

US EPA ARCHIVE DOCUMENT

**U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION V  
POLLUTION/SITUATION REPORT #131**



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



**To:** Susan Hedman, U.S. EPA Regional Administrator  
James Sygo, MDEQ  
Mark DuCharme, MDEQ  
Michelle DeLong, MDEQ  
Dr. Linda Dykema, MDCH  
Lt. Barry Reber, Michigan State Police, Emergency Management  
Deb Cardiff, Kalamazoo County  
Lt. Paul Baker, Kalamazoo County Sheriff's Office  
James Rutherford, Calhoun County Public Health Department  
Durk Dunham, Calhoun County Emergency Management  
Mike McKenzie, City of Battle Creek  
Cheryl Vosburg, City of Marshall  
Christine Kosmowski, City of Battle Creek

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

**Date:** 01/31/2012

**Reporting/Operational Period:** 0700 hours 1/19/2012 through 0700 hours 1/26/2012

### ***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) Overbank; 2) Submerged Oil; 3) Containment; 4) OSCAR; 5) Kalamazoo River; 6) Talmadge Creek; 7) Air Operations; and 8) Waste Management.

#### **2.1 Overbank Branch**

##### ***2.1.1 Overbank Science Group***

- On January 23, 2012, Enbridge submitted Response Action Work Plans for OB 8.97 I, OB 9.10 LDB, and OB 10.37 RDB. The plans are currently under review by U.S. EPA.

##### ***2.1.2 Overbank Compliance Group***

- The Group continued permit preparation for response actions at the above referenced sites.

##### ***2.1.3 Overbank Recovery Group***

- Teams conducted pre-planning for recovery operations at OB 13.40 LDB.
- Teams continued mat installation, erosion control, and site grading along Talmadge Creek, and mobilized to MP 2.00 for construction of the diversion structure at the confluence.
- Teams continued to demobilize from OB 5.92 RDB.

#### **2.1.4 Overbank Monitoring Group**

- Teams continued to conduct water quality monitoring during sheet piling removal at OB 5.92 RDB.
- Teams continued to conduct air monitoring and sampling at OB 5.92 RDB and MP 2.00. No air monitoring detections were noted during the reporting period.
- Enbridge continued to maintain an odor response team; however, no odor complaints were received during this reporting period.
- Air sampling and monitoring information is included in Tables 1 and 2.

### **2.2 Submerged Oil Branch**

#### **2.2.1 Submerged Oil Science Group**

- The Group continued review of hydrodynamic assessment data and generation of the hydrodynamic model to characterize the movement of submerged oil.
- On January 20, 2012, Enbridge submitted a request for a deadline extension for the Quantification for Submerged Oil Report. The request is currently under review by EPA personnel.
- The Group continued to compile packages for submerged oil sites being considered and evaluated for potential winter work by the OSCAR Branch.

#### **2.2.2 Submerged Oil Compliance Group**

- No activities were conducted during the reporting period.

#### **2.2.3 Submerged Oil Recovery Group**

- No activities were conducted during the reporting period.

#### **2.2.4 Submerged Oil Monitoring Group**

- No activities were conducted during the reporting period.

### **2.3 Containment Branch**

#### **2.3.1 Containment Science Group**

- The Group continued refining the hydrodynamic model concepts and modifying the Plan for Preventing Migration of Oil Past the Morrow Lake Dam during Winter/Spring 2011-2012.
- The Group continued to develop subsurface containment strategies for depositional areas along the Kalamazoo River, including the completion of hydraulic calculations to assess various sites under consideration.

#### **2.3.2 Containment Compliance Group**

- The Group commenced development of necessary permits for subsurface containment at various sites along the Kalamazoo River.

### ***2.3.3 Containment Recovery Group***

- Teams continued to maintain 3,100 feet of surface hard boom at 13 protective containment sites and 600 feet of surface hard boom at 2 control points. Teams removed debris accumulated within the boomed areas.
- Teams removed shoreline protective containment at MP 5.92 following demobilization.

### ***2.3.4 Containment Monitoring Group***

- Water level gauges were monitored at multiple locations along the Kalamazoo River, the Morrow Lake Delta, and Morrow Lake.

## **2.4 OSCAR Branch**

- The OSCAR Branch continued to consolidate and prioritize outstanding work sites. The Branch participated in data review, quality control, and site closure processes to ensure that all pending issues are addressed. The OSCAR Branch requested information for site determination, and oversaw the transfer of sites between the various Branches.
- The OSCAR Branch reviewed data from several recently completed expedited RI sites along the Kalamazoo River to determine whether they are consistent with the U.S. EPA Order or whether further site plan development is necessary.
- The OSCAR Branch began reviewing packages prepared by the Submerged Oil Branch for determination as to whether winter work may be feasible at sites.
- Sites status information is presented in Table 3.

## **2.5 Kalamazoo River Branch**

### ***2.5.1 Kalamazoo River Remedial Investigation Group***

- Teams continued development and implementation the Kalamazoo River RI Work Plan for 13.0 R1.
- Teams conducted RI assessment at OB 8.48 LDB.

### ***2.5.2 Kalamazoo River Compliance Group***

- The Group continued restoration and stabilization at various Kalamazoo River Bank Erosion Assessment (KRBEA) Sites.
- The Group developed permit applications for the Raymond Road KRBEA site.
- The Group completed the sixth River Bank Erosion tour.

### ***2.5.3 Kalamazoo River Remedial Action Group***

- Teams collected post-excavation verification samples at OB 5.92 RDB.

#### **2.5.4 Kalamazoo River Monitoring Group**

- Teams performed potable well sampling. Refer to Table 2 for the total number of samples collected during this reporting period, as reported by Enbridge.

### **2.6 Talmadge Creek Branch**

#### **2.6.1 Talmadge Creek Remedial Investigation Group**

- The Group continued conducting the bulk sediment toxicity study.

#### **2.6.2 Talmadge Creek Compliance Group**

- The Group continued evaluation of RI data and Verification of Soil Remediation (VSR) data for MP 0.0 to MP 1.0.

#### **2.6.3 Talmadge Creek Remedial Action Group**

- Teams continued to operate and maintain the pump-around and GAC dewatering systems, and maintained soil erosion and sedimentation controls.
- Excavation, restoration, and post-excavation verification sampling continued from MP 0.5 through MP 1.0.
- Teams began mobilization and mat road installation between MP 1.0 and MP 2.25.

#### **2.6.4 Talmadge Creek Monitoring Group**

- Teams continued monitoring erosion control devices.
- Teams conducted water quality monitoring during sheet pile installation at the Confluence and during excavation activities along Talmadge Creek.
- Teams continued to conduct air monitoring at Talmadge Creek. No detections were noted during the reporting period.

### **2.7 Air Operations Branch**

- One over-flight was conducted for situational awareness during this reporting period.
- Photographs were taken during the over-flight for presentation during various meetings.

### **2.8 Waste Management Branch**

#### **2.8.1 Decontamination Group**

- A summary of equipment and boom decontaminated during this reporting period is presented in Table 4.

#### **2.8.2 Transportation and Disposal Group**

- Teams continued to haul contaminated soil, water, and debris to staging areas. Samples were collected for waste characterization and oil recovery determination prior to off-site disposal.

- Quantities of oil and debris shipped off-site during the reporting period are presented in Tables 5 through 8.
- 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 9.

### ***2.8.3 Waste Management Characterization Group***

- Waste management characterization, manifesting, and coordination of transportation and disposal continued according to approved plans.

## ***3. Planning***

### **3.1 Situation Unit**

- Situation Unit personnel observed and documented progress in operational areas, and continued to assess areas of interest including locations of oil sheen, turbidity, and ice formation.
- Daily situational photo logs were prepared and distributed to project participants.

#### ***3.1.1 GIS Specialists***

- GIS personnel continued to support operations with the generation of site maps.

### **3.2 Environmental Unit**

- EPA continued coordination with United States Geological Survey (USGS) regarding the Kalamazoo River geomorphology evaluation and the impact on strategy and tactics for future oil recovery efforts.

### **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 provided information to Logistics personnel in order to properly prepare and procure resources.

## ***4. Command***

### **4.1 Safety Officers**

- Safety personnel continued to conduct work-site safety inspections, with a focus on excavation activities at Talmadge Creek and the diversion installation at the Confluence.
- A minor shoulder injury and a minor first aid incident occurred during the reporting period. Both employees returned to work.

## 4.2 Public Information

- No activities were conducted during this reporting period.
- The number of public inquiries reported by Enbridge for this period is presented in Table 10.

### ***5. Landowner Environmental Issues***

- Landowner environmental issues, as reported by Enbridge, are presented in Table 11.

### ***6. Finance***

- The current National Pollution Funds Center (NPFC) ceiling is \$43.7 Million. Approximately 88.9% of the ceiling has been spent through January 22, 2012. The latest average 7-day burn rate was \$34,709. These cost summaries reflect only EPA-funded expenditures for the incident. A summary of these expenses is presented in Table 12.

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

- On January 19 and 20, 2012, EPA held discussions with the SSCG which has been formed to provide scientific advice to the FOOSC regarding EPA's determination of final cleanup endpoints.

### ***8. Participating Entities***

- The Multi-Agency Coordination (MAC) Group continues meeting twice per month to discuss the progress of the response. 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
  - Calhoun County Public Health Department
  - Calhoun County Emergency Management
  - Kalamazoo County Health and Community Services Department
  - Kalamazoo County Sheriff
  - Enbridge (Responsible Party).
- The MAC did not meet during the reporting period.
- For a list of cooperating and assisting agencies and the congressional presence, 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 13.

### ***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 – Real Time Air Monitoring Counts Performed by Enbridge**

Monitoring Location	Total	January 2012						
		25	24	23	22	21	20	19
Odor Response	0	0	0	0	0	0	0	0
Work Area	95	22	11	15	0	11	17	19

**Table 2 – Samples Collected By Enbridge**

Sample Type	Total	January 2012						
		25	24	23	22	21	20	19
Surface Water	0	0	0	0	0	0	0	0
Private Well	8	0	0	0	0	0	0	8
Groundwater	0	0	0	0	0	0	0	0
Sediment	0	0	0	0	0	0	0	0
Soil	53	18	9	9	0	0	8	9
Dewatering	2	0	0	0	0	0	2	0
Air (Odor Complaint)	0	0	0	0	0	0	0	0
Air (Work Area)	12	0	0	3	0	3	3	3

**Table 3 – Site Status Information (as of 1/25/2012)**

Overbank Branch	5
Submerged Oil Branch	186
Containment Branch	5
Talmadge Creek Branch	1
Kalamazoo River Branch	4
Consistent with EPA Order and up for MDEQ Part 201 Program	3
<b>Total Sites</b>	<b>204</b>

**Table 4 - Equipment Decontamination**

Location/Media	Total	January 2012						
		25	24	23	22	21	20	19
Frac Tanks	4	1	2	1	0	0	0	0
Vac Trucks-Tankers	2	0	0	0	0	0	0	2
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	9	2	1	2	0	2	0	2

**Table 5 - Soil and Debris Shipped Off Site (as of 1/25/2012)**

Waste Stream	Cumulative	Disposal Facility
Haz Soil (yd <sup>3</sup> )	19,644	Envirosafe (Oregon, OH)
Non-Haz Soil & Debris (yd <sup>3</sup> ) (Excluding Ceresco Dredge)	61,943	Terra/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)	1,192	EQ/Republic (Marshall, MI); C&C
Non-Haz Impacted Debris (ton)	6,523	

Shaded items are discontinued waste streams.

**Table 6 – Oil/Water Collected by Location (as of 1/25/2012)**

Location	Cumulative (gallons)
Division A	5,356,315
Division B	4,890,079
Division C	2,094,238
Division D	121,106
Division E	52,631
Decontamination	2,317,989
Site A	320,909
Other Locations*	1,823,809
Subtotal	<b>16,977,076</b>
Sludge**	<b>474,215</b>
<b>Total Oil/Water</b>	<b>16,502,861</b>

\* Wildlife Center Operations, Sediment Trap Cleaning, Hydro-Vacuuming.

\*\* Sludge collected is tracked as a liquid waste inbound; however, after stabilization, the sludge is disposed of as solid waste. Therefore, the volume of sludge is not included within the cumulative oil/water totals. Stabilized sludge is included in the solid waste disposal metrics.

**Table 7 - Liquid Shipped Off-Site (as of 1/25/2012)**

Stream	Destination Company	Destination Location	Cumulative Volume (gallons) †
Non-Haz Water	Battle Creek POTW	Battle Creek, MI	1,034,480
Non-Haz Water	Dynecol	Detroit, MI	981,792
Non-Haz Water	Liquid Industrial Waste	Holland, MI	980,807
Non-Haz Water	Plummer	Kentwood, MI	268,025
<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>16,498,061</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.

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

**Table 8 - Oil/Water Remaining On-Site (as of 1/25/2012)**

Item	Cumulative (gallons)
Oil/Water Collected	16,502,861
Oil/Water Shipped Off-Site	16,498,061
<b>Total Oil/Water Remaining On-Site</b>	<b>4,800</b>

**Table 9 – Estimated Recovered Oil (as of 1/23/2012)**

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	12,522*
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	33,697
Frac Tank City - Influent to Carbon Filtration System	C&C Landfill	Marshall, MI	8,109
Frac Tank City - Water	Dynecol	Detroit, MI	46,126**
	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
<b>Total</b>	-	-	<b>1,146,803</b>

Shaded items represent discontinued waste streams

\*Totals updated for analytical received after report generation. Not all analytical is available at the time of report generation.

\*\* Not all analytical is available at the time of report generation.

**Table 10 – Public Inquiries Received by EPA and Enbridge**

Location/Media	Total	January 2012						
		25	24	23	22	21	20	19
Marshall Community Center	3	0	3	0	0	0	0	0
Oil Spill Public Information Hotline	6	1	1	2	0	0	1	1
Website	0	0	0	0	0	0	0	0
<b>Total Public Inquiries</b>	<b>9</b>	<b>1</b>	<b>4</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>

**Table 11 – Landowner Environmental Issues (as of 1/25/2012)**

Issues this Period	Issues Undergoing Evaluation	Issues Considered Addressed
0	5	0

**Table 12 - Financial Summary**

Item	Expended (Cumulative) (as of 1/22/2012)
<b>ERRS Contractors</b>	
EQM (EPS50802) T057	\$ 1,199,522
T060	\$ 213,636
LATA (EPS50804) T019	\$ 1,161,082
ER LLC (EPS50905) T040	\$ <u>683,330</u>
<b>Total ERRS Contractors</b>	<b>\$ 3,257,571</b>
<b>Other Contractors</b>	
Lockheed Martin (EPW09031) – TAGA Support	\$ 185,951
T&T Bisso (EPA:HS800008)	\$ <u>882,087</u>
<b>Total Other Contractors</b>	<b>\$ 1,068,038</b>
<b>START Contractor – WESTON (EPS50604)</b>	
T030-Response	\$ 21,484,232
T032-Sampling	\$ 183,567
T037-Doc Support	\$ <u>1,259,354</u>
<b>Total START Contractor</b>	<b>\$ 22,927,153</b>
<b>Response Contractor Sub-Totals</b>	<b>\$ 27,252,762</b>
<b>EPA Funded Costs: Total EPA Costs</b>	<b>\$ 5,608,222</b>
<b>Pollution Removal Funding Agreements – Total Other Agencies</b>	<b>\$ 1,508,854</b>
<b>Sub-Totals</b>	<b>\$ 34,369,838</b>
Indirect Cost (16.00%)	\$ 3,598,252
Indirect Cost (8.36%)	\$ 872,824
<b>Total Est. Oil Spill Cost</b>	<b>\$ 38,840,915</b>
<b>Oil Spill Ceiling Authorized by USCG</b>	<b>\$ 43,700,000</b>
<b>Oil Spill Ceiling Available Balance</b>	<b>\$ 4,859,085</b>

Shaded items are discontinued

**Table 13 - Personnel On-Site**

Agency/Entity	January 2012						
	25	24	23	22	21	20	19
U.S. EPA	3	2	2	0	2	8	8
START	19	18	16	4	16	23	23
MDEQ	7	6	9	0	0	8	9
MDEQ Contractors	7	7	6	0	1	6	6
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	1	1
City of Marshall	0	0	0	0	0	1	1
Village of Augusta	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	2	2
USGS	0	0	0	0	0	4	4
Michigan State Police EMD	0	0	0	0	0	0	0
Other	0	0	0	0	0	3	3
Enbridge – Operations Center	69	68	68	3	20	74	81
Enbridge – Talmadge Creek	71	70	70	3	63	69	72
Enbridge – Kalamazoo River	13	11	11	0	0	6	7
Enbridge – Containment	6	6	6	0	7	7	7
Enbridge – Submerged Oil	1	1	1	0	1	1	1
Enbridge – Overbank	30	31	29	0	24	23	23
Enbridge – Waste Management	35	37	33	0	36	38	40
Enbridge – Security & Flaggers	10	12	12	11	11	12	12
Enbridge –Communications Center	2	2	2	0	0	2	2
<b>Total</b>	<b>273</b>	<b>271</b>	<b>265</b>	<b>21</b>	<b>181</b>	<b>288</b>	<b>302</b>

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