State of Wisconsin
Department of Natural Resources
P.O. Box 7921, Madison, WI 53707-7921

GIS REGISTRY (Cover Sheet)
Form 4400-280 (R 6/13)

Source Property Information

CLOSURE DATE: 09/25/2014

BRRTS #: **02-20-545105**

FID #: 420092420

ACTIVITY NAME: CANADIAN NATIONAL-ROUNDHOUSE LUBE OIL

DATCP #:

PROPERTY ADDRESS: 2 Harrison St

PECFA#:

MUNICIPALITY: North Fond du Lac

PARCEL ID #: Not applicable

***WTM COORDINATES:**

X: **642408** Y: **372015**

** 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)

CONTINUING OBLIGATIONS

Contaminated Media for Residual Contamination:

☒ Groundwater Contamination > ES *(236)*

- ☐ Contamination in ROW
- ☐ Off-Source Contamination

*(**note:** for list of off-source properties see "Impacted Off-Source Property Information, Form 4400-246")*

☒ Soil Contamination > *RCL or **SSRCL *(232)*

- ☐ Contamination in ROW
- ☐ Off-Source Contamination

*(**note:** for list of off-source properties see "Impacted Off-Source Property Information, Form 4400-246")*

Site Specific Obligations:

☒ Soil: maintain industrial zoning *(220)*

*(**note:** soil contamination concentrations between non-industrial and industrial levels)*

☐ Structural Impediment *(224)*

☐ Site Specific Condition *(228)*

☒ Cover or Barrier *(222)*

- ☐ Direct Contact
- ☒ Soil to GW Pathway

☒ Vapor Mitigation *(226)*

☐ Maintain Liability Exemption *(230)*

*(**note:** local government unit or economic development corporation was directed to take a response action)*

Monitoring Wells:

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

(●) Yes ( ) No ( ) N/A

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

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
2984 Shawano Avenue
Green Bay WI 54313-6727

Scott Walker, Governor
Cathy Stepp, Secretary
Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711

September 25, 2014

Wisconsin Central, Ltd.
Attn: Mr. Brian Hayden
1 Waterfront Drive
Two Harbor, MN 55616

KEEP THIS DOCUMENT WITH YOUR PROPERTY RECORDS

SUBJECT: Final Case Closure with Continuing Obligations
Canadian National – Roundhouse Lube Oil, 2 Harrison Street,
North Fond du Lac, Wisconsin
DNR BRRTS Activity # 02-20-545105

Dear Mr. Hayden:

The Department of Natural Resources (DNR) considers the Canadian National – Roundhouse Lube Oil contamination case closed with continuing obligations. No further investigation or remediation is required at this time. However, you, future property owners, and occupants of the property 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 and any attachments listed at the end of this letter to anyone who purchases, rents or leases this property from you.

This final closure decision is based on the correspondence and data provided, and is issued under chs. NR 726 and 727, Wis. Adm. Code. The Northeast Region (NER) Closure Committee reviewed the request for closure on December 6, 2013. The Closure Committee reviews environmental remediation cases for compliance with state laws and standards to maintain consistency in the closure of these cases. A conditional closure letter was issued by the DNR on December 13, 2013, and documentation that the conditions in that letter were met was received on September 22, 2014.

The property is currently utilized by Canadian National Railway as a rail yard. The current use is not anticipated to change in the foreseeable future. Soil and groundwater contaminated by Volatile Organic Compounds (VOC) and/or Polycyclic Aromatic Hydrocarbons (PAH) remain in the vicinity of the area investigated. Remedial action included in-situ bioremediation combined with long-term groundwater monitoring. 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.

- Groundwater contamination is present above ch. NR 140, Wis. Adm. Code enforcement standards,
- Residual soil contamination exists that must be properly managed should it be excavated or removed,

- The existing impervious surface cover must be maintained over contaminated soil for groundwater protection and the DNR must approve any changes to this barrier,
- Industrial soil standards were applied for closure, and industrial zoning/land use is required. Before the land use may be changed from industrial to non-industrial, additional environmental work must be completed, and
- Remaining soil contamination could result in vapor intrusion if future construction activities occur. Vapor control technologies will be required for occupied buildings, unless the property owner assesses the potential for vapor intrusion, and the DNR agrees that vapor control technologies are not needed.

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/clean.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 Northeast Regional DNR office, at 2984 Shawano Avenue, Green Bay, WI 54313. This letter and information that was submitted with your closure request application, including any maintenance plan and maps, can be found as a Portable Document Format (PDF) in BRRTS on the Web.

Prohibited Activities

Certain activities are prohibited at closed sites because maintenance of a barrier is intended to prevent contact with any remaining contamination. When a barrier is required, the condition of closure requires notification of the DNR before making a change, in order to determine if further action is needed to maintain the protectiveness of the remedy employed. The following activities are prohibited on any portion of the property where maintenance of the existing concrete or asphalt pavement and building foundation is required, as shown on the attached map (Figure 3 - Cap/Barrier Maintenance Area), unless prior written approval has been obtained from the DNR:

- removal of the existing barrier or cover,
- replacement with another barrier or cover,
- excavating or grading of the land surface,
- filling on covered or paved areas,
- plowing for agricultural cultivation,
- construction or placement of a building or other structure, and
- changing the use or occupancy of the property to a residential exposure setting, which may include certain uses, such as single or multiple family residences, a school, day care, senior center, hospital, or similar residential exposure settings.

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 and the attached maintenance plan are met. If these requirements are not followed, the DNR may take enforcement action under s. 292.11, Wis. Stats. to ensure compliance with the specified requirements, limitations or other conditions related to the property.

Please send written notifications in accordance with the following requirements to:

Department of Natural Resources
Attn: Keld Lauridsen
2984 Shawano Avenue
Green bay, WI 54313

Residual Groundwater Contamination (ch. NR 140, 812, Wis. Adm. Code)
Groundwater contamination greater than enforcement standards is present on this contaminated property, as shown on the attached map (Figure 2 – Groundwater Analytical Exceedances). If you intend to construct a new well, or reconstruct an existing well, you'll need prior DNR approval.

Residual Soil Contamination (ch. NR 718, chs. 500 to 536, Wis. Adm. Code or ch. 289, Wis. Stats.)
Soil contamination remains as indicated on the attached map (Figure 3 – Soil Analytical Results). If soil in the area of known contamination is excavated in the future, the property owner or right-of-way holder 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 or right-of-way holder 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 and right-of-way holders 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.

Cover or Barrier (s. 292.12 (2) (a), Wis. Stats., s. NR 726.15, s. NR 727.07 Wis. Adm. Code)
The existing concrete or asphalt pavement, building foundation or other impervious cover that exists in the location shown on the attached map (Figure 3 - Cap/Barrier Maintenance Area) shall be maintained in compliance with the attached maintenance plan in order to minimize the infiltration of water and prevent additional groundwater contamination that would further violate the groundwater quality standards in ch. NR 140, Wis. Adm. Code.

A cover or barrier for industrial land uses, or certain types of commercial land uses may not be protective if the use of the property were to change such that a residential exposure would apply. This may include, but is not limited to single or multiple family residences, a school, day care, senior center, hospital or similar settings. In addition, a cover or barrier for multi-family residential housing use may not be appropriate for use at a single family residence.

The cover approved for this closure was designed to be protective for a commercial or industrial use setting. Before using the property for residential purposes, you must notify the DNR at least 45 days before taking an action, to determine if additional response actions are warranted.

A request may be made to modify or replace a cover or barrier. The replacement or modified cover or barrier must be protective of the revised use of the property, and must be approved in writing by the DNR prior to implementation.

The attached maintenance plan and inspection log (DNR form 4400-305) are to be kept up-to-date and on-site. Inspections shall be conducted annually, in accordance with the attached maintenance plan. Submit the inspection log to the DNR only upon request.

Industrial Soil Standards (s. NR 726.15, s. NR 727.07, Wis. Adm. Code)
Soil contamination remains as shown on the attached map (Figure 3 – Soil Analytical Results). Samples contained Polycyclic Aromatic Hydrocarbons (PAH) in concentrations that met the site-specific industrial soil standards developed for this site.

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. The property owner shall notify the DNR at least 45 days before changing the use. An investigation and remedial action to meet applicable soil cleanup standards may be required at that time.

Vapor Mitigation or Evaluation (s. 292.12 (2), Wis. Stats., s. NR 726.15, s. NR 727.07, Wis. Adm. Code)
Vapor intrusion is the movement of vapors coming from volatile chemicals in the soil or groundwater, into buildings where people may breathe air contaminated by the vapors. Vapor mitigation systems are used to interrupt the pathway, thereby reducing or preventing vapors from moving into the building.

Future Concern: Chlorinated solvents remain in soil and groundwater as shown on the attached maps (Figure 3 – Soil Analytical Results & Figure 2 – Groundwater Analytical Exceedances), at levels that may be of concern for vapor intrusion in the future, depending on construction and occupancy of a building. The on-site Roundhouse building was and continues to be utilized for rail car, engine and locomotive repair and maintenance. Therefore, before a building is constructed and/or an existing building is modified, the property owner must notify the DNR at least 45 days before the change. Vapor control technologies are required for construction of occupied buildings unless the property owner assesses the vapor pathway and DNR agrees that vapor control technologies are not needed.

General Wastewater Permits for Construction Related Dewatering Activities
The DNR's Water Quality Program regulates point source discharges of contaminated water, including discharges to surface waters, storm sewers, pits, or to the ground surface. This includes discharges from construction related dewatering activities, including utility and building construction.

If you or any other person plan to conduct such activities, you or that person must contact that program, and if necessary, apply for the necessary discharge permit. Additional information regarding discharge permits is available at http://dnr.wi.gov/topic/wastewater/GeneralPermits.html. If residual soil or groundwater contamination is likely to affect water collected in a pit/trench that requires dewatering, a general permit for Discharge of Contaminated Groundwater from Remedial Action Operations may be needed. If water collecting in a pit/trench that requires dewatering is expected to be free of pollutants other than suspended solids and oil and grease, a general permit for Pit/Trench Dewatering may be needed.

Chapter NR 140, Wis. Adm. Code Exemption
Recent groundwater monitoring data at this site indicates that for selenium at monitoring well MW109, contaminant levels exceed the NR 140 preventive action limit (PAL) but are below the enforcement

standard (ES). The DNR may grant an exemption to a PAL for a substance of public health concern, other than nitrate, pursuant to s. NR 140.28 (2) (b), Wis. Adm. Code, if all of the following criteria are met:

1. The measured or anticipated increase in the concentration of the substance will be minimized to the extent technically and economically feasible.
2. Compliance with the PAL is either not technically or economically feasible.
3. The enforcement standard for the substance will not be attained or exceeded at the point of standards application. [Note: at this site the point of standards application is all points where groundwater is monitored.]
4. Any existing or projected increase in the concentration of the substance above the background concentration does not present a threat to public health or welfare.

Based on the information you provided, the DNR believes that these criteria have been or will be met. Limited groundwater monitoring has indicated stable contaminant concentrations. Therefore, pursuant to s. NR 140.28, Wis. Adm. Code, an exemption to the PAL is granted for selenium at monitoring well MW109. Please keep this letter, because it serves as your exemption.

In Closing

Please be aware that the case may be reopened pursuant to s. NR 727.13, Wis. Adm. Code, for any of the following situations:

- 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,
- if the property owner does not comply with the conditions of closure, with any deed restrictions applied to the property, or with a certificate of completion issued under s. 292.15, Wis. Stats, or
- a property owner fails to maintain or comply with a continuing obligation (imposed under this closure approval letter).

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 Keld Lauridsen at (920) 662-5420, or at Keld.Lauridsen@wisconsin.gov.

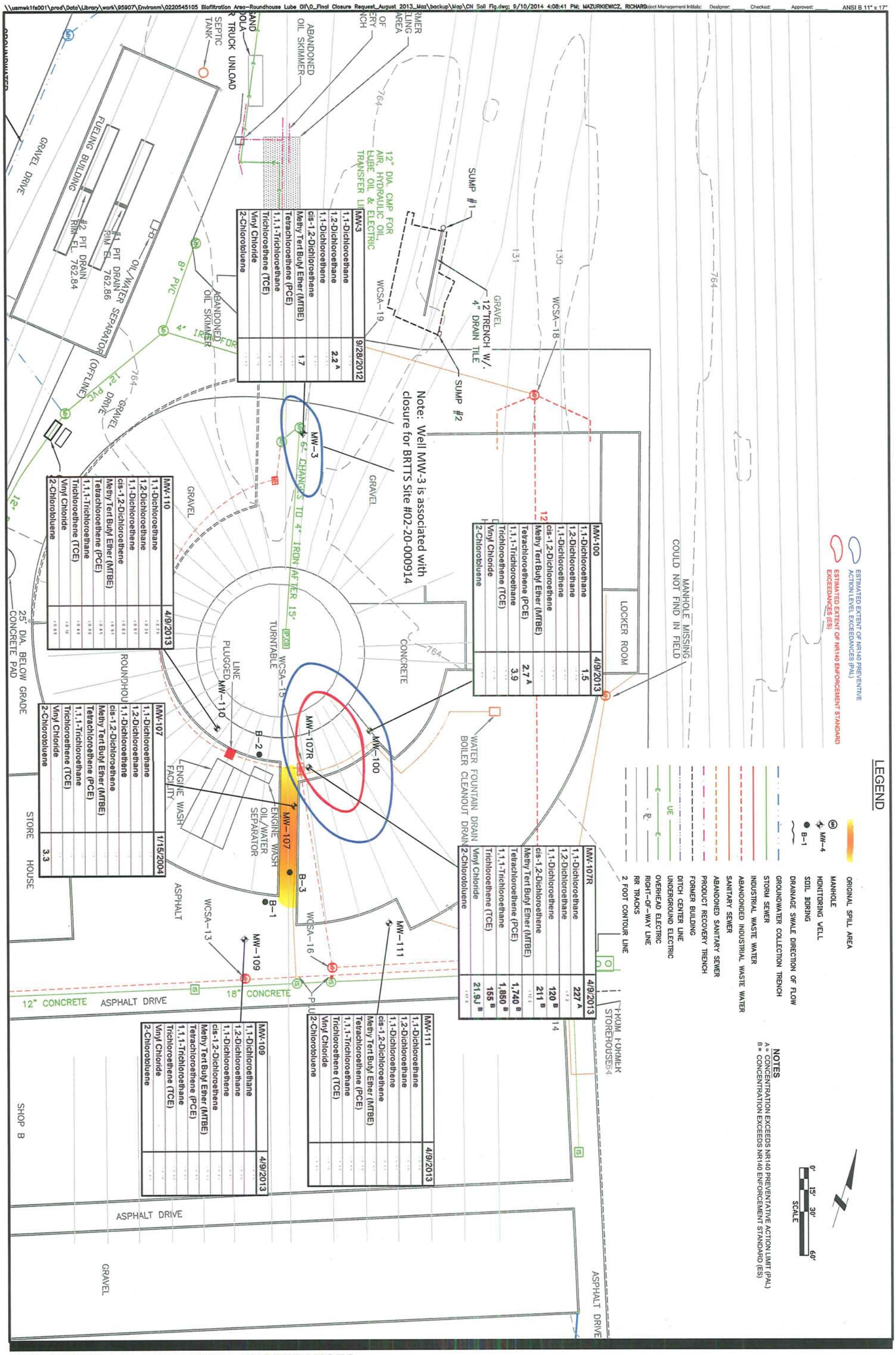
Sincerely,

Roxanne N. Chronert, Team Supervisor
Northeast Region Remediation & Redevelopment Program

Attachments:

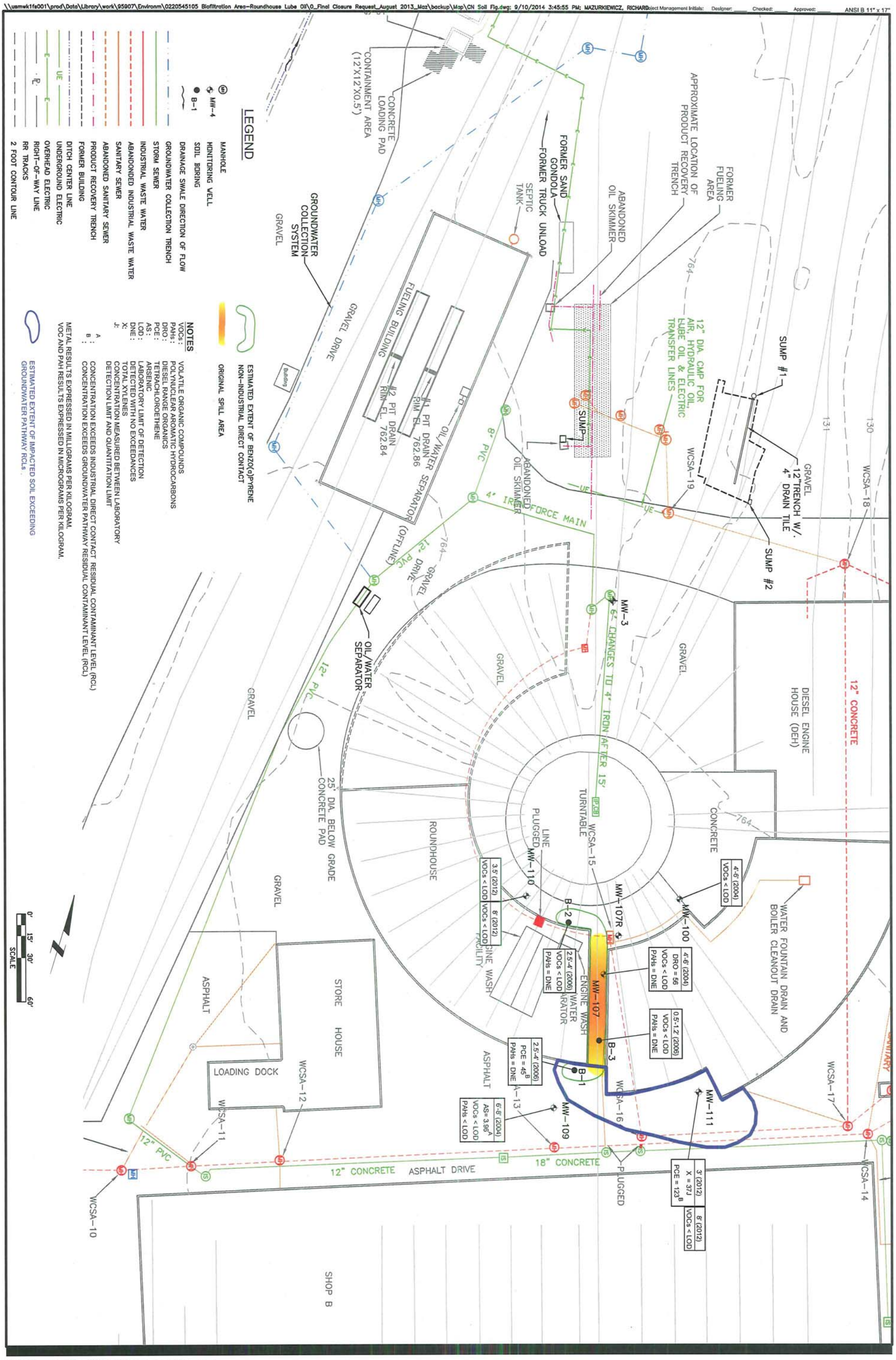
- Remaining groundwater contamination (Figure 2 – Groundwater Analytical Exceedances)
- Remaining soil contamination (Figure 3 – Soil Analytical Results)
- Cap maintenance area (Figure 3 - Cap/Barrier Maintenance Area)
- Remaining soil meeting industrial standards (Figure 3 – Soil Analytical Results)
- Cap maintenance plan (Cap/Barrier Maintenance Plan dated October 29, 2013) (See Att D)

cc: Dennis Lawton, AECOM (e-copy - dennis.lawton@aecom.com)
Bill Phelps, DG/5



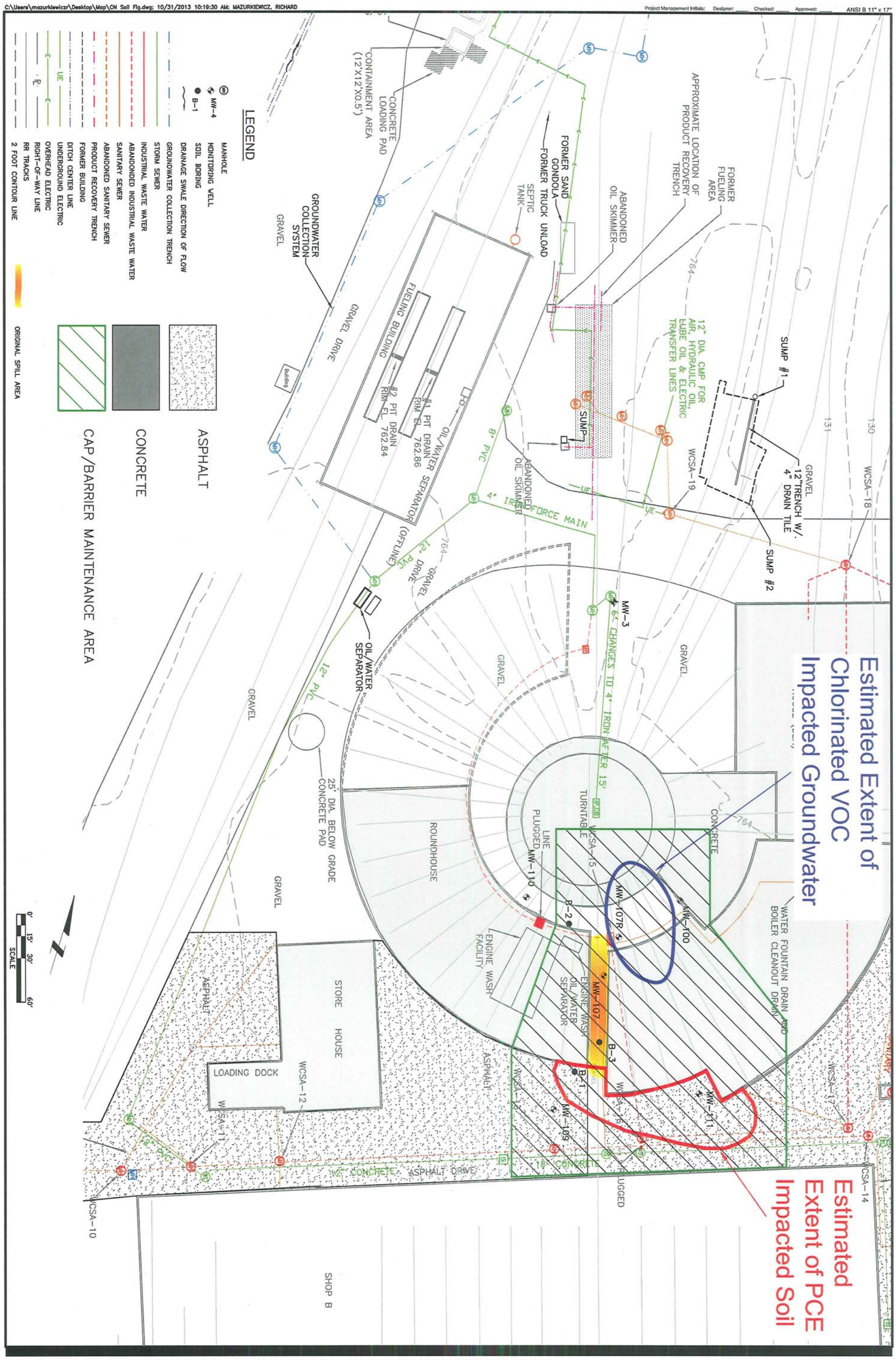
GROUNDWATER ANALYTICAL EXCEEDANCES
ROUNDHOUSE LUBE OIL AREA - BRRTS #02-20-545105
WISCONSIN CENTRAL, LTD.
NORTH FOND DU LAC RAIL YARD
FOND DU LAC, WISCONSIN

AECOM
60135737
FIGURE 2



SOIL ANALYTICAL RESULTS
ROUNDHOUSE LUBE OIL AREA - BRRTS #02-20-545105
WISCONSIN CENTRAL, LTD.
NORTH FOND DU LAC RAIL YARD
FOND DU LAC, WISCONSIN

AECOM
60135737
FIGURE 3



CAP/BARRIER MAINTENANCE PLAN - CAP/BARRIER MAINTENANCE AREA
ROUNDHOUSE LUBE OIL AREA - BRRTS #02-20-545105
WISCONSIN CENTRAL, LTD.
NORTH FOND DU LAC RAIL YARD
FOND DU LAC, WISCONSIN

AECOM
60135737
FIGURE 3

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
2984 Shawano Avenue
Green Bay WI 54313-6727

Scott Walker, Governor
Cathy Stepp, Secretary
Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711

WISCONSIN
DEPT. OF NATURAL RESOURCES

December 13, 2013

Wisconsin Central, Ltd.
Attn: Mr. Brian Hayden
1 Waterfront Drive
Two Harbor, MN 55616

Subject: Conditional Closure Decision with Requirements to Achieve Final Closure
Canadian National – Roundhouse Lube Oil, 2 Harrison Street,
North Fond du Lac, Wisconsin
DNR BRRTS Activity # 02-20-545105

Dear Mr. Hayden:

On December 6, 2013, the Northeast Region Closure Committee reviewed your request for closure of the case described above. The Closure Committee reviews environmental remediation cases for compliance with state rules and statutes to maintain consistency in the closure of these cases. After careful review of the closure request, the Closure Committee has determined that the chlorinated solvent and petroleum contamination identified at the site in the vicinity of a locomotive repair and maintenance area appears to have been investigated and remediated to the extent practicable under site conditions. Your case has been remediated to Department standards in accordance with ch. NR 726, Wis. Adm. Code and will be closed if the following conditions are satisfied.

MONITORING WELL ABANDONMENT
The monitoring wells at the site must be properly abandoned in accordance with ch. NR 141, Wis. Adm. Code. Documentation of well abandonment must be submitted to me on Form 3300-005, found at http://dnr.wi.gov/topic/groundwater/forms.html.

PURGE WATER, WASTE AND SOIL PILE REMOVAL
Any remaining purge water, waste and/or soil piles generated as part of site investigation or remediation activities must be removed from the site and disposed of or treated in accordance with the applicable rules. Once that work is completed, please send appropriate documentation regarding the treatment or disposal of the remaining purge water, waste and/or soil piles.

When the above conditions have been satisfied, please submit the appropriate documentation (for example, well abandonment forms, disposal receipts, copies of correspondence, etc.) to verify that applicable conditions have been met, and your case will be closed.

Your site will be listed on the DNR's Remediation and Redevelopment GIS Registry. Information that was submitted with your closure request application will be included on the Bureau for Remediation and Redevelopment Tracking System (BRRTS on the Web). The site may be viewed on the Remediation and Redevelopment Sites Map (RRSM), on the GIS Registry layer. To review the site on BRRTS on the Web, or to view the GIS Registry web page, see http://dnr.wi.gov/topic/Brownfields/rrsm.html.

CONTINUING OBLIGATIONS

As part of the approval of the closure of this case, you will be responsible for maintaining the following continuing obligations:

- Groundwater contamination is present above ch. NR 140, Wis. Adm. Code enforcement standards.
- Residual soil contamination exists that must be properly managed should it be excavated or removed.
- Industrial soil standards were applied for closure, and industrial land use is required. Before the land use may be changed from industrial to non-industrial, additional environmental work must be completed.
- Remaining soil contamination could result in vapor intrusion if future construction activities occur. Vapor control technologies will be required for occupied buildings, unless the property owner assesses the potential for vapor intrusion, and the DNR agrees that vapor control technologies are not needed.

Please be aware that the case may be reopened pursuant to s. NR 727.13, Wis. Adm. Code, for any of the following situations:

- 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,
- if the property owner does not comply with the conditions of closure, with any deed restrictions applied to the property, or with a certificate of completion issued under s. 292.15, Wis. Stats, or
- a property owner fails to maintain or comply with a continuing obligation (imposed under this closure approval letter).

We appreciate your efforts to restore the environment at this site. If you have any questions regarding this letter, please contact me at (920) 662-5420, or by email at Keld.Lauridsen@wisconsin.gov.

Sincerely,

Keld Lauridsen
Hydrogeologist
Remediation & Redevelopment Program

cc: Dennis Lawton, AECOM (e-copy - dennis.lawton@aecom.com)

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

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. 02-20-545105	Parcel ID No. NOT APPLICABLE		
BRRTS Activity (Site) Name CANADIAN NATIONAL-ROUNDHOUSE LUBE OIL	WTM Coordinates X 642,409	Y 372,015	
Street Address 2 HARRISON ST	City NORTH FOND DU LAC	State WI	ZIP Code 54937
Responsible Party (RP) Name BRIAN HAYDEN (Company Contact)			
Company Name WISCONSIN CENTRAL LTD			
Street Address 1 WATERFRONT DRIVE	City TWO HARBORS	State MN	ZIP Code 54313
Phone Number (218) 628-4592	Email Brian.Hayden@cn.ca		

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

Environmental Consultant Name Dennis Lawton			
Consulting Firm AECOM			
Street Address 1555 North RiverCenter Drive Suite 214	City Milwaukee	State WI	ZIP Code 53212
Phone Number (414) 944-6183	Email Dennis.Lawton@aecom.com		
Acres Ready For Use 100	Voluntary Party Liability Exemption Site? ○ Yes ◉ 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 $ $1,200.00

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.**

02-20-545105 CANADIAN NATIONAL-ROUNDHOUSE LUBE OIL

BRRTS No. Activity (Site) Name

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 Roundhouse Lube Oil site is located within the Wisconsin Central Ltd. North Fond du Lac Rail Yard (Yard) in part of the Southwest Quarter of Section 33 in Township 15 North, Range 17 East in the Village of North Fond du Lac, Fond du Lac County, Wisconsin. The subject property has an address of 2 Harrison Street.

The Roundhouse Lube Oil site is located within the east-central portion of the NFDL Yard. Residential and some commercial properties are located approximately 600 feet west of the site and up to approximately 1200 feet to the northwest and southwest. Other portions of the Yard are present up to at least 1200 feet to the north and south, and commercial and rural density residential properties are present approximately 1,000 feet east of the site. Lake Winnebago is located approximately 2,000 feet to the east of the site.

B. **Prior and current site usage**: Specifically describe the current and historic occupancy and types of use.

The subject property has been used as a railroad yard since the mid-1800s. The roundhouse was and continues to be used for car, engine, and locomotive repair and maintenance. The former locomotive lube oil dispensing track was located in the alcove between two sections of the roundhouse. A bio-treatment system operated in the alcove area from approximately 1998 to 2006 to treat surface releases of lube oil and other petroleum products. Lube oil dispensing activities no longer occur in the alcove area.

C. Describe how and when site contamination was discovered.

On March 7, 2004, Wisconsin Central Ltd. (WC) notified the Wisconsin Department of Natural Resources (WDNR) of a petroleum release along the former locomotive lube oil dispensing track adjacent to the roundhouse at the WC North Fond du Lac Yard (NFDL Yard) located at 2 Harrison Street in the Village of North Fond du Lac, Fond du Lac County, Wisconsin. The release was reported based on the observation of apparent petroleum staining along the former lube oil dispensing track in an alcove between two sections of the Roundhouse.

D. Describe the type(s) and source(s) or suspected source(s) of contamination.

Lube oil, waste engine oil and other petroleum products and solvents.

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.

WIS CENTRAL RR-DIESEL SPILL TRACK, 55220543232 (Closed); WISCONSIN CENTRAL LTD, 320002652; CANADIAN NATIONAL YARD-OIL/WATER SEPARATOR, 220539302 (Closed); WISCONSIN CENTRAL LTD - PAINT SHOP UST, 320548039 (Closed); CANADIAN NATIONAL - PAH, 220549952 (Closed); WISCONSIN CENTRAL LTD - REFUELING AREA, 220000914 (Conditionally Closed); CANADIAN NATIONAL RAIL YRD-DIESEL FUEL SPILL, 220540810 (Closed); and CANADIAN NATIONAL RAILWAY - STOREHOUSE, 220297826 (Conditionally Closed).

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.

North Fond du Lac VIL, 0320001517 (south-southwest) and Boelter Property, 0320282507 (north)

H. **Current zoning** (e.g. industrial, commercial, residential) for the site and for neighboring properties, and how verified (Provide documentation in Attachment G).

Not applicable: Railroad properties are exempt from zoning requirements per the preemption of the Interstate Commerce Commission (ICC) Termination Act.

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.

The uncolsolidated material in the roundhouse lube oil area at the site generally consists of 0.5 foot to 9 feet of fill (sand, gravel, cinders, and traces of clay) above native soil (brown to reddish-brown silty clay) to at least 13 feet below ground surface, the terminal depth of the borings.

ii. Describe the composition, location and lateral extent, and depth of fill or waste deposits on the site.

The thickness of fill material in the roundhouse lube oil area varied in depth from approximately 0.5 foot to 9 feet. The

fill material consisted of sand, gravel, cinders, and traces of clay.

iii. Depth to bedrock, bedrock type, and whether or not it was encountered during the investigation.
Bedrock was not encountered during the site investigation activities. According to two Wisconsin Geologic and Natural History Survey Well Construction Records of water supply wells located near the subject site, the red silty clay extends to a depth of approximately 25 feet deep. Light grey to bluish-grey dolomite (Galena/Platteville Formation) extends to a depth of 190 feet bgs. The dolomite overlies the Ordovician St. Peter sandstone.

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).
The surfaces in the area of the roundhouse lube oil area are comprised generally of concrete (building floors), asphalt and gravel.

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.
In general, the depth to groundwater in the roundhouse lube oil area ranges from between 1.3 (MW-111, 11/14/12) to 7.75 (MW-100, 1/15/04) feet deep.

ii. Discuss groundwater flow direction(s), shallow and deep. Describe and explain flow variations, including fracture flow if present.
Groundwater flow in the vicinity of the Roundhouse Lube Oil site is generally to the east-southeast, towards Lake Winnebago. There is an apparent groundwater divide northwest of the Roundhouse Lube Oil site.

iii. Discuss groundwater flow characteristics: hydraulic conductivity, flow rate and permeability, or state why this information was not obtained.
The estimated hydraulic conductivity is 8.0 x 10-5 cm/sec based on in-situ hydraulic conductivity tests conducted on monitoring well MW-109 and another nearby well on the western portion of the Yard. Groundwater flow velocity, based on a hydraulic gradient of 0.025 ft/ft is estimated to be approximately 6.6 x 10-6 cm/sec, or 0.02 ft/day (7 ft/ year).

iv. Identify and describe locations/distance of potable and/or municipal Wells within 1200 feet of the site.
Potable wells were not identified within 1,200 feet of Roundhouse Lube Oil area. Village of North Fond du Lac municipal wells were identified greater than 2,500 feet west of the site and a potable supply well that serves the yard office for the former Fox Valley & Western portion of the Yard (northeast portion of yard) is located greater than 2,500 feet north of the site. Residential wells were identified greater than 2500 feet northeast of the site and greater than 1600 feet east of the site.

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.

On March 7, 2004, Wisconsin Central Ltd. (WC) notified the Wisconsin Department of Natural Resources (WDNR) of a petroleum release along the former locomotive lube oil dispensing track adjacent to the roundhouse at the WC North Fond du Lac Yard (NFDL Yard) located at 2 Harrison Street in the Village of North Fond du Lac, Fond du Lac County, Wisconsin (Figures B.1.a.1 and B.1.b.1). The release was reported based on the observation of apparent petroleum staining along the former lube oil dispensing track in an alcove between two sections of the Roundhouse (Figure B.1. b.2). The WDNR issued a Responsible Party (RP) letter to WC on March 21, 2004 and established the Roundhouse Lube Oil area BRRTS Site (BRRTS# 02-20-545105), located east of the intersection of Wisconsin Avenue and Cleveland Street, as illustrated on Figure B.1a.1. Refer to Figure B.1.b.1 for general site layout features in the vicinity of the observed stained area and the boundaries of the area of investigation related to the Roundhouse Lube Oil site. Tables A.3 and A.2 include the soil and groundwater analytical results discussed herein. Also, refer to Figure B.1.a.2 for the location of the Roundhouse Lube Oil BRRTS site relative to other recently closed adjacent BRRTS sites at the NFDL Yard.
Note that WC historically treated releases of heavy oils and petroleum hydrocarbon spills along the former lube oil servicing track using in-situ bioremediation (in situ bioreactor, or bio-infiltration) to break down and remediate the petroleum compounds. WC treated the stained area from between approximately 1998 and 2006. The bio-filtration treatment generally involved biological destruction of historic and reoccurring petroleum constituents using either naturally occurring indigenous bacteria or selected inoculated bacteria to serve as the petroleum degraders. The track ballast and subgrade provided the substrate needed to facilitate viable bacteria populations. The addition of water and selected nutrients stimulated growth and metabolism of the degraders.
TRC Solutions, Inc. (TRC) installed three soil borings (MW-100, MW-107 and MW-109) and collected soil samples in and around the oil stained area near the Roundhouse Lube Oil area on January 7-8, 2004. MW-107 was located adjacent to the lube oil dispensing track in the alcove area between the two sections of the Roundhouse and MW-100

and MW-109 were located generally northwest and southeast of the alcove area, respectively. Soil samples were collected for laboratory analysis of volatile organic compounds (VOCs) at each location, for polynuclear aromatic hydrocarbons (PAHs) at MW-107 and MW-109, for diesel range organics (DRO) at MW-107, and for select metals (arsenic, barium, chromium and lead) at MW-109. The three borings were converted to permanent NR 141 groundwater monitoring wells and the wells were sampled for laboratory analysis of VOCs at each well, for PAHs and DRO at MW-107 and MW-109, and for select metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver) at MW-109.
The soil sample collected from boring MW-107 (4 to 6 feet below ground surface [bgs]) had detections of PAHs; however, the concentrations were below the Wisconsin Administrative Code (WAC) Chapter (Ch.) NR 720 Residual Contaminant Levels (RCLs). Arsenic was detected at a concentration above the industrial direct contact and groundwater pathway RCL in a soil sample collected from 6 to 8 feet bgs in boring MW-107; however, the detected concentration (3.96 mg/kg) was considered to be within the common background range. The concentration of lead in the groundwater sample collected from monitoring well MW-109 in January 2004 was above the WAC Ch. NR 140 Enforcement Standard (ES), but a follow-up sample collected in February 2004 did not have detectable lead.
AECOM (formerly Earth Tech, Inc.), advanced three soil borings (B-1, B-2, and B-3) at the Site on March 2 and 13, 2006 to confirm the 2004 TRC soil results. Soil samples were collected for analysis of VOCs and PAHs. One soil sample collected from 2.5 to 4 feet bgs in boring B-1, had a tetrachloroethene (PCE) concentration of 45 micrograms per kilogram (µg/kg), which was above the NR 720 protection of groundwater RCL.

Note: The above referenced information was provided to the WDNR in a data submittal entitled "TRC and Earth Tech Soil and Groundwater Data Compilation Package", dated March 2007. Information referenced below is included in Attachment C of this closure request submittal.

AECOM replaced groundwater monitoring well MW-107 with replacement well MW-107R on March 15, 2011 (MW-107 was no longer suitable for groundwater sampling purposes) and collected three rounds of groundwater samples from MW-100, MW-107R and MW-109 (5/17/11, 8/24/11 and 12/01/11) for laboratory analyses of VOCs. Two rounds of samples were also collected from nearby well MW-3 (8/24/11 and 12/91/11). The concentrations of several chlorinated VOCs exceeded the respective NR 140 Enforcement Standard (ES) in the groundwater sample collected from MW-107R and concentrations of one or two chlorinated VOCs exceeded their respective NR 140 Preventive Action Limit (PAL) in MW-3 and MW-100.
Based on the ES exceedances in MW-107R, AECOM advanced two soil borings and installed monitoring wells MW-110 and MW-111 on September 13, 2012 to delineate the extent of chlorinated VOCs in soil and groundwater. Two soil samples were collected from each boring for VOC analysis and three rounds (9/28/12, 1/04/13 and 4/09/12) of groundwater samples were collected from the two new wells and from MW-3, MW-100, MW-107A and MW-109. One soil sample collected from 3.5 feet bgs in boring MW-111 had a PCE concentration of 123 µg/kg, which is above the NR 720 protection of groundwater RCL. VOCs were not detected in the groundwater samples from MW-110 and MW-111 and concentrations in the other wells were similar to previous sampling rounds.

Soil Summary: In general, the PCE impact in soil is reasonably delineated around borings B-1 and MW-111. Although the arsenic concentration was above the NR 720 industrial direct contact and groundwater pathway RCLs in the soil sample collected in boring MW-107 (3.96 milligrams per kilogram [mg/kg]), the concentration is well below the recognized statewide background threshold value of 8 mg/kg. Therefore, arsenic is not considered a metal of concern at the Site. The extent of PCE soil impacts at the Site is illustrated on Figure B.2.c.

Groundwater Summary: Six groundwater monitoring wells are associated with the Roundhouse Lube Oil investigation (MW-3, MW-100, MW-107R, MW-109, MW-110 and MW-111). The groundwater flow direction at the Site is to the southeast, towards Lake Winnebago (historical groundwater elevation data are summarized in Table A.7 and the water table configuration is shown in Figure B.3.c). Historically, six chlorinated VOCs (PCE, trichloroethene [TCE], vinyl chloride, 1,1,1-trichloroethane [1,1,1-TCA], 1,1-dichloroethene [1,1-DCE], and cis-1,2-dichloroethene [cis-1,2-DCE]) were reported at concentrations above the NR 140 ES in groundwater samples collected from monitoring well MW-107R. The benzene concentration was also above the ES for one of the six sampling rounds. In addition, the concentration of lead was above the NR 140 ES in a groundwater sample collected from monitoring well MW-109 on January 15, 2004: however, it was below the ES in the groundwater sample collected from MW-109 on February 5, 2004. The extent of ES exceedances for chlorinated VOCs in groundwater is around groundwater monitoring well MW-107R and is delineated by surrounding wells MW-100 to the east; MW-109 and MW-111 to the south; MW-110 to the west; and MW-3 to the north. The extent of groundwater ES and PAL exceedances is illustrated on Figure B.3.b.2 and is well within the NFDL Yard property boundary.
Based on site investigation activities completed to date, AECOM recommends case closure with a Geographical Information (GIS) registry to address the NR 720 RCL exceedances for PCE. The NR 140 ES exceedances for chlorinated VOCs in groundwater will be addressed by natural attenuation and listing on the GIS registry for sites with residual groundwater contamination.

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.

Contamination from the Roundhouse Lube Oil does not extend off-site.

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.

Structural impediments were not encountered during the Roundhouse Lube Oil site investigation.

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.

PCE was detected in soil samples collected from two borings (in MW-111, at 3 feet deep @ 123 µg/kg; in B-1, at 2.5 to 4 feet deep @ 45 µg/kg). Possible historical use of chlorinated solvents during locomotive maintenance is the potential source of the PCE. The PCE impact in soil at the MW-111 location (the highest impact) is limited to the top 4 feet of soil (within fill material); the sample of native soil (silty-clay) at 8 feet deep did not have detectable VOCs. Also, VOC concentrations in groundwater samples collected from monitoring well MW-111 are below the laboratory method detection limits. Therefore, the PCE impact in soil is delineated on-site (both horizontally and vertically) and the detected PCE concentration in soil at MW-11 does not appear to be adversely impacting groundwater at MW-111.

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

see B(i.) above

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.

Generic RCLs not included in Wisconsin Administrative Code or Guidance are calculated from the US EPA Soil Screening Level Web Page and the default values contained in Determining Residual Contaminant Levels using the EPA Soil Screening Level Web Site WDNR PUB-RR-682 on May 12, 2006.

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.

The groundwater impact at the site consists of PCE (1,740µg/L), TCE (155 µg/L), cis1,2-DCE (211 µg/L), 1,1-DCE (120 µg/L), 1,1,1-TCA 1,850 µg/L), and vinyl chloride (21.9 µg/L) that were reported at concentrations above the NR 140 ES in groundwater samples collected from monitoring well MW-107R during the latest groundwater sampling event (4/9/13). In addition, the concentration of lead was above the NR 140 ES in a groundwater sample collected from monitoring well MW-109 on January 15, 2004; however, it was below the ES in the groundwater sample collected from MW-109 on February 5, 2004. The extent of ES exceedances for chlorinated VOCs is around monitoring well MW-107R and is delineated by surrounding wells MW-100 to the east; MW-109 and MW-111 to the south; MW-110 to the west; and MW-3 to the north. Concentrations of PCE, TCE and other chlorinated VOCs in MW-107R appear to be stable during the six rounds of sampling between May 2011 and April 2013. The specific source of the chlorinated VOCs in MW-107R is not known but is likely related to historic releases from chlorinated solvents likely used at the site for maintenance activities. Building foundations or drain systems that might be impacted were not identified.

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

Non-aqueous phase liquids were not identified during the Roundhouse Lube Oil area site investigation activities.

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.

Vapor intrusion is not applicable for the chlorinated volatile organic compound (CVOC) soil impact to the east of the roundhouse building (in borings MW-111 and B-1, Figure B.2.c). The soil impacts are likely due to spill/s originating outside of the building and are limited to soil, based on no CVOC detections in groundwater samples collected from monitoring well MW-111 (the boring with highest tetrachloroethylene [PCE] soil concentration, 123 micrograms per kilogram). Several CVOCs were detected at concentrations above the Wisconsin Administrative Code (WAC) Chapter (Ch.) NR 140 Enforcement Standard (ES) in groundwater samples collected from monitoring well MW-107R, which is located inside the Roundhouse Lube Oil building. Concentrations of PCE, trichloroethene (TCE), vinyl chloride, 1,1,1-trichloroethane (TCA), 1,2-cis-dichloroethylene (1,2-cis-DCE), 1,1-dichloroethylene (1,1-DCE), and 1,1-dichloroethane (1,1-DCA) were above the NR 140 ES in groundwater monitoring well MW-107R during the most recent groundwater sampling event (April 2013) as noted on Figure B.3.b.2.

AECOM performed a vapor risk assessment for the Roundhouse Lube Oil building by extrapolating vapor concentrations from chemical concentrations in groundwater in monitoring well MW-107R, which is located adjacent to the Roundhouse building. AECOM used the most recent groundwater data that was collected from the Site on April 9, 2013. Although the railroad property is exempt from zoning classifications, AECOM's assessment compares the

calculated data to that which is protective for an industrial property. The Roundhouse Lube Oil groundwater data was evaluated by using the Wisconsin Department of Natural Resources' (WDNR) Indoor Air Vapor Action Levels for Various VOCs Quick Lookup-Table—Determining the Vapor Risk Screening Level for Groundwater calculation (December 11, 2012). This assessment calculates the industrial groundwater concentration vapor screening levels, which are compared to chemical concentrations in groundwater. Note that the site is a railroad property (considered an industrial property for this assessment) and there is no current plan to change the property use in the future.
AECOM evaluated the CVOCs (PCE, TCE, vinyl chloride, 1,1,1-TCA, 1,2-cis-DCE, 1,1-DCE, and 1,1-DCA) that were above the NR 140 ES in MW-107R during the latest groundwater sampling event that occurred on April 9, 2013. Using Site data, the WDNR's groundwater risk screening level calculation results in industrial groundwater concentration vapor screening levels (column eight on the Table A.5) that are higher than the CVOC concentrations in groundwater in monitoring well MW-107R (column nine on Table A.5). Thus the CVOC concentrations in groundwater that were evaluated in monitoring well MW-107R are below that which may potentially cause an industrial indoor air exceedance in the Roundhouse building.
Therefore, it does not appear that vapor intrusion would be an issue in the Roundhouse building, based on the current model used in this evaluation. It should also be noted that the Roundhouse building is not tightly sealed and is frequently open to the outside air when the doors are opened to move engines in and out of the building, which limits buildup of potential concentrations of CVOC vapors in the building. The Roundhouse also has an existing venting system because locomotive engines are operated and serviced within the building. In addition, the Roundhouse building floors are constructed of thicker concrete (greater than 8 inches and likely greater than 12 inches or more), which presents a greater barrier for potential CVOC vapors to cross.

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).

Note that although railroad properties are exempt from zoning requirements, the subject property is a not used for commercial or residential purposes. However, if land use is changed or if buildings are planned for the areas impacted by chlorinated VOCs, a vapor intrusion assessment would be required.

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.

Surface water and/or sediment impacts were not documented during the Roundhouse Lube Oil area site investigation activities. The closest water body (Mosher Creek) is located approximately 1200 feet northeast of the site.

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 (see E(i.) above)

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.

WC historically treated releases of heavy oils and petroleum hydrocarbon spills along the former lube oil servicing track using in-situ bioremediation (in situ bioreactor) to break down and remediate the petroleum compounds. WC treated the stained area from between approximately 1998 and 2006. The in situ bioreactor treatment generally involved biological destruction of historic and reoccurring petroleum constituents using either naturally occurring indigenous bacteria or selected inoculated bacteria to serve as the petroleum degraders. The track ballast and subgrade provided the substrate needed to facilitate viable bacteria populations. The addition of water and selected nutrients stimulated growth and metabolism of the degraders.

B. Describe any immediate or interim actions taken at the site under ch NR 708, Wis. Adm. Code.

see 4.(A.) above

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.

See 4.(A.) above

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.

The identified soil impact consists of PCE concentrations in soil samples collected from two on-site borings (in MW-111 at 3 feet deep @ 123 µg/kg and in B-1 at 2.5 to 4 feet deep @ 45 µg/kg). The groundwater impact consists of PCE (1,740 µg/L), TCE (155 µg/L), cis1,2-DCE (211 µg/L), 1,1-DCE (120 µg/L), 1,1,1-TCA 1,850 µg/L), and vinyl chloride (21.9 µg/L) that were reported at concentrations above the NR 140 ES in groundwater samples collected from monitoring well MW-107R during the latest groundwater sampling event (4/9/13). The chlorinated VOC impact in soil and groundwater is

delineated on-site around the Roundhouse Lube Oil area and does not extend off-site.

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.

There are no documented soil concentrations that are above the ch. NR720, Wis. Adm. Code, standard(s) for direct contact.

F. Describe the remaining soil contamination in the vadose zone that attains or exceeds the soil standard(s) for the groundwater pathway.

PCE was detected in soil samples collected from two borings (in MW-111 at 3 feet deep @ 123 µg/kg and in B-1 at 2.5 to 4 feet deep @ 45 µg/kg).

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.

The surfaces in the Roundhouse Lube Oil area are comprised concrete (buildings floors), asphalt and gravel. Note that although not part of this case closure request, Wisconsin Central Ltd. already has a general cap maintenance plan that covers the Roundhouse Lube Oil area portion of the site (Wisconsin Central Ltd. Former Refueling Area-BRTTS# 02-20-000914)

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).

Chlorinated non-aqueous phase liquids are not not present at the Roundhouse Lube Oil Area. Concentrations of PCE and 1,1,1-TCA (likely source product) have been decreasing since the September 2012. PCE breakdown products (TCE, cis-1,2-DCE, 1,1-DCE, and vinyl chloride) show evidence that reductive dechlorination is occurring at the site. The presence of 1,1,1-TCA breakdown product 1,1-DCA shows evidence that 1,1,1-TCA is degrading via aenarobic processes at the site. Overall, reductive dechlorination and anaerobic degradation processes appear to be reducing the chlorinated groundwater impact at the site. Therfore, natural attenuation appears to be a reasonable process to remediate the chlorinated groundwater impacts at the site.

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.

The PCE impact in soil is not above the direct contact criterion, therfore soil direct contact is not an issue. The soil groundwater protection RCL pathway will be addressed via natural attenuation of groundwater. The groundwater exposure pathway for concentrations above the NR 140 ES and Preventive Action Limit (PAL) is not complete for 1) potable water because groundwater at the site is not used for potable purposes (potable water for the site is supplied by the Village of North Fond du Lac) and 2) not complete to surface water as the chlorinated VOC impact in groundwater is delineated on-site (note that the closest down gradient water body is Mosher Creek, located approximately 1,200 feet northeast of the site).

J. Identify any system hardware anticipated to be left in place after site closure, and explain the reasons why it will remain.

Not applicable

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.

A groundwater GIS registry will be required for chlorinated impacts of PCE (1,740 micrograms per liter [µg/L]), TCE (155 µg/L), cis1,2-DCE (211 µg/L), 1,1-DCE (120 µg/L), 1,1,1-TCA 1,850 µg/L), and vinyl chloride (21.9 µg/L) that were reported at concentrations above the NR 140 ES in groundwater samples collected from monitoring well MW-107R during the latest groundwater sampling event (4/9/13).

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

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

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.	☐	☐	Engineering Control/Barrier for Direct Contact	✓	✓
ii.	☒	☐	Engineering Control/Barrier for Groundwater Infiltration	✓	✓
iii.	☐	☐	Vapor Mitigation - post closure passive system	✓	✓
iv.	☐	☐	Vapor Mitigation - post closure active system	✓	✓
v.	☐	☒	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.	☒	☐	Residual soil contamination exceeds ch. NR 720 generic or site-specific RCLs	✓
ii.	☒	☐	Sites with groundwater contamination equal to or greater than the ch. NR 140, enforcement standards (ES)	✓
iii.	☐	☐	Monitoring wells: lost, transferred or remaining in use	✓
iv.	☐	☐	Structural Impediment (not as a performance standard)	✓
v.	☒	☐	Residual soil contamination remaining at ch. NR 720 Industrial Use levels	✓
vi.	☒	☐	Vapor intrusion may be future, post-closure issue if building use or land use changes	✓
vii.	☐	☒	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://dnrmaps.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 Contaminate 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.

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) 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.

02-20-545105 CANADIAN NATIONAL-ROUNDHOUSE LUBE OIL

BRRTS No. Activity (Site) Name

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.	☐	☐	☐	Residual groundwater contamination exceeds Ch. NR 140 Wis. Administrative Code enforcement standards.
2.	☐	☐	☐	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.	☐	☐	☐	An engineered cover or a soil barrier (e.g. pavement) must be maintained over contaminated soil for direct contact or groundwater infiltration concerns.
4.	☐	☐	☐	Industrial land use soil standards were used for the clean-up standard.
5.	☐	☐	☐	A vapor mitigation system (or other specific vapor protection) must be operated and maintained.
6.	☐	☐	☐	Vapor assessment needed if use changes.
7.	☐	☐	☐	Structural impediment.
8.	☐	☐	☐	Lost, transferred or open monitoring wells.
9.	☒	☒	☒	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, ___0___ (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.

02-20-545105 — BRRTS No.

CANADIAN NATIONAL-ROUNDHOUSE LUBE OIL — Activity (Site) Name

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 Kevin Brehm 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."

Kevin Brehm		Principal Engineer
Printed Name		Title
Signature	9/17/14 Date	P.E. Stamp and Number

WISCONSIN PROFESSIONAL ENGINEER Kevin L. Brehm E30567 Milwaukee, WI

Hydrogeologist Certification

I Dennis Lawton 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."

Dennis Lawton	Senior Project Manager
Printed Name	Title
Signature	9/17/2014 Date

ATTACHMENT A - Tables

A.1 Table 2 – Groundwater Analytical Data
A.2 NA – Same as A.3
A.3 Table 1 – Soil Analytical Data
A.4 NA – same as A.3
A.5 Table 1 – Soil Vapor Evaluation
A.6 NA – No other Media of Concern
A.7 Table 3 – Groundwater Elevations
A.8 NA – No other pertinent tables

TABLE 2
GROUNDWATER ANALYTICAL DATA
BIOINFILTRATION AREA - BRRTS #02-20-545105
WISCONSIN CENTRAL, LTD. - NORTH FOND DU LAC YARD
NORTH FOND DU LAC, WISCONSIN
AECOM PROJECT NO. 60135737

Sample Location:			MW-3								MW-100							MW-107	107R						MW-109								MW-110			MW-111		
Sample Date:			10/13/2000	6/27/2001	3/2/2006	8/24/2011	12/1/2011	9/28/2012	1/4/2013	4/9/2013	1/15/2004	5/17/2011	8/24/2011	12/1/2011	9/28/2012	1/4/2013	4/9/2013	1/15/2004	5/17/2011	8/24/2011	12/1/2011	9/28/2012	1/4/2013	4/9/2013	1/15/2004	2/5/2004	5/17/2011	8/24/2011	12/1/2011	9/28/2012	1/11/2013	4/9/2013	9/28/2012	1/4/2013	4/9/2013	11/14/2012	1/11/2013	4/9/2013
Sampling Company:			STS	STS	Earth Tech	AECOM	AECOM	AECOM	AECOM	AECOM	TRC	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	TRC	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	TRC	TRC	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM
	PAL[1] (A)	ES[1] (B)																																				
Polynuclear Aromatic Hydrocarbons (µg/L):																																						
Benzo(a)anthracene	NL	NL	--	--	--	--	--	--	--		--	--	--	--	--	--		<0.042	--	--	--	--	--	--	0.061	--	--	--	--	<0.0043	<0.0043	--	--	--	--	--	--	--
Benzo(b)fluoranthene	0.02	0.2	--	--	--	--	--	--	--		--	--	--	--	--	--		<0.042	--	--	--	--	--	--	**0.072[A]**	--	--	--	--	<0.0045	<0.0045	--	--	--	--	--	--	--
Anthracene	600	3,000	--	--	--	--	--	--	--		--	--	--	--	--	--		--	--	--	--	--	--	--	--	--	--	--	--	0.0072J	0.0072J	--	--	--	--	--	--	--
Fluorene	80	400	--	--	--	--	--	--	--		--	--	--	--	--	--		0.088	--						<0.042	--	--	--	--	0.0059J	0.0059J	--	--	--	--	--	--	--
Fluoranthene	80	400	--	--	--	--	--	--	--		--	--	--	--	--	--		<0.042	--	--	--	--	--	--	0.072	--	--	--	--	0.0075J	0.0075J	--	--	--	--	--	--	--
1-Methylnaphthalene	NL	NL	--	--	--	--	--	--	--		--	--	--	--	--	--			--	--	--	--	--	--		--	--	--	--	0.0054J	0.0054J	--	--	--	--	--	--	--
2-Methylnaphthalene	NL	NL	--	--	--	--	--	--	--		--	--	--	--	--	--			--	--	--	--	--	--		--	--	--	--	0.0074J	0.0074J	--	--	--	--	--	--	--
Phenanthrene	NL	NL	--	--	--	--	--	--	--		--	--	--	--	--	--		<0.042	--	--	--	--	--	--	0.064	--	--	--	--	0.035J	0.035J	--	--	--	--	--	--	--
Pyrene	50	250	--	--	--	--	--	--	--		--	--	--	--	--	--		0.072	--	--	--	--	--	--	0.078	--	--	--	--	0.0094J	0.0094J	--	--	--	--	--	--	--
Dissolved Metals (µg/L):																																						
Arsenic	1	10	--	--	--	--	--	--	--		--	--	--	--	--	--			--	--	--	--	--	--	<10	<10	--	--	--	--	--		--	--	--	--	--	--
Barium	400	2,000	--	--	--	--	--	--	--		--	--	--	--	--	--			--	--	--	--	--	--	339	353	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	0.5	5	--	--	--	--	--	--	--		--	--	--	--	--	--			--	--	--	--	--	--	<1.0	<1.0	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	10	100	--	--	--	--	--	--	--		--	--	--	--	--	--			--	--	--	--	--	--	<10	<10	--	--	--	--	--	--	--	--	--	--	--	--
Lead	1.5	15	--	--	--	--	--	--	--		--	--	--	--	--	--			--	--	--	--	--	--	**20.6[A,B]**	<3	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	10	50	--	--	--	--	--	--	--		--	--	--	--	--	--			--	--	--	--	--	--	**17.9[A]**	**23.2[A]**	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	2	0.2	--	--	--	--	--	--	--		--	--	--	--	--	--			--	--	--	--	--	--	<0.2	<0.2	--	--	--	--	--	--	--	--	--	--	--	--
Silver	10	50	--	--	--	--	--	--	--		--	--	--	--	--	--			--	--	--	--	--	--	<10	<10	--	--	--	--	--	--	--	--	--	--	--	--
Volatile Organic Compounds (µg/L):																																						
Benzene	0.5	5	<0.19	<0.19	<0.41	<0.41	<0.41	<0.41	<0.41	NS	<1	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<1	<16.4	**19.6J[A,B]**	<8.2	<10.2	<10.2	<8.2	<1	--	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41
1,1-Dichloroethane	85	850	5.2	3.5	1.4J	<0.75	0.78J	1.3	<0.75	NS	3.2	1.6	2.4	1.8	1.9	1.2	1.5	<1	**96.8[A]**	**103[A]**	**156[A]**	**236[A]**	**208[A]**	**227[A]**	<1	--	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75
1,2-Dichloroethane	0.5	5	**0.66[A]**	<0.35	**1.9[A]**	**2.1[A]**	**2.0[A]**	**3.3[A]**	**2.2[A]**	NS	<1	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36	<1	<14.4	<7.2	<7.2	<9.0	<9.0	<7.2	<1	--	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36
1,1-Dichloroethene	0.7	7	--	--	<0.57	<0.57	<0.57	<0.57	<0.57	NS	<1	<0.57	<0.57	<0.57	<0.57	<0.57	<0.57	<1	**68.4[A,B]**	**67.7[A,B]**	**101[A,B]**	**106[A,B]**	**47.6[A,B]**	**120[A,B]**	<1	--	<0.57	<0.57	<0.57	<0.57	<0.57	<0.57	<0.57	<0.57	<0.57	<0.57	<0.57	<0.57
Chloroethane	80	400	<0.28	<0.28	1.7J	<0.97	<0.97	<0.97	<0.97	NS	2.7	<0.97	<0.97	<0.97	<0.97	<0.97	<0.97	<1	<19.4	<19.4	<19.4	<24.2	<24.2	<19.4	<1	--	<0.97	<0.97	<0.97	<0.97	<0.97	<0.97	<0.97	<0.97	<0.97	<0.97	<0.97	<0.97
cis-1,2-Dichloroethene	7	70	0.95	0.45	<0.83	<0.83	<0.83	<0.83	<0.83	NS	<1	<0.83	<0.83	<0.83	<0.83	<0.83	<0.83	<1	**168[A,B]**	**244[A,B]**	**283[A,B]**	**301[A,B]**	**265[A,B]**	**211[A,B]**	<1	--	<0.83	<0.83	<0.83	<0.83	<0.83	<0.83	<0.83	<0.83	<0.83	<0.83	<0.83	<0.83
Methy Tert Butyl Ether (MTBE)	12	60	1.4	<0.2	0.96J	0.89J	1.6	1.7	1.7	NS	<1	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<1	<24.4	<12.2	<12.2	<15.2	<15.2	<12.2	<1	--	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61
Tetrachloroethene (PCE)	0.5	5	<0.14	<0.14	<0.45	<0.45	<0.45	<0.45	<0.45	NS	<1	**1.7[A]**	**1.5[A]**	**1.9[A]**	**1.9[A]**	**0.88J[A]**	**2.7[A]**	<1	**1,440[A,B]**	**1,610[A,B]**	**2,080[A,B]**	**2,200[A,B]**	**1,190[A,B]**	**1,740[A,B]**	<1	--	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45
1,1,1-Trichloroethane	40	200	0.15	<0.13	<0.90	<0.90	<0.90	<0.90	<0.90	NS	0.92J	3.4	3.1	5.3	2.9	2.3	3.9	<1	**2,650[A,B]**	**1,740[A,B]**	**2,270[A,B]**	**2,460[A,B]**	**1,930[A,B]**	**1,850[A,B]**	<1	--	<0.90	<0.90	<0.90	<0.90	<0.90	<0.90	<0.90	<0.90	<0.90	<0.90	<0.90	<0.90
Trichloroethene (TCE)	0.5	5	0.11	<0.098	<0.48	<0.48	<0.48	<0.48	<0.48	NS	<1	**0.66J[A]**	**0.95J[A]**	**0.83J[A]**	**0.83J[A]**	**0.55J[A]**	<0.48	<1	**160[A,B]**	**159[A,B]**	**204[A,B]**	**243[A,B]**	**148[A,B]**	**155[A,B]**	<1	--	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48
Vinyl Chloride	0.02	0.2	<0.23	<0.23	<0.18	<0.18	<0.18	<0.18	<0.18	NS	<1	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<1	<7.2	**21.4[A,B]**	**38.7[A,B]**	**54.3[A,B]**	**19.8J[A,B]**	**21.9J[A,B]**	<1	--	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18
2-Chlorotoluene	NL	NL	--	--	<0.85	<0.85	<0.85	<0.85	<0.85	NS	<1	<34	<0.85	<0.85	<0.85	<17	<85	3.3	<34	<17	<17	<17	<21.2	<17.0	<1	--	<0.85	<0.85	<0.85	<0.85	<0.85	<0.85	<0.85	<0.85	<0.85	<0.85	<0.85	<0.85
Organic Ranges (mg/L):																																						
Diesel Range Organics	NL	NL	--	--	--	--	--	--	--		--	--	--	--	--	--	--	4	--	--	--	--	--	--	0.56	--	--	--	--	--	--	--	--	--	--	--	--	--

NOTES:
ES - Enforcement Standard.
-- - Not analyzed.
NL - WDNR has not established a regulatory standard.
PAL - Preventive Action Limit.
µg/l - micrograms per liter.
(1) ES and PAL are from Wisconsin Administrative Code Chapter NR140, Groundwater Quality Standards, December 2010.
(A) indicates a PAL exceedance.
(B) indicates an ES exceedance.
J - The analyte has been detected between the limit of detection and limit of quantitation.
Only the detected compounds are presented. The complete analytical results, with detection limits, are included in the laboratory reports.

TABLE 1
SOIL ANALYTICAL DATA
BIOINFILTRATION AREA - BRRTS #02-20-545105
WISCONSIN CENTRAL, LTD - FOND DU LAC RAIL YARD
FOND DU LAC, WISCONSIN
AECOM PROJECT NO. 60135737

			NR 746 Criteria			Soil Boring Location:	MW-100	MW-100 Dup	MW-107	MW-109	AOC 16 (B-1)	AOC 16 (B-2)	AOC 16 (B-3)	MW-110	MW-110	MW-111	MW-111
	Direct Contact	Protection of Groundwater	Table 1	Table 2	Direct Contact	Date Sampled:	1/8/2004	1/8/2004	1/8/2004	1/7/2004	3/2/2006	3/2/2006	3/13/2006	9/13/2012	9/13/2012	9/13/2012	9/13/2012
						Depth of Sample (ft bgs)	4-6	4-6	4-6	6-8	2.5-4	2.5-4	0.5-1.2	3.5	8	3.5	8
	Industrial (A)	(B)	Indicator of Residual Petroleum Product in Soil Pores (C)	Protection of Human Health from Direct Contact with Contaminated Soil (D)	non-industrial RCL (E)	Consultant	TRC	TRC	TRC	TRC	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM
In field Measurments																	
PID (i.u.)						I.U.	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total Organic Carbon:																	
TOC						mg/kg	639	612	---	---	---	---	---	---	---	---	---
Metals:																	
Arsenic	2.39-NR 720/ 8-WDNR BTV	0.584			0.039-NR 720/ 8-WDNR BTV	mg/kg	---	---	---	**3.96**[A,E]	---	---	---	---	---	---	---
Barium						mg/kg	---	---	---	95.4	---	---	---	---	---	---	---
Chromium						mg/kg	---	---	---	24.9	---	---	---	---	---	---	---
Lead	800	27			50	mg/kg	---	---	---	6.02	---	---	---	---	---	---	---
Petroleum Hydrocarbons:																	
Diesel Range Organics	--	--				mg/kg	---	---	56	---	---	---	---	---	---	---	---
Detected Volatile Organic Compounds:																	
Total Xylenes	204,000,000	4,100	42,000		3,130,000	µg/kg	<20	<15	<15	<15	<75	<75	<75	<75	<75	37J	<75
Tetrachloroethene (PCE)	35,000	4.1			1,230	µg/kg	<6.5	<6.2	<6.2	<6	**45J**[B]	<25	<29	<25	<25	**123**[B]	<25
Polynuclear Aromatic Hydrocarbons:																	
Acenaphthene	60,000,000	38,000			900,000	µg/kg	---	---	<12	<12	17	14	<3.3	---	---	---	---
Acenaphthylene	260,000	700			18,000	µg/kg	---	---	21	<12	4.4J	<3.1	<3.2	---	---	---	---
Anthracene	300,000,000	3,000,000			5,000,000	µg/kg	---	---	28	<12	53	56	<3.9	---	---	---	---
Benzo(a)anthracene	3,900	17,000			88	µg/kg	---	---	35	<12	150 [E]	61	6.6	---	---	---	---
Benzo(a)pyrene	390	48,000			9	µg/kg	---	---	33 [E]	<12	96 [E]	58 [E]	12 [E]	---	---	---	---
Benzo(b)fluoranthene	39,000	360,000			88	µg/kg	---	---	46	<12	91 [E]	34	9.7	---	---	---	---
Benzo(g,h,i)perylene	39,000	6,800,000			1,800	µg/kg	---	---	32	<12	46	25	12	---	---	---	---
Benzo(k)fluoranthene	39,000	870,000			880	µg/kg	---	---	<12	<12	94	40	8	---	---	---	---
Chrysene	390,000	37,000			8,800	µg/kg	---	---	37	<12	170	54	10	---	---	---	---
Dibenz(a,h)anthracene	390	38,000			9	µg/kg	---	---	<12	<12	14 [E]	5.9	<3.0	---	---	---	---
Fluoranthene	40,000,000	500,000			600,000	µg/kg	---	---	47	<12	300	140	5.8	---	---	---	---
Fluorene	40,000,000	100,000			600,000	µg/kg	---	---	<12	<12	22	16	<3.7	---	---	---	---
Indeno(1,2,3-cd)pyrene	3,900	680,000			88	µg/kg	---	---	21	<12	53	24	12	---	---	---	---
1-Methylnaphthalene	70,000,000	23,000			1,100,000	µg/kg	---	---	---	---	6.3	10	5.7	---	---	---	---
2-Methylnaphthalene	40,000,000	20,000			600,000	µg/kg	---	---	82	<12	11	6	12	---	---	---	---
Naphthalene	110,000	400	2,700		20,000	µg/kg	---	---	45	<12	31	6.5	8	---	---	---	---
Phenanthrene	390,000	1,800			18,000	µg/kg	---	---	87	<12	110	170	6.4	---	---	---	---
Pyrene	30,000,000	87,000			500,000	µg/kg	---	---	65	<12	280	180	13				

NOTES:
Blank cell indicates regulatory criteria have not been established.
ft bgs - feet below ground surface.
mg/kg - milligrams per kilogram.
µg/kg - micrograms per kilogram.
RCL - Residual Contaminant Level
J - The analyte has been detected between the limit of detection and limit of quantitation.

Bold indicates a regulatory standard has been exceeded.
[A] = Exceeds NR 720 Industrial Direct Contact RCL
[B] = Exceeds NR 720 Groundwater Pathway RCL
[C] = Exceeds NR 746 Table 1 Indicator of Residual Petroleu Product in Soil Pores Screening Levels
[D] = Exceeds NR 746 Human Health from Direct Contact with Contaminated Soil RCL
BTV = Wisconsin Department of Natural Resources recognized Wisconsin background threshhold value for arsenic.

TABLE 1

Soil Vapor Intrusion Evaluation

Canadian National -Roundhouse Lube Oil Site (BRRTS 02-20-545105)

DETERMINING THE VAPOR RISK SCREENING LEVEL FOR GROUNDWATER

(at what concentration would groundwater potentially cause an indoor air exceedance)

$$C_{gw} = \frac{C_{IA}}{(H \times AF_{gw} \times 1{,}000\ L/m^3)}$$

		Residential Screening			Industrial Screening			
Chemical	Henry's Law Constant (H)[2] (Dimensionless)	Residential Air Vapor Action Level - Indoor Air Concentration (C_{IA})[1] (µg/m^3)	Residential Setting Attenuation Factor (AF_{gw})[3] (Unitless)	Residential Groundwater Concentration Vapor Screening Level (C_{gw}) (µg/L)	Non-Residential Air Vapor Action Level - Indoor Air Concentration (C_{IA})[1] (µg/m^3)	Industrial Setting Attenuation Factor (AF_{gw})[3] (Unitless)	Industrial Groundwater Concentration Vapor Screening Level (C_{gw}) (µg/L)	Groundwater Concentration[4] (µg/L)
Tetrachloroethylene	0.7236304	42	0.001	58.04	180	0.0001	2487.46	1740
Trichloroethene	0.4026983	2.1	0.001	5.21	8.8	0.0001	218.53	155
Vinyl Chloride	1.1365495	1.6	0.001	1.41	28	0.0001	246.36	21.9
1,1,1-Trichloroethane	0.7031889	5200	0.001	7394.88	22,000	0.0001	312860.46	1850
1,2-cis-Dichloroethylene	0.1668029	--	0.001	--	--	0.0001	--	211
1,1-Dichloroethylene	1.0670482	210	0.001	196.80	880	0.0001	8247.05	227
1,1-Dichloroethane	0.2297629	15	0.001	65.28	77	0.0001	3351.28	3.3

1 - Indoor air concentration from OSWER VAPOR INTRUSION ASSESSMENT Vapor Intrusion Screening Level (VISL) Calculator Version 3.1, June 2013 RSL
Target Risk for Carcinogens = 1E-05 or Target Hazard Quotient = 1

2 - Henry's Law constant from USEPA Chemical Specific Parameter Table (*Regional Screening Level (RSL) Chemical-specific Parameters Supporting Table May 2013*)

3 - WDNR Attenuation factor between groundwater and indoor air (large industrial building setting).

4 - Groundwater concentration from latest (April 9, 2013) groundwater data collected from a monitoring well MW-107R (highest impacted well).

µg/L = Micrograms per liter

µg/m^3 = Microgram per cubic meter

TABLE 3
GROUNDWATER ELEVATIONS
BIOINFILTRATION AREA - BRRTS #02-20-545105
WISCONSIN CENTRAL, LTD - NORTH FOND DU LAC YARD
NORTH FOND DU LAC, WISCONSIN
AECOM PROJECT NO. 60135737

WELL IDENTIFICATION (DATE MEASURED)	NORTHING (FEET)	EASTING (FEET)	TOP OF WELL CASING ELEVATION (FEET)	TOP OF WELL SCREEN (FEET)	GROUND SURFACE ELEVATION (FEET)	DEPTH TO GROUNDWATER (FEET)	GROUNDWATER ELEVATION (FEET MSL)	FREE PRODUCT (INCHES)	pH (Standard Units)	DISSOLVED OXYGEN (MG/L)	CONDUCTIVITY (umhos)	ORP (Mv)	COLOR	ODOR	TURBIDITY (NTUs)
MW-3															
10/13/00						3.77	760.46	0	6.63	1	1,910	--	Black	Petroleum	--
06/27/01						3.12	761.11	0	6.83	2	1,260	--	--	--	--
03/02/06						6.91	757.32	0	--	--	--	--	Gray	None	--
08/24/11			764.23	762.40		6.76	757.47	0	--	--	--	--	--	--	--
12/01/11						6.57	757.66	0	--	--	--	--	Clear	None	--
09/28/12						7.21	757.02	0	7.23	1.6	1,827	-98.1	Dark Gray	None	>1,000
01/04/13						6.91	757.32	0	7.88	2.53	956	210	Light Gray	None	13.5
MW-100															
01/15/04						7.75	755.81	--	--	--	--	--	--	--	--
02/04/04						5.49	758.07	--	--	--	--	--	--	--	--
05/17/11						4.28	759.28	0	7.99	1	755	269.3	Brown	None	2,465.60
08/24/11	43.8113	88.4780	763.56	761.44	763.94	3.98	759.58	0	7.00	--	--	34	Light Brown	None	--
12/01/11						3.73	759.83	0	--	--	--	--	Light Brown	None	--
09/28/12						5.16	758.40	0	7.82	3.56	1,272	-74.5	Clear	None	8.86
01/04/13						5.00	758.56	0	7.92	3.12	1,153	-86.2	Clear	None	9.89
04/08/13						3.46	760.1	0	8.21	2.58	4276	-10.7	Clear	None	80.2
MW-107															
01/15/04						7.28	756.34	--	--	--	--	--	--	--	--
02/04/04	43.8109	88.4781	763.62	761.74	764.24	7.11	756.51	--	--	--	--	--	--	--	--
Abandoned 3/15/11															
MW-107R															
05/17/11						6.33		0	7.85	0.8	2,691	273.2	Brown	None	2,550.30
08/24/11						6.67		0	6.81	--	--	31	Brown	None	--
12/01/11						5.93		0	--	--	--	--	Light Brown	None	--
09/28/12						4.9		0	7.36	11.62	1,216	-64.6	Brown	None	10.1
01/04/13						4.86		0	7.55	8.73	1,919	214	Clear	None	9.78
04/09/13						2.33		0	8.15	2.76	5150	-63.6	Light Brown	None	371
MW-109															
01/15/04						7.49	755.70								
02/04/04						5.45	757.74								
05/17/11						--	--	0	7.21	0.5	10,173	292	Brown	None	2,100
08/24/11	43.8108	88.4782	763.19	761.35	763.85	4.02	759.17	0	6.59	--	--	39	Brown	None	--
12/01/11						4.80	758.39	0	--	--	--	--	Light Brown	None	--
09/28/12						4.95	758.24	0	7.19	1.9	935	-3	Clear	None	10.9
01/14/13						4.3	758.89	0	7.21	2.16	981	-2.4	Clear	None	26.7
04/09/13						3.65	759.54	0	6.93	4.84	1717	104	Brown	None	470
MW-110															
09/28/12						2.01		0	7.9	11.03	240	-57.3	Clear	None	9.06
01/14/13						3.21		0	7.42	2.39	1,216	239	Clear	None	6.46
04/09/13						1.5		0	7.97	3.86	5594	-43.5	Cloudy	None	145
MW-111															
11/14/12						1.30		0	7.1	4.33	780	-75.5	Clear	None	7.67
01/11/13						3.76		0	7.15	2.36	1,293	-89.9	Clear	None	16.4
04/08/13						2.02		0	7.1	2.77	1472	-98.5	Clear	None	1.6

Notes:
All elevations are relative to a local benchmark (northeast bolt on fire hydrant at northeast corner of Minor Avenue and 4th Street).

ATTACHMENT B – Maps and Figures

B.1 Location Maps

B.1.a(1) Figure 1 – Site Location Map

B.1.a(2) Figure 2 – Legal Description Location Map

B.1.b Figure 3 – Site Layout

B.1.c Figure 1 – R&R Sites Map

B.2 Soil Figures

B.2.a NA – Same as B.2.c

B.2.b NA – Same as B.2.c

B.2.c Figure 4 – Soil Analytical Results

B.3 Groundwater Figures

B.3.a(1) Figure 3-2 – Cross Section Location Map

B.3.a(2) Figure 3-1 – Cross Section A-A'

B.3.b Figure 5 – Groundwater Analytical Exceedances

B.3.c Figure 3-2 – Groundwater Contour Map

B.3.d Figure 3 – Site Layout – Monitoring Well Locations [Same as B.1.a(2)]

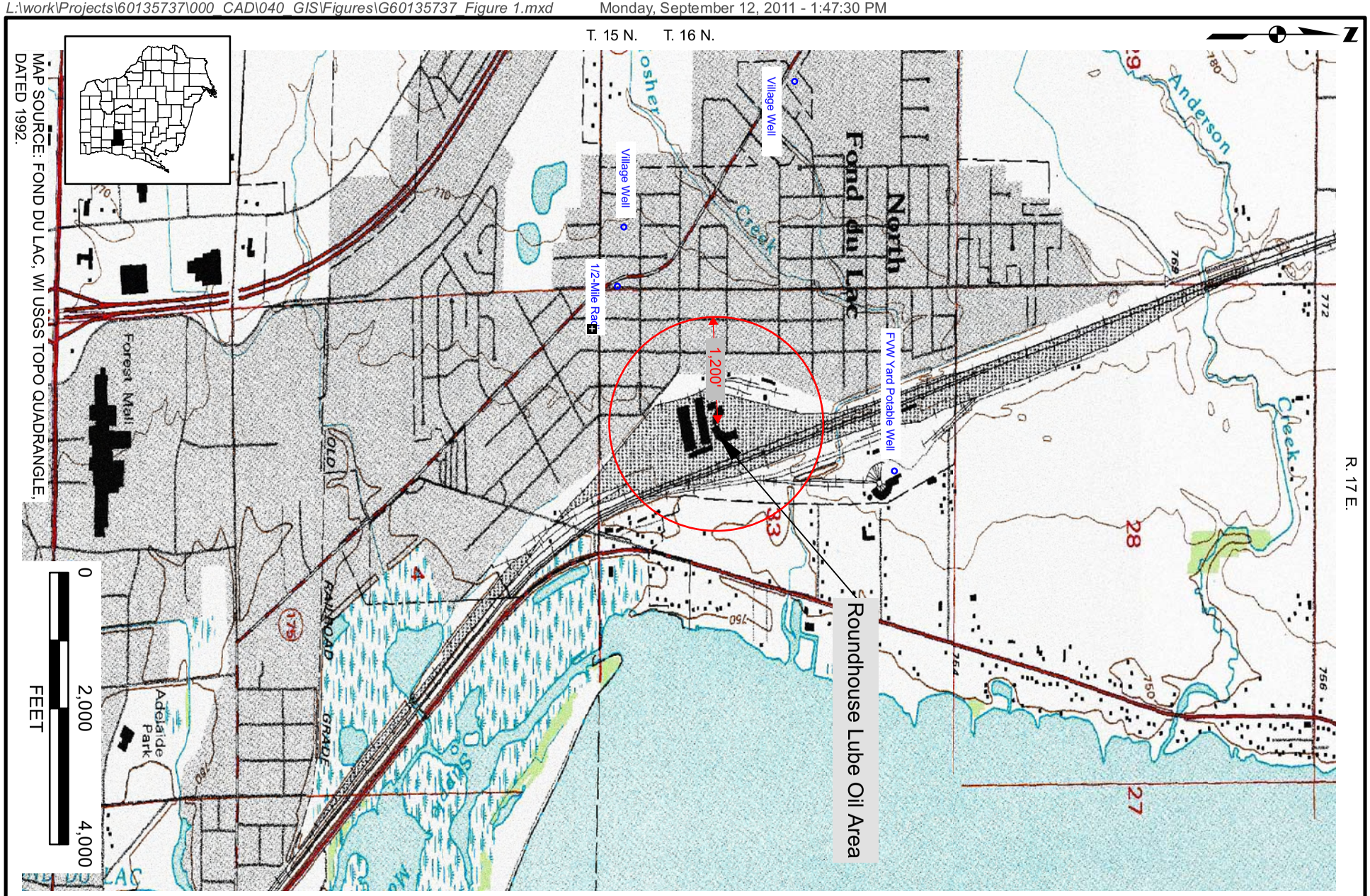
B.4 Vapor Maps and Other Media

B.4.a NA – See Table A.5 for Vapor Evaluation

B.4.b NA – No other Media of Concern

B.4.c NA – No other pertinent figures

B.1 – Location Maps



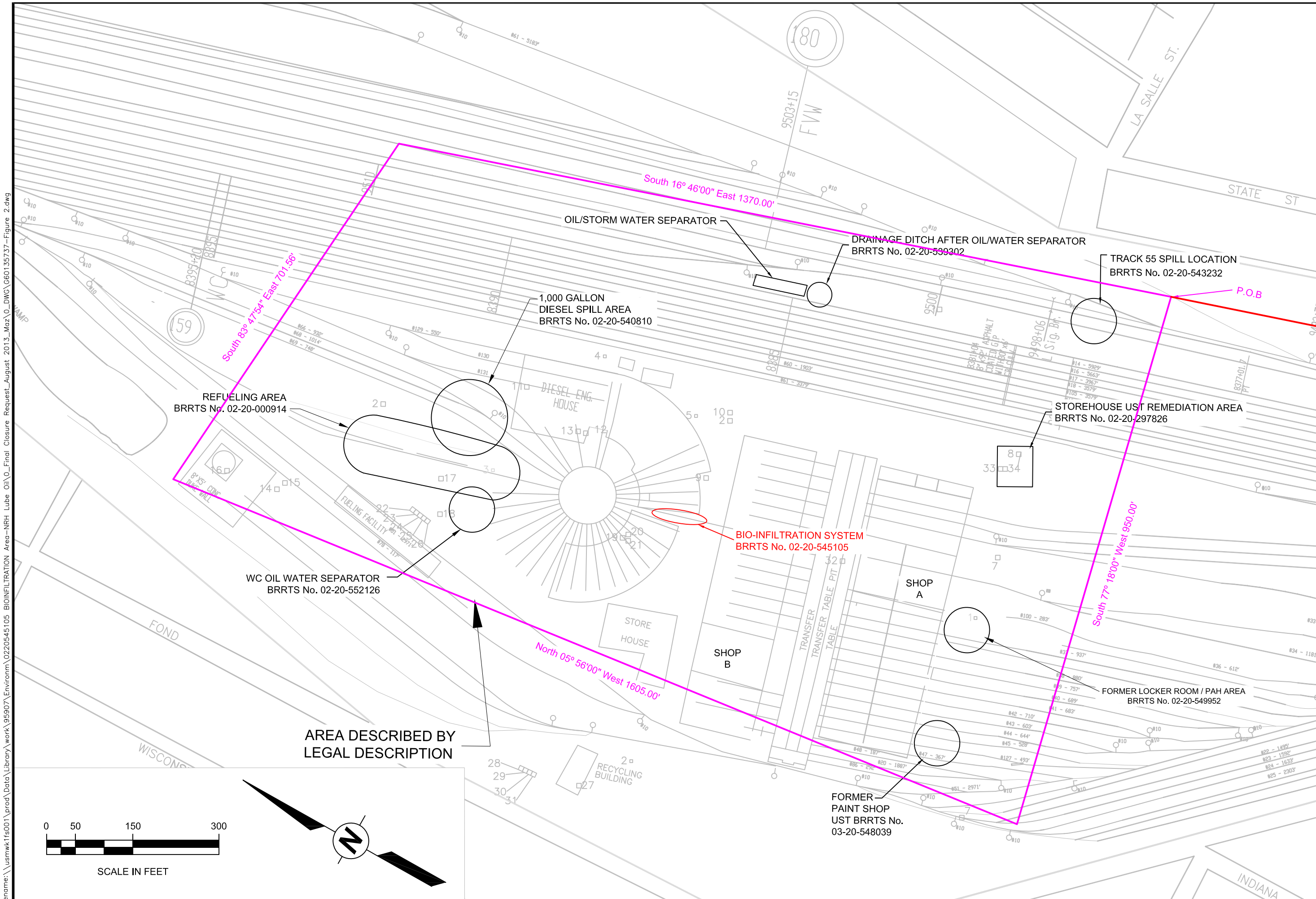
SITE LOCATION MAP

WISCONSIN CENTRAL NORTH FOND DU LAC RAIL YARD
ROUNDHOUSE LUBE OIL AREA - BRRTS#02-20-545105
NORTH FOND DU LAC, WISCONSIN

AECOM

60135737

FIGURE 1



1 INCH — VERIFY SCALE IF PLAN SHEET IS REDUCED

REV	DESCRIPTION	DRN	CHK	DATE

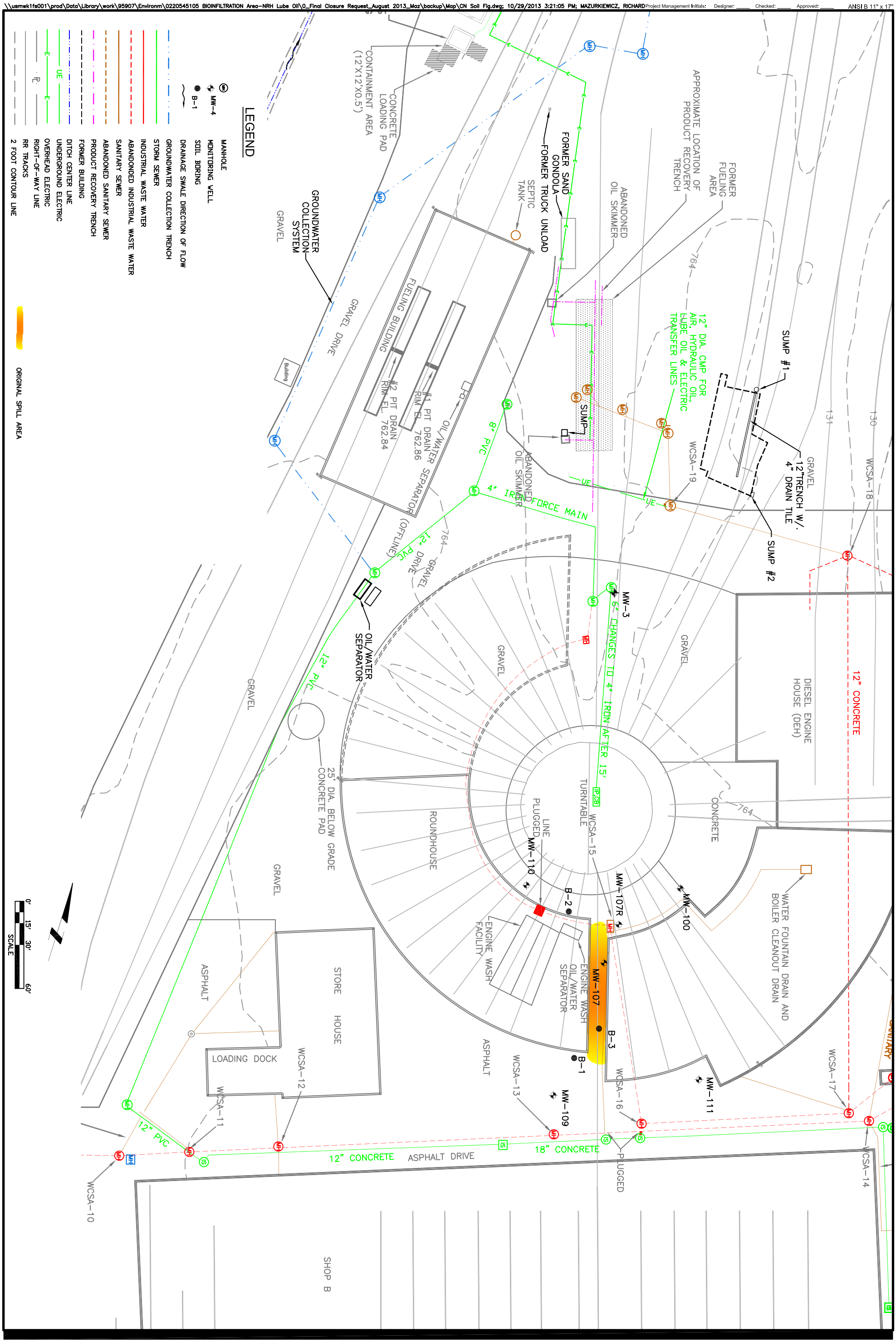
DRN BY: ALB
DES BY: RSR
CHK BY: RSR
APP BY:

WISCONSIN CENTRAL NORTH FOND DU LAC RAIL YARD
ROUNDHOUSE LUBE OIL AREA - BRRTS # 02-20-545105
NORTH FOND DU LAC, WI

LEGAL DESCRIPTION LOCATION MAP

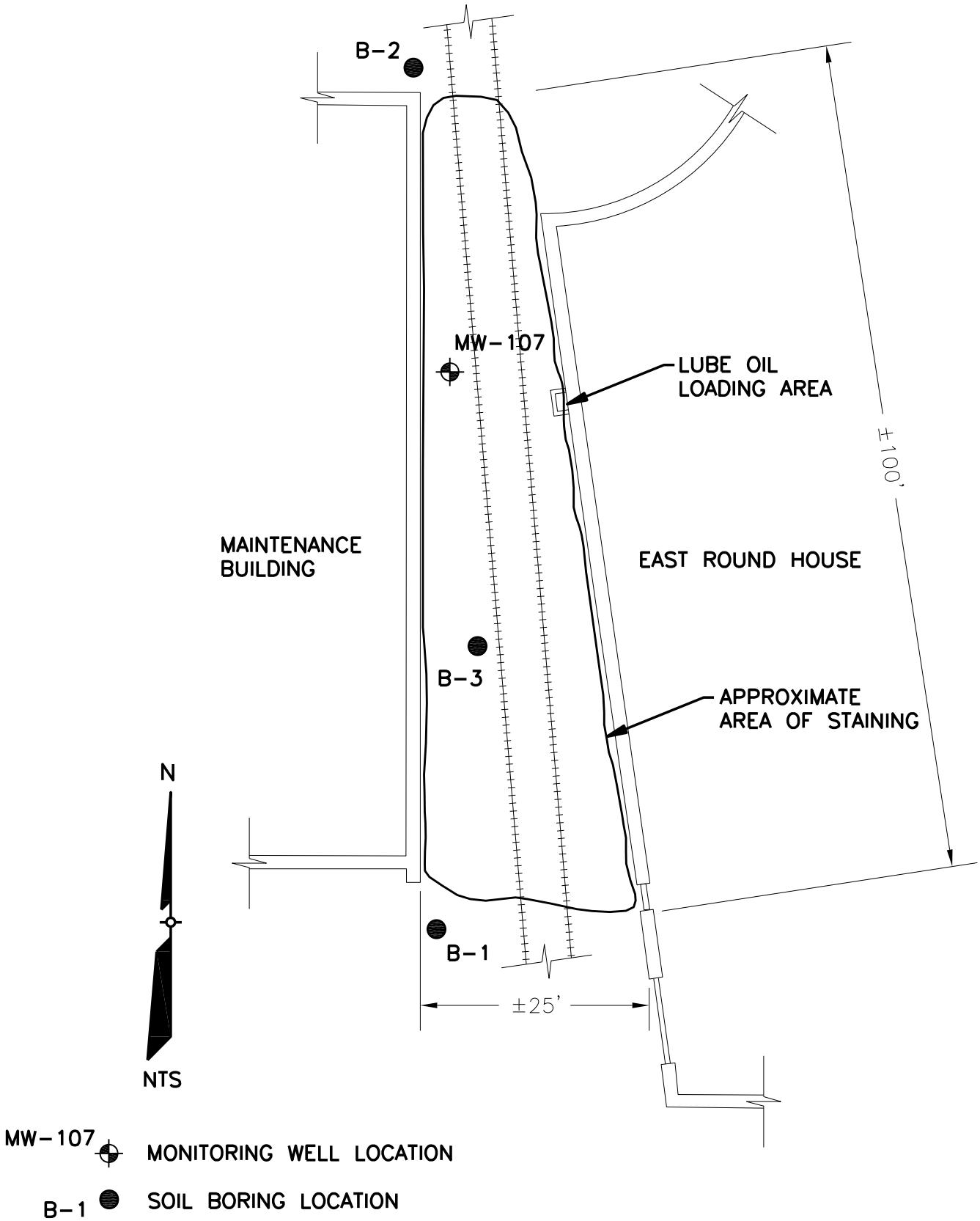
DATE	10/9/13
PROJECT NO.	60135737
FILENAME	G60135737-Figure 2.dwg
SHEET NO.	
DRAWING NO.	FIGURE 2

Filename: \\usmwk1fs001\prod\Data\Library\work\95907\Environm\0220545105 BIOINFILTRATION Area-NRH Lube Oil\0_Final Closure Request_August 2013_Maz\0_DWG\G60135737-Figure 2.dwg



SITE LAYOUT
ROUNDHOUSE LUBE OIL AREA - BRRTS #02-20-545105
WISCONSIN CENTRAL, LTD.
NORTH FOND DU LAC RAIL YARD
FOND DU LAC, WISCONSIN

AECOM
60135737
FIGURE 3



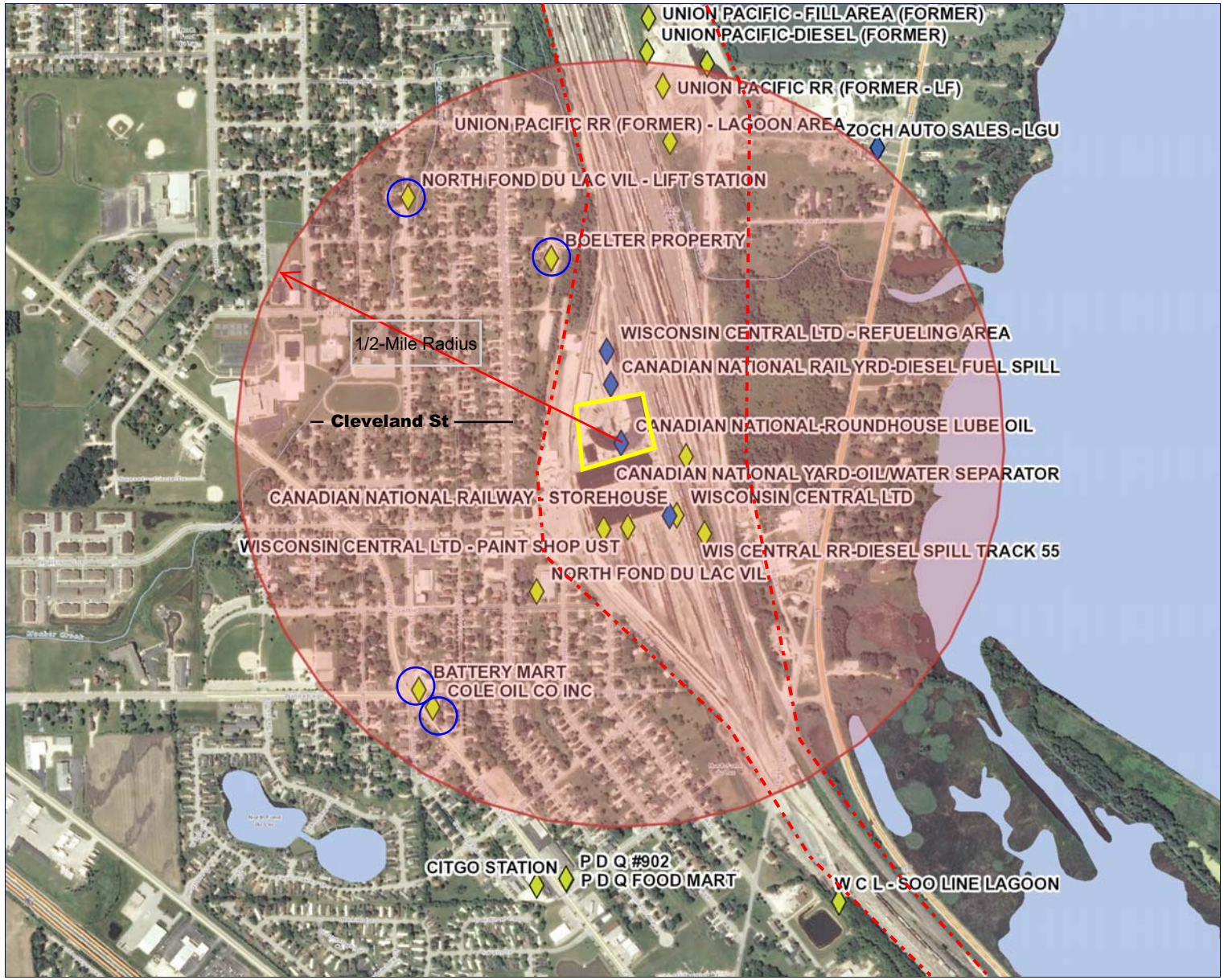
EarthTech
A Tyco International Ltd. Company

FIGURE 2
WC FOND DU LAC YARD
SAMPLE LOCATIONS
BIOREMEDIATION AREA
WISCONSIN CENTRAL LTD
FOND DU LAC, WISCONSIN

MARCH 2006 83103

File: L:\work\83103\CADD\fig2.dwg Time: Apr 13, 2006 - 8:28am

Remediation Sites Within 1/2-Mile of Central Canadian Roundhouse Lube Oil Site (BRRTS#02-20-545105)



Legend

- Open Site (ongoing cleanup)
- Open Site Boundary
- Closed Site (completed cleanup)
- Closed Site Boundary
- Airport
- Cities and Villages
  - Cities
  - Villages
- Approximate Wisconsin Central Property Boundary
- Adjacent BRRTS Activities Outside Roundhouse Lube Oil Area
- Approximate Roundhouse Lube Oil Area Boundary

0.4 0 0.20 0.4 Miles

NAD_1983_HARN_Wisconsin_TM

1: 12,696

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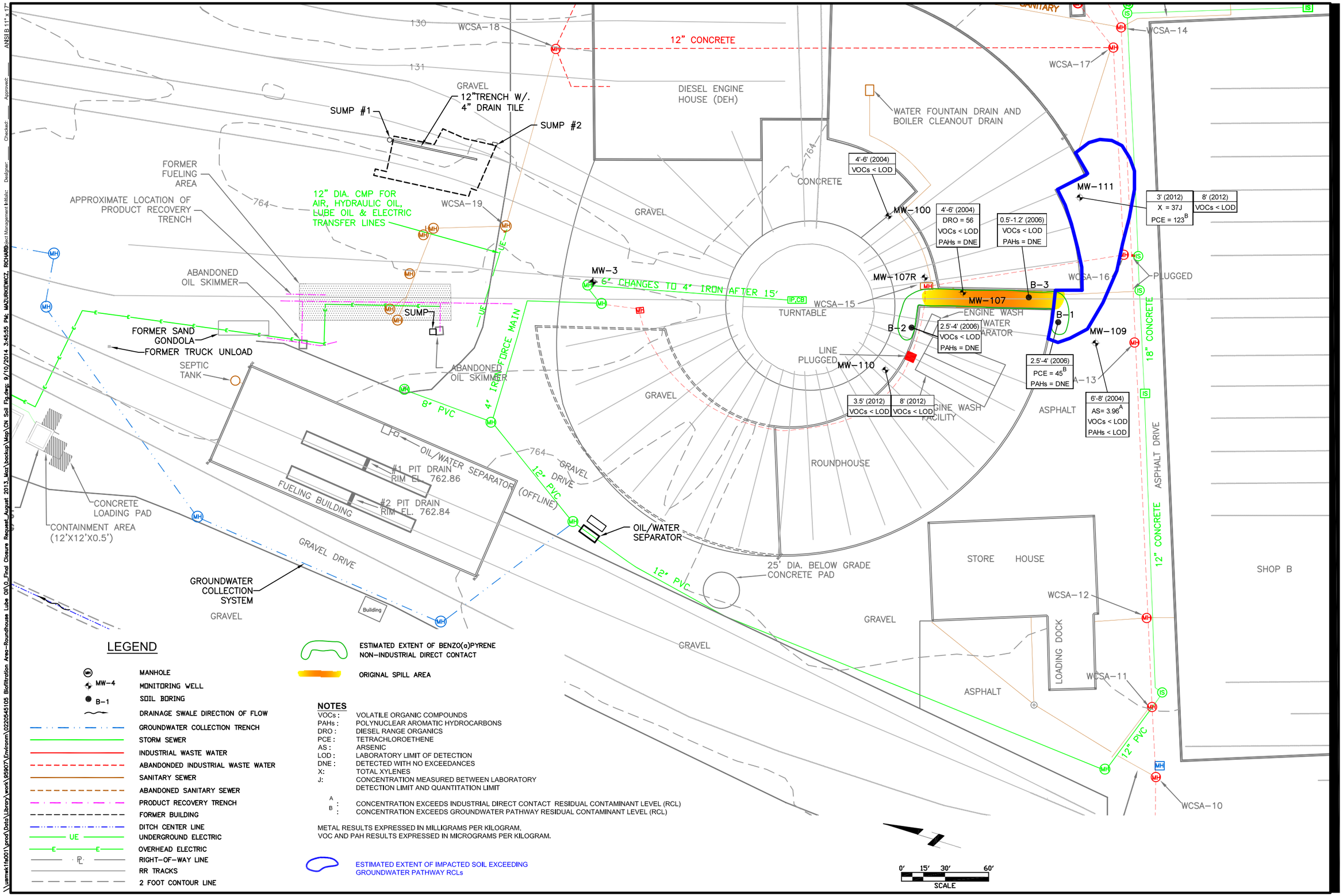
Note: Not all sites are mapped.

Notes

rpm, 10/2/2013

FIGURE 1

B.2 – Soil Figures



LEGEND

- MANHOLE
- MW-4 MONITORING WELL
- B-1 SOIL BORING
- DRAINAGE SWALE DIRECTION OF FLOW
- GROUNDWATER COLLECTION TRENCH
- STORM SEWER
- INDUSTRIAL WASTE WATER
- ABANDONDED INDUSTRIAL WASTE WATER
- SANITARY SEWER
- ABANDONED SANITARY SEWER
- PRODUCT RECOVERY TRENCH
- FORMER BUILDING
- DITCH CENTER LINE
- UE UNDERGROUND ELECTRIC
- E OVERHEAD ELECTRIC
- RIGHT-OF-WAY LINE
- RR TRACKS
- 2 FOOT CONTOUR LINE
- ESTIMATED EXTENT OF BENZO(a)PYRENE NON-INDUSTRIAL DIRECT CONTACT
- ORIGINAL SPILL AREA

NOTES

VOCs :	VOLATILE ORGANIC COMPOUNDS
PAHs :	POLYNUCLEAR AROMATIC HYDROCARBONS
DRO :	DIESEL RANGE ORGANICS
PCE :	TETRACHLOROETHENE
AS :	ARSENIC
LOD :	LABORATORY LIMIT OF DETECTION
DNE :	DETECTED WITH NO EXCEEDANCES
X:	TOTAL XYLENES
J:	CONCENTRATION MEASURED BETWEEN LABORATORY DETECTION LIMIT AND QUANTITATION LIMIT
A :	CONCENTRATION EXCEEDS INDUSTRIAL DIRECT CONTACT RESIDUAL CONTAMINANT LEVEL (RCL)
B :	CONCENTRATION EXCEEDS GROUNDWATER PATHWAY RESIDUAL CONTAMINANT LEVEL (RCL)

METAL RESULTS EXPRESSED IN MILLIGRAMS PER KILOGRAM.
VOC AND PAH RESULTS EXPRESSED IN MICROGRAMS PER KILOGRAM.

ESTIMATED EXTENT OF IMPACTED SOIL EXCEEDING GROUNDWATER PATHWAY RCLs

AECOM

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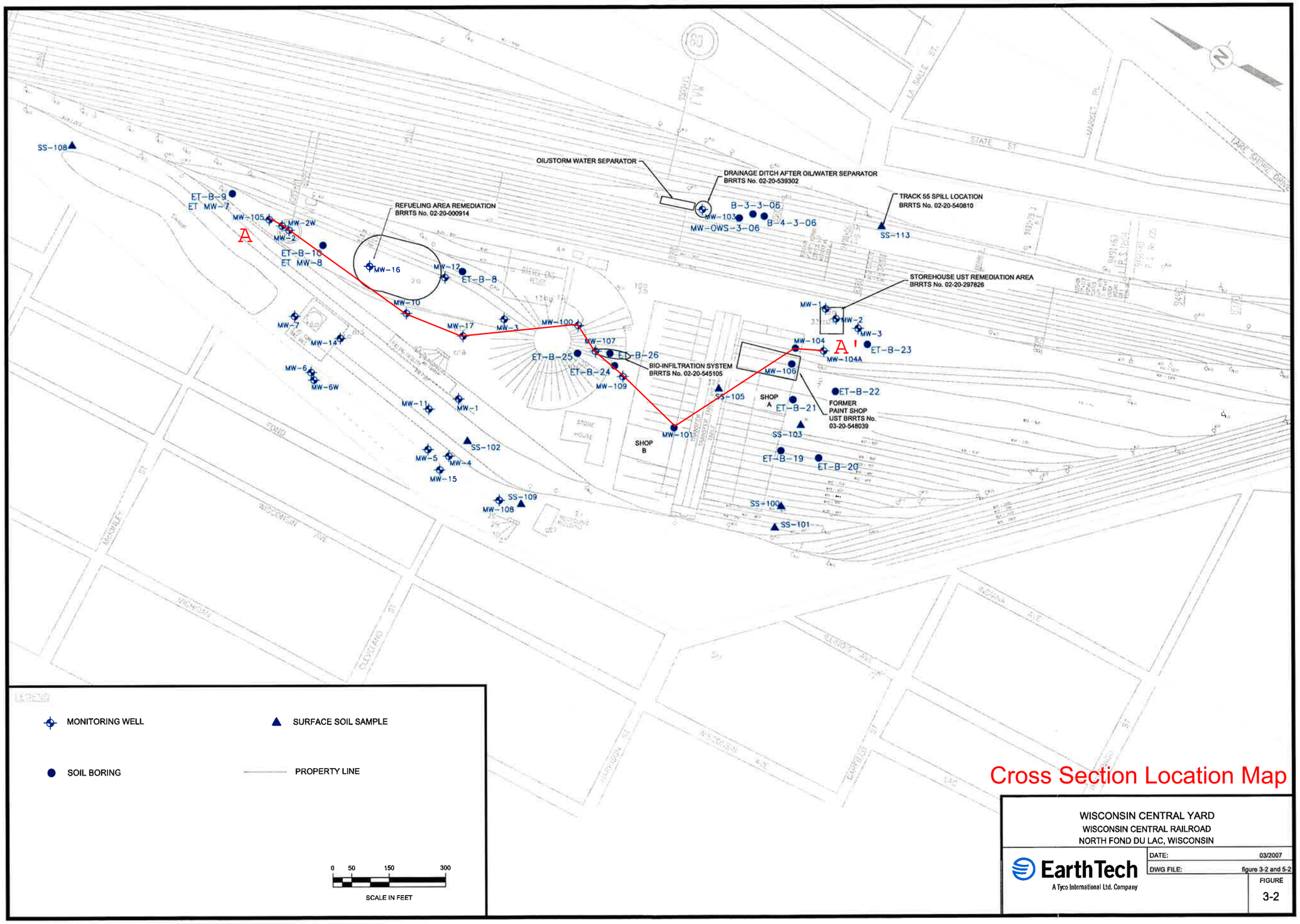
FIGURE 3

SOIL ANALYTICAL RESULTS
ROUNDHOUSE LUBE OIL AREA - BRRTS #02-20-545105
WISCONSIN CENTRAL, LTD.
NORTH FOND DU LAC RAIL YARD
FOND DU LAC, WISCONSIN

\\usmwk1fs001\prod\Data\Library\work\95907\Environm\0220545105 Biofiltration Area-Roundhouse Lube Oil\0_Final Closure Request_August 2013_Maz\backup\Map\CN Soil Fig.dwg; 9/10/2014 3:45:55 PM; MAZURKIEWICZ, RICHARD
Project Management Initials: Designer: Checked: Approved: ANSI B 11" x 17"

B.3 – Groundwater Figures

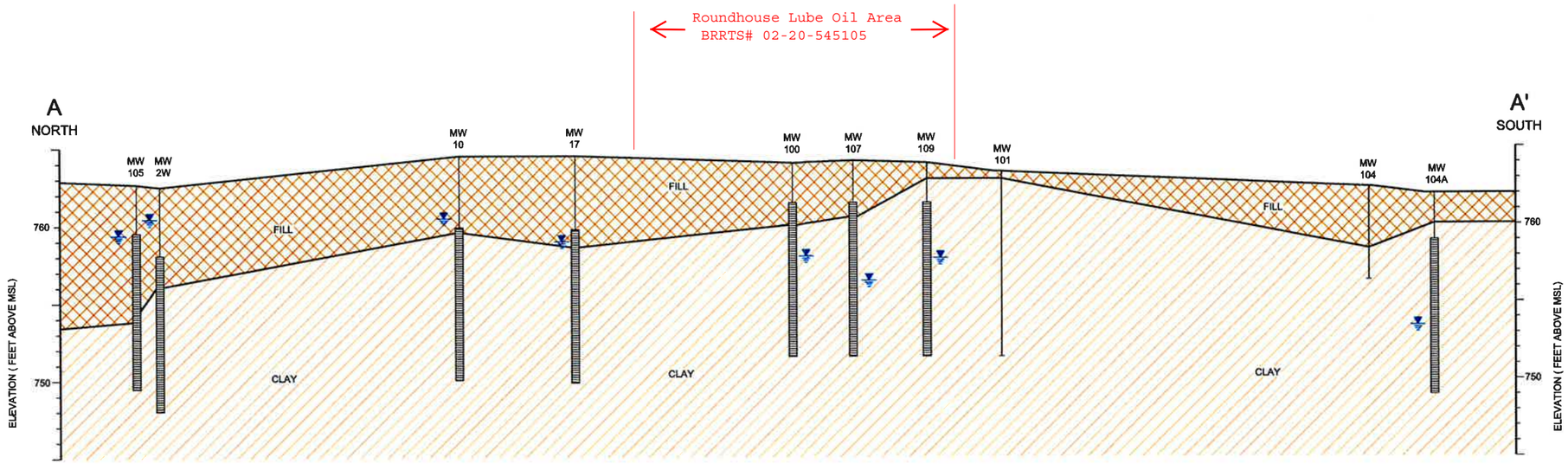


Cross Section Location Map

WISCONSIN CENTRAL YARD
WISCONSIN CENTRAL RAILROAD
NORTH FOND DU LAC, WISCONSIN

EarthTech
A Tyco International Ltd. Company

DATE:	03/2007
DWG FILE:	figure 3-2 and 5-2
FIGURE	3-2



SCALE
VERTICAL EXAGGERATION = 20X

LEGEND

FILL

CLAY

MONITORING WELL

WATER LEVELS MEASURED ON FEBRUARY 4, 2004

NOTE: GROUND ELEVATION AT MW-101 AND MW-104 ESTIMATED
MW-3 AND MW-5 WERE ABANDONED IN JUNE 2001

EarthTech
A Tyco International Ltd. Company

Note: Figure Modified by:
Earth Tech on 3-8-07

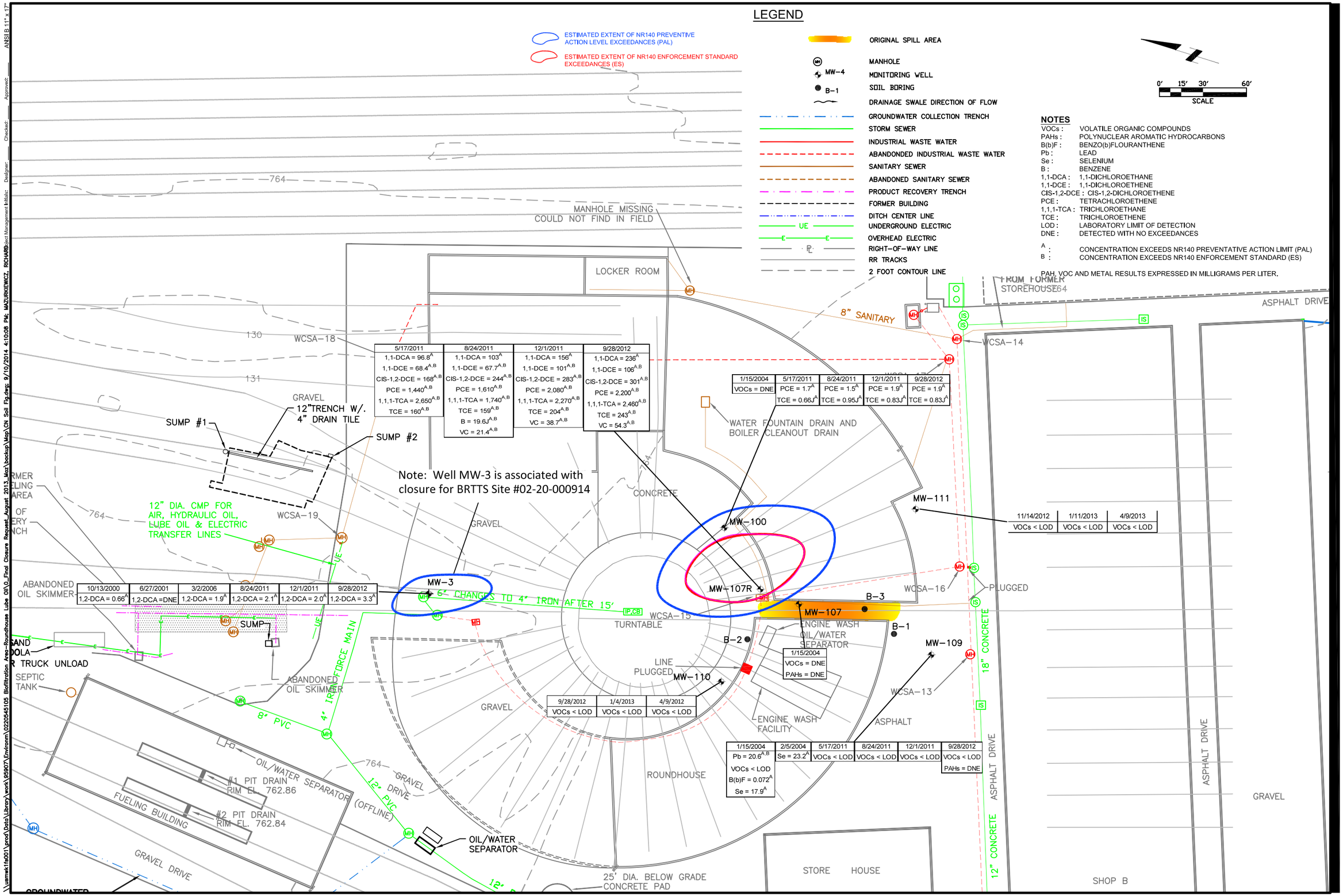
1/2-Mile Radius

WISCONSIN CENTRAL RAILROAD
NORTH FOND DU LAC, WISCONSIN

DRAWN BY:	MOH	DATE:	04/15/2004
PROJECT NO:	38539	DWG FILE:	14-04-38539

TRC
Customer-Focused Solutions
10 SOUTH RIVERSIDE PLAZA
SUITE 1770
CHICAGO, ILLINOIS 60606-3807
312-879-0191

FIGURE
3-1



5/17/2011	8/24/2011	12/1/2011	9/28/2012
1,1-DCA = 96.8[A]	1,1-DCA = 103[A]	1,1-DCA = 156[A]	1,1-DCA = 236[A]
1,1-DCE = 68.4[A,B]	1,1-DCE = 67.7[A,B]	1,1-DCE = 101[A,B]	1,1-DCE = 106[A,B]
CIS-1,2-DCE = 168[A,B]	CIS-1,2-DCE = 244[A,B]	CIS-1,2-DCE = 283[A,B]	CIS-1,2-DCE = 301[A,B]
PCE = 1,440[A,B]	PCE = 1,610[A,B]	PCE = 2,080[A,B]	PCE = 2,200[A,B]
1,1,1-TCA = 2,650[A,B]	1,1,1-TCA = 1,740[A,B]	1,1,1-TCA = 2,270[A,B]	1,1,1-TCA = 2,460[A,B]
TCE = 160[A,B]	TCE = 159[A,B]	TCE = 204[A,B]	TCE = 243[A,B]
	B = 19.6J[A,B]	VC = 38.7[A,B]	VC = 54.3[A,B]
	VC = 21.4[A,B]		

1/15/2004	5/17/2011	8/24/2011	12/1/2011	9/28/2012
VOCs = DNE	PCE = 1.7[A]	PCE = 1.5[A]	PCE = 1.9[A]	PCE = 1.9[A]
	TCE = 0.66J[A]	TCE = 0.95J[A]	TCE = 0.83J[A]	TCE = 0.83J[A]

11/14/2012	1/11/2013	4/9/2013
VOCs < LOD	VOCs < LOD	VOCs < LOD

10/13/2000	6/27/2001	3/2/2006	8/24/2011	12/1/2011	9/28/2012
1,2-DCA = 0.66[A]	1,2-DCA =DNE	1,2-DCA = 1.9[A]	1,2-DCA = 2.1[A]	1,2-DCA = 2.0[A]	1,2-DCA = 3.3[A]

1/15/2004
VOCs = DNE
PAHs = DNE

9/28/2012	1/4/2013	4/9/2012
VOCs < LOD	VOCs < LOD	VOCs < LOD

1/15/2004	2/5/2004	5/17/2011	8/24/2011	12/1/2011	9/28/2012
Pb = 20.6[A,B]	Se = 23.2[A]	VOCs < LOD	VOCs < LOD	VOCs < LOD	VOCs < LOD
VOCs < LOD					PAHs = DNE
B(b)F = 0.072[A]					
Se = 17.9[A]					

AECOM

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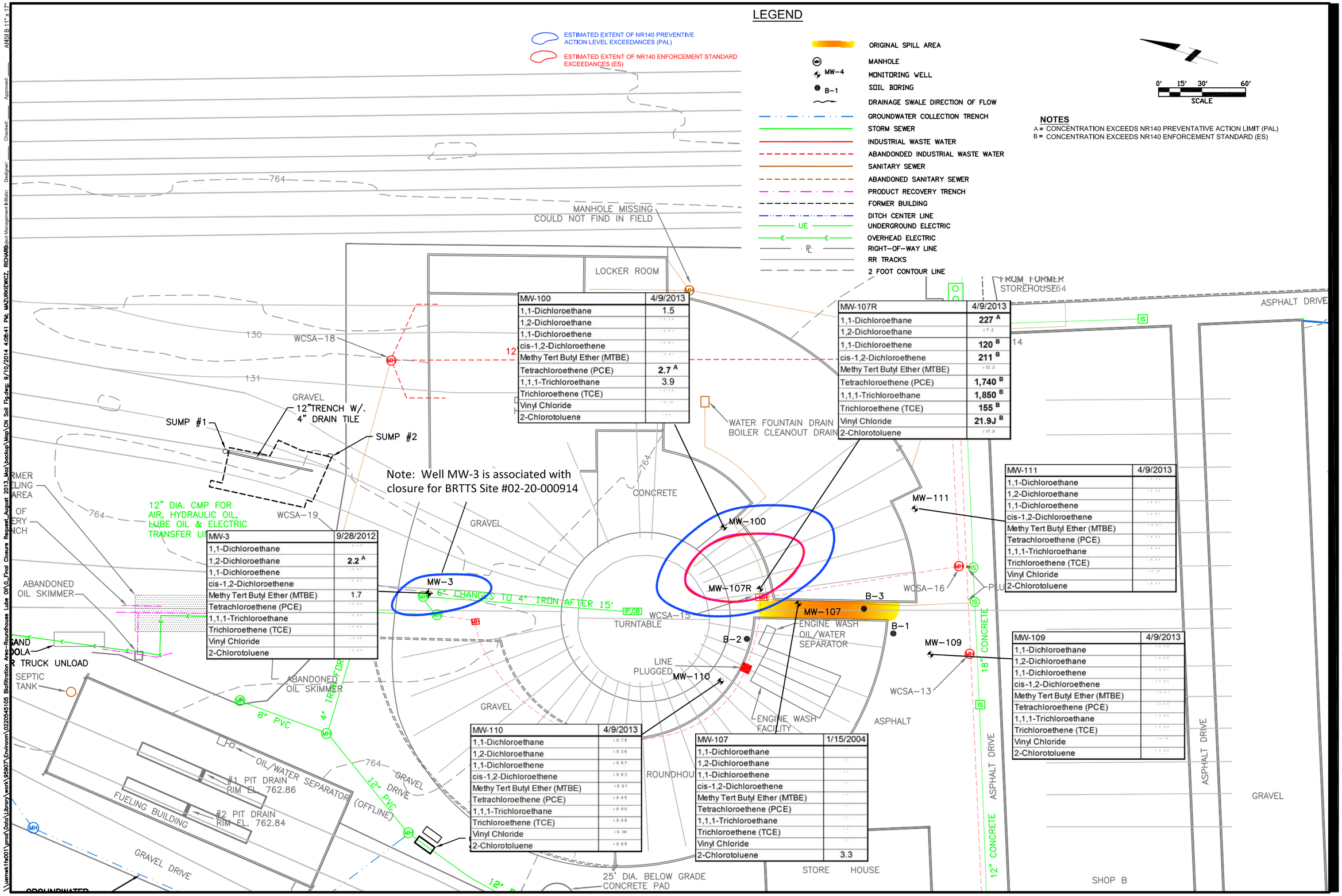
FIGURE 5

GROUNDWATER ANALYTICAL EXCEEDANCES
ROUNDHOUSE LUBE OIL AREA - BRRTS #02-20-545105
WISCONSIN CENTRAL, LTD.
NORTH FOND DU LAC RAIL YARD
FOND DU LAC, WISCONSIN

\\usmak1fs001\proj\Data\Library\work\95907\Environm\02205545105 Biofiltration Area-Roundhouse Lube Oil\0_Final Closure Request_August 2013.dwg\CN Soil Fig.dwg: 9/10/2014 4:10:08 PM: MAZURKIEWICZ, RICHARD

Project Management Initiatis: Designer: Checkers: Approver: ANSI B 11" x 17"



MW-100	4/9/2013
1,1-Dichloroethane	1.5
1,2-Dichloroethane	
1,1-Dichloroethene	
cis-1,2-Dichloroethene	
Methy Tert Butyl Ether (MTBE)	
Tetrachloroethene (PCE)	2.7 A
1,1,1-Trichloroethane	3.9
Trichloroethene (TCE)	
Vinyl Chloride	
2-Chlorotoluene	

MW-107R	4/9/2013
1,1-Dichloroethane	227 A
1,2-Dichloroethane	
1,1-Dichloroethene	120 B
cis-1,2-Dichloroethene	211 B
Methy Tert Butyl Ether (MTBE)	
Tetrachloroethene (PCE)	1,740 B
1,1,1-Trichloroethane	1,850 B
Trichloroethene (TCE)	155 B
Vinyl Chloride	21.9J B
2-Chlorotoluene	

MW-111	4/9/2013
1,1-Dichloroethane	
1,2-Dichloroethane	
1,1-Dichloroethene	
cis-1,2-Dichloroethene	
Methy Tert Butyl Ether (MTBE)	
Tetrachloroethene (PCE)	
1,1,1-Trichloroethane	
Trichloroethene (TCE)	
Vinyl Chloride	
2-Chlorotoluene	

MW-3	9/28/2012
1,1-Dichloroethane	
1,2-Dichloroethane	2.2 A
1,1-Dichloroethene	
cis-1,2-Dichloroethene	
Methy Tert Butyl Ether (MTBE)	1.7
Tetrachloroethene (PCE)	
1,1,1-Trichloroethane	
Trichloroethene (TCE)	
Vinyl Chloride	
2-Chlorotoluene	

MW-109	4/9/2013
1,1-Dichloroethane	
1,2-Dichloroethane	
1,1-Dichloroethene	
cis-1,2-Dichloroethene	
Methy Tert Butyl Ether (MTBE)	
Tetrachloroethene (PCE)	
1,1,1-Trichloroethane	
Trichloroethene (TCE)	
Vinyl Chloride	
2-Chlorotoluene	

MW-110	4/9/2013
1,1-Dichloroethane	
1,2-Dichloroethane	
1,1-Dichloroethene	
cis-1,2-Dichloroethene	
Methy Tert Butyl Ether (MTBE)	
Tetrachloroethene (PCE)	
1,1,1-Trichloroethane	
Trichloroethene (TCE)	
Vinyl Chloride	
2-Chlorotoluene	

MW-107	1/15/2004
1,1-Dichloroethane	
1,2-Dichloroethane	
1,1-Dichloroethene	
cis-1,2-Dichloroethene	
Methy Tert Butyl Ether (MTBE)	
Tetrachloroethene (PCE)	
1,1,1-Trichloroethane	
Trichloroethene (TCE)	
Vinyl Chloride	
2-Chlorotoluene	3.3

AECOM

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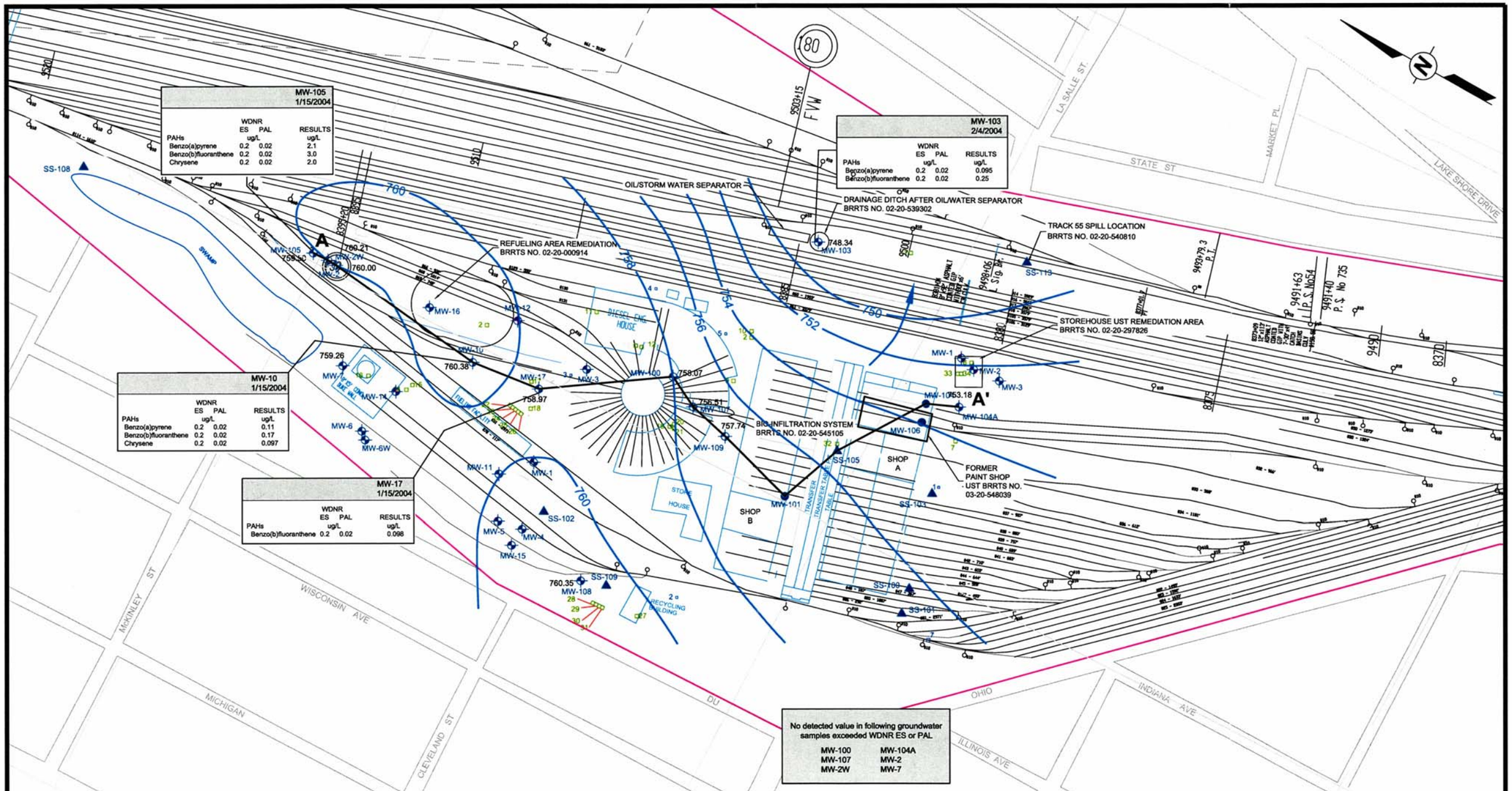
FIGURE 2

GROUNDWATER ANALYTICAL EXCEEDANCES
ROUNDHOUSE LUBE OIL AREA - BRRTS #02-20-545105
WISCONSIN CENTRAL, LTD.
NORTH FOND DU LAC RAIL YARD
FOND DU LAC, WISCONSIN

ANSI B 11" x 17"
Approved: ____
Checked: ____
Designer: ____
Project Management Initiative
\\usmwk1fs001\proc\Data\Library\work\95907\Environ\02220545105 Bioffiltration Area-Roundhouse Lube Oil\O_Final Closure Request_August 2013_Mar2\backup\Map\GN Soil Fig.dwg: 9/10/2014 4:08:41 PM: MAZURKIEWICZ, RICHARD



MW-105
1/15/2004
WDNR ES PAL RESULTS
PAHs ug/L ug/L
Benzo(a)pyrene 0.2 0.02 2.1
Benzo(b)fluoranthene 0.2 0.02 3.0
Chrysene 0.2 0.02 2.0
MW-103
2/4/2004
WDNR ES PAL RESULTS
PAHs ug/L ug/L
Benzo(a)pyrene 0.2 0.02 0.095
Benzo(b)fluoranthene 0.2 0.02 0.25
MW-10
1/15/2004
WDNR ES PAL RESULTS
PAHs ug/L ug/L
Benzo(a)pyrene 0.2 0.02 0.11
Benzo(b)fluoranthene 0.2 0.02 0.17
Chrysene 0.2 0.02 0.097
MW-17
1/15/2004
WDNR ES PAL RESULTS
PAHs ug/L ug/L
Benzo(b)fluoranthene 0.2 0.02 0.098
OIL/STORM WATER SEPARATOR
DRAINAGE DITCH AFTER OIL/WATER SEPARATOR
BRRTS NO. 02-20-539302
TRACK 55 SPILL LOCATION
BRRTS NO. 02-20-540810
REFUELING AREA REMEDIATION
BRRTS NO. 02-20-000914
STOREHOUSE UST REMEDIATION AREA
BRRTS NO. 02-20-297826
BIO INFILTRATION SYSTEM
BRRTS NO. 02-20-545105
FORMER
PAINT SHOP
UST BRRTS NO.
03-20-548039
SHOP A
SHOP B
DIESEL ENG. HOUSE
STORE HOUSE
RECYCLING BUILDING
SWAMP
A
A'
No detected value in following groundwater samples exceeded WDNR ES or PAL
MW-100 MW-104A
MW-107 MW-2
MW-2W MW-7
LEGEND
MONITORING WELL
SURFACE SOIL SAMPLE
SOIL BORING
PROPERTY LINE
GROUNDWATER FLOW DIRECTION
GROUNDWATER CONTOUR LINES (INTERVAL 2 FEET)
PAHs POLYNUCLEAR AROMATIC HYDROCARBONS
WDNR ES WISCONSIN DNR ENFORCEMENT STANDARD
WDNR PAL WISCONSIN DNR PREVENTATIVE ACTION LIMIT
COMPOUNDS WERE DETECTED AT CONCENTRATIONS ABOVE THE WDNR ES AND PAL IN MW-103 AND MW-105 ONLY, IN JANUARY AND FEBRUARY 2004.
0 50 150 300
SCALE IN FEET
EarthTech
A Tyco International Ltd. Company
Note: Figure Modified by:
Earth Tech on 3-16-07
GROUNDWATER CONTOUR MAP
WISCONSIN CENTRAL YARD
WISCONSIN CENTRAL RAILROAD
NORTH FOND DU LAC, WISCONSIN
DRAWN BY: MB, MDH DATE: 04/13/2004
PROJECT NO: 38539 DWG FILE: 13-04-38539
TRC
Customer-Focused Solutions
10 SOUTH RIVERSIDE PLAZA
SUITE 1770
CHICAGO, IL 60606-3807
312-879-0191
FIGURE
3-2

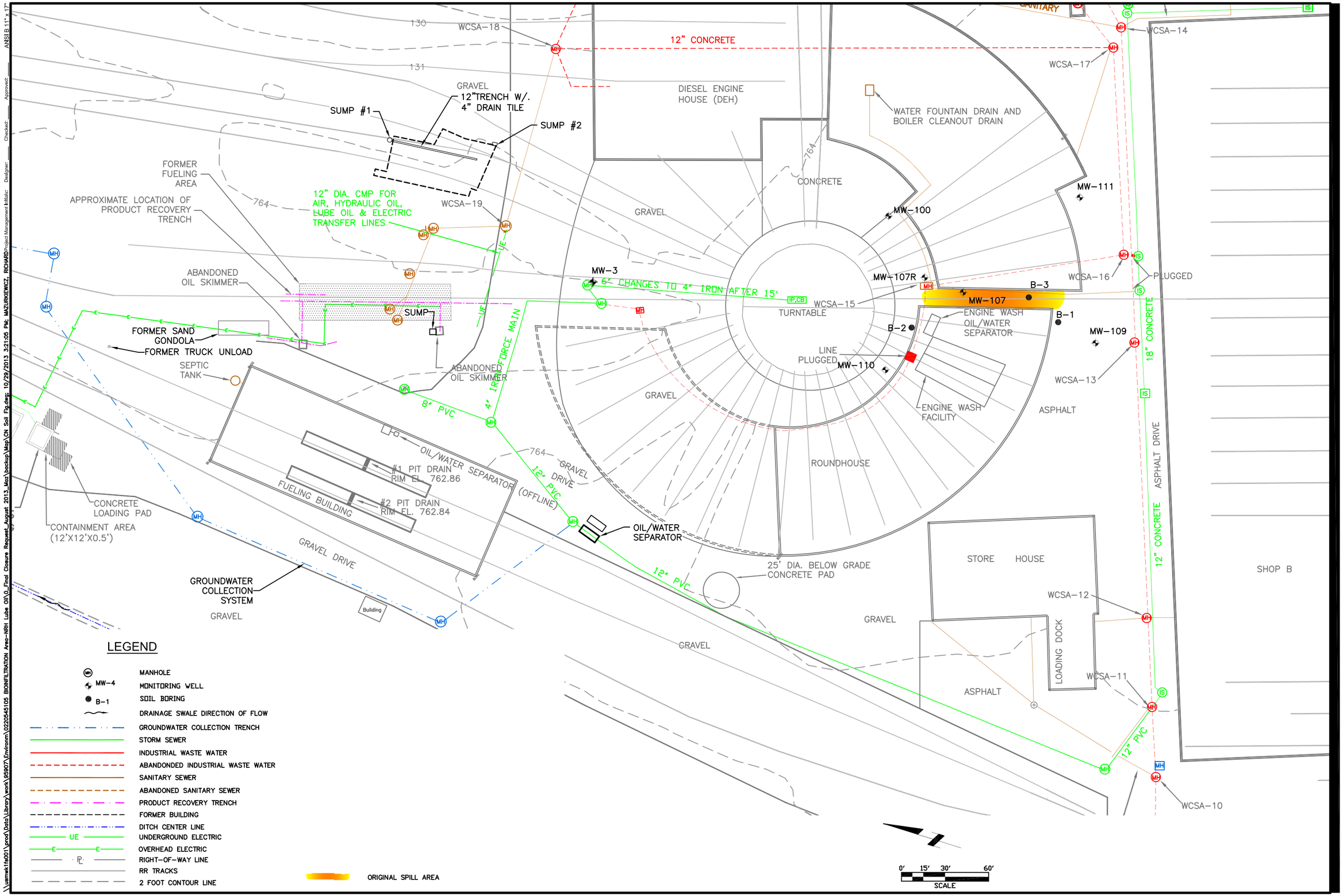


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FIGURE 3

SITE LAYOUT
ROUNDHOUSE LUBE OIL AREA - BRRTS #02-20-545105
WISCONSIN CENTRAL, LTD.
NORTH FOND DU LAC RAIL YARD
FOND DU LAC, WISCONSIN

Documentation of Remedial Action (Attachment C)

DISCLAIMER

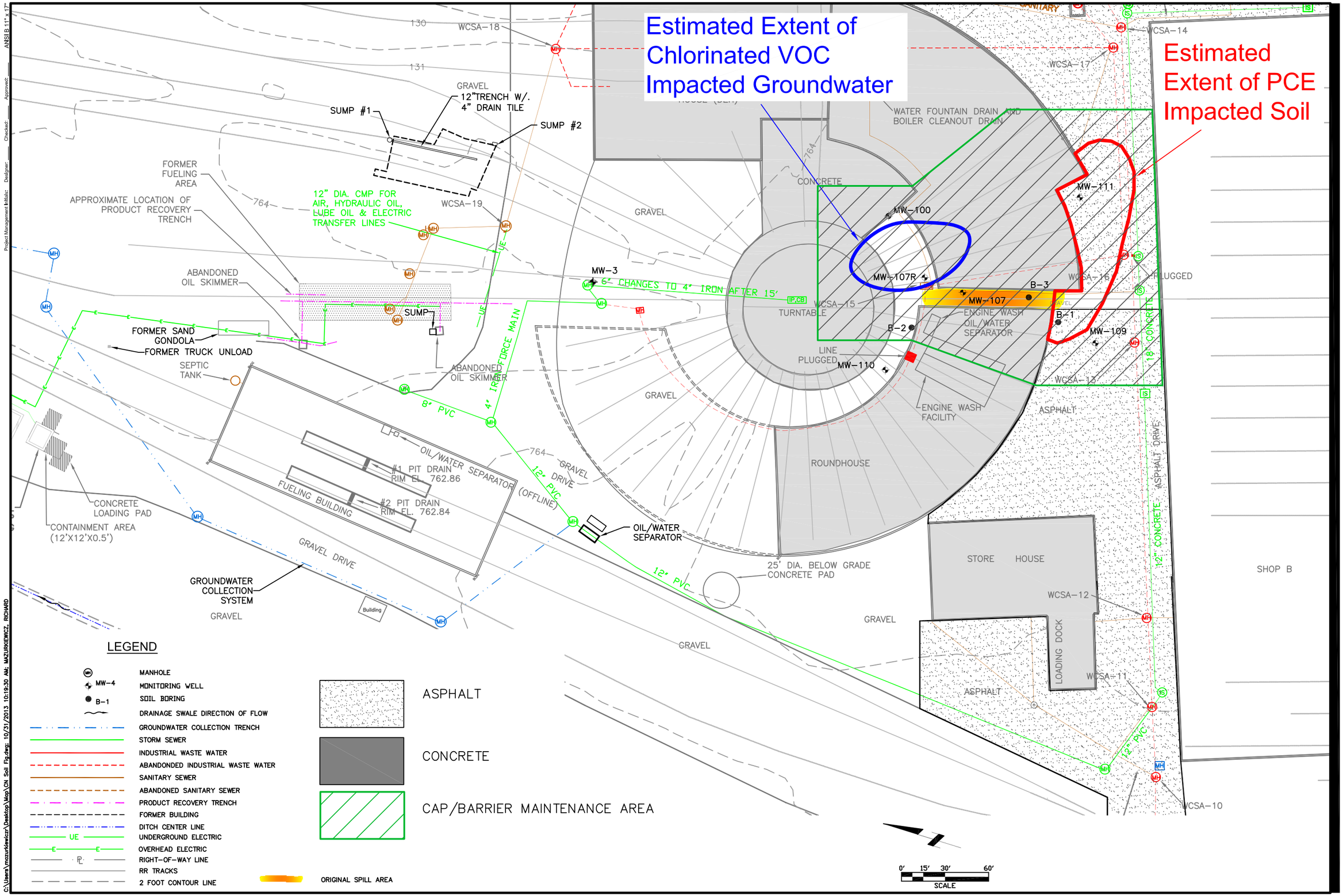
Documents contained in Attachment C of the Case Closure – GIS Registry (Form 4400-202) are not included in the electronic version (GIS Registry Packet) available on RR Sites Map to limit file size.

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

WISCONSIN
DEPT. OF NATURAL RESOURCES

ATTACHMENT D – Maintenance Plan

D.1	Location Maps	D.1-4 Maps and Inspection Log
		D.1 – Cap Barrier Maintenance Plan-Surface Cover Map
D.2	Brief Descriptions	D.2-3-5 – Cap Barrier Maintenance Plan-Text
D.3	Description of Maintenance Action(s)	D.2-3-5 – Cap Barrier Maintenance Plan-Text
D.4	Inspection Log	D.1-4 Maps and Inspection Log
D.5	Contact Information	D.2-3-5 – Cap Barrier Maintenance Plan-Text



AECOM

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FIGURE 3

CAP/BARRIER MAINTENANCE PLAN - CAP/BARRIER MAINTENANCE AREA

ROUNDHOUSE LUBE OIL AREA - BRRTS #02-20-545105

WISCONSIN CENTRAL, LTD.

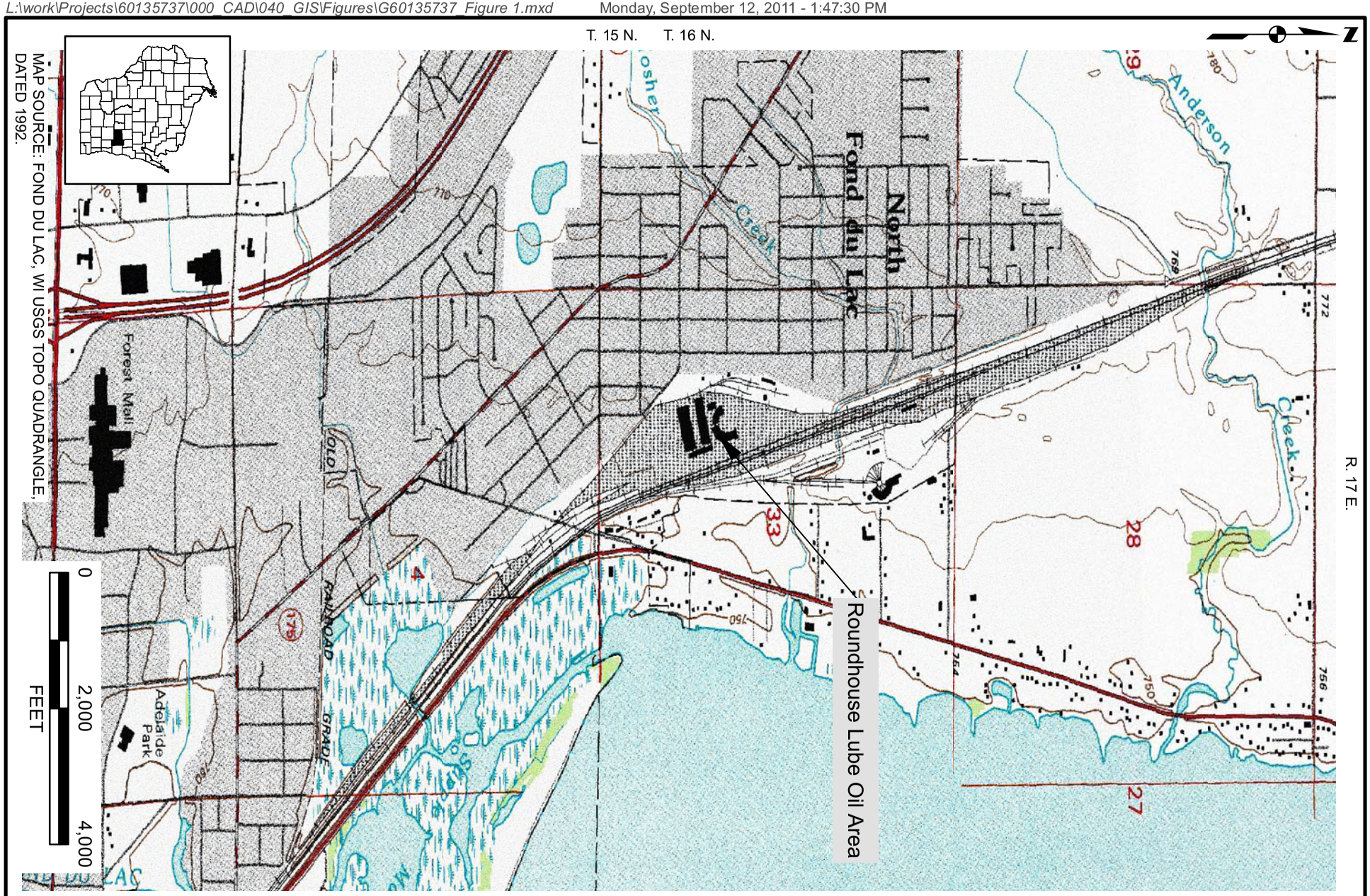
NORTH FOND DU LAC RAIL YARD

FOND DU LAC, WISCONSIN

C:\Users\mazurkiewiczr\Desktop\Map\CN Soil Fig.dwg; 10/31/2013 10:19:30 AM; MAZURKIEWICZ, RICHARD

Project Management Initials: Designer: Checked: Approved: ANSI B 11" x 17"

Figures



MAP SOURCE: FOND DU LAC, WI USGS TOPO QUADRANGLE, DATED 1992.

SITE LOCATION MAP

WISCONSIN CENTRAL NORTH FOND DU LAC RAIL YARD
ROUNDHOUSE LUBE OIL AREA - BRRTS#02-20-545105
NORTH FOND DU LAC, WISCONSIN

AECOM

60135737

FIGURE 1

SOUTH 16°46'00" EAST 1370.00'

OIL/STORM WATER SEPARATOR

DRAINAGE DITCH AFTER OIL/WATER SEPARATOR
BRRTS No. 02-20-539302

TRACK 55 SPILL LOCATION
BRRTS No. 02-20-543232

P.O.B.

SOUTH 83°47'54" EAST 701.56'

1,000 GALLON
DIESEL SPILL AREA
BRRTS No. 02-20-540810

REFUELING AREA
BRRTS No. 02-20-000914

Roundhouse Lube Oil Area
BRRTS# 02-20-545105

WC OIL WATER SEPARATOR
BRRTS No. 02-20-552126

SOUTH 77°18'00" WEST 950.00'

NORTH 05°56'00" WEST 1605.00'

FORMER LOCKER ROOM / PAH AREA
BRRTS No. 02-20-549952

AREA DESCRIBED BY
LEGAL DESCRIPTION

FORMER
PAINT SHOP
UST BRRTS No.
03-20-548039

0 50 150 300

SCALE IN FEET

VERIFY SCALE IF PLAN SHEET IS REDUCED

REV	DESCRIPTION	DRN	CHK	DATE

DRN BY: ALB
DES BY: RSR
CHK BY: RSR
APP BY:

AECOM
200 Indiana Avenue
Stevens Point, WI 54481
T 715.341.8110 F 715.341.7390
WWW.AECOM.COM

WISCONSIN CENTRAL NORTH FOND DU LAC RAIL YARD
1/2-Mile Radius
NORTH FOND DU LAC, WI

LEGAL DESCRIPTION LOCATION MAP

DATE 4/9/2012
PROJECT NO. 60135737
FILENAME G60135737-Figure 2_Maintenance Cap
SHEET NO.
DRAWING NO. FIGURE 2

Filename: L:\work\Projects\60135737\000_CAD\001_Drawings\Sheets\Refueling Area GIS\G60135737-Figure 2_Maintenance Cap.dwg

Exhibit A

State of Wisconsin
Department of Natural Resources
dnr.wi.gov

Continuing Obligations Inspection and Maintenance Log

Form 4400-305 (2/14)

Directions: In accordance with s. NR 727.05 (1) (b) 3., Wis. Adm. Code, use of this form for documenting the inspections and maintenance of certain continuing obligations is required. 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.]. When using this form, identify the condition that is being inspected. See the closure approval letter for this site for requirements regarding the submittal of this form to the Department of Natural Resources. A copy of this inspection log is required to be maintained either on the property, or at a location specified in the closure approval letter. Do NOT delete previous inspection results. This form was developed to provide a continuous history of site inspection results. The Department of Natural Resources project manager is identified in the closure letter. The project manager may also be identified from the database, BRRTS on the Web, at http://dnr.wi.gov/botw/SetUpBasicSearchForm.do, by searching for the site using the BRRTS ID number, and then looking in the "Who" section.

Activity (Site) Name	BRRTS No.
CANADIAN NATIONAL-ROUNDHOUSE LUBE OIL	02-20-545105

Inspections are required to be conducted (see closure approval letter):

- (●) annually
- ( ) semi-annually
- ( ) other – specify _____

When submittal of this form is required, submit the form electronically to the DNR project manager. An electronic version of this filled out form, or a scanned version may be sent to the following email address (see closure approval letter):

Inspection Date	Inspector Name	Item	Describe the condition of the item that is being inspected	Recommendations for repair or maintenance	Previous recommendations implemented?	Photographs taken and attached?
		☐ monitoring well ☒ cover/barrier ☐ vapor mitigation system ☐ other:			( ) Y ( ) N	( ) Y ( ) N
		☐ monitoring well ☐ cover/barrier ☐ vapor mitigation system ☐ other:			( ) Y ( ) N	( ) Y ( ) N
		☐ monitoring well ☐ cover/barrier ☐ vapor mitigation system ☐ other:			( ) Y ( ) N	( ) Y ( ) N
		☐ monitoring well ☐ cover/barrier ☐ vapor mitigation system ☐ other:			( ) Y ( ) N	( ) Y ( ) N
		☐ monitoring well ☐ cover/barrier ☐ vapor mitigation system ☐ other:			( ) Y ( ) N	( ) Y ( ) N
		☐ monitoring well ☐ cover/barrier ☐ vapor mitigation system ☐ other:			( ) Y ( ) N	( ) Y ( ) N

{Click to Add/Edit Image} Date added: 10/29/2013

Title: Gravel area (over CVOC impacted groundwater).

{Click to Add/Edit Image} Date added: 10/29/2013

Title: Concrete turntable area (over CVOC impacted groundwater area).

{Click to Add/Edit Image} Date added: 10/29/2013

Title: Photograph taken of original petroleum spill area.

{Click to Add/Edit Image} Date added: 10/29/2013

Title: Asphalt area over the PCE impacted soil area.

{Click to Add/Edit Image} Date added: 10/29/2013

Title: PCE impacted soil area-W of spill area between Roundhouse sections.

CAP/BARRIER MAINTENANCE PLAN

October 29, 2013

Property Located at:
North Fond du Lac Rail Yard – Roundhouse Lube Oil Area
2 Harrison Street
North Fond du Lac, Wisconsin
(See **Figures 1** and **2**)

Wisconsin Department of Natural Resources (WDNR) Reference Information:
BRRTS No. – 02-20-545105
FID No. – 420092420

Legal Description:
Due to the large size of the North Fond du Lac Rail Yard the following legal description (as shown on **Figure 1**) describes the southern portion of the North Fond du Lac Rail Yard, which includes the Roundhouse Lube Oil Area.

That part of the Southwest 1/4 of Section 33, Township 16 North, Range 17 East, in the Village of North Fond du Lac, County of Fond du Lac, State of Wisconsin, more particularly described as:

Commencing at the Southeast corner of said Southwest 1/4 section;
Thence South 89°50'27" West, 121.71 feet, along the south line of said 1/4 Section;
Thence North 16°46'00" West, 1133.41 feet, to the point of beginning;
Thence South 77°18'00" West, 950.00 feet;
Thence North 05°56'00" West, 1605.00 feet;
Thence South 83°47'54" East, 701.56 feet;
Thence South 16°46'00" East, 1370.00 feet, to the point of beginning.

This area contains 1,199,529.80 square feet, or 27.5374 acres, more or less.

Introduction:
This Maintenance Plan established for direct contact issues at the above referenced property meets the requirements of s. NR 724.13(2), Wisconsin Administrative Code. The original spill related to the observation of apparent petroleum staining along the former lube oil dispensing track in an alcove between two sections of the Roundhouse (**Figure 2**). The maintenance activities relate to the concrete and gravel (covering the chlorinated groundwater impact area) and asphalt, concrete, and gravel (covering the tetrachloroethene [PCE] impacted soil area) surfaces that cover the impacts at the Roundhouse Lube Oil area of the site (as shown on the attached **Figure 3**).

Cap-Barrier Purpose:
The concrete pavement over the impacted groundwater area beneath the roundhouse and the asphalt over the PCE impacted soil area will be maintained to limit the infiltration of surface water, thus minimizing the potential of chlorinated compounds to leach into groundwater. The concrete and asphalt surfaces also provide as a barrier to prevent direct contact with residual chlorinated soil and/or groundwater that might otherwise pose a threat to human health. The public will not encounter the chlorinated impacted soil and groundwater beneath affected areas. Based on the current and future use of the property, the existing concrete and asphalt cap-barrier should function as intended unless disturbed.

Annual Inspection:
The surface overlying the residual contaminated soil and groundwater in the Roundhouse Lube Oil Area will be inspected once a year (normally in the spring after the snow and ice has melted) for asphalt and concrete cracking, settling, and other potential problems that may cause exposure to underlying soils and/or groundwater. The inspections will be performed to evaluate damage due to settling, exposure to the weather, wear from traffic, and other factors. Areas where soils have become or are likely to become exposed will be documented.

A log of the inspections and repairs, if any, will be maintained by the property owner. An example inspection log is included as **Exhibit A**, Cap Inspection Log. The log will include recommendations for necessary repairs. Once repairs are completed, they will be documented in the inspection log. A copy of the inspection log will be maintained by the Property owner, unless otherwise directed in the WDNR case closure letter.

Maintenance Activities:
If problems are noted during the annual inspections or at another time during the year, repairs will be completed as soon as practical. Repairs may include the addition, replacement, or maintenance of concrete and/or asphalt in the Roundhouse Lube Oil Area. In the event that necessary maintenance activities expose the underlying soil, the owner will inform maintenance workers of the exposure hazard and provide them with appropriate personal protection equipment (PPE). Residual contaminated soil that is excavated during maintenance activities will be treated, stored, or disposed of by the owner in accordance with applicable local, state and federal law.

Amendment or Withdrawal of Maintenance Plan:
This maintenance plan can be amended or withdrawn by the property owner and its successors with written approval of the WDNR.

Contact Information (as of October 2013):

Site Owner and Operator:
Mr. Brian Hayden
Wisconsin Central, Ltd.
1 Waterfront Drive
PO Box 509
Two Harbors, MN 55616

Consultant:
Mr. Dennis Lawton
AECOM
1555 N RiverCenter Drv Ste 214
Milwaukee, Wisconsin 53212

WDNR:
Mr. Keld Lauridsen
Wisconsin Department of Natural Resources
Northeast Regional Office
2984 Shawano Avenue
Green Bay, WI 54313-6727

ATTACHMENT E – Monitoring Well Information

NA – All monitoring wells have been located and will be abandoned upon WDNR granting closure

ATTACHMENT F – Notification to Owners of Impacted Properties

NA – No off-site properties are impacted.

ATTACHMENT G

G.1 NA – Deeds not available for railroad properties – See G.2

G.2 Figure 2 – Legal Description Location Map

G.3 NA – Railroad properties are exempt from zoning requirements

G.4 Signed Statement – Letter Dated October 2013 – Refer to legal description in G.2

AECOM

AECOM
200 Indiana Avenue
Stevens Point, WI 54481
www.aecom.com

715 341 8110 tel
715 341 7390 fax

Memorandum

To WDNR

CC

Subject Legal Description – Former Locker Room/PAH Area

From Dick Reesman

Date 10/31/11

Due to the large size of the North Fond du Lac Rail Yard the following legal description (as shown on Figure 2) describes the southern portion of the North Fond du Lac Rail Yard, which includes the Former Locker Room/PAH Area.

That part of the Southwest ¼ of Section 33, Township 16 North, Range 17 East, in the Village of North Fond du Lac, County of Fond du Lac, State of Wisconsin, more particularly described as:

Commencing at the Southeast corner of said Southwest ¼ section;
Thence South 89°50′27″ West, 121.71 feet, along the south line of said ¼ Section;
Thence North 16°46′00″ West, 1133.41 feet, to the point of beginning;
Thence South 77°18′00″ West, 950.00 feet;
Thence North 05°56′00″ West, 1605.00 feet;
Thence South 83°47′54″ East, 701.56 feet;
Thence South 16°46′00″ East, 1370.00 feet, to the point of beginning.

This area contains 1,199,529.80 square feet, or 27.5374 acres, more or less.

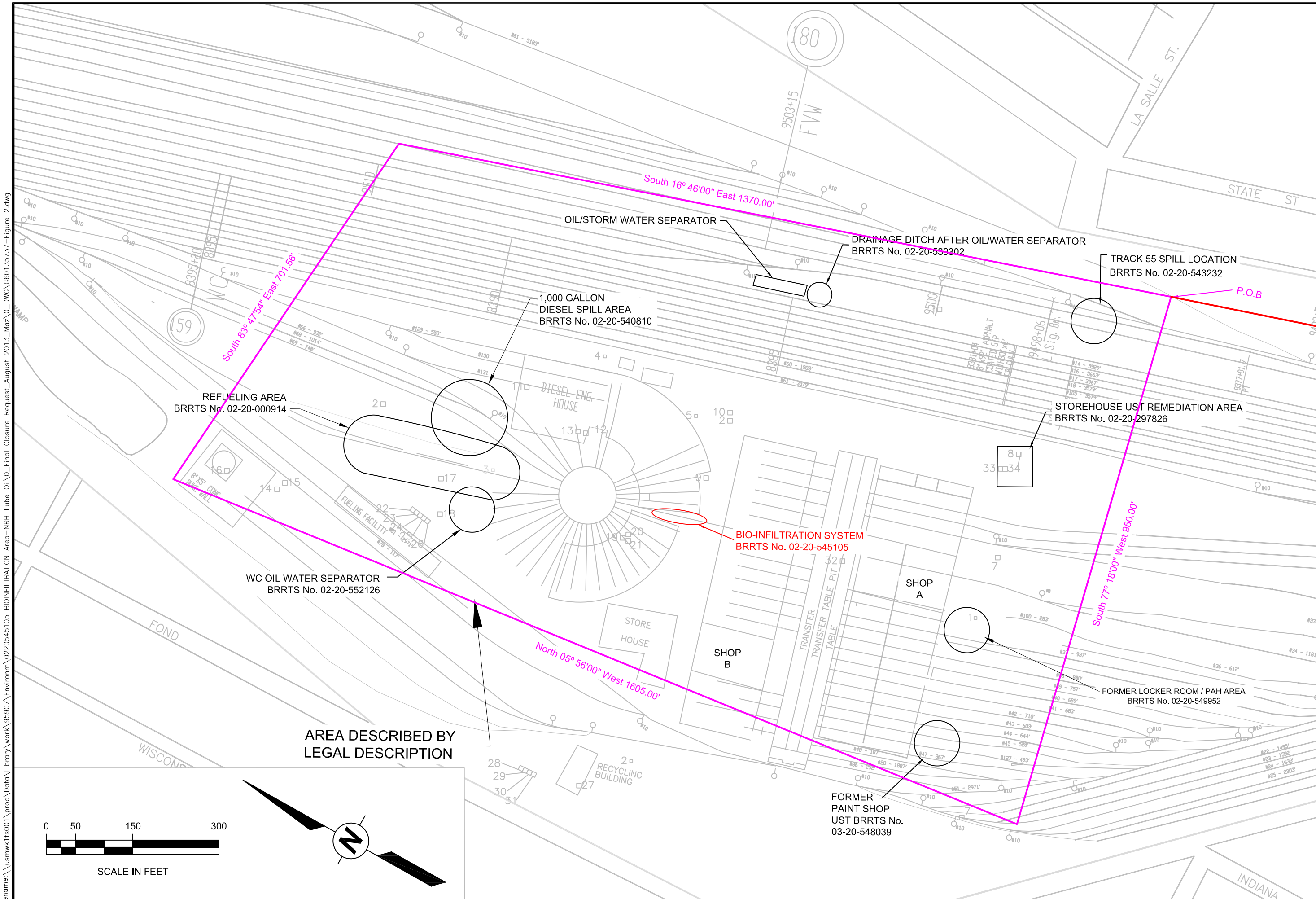
An illustration of the area described in the above legal description is presented on the attached Figure 2.

The WTM coordinates for the PAH Area are: 642604E, 371847N. The WTM coordinates were obtained from the Wisconsin Department of Natural Resources RR Sites Map.

Regards,

Dick Reesman

Dick Reesman, P.E.
Senior Project Engineer
richard.reesman@aecom.com



1 INCH — VERIFY SCALE IF PLAN SHEET IS REDUCED

REV	DESCRIPTION	DRN	CHK	DATE

DRN BY: ALB
DES BY: RSR
CHK BY: RSR
APP BY:

WISCONSIN CENTRAL NORTH FOND DU LAC RAIL YARD
ROUNDHOUSE LUBE OIL AREA - BRRTS # 02-20-545105
NORTH FOND DU LAC, WI

LEGAL DESCRIPTION LOCATION MAP

DATE	10/9/13
PROJECT NO.	60135737
FILENAME	G60135737-Figure 2.dwg
SHEET NO.	
DRAWING NO.	FIGURE 2

Filename: \\usmwk1fs001\prod\Data\Library\work\95907\Environm\0220545105 BIOINFILTRATION Area-NRH Lube Oil\0_Final Closure Request_August 2013_Maz\0_DWG\G60135737-Figure 2.dwg

Environment

PO Box 509
Two Harbors, MN, USA
55616

October 24, 2013

To Whom It May Concern:

To the best of my knowledge, the following legal description completely and accurately describes an area on the North Fond du Lac Rail Yard that contains the Roundhouse Lube Oil Area (BRRTS # 02-20-545105):

> That part of the Southwest 1/4 of Section 33, Township 16 North, Range 17 East, in the Village of North Fond du Lac, County of Fond du Lac, State of Wisconsin, more particularly described as:
>
> Commencing at the Southeast corner of said Southwest 1/4 section;
> Thence South 89°50'27" West, 121.71 feet, along the south line of said 1/4 Section;
> Thence North 16°46'00" West, 1133.41 feet, to the point of beginning;
> Thence South 77°18'00" West, 950.00 feet;
> Thence North 05°56'00" West, 1605.00 feet;
> Thence South 83°47'54" East, 701.56 feet;
> Thence South 16°46'00" East, 1370.00 feet, to the point of beginning.
>
> This parcel contains **1,199,529.80 square feet,** or **27.5374 acres,** more or less.

Respectfully,

Brian T Hayden

Brian Hayden
Regional Manager - Environment