

## Source Property Information

**BRRTS #:**  (No Dashes)

**ACTIVITY NAME:**

**PROPERTY ADDRESS:**

**MUNICIPALITY:**

**PARCEL ID #:**

**CLOSURE DATE:**

**FID #:**

**DATCP #:**

**PECFA#:**

**\*WTM COORDINATES:**

X:  Y:

*\* Coordinates are in  
WTM83, NAD83 (1991)*

**WTM COORDINATES REPRESENT:**

- Approximate Center Of Contaminant Source
- Approximate Source Parcel Center

**Please check as appropriate:** (BRRTS Action Code)

### Contaminated Media:

- |  |  |
|--|--|
| <input type="checkbox"/> Groundwater Contamination > ES (236)                                | <input checked="" type="checkbox"/> Soil Contamination > *RCL or **SSRCL (232)               |
| <input type="checkbox"/> Contamination in ROW  | <input type="checkbox"/> Contamination in ROW  |
| <input type="checkbox"/> Off-Source Contamination  | <input type="checkbox"/> Off-Source Contamination  |
| <i>(note: for list of off-source properties<br/>see "Impacted Off-Source Property" form)</i> | <i>(note: for list of off-source properties<br/>see "Impacted Off-Source Property" form)</i> |

### Continuing Obligations:

- |   |   |
|---|---|
| <input type="checkbox"/> N/A (Not Applicable)   | <input type="checkbox"/> Cover or Barrier (222)   |
| <input checked="" type="checkbox"/> Soil: maintain industrial zoning (220)                        | <i>(note: maintenance plan for<br/>groundwater or direct contact)</i>   |
| <i>(note: soil contamination concentrations<br/>between non-industrial and industrial levels)</i> | <input type="checkbox"/> Vapor Mitigation (226)   |
| <input checked="" type="checkbox"/> Structural Impediment (224)                                   | <input type="checkbox"/> Maintain Liability Exemption (230)   |
| <input type="checkbox"/> Site Specific Condition (228)  | <i>(note: local government unit or economic<br/>development corporation was directed to<br/>take a response action)</i> |

**Note:** Comments will not print out.

### Monitoring Wells:

Are all monitoring wells properly abandoned per NR 141? (234)

- Yes    No    N/A

*\* Residual Contaminant Level  
\*\*Site Specific Residual Contaminant Level*



November 18, 2013

Karl Beaster  
Enbridge Energy  
1320 Grand Avenue  
Superior WI 54880

**KEEP THIS DOCUMENT WITH YOUR PROPERTY RECORDS**

SUBJECT: Final Case Closure with Continuing Obligations  
Enbridge Energy – Tank 23, Superior, WI  
WDNR BRRTS Activity #: 02-16-558989

Dear Mr. Beaster:

The Department of Natural Resources (DNR) considers the Enbridge Energy – Tank 12 site closed, with continuing obligations. No further investigation or remediation is required at this time. However, you and future property owners must comply with the continuing obligations as explained in the conditions of closure in this letter. Please read over this letter closely to ensure that you comply with all conditions and other on-going requirements. Provide this letter to anyone who purchases this property from you.

This final closure decision is based on the correspondence and data provided, and is issued under ch. NR 726, Wisconsin Administrative Code. The DNR Northern Region (NOR) Closure Committee reviewed the request for closure on November 11, 2013. This environmental remediation case was reviewed for compliance with state laws and standards.

The site consists of historical impacts of diesel fuel and crude oil that were discovered during tank upgrade work. These impacts exist in the soil below and around the tank floor and the tank ring road. The clean-up included excavation of the petroleum-impacted soil. Confirmation sampling was done to confirm the degree and extent of contamination. The conditions of closure and continuing obligations required were based on the property being used for industrial purposes.

Continuing Obligations

The continuing obligations for this site are summarized below. Further details on actions required are found in the section Closure Conditions.

- Residual soil contamination exists that must be properly managed should it be excavated or removed.
- If a structural impediment that obstructed a complete site investigation or cleanup is removed or modified, additional environmental work must be completed.

- Industrial soil standards were applied for closure, and industrial zoning is required. Before the land use may be changed from industrial to non-industrial, additional environmental work must be completed.

The DNR fact sheet, “Continuing Obligations for Environmental Protection”, RR-819, helps to explain a property owner’s responsibility for continuing obligations on their property. The fact sheet may be obtained at <http://dnr.wi.gov/files/PDF/pubs/rr/RR819.pdf>.

### GIS Registry

This site will be included on the Bureau for Remediation and Redevelopment Tracking System (BRRTS on the Web) at <http://dnr.wi.gov/topic/Brownfields/rrsm.html>, to provide public notice of residual contamination and of any continuing obligations. The site can also be viewed on the Remediation and Redevelopment Sites Map (RRSM), a map view, under the Geographic Information System (GIS) Registry layer, at the same web address.

DNR approval prior to well construction or reconstruction is required for all sites shown on the GIS Registry, in accordance with s. NR 812.09 (4) (w), Wis. Adm. Code. This requirement applies to private drinking water wells and high capacity wells. To obtain approval, complete and submit Form 3300-254 to the DNR Drinking and Groundwater program’s regional water supply specialist. This form can be obtained on-line at <http://dnr.wi.gov/topic/wells/documents/3300254.pdf>.

All site information is also on file at the NOR Regional DNR office, at 107 Sutliff Avenue, Rhinelander. This letter and information that was submitted with your closure request application, including any maps, can be found as a PDF in BRRTS on the Web.

### Closure Conditions

Compliance with the requirements of this letter is a responsibility to which you and any subsequent property owners must adhere. DNR staff will conduct periodic prearranged inspections to ensure that the conditions included in this letter are met. If these requirements are not followed, the DNR may take enforcement action under s. 292.11, Wisconsin Statutes to ensure compliance with the specified requirements, limitations or other conditions related to the property.

Residual Soil Contamination (ch. NR 718, chs. 500 to 536, Wis. Adm. Code or ch. 289, Wis. Stats.)  
Soil contamination remains beneath Tank 23, near the tank foundation, and beneath the tank ring road, as indicated on the attached map (Figure B.2.c – Tank 23 Pre/Post Remaining Soil Contamination, June 2013). If soil in the specific locations described above is excavated in the future, the property owner at the time of excavation must sample and analyze the excavated soil to determine if contamination remains. If sampling confirms that contamination is present, the property owner at the time of excavation will need to determine whether the material is considered solid or hazardous waste and ensure that any storage, treatment or disposal is in compliance with applicable standards and rules. Contaminated soil may be managed in accordance with ch. NR 718, Wis. Adm. Code, with prior DNR approval.

In addition, all current and future owners and occupants of the property need to be aware that excavation of the contaminated soil may pose an inhalation or other direct contact hazard and as a result special precautions may need to be taken to prevent a direct contact health threat to humans.

Depending on site-specific conditions, construction over contaminated soils or groundwater may result in vapor migration of contaminants into enclosed structures or migration along newly placed underground utility lines. The potential for vapor inhalation and means of mitigation should be evaluated when planning any future redevelopment, and measures should be taken to ensure the continued protection of public health, safety, welfare and the environment at the site.

Structural Impediments (s. 292.12 (2) (b), Wis. Stats., s. NR 726.15, s. NR 727.07, Wis. Adm. Code)  
Tank 23 and the surrounding tank ring road, as shown on the attached map (Figure B.2.c – Tank 23 Pre/Post Remaining Soil Contamination, June 2013) made complete investigation and/or remediation of the soil contamination on this property impracticable. If the structural impediment is to be removed, the property owner shall notify the DNR at least 45 days before removal, and conduct an investigation of the degree and extent of type of contaminant contamination below the structural impediment. If contamination is found at that time, the contamination shall be properly remediated in accordance with applicable statutes and rules.

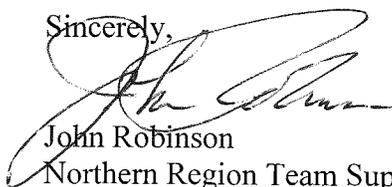
Industrial Soil Standards (s. NR 726.15, s. NR 727.07, Wis. Adm. Code)  
Soil contamination remains beneath Tank 23, near the tank foundation, and beneath the tank ring road, as shown on the attached map (Figure B.2.c – Tank 23 Pre/Post Remaining Soil Contamination, June 2013). Sample Tk23-HIS-B1 contained benzo(a)pyrene in concentrations which exceeded non-industrial (residential) soil standards, but which met industrial soil standards.

This property may not be used or developed for a residential, commercial, agricultural or other non-industrial use, unless prior written approval has been obtained from the DNR. An investigation and remedial action to meet applicable soil cleanup standards may be required at that time.

Please be aware that the case may be reopened pursuant to s. NR 726.09, Wis. Adm. Code, if additional information regarding site conditions indicates that contamination on or from the site poses a threat to public health, safety, or welfare or to the environment.

The DNR appreciates your efforts to restore the environment at this site. If you have any questions regarding this closure decision or anything outlined in this letter, please contact Erin Endsley at 715-392-3126 or via email at [erin.endsley@wisconsin.gov](mailto:erin.endsley@wisconsin.gov).

Sincerely,

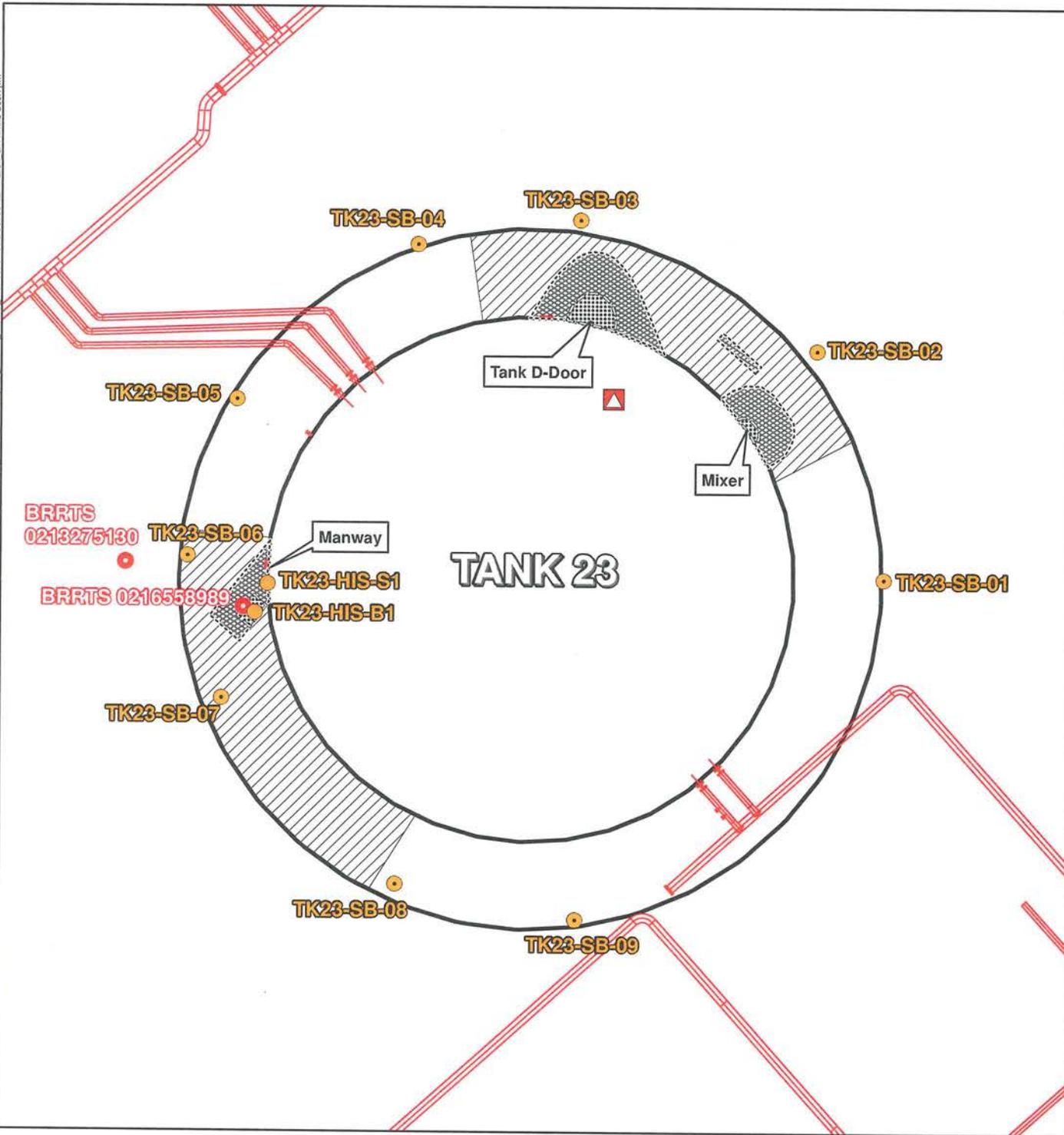


John Robinson  
Northern Region Team Supervisor  
Remediation & Redevelopment Program

Attachments: Figure B.2.c – Tank 23 Pre/Post Remaining Soil Contamination, June 2013

cc: Lynette Carney, Barr Engineering

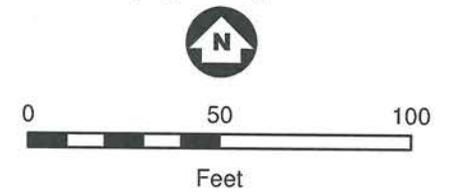
Barr Footer: ArcGIS 10.1, 2013-06-19 15:42 File: I:\Client\Enbridge\_Energy\Work\_Orders\Spill\_Response\_Investigation\49161092\Work\_Orders\Tank\_23\_Geoprobe\_Investigation\Maps\FigureB2c\_Tank23\_PrePostremedialSoilContamination\_8x11.mxd User: lvk



**ENBRIDGE SUPERIOR TERMINAL**



- Geoprobe Borings
- Analytical Samples
- ▲ Approximate Tank Bottom Cut Out Location
- Documented Historical Releases
- Field Screened Area
- Impacted Soil - Post-Remedial Excavation
- Impacted Soil - Pre-Remedial Excavation
- Road Boundary
- Pipeline Infrastructure
- Terminal Property Boundary



1 Inch = 50 Feet  
Figure B.2.c.

**TANK 23 PRE/POST REMAINING SOIL CONTAMINATION SUPERIOR TERMINAL**  
Enbridge Energy, L.P.  
Superior, Wisconsin



**SUBMIT AS UNBOUND PACKAGE IN THE ORDER SHOWN**

**Notice:** Pursuant to ch. 292, Wis. Stats., and chs. NR 726 and 746, Wis. Adm. Code, this form is required to be completed for case closure requests. The closure of a case means that the Department of Natural Resources (DNR) has determined that no further response is required at that time based on the information that has been submitted to the DNR. All sections of this form must be completed unless otherwise directed by the Department. Incomplete forms will be considered "administratively incomplete" and processing of the request will stop until required information is provided. Any section of the form not relevant to the case closure request must be fully filled out or explained on a separate page and attached to the relevant section of this form. DNR will consider your request administratively complete when the form and all sections are completed, all attachments are included, and the applicable fees required under ch. NR 749, Wis. Adm. Code, are included, and sent to the proper destinations. Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Open Records Law (ss. 19.31 - 19.39, Wis. Stats.).

**Site Information**

BRRTS No. 02-16-558989		Parcel ID No. 08-808-10046-00; 01-801-05131-00	
BRRTS Activity (Site) Name Enbridge Energy - Tank 23		WTM Coordinates	
		X 362148	Y 692142
Street Address 2800 E. 21st St.		City Superior	State   ZIP Code WI   54880
Responsible Party (RP) Name Karl Beaster			
Company Name Enbridge Energy Limited Partnership			
Street Address 1320 Grand Ave		City Superior	State   ZIP Code WI   54880
Phone Number (715) 398-4754		Email karl.beaster@enbridge.com	

Check here if the RP is the owner of the source property.

**Environmental Consultant Name**

Lynette Carney  
 Consulting Firm  
 Barr Engineering

Street Address 332 W. Superior Street, Suite 600		City Duluth	State   ZIP Code MN   55802
Phone Number (218) 529-7141		Email lcarney@barr.com	
Acres Ready For Use		Voluntary Party Liability Exemption Site? <input type="radio"/> Yes <input checked="" type="radio"/> No	

**Fees and Mailing of Closure Request**

*If any section is not relevant to the case closure request, you must fully explain the reasons why and attach that explanation to the relevant section of the form. All information submitted shall be legible. Providing illegible information may result in a submittal being considered incomplete until corrected.*

1. **Send a copy of page one** of this form and the applicable ch. NR 749, Wis. Adm. Code, fee(s) to the DNR regional Environmental Program Associate at <http://dnr.wi.gov/topic/Brownfields/Contact.html>. Check all fees that apply:

- \$750 Closure Fee  \$200 GIS Registry Fee for Soil  
 \$250 GIS Registry Fee for Groundwater Lost Well(s) Total Amount of Payment \$ \$950.00

2. **Send one paper copy and one e-copy on compact disk of the entire closure package** to the Regional Project Manager assigned to your site. Submit as *unbound, separate documents* in the order and with the titles prescribed by this form. For electronic document submittal requirements, see <http://dnr.wi.gov/files/PDF/pubs/rr/RR690.pdf>.

## Site Summary

If any section is not relevant to the case closure request, you must fully explain the reasons why and attach that explanation to the relevant section of the form. All information submitted shall be legible. Providing illegible information may result in a submittal being considered incomplete until corrected.

### 1. General Site Information and Site History

- A. **Site Location:** Describe the physical location of the site, both generally and specific to its immediate surroundings.  
The terminal operated by Enbridge Energy Limited Partnership is located at 2800 East 21st Street, Superior, Douglas County, Wisconsin (Figure B.1.a). The site township, range and section is T49N, R14W, S36, NE, SW (Figure B.1.a). Tank 23 is located in a 400 foot by 400 foot by 8 foot high containment basin on the west side of the terminal (Figure B.1.b). The surrounding land use is industrial, including oil refining and natural gas storage facilities at adjacent properties.
- B. **Prior and current site usage:** Specifically describe the current and historic occupancy and types of use.  
Enbridge (formerly known as Lakehead Pipeline) expanded an oil pipeline system from Canada to their existing Superior Terminal property in 1950. The Lakehead Pipeline name changed to Enbridge in or around 1991. The terminal operates as a crude oil pipeline pumping facility and storage facility for product pumped southeast from North Dakota and Canada to Chicago and Detroit. Enbridge currently operates 40 storage tanks at their Superior facility.
- C. Describe how and when site contamination was discovered.  
1) Tank 23 road construction: Crude oil contaminated soil was discovered around Tank 23 during a ring road construction project in April of 2012.  
2) Tank 23 floor cut-out: Diesel fuel contaminated construction fill was discovered in a Tank 23 tank maintenance floor cut-out in January of 2013.
- D. Describe the type(s) and source(s) or suspected source(s) of contamination.  
1) Tank 23 road construction: Three locations with crude oil contaminated soil were identified around the perimeter of the tank during tank ring road construction. All three locations were adjacent to tank access ports (Manway, D-door, Mixer) (Figure B.2.a). Enbridge believes that the crude oil contamination is from releases during historical tank activity and maintenance work.  
2) Tank 23 floor cut-out: Diesel fuel contaminated soil was The soil beneath Tank 23 is contaminated by diesel fuel. Diesel fuel is used to clean crude oil storage tanks. Enbridge believes that the diesel fuel contaminated fill discovered in the 2013 tank maintenance floor cut-out (Figure B.2.a) is associated with holes identified in the Tank 23 floor during maintenance activities in the 1980's. Enbridge does not believe that the impacts are recent because no holes in the tank bottom were discovered during the 2012-2013 maintenance work.
- E. Other relevant site description information (or enter Not Applicable).  
Not applicable.
- F. List BRRTS activity site name and number for all other BRRTS activities at this property, including closed cases.  
BRRTS activity for the Enbridge Superior Terminal Tank 23 Containment Basin:  
- Lakehead Pipeline Tank 23: 0216275130 (Figure B.2.a). Closed on 2/21/2007.  
- Additional Terminal BRRTS sites shown on Figure B.1.c.
- G. List BRRTS activity/site name(s) and number(s) for all properties immediately adjacent to this site, and those impacted by contamination from this site.  
See Figure B.1.c for adjacent BRRTS sites.  
- Lakehead Pipeline Tank 23 (0216275130) is adjacent to this site (Figure B.2.a) and soil with a benzo(a)pyrene exceedence was left in place to the east of Tank 23. However residual contamination appears to be outside the ring road boundaries so it is unclear whether the contamination discovered during construction activities is related.
- H. **Current zoning** (e.g. industrial, commercial, residential) for the site and for neighboring properties, and how verified (Provide documentation in Attachment G).  
The site is zoned Manufacturing District 2 Figure G.3.). The Calumet oil refinery is located to the northwest across East 21st Street. The Dome Petroleum natural gas facility is located immediately to the north of the Enbridge Energy Superior Terminal. The Nemadji River is located immediately to the south and east of the facility.

### 2. General Site Conditions

- A. Soil/Geology
- i. Describe soil type(s) and relevant physical properties, thickness of soil column across the site, vertical and lateral variations in soil types.  
Surficial geology in the area consists of a glacial-lacustrine clay deposit that is approximately 150 feet thick (USGS Hydrologic Investigation Atlas HA-524, Water Resources of Wisconsin Lake Superior Basin). Sandy hardpan geological units have been observed in local wells (VE161 and VH933) at approximately 140 feet below ground surface (bgs).

- ii. Describe the composition, location and lateral extent, and depth of fill or waste deposits on the site.
  - 1) Tank 23 road construction: The gravel ring road around Tank 23 consists of gravel roadbed material overlying a geotechnical fabric. The road bed is approximately two feet deep by 30 feet wide (Figure B.3.a).
  - 2) Tank 23 floor cut-out: Construction fill beneath tank consists of approximately 0.5 feet of sand that is overlying 0.5 feet of gravel that is overlying fat clay (Figure B.3.a).
- iii. Depth to bedrock, bedrock type, and whether or not it was encountered during the investigation.
 

Bedrock is approximately 150 feet bgs and consists of sandstone of the Precambrian Bayfield Formation (USGS Hydrologic Investigations Atlas HA-524, Water Resources of Wisconsin Lake Superior Basin, 1974). Bedrock was not encountered in this investigation.
- iv. Describe the nature and locations of current surface cover(s) across the site (e.g. natural vegetation, landscaped areas, gravel, hard surfaces, and buildings).
 

Tank 23 is an approximately 180 foot diameter steel crude oil storage tank. The tank is located in the bottom of a tank containment basin (400 feet wide by 400 feet wide by 8 feet tall) (Figure B.1.b). The ground surface in the bottom of the basin is clay with little to no vegetation. The clay basin berms are covered in grass. Tank 23 is surrounded by a 30 foot wide gravel ring road with access roads in the north and west basin corners. Aboveground feeder pipelines are located on the northwest and southeast sides of the tank and buried cathodic lines are located around the perimeter of the tank.

#### B. Groundwater

- i. **Discuss depth to groundwater and piezometric elevations.** Describe and explain depth variations, and whether free product affects measurement or water table elevation. Describe the stratigraphic unit(s) where water table was found or which were measured for piezometric levels.
 

The estimated groundwater depth in the Tank 23 containment basin area varies between 7 and 9 feet bgs based on groundwater measurements taken during periodic sampling of monitoring well MW-6. MW-6 is located downgradient of Tank 23 (Figure B.3.c). No water or product were observed in the 10-15 foot deep Tank 23 Geoprobe borings. The water table is located in a fat glacial/lacustrine clay.
- ii. Discuss groundwater flow direction(s), shallow and deep. Describe and explain flow variations, including fracture flow if present.
 

Shallow groundwater flow from the Tank 23 basin is to the southeast based on the groundwater depths measured during annual terminal monitoring well sampling (Figure B.3.c). Water levels in shallow site monitoring wells are also at higher elevations than water levels in the deep water supply wells completed in hard pan and/or silty sand soil 140 to 150 feet bgs. The water levels in the deep water supply wells are also lower than surface water features. This indicates that the vertical groundwater gradient is downward, which is common where material with a low hydraulic conductivity overlies material with a higher hydraulic conductivity.
- iii. Discuss groundwater flow characteristics: hydraulic conductivity, flow rate and permeability, or state why this information was not obtained.
 

Hydraulic conductivity for a clay is between 0.000000001 and 0.000000000001 m/sec (Freeze and Cherry, 1979).
- iv. Identify and describe locations/distance of potable and/or municipal Wells within 1200 feet of the site.
 

Two Enbridge potable wells are located in upgradient maintenance buildings to the north-north-east of Tank 23 approximately 800 feet and 1100 feet away (Figure B.1.b).

### 3. Site Investigation Summary

#### A. General

- i. Provide a brief summary of the site investigation history. Reference previous submittals by name and date. Describe site investigation activities undertaken since the last submittal for this project and attach the appropriate documentation in Attachment C, if not previously provided.
  - 1) Tank 23 road construction: (April 2012) During road construction activities, the excavation extents were field screened for headspace and hydrocarbon odor, sheen and discoloration using standard operating procedures. Three crude oil impacted areas were identified adjacent to Tank 23 access ports (Figure B.2.a). The extents of residual crude oil impacted soil near the northwest manway was identified and defined through field screening (Figures C.1.a.i - iii). Two analytical samples (TK23-HIS-B1 and TK23-HIS-S1) were collected from the residual impacted soil near the northwest manway and submitted to Pace Analytical for analysis of: diesel range organics (DRO), petroleum volatile organic compounds (PVOCs), and polycyclic aromatic hydrocarbons (PAHs). Residual crude oil impacts in the other two Tank 23 areas (northern D-door and eastern mixer) were defined through field screening and no analytical samples were collected. Field screening results are summarized in Figures C.1.a.i-iii.
  - 2) Tank 23 maintenance floor cut-out: (January 2013) Diesel fuel impacted fill was discovered beneath the tank during tank floor maintenance activities. The one foot deep sand and gravel fill exposed in the 12 foot by 14 foot floor cut-out was field screened for headspace and hydrocarbon odor, sheen and discoloration using standard operating procedures (Figure C.1.a.iv). An analytical soil sample was collected and submitted to Pace for analysis of DRO, gasoline range organics (GRO), and PVOCs for investigation and waste characterization purposes. Field screening results are

summarized in Figures C.1.a.iv.

3) Tank 23 Geoprobe investigation: (March 2013) Nine 10-15 foot deep borings were advanced around the perimeter of the tank to determine if hydrocarbon contamination was present in the soil (Figure B.2.a). Recovered soil samples were described using the ASTM method and field screened for headspace and hydrocarbon odor, sheen and discoloration using standard operating procedures (Figure C.1.). At least one analytical soil sample was collected per boring from above the water table and submitted to Pace for analysis of DRO, GRO and PVOCs and a total of 10 samples were run (Table A.2).

- ii. Identify whether contamination extends beyond the source property boundary, describe the off-site media (e.g., soil, groundwater, etc.) impacted, and the vertical and horizontal extent of off-site impacts.

No hydrocarbon impacts are believed to extend out from the immediate Tank 23 perimeter based on the physical characteristics of the native clay, the observations made during road excavation activities and the results from the Tank 23 Geoprobe investigation.

- iii. Identify any structural impediments to the completion of site investigation and/or remediation and whether these impediments are on the source property or off the source property. Identify the type and location of any structural impediment (e.g., structure) that also serves as the performance standard barrier for protection of the direct contact or the groundwater pathway.

Excavation activity immediately around Tank 23 is limited to protect the tank structural integrity and the buried and aboveground tank and pipeline infrastructure (cathodic lines, feeder pipes, cat walks). Tank 23 also serves as the direct contact barrier to the diesel fuel contamination discovered in the fill beneath the tank floor.

## B. Soil

- i. Describe degree and extent of **soil contamination** at and from this site. Relate this to known or suspected sources and known or potential receptors/migration pathways.

1) Tank 23 road construction: Historical crude oil contaminated soil was identified in three locations around the perimeter of Tank 23 adjacent to tank ports (manway, D-door, mixer) during the ring road construction as shown in Figure B.2.a. Contamination depth varied but was generally between 0 and 2 feet bgs. Contamination immediately below the D-door was observed to 7 feet bgs but was shallower further away from the tank. During the road excavation, crude oil contaminated soil was observed up to 25 feet out from the tank but never exceeded the width of the road excavation. The road excavation provided an excellent opportunity to identify the lateral extent of contamination from these release points. Vertical definition was not achieved in the areas with residual impacts (Figure B.2.b) because the excavation depth was typically limited by construction objectives and safety concerns associated with buried infrastructure. Enbridge indicated that the crude oil contaminated soil originated from releases from the tank ports during historical tank maintenance projects.

2) Tank 23 floor cut out: Diesel fuel contaminated fill was exposed during 2013 Tank 23 maintenance work in a 12 x 14 foot tank floor cut out. The contaminated fill material consisted of sand and gravel fill approximately one foot deep overlying clay. The vertical definition of the contamination was not defined due to frozen ground conditions. The horizontal extent of the impacts could not be determined because of the limited size of the floor cut-out. Enbridge indicated that they believe the diesel fuel impacts originated from a historical (1980's) tank cleaning and maintenance project where holes were detected in the tank bottom. Enbridge came to this conclusion because: 1) diesel fuel is used in one of the tank cleaning stages; and 2) no holes were detected in the tank bottom during 2013 maintenance work.

3) Tank 23 Geoprobe investigation: No soil contamination was detected during the Geoprobe investigation with field screening methods or laboratory analyses (Figures B.2.a. and C.1.; Table A.2). Based on the Geoprobe investigation results, it can be concluded that no hydrocarbon impacts are migrating through the soil away from Tank 23.

No soil receptors or migration pathways were identified during construction excavation and investigation activities around the perimeter of Tank 23.

- ii. Describe the level and types of **soil contaminants** found in the upper four feet of the soil column.

1) Tank 23 road construction: The historically contaminated soil observed in the road construction excavation exhibited petroleum staining, a petroleum odor and elevated headspace readings (up to 794 ppm). Specific location descriptions are listed below:

- Western manway (Figures B.2.c, C.1.a.i.): Crude oil contaminated soil in this location had elevated headspace detections, dark discoloration and a petroleum odor. Most of the contaminated soil was located between 0 and 2 feet bgs and was removed during the construction excavation. Analytical samples were collected from contaminated soil left in place and the benzene concentration detected in TK23-HIS-B1 (0.16 mg/kg) exceeded Site Specific Groundwater Residual Contaminant Level (Table A.2.).

- Northern D-door (Figures B.2.c, C.1.a.ii.): Crude oil contaminated soil in this location contained some free-product near the tank and had elevated headspace detections, dark discoloration and a petroleum odor. Within approximately 10 feet of the tank the contaminated soil extended to approximately 8 feet bgs but as you moved away from the tank the contamination depth decreased. Most crude contaminated soil was excavated during the construction excavation and additional remedial excavation work focused on removing the observed free-product. Some contaminated soil was left in place immediately adjacent to the tank due to infrastructure concerns. No analytical sample was collected.

- Northwest mixer (Figures B.2.c, C.1.a.iii.): Crude oil contaminated soil in this location had elevated headspace detections, dark discoloration and a petroleum odor. Most contaminated soil was between 0 and 2 feet bgs and was removed during the construction excavation. Some contaminated soil was left in place immediately adjacent to the tank due to infrastructure concerns. No analytical sample was collected.

2) Tank 23 floor cut-out (Figures B.2.c, C.1.a.iv): The diesel fuel contaminated construction fill was stained immediately below the floor and a petroleum odor and elevated headspace readings (up to 163 ppm) were noted throughout the rest of the exposed one foot of fill material.

- iii. Identify the ch. NR 720, Wis. Adm. Code, method used to establish the soil cleanup standards for this site: for example, a Residual Contaminant Level (RCL), a Site-Specific Residual Contaminant Level (SSRCL), or a Performance Standard as determined under ss NR 720.09, 720.11 and 720.19, Wis. Adm. Code. Identify the land use classification that was used to establish cleanup standards. Provide a copy of the supporting calculations/information in Attachment C.

Soil Residual Contaminant Level Determinations were made using the U.S. EPA Regional Screening Level Web Calculator (Pub-RR-890) for industrial properties.

#### C. Groundwater

- i. Describe degree and extent of groundwater contamination at or from this site. Relate this to known or suspected sources and known or potential receptors/migration pathways. Specifically address any potential or existing impacts to water supply wells or interception with building foundation drain systems.

No groundwater contamination has been observed. Groundwater was not observed in the road construction excavations or the Geoprobe borings. No hydrocarbons have been detected in the nearest down gradient terminal monitoring well (MW-6; 400 feet to southeast of Tank 23; Figure B.3.d). No migration pathways were identified at the site. No public wells are within 1000 feet of the site. No private wells are within 100 feet of the site.

- ii. Describe the presence of free product at the site, including the thickness, depth, and locations.

Some free product was observed in the soil pore space in a localized area beneath the northern D-door. Most of the crude oil contaminated soil was removed during the construction excavation and additional remedial excavation activity in this location that could not be completed due to concerns regarding the structural integrity of the tank. No groundwater with free product was observed in the Tank 23 excavations or borings.

#### D. Vapor

- i. Describe how the vapor migration pathway was assessed, including locations where vapor or indoor air samples were collected. If the vapor pathway was not assessed, explain reasons why.

Not applicable. No vapor receptors are located within 100 feet of the site (Figure B.1.b.).

- ii. Identify the applicable DNR action levels and the land use classification used to establish them. Describe where the DNR action levels were reached or exceeded (e.g., sub slab, indoor air or both).

Not applicable. No nearby vapor receptors.

#### E. Surface Water and Sediment

- i. Identify whether surface water and/or sediment was assessed and describe the impacts found. If this pathway was not assessed, explain why.

Not applicable. There are no surface water receptors within the containment basin. The only surface water receptor within 1000 feet is a Terminal drainage ditch approximately 450 feet to the southeast (Figure B.2.b.). Migration to this receptor is unlikely due to site containment berms located between Tank 23 and the drainage ditch and the lack of direct migration pathways.

- ii. Identify any surface water and/or sediment action levels used to assess the impacts for this pathway and how these were derived. Describe where the DNR action levels were reached or exceeded.

Not applicable. No surface water is present in the containment basin.

### 4. Remedial Actions Implemented and Residual Levels at Closure

- A. General: Provide a brief summary of the remedial action history. List previous remedial action report submittals by name and date. Identify remedial actions undertaken since the last submittal for this project and provide the appropriate documentation in Attachment C.

1) Tank 23 road construction: Crude oil contaminated soil (headspace > 10 ppm or crude oil staining or odor) excavated during the road construction work was segregated from uncontaminated soil. A total of 540 tons of contaminated soil was hauled to the Shamrock Landfill in Cloquet, MN (Attachment C.2; profile # CL12-0023). The road construction excavation extents were field screened by Barr and additional contaminated soil was removed beyond the planned road grade when doing so did not threaten the tank infrastructure. The approximate pre and post contaminated soil areas are illustrated in Figure B.2.c.

2) Tank 23 floor cut-out: approximately one cubic yard of discolored fill (top 0.2 feet) exposed during the tank floor cut-out was removed for tank maintenance purposes (Figure B.2.b). The soil was hauled to the Shamrock Landfill (Attachment C.2; Profile # CL12-0023). Additional remedial actions were not pursued due to the inaccessibility of the impacted material beneath the tank bottom.

- B. Describe any immediate or interim actions taken at the site under ch NR 708, Wis. Adm. Code.  
Not Applicable
- C. Describe the *active* remedial actions taken at the site, including: type of remedial system(s) used for each media impacted; the size and location of any excavation or in-situ treatment; the effectiveness of the systems to address the contaminated media and substances; operational history of the systems; and summarize the performance of the active remedial actions. Provide any system performance documentation in Attachment A.7.
- 1) Tank 23 road construction: The ring road construction excavation was approximately 30 feet wide by 2 feet deep (Figure B.2.1). 540 cubic yards of crude oil contaminated soil (headspace > 10 ppm or crude oil staining or odor) was segregated and hauled to the Shamrock Landfill in Cloquet, MN. Most of the crude oil contaminated soil identified during the road excavation was excavated during the construction work however some contaminated soil remains below each tank port next to the foundation as shown in Figures B.2.b. and B.2.c.
- 2) Tank 23 floor cut-out: No remedial actions, outside the limited excavation of impacted soil, were taken due to the inaccessibility of the contaminated soil beneath the tank floor and the lack of a direct contact risk.
- D. Provide a discussion of the nature, degree and extent of residual contamination that will remain at the site or on off-site affected properties after case closure.
- 1) Tank 23 road construction: Crude oil contaminated soil remains in situ near the Tank 23 foundation and beneath the approximately 2 foot thick gravel roadbed. No free product in soil pore space was observed in the contaminated soil left in place at the base of the road-cut.
- 2) Tank 23 floor cut-out: Diesel fuel impacted fill material was left in place beneath Tank 23.
- E. Describe the remaining soil contamination within four feet of ground surface (direct contact zone) that attains or exceeds the ch. NR720, Wis. Adm. Code, standard(s) for direct contact.
- 1) Tank 23 road construction: TK23-HIS-B-1 was collected at approximately 2.2 feet bgs. The Benzo(a)pyrene detection (0.525 mg/kg) was the only analyte detection that exceeded the NR720 direct contact standards (Table A.4.).
- F. Describe the remaining soil contamination in the vadose zone that attains or exceeds the soil standard(s) for the groundwater pathway.  
Groundwater was not encountered during excavation activities or in the soil borings performed as part of this investigation. Therefore, contamination within the vadose zone was not documented.
- G. Describe how the residual contamination will be addressed, including but not limited to details concerning: covers, engineering controls or other barrier features; use of natural attenuation of groundwater; and vapor mitigation systems or measures.
- 1) Tank 23 road construction: the following actions were completed where residual contamination was left in place:
- Remedial excavations below the grade required for the road cut were backfilled with clay fill.
  - A geotechnical fabric was placed along the bottom of the road cut.
  - Approximately two feet of gravel roadbed material was placed above the geotechnical fabric.
  - Tank 23 covers contaminated soil that could not be excavated.
- 2) Tank 23 floor cut-out: A steel plate was welded to the floor to cover the maintenance work floor cut-out. The tank was subsequently filled with crude oil after the maintenance work was completed. The tank footprint covers the diesel fuel contaminated soil.
- H. If using natural attenuation as a groundwater remedy, describe how the data collected supports the conclusion that natural attenuation is effective in reducing contaminant mass and concentration, (e.g. stable or receding groundwater plume).  
Not applicable. Groundwater was not encountered during this project.
- I. Identify how all exposure pathways were removed and/or adequately addressed by immediate and/or remedial action(s) described above in paragraphs, B, C, D, E and F.  
An attempt was made to eliminate the direct contact and groundwater exposure pathways by removing contaminated soil encountered during the ring road construction. Excavation extent field screening tests indicate that residual impacts are only found immediately adjacent to and under the tank structure. The analytical soil samples collected from the western excavation indicate that the only remaining residual impacts documented in that area that were above direct contact and groundwater pathway standards was a benzo(a)pyrene detection in soil sample TK23-HIS-B-1. The excavation extent was driven by the construction objectives and limited by above and below ground tank infrastructure. Borings completed around the perimeter of Tank 23 at the edge of the ring road indicate that the contaminants have not migrated past the perimeter of the road. The documented remaining residual contamination is covered by the tank or has been covered by the new ring road.

- J. Identify any system hardware anticipated to be left in place after site closure, and explain the reasons why it will remain.  
Not applicable. No system hardware was used.
- K. Identify the need for a ch. NR 140, Wis. Adm. Code, groundwater Preventive Action Limit (PAL) or Enforcement Standard (ES) exemption, and identify the affected monitoring points and applicable substances.  
Groundwater was not encountered.
- L. If a DNR action level for vapor intrusion was exceeded (for indoor air, sub slab, or both) describe where it was exceeded and how the pathway was addressed.  
Not applicable. No nearby vapor receptors.
- M. Describe the surface water and/or sediment contaminant concentrations and areas after remediation. If a DNR action level was exceeded, describe where it was exceeded and how the pathway was addressed.  
Not Applicable. No surface water or sediment were contaminated.

**5. Continuing Obligations: Situations where a maintenance plan(s) and inclusion on DNR's GIS Registry are required.**

Directions: Check all that apply to this case closure request:

	This scenario Applies to this Case Closure		Case Closure Scenario: Maintenance Plans and GIS Registry	Maintenance Plan (s) Required in Attachment D	GIS Registry Listing
	A. On-Site	B. Off-Site			
i.	<input type="checkbox"/>	<input type="checkbox"/>	Engineering Control/Barrier for Direct Contact	✓	✓
ii.	<input type="checkbox"/>	<input type="checkbox"/>	Engineering Control/Barrier for Groundwater Infiltration	✓	✓
iii.	<input type="checkbox"/>	<input type="checkbox"/>	Vapor Mitigation - post closure passive system	✓	✓
iv.	<input type="checkbox"/>	<input type="checkbox"/>	Vapor Mitigation - post closure active system	✓	✓
v.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	None of the above scenarios apply to this case closure	NA	NA

**6. Continuing Obligations: Situations where inclusion on DNR's GIS Registry is required.**

Directions: Check all that apply to this case closure request:

	This scenario Applies to this Case Closure		Case Closure Scenario: GIS Registry Only	GIS Registry Listing
	A. On-Site	B. Off-Site		
i.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Residual soil contamination exceeds ch. NR 720 generic or site-specific RCLs	✓
ii.	<input type="checkbox"/>	<input type="checkbox"/>	Sites with groundwater contamination equal to or greater than the ch. NR 140, enforcement standards (ES)	✓
iii.	<input type="checkbox"/>	<input type="checkbox"/>	Monitoring wells: lost, transferred or remaining in use	✓
iv.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Structural Impediment (not as a performance standard)	✓
v.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Residual soil contamination remaining at ch. NR 720 Industrial Use levels	✓
vi.	<input type="checkbox"/>	<input type="checkbox"/>	Vapor intrusion may be future, post-closure issue if building use or land use changes	✓
vii.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	None of the above scenarios apply to this case closure	NA

## 7. Underground Storage Tanks

- A. Were any tanks, piping or other associated tank system components removed as part of the investigation or remedial action?  Yes  No
- B. Do any upgraded tanks meeting the requirements of ch. SPS 310, Wis. Adm. Code, exist on the property?  Yes  No
- C. If the answer to question 7b is yes, is the leak detection system currently being monitored?  Yes  No

### Data Tables (Attachment A)

If any section is not relevant to the case closure request, you must fully explain the reasons why and attach that explanation to the relevant section of the form. All information submitted shall be legible. Providing illegible information may result in a submittal being considered incomplete until corrected.

#### General directions for Data Tables:

- Use bold and italics font on information of importance on tables and figures. Use **bold font** for ch. NR 140, Wis. Adm. Code, groundwater enforcement standard (ES) attainments or exceedances, and *italicized font* for ch. NR 140, Wis. Adm. Code, groundwater preventive action limit (PAL) standard attainments or exceedances.
- Do not use shading or highlighting on the analytical tables.
- Include on Data Tables the level of detection for results which are below the detection level (i.e. do not just list as no detect (ND)).
- Include the units on data tables.
- Summaries of all data must include information collected by previous consultants.
- Do not submit lab data sheets unless these have not been submitted in a previous report. Tabulate all data required in s. NR 716.15(2)(g)3, Wis. Adm. Code, in the format required in s. NR 716.15(2)(h)3, Wis. Adm. Code.
- Include in Attachment A all of the following tables, in the order prescribed below, with the specific Closure Form titles noted on the separate attachments (e.g., Title: A.1. Groundwater Analytical Table; A.2. Pre-remedial Soil Analytical Table, etc).
- For required documents, each table (e.g., A.1., A.2., etc.) should be a separate PDF.

#### A. Data Tables

- A.1. **Groundwater Analytical Table(s):** Table(s) showing the analytical results and collection dates, for all groundwater sampling points e.g. monitoring wells, temporary wells, sumps, extraction wells, any potable wells and any other wells, extraction wells and any potable wells for which samples have been collected.
- A.2. **Pre-remedial Soil Analytical Table(s):** Table(s) showing the soil analytical results and collection dates - prior to conducting the interim and/or remedial action. Indicate if sample was collected above or below the all-time low water table (unsaturated verses saturated).
- A.3. **Post-remedial Soil Analytical Table(s):** Table(s) showing the post-remedial action soil analytical results and collection dates. Indicate if sample was collected above or below the all-time low water table (unsaturated verses saturated).
- A.4. **Pre and Post Remaining Soil Contamination Soil Analytical Table(s):** Table(s) showing only the pre and post remedial action soil analytical results that exceed a Residual Contaminate Level (RCL) or a Site-Specific Residual Level (SSRCL).
- A.5. **Vapor Analytical Table:** Table(s) showing type(s) of samples, sample collection methods, analytical method, sample results, date of sample collection, time period for sample collection, method and results of leak detection, and date, method and results of communication testing.
- A.6. **Other Media of Concern (e.g., sediment or surface water):** Table(s) showing type(s) of sample, sample collection method, analytical method, sample results, date of sample collection, time period for sample collection, method and results sampling.
- A.7. **Water Level Elevations:** Table(s) showing all water level elevation measurements and dates from all monitoring wells. If present, free product should be noted on the table.
- A.8. **Other:** This attachment should include: 1) any available tabulated natural attenuation data; 2) data tables pertaining to engineered remedial systems that document operational history, demonstrate system performance and effectiveness, and display emissions data; and (3) any other data tables relevant to case closure not otherwise noted above. If this section is not applicable, please explain the reasons why.

### Maps and Figures (Attachment B)

If any section is not relevant to the case closure request, you must fully explain the reasons why and attach that explanation to the relevant section of the form. All information submitted shall be legible. Providing illegible information may result in a submittal being considered incomplete until corrected.

#### General Directions for all Maps and Figures:

- If any map or figure is not relevant to the case closure request, you must fully explain the reason(s) why and attach that explanation (properly labeled with the map/ figure title) in Attachment B.
- Provide on paper no larger than 11 x 17 inches, unless otherwise directed by the Department. Maps and figures may be submitted in a larger electronic size than 11x17 inches, in a portable document format (pdf) readable by the Adobe Acrobat Reader. However, those larger-size documents must be legible when printed.

- Prepare visual aids, including maps, plans, drawings, fence diagrams, tables and photographs according to the applicable portions of ss. NR 716.15(2)(h)1 and 726.05(3)(a)4.d, Wis Adm. Code.
- Do not use shading or highlights on any of the analytical tables.
- Include all sample locations.
- Contour lines should be clearly labeled and defined.
- Include in Attachment B all of the following maps and figures, in the order prescribed below, with the specific Closure Form titles noted on the separate attachments (e.g., Title: B.1. Location Map; B.2. Detailed Site Map, etc).
- For the electronic copies that are required, each map (e.g., B.1.a., B.2.a, etc.,) should be a separate PDF.

### B.1. Location Maps

- B.1.a. **Location Map:** A map outlining all properties within the contaminated site boundaries on a U.S.G.S. topographic map or plat map in sufficient detail to permit easy location of all impacted and/or adjacent parcels. If groundwater standards are exceeded, include the location of all potable wells, including municipal wells, within 1200 feet of the area of contamination.
- B.1.b. **Detailed Site Map:** A map that shows all relevant features (buildings, roads, current ground surface cover, individual property boundaries for on-site and applicable off-site properties, contaminant sources, utility lines, monitoring wells and potable wells) within the contaminated area. This map is to show the location of all contaminated public streets, and highway and railroad rights-of-way in relation to the source property and in relation to the boundaries of groundwater contamination exceeding a ch. NR 140 Enforcement Standard (ES), and/or in relation to the boundaries of soil contamination exceeding a Residual Contaminant Level (RCL) or a Site Specific Residual Contaminant Levels (SSRCL) as determined under ss. NR 720.09, 720.11 and 720.19, Wis. Adm. Code.
- B.1.c. **RR Site Map:** From RR Sites Map (<http://dnrmmaps.wi.gov/imf/imf.jsp?site=brrts2>) attach a map depicting the source property, and all open and closed BRRTS sites within a half-mile radius or less of the property.

### B.2. Soil Figures

- B.2.a. **Pre-remedial Soil Contamination:** Figure(s) showing the sample location of all pre-remedial, unsaturated contaminated soil and a single contour showing the horizontal extent of each area of contiguous residual soil contamination that exceeded a Residual Contaminant Level (RCL) or a Site-Specific Residual Contaminant Level (SSRCL) as determined under ss. NR 720.09, 720.11 and 720.19, Wis. Adm. Code.
- B.2.b. **Post-remedial Soil Contamination :** Figure(s) showing the sample location of all post-remedial, unsaturated contaminated soil and a single contour showing the horizontal extent of each area of contiguous residual soil contamination that exceeds a Residual Contaminant Level (RCL) or a Site-Specific Residual Contaminant Level (SSRCL) as determined under ss. NR 720.09, 720.11 and 720.19, Wis. Adm. Code. A separate contour line should be used to indicate the extent of residual direct contact exceedances.
- B.2.c. **Pre/Post Remaining Soil Contamination:** Figure(s) showing the only location of all pre and post remedial residual soil sample location(s) where unsaturated contaminated soil remains after remediation and a single contour showing the horizontal extent of each area of contiguous residual soil contamination that exceeds a Residual Contaminant Level (RCL) or a Site-Specific Residual Level (SSRCL) as determined under ss. NR 720.09, 720.11 and 720.19, Wis. Admin. Code. A separate contour line should be used to indicate the extent of residual direct contact exceedances.

### B.3. Groundwater Figures

- B.3.a. **Geologic Cross-Section Figure(s):** One or more cross-section diagrams showing soil types and correlations across the site, water table and piezometric elevations, and locations and elevations of geologic rock units, if encountered. Display on one or more figures all of the following:
- Source location(s) and vertical extent of residual soil contamination exceeding a Residual Contaminant Level (RCL) or a Site Specific Residual Contaminant Level (SSRCL).
  - Source location(s) and lateral and vertical extent if groundwater contamination exceeds a ch. NR 140 Enforcement Standard (ES)
  - Surface features, including buildings and basements, and show surface elevation changes.
  - Any areas of active remediation within the cross section path, such as excavations or treatment zones.
  - Include a map displaying the cross-section location(s), if they are not displayed on the Detailed Site Map (Map B.1b)
- B.3.b. **Groundwater Isoconcentration:** Figure(s) showing the horizontal extent of the post-remedial groundwater contamination exceeding a ch. NR 140, Wis. Adm. Code, Preventive Action Limit (PAL) and/or an Enforcement Standard (ES). Indicate the date and direction of groundwater flow based on the most recent sampling data.
- B.3.c. **Groundwater Flow Direction:** Figure(s) representing groundwater movement at the site. If the flow direction varies by more than 20° over the history of the site, submit two groundwater flow maps showing the maximum variation in flow direction.
- B.3.d. **Monitoring Wells:** Figure(s) showing all monitoring wells, with well identification number. Clearly designate any wells that: (1) are proposed to be abandoned; (2) cannot be located; (3) are being transferred; (4) will be retained for further sampling, or (5) have been previously abandoned.

#### B.4. Vapor Maps and Other Media

- B.4.a. **Vapor Intrusion Map:** Map(s) showing all locations and results for samples taken to investigate the vapor intrusion pathway, in relation to remaining soil and groundwater contamination, including sub-slab, indoor air, soil vapor, ambient air, and communication testing. Show locations and footprints of affected structures and utility corridors, and/or where residual contamination poses a future risk of vapor intrusion.
- B.4.b. **Other media of concern (e.g., sediment or surface water):** Map(s) showing all sampling locations and results for other media investigation. Include the date of sample collection and identify where any standards are exceeded.
- B.4.c. **Other:** Include any other relevant maps and figures not otherwise noted above. (This section may remain blank)

#### Documentation of Remedial Action (Attachment C)

*If any section is not relevant to the case closure request, you must fully explain the reasons why and attach that explanation to the relevant section of the form. All information submitted shall be legible. Providing illegible information may result in a submittal being considered incomplete until corrected.*

##### General Directions:

- Include in Attachment C all of the following documentation, in the order prescribed below, with the specific Closure Form titles noted on the separate attachments (e.g., Title: C.1. Site Investigation Documentation; C.2. Investigative Waste, etc).
- If the documentation requested below is "not applicable" to the site-specific circumstances, include a brief explanation to support that conclusion.
- If the documentation requested below has already been submitted to the Department, please note the title and date of the report for that particular document requested.

- C.1. **Site investigation documentation**, that has not otherwise been previously submitted.
- C.2. **Investigative waste** disposal documentation.
- C.3. **NR 720.19 analysis**, assumptions and calculations for site specific RCLs (SSRCLs) , with justification, including EPA Soil Screening Level Model Calculations and results.
- C.4. **Construction documentation** or as-built report for any constructed remedial action or portion of, or interim action specified in s. NR 724.02(1), Wis. Adm. Code.
- C.5. **Decommissioning of Remedial Systems.** Include plans to properly abandon any systems or equipment upon receiving conditional closure.
- C.6. **Photos.** For sites or facilities with a cover or other performance standard, a structural impediment or a vapor mitigation system. Include one or more photographs documenting the condition and extent of the feature at the time of the closure request. Pertinent features should be visible and discernible. Photographs must be labeled with the site name, the features shown, location and the date on which the photograph was taken.
- C.7. **Other.** Include any other relevant documentation not otherwise noted above. (This section may remain blank)

#### Maintenance Plan(s) (Attachment D)

*If any section is not relevant to the case closure request, you must fully explain the reasons why and attach that explanation to the relevant section of the form. All information submitted shall be legible. Providing illegible information may result in a submittal being considered incomplete until corrected.*

When one or more "maintenance plans" are required for a site closure, include in each maintenance plan all required information in sections D.1. through D.5. below, and attach the plan(s) in Attachment D. The following "model" maintenance plans can be located at: (1) Maintenance plan for a engineering control or cover: <http://dnr.wi.gov/topic/Brownfields/documents/maintenance-plan.pdf>; and (2) Maintenance plan for vapor intrusion: [http://dnr.wi.gov/topic/Brownfields/documents/appendix5\\_606.pdf](http://dnr.wi.gov/topic/Brownfields/documents/appendix5_606.pdf).

- D.1. **Location map(s)** which show(s): (1) the feature that requires maintenance; (2) the location of the feature(s) that require(s) maintenance - on and off the source property; (3) the extent of the structure or feature(s) to be maintained, in relation to other structures or features on the site; (4) the extent and type of residual contamination; and (5) and all property boundaries.
- D.2. **Brief descriptions** of the type, depth and location of residual contamination.
- D.3. **Description of maintenance action(s)** required for maximizing effectiveness of the engineered control, vapor mitigation system, feature or other action for which maintenance is required.
- D.4. **Inspection log**, to be maintained on site, or at a location specified in the maintenance plan or approval letter.
- D.5. **Contact information**, including the name, address and phone number of the individual or facility who will be conducting the maintenance.

**Monitoring Well Information (Attachment E)**

If any section is not relevant to the case closure request, you must fully explain the reasons why and attach that explanation to the relevant section of the form. All information submitted shall be legible. Providing illegible information may result in a submittal being considered incomplete until corrected.

**General Directions:**

Attach monitoring well construction and development forms (DNR FORM 4400-113 A and B: [http://dnr.wi.gov/topic/groundwater/documents/forms/4400\\_113\\_1\\_2.pdf](http://dnr.wi.gov/topic/groundwater/documents/forms/4400_113_1_2.pdf)) for all wells that will remain in-use, be transferred to another party or that could not be located. A figure of these wells should be included in Attachment B.3.d.

**Select One:**

- No monitoring wells were required as part of this response action.
- All monitoring wells have been located and will be properly abandoned upon the DNR granting conditional closure to the site
- Select One or More:**
  - Not all monitoring wells can be located, despite good faith efforts. Attachment E must include description of efforts made to locate the "lost" wells.
  - One or more wells will be transferred to another owner upon case closure being granted. Attachment E should include documentation identifying the name, address and email for the new owner(s).
  - One or more wells will remain in use at the site after this closure. Attachment E must include documentation as to the reason(s) the well(s) will remain in use.

**Notifications to Owners of Impacted Properties (Attachment F)**

If any section is not relevant to the case closure request, you must fully explain the reasons why and attach that explanation to the relevant section of the form. All information submitted shall be legible. Providing illegible information may result in a submittal being considered incomplete until corrected.

**General Directions:**

- State law requires that the responsible party provide a 30-day, written advance notice (i.e., a letter) to certain persons prior to applying for case closure. This requirement applies if: (1) the person conducting the response action does not own the source property; (2) the contamination has migrated onto another property; and/or (3) one or more monitoring wells will not be abandoned.
- A model "template letter" for these mandatory notifications can be downloaded at: <http://dnr.wi.gov/files/PDF/pubs/rr/RR919.pdf>.

**Check all that apply to the site-specific circumstances of this case closure:**

	A. Impacted Source Property and Owner is not Conducting Cleanup	B. Impacted Right of Way	C. Impacted Off-Site Property Owner	Impacted Property Notification Situations: Ch. NR 726 Appendix A Letter
1.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Residual groundwater contamination exceeds Ch. NR 140 Wis. Administrative Code enforcement standards.
2.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Residual soil contamination that attains or exceeds standards is present after the remedial action is complete, and must be properly managed should it be excavated or removed.
3.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	An engineered cover or a soil barrier (e.g. pavement) must be maintained over contaminated soil for direct contact or groundwater infiltration concerns.
4.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Industrial land use soil standards were used for the clean-up standard.
5.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	A vapor mitigation system (or other specific vapor protection) must be operated and maintained.
6.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Vapor assessment needed if use changes.
7.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Structural impediment.
8.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Lost, transferred or open monitoring wells.
9.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Not Applicable.

If any of the previous boxes in rows 1 thru 8 were checked, include the following as part of Attachment F:

- FORM 4400-246;
- Copy of each letter sent, 30 days or more prior to requesting closure; and
- Proof of receipt for each letter.
- For this site closure, \_\_\_\_\_ (number) property (ies) has/have been impacted, the owners have been notified, and copies of the letters and receipts are included in Attachment F.

**Source Legal Documents (Attachment G)**

If any section is not relevant to the case closure request, you must fully explain the reasons why and attach that explanation to the relevant section of the form. All information submitted shall be legible. Providing illegible information may result in a submittal being considered incomplete until corrected.

Include all of the following documents, in this order, in Attachment G:

- G.1. **Deeds - Source Property and Other Impacted Properties:** The most recent deed with legal descriptions clearly labeled for (1) the **Source Property** (where the contamination originated) and (2) all **off-source** (off-site) properties where letters were required to be sent per the ch. NR 700, Wis. Adm. Code, rule series (e.g., off-site cover maintenance required, lost monitoring well, off-site cover property impacts to groundwater exceeding the ch. NR 140, Wis. Adm. Code.  
*Note: If a property has been purchased with a land contract and the purchaser has not yet received a deed, a copy of the land contract which includes the legal description shall be submitted instead of the most recent deed. If the property has been inherited, written documentation of the property transfer should be submitted along with the most recent deed.*
- G.2. **Certified Survey Map:** A copy of the certified survey map or the relevant section of the recorded plat map for those properties where the legal description in the most recent deed refers to a certified survey map or a recorded plat map. (Lots on subdivided or platted property (e.g. lot 2 of xyz subdivision)).
- G.3. **Verification of Zoning:** Documentation (e.g., official zoning map or letter from municipality) of the property's or properties' current zoning status.
- G.4. **Signed Statement:** A statement signed by the Responsible Party (RP), which states that he or she believes that the attached legal description(s) accurately describe(s) the correct contaminated property or properties.

**Signatures and Findings for Closure Determination**

If any section is not relevant to the case closure request, you must fully explain the reasons why and attach that explanation to the relevant section of the form. All information submitted shall be legible. Providing illegible information may result in a submittal being considered incomplete until corrected.

Check the correct signature block below for this case closure request, and have the proper environmental professional(s) sign this document, in accordance with the ch. NR 700 Wis. Adm. Code rule series. Both boxes may be checked if applicable to this case closure.

- A response action(s) for this site addresses groundwater contamination (including natural attenuation remedies). In this situation, the closure request must be prepared by, or under the supervision of, a professional engineer and a hydrogeologist, as defined in ch. NR 712, Wis. Adm. Code. Include both signatures provided below with the submittal.
- The response action(s) for this site addresses media other than groundwater. In this situation, the case closure request must be prepared by, or under the supervision of, a professional engineer, as defined in ch. NR 712, Wis. Adm. Code. The "engineering certification" language below, at a minimum, must be signed.

**Engineering Certification**

I \_\_\_\_\_ hereby certify that I am a registered professional engineer in the State of Wisconsin, registered in accordance with the requirements of ch. A-E 4, Wis. Adm. Code; that this case closure request has been prepared in accordance with the Rules of Professional Conduct in ch. A-E 8, Wis. Adm. Code; and that, to the best of my knowledge, all information contained in this case closure request is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code. All phases of work necessary to obtain data, develop conclusions, recommendations and prepare submittals for this case closure request have been prepared by me, or their preparation has been supervised by me. Specifically, with respect to compliance with the rules, in my professional opinion a site investigation has been conducted in accordance with ch. NR 716, Wis. Adm. Code, and all necessary remedial actions have been completed in accordance with chs. NR 140, NR 718, NR 720, NR 722, NR 724 and NR 726, Wis. Adm. Codes."

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Title

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
P.E. Stamp and Number

**Hydrogeologist Certification**

I, Lynette Carney hereby certify that I am a hydrogeologist as that term is defined in s. NR 712.03 (1), Wis. Adm. Code, and that, to the best of my knowledge, all of the information contained in this case closure request is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code. All phases of work necessary to address groundwater contamination including obtaining data, developing conclusions, recommendations and preparing submittals for this case closure request have been prepared by me, or their preparation has been supervised by me. Specifically, with respect to compliance with the rules, in my professional opinion a site investigation has been conducted in accordance with ch. NR 716, Wis. Adm. Code, and all necessary remedial actions have been completed in accordance with chs. NR 140, NR 718, NR 720, NR 722, NR 724 and NR 726, Wis. Adm. Codes.”

Lynette Carney

Printed Name

Professional Geologist (WI Reg. No. 1138)

Title



Signature

9/25/13

Date

**Attachment A.1.**

***Groundwater Analytical Table***

Not applicable - Groundwater was not encountered during this project

**Table A.2**  
**Soil Analytical Data Summary**  
**Tank 23 Pre-remedial Soil Analytical Tables**  
**Enbridge Terminal - Superior, Wisconsin**  
**Units, mg/kg (unless otherwise noted)**  
**All samples were collected above the all-time low water table.**

Chemical Name			Moisture	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene
Effective Date	Exceedance Key																
Site Specific Groundwater RCLs		<b>Bold</b>				196.7442		<b>0.47</b>	<b>0.48</b>			<b>0.0725</b>		44.4089	7.4074		0.3294
Site Specific Industrial Direct Contact RCLs	05/01/2012	<i>Italic</i>		33000	487	100000	2.11	<i>0.211</i>	2.11		21.1	211	0.211	22000	22000	2.11	26
Location	Sample Date	Depth (ft)															
TK23-Floor Repair-1	1/31/2013		3.8 %	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TK23-HIS-B1	4/3/2012	2.2	25.3 %	0.0576	< 0.0134	0.0987	0.302	<b>0.525</b>	<b>0.662</b>	0.148	0.267	<b>0.327</b>	0.0566	0.439	0.0800	0.158	0.0290
TK23-HIS-S1	4/3/2012	0.5	8.2 %	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TK23-SB-01	3/26/2013	6 - 7	24.1 %	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TK23-SB-02	3/26/2013	6 - 7	28.2 %	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TK23-SB-03	3/26/2013	5 - 6	25.1 %	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TK23-SB-03	3/26/2013	9 - 10	22.8 %	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TK23-SB-04	3/26/2013	6 - 7	25.1 %	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TK23-SB-05	3/26/2013	6 - 7	26.2 %	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TK23-SB-06	3/26/2013	5 - 6	23.6 %	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TK23-SB-07	3/26/2013	6 - 7	28.6 %	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TK23-SB-08	3/26/2013	5 - 6	24.4 %	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TK23-SB-09	3/26/2013	5 - 6	25.1 %	--	--	--	--	--	--	--	--	--	--	--	--	--	--

TR - Based on 1,2,4-Trimethylbenzene and 1,3,5-Trimethylbenzene combined.

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

\*Estimated value, QA/QC criteria not met.

-- Not analyzed/Not available.

**Table A.2**  
**Soil Analytical Data Summary**  
**Tank 23 Pre-remedial Soil Analytical Tables**  
**Enbridge Terminal - Superior, Wisconsin**  
**Units, mg/kg (unless otherwise noted)**  
**All samples were collected above the all-time low water table.**

Chemical Name			Phenanthrene	Pyrene	Methyl tertiary butyl ether (MTBE)	1,2,4-Trimethyl benzene	1,3,5-Trimethyl benzene	Benzene	Diesel Range Organics	Ethyl benzene	Gasoline Range Organics	Toluene	Xylene, total	Exceedance Count	Hazard Quotient	Cumulative Cancer Risk	Pass or Fail
Effective Date	Exceedance Key																
<b>Site Specific Groundwater RCLs</b>				27.2362	0.0135	1.3793 TR	1.3793 TR	0.0051		0.785		0.5536	1.97 XYL				
<b>Site Specific Industrial Direct Contact RCLs</b>			115	16500	293	219	182	7.41		37		818	258	0	1.0	0.00001	Pass
Location	Sample Date	Depth (ft)															
TK23-Floor Repair-1	1/31/2013		--	--	< 0.0536	9.94	7.81	< 0.0214	7130	0.141	--	< 0.0536	2.17	0	0.0277	6.9E-09	Pass
TK23-HIS-B1	4/3/2012	2.2	0.324	0.463	--	0.66 *	0.30 *	0.16 *	187	0.24 *	--	< 0.13 *	0.69 *	1	0.0023	3.3E-06	Fail
TK23-HIS-S1	4/3/2012	0.5	--	--	--	< 0.052	< 0.052	< 0.052	219	< 0.052	--	< 0.052	< 0.16	0	0.0003	8.4E-09	Pass
TK23-SB-01	3/26/2013	6 - 7	--	--	--	< 0.064	< 0.064	< 0.064	< 11.8	< 0.064	< 6.4	< 0.064	< 0.19	0	0.0003	1.0E-08	Pass
TK23-SB-02	3/26/2013	6 - 7	--	--	--	< 0.070	< 0.070	< 0.070	< 12.7	< 0.070	< 7.0	< 0.070	< 0.21	0	0.0004	1.1E-08	Pass
TK23-SB-03	3/26/2013	5 - 6	--	--	--	< 0.066	< 0.066	< 0.066	< 13.0	< 0.066	< 6.6	< 0.066	0.22	0	0.0003	1.1E-08	Pass
TK23-SB-03	3/26/2013	9 - 10	--	--	--	0.12	< 0.063	< 0.063	< 11.6	< 0.063	< 6.3	< 0.063	< 0.19	0	0.0005	1.0E-08	Pass
TK23-SB-04	3/26/2013	6 - 7	--	--	--	< 0.067	< 0.067	< 0.067	< 13.1	< 0.067	< 6.7	< 0.067	< 0.20	0	0.0003	1.1E-08	Pass
TK23-SB-05	3/26/2013	6 - 7	--	--	--	< 0.067	< 0.067	< 0.067	< 12.0	< 0.067	< 6.7	< 0.067	< 0.20	0	0.0003	1.1E-08	Pass
TK23-SB-06	3/26/2013	5 - 6	--	--	--	< 0.067	< 0.067	< 0.067	< 12.1	< 0.067	< 6.7	< 0.067	< 0.20	0	0.0003	1.1E-08	Pass
TK23-SB-07	3/26/2013	6 - 7	--	--	--	< 0.070	< 0.070	< 0.070	< 14.1	< 0.070	< 7.0	< 0.070	< 0.21	0	0.0004	1.1E-08	Pass
TK23-SB-08	3/26/2013	5 - 6	--	--	--	< 0.065	< 0.065	< 0.065	< 12.6	< 0.065	< 6.5	< 0.065	< 0.20	0	0.0003	1.1E-08	Pass
TK23-SB-09	3/26/2013	5 - 6	--	--	--	< 0.067	< 0.067	< 0.067	< 13.2	< 0.067	< 6.7	< 0.067	< 0.20	0	0.0003	1.1E-08	Pass

TR - Based on 1,2,4-Trimethylbenzene and 1,3,5-Trimethylbenzene combined.

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

\*Estimated value, QA/QC criteria not met.

-- Not analyzed/Not available.

**Attachment A.3.**

***Post Remedial Soil Analytical Table***

Not applicable - Soil remediation was not completed following construction and investigation activities

**Table A.4**  
**Soil Analytical Data Summary**  
**RCL Exceedances Only**  
**Tank 23 Historical Contamination**  
**Enbridge Terminal - Superior, Wisconsin**  
**Units, mg/kg (unless otherwise noted)**  
**All samples were collected above the all-time low water table.**

Chemical Name		Moisture	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	
Effective Date	Exceedance Key															
<b>Site Specific Groundwater RCLs</b>					196.7442		<b>0.47</b>	<b>0.48</b>			<b>0.0725</b>		44.4089	7.4074		
<b>Site Specific Industrial Direct Contact RCLs</b>	05/01/2012	<i>Italic</i>	33000	487	100000	2.11	<i>0.211</i>	2.11		21.1	211	0.211	22000	22000	2.11	
<b>Location</b>	<b>Sample Date</b>	<b>Depth (ft)</b>														
TK23-Floor Repair-1	1/31/2013		3.8 %	--	--	--	--	--	--	--	--	--	--	--	--	
TK23-HIS-B1	4/3/2012	2.2	25.3 %	0.0576	< 0.0134	0.0987	0.302	<b>0.525</b>	<b>0.662</b>	0.148	0.267	<b>0.327</b>	0.0566	0.439	0.0800	0.158

TR - Based on 1,2,4-Trimethylbenzene and 1,3,5-Trimethylbenzene combined.

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

\*Estimated value, QA/QC criteria not met.

-- Not analyzed/Not available.

**Table A.4**  
**Soil Analytical Data Summary**  
**RCL Exceedances Only**  
**Tank 23 Historical Contamination**  
**Enbridge Terminal - Superior, Wisconsin**  
**Units, mg/kg (unless otherwise noted)**

All samples were collected above the all-time low water table.

		Chemical Name	Naphthalene	Phenanthrene	Pyrene	Methyl tertiary butyl ether (MTBE)	1,2,4-Trimethyl benzene	1,3,5-Trimethyl benzene	Benzene	Diesel Range Organics	Ethyl benzene	Toluene	Xylene, total	Exceedance Count	Hazard Quotient	Cumulative Cancer Risk	Pass or Fail
	Effective Date	Exceedance Key															
<b>Site Specific Groundwater RCLs</b>		<b>Bold</b>	0.3294		27.2362	0.0135	<b>1.3793 TR</b>	<b>1.3793 TR</b>	<b>0.0051</b>		0.785	0.5536	<b>1.97 XYL</b>				
<b>Site Specific Industrial Direct Contact RCLs</b>		<i>Italic</i>	26	115	16500	293	219	182	7.41		37	818	258	0	1.0	0.00001	Pass
Location	Sample Date	Depth (ft)															
TK23-Floor Repair-1	1/31/2013		--	--	--	< 0.0536	<b>9.94</b>	<b>7.81</b>	< 0.0214	7130	0.141	< 0.0536	<b>2.17</b>	0	0.0277	6.9E-09	Pass
TK23-HIS-B1	4/3/2012	2.2	0.0290	0.324	0.463	--	0.66 *	0.30 *	<b>0.16 *</b>	187	0.24 *	< 0.13 *	0.69 *	1	0.0023	0.0000033	<i>Fail</i>

TR - Based on 1,2,4-Trimethylbenzene and 1,3,5-Trimethylbenzene combined.

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

\*Estimated value, QA/QC criteria not met.

-- Not analyzed/Not available.

**Attachment A.5.**

***Vapor Analytical Table***

Not applicable - Vapor receptors were not present within 100 feet of the site.

**Attachment A.6.**

***Other Media of Concern***

Not applicable - No other media of concern were present

**Attachment A.7.**

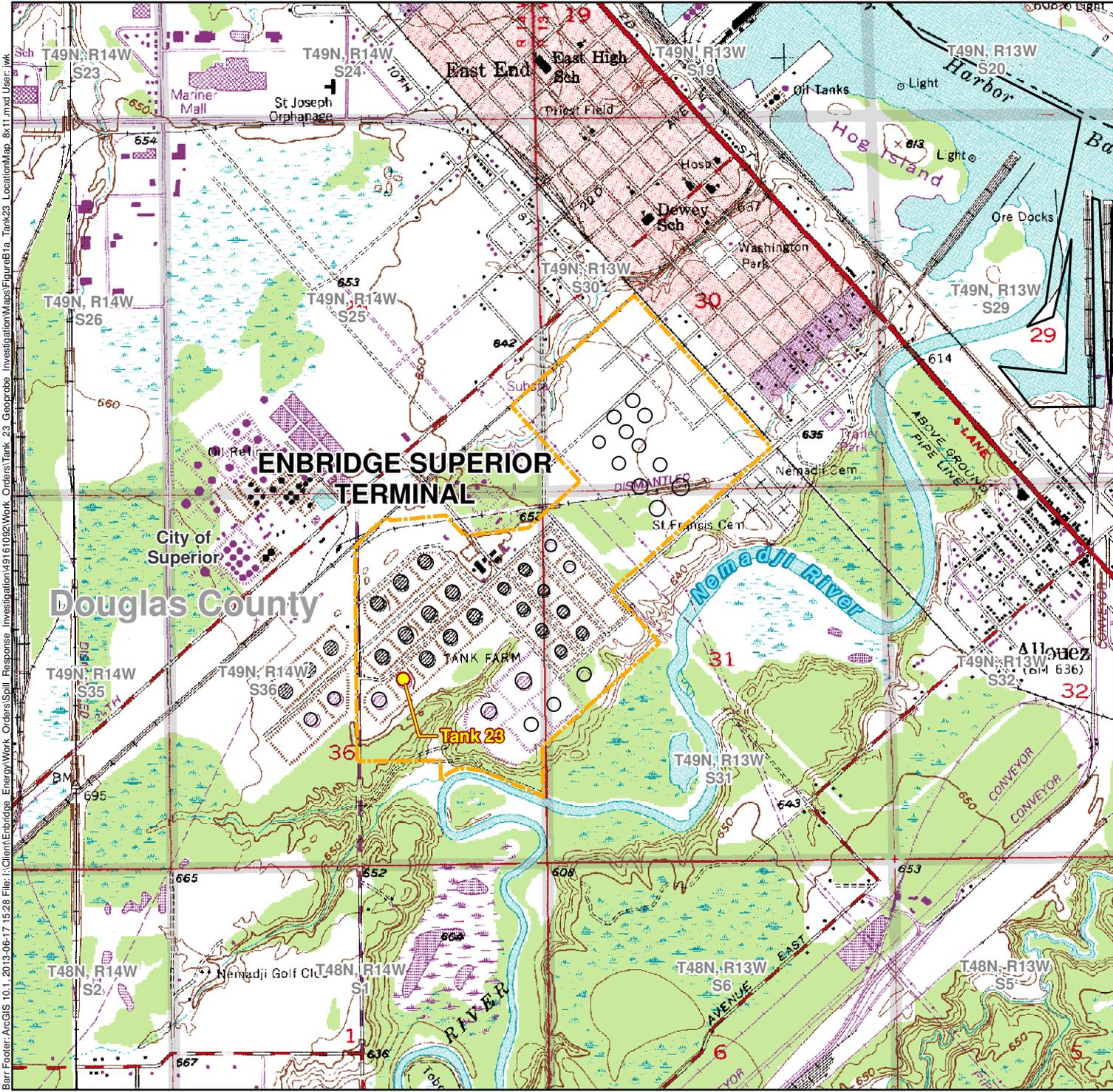
***Water Level Elevations***

Not applicable - Groundwater was not encountered during this project

**Attachment A.8.**

***Other***

Not applicable - Natural attenuation data was not determined and no remedial system was utilized



- Tank 23
- Terminal Property Boundary



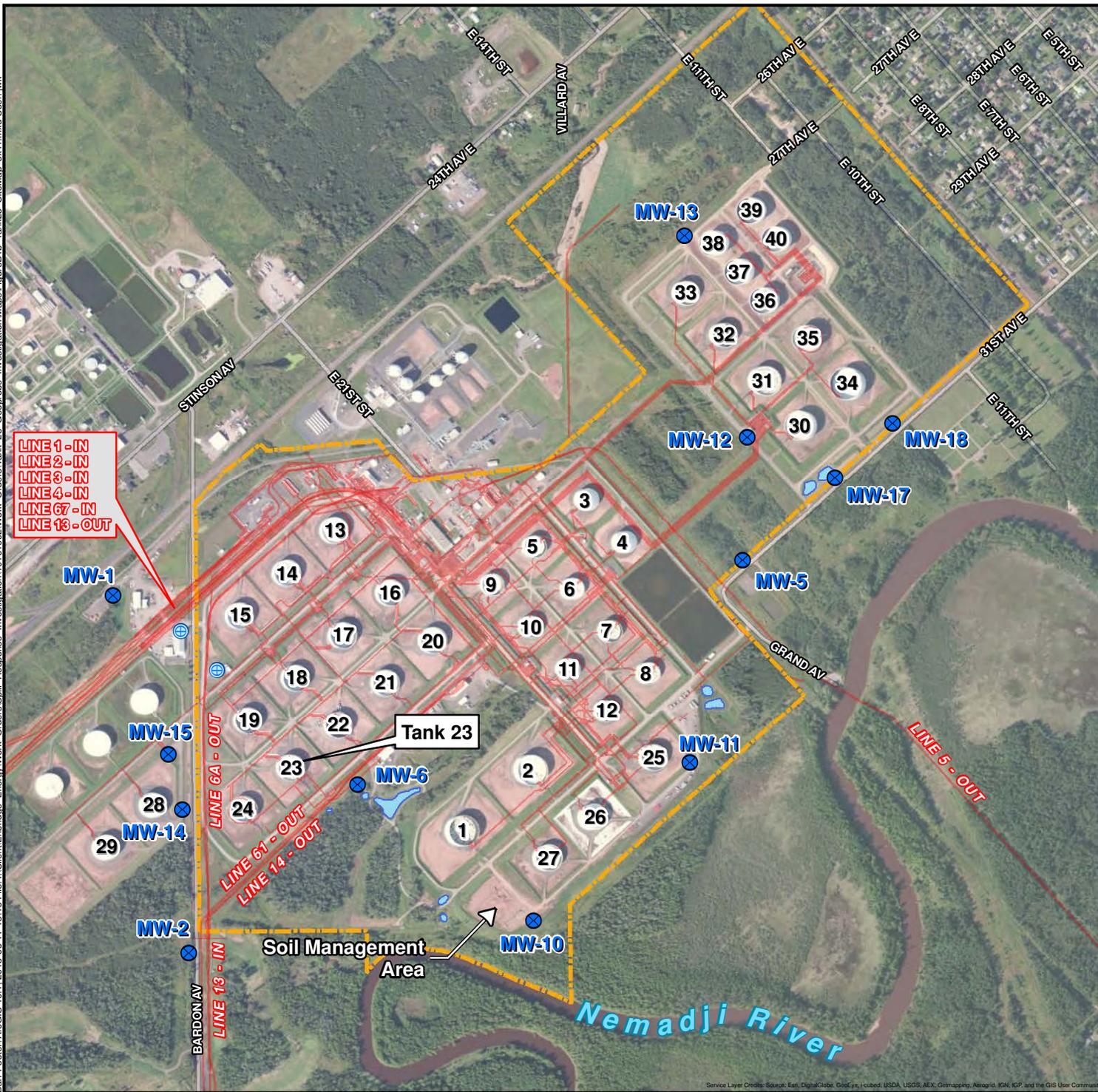
Feet  
1 Inch = 2,000 Feet

Figure B.1.a.

**LOCATION MAP**  
**SUPERIOR TERMINAL**  
 Enbridge Energy, L.P.  
 Superior, Wisconsin

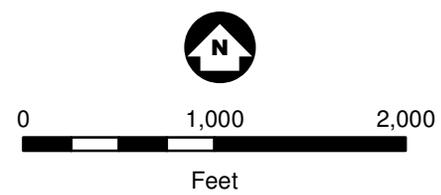


Barr Footer: ArcGIS 10.1, 2013-06-17 15:28 File: I:\Client\Enbridge Energy\Work Orders\Spill Response Investigation\49161092\Work Orders\Tank 23 Geoprobe Investigation\Maps\FigureB1a\_Tank23\_LocationMap\_8x11.mxd User: wjk



-  Terminal Monitoring Wells
-  Potable Wells
-  Retention Ponds
-  Pipeline Infrastructure
-  Terminal Property Boundary

**Note:**  
 Cross Section is identified on Figure B.2.a.



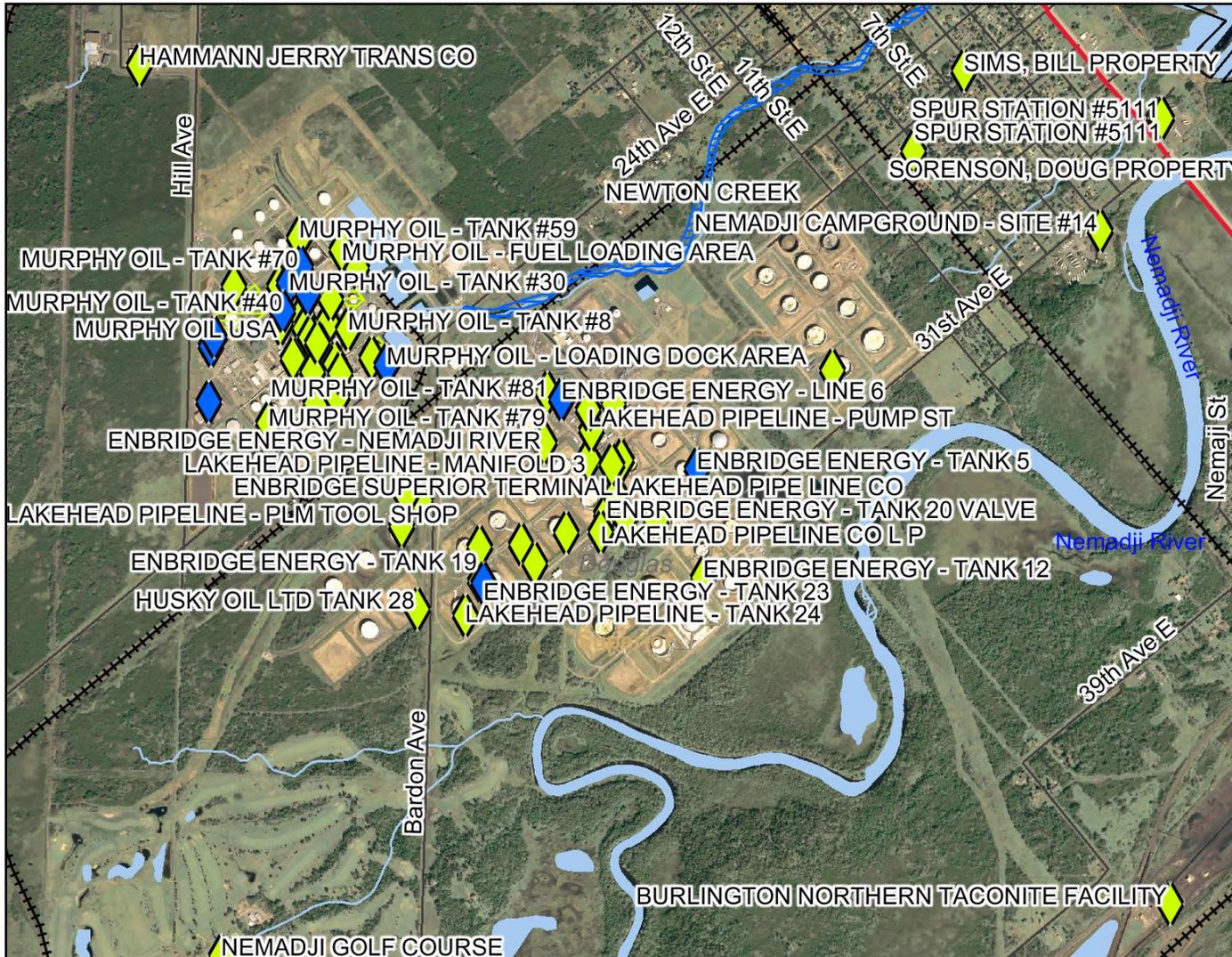
ESRI World Imagery Circa August, 2011

Figure B.1.b.

**DETAILED SITE MAP**  
**SUPERIOR TERMINAL**  
 Enbridge Energy, L.P.  
 Superior, Wisconsin



Map Created on Apr 17, 2013



**Legend**

- Open Sites (ongoing cleanups)
- Open Sites (ongoing cleanups) - site boundaries shown
- Closed Sites (completed cleanups)
- Closed Sites (completed cleanups) - site boundaries shown
- County Boundary
- Railroads
- County Roads (WDOT)
- County Trunk Highway
- State and U.S. Highways (WDOT)
- State Trunk Highway
- US Highway
- Interstate Highways (WDOT)
- Interstate Highway
- Local Roads (WDOT)
- Civil Towns
- Civil Town
- 24K Open Water
- 24K Rivers and Shorelines
- Municipalities

0 2100 4200 6300 ft.

Map created on Apr 17, 2013

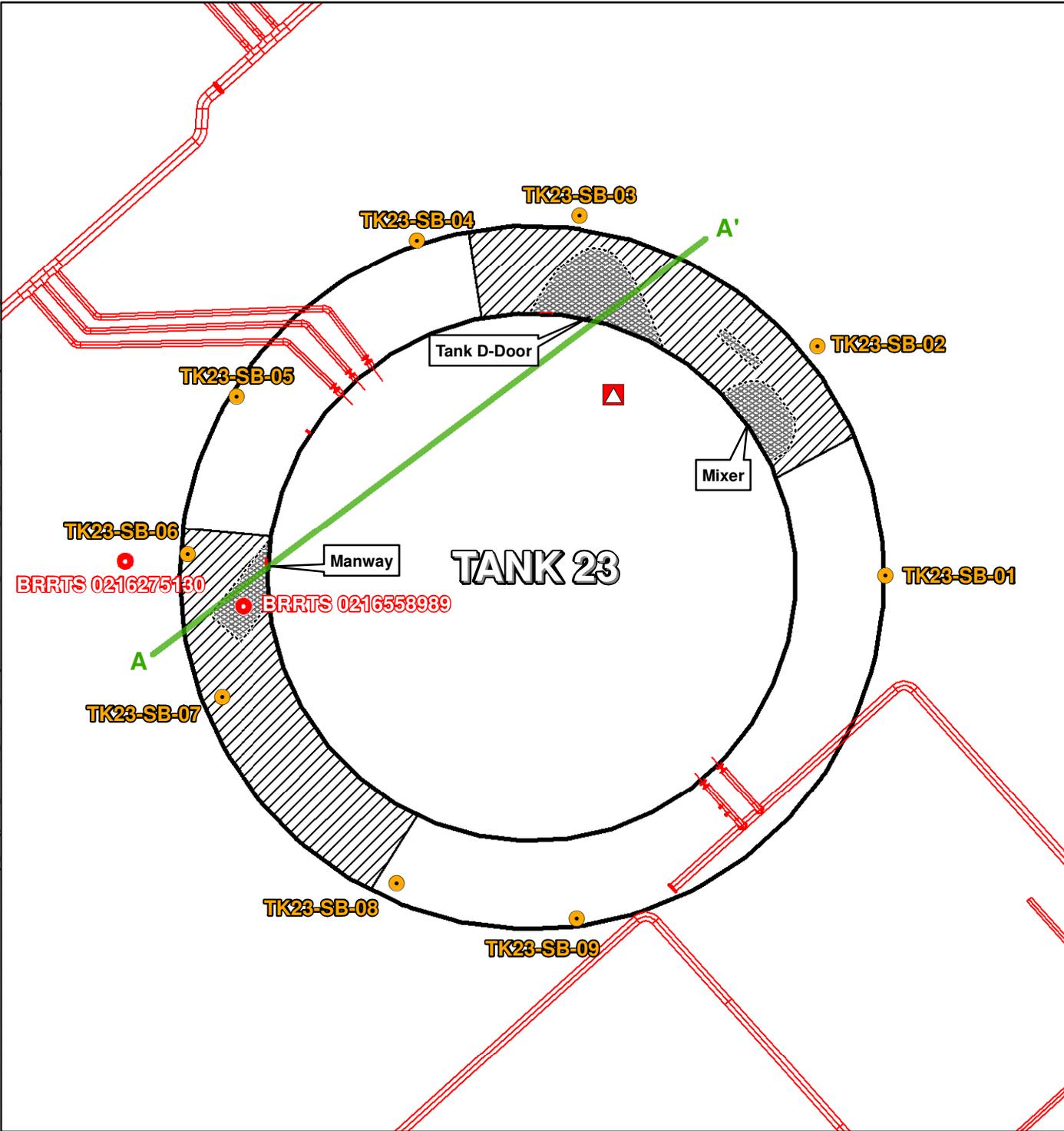
Note: Not all RR Sites have been geo-located yet.



Scale: 1:21,821

This map is a user generated static output from an Internet mapping site and is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. THIS MAP IS NOT TO BE USED FOR NAVIGATION.

Barr Footer: ArcGIS 10.1, 2013-06-18 15:26 File: I:\Client\Enbridge\_Energy\Work\_Orders\Spill\_Response\_Investigation\49161092\Work\_Orders\Tank\_23\_Geoprobe\_Investigation\Maps\FigureB2a\_Tank23\_PremediaalSoilContamination\_8x11.mxd User: jwk

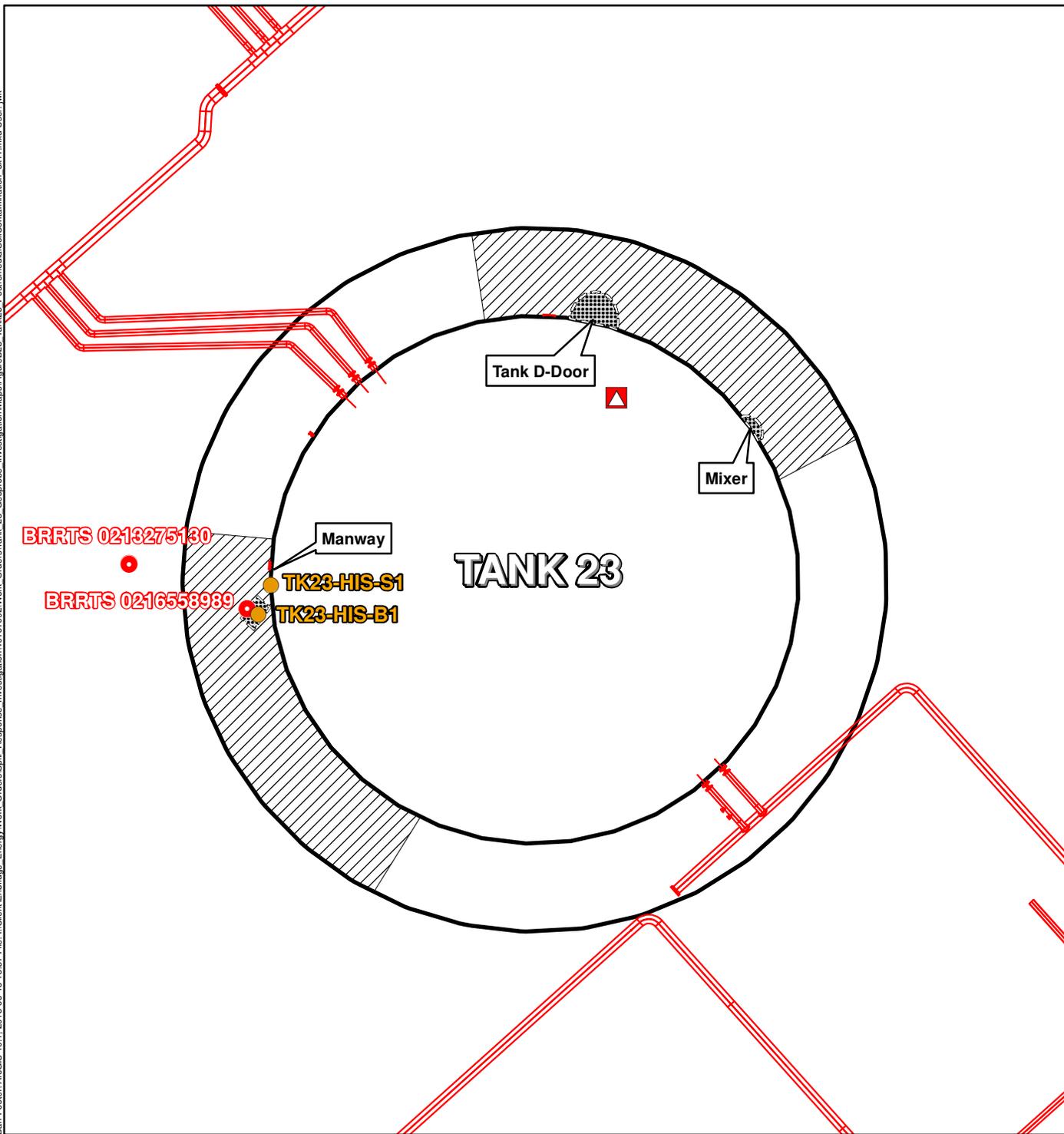


- Geoprobe Borings
- Approximate Tank Bottom Cut Out Location
- Documented Historical Releases
- Cross Section A - A'
- Field Screened Area
- Existing or Potential Residual Direct Contact Exceedance - Pre-Remedial Excavation
- Road Boundary
- Pipeline Infrastructure
- Terminal Property Boundary

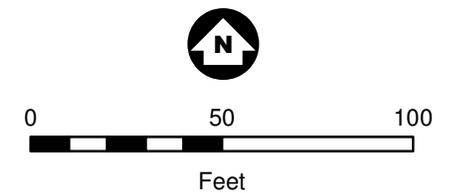
0 50 100  
 Feet  
 1 Inch = 50 Feet  
 Figure B.2.a.

**TANK 23 PRE-REMEDIATION  
SOIL CONTAMINATION  
SUPERIOR TERMINAL**  
 Enbridge Energy, L.P.  
 Superior, Wisconsin





- Analytical Samples
- ▲ Approximate Tank Bottom Cut Out Location
- Documented Historical Releases
- Field Screened Area
- Impacted Soil - Post-Remedial Excavation
- Road Boundary
- Pipeline Infrastructure
- Terminal Property Boundary

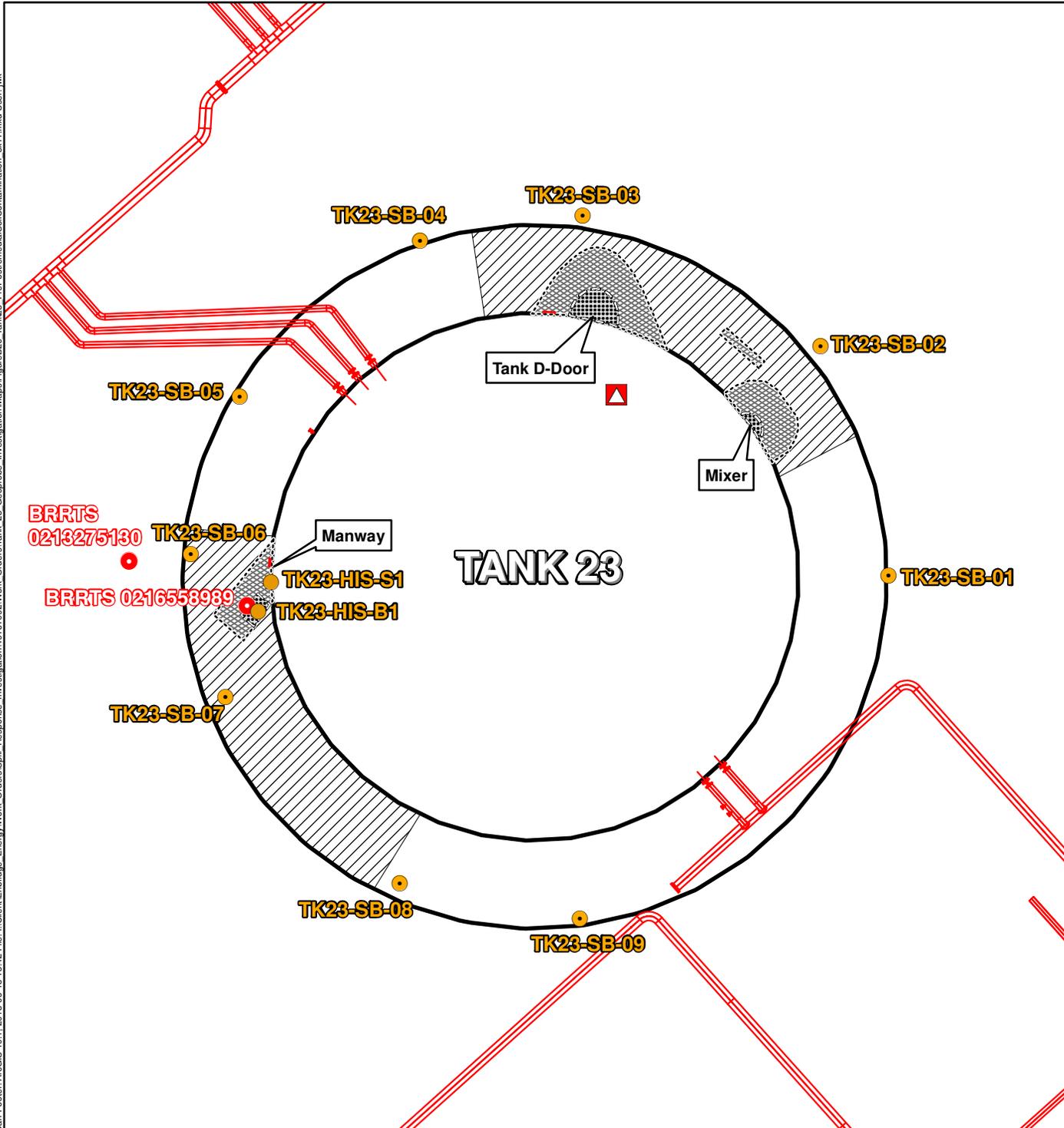


1 Inch = 50 Feet  
Figure B.2.b.

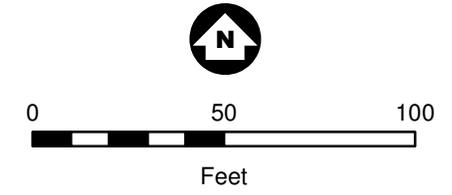
**TANK 23 POST-REMEDIATION  
SOIL CONTAMINATION  
SUPERIOR TERMINAL**  
Enbridge Energy, L.P.  
Superior, Wisconsin



Barr Footer: ArcGIS 10.1, 2013-06-18 15:42 File: I:\Client\Enbridge\_Energy\Work\_Orders\Spill\_Response\_Investigation\49161092\Work\_Orders\Tank\_23\_Geoprobe\_Investigation\Maps\FigureB2c\_Tank23\_PostRemedialSoilContamination\_8x11.mxd User: jwk

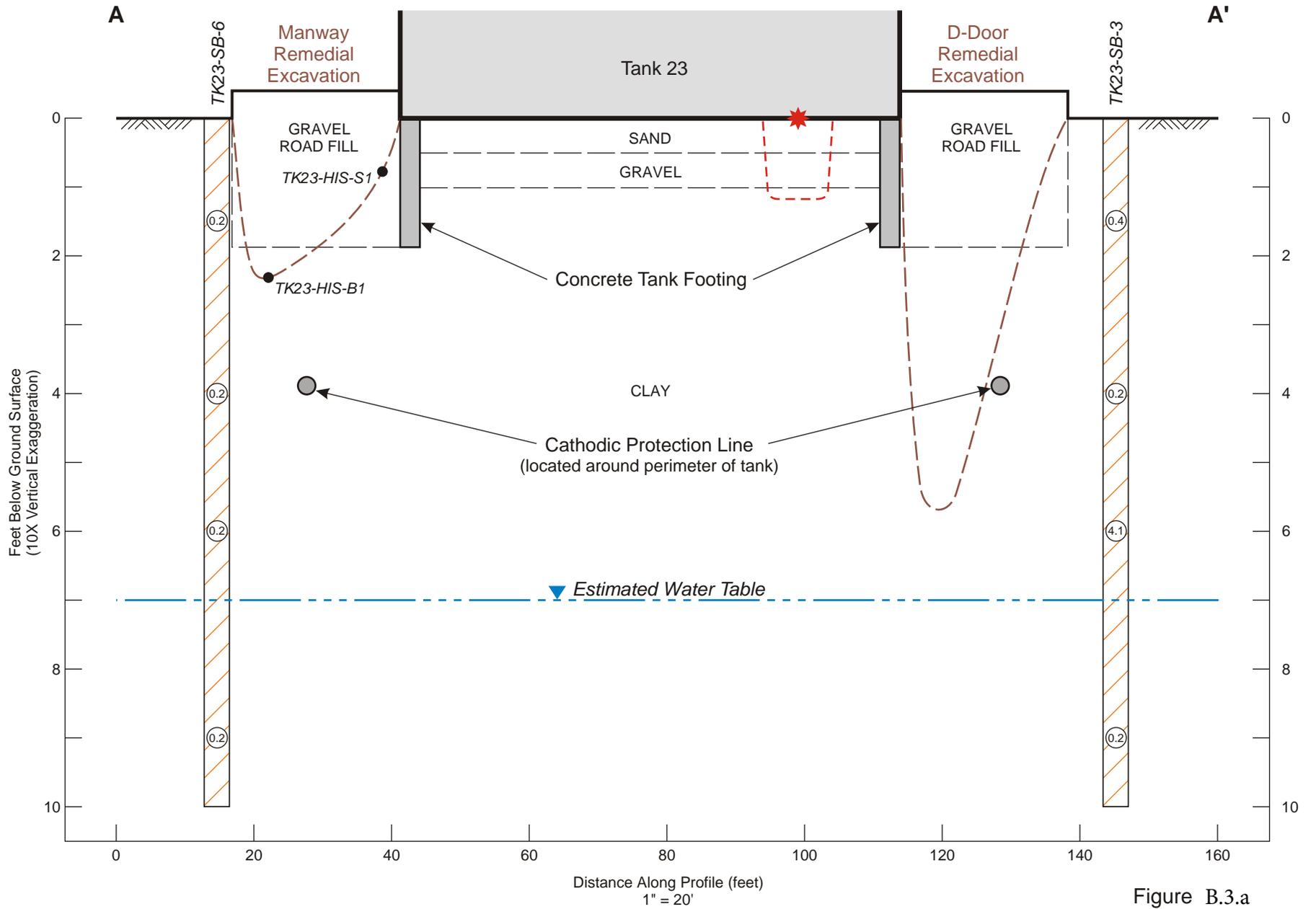


- Geoprobe Borings
- Analytical Samples
- ▲ Approximate Tank Bottom Cut Out Location
- Documented Historical Releases
- Field Screened Area
- Impacted Soil - Post-Remedial Excavation
- Impacted Soil - Pre-Remedial Excavation
- Road Boundary
- Pipeline Infrastructure
- Terminal Property Boundary



**TANK 23 PRE/POST REMAINING SOIL CONTAMINATION SUPERIOR TERMINAL**  
 Enbridge Energy, L.P.  
 Superior, Wisconsin





- Excavation Extent
- ★ Approximate Location of Known Diesel Impacts
- PID (ppm)
- Sample Location

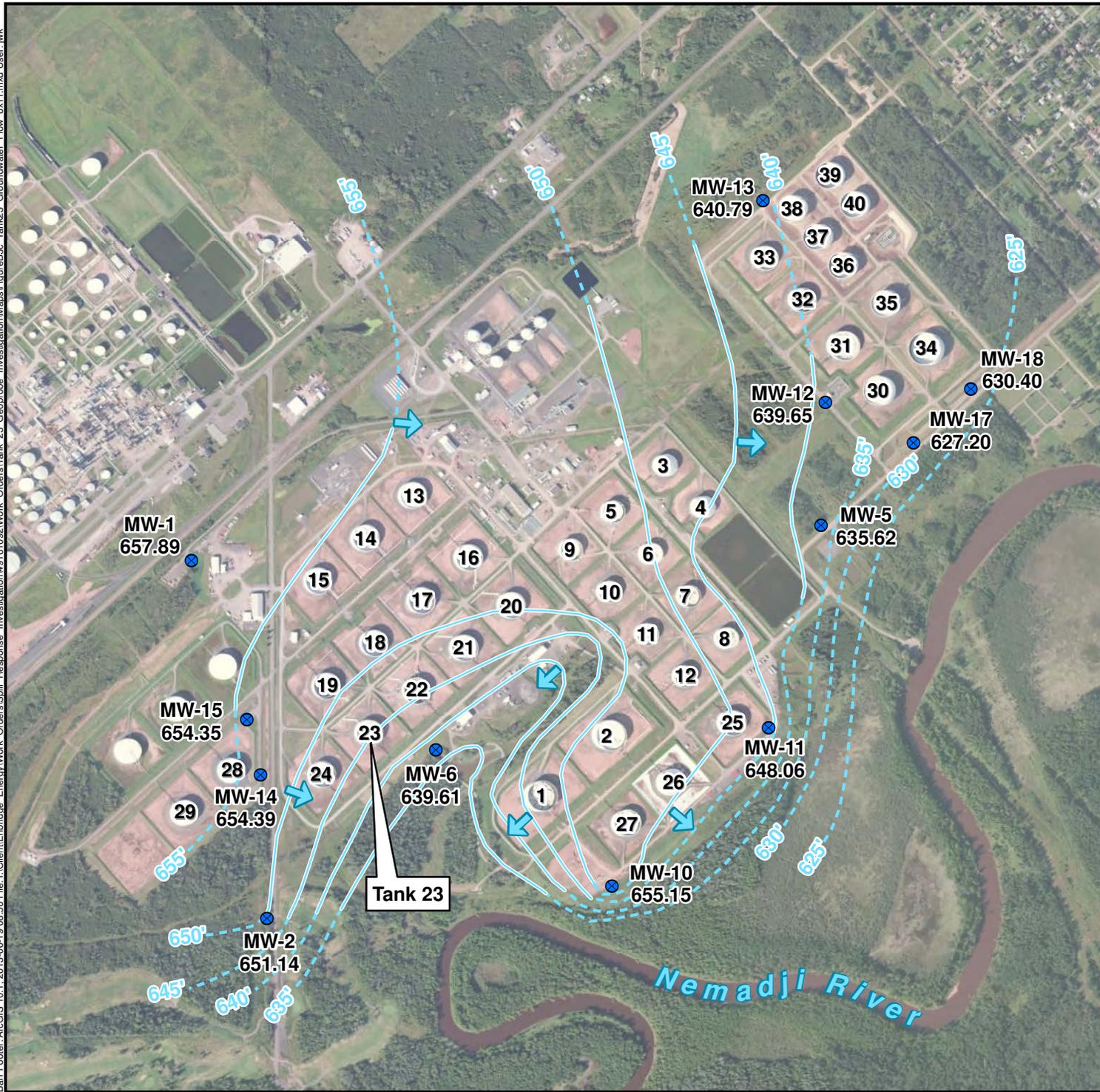
Figure B.3.a

CONCEPTUAL CROSS SECTION A-A'  
TANK 23 HISTORICAL CONTAMINATION  
Enbridge Superior Terminal  
Superior, Wisconsin

**Attachment B.3.b**

***Groundwater Isoconcentration***

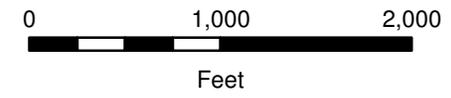
Not applicable - Groundwater was not encountered during this project



- ⊕ **630.40** Monitoring Well Location and Groundwater Elevation (ft)
- Groundwater Contour  
Dashed where inferred  
(Contour Interval = 5.0 ft)
- ➔ Inferred Groundwater Flow Direction

Monitoring well groundwater elevations were measured on September 26, 2012

**Note:**  
Monitoring well locations 17 and 18 are newly installed and were not used in groundwater contour modeling

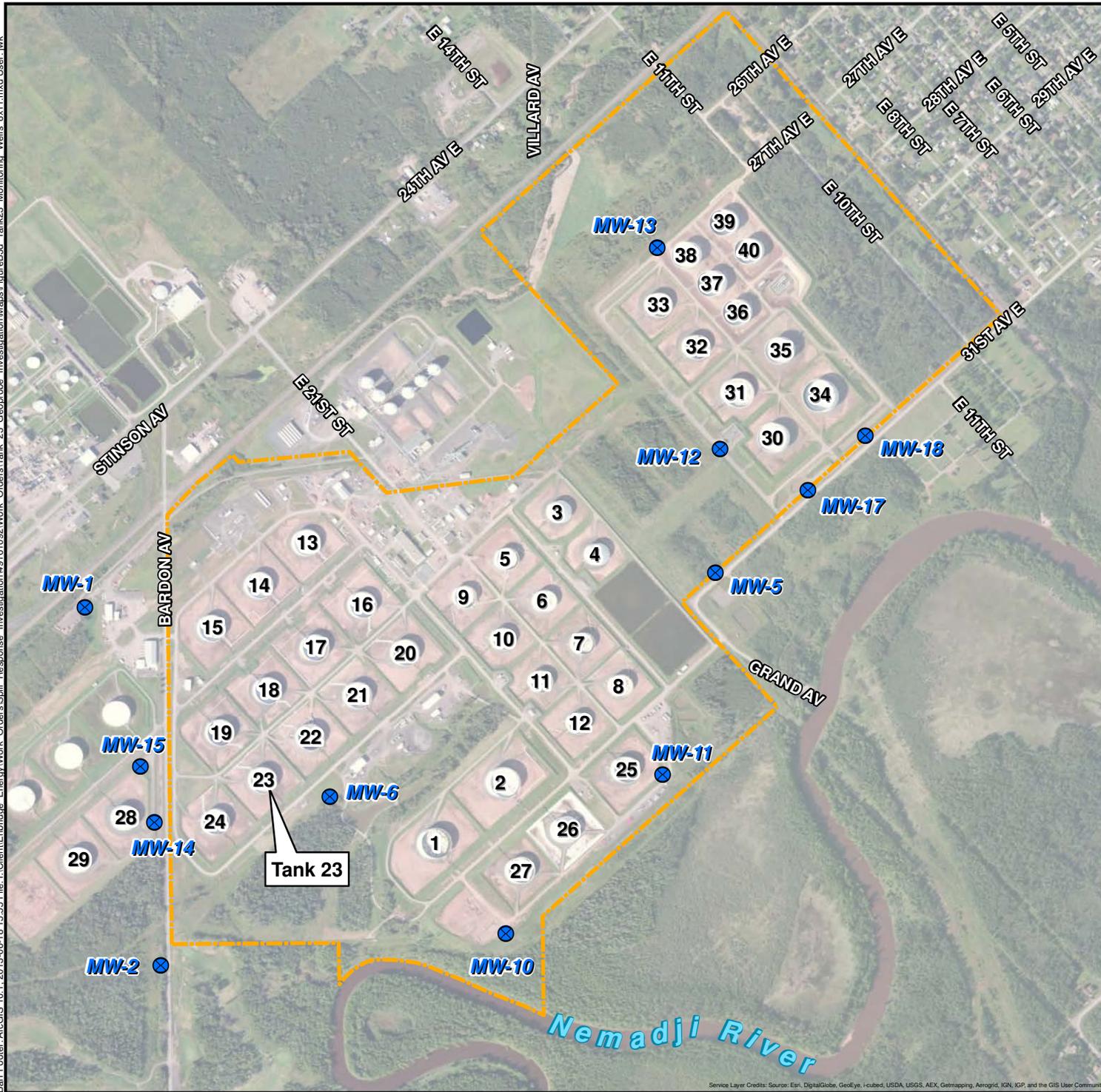


1 Inch = 1,000 Feet  
ESRI World Imagery Circa August, 2011

Figure B.3.c.

**TANK 23 GROUNDWATER FLOW DIRECTION SUPERIOR TERMINAL**  
Enbridge Energy, L.P.  
Superior, Wisconsin





- Terminal Monitoring Wells
- Terminal Property Boundary



0 1,000 2,000

Feet

1 Inch = 1,000 Feet

ESRI World Imagery Circa August, 2011

Figure B.3.d.

**TANK 23  
MONITORING WELLS  
SUPERIOR TERMINAL**  
Enbridge Energy, L.P.  
Superior, Wisconsin



**Attachment B.4.a-c**

***Vapor Maps and Other Media***

Not applicable - No vapor receptors were located within 100 feet of the site and there were no other media of concern

## Documentation of Remedial Action (Attachment C)

# DISCLAIMER

Documents contained in Attachment C of the Case Closure – GIS Registry (Form 4400-202) are not included in the electronic version (GIS Registry Packet) available on RR Sites Map to limit file size.

For information on how to obtain a copy or to review the file, please contact the Remediation & Redevelopment (RR) Environmental Program Associate (EPA) at [dnr.wi.gov/topic/Brownfields/Contact.html](http://dnr.wi.gov/topic/Brownfields/Contact.html)



## **Attachment D – Maintenance Plans**

### ***D.1 Location Maps***

### ***D.2 Brief Descriptions***

### ***D.3 Description of Maintenance action(s)***

### ***D.4 Inspection Logs***

### ***D.5 Contact Information***

Not applicable -     There is no planned Tank 23 site maintenance in relation to the contaminated soil

## **Attachment E**

### ***Monitoring Well Information***

Not applicable - Monitoring wells were not involved in this project

## **Attachment F**

### ***Notifications to Owners of Impacted Properties***

Not applicable - Enbridge owned the source property, contamination did not migrate onto another property, and monitoring wells were not involved in this project

## **Attachment G.1.**

### ***Deeds***

(1) Enbridge Superior Terminal Deed

(2) Not applicable - Notification of off-source properties was not required

DEED

409027

THIS INDENTURE, MADE BY INTERSTATE OIL PIPE LINE COMPANY

a Delaware corporation, hereby quitclaims to the LAKEHEAD PIPE LINE COMPANY, INC., a Delaware corporation duly authorized to do business in the State of Wisconsin, Grantee, for the sum of One Dollar (\$1.00) and other good and valuable considerations, the receipt of which is hereby acknowledged, the following described real estate situated in Douglas County, State of Wisconsin, to-wit:

A parcel of land in the City of Superior, contained in the plat of Southwestern Division, in the Townships of Superior, particularly described as follows: Commencing at the center of Section Thirty-six (36) in Township Forty-nine (49) North of Range Fourteen (14) West; thence westerly Thirty-three (33.6) feet on the East-West centerline of Section Thirty-six (36) which is the point of beginning; thence North a distance of One Thousand One Hundred Fifty-nine and 35/100 (1159.35) feet; thence Southwesterly at an angle of Forty-eight degrees Thirty-six minutes (48°36') from South to West a distance of One Thousand Seven Hundred Sixty and 55/100 (1760.55) feet; thence Easterly at an angle of Eighty-nine degrees Forty-seven and one-half minutes (89°47½') from North to East a distance of One Thousand Three Hundred Twenty and 61/100 (1320.61) feet to the point of beginning.

- All of subject to the easement granted the Northern Pacific Railroad Co. for a right of way for its railroad on Newton Ave. Block 13
- All of Southwest 1/4 Block 14
- All of Northeast 1/4 Block 15
- All of West 1/2 Block 16
- All of Southwest 1/4 Block 17
- All of North 1/2 Block 18
- All of Southeast 1/4 Block 19
- All of North 1/2 Block 20
- All of Southwest 1/4 Block 21
- All of Southeast 1/4 Block 22
- All of Fr. Block 23
- All of Block 24
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- All of Block 100

Intt cert lying East of the shot line of Wisconsin Central Railway Company's plat of

That part lying East of the East line of Wisconsin Central Railway Company's right of way of Block 28 all on West Thirty-first Street

Northwest  $\frac{1}{2}$  subject to the easement granted the Northern Pacific Railroad Co. for a right of way for its railroad on Newton Ave. Block 13

South  $\frac{1}{2}$  subject to the easement granted the Northern Pacific Railroad Co. for a right of way for its railroad on Newton Ave. Block 13

Northeast  $\frac{1}{2}$  except r/w All, except r/w Block 13 Fr. Block 14

All of Block 15

North  $\frac{1}{2}$  Block 16

South  $\frac{1}{2}$  Block 16

All of Block 16

Southeast  $\frac{1}{4}$  Block 17

North  $\frac{1}{4}$  Block 18

Southwest  $\frac{1}{4}$  Block 18

All of Block 18

All of Block 19

All of Block 20

All of Block 21

Block 22

That part of the South  $\frac{1}{2}$  lying East of the East line of Wisconsin Central Railway Company's right of way of Block 23

Block 23

North  $\frac{1}{2}$  That part lying East of the East line of Wisconsin Central Railway Company's right of way of Block 24

Northeast  $\frac{1}{4}$ , Ely. of Ely. line of Block 25

W. C. Ry. r/w Block 25

All on West Thirty-third Street

South  $\frac{1}{2}$  subject to the easement granted the Northern Pacific Railroad Co. for a right of way for its railroad on Newton Ave. Block 13

All of subject to the easement granted the Northern Pacific Railroad Co. for a right of way for its railroad on Newton Ave. Block 14

All of Block 15

All of Block 16

All of Block 16

Northwest  $\frac{1}{4}$  Block 17

Northeast  $\frac{1}{4}$  Block 18

South  $\frac{1}{4}$  Block 18

East  $\frac{1}{4}$  Block 18

West  $\frac{1}{4}$  Block 19

Block 19

That part of the North  $\frac{1}{2}$  lying East of the East line of Wisconsin Central Railway Company's right of way of Block 20

Block 20

That part of the Southwest  $\frac{1}{4}$  lying East of the East line of Wisconsin Central Railway Company's right of way of Block 20

Block 20

Southeast 1/4	Block 20
That part lying East of the East line of Wisconsin Central Railway Company's right of way of all on West Thirty-fifth Street	Block 21
All of subject to the easement granted the Northern Pacific Railroad Co. for a right of way for its railroad on Newton Ave.	Block 13
All of North 1/4	Block 14
West 1/4 of the Southwest 1/4	Block 15
East 1/4 of the Southwest 1/4	Block 15
All of Southeast 1/4	Block 16
North 1/4	Block 17
Southwest 1/4 except r/w	Block 17
That part lying East of the East line of Wisconsin Central Railway Company's right of way of	Block 18
That part lying East of the East line of Wisconsin Central Railway Company's right of way of all on West Thirty-seventh Street	Block 19
All of subject to the easement granted the Northern Pacific Railroad Co. for a right of way for its railroad on Newton Ave.	Block 13
That part of the West 1/4 lying East of the East line of Wisconsin Central Railway Company's right of way of	Block 14
That part lying East of the East line of Wisconsin Central Railway Company's right of way of all on West Thirty-ninth Street	Block 15
That part lying East of the East line of Wisconsin Central Railway Company's right of way, subject to the easement granted the Northern Pacific Railroad Company for a right of way for its railroad on Newton Avenue of on West Forty-first Street	Block 13
All of	Block 3
All of all on East Nineteenth Street	Block 4
All of Northeast 1/4	Block 3
Northwest 1/4	Block 4
Southeast 1/4	Block 4
all on East Twenty-first Street	Block 4

All of  
on East Twenty-third Street

Fr. Block 3

All of  
on East Twenty-fourth Street

Fr. Block 3

all the foregoing in the Townsite of Superior;

Lots Thirty-three (33), Thirty-five (35), Thirty-seven (37),  
Thirty-nine (39), Forty-one (41), Forty-three (43), Forty-  
five (45) and Forty-seven (47) on East Twenty-second Street

Lots Thirty-four (34), Thirty-six (36), Thirty-Eight (38),  
Forty (40), Forty-two (42), Forty-four (44), Forty-six (46),  
Forty-eight (48), Fifty (50), Fifty-two (52), Fifty-four (54),  
Fifty-six (56), Fifty-eight (58), Sixty (60), Sixty-two (62)  
and Sixty-four (64) on East Twenty-third Street

All in sub-division of Block Four (4), East Twenty-third  
Street

according to the recorded plat or plats thereof on file and  
in the office of the Register of Deeds in and for Douglas  
County, Wisconsin.

The following described real estate situated in Douglas  
County, Wisconsin:

South Half (S $\frac{1}{2}$ ) Section Thirty-six (36) Township Forty-nine  
(49) North of Range Fourteen (14) West, except the following  
described tracts of land:

(a) Government Lot One (1)

(b) A strip of land Four Hundred Feet (400') wide  
through the Northwest Quarter Southwest Quarter (NW $\frac{1}{4}$ SW $\frac{1}{4}$ )  
lying southeasterly of and adjacent to the present  
Northern Pacific Railway Company's right of way

(c) A triangular piece lying northwesterly of Northern  
Pacific Railway Company's right of way, S5D96 and  
109D52E

(d) A strip of land Three Hundred Feet (300') in width  
North and South from the South line of said section and  
further extending from the West line to the East line  
of said Southwest Quarter (SW $\frac{1}{4}$ )

(e) A tract of land described as follows:

Beginning at the Southwest corner of the southeast  
Quarter (SE $\frac{1}{4}$ ) of Section Thirty-six (36) Township  
Forty-nine (49) North of Range Fourteen (14) West,  
and proceeding North along the Quarter Section line  
a distance of One Thousand Four Hundred Eighty-two  
and 04/100 (1482.04) feet, thence at an angle of

Ninety Degrees Three and one-half minutes (90°37')  
to the right and proceeding for a distance of One  
Thousand Six Hundred Sixty (1660.) feet, thence  
turning at an angle of Forty-six Degrees Ten Minutes  
Forty Seconds (46°10' 40") to the right, thence pro-  
ceeding to the northerly bank of the Nemadji River  
as now situated, thence proceeding in a westerly  
direction along the bank of the Nemadji River and  
following said bank to the south section line of  
said southeast Quarter (SE $\frac{1}{4}$ ), thence proceeding  
westerly along the south section line to the point  
of beginning, said tract of land containing approx-  
imately Fifty-six and 7/10 (56.7) acres more or less

WITNESS the corporate name and seal of said Grantor hereunto affixed by authority of its Board of Directors on this \_\_\_\_\_ day of \_\_\_\_\_, 1951.

IN WITNESS WHEREOF I have hereunto set my hand and official seal, at \_\_\_\_\_, Louisiana, this \_\_\_\_\_ day of \_\_\_\_\_, 1951.  
BY: *[Signature]*  
Notary Public,  
State of Louisiana,  
My Commission Expires \_\_\_\_\_

IN THE PRESENCE OF:  
*[Signature]*  
Notary Public,  
State of Louisiana,  
My Commission Expires \_\_\_\_\_  
*[Signature]*  
Frank H. Clark, Jr.

BY: *[Signature]*  
Notary Public,  
State of Louisiana,  
My Commission Expires \_\_\_\_\_  
P. H. Hunter

STATE OF Louisiana )  
COUNTY OF Cade ) ss:

ON THIS the \_\_\_\_\_ day of \_\_\_\_\_, 1951, before me, the undersigned Notary Public in and for \_\_\_\_\_ Parish, \_\_\_\_\_ State of Louisiana, personally appeared \_\_\_\_\_ and \_\_\_\_\_, who respectively acknowledged themselves to be officers, to wit: \_\_\_\_\_ and \_\_\_\_\_ of INDIAN OIL PIPE LINE COMPANY, a corporation, the Grantor in the foregoing instrument, and \_\_\_\_\_ officers below authorized to do so, executed the foregoing instrument for the purposes therein contained by signing the name of said corporation by themselves as such officers and affixing the corporate seal, with the authority of the Board of Directors of said corporation.

IN WITNESS WHEREOF I have hereunto set my hand and official seal.

*[Signature]*  
Notary Public,  
State of Louisiana,  
My Commission Expires \_\_\_\_\_  
P. H. Hunter

409027

CLERK OF PROCTOR & DEER  
DODGE COUNTY, WISCONSIN

Received of the State of Wisconsin  
the sum of \$110.00  
for the year 1923  
Dated this 23rd day of August  
1923

*Charles H. ...*  
Deputy

WIT - CLARK DEER

INTERNATIONAL OIL FIELD COMPANY

-to-

LAWRENCE FIELD OFFICE, ...

Handwritten notes at the bottom of the page, including "New ... 8/23/23"

LAKEHEAD PIPE LINE COMPANY, INC.

Superior Terminal

Those areas of Section 35 and 36, Township 49 North, Range 14 West, and Section 31, Township 49 North, Range 13 West, all in Douglass County, Wisconsin, described as follows:

Parcel No. 1

Commencing at the Northeast corner of Section 35; thence Southerly along the East boundary of said Section to the centerline of West 30th Street to the point of beginning; thence Southeasterly along the center of West 30<sup>th</sup> Street to the North boundary of 25th Avenue East; thence Southwesterly along the Northerly boundary of 25<sup>th</sup> Avenue East to the East-West centerline of Section 36; thence Westerly along the East-West centerline of Section 36, to the East boundary of Section 35; thence Southerly along the East boundary of Section 35 to the North boundary of 25<sup>th</sup> Avenue East; thence Southwesterly along the North boundary of 25th Avenue East to the East right-of-way line of the Northern Pacific Railroad as presently installed; thence Northerly along the East right-of-way line of the Northern Pacific Railroad as presently installed to the center of West 30th Street thence Southeasterly along the center of West 30<sup>th</sup> Street to the point of beginning excepting all street and avenue easements contained therein and the following parcels: the SW 1/4 of Block 25 on West 31st Street; the SE 1/4 of Block 17 on West 35<sup>th</sup> Street; the E 1/2 of Block 16 on West 37th Street; all that portion of Block 13 on West 35th Street lying East and North of Hill Avenue.

Parcel No. 2 (Pipeline Maintenance Area)

Commencing at the Northeast corner of Section 36; thence Westerly along the North boundary of Section 36 to the North-South centerline of Section 36, also known as the centerline of Bardon Avenue; thence Southerly along the centerline of Bardon Avenue for a distance of approximately 1,440 feet to a point; said point being the point of beginning; thence Southerly along the centerline of Bardon Avenue along a bearing of S 0° 03' 35" E for a distance of 660.78 feet to a point; thence S 41° 27' 35" E for a distance of 545.66 feet to a point; thence N 48° 32' 25" E for a distance of 436.98 feet to the point of beginning; all begin in Section 36, Township 49 North, Range 14 West. Douglas County, State of Wisconsin.

SUPERIOR TERMINAL (continued)

Parcel No. 3

Commencing at the Northeast corner of Section 36; thence Southerly along the East boundary of Section 36 to the centerline of East 18<sup>th</sup> Street; thence Southeasterly along the centerline of East 18<sup>th</sup> Street to the North boundary of 28<sup>th</sup> Avenue East; thence Southwesterly along the North boundary of 28<sup>th</sup> Avenue East to its junction with the Easterly boundary of East 18<sup>th</sup> Street being the point of beginning; thence 316.35 feet more or less Southwesterly along the North boundary of 28<sup>th</sup> Avenue East to a point 250 feet perpendicular to the Northern Pacific Railroad as presently installed; thence 1602.57 feet more or less and 34° 10 feet right more or less and 250 feet parallel to the Northern Pacific Railroad as presently installed to a point on the South boundary of 26<sup>th</sup> Avenue East; thence Southwesterly along the South boundary of 26<sup>th</sup> Avenue East, to a point of the East boundary of Bardon Avenue; thence Southerly along the East boundary of Bardon Avenue to a point 1168.79 feet more or less South of the East-West centerline of Section 36; thence 1627.00 feet 89° 56' 30" left; thence 188.00 feet 46° 11' right to a point, more or less on the North boundary of the Nemadji River; thence Easterly along the North boundary of the Nemadji River to a point on the East boundary of Section 36; thence Northerly 670.37 feet more or less along the East boundary of Section 36, to the North boundary of 33<sup>rd</sup> Avenue East; thence Northeasterly along the North boundary of 33<sup>rd</sup> Avenue East to the West boundary of East 18<sup>th</sup> Street; thence Northwesterly along the West boundary of East 18<sup>th</sup> Street to the center of 31<sup>st</sup> Avenue East; thence continuing along the same line but known as West 18<sup>th</sup> Street to the point of beginning. This parcel contains 255.04 acres, more or less. Excepting the portion of East 22<sup>nd</sup> Street bounded on the North by Block 3 of East 21<sup>st</sup> Street, on the South by Block 4 of East 23<sup>rd</sup> Street, on the East by the North boundary of 33<sup>rd</sup> Avenue East and on the West by a line 200 feet perpendicular and parallel to the North boundary of 33<sup>rd</sup> Avenue East.

Parcel No. 4

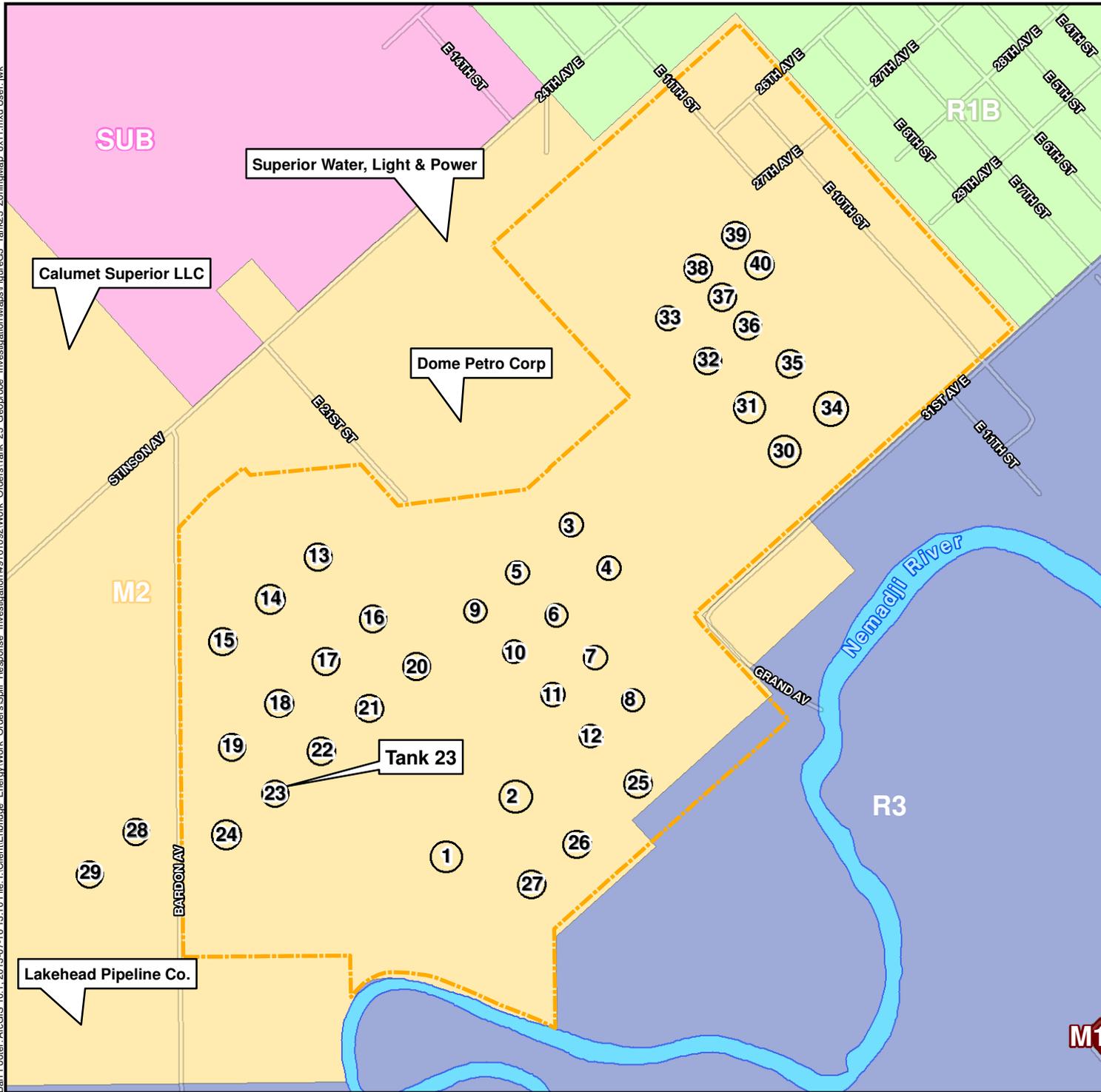
Block 14 on West 21<sup>st</sup> Street, Townsite of Superior, Douglas County, Wisconsin, containing 2.35 acres more or less.

Parcel No. 5

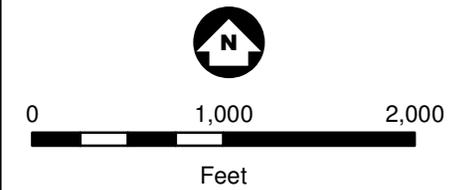
The E ½ of the SW ¼ and the SE ¼ of Block 6 on West 17<sup>th</sup> Street; the SW ¼ and the E ½ of the SE ¼ of Block 4 on West 17<sup>th</sup> Street; the S ½ of Block 2 on West 17<sup>th</sup> Street; the SW ¼ and W ½ of the SE ¼ of Block 1 on East 17<sup>th</sup> Street, Townsite of Superior, Douglas County, Wisconsin, containing a total of 4.10 acres more or less.

**Attachment G.2.**  
***Certified Survey Map***





- Terminal Property Boundary
- Nemadji River
- City of Superior Zoning**
- M1; MANUFACTURING DISTRICT 1
- M2; MANUFACTURING DISTRICT 2
- R1B; 1 FAMILY RESIDENTIAL B
- R3; APARTMENT RESIDENTIAL
- SUB; SUBURBAN



1 Inch = 1,000 Feet  
 Zoning data obtained from the City of Superior and is current as of 05/02/2013

Figure G.3.

**VERIFICATION OF ZONING  
 SUPERIOR TERMINAL**  
 Enbridge Energy, L.P.  
 Superior, Wisconsin



**Attachment G.4.**  
***Signed Statement***

**Enbridge Pipelines (Lakehead) L.L.C.**  
**Environment Department**  
1320 Grand Avenue  
Superior, WI 54880  
Tel 715 394 1400  
Fax 715 394 1500

**Shane Yokom**  
**Joseph Peterson**  
**Jim Snider**  
**Cheryl Urie**  
**Rhonda O'Leary**  
**James Anklam**  
**Karl Beaster**  
**Stacey Frerich**  
**Derek Senn**  
**Kelli Nelson**  
**Bryan Sederberg**  
**Alex Smith**  
**Greg St. Onge**  
**Julie O'Brien**

Manager, Environment Operations  
Supervisor, Region Operations  
Environmental Specialist  
Environmental Specialist  
Sr. Air Compliance Specialist  
Sr. Environmental Analyst  
Environmental Analyst II  
Environmental Analyst II  
Environmental Analyst II  
Environmental Analyst  
Environmental Analyst  
Environmental Analyst  
ER Preparedness Coordinator  
Environmental Assistant



[www.enbridgepartners.com](http://www.enbridgepartners.com)

August 6, 2013

Mr. John Sager  
Wisconsin Department of Natural Resources  
107 Sutliff Avenue  
Rhineland WI 54501

Re: Enbridge Energy, Limited Partnership  
Case Closure Request  
Tank 23, Superior Terminal  
Superior, Wisconsin  
BRTTS # 02-16-558989

Dear Mr. Sager:

The attached surveyed drawing and legal description accurately describes the Superior Terminal property which includes the Tank 23 leak site.

Sincerely,  
Enbridge Energy

A handwritten signature in blue ink that reads 'Karl F. Beaster'.

Karl F. Beaster, P.G.  
Environmental Analyst

Enclosure

cc: Ryan Erickson, Barr Engineering