

Endsley, Erin A - DNR

From: DNRRNR700Reporting@wisconsin.gov
Sent: Tuesday, January 27, 2015 4:32 PM
To: ree@barr.com
Cc: Endsley, Erin A - DNR
Subject: WDNR NR700 Semi-Annual Report Confirmation

Thank you for submitting your NR700 semi-annual progress report. The DNR Project Manager for this site has been notified of your report submittal. If final case closure has not been granted for this Activity before the next reporting period, you will receive a system-generated email reminder and link to report for the next period.

The contents of your report is included below for your records:

Report ID: 150155899343063
BRRTS No.: 02-16-558993
PECFA No: --
Activity Name: ENBRIDGE ENERGY - TANK 5
Address: 2800 E 21ST ST, SUPERIOR
Reporting Period: 7/1/2014 - 12/31/2014

Submitted On: 01/27/2015

Status: Conditionally Closed

Comments:

Site closure pending WDNR Enbridge Superior Terminal facility-wide agreement.

PECFA Eligible? No

Endsley, Erin A - DNR

From: DNRRNR700Reporting@wisconsin.gov
Sent: Wednesday, August 06, 2014 3:11 PM
To: rerickson@barr.com
Cc: Endsley, Erin A - DNR
Subject: WDNR NR700 Semi-Annual Report Confirmation

Thank you for submitting your NR700 semi-annual progress report. The DNR Project Manager for this site has been notified of your report submittal. If final case closure has not been granted for this Activity before the next reporting period, you will receive a system-generated email reminder and link to report for the next period.

The contents of your report is included below for your records:

Report ID: 140755899341215
BRRTS No.: 02-16-558993
PECFA No: --
Activity Name: ENBRIDGE ENERGY - TANK 5
Address: 2800 E 21ST ST, SUPERIOR
Reporting Period: 1/1/2014 - 6/30/2014

Submitted On: 08/06/2014

Status: Conditionally Closed

Comments:

The Tank 5 site is awaiting WDNR approval of the pending Enbridge Superior Terminal facility-wide Site Investigation and Response Action Plan. A report has been submitted and no additional response action is planned.

PECFA Eligible? No

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

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

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



www.enbridgepartners.com

January 22, 2014

Erin Endsley
Wisconsin Department of Natural Resources - Northern Region
Remediation and Redevelopment
1701 N 4th St
Superior, WI 54880

Re: Tank 5 Historical Crude Oil Impacts
Stairway Platform Excavation Report
Enbridge Energy Superior Terminal
Superior, Wisconsin

Dear Ms. Endsley:

Please find attached report regarding the clean-up of historical crude oil impacts discovered during the Tank 5 stairway platform footings excavation. Based on the findings presented in this report, we are requesting no further action in regards to this historical release.

Please contact me if you have any questions or comments regarding this project.

Sincerely,
Enbridge Energy

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

Karl F. Beaster, P.G.
Environmental Analyst

Enclosure

cc: Ryan Erickson, Barr Engineering

Has BRRTs # 5
RPI letter
Ok review for
placement in facility
wide ERP

02-16-558993 ENBRIDGE ENERGY - TANK 5

Location Name: ENBRIDGE ENERGY CO **Activity Start Date:** 2012-05-31 **Activity End Date:**
Address: 2800 E 21ST ST **Activity Type:** ERP
Muni: SUPERIOR **Zip:** 54880 **File Location:**
Region: NO **Region of Management:** NO **DSPS No:**
County: Douglas **DATCP Case No:** **DATCP Spill No:**
FID: 816010580 **EPA Cerclis ID:** **Acres:** Right-of-Way Acres > 100

Activity Address:

PLSS: NE 1/4 of the NE 1/4 of Sec 36, T49N, R14W **Latitude:** 0 **Longitude:** 0

Location Comment: LQG PER HW GENERATOR CHANGES FOR 2011; VSQG FOR 2010 PER EXEMPTION FORM AND MANIFEST CHECK 03/15/2011 MKP; VSQG FOR 2009 ONLY PER EXEMPTION FORM & MANIFEST CHECK - SLB; ENBRIDGE ENERGY CO CHANGE PER 2005 REPORT10/04/2006,MKP, ENBRIDGE ENERGY LTD PARTNERSHIP/LAKEHEAD CHANGED PER 2001 HW ANNUAL REPORTFKA: LAKEHEAD PIPELINE CO LP; SQG PER E-MAIL REQUEST, ANNUAL REPORT 1998 & SAL 3/5/99/LQG/STATUS CH FORM 9/20/94

Activity Comment:

- Transferred to DSPS Transferred to DATCP Transferred to WMM Tracked by DSPS Created by DSPS
 PECFA Eligible PECFA 80K PECFA 80K Failure Above Ground Storage Tank Co-Contamination
 VPLE at Location VPLE Inactive General Property at Location Drycleaner Superfund Superfund NPL
 Status Unclear (Mask BOTW) Geo-Located On GIS Registry

Other Activities at this Location

Activity Detail No	Type	Activity Detail Name	Start Date	End Date
01-16-561125		ENBRIDGE ENERGY - TANK 11		
01-16-561126		ENBRIDGE ENERGY - TANK 21 RING RD		
04-16-042495	SPILL	ENBRIDGE ENERGY - PUMP STATION	1988-01-11	1988-01-12
02-16-178165	ERP	LAKEHEAD PIPELINE - TANK 21 CRUDE OIL	1997-08-13	1998-03-16
02-16-176579	ERP	LAKEHEAD PIPELINE CO L P	1997-11-18	2003-10-23
02-16-183249	ERP	LAKEHEAD PIPELINE - MANIFOLD 3	1998-02-02	2004-04-15
04-16-202351	SPILL	LAKEHEAD PIPELINE - TANK 22	1998-08-28	1999-05-12
04-16-220589	SPILL	LAKEHEAD PIPELINE - TANK 11	1999-03-19	1999-05-13
02-16-220009	ERP	LAKEHEAD PIPELINE - CRUDE OIL TANK 22	1999-05-12	2003-10-23
02-16-275100	ERP	LAKEHEAD PIPELINE - TANK 24	1999-08-30	2004-02-02
04-16-275096	SPILL	LAKEHEAD PIPELINE - TANK 24	1999-08-30	2001-07-18
04-16-232151	SPILL	LAKEHEAD PIPELINE - TANK 23	1999-09-20	1999-10-19
04-16-251372	SPILL	LAKEHEAD PIPELINE - TANK PAD 12	2000-02-26	2000-03-01
02-16-279246	ERP	LAKEHEAD PIPELINE CO L P	2000-07-27	2005-08-16
04-16-256902	SPILL	LAKEHEAD PIPELINE CO L P	2000-07-27	2001-08-21
04-16-390497	SPILL	LAKEHEAD PIPELINE	2000-09-23	2002-06-10
04-16-427625	SPILL	LAKEHEAD PIPELINE	2001-06-23	2001-11-29
02-16-338051	ERP	LAKEHEAD PIPELINE - BOOSTER PUMP #56	2002-01-20	2006-07-14
04-16-338044	SPILL	LAKEHEAD PIPELINE - BOOSTER PUMP 56	2002-01-20	2003-01-07
04-16-408048	SPILL	ENBRIDGE ENERGY - TANK 8	2002-03-07	2002-05-29
04-16-408780	SPILL	ENBRIDGE ENERGY	2002-03-07	2002-05-29
04-16-489609	SPILL	ENBRIDGE ENERGY - TANK 8 FARM	2002-03-07	2002-05-29
04-16-403150	SPILL	ENBRIDGE ENERGY	2002-04-04	2002-11-08
04-16-403142	SPILL	ENBRIDGE ENERGY TERMINAL	2002-07-17	2002-11-05
04-16-402258	SPILL	ENBRIDGE ENERGY	2002-08-26	2002-09-26
04-16-403133	SPILL	ENBRIDGE ENERGY - PIPELINE ENTERING FROM SW	2002-09-12	2002-11-20
04-16-518737	SPILL	ENBRIDGE ENERGY - LINE 14 BOOSTER PUMP	2002-11-28	2003-12-18
04-16-454807	SPILL	ENBRIDGE ENERGY - NEMADJI RIVER	2003-01-24	2003-10-01
02-16-513788	ERP	ENBRIDGE ENERGY - NEMADJI RIVER	2003-01-25	2010-03-24
04-16-522605	SPILL	ENBRIDGE ENERGY - MANIFOLD 1	2003-04-08	2004-01-12
04-16-518579	SPILL	ENBRIDGE ENERGY TERMINAL	2003-11-10	2003-12-12
04-16-529969	SPILL	ENBRIDGE ENERGY - MANIFOLD #1 BLDG	2004-03-10	2004-06-08
04-16-526914	SPILL	ENBRIDGE ENERGY - N SIDE OF MANIFOLD 1	2004-03-18	2004-06-01
04-16-526925	SPILL	ENBRIDGE ENERGY - PIPE A	2004-04-02	2004-06-01
04-16-527008	SPILL	ENBRIDGE ENERGY - DENOSTOMETER BLDG	2004-04-08	2004-06-01

02-16-558993 ENBRIDGE ENERGY - TANK 5

Activity Detail No	Type	Activity Detail Name	Start Date	End Date
04-16-527017	SPILL	ENBRIDGE ENERGY - SAMPLING BLDG	2004-04-14	2004-06-01
04-16-527028	SPILL	ENBRIDGE ENERGY	2004-04-16	2004-06-01
04-16-529990	SPILL	ENBRIDGE ENERGY - TANK 13	2004-05-13	2004-07-27
04-16-537774	SPILL	ENBRIDGE ENERGY - BOOSTER PUMP 25	2004-06-03	2004-10-18
04-16-544785	SPILL	ENBRIDGE ENERGY - CRUDE OIL TERMINAL	2005-10-03	2006-01-23
04-16-548608	SPILL	ENBRIDGE ENERGY - TANK 1	2006-01-01	2006-11-28
04-16-547783	SPILL	ENBRIDGE ENERGY	2006-02-09	2006-03-08
04-16-548152	SPILL	ENBRIDGE ENERGY - GRAVEL ROAD IN TERMINAL	2006-05-22	2006-05-30
04-16-551607	SPILL	ENBRIDGE ENERGY - LINE 6	2007-03-19	2007-08-09
04-16-550837	SPILL	ENBRIDGE ENERGY - LINE 1 MANIFOLD BLDG	2007-10-30	2008-01-23
04-16-552902	SPILL	ENBRIDGE ENERGY TERMINAL	2008-08-25	2008-11-18
04-16-553271	SPILL	ENBRIDGE ENERGY - PIG LAUNCHER	2009-02-12	2009-02-13
04-16-553390	SPILL	ENBRIDGE ENERGY - TANK FARM	2009-03-22	2009-03-23
04-16-554022	SPILL	ENBRIDGE ENERGY - LINE 61 PUMP UNIT	2009-04-25	2009-08-18
04-16-554023	SPILL	ENBRIDGE ENERGY - TANK FARM	2009-05-21	2009-08-18
02-16-556786	ERP	ENBRIDGE ENERGY - TANK 22	2009-10-09	2011-09-19
04-16-556812	SPILL	ENBRIDGE ENERGY - TANK 22	2009-10-09	2011-09-19
10-16-556810	REMOVED	ENBRIDGE ENERGY SPILL	2009-10-09	2011-03-11
04-16-556107	SPILL	ENBRIDGE ENERGY	2010-01-06	2010-09-29
04-16-556109	SPILL	ENBRIDGE ENERGY - TANK 15	2010-03-12	2010-09-29
04-16-555211	SPILL	ENBRIDGE ENERGY - LINE 2 BLDG	2010-04-30	2010-04-30
04-16-556000	SPILL	ENBRIDGE ENERGY - CONTAINMENT FACILITY	2010-06-02	2010-09-20
04-16-560095	SPILL	ENBRIDGE ENERGY SPILL	2011-04-04	2013-02-15
04-16-558331	SPILL	ENBRIDGE ENERGY - TANK 12	2011-08-17	2012-12-03
02-16-558329	ERP	ENBRIDGE ENERGY - TANK 12	2011-08-18	2012-12-03
02-16-558649	ERP	ENBRIDGE ENERGY - LINE 14 BOOSTER PUMP	2011-09-25	2012-12-27
04-16-558652	SPILL	ENBRIDGE ENERGY - LINE 14 BOOSTER PUMP SPILL	2011-09-25	2012-12-27
04-16-560096	SPILL	FUTURE ENVIRONMENTAL SPILL	2011-12-02	2013-02-15
04-16-558766	SPILL	ENBRIDGE ENERGY - TANK 16	2012-05-24	2012-05-25
10-16-558757	REMOVED	ENBRIDGE ENERGY - TANK 16	2012-05-24	2012-07-17
02-16-558989	ERP	ENBRIDGE ENERGY - TANK 23	2012-05-31	2013-11-18
02-16-558990	ERP	ENBRIDGE ENERGY - TANK 19	2012-05-31	2012-09-04
02-16-558991	ERP	ENBRIDGE ENERGY - LINE 6	2012-05-31	
02-16-558992	ERP	ENBRIDGE ENERGY - TANK 20 VALVE	2012-05-31	2012-09-04
02-16-558988	ERP	ENBRIDGE ENERGY - OFFICE EXCAVATION	2012-06-04	2012-09-04
02-16-558987	ERP	ENBRIDGE ENERGY - TANK 9	2012-07-02	2012-09-04
10-16-558986	REMOVED	ENBRIDGE ENERGY - TANK 16	2012-07-02	
02-16-560841	ERP	ENBRIDGE ENERGY TERMINAL - LINE 5 PIG TRAP	2013-04-22	2013-09-03
10-16-559678	REMOVED	ENBRIDGE ENERGY TERMINAL - DV 566 VALVE	2013-06-04	2013-06-05
02-16-560657	ERP	ENBRIDGE ENERGY -SUPERIOR TERM FACILITY WIDE	2013-06-27	
02-16-560716	ERP	ENBRIDGE ENERGY - TANK 8	2013-07-18	
04-16-560863	SPILL	ENBRIDGE ENERGY CO SPILL	2013-08-15	2013-08-21

Actions

Action Date	Code	Action Name / Comment	Audit
2012-05-31	1	Notification	Added 12/11/2012 by SHAFEK
2012-12-11	2	RP Letter Sent	Added 12/18/2012 by SHAFEK

Documents**Energy Act Details****Impacts**

Free Product

Added 12/11/2012 by SHAFEK

02-16-558993 ENBRIDGE ENERGY - TANK 5

Soil Contamination

Added 12/11/2012 by SHAFEK

Priority		
Risk		
High	Assigned: 12/11/2012	Added 12/11/2012 by SHAFEK
Substances		

Category: Petroleum

Crude Oil

Added 12/11/2012 by SHAFEK

Category: VOC

VOC

Added 12/11/2012 by SHAFEK

Who

Responsible Party is ENBRIDGE ENERGY

Title:
Address: 1320 GRAND AVE

 SUPERIOR WI 54880

Phone: (715) 398-4751
Fax: () -
E-Mail:

Project Manager is ERIN ENDSLEY

Title: HYDROGEOLOGIST
Address: 1701 N 4TH ST

 SUPERIOR WI 54880

Phone: (715) 392-3126
Fax: (715) 392-7993
E-Mail: erin.endsley@wi.gov

Consultant is HANS WRONKA

Title:
Address: 332 W SUPERIOR ST, SUITE 600
 BARR ENGINEERING CO
 DULUTH MN 55802

Phone: (218) 529-8208
Fax: () -
E-Mail: hwronka@barr.com

RP Contact/Agent is KARL BEASTER

Title:
Address: 1320 GRAND AVE
 ENBRIDGE ENERGY LLC
 SUPERIOR WI 54880

Phone: (715) 398-4754
Fax: () -
E-Mail: karl.beaster@enbridge.com

Associated with:

ENBRIDGE ENERGY
 1320 GRAND AVE

Phone: (715) 398-4751
Fax: () -

SUPERIOR, WI 54880-

COPY



December 11, 2012

Karl Beaster
Enbridge Energy
1320 Grand Ave
Superior WI 54880

Subject: Reported Contamination at Enbridge Energy – Tank 5, Superior, WI
WDNR BRRTS Activity # 02-16-558993
WDNR FID # 816010580

Dear Mr. Beaster:

On June 19, 2012, Enbridge Energy notified the Wisconsin Department of Natural Resources (“WDNR”) that crude oil had been detected at the site described above.

Based on the information that has been submitted to the WDNR regarding this site, we believe you are responsible for investigating and restoring the environment at the above-described site under Section 292.11, Wisconsin Statutes, known as the hazardous substances spills law.

This letter describes the legal responsibilities of a person who is responsible under section 292.11, Wis. Stats., explains what you need to do to investigate and clean up the contamination.

Legal Responsibilities:

Your legal responsibilities are defined both in statute and in administrative codes. The hazardous substances spill law, Section 292.11 (3) Wisconsin Statutes, states:

- **RESPONSIBILITY.** A person who possesses or controls a hazardous substance which is discharged or who causes the discharge of a hazardous substance shall take the actions necessary to restore the environment to the extent practicable and minimize the harmful effects from the discharge to the air, lands, or waters of the state.

Wisconsin Administrative Code chapters NR 700 through NR 749 establish requirements for emergency and interim actions, public information, site investigations, design and operation of remedial action systems, and case closure. Wisconsin Administrative Code chapter NR 140 establishes groundwater standards for contaminants that reach groundwater.

Steps to Take:

The longer contamination is left in the environment, the farther it can spread and the more it may cost to clean up. Quick action may lessen damage to your property and neighboring properties and reduce your

costs in investigating and cleaning up the contamination. To ensure that your cleanup complies with Wisconsin's laws and administrative codes, you should hire a professional environmental consultant who understands what needs to be done. These are the first steps to take:

1. Within the next **30 days**, by January 15, 2013, you should submit written verification (such as a letter from the consultant) that you have hired an environmental consultant. If you do not take action within this time frame, the WDNR may initiate enforcement action against you.
2. Within the next **60 days**, by February 15, 2013, your consultant should submit a work plan and schedule for the investigation. The consultant must comply with the requirements in the NR 700 Wis. Adm. Code rule series and should adhere to current WDNR technical guidance documents.

In addition, within 30 days of completion of the site investigation, your consultant should submit a Site Investigation Report to the WDNR or other agency with administrative authority.

Sites where discharges to the environment have been reported are entered into the Bureau for Remediation and Redevelopment Tracking System ("BRRTS"), a version of which appears on the WDNR's internet site. You may view the information related to your site at any time (<http://dnr.wi.gov/botw/SetUpBasicSearchForm.do>) and use the feedback system to alert us to any errors in the data.

If you want a formal written response from the department on a specific submittal, please be aware that a review fee is required in accordance with ch. NR 749, Wis. Adm. Code. If a fee is not submitted with your reports, you should proceed under the advice of your consultant to complete the site investigation and cleanup to maintain your compliance with the spills law and chapters NR 700 through NR 749. **Do not delay the investigation of your site by waiting for an agency response.** We have provided detailed technical guidance to environmental consultants. Your consultant is expected to know our technical procedures and administrative rules and should be able to answer your questions on meeting cleanup requirements.

All correspondence regarding this site should be sent to me at the Superior office. Unless otherwise requested, please send only one copy of plans and reports. In addition to the paper copy, an electronic copy may also be submitted. To speed processing, correspondence should reference the BRRTS and FID numbers (if assigned) shown at the top of this letter.

Site Investigation and Vapor Pathway Analysis

As you develop the site investigation work plan, we want to remind you to include an assessment of the vapor intrusion pathway. Chapter NR 716, Wisconsin Administrative Code outlines the requirements for investigation of contamination in the environment. Specifically, s. NR 716.11(3)(a) requires that the field investigation determine the "nature, degree and extent, both areal and vertical, of the hazardous substances or environmental pollution in all affected media". In addition, section NR 716.11(5) specifies that the field investigation include an evaluation of the "pathways for migration of the contamination, including drainage improvements, utility corridors, bedrock and permeable material or soil along which vapors, free product or contaminated water may flow".

You will need to include documentation with the Site Investigation Report that explains how the assessment was done. If the pathway is being ruled out, then the report needs to provide the appropriate justification for reaching this conclusion. If the pathway cannot be ruled out, then investigation and, if appropriate, remedial action must be taken to address the risk presented prior to submitting the site for closure. The WDNR has developed guidance to help responsible parties and their consultants comply with the requirements described above. The guidance includes a detailed explanation of how to assess the vapor intrusion pathway and provides criteria which identify when an investigation is necessary. The guidance is available at: <http://dnr.wi.gov/files/PDF/pubs/rr/RR800.pdf>.

Additional Information for Site Owners:

We encourage you to visit our website at <http://dnr.wi.gov/topic/Brownfields/>, where you can find information on selecting a consultant, financial assistance and understanding the cleanup process. You will also find information there about liability clarification letters, post-cleanup liability and more.

If you have questions, contact me at 715-392-3126 or via email at erin.endsley@wisconsin.gov for more information or visit the RR web site at the address above.

Thank you for your cooperation.

Sincerely,



Erin Endsley
Hydrogeologist
Remediation & Redevelopment Program

cc: Hans Wronka, Barr Engineering

RECEIVED

02-16-558993

*Have map to

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

JUN 18 2012

Notification

DNR - SUPERIOR
Emergency Discharges / Spills should be reported via

Notice: Hazardous substance discharges must be reported immediately and substance discharges may be reported by telefaxing or e-mailing a completed form to the office in person. If you choose to notify the Department by telefax or by email, the requirements of ch. 292 Wis. Stats., shall be no less than \$10 nor more than \$500 per separate offense. It is not the Department's intention to use any personally identifiable information for program administration. However, information submitted on this form may be subject to the Records Law (ss. 19.31 - 19.39, Wis. Stats.).

Confirmatory laboratory data should be included with this form, to assist in the notification process.

Complete this form. **TYPE or PRINT LEGIBLY.** NOTIFY appropriate DNR representative of potential release from (check one):

- Underground Petroleum Storage Tank System (additional information may be required)
- Aboveground Petroleum Storage Tank System
- Dry Cleaner Facility
- Other - Describe: Enbridge Superior Terminal - Historical Piping Contamination near Tank 5

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

Date DNR Notified: 05/31/2012

1. Discharge Reported By

Name Karl Beaster	Firm Enbridge Energy	Phone No. (include area code) (715) 398-4754
Mailing Address 1320 Grand Ave., Superior, WI 54880		Email Address karl.beaster@enbridge.com

2. Site Information

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

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

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

Superior

County: Douglas	Legal Description: SW 1/4 NW 1/4 Sec 36 Tn 49N Range 13 <input type="radio"/> E <input checked="" type="radio"/> W	WTM: X 362845 Y 692514
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3. Responsible Party (RP) and/or RP Representative

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

Enbridge Energy

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

Contact Person Name (if different) Karl Beaster	Phone Number (715) 398-4757	Email Address karl.beaster@enbridge.com	
Mailing Address 1320 Grand Ave., Superior, WI 54880	City Superior	State WI	ZIP Code 54880

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

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

Two options

1) try to close now - will need to dig out or cap due to DC exc. for benzene at 5-5-3 (1.4 ppm)

2) wait for MOC and close out w/ soil - find DC b/c over level for benzene is 7.41 ppm

Large (ly) f 2 rous tment ssary orting n is a r than Open

**Notification For Hazardous Substance Discharge
 (Non-Emergency Only)**

4. Hazardous Substance Information

Identify hazardous substance discharged (check all that apply):

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

5. Impacts to the Environment Information

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

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

Contamination was discovered as a result of:

- | | | |
|--|--|--|
| <input type="checkbox"/> Tank closure assessment | <input type="checkbox"/> Site assessment | <input checked="" type="checkbox"/> Other - Describe: <u>Tank maintenance construction</u> |
| Date <input type="text"/> | Date <input type="text"/> | Date <input type="text" value="11/16/2011"/> |

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

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

Enbridge identified an abandoned 8-inch pipeline during construction activities. Hydrocarbons in the pipe were removed with a vacuum truck and the surrounding contaminated soil was excavated. The pipeline was cut, capped, and eventually removed.

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

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

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

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

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

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

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

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

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

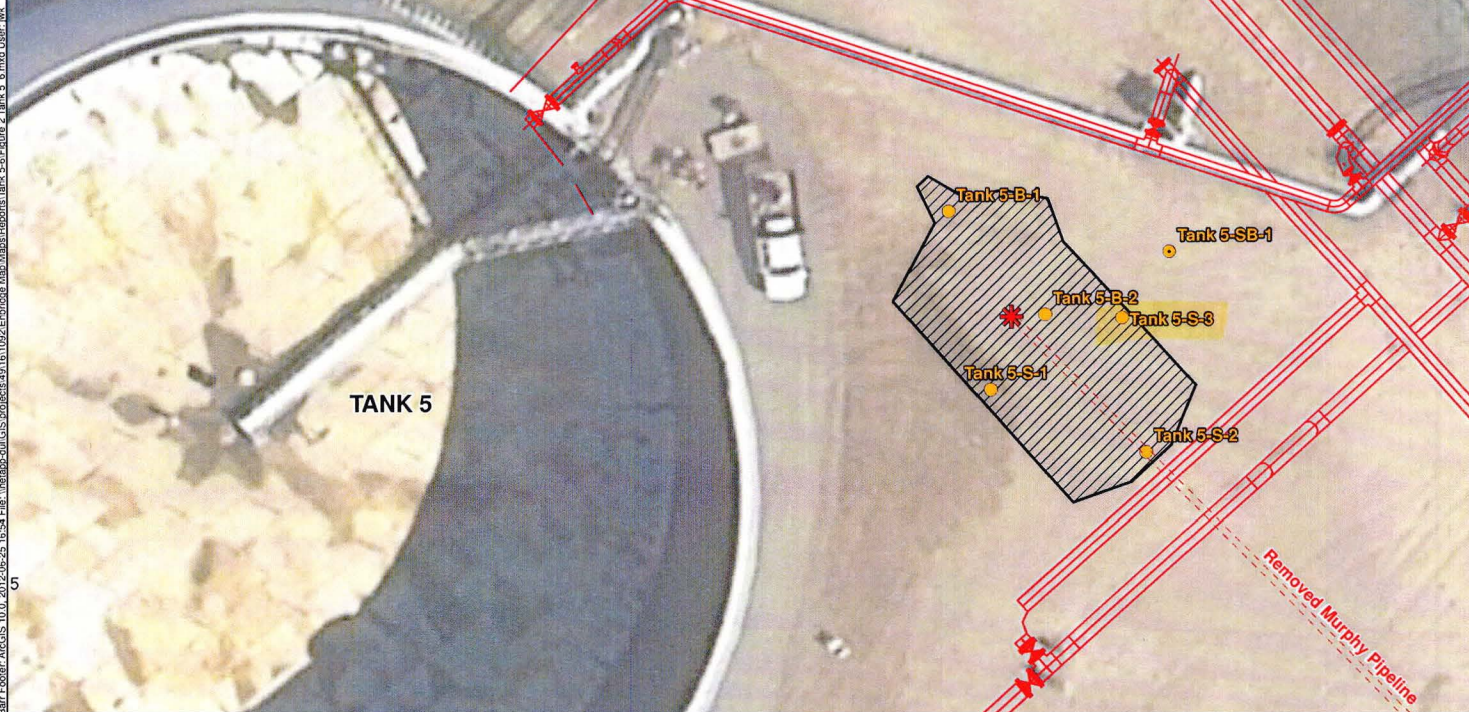
Columbia, Dane, Dodge, Fond du Lac (City of Waupun only), Grant, Green, Iowa, Jefferson, Lafayette, Richland, Rock, Sauk, Walworth counties

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

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

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

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



- Approximate Release Location
- Excavation Soil Sample Locations
- Geoprobe Boring Locations
- Terminal Property Boundary
- Terminal Pipeline Infrastructure
- Excavation Extent

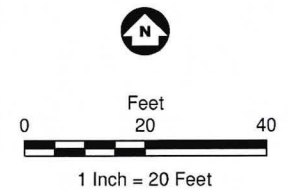


Figure 2
TANK 5 INVESTIGATION
 Enbridge Superior Terminal
 Superior, Wisconsin

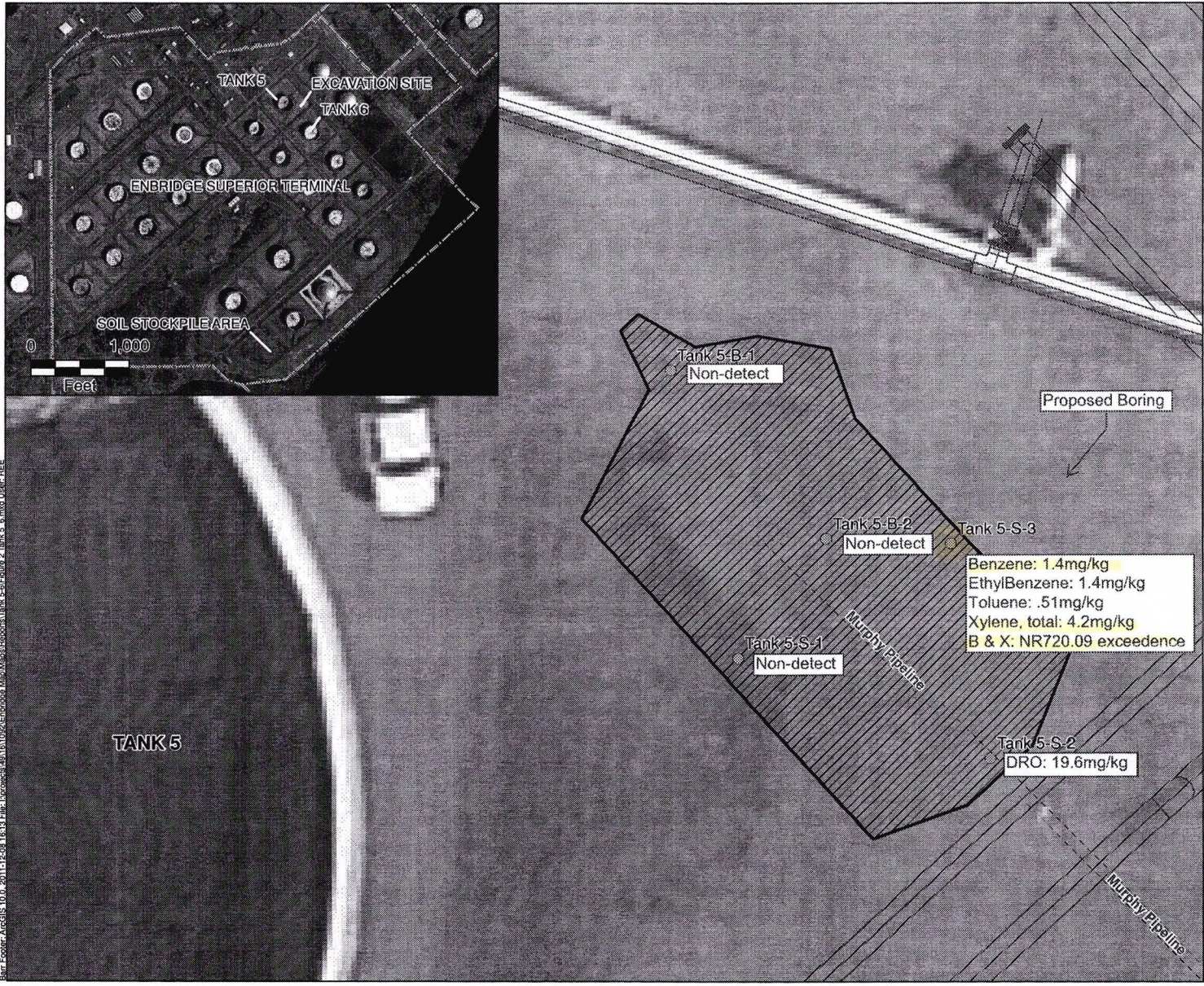


**Table 1
Soil Analytical Data Summary
PVOC and DRO
Tank 5 Soil Excavation
Enbridge Energy Terminal - Superior, Wisconsin**

Chemical Name				Solids, percent	1,2,4-Trimethyl benzene	1,3,5-Trimethyl benzene	Benzene	Ethyl benzene	Toluene	Xylenes, total	Diesel Range Organics
Effective Date	Exceedance Key										
Wisconsin Generic Residual Contaminant Levels NR 720.09		09/01/2007	Bold				0.0055 mg/kg	2.9 mg/kg	1.5 mg/kg	4.1 mg/kg	250 mg/kg
Sys Loc Code	Sample Date	Depth Interval (ft)	Sys Sample Code								
Bottom Samples											
B-1	11/17/2011	3 - 3	TANK5-B-1_3-3	82 %	-	-	< 0.061 mg/kg	< 0.061 mg/kg	< 0.061 mg/kg	< 0.18 mg/kg	< 11.1 mg/kg
B-2	11/17/2011	10 - 10	TANK5-B-2_10-10	76.2 %	-	-	< 0.071 mg/kg	< 0.071 mg/kg	< 0.071 mg/kg	< 0.21 mg/kg	< 11.5 mg/kg
Sidewall Samples											
S-1	11/17/2011	2 - 2	TANK5-S-1_2-2	78.9 %	-	-	< 0.066 mg/kg	< 0.066 mg/kg	< 0.066 mg/kg	< 0.20 mg/kg	< 12.8 mg/kg
S-2	11/17/2011	3 - 3	TANK5-S-2_3-3	80.2 %	-	-	< 0.064 mg/kg	< 0.064 mg/kg	< 0.064 mg/kg	< 0.19 mg/kg	19.6 mg/kg
S-3	11/17/2011	2 - 2	TANK5-S-3_2-2	81.8 %	-	-	1.4 mg/kg	1.4 mg/kg	0.51 mg/kg	4.2 mg/kg	< 11.5 mg/kg
Geoprobe Sample											
SB-1	6/15/2012	2 - 3	TK5-SB-1_2-3	75.9 %	<0.065 mg/kg	<0.065 mg/kg	<0.065 mg/kg	<0.065 mg/kg	<0.065 mg/kg	<0.19 mg/kg	< 11.0 mg/kg

DC Exceedance

*under new MTR values
Benzene Ind. DC is 7.41 ppm,
So no exceedance*



- * Release Point
- Soil Sample Locations
- Terminal Pipeline Infrastructure
- Terminal Pipeline Infrastructure
- Excavation Extent - 11/17/2011

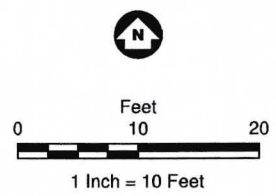


Figure 1
TANK 5 SOIL EXCAVATION
 Enbridge Superior Terminal
 Superior, Wisconsin



B:\Enbridge\ArcGIS\10.0\20111228_1618_EPA\workspace\1010292_Edwards_Maps\MapDocument\Tank_5_Excavation_2_Tank_5_6.mxd User: DEE



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Tank 5

CERTIFICATIONS

December 05, 2011

Project: 49161092 TANK 5
Pace Project No.: 10176549

Andrea Nord
Barr Engineering
4700 West 77th Street
Minneapolis, MN 55435

Minnesota Certification IDs
1700 Elm Street SE Suite 200, Minneapolis, MN 55414
A2LA Certification #: 2926.01
Alaska Certification #: UST-078
Alaska Certification #MN00064
Arizona Certification #: AZ-0014
Arkansas Certification #: 88-0880
California Certification #: 01155CA
EPA Region 8 Certification #: Pace
Florida/NELAP Certification #: E87605
Georgia Certification #: 959
Idaho Certification #: MN00064
Illinois Certification #: 200011
Iowa Certification #: 368
Kansas Certification #: E-10167
Louisiana Certification #: 03086
Louisiana Certification #: LA080009
Maine Certification #: 2007029
Maryland Certification #: 322
Michigan DEQ Certification #: 9909
Minnesota Certification #: 027-053-137

Mississippi Certification #: Pace
Montana Certification #: MT CERT0092
Nevada Certification #: MN_00064
Nebraska Certification #: Pace
New Jersey Certification #: MN-002
New Mexico Certification #: Pace
New York Certification #: 11647
North Carolina Certification #: 530
North Dakota Certification #: R-036
North Dakota Certification #: R-036A
Ohio VAP Certification #: CL101
Oklahoma Certification #: D9921
Oklahoma Certification #: 9507
Oregon Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification
Tennessee Certification #: 02818
Texas Certification #: T104704192
Washington Certification #: C754
Wisconsin Certification #: 999407970

RE: Project: 49161092 TANK 5
Pace Project No.: 10176549

Dear Andrea Nord:

Enclosed are the analytical results for sample(s) received by the laboratory on November 22, 2011. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Andrea Opland
andrea.opland@pacelabs.com
Project Manager

Enclosures

5 Samples

S-2 (3') DBO - 19.6 ppm

S-3 (2') Benz 1400 ppm

Xylene 4200 ppb (4100)

> MTD
RUS



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SAMPLE SUMMARY

Project: 49161092 TANK 5
Pace Project No.: 10176549

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10176649001	TANK5-B-1_3-3	Solid	11/17/11 14:50	11/22/11 09:55
10176649002	TANK5-B-2_10-10	Solid	11/17/11 15:10	11/22/11 09:55
10176649003	TANK5-S-1_2-2	Solid	11/17/11 14:55	11/22/11 09:55
10176649004	TANK5-S-2_3-3	Solid	11/17/11 15:00	11/22/11 09:55
10176649005	TANK5-S-3_2-2	Solid	11/17/11 15:05	11/22/11 09:55

SAMPLE ANALYTE COUNT

Project: 49161092 TANK 5
Pace Project No.: 10176549

Lab ID	Sample ID	Method	Analysts	Analyses Reported	Laboratory
10176649001	TANK5-B-1_3-3		AMO	2	
		WI MOD DRO	JRH	2	PASI-M
		WI MOD GRO	KT1	5	PASI-M
10176649002	TANK5-B-2_10-10	% Moisture	JDL	1	PASI-M
			AMO	2	
		WI MOD DRO	JRH	2	PASI-M
10176649003	TANK5-S-1_2-2	WI MOD GRO	KT1	5	PASI-M
		% Moisture	JDL	1	PASI-M
			AMO	2	
10176649004	TANK5-S-2_3-3	WI MOD DRO	JRH	2	PASI-M
		WI MOD GRO	KT1	5	PASI-M
		% Moisture	JDL	1	PASI-M
10176649005	TANK5-S-3_2-2		AMO	2	
		WI MOD DRO	JRH	2	PASI-M
		WI MOD GRO	KT1	5	PASI-M
		% Moisture	JDL	1	PASI-M
		EPA 8270 by SIM	JLR	18	PASI-M

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ANALYTICAL RESULTS

Project: 49161092 TANK 5
Pace Project No.: 10176549

Sample: TANK6-B-1_3-3 Lab ID: 10176549001 Collected: 11/17/11 14:50 Received: 11/22/11 09:55 Matrix: Solid
Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method:									
Start Depth	3 feet				1		11/22/11 17:17		
Stop Depth	3 feet				1		11/22/11 17:17		
WIDRO GCS Silica Gel									
Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO									
Diesel Range Organics	ND mg/kg		11.1	5.6	1	11/23/11 07:23	11/26/11 16:50		
Surrogates									
n-Triacontane (S)	69 %		38-125		1	11/23/11 07:23	11/26/11 16:50		1M
WIGRO GCV									
Analytical Method: WI MOD GRO Preparation Method: TPH GRO/PVOC WI ext.									
Benzene	ND mg/kg		0.061	0.027	1	11/28/11 07:56	11/28/11 18:20	71-43-2	
Ethylbenzene	ND mg/kg		0.061	0.023	1	11/28/11 07:56	11/28/11 18:20	100-41-4	
Toluene	ND mg/kg		0.061	0.026	1	11/28/11 07:56	11/28/11 18:20	108-88-3	
Xylene (Total)	ND mg/kg		0.18	0.061	1	11/28/11 07:56	11/28/11 18:20	1330-20-7	
Surrogates									
a,a,a-Trifluorotoluene (S)	95 %		80-125		1	11/28/11 07:56	11/28/11 18:20	98-08-8	
Dry Weight									
Analytical Method: % Moisture									
Percent Moisture	18.0 %		0.10	0.10	1		12/01/11 00:00		

Sample: TANK6-B-2_10-10 Lab ID: 10176549002 Collected: 11/17/11 15:10 Received: 11/22/11 09:55 Matrix: Solid
Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method:									
Start Depth	10 feet				1		11/22/11 17:18		
Stop Depth	10 feet				1		11/22/11 17:18		
WIDRO GCS Silica Gel									
Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO									
Diesel Range Organics	ND mg/kg		11.5	5.7	1	11/23/11 07:23	11/26/11 16:57		
Surrogates									
n-Triacontane (S)	68 %		38-125		1	11/23/11 07:23	11/26/11 16:57		1M
WIGRO GCV									
Analytical Method: WI MOD GRO Preparation Method: TPH GRO/PVOC WI ext.									
Benzene	ND mg/kg		0.071	0.031	1	11/28/11 07:56	11/28/11 18:43	71-43-2	
Ethylbenzene	ND mg/kg		0.071	0.027	1	11/28/11 07:56	11/28/11 18:43	100-41-4	
Toluene	ND mg/kg		0.071	0.030	1	11/28/11 07:56	11/28/11 18:43	108-88-3	
Xylene (Total)	ND mg/kg		0.21	0.071	1	11/28/11 07:56	11/28/11 18:43	1330-20-7	
Surrogates									
a,a,a-Trifluorotoluene (S)	97 %		80-125		1	11/28/11 07:56	11/28/11 18:43	98-08-8	
Dry Weight									
Analytical Method: % Moisture									
Percent Moisture	23.8 %		0.10	0.10	1		12/01/11 00:00		

Date: 12/05/2011 04:35 PM

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ANALYTICAL RESULTS

Project: 49161092 TANK 5
Pace Project No.: 10176549

Sample: TANK6-S-1_2-2 Lab ID: 10176549003 Collected: 11/17/11 14:55 Received: 11/22/11 09:55 Matrix: Solid
Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method:									
Start Depth	2 feet				1		11/22/11 17:18		
Stop Depth	2 feet				1		11/22/11 17:18		
WIDRO GCS Silica Gel									
Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO									
Diesel Range Organics	ND mg/kg		12.8	6.4	1	11/23/11 07:23	11/26/11 16:37		
Surrogates									
n-Triacontane (S)	72 %		38-125		1	11/23/11 07:23	11/26/11 16:37		1M
WIGRO GCV									
Analytical Method: WI MOD GRO Preparation Method: TPH GRO/PVOC WI ext.									
Benzene	ND mg/kg		0.066	0.029	1	11/28/11 07:56	11/28/11 19:06	71-43-2	
Ethylbenzene	ND mg/kg		0.066	0.025	1	11/28/11 07:56	11/28/11 19:06	100-41-4	
Toluene	ND mg/kg		0.066	0.028	1	11/28/11 07:56	11/28/11 19:06	108-88-3	
Xylene (Total)	ND mg/kg		0.20	0.066	1	11/28/11 07:56	11/28/11 19:06	1330-20-7	
Surrogates									
a,a,a-Trifluorotoluene (S)	96 %		80-125		1	11/28/11 07:56	11/28/11 19:06	98-08-8	
Dry Weight									
Analytical Method: % Moisture									
Percent Moisture	21.1 %		0.10	0.10	1		12/01/11 00:00		

Sample: TANK6-S-2_3-3 Lab ID: 10176549004 Collected: 11/17/11 15:00 Received: 11/22/11 09:55 Matrix: Solid
Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method:									
Start Depth	3 feet				1		11/22/11 17:19		
Stop Depth	3 feet				1		11/22/11 17:19		
WIDRO GCS Silica Gel									
Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO									
Diesel Range Organics	19.6 mg/kg		11.6	5.8	1	11/23/11 07:23	11/26/11 17:04		
Surrogates									
n-Triacontane (S)	98 %		38-125		1	11/23/11 07:23	11/26/11 17:04		1M
WIGRO GCV									
Analytical Method: WI MOD GRO Preparation Method: TPH GRO/PVOC WI ext.									
Benzene	ND mg/kg		0.064	0.028	1	11/28/11 07:56	11/28/11 19:29	71-43-2	
Ethylbenzene	ND mg/kg		0.064	0.024	1	11/28/11 07:56	11/28/11 19:29	100-41-4	
Toluene	ND mg/kg		0.064	0.027	1	11/28/11 07:56	11/28/11 19:29	108-88-3	
Xylene (Total)	ND mg/kg		0.19	0.064	1	11/28/11 07:56	11/28/11 19:29	1330-20-7	
Surrogates									
a,a,a-Trifluorotoluene (S)	96 %		80-125		1	11/28/11 07:56	11/28/11 19:29	98-08-8	
Dry Weight									
Analytical Method: % Moisture									
Percent Moisture	19.8 %		0.10	0.10	1		12/01/11 00:00		

Date: 12/05/2011 04:35 PM

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ANALYTICAL RESULTS

Project: 49161092 TANK 5
Pace Project No.: 10176549

Sample: TANK6-S-3_2-2 Lab ID: 10176549005 Collected: 11/17/11 15:05 Received: 11/22/11 09:55 Matrix: Solid
Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method:									
Start Depth	2 feet				1		11/22/11 17:19		
Stop Depth	2 feet				1		11/22/11 17:19		
WIDRO GCS Silica Gel									
Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO									
Diesel Range Organics	ND	mg/kg	11.5	5.7	1	11/23/11 07:23	11/26/11 16:43		
Surrogates									
n-Triacontane (S)	73 %		38-125		1	11/23/11 07:23	11/26/11 16:43		1M
WIGRO GCV									
Analytical Method: WI MOD GRO Preparation Method: TPH GRO/PVOC WI ext.									
Benzene	1.4	mg/kg	0.30	0.13	5	11/28/11 07:56	11/29/11 17:19	71-43-2	
Ethylbenzene	1.4	mg/kg	0.30	0.11	5	11/28/11 07:56	11/29/11 17:19	100-41-4	
Toluene	0.81	mg/kg	0.30	0.13	5	11/28/11 07:56	11/29/11 17:19	108-88-3	
Xylene (Total)	4.2	mg/kg	0.89	0.30	5	11/28/11 07:56	11/29/11 17:19	1330-20-7	
Surrogates									
a,a,a-Trifluorotoluene (S)	86 %		80-125		5	11/28/11 07:56	11/29/11 17:19	98-08-8	D3
Dry Weight									
Analytical Method: % Moisture									
Percent Moisture	18.2 %		0.10	0.10	1		12/01/11 00:00		
8270 MSSV PAH by SIM									
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3550									
Acenaphthene	ND	ug/kg	12.1	0.36	1	11/23/11 10:53	11/29/11 17:09	83-32-9	
Acenaphthylene	ND	ug/kg	12.1	0.36	1	11/23/11 10:53	11/29/11 17:09	208-96-8	
Anthracene	ND	ug/kg	12.1	6.1	1	11/23/11 10:53	11/29/11 17:09	120-12-7	
Benzo(a)anthracene	ND	ug/kg	12.1	6.1	1	11/23/11 10:53	11/29/11 17:09	56-55-3	
Benzo(a)pyrene	ND	ug/kg	12.1	6.1	1	11/23/11 10:53	11/29/11 17:09	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	12.1	0.61	1	11/23/11 10:53	11/29/11 17:09	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	12.1	0.61	1	11/23/11 10:53	11/29/11 17:09	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	12.1	0.73	1	11/23/11 10:53	11/29/11 17:09	207-08-9	
Chrysene	ND	ug/kg	12.1	0.61	1	11/23/11 10:53	11/29/11 17:09	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	12.1	0.61	1	11/23/11 10:53	11/29/11 17:09	53-70-3	
Fluoranthene	ND	ug/kg	12.1	6.1	1	11/23/11 10:53	11/29/11 17:09	206-44-0	
Fluorene	ND	ug/kg	12.1	0.49	1	11/23/11 10:53	11/29/11 17:09	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	12.1	0.61	1	11/23/11 10:53	11/29/11 17:09	193-39-5	
Naphthalene	ND	ug/kg	12.1	0.73	1	11/23/11 10:53	11/29/11 17:09	91-20-3	
Phenanthrene	ND	ug/kg	12.1	6.1	1	11/23/11 10:53	11/29/11 17:09	85-01-8	
Pyrene	ND	ug/kg	12.1	0.49	1	11/23/11 10:53	11/29/11 17:09	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	50 %		30-130		1	11/23/11 10:53	11/29/11 17:09	321-60-8	
Terphenyl-d14 (S)	56 %		30-150		1	11/23/11 10:53	11/29/11 17:09	1718-51-0	



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QUALITY CONTROL DATA

Project: 49161092 TANK 5
Pace Project No.: 10176549

QC Batch: GCV/8704 Analysis Method: WI MOD GRO
QC Batch Method: TPH GRO/PVOC WI ext. Analysis Description: WIGRO Solid GCV
Associated Lab Samples: 10176549001, 10176549002, 10176549003, 10176549004, 10176549005

METHOD BLANK: 1105728 Matrix: Solid
Associated Lab Samples: 10176549001, 10176549002, 10176549003, 10176549004, 10176549005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	mg/kg	ND	0.050	11/28/11 12:58	
Ethylbenzene	mg/kg	ND	0.050	11/28/11 12:58	
Toluene	mg/kg	ND	0.050	11/28/11 12:58	
Xylene (Total)	mg/kg	ND	0.15	11/28/11 12:58	
a,a,a-Trifluorotoluene (S)	%	95	80-125	11/28/11 12:58	

Parameter	Units	1105729		1105730		% Rec	% Rec	% Rec	RPD	Max RPD	Qualifiers
		Spike Conc.	LCS Result	LCS Result	LCS % Rec						
Benzene	mg/kg	5	5.3	5.9	106	119	80-120	11	20		
Ethylbenzene	mg/kg	5	5.3	5.8	107	115	80-120	8	20		
Toluene	mg/kg	5	5.4	5.9	108	118	80-120	9	20		
Xylene (Total)	mg/kg	15	16.3	17.5	109	117	80-120	7	20		
a,a,a-Trifluorotoluene (S)	%				95	95	80-125				

Parameter	Units	1105731		% Rec	% Rec	% Rec	Limits	Qualifiers
		10176665001 Result	Spike Conc.					
Benzene	mg/kg	ND	5.2	5.2	102		80-120	
Ethylbenzene	mg/kg	ND	5.2	5.1	100		80-120	
Toluene	mg/kg	0.061	5.2	5.2	100		80-120	
Xylene (Total)	mg/kg	ND	15.5	15.7	101		80-120	
a,a,a-Trifluorotoluene (S)	%				96		80-125	

Parameter	Units	1105732		RPD	Max RPD	Qualifiers
		10176665002 Result	Dup Result			
Benzene	mg/kg	ND	ND			20
Ethylbenzene	mg/kg	ND	ND			20
Toluene	mg/kg	ND	ND			20
Xylene (Total)	mg/kg	ND	ND			20
a,a,a-Trifluorotoluene (S)	%	97	95		5	

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REPORT OF LABORATORY ANALYSIS

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Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 49161092 TANK 5
Pace Project No.: 10176549

QC Batch: MPRP/30070 Analysis Method: % Moisture
QC Batch Method: % Moisture Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 10176549001, 10176549002, 10176549003, 10176549004, 10176549005

SAMPLE DUPLICATE: 1108403

Parameter	Units	10176297022 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	16.2	17.0	5	30	

SAMPLE DUPLICATE: 1108404

Parameter	Units	10176631003 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	14.7	14.1	4	30	

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QUALITY CONTROL DATA

Project: 49161092 TANK 5
Pace Project No.: 10176549

QC Batch: OEXT/17333 Analysis Method: EPA 8270 by SIM
QC Batch Method: EPA 3550 Analysis Description: 8270 Solid PAH by SIM MSSV
Associated Lab Samples: 10176549005

METHOD BLANK: 1104889

Matrix: Solid

Associated Lab Samples: 10176549005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Acenaphthene	ug/kg	ND	10.0	11/29/11 11:24	
Acenaphthylene	ug/kg	ND	10.0	11/29/11 11:24	
Anthracene	ug/kg	ND	10.0	11/29/11 11:24	
Benzo(a)anthracene	ug/kg	ND	10.0	11/29/11 11:24	
Benzo(a)pyrene	ug/kg	ND	10.0	11/29/11 11:24	
Benzo(b)fluoranthene	ug/kg	ND	10.0	11/29/11 11:24	
Benzo(g,h,i)perylene	ug/kg	ND	10.0	11/29/11 11:24	
Benzo(k)fluoranthene	ug/kg	ND	10.0	11/29/11 11:24	
Chrysene	ug/kg	ND	10.0	11/29/11 11:24	
Dibenz(a,h)anthracene	ug/kg	ND	10.0	11/29/11 11:24	
Fluoranthene	ug/kg	ND	10.0	11/29/11 11:24	
Fluorene	ug/kg	ND	10.0	11/29/11 11:24	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	10.0	11/29/11 11:24	
Naphthalene	ug/kg	ND	10.0	11/29/11 11:24	
Phenanthrene	ug/kg	ND	10.0	11/29/11 11:24	
Pyrene	ug/kg	ND	10.0	11/29/11 11:24	
2-Fluorobiphenyl (S)	%	82	30-130	11/29/11 11:24	
Terphenyl-d14 (S)	%	86	30-150	11/29/11 11:24	

LABORATORY CONTROL SAMPLE: 1104890

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acenaphthene	ug/kg	33.3	22.5	68	56-125	
Acenaphthylene	ug/kg	33.3	22.1	66	49-125	
Anthracene	ug/kg	33.3	22.4	67	49-125	
Benzo(a)anthracene	ug/kg	33.3	25.4	76	60-125	
Benzo(a)pyrene	ug/kg	33.3	26.0	78	58-125	
Benzo(b)fluoranthene	ug/kg	33.3	26.4	79	63-125	
Benzo(g,h,i)perylene	ug/kg	33.3	27.4	82	56-125	
Benzo(k)fluoranthene	ug/kg	33.3	28.7	86	56-127	
Chrysene	ug/kg	33.3	28.3	79	60-125	
Dibenz(a,h)anthracene	ug/kg	33.3	28.2	85	57-125	
Fluoranthene	ug/kg	33.3	26.3	79	58-125	
Fluorene	ug/kg	33.3	22.2	67	53-125	
Indeno(1,2,3-cd)pyrene	ug/kg	33.3	27.5	82	56-125	
Naphthalene	ug/kg	33.3	21.7	65	56-125	
Phenanthrene	ug/kg	33.3	23.6	71	53-125	
Pyrene	ug/kg	33.3	26.7	80	60-125	
2-Fluorobiphenyl (S)	%			84	30-130	
Terphenyl-d14 (S)	%			96	30-150	

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QUALITY CONTROL DATA

Project: 49161092 TANK 5
Pace Project No.: 10176549

Parameter	Units	1104891		1104892		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		10176570001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result							
Acenaphthene	ug/kg	ND	34.4	34.1	25.3	48.7	44	113	30-150	63	30	D6
Acenaphthylene	ug/kg	ND	34.4	34.1	23.1	28.8	67	84	30-150	22	30	
Anthracene	ug/kg	30.0	34.4	34.1	36.3	109	18	230	30-150	100	30	D6,M1
Benzo(a)anthracene	ug/kg	99.1	34.4	34.1	85.5	253	-39	452	30-150	99	30	D6,M1
Benzo(a)pyrene	ug/kg	98.7	34.4	34.1	88.4	253	-30	452	30-150	96	30	D6,M1
Benzo(b)fluoranthene	ug/kg	128	34.4	34.1	111	332	-50	596	30-150	100	30	D6,M1
Benzo(g,h,i)perylene	ug/kg	76.7	34.4	34.1	77.2	198	1	355	30-150	88	30	D6,M1
Benzo(k)fluoranthene	ug/kg	59.4	34.4	34.1	59.9	135	2	223	30-150	77	30	D6,M1
Chrysene	ug/kg	108	34.4	34.1	92.1	279	-45	502	30-150	101	30	D6,M1
Dibenz(a,h)anthracene	ug/kg	30.3	34.4	34.1	30.2	97.6	-2	198	30-150	105	30	D6,M1
Fluoranthene	ug/kg	203	34.4	34.1	152	488	-150	834	30-150	105	30	D6,E,M1
Fluorene	ug/kg	ND	34.4	34.1	23.8	49.5	42	118	30-150	70	30	D6
Indeno(1,2,3-cd)pyrene	ug/kg	67.0	34.4	34.1	70.1	179	9	328	30-150	87	30	D6,M1
Naphthalene	ug/kg	ND	34.4	34.1	20.8	27.5	60	81	30-150	28	30	
Phenanthrene	ug/kg	118	34.4	34.1	81.4	336	-106	641	30-150	122	30	D6,M1
Pyrene	ug/kg	176	34.4	34.1	137	434	-116	756	30-150	104	30	D6,E,M1
2-Fluorobiphenyl (S)	%						74	83	30-130			
Terphenyl-d14 (S)	%						76	92	30-150			

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QUALITY CONTROL DATA

Project: 49161092 TANK 5
Pace Project No.: 10176549

QC Batch: OEXT/17328 Analysis Method: WI MOD DRO
QC Batch Method: WI MOD DRO Analysis Description: WIDRO Solid GCV
Associated Lab Samples: 10176549001, 10176549002, 10176549003, 10176549004, 10176549005
METHOD BLANK: 1104618 Matrix: Solid
Associated Lab Samples: 10176549001, 10176549002, 10176549003, 10176549004, 10176549005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Range Organics	mg/kg	ND	10.0	11/26/11 16:23	
n-Triacontane (S)	%	78	38-125	11/26/11 16:23	

Parameter	Units	1104619		1104620		% Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
		Spike Conc.	LCS Result	LCSD Result	LCS % Rec						
Diesel Range Organics	mg/kg	80	58.0	57.8	73	72	70-125	.5	20		
n-Triacontane (S)	%				78	75	38-125				

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QUALIFIERS

Project: 49161092 TANK 5
Pace Project No.: 10176549

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.
 ND - Not Detected at or above adjusted reporting limit.
 J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
 MDL - Adjusted Method Detection Limit.
 S - Surrogate
 1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.
 Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.
 LCS(D) - Laboratory Control Sample (Duplicate)
 MS(D) - Matrix Spike (Duplicate)
 DUP - Sample Duplicate
 RPD - Relative Percent Difference
 NC - Not Calculable.
 SG - Silica Gel - Clean-Up
 U - Indicates the compound was analyzed for, but not detected.
 N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.
 Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

1M The sample was re-weighed into a new container because the original container was not the standard tared 4oz amber jar.
 D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
 D6 The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits.
 E Analyte concentration exceeded the calibration range. The reported result is estimated.
 M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 49161092 TANK 5
Pace Project No.: 10176549

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10176549001	TANK5-B-1_3-3		FLD/		
10176549002	TANK5-B-2_10-10		FLD/		
10176549003	TANK5-S-1_2-2		FLD/		
10176549004	TANK5-S-2_3-3		FLD/		
10176549005	TANK5-S-3_2-2		FLD/		
10176549001	TANK5-B-1_3-3	WI MOD DRO	OEXT/17328	WI MOD DRO	GCSV/8909
10176549002	TANK5-B-2_10-10	WI MOD DRO	OEXT/17328	WI MOD DRO	GCSV/8909
10176549003	TANK5-S-1_2-2	WI MOD DRO	OEXT/17328	WI MOD DRO	GCSV/8909
10176549004	TANK5-S-2_3-3	WI MOD DRO	OEXT/17328	WI MOD DRO	GCSV/8909
10176549005	TANK5-S-3_2-2	WI MOD DRO	OEXT/17328	WI MOD DRO	GCSV/8909
10176549001	TANK5-B-1_3-3	TPH GRO/PVOC WI ext.	GCV/8704	WI MOD GRO	GCV/8705
10176549002	TANK5-B-2_10-10	TPH GRO/PVOC WI ext.	GCV/8704	WI MOD GRO	GCV/8705
10176549003	TANK5-S-1_2-2	TPH GRO/PVOC WI ext.	GCV/8704	WI MOD GRO	GCV/8705
10176549004	TANK5-S-2_3-3	TPH GRO/PVOC WI ext.	GCV/8704	WI MOD GRO	GCV/8705
10176549005	TANK5-S-3_2-2	TPH GRO/PVOC WI ext.	GCV/8704	WI MOD GRO	GCV/8705
10176549001	TANK5-B-1_3-3	% Moisture	MPRP/30070		
10176549002	TANK5-B-2_10-10	% Moisture	MPRP/30070		
10176549003	TANK5-S-1_2-2	% Moisture	MPRP/30070		
10176549004	TANK5-S-2_3-3	% Moisture	MPRP/30070		
10176549005	TANK5-S-3_2-2	% Moisture	MPRP/30070		
10176549005	TANK5-S-3_2-2	EPA 3550	OEXT/17333	EPA 8270 by SIM	MSSV/7512

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

1137

10176549

Project Number: 47161092
 Project Name: Tank 5
 Sample Origin State: WI (use two letter postal state abbreviation)
 COC Number: NO 32220

Location	Start Depth	Stop Depth	Depth Unit (m, ft, or in.)	Collection Date (mm/dd/yyyy)	Collection Time (hh:mm)	Matrix			Type	Total Number of Containers
						Water	Soil	Other		
1. Tank 5-B-1	3	3	FT	11/17/11	1450	X	X		3	BTEX, DRO, Moisture
2. Tank 5-B-2	10	10			1510				3	
3. Tank 5-S-1	2	2			1455				3	
4. Tank 5-S-2	3	3			1500				3	
5. Tank 5-S-3	2	2	↓	↓	1505				4	↓ + PAH as
6.										
7.										
8.										Normal TAT
9.										
10.										

Common Parameter/Container - Preservation Key
 #1 - Volatile Organics = BTEX, GRQ, TPH, 8260 Full List
 #2 - Semivolatile Organics = PAHs, PCB, Dioxins, 8270 Full List, Herbicides/Pesticides/PCBs
 #3 - General = pH, Chloride, Fluoride, Alkalinity, TSS, TDS, TS, Sulfate
 #4 - Nutrients = COD, TOC, Phos, Ammonia Nitrogen, TNK

Relinquished By: [Signature] On Ice? N Date: 11/22/11 Time: 1200
 Relinquished By: [Signature] On Ice? Y Date: _____ Time: _____
 Received by: [Signature] Date: 11/22/11 Time: 9:55
 Received by: _____ Date: _____ Time: _____
 Samples Shipped Via: Air Freight Federal Express Sampler Air Bill Number: _____
 Other: _____

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

T=3.3

Pace Analytical Document Name: Sample Condition Upon Receipt Form Revised Date: 02Jun2011
 Document Number: F-L-213 Rev.01 Page 1 of 1
 Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt Client Name: Barr Project # 10176549

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____
 Tracking #: 797759635817
 Custody Seal on Cooler/Box Present: yes no Seals Intact: yes no
 Packing Material: Bubble Wrap Bubble Bags None Other _____ Temp Blank: Yes No
 Thermometer Used: 80344042 or 80512447 Type of Ice: (W) Blue None Samples on ice, cooling process has begun
 Cooler Temperature: 3.3 Biological Tissue Is Frozen: Yes No Date and initials of person examining contents: 11/22/11 [Signature]
 Temp should be above freezing to 8°C Comments: _____

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72hr):	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	11.
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes date/time/ID/Analysis Matrix:	<u>ISL</u>	
All containers needing acid/base preservation have been checked. Noncompliance are noted in 13.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Exceptions: VOA, Coliform, TOC, Oil and Grease, W-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	15.
Trip Blank Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/Resolution: _____ Field Data Required? Y / N
 Person Contacted: _____ Date/Time: _____
 Comments/Resolution: _____

 Project Manager Review: [Signature] Date: 11/22/11

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)



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Tank 5

CERTIFICATIONS

November 29, 2011

Project: 49161092 TANK 5
Pace Project No.: 10176510

Andrea Nord
Barr Engineering
4700 West 77th Street
Minneapolis, MN 55435

RE: Project: 49161092 TANK 5
Pace Project No.: 10176510

Minnesota Certification IDs
1700 Elm Street SE Suite 200, Minneapolis, MN 55414
A2LA Certification #: 2926.01
Alaska Certification #: UST-078
Alaska Certification #MN00064
Arizona Certification #: AZ-0014
Arkansas Certification #: 88-0680
California Certification #: 01155CA
EPA Region 8 Certification #: Pace
Florida/NELAP Certification #: E87605
Georgia Certification #: 959
Idaho Certification #: MN00064
Illinois Certification #: 200011
Iowa Certification #: 368
Kansas Certification #: E-10167
Louisiana Certification #: 03086
Louisiana Certification #: LA080009
Maine Certification #: 2007029
Maryland Certification #: 322
Michigan DEQ Certification #: 9909
Minnesota Certification #: 027-053-137

Mississippi Certification #: Pace
Montana Certification #: MT CERT0092
Nevada Certification #: MN_00064
Nebraska Certification #: Pace
New Jersey Certification #: MN-002
New Mexico Certification #: Pace
New York Certification #: 11647
North Carolina Certification #: 530
North Dakota Certification #: R-036
North Dakota Certification #: CL101
Oklahoma Certification #: D9921
Oklahoma Certification #: 5507
Oregon Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification
Tennessee Certification #: 02818
Texas Certification #: T104704192
Washington Certification #: C754
Wisconsin Certification #: 999407970

Dear Andrea Nord:

Enclosed are the analytical results for sample(s) received by the laboratory on November 22, 2011. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Andrea Opland

andrea.opland@pacelabs.com
Project Manager

Enclosures

2 Stockpile Samples



REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
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SAMPLE SUMMARY

Project: 49161092 TANK 5
Pace Project No.: 10176510

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10176610001	TANK 5-STOCKPILE-1	Solid	11/17/11 15:20	11/22/11 09:55
10176610002	TANK 5-STOCKPILE-2	Solid	11/17/11 15:25	11/22/11 09:55

SAMPLE ANALYTE COUNT

Project: 49161092 TANK 5
Pace Project No.: 10176510

Lab ID	Sample ID	Method	Analysts	Analyses Reported	Laboratory
10176610001	TANK 5-STOCKPILE-1	WI MOD DRO	JRH	2	PASI-M
		WI MOD GRO	MJH	5	PASI-M
		% Moisture	JDL	1	PASI-M
10176610002	TANK 5-STOCKPILE-2	WI MOD DRO	JRH	2	PASI-M
		WI MOD GRO	MJH	5	PASI-M
		% Moisture	JDL	1	PASI-M

REPORT OF LABORATORY ANALYSIS

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(612)807-1700

ANALYTICAL RESULTS

Project: 49161092 TANK 5
Pace Project No.: 10176510

Sample: TANK 6-STOCKPILE-1 Lab ID: 10176510001 Collected: 11/17/11 15:20 Received: 11/22/11 09:55 Matrix: Solid
Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO									
Diesel Range Organics	1190	mg/kg	133	66.7	10	11/23/11 07:23	11/27/11 13:57		T6
<i>Surrogates</i>									
n-Triacontane (S)	69 %		38-125		10	11/23/11 07:23	11/27/11 13:57		2M
Analytical Method: WI MOD GRO Preparation Method: TPH GRO/PVOC WI ext.									
Benzene	0.10	mg/kg	0.066	0.029	1	11/22/11 15:54	11/23/11 18:17	71-43-2	
Ethylbenzene	0.62	mg/kg	0.066	0.025	1	11/22/11 15:54	11/23/11 18:17	100-41-4	
Toluene	0.23	mg/kg	0.066	0.028	1	11/22/11 15:54	11/23/11 18:17	108-88-3	
Xylene (Total)	2.0	mg/kg	0.20	0.066	1	11/22/11 15:54	11/23/11 18:17	1330-20-7	
<i>Surrogates</i>									
a,a,a-Trifluorotoluene (S)	66 %		80-125		1	11/22/11 15:54	11/23/11 18:17	98-08-8	1M
Analytical Method: % Moisture									
Percent Moisture	24.2 %		0.10	0.10	1		11/28/11 00:00		

Sample: TANK 6-STOCKPILE-2 Lab ID: 10176510002 Collected: 11/17/11 15:25 Received: 11/22/11 09:55 Matrix: Solid
Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO									
Diesel Range Organics	204	mg/kg	12.4	6.2	1	11/23/11 07:23	11/26/11 17:11		T6
<i>Surrogates</i>									
n-Triacontane (S)	72 %		38-125		1	11/23/11 07:23	11/26/11 17:11		2M
Analytical Method: WI MOD GRO Preparation Method: TPH GRO/PVOC WI ext.									
Benzene	0.20	mg/kg	0.070	0.031	1	11/22/11 15:54	11/23/11 18:40	71-43-2	
Ethylbenzene	0.27	mg/kg	0.070	0.027	1	11/22/11 15:54	11/23/11 18:40	100-41-4	
Toluene	0.10	mg/kg	0.070	0.029	1	11/22/11 15:54	11/23/11 18:40	108-88-3	
Xylene (Total)	1.1	mg/kg	0.21	0.070	1	11/22/11 15:54	11/23/11 18:40	1330-20-7	
<i>Surrogates</i>									
a,a,a-Trifluorotoluene (S)	82 %		80-125		1	11/22/11 15:54	11/23/11 18:40	98-08-8	
Analytical Method: % Moisture									
Percent Moisture	24.6 %		0.10	0.10	1		11/28/11 00:00		

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QUALITY CONTROL DATA

Project: 49161092 TANK 5
Pace Project No.: 10176510

QC Batch: GCV/8690 Analysis Method: WI MOD GRO
QC Batch Method: TPH GRO/PVOC WI ext. Analysis Description: WIGRO Solid GCV
Associated Lab Samples: 10176510001, 10176510002

METHOD BLANK: 1104285 Matrix: Solid
Associated Lab Samples: 10176510001, 10176510002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	mg/kg	ND	0.050	11/23/11 16:00	
Ethylbenzene	mg/kg	ND	0.050	11/23/11 16:00	
Toluene	mg/kg	ND	0.050	11/23/11 16:00	
Xylene (Total)	mg/kg	ND	0.15	11/23/11 16:00	
a,a,a-Trifluorotoluene (S)	%	97	80-125	11/23/11 16:00	

Parameter	Units	LABORATORY CONTROL SAMPLE & LCSD: 1104286								
		Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Benzene	mg/kg	5	5.4	5.1	108	101	80-120	6	20	
Ethylbenzene	mg/kg	5	5.2	5.0	103	99	80-120	4	20	
Toluene	mg/kg	5	5.3	5.1	106	102	80-120	4	20	
Xylene (Total)	mg/kg	15	15.7	15.2	105	101	80-120	3	20	
a,a,a-Trifluorotoluene (S)	%				97	96	80-125			

Parameter	Units	MATRIX SPIKE SAMPLE: 1104288					
		10176383001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Benzene	mg/kg	ND	5	6.5	129	80-120	M1
Ethylbenzene	mg/kg	ND	5	6.3	125	80-120	M1
Toluene	mg/kg	ND	5	6.4	128	80-120	M1
Xylene (Total)	mg/kg	ND	15	19.0	126	80-120	ES
a,a,a-Trifluorotoluene (S)	%				98	80-125	

Parameter	Units	SAMPLE DUPLICATE: 1104289				
		10176383002 Result	Dup Result	RPD	Max RPD	Qualifiers
Benzene	mg/kg	ND	ND		20	
Ethylbenzene	mg/kg	ND	ND		20	
Toluene	mg/kg	ND	ND		20	
Xylene (Total)	mg/kg	ND	ND		20	
a,a,a-Trifluorotoluene (S)	%	96	96	21		

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QUALITY CONTROL DATA

Project: 49161092 TANK 5
Pace Project No.: 10176510

QC Batch: MPRP/29997 Analysis Method: % Moisture
QC Batch Method: % Moisture Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 10176510001, 10176510002

SAMPLE DUPLICATE: 1105888

Parameter	Units	10175823001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	18.1	18.0	.6	30	

SAMPLE DUPLICATE: 1105889

Parameter	Units	10176510002 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	24.6	24.5	.4	30	



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QUALITY CONTROL DATA

Project: 49161092 TANK 5
Pace Project No.: 10176510

QC Batch: OEXT/17328 Analysis Method: WI MOD DRO
QC Batch Method: WI MOD DRO Analysis Description: WIDRO Solid GCV
Associated Lab Samples: 10176510001, 10176510002

METHOD BLANK: 1104618

Matrix: Solid

Associated Lab Samples: 10176510001, 10176510002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Range Organics	mg/kg	ND	10.0	11/26/11 16:23	
n-Triacontane (S)	%	78	38-125	11/26/11 16:23	

LABORATORY CONTROL SAMPLE & LCS: 1104619

1104620

Parameter	Units	Spike Conc.	LCS Result	LCS Result	LCS % Rec	LCS % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Range Organics	mg/kg	80	58.0	57.8	73	72	70-125	.5	20	
n-Triacontane (S)	%				78	75	38-125			

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QUALIFIERS

Project: 49161092 TANK 5
Pace Project No.: 10176510

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.
 ND - Not Detected at or above adjusted reporting limit.
 J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
 MDL - Adjusted Method Detection Limit.
 S - Surrogate
 1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.
 Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.
 LCS(D) - Laboratory Control Sample (Duplicate)
 MS(D) - Matrix Spike (Duplicate)
 DUP - Sample Duplicate
 RPD - Relative Percent Difference
 NC - Not Calculable.
 SG - Silica Gel - Clean-Up
 U - Indicates the compound was analyzed for, but not detected.
 N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.
 Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

1M Surrogate recovery outside laboratory control limits due to matrix interferences.
 2M The sample was re-weighed into a new container because the original container was not the standard tared 4oz amber jar.
 ES The reported result is estimated because one or more of the constituent results are qualified as such.
 M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
 T6 High boiling point hydrocarbons are present in the sample.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 49161092 TANK 5
Pace Project No.: 10176510

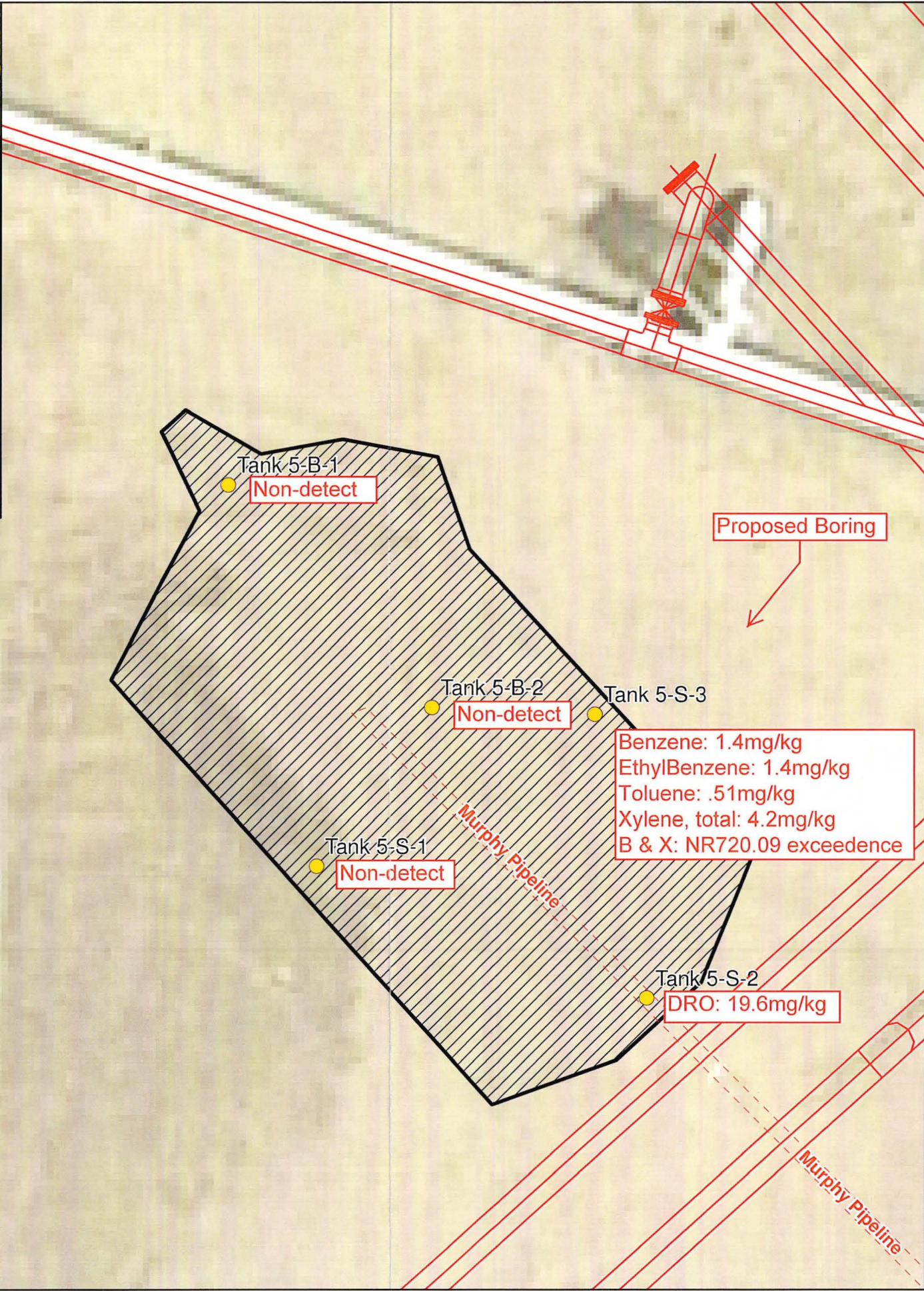
Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10176510001	TANK 5-STOCKPILE-1	WI MOD DRO	OEXT/17328	WI MOD DRO	GCSV/8909
10176510002	TANK 5-STOCKPILE-2	WI MOD DRO	OEXT/17328	WI MOD DRO	GCSV/8909
10176510001	TANK 5-STOCKPILE-1	TPH GRO/PVOC Wi ext.	GCV/8690	WI MOD GRO	GCV/8691
10176510002	TANK 5-STOCKPILE-2	TPH GRO/PVOC Wi ext.	GCV/8690	WI MOD GRO	GCV/8691
10176510001	TANK 5-STOCKPILE-1	% Moisture	MPRP/29997		
10176510002	TANK 5-STOCKPILE-2	% Moisture	MPRP/29997		

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- Release Point
- Soil Sample Locations
- Terminal Pipeline Infrastructure
- Terminal Pipeline Infrastructure
- Excavation Extent - 11/17/2011

Benzene: 1.4mg/kg
 EthylBenzene: 1.4mg/kg
 Toluene: .51mg/kg
 Xylene, total: 4.2mg/kg
 B & X: NR720.09 exceedence

DRO: 19.6mg/kg

Tank 5-B-1
Non-detect

Tank 5-B-2
Non-detect

Tank 5-S-1
Non-detect

Tank 5-S-3

Tank 5-S-2
DRO: 19.6mg/kg

Proposed Boring

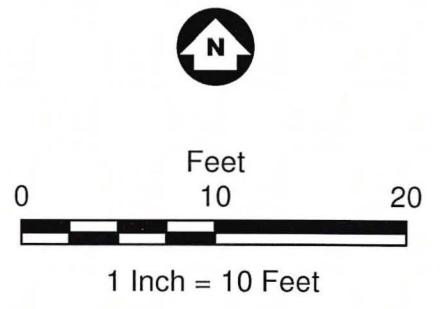


Figure 1

TANK 5 SOIL EXCAVATION
Enbridge Superior Terminal
Superior, Wisconsin

