

US EPA ARCHIVE DOCUMENT

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION V  
POLLUTION/SITUATION REPORT #171



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



**Morrow Lake Delta E4 Bathymetry Team (January 10, 2013)**

**US EPA ARCHIVE DOCUMENT**

**To:** Susan Hedman, U.S. EPA Regional Administrator  
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Scott Corbin, Allegan County Emergency Management  
Mike McKenzie, City of Battle Creek  
Cheryl Vosburg, City of Marshall  
Christine Kosmowski, Calhoun County Water Resources Commissioner

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

**Date:** 01/23/2013

**Reporting/Operational Period:** 0700 hours 12/24/2012 through 0700 hours 01/14/2013

### *1. Site Data*

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

### *2. Operations Section*

- The organizational response structure consisted of the following Branches: 1) Submerged Oil; 2) Containment; and 3) Waste Management.
- The Kalamazoo System River Branch was removed from the Incident Command System (ICS) structure. Tasks previously performed under the Kalamazoo System River Branch will be overseen by MDEQ under a separate project management system.
- All Operations Section response activities, excluding for sheen management, were shut down for the holiday break between December 24, 2012 and January 6, 2013 during this Operational Period.

#### **2.1 Submerged Oil Branch**

##### *2.1.1 Submerged Oil Science Group*

- On January 10, 2013, teams resumed post removal bathymetry at the former E4.0 containment system utilizing a total station system.

##### *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 each identified location 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. See Table 1 for information regarding the total number of sheen differentiation tests conducted, and the results of those tests.
- Management of oil sheen and/or globules continued with sweep boats conducting responses as determined necessary. During this reporting period, no responses were conducted. See Table 2 for information regarding the total number of responses to oil sheen and/or globules by date.
- Teams performed weekly visual inspections of the 5 currently-installed Phase I and II enhanced sediment trap structure locations when safe river ice conditions allowed.

## 2.4 Waste Management Branch

- Quantities of soil, debris, and liquid shipped off-site during the reporting period are presented in Tables 3 and 4.
- The total amount of recovered oil from the inception of the response 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 observed and documented progress in operational areas, and documented locations of oil sheen and/or globules through field observations and weekly overflights. Personnel reported observations of oil sheen and/or globules to Operations for follow-up testing and/or response, consistent with the EOMP. See Section 2.2.2 for additional details regarding the EOMP.
- Specific observations during this period include the observation of oil sheen and globules at the Ceresco Dam impoundment at MP 5.75 on January 11 and 12, 2013.
- Situation Unit personnel continued documenting occurrences of ice formation throughout the river system.
- Photographs were taken and distributed to project participants during the weekly Consolidated ICS Meetings.

### 3.2 Environmental Unit

- U.S. EPA continued to track the progress of the Oil Quantification process by reviewing core logs submitted by Enbridge and tracking the samples submitted for laboratory analysis.

- Review of bathymetry data submitted by Enbridge from the E4.0 Containment System and quarterly sediment trap bathymetry tasks continued.
- Review of field data collected from the Cylindrical Sampling Devices (CSDs) as part of the monthly sediment trap monitoring and maintenance program continued.

### **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**

- Safety personnel continued conducting work-site safety inspections and implementing the plan for integration of public safety and worker safety on the Kalamazoo River.

## ***5. Finance***

- The current National Pollution Funds Center (NPFC) ceiling is \$56.25 Million. Approximately 88.6% of the ceiling has been spent through January 13, 2012. The latest average 7-day burn rate was \$27,436 per day. These cost summaries reflect only U.S. EPA-funded expenditures for the incident. A summary of these expenses is presented in Table 7.

## ***6. Scientific Support Coordination Group (SSCG)***

- SSCG and Enbridge forensic chemists continued regular conference calls to examine the oil chemical fingerprinting results and compare procedures for applying oil fingerprinting results to measuring Line 6B oil remaining in the Kalamazoo River sediments.

## ***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 Commissioner
  - 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***

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- Staffing numbers for the entities and agencies active in the response are presented in Table 8.

#### ***9. Source of Additional Information***

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- 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	January 2013														December 2012						
		13	12	11	10	9	8	7	6	5	4	3	2	1	31	30	29	28	27	26	25	24
Sheen Tests Performed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Results Indicated Petroleum Source	0	0	0	0	0	0	0	0	0	0	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	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	0	0	0	0	0	0	0

**Table 2 – Sheen Responses**

Total	January 2013														December 2012						
	13	12	11	10	9	8	7	6	5	4	3	2	1	31	30	29	28	27	26	25	24
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

**Table 3 - Soil and Debris Shipped Off Site (as of 1/13/2013)**

Waste Stream	Cumulative	Disposal Facility
Haz Soil (yd <sup>3</sup> )	19,644	Envirosafe (Oregon, OH)
Non-Haz Soil (yd <sup>3</sup> ) (Excluding Ceresco Dredge)	78,109	SET/C&C
Non-Haz Soil & Debris (yd <sup>3</sup> ) (Excluding Ceresco Dredge)	64,815	Westside Recycling (Three Rivers, MI)
Non-Haz Soil (yd <sup>3</sup> ) (Ceresco Dredge Only)	5,562	EQ/Republic (Marshall, MI)
Haz Debris (yd <sup>3</sup> )	12,075	EQ/Michigan Disposal (Wayne, MI) and Republic (Marshall, MI)
Non-Haz Household Debris (ton)	1,802	SET/C&C
Non-Haz Impacted Debris (ton)	7,153	

Shaded items are discontinued waste streams.

**Table 4 - Liquid Shipped Off-Site (as of 1/13/2013)**

<b>Stream</b>	<b>Destination Company</b>	<b>Destination Location</b>	<b>Cumulative Volume (gallons)†</b>
Non-Haz Water	Dynecol	Detroit, MI	981,792
Non-Haz Water	Liquid Industrial Waste	Holland, MI	1,376,757
Non-Haz Water	Plummer	Kentwood, MI	521,726
<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<sup>a</sup></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>
<b>Total</b>			<b>17,256,512</b>

*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 12/21/2012)**

<b>Waste Stream Containing Recovered Oil</b>	<b>Destination Company</b>	<b>Destination Location</b>	<b>Estimated Oil Volume in Waste Stream (gallons)</b>
<b>Soil</b> Impacted Soil & Debris	C&C Landfill	Marshall, MI	14,032
	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>
<b>Debris - (Roll Off Boxes with Impacted Sorbents, boom, pads, plastic, PPE, vegetation, and biomass)</b>	EQ Michigan	Belleville, MI	34,493
<i>Frac Tank City - Influent to Carbon Filtration System</i>	<i>C&amp;C Landfill</i>	<i>Marshall, MI</i>	<i>8,109</i>
<b>Frac Tank City - Water</b>	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&amp;C Landfill</i>	<i>Marshall, MI</i>	<i>90</i>
<i>A-1 Pretreatment System</i>	<i>C&amp;C Landfill</i>	<i>Marshall, MI</i>	<i>9</i>
<b>Oily Water - RPP</b>	Enbridge Facility	Griffith, IN	766,288
<b>Total</b>			<b>1,149,160</b>

*Shaded and italicized items represent discontinued waste streams.*

**Table 6 – Samples Collected By Enbridge**

Sample Type	Total	January 2013													December 2012											
		13	12	11	10	9	8	7	6	5	4	3	2	1	31	30	29	28	27	26	25	24	23*	22*	21*	
Surface Water	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0	0	0
Groundwater	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sediment	7	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
Soil	82	0	0	17	26	26	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Product	0	0	0	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0	0	0
Sheen	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

\*Samples collected during the last operational period from December 21 – 23, 2012 are reported here, due to the holiday shut-down

**Table 7 - Financial Summary (as of 1/14/2013)**

Item	Expended (Cumulative)
<b><i>ERRS Contractors</i></b>	
<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
<b><i>Total ERRS Contractors</i></b>	<b>\$ 3,257,571</b>
<b><i>Other Contractors</i></b>	
<i>Lockheed Martin (EPW09031) – TAGA Support</i>	\$ 198,379
<i>Lockheed Martin (EPW09031) -Biodegradability Study</i>	31,554
<i>T&amp;T Bisso (EPA:HS800008)</i>	\$ 882,087
<b><i>Total Other Contractors</i></b>	<b>\$ 1,112,020</b>
<b>START Contractor – WESTON (EPS50604)</b>	
T030-Response	\$ 29,431,279
T032-Sampling	\$ 183,567
T037-Doc Support	\$ 1,845,814
<b>Total START Contractor</b>	<b>\$ 31,460,660</b>
<b>Response Contractor Sub-Totals</b>	<b>\$ 35,830,251</b>
<b>U.S. EPA Funded Costs: Total U.S. EPA Costs</b>	<b>\$ 6,270,037</b>
<b>Pollution Removal Funding Agreements</b>	
Total Other Agencies	\$ 2,063,536
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	\$ 403,471
Cost Documentation/Billing Admin Fee (2.93%)*	\$ 350,270
<b>Total Est. Oil Spill Cost</b>	<b>\$ 49,826,676</b>
<b>Oil Spill Ceiling Authorized by USCG</b>	<b>\$ 56,250,000</b>
<b>Oil Spill Ceiling Available Balance</b>	<b>\$ 6,423,324</b>

Shaded and *italicized* items are discontinued

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

**Table 8 - Personnel On-Site\***

Agency/Entity	January 2013												December 2012										
	13	12	11	10	9	8	7	6	5	4	3	2	1	31	30	29	28	27	26	25	24	23**	22**
U.S. EPA	0	0	2	4	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
START	0	2	15	16	12	11	15	0	1	1	1	1	0	1	0	1	1	1	0	0	0	0	15
Other Agencies	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Calhoun County Public Health	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Calhoun County (CC) EM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
City of Battle Creek	0	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0	0	0	0
Kalamazoo County Public Health	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Kalamazoo Sheriff	0	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0	0	0	0
Michigan State Police EMD	0	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0
MDNR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Enbridge – Kalamazoo River*	0	3	5	5	9	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Enbridge – Containment*	0	0	2	3	2	0	11	0	0	0	0	0	0	0	0	0	2	2	0	0	0	2	6
Enbridge – Submerged Oil*	0	1	9	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26
Enbridge – Waste Management*	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Enbridge – Marshall Office*	0	5	36	41	33	32	45	0	1	6	4	4	1	2	0	1	2	2	1	0	0	1	30
<b>Total</b>	<b>0</b>	<b>11</b>	<b>70</b>	<b>80</b>	<b>61</b>	<b>54</b>	<b>73</b>	<b>0</b>	<b>2</b>	<b>7</b>	<b>5</b>	<b>5</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>2</b>	<b>5</b>	<b>5</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>70</b>

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

\*\*Personnel counts during the last operational period for December 21 – 23, 2012 are reported here, due to the holiday shut-down