

US EPA ARCHIVE DOCUMENT

**U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION V
POLLUTION/SITUATION REPORT #193**



**KALAMAZOO RIVER/ENBRIDGE SPILL – REMOVAL
SITE # Z5JS
MARSHALL, MICHIGAN
LATITUDE: 42.2395273; LONGITUDE: -84.9662018**



Ceresco Pilot Channel Overview (11/12/2013)

US EPA ARCHIVE DOCUMENT

To: Susan Hedman, U.S. EPA Regional Administrator
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 Tiffany Eichorst, City of Battle Creek
 Cheryl Vosburg, City of Marshall
 Christine Kosmowski, Calhoun County Water Resources Commissioner

From: Jeffrey Kimble, U.S. EPA, Federal On-Scene Coordinator

Date: 12/06/2013

Operational Period: 0700 hours 11/04/2013 through 0700 hours 11/11/2013
 0700 hours 11/11/2013 through 0700 hours 11/18/2013

Reporting Period: 0700 hours 11/04/2013 through 0700 hours 11/18/2013

1. Site Data

Site Number:	Z5JS	Response Type:	Emergency
Response Authority:	OPA	Incident Category:	Removal Action
Response Lead:	RP	NPL Status:	Non-NPL
Mobilization Date:	7/26/2010	Start Date:	7/26/2010
FPN#:	E10527		

2. Operations Section

- The organizational response structure consisted of the following Branches: 1) Environmental Field Teams; and 2) Dredge Operations.

2.1 Environmental Field Teams Branch

2.1.1 Science Division

- Monthly Morrow Lake Delta and Morrow Lake monitoring (poling) was conducted from November 4 – 8, 2013, in accordance with the 2012 Morrow Lake Delta and Morrow Lake Monitoring and Management Work Plan (November 15, 2012).
- Sediment trap monitoring continued in accordance with the approved Sediment Trap Monitoring and Maintenance Plan (July 10, 2012). Samples were collected from Cylindrical Sampling Devices (CSDs) from November 11 – 14, 2013.
- A SedFlume study was conducted by the USGS during the week of November 11, 2013.

2.1.2 Water Operations Division

- Enbridge monitored and maintained 4,900 feet of surface hard boom and 4,025 feet of subsurface half-curtain at the E 4.0 Containment System.

- Management of oil sheen and/or globules continued throughout the period. No responses were conducted during this reporting period.

2.1.3 Compliance Division

- As of the close of the reporting period, Enbridge's supplemental information for the dredging permit for MP 36.10 is in review with MDEQ.
- As of the close of the reporting period, Enbridge's dredging modification supplemental information to the MDEQ permit for oil recovery at the MP 26.00 sediment trap is in review with MDEQ.
- As of the close of the reporting period, Enbridge's MDEQ dredging permit application for the MP 28.25 sediment trap is in review with MDEQ. The permit application will require a full review by MDEQ and a public notice period.
- U.S. EPA outlined in Section 47 of the March 14, 2013 Administrative Order and subsequently verbally communicated to Enbridge that it is Enbridge's responsibility to apply for MDEQ dredging permits and to modify existing permits to include dredging as the submerged oil recovery method, in a timeframe which allows for compliance with the U.S. EPA Order deadline of December 31, 2013. Enbridge has elected to wait for triggers to occur before applying for or modifying the existing MDEQ dredging permits.

2.2 Dredge Operations Branch

2.2.1 Ceresco, Mill Ponds, Morrow Lake and Sediment Trap Divisions

- Dam notching and drawdown at the Ceresco Dam impoundment was completed to the MDEQ permitted elevation on November 6, 2013. Additional containment was placed around the newly exposed overbanks for stabilization. On November 15, 2013, MDEQ issued a dam notching permit revision to allow for additional notching of the dam by an additional 1.7 feet. The additional notching and drawdown began November 17, 2013.
- Scraping of the newly exposed overbank soils in the "bowl" area immediately upstream of the dam commenced on November 13, 2013 and continued throughout the period.
- Dredging continued at the Mill Ponds impoundment. Dredging operations included water treatment and discharge, containment installation and maintenance, dewatering of dredged sediment in Geotube bags, sediment solidification and transportation for off-site disposal. Dredging via the Toyo pump of the polygons in the Mill Ponds spillway was completed on November 7, 2013. A second hydraulic dredge unit was added to the Mill Ponds impoundment on November 12, 2013.
- Sediment removal activities continued at the MP 21.50 RDB sediment trap. Activities included installation of steel sheet piling, dewatering, water treatment and discharge, excavation of oiled sediment, solidification and transportation for off-site disposal.
- Pre-Dredge bathymetry began at the MP 10.40 North sediment trap on November 5, 2013. Sediment removal activities were conducted from November 12 – 19, 2013. Activities included installation of sheet piling, dewatering, water treatment and discharge, excavation of oiled sediment, solidification and transportation for off-site disposal.
- Pre-Dredge bathymetry was completed at the MP 36.1 sediment trap on November 8, 2013.
- Pre-Dredge bathymetry began in the Morrow Lake Delta on November 11, 2013, in preparation for sediment removal activities utilizing a Toyo pump associated with removal of the E4.0 Containment System prior to winter months. Site preparations at the E3.5 boat launch continued throughout the

period; site preparations at E4 began on November 12, 2013. Dredge operations are scheduled to commence on November 18, 2013.

- Table 1 presents the quantities of water treated at each dredge location during the reporting period. Table 2 presents the estimated dredge waste on-site in Geotube bags, the cumulative estimated dredge waste, and the cumulative waste shipped off-site for disposal.
- Work area air monitoring, dissolved oxygen water quality monitoring, and turbidity water quality monitoring were conducted during dredging activities.

2.2.2 Waste Management Division

- Cumulative quantities of soil, debris, and liquid shipped off-site during the response are presented in Tables 3 and 4.
- The cumulative quantity of recovered oil has been estimated using actual waste stream volumes, analytical data, and physical parameters of oil-containing media. A summary of the estimated volume of recovered oil is presented in Table 5.

3. Planning Section

3.1 Situation Unit

- During the reporting period, overflights were conducted on November 4, 5, 7, 8, and 12, 2013 to document all operational areas and locations of oil sheen and/or globules. Photographs were taken and distributed to project participants during the weekly Consolidated ICS Meetings.

3.2 Environmental Unit

- U.S. EPA, USGS, and the U.S. Army Corps of Engineers held weekly meetings to discuss Hydrodynamic Model (HDM) activities. The U.S. Army Corps of Engineers conducted erodability testing fieldwork throughout the reporting period.
- U.S. EPA continued review of sediment sample analytical results from legacy cores collected by Enbridge.
- U.S. EPA continued review of oil fingerprinting analytical results from sheen and globule samples collected by Enbridge to determine the presence/absence of Line 6B oil.

3.3 Documentation Unit

- The Documentation Unit continued organizing and archiving electronic and paper files for post-incident use.

3.4 Resource Unit

- The Resources Unit continued to support production of the Incident Action Plan (IAP), supported the planning efforts of operations, and provided information to Logistics personnel in order to properly prepare and procure resources.

4. Command

4.1 Safety Officers

- Enbridge safety personnel continued conducting work-site safety inspections and implementing the plan for integration of public safety and worker safety on the Kalamazoo River.
- The USCG is providing the U.S. EPA with on-site support by monitoring safety throughout all active work areas.

4.2 Public Information

- The number of public inquires reported by Enbridge for this period is presented in Table 7.

5. Finance

- The current National Pollution Funds Center (NPFC) ceiling is \$63.25 million. Approximately 92.4% of the ceiling has been spent through November 17, 2013. The latest average 14-day burn rate was \$19,784 per day. These cost summaries reflect only U.S. EPA-funded expenditures for the incident. A summary of these expenses is presented in Table 8.

6. Scientific Support Coordination Group (SSCG)

- No activities were conducted during this operational period.

7. Participating Entities

- U.S. EPA and MDEQ continued to meet bi-weekly with a group of stakeholders to discuss how to continue to effectively communicate, share information about site progress, and receive feedback about the communication needs of the local communities.
- For a list of cooperating and assisting agencies, see SITREP #51 (Sections 3.2 and 3.3).

8. Personnel On-Site

- Staffing numbers for the entities and agencies active in the response are presented in Table 9.

9. Source of Additional Information

- For additional information, refer to <http://www.epa.gov/enbridgespill>. For sampling analysis data, see <http://response.enbridge.com/response/>.

10. Clean-up Progress Metrics

Table 1 – Water Treated During Dredging Operations for the Reporting Period

Dredge Location	Water Treated (gal)
Ceresco	205,295
Mill Ponds	9,125,326
Sediment Traps	11,417,413
Morrow Lake	0

Table 2 – Dredging Waste (as of 11/18/2013)

Waste Stream	Estimated Dredge Waste On-Site in Geotube bags (yd³)	Cumulative Estimated Dredge Waste (yd³)	Cumulative Waste Shipped Off-Site for Disposal (tons)
Ceresco	1,205	96,503	96,722
Mill Ponds	6,825	15,875	7,713
Sediment Traps	600	9,482	7,611
Morrow Lake Delta	N/A	5	0
C0.4/Wildlife Center/C3.2/FTC	N/A	829*	158
Total	8,630	122,694	112,205

*Estimated dredge waste related to oily debris.

Table 3 - Soil and Debris Shipped Off Site (as of 11/17/2013)

Waste Stream	Cumulative	Disposal Facility
<i>Haz Soil (yd³)</i>	<i>19,644</i>	<i>Envirosafe (Oregon, OH)</i>
Non-Haz Soil (yd ³)	167,548	SET/C&C
Non-Haz Soil (yd ³)	2,604	SET/Ottawa County Farms
Non-Haz Soil (yd ³)	13,387	SET/WM Westside
<i>Non-Haz Soil & Debris (yd³) (Excluding 2010 Ceresco Dredge)</i>	<i>64,815</i>	<i>Westside Recycling (Three Rivers, MI)</i>
<i>Non-Haz Soil (yd³) (2010 Ceresco Dredge Only)</i>	<i>5,562</i>	<i>EQ/Republic (Marshall, MI)</i>
<i>Haz Debris (yd³)</i>	<i>12,075</i>	<i>EQ/Michigan Disposal (Wayne, MI) and Republic (Marshall, MI)</i>
Non-Haz Household Debris (ton)	2,106	SET/C&C
Non-Haz Impacted Debris (ton)	12,599	

Shaded and italicized items are discontinued waste streams.

Table 4 - Liquid Shipped Off-Site (as of 11/17/2013)

Stream	Destination Company	Destination Location	Cumulative Volume (gallons)†
Non-Haz Water	Liquid Industrial Waste	Holland, MI	1,483,707
Non-Haz Water	Plummer	Kentwood, MI	697,714
<i>Non-Haz Water</i>	<i>Dynecol</i>	<i>Detroit, MI</i>	981,792
<i>Non-Haz Water</i>	<i>Battle Creek POTW</i>	<i>Battle Creek, MI</i>	1,143,280
<i>Hazardous Water</i>	<i>Dynecol</i>	<i>Detroit, MI</i>	3,594,579
<i>Oil</i>	<i>Enbridge Facility</i>	<i>Griffith, IN</i>	766,288
<i>Other Material</i>			1,405,525
<i>Treated Non-Haz Water</i>	<i>Liquid Industrial Waste</i>	<i>Holland, MI</i>	370,200
<i>Treated Non-Haz Water</i>	<i>Plummer</i>	<i>Kentwood, MI</i>	4,976,140
<i>Hazardous Water</i>	<i>Safety Kleen^a</i>		825
<i>Treated Non-Haz Water</i>	<i>Dynecol</i>	<i>Detroit, MI</i>	150,700
<i>Treated Non-Haz Water</i>	<i>Battle Creek POTW</i>	<i>Battle Creek, MI</i>	1,968,700
Total			17,539,450

Shaded and italicized items are discontinued waste streams.

† Cumulative quantities may not reconcile with previous reports (due to auditing).

a New Age lab water and methanol mix generated by mobile laboratory.

Table 5 – Estimated Recovered Oil (as of 11/18/2013)

Waste Stream Containing Recovered Oil	Destination Company	Destination Location	Estimated Oil Volume in Waste Stream (gallons)
Soil Impacted Soil & Debris	C&C Landfill	Marshall, MI	20,912*
	Envirosafe/ Westside RDF	Oregon, OH	278,665
<i>Geotube Sediment - (Impacted Sediment)</i>	<i>Envirosafe/ Westside RDF</i>	<i>Oregon, OH</i>	1,298
Debris - (Roll Off Boxes with Impacted Sorbents, boom, pads, plastic, PPE, vegetation, and biomass)	EQ Michigan	Belleville, MI	53,129*
<i>Frac Tank City - Influent to Carbon Filtration System</i>	<i>C&C Landfill</i>	<i>Marshall, MI</i>	8,109
Frac Tank City - Water	Dynecol	Detroit, MI	46,180
	Liquid Industrial Waste Services, Inc.	Kentwood, MI	
	Plummers Env. Inc.	Holland, MI	
	BC POTW	Battle Creek, MI	
<i>Ceresco Pretreatment System</i>	<i>C&C Landfill</i>	<i>Marshall, MI</i>	90
<i>A-1 Pretreatment System</i>	<i>C&C Landfill</i>	<i>Marshall, MI</i>	9
Oily Water - RPP	Enbridge Facility	Griffith, IN	766,288
Total			1,174,680

Shaded and italicized items represent discontinued waste streams.

*Total updated for analytical received after report generation.

Table 6 – Samples Collected By Enbridge

Sample Type	Total	November 2013													
		16	15	14	13	12	11	10	9	8	7	6	5	4	3
Surface Water	18	0	0	0	0	6	12	0	0	0	0	0	0	0	0
Private Well	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Groundwater	4	0	0	0	0	0	0	0	0	0	0	0	0	4	0
Sediment	52	0	0	8	19	14	8	0	0	3	0	0	0	0	0
Soil	51	0	1	4	3	9	10	0	0	5	6	6	5	2	0
Product	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dewatering	34	0	0	0	2	0	14	6	0	0	0	0	12	0	0
Sheen	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 7 – Public Inquiries Received by Enbridge

Location/Med	November/October 2013															
	15	14	13	12	11	10	9	8	7	6	5	4	3	2		
Marshall Community Center	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Oil Spill Public Information Hotline	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Website	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Public Inquiries	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Table 8 - Financial Summary (as of 11/17/2013)

Item	Expended (Cumulative)
<i>ERRS Contractors</i>	
<i>EQM (EPS50802)</i> T057	\$ 1,199,522
T060	\$ 213,636
<i>LATA (EPS50804)</i> T019	\$ 1,161,082
<i>ER LLC (EPS50905)</i> T040	\$ 683,330
Total ERRS Contractors	\$ 3,257,571
<i>Other Contractors</i>	
<i>Lockheed Martin (EPW09031) – TAGA Support</i>	\$ 198,379
<i>Lockheed Martin (EPW09031) -Biodegradability Study</i>	61,886
<i>T&T Bisso (EPA:HS800008)</i>	\$ 882,087
Total Other Contractors	\$ 1,142,352
START Contractor – WESTON (EPS50604)	
T030-Response	\$ 35,912,789
Community Relations	\$ 114,563
T032-Sampling	\$ 161,045
T037-Doc Support	2,070,618
Total START Contractor	\$ 38,259,015
Response Contractor Sub-Totals	\$ 42,665,610
U.S. EPA Funded Costs: Total U.S. EPA Costs	\$ 6,738,964
Pollution Removal Funding Agreements	
Total Other Agencies	\$ 3,437,081
Indirect Cost (16.00%)	\$ 3,520,519
Indirect Cost (8.36%)-payments after 10/1/2011	\$ 1,310,859
Indirect Cost (10.15%)-payments after 10/1/2012	\$ 1,144,857
Cost Documentation/Billing Admin Fee (2.93%)*	\$ 564,286
Total Est. Oil Spill Cost	\$ 58,466,350
Oil Spill Ceiling Authorized by USCG	\$ 63,250,000
Oil Spill Ceiling Available Balance**	\$ 4,783,650

Shaded and *italicized* items are discontinued

* Effective on EPA Enbridge costs billed to USCG for bills issued after 6/5/12.

**USCG personnel may increase to compensate for EPA not having all available funds to fully staff the site to execute the OPA Project Plan as approved through 12/31/2013. USCG personnel will fill gaps in contractor/EPA staff planned resources as appropriate.

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Table 9 - Personnel On-Site

Agency/Entity	November 2013													
	17	16	15	14	13	12	11	10	9	8	7	6	5	4
U.S. EPA	0	0	1	2	2	2	0	0	0	2	3	3	3	4
START	2	7	14	16	16	16	15	1	3	14	15	15	13	13
MDEQ	0	0	2	8	4	4	0	0	0	3	6	7	2	3
MDEQ Contractors	0	0	0	2	2	1	1	0	0	1	3	3	3	2
Other Agencies	3	6	6	3	3	2	5	5	5	2	5	8	6	3
Enbridge – Environmental Field Teams – Science*	9	13	35	39	36	35	31	7	13	30	32	30	34	31
Enbridge – Environmental Field Teams – Water Ops*	11	45	45	46	43	38	40	5	32	41	42	49	43	46
Enbridge – Dredge Operations – Ceresco*	26	53	53	61	71	74	73	1	69	78	82	88	90	86
Enbridge – Dredge Operations – Mill Ponds*	19	80	74	66	63	64	60	1	50	50	57	51	55	54
Enbridge – Dredge Operations – Delta/Morrow Lake*	3	29	28	26	15	9	9	0	4	1	7	10	10	10
Enbridge – Dredge Operations – Sediment Traps*	23	25	26	29	29	31	30	8	28	26	14	22	23	25
Enbridge – Waste Management*	0	86	81	56	87	87	81	0	61	70	72	76	76	82
Enbridge – Office Support*	14	25	44	47	49	47	45	2	27	49	48	47	47	45
Total	110	369	409	401	420	410	390	30	292	367	386	409	405	404

*Enbridge Operations and Field include Enbridge and contractors as reported by Enbridge