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BARR

Technical Memorandum

To: Nick Larabel, Enbridge Energy
From: Ryan Erickson and Jes Pedersen
Subject: Superior Terminal Tank 2 Ring Road Historical Response
WDNR BRRTS #: 02-16-586743
Date: December 18, 2020
Project: 49161092.08 003 004
Site Coordinates: 46.684174°, -92.057037° (NAD83)

This memorandum summarizes the environmental response activities performed by Barr Engineering (Barr) at the request of Enbridge Energy (Enbridge) following the discovery of historical hydrocarbon impacts encountered around the perimeter of Tank 2 at the Enbridge Superior Terminal (Terminal) in Superior, Wisconsin (Figure 1).

Background

In October and November of 2020, Enbridge contractors replacing the gravel access road (ring road) around the perimeter of the Tank 2 crude oil storage tank discovered soil with a hydrocarbon odor and discoloration in multiple locations near the exterior tank wall (Figure 2). Enbridge personnel responded to the site to evaluate the source of the impacts and conduct an initial assessment of the environmental conditions. Enbridge personnel did not identify an active release at the time of the initial discovery and throughout the road construction project; therefore, the contaminated soil was considered historical.

Enbridge requested that Barr complete the following activities:

- review the historical release information at the Terminal,
- field screen and sample soil from the final excavation extents to document the soil conditions,
- assist with the characterization and offsite management coordination of impacted soil, and
- prepare a memorandum summarizing the response actions and the excavation conditions upon the completion of remedial activities.

The Wisconsin Department of Natural Resources (WDNR) was notified about the identification of historical soil impacts from the Tank 2 ring road project on October 30, 2020 and Bureau of Remediation & Redevelopment Tracking System (BRRTS) number #02-16-586743 was assigned to the site. The associated WDNR *Notification For Hazardous Substance Discharge* reporting form is provided in Attachment A. Note that a small amount of soil with historical hydrocarbon contamination was previously identified in 2017 on the south side of Tank 2 (BRRTS #: 0216579607; Figure 2) in a small infrastructure upgrade excavation. The site was reported to the WDNR and was closed on November 16, 2017.

Field Activities

During the excavation and replacement of the ring road, Enbridge contractors began the management and removal of the contaminated material on October 27, 2020 and continued as the project excavation was advanced. Soil with evidence of contamination was either transported to the Terminal Soil Management Area or direct hauled to the landfill, once approval was granted. The *Material Management* section of this memorandum provides details on the management and disposal of the impacted soil.

On October 28, Barr communicated with Enbridge regarding project remediation planning and regulatory requirements and visited the Terminal to collect waste characterization soil samples from the impacted soil stockpile, as described in the *Material Management* section of this memo.

On October 30, November 2 and 5, Barr returned to the site as sections of the ring road excavation were completed to field screen and sample soil from the final Tank 2 ring road excavation base to document environmental conditions per the WDNR-approved *Site Investigation and Response Action Plan* (SI/RAP; 2014). Field screening samples were collected at regular intervals around the perimeter of the tank. Samples were collected from the area where the impacts had been identified by contractors (typically within 2 feet of the exterior tank wall) and from just beyond the area with identified contamination (typically 10 feet from the exterior tank wall) as shown in Attachment B: Sheets 1 through 3. On the north side of the tank, field screening samples were also collected further out (50 feet from tank wall) based on impacts observed during excavation activities. Field screening soil samples were screened for the presence of total organic vapors using a 10.6eV photoionization detector (PID). The samples were also visually assessed for the presence of other potential indicators of petroleum impacts such as odor, discoloration and sheen. The field screening sample locations and results were documented on site investigation field sampling and screening logs (Attachment B). Soil with headspace readings above 10 parts per million (ppm) and/or other evidence of hydrocarbon contamination (e.g., hydrocarbon odor, sheen, the presence of historical crude oil) was classified as contaminated.

Representative analytical confirmation soil samples *TK2 Road-B-1, TK2 Road-B-2, TK2 Road-B-3, and TK2 Road-B-4* were collected from areas exhibiting impacts above the screening levels areas, as outlined below. The samples were submitted to ALS Environmental Laboratory (ALS) in Holland, Michigan for analysis of petroleum volatile organic compounds (PVOCs) and naphthalene. The sampling locations are shown in Figure 2, the laboratory results are summarized in Table 1, and the laboratory reports are provided in Attachment C.

Results

The Tank 2 ring road replacement excavation was approximately 700 feet in total length, 30 feet wide (out from the tank wall), and between 2 and 3 feet deep (Photos 1, 3, 5, 8; Figure 2; Attachment B – Sheets 1 through 3). Approximately 1 foot of road base gravel material and 1 to 2 feet of fat clay were excavated. Based on communications from the contractor, most of the soil with apparent hydrocarbon impacts was within 3 lateral feet of the tank wall and the top 2 vertical feet. The exception to this was the additional impacts on the north side of the tank up to 20 feet out from the tank wall. Small areas of standing water were present on the ground surface near the tank and no sheen was observed on the water surface by the contractor or Barr (Photos 2 and 7).

Based on the field screening results, four areas with evidence of residual contamination (soil headspace greater than 10 ppm) were identified in the base of the final excavation. Specifically, the areas with residual impacts (headspace readings between 15.7 and 55.6 ppm) were identified on the south side of the tank (Photos 1 and 2) and the north side of the tank (Photos 5 and 6). Soil with elevated headspace readings typically also had a light to moderate hydrocarbon odor and discoloration. The soil with the highest headspace reading (*B-14*=55.6 ppm; 11/5/2020) was near the D-door on the north side of the tank (Photos 5, 6).

Representative analytical soil samples *TK2 Road-B-1, TK2 Road-B-2, TK2 Road-B-3, and TK2 Road-B-4* were collected from the base of the final excavation in areas where headspace readings exceeded 10 ppm as outlined above (Figure 2; Attachment B – Sheets 1-3). All PVOC + naphthalene analyte concentrations were below WDNR Direct Contact and Groundwater Residual Contaminant Levels (RCLs) and below the laboratory method detection limits and/or practical quantitation limits. The analytical results are summarized in Table 1 and the ALS laboratory report is provided in Attachment C.

Based on the field screening observations and the presence of Terminal infrastructure, additional excavation activities did not go beyond the final road grade. The new ring road was constructed, which included a geotechnical liner and between 2 and 3 feet of clean fill material (Photos 8 and 9).

Receptor Survey

No direct contact risks were identified based on the field screening and analytical sampling results. Additionally, the placement of clean road fill material over potentially impacted areas further assists in limiting direct contact by personnel. No impacts to surface water were identified and there is little risk of future surface water impacts based on the remedial actions and the site's location within the tank containment basin. No groundwater risks were identified based on the analytical sampling results from a review of ongoing facility-wide groundwater monitoring program data. Specifically, the groundwater pathway at the Superior Terminal is addressed on a facility-wide basis through the established hydrogeologic performance standard approved by the WDNR. Enbridge samples the Terminal monitoring well network (Figure 3) on a semi-annual basis and provides the data to the WDNR on an annual basis. The nearest enclosed structures are slab-on-grade terminal buildings approximately 250 feet north and 250 feet to the east of Tank 2. The risk of hazardous vapor accumulation in those structures is low due to the documented soil conditions, the distance to the structures, and the slab-on-grade construction. Terminal employees are also required to wear four-gas detectors that would alert them to a potentially hazardous atmosphere.

Material Management

During the excavation and replacement of the ring road, soil with evidence of contamination was either transported to the Terminal Soil Management Area contaminated soil building (Photo 10) or direct hauled to the landfill, once approval was granted. On October 28, 2020, Barr collected characterization samples *TK2 RD-Stockpile-1* and *TK2 RD-Stockpile-2* from the contaminated soil stockpile for laboratory analysis at ALS Laboratory. The samples were analyzed for diesel range organics and benzene, toluene, ethyl benzene, and xylenes. The laboratory report and waste profile application were submitted to the VONCO V landfill in Duluth, Minnesota and the soil was assigned waste profile #20-107-I. A total of 706.3 tons of contaminated soil was hauled to the landfill November 4 through 10, 2020. The waste profile documents, waste characterization laboratory report, and landfill summary report are included in Attachment D.

Conclusions

Evidence of historical hydrocarbon impacts were identified during the Superior Terminal Tank 2 ring road replacement project conducted in October and November 2020. No active release was identified during the project. Excavated soil with evidence of contamination was managed at a landfill.

Based on the results of field screening and analytical sampling from the final excavation base, no historically impacted soil exceeding WDNR Direct Contact and Groundwater RCLs remains and clean road fill has replaced the excavated material.

Based on the information in this report, the ongoing Terminal groundwater monitoring program, and Enbridge's environmental response procedures implemented at the facility, there appears to be little risk to potential direct contact, vapor, surface water and groundwater receptors.

Per Wisconsin Statute NR708.09, Barr recommends that Enbridge submit this memo to the WDNR and request a No Further Response Action determination that states that no further remediation or investigation actions are required at this time. If residual contamination associated with this site is identified in the future, the WDNR will be notified and site conditions will be documented and reported to the WDNR.

Reference

Barr Engineering Co. 2014, *Site Investigation and Response Action Plan Enbridge Energy Superior Terminal (Facility-Wide)*. Prepared for Enbridge Energy, July 2014.

Attachments:

Site Photos	1 through 10
Table 1	Analytical Soil Data Summary
Figure 1	Site Location
Figure 2	Site Layout
Figure 3	Receptor Survey
Attachment A	WDNR Release Reporting Communication
Attachment B	Site Investigation Field Sampling and Screening Logs
Attachment C	ALS Laboratory Report for Confirmation Soil Samples
Attachment D	Material Management Documentation

Site Photos

Photo 1

Photo 2

Photo 1: Tank 2 ring road excavation on southwest side of the tank. Photo taken facing northwest on October 30, 2020.
Photo 2: Area of localized contamination on the south side of Tank 2. Analytical sample *TK2 Road-B-1* was collected at this location. Photo taken October 30, 2020.

Photo 3

Photo 4

Photo 3: Tank 2 ring road excavation on the southeast side of the tank. Photo taken facing north on November 2, 2020.
Photo 4: Area of impacted soil beneath mixer valve on the northeast side of Tank 2. Analytical sample *TK2 Road-B-2* was collected at this location. Photo taken facing south on November 2, 2020.

Photo 5

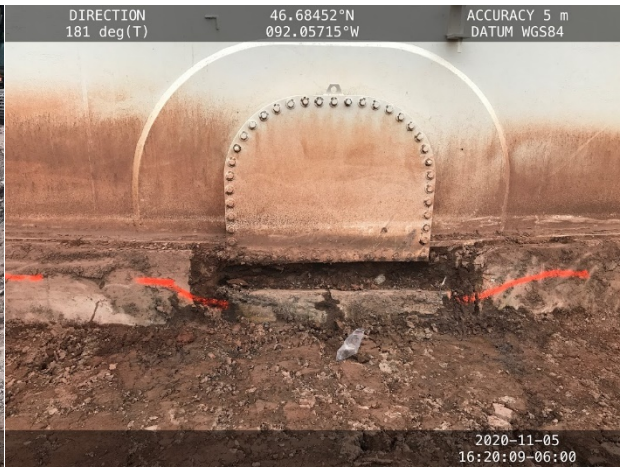


Photo 6

Photo 5: Tank 2 ring road excavation with discolored soil on the north side of the tank. The red arrow is pointing at the northern D-door. Photo taken facing southwest on November 5, 2020.
Photo 6: D-door on the north side of Tank 2. Soil with an elevated headspace reading was identified and analytical sample *TK2 Road-B-3* was collected at this location. Photo taken facing south on November 5, 2020.

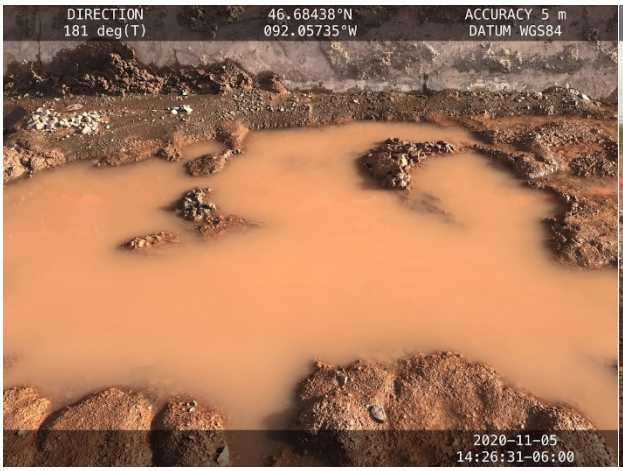


Photo 7

Photo 8

Photo 7: Standing water on the north side of Tank 2. No sheen was observed. Photo taken on November 5, 2020.
Photo 8: New road fill material and the road cut (photo foreground) near the northeast side of Tank 2. Photo taken facing southeast on November 5, 2020.

Photo 9

Photo 10

Photo 9: Ring road during construction on the west side of Tank 2. Photo taken facing south on November 5, 2020.
Photo 10: Contaminated soil stockpile in the Terminal Soil Management Area. Photo taken on October 28, 2020.

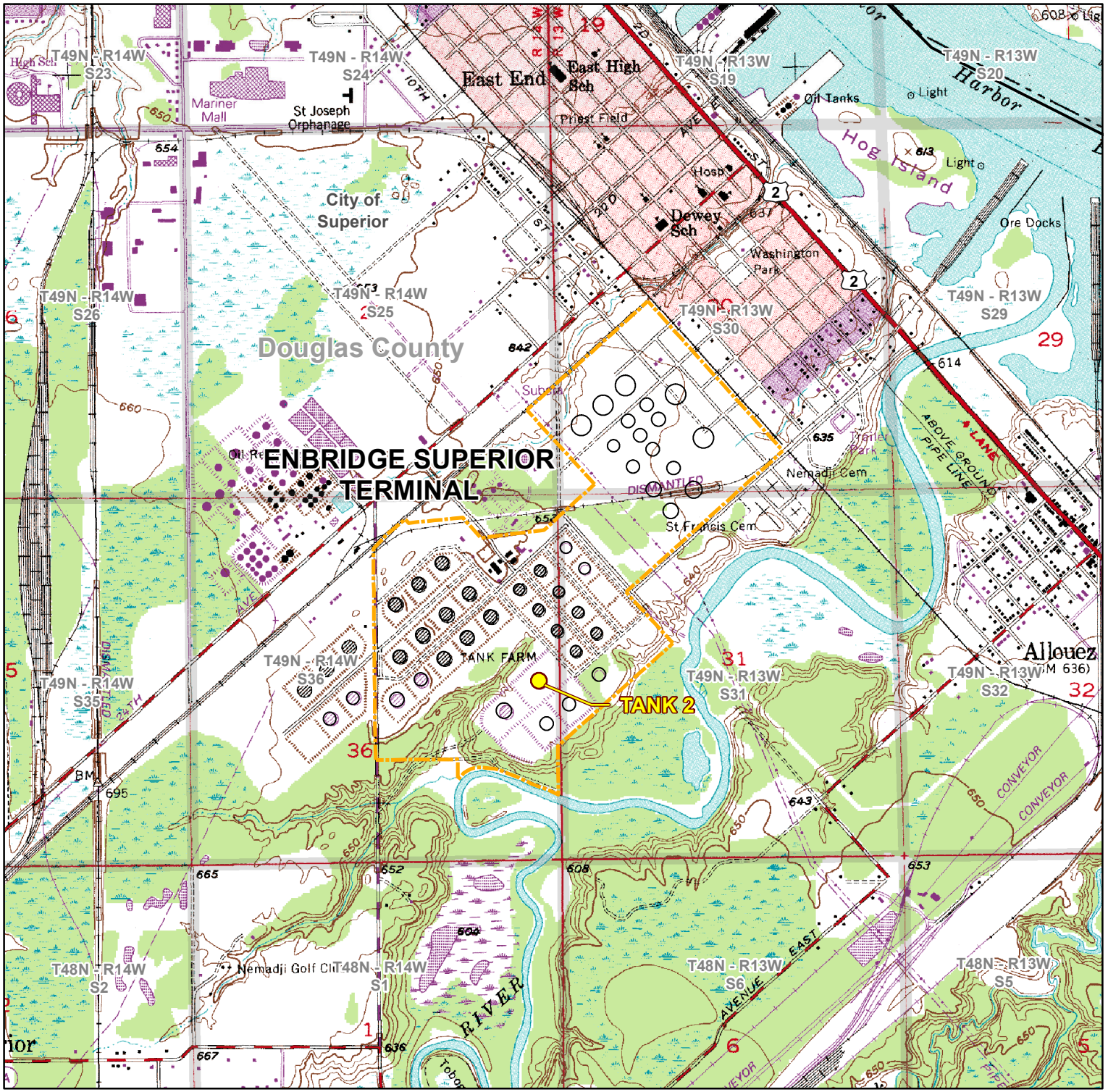
Table 1
Analytical Soil Data Summary
Tank 2 Ring Road Reponse
Enbridge Energy

		Location	TK2 Road-B-1	TK2 Road-B-2	TK2 Road-B-3	TK2 Road-B-4
		Date	10/30/2020	11/02/2020	11/05/2020	11/05/2020
		Depth	2 ft	2 ft	2 ft	2 ft
Parameter	Wisconsin Groundwater RCLs, DF=2	Wisconsin Not to Exceed Direct Contact Industrial RCLs				
Effective Date	06/01/2018	06/01/2018				
Exceedance Key	No Exceedances	No Exceedances				
Volatile Organic Compounds						
1,2,4-Trimethylbenzene	1.3787	219	0.120J	U	U	U
1,3,5-Trimethylbenzene	1.3787	182	U	0.075J	U	U
Benzene	0.0051	7.07	U	U	U	U
Ethyl benzene	1.57	35.4	U	U	U	U
Naphthalene	0.6582	24.1	U	U	U	U
Toluene	1.1072	818	U	U	U	U
Xylene, total	3.96	260	U	U	U	U

-All values in mg/kg unless otherwise noted

Barr Standard Footnotes and Qualifiers

U	The analyte was analyzed for, but was not detected.
J	Analyte is present at an estimated concentration between the MDL and Report Limit



Site Location

Tank 2

Terminal Property Boundary

0 2,000 4,000

Feet

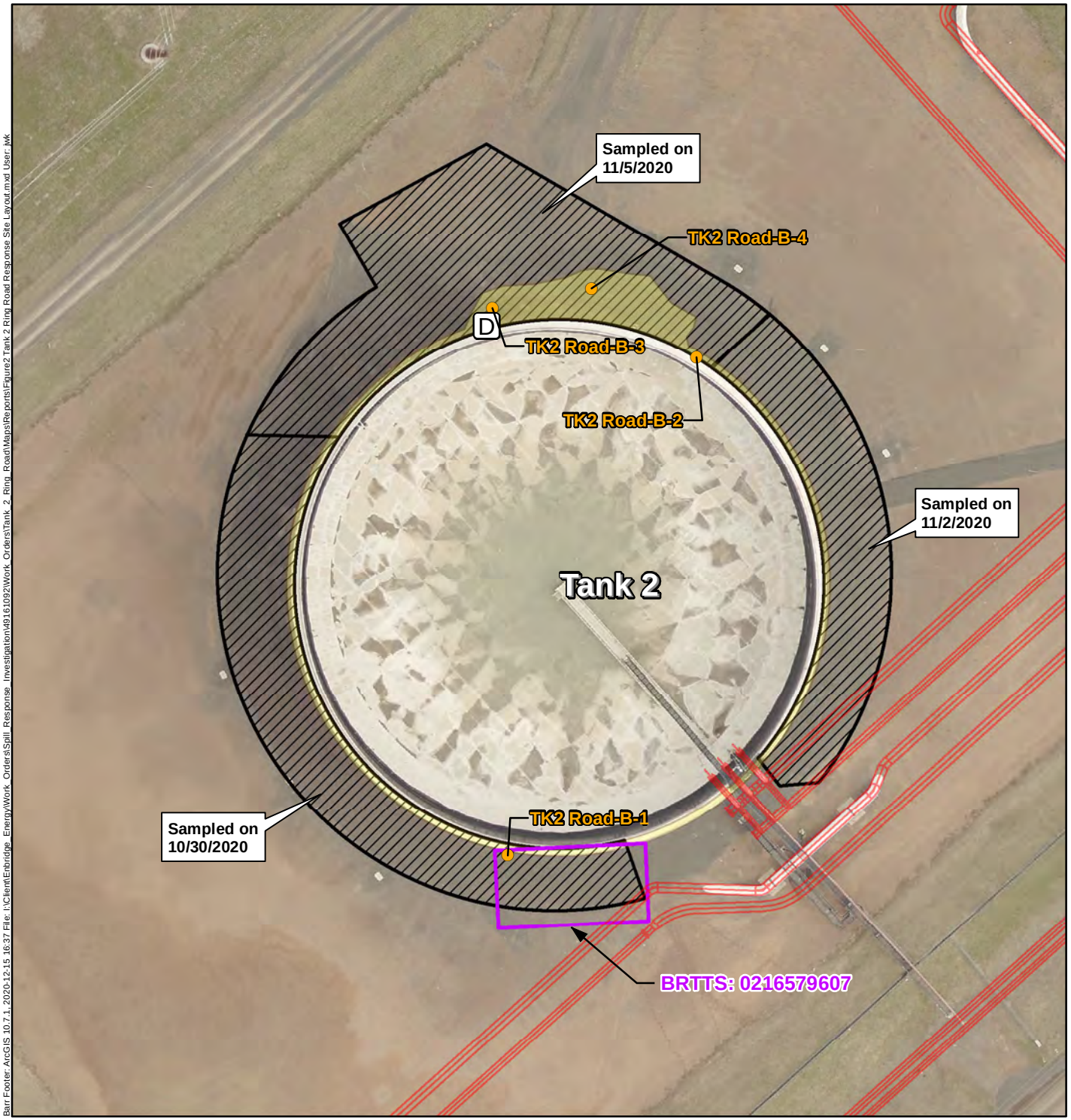
1 Inch = 2,000 Feet

Figure 1

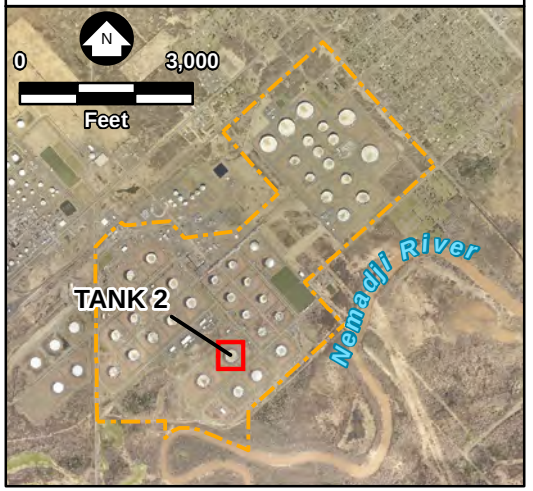
SITE LOCATION
TANK 2 RING ROAD RESPONSE
SUPERIOR TERMINAL
Enbridge Energy, L.P.
Superior, Wisconsin

ENBRIDGE

Barr Footer: ArcGIS 10.7.1, 2020-11-25 01:16 File: I:\Client\Enbridge_Energy\Work_Orders\Spill_Response_Investigation\49161092\Work_Orders\Tank_2_Ring_Road\Maps\Reports\Figure1 Tank 2 Ring Road Response Site Location.mxd User: jwk



ENBRIDGE SUPERIOR TERMINAL



- Analytical Sample Locations
- D Door
- Excavation Extents
- Area with Identified and Removed Impacted Soil
- Known Closed BRRTS Site
- Pipeline Infrastructure
- Terminal Property Boundary

N

0 60 120

Feet

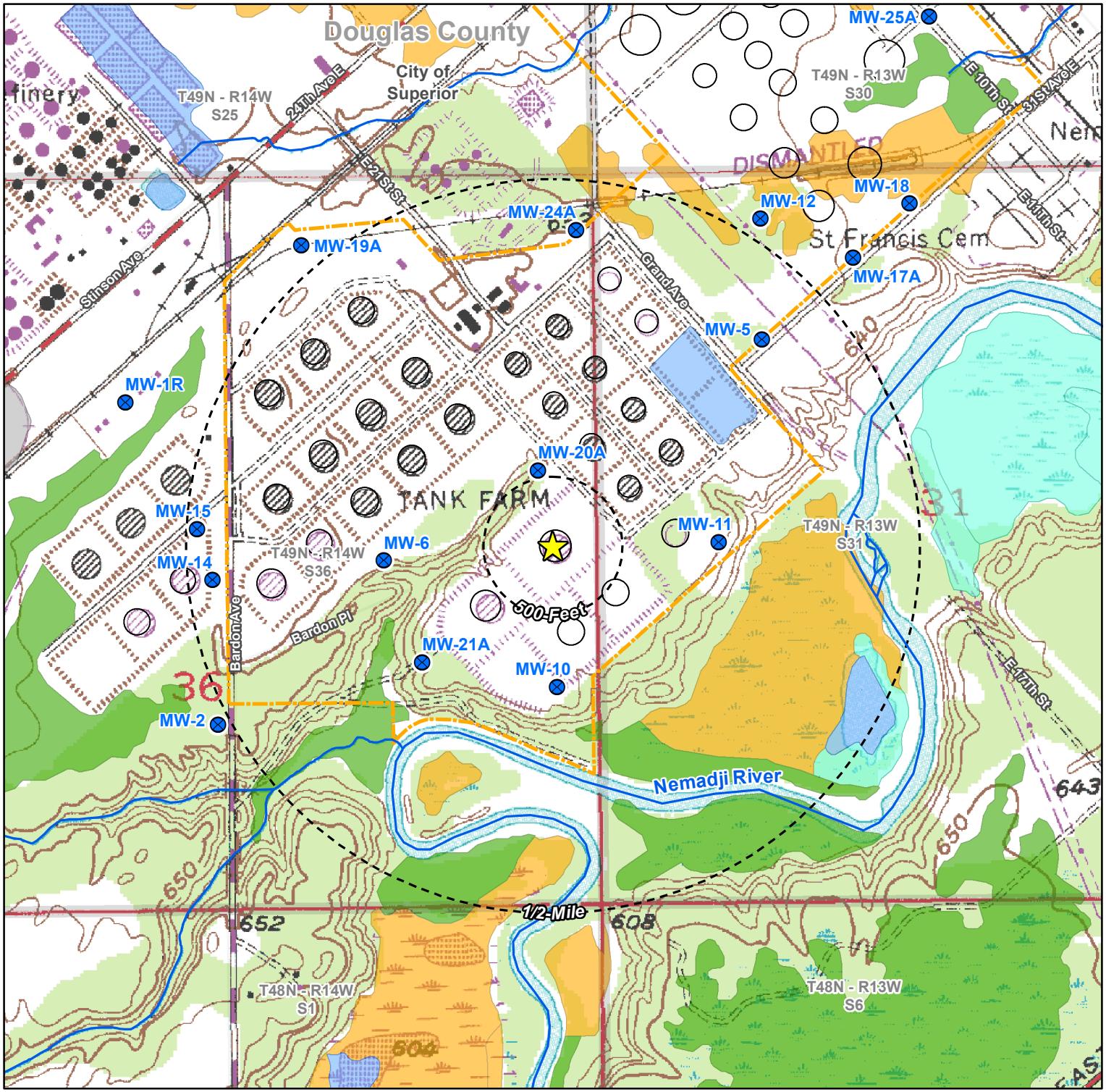
1 Inch = 60 Feet

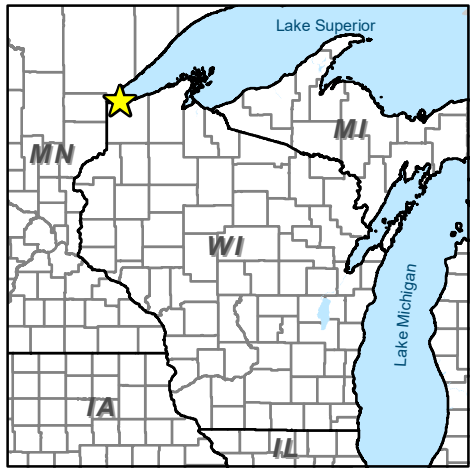
Douglas County Imagery Circa May, 2019

Figure 2

SITE LAYOUT
TANK 2 RING ROAD RESPONSE
SUPERIOR TERMINAL
Enbridge Energy, L.P.
Superior, Wisconsin

ENBRIDGE





Site Location

Enbridge Monitoring Well

Terminal Property Boundary

Watercourses

Wisconsin Wetland Inventory

Emergent/wet meadow

Filled/drained wetland

Forested

Open Water

Scrub/Shrub

N

0 1,000 2,000

Feet

1 Inch = 1,000 Feet

Figure 3

RECEPTOR SURVEY
TANK 2 RING ROAD RESPONSE
SUPERIOR TERMINAL
Enbridge Energy, L.P.
Superior, Wisconsin

ENBRIDGE

Barr Footer: ArcGIS 10.7.1, 2020-11-25 02:02 File: I:\Client\Enbridge_Energy\Work_Orders\Spill_Response_Investigation\49161092\Work_Orders\Tank_2_Ring_Road\Maps\Reports\Figure3 Tank 2 Ring Road Response Receptor.mxd User: jwk

Attachment A

WDNR Release Reporting Communication

Save... Clear Data **Note:** In order to fill and save this form electronically, it must be opened using Adobe Reader or Acrobat software. Save a copy of the file, open Adobe Reader, select File > Open and browse for the file you saved.

State of Wisconsin
Department of Natural Resources
PO Box 7921, Madison WI 53707-7921
dnr.wi.gov

Notification For Hazardous Substance Discharge (Non-Emergency Only)

Form 4400-225 (R 02/20)

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: Pipeline Terminal

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

Date DNR Notified: 10/30/2020

1. Discharge Reported By

Name	Firm	Phone Number (include area code)
Nick Larabel	Enbridge	(269) 330-3872

Mailing Address	Email
455 Leggitt Road, Marshall, MI 49068	nick.larabel@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 Energy - Superior Terminal: Tank 2 Ring Road

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, WI

County	Legal Description:	WTM:
Douglas	NE ¼ of SE ¼ Section 16 , Town 49 N, Range 14 ◯ E ◉ W	X 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

☐ A local governmental unit claiming an exemption from state Spill Law and Solid Waste Management responsibilities for the discharge being reported, per Wis. Stat. §§ 292.11(9)(e) and 292.23, should: 1) check this box; 2) review DNR publication RR-055; and 3) provide documentation to DNR that demonstrates compliance with the statutory requirements of the liability exemptions. Local governmental units may also request a fee-based liability clarification letter from DNR by using DNR Form 4400-237.

Contact Person Name (if different)	Phone Number	Email
Enbridge Energy - Nick Larabel	(269) 330-3872	nick.larabel@enbridge.com

Mailing Address	City	State	ZIP Code

Responsible Party Name: 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

Mailing Address	City	State	ZIP Code

(continued)

Notification For Hazardous Substance Discharge (Non-Emergency Only)

4. Hazardous Substance Information

Identify hazardous substance discharged (check all that apply):

- ☐ VOCs
  - ☐ PCE
  - ☐ TCE
  - ☐ Other Chlorinated
  - ☐ Diesel
  - ☐ Fuel Oil
  - ☐ Gasoline
  - ☐ Hydraulic Oil
  - ☐ Jet Fuel
- *(VOCs continued)*
  - ☐ Mineral Oil
  - ☐ Waste Oil
  - ☐ Petroleum-Unknown Type
- ☐ PAHs
- ☐ PCBs
- ☐ Cyanide
- ☐ Leachate
- ☐ Manure
- ☐ Metals
  - ☐ Arsenic
  - ☐ Chromium
  - ☐ Lead
  - ☐ Other: _____
- ☐ Pesticides: _____
- ☐ Fertilizer: _____
- ☐ RCRA Hazardous Waste: _____
- ☒ Other: Crude oil - historical impacted soil
- ☐ Unknown

5. Impacts to the Environment Information

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

- ____ Air Contamination
- ____ Co-mingled (Petroleum & Non-Petroleum)
- ____ Contamination in Fractured Bedrock
- ____ Contamination Within 1 Meter of Bedrock
- ____ Contaminated Private Well
- ____ Contaminated Public Well
- ____ Contamination in Right of Way
- ____ Fire Explosion Threat
- ____ Free Product
- ____ Groundwater Contamination
- ____ Off-Site Contamination
- ____ Sanitary Sewer Contamination
- ____ Storm Sewer Contamination
- ____ Sediment Contamination
- K Soil Contamination
- ____ Soil Gas Contamination
- ____ Sub-slab Vapor Contamination
- ____ Surface Water Contamination
- ____ Within 100 ft of Private Well
- ____ Within 1000 ft of Public Well

Other (specify): _____

Contamination was discovered as a result of:

☐ Tank closure assessment Date _____
☐ Site assessment Date _____
☒ Other - Describe: Tank Ring Road Construction Date 10/30/2020

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.

Enbridge is replacing the Superior Terminal Tank #2 ring road. The ring road is a gravel road that goes around the perimeter of the tank. During excavation of old road, soil with a hydrocarbon odor and staining was observed in multiple locations within approximately 3 lateral feet of the tank wall. No active releases were identified therefore the impacts were interpreted to be associated with historical Terminal activities. Excavation will be completed by the first week of November and all excavated impacted soil will be sent to the landfill.

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

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

☒ Does not apply.

Source

- ☐ Tank
- ☐ Piping
- ☐ Dispenser
- ☐ Submersible Turbine Pump
- ☐ Delivery Problem
- ☐ Other (specify): _____

Cause

- ☐ Spill
- ☐ Overfill
- ☐ Corrosion
- ☐ Physical or Mechanical Damage
- ☐ Installation Problem
- ☐ Other (does not fit any of above)
- ☐ Unknown

Submit this completed form along with any associate lab results using the RR Program Submittal Portal, found on the DNR website at https://dnr.wi.gov/topic/Brownfields/Submittal.html.

If you have any questions, please contact the appropriate regional Environmental Program Associate (EPA) listed under the "EPAs" tab at https://dnr.wi.gov/topic/Brownfields/Contact.html.

Attachment B

Site Investigation Field Sampling and Screening Logs

(Sheets 1 through 3)

Zero = 0.0
Span = 100.2
bump = 100.4 span

SITE INVESTIGATION FIELD SAMPLING AND SCREENING LOG

Location: *Milepost or Facility* Tank 2 Ring Road Response

Equipment used: Photo -*ionization detector with* 10.6 *eV lamp*

Background Headspace: 0.0 ppm

Date: 10/30/2020

Sampler: JSP/RDB

Calibration Time: 0805

Sample Nomenclature *(Location - sample type - #)*: TK2 Road -

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)
Example: A3-NE	4	16:30	CL	Reddish brown	Petroleum/ Rainbow	275
1	2	1030	CL	Red/N	N/N	0.1
2				↓	N/N	0.2
3				Slight dark discolor	N/N	2.4
4				Red/N	N/N	0.2
5					Petroleum odor True sheen/sheen	18.3
6						0.2
7						0.1
8						0.2
9						0.1
10						0.0
11			Clay w/ Sand	Red/ Dk brn Discolor	Light Petrol odor /N	6.9
12			Clay	Red /N	N /N	0.7
13				Brown	N/N	0.2
14				Red/N	N/N	0.3
15				Brown	Light Petrol odor/N	0.1
16				Red	N/N	0.2
17				~~Brown~~	N/N	0.1
18				↓	N/N	0.2
19				Dk brn discolor	N/N	0.3
20				Red	N/N	0.4
21					N/N	0.1
22					N/N	0.2
23					N/N	0.1
24					N/N	0.2
25					N/N	0.2
26		1050			N/N	1.0

SITE SKETCH: *north is up; excavation extents & depths, impacted areas, sample locations, borings, wells, structures, utilities, natural features...* ***1 inch/grid = 50 FEET***

Zero = 0.0
Span = 100.2
bump = 100.9

SITE INVESTIGATION FIELD SAMPLING AND SCREENING LOG

Location: *Milepost or Facility* Tank 2 Ring Road Response

Equipment used: Photo -*ionization detector with* 10.6 *eV lamp*

Background Headspace: 0.0 ppm

Date: 11/2/2020

Sampler: JSP

Calibration Time: 1110

Sample Nomenclature *(Location - sample type - #)*: TK2 Road -

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)
Example: A3-NE	4	16:30	CL	Reddish brown	Petroleum/ Rainbow	275
B1	2	1315	CL	reddish brown	N/N	0.0
2						0.0
3						0.0
4			SP-SM w/gravel	dark brown		0.4
5			CL	reddish brown		0.0
6						0.0
7						0.0
8						0.2
9						0.0
10						0.0
11						0.1
12						0.0
13						0.0
14						0.1
15				dark brown discolor	slight petroleum	6.8
16				reddish brown	N	0.2
17						0.3
18						0.6
19						0.1
20						0.2
21						0.3
22						0.1
23						0.2
24						0.2
25						5.5
26		1330		dark brown discolor	slight petroleum	0.2
27				reddish brown	N	0.4

SITE SKETCH: *north is up; excavation extents & depths, impacted areas, sample locations, borings, wells, structures, utilities, natural features...* **1 inch/grid = 50 FEET**

sample	depth	soil	discolor	odor	PID	
B 28	2	CL	red brown	slight	26.8	@ 1335
S 29	1	SP	black	N	0.4	@ 1335

Zero = 0.0
5 ppm = 100.1
60ppm = 160.1

SITE INVESTIGATION FIELD SAMPLING AND SCREENING LOG

Location: *Milepost or Facility* Tank 2 Ring Road Response

Equipment used: Photo *-ionization detector with* 10.6 *eV lamp*

Background Headspace: 0.0 ppm

Date: 11/5/2020

Sampler: JSP

Calibration Time: 1300

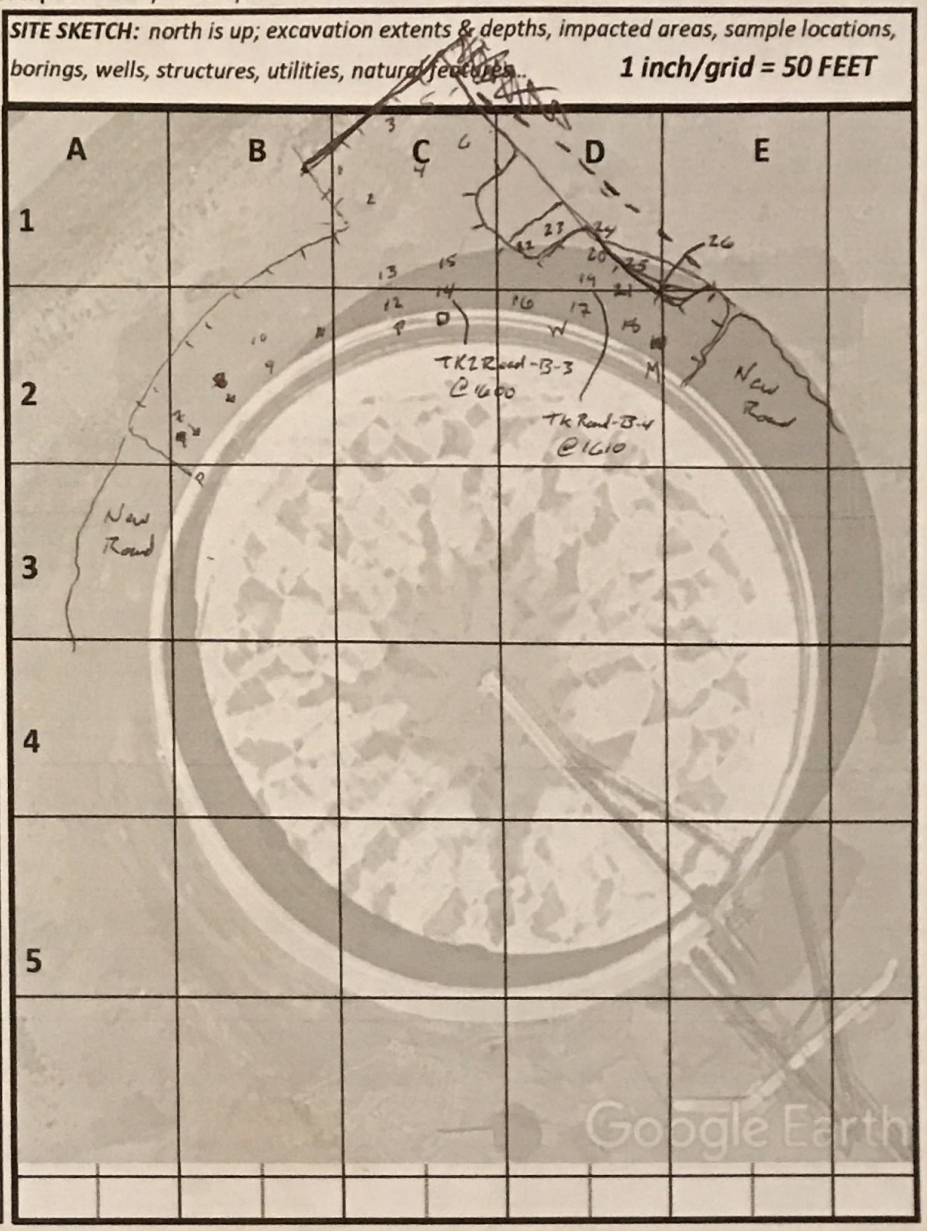
Sample Nomenclature *(Location - sample type - #)*: TK2 Road -

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)
Example: A3-NE	4	16:30	CL	Reddish brown	Petroleum/ Rainbow	275
B 1	2	1450			N/N	0.1
2						6.4
3						0.6
4						0.1
5						0.1
6		"				0.1
7		1455				0.2
8						0.4
9						0.1
10						0.2
11				black		0.3
12				red brown		7.7
13				"		0.1
14				dark brown	slight	55.6
15				red brown	N/N	9.0
16				dark brown	slight	20.1
17				"	"	12.5
18				red brown	N/N	0.3
19	"			black	mod	15.7
R 20	1			red brown	N/N	0.6
R 21	1.5	1515		black	slight	19.9
B 22	"	1613		red brown	N/N	0.5
B 23	2	"		red brown	slight	4.5
S 24	1.5	1630			N/N	0.4
S 25	"	"		"	"	0.3
S 26	"	"		"	"	0.7

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

1 inch/grid = 50 FEET



Attachment C

ALS Laboratory Report for Confirmation Soil Samples

12-Nov-2020

Ryan Erickson
Barr Engineering Company
4300 Market Pointe Drive
Suite 200
Minneapolis, MN 55435

Re: **Tank 2 Ring Road (49161092.08 003 004)** Work Order: **20110247**

Dear Ryan,

ALS Environmental received 2 samples on 03-Nov-2020 10:00 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental - Holland and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 11.

If you have any questions regarding this report, please feel free to contact me:

ADDRESS: 3352 128th Avenue, Holland, MI, USA
PHONE: +1 (616) 399-6070 FAX: +1 (616) 399-6185

Sincerely,

Ehrland Bosworth

Electronically approved by: Ehrland Bosworth

Ehrland Bosworth
Project Manager

Report of Laboratory Analysis

Certificate No: WI: 399084510

ALS Group, USA

Date: 12-Nov-20

Client: Barr Engineering Company
Project: Tank 2 Ring Road (49161092.08 003 004)
Work Order: **20110247**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
20110247-01	TK2 Road-B-1	Soil		10/30/2020 11:25	11/3/2020 10:00	☐
20110247-02	TK2 Road-B-2	Soil		11/2/2020 14:05	11/3/2020 10:00	☐

ALS Group, USA

Date: 12-Nov-20

Client: Barr Engineering Company
Project: Tank 2 Ring Road (49161092.08 003 004)
WorkOrder: **20110247**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
Hr	BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated.
J	Analyte is present at an estimated concentration between the MDL and Report Limit
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
% of sample	Percent of Sample
µg/Kg-dry	Micrograms per Kilogram Dry Weight

Client:	Barr Engineering Company
Project:	Tank 2 Ring Road (49161092.08 003 004)
Work Order:	20110247

Case Narrative

Samples for the above noted Work Order were received on 11/03/2020. The attached "Sample Receipt Checklist" documents the status of custody seals, container integrity, preservation, and temperature compliance.

Samples were analyzed according to the analytical methodology previously transmitted in the "Work Order Acknowledgement". Methodologies are also documented in the "Analytical Result" section for each sample. Quality control results are listed in the "QC Report" section. Sample association for the reported quality control is located at the end of each batch summary. If applicable, results are appropriately qualified in the Analytical Result and QC Report sections. The "Qualifiers" section documents the various qualifiers, units, and acronyms utilized in reporting. A copy of the laboratory's scope of accreditation is available upon request.

With the following exceptions, all sample analyses achieved analytical criteria.

Volatile Organics:
No deviations or anomalies were noted.

Wet Chemistry:
No deviations or anomalies were noted.

ALS Group, USA

Date: *12-Nov-20*

Client: Barr Engineering Company
Project: Tank 2 Ring Road (49161092.08 003 004)
Sample ID: TK2 Road-B-1
Collection Date: 10/30/2020 11:25 AM

Work Order: 20110247
Lab ID: 20110247-01
Matrix: SOIL

Analyses	Result	Qual	MDL	PQL	Units	Dilution Factor	Date Analyzed
VOLATILE ORGANIC COMPOUNDS		Method: **SW8260C**					Analyst: **MF**
1,2,4-Trimethylbenzene	**120**	J	**40**	**130**	**µg/Kg-dry**	1	11/9/2020 03:44
1,3,5-Trimethylbenzene	U		63	210	µg/Kg-dry	1	11/9/2020 03:44
Benzene	U		9.2	31	µg/Kg-dry	1	11/9/2020 03:44
Ethylbenzene	U		11	38	µg/Kg-dry	1	11/9/2020 03:44
m,p-Xylene	U		72	240	µg/Kg-dry	1	11/9/2020 03:44
Naphthalene	U		130	430	µg/Kg-dry	1	11/9/2020 03:44
o-Xylene	U		21	69	µg/Kg-dry	1	11/9/2020 03:44
Toluene	U		15	49	µg/Kg-dry	1	11/9/2020 03:44
Xylenes, Total	U		72	240	µg/Kg-dry	1	11/9/2020 03:44
Surr: 1,2-Dichloroethane-d4	*99.3*			*70-130*	*%REC*	1	11/9/2020 03:44
Surr: 4-Bromofluorobenzene	*101*			*70-130*	*%REC*	1	11/9/2020 03:44
Surr: Dibromofluoromethane	*102*			*70-130*	*%REC*	1	11/9/2020 03:44
Surr: Toluene-d8	*104*			*70-130*	*%REC*	1	11/9/2020 03:44
MOISTURE		Method: **SW3550C**					Analyst: **KTP**
Moisture	**29**		**0.10**	**0.10**	**% of sample**	1	11/9/2020 14:29

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *12-Nov-20*

Client: Barr Engineering Company
Project: Tank 2 Ring Road (49161092.08 003 004)
Sample ID: TK2 Road-B-2
Collection Date: 11/2/2020 02:05 PM

Work Order: 20110247
Lab ID: 20110247-02
Matrix: SOIL

Analyses	Result	Qual	MDL	PQL	Units	Dilution Factor	Date Analyzed
VOLATILE ORGANIC COMPOUNDS		Method: **SW8260C**					Analyst: **MF**
1,2,4-Trimethylbenzene	U		30	99	µg/Kg-dry	1	11/9/2020 04:00
1,3,5-Trimethylbenzene	**75**	J	**47**	**160**	**µg/Kg-dry**	1	11/9/2020 04:00
Benzene	U		6.9	23	µg/Kg-dry	1	11/9/2020 04:00
Ethylbenzene	U		8.5	28	µg/Kg-dry	1	11/9/2020 04:00
m,p-Xylene	U		54	180	µg/Kg-dry	1	11/9/2020 04:00
Naphthalene	U		97	320	µg/Kg-dry	1	11/9/2020 04:00
o-Xylene	U		16	52	µg/Kg-dry	1	11/9/2020 04:00
Toluene	U		11	37	µg/Kg-dry	1	11/9/2020 04:00
Xylenes, Total	U		54	180	µg/Kg-dry	1	11/9/2020 04:00
Surr: 1,2-Dichloroethane-d4	*95.6*			*70-130*	*%REC*	1	11/9/2020 04:00
Surr: 4-Bromofluorobenzene	*101*			*70-130*	*%REC*	1	11/9/2020 04:00
Surr: Dibromofluoromethane	*98.9*			*70-130*	*%REC*	1	11/9/2020 04:00
Surr: Toluene-d8	*104*			*70-130*	*%REC*	1	11/9/2020 04:00
MOISTURE		Method: **SW3550C**					Analyst: **KTP**
Moisture	**19**		**0.10**	**0.10**	**% of sample**	1	11/9/2020 14:29

Note: See Qualifiers page for a list of qualifiers and their definitions.

QC BATCH REPORT

Batch ID: **167106w** Instrument ID **VMS8** Method: **SW8260C**

MBLK Sample ID: **MBLK-167106-167106w** Units: **µg/Kg-dry** Analysis Date: **11/6/2020 10:59 PM**

Client ID: Run ID: **VMS8_201106B** SeqNo: **6880490** Prep Date: **11/4/2020** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trimethylbenzene	U	22	73								
1,3,5-Trimethylbenzene	U	35	120								
Benzene	U	5.1	17								
Ethylbenzene	U	6.3	21								
m,p-Xylene	U	40	130								
Naphthalene	U	72	240								
o-Xylene	U	12	39								
Toluene	U	8.2	27								
Xylenes, Total	U	40	130								
Surr: 1,2-Dichloroethane-d4	*1022*	0	0	*1000*	0	*102*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*992*	0	0	*1000*	0	*99.2*	*70-130*	0			
Surr: Dibromofluoromethane	*1034*	0	0	*1000*	0	*103*	*70-130*	0			
Surr: Toluene-d8	*1008*	0	0	*1000*	0	*101*	*70-130*	0			

LCS Sample ID: **LCS-167106-167106w** Units: **µg/Kg-dry** Analysis Date: **11/6/2020 10:10 PM**

Client ID: Run ID: **VMS8_201106B** SeqNo: **6880489** Prep Date: **11/4/2020** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trimethylbenzene	959.5	22	73	1000	0	96	65-135	0			
1,3,5-Trimethylbenzene	1116	35	120	1000	0	112	65-135	0			
Benzene	1084	5.1	17	1000	0	108	75-125	0			
Ethylbenzene	1056	6.3	21	1000	0	106	75-125	0			
m,p-Xylene	2046	40	130	2000	0	102	80-125	0			
Naphthalene	940.5	72	240	1000	0	94	40-140	0			
o-Xylene	1144	12	39	1000	0	114	75-125	0			
Toluene	1084	8.2	27	1000	0	108	70-125	0			
Xylenes, Total	3190	40	130	3000	0	106	75-125	0			
Surr: 1,2-Dichloroethane-d4	*973*	0	0	*1000*	0	*97.3*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*993.5*	0	0	*1000*	0	*99.4*	*70-130*	0			
Surr: Dibromofluoromethane	*1021*	0	0	*1000*	0	*102*	*70-130*	0			
Surr: Toluene-d8	*982.5*	0	0	*1000*	0	*98.2*	*70-130*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Barr Engineering Company
Work Order: 20110247
Project: Tank 2 Ring Road (49161092.08 003 004)

QC BATCH REPORT

Batch ID: **167106w** Instrument ID **VMS8** Method: **SW8260C**

MS Sample ID: **20110225-01A MS** Units: **µg/Kg-dry** Analysis Date: **11/7/2020 05:12 AM**
Client ID: Run ID: **VMS8_201106B** SeqNo: **6880492** Prep Date: **11/4/2020** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trimethylbenzene	1328	30	100	1381	0	96.2	65-135	0			
1,3,5-Trimethylbenzene	1571	48	160	1381	0	114	65-135	0			
Benzene	1409	7.1	24	1381	0	102	75-125	0			
Ethylbenzene	1431	8.7	29	1381	0	104	75-125	0			
m,p-Xylene	2743	55	180	2762	0	99.3	80-125	0			
Naphthalene	1656	99	330	1381	58	116	40-140	0			
o-Xylene	1471	16	53	1381	0	106	75-125	0			
Toluene	1462	11	38	1381	0	106	70-125	0			
Xylenes, Total	4213	55	180	4143	0	102	75-125	0			
Surr: 1,2-Dichloroethane-d4	*1331*	0	0	*1381*	0	*96.4*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*1446*	0	0	*1381*	0	*105*	*70-130*	0			
Surr: Dibromofluoromethane	*1362*	0	0	*1381*	0	*98.7*	*70-130*	0			
Surr: Toluene-d8	*1384*	0	0	*1381*	0	*100*	*70-130*	0			

MSD Sample ID: **20110225-01A MSD** Units: **µg/Kg-dry** Analysis Date: **11/7/2020 05:28 AM**
Client ID: Run ID: **VMS8_201106B** SeqNo: **6880493** Prep Date: **11/4/2020** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trimethylbenzene	1349	30	100	1381	0	97.7	65-135	1328	1.55	30	
1,3,5-Trimethylbenzene	1520	48	160	1381	0	110	65-135	1571	3.31	30	
Benzene	1425	7.1	24	1381	0	103	75-125	1409	1.17	30	
Ethylbenzene	1372	8.7	29	1381	0	99.4	75-125	1431	4.24	30	
m,p-Xylene	2740	55	180	2762	0	99.2	80-125	2743	0.101	30	
Naphthalene	1602	99	330	1381	58	112	40-140	1656	3.31	30	
o-Xylene	1458	16	53	1381	0	106	75-125	1471	0.896	30	
Toluene	1458	11	38	1381	0	106	70-125	1462	0.236	30	
Xylenes, Total	4197	55	180	4143	0	101	75-125	4213	0.378	30	
Surr: 1,2-Dichloroethane-d4	*1306*	0	0	*1381*	0	*94.6*	*70-130*	1331	*1.94*	*30*	
Surr: 4-Bromofluorobenzene	*1441*	0	0	*1381*	0	*104*	*70-130*	1446	*0.335*	*30*	
Surr: Dibromofluoromethane	*1387*	0	0	*1381*	0	*100*	*70-130*	1362	*1.81*	*30*	
Surr: Toluene-d8	*1393*	0	0	*1381*	0	*101*	*70-130*	1384	*0.696*	*30*	

The following samples were analyzed in this batch: 20110247-01A 20110247-02A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Barr Engineering Company
Work Order: 20110247
Project: Tank 2 Ring Road (49161092.08 003 004)

QC BATCH REPORT

Batch ID: **R302289** Instrument ID **MOIST** Method: **SW3550C**

MBLK Sample ID: **WBLKS-R302289** Units: **% of sample** Analysis Date: **11/9/2020 02:29 PM**
Client ID: Run ID: **MOIST_201109B** SeqNo: **6878246** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	U	0.1	0.10								

LCS Sample ID: **LCS-R302289** Units: **% of sample** Analysis Date: **11/9/2020 02:29 PM**
Client ID: Run ID: **MOIST_201109B** SeqNo: **6878245** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	100	0.1	0.10	100	0	100	98-102	0			

DUP Sample ID: **20110385-02B DUP** Units: **% of sample** Analysis Date: **11/9/2020 02:29 PM**
Client ID: Run ID: **MOIST_201109B** SeqNo: **6878231** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	5.8	0.1	0.10	0	0	0	0-0	5.76	0.692	10	

DUP Sample ID: **20110385-03B DUP** Units: **% of sample** Analysis Date: **11/9/2020 02:29 PM**
Client ID: Run ID: **MOIST_201109B** SeqNo: **6878233** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	4.43	0.1	0.10	0	0	0	0-0	4.34	2.05	10	

The following samples were analyzed in this batch: 20110247-01B 20110247-02B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

20110247

Barr Engineering Co. Chain of Custody

Sample Origination State
☐ CO ☐ MI ☐ MN ☐ MO ☐ ND ☐ TX ☐ UT ☒ WI ☐ Other: _____

COC Number: **№ 588040**
COC 1 of 1

REPORT TO	INVOICE TO
Company: Barr Engineering	Company: Barr Engineering
Address: 325 S. Lake Ave	Address:
Address: Duluth, MN 55802	Address:
Name: Ryan Erickson	Name:
email: RErickson@barr.com	email:
Copy to: BarrDM@barr.com / jet@barr.com	P.O.
Project Name: Tank 2 Ring Road	Barr Project No: [redacted] 49/41092.06 003 004

Matrix Code:
GW = Groundwater
SW = Surface Water
WW = Waste Water
DW = Drinking Water
S = Soil/Solid
SD = Sediment
O = Other

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
I = Ascorbic Acid
J = Zn Acetate
K = Other

Location	Sample Depth Start	Stop	Unit (m./ft. or in.)	Collection Date (mm/dd/yyyy)	Collection Time (hh:mm)	Matrix Code	Perform MS/MSD Y / N	Total Number Of Containers	Analysis Requested: Water	Soil: 40 ml vials	Soil: % Solids	Preservative Code / Field Filtered Y/N
										F	A	Preservative Code
										N	N	Field Filtered Y/N
1. TK2 Road-B-1	2	2	ft	10/30/2020	11:25	S	N	3		2	1	PVOC + naphthalene, moisture
2. TK2 Road-B-2	2	2	ft	11/2/2020	14:05	S	1	1		1	1	1
3.												
4.												
5.												
6.												
7.												
8.												
9.												
10.												

BARR USE ONLY
Sampled by: JSP
Barr Proj. Manager: REE
Barr DQ Manager: JET
Lab Name: ALS
Lab Location: Holland, MI

Relinquished by: [signature] — On Ice? (Y) N — Date 11/2/2020 — Time 15:45
Received by: [signature] — Date 11/3/20 — Time 10:00
Relinquished by: _____ — On Ice? Y N — Date _____ — Time _____
Received by: _____ — Date _____ — Time _____

Samples Shipped VIA: ☐ Ground Courier ☐ Air Carrier ☐ Sampler ☐ Other: _____
Air Bill Number: 9162 2966 4459
Lab WO: _____ Temperature on Receipt (°C): 1.0 °C Custody Seal Intact? ☐ Y ☐ N ☐ None

Requested Due Date:
☒ Standard Turn Around Time
☐ Rush _____ (mm/dd/yyyy)

Distribution - White-Original: Accompanies Shipment to Laboratory; **Yellow Copy:** Include in Field Documents; **Scan and email:** a copy to BarrDM@barr.com for tracking and filing procedures

H:\RLG\STDFORMS\Chain of Custody Form 2015 RLG Rev. 01/30/2020

ALS Group, USA

Sample Receipt Checklist

Client Name: **BARRENG-MN** Date/Time Received: **03-Nov-20 10:00**

Work Order: **20110247** Received by: **MJG**

Checklist completed by Matthew Gaylord (eSignature) 03-Nov-20 (Date) Reviewed by: Ehrland Bosworth (eSignature) 04-Nov-20 (Date)

Matrices: Soil

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	1.0/1.0C	IR1	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	11/3/2020 4:17:51 PM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

17-Nov-2020

Ryan Erickson
Barr Engineering Company
4300 Market Pointe Drive
Suite 200
Minneapolis, MN 55435

Re: **Tank 2 Ring Road (49161092.08 003 004)** Work Order: **20110930**

Dear Ryan,

ALS Environmental received 2 samples on 10-Nov-2020 10:00 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental - Holland and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 11.

If you have any questions regarding this report, please feel free to contact me:

ADDRESS: 3352 128th Avenue, Holland, MI, USA
PHONE: +1 (616) 399-6070 FAX: +1 (616) 399-6185

Sincerely,

Ehrland Bosworth

Electronically approved by: Ehrland Bosworth

Ehrland Bosworth
Project Manager

Report of Laboratory Analysis

Certificate No: WI: 399084510

ALS Group, USA

Date: 17-Nov-20

Client: Barr Engineering Company
Project: Tank 2 Ring Road (49161092.08 003 004)
Work Order: **20110930**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
20110930-01	TK2 Road-B-3	Soil		11/5/2020 16:00	11/10/2020 10:00	☐
20110930-02	TK2 Road-B-4	Soil		11/5/2020 16:10	11/10/2020 10:00	☐

Client: Barr Engineering Company
Project: Tank 2 Ring Road (49161092.08 003 004)
WorkOrder: **20110930**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
Hr	BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated.
J	Analyte is present at an estimated concentration between the MDL and Report Limit
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
% of sample	Percent of Sample
µg/Kg-dry	Micrograms per Kilogram Dry Weight

Client: Barr Engineering Company
Project: Tank 2 Ring Road (49161092.08 003 004)
Work Order: 20110930

Case Narrative

Samples for the above noted Work Order were received on 11/10/2020. The attached "Sample Receipt Checklist" documents the status of custody seals, container integrity, preservation, and temperature compliance.

Samples were analyzed according to the analytical methodology previously transmitted in the "Work Order Acknowledgement". Methodologies are also documented in the "Analytical Result" section for each sample. Quality control results are listed in the "QC Report" section. Sample association for the reported quality control is located at the end of each batch summary. If applicable, results are appropriately qualified in the Analytical Result and QC Report sections. The "Qualifiers" section documents the various qualifiers, units, and acronyms utilized in reporting. A copy of the laboratory's scope of accreditation is available upon request.

With the following exceptions, all sample analyses achieved analytical criteria.

Volatile Organics:
No deviations or anomalies were noted.

Wet Chemistry:
No deviations or anomalies were noted.

ALS Group, USA

Date: *17-Nov-20*

Client: Barr Engineering Company
Project: Tank 2 Ring Road (49161092.08 003 004)
Sample ID: TK2 Road-B-3
Collection Date: 11/5/2020 04:00 PM

Work Order: 20110930
Lab ID: 20110930-01
Matrix: SOIL

Analyses	Result	Qual	MDL	PQL	Units	Dilution Factor	Date Analyzed
VOLATILE ORGANIC COMPOUNDS		Method: **SW8260C**			Prep: SW5035 / 11/12/20		Analyst: **JNS**
1,2,4-Trimethylbenzene	U		34	110	µg/Kg-dry	1	11/16/2020 22:54
1,3,5-Trimethylbenzene	U		54	180	µg/Kg-dry	1	11/16/2020 22:54
Benzene	U		8.0	27	µg/Kg-dry	1	11/16/2020 22:54
Ethylbenzene	U		9.9	33	µg/Kg-dry	1	11/16/2020 22:54
m,p-Xylene	U		62	210	µg/Kg-dry	1	11/16/2020 22:54
Naphthalene	U		110	370	µg/Kg-dry	1	11/16/2020 22:54
o-Xylene	U		18	60	µg/Kg-dry	1	11/16/2020 22:54
Toluene	U		13	42	µg/Kg-dry	1	11/16/2020 22:54
Xylenes, Total	U		62	210	µg/Kg-dry	1	11/16/2020 22:54
Surr: 1,2-Dichloroethane-d4	*108*			*70-130*	*%REC*	1	11/16/2020 22:54
Surr: 4-Bromofluorobenzene	*100*			*70-130*	*%REC*	1	11/16/2020 22:54
Surr: Dibromofluoromethane	*102*			*70-130*	*%REC*	1	11/16/2020 22:54
Surr: Toluene-d8	*98.9*			*70-130*	*%REC*	1	11/16/2020 22:54
MOISTURE		Method: **SW3550C**					Analyst: **KTP**
Moisture	**25**		**0.10**	**0.10**	**% of sample**	1	11/12/2020 11:34

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *17-Nov-20*

Client: Barr Engineering Company
Project: Tank 2 Ring Road (49161092.08 003 004)
Sample ID: TK2 Road-B-4
Collection Date: 11/5/2020 04:10 PM

Work Order: 20110930
Lab ID: 20110930-02
Matrix: SOIL

Analyses	Result	Qual	MDL	PQL	Units	Dilution Factor	Date Analyzed
VOLATILE ORGANIC COMPOUNDS		Method: **SW8260C**			Prep: SW5035 / 11/12/20		Analyst: **JNS**
1,2,4-Trimethylbenzene	U		30	100	µg/Kg-dry	1	11/16/2020 23:11
1,3,5-Trimethylbenzene	U		48	160	µg/Kg-dry	1	11/16/2020 23:11
Benzene	U		7.0	23	µg/Kg-dry	1	11/16/2020 23:11
Ethylbenzene	U		8.6	29	µg/Kg-dry	1	11/16/2020 23:11
m,p-Xylene	U		54	180	µg/Kg-dry	1	11/16/2020 23:11
Naphthalene	U		98	330	µg/Kg-dry	1	11/16/2020 23:11
o-Xylene	U		16	53	µg/Kg-dry	1	11/16/2020 23:11
Toluene	U		11	37	µg/Kg-dry	1	11/16/2020 23:11
Xylenes, Total	U		54	180	µg/Kg-dry	1	11/16/2020 23:11
Surr: 1,2-Dichloroethane-d4	*105*			*70-130*	*%REC*	1	11/16/2020 23:11
Surr: 4-Bromofluorobenzene	*104*			*70-130*	*%REC*	1	11/16/2020 23:11
Surr: Dibromofluoromethane	*99.4*			*70-130*	*%REC*	1	11/16/2020 23:11
Surr: Toluene-d8	*102*			*70-130*	*%REC*	1	11/16/2020 23:11
MOISTURE		Method: **SW3550C**					Analyst: **KTP**
Moisture	**20**		**0.10**	**0.10**	**% of sample**	1	11/12/2020 11:34

Note: See Qualifiers page for a list of qualifiers and their definitions.

QC BATCH REPORT

Batch ID: **167609** Instrument ID **VMS8** Method: **SW8260C**

MBLK Sample ID: **MBLK-167609-167609** Units: **µg/Kg-dry** Analysis Date: **11/13/2020 03:41 A**

Client ID: Run ID: **VMS8_201112A** SeqNo: **6893336** Prep Date: **11/12/2020** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trimethylbenzene	U	22	30								
1,3,5-Trimethylbenzene	U	35	100								
Benzene	U	5.1	30								
Ethylbenzene	U	6.3	30								
m,p-Xylene	U	40	60								
Naphthalene	U	72	100								
o-Xylene	U	12	30								
Toluene	U	8.2	30								
Xylenes, Total	U	40	90								
Surr: 1,2-Dichloroethane-d4	*1034*	0	0	*1000*	0	*103*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*959*	0	0	*1000*	0	*95.9*	*70-130*	0			
Surr: Dibromofluoromethane	*1040*	0	0	*1000*	0	*104*	*70-130*	0			
Surr: Toluene-d8	*1009*	0	0	*1000*	0	*101*	*70-130*	0			

LCS Sample ID: **LCS-167609-167609** Units: **µg/Kg-dry** Analysis Date: **11/13/2020 02:53 A**

Client ID: Run ID: **VMS8_201112A** SeqNo: **6893334** Prep Date: **11/12/2020** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trimethylbenzene	982.5	22	30	1000	0	98.2	65-135	0			
1,3,5-Trimethylbenzene	1124	35	100	1000	0	112	65-135	0			
Benzene	894	5.1	30	1000	0	89.4	75-125	0			
Ethylbenzene	949.5	6.3	30	1000	0	95	75-125	0			
m,p-Xylene	1968	40	60	2000	0	98.4	80-125	0			
Naphthalene	943.5	72	100	1000	0	94.4	40-140	0			
o-Xylene	1140	12	30	1000	0	114	75-125	0			
Toluene	929.5	8.2	30	1000	0	93	70-125	0			
Xylenes, Total	3108	40	90	3000	0	104	75-125	0			
Surr: 1,2-Dichloroethane-d4	*956*	0	0	*1000*	0	*95.6*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*1016*	0	0	*1000*	0	*102*	*70-130*	0			
Surr: Dibromofluoromethane	*1020*	0	0	*1000*	0	*102*	*70-130*	0			
Surr: Toluene-d8	*1002*	0	0	*1000*	0	*100*	*70-130*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Barr Engineering Company
Work Order: 20110930
Project: Tank 2 Ring Road (49161092.08 003 004)

QC BATCH REPORT

Batch ID: **167609** Instrument ID **VMS8** Method: **SW8260C**

MS Sample ID: **20110846-07A MS** Units: **µg/Kg-dry** Analysis Date: **11/13/2020 09:22 A**
Client ID: Run ID: **VMS8_201112A** SeqNo: **6893357** Prep Date: **11/12/2020** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trimethylbenzene	2511	21	28	949.7	1769	78.2	65-135	0			
1,3,5-Trimethylbenzene	1578	33	95	949.7	697.7	92.7	65-135	0			
Benzene	867	4.9	28	949.7	0	91.3	75-125	0			
Ethylbenzene	1022	6	28	949.7	82.17	99	75-125	0			
m,p-Xylene	2187	38	57	1899	404.7	93.8	80-125	0			
Naphthalene	1193	68	95	949.7	132.6	112	40-140	0			
o-Xylene	1183	11	28	949.7	142.2	110	75-125	0			
Toluene	900.3	7.8	28	949.7	10.47	93.7	70-125	0			
Xylenes, Total	3370	38	85	2849	540	99.3	75-125	0			
Surr: 1,2-Dichloroethane-d4	*898.9*	0	0	*949.7*	0	*94.7*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*993.8*	0	0	*949.7*	0	*105*	*70-130*	0			
Surr: Dibromofluoromethane	*910.3*	0	0	*949.7*	0	*95.9*	*70-130*	0			
Surr: Toluene-d8	*938.3*	0	0	*949.7*	0	*98.8*	*70-130*	0			

MSD Sample ID: **20110846-07A MSD** Units: **µg/Kg-dry** Analysis Date: **11/13/2020 09:39 A**
Client ID: Run ID: **VMS8_201112A** SeqNo: **6893358** Prep Date: **11/12/2020** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trimethylbenzene	2210	19	26	878.7	1769	50.2	65-135	2511	12.8	30	S
1,3,5-Trimethylbenzene	1497	31	88	878.7	697.7	91	65-135	1578	5.24	30	
Benzene	847.5	4.5	26	878.7	0	96.5	75-125	867	2.28	30	
Ethylbenzene	948.6	5.6	26	878.7	82.17	98.6	75-125	1022	7.48	30	
m,p-Xylene	2035	35	53	1757	404.7	92.8	80-125	2187	7.22	30	
Naphthalene	1128	63	88	878.7	132.6	113	40-140	1193	5.64	30	
o-Xylene	1099	10	26	878.7	142.2	109	75-125	1183	7.32	30	
Toluene	866	7.2	26	878.7	10.47	97.4	70-125	900.3	3.88	30	
Xylenes, Total	3134	35	79	2636	540	98.4	75-125	3370	7.25	30	
Surr: 1,2-Dichloroethane-d4	*883.1*	0	0	*878.7*	0	*101*	*70-130*	898.9	*1.77*	*30*	
Surr: 4-Bromofluorobenzene	*915.2*	0	0	*878.7*	0	*104*	*70-130*	993.8	*8.24*	*30*	
Surr: Dibromofluoromethane	*870.8*	0	0	*878.7*	0	*99.1*	*70-130*	910.3	*4.43*	*30*	
Surr: Toluene-d8	*880.9*	0	0	*878.7*	0	*100*	*70-130*	938.3	*6.3*	*30*	

The following samples were analyzed in this batch: 20110930-01A 20110930-02A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Barr Engineering Company
Work Order: 20110930
Project: Tank 2 Ring Road (49161092.08 003 004)

QC BATCH REPORT

Batch ID: **R302600** Instrument ID **MOIST** Method: **SW3550C**

MBLK Sample ID: **WBLKS-R302600** Units: **% of sample** Analysis Date: **11/12/2020 11:34 A**
Client ID: Run ID: **MOIST_201112A** SeqNo: **6892477** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	U	0.1	0.10								

LCS Sample ID: **LCS-R302600** Units: **% of sample** Analysis Date: **11/12/2020 11:34 A**
Client ID: Run ID: **MOIST_201112A** SeqNo: **6892476** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	100	0.1	0.10	100	0	100	98-102	0			

DUP Sample ID: **20110417-02B DUP** Units: **% of sample** Analysis Date: **11/12/2020 11:34 A**
Client ID: Run ID: **MOIST_201112A** SeqNo: **6892461** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	20.14	0.1	0.10	0	0	0	0-0	19.46	3.43	10	

DUP Sample ID: **20110868-01B DUP** Units: **% of sample** Analysis Date: **11/12/2020 11:34 A**
Client ID: Run ID: **MOIST_201112A** SeqNo: **6892470** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	12.44	0.1	0.10	0	0	0	0-0	12.38	0.483	10	

The following samples were analyzed in this batch: 20110930-01B 20110930-02B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

20110930

Barr Engineering Co. Chain of Custody

Sample Origination State
☐ CO ☐ MI ☐ MN ☐ MO ☐ ND ☐ TX ☐ UT ☒ WI ☐ Other: _____

COC Number: **№ 588067**
COC 1 of 1

REPORT TO	INVOICE TO
Company: Barr Engineering	Company: Barr Engineering
Address: 325 S. Lake Ave	Address:
Address: Duluth, MN 55802	Address:
Name: Ryan Erickson	Name:
email: REricksen@barr.com	email:
Copy to: BarrDM@barr.com / jet@barr.com	P.O.
Project Name: Tank 2 Ring Road	Barr Project No: 49161092.08 003 004

Matrix Code: GW = Groundwater; SW = Surface Water; WW = Waste Water; DW = Drinking Water; S = Soil/Solid; SD = Sediment; O = Other

Preservative Code: A = None; B = HCl; C = HNO_3; D = H_2SO_4; E = NaOH; F = MeOH; G = $NaHSO_4$; H = $Na_2S_2O_3$; I = Ascorbic Acid; J = Zn Acetate; K = Other

Location	Sample Depth Start	Sample Depth Stop	Sample Depth Unit (m./ft. or in.)	Collection Date (mm/dd/yyyy)	Collection Time (hh:mm)	Matrix Code	Perform MS/MSD Y / N	Total Number Of Containers	Analysis Requested: Water: 40 ml vials	Analysis Requested: Soil: 40 ml vials	Analysis Requested: Soil: % Solids	Preservative Code	Field Filtered Y/N
									F		A		
									N		N		
1. TK2 Road-B-3	2	2	ft	11/05/2020	16:00	S	N	3		2	1	PVOC + Naphthalene, moisture	
2. TK2 Road-B-4	2	2	ft	11/05/2020	16:10	S	N	3		2	1	"	
3.													
4.													
5.													
6.													
7.													
8.													
9.													
10.												1R3 0.8°C	EK

BARR USE ONLY							
Sampled by: JSP	Relinquished by:	On Ice? Y ☑ N	Date: 11/09/2020	Time: 1500	Received by: FED EX	Date	Time
Barr Proj. Manager: REE	Relinquished by: FED EX	On Ice? Y N	Date: 11/10/20	Time: 1000	Received by:	Date	Time
Barr DQ Manager: JET	Samples Shipped VIA: ☐ Ground Courier ☐ Air Carrier ☐ Sampler ☐ Other: _____				Air Bill Number: 4162 2966 4460		
Lab Name: ALS							
Lab Location: Holland, MI	Lab WO:	Temperature on Receipt (°C):			Custody Seal Intact? ☐ Y ☐ N ☐ None		

Requested Due Date: ☒ Standard Turn Around Time ☐ Rush _____ (mm/dd/yyyy)

Distribution - White-Original: Accompanies Shipment to Laboratory; **Yellow Copy:** Include in Field Documents; **Scan and email:** a copy to BarrDM@barr.com for tracking and filing procedures

H:\RLG\STDFORMS\Chain of Custody Form 2015 RLG Rev. 01/30/2020

ALS Group, USA

Sample Receipt Checklist

Client Name: **BARRENG-MN** Date/Time Received: **10-Nov-20 10:00**

Work Order: **20110930** Received by: **DS**

Checklist completed by Diane Shaw (eSignature) 10-Nov-20 (Date) Reviewed by: Ehrland Bosworth (eSignature) 10-Nov-20 (Date)

Matrices: Soil

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	0.8/1.8 c	IR3	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	11/10/2020 3:48:11 PM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

Attachment D

Material Management Documentation

VONCO V, LLC.

Industrial Waste Profile Sheet

PROFILE# _____

Designated Facility: Vonco V, LLC.

Permit #536

A. Generator, Waste Site Location

Name	Enbridge Energy Superior Terminal
Site Address	2800 E 21st St
City, State, Zip	Superior, WI 54880
Contact	Nick Larabel
Phone	269-330-3872
Fax	
County	Douglas

B. Billing

Name	Enbridge Energy
Site Address	1100 Louisiana Ave, Ste 3300
City, State, Zip	Houston, TX 77002
Contact	Nick Larabel
Phone	269-330-3872
Fax	

C. Description of Waste

Name of Waste: Tank 2 Road

Process Generating Waste: Historical hydrocarbon impacted soil

Estimated Volume: 500 CY

Frequency: One time

Physical State: Solid (soil) Color: Reddish brown Free Liquids: No

Flash Point (°F): Not applicable pH: _____ Total Solids: _____

D. Other Comments

E. Sample Information

Check all that apply:

☒ Laboratory Analysis submitted ☐ Material Safety Data Sheet submitted

Laboratory Name: ALS Environmental Sample Date: 10/28/2020 Sample I.D.: TK2 Road-Stockpile-1, -2

F. Generator Certifications

1. This waste is not a hazardous waste as defined in Minnesota Rules Chapter 7045 or 40 CFR 261.
2. This waste does not contain regulated quantities of PCBs.
3. This waste does not contain regulated quantities of herbicides or pesticides.
4. This waste does not contain infectious wastes as defined in Minnesota Rules Chapter.
5. All information submitted in this and all attached documents contains true and accurate descriptions of this waste. Any sample submitted is representative as defined in 40 CFR 261 Appendix 1 and was obtained by using this or an equivalent sampling method. All relevant information regarding known or suspected hazards in the possession of the generator has been disclosed.

Generator's Signature: Nick Larabel Digitally signed by Nick Larabel Date: 2020.11.02 20:23:11 -05'00' Title: Environmental Advisor

Print Name: Nick Larabel Date: 11/2/2020

G. Landfill Approval

My approval is based upon the laboratory analysis of a representative sample and/or material safety data sheets submitted by the generator.

Landfill Signature _____ Date _____

Recertification Date _____

02-Nov-2020

Jim Taraldsen
Barr Engineering Company
4300 Market Pointe Drive
Suite 200
Minneapolis, MN 55435

Re: **Tank 2 (49161097.08 003 004)** Work Order: **20102653**

Dear Jim,

ALS Environmental received 2 samples on 29-Oct-2020 10:30 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental - Holland and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 11.

If you have any questions regarding this report, please feel free to contact me:

ADDRESS: 3352 128th Avenue, Holland, MI, USA
PHONE: +1 (616) 399-6070 FAX: +1 (616) 399-6185

Sincerely,

Ehrland Bosworth

Electronically approved by: Bill Carey

Ehrland Bosworth
Project Manager

Report of Laboratory Analysis

Certificate No: WI: 399084510

ALS Group, USA

Date: 02-Nov-20

Client: Barr Engineering Company
Project: Tank 2 (49161097.08 003 004)
Work Order: **20102653**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
20102653-01	TK 2 RO-STOCKPILE-1	Soil		10/28/2020 13:22	10/29/2020 10:30	☐
20102653-02	TK 2 RO-STOCKPILE-2	Soil		10/28/2020 13:40	10/29/2020 10:30	☐

Client: Barr Engineering Company
Project: Tank 2 (49161097.08 003 004)
WorkOrder: **20102653**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
Hr	BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated.
J	Analyte is present at an estimated concentration between the MDL and Report Limit
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
% of sample	Percent of Sample
µg/Kg-dry	Micrograms per Kilogram Dry Weight
mg/Kg-dry	Milligrams per Kilogram Dry Weight

Client: Barr Engineering Company
Project: Tank 2 (49161097.08 003 004)
Work Order: 20102653

Case Narrative

Samples for the above noted Work Order were received on 10/29/2020. The attached "Sample Receipt Checklist" documents the status of custody seals, container integrity, preservation, and temperature compliance.

Samples were analyzed according to the analytical methodology previously transmitted in the "Work Order Acknowledgement". Methodologies are also documented in the "Analytical Result" section for each sample. Quality control results are listed in the "QC Report" section. Sample association for the reported quality control is located at the end of each batch summary. If applicable, results are appropriately qualified in the Analytical Result and QC Report sections. The "Qualifiers" section documents the various qualifiers, units, and acronyms utilized in reporting. A copy of the laboratory's scope of accreditation is available upon request.

With the following exceptions, all sample analyses achieved analytical criteria.

Volatile Organics:
No other deviations or anomalies were noted.

Extractable Organics:
No other deviations or anomalies were noted.

Wet Chemistry:
No other deviations or anomalies were noted.

ALS Group, USA

Date: *02-Nov-20*

Client: Barr Engineering Company
Project: Tank 2 (49161097.08 003 004)
Sample ID: TK 2 RO-STOCKPILE-1
Collection Date: 10/28/2020 01:22 PM

Work Order: 20102653
Lab ID: 20102653-01
Matrix: SOIL

Analyses	Result	Qual	MDL	PQL	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID		Method: **PUBL-SW-141**			Prep: PUBL-SW-141 / 10/30/20		Analyst: **JZB**
DRO (C10-C28)	**27**		**0.60**	**6.0**	**mg/Kg-dry**	1	11/2/2020 12:49
VOLATILE ORGANIC COMPOUNDS		Method: **SW8260C**			Prep: SW5035 / 10/29/20		Analyst: **JNS**
Benzene	U		6.1	20	µg/Kg-dry	1	11/1/2020 15:30
Ethylbenzene	U		7.6	25	µg/Kg-dry	1	11/1/2020 15:30
m,p-Xylene	U		48	160	µg/Kg-dry	1	11/1/2020 15:30
o-Xylene	U		14	46	µg/Kg-dry	1	11/1/2020 15:30
Toluene	U		9.8	33	µg/Kg-dry	1	11/1/2020 15:30
Xylenes, Total	U		48	160	µg/Kg-dry	1	11/1/2020 15:30
Surr: 1,2-Dichloroethane-d4	*103*			*70-130*	*%REC*	1	11/1/2020 15:30
Surr: 4-Bromofluorobenzene	*99.0*			*70-130*	*%REC*	1	11/1/2020 15:30
Surr: Dibromofluoromethane	*99.8*			*70-130*	*%REC*	1	11/1/2020 15:30
Surr: Toluene-d8	*97.1*			*70-130*	*%REC*	1	11/1/2020 15:30
MOISTURE		Method: **SW3550C**					Analyst: **KTP**
Moisture	**20**		**0.10**	**0.10**	**% of sample**	1	10/30/2020 16:27

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *02-Nov-20*

Client: Barr Engineering Company
Project: Tank 2 (49161097.08 003 004)
Sample ID: TK 2 RO-STOCKPILE-2
Collection Date: 10/28/2020 01:40 PM

Work Order: 20102653
Lab ID: 20102653-02
Matrix: SOIL

Analyses	Result	Qual	MDL	PQL	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID		Method: **PUBL-SW-141**			Prep: PUBL-SW-141 / 10/30/20		Analyst: **JZB**
DRO (C10-C28)	**14**		**0.60**	**6.1**	**mg/Kg-dry**	1	11/2/2020 13:29
VOLATILE ORGANIC COMPOUNDS		Method: **SW8260C**			Prep: SW5035 / 10/29/20		Analyst: **JNS**
Benzene	U		6.7	22	µg/Kg-dry	1	11/1/2020 15:52
Ethylbenzene	U		8.3	28	µg/Kg-dry	1	11/1/2020 15:52
m,p-Xylene	U		52	170	µg/Kg-dry	1	11/1/2020 15:52
o-Xylene	U		15	51	µg/Kg-dry	1	11/1/2020 15:52
Toluene	U		11	36	µg/Kg-dry	1	11/1/2020 15:52
Xylenes, Total	U		52	170	µg/Kg-dry	1	11/1/2020 15:52
Surr: 1,2-Dichloroethane-d4	*98.8*			*70-130*	*%REC*	1	11/1/2020 15:52
Surr: 4-Bromofluorobenzene	*99.5*			*70-130*	*%REC*	1	11/1/2020 15:52
Surr: Dibromofluoromethane	*96.1*			*70-130*	*%REC*	1	11/1/2020 15:52
Surr: Toluene-d8	*95.7*			*70-130*	*%REC*	1	11/1/2020 15:52
MOISTURE		Method: **SW3550C**					Analyst: **KTP**
Moisture	**21**		**0.10**	**0.10**	**% of sample**	1	10/30/2020 16:27

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 02-Nov-20

Client: Barr Engineering Company

QC BATCH REPORT

Work Order: 20102653

Project: Tank 2 (49161097.08 003 004)

Batch ID: **166876** Instrument ID **GC8** Method: **PUBL-SW-141**

MBLK Sample ID: **DBLKS1-166876-166876** Units: **mg/Kg** Analysis Date: **11/2/2020 11:31 AM**

Client ID: Run ID: **GC8_201102A** SeqNo: **6848893** Prep Date: **10/30/2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	U	5.0								

LCS Sample ID: **DLCSS1-166876-166876** Units: **mg/Kg** Analysis Date: **11/2/2020 10:53 AM**

Client ID: Run ID: **GC8_201102A** SeqNo: **6848892** Prep Date: **10/30/2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	7.164	5.0	10	0	71.6	70-120	0			

LCSD Sample ID: **DLCSDS1-166876-166876** Units: **mg/Kg** Analysis Date: **11/2/2020 02:08 PM**

Client ID: Run ID: **GC8_201102A** SeqNo: **6848897** Prep Date: **10/30/2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	7.73	5.0	10	0	77.3	70-120	7.164	7.61	20	

The following samples were analyzed in this batch: 20102653-01C 20102653-02C

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Barr Engineering Company
Work Order: 20102653
Project: Tank 2 (49161097.08 003 004)

QC BATCH REPORT

Batch ID: **R301680** Instrument ID **MOIST** Method: **SW3550C**

MBLK Sample ID: **WBLKS-R301680** Units: **% of sample** Analysis Date: **10/30/2020 04:27 PM**
Client ID: Run ID: **MOIST_201030C** SeqNo: **6847659** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	U	0.10								

LCS Sample ID: **LCS-R301680** Units: **% of sample** Analysis Date: **10/30/2020 04:27 PM**
Client ID: Run ID: **MOIST_201030C** SeqNo: **6847658** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	99.99	0.10	100	0	100	98-102	0			

DUP Sample ID: **20102351-01A DUP** Units: **% of sample** Analysis Date: **10/30/2020 04:27 PM**
Client ID: Run ID: **MOIST_201030C** SeqNo: **6847643** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	82.93	0.10	0	0	0	0-0	82.89	0.0482	10	

DUP Sample ID: **20102373-01B DUP** Units: **% of sample** Analysis Date: **10/30/2020 04:27 PM**
Client ID: Run ID: **MOIST_201030C** SeqNo: **6847646** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	8.42	0.10	0	0	0	0-0	8.54	1.42	10	

The following samples were analyzed in this batch: 20102653-01B 20102653-02B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

20102653

Barr Engineering Co. Chain of Custody

Sample Origination State: ☐ CO ☐ MI ☐ MN ☐ MO ☐ ND ☐ TX ☐ UT ☒ WI ☐ Other: _____

COC Number: № 588022

COC 1 of 1

REPORT TO	INVOICE TO
Company: Barr Engineering Co	Company:
Address: 325 S. Lake Ave.	Address: - Same -
Address: Duluth MN	Address:
Name: Ryan Erickson	Name:
email: rerickson@barr.com	email:
Copy to: BarrDM@barr.com, JTaraldsen@barr.com	
Project Name: Tank 2	Barr Project No: 49/61092.08 003 004

Matrix Code: GW = Groundwater; SW = Surface Water; WW = Waste Water; DW = Drinking Water; S = Soil/Solid; SD = Sediment; O = Other

Preservative Code: A = None; B = HCl; C = HNO_3; D = H_2SO_4; E = NaOH; F = MeOH; G = $NaHSO_4$; H = $Na_2S_2O_3$; I = Ascorbic Acid; J = Zn Acetate; K = Other

Location	Sample Depth Start	Stop	Unit (m./ft. or in.)	Collection Date (mm/dd/yyyy)	Collection Time (hh:mm)	Matrix Code	Perform MS/MSD Y/N	Total Number Of Containers	Analysis Requested: Water	Soil: DRO 4oz amber, BTEX - 40 mls t mod, Hold Jar	% Solids	Preservative Code	Field Filtered Y/N	
										A F A		A	-	
1. Tk 2 RO - Stockpile-1	—			10/15/20	13:22	S	N	4		1 2 1	1			DRO, BTEX, Moisture Hold Jar
2. Tk 2 RO - Stockpile 2	—			10/15/20	13:40	S	N	4		1 2 1	1			DRO BTEX, Moisture Hold Jar
3.														
4.														
5.														
6.														
7.														
8.														
9.														
10.														

ASAP TAT

EB

BARR USE ONLY							
Sampled by: J. Taraldsen	Relinquished by:	On Ice? Y N	Date	Time	Received by:	Date	Time
Barr Proj. Manager: R. Erickson	Relinquished by:	On Ice? Y N	Date	Time	Received by:	Date	Time
Barr DQ Manager: J. Taraldsen			10/15/20	15:30		10/21/20	10:30
Lab Name: PLS Environmental	Samples Shipped VIA: ☐ Ground Courier ☒ Air Carrier ☐ Sampler ☐ Other: _____				Air Bill Number:		
Lab Location: Rollond, MT	Lab WO:	Temperature on Receipt (°C):			Custody Seal Intact? ☐ Y ☐ N ☐ None		

Requested Due Date: ☐ Standard Turn Around Time ☒ Rush ASAP (mm/dd/yyyy)

Distribution - **White-Original:** Accompanies Shipment to Laboratory; **Yellow Copy:** Include in Field Documents; **Scan and email:** a copy to BarrDM@barr.com for tracking and filing procedures

H:\RLG\STDFORMS\Chain of Custody Form 2015 RLG Rev. 01/30/2020

ALS Group, USA

Sample Receipt Checklist

Client Name: **BARRENG-MN** Date/Time Received: **29-Oct-20 10:30**

Work Order: **20102653** Received by: **MJG**

Checklist completed by Matthew Gaylord (eSignature) 29-Oct-20 (Date) Reviewed by: Ehrland Bosworth (eSignature) 29-Oct-20 (Date)

Matrices: Soil

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	4.4/4.4C	IR1	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	10/29/2020 12:32:31 PM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

VONCO

Vonco V Waste Management Campus
1100 West Gary Street
Duluth, MN 55808
Permit: SW 536

20-107-I Enbridge Tank 2 Road					
Date	**Ticket**	**Customer**	**Truck**	**Material**	**Tons**
11/04/2020	326651	001342 - Enbridge Pipelines LLC	R78119W	Alternative Daily cover	16.58
11/04/2020	326667	001342 - Enbridge Pipelines LLC	RB27092	Alternative Daily cover	21.99
11/04/2020	326668	001342 - Enbridge Pipelines LLC	R78119W	Alternative Daily cover	17.83
11/04/2020	326669	001342 - Enbridge Pipelines LLC	RB20084	Alternative Daily cover	18.24
11/04/2020	326671	001342 - Enbridge Pipelines LLC	6271PRA	Alternative Daily cover	14.36
11/05/2020	326688	001342 - Enbridge Pipelines LLC	R78119W	Alternative Daily cover	17.21
11/05/2020	326689	001342 - Enbridge Pipelines LLC	4380PRA	Alternative Daily cover	17.20
11/05/2020	326690	001342 - Enbridge Pipelines LLC	6271PRA	Alternative Daily cover	16.03
11/05/2020	326692	001342 - Enbridge Pipelines LLC	RB27092	Alternative Daily cover	15.89
11/05/2020	326693	001342 - Enbridge Pipelines LLC	RB20084	Alternative Daily cover	18.48
11/05/2020	326700	001342 - Enbridge Pipelines LLC	RB20084	Alternative Daily cover	18.35
11/05/2020	326701	001342 - Enbridge Pipelines LLC	R78119W	Alternative Daily cover	16.58
11/05/2020	326704	001342 - Enbridge Pipelines LLC	4380PRA	Alternative Daily cover	17.95
11/05/2020	326707	001342 - Enbridge Pipelines LLC	6271PRA	Alternative Daily cover	16.87
11/05/2020	326712	001342 - Enbridge Pipelines LLC	RB27092	Alternative Daily cover	17.33
11/05/2020	326713	001342 - Enbridge Pipelines LLC	RB20084	Alternative Daily cover	18.12
11/05/2020	326714	001342 - Enbridge Pipelines LLC	R78119W	Alternative Daily cover	17.80
11/09/2020	326767	001342 - Enbridge Pipelines LLC	RB27092	Alternative Daily cover	18.04
11/09/2020	326768	001342 - Enbridge Pipelines LLC	S39858W	Alternative Daily cover	19.44
11/09/2020	326771	001342 - Enbridge Pipelines LLC	RB20084	Alternative Daily cover	20.77
11/09/2020	326772	001342 - Enbridge Pipelines LLC	T94381W	Alternative Daily cover	24.57
11/09/2020	326776	001342 - Enbridge Pipelines LLC	T94387W	Alternative Daily cover	22.39
11/09/2020	326777	001342 - Enbridge Pipelines LLC	T21989Z	Alternative Daily cover	21.71
11/09/2020	326784	001342 - Enbridge Pipelines LLC	T94381W	Alternative Daily cover	22.75
11/09/2020	326787	001342 - Enbridge Pipelines LLC	T94387W	Alternative Daily cover	25.97
11/09/2020	326788	001342 - Enbridge Pipelines LLC	T21989Z	Alternative Daily cover	24.95
11/09/2020	326798	001342 - Enbridge Pipelines LLC	T94381W	Alternative Daily cover	22.87
11/09/2020	326799	001342 - Enbridge Pipelines LLC	T94387W	Alternative Daily cover	25.20
11/09/2020	326804	001342 - Enbridge Pipelines LLC	T94381W	Alternative Daily cover	21.78

11/09/2020	326805	001342 - Enbridge Pipelines LLC	T21989Z	Alternative Daily cover	23.00
11/09/2020	326806	001342 - Enbridge Pipelines LLC	T94387W	Alternative Daily cover	25.01
11/09/2020	326811	001342 - Enbridge Pipelines LLC	T94381W	Alternative Daily cover	26.56
11/09/2020	326812	001342 - Enbridge Pipelines LLC	T21989Z	Alternative Daily cover	22.34
11/09/2020	326813	001342 - Enbridge Pipelines LLC	T94381W	Alternative Daily cover	23.23
11/10/2020	326821	001342 - Enbridge Pipelines LLC	T21989Z	Alternative Daily cover	18.91

Total Tons	**706.3**
Total Loads	**35**