

US EPA ARCHIVE DOCUMENT

**U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION V
POLLUTION/SITUATION REPORT #160**



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

MP26.0 RDB Sediment Trap Surveying



To: Susan Hedman, U.S. EPA Regional Administrator
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From: Ralph Dollhopf, U.S. EPA, Federal On-Scene Coordinator

Date: 9/29/2012

Reporting/Operational Period: 0700 hours 9/6/2012 through 0700 hours 9/13/2012

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; 3) Kalamazoo River System; and 4) Waste Management.

2.1 Submerged Oil Branch

2.1.1 Submerged Oil Science Group

- Initial poling and bathymetry monitoring was conducted for Phase II sediment traps.
- Monthly monitoring and sampling of Phase I sediment traps was conducted. Quarterly bathymetry monitoring began during this operational period and will be completed during the next operational period.
- Teams collected sediment samples from all installed walling tubes. Analytical results will be used for additional calibration of the hydrodynamic model and to further characterize submerged oil fate and transport.
- Teams conducted poling monitoring of Morrow Lake and the Delta pursuant to Enbridge's 2012 Morrow Lake Delta and Morrow Lake Monitoring and Management Work Plan, dated August 28, 2012, which is currently in review by U.S. EPA.
- Late Summer Reassessment 2012 (LSR 2012) poling was completed for all selected target locations, many of which were recommended for monitoring by Net Environmental Benefits Analysis (NEBA).

- Enbridge received analytical results for chemical and fingerprint analyses for the oil quantification pilot study. Results of the pilot testing are being reviewed to evaluate the UV inspection process for evaluating sediment cores.
- Sediment cores collected during the agitation effects study continue to be held pending the results of the pilot testing to validate the UV inspection screening process.
- Sediment cores collected for the submerged oil quantification program are being held in cold storage pending the results of the pilot testing to validate the UV inspection screening process.

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, U.S. EPA, and MDEQ continued to track the location, response, and sheen differentiation test results of each identified location of sheen. Teams recorded and documented sheen observations in the main channel and overbank areas, and conducted sheen testing as necessary. Sheen observations were reported back to Operations Section Chiefs for response and/or monitoring. See Table 1 for information regarding the total number of sheen differentiation tests conducted, and the results of those tests.
- U.S. EPA, MDEQ, and Enbridge continued to implement the decision matrix for responding to observations of oil sheen.
- Daily sheen management activities continued with sheen sweep boats conducting routine recovery activities at Ceresco Dam (MP 5.25 to Ceresco control point), MP 21.25 – MP 28.0 and the Morrow Lake Delta/Morrow Lake, along with other ongoing sheen sweep responses as determined necessary. See Table 2 for information regarding the total number of sheen responses by date.
- As of September 12, 2012, a total of 800 feet of surface hard boom is deployed at the Ceresco Control Point. Additionally, a total of 8,400 feet of surface hard boom and 5,350 feet of subsurface half curtain have been deployed at the E4 Containment system boom locations. Teams removed debris accumulated within the boomed areas and continued to monitor the E4 system boom locations using an underwater camera
- Teams completed installation of structures at 1 Phase II sediment trap location, began installation of structures at 1 Phase II sediment trap location, and began installation of cylindrical sampling devices (CSDs) at the trap locations. CSD and sediment trap installation will be completed during the next operational period.
- Teams performed weekly visual inspections of the 6 currently-installed Phase I sediment trap locations.

2.3 Kalamazoo River System Branch

2.3.1 *Talmadge Creek/Kalamazoo River Remedial Investigation Group*

- No activities were conducted during the reporting period.

2.3.2 *Kalamazoo River Compliance Group*

- Restoration and stabilization activities were conducted at various Kalamazoo River Bank Erosion Assessment (KRBEA) sites.

2.3.3 *Kalamazoo River Remedial Action Group*

- No activities were conducted during the reporting period.

2.3.4 *Talmadge Creek/Kalamazoo River Monitoring Group*

- Monitoring of erosion control devices continued.
- Water level and flow rate information continued to be downloaded daily from three USGS gauging stations at Marshall, Battle Creek, and Comstock.
- Collection of daily water and sediment temperature readings were collected where operational tasks were being performed.
- Enbridge conducted weekly monitoring of buoys and signage along the Kalamazoo River.

2.5 Waste Management Branch

- A summary of equipment and boom decontaminated during this reporting period is presented in Table 3.
- Quantities of soil, debris, and liquid shipped off-site during the reporting period are presented in Tables 4 and 5.
- 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 6.

3. *Planning*

3.1 Situation Unit

- Situation Unit personnel observed and documented progress in operational areas, documented locations of oil globules and oil sheen through field observations and weekly over-flights. Personnel reported observations of sheen/product (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.
- Photographs were taken and distributed to project participants during Operations, Command and General Staff, and Multi-Agency Coordination (MAC) Group meetings.
- Following U.S. EPA's verbal approval of Enbridge's Request for Modification of the Air Monitoring and Sampling Addendum to the Sampling and Analysis Plan submitted to U.S. EPA on August 17, 2012, work area air monitoring during boom maintenance activities was suspended on September 5, 2012.

3.2 Environmental Unit

- U.S. EPA continued discussions with Enbridge regarding U.S. EPA comments (provided to Enbridge on August 22, 2012) on the Kalamazoo River Hydrodynamic Transport Model Report.
- The pilot study for validation of the UV inspection process for sediment cores continued. This also includes evaluating the sediment cores for the possible presence of oil-mineral aggregate (OMA), which may not be visible using current core inspection/UV processes.
- Field data/measurements collected during the agitation experiment are currently being compiled.
- Enbridge and MDEQ continued to review and track RI progress.

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.

4.2 Public Information

- The number of public inquires reported by Enbridge for this period is presented in Table 8.

5. Finance

- The current National Pollution Funds Center (NPFC) ceiling is \$52.7 Million. Approximately 89.0% of the ceiling has been spent through September 9, 2012. The latest average 7-day burn rate was \$20,398. These cost summaries reflect only U.S. EPA-funded expenditures for the incident. A summary of these expenses is presented in Table 9.

6. Scientific Support Coordination Group (SSCG)

- Recommendations regarding the Net Environmental Benefits Analysis (NEBA), agitation effects study and quantification of submerged oil are being reviewed by the FOSC.
- SSCG and Enbridge forensic chemists continued periodic conference calls to examine the oil 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
 - 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 10.

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	September 2012						
		12	11	10	9	8	7	6
Sheen Tests Performed	0	0	0	0	0	0	0	0
Results Indicated Petroleum Source	0	0	0	0	0	0	0	0
Results Indicated Biogenic Source	0	0	0	0	0	0	0	0
Inconclusive Test Results	0	0	0	0	0	0	0	0

Table 2 – Sheen Responses

Description	Total	September 2012						
		12	11	10	9	8	7	6
Responses	55	10	9	9	0	9	9	9

Table 3 - Equipment Decontamination

Location/Media	Total	September 2012						
		12	11	10	9	8	7	6
Frac Tanks	0	0	0	0	0	0	0	0
Vac. Trucks-Tankers	0	0	0	0	0	0	0	0
Roll-Off Boxes	0	0	0	0	0	0	0	0
Yellow Iron (light)	0	0	0	0	0	0	0	0
Yellow Iron (heavy)	0	0	0	0	0	0	0	0
Jon Boats	0	0	0	0	0	0	0	0
Air Boats	0	0	0	0	0	0	0	0
Vehicles	0	0	0	0	0	0	0	0
Boom (linear ft)	0	0	0	0	0	0	0	0
Miscellaneous Items	0	0	0	0	0	0	0	0

Table 4 - Soil and Debris Shipped Off Site (as of 9/12/2012)

Waste Stream	Cumulative	Disposal Facility
Haz Soil (yd ³)	19,644	Envirosafe (Oregon, OH)
Non-Haz Soil (yd ³) (Excluding Ceresco Dredge)	76,443	SET/C&C
Non-Haz Soil & Debris (yd ³) (Excluding Ceresco Dredge)	64,815	Westside Recycling (Three Rivers, MI)
Non-Haz Soil (yd ³) (Ceresco Dredge Only)	5,562	EQ/Republic (Marshall, MI)
Haz Debris (yd ³)	12,075	EQ/Michigan Disposal (Wayne, MI) and Republic (Marshall, MI)
Non-Haz Household Debris (ton)	1,757	SET/C&C
Non-Haz Impacted Debris (ton)	7,099	

Shaded items are discontinued waste streams.

Table 5 - Liquid Shipped Off-Site (as of 9/12/2012)

Stream	Destination Company	Destination Location	Cumulative Volume (gallons) †
Non-Haz Water	Battle Creek POTW	Battle Creek, MI	1,143,280
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	416,726
<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			17,151,512

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 6 – Estimated Recovered Oil (as of 9/10/2012)

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	13,814
	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	34,304
<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	46,176
	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>	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			1,148,753

Shaded and *italicized* items represent discontinued waste streams

Table 7 – Samples Collected By Enbridge

Sample Type	Total	September 2012						
		12	11	10	9	8	7	6
Surface Water	0	0	0	0	0	0	0	0
Private Well	0	0	0	0	0	0	0	0
Groundwater	10	5	5	0	0	0	0	0
Sediment	37	37	0	0	0	0	0	0
Soil	0	0	0	0	0	0	0	0
Product	0	0	0	0	0	0	0	0
Dewatering	0	0	0	0	0	0	0	0
Sheen	0	0	0	0	0	0	0	0

Table 8 – Public Inquiries Received by U.S. EPA and Enbridge

Location/Med	Total	September 2012						
		12	11	10	9	8	7	6
Marshall Community Center	18	3	12	1	0	0	1	1
Oil Spill Public Information Hotline	0	0	0	0	0	0	0	0
Website	0	0	0	0	0	0	0	0
Total Public Inquiries	18	3	12	1	0	0	1	1

Table 9 - Financial Summary (as of 9/9/2012)

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>	27,357
<i>T&T Bisso (EPA:HS800008)</i>	\$ 882,087
Total Other Contractors	\$ 1,107,823
START Contractor – WESTON (EPS50604)	
T030-Response	\$ 27,205,808
T032-Sampling	\$ 183,567
T037-Doc Support	\$ 1,720,547
Total START Contractor	\$ 29,109,922
Response Contractor Sub-Totals	\$ 33,447,959
U.S. EPA Funded Costs: Total U.S. EPA Costs	\$ 6,084,926
Pollution Removal Funding Agreements	
Total Other Agencies	\$ 2,051,535
Indirect Cost (16.00%)	\$ 3,598,252
Indirect Cost (8.36%)	\$ 1,430,595
Cost Documentation/Billing Admin Fee (2.93%)*	\$ 275,045
Total Est. Oil Spill Cost	\$ 46,888,312
Oil Spill Ceiling Authorized by USCG	\$ 52,700,000
Oil Spill Ceiling Available Balance	\$ 5,811,688

Shaded and italicized items are discontinued ; * Effective on EPA Enbridge costs billed to USCG for bills issued after 6/5/12.

Table 10 - Personnel On-Site

Agency/Entity	September 2012						
	12	11	10	9	8	7	6
U.S. EPA	2	2	1	0	0	2	2
START	20	18	19	0	10	11	14
MDEQ	5	4	4	0	1	5	5
MDEQ Contractors	5	5	5	0	0	5	5
USGS	2	2	0	0	0	0	0
Calhoun County Public Health	0	0	0	0	0	0	0
Calhoun County (CC) EM	0	0	0	0	0	0	0
City of Battle Creek	0	0	0	0	0	0	0
City of Marshall	0	0	0	0	0	0	0
Kalamazoo County Public Health	0	0	0	0	0	0	0
Kalamazoo Sheriff	0	0	0	0	0	0	0
MDCH	0	0	0	0	0	0	0
Michigan State Police EMD	0	0	0	0	0	0	0
Allegan County Emergency Mgmt.	0	0	0	0	0	0	0
MDNR	0	0	0	0	0	0	0
Enbridge – Operations Center	40	40	43	0	13	39	38
Enbridge – Kalamazoo River	27	27	23	0	6	11	10
Enbridge – Containment	15	16	19	0	11	15	13
Enbridge – Submerged Oil	43	38	36	0	12	12	12
Enbridge – Waste Management	1	1	1	0	1	1	1
Enbridge – Security & Flaggers	4	4	4	4	4	4	4
Enbridge – Communications Ctr.	5	6	4	0	0	4	4
Total	169	163	159	4	58	109	108

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