

US EPA ARCHIVE DOCUMENT

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION V
POLLUTION/SITUATION REPORT #154



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

US EPA ARCHIVE DOCUMENT



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To: Susan Hedman, U.S. EPA Regional Administrator
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 Christine Kosmowski, City of Battle Creek

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

Date: 8/2/2012

Reporting/Operational Period: 0700 hours 7/19/2012 through 0700 hours 7/26/2012

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; 4) Air Operations; and 5) Waste Management.
- The Submerged Oil Recovery Group, Submerged Oil Monitoring Group, Containment Science Group, Containment Monitoring Group, and the Air Operations Branch were not active during this operational period.

2.1 Submerged Oil Branch

2.1.1 OSCAR Group

- No activities were conducted during this operational period.

2.1.2 Submerged Oil Science Group

- On July 23, 2012, Enbridge began implementation of the Agitation Study. Results of the study will be used to evaluate the effectiveness of agitation for recovery of submerged oil in potential future operations.
- On July 23, 2012, U.S. EPA and Enbridge began implementation of a sediment coring program to quantify the amount of submerged oil remaining in the system. Coring locations were determined by a

random generation procedure combined with the 2012 submerged oil reassessment polygon defined areas.

- Monitoring of submerged oil in Morrow Lake and the Morrow Lake Delta continued according to the Morrow Lake Monitoring, Assessment, and Management Plan.
- Enbridge collected velocity profiling data from the Kalamazoo River System. The data will be utilized for the development of containment strategies to prevent the continued migration of oil, oil sheen, submerged oil and oil containing sediments into the Morrow Lake fan, and for refinement of the hydrodynamic model.

2.1.3 Submerged Oil Compliance Group

- No activities were performed during this operational period.

2.2 Containment Branch

2.2.1 Containment Compliance Group

- Enbridge tracked an MDEQ permit application for installation of enhancements (e.g. structures) and cylindrical sampling devices at 14 sediment trap locations. The permit application is currently under review by MDEQ.

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/product (globules). 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.
- On July 24, 2012, U.S. EPA, MDEQ, and Enbridge implemented a new procedure for response to observations of oil sheen. The new procedure utilizes a decision matrix for determining whether a response is necessary.
- Daily sheen management activities continued with sheen sweep boats conducting routine recovery activities at Ceresco Dam, Mill Ponds, and the Morrow Lake Delta, 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 July 25, 2012, a total of 800 feet of surface hard boom has been deployed at the Ceresco Control Point. Additionally, a total of 1,500 feet of surface hard boom and 5,350 feet of subsurface half curtain has been deployed at the E4 Containment system boom locations. Teams removed debris accumulated within the boomed areas. Inspection of subsurface curtain was performed using an underwater camera.
- Teams performed weekly visual inspections of the 6 currently-permitted sediment trap locations.
- Sediment samples collected from the 6 currently-permitted sediment trap locations were sent for laboratory analysis. Sample results will be used to evaluate and verify the effectiveness of the sediment traps.

2.3 Kalamazoo River System Branch

2.3.1 Talmadge Creek/Kalamazoo River Remedial Investigation Group

- No activities were conducted during this operational period.

2.3.2 Kalamazoo River Compliance Group

- Restoration and stabilization activities were conducted at various Kalamazoo River Bank Erosion Assessment (KRBEA) sites.
- Restoration planting of the Talmadge Creek corridor between MP 0.0 and MP 0.50 was completed.

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 gauges were monitored at multiple locations along the Kalamazoo River, Morrow Lake Delta, and Morrow Lake. In addition, daily water and sediment temperature readings were collected at 10 locations.
- Enbridge conducted weekly monitoring of buoys and signage in 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, assessed 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.
- Enbridge continued to maintain an odor response team; however, no odor complaints were received during the operational period. Air monitoring and sampling information is included in Tables 7 and 8.

3.2 Environmental Unit

- Enbridge's Kalamazoo River Hydrodynamic Transport Model Report containing baseline model calibration results (e.g. riverine and floodplain grids) and various baseline scenario results, sensitivity analysis results, and the Report addendum are currently under review by U.S. EPA.
- Efforts to calculate the quantity of submerged oil remaining as of Spring 2012 continued.
- Enbridge and MDEQ continued to review and track RI progress.

3.3 Documentation Unit

- Documentation Unit personnel continued organizing and archiving electronic and paper files.

3.4 Resource Unit

- Personnel continued to produce Incident Action Plans (IAPs), support the planning efforts of operations, and provide 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 9.

5. *Landowner Environmental Issues*

- Landowner environmental issues, as reported by Enbridge, are presented in Table 10.

6. *Finance*

- The current National Pollution Funds Center (NPFC) ceiling is \$52.7 Million. Approximately 86.0% of the ceiling has been spent through July 22, 2012. The latest average 7-day burn rate was \$35,303. These cost summaries reflect only U.S. EPA-funded expenditures for the incident. A summary of these expenses is presented in Table 11.

7. *Scientific Support Coordination Group (SSCG)*

- Individuals in the Eco-Toxicity Subgroup continue to use the interim version of a Net Environmental Benefits Analysis (NEBA) to assess the harm and benefits accompanying oil recovery efforts. The draft recommendation document is near completion and will be submitted to the FOOSC for review upon incorporation of Spring 2012 poling results.
- SSCG and Enbridge forensic chemists held a conference call to examine the oil fingerprinting results and compare procedures for applying oil fingerprinting results to the task of measuring Line 6B oil remaining in the Kalamazoo River sediments.

8. 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).

9. Personnel On-Site

- Staffing numbers for the entities and agencies active in the response are presented in Table 12.

10. Source of Additional Information

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

11. Clean-up Progress Metrics

Table 1 – Sheen Differentiation Test Results

	July 2012							
	Total	25	24	23	22	21	20	19
Sheen Tests Performed	3	3	0	0	0	0	0	0
Results Indicated Petroleum Source	0	0	0	0	0	0	0	0
Results Indicated Biogenic Source	2	2	0	0	0	0	0	0
Inconclusive Test Results	1	1	0	0	0	0	0	0

Table 2 – Sheen Responses

Total	July 2012						
	25	24	23	22	21	20	19
58	7	6	8	0	12	12	13

Table 3 - Equipment Decontamination

Location/Media	Total	July 2012						
		25	24	23	22	21	20	19
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)	575	0	0	0	0	0	350	225
Miscellaneous Items	0	0	0	0	0	0	0	0

Table 4 - Soil and Debris Shipped Off Site (as of 7/26/2012)

Waste Stream	Cumulative	Disposal Facility
Haz Soil (yd ³)	19,644	Envirosafe (Oregon, OH)
Non-Haz Soil & Debris (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)	1,717	SET/C&C
Non-Haz Impacted Debris (ton)	7,040	

Shaded items are discontinued waste streams.

Table 5 - Liquid Shipped Off-Site (as of 7/26/2012)

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	392,526
<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			17,127,312

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.

* Treated Non-Haz Water no longer sent to this location.

Table 6 – Estimated Recovered Oil (as of 7/23/2012)

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
Soil - (Impacted Soil & Debris)	Envirosafe/ Westside RDF	Oregon, OH	278,665
Geotube Sediment - (Impacted Sediment)	Envirosafe/ Westside RDF	Oregon, OH	1,298
Debris - (Roll Off Boxes with Impacted Sorbents, boom, pads, plastic, PPE, vegetation, and biomass)	EQ Michigan	Belleville, MI	33,965
Frac Tank City - Influent to Carbon Filtration System	C&C Landfill	Marshall, MI	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	
Ceresco Pretreatment System	C&C Landfill	Marshall, MI	90
A-1 Pretreatment System	C&C Landfill	Marshall, MI	9
Oily Water - RPP	Enbridge Facility	Griffith, IN	766,288
Total	-	-	1,148,413

Shaded items represent discontinued waste streams

Table 7 – Real Time Air Monitoring Counts Performed by Enbridge

Monitoring Location	Total	July 2012						
		25	24	23	22	21	20	19
Odor Response	0	0	0	0	0	0	0	0
Work Area	79	12	21	14	0	8	11	11

Table 8 – Samples Collected By Enbridge

Sample Type	Total	July 2012						
		25	24	23	22	21	20	19
Surface Water	6	3	3	0	0	0	0	0
Private Well	0	0	0	0	0	0	0	0
Groundwater	8	0	0	4	0	4	0	0
Sediment	142	84	52	0	0	0	3	3
Soil	22	0	0	0	0	10	7	5
Product	3	2	1	0	0	0	0	0
Dewatering	0	0	0	0	0	0	0	0
Sheen	7	5	2	0	0	0	0	0

Table 9 – Public Inquiries Received by U.S. EPA and Enbridge

Location/Media	Total	July 2012						
		25	24	23	22	21	20	19
Marshall Community Center	13	4	2	1	0	0	4	2
Oil Spill Public Information Hotline	6	1	1	0	0	0	2	2
Website	3	0	0	1	1	0	0	1
Total Public Inquiries	22	5	3	2	1	0	6	5

Table 10 – Landowner Environmental Issues (as of 7/26/2012)

Issues this Period	Issues Undergoing Evaluation	Issues Considered Addressed
0	4	1

Table 11 - Financial Summary

Item	Expended (Cumulative) (as of 7/22/2012)
ERRS Contractors	
EQM (EPS50802) T057	\$ 1,199,522
T060	\$ 213,636
LATA (EPS50804) T019	\$ 1,161,082
ER LLC (EPS50905) T040	\$ <u>683,330</u>
Total ERRS Contractors	\$ 3,257,571
Other Contractors	
Lockheed Martin (EPW09031) – TAGA Support	\$ 198,379
Lockheed Martin (EPW09031) -Biodegradability Study	25,694
T&T Bisso (EPA:HS800008)	\$ <u>882,087</u>
Total Other Contractors	\$ <u>1,106,160</u>
START Contractor – WESTON (EPS50604)	
T030-Response	\$ 26,344,766
T032-Sampling	\$ 183,567
T037-Doc Support	\$ <u>1,660,482</u>
Total START Contractor	\$ <u>28,188,815</u>
Response Contractor Sub-Totals	\$ <u>32,526,852</u>
U.S. EPA Funded Costs: Total U.S. EPA Costs	\$ <u>6,042,932</u>
Pollution Removal Funding Agreements – Total Other Agencies	\$ <u>1,790,754</u>
Indirect Cost (16.00%)	\$ 3,598,252
Indirect Cost (8.36%)	\$ 1,350,080
Total Est. Oil Spill Cost	\$ <u>43,518,116</u>
Oil Spill Ceiling Authorized by USCG	\$ 52,700,000
Oil Spill Ceiling Available Balance	\$ <u>7,391,130</u>

Shaded items are discontinued

Table 12 - Personnel On-Site

Agency/Entity	July 2012						
	25	24	23	22	21	20	19
U.S. EPA	1	1	1	0	0	1	1
START	23	22	21	0	11	18	21
MDEQ	6	6	6	0	1	5	6
MDEQ Contractors	2	3	4	0	1	5	5
USGS	1	1	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 Management	0	0	0	0	0	0	0
MDNR	0	0	0	0	0	0	0
Enbridge – Operations Center	54	53	53	0	10	51	52
Enbridge – Kalamazoo River	12	12	13	0	3	32	36
Enbridge – Containment	10	10	11	0	10	13	16
Enbridge – Submerged Oil	32	32	32	2	9	5	5
Enbridge – Waste Management	1	1	1	0	1	1	1
Enbridge – Security & Flaggers	4	4	4	4	4	4	4
Enbridge – Communications Center	4	4	3	0	0	3	4
Total	150	149	149	6	50	138	151

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