

US EPA ARCHIVE DOCUMENT

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION V
POLLUTION/SITUATION REPORT #178



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



Morrow Lake Monitoring at MP 38.75 (04/12/2013)

US EPA ARCHIVE DOCUMENT

To: Susan Hedman, U.S. EPA Regional Administrator
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Christine Kosmowski, Calhoun County Water Resources Commissioner

From: Ralph Dollhopf, U.S. EPA, Federal On-Scene Coordinator

Date: 04/26/2013

Reporting/Operational Period: 0700 hours 04/08/2013 through 0700 hours 04/22/2013

1. Site Data

Site Number:	Z5JS	Response Type:	Emergency
Response Authority:	OPA	Incident Category:	Removal Action
Response Lead:	PRP	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) Submerged Oil; 2) Containment; and 3) Waste Management.

2.1 Submerged Oil Branch

2.1.1 Submerged Oil Science Group

- Quarterly Sediment Trap Bathymetry continued throughout the operational period, pursuant to the Sediment Trap Monitoring and Maintenance Plan.
- Round 1 of 2013 Morrow Lake Delta and Morrow Lake monitoring (poling) was completed on April 12, 2013, pursuant to the 2012 Morrow Lake Delta and Morrow Lake Monitoring and Management Work Plan.
- The U.S. Geological Survey (USGS) completed velocity measurements at various locations throughout the river, and completed surveying the previously installed water level stage recorders.
- Enbridge conducted single beam sonar bathymetric surveys of the proposed dredge areas during the Operational period.

2.1.2 Submerged Oil Compliance Group

- No activities were conducted during this operational period.

2.2 Containment Branch

2.2.1 Containment Compliance Group

- No activities were conducted during this operational period.

2.2.2 Containment Recovery Group

- Pursuant to the Emerging Oil Management Program (EOMP), Enbridge and U.S. EPA continued to track the location, response, and sheen differentiation test results (when necessary) of sheen and/or oil globules in the main channel and overbank areas. Observations of sheen and/or oil globules were reported back to Operations Section Chiefs for response, if appropriate. A sheen differentiation test was conducted at the Mill Ponds impoundment on April 20, 2013. In addition, a sheen sample was collected for chemical fingerprint analysis from the same area on April 20, 2013. Refer to Table 1.
- Management of oil sheen and/or globules continued. Sheen responses were conducted on April 8, 2013 at MP 28.25 RDB; on April 16, 2013 at the Ceresco Dam impoundment; and on April 20, 2013 at the Mill Ponds impoundment from MP 15.30 – 15.50. Refer to Table 2.
- On April 8, 2013, Enbridge deployed boom at MP 28.25 in response to sheen generated by sediment trap bathymetry operations. Boom was subsequently removed on April 12, 2013.

2.4 Waste Management Branch

- Enbridge conducted dredge area waste characterization and Geotechnical sediment sampling throughout the operation period.
- 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

3.1 Situation Unit

- Situation Unit personnel conducted field observations and overflights to document all operational areas, including the locations and integrity of CSDs, buoys and sediment trap structures; and locations of oil sheen and/or globules. During this operational period, overflights were conducted on April 12 and 18, 2013. See Section 2.2.2 for additional details regarding the EOMP.
- During this operational period, oil sheen and/or globules were observed at:
 - Ceresco Dam Impoundment at various locations between MP 5.15 LDB and MP 5.89 RDB on April 8 - 10, 15 - 17, 19, and 20;
 - C3.2 Boat Launch (MP 10 LDB) on April 16;
 - Mill Pond Impoundment at various locations between MP 14.8 – 15.75 on April 9, 15 - 17, 19, and 20;
 - MP 28.25 Sediment Trap on April 8;
 - MP 36.25 LDB on April 9;

- Morrow Lake Delta on April 9 and 15;
- Morrow Lake Delta neck on April 16; and
- Morrow Lake South Cove on April 15.
- 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 upcoming Hydrodynamic Model (HDM) activities.
- On April 11, 2013, U.S. EPA disapproved Enbridge's 2013 Consolidated Work Plan (April 4, 2013). Enbridge's revised work plan is due on April 23, 2013.
- Enbridge's Quantification of Submerged Oil Report (March 21, 2013) is currently in review with U.S. EPA.

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.

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 \$56.25 million. Approximately 92.1% of the ceiling has been spent through April 21, 2013. The latest average 14-day burn rate was \$23,630 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

- Entities participating in the MAC include:
 - U.S. Environmental Protection Agency
 - Michigan Department of Environmental Quality
 - Michigan Department of Community Health
 - City of Battle Creek
 - City of Marshall
 - Allegan County Emergency Management
 - Calhoun County Public Health Department
 - Calhoun County Emergency Management
 - Calhoun County Water Resources Commission
 - Kalamazoo County Health and Community Services Department
 - Kalamazoo County Sheriff
 - Enbridge (Responsible Party)
- 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 – Sheen Differentiation Test Results

Description	Total	April 2013													
		21	20	19	18	17	16	15	14	13	12	11	10	9	8
Sheen Tests Performed	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Results Indicated Petroleum Source	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Results Indicated Biogenic Source	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Inconclusive Test Results	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 2 – Sheen Responses

Total	April 2013													
	21	20	19	18	17	16	15	14	13	12	11	10	9	8
3	0	1	0	0	0	1	0	0	0	0	0	0	0	1

Table 3 - Soil and Debris Shipped Off Site (as of 4/21/2013)

Waste Stream	Cumulative	Disposal Facility
<i>Haz Soil (yd³)</i>	<i>19,644</i>	<i>Envirosafe (Oregon, OH)</i>
Non-Haz Soil (yd ³) (Excluding Ceresco Dredge)	78,112	SET/C&C
<i>Non-Haz Soil & Debris (yd³) (Excluding Ceresco Dredge)</i>	<i>64,815</i>	<i>Westside Recycling (Three Rivers, MI)</i>
<i>Non-Haz Soil (yd³) (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)	1,805	SET/C&C
Non-Haz Impacted Debris (ton)	7,162	

Shaded and italicized items are discontinued waste streams.

Table 4 - Liquid Shipped Off-Site (as of 4/21/2013)

Stream	Destination Company	Destination Location	Cumulative Volume (gallons)†
Non-Haz Water	Liquid Industrial Waste	Holland, MI	1,376,757
Non-Haz Water	Plummer	Kentwood, MI	611,726
<i>Non-Haz Water</i>	<i>Dynecol</i>	<i>Detroit, MI</i>	<i>981,792</i>
<i>Non-Haz Water</i>	<i>Battle Creek POTW</i>	<i>Battle Creek, MI</i>	<i>1,143,280</i>
<i>Hazardous Water</i>	<i>Dynecol</i>	<i>Detroit, MI</i>	<i>3,594,579</i>
<i>Oil</i>	<i>Enbridge Facility</i>	<i>Griffith, IN</i>	<i>766,288</i>
<i>Other Material</i>			<i>1,405,525</i>
<i>Treated Non-Haz Water</i>	<i>Liquid Industrial Waste</i>	<i>Holland, MI</i>	<i>370,200</i>
<i>Treated Non-Haz Water</i>	<i>Plummer</i>	<i>Kentwood, MI</i>	<i>4,976,140</i>
<i>Hazardous Water</i>	<i>Safety Kleen^a</i>		<i>825</i>
<i>Treated Non-Haz Water</i>	<i>Dynecol</i>	<i>Detroit, MI</i>	<i>150,700</i>
<i>Treated Non-Haz Water</i>	<i>Battle Creek POTW</i>	<i>Battle Creek, MI</i>	<i>1,968,700</i>
Total			17,346,512

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 4/22/2013)

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	14,034
	Envirosafe/ Westside RDF	Oregon, OH	278,665
<i>Geotube Sediment - (Impacted Sediment)</i>	<i>Envirosafe/ Westside RDF</i>	<i>Oregon, OH</i>	<i>1,298</i>
Debris - (Roll Off Boxes with Impacted Sorbents, boom, pads, plastic, PPE, vegetation, and biomass)	EQ Michigan	Belleville, MI	34,510
<i>Frac Tank City - Influent to Carbon Filtration System</i>	<i>C&C Landfill</i>	<i>Marshall, MI</i>	<i>8,109</i>
Frac Tank City - Water	Dynecol	Detroit, MI	46,176
	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>	<i>90</i>
<i>A-1 Pretreatment System</i>	<i>C&C Landfill</i>	<i>Marshall, MI</i>	<i>9</i>
Oily Water - RPP	Enbridge Facility	Griffith, IN	766,288
Total			1,149,180

Shaded and *italicized* items represent discontinued waste streams.

Table 6 – Samples Collected By Enbridge

Sample Type	Total	April 2013													
		21	20	19	18	17	16	15	14	13	12	11	10	9	8
Surface Water	17	0	0	0	0	0	7	10	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	3	0	0	0	0	0	0	0	1	0
Sediment	13	0	0	6	0	1	0	0	0	0	0	6	0	0	0
Soil	230	0	0	6	9	6	15	48	0	0	86	25	18	8	9
Product	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dewatering	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sheen	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0

Table 7 – Public Inquiries Received by Enbridge

Location/Med	April 2013															
	21	20	19	18	17	16	15	14	13	12	11	10	9	8		
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	1	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	1	0												

Table 8 - Financial Summary (as of 4/21/2013)

Item	Expended (Cumulative)	
<i>ERRS Contractors</i>		
<i>EQM (EPS50802)</i>	<i>T057</i>	\$ 1,199,522
	<i>T060</i>	\$ 213,636
<i>LATA (EPS50804)</i>	<i>T019</i>	\$ 1,161,082
<i>ER LLC (EPS50905)</i>	<i>T040</i>	\$ 683,330
<i>Total ERRS Contractors</i>		<i>\$ 3,257,571</i>
<i>Other Contractors</i>		
<i>Lockheed Martin (EPW09031) – TAGA Support</i>		\$ 198,379
<i>Lockheed Martin (EPW09031) -Biodegradability Study</i>		31,554
<i>T&T Bisso (EPA:HS800008)</i>		\$ 882,087
<i>Total Other Contractors</i>		<i>\$ 1,112,020</i>
START Contractor – WESTON (EPS50604)		
	T030-Response	\$ 30,821,402
	Community Relations	\$ 114,563
	T032-Sampling	\$ 184,992
	T037-Doc Support	1,896,194
Total START Contractor		\$ 33,017,151
Response Contractor Sub-Totals		\$ 37,386,742
U.S. EPA Funded Costs: Total U.S. EPA Costs		\$ 6,356,887
Pollution Removal Funding Agreements		
Total Other Agencies		\$ 2,797,081
Indirect Cost (16.00%)		\$ 3,598,252
Indirect Cost (8.36%)-payments after 10/1/2011		\$ 1,310,859
Indirect Cost (10.15%)-payments after 10/1/2012		\$ 570,271
Cost Documentation/Billing Admin Fee (2.93%)*		\$ 398,420
Total Est. Oil Spill Cost		\$ 51,808,261
Oil Spill Ceiling Authorized by USCG		\$ 56,250,000
Oil Spill Ceiling Available Balance		\$ 4,441,739

Shaded and *italicized* items are discontinued

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

Table 9 - Personnel On-Site

Agency/Entity	April 2013													
	21	20	19	18	17	16	15	14	13	12	11	10	9	8
U.S. EPA	0	0	3	4	4	3	3	0	0	3	3	3	3	3
START	0	2	15	20	18	16	15	0	1	15	16	18	17	16
MDEQ	0	0	2	2	4	3	3	0	0	5	5	5	5	3
MDEQ Contractors	0	0	0	2	2	2	2	0	0	1	3	2	1	1
Other Agencies	0	0	0	1	1	4	3	3	3	2	0	0	0	0
Calhoun County (CC) Public Health	0	0	0	0	0	0	0	0	0	0	0	2	0	0
CC Emergency Management (EM)	0	0	0	0	0	0	0	0	0	0	0	1	0	0
CC Water Resources Commission	0	0	0	0	0	0	0	0	0	0	0	1	0	0
City of Battle Creek	0	0	0	0	0	0	0	0	0	0	0	0	0	0
City of Marshall	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Kalamazoo County Public Health	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Kalamazoo County EM	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Kalamazoo County Sheriff	0	0	0	0	0	0	0	0	0	0	0	1	0	0
MDEQ	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MDCH	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Michigan State Police EMD	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Allegan County Emergency Mgmt.	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MDNR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Enbridge – Kalamazoo River*	0	0	6	7	4	6	7	0	0	6	5	4	5	5
Enbridge – Containment*	0	2	2	2	2	2	2	0	2	2	2	2	2	2
Enbridge – Submerged Oil*	0	1	16	16	17	18	17	0	0	13	14	15	15	15
Enbridge – Waste Management*	0	0	1	1	1	1	1	0	0	3	3	3	1	1
Enbridge – Marshall Office*	8	12	50	49	54	50	50	7	12	43	51	50	45	49
Total	8	17	95	104	107	105	103	10	18	93	102	111	94	95

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