/04/13 14:25	12/06/13 10:25
Pump House 5-S-3_2.5-2.5	1306023-03	Soil	12/04/13 14:30	12/06/13 10:25
Pump House 5-S-4_6-6	1306023-04	Soil	12/04/13 15:20	12/06/13 10:25
Pump House 5-B-1_8-8	1306023-05	Soil	12/04/13 15:25	12/06/13 10:25
Pump House 5-S-5_2-2	1306023-06	Soil	12/04/13 16:30	12/06/13 10:25
Pump House 5-S-6_1.5-1.5	1306023-07	Soil	12/04/13 16:40	12/06/13 10:25
Pump House 5-B-2_7-7	1306023-08	Soil	12/04/13 16:35	12/06/13 10:25
Trip Blank	1306023-09	Methanol	12/04/13 00:00	12/06/13 10:25

Shipping Container Information

Default Cooler Temperature (°C): 0.0

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: No

Case Narrative:

The dry weight correction and dilution applies to the sample result, MDL, and RL.

Ethylbenzene and Naphthalene were present in the method blank between the MDL and RL for the BTEX analysis.

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161092 Project Number: 49161092.02 003 031 Project Manager: Ms. Andrea Nord	Work Order #: 1306023 Date Reported: 12/17/13
---	--	--

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

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Pump House 5-S-1_2-2 (1306023-01) Soil Sampled: 12/04/13 14:20 Received: 12/06/13 10:25										
1,2,4-Trimethylbenzene	0.15	0.027	0.0038	mg/kg dry	1	B3L1006	12/10/13	12/10/13	WI(95) GRO	
1,3,5-Trimethylbenzene	<0.0042	0.027	0.0042	mg/kg dry	1	"	"	"	"	
Benzene	0.014	0.027	0.0034	mg/kg dry	1	"	"	"	"	J
Ethylbenzene	0.13	0.027	0.0023	mg/kg dry	1	"	"	"	"	
Naphthalene	0.86	0.54	0.016	mg/kg dry	1	"	"	"	"	B-01
Toluene	0.030	0.027	0.0029	mg/kg dry	1	"	"	"	"	
Xylenes (total)	0.17	0.082	0.0087	mg/kg dry	1	"	"	"	"	
Surrogate: 4-Fluorochlorobenzene	131			80-150 %		"	"	"	"	
Pump House 5-S-2_7-7 (1306023-02) Soil Sampled: 12/04/13 14:25 Received: 12/06/13 10:25										
1,2,4-Trimethylbenzene	<0.0045	0.032	0.0045	mg/kg dry	1	B3L1006	12/10/13	12/10/13	WI(95) GRO	
1,3,5-Trimethylbenzene	<0.0050	0.032	0.0050	mg/kg dry	1	"	"	"	"	
Benzene	<0.0040	0.032	0.0040	mg/kg dry	1	"	"	"	"	
Ethylbenzene	0.027	0.032	0.0028	mg/kg dry	1	"	"	"	"	B-01, J
Naphthalene	0.40	0.64	0.019	mg/kg dry	1	"	"	"	"	B-01, T-1, J
Toluene	<0.0035	0.032	0.0035	mg/kg dry	1	"	"	"	"	
Xylenes (total)	<0.010	0.096	0.010	mg/kg dry	1	"	"	"	"	
Surrogate: 4-Fluorochlorobenzene	113			80-150 %		"	"	"	"	
Pump House 5-S-3_2.5-2.5 (1306023-03) Soil Sampled: 12/04/13 14:30 Received: 12/06/13 10:25										
1,2,4-Trimethylbenzene	0.45	0.035	0.0049	mg/kg dry	1	B3L1006	12/10/13	12/10/13	WI(95) GRO	
1,3,5-Trimethylbenzene	0.085	0.035	0.0055	mg/kg dry	1	"	"	"	"	
Benzene	0.038	0.035	0.0044	mg/kg dry	1	"	"	"	"	
Ethylbenzene	0.14	0.035	0.0030	mg/kg dry	1	"	"	"	"	
Naphthalene	1.1	0.70	0.021	mg/kg dry	1	"	"	"	"	B-01
Toluene	0.086	0.035	0.0038	mg/kg dry	1	"	"	"	"	
Xylenes (total)	0.33	0.11	0.011	mg/kg dry	1	"	"	"	"	
Surrogate: 4-Fluorochlorobenzene	144			80-150 %		"	"	"	"	
Pump House 5-S-4_6-6 (1306023-04) Soil Sampled: 12/04/13 15:20 Received: 12/06/13 10:25										
1,2,4-Trimethylbenzene	<0.0044	0.032	0.0044	mg/kg dry	1	B3L1006	12/10/13	12/10/13	WI(95) GRO	
1,3,5-Trimethylbenzene	<0.0049	0.032	0.0049	mg/kg dry	1	"	"	"	"	
Benzene	<0.0039	0.032	0.0039	mg/kg dry	1	"	"	"	"	
Ethylbenzene	0.043	0.032	0.0027	mg/kg dry	1	"	"	"	"	B-01
Naphthalene	0.73	0.63	0.019	mg/kg dry	1	"	"	"	"	B-01, T-1
Toluene	0.0089	0.032	0.0034	mg/kg dry	1	"	"	"	"	J
Xylenes (total)	0.063	0.095	0.010	mg/kg dry	1	"	"	"	"	J
Surrogate: 4-Fluorochlorobenzene	114			80-150 %		"	"	"	"	
Pump House 5-B-1_8-8 (1306023-05) Soil Sampled: 12/04/13 15:25 Received: 12/06/13 10:25										
1,2,4-Trimethylbenzene	<0.0051	0.036	0.0051	mg/kg dry	1	B3L1006	12/10/13	12/10/13	WI(95) GRO	

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161092 Project Number: 49161092.02 003 031 Project Manager: Ms. Andrea Nord	Work Order #: 1306023 Date Reported: 12/17/13
---	--	--

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

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Pump House 5-B-1_8-8 (1306023-05) Soil Sampled: 12/04/13 15:25 Received: 12/06/13 10:25										
1,3,5-Trimethylbenzene	<0.0056	0.036	0.0056	mg/kg dry	1	B3L1006	12/10/13	12/10/13	WI(95) GRO	
Benzene	<0.0045	0.036	0.0045	mg/kg dry	1	"	"	"	"	
Ethylbenzene	0.017	0.036	0.0031	mg/kg dry	1	"	"	"	"	B-01, J
Naphthalene	0.53	0.72	0.022	mg/kg dry	1	"	"	"	"	B-01, T-1, J
Toluene	<0.0039	0.036	0.0039	mg/kg dry	1	"	"	"	"	
Xylenes (total)	<0.012	0.11	0.012	mg/kg dry	1	"	"	"	"	
Surrogate: 4-Fluorochlorobenzene	115			80-150 %		"	"	"	"	
Pump House 5-S-5_2-2 (1306023-06) Soil Sampled: 12/04/13 16:30 Received: 12/06/13 10:25										
1,2,4-Trimethylbenzene	<0.0047	0.034	0.0047	mg/kg dry	1	B3L1006	12/10/13	12/10/13	WI(95) GRO	
1,3,5-Trimethylbenzene	<0.0053	0.034	0.0053	mg/kg dry	1	"	"	"	"	
Benzene	<0.0042	0.034	0.0042	mg/kg dry	1	"	"	"	"	
Ethylbenzene	0.019	0.034	0.0029	mg/kg dry	1	"	"	"	"	B-01, J
Naphthalene	<0.020	0.68	0.020	mg/kg dry	1	"	"	"	"	T-1
Toluene	<0.0036	0.034	0.0036	mg/kg dry	1	"	"	"	"	
Xylenes (total)	<0.011	0.10	0.011	mg/kg dry	1	"	"	"	"	
Surrogate: 4-Fluorochlorobenzene	113			80-150 %		"	"	"	"	
Pump House 5-S-6_1.5-1.5 (1306023-07) Soil Sampled: 12/04/13 16:40 Received: 12/06/13 10:25										
1,2,4-Trimethylbenzene	<0.0040	0.029	0.0040	mg/kg dry	1	B3L1006	12/10/13	12/10/13	WI(95) GRO	
1,3,5-Trimethylbenzene	<0.0045	0.029	0.0045	mg/kg dry	1	"	"	"	"	
Benzene	<0.0036	0.029	0.0036	mg/kg dry	1	"	"	"	"	
Ethylbenzene	<0.0025	0.029	0.0025	mg/kg dry	1	"	"	"	"	
Naphthalene	0.26	0.57	0.017	mg/kg dry	1	"	"	"	"	B-01, T-1, J
Toluene	<0.0031	0.029	0.0031	mg/kg dry	1	"	"	"	"	
Xylenes (total)	<0.0092	0.086	0.0092	mg/kg dry	1	"	"	"	"	
Surrogate: 4-Fluorochlorobenzene	104			80-150 %		"	"	"	"	
Pump House 5-B-2_7-7 (1306023-08) Soil Sampled: 12/04/13 16:35 Received: 12/06/13 10:25										
1,2,4-Trimethylbenzene	<0.0047	0.034	0.0047	mg/kg dry	1	B3L1006	12/10/13	12/10/13	WI(95) GRO	
1,3,5-Trimethylbenzene	<0.0052	0.034	0.0052	mg/kg dry	1	"	"	"	"	
Benzene	<0.0042	0.034	0.0042	mg/kg dry	1	"	"	"	"	
Ethylbenzene	0.019	0.034	0.0029	mg/kg dry	1	"	"	"	"	B-01, J
Naphthalene	<0.020	0.67	0.020	mg/kg dry	1	"	"	"	"	T-1
Toluene	<0.0036	0.034	0.0036	mg/kg dry	1	"	"	"	"	
Xylenes (total)	<0.011	0.10	0.011	mg/kg dry	1	"	"	"	"	
Surrogate: 4-Fluorochlorobenzene	106			80-150 %		"	"	"	"	
Trip Blank (1306023-09) Methanol Sampled: 12/04/13 00:00 Received: 12/06/13 10:25										
1,2,4-Trimethylbenzene	<0.0035	0.025	0.0035	mg/kg wet	1	B3L1006	12/10/13	12/10/13	WI(95) GRO	
1,3,5-Trimethylbenzene	<0.0039	0.025	0.0039	mg/kg wet	1	"	"	"	"	
Benzene	<0.0031	0.025	0.0031	mg/kg wet	1	"	"	"	"	

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161092 Project Number: 49161092.02 003 031 Project Manager: Ms. Andrea Nord	Work Order #: 1306023 Date Reported: 12/17/13
---	--	--

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

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Trip Blank (1306023-09) Methanol Sampled: 12/04/13 00:00 Received: 12/06/13 10:25										
Ethylbenzene	0.012	0.025	0.0022	mg/kg wet	1	B3L1006	12/10/13	12/10/13	WI(95) GRO	B-01, J
Naphthalene	<0.015	0.50	0.015	mg/kg wet	1	"	"	"	"	T-1
Toluene	<0.0027	0.025	0.0027	mg/kg wet	1	"	"	"	"	
Xylenes (total)	<0.0080	0.075	0.0080	mg/kg wet	1	"	"	"	"	
Surrogate: 4-Fluorochlorobenzene	103			80-150 %		"	"	"	"	

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161092 Project Number: 49161092.02 003 031 Project Manager: Ms. Andrea Nord	Work Order #: 1306023 Date Reported: 12/17/13
---	--	--

PERCENT SOLIDS
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Pump House 5-S-1_2-2 (1306023-01) Soil Sampled: 12/04/13 14:20 Received: 12/06/13 10:25										
% Solids	86			%	1	B3L1308	12/13/13	12/13/13	% calculation	
Pump House 5-S-2_7-7 (1306023-02) Soil Sampled: 12/04/13 14:25 Received: 12/06/13 10:25										
% Solids	78			%	1	B3L1308	12/13/13	12/13/13	% calculation	
Pump House 5-S-3_2.5-2.5 (1306023-03) Soil Sampled: 12/04/13 14:30 Received: 12/06/13 10:25										
% Solids	71			%	1	B3L1308	12/13/13	12/13/13	% calculation	
Pump House 5-S-4_6-6 (1306023-04) Soil Sampled: 12/04/13 15:20 Received: 12/06/13 10:25										
% Solids	79			%	1	B3L1308	12/13/13	12/13/13	% calculation	
Pump House 5-B-1_8-8 (1306023-05) Soil Sampled: 12/04/13 15:25 Received: 12/06/13 10:25										
% Solids	76			%	1	B3L1308	12/13/13	12/13/13	% calculation	
Pump House 5-S-5_2-2 (1306023-06) Soil Sampled: 12/04/13 16:30 Received: 12/06/13 10:25										
% Solids	74			%	1	B3L1308	12/13/13	12/13/13	% calculation	
Pump House 5-S-6_1.5-1.5 (1306023-07) Soil Sampled: 12/04/13 16:40 Received: 12/06/13 10:25										
% Solids	87			%	1	B3L1308	12/13/13	12/13/13	% calculation	
Pump House 5-B-2_7-7 (1306023-08) Soil Sampled: 12/04/13 16:35 Received: 12/06/13 10:25										
% Solids	70			%	1	B3L1308	12/13/13	12/13/13	% calculation	

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161092 Project Number: 49161092.02 003 031 Project Manager: Ms. Andrea Nord	Work Order #: 1306023 Date Reported: 12/17/13
---	--	--

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 B3L1006 - EPA 5035 Soil (Purge and Trap)

Blank (B3L1006-BLK1)

Prepared & Analyzed: 12/10/13

1,2,4-Trimethylbenzene	< 0.0035	0.025	0.0035	mg/kg wet							
1,3,5-Trimethylbenzene	< 0.0039	0.025	0.0039	mg/kg wet							
Benzene	< 0.0031	0.025	0.0031	mg/kg wet							
Ethylbenzene	0.00945	0.025	0.0022	mg/kg wet							B-02, J
Naphthalene	0.225	0.50	0.015	mg/kg wet							B-02, J
Toluene	< 0.0027	0.025	0.0027	mg/kg wet							
Xylenes (total)	< 0.0080	0.075	0.0080	mg/kg wet							
<i>Surrogate: 4-Fluorochlorobenzene</i>	26.2			ug/L	25.0		105	80-150			

LCS (B3L1006-BS1)

Prepared & Analyzed: 12/10/13

1,2,4-Trimethylbenzene	119			ug/L	100		119	80-120			
1,3,5-Trimethylbenzene	110			ug/L	100		110	80-120			
Benzene	104			ug/L	100		104	80-120			
Ethylbenzene	111			ug/L	100		111	80-120			
Naphthalene	111			ug/L	100		111	80-120			
Toluene	106			ug/L	100		106	80-120			
Xylenes (total)	328			ug/L	300		109	80-120			
<i>Surrogate: 4-Fluorochlorobenzene</i>	26.5			ug/L	25.0		106	80-150			

LCS Dup (B3L1006-BSD1)

Prepared & Analyzed: 12/10/13

1,2,4-Trimethylbenzene	114			ug/L	100		114	80-120	3.79	20	
1,3,5-Trimethylbenzene	105			ug/L	100		105	80-120	4.42	20	
Benzene	104			ug/L	100		104	80-120	0.304	20	
Ethylbenzene	108			ug/L	100		108	80-120	3.07	20	
Naphthalene	119			ug/L	100		119	80-120	6.93	20	
Toluene	104			ug/L	100		104	80-120	2.21	20	
Xylenes (total)	313			ug/L	300		104	80-120	4.50	20	
<i>Surrogate: 4-Fluorochlorobenzene</i>	26.6			ug/L	25.0		106	80-150			

Matrix Spike (B3L1006-MS1)

Source: 1306023-06

Prepared & Analyzed: 12/10/13

1,2,4-Trimethylbenzene	120			ug/L	100	<	120	80-120			
1,3,5-Trimethylbenzene	111			ug/L	100	<	111	80-120			
Benzene	102			ug/L	100	<	102	80-120			
Ethylbenzene	110			ug/L	100	0.277	110	80-120			
Naphthalene	108			ug/L	100	<	108	80-120			
Toluene	104			ug/L	100	<	104	80-120			
Xylenes (total)	321			ug/L	300	<	107	80-120			
<i>Surrogate: 4-Fluorochlorobenzene</i>	25.6			ug/L	25.0		102	80-150			

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161092 Project Number: 49161092.02 003 031 Project Manager: Ms. Andrea Nord	Work Order #: 1306023 Date Reported: 12/17/13
---	--	--

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 B3L1308 - General Preparation												
Duplicate (B3L1308-DUP1)							Source: 1306027-01					Prepared & Analyzed: 12/13/13
% Solids	85.0			%		86.0			1.17	20		
Duplicate (B3L1308-DUP2)							Source: 1306081-09					Prepared & Analyzed: 12/13/13
% Solids	92.0			%		93.0			1.08	20		
Duplicate (B3L1308-DUP3)							Source: 1306081-18					Prepared & Analyzed: 12/13/13
% Solids	81.0			%		80.0			1.24	20		

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161092 Project Number: 49161092.02 003 031 Project Manager: Ms. Andrea Nord	Work Order #: 1306023 Date Reported: 12/17/13
---	--	--

Notes and Definitions

T-1	MDH does not offer certification for this parameter.
J	Parameter was present between the MDL and RL and should be considered an estimated value
B-02	Target analyte was present in the method blank between the MDL and RL.
B-01	Analyte was present in the method blank. Sample result is less than or equal to 10 times the blank concentration.
<	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)

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

1306023

Project Number: U9/16-1092.02 003 031
 Project Name: Enbridge - Pump House 5 excavation
 Sample Origination State WI (use two letter postal state abbreviation)
 COC Number: **№ 41310**

Number of Containers/Preservative		COC <u>1</u> of <u>1</u>
Water	Soil	
VOCs (unpreserved) #1	VOCs (unpreserved) #2	Total Number Of Containers
Dissolved Metals (HNO ₃)	VOCs (lared MeOH) #1	
Total Metals (HNO ₃)	GRX, BTEX (lared MeOH) #1	
General (unpreserved) #3	DRO (lared unpreserved)	
Diesel Range Organics (HCl)	Metals (unpreserved)	
Nutrients (H ₂ SO ₄) #4	SVOCS (unpreserved) #2	
	% Solids (plastic vial, unpres.)	
	<u>PVC - mbe (1 unpreserved)</u>	

Project Manager: REE
 Project QC Contact: AAN
 Sampled by: HEW
 Laboratory: Legend

Location	Start Depth	Stop Depth	Depth Unit (m or in.)	Collection Date (mm/dd/yyyy)	Collection Time (hh:mm)	Matrix		Type	VOCs (HCl) #1	SVOCS (unpreserved) #2	Dissolved Metals (HNO ₃)	Total Metals (HNO ₃)	General (unpreserved) #3	Diesel Range Organics (HCl)	Nutrients (H ₂ SO ₄) #4	VOCs (lared MeOH) #1	GRX, BTEX (lared MeOH) #1	DRO (lared unpreserved)	Metals (unpreserved)	SVOCS (unpreserved) #2	% Solids (plastic vial, unpres.)	PVC - mbe (1 unpreserved)	Total Number Of Containers	
						Water	Soil																	
1. Pump House 5-S-1			2	12/04/2013	14:20	X	X																1 2 3	Regular TAT
2. Pump House 5-S-2			7	12/04/2013	14:25	X	X																1 2 3	for all
3. Pump House 5-S-3			2.5	12/04/2013	14:30	X	X																1 2 3	samples
4. Pump House 5-S-4			6	12/04/2013	15:20	X	X																1 2 3	
5. Pump House 5-B-1			9	12/04/2013	15:25	X	X																1 2 3	
6. Pump House 5-S-5			2	12/04/2013	16:30	X	X																1 2 3	
7. Pump House 5-S-6			1.5	12/04/2013	16:40	X	X																1 2 3	
8. Pump House 5-B-2			7	12/04/2013	16:35	X	X																1 2 3	
9. Field blank			-	12/04/2013	16:45																		1	
10.																								

Common Parameter/Container - Preservation Key
 #1 - Volatile Organics = BTEX, GRX, 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, TRN

Relinquished By: Walter Knight On Ice? N Date: 12/5/13 Time: 10:45 Received by: ll Date: 12/1/13 Time: 10:25
 Relinquished By: ll On Ice? N Date: 12/1/13 Time: 10:25 Received by: ll Date: 12/1/13 Time: 10:25
 Samples Shipped VIA: Air Freight Federal Express Sampler Air Bill Number: 0000
 Other: _____

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

Legend Technical Services, Inc.
 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.

Attachment D

Waste Disposal Documentation

P.O. Number	Customer Code	SKB Representative	CL
-------------	---------------	--------------------	----

I. Generator Information

Generator Name: Enbridge Pipelines Limited Partnership, LLC		Generator EPA ID Number	SIC Code
Generator Location: Enbridge Superior Terminal - Pump House 5 Excavation	County: Douglas	Generator Contact: Alex Smith	
Generator Mailing Address (if different: 1320 Grand Ave, Superior, WI 54880)		Phone: 715-398-4795	Fax: 832-325-5511
Bill To Name & Address: Enbridge Energy, 1100 Louisiana Ave, STE. 3300, Houston, TX 77002		Bill To #:	Billing Contact: Alex Smith
Invoice Contact:		Phone: 715-398-4795	Fax: 832-325-5511
		Billing Email Address: alex.smith@enbridge.com	

II. Waste Generation Information

Waste Name: Crude contaminated soil - Pump House 5 Excavation	Estimated rate of waste generation: <u>1500</u> <input type="checkbox"/> Lbs. <input type="checkbox"/> tons <input checked="" type="checkbox"/> cy <input type="checkbox"/> drums	<input checked="" type="checkbox"/> one time <input type="checkbox"/> yearly
Generator Facility Operations and/or Site History: Enbridge Pipeline Terminal		
Describe the generating process or source of contaminated soil/debris and/or waste: Pump House 5 Excavation		

III. Waste Composition and Constituents (list all known)

	Actual Range	
	%	ppm
Crude oil impacted soil	100	

IV. Waste Properties

Physical state: <input checked="" type="checkbox"/> Solid <input type="checkbox"/> Liquid <input type="checkbox"/> Sludge <input type="checkbox"/> Gas	Free Liquids: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Content _____ %	pH Range: <input type="checkbox"/> <2 <input type="checkbox"/> 2-4 <input type="checkbox"/> 5-8 <input type="checkbox"/> 8-12.4 <input type="checkbox"/> >12.5	Flash point: <input type="checkbox"/> ≤ 140°F <input type="checkbox"/> > 140°F to < 200°F <input type="checkbox"/> > 200°F	Color: Brown	Odor (describe): petroleum odor
--	---	---	---	-----------------	------------------------------------

V. Waste Classification

Waste stream properties (answer ALL questions)	Does this waste contain absorbents? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Does this waste stream contain any D, F, K, U or P listed as hazardous waste, either in pure form, as a mixture, or treatment residue? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Is this waste lethal (by Minn. Rules 7045.0131 Subp. 6)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Does this waste stream contain PCB material If yes, concentration: _____ ppm <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Is this waste recyclable? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Does this waste stream contain fuming acids? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Is this waste explosive? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Does this waste contain asbestos? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Is this waste infectious? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Does this waste contain oxidizers? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Is this putrescible waste? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Does this waste contain radioactive material? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Is this waste demolition debris? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
	Is this waste sewer sludge? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Please attach any available information or analytical test results that have previously been performed on this waste that substantiates these determinations. Include MSDS's and any information from other agencies (i.e., MPCA, USEPA)	

VI. Shipping Information

Proper DOT Shipping Name (per CFR 172.101) where applicable			
Reportable Quantity	DOT Hazard Class	UN/NA Number	Packing Group
Method of packaging: <input type="checkbox"/> drums (size _____) <input checked="" type="checkbox"/> Bulk Solids <input type="checkbox"/> boxes (size _____)		Method of shipment <input type="checkbox"/> Roll-off <input checked="" type="checkbox"/> End dump <input type="checkbox"/> Rail <input type="checkbox"/> Other (Specify) _____	

VII. Certification of Non Hazardous Waste & Approval Conditions

I hereby certify and warrant, on behalf of the generator and myself that, to the best of my knowledge and belief, the information contained herein is accurate, and true and that the waste is nonhazardous as defined in Title 42, Unites States Code Section 6903, Minnesota Statute Section 116.06, Subdivision 13, and/or any rules adopted by the Minnesota Pollution Control Agency under Minnesota Statute Section 116.07.

I understand that any approval is no longer valid if there are any changes in the process generating the waste or there have been changes in the composition of the waste. Therefore, if the composition of the waste stream changes or potentially changes, I or someone representing the generator, will immediately notify SKB Environmental. I, on behalf of the generator, hereby agree to fully indemnify SKB Environmental for any damages and/or costs incurred as a result of this certification being inaccurate or untrue.

	Alex Smith	Environmental Analyst	11/8/13
Signature	Printed Name	Title	Date

November 11, 2013

Karl Beaster
Enbridge Pipelines Limited Partnership, LLC
Accounts Payable
1100 Louisiana Ave, Ste 3300
Houston, TX 77002

RE: CL13-0061 Crude Contaminated Soil - Pump House 5

Dear Mr. Beaster,

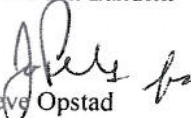
This agreement will confirm the price and length of service for disposal and /or transportation of your non-hazardous industrial material at our facility. This agreement is for the term of the Waste Approval granted by Shamrock Landfill and is for all services ordered and performance initiated within such period and does include the disposal surcharge fees which you are obligated to pay as of the date of this agreement. Shamrock Landfill may incur additional costs including but not limited to increases in state and local taxes. Shamrock Landfill may pass these costs on to the customer only after notification to the Customer. This agreement grants Shamrock Landfill the exclusive right to dispose of the referenced waste for the term of this agreement. This agreement shall automatically renew thereafter for an additional term of 24 months "Renewal Term" unless either party gives the other party written notification of termination at least 90 days prior to the termination of the then-existing term. Shamrock Landfill will notify the customer prior to the expiration of the agreement of any rate changes prior to the start of the Renewal Term.

Payment and terms are net thirty (30) days. Interest will be charged at a rate of 1 ½% per month (18% annually) on any unpaid balance 30 days after the date of the invoice. In the event Customer terminates this Agreement prior to its expiration other than as a result of a breach by Shamrock Landfill or Shamrock Landfill terminates this agreement for Customer's breach (including nonpayment) Customer agrees to pay to Shamrock Landfill as liquidated damages a sum calculated as follows: (1) if the remaining term under this agreement is six or more months Customer shall pay its average monthly charges multiplied by six: or (2) if the remaining term under this agreement is less than six months Customer shall pay its average monthly charge multiplied by the number of months remaining in the term. Customer expressly acknowledges that in the event of an unauthorized termination of this agreement the anticipated loss to Shamrock Landfill in such event is estimated to be the amount set forth in the foregoing liquidated damages provision and such estimated value is reasonable and is not imposed as a penalty.

These prices are based on an approved waste stream composition. In the event that a non-conforming waste is received, you will be notified of additional charges, when applicable.

To accept this agreement, please sign one copy and return it to our St. Paul, MN office at Shamrock Landfill, 251 Starkey St., St. Paul, MN 55107 or Via Fax at 651-223-8197 or email to sopstad@skbinc.com.

Shamrock Landfill


Steve Opstad

Customer ACCEPTED BY: (name, position) Alex Smith, Environmental Analyst

DATE: 11 November 2013 AW/STAD

WASTE APPROVAL Period: 11/11/2013 to 11/4/2015

Bill To Customer

Enbridge Pipelines Limited Partnership, LLC
Accounts Payable
1100 Louisiana Ave, Ste 3300
Houston, TX 77002

Service For Generator

Enbridge Pipelines Limited Partnership, LLC
2800 East 21st St
Superior, WI 54880

Disposal

Waste Description: Crude Contaminated Soil - Pump House 5

Estimated Volume: 1500 YARDS / ONE TIME ONLY

Disposal Method: Secure Non-Hazardous Landfill

Treatment Method: None Expected For Conforming Waste

Pricing

Disposal	\$16.00	Per Ton	Crude Contaminated Soil - Pump House 5
----------	---------	---------	--

Notification of Waste Acceptance

PAGE 1 of 2
11/11/2013

CUSTOMER INFORMATION

EPA ID#: WID981092133
Enbridge Pipelines Limited Partnership,
Enbridge Superior Terminal

2800 East 21st St
Superior, WI 54880
Contact: Karl Beaster
Phone: (715) 398-4795

INVOICE INFORMATION

Bill #: 2133
Enbridge Pipelines Limited Partnership,
Accounts Payable

1100 Louisiana Ave, Ste 3300
Houston, TX 77002
Contact: Karl Beaster
Phone: (715) 398-4795

Profile Sheet #:
Waste Stream #: CL13-0061
Waste Name: Crude Contaminated Soil - Pump House 5

Thank you for selecting SHAMROCK LANDFILL for your waste management requirements. Your waste stream has been reviewed and is acceptable for management at our facility based on the information provided in the profile sheet number listed above and conditions below. Our facility has the necessary permits to allow the storage, treatment, or disposal of this waste. The above referenced acceptance number should be listed on all shipping documents and correspondence. Please retain these documents for your records and future reference.

To schedule a shipment, or should you have any questions, please contact the facility at (218) 878-0112.

ACCEPTANCE INFORMATION

The waste stream identified by the reference above is acceptable for disposal.
The anticipated frequency of shipment is 1500 YARDS / ONE TIME ONLY

This waste is acceptable for delivery beginning on 11/11/2013 thru 11/4/2015 at which time the material will need to be reanalyzed and recertified.

PCB Statement: The Minnesota Pollution Control Agency encourages generators of non-hazardous PCB waste to voluntarily manage the waste as hazardous waste or to seek an alternative to land disposal such as incineration

Spill Reporting Reminder: Proper County and MPCA spill reporting procedures must be followed.

Empty Container Statement: Each shipment containing empty containers must be accompanied with a completed 'EMPTY CONTAINER CERTIFICATION FORM'.

Free Liquid Statement: Free liquids will not be placed in cells at Shamrock Landfill. Free liquids must be solidified either prior to shipment to Shamrock Landfill or at Shamrock Landfill.

Shipping Requirements A NON-HAZARDOUS certificate is required to be on file, certifying the waste is non-hazardous as specified per 40 CFR 261.4. The shipment must be accompanied with an Shamrock Landfill manifest.

WASTE STREAM ANALYSIS INFORMATION

Waste Name: Crude Contaminated Soil - Pump House 5
Physical State: Solid
Process Producing Waste: Pump House 5 Excavation

PRE-ACCEPTANCE SAMPLE RESULTS

Color:		Physical State:	
Dust Present:	0	Free Liquids:	0
Paint Filter Test:	0	Odor:	
Flash Point Range:		Density:	
Radioactive?:	0	Water Reactivity:	0
pH Range:		React to Acid:	0
React to Base:	0	% Moisture:	
OVM Sniff:		Sulfide:	
Oxidizers:	0	Cyanide:	
Reacts with Air:	0		

This analysis is solely for use by Shamrock Landfill employees for the purpose of determining waste acceptability. No other claims are made or implied.

COMMENTS

AUTHORIZATION

Approval: _____



Date: _____

11/11/13

REPORT NAME: **Tons Each Load By WSID**
 DESCRIPTION: **Tonnage for EACH LOAD, grouped by customer**
 DATE RANGE: **01/01/2013 to 12/19/2013**
 PRINTED ON (DATE): **Thursday, December 19, 2013**

ENBS1

Enbridge Pipelines Limited Partnership,
 2800 East 21st St
 Superior WI 54880

LOAD #	MANIFEST	ARRIVED	WASTE STREAM	WASTE NAME	CELL	SPOT	LIFT	TONS
15592 (A)	17056	11/14/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	X33	1175	15.68
15593 (A)	17057	11/14/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	X34	1175	16.37
15595 (A)	17059	11/14/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	X33	1175	19.47
15596 (A)	16966	11/14/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	X33	1175	21.88
15602 (A)	16968	11/14/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	Y33	1175	18.14
15603 (A)	16990	11/14/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	Y33	1175	16.74
15604 (A)	16967	11/14/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	X33	1175	21.82
15606 (A)	16991	11/14/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	Y33	1175	22.21
15611 (A)	17002	11/14/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	Y33	1175	18.73
15612 (A)	16969A	11/14/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	Y33	1175	18.54
15613 (A)	16992	11/14/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	Y33	1175	17.35
15616 (A)	16993	11/14/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	X33	1175	23.44
15618 (A)	16998	11/14/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	X33	1175	21.99
15623 (A)	16997	11/14/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	X34	1175	16.30
15624 (A)	16999	11/14/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	X34	1175	16.65
15625 (A)	17000	11/14/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	X34	1175	14.38
15626 (A)	16996	11/14/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	X34	1175	21.87
15627 (A)	16994	11/14/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	X34	1175	20.73
15629 (A)	16995	11/14/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	X34	1175	16.57
15630 (A)	16970	11/14/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	X34	1175	16.78
15631 (A)	17058	11/14/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	X34	1175	15.62
15633 (A)	16971	11/14/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	X34	1175	20.89
15635 (A)	17001	11/14/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	X34	1175	25.31
15645 (A)	16972	11/15/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	W34	1175	18.45
15646 (A)	16973	11/15/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	W34	1175	16.20
15647 (A)	013554	11/15/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	W34	1175	20.89
15648 (A)	013555	11/15/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	W34	1175	25.11
15653 (A)	013556	11/15/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	W33	1175	22.25
15654 (A)	013557	11/15/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	W34	1175	21.03
15655 (A)	013558	11/15/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	W33	1175	20.61
15656 (A)	013559	11/15/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	W33	1175	24.50
15660 (A)	013560	11/15/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	W33	1175	17.60
15661 (A)	013561	11/15/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	W33	1175	13.73
15662 (A)	013562	11/15/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	W33	1175	18.62
15663 (A)	013563	11/15/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	W33	1175	21.23
15668 (A)	13564	11/15/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	W33	1175	17.70
15671 (A)	13565	11/15/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	W34	1175	14.87
15672 (A)	13566	11/15/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	W33	1175	20.67
15673 (A)	13567	11/15/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	W33	1175	23.08
15675 (A)	013568	11/15/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	W34	1175	17.50
15676 (A)	013571	11/15/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	W34	1175	14.72
15677 (A)	013569	11/15/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	W34	1175	20.39
15678 (A)	013570	11/15/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	W33	1175	22.27
15690 (A)	013573	11/18/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	W34	1175	17.49
15692 (A)	013574	11/18/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	W34	1175	17.00
15694 (A)	013575	11/18/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	W34	1175	19.74
15698 (A)	013576	11/18/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	W34	1175	16.52
15699 (A)	013577	11/18/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	W34	1175	13.64
15701 (A)	013578	11/18/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	W34	1175	21.29
15705 (A)	013579	11/18/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	W34	1175	19.62

15706 (A)	013580	11/18/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	W34	1175	15.77
15707 (A)	013581	11/18/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	W34	1175	25.04
15715 (A)	013582	11/18/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	W34	1175	16.94
15758 (A)	013583	11/20/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	T33	1175	20.92
15759 (A)	013584	11/20/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	U33	1175	16.19
15760 (A)	013585	11/20/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	U34	1175	18.83
15763 (A)	013586	11/20/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	U33	1175	15.66
15765 (A)	013587	11/20/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	U33	1175	16.10
15775 (A)	013588	11/20/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	U33	1175	18.98
15776 (A)	013589	11/20/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	V34	1175	15.85
15777 (A)	013590	11/20/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	U33	1175	19.77
15784 (A)	13591	11/20/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	V34	1175	16.77
15785 (A)	13593	11/20/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	V34	1175	16.05
15787 (A)	13594	11/20/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	V34	1175	15.45
15791 (A)	013597	11/20/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	V34	1175	18.25
15794 (A)	013596	11/20/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	V34	1175	17.35
15795 (A)	013595	11/20/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	V34	1175	15.69
15805 (A)	013598	11/21/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	V34	1175	16.49
15807 (A)	013628	11/21/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	V33	1175	17.19
15811 (A)	013599	11/21/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	V33	1175	18.02
15812 (A)	13600	11/21/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	V33	1175	17.08
15820 (A)	13640	11/21/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	V33	1175	18.14
15821 (A)	13639	11/21/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	V33	1175	17.41
15827 (A)	013642	11/21/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	V34	1175	16.10
15828 (A)	013641	11/21/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	V33	1175	13.85
15831 (A)	13643	11/21/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	V33	1175	17.55
15832 (A)	013644	11/21/2013	CL13-0061	Crude Contaminated Soil - Pump H	2A	V34	1175	17.56
15879 (A)	013646	11/25/2013	CL13-0061	Crude Contaminated Soil - Pump H	1A	S32	1175	16.78
15880 (A)	013645	11/25/2013	CL13-0061	Crude Contaminated Soil - Pump H	1A	S32	1175	16.87
15881 (A)	013647	11/25/2013	CL13-0061	Crude Contaminated Soil - Pump H	1A	S32	1175	14.78
15888 (A)	013658	11/25/2013	CL13-0061	Crude Contaminated Soil - Pump H	1A	S33	1175	16.82
15889 (A)	13657	11/25/2013	CL13-0061	Crude Contaminated Soil - Pump H	1A	S33	1175	13.23
15891 (A)	13656	11/25/2013	CL13-0061	Crude Contaminated Soil - Pump H	1A	S33	1175	17.24
15896 (A)	13655	11/25/2013	CL13-0061	Crude Contaminated Soil - Pump H	1A	R33	1175	16.95
15897 (A)	13654	11/25/2013	CL13-0061	Crude Contaminated Soil - Pump H	1A	R33	1175	17.76
15899 (A)	13653	11/25/2013	CL13-0061	Crude Contaminated Soil - Pump H	1A	R33	1175	17.13
15901 (A)	013651	11/25/2013	CL13-0061	Crude Contaminated Soil - Pump H	1A	R33	1175	17.30
15902 (A)	13652	11/25/2013	CL13-0061	Crude Contaminated Soil - Pump H	1A	S33	1175	14.50
15904 (A)	13650	11/25/2013	CL13-0061	Crude Contaminated Soil - Pump H	1A	R33	1175	19.27
15911 (A)	13648	11/25/2013	CL13-0061	Crude Contaminated Soil - Pump H	1A	R33	1175	16.82
15912 (A)	13649	11/25/2013	CL13-0061	Crude Contaminated Soil - Pump H	1A	R33	1175	15.47
15913 (A)	13602	11/25/2013	CL13-0061	Crude Contaminated Soil - Pump H	1A	R33	1175	17.69
15916 (A)	013601	11/25/2013	CL13-0061	Crude Contaminated Soil - Pump H	1A	R33	1175	18.33
15917 (A)	013603	11/25/2013	CL13-0061	Crude Contaminated Soil - Pump H	1A	Q33	1175	16.31
15922 (A)	13604	11/26/2013	CL13-0061	Crude Contaminated Soil - Pump H	1A	Q33	1175	14.50
15924 (A)	13605	11/26/2013	CL13-0061	Crude Contaminated Soil - Pump H	1A	Q33	1175	16.15
15925 (A)	13606	11/26/2013	CL13-0061	Crude Contaminated Soil - Pump H	1A	Q33	1175	16.52
15932 (A)	13607	11/26/2013	CL13-0061	Crude Contaminated Soil - Pump H	1A	Q33	1175	15.15
15933 (A)	13608	11/26/2013	CL13-0061	Crude Contaminated Soil - Pump H	1A	Q33	1175	16.55
15934 (A)	013609	11/26/2013	CL13-0061	Crude Contaminated Soil - Pump H	1A	Q33	1175	17.57
15941 (A)	013612	11/26/2013	CL13-0061	Crude Contaminated Soil - Pump H	1A	Q32	1175	18.62
15943 (A)	013611	11/26/2013	CL13-0061	Crude Contaminated Soil - Pump H	1A	Q32	1175	17.39
15944 (A)	013610	11/26/2013	CL13-0061	Crude Contaminated Soil - Pump H	1A	Q32	1175	14.59
15950 (A)	13613	11/26/2013	CL13-0061	Crude Contaminated Soil - Pump H	1A	Q32	1175	16.17
15951 (A)	13614	11/26/2013	CL13-0061	Crude Contaminated Soil - Pump H	1A	Q32	1175	14.41
15952 (A)	13615	11/26/2013	CL13-0061	Crude Contaminated Soil - Pump H	1A	Q32	1175	16.02
16318 (A)	13638	12/17/2013	CL13-0061	Crude Contaminated Soil - Pump H	1A	W37	1175	8.38
16319 (A)	13631	12/17/2013	CL13-0061	Crude Contaminated Soil - Pump H	1A	W37	1175	11.27
16320 (A)	13637	12/17/2013	CL13-0061	Crude Contaminated Soil - Pump H	1A	W37	1175	10.21
16325 (A)	13629	12/17/2013	CL13-0061	Crude Contaminated Soil - Pump H	1A	W37	1175	12.20
16328 (A)	13636	12/17/2013	CL13-0061	Crude Contaminated Soil - Pump H	1A	W37	1175	9.19

16329 (A)	13635	12/17/2013	CL13-0061	Crude Contaminated Soil - Pump H	1A	W37	1175	13.60
16330 (A)	13634	12/17/2013	CL13-0061	Crude Contaminated Soil - Pump H	1A	W37	1175	12.90
16336 (A)	13633	12/17/2013	CL13-0061	Crude Contaminated Soil - Pump H	1A	W37	1175	11.64
16338 (A)	13619	12/17/2013	CL13-0061	Crude Contaminated Soil - Pump H	1A	W37	1175	13.27
16339 (A)	13618	12/17/2013	CL13-0061	Crude Contaminated Soil - Pump H	1A	W37	1175	11.96
16340 (A)	13620	12/17/2013	CL13-0061	Crude Contaminated Soil - Pump H	1A	W37	1175	12.27
16341 (A)	13621	12/17/2013	CL13-0061	Crude Contaminated Soil - Pump H	1A	W37	1175	13.43
16346 (A)	13623	12/17/2013	CL13-0061	Crude Contaminated Soil - Pump H	1A	W37	1175	12.31
16349 (A)	13622	12/17/2013	CL13-0061	Crude Contaminated Soil - Pump H	1A	W37	1175	12.67
16350 (A)	13632	12/17/2013	CL13-0061	Crude Contaminated Soil - Pump H	1A	W37	1175	10.95
16351 (A)	13630	12/17/2013	CL13-0061	Crude Contaminated Soil - Pump H	1A	W37	1175	14.90

Total # of Loads: 122

Total Tons: 2,091.22

Grand Total (Tons): 2,091.22
Grand Total (Loads): 122

LOAD TICKET



SHAMROCK LANDFILL



752 Highway 45 • Cloquet, MN 55720
Main Office: (651) 224-6329

Industrial

No.: 415928

DATE: 5/9/2014

TIME: 10:15:28 AM (IN)

TIME: 10:15:28 AM (OUT)

CUSTOMER NO.: 2133

CUSTOMER NAME / CUSTCODE: Enbridge Pipelines Limited Partnership, LLC (E

ORIGIN / JOB ADDRESS: 2800 East 21st St

CITY: Superior COUNTY: Douglas

HAULER: Udeen

TRUCK #: U22

LOAD #: 19854

WSID: CL13-0061

MANIFEST #: 13685

TYPE OF MATERIAL: _____

GROSS:	<u>57180</u>
TARE:	<u>28600</u>
NET:	<u>28580</u>
TONS:	<u>14.29</u>
YARDS:	_____
BOX SIZE:	_____

Crude Contaminated Soil - Pump House 5

LICENSE PLATE: 36745W

WEIGHMASTER: Maynard

PLATE STATE: WI

DRIVER'S SIGNATURE: _____

OF AXLES: 5

This facility will only accept non-hazardous waste from industrial and construction/demolition projects.

We will not accept any loads containing any non-approved wastes or hazardous waste.



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

November 07, 2013

Ms. Andrea Nord
Barr Engineering Co.
4700 W 77th St
Minneapolis, MN 55435

Work Order Number: 1305469
RE: 49161092

Enclosed are the results of analyses for samples received by the laboratory on 11/05/13. 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.

WI Accreditation #998022410

Prepared by,
LEGEND TECHNICAL SERVICES, INC

A handwritten signature in black ink, appearing to read "Bach Pham".

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

A handwritten signature in blue ink, appearing to read "Samantha Jaworski".

Samantha Jaworski
Manager, Organics
sjaworski@legend-group.com

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161092 Project Number: 49161092 Project Manager: Ms. Andrea Nord	Work Order #: 1305469 Date Reported: 11/07/13
---	---	--

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Pump House 5-Stockpile-1	1305469-01	Soil	11/04/13 10:30	11/05/13 09:25

Shipping Container Information

Default Cooler Temperature (°C): 2.2

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: No

Case Narrative:

The dry weight correction and dilution applies to the sample result, MDL, and RL.

Ethylbenzene was present in the method blank between the MDL and RL for the BTEX analysis.

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161092 Project Number: 49161092 Project Manager: Ms. Andrea Nord	Work Order #: 1305469 Date Reported: 11/07/13
---	---	--

DRO/8015D
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Pump House 5-Stockpile-1 (1305469-01) Soil Sampled: 11/04/13 10:30 Received: 11/05/13 9:25										
Diesel Range Organics	120	9.5	1.2	mg/kg dry	1	B3K0505	11/05/13	11/05/13	WI(95) DRO	
Surrogate: <i>Triacotane (C-30)</i>	102			70-130 %		"	"	"	"	

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161092 Project Number: 49161092 Project Manager: Ms. Andrea Nord	Work Order #: 1305469 Date Reported: 11/07/13
---	---	--

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

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Pump House 5-Stockpile-1 (1305469-01) Soil Sampled: 11/04/13 10:30 Received: 11/05/13 9:25										
Benzene	0.040	0.032	0.0040	mg/kg dry	1	B3K0508	11/05/13	11/05/13	WI(95) GRO	
Ethylbenzene	0.098	0.032	0.0028	mg/kg dry	1	"	"	"	"	B-01
Toluene	0.016	0.032	0.0035	mg/kg dry	1	"	"	"	"	J
Xylenes (total)	0.13	0.096	0.010	mg/kg dry	1	"	"	"	"	
Surrogate: 4-Fluorochlorobenzene	114			80-150 %		"	"	"	"	

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161092 Project Number: 49161092 Project Manager: Ms. Andrea Nord	Work Order #: 1305469 Date Reported: 11/07/13
---	---	--

PERCENT SOLIDS
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Pump House 5-Stockpile-1 (1305469-01) Soil Sampled: 11/04/13 10:30 Received: 11/05/13 9:25										
% Solids	78			%	1	B3K0607	11/06/13	11/06/13	% calculation	

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161092 Project Number: 49161092 Project Manager: Ms. Andrea Nord	Work Order #: 1305469 Date Reported: 11/07/13
---	---	--

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 B3K0505 - Sonication (Wisc DRO)											
Blank (B3K0505-BLK1)											
						Prepared & Analyzed: 11/05/13					
Diesel Range Organics	< 0.99	8.0	0.99	mg/kg wet							
Surrogate: <i>Triacontane (C-30)</i>	15.2			mg/kg wet	16.0		94.7	70-130			
LCS (B3K0505-BS1)											
						Prepared & Analyzed: 11/05/13					
Diesel Range Organics	62.4	8.0	0.99	mg/kg wet	64.0		97.5	70-120			
Surrogate: <i>Triacontane (C-30)</i>	15.1			mg/kg wet	16.0		94.5	70-130			
LCS Dup (B3K0505-BSD1)											
						Prepared & Analyzed: 11/05/13					
Diesel Range Organics	63.2	8.0	0.99	mg/kg wet	64.0		98.8	70-120	1.34	20	
Surrogate: <i>Triacontane (C-30)</i>	15.2			mg/kg wet	16.0		95.2	70-130			

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161092 Project Number: 49161092 Project Manager: Ms. Andrea Nord	Work Order #: 1305469 Date Reported: 11/07/13
---	---	--

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 B3K0508 - EPA 5035 Soil (Purge and Trap)											
Blank (B3K0508-BLK1)						Prepared & Analyzed: 11/05/13					
Benzene	< 0.0031	0.025	0.0031	mg/kg wet							
Ethylbenzene	0.0138	0.025	0.0022	mg/kg wet							B-02, J
Toluene	< 0.0027	0.025	0.0027	mg/kg wet							
Xylenes (total)	< 0.0080	0.075	0.0080	mg/kg wet							
Surrogate: 4-Fluorochlorobenzene	24.2			ug/L	25.0		96.8	80-150			
LCS (B3K0508-BS1)						Prepared & Analyzed: 11/05/13					
Benzene	99.8			ug/L	100		99.8	80-120			
Ethylbenzene	107			ug/L	100		107	80-120			
Toluene	101			ug/L	100		101	80-120			
Xylenes (total)	310			ug/L	300		103	80-120			
Surrogate: 4-Fluorochlorobenzene	25.1			ug/L	25.0		100	80-150			
LCS Dup (B3K0508-BSD1)						Prepared & Analyzed: 11/05/13					
Benzene	97.7			ug/L	100		97.7	80-120	2.15	20	
Ethylbenzene	102			ug/L	100		102	80-120	4.94	20	
Toluene	100			ug/L	100		100	80-120	1.09	20	
Xylenes (total)	299			ug/L	300		99.8	80-120	3.49	20	
Surrogate: 4-Fluorochlorobenzene	26.4			ug/L	25.0		105	80-150			
Matrix Spike (B3K0508-MS1)						Source: 1305468-01 Prepared & Analyzed: 11/05/13					
Benzene	103			ug/L	100	<	103	80-120			
Ethylbenzene	107			ug/L	100	0.188	107	80-120			
Toluene	106			ug/L	100	<	106	80-120			
Xylenes (total)	319			ug/L	300	<	106	80-120			
Surrogate: 4-Fluorochlorobenzene	27.2			ug/L	25.0		109	80-150			

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161092 Project Number: 49161092 Project Manager: Ms. Andrea Nord	Work Order #: 1305469 Date Reported: 11/07/13
---	---	--

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 B3K0607 - General Preparation											
Duplicate (B3K0607-DUP1)		Source: 1305497-02				Prepared & Analyzed: 11/06/13					
% Solids	80.0			%		80.0			0.00	20	

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161092 Project Number: 49161092 Project Manager: Ms. Andrea Nord	Work Order #: 1305469 Date Reported: 11/07/13
---	---	--

Notes and Definitions

J	Parameter was present between the MDL and RL and should be considered an estimated value
B-02	Target analyte was present in the method blank between the MDL and RL.
B-01	Analyte was present in the method blank. Sample result is less than or equal to 10 times the blank concentration.
<	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)

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

13054609

Project Number: 49161092
 Project Name: Enbridge Superior Terminal Pump House 5 soil
 Sample Origination State: WL (use two letter postal state abbreviation)
 COC Number: No 41359

Number of Containers/Preservative		COC	Project Manager: REG																				
Water	Soil			Project QC Contact: ADN																			
VOCs (unpreserved) #2 Dissolved Metals (HNO ₃) Total Metals (HNO ₃) General (unpreserved) #2 Diesel Range Organics (HCl) Nutrients (H ₂ SO ₄) #4	VOCs (unpreserved) #1 VOCs (larged MeOH) #1 GRQ, BTEX (larged MeOH) #1 DRQ (unred unpreserved) Metals (unpreserved) SVOCs (unpreserved) #2 % Solids (plastic vial, unpres.)	Total Number of Containers Sampled by: REG Laboratory: Legend	Project Manager: REG Project QC Contact: ADN Sampled by: REG Laboratory: Legend																				
Location	Start Depth	Stop Depth	Depth Unit (m./ft. or in.)	Collection Date (mm/dd/yyyy)	Collection Time (hh:mm)	Matrix	Type	OC	SWOCs (HCl) #1	Dissolved Metals (HNO ₃)	Total Metals (HNO ₃)	General (unpreserved) #2	Diesel Range Organics (HCl)	Nutrients (H ₂ SO ₄) #4	VOCs (unpreserved) #1	VOCs (larged MeOH) #1	GRQ, BTEX (larged MeOH) #1	DRQ (unred unpreserved)	Metals (unpreserved)	SVOCs (unpreserved) #2	% Solids (plastic vial, unpres.)	Total Number of Containers	
1. Pump House 5 - stockpile - 1				11/4/13	1030	X	X									X	X				X		4
2.																							
3.																							
4.																							
5.																							
6.																							
7.																							
8.																							
9.																							
10.																							

Common Parameter/Container - Preservation Key
 #1 - Volatile Organics = BTEX, GRQ, 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: [Signature] On Ice? Y N Date: 11/13 Time: 1230 Received by: [Signature] Date: 11/5/13 Time: 9:25
 Relinquished By: [Signature] On Ice? Y N Date: [] Time: [] Received by: [Signature] Date: [] Time: []
 Samples Shipped VIA: Air Freight Federal Express Sampler Air Bill Number: 220
 Other: []

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

M:\RL\GIST\FORMS\Chain Of Custody Form 2009 RLG Rev. 09/01/09

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

November 13, 2013

Ms. Andrea Nord
Barr Engineering Co.
4700 W 77th St
Minneapolis, MN 55435

Work Order Number: 1305563
RE: 49161092

Enclosed are the results of analyses for samples received by the laboratory on 11/08/13. 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.

WI Accreditation #998022410

Prepared by,
LEGEND TECHNICAL SERVICES, INC

A handwritten signature in black ink that reads "Bach Pham".

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

A handwritten signature in blue ink that reads "Samantha Jaworski".

Samantha Jaworski
Manager, Organics
sjaworski@legend-group.com

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161092 Project Number: 49161092 003 031 Project Manager: Ms. Andrea Nord	Work Order #: 1305563 Date Reported: 11/13/13
---	---	--

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Pump House 5-Stockpile-2	1305563-01	Soil	11/07/13 11:20	11/08/13 10:15

Shipping Container Information

Default Cooler Temperature (°C): 1.6

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: No

Case Narrative:

The dry weight correction and dilution applies to the sample result, MDL, and RL.

Ethylbenzene was present in the method blank between the MDL and RL for the BTEX analysis.

The DRO chromatogram for sample Pump House 5-Stockpile-2 is attached.

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161092 Project Number: 49161092 003 031 Project Manager: Ms. Andrea Nord	Work Order #: 1305563 Date Reported: 11/13/13
---	---	--

DRO/8015D
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Pump House 5-Stockpile-2 (1305563-01) Soil Sampled: 11/07/13 11:20 Received: 11/08/13 10:15										
Diesel Range Organics	430	110	14	mg/kg dry	10	B3K1103	11/11/13	11/12/13	WI(95) DRO	L1
Surrogate: <i>Triacotane (C-30)</i>	84.3			70-130 %		"	"	"	"	

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161092 Project Number: 49161092 003 031 Project Manager: Ms. Andrea Nord	Work Order #: 1305563 Date Reported: 11/13/13
---	---	--

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

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Pump House 5-Stockpile-2 (1305563-01) Soil Sampled: 11/07/13 11:20 Received: 11/08/13 10:15										
Benzene	0.090	0.043	0.0053	mg/kg dry	1	B3K1102	11/11/13	11/11/13	WI(95) GRO	
Ethylbenzene	0.22	0.043	0.0037	mg/kg dry	1	"	"	"	"	B-01
Toluene	0.16	0.043	0.0046	mg/kg dry	1	"	"	"	"	
Xylenes (total)	0.53	0.13	0.014	mg/kg dry	1	"	"	"	"	
Surrogate: 4-Fluorochlorobenzene	121			80-150 %		"	"	"	"	



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

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161092 Project Number: 49161092 003 031 Project Manager: Ms. Andrea Nord	Work Order #: 1305563 Date Reported: 11/13/13
---	---	--

PERCENT SOLIDS
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Pump House 5-Stockpile-2 (1305563-01) Soil Sampled: 11/07/13 11:20 Received: 11/08/13 10:15										
% Solids	63			%	1	B3K1210	11/12/13	11/12/13	% calculation	

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161092 Project Number: 49161092 003 031 Project Manager: Ms. Andrea Nord	Work Order #: 1305563 Date Reported: 11/13/13
---	---	--

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 B3K1103 - Sonication (Wisc DRO)											
Blank (B3K1103-BLK1)											
						Prepared: 11/11/13 Analyzed: 11/12/13					
Diesel Range Organics	< 0.99	8.0	0.99	mg/kg wet							
Surrogate: <i>Triacontane (C-30)</i>	14.6			mg/kg wet	16.0		91.5	70-130			
LCS (B3K1103-BS1)											
						Prepared: 11/11/13 Analyzed: 11/12/13					
Diesel Range Organics	51.5	8.0	0.99	mg/kg wet	64.0		80.4	70-120			
Surrogate: <i>Triacontane (C-30)</i>	14.2			mg/kg wet	16.0		88.6	70-130			
LCS Dup (B3K1103-BSD1)											
						Prepared: 11/11/13 Analyzed: 11/12/13					
Diesel Range Organics	52.9	8.0	0.99	mg/kg wet	64.0		82.7	70-120	2.74	20	
Surrogate: <i>Triacontane (C-30)</i>	14.9			mg/kg wet	16.0		93.3	70-130			

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161092 Project Number: 49161092 003 031 Project Manager: Ms. Andrea Nord	Work Order #: 1305563 Date Reported: 11/13/13
---	---	--

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 B3K1102 - EPA 5035 Soil (Purge and Trap)											
Blank (B3K1102-BLK1)						Prepared & Analyzed: 11/11/13					
Benzene	< 0.0031	0.025	0.0031	mg/kg wet							
Ethylbenzene	0.0137	0.025	0.0022	mg/kg wet							B-02, J
Toluene	< 0.0027	0.025	0.0027	mg/kg wet							
Xylenes (total)	< 0.0080	0.075	0.0080	mg/kg wet							
Surrogate: 4-Fluorochlorobenzene	23.7			ug/L	25.0		94.9	80-150			
LCS (B3K1102-BS1)						Prepared & Analyzed: 11/11/13					
Benzene	102			ug/L	100		102	80-120			
Ethylbenzene	106			ug/L	100		106	80-120			
Toluene	105			ug/L	100		105	80-120			
Xylenes (total)	315			ug/L	300		105	80-120			
Surrogate: 4-Fluorochlorobenzene	28.1			ug/L	25.0		112	80-150			
LCS (B3K1102-BS2)						Prepared & Analyzed: 11/11/13					
Benzene	102			ug/L	100		102	80-120			
Ethylbenzene	99.8			ug/L	100		99.8	80-120			
Toluene	103			ug/L	100		103	80-120			
Xylenes (total)	294			ug/L	300		98.1	80-120			
Surrogate: 4-Fluorochlorobenzene	25.7			ug/L	25.0		103	80-150			
LCS Dup (B3K1102-BSD1)						Prepared & Analyzed: 11/11/13					
Benzene	102			ug/L	100		102	80-120	0.469	20	
Ethylbenzene	104			ug/L	100		104	80-120	1.67	20	
Toluene	104			ug/L	100		104	80-120	1.43	20	
Xylenes (total)	306			ug/L	300		102	80-120	2.68	20	
Surrogate: 4-Fluorochlorobenzene	25.9			ug/L	25.0		104	80-150			
Matrix Spike (B3K1102-MS1)						Source: 1305563-01 Prepared & Analyzed: 11/11/13					
Benzene	103			ug/L	100	1.05	102	80-120			
Ethylbenzene	109			ug/L	100	2.58	106	80-120			
Toluene	103			ug/L	100	1.88	102	80-120			
Xylenes (total)	326			ug/L	300	6.14	106	80-120			
Surrogate: 4-Fluorochlorobenzene	28.9			ug/L	25.0		115	80-150			

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161092 Project Number: 49161092 003 031 Project Manager: Ms. Andrea Nord	Work Order #: 1305563 Date Reported: 11/13/13
---	---	--

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 B3K1210 - General Preparation											
Duplicate (B3K1210-DUP1)		Source: 1305600-02				Prepared & Analyzed: 11/12/13					
% Solids	94.0			%		95.0			1.06	20	

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161092 Project Number: 49161092 003 031 Project Manager: Ms. Andrea Nord	Work Order #: 1305563 Date Reported: 11/13/13
---	---	--

Notes and Definitions

L1	Results in the diesel organics range are primarily due to overlap from a heavy oil range product.
J	Parameter was present between the MDL and RL and should be considered an estimated value
B-02	Target analyte was present in the method blank between the MDL and RL.
B-01	Analyte was present in the method blank. Sample result is less than or equal to 10 times the blank concentration.
<	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)



Chain of Custody

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

1305563

Project Number: 49/16 - 1092 003 031
 Project Name: Enbridge Pumphouse 5
 Sample Origination State: WI (use two letter postal state abbreviation)
 COC Number: **No 41329**

Number of Containers/Preservative		COC <u>1</u> of <u>1</u>
Water	Soil	
VOCs (unpreserved) #2	VOCs (Lured MeOH) #1	Total Number Of Containers
Dissolved Metals (HNO ₃)	GRQ (BTEX) (Lured MeOH) #1	
Total Metals (HNO ₃)	DRQ (Lured unpreserved) Metals (unpreserved)	
General (unpreserved) #3	SVOCs (unpreserved) #2	
Diesel Range Organics (HCl)	% Solids (plastic vial, unpres.)	
Nutrients (H ₂ SO ₄) #4		

Project Manager: REE, LEN
 Project QC Contact: AAW
 Sampled by: HEW
 Laboratory: Legend

Location	Start Depth	Stop Depth	Depth Unit (m./ft. or in.)	Collection Date (mm/dd/yyyy)	Collection Time (hh:mm)	Matrix		Type		Total Number Of Containers
						Water	Soil	Grab	Comp. OC	
1. Pump houses - stockpile - 2				11/07/2013	11:20	X		X		1
2. Pump house 5 - stockpile - 2a				11/07/2013	11:25	X		X		1
3.										
4.										
5.										
6.										
7.										
8.										
9.										
10.										

- Common Parameter/Container - Preservation Key**
- #1 - Volatile Organics = BTEX, GRQ, 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: Weather Night Wanda On Ice? Date: 11/7/13 Time: 11:40
 Received by: _____ Date: _____ Time: _____
 Relinquished By: [Signature] On Ice? Date: _____ Time: _____
 Received by: [Signature] Date: 11/8/13 Time: 10:15
 Samples Shipped VIA: Air Freight Federal Express Sampler Air Bill Number: 11002
 Other: _____

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

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.

Data File: \\lts-target\targetdata\chem\FID5.i\131112.b\018.d

Date : 12-NOV-2013 22:51

Client ID:

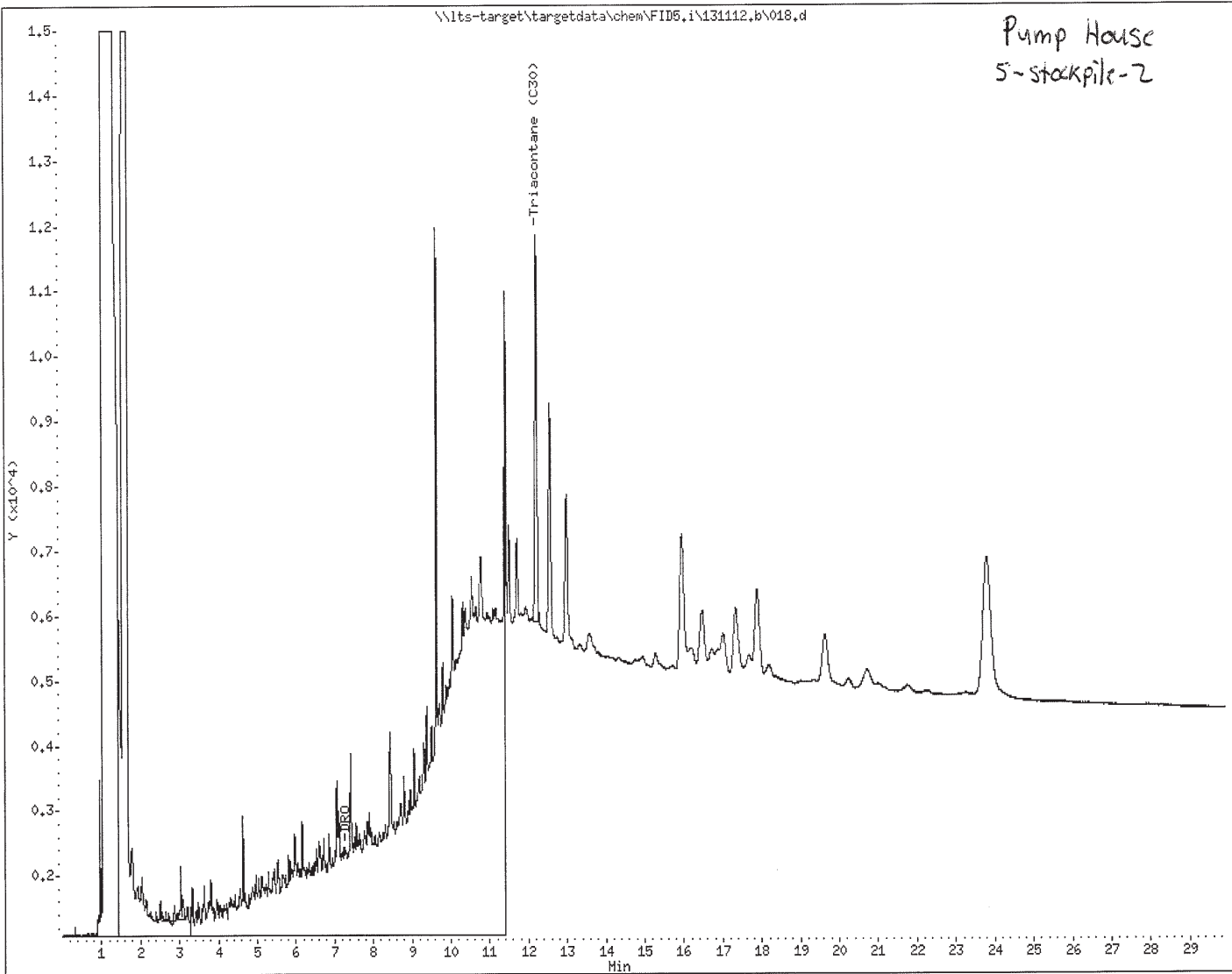
Sample Info: 1305563-01 x10

Instrument: FID5.i

Operator: TL

Column diameter: 0,53

Column phase:





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

November 14, 2013

Ms. Andrea Nord
Barr Engineering Co.
4700 W 77th St
Minneapolis, MN 55435

Work Order Number: 1305621
RE: 49161092

Enclosed are the results of analyses for samples received by the laboratory on 11/12/13. 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.

WI Accreditation #998022410

Prepared by,
LEGEND TECHNICAL SERVICES, INC

A handwritten signature in black ink, appearing to read "Bach Pham".

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

A handwritten signature in blue ink, appearing to read "Samantha Jaworski".

Samantha Jaworski
Manager, Organics
sjaworski@legend-group.com

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161092 Project Number: 49161092.02 003 031 Project Manager: Ms. Andrea Nord	Work Order #: 1305621 Date Reported: 11/14/13
---	--	--

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Pump House 5-Stockpile-3	1305621-01	Soil	11/11/13 11:45	11/12/13 10:00

Shipping Container Information

Default Cooler Temperature (°C): 0.6

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: No

Case Narrative:

The dry weight correction and dilution applies to the sample result, MDL, and RL.

Ethylbenzene was present in the method blank between the MDL and RL for the BTEX analysis.

The DRO chromatogram for sample Pump House 5-Stockpile-3 is attached.

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161092 Project Number: 49161092.02 003 031 Project Manager: Ms. Andrea Nord	Work Order #: 1305621 Date Reported: 11/14/13
---	--	--

DRO/8015D
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Pump House 5-Stockpile-3 (1305621-01) Soil Sampled: 11/11/13 11:45 Received: 11/12/13 10:00										
Diesel Range Organics	420	140	17	mg/kg dry	10	B3K1205	11/12/13	11/13/13	WI(95) DRO	L1
Surrogate: <i>Triacontane (C-30)</i>	92.1			70-130 %		"	"	"	"	

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161092 Project Number: 49161092.02 003 031 Project Manager: Ms. Andrea Nord	Work Order #: 1305621 Date Reported: 11/14/13
---	--	--

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

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Pump House 5-Stockpile-3 (1305621-01) Soil Sampled: 11/11/13 11:45 Received: 11/12/13 10:00										
Benzene	0.035	0.042	0.0053	mg/kg dry	1	B3K1308	11/13/13	11/13/13	WI(95) GRO	J
Ethylbenzene	0.20	0.042	0.0036	mg/kg dry	1	"	"	"	"	B-01
Toluene	0.027	0.042	0.0046	mg/kg dry	1	"	"	"	"	J
Xylenes (total)	0.25	0.13	0.014	mg/kg dry	1	"	"	"	"	
Surrogate: 4-Fluorochlorobenzene	111			80-150 %		"	"	"	"	

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161092 Project Number: 49161092.02 003 031 Project Manager: Ms. Andrea Nord	Work Order #: 1305621 Date Reported: 11/14/13
---	--	--

PERCENT SOLIDS
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Pump House 5-Stockpile-3 (1305621-01) Soil Sampled: 11/11/13 11:45 Received: 11/12/13 10:00										
% Solids	59			%	1	B3K1408	11/14/13	11/14/13	% calculation	

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161092 Project Number: 49161092.02 003 031 Project Manager: Ms. Andrea Nord	Work Order #: 1305621 Date Reported: 11/14/13
---	--	--

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 B3K1205 - Sonication (Wisc DRO)											
Blank (B3K1205-BLK1)											
						Prepared & Analyzed: 11/12/13					
Diesel Range Organics	< 0.99	8.0	0.99	mg/kg wet							
Surrogate: <i>Triacontane (C-30)</i>	14.8			mg/kg wet	16.0		92.3	70-130			
LCS (B3K1205-BS1)											
						Prepared & Analyzed: 11/12/13					
Diesel Range Organics	50.1	8.0	0.99	mg/kg wet	64.0		78.3	70-120			
Surrogate: <i>Triacontane (C-30)</i>	14.5			mg/kg wet	16.0		90.8	70-130			
LCS Dup (B3K1205-BSD1)											
						Prepared & Analyzed: 11/12/13					
Diesel Range Organics	53.6	8.0	0.99	mg/kg wet	64.0		83.8	70-120	6.68	20	
Surrogate: <i>Triacontane (C-30)</i>	15.3			mg/kg wet	16.0		95.6	70-130			

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161092 Project Number: 49161092.02 003 031 Project Manager: Ms. Andrea Nord	Work Order #: 1305621 Date Reported: 11/14/13
---	--	--

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 B3K1308 - EPA 5035 Soil (Purge and Trap)											
Blank (B3K1308-BLK1)						Prepared & Analyzed: 11/13/13					
Benzene	< 0.0031	0.025	0.0031	mg/kg wet							
Ethylbenzene	0.0111	0.025	0.0022	mg/kg wet							B-02, J
Toluene	< 0.0027	0.025	0.0027	mg/kg wet							
Xylenes (total)	< 0.0080	0.075	0.0080	mg/kg wet							
Surrogate: 4-Fluorochlorobenzene	23.3			ug/L	25.0		93.4	80-150			
LCS (B3K1308-BS1)						Prepared & Analyzed: 11/13/13					
Benzene	97.9			ug/L	100		97.9	80-120			
Ethylbenzene	101			ug/L	100		101	80-120			
Toluene	99.2			ug/L	100		99.2	80-120			
Xylenes (total)	299			ug/L	300		99.7	80-120			
Surrogate: 4-Fluorochlorobenzene	26.1			ug/L	25.0		104	80-150			
LCS Dup (B3K1308-BSD1)						Prepared: 11/13/13 Analyzed: 11/14/13					
Benzene	94.9			ug/L	100		94.9	80-120	3.13	20	
Ethylbenzene	96.7			ug/L	100		96.7	80-120	4.10	20	
Toluene	94.6			ug/L	100		94.6	80-120	4.77	20	
Xylenes (total)	282			ug/L	300		93.9	80-120	6.05	20	
Surrogate: 4-Fluorochlorobenzene	23.0			ug/L	25.0		92.1	80-150			
Matrix Spike (B3K1308-MS1)						Source: 1305622-01 Prepared & Analyzed: 11/13/13					
Benzene	97.8			ug/L	100	<	97.8	80-120			
Ethylbenzene	101			ug/L	100	0.269	101	80-120			
Toluene	99.1			ug/L	100	<	99.1	80-120			
Xylenes (total)	299			ug/L	300	<	99.7	80-120			
Surrogate: 4-Fluorochlorobenzene	25.2			ug/L	25.0		101	80-150			

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161092 Project Number: 49161092.02 003 031 Project Manager: Ms. Andrea Nord	Work Order #: 1305621 Date Reported: 11/14/13
---	--	--

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 B3K1408 - General Preparation											
Duplicate (B3K1408-DUP1)											
% Solids	79.0			%		78.0			1.27	20	
Duplicate (B3K1408-DUP2)											
% Solids	64.0			%		59.0			8.13	20	
Duplicate (B3K1408-DUP3)											
% Solids	63.0			%		65.0			3.12	20	

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161092 Project Number: 49161092.02 003 031 Project Manager: Ms. Andrea Nord	Work Order #: 1305621 Date Reported: 11/14/13
---	--	--

Notes and Definitions

L1	Results in the diesel organics range are primarily due to overlap from a heavy oil range product.
J	Parameter was present between the MDL and RL and should be considered an estimated value
B-02	Target analyte was present in the method blank between the MDL and RL.
B-01	Analyte was present in the method blank. Sample result is less than or equal to 10 times the blank concentration.
<	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)



Chain of Custody

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

1305621

Project Number: 49/16-1092.02 003 031

Project Name: Enbridge - Pump House 5

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

COC Number: **No 41325**

Number of Containers/Preservative		COC <u>1</u> of <u>1</u>
Water	Soil	
VOCs (unpreserved) #2	VOCs (unpreserved) #1	Total Number Of Containers
Dissolved Metals (HNO ₃)	GRO (BTEX) (unpreserved) #1	
Total Metals (HNO ₃)	DRO (unpreserved) Metals (unpreserved)	
General (unpreserved) #3	SVOCs (unpreserved) #2	
Diesel Range Organics (HCl)	% Solids (plastic vial, unpres.)	
Nutrients (H ₂ SO ₄) #4		

Project Manager: RET, LEN

Project QC Contact: AAN

Sampled by: HEW

Laboratory: Legend

Location	Start Depth	Stop Depth	Depth Unit (m./ft. or in.)	Collection Date (mm/dd/yyyy)	Collection Time (hh:mm)	Matrix		Type		OC	VOCs (HCl) #1	SVOCs (unpreserved) #2	Dissolved Metals (HNO ₃)	Total Metals (HNO ₃)	General (unpreserved) #3	Diesel Range Organics (HCl)	Nutrients (H ₂ SO ₄) #4	VOCs (unpreserved) #1	GRO (BTEX) (unpreserved) #1	DRO (unpreserved) Metals (unpreserved)	SVOCs (unpreserved) #2	% Solids (plastic vial, unpres.)	Total Number Of Containers
						Water	Soil	Grab	Comp.														
1. Pump House 5 - stockpile		-3		11/11/2013	11:45	X		X															3
2. Pump House 5 - stockpile		-3a		11/11/2013	11:50	X		X															1
3.																							
4.																							
5.																							
6.																							
7.																							
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: Heather Wright + Wynn On Ice? Date: 11/11/13 Time: 1:30 pm

Relinquished By: [Signature] On Ice? Date: 11/2/13 Time: 10:00

Received by: [Signature] Date: 11/2/13 Time: 10:00

Samples Shipped VIA: Air Freight Federal Express Sampler Air Bill Number: 01602

Other: _____

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

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.

Data File: \\lts-target\targetdata\chem\FID5,i\131112,b\025,d

Date : 13-NOV-2013 02:56

Client ID:

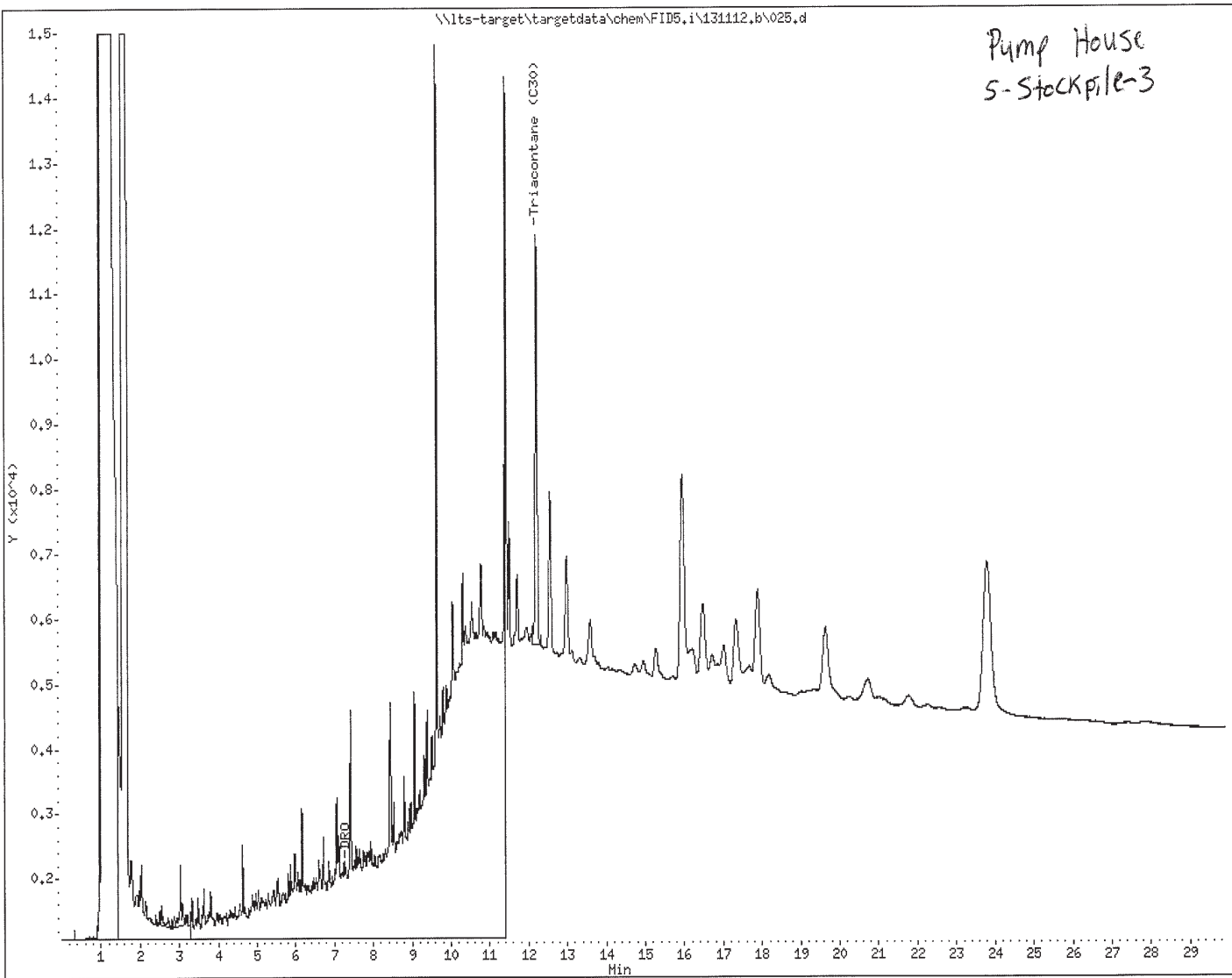
Sample Info: 1305621-01 x10

Instrument: FID5,i

Operator: TL

Column diameter: 0,53

Column phase:





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

November 19, 2013

Ms. Andrea Nord
Barr Engineering Co.
4700 W 77th St
Minneapolis, MN 55435

Work Order Number: 1305714
RE: 49161092

Enclosed are the results of analyses for samples received by the laboratory on 11/15/13. 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.

WI Accreditation #998022410

Prepared by,
LEGEND TECHNICAL SERVICES, INC

A handwritten signature in black ink that reads "BACH PHAM".

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

A handwritten signature in blue ink that reads "Samantha Jaworski".

Samantha Jaworski
Manager, Organics
sjaworski@legend-group.com

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161092 Project Number: 49161092.02 003 031 Project Manager: Ms. Andrea Nord	Work Order #: 1305714 Date Reported: 11/19/13
---	--	--

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Pump House 5-Stockpile-4	1305714-01	Soil	11/14/13 11:40	11/15/13 09:40

Shipping Container Information

Default Cooler Temperature (°C): 2.5

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: No

Case Narrative:

The dry weight correction and dilution applies to the sample result, MDL, and RL.

Ethylbenzene was present in the method blank between the MDL and RL for the BTEX analysis.

The DRO chromatogram for sample Pump House 5-Stockpile-4 is attached.

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161092 Project Number: 49161092.02 003 031 Project Manager: Ms. Andrea Nord	Work Order #: 1305714 Date Reported: 11/19/13
---	--	--

DRO/8015D
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Pump House 5-Stockpile-4 (1305714-01) Soil Sampled: 11/14/13 11:40 Received: 11/15/13 9:40										
Diesel Range Organics	190	12	1.5	mg/kg dry	1	B3K1511	11/15/13	11/16/13	WI(95) DRO	L1
Surrogate: Triacotane (C-30)	83.4			70-130 %		"	"	"	"	

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161092 Project Number: 49161092.02 003 031 Project Manager: Ms. Andrea Nord	Work Order #: 1305714 Date Reported: 11/19/13
---	--	--

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

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Pump House 5-Stockpile-4 (1305714-01) Soil Sampled: 11/14/13 11:40 Received: 11/15/13 9:40										
Benzene	0.0089	0.037	0.0046	mg/kg dry	1	B3K1801	11/18/13	11/18/13	WI(95) GRO	J
Ethylbenzene	0.033	0.037	0.0032	mg/kg dry	1	"	"	"	"	B-01, J
Toluene	0.0084	0.037	0.0040	mg/kg dry	1	"	"	"	"	J
Xylenes (total)	0.055	0.11	0.012	mg/kg dry	1	"	"	"	"	J
Surrogate: 4-Fluorochlorobenzene	104			80-150 %		"	"	"	"	



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

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161092 Project Number: 49161092.02 003 031 Project Manager: Ms. Andrea Nord	Work Order #: 1305714 Date Reported: 11/19/13
---	--	--

PERCENT SOLIDS
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Pump House 5-Stockpile-4 (1305714-01) Soil Sampled: 11/14/13 11:40 Received: 11/15/13 9:40										
% Solids	68			%	1	B3K1913	11/19/13	11/19/13	% calculation	

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161092 Project Number: 49161092.02 003 031 Project Manager: Ms. Andrea Nord	Work Order #: 1305714 Date Reported: 11/19/13
---	--	--

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 B3K1511 - Sonication (Wisc DRO)											
Blank (B3K1511-BLK1)											
						Prepared & Analyzed: 11/15/13					
Diesel Range Organics	< 0.99	8.0	0.99	mg/kg wet							
Surrogate: <i>Triacontane (C-30)</i>	13.2			mg/kg wet	16.0		82.3	70-130			
LCS (B3K1511-BS1)											
						Prepared & Analyzed: 11/15/13					
Diesel Range Organics	55.1	8.0	0.99	mg/kg wet	64.0		86.1	70-120			
Surrogate: <i>Triacontane (C-30)</i>	13.9			mg/kg wet	16.0		86.9	70-130			
LCS Dup (B3K1511-BSD1)											
						Prepared & Analyzed: 11/15/13					
Diesel Range Organics	55.1	8.0	0.99	mg/kg wet	64.0		86.1	70-120	0.0177	20	
Surrogate: <i>Triacontane (C-30)</i>	13.7			mg/kg wet	16.0		85.7	70-130			

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161092 Project Number: 49161092.02 003 031 Project Manager: Ms. Andrea Nord	Work Order #: 1305714 Date Reported: 11/19/13
---	--	--

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 B3K1801 - EPA 5035 Soil (Purge and Trap)											
Blank (B3K1801-BLK1)						Prepared & Analyzed: 11/18/13					
Benzene	< 0.0031	0.025	0.0031	mg/kg wet							
Ethylbenzene	0.0126	0.025	0.0022	mg/kg wet							B-02, J
Toluene	< 0.0027	0.025	0.0027	mg/kg wet							
Xylenes (total)	< 0.0080	0.075	0.0080	mg/kg wet							
Surrogate: 4-Fluorochlorobenzene	25.1			ug/L	25.0		100	80-150			
LCS (B3K1801-BS1)						Prepared & Analyzed: 11/18/13					
Benzene	96.0			ug/L	100		96.0	80-120			
Ethylbenzene	99.9			ug/L	100		99.9	80-120			
Toluene	98.4			ug/L	100		98.4	80-120			
Xylenes (total)	298			ug/L	300		99.3	80-120			
Surrogate: 4-Fluorochlorobenzene	26.5			ug/L	25.0		106	80-150			
LCS Dup (B3K1801-BSD1)						Prepared & Analyzed: 11/18/13					
Benzene	97.0			ug/L	100		97.0	80-120	1.03	20	
Ethylbenzene	101			ug/L	100		101	80-120	0.967	20	
Toluene	99.5			ug/L	100		99.5	80-120	1.12	20	
Xylenes (total)	300			ug/L	300		100	80-120	0.794	20	
Surrogate: 4-Fluorochlorobenzene	25.6			ug/L	25.0		102	80-150			
Matrix Spike (B3K1801-MS1)						Prepared & Analyzed: 11/18/13					
Source: 1305714-01											
Benzene	94.1			ug/L	100	0.117	94.0	80-120			
Ethylbenzene	98.5			ug/L	100	0.433	98.0	80-120			
Toluene	97.1			ug/L	100	0.109	96.9	80-120			
Xylenes (total)	295			ug/L	300	0.720	98.0	80-120			
Surrogate: 4-Fluorochlorobenzene	28.0			ug/L	25.0		112	80-150			

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161092 Project Number: 49161092.02 003 031 Project Manager: Ms. Andrea Nord	Work Order #: 1305714 Date Reported: 11/19/13
---	--	--

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 B3K1913 - General Preparation											
Duplicate (B3K1913-DUP1)	Source: 1305716-02		Prepared & Analyzed: 11/19/13								
% Solids	93.0			%		92.0			1.08	20	
Duplicate (B3K1913-DUP2)	Source: 1305754-05		Prepared & Analyzed: 11/19/13								
% Solids	89.0			%		90.0			1.12	20	

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161092 Project Number: 49161092.02 003 031 Project Manager: Ms. Andrea Nord	Work Order #: 1305714 Date Reported: 11/19/13
---	--	--

Notes and Definitions

L1	Results in the diesel organics range are primarily due to overlap from a heavy oil range product.
J	Parameter was present between the MDL and RL and should be considered an estimated value
B-02	Target analyte was present in the method blank between the MDL and RL.
B-01	Analyte was present in the method blank. Sample result is less than or equal to 10 times the blank concentration.
<	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)

Chain of Custody

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

BARR

1305714

Project Number: 49/16-1092.02 003 031

Project Name: Embury - Pump House 5

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

COC Number: **NO 41344**

Location	Start Depth	Stop Depth	Depth Unit (m./ft. or in.)	Collection Date (mm/dd/yyyy)	Collection Time (hh:mm)	Matrix			Type
						Water	Soil	Grab	
1. Pump House 5 - Stockpile - 4				11/14/2013	11:40	X	X	X	OC
2. Pump House 5 - Stockpile - 4a				11/14/2013	11:45	X	X	X	OC
3.									
4.									
5.									
6.									
7.									
8.									
9.									
10.									

Common Parameter/Container - Preservation Key
 #1 - Volatile Organics = BTEX, GRO, TPH, 8260 Full List
 #2 - Semivolatile Organics = PAHs, PCB, 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: Water Right World
 Relinquished By: Water Right World
 Samples Shipped Via: Air Freight Federal Express Sampler
 Other:

Number of Containers/Preservative
 Water: _____
 Soil: _____
 Total Number Of Containers: _____
 VOCs (lared MeOH) #1: _____
 GRO (ITEX) (lared MeOH) #1: _____
 DRO (lared unpreserved): _____
 Metals (unpreserved): _____
 SVOCs (unpreserved) #2: _____
 % Solids (plastic vat, unpres.): _____
 VOCs (HCl) #1: _____
 SVOCs (unpreserved) #2: _____
 Dissolved Metals (HNO3): _____
 Total Metals (HNO3): _____
 General (unpreserved) #3: _____
 Diesel Range Organics (HCl): _____
 Nutrients (H2SO4) #4: _____
 Received by: _____
 Received by: UK
 Air Bill Number: 2500
 Date: 11/13/13
 Date: 11/13/13
 Time: 12:00
 Time: 9:40

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

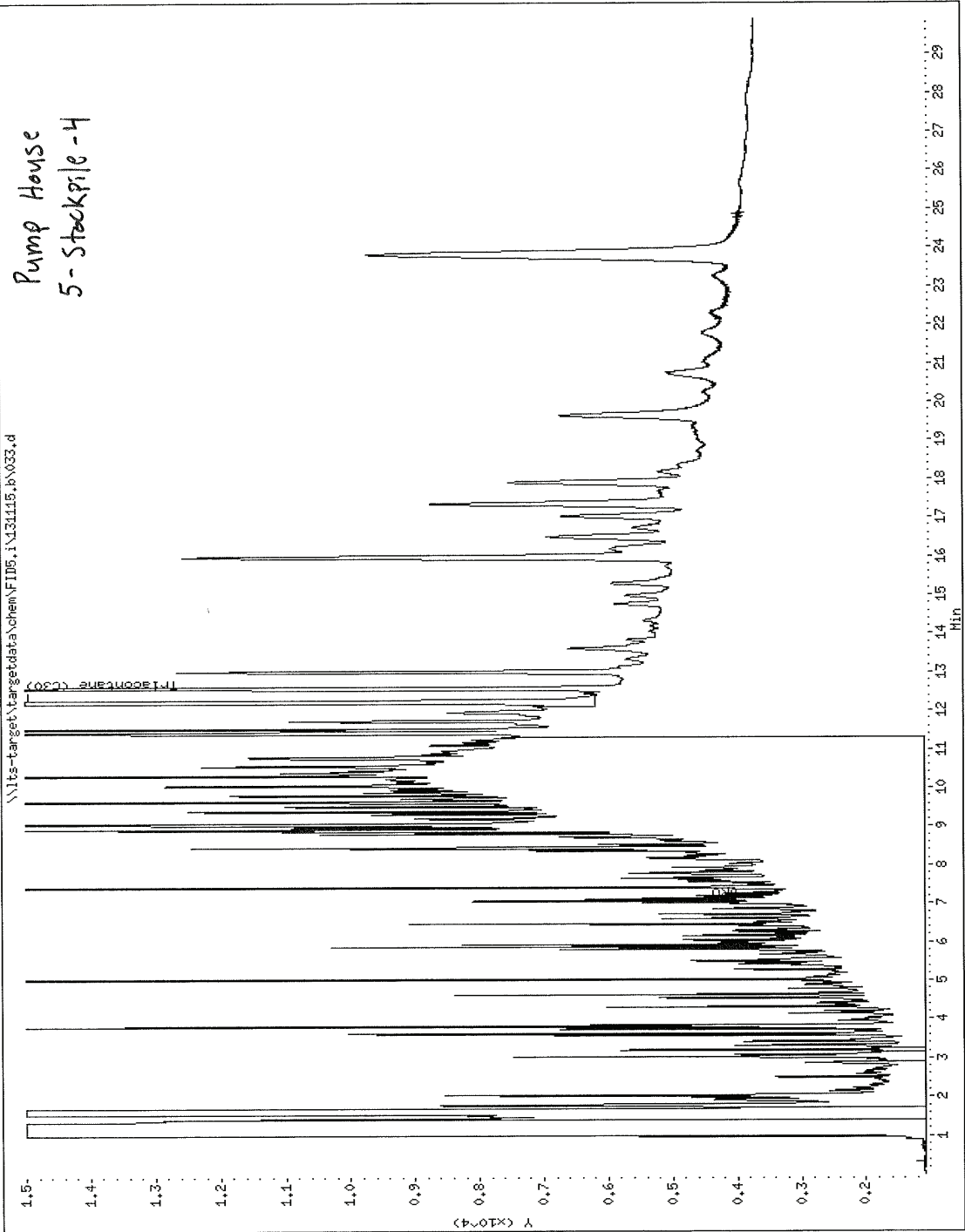
REG-10/2009/FORMS/CHAIN OF CUSTODY Form 2009 REG Rev. 09/10/09

Page 1

Data File: \\lts-target\targetdata\chem\FID5.i\131115.b\W33.d
 Date : 16-NOV-2013 06:24
 Client ID:
 Sample Info: 1305714-01

Instrument: FID5.i

Operator: TL
 Column diameter: 0.53





2626 Courtland Street
Duluth, MN 55806-1894
phone 218.722.3336
fax 218.727.7471
www.wlssd.com

W L S S D

Western Lake Superior Sanitary District

November 8, 2013

Alex Smith
Enbridge
1320 Grand Avenue
Superior, WI 54880

Re: WLSSD Discharge Approval (Pump House 5 & 6 Water)

Dear Mr. Smith:

Based on the analytical information provided on 11/8/2013, the WLSSD approves the discharge of Up to 100,000 gallons of Pump House 5 & 6 Water from Enbridge Superior provided there is no visual sign of the petroleum oil, grease or other petroleum related products. This contaminated water is to be disposed of at the WLSSD's main treatment facility, which is located at 2626 Courtland in Duluth.

This is a one time only approval for the waste described. It does not release Enbridge from any conditions/regulations set forth by the MPCA and/or any other agency that regulates the waste being discharged. In addition, this approval does not release Enbridge or any consultant/contractor involved from any subsequent liabilities associated with conducting this discharge.

Disposal during a significant rainstorm may be denied because of high flows. A copy of this letter of approval is to accompany each load and is to be disposed of and given to the process control operator. **Please attempt to discharge at our facility between 7:00 a.m. and 5:00 p.m. If you are unable to discharge at that time please call the process control operator (218) 722-3336 ext. 301 with you estimated time of arrival.**

If there are any questions, please contact me at (218) 740-4815.

Sincerely,

Tim Tuominen
Chemist



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

November 07, 2013

Ms. Andrea Nord
Barr Engineering Co.
4700 W 77th St
Minneapolis, MN 55435

Work Order Number: 1305507
RE: 49161092

Enclosed are the results of analyses for samples received by the laboratory on 11/06/13. 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.

WI Accreditation #998022410

Prepared by,
LEGEND TECHNICAL SERVICES, INC

A handwritten signature in black ink that reads "Bach Pham".

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

A handwritten signature in blue ink that reads "Samantha Jaworski".

Samantha Jaworski
Manager, Organics
sjaworski@legend-group.com

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161092 Project Number: 49161092 003 031 Project Manager: Ms. Andrea Nord	Work Order #: 1305507 Date Reported: 11/07/13
---	---	--

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Pump House 5-Water-1	1305507-01	Water	11/05/13 07:30	11/06/13 09:50

Shipping Container Information

Default Cooler Temperature (°C): 1.2

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: No

Case Narrative:

The dry weight correction and dilution applies to the sample result, MDL, and RL.

Ethylbenzene was present in the method blank between the MDL and RL for the BTEX analysis.

Recovery of the DRO surrogate for sample Pump House 5-Water-1 was below laboratory limits due to sample dilution required from high analyte concentration. All DRO surrogate recoveries for the batch B3K0611 QC were within limits.

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161092 Project Number: 49161092 003 031 Project Manager: Ms. Andrea Nord	Work Order #: 1305507 Date Reported: 11/07/13
---	---	--

DRO/8015D
Legend Technical Services, Inc.

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Pump House 5-Water-1 (1305507-01) Water Sampled: 11/05/13 07:30 Received: 11/06/13 9:50										
Diesel Range Organics	12000	1100	310	ug/L	10	B3K0611	11/06/13	11/06/13	WI(95) DRO	PH2
Surrogate: <i>Triacontane (C-30)</i>	40.2			70-130 %		"	"	"	"	S-06

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161092 Project Number: 49161092 003 031 Project Manager: Ms. Andrea Nord	Work Order #: 1305507 Date Reported: 11/07/13
---	---	--

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

Analyte	Result	RL	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Pump House 5-Water-1 (1305507-01) Water										
Sampled: 11/05/13 07:30 Received: 11/06/13 9:50										
Benzene	44	1.0	0.13	ug/L	1	B3K0703	11/07/13	11/07/13	WI(95) GRO	
Ethylbenzene	14	1.0	0.022	ug/L	1	"	"	"	"	
Toluene	4.7	1.0	0.15	ug/L	1	"	"	"	"	
Xylenes (total)	32	3.0	0.41	ug/L	1	"	"	"	"	
Surrogate: 4-Fluorochlorobenzene	101									80-150 %

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161092 Project Number: 49161092 003 031 Project Manager: Ms. Andrea Nord	Work Order #: 1305507 Date Reported: 11/07/13
---	---	--

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 B3K0611 - EPA 3510C (Sep Funnel)											
Blank (B3K0611-BLK1)											
						Prepared & Analyzed: 11/06/13					
Diesel Range Organics	< 28	100	28	ug/L							
Surrogate: <i>Triacontane (C-30)</i>	417			ug/L	400		104	70-130			
LCS (B3K0611-BS1)											
						Prepared & Analyzed: 11/06/13					
Diesel Range Organics	1740	100	28	ug/L	1600		109	75-115			
Surrogate: <i>Triacontane (C-30)</i>	413			ug/L	400		103	70-130			
LCS Dup (B3K0611-BSD1)											
						Prepared & Analyzed: 11/06/13					
Diesel Range Organics	1850	100	28	ug/L	1600		115	75-115	5.98	20	
Surrogate: <i>Triacontane (C-30)</i>	431			ug/L	400		108	70-130			

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161092 Project Number: 49161092 003 031 Project Manager: Ms. Andrea Nord	Work Order #: 1305507 Date Reported: 11/07/13
---	---	--

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 B3K0703 - EPA 5030 Water (Purge and Trap)											
Blank (B3K0703-BLK1)						Prepared & Analyzed: 11/07/13					
Benzene	< 0.13	1.0	0.13	ug/L							
Ethylbenzene	0.242	1.0	0.022	ug/L							B-02, J
Toluene	< 0.15	1.0	0.15	ug/L							
Xylenes (total)	< 0.41	3.0	0.41	ug/L							
Surrogate: 4-Fluorochlorobenzene	23.1			ug/L	25.0		92.4	80-150			
LCS (B3K0703-BS1)											
LCS (B3K0703-BS1)						Prepared & Analyzed: 11/07/13					
Benzene	100	1.0	0.13	ug/L	100		100	80-120			
Ethylbenzene	104	1.0	0.022	ug/L	100		104	80-120			
Toluene	103	1.0	0.15	ug/L	100		103	80-120			
Xylenes (total)	308	3.0	0.41	ug/L	300		103	80-120			
Surrogate: 4-Fluorochlorobenzene	26.2			ug/L	25.0		105	80-150			
LCS Dup (B3K0703-BSD1)											
LCS Dup (B3K0703-BSD1)						Prepared & Analyzed: 11/07/13					
Benzene	99.9	1.0	0.13	ug/L	100		99.9	80-120	0.372	20	
Ethylbenzene	103	1.0	0.022	ug/L	100		103	80-120	0.754	20	
Toluene	102	1.0	0.15	ug/L	100		102	80-120	0.812	20	
Xylenes (total)	309	3.0	0.41	ug/L	300		103	80-120	0.338	20	
Surrogate: 4-Fluorochlorobenzene	25.5			ug/L	25.0		102	80-150			
Matrix Spike (B3K0703-MS1)											
Matrix Spike (B3K0703-MS1)						Prepared & Analyzed: 11/07/13					
						Source: 1305506-01					
Benzene	99.4	1.0	0.13	ug/L	100	<1.0	99.1	80-120			
Ethylbenzene	104	1.0	0.022	ug/L	100	<1.0	103	80-120			
Toluene	99.5	1.0	0.15	ug/L	100	<1.0	99.3	80-120			
Xylenes (total)	305	3.0	0.41	ug/L	300	<3.0	101	80-120			
Surrogate: 4-Fluorochlorobenzene	25.9			ug/L	25.0		103	80-150			

Barr Engineering Co. 4700 W 77th St Minneapolis, MN 55435	Project: 49161092 Project Number: 49161092 003 031 Project Manager: Ms. Andrea Nord	Work Order #: 1305507 Date Reported: 11/07/13
---	---	--

Notes and Definitions

S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interferences.
PH2	Insufficient preservative to reduce the sample pH to less than 2.
J	Parameter was present between the MDL and RL and should be considered an estimated value
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)

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

1305507

Project Number: 49161092 003 031
 Project Name: Pump House #5 Excavation
 Sample Origination State: WI (use two letter postal state abbreviation)
 COC Number: **No 38543**

Location		Start Depth	Stop Depth	Depth Unit (m./ft. or in.)	Collection Date (mm/dd/yyyy)	Collection Time (hh:mm)	Matrix		Type	Number of Containers/Preservative										COC 1 of 1							
							Water	Soil	Grab	Comp	QC	VOCs (HCl) #1	SVOCs (unpreserved) #2	Dissolved Metals (HNO ₃)	Total Metals (HNO ₃)	General (unpreserved) #3	Diesel Range Organics (HCl)	Nutrients (H ₂ SO ₄) #4	BTEX	VOCs (Iared MeOH) #1	GRQ, BTEX (Iared MeOH) #1	DRQ (Iared unpreserved)	Metals (unpreserved)	SVOCs (unpreserved) #2	% Solids (plastic vial, unpres.)	Total Number Of Containers	Project Manager: REE
1.	Pump House 5 water-1				11/05/2013	7:30	X		X																	4	ASAP TAT.
2.	Pump House 5 water-6				"	"	X		X																	1	HOLD (unpreserved)
3.																											
4.																											
5.																											
6.																											
7.																											
8.																											
9.																											
10.																											

Common Parameter/Container - Preservation Key
 #1 - Volatile Organics = BTEX, GRQ, 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: Laura Noritlu On Ice? N Date: 11/5/13 Time: 9:15
 Relinquished By: [Signature] On Ice? N Date: 11/06/13 Time: 9:50
 Received by: [Signature] Date: 11/06/13 Time: 9:50
 Samples Shipped VIA: Air Freight Federal Express Sampler Other: _____ Air Bill Number: 1-20

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

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.



Superior Terminal - Water Tanker Ledger
 2800 East 21st Street
 Superior, WI 54880

Tanker #/Company: OSI Environmental

Date of First Load: 11-12-13 SMA Contractor: _____

Date Water Sampled: _____ Sampling Contractor: _____

Date Offsite Disposal: _____ Disposal Facility: WLSFD Profile #: 11/8/13

Load #	Date Water Added	Water Source			Tanker #	Load Volume (gallons)	Running Total (gallons)	Comments <i>Water source and degree of contamination *</i> NO CRUDE OIL DISPOSAL IN TANKERS
		Project Name	Project Contractor	Contractor Vehicle				
Ex. Onsite	1/23/2013	Tank 99	PLM	Vac truck 789	123	2000	2000	Rainwater with sheen, drops of product from Tank 99 excavation
1	11/12/13	L5		6087		1200	1200	Excavation Water 20996
2	11/13/13	L5		6087		1500	2700	" " 20996B
3	11/14/13	L5		6087		2000	4700	" " 20996C
4	11/15/13	L5		6086		2400	7100	" " 20996D
5	11/16/13	L5		6086		1700	8800	" " 20996F
6	11/18/13	L5		6087		3000	11,800	" " 20996G
7	11/18/13	L5		6087		3000	14,800	" " 17578
8	11/18/13	L5		6087		3000	17,800	" " 17577
9	11/18/13	L5		6087		2700	20,500	" " 17579
10	11/19/13	L5		6087		1200	21,700	" " 20996
11	11/20/13	L5		6087		1400	23,100	" " 20996
12	11/21/13	L5		6087		2300	25,400	" " 20996
13	11/22/13	L5		6087		1800	27,200	" " 20996
14	11/25/13	L5		6087		1500	28,700	" " 112513A
15	11/26/13	L5		6087		1600	30,300	" " 112513C

COMMENTS (additional source, handling, disposal notes...):

ENBRIDGE CONTACTS:

Terminal - Tom Peterson (715) 718-1572; Dennis Wedan (218) 428-1002.

Environment - Karl Beaster (715) 718-1040; Alex Smith (715) 817-8322.



Superior Terminal - Water Tanker Ledger
 2800 East 21st Street
 Superior, WI 54880

Tanker #/Company: OSI Environmental, Inc.

Date of First Load: 12/2/13 SMA Contractor: _____

Date Water Sampled: _____ Sampling Contractor: _____

Date Offsite Disposal: _____ Disposal Facility: WLSJD Profile #: 1118/13

Load #	Date Water Added	Water Source			Tanker #	Load Volume (gallons)	Running Total (gallons)	Comments <i>Water source and degree of contamination * NO CRUDE OIL DISPOSAL IN TANKERS</i>
		Project Name	Project Contractor	Contractor Vehicle				
Ex. Onsite	1/23/2013	Tank 99	PLM	Vac truck 789	123	2000	2000	Rainwater with sheen, drops of product from Tank 99 excavation
1	12/2/13	L5		6087		4400	4400	Excavation Water 112513B
2	12/3/13	L5		6087		2000	6400	" " 120313A
3	12/4/13	L5		6087		1500	7900	" " 120313B
4	12/5/13	L5		6087		1500	9400	" " 120513C
5	12/6/13	L5		6087		100	9500	" " Shop Thaw
6	12/10/13	L5		6087		1000	10,500	" " 120913A
7								
8								
9								
10								
11								
12								
13								
14								
15								

COMMENTS (additional source, handling, disposal notes...):

ENBRIDGE CONTACTS:

Terminal - Tom Peterson (715) 718-1572; Dennis Wedan (218) 428-1002.

Environment - Karl Beaster (715) 718-1040; Alex Smith (715) 817-8322.



Superior Terminal - Water Tanker Ledger
 2800 East 21st Street
 Superior, WI 54880

Tanker #/Company: OSI 6087

Date of First Load: 12-1-13 SMA Contractor: _____

Date Water Sampled: _____ Sampling Contractor: BARR

Date Offsite Disposal: _____ Disposal Facility: WLSSD Profile #: 20996

Load #	Date Water Added	Water Source			Tanker #	Load Volume (gallons)	Running Total (gallons)	Comments Water source and degree of contamination* NO CRUDE OIL DISPOSAL IN TANKERS
		Project Name	Project Contractor	Contractor Vehicle				
Ex. Onsite	1/23/2013	Tank 99	PLM	Vac truck 789	123	2000	2000	Rainwater with sheen, drops of product from Tank 99 excavation
1	12-2-13	line 5	Charps	6087		2800		Ground water
2	12-2-13					1600		
3	12-3-13					2000		
4	12-4-13					1500		
5	12-5-13					1500		
6	12-10-13					1000		
7								
8								
9								
10								
11								
12								
13								
14								
15								

COMMENTS (additional source, handling, disposal notes...):

ENBRIDGE CONTACTS:

Terminal - Tom Peterson (715) 718-1572; Dennis Wedan (218) 428-1002.

Environment - Karl Beaster (715) 718-1040; Alex Smith (715) 817-8322.