US ERA ARCHIVE DOCUMENT

Enbridge Line 6B MP 608 Pipeline Release
Marshall, Michigan
Source Contamination Removal and Verification Summary Report
Talmadge Creek Section 5
Stationing 40+00L to 50+00L and 39+00R to 48+50R

Enbridge Energy September 25, 2010

#### Talmadge Creek Source Contamination Removal and Verification Summary Report

Section 5 of 10 - Stationing (40+00L to 50+00L) and (39+00R to 48+50R)

#### Overview

The Enbridge Source Area Response Plan (SAR) and Sampling and Analysis Plan (SAP), dated 2 August 2010, revised 17 August 2010 was developed to prescribe response activities related to a release of crude oil from Enbridge Energy, Limited Partnership's Line 6B MP 608 pipeline in Marshall, Michigan. A detailed and defined approach to identify and complete source removal was subsequently developed and presented in the 13 September 2010 Supplement to Source Area Response Plan Approach for Source Contamination Removal, Verification and Backfill, Talmadge Creek, Enbridge Line 6B MP 608, and the Notice of Approval of Modification dated 14 September 2010. This report presents the results of the implementation of that approach for Section 5 of 10 (Stationing left bank of Talmadge Creek: 40+00L to 50+00L and Stationing right bank of Talmadge Creek: 39+00R to 48+50R).

#### **Supplemental SAR Objectives**

The following remedial objectives were identified to develop guidelines and procedures to remove the source area contamination from Talmadge Creek:

- Remove free oil from the banks of Talmadge Creek;
- Stabilize the existing creek bed;
- Identify that adjacent up bank areas are not a source of free oil.

To meet these objectives, the response actions included the completion of the following activities along Talmadge Creek:

- Site clearing and grubbing of trees and vegetation to allow access road construction and implementation of free oil removal activities;
- Construction of temporary access roads into the affected area;
- Construction of flumes along Talmadge Creek to recover free oil;
- Oil and water recovery and subsequent disposal;
- Installation and maintenance of absorbent booms along Talmadge Creek;
- Soil removal, staging, and bulking of crude oil-impacted soil with eventual characterization, transport, and offsite disposal;
- Storm water management and erosion control;

• Interim source area restoration under guidance of Michigan Department of Natural Resources and Environment (MDNRE).

#### **Section Location**

For efficiency and clarity in implementation and reporting, Divisions A and B of Talmadge Creek were divided into 10 sections as illustrated in Figure 1. Each section was subsequently divided into approximately 20, 50-foot linear clearance areas (stationing) on both the left and right banks of Talmadge Creek as illustrated in Figure 2, (left and right banks oriented facing downstream). This summary report addresses Section 5 as described in the table below.

Section Number	Stationing					
_	Left Bank: 40+00L to 50+00L					
J J	Right Bank: 39+00R to 48+50R					

#### **Section Excavation Methods and Clearance Metrics**

Three methods for determining the vertical limit of excavation were developed and identified as A, B, or C. These three methods are defined as:

- A No visible free oil and the clearance area passed the 40 CFR Appendix 1 to Subpart
  A of Part 435 Static Sheen Test. A test pit was then constructed and inspected by the
  United States Environmental Protection Agency (U.S. EPA) representative after 6 hours.
  If free oil was observed in the 6-hour test pit, additional excavation was completed until
  clearance was obtained via method A, B, or C. If free oil was not observed, backfilling
  was completed.
- B The vertical limit was reached due to groundwater (excavation proceeded vertically at least 6-inches into groundwater). No 6-hour test pit was required for clearance.
- C The vertical limit was reached due to the silt/clay confining layer. No 6-hour test pit was required for clearance.

In addition, an approximately 2-foot wide 48-hour observation pit/trench was installed along the wall of the excavation boundary and remained open for a minimum of 48 hours to allow the EPA representative to observe potential accumulation of free oil. If oil was observed, an evaluation of the source was conducted and an XTex curtain was installed to separate the impacted area from the clean area. If no oil was observed, or the barrier curtain was installed, backfilling proceeded.

#### Soil Sampling and Analysis

Soil samples were collected from the area of excavation and analyzed pursuant to MDNRE approved work plans for the following analytical parameters:

- Total Petroleum Hydrocarbons (TPH):
  - Gasoline Range Organics (GRO);
  - Diesel Range Organics (DRO);

- Oil Range Organics (ORO);
- Benzene;
- Toluene;
- Ethylbenzene;
- Xylenes;
- Polynuclear Aromatics (PNAs);
- 1,2,4-Trimethlybenzene;
- 1,3,5-Trimethylbenzene;
- Barium;
- Nickel;
- Vanadium;
- Iron.

The analytical results will be evaluated as part of future assessment and remediation activities.

#### **Deviations from SAP**

No deviations from the SAP were noted in this Section.

#### Conclusion

All completed work for this section met the U.S. EPA metrics in compliance with the SAR and the Supplement to the SAR. No additional cleanup is required to fulfill the U.S. EPA's requirements pursuant to the Removal Administrative Order issued by U.S. EPA on July 27, 2010 (Docket No. CWA 1321-5-10-001) pursuant to §311(c) of the Clean Water Act.

#### **Supporting Documentation**

The following documentation is included as attachments to this document:

- Location maps indentifying the subject section (Figures 1 and 2);
- Photographs;
- Field notes;
- A table summarizing the following information:

- Identification of final EPA clearance method used to dictate vertical limit (A, B, or C);
- Free oil observed (for Method A);
- Odor (for Method A);
- Sheen test per 40 CFR Appendix 1 to Subpart A of Part 435 (for Method A);
- Photoionization detector (PID) headspace (for Method A);
- Installation date and time of 6-hour test pit;
- EPA representative sign-off and approval of backfilling;
- Installation date and time of 48-hour observation pit/trench;
- 48-hour observation.

#### Talmadge Creek Source Contamination Removal and Verification Summary Table: Section 5

Division	Section Number	Station Number	Creek Bank (L/R)	Final EPA Clearance Method (A, B, C)	Free Oil Observed (Y/N)	Odor (Y/N)	40 CFR Sheen Test Sheen Observed (Y/N)	PID Headspace (ppm)	Installation Date of 6- hour Test Pit	Installation Time of 6- hour Test Pit	Method A 6-hour Test Pit EPA Representative Sign-off (Y/N)	Installation Date of 48- hour Observation Trench/Pit	Installation Time of 48- hour Observation Trench/Pit	48-hour Observation Completed (Y/N)
B2	5	40+00L - 40+50L	L	Α	N	N	N	11.3	9/13/2010	1435	Υ	9/13/2010	1441	Υ
B2	5	40+50L - 41+00L	L	Α	N	N	N	2.5	9/13/2010	1425	Υ	9/13/2010	1425	Υ
B2	5	41+00L - 41+50L	L	С	NA	NA	NA	NA	NA	NA	NA	9/21/2010	1405	Υ
B2	5	41+50L - 42+00L	L	С	NA	NA	NA	NA	NA	NA	NA	9/21/2010	1622	Υ
B2	5	42+00L - 42+50L	L	С	NA	NA	NA	NA	NA	NA	NA	9/21/2010	1608	Υ
B2	5	42+50L - 43+00L	L	В	NA	NA	NA	NA	NA	NA	NA	9/21/2010	1710	Υ
B2	5	43+00L - 43+50L	L	Α	N	N	N	0.0	9/20/2010	1630	Υ	9/20/2010	1630	Υ
В2	5	43+50L - 44+00L	L	С	NA	NA	NA	NA	NA	NA	NA	9/22/2010	1500	Υ
В2	5	44+00L - 44+50L	L	В	NA	NA	NA	NA	NA	NA	NA	9/13/2010	1035	Υ
В2	5	44+50L - 45+00L	L	В	NA	NA	NA	NA	NA	NA	NA	9/22/2010	1814	Υ
B2.7	5	45+00L - 45+50L	L	Α	N	N	N	31.4	9/13/2010	0935	Υ	9/13/2010	1005	Υ
B2.7	5	45+50L - 46+00L	L	В	NA	NA	NA	NA	NA	NA	NA	9/21/2010	0500	Υ
B2.7	5	46+00L - 46+50L	L	В	NA	NA	NA	NA	NA	NA	NA	9/21/2010	0435	Υ
B2.7	5	46+50L - 47+00L	L	В	NA	NA	NA	NA	NA	NA	NA	9/15/2010	1721	Υ
B2.7	5	47+00L - 47+50L	L	Α	N	N	N	1.1	9/15/2010	1624	Υ	9/15/2010	1636	Υ
B2.7	5	47+50L - 48+00L	L	Α	N	N	N	0.6	9/15/2010	1541	Υ	9/15/2010	1552	Υ
В2	5	48+00L - 48+50L	L	Α	N	N	N	1.5	9/15/2010	1505	Υ	9/15/2010	1512	Υ
В2	5	48+50L - 49+00L	L	В	NA	NA	NA	NA	NA	NA	NA	9/12/2010	1810	Υ
В2	5	49+00L - 49+50L	L	В	NA	NA	NA	NA	NA	NA	NA	9/12/2010	1759	Υ
В2	5	49+50L - 50+00L	L	Α	γ*	N	N	0.4	9/12/2010	1725	Υ	9/12/2010	1725	Υ

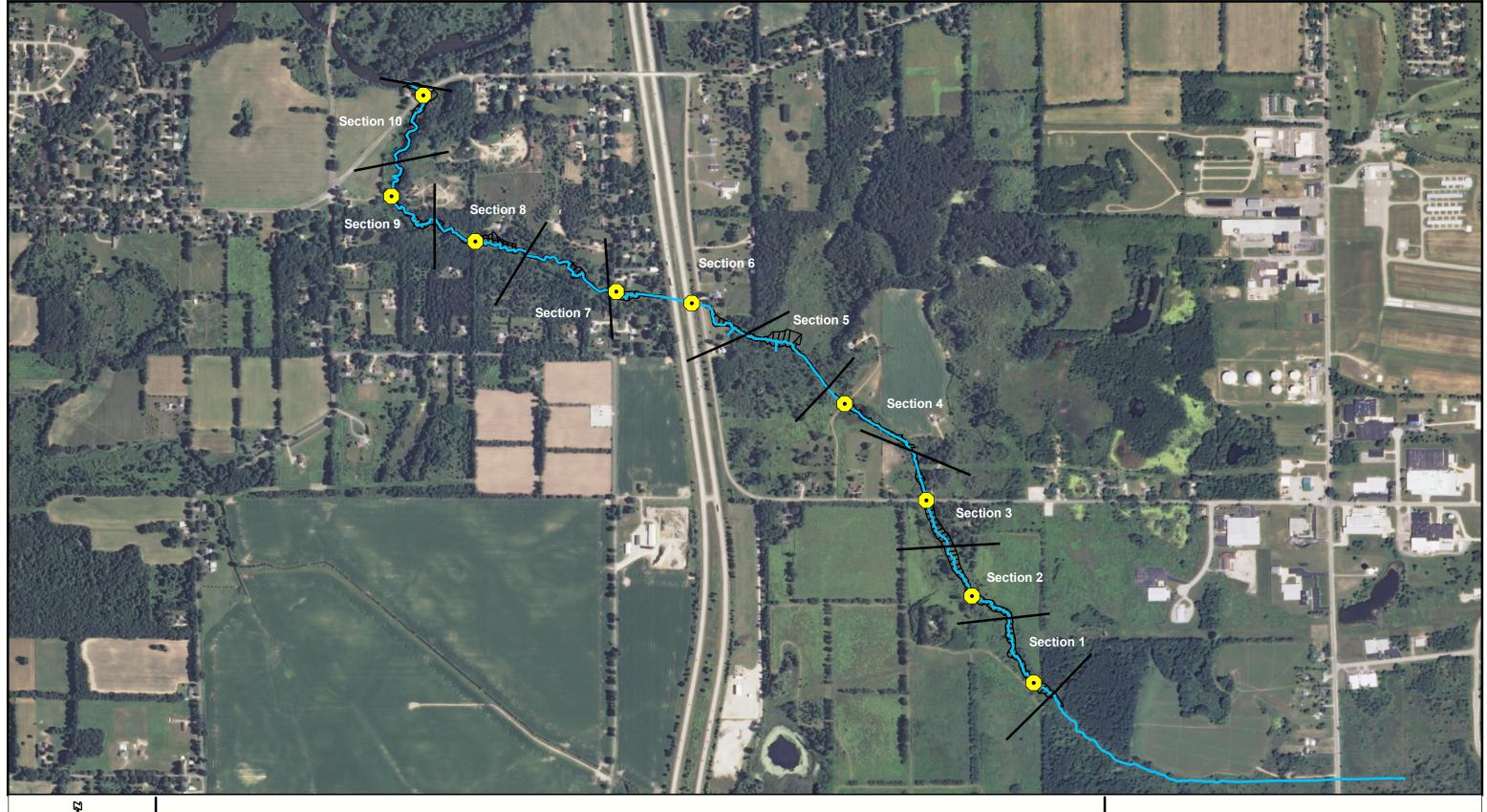
# Talmadge Creek Source Contamination Removal and Verification Summary Table: Section 5

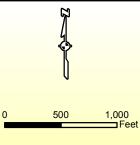
Division	Section Number	Station Number	Creek Bank (L/R)	Final EPA Clearance Method (A, B, C)	Free Oil Observed (Y/N)	Odor (Y/N)	40 CFR Sheen Test Sheen Observed (Y/N)	PID Headspace (ppm)	Installation Date of 6- hour Test Pit	Installation Time of 6- hour Test Pit	Method A 6-hour Test Pit EPA Representative Sign-off (Y/N)	Installation Date of 48- hour Observation Trench/Pit	Installation Time of 48- hour Observation Trench/Pit	48-hour Observation Completed (Y/N)
B2	5	39+00R - 39+50R	R	Α	N	N	N	0.6	9/11/2010	1640	Υ	9/11/2010	1640	Υ
B2	5	39+50R - 40+00R	R	Α	N	N	N	0.3	9/11/2010	1630	Υ	9/11/2010	1630	Υ
B2	5	40+00R - 40+50R	R	Α	N	N	N	0.5	9/11/2010	1610	Υ	9/11/2010	1610	Υ
B2	5	40+50R - 41+00R	R	Α	N	N	N	0.4	9/11/2010	1555	Υ	9/11/2010	1555	Υ
B2	5	41+00R - 41+50R	R	Α	N	N	N	0.3	9/11/2010	1546	Υ	9/11/2010	1546	Υ
В2	5	41+50R - 42+00R	R	Α	N	N	N	0.1	9/11/2010	1459	Υ	9/11/2010	1459	Υ
В2	5	42+00R - 42+50R	R	Α	N	N	N	1.0	9/11/2010	1445	Υ	9/11/2010	1445	Υ
В2	5	42+50R - 43+00R	R	Α	N	N	N	0.8	9/11/2010	1420	Υ	9/11/2010	1420	Υ
B2	5	43+00R - 43+50R	R	Α	N	N	N	0.2	9/11/2010	1300	Υ	9/11/2010	1300	Υ
В2	5	43+50R - 44+00R	R	Α	N	N	N	1.3	9/17/2010	1800	Υ	9/17/2010	1800	Υ
B2	5	44+00R - 44+50R	R	С	NA	NA	NA	NA	NA	NA	NA	9/11/2010	0930	Υ
B2.7	5	44+50R - 45+00R	R	Α	N	N	N	1.7	9/11/2010	1500	Υ	9/11/2010	1510	Υ
B2.7	5	45+00R - 45+50R	R	Α	N	N	N	0.9	9/11/2010	1415	Υ	9/11/2010	1420	Υ
B2.7	5	45+50R - 46+00R	R	Α	N	N	N	0.8	9/11/2010	1410	Υ	9/11/2010	1410	Υ
B2.7	5	46+00R - 46+50R	R	Α	N	N	N	0.6	9/11/2010	1110	Υ	9/11/2010	1115	Υ
B2.7	5	46+50R - 47+00R	R	Α	N	N	N	0.8	9/11/2010	1030	Υ	9/11/2010	1045	Υ
B2.7	5	47+00R - 47+50R	R	Α	N	N	N	1.4	9/11/2010	0945	Υ	9/11/2010	0945	Υ
B2	5	47+50R - 48+00R	R	Α	N	N	N	1.5	9/19/2010	0930	Υ	9/19/2010	0940	Υ
В2	5	48+00R - 48+50R	R	Α	N	N	N	1.0	9/11/2010	1555	Υ	9/11/2010	1601	Υ

#### Endnotes for Talmadge Creek Source Contamination Removal and Verification Summary Table

- NR Information not recorded on field log, however, U.S. EPA representative sign-off obtained.
- NA Metric not applicable to final site conditions after achieving 'B' or 'C' Method limits. Site conditions prior to achieving final excavation limits were recorded on field notes.
- ND Not Detected
- PID Photoionization detector
- ppm Parts per million
  - $_{\star}$  \_ Field logs do not reflect the final observations; however, EPA approval was obtained in accordance with EPA
    - Method A Metrics.

# **Figures**

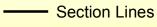




# Legend



Culverts



Talmadge Creek

FIGURE 1 **OVERALL SECTION LOCATION MAP LINE 6B MP 608** MARSHALL, MICHIGAN

SEPTEMBER, 2010



Legend

Culverts

Talmadge Creek

Section Lines

01+00L Environmental Clearance Areas

SEPTEMBER, 2010

SECTION 5 STATION LOCATIONS
TALMADGE CREEK
LINE 6B MP 608
MARSHALL, MICHIGAN

# **Field Photographs**



40+00L - 40+50L: Looking toward Talmadge Creek (September 13, 2010)



40+50L – 41+00L: Looking toward Talmadge Creek (September 13, 2010)



41+00L - 41+50L: Looking toward Talmadge Creek (September 13, 2010)



41+50L - 42+00L: Looking downstream (September 13, 2010)



42+00L - 42+50L: Looking toward Talmadge Creek (September 13, 2010)



42+50L – 43+00L: Looking toward Talmadge Creek (September 13, 2010)



43+00L - 43+50L: Looking downstream (September 23, 2010)



43+50L – 44+00L: Looking toward Talmadge Creek (September 13, 2010)



44+00L - 44+50L: Looking toward Talmadge Creek (September 13, 2010)



44+50L - 45+00L: Looking upstream (September 13, 2010)



45+00L - 45+50L: Looking toward Talmadge Creek at 6-hour test pit (September 13, 2010)



45+50L – 46+00L: Looking toward Talmadge Creek (September 13, 2010)



46+00L - 46+50L: Looking toward Talmadge Creek (September 13, 2010)



46+50L – 47+00L: Looking toward Talmadge Creek at 6-hour test and 48-hour observation pits (September 15, 2010)



47+00L – 47+50L: Looking toward Talmadge Creek at 6-hour test and 48-hour observation pits (September 15, 2010)



47+50L – 48+00L: Looking toward Talmadge Creek at 6-hour test and 48-hour observation pits (September 15, 2010)



48+00L - 48+50L: Looking downstream (September 15, 2010)



48+50L - 49+00L: Looking upstream (September 23, 2010)



49+00L - 49+50L: Looking upstream (September 23, 2010)



49+50L - 50+00L: Looking upstream (September 12, 2010)



39+00R - 39+50R: Looking at 6-hour test pit (September 11, 2010)



39+50R - 40+00R: Looking downstream (September 11, 2010)



40+00R - 40+50R: Looking downstream (September 11, 2010)



40+50R - 41+00R: Looking toward Talmadge Creek (September 24, 2010)



41+00R - 41+50R: Looking downstream (September 11, 2010)



41+50R – 42+00R: Looking at 6-hour test pit (September 11, 2010)



42+00R - 42+50R: Looking upstream (September 11, 2010)



42+50R - 43+00R: Looking toward Talmadge Creek at 6-hour test pit (September 11, 2010)



43+00R - 43+50R: Looking toward Talmadge Creek at 6-hour test pit (September 11, 2010)



43+50R - 44+00R: Looking toward Talmadge Creek (September 11, 2010)



44+00R - 44+50R: Looking upstream (September 12, 2010)



44+50R - 45+00R: Looking toward Talmadge Creek (September 12, 2010)



45+00R - 45+50R: Looking toward Talmadge Creek (September 12, 2010)



45+50R - 46+00R: Looking toward Talmadge Creek (September 12, 2010)



46+00R - 46+50R: Looking away from Talmadge Creek (September 12, 2010)



46+50R - 47+00R: Looking toward Talmadge Creek (September 24, 2010)



47+00R - 47+50R: Looking toward mat road at 6-hour test pit (September 11, 2010)



47+50R - 48+00R: Looking away from Talmadge Creek (September 14, 2010)



48+00R - 48+50R: Looking toward Talmadge Creek at 6-hour test pit (September 11, 2010)

# **Field Notes**

	Backfill Approval  EPA Enbridge	W TWE	
	48-hour Follow-up Inspection Observations and Time (If Applicable)  4-(5-(0   4:3)	XXXX	
FRANK	lon Time of Trench Excavation	m/ 82.12	21-71-10-10-10-10-10-10-10-10-10-10-10-10-10
09/13/2010 Rival Frendly	6-hour Follow-up Inspection Observations and Time Mr Applicable) A-/-("A-/-", 4/", 4/", 4/", 4/	4-14	
Date: Completed By:	Headspace Time of Test Pit Ppm 75	0 % [153] and	1.2 15470
	Sheen Test Rainbow Sheen Observed S Y (N	\(\begin{align*} \(\overline{z}\) \\ \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	\(\sigma\)
Marshall Line 68 MP608 Pipeline Release 22131003	Phase Oil Odor <sup>2</sup> Observed  V	W 11 (2)	(Z) (Z) >
Marshall Lin	Method Dhoto ID Indicate Vertical Umiliar	24 15 38 B B C	1006 W 8 C
Project Name: Project Number:	Creek Section  ACHSOL to ACHOL	401001 10 374504 (578 B	391501 10394001 1606 6
			4.

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Depth of Contamnation (A)
Groundwater (B)
Conflaing Layer (C)
Mone (M), Light (L), Moderate (M), Strong (S)
PID readouts in ppm above background
ND = No Detection

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Marshall Line 68 MP608 Pipeline Release Project Name:

Project Number:

Date: 9/21/2010 Completed By: Strr055

Greek Section Se of 21/2002 22131003

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Sackfil Approval	Enbridge	Dr.			- EKAUTTON		ATT LANCE										
	<b>V</b> d3	Q 8.4.		£ 1.00	DELAYES	4					S TOOM						
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6-bour Follow-up Inspection Observations and Time (If T)		ican's Bern Higher ~ 1	28.45 VEST. C.	4218 - 4460 WSIAL	34 3560 - 4250 MS	Wheel Blood from OPHETTE MATE	2.45 MILL C. / YONG ENV. BENDERINGTALL ALTSO TO 4/100/ SECTION FACED AS HE FEST	3.45 BEGAN INSTAL CLIV TROUM @ 42+50 TIME@ & 4:08 FOL 48 HL TEST	4:15 BELY INSTALL CLATTORNING 42+00-41+50 BEGAD 48 HR TEST 8 4:22	FIF BEENVINGEN CLAY TROND P 43,00 - 42,50 BEENV 48 HL TESTE 5:10	e No SHEEN OBSERVED				1 X My VIN	1 Jan 1 16	
Oldor Shem Test readspaces Time of Odor Observed Ppm Test Pit	(N) \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	San OBSERVED CREW BY	2116 SON 1047-50 (	50 TO 42:00 VEC-C-TO	C TRL, VAL SPENG SETT	50 70 4240 1620	CHECK FABOR INSTALL 41+	4 THOUSE GLASO TIME	1-100-10 47.00-41+	1 TROUGE 43100 - 42	al observed No oba	to deliminate the second se		1 1 10	0/01/201		
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Depth of Contamination (4)
Groundwater (8)
Confinite Layer (C)
None (N), Light (Light 86

12110 4/4001-24/400C Enbridge Backfill Approval £ΡΑ Ξ 48-hour Follow-up Inspection Applicable) Observations and Time Ton Planuis Excavation Time of Trench 33 6-hour Follow-up inspection Applicable) Time of Test Pit Observations and Time Left bare: Headspace<sup>3</sup> uudd Sheen Test Rainbow Sheen Observed z >-S W I N SMIZ N N Odor2 Marshall Line 68 MP608 Pipeline Release Free Phase Oil Observed z z z 22131003 Α Θ Method
Used to
Used to
Photo ID Indicate
Vertical
Limit<sup>2</sup> ω Ω <u>0</u> ₹ Creek Section Project Number: 2 2 Project Name: Comments Comments Comments

Notaria heet

None (N), Light (L), Moderate (M), Strong (S) PID readouts in ppm above background

88

ND = No Detection

Depth of Contamination (A)

3

Confining Layer (C)

Groundwater (B)

THEAD WENT

Creek Section	Zectfil Approvel  EPA Enbridge		
Date: A-Zi-Co	nch 48-hour Follow-up Inspection Observations and Time (# Applicable)	Merty Catro	
1	6-how Follow-up inspection Observations and Time (if Time of Tranch 4, Applicable)	sult clay	
Marshall Line 68 MPS08 Pipeline Release 22131003	Shean Yest Headspace <sup>3</sup> Yime of Odor <sup>2</sup> Sahbou Shean Ppim Yest Pit N L M S Y N	tailed free	M), Strong (5) Aground
	Method Photo ID Indicate Photo ID Gree Phase Oil Vertical Observed Limit*  A & & & & N		(1) Dapth of Contamination (A) Groundwater (B) Confibril Laryer (C) (2) None (B). Light (U, Moderate (M), Strong (S) PID readouts in ppm above background ND * No Detection

Enbridge Backfill Approval usho Due to free EPA 5 3/05/79 48-hour Follow-up inspection Observations and Time CF 4 (NA No (If Applicable) C3/13/2010 RABA TECHNIK 07-61-るなべ Time of Trench Excavation C 17/15 6-hour Follow-up inspection Observations and Time (If Applicable) 135/2 "Sankon 1348 ONE FOR ì 4/11/10 Headspace<sup>3</sup> Time of Test Pit Completed By: 五名 Date: 15 Ĩ 4. Sarking. The with nasking > \ \ \ \ <u>⟨²)</u> ≻ <u>(2)</u> Test Rainbow Sheen Observed (<sub>2</sub>) E N ₹<u>₩</u> S E S Odor<sup>2</sup> Marshall Line 6B MP608 Pipeline Release Z. <u>,</u> **(2**) Free Phase Oil Observed € state 22131003 ¥ >-15/8 1/4 02/1/05+11/01/100+2/ 21+50 1/40041/40 ms+1/4 1400 10 46+504 1421 1810 1810 Method Used to Indicate Vertical Llmit. 7 Photo ID 701/ j 01/21/10 9/17/ Creek Section Project Number: Project Name: Comments Comments

Depth of Contamination (A)

3

Groundwater (3)

Confining Layer (C)

None (N), Light (L), Moderate (M), Strong (S) PID readouts in ppm above background ND = No Detection

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Texto a got of 42 to 42452 ( Enbridge **Backfill Approval** EP. トしなって Time of 6-boar follow-up inspection Observations and Time of Tranch 48-hour follow-up inspection Observations and Time Trans Pit 2 Applicable) NO Satire Completed By: Date: の一つで 4.68 Am 7 0 p Q Later of the state 0 のとのとと K Shen Test Headspace<sup>3</sup> Sainbow Sheen Ppm Observed Ppm Marshall Line 68 MP508 Pipeline Release 22131003 N L M S 5 2 darte Free Phase Off Observed 0 Photo 1D **₽** Method Used to Indicate Vertical Project Number: Project Name: Photo ID

Not bright

Confining Layer (C)
None (N), Light (L), Moderate (M), Strong (S)
PID readouts in ppm above background
ND = No Detection

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Depth of Contamination (A)

Greek Section	Eacifii Approval  EPA Enbridge	4201 23 4-	0//	1623		
Date: $\frac{\mathcal{A}(Z)/(Z)}{Completed By:}$	Time of Tranch 48-hour Follow-up Inspection Observetions and Time  [17 Applicable]	1.991cm to Claz/50/1/	2/20 0020	hole in bank.		
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Marshall Line 68 MP608 Pipeline Release 22131003	Free Phase Oil Odor <sup>2</sup> Sinen Test Readpage Time of Observed Observed Ppm Test Pit V N N N N N N N N N N N N N N N N N N	2 42 ×	Led 6 Wr C	SUPPLEAR	+2)	<u>a</u>
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<sup>8</sup> 

Depth of Contamination (A)
Groundwater (B)
Confiniting tayer (C)
None (M), Upht (L), Moderate (M), Strong (S)
PID readouts in ppm above background
ND = No Detection <u> 8</u>

Backfill Approvat 4/42 Mm  $\langle \rangle$ £PA 2000 EDGE OF MA ROAD - NO SAWPLE OR PLT 1630 9.53.0 9-28-10 1, 47.37 61/6 いるの 48-hour Follow-up Inspection Observations and Time 91/22/6 (if Applicable) falled freached COMMONIS VERY SOUTHL ROETICAL OF SWEAM, REMOVE SMALL PORTION OF CONTAININATED ALGIA. をかるべて Ð 24-2-1-2 アクノーカ 17ac 5.20 rika or 4-21-10) 01-1400 1.080m Time of Trench Excavation KYANI FRANK 19,5 ひんとんしか Acidial alosated observer one test pt. 6-hour Follow-up Inspection Observations and Time (if Applicable) 1130 OSII 1330000 Time of Test Pit Completed By: COMMENTS MAT ROAD CROSSONER AREA - SILT FELICE AT 0 Headspace<sup>3</sup> (). щdd (Z) > Sheen Test Rainbow Sheen Observed 2 z >-W I N I S N N Odor2 Free Phase Oil Observed <u>s</u> z (2) 22131003 > > DID SHEAN FEST A B υ (<u>\$</u>) Used to Indicate 434001 10424501 1419 (F) 8 0 Vertical Umit Method Photo ID 124501 0 42400 1 14P 12+501 10 13+03L Creek Section Comments

Enbridge

09/13/2010

Date:

Marshall Line 6B MP608 Pipeline Release

Project Number: Project Name;

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Depth of Contamination (A) €

Confing Layer (C) Groundwater (B)

None (N), Light (L), Moderate (M), Strong (S)

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PID readouts in ppm above background

ND = No Detection

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Marshall Line 6B MP608 Pipeline Release

22131003

Project Number: Project Name:

Completed By:

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Depth of Contamination (A)

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Confining Layer (C) Groundwater (B)

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Excavation (B)

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									'			<u>)</u>
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			ξ	NAT ROW	Soud				)			
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Depth of Contamination (A)
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Nove (M), Light (L), Moderate (M), Strong (S)
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(Restand Supplemental Supplemental Sheet Signal Marshall Une 68 MPG08 Pipeline Release Supplemental By Completed By Comple

Project Name:

Creek Section 45+50 to 46+00

700 + 67 00 46+ 00	Sacitii Aproval						
Completed By:	h 45-hour Follow-up Inspection Observations and Time (If Applicable)				30/CE132		
	6-bour Follow-up Inspection Observations and Time (# Time of Tranch Applicable)  Scavetion  [4] [5]	men - start	to wat		and by ray - Waster Cent		
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Depth of Contamination (A) 3

Groundwater (8)
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Confining Layer (C)
Confining Layer (C)
Pipter (B) Moderate (M), Strong (S)
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Creek Section Marshall Une 68 MP608 Pipeline Release

15 +50 Lo 46 + 400 + 46 +00 L Enbridge Sackfill Approval ΕPA 48-hour Follow-up Inspection Observations and Time (If Applicable) Time of 6-hour follow-up inspection. Observations and Time (if Time of Tranch Test Pit. Exception Applicable) DE-OG mon. PIT RE-DUL @ 0500 ON 9/24/10. PREVIDUS PIT FIGHTED. 536 22131003 SECTION 45+501 - 40+001 Free Phase Oil Observed Method
Used to
Indicate Photo ID
Vertical Project Number: Project Name: 0183 Photo ID

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Depth of Contamination (A)
Groundwater (8)
Confinite Layer (C)
None (M), Light (I), Moderate (M), Strong (S)
Pipp readouts in ppm above background
ND = No Detection 多色

46+0010 - 46+50C Enbridge Creek Section ONLY I PIT @ THIS LOCATION. RE-DUD @ 0435 ON 9/21/10 - DELINUS DIT FALLED INSPECTIONLY Seckfill Approval **89** Time of Shour Follow-up Impaction Observations and Time (if Time of Tranch 48-hour Follow-up impaction Observations and Time of Tranch Ashour Follow-up impaction Observation Observa Completed By Lettle Stryin 0/18/P ==== 0425 2435 Marshall Line 6B MP608 Pipeline Release Shen Test Henbow Sheen He Observed 22131003 Free Phase Oil Observed HOWEN EXTRACTOR WERE CTS Method
Used to
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Vertical
Userital Project Number: Project Name: 0193 Photo (D

B

Depth of Contamination (A)
Groundwater (B)
Confinite Layer (C)
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PID readouts in pen above background
ND = No Detection 88

: 09/15/2010 TAVA FRANK	6-hour Follow-up inspection Time of A8-hour Follow-up inspection Backfill Approval Observations and Time Trench Observations and Time (if Applicable) Excavation (if Applicable) EPA Enbridge	OR PHINESAL SHEEL OBSERVED WTEST, VISABLE  12" OPT SWEBALE.  THE SWEBALE.  THE THE STANDARY AND THE THE THE STANDARY  THE SWEDING OF STANDARY AND THE STANDARY  THE SWEDING OF STANDARY AND THE SWEDING IN SO IN S
Project Name: Marshall Line 58 MP508 Pipeline Release Date: 22131003 Completed By:	Creek Section         Photo ID Indicate Limit         Free Diagram         Sheen Test Free Test Free Test Free Test Free Test Free Test Free Sheen Ppm         Time of Test Pit Ppm           4.H-CoL Indicate Limit         A B C V N N I M S V N I M CONServed Comments         A B C V N O I M I M S V N I M CONSERVED I M I M S V N I M CONSERVED I M I M S V N I M CONSERVED I M I M CONSERVED I	Comments Stylot A B C V W N LMS V W I.9  PRODUCT FOUNDS CDOR STREET IS COFF SURFICED  Comments  Comments

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Depth of Contamination (A)
Groundwater (B)
Confining Laver (C)
None (N), Light (L), Moderate (M), Strong (S)
PID readouts in pin above background
ND = No Detection

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Project Name:

Marshall Une 6B MP608 Pipeline Release

Date: 3/22/2010
Completed By: 56-

Creek Section
44700 to 43155

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Completed By:	th 48-hour Follow-up Introaction Characteristics and Time (If Applicable)		KEEL PRODUCE BOTTOM OF PEAT LAYER INSTRUCED WELKED TO COT DOWN TO SURFER CORE	Moved FOR LAKER AG	50-44-00							MATERIAL PROPERTY OF THE PROPE	
	Ilme (if Three of Trench Excavation	21.5	720 OFE	OX BACE	om dur			,					
	6-bour Follow-up Inspection Observations and Time (if Applicable)	IT OT ENSING SON, INSTAU FABRIC	LATER, INSTRUC	SEAT LABORERS	S. OO VAC TRUCK BACKED IN VACUMED OUT WATCH ONE From HATSD - 44-00				A PORTINE ME ANTI- THE THE PROPERTY AND A THE THE PROPERTY AND A THE THE THE PROPERTY AND A THE	in the property of the major man in the property of the major majo			
	Time of Test Pit.	16 SNL	of pear	いいながん	io out								
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2	Free Phase Oil Oderwad Observad (V)	100	1000ct 6	COP CACAVA	K BACKEL							:	
	Method Used to Indicate Photo ID Vortical A	43-43+50	FREE G	(06 001 1	VAC TREE		***************************************		:				
Project Number:	Proto 15	Notes: 44-10			5:00								į

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Depth of Contamination (A)
Groundwater (B)
Confining Layer (C)
None (M), Light (L), Moderate (M), Strong (S)
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Project Name:	Ma	rshall Line 6B	Marshall Une 68 MP608 Pipeline Release	e Release			Date:	160	0/22/51/1				
Project Number:			22131003		**		Completed By:	78/42	T 1				
Creek Section	Photo ID In	Method Used to Indicate Vertical Umit <sup>1</sup>	Free Phase Oil Observed	Odor <sup>2</sup>	Sheen Test Rainbow Sheen	Headspace <sup>3</sup>	Time of Test Pit		6-hour Follow-up Inspection Observations and Time (If Applicable)	Time of Trench Excavation	48-hour Follow-up Inspection Observations and Time (If Appilicable)	Backfill Approval	roval
15toc/ 10 44t501, 1028	629 G	U B	<b>€</b> >-	M S	£ >	000		ONE A	かっている	9	J. Matol	EPA	Enbridge
Comments											9-14-10	)	
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Comments					A		1 1		6 0010	2 2	640.	Tee pro	duct
FLLEO 9/17 44+001 = 43+50 14	14743	BC		S W 7 (2)	(Z)	5.00 5.00	1054	د ا له	1-1-1-12 1-1-12	٥	1.7. 9.0.00 (act A)		3
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							8	magin	AS July	7	for drivent	14 B.	

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Depth of Contamination (A)
Groundwater (B)
Confining Layer (C)
None (M), Light (L), Moderate (M), Strong (S)
PID readouts in ppm above background
ND = No Detection

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The Work Free freduct Enbridge Backfill Approval 22 1/25 PV EPA 8 933.10 48-hour Follow-up Inspection Observations and Time 45 hx lassed 沙沙 7. -15.10. (if Applicable) 12:60 645. 0 Time of Trench Excavation 0853 1500 0 0 ò FRALK \$ 7 6-hour Follow-up Inspection Observations and Time (If Applicable) 2 Still Tubelled Toiled KYAZ. the state of 100 1000 St The state of the s Time of Test Plt Completed By: 838 0847 Date: Headspace<sup>3</sup> . 10 L° O N (g) Rainbow Sheen Observed (<u>≥</u>) > **②** ≻ Sheen Test > N N N N N N N N Odor<sup>2</sup> Marshall Line 68 MP608 Pipeline Release Free Phase Oil Observed **②** Ø Z 22131003 > >->-(م ق 0 8 ں ھ (ج Method Used to Indicate Vertical Umit<sup>2</sup> Photo ID Alchon 101 45+501 092 46+5040 4cto 1 1859 45.50 1 10 45 + 00 Creek Section Project Number: 大田田 Project Name: Comments Comments Comments

Depth of Contamination (A)

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Confining Layer (C) Groundwater (B)

None (M), Light (L), Moderate (M), Strong (S) PID readouts in ppm above background

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ND ≈ No Detection

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	Sackfili Approval EPA Enbridge	<u> </u>	5
X	48-hour Follow-up inspection Observations and Time (If Applicable)	01-06-10 PA	All Ariba
FRAGA	Time of Trench Excavation	1552	959
09/15/2010 (X48) FRANK	6-hour Follow-up Inspection Observations and Time (If Applicable)	"dalle	MARRIE
Date: Completed 8y:	Headspace <sup>3</sup> Time of Test Pit.    15   1505	1241	1,624
		0)~0	
	Sheen Test Reinbow Sheen Observed M S Y (N)	>	\(\frac{1}{\rm \chi}\)
Marshall Line 6B MPG08 Pipeline Release 22131003	- O	Σ (Z)	Σ 1 2
ine 58 MP608 Pi	Phase Obser	<b>&gt;</b>	>
Marshall	Wethod Used to Indicate Undicate Undica	8	8
	332, Photo 1D	30/105	2/100
Project Name: Project Number:	Creek Section 484561 484700	48406 1047+504/68	67450L 1047+00LD64

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Depth of Contamination (A)
Groundwarer (B)
Confining Layer (C)
None (N), Light (L), Moderate (M), Strong (5)
PID readouts in ppm above background
ND = No Detection

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		CAIII Apr	EPA cubridge	«Vions IV	to remove		0/14/10	8	minute>	1511/2	9/13				**************************************	
		48-hour Follow-up Inspection Observations and Time (If Applicable)	J. 9-20-10	new 49725 in area that appeared to howe been orevious ly	Test pit was placed. This area will ned to be addressed to remove	7		0.8.8.11	Test Dit was due to ground water. In ten minutes	12 produced. 9/13 - 9/15 Heris	PIT SRCHUHED - REMINED @ 0525 ON 9/18	And the state of t				
	7	Time of Trench Excavation		Cocascal	) ]]; <del>'</del> 37	で、 どか			B SOUN		1 P.C. Mar.					
09/12/2010	RVAL FIZANK	6-hour Follow-up inspection Observations and Time (If Applicable)	1) remined	in area that a	laced. This area	4	,	ine.	11 Was dug to	I'd broads	PIT BREAUTED.					
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1444		Sheen Test Rainbow Sheen Observed	z (3)		·			(2)	,		170000		Z >-			
Release		Odor²	N M S	he surt	Free oil in Sheen test			S N S	752+84	Jut to,			S Z Z			
Marshall Line 68 MP608 Pipeline Release.	22131003	Free Phase Oil Observed	Z (>)	4 00 4	in She		2	<i>B</i>	۳ ۸۲۰۳	to 15-		-	z >			
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		Photo ID		) et 5	i	ation.			Same	Cam		-				
Project Name:	Project Number:	Creek Section	78748 10 48488T	Comments Oil when observed on the surface	Scraped.	Contamalaction		45+60 to 48+501	Comments Sheen Sample takes acre 48+75L	free Orl came in with out water			2	Comments	A-4000	

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Depth of Contamination (A)
Groundwater (B)
Confining Layer (C)
None (N), Light (L), Moderate (M), Strong (S)
P10 readouts in ppm above background
ND = No Detection

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Enbridge See Cerementy from 51450-514001 & Same Situation. Backfill Approval 3 Oil deves 13 Keep DA. EPA でするかりから Ϋ́ Ϋ́ Completed 48-hour Follow-up Inspection Observations and Time 1650-012 (if Applicable) 7 MILLINGIA LA XCavatin OIT Was Ministra Gx1 wit Ding was placed around Excavation Thme of Trench 8 comments light sheen - no raisbow - no observed oil in section, when the tist RANJ FRANK 6-hour Follow-up Inspection Observations and Time 09/12/2010 (if Applicable) 1725 Opt 135m 9-43-70 6.6 Same Situation Mariamon a for 0.0 1707 oht 9/12/10 1706号 50+506. Time of Test Pit Completed By: observed on the surface of the water within a minute. 5 12 ( cook Date: 7.0 Headspace<sup>3</sup> りかかり A 9-13-10 51+504-51+001-② > **②** ≻ **②** } Sheen Test Rainbow Sheen Observed SOCIAS 14 A TO FIX DAMES Driving who the pit. Free oil in low area near × × (§) S L W § ≥ √ ⊗ Odor<sup>2</sup> Marshall Line 68 MP608 Pipeline Release Drawin (S) z Ø Phase Oil 50+501 0 50+00/1711 (A= 0 0 0 0 22131003 Sec coments from 50-tw 10 49+50 1745 3/18 C 5/ HOU | 10/ 502450 | 1706 | 10/ 10/ 10/ 10/ Used to Indicate Vertical Umit<sup>3</sup> Photo ID Creek Section Spring Project Number: Project Name; Comments Comments

Depth of Contamination (A)

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Confining Layer (C) Graundwater (8)

None (N), Light (L), Moderate (M), Strong (S)

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PID readouts in ppm above background ND = No Detection

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Supple then In (SL-its Enbridge Backfill Approvat EPA 48-hour Follow-up Inspection Observations and Time (If Applicable) 6-hour Follow-up Inspection Observations and Time (If Applicable) Headspace<sup>3</sup> Time of Test Pit Completed By: Crosek Sheen Test Rainbow Sheen Observed Munema ddi war max Minor N N S Z Z N L Odor<sup>2</sup> Marshall Line 68 MP608 Pipeline Release (वाषाय Free Phase Oil Observed z --× × 22131003 A B C Method Used to Indicate Vertical Umit<sup>±</sup> A 8 C A B C Photo ID Comments 55 1 1973 しなる るもうころない Creek Section 主事のぞ Project Number: 14 450 100 Project Name: Comments

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Depth of Contamination (A)

Confining Layer (C)

None (N), Light (L), Moderate (M), Strong (S)

PiD readouts in ppm above background

ND ≈ No Detection

*	48-hour Follow-up inspection Backfill Approval Observations and Time (If Applicable)  EPA Enbridge	0 KW W TU- 9-14-6-11:45	of Mye Efth	14	ofule ENA	1 2 14-10 11 180 M TAP	western eftels
Completed By: Thousan CAV COM	Headspace <sup>3</sup> Time of Test Ple ppm	1630 alm / 1630	Yours Cleaned	1 0 2 1640 all 1640 - 1770. 911	UShiz morky	7 OSti 1230 01	11.06 Am 9-12-10 J ENA J 2 June of 2 June 1 ENA J
Project Name: Marshall Line 68 MP608 Pipeline Release Project Number: 22131003	Method Free Used to Photo ID Indicate Phase Oil Vertical Observed	Comments		2950103900 642080 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		5300 tol 2620 1220 8 c v 60 m2 m s	

Depth of Consamnation (A)
Groundwater (B)
Confining Layer (C)
None (N), Light (L), Moderate (M), Strong (5)
PID readouts in ppm above background
ND = No Detection 3

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	Backfill Approval	EPA Enbridge	414	A. Jul	Muk & M		MAS SAM
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Steether	Time of Trench Excavation	1516	med	125 A	Ti ma com	200	0 8 2 2 4
O INTO	6-hour Follow-up Inspection Observations and Time (If Applicable)	=	de OF 2: Marky	311.113	9-14-10 II	410-11-	er-17-12
Date: Completed By:	Time of Test Pit	12/20	MEH	853	, भूर के	0.3) 8,0	J. J
	Headspace <sup>3</sup> ppm	0.3		3-   0	79.50	Š	
	Sheen Test Rainbow Sheen Observed	>		(a)		2	
ne Release	Odor²	N L M		N N N		8 N N N N N N N N N N N N N N N N N N N	
Marshall Line 68 MPG08 Pipeline Release 22131003	Free Phase Oil Observed	<u>\$</u>		( <u>s</u> )	-	(N)	
Marshall Line	Method Used to Used to Photo ID Indicate Vertical Umit¹	\$ 600 S		ZZZADB c		2 8 C	2011
Project Number:	Creek Section	4100 10 4150		43000000	Comments	1050 o Johan	Comments
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Depth of Contemnation (A)
Groundwater (B)
Confining Layer (C)
None (N), Light (L), Moderase (M), Strong (S)
PID readouts in ppm above background
ND = No Detection

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Enbridge Backfill Approval 7 8 5/100/10 7 9-1200 11155am 48-hour Follow-up inspection Observations and Time Mice ENA あるこれ、と A(T) B Site Green on to 1445 Time of Trench Excavation 1420 All Win Billetich win 0//17/0 一年大大学工場の Morragin 6-hour Follow-up Inspection cleaned Observations and Time (If Applicable) Chewal & Legred Headspace<sup>3</sup> Time of Test Pit Completed By: Date: 0,0 (<u>2</u>) > Z . Sheen Test Rainbow Sheen Observed N N N N N Marshall Line 68 MP608 Pipeline Release Odor2 (<u>2</u>) Free Phase Oil Observed <u>(</u> × (x) 22131003 5 1/5 die Method Used to Photo ID Indicate 9 8 8 250 1 052 po 1052 p 1250 10 4200 134K (1)10 10 110000 Vertical (1/3 1200 04150 WW Limit<sup>1</sup> Creek Section Project Number: Project Name: Comments

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Depth of Contamination (A) Groundwater (B) €

Confining Layer (C)

None (N), Light (L), Moderate (M), Strong (S) PID readouts in ppm above background

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ND = No Detection

Comments Applied on location @ 0845, Enbridge, ordered the area to be back Pilled for Ententings only lenceding Clay I sumply B 2.7 4mp Soi Backfill Approval Per ine 2 hand distant the remender were dup ly Wester to reaction road mats. Met do A 02/22 0895-915 was they so outton it back Pilling will occur prote sampling screening 48-hour Follow-up Inspection Observations and Time 120 (if Applicable) (50:1) boook Rilling. Sacolling aren @ 1230-211/16 3-4" removed (500) 57 Excavation Time of Trench alue to trave perutual in shown to 31. Masto lench 6-hour Follow-up Inspection Observations and Time Coerbornierockolon + benefit Relling med あがなられる。 dir 110 \*\* to come built Headspace<sup>3</sup> Time of Test Pit 1. @ 0.8 Cont 093, 1200 Soil Generaling Into to Asked l i 10,2 sureners Sheen Test Rainbow Sheen Observed Z (2) (8) 1 Z Close w Module with watch Sim Souder of Envidue N L M S Odor 3 Free Phase Oil Œ, Observed 0 1400 0250 M16 ABE O NO Cer Wosier Comments Service Constacted Stove Menhon approved Bureal Has hopes 4400 00 4450 001/11 1 1 1 1 C) Used to Indicate Method 1350 04300 1414 (2 8 c Depth of Contamination (A) Vertical Umlt, Photo (D J. J. Wall Comments Warred Creek Section 623 2 Katelian in a

7-0-19-

Completed By: 2 MON Can

Date:

Marshall Line 58 MP508 Pipeline Release

Project Number: Project Name:

0/2/0

Groundwater (B)

None (N), Light (L), Moderate (M), Strong (S) Confining Layer (C)

2 3

PID readouts in ppm above background ND = No Detection

Completed By: (XYA)   TO 10	Sheen Test Rainbow Sheen Ppm Time of Test Pit Obs	Unserved	15 1860 PEC/TREASET	TRENCH, LINESPOR WILLAN & SUIT FOR	Archa is proppers	Z > \			Z > 20			
eted By:	Headspace <sup>a</sup> Time of Test Pit. Obs	Observed A	V (N) 1.3	1	Y	>	Comments		>	CONTINUENTS		

Death of Contamination (A)
Groundwazer (B)
Confining Layer (C)
None (M), Light (L), Moderase (M), Strong (S)
PID readouts in opm above background
ND a No Detection

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A Joseph Market	Backfill Approval	9-14-10 12:36 pt		
6-hr clearance	48-hour Follow-up Inspection Observations and Time (If Applicable)	1) 00 d.	3081 60-21-6	
0-6	Time of Trench Excavation			
9-12-10	6-hour Follow-up Inspection Observations and Time (If Applicable)	of 14.60	9-17-6	
Too to all the A	E Time of Test Pit			
S Too that Bare.	Headspace <sup>3</sup>			
2	Sheen Test Rainbow Sheen Observed Y N	>-	>	
e Refesse	Odor <sup>2</sup> N L M S	ν Σ Z	\(\sigma\)	
Marshall Line 68 MP608 Pipeline Release	Free Phase Oil Observed Y N	Z >	> >	
Marshall Line 6	Method Used to Used to Vertical Umit <sup>2</sup>	A B C	T Fro	Depth of Contemination (s)
	Wetho D Indicat Used t Vertical Used t Vertica		4.55.50 P.M.	Depth of Co
Project Name: Project Number:	Creek Section Creek Section	Comments	Comments	a

Depth of Contamination (a)
Goundwater (B)
Gonfining Layer (C)
None (B), Light (L), Moderate (M), Strong (S)
PID readours in ppm above background
ND = No Detection

oject Name:	Marshall Line 6B M.	Marshall Line 6B MP608 Pipeline Release					W15/16		
oject Number:		22131003		! <u> </u>			Complete G 10% DATH BUN		Creek Section
	<u> </u>	3	-				Completed by: Control of 1155 V V		25 70 to 45 750
Photo ID	Indicate Photo ID Free Phase Oil Odor² Vertical Observed Odor² Limit*	Rainbow Sheen Headspace <sup>3</sup> Observed Ppm	o <sup>3</sup> Time of Test Pit	6-hour Follow-up Inspection Observations and Time (If Applicable)		Time of Trench Excavation	48-hour Follow-up inspection Observations and Time (#Applicable)	Backfill Approval	pproval
5-11		s v @ 2.7						EPA	Enbridge
tes:	West rand removed	Limbers	Lewis ve	Q	Show tead at 4+256	to	4+256		
	Uplice for First	1/2/3	ale	Redy Sign	Signed both		Kih and UP-hr	47/1/16 1645	1845
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	7000						- Andrews - Andr		
The state of the s	***************************************	777444							
(F)	Depth of Contamination (A) Grandwaser (B)								
(3)	Confining Layer (c)  Confining Layer (c)  None (M), Light (L), Moderate (M), Strong (S)  PID readouts in ppm above background								
	NU ≈ NO Detection								

18/25		
Jane / See	Packfill Approval	
	48-hour Follow-up Inspection Observations and Time (If Applicable)  4   17   10  2   17   17  2   17   17  3   17   17  4   17   17	
FRANIK	Tirench Skravation OP OP 1410	
09/11/2010  ZVAW FR	6-hour Follow-up Inspection Observations and Time (If Applicable)	
Date: Completed By:	The offest pin   1475	
	Headspace ppm ppm ppm ppm ppm ppm ppm ppm ppm pp	
	Sheen Salmbo Sheen Observed Observed V	
22131003		(5) 2
Marshall Line 68 MPGCS Pipeline Release. 22131003 Method	B C C Seed to B C C C C C C C C C C C C C C C C C C	Groundwater (8) Groundwater (8) Confining Layer (C) None (N) 1.8pt (1), Moderate (N), Strong (5) PID readouts in poin above Bickground ND = No Detection
	9 12	
roject Number:	Comments  Comments  Comments  Comments  Comments  Comments	्र

Project Nane: Marshall Line 6B MP608 Pipeline Release Project Number: 22131003	Date:	69/11/2010 RVALL FRAUK			<i>;</i>
Creek Section Photo ID Indicate Phase Oil Odor <sup>2</sup> Rainbow Ppm Ppm Lmit <sup>2</sup> Observed Spec	Time of Test Pit	6-hour Follow-up Inspection Observations and Time (If Applicable)	Time of 46	48-hour Follow-up Inspection Observations and Time (If Applicable)	Backfill Approval
			J.		EPA Enbridge
// 1.4 COK   1.4 COZ   1.4 CO   1.4 COK   1.4	0945 PAT	Mad Colons out	T. COLIE		7
Comments				6 17 11° cur	7
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40+50 R 1047+1878 1740 18 8 C V B 121 121 121 121 121 121 121 121 121 1					
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ALACOK 1940+562 1130 BBC V R BLMS V R OLINIS	<b>*</b>		1		
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Connecto				ر م	pin
				7.6.2	
	A THOMAS				

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Depth of Contamination (4)
Groundwater (8)
Confining Layer (C)
None (N), Light (L), Moderate (M), Strong (5)
PID readouts in ppm above background
ND = No Detection

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Enbridge Backfill Approval 9171/1/ 030g 48-hour Follow-up Inspection Observations and Time {# Applicable} : : Time of Trench Excavation 14.0 0702/61/60 i RYPAL FRAMIK 6-hour Follow-up Inspection Observations and Time (If Applicable) Headspace\* | Time of Test Pit Completed By: 0930 Dare: mdd 73 Sheen Test Rainbow Sheen Observed <u>(2)</u> z z S M N N N N L M Marshall Une 68 MP608 Pipeline Release Odor2 Free Phase Oil Observed 22131003 رځ z z >. >-4800K 10 47450 K 6957 10 10 10 Method Used to Indicate Vertical Umit<sup>2</sup> A 8 A 8 Photo ID Creek Section Project Number: 8 Project Name: 2 Ē Comments Comments Comments Charles

Depth of Contamination (A)

Groundwater (B)

Confining tayer (C)

None (N), Light (L), Moderate (M), Strong (S) PID readouts in ppm above background

2 2

ND # No Detection

Project Number: CALL 7C C Project Number: CALL 7C C Completed By: CAPAL TOLL
ection
Just State of the
Comments
PARCE 10 42, 5, 1747 [28 6   Y [28   12   W   W   W   W   W   W   W   W   W
44600 44250 (May 70) (My 10)
- Observed pit with in braching,
ation (A)

	48-hour Follow-up inspection Observations and Time (if Applicable)  7 7 2 48 EPA Enbridge	1-17\$1800	m 2001 8+ 61-6	
69/12/2010 Rypal Femalk	Time of Trench Excavetion			
Date: 69/12	Headspace Time of Test Pit G-hour Follow-up inspection ppm TP (If Applicable)	0 1015 elde M	0.0 630 SE	
	Sheen Sheen Sheen Odor² Rainbow Sheen Observed O	0°0 × s w 1 √ x	N S W	
Marshall Line 68 MP608 Pipeline Release 22131003 Method	Photo ID Indicate Phase Vertical Obsertical Obsertical Colored Phase Vertical Obsertical Obsertical Obsertical Photo ID Indicate Phase Vertical Obsertical Photo ID Indicate P	40+50Rho(16400 B) 1027 DB C V O	4600 By 1046 By 1076 B C V 3	Depth of Contamination (A) Groundwater (B) Confining Layer (c) None (M), Light (L), Moderate (M), Strong (5) PID readouts in ppm above background ND = No Desertion
Project Name: Project Number:	Greek Section  Altor Fra 100 Aloris  Comments	4 or 50 ch. refer	Comments	(1) (2) (2)

Soppi weath Backfill Approval 6 Les 48-hour Follow-up inspection Observations and Time [if Applicable] 12.1 C Time of Trench Excavation D. C. RIVEN LA F. Ward Land 6-hour Follow-up Inspection Observations and Time (If Applicable) 9 13 Headspace<sup>3</sup> Time of Test Pit Completed By: Sheen Test Rainbow Sheen Observed z > N L M S S F S S M N Odor2 Marshall Line 68 MP608 Pipeline Release Free Phase Oil Observed 22131003 z >-A B C Method Used to indicate Vertical Limit<sup>1</sup> A B C A B 0(x0) 01 -(xx) 17 45150 10 years 10 K/10 Creek Section : Number: ct Name: Comments される Comments Comments

> Project Proje

51/2 my 2/12

(1) Depth of Contamination (A) Groundwater (B)

Gonfining Leyer (C)

None (N), Light (L), Moderate (M), Strong (S)

2 2

PID readouts in ppm above background