

US EPA ARCHIVE DOCUMENT

**U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION V  
POLLUTION/SITUATION REPORT #104**



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

**US EPA ARCHIVE DOCUMENT**



**Submerged Oil Remediation on Kalamazoo River at MP26.0**

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

**From:** Ralph Dollhopf, U.S. EPA, Federal On-Scene Coordinator  
Tricia Edwards, U.S. EPA, On-Scene Coordinator  
Jeff Kimble, U.S. EPA, On-Scene Coordinator  
Stephen Wolfe, U.S. EPA, On-Scene Coordinator

**Date:** 06/20/2011

**Reporting Period:** 0700 hours 06/13/2011 through 0700 hours 06/20/2011

### **1. Site Data**

<b>Site Number:</b>	Z5JS	<b>Contract Number:</b>	
<b>D.O. Number:</b>		<b>Action Memo Date:</b>	
<b>Response Authority:</b>	OPA	<b>Response Type:</b>	Emergency
<b>Response Lead:</b>	PRP	<b>Incident Category:</b>	Removal Action
<b>NPL Status:</b>	Non-NPL	<b>Operable Unit:</b>	
<b>Mobilization Date:</b>	7/26/2010	<b>Start Date:</b>	7/26/2010
<b>Demobilization Date:</b>		<b>Completion Date:</b>	
<b>CERCLIS ID:</b>		<b>RCRIS ID:</b>	
<b>ERNS No.:</b>		<b>State Notification:</b>	
<b>FPN#:</b>	E10527	<b>Reimbursable Account:</b>	

### **2. Previous Response Actions and Current Response Governance**

Previous response actions performed to date may be found in SITREPs #1 through #103.

Governance for the project is provided by the U.S. Environmental Protection Agency (U.S. EPA) Federal On-Scene Coordinator (FOSC) and the Michigan Department of Environmental Quality. The structure of the response is the Incident Command System (ICS), with the FOSC serving as the Incident Commander (IC).

The Operational Period covered in this report is: 0700 hours 06/13/2011 through 0700 hours 06/20/2011.

### **3. Operations**

This operations phase of the response consisted of: 1) Active oil recovery in Talmadge Creek and Kalamazoo River; 2) Strike Team (ST) Assessment; 3) Poling for submerged oil 4) Overbank Surface Cleanup; 5) Overbank Excavation; 6) Operations and Maintenance (O&M); and 7) Decontamination.

Sheen and/or oil were observed at 63 locations inspected by the O&M inspectors.

A summary of active operational/inspection sites as reported by Enbridge is provided below.

**Table 1 – Daily Activity/Progress**

Type of Site	June 2011						
	19	18	17	16	15	14	13
Parks Assessment Sites	3	3	3	3	3	3	3
Bridge Assessment Sites	21	21	21	21	21	21	21
High Use Access Points Assessment Sites	9	9	9	9	9	9	9
Operations & Maintenance Site	106	106	106	106	106	106	107
Control Points	10	10	10	10	10	10	9
Protective Containment Sites	36	36	36	36	36	36	36
River Erosion Sites	26	26	26	26	26	26	26
Monitoring Well Installation Sites	3	3	3	3	3	3	3

### **3.1 Oil Recovery Operations**

Active oil recovery operations continued on Talmadge Creek and the Kalamazoo River. Recovery operation techniques used included raking, flushing and other mechanical agitation techniques not requiring permits from the MDEQ.

### **3.2 Strike Team (ST)**

Strike Teams (ST) continued to perform focused assessments of areas requiring further assessment, as designated by SORT and poling teams. The Strike Team assessment work for the project was completed on Friday, June 17, 2011.

### **3.3 Poling Re-assessment for submerged oil**

A summary of poling progress for this period is presented below.

**Table 2– Poling Progress on Morrow Lake Delta 6/20/2011**

Number of locations:	214
Approximate Total Area:	204 acres (8,886,240 sq ft)
Moderate (138 Locations)	32.6 acres (1,420,056 sq ft)
Heavy (214 Locations)	0.6 acres (25,100 sq ft)

### **3.4 Overbank Surface Cleanup**

Overbank surface cleanup operations continued in accordance with the schedule outlined in Enbridge's Strategic Plan for Summer 2011 operations. A summary of Overbank Surface Cleanup progress for this period is presented below:

**Table 3 – Overbank Surface Cleanup Progress as of 6/20/2011**

Quarter – mile Segments Completed: 153	153 of 240 locations (63.75% of planned locations)
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### 3.5 Overbank Excavation

Overbank excavation continued in accordance with the schedule outlined in Enbridge's Strategic Plan for Summer 2011 operations. Work was completed at two of eight of the overbank excavation sites during this operational period.

### 3.6 Operations and Maintenance (O&M)

Teams inspected O&M locations. In general, team activities included an inspection of containment and protective boom locations to ensure proper placement and effectiveness and inspection for readily visible oil or oil-saturated soils.

### 3.7 Decontamination

Equipment and boom that were decontaminated during this operational period as reported by Enbridge are presented below.

**Table 4 - Equipment Decontamination**

Location/Media	Total	June 2011						
		19	18	17	16	15	14	13
Frac Tanks	0	0	0	0	0	0	0	0
Vac Trucks-Tankers	1	0	0	0	0	1	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
Boats	5	3	0	1	0	1	0	0
Vehicles	0	0	0	0	0	0	0	0
Boom (feet)	2,450	0	400	400	100	400	650	500

### 3.7 Additional Operations

#### 3.7.1 Air Operations

There were 6 overflights for situational awareness conducted during this operational period. Air Operations personnel observed and documented progress in all operational areas and continued to assess areas of interest such as oil mobilization, oil removal and decontamination activities.

#### 3.7.2 Environmental Compliance and Oversight

EPA continued coordination with the MDEQ, particularly with regards to MDEQ concurrence for work contemplated by Enbridge in ecologically sensitive areas during operations.

#### 3.7.3 Transportation and Disposal Branch

EPA continued oversight of waste management characterization, documentation and coordination.

#### 3.7.4 Monitoring Branch

Under MDEQ direction, potable water, groundwater, soil, sediment and surface water sampling were performed in accordance with the existing U.S. EPA-approved Sampling and Analysis Plan (SAP) (adopted by MDEQ) and a reduced sampling frequency as approved by the MDEQ. Samples reported by Enbridge are provided below.

**Table 5 – Samples Collected By Enbridge**

Sample Type	Total	June 2011						
		19	18	17	16	15	14	13
Surface Water	31	0	0	0	6	5	10	10
Private Well Samples	0	0	0	0	0	0	0	0
Groundwater Samples	0	0	0	0	0	0	0	0
Sediment Samples	0	0	0	0	0	0	0	0
Soil Samples	19	0	2	3	0	5	0	9

Enbridge continued to develop and implement a comprehensive air monitoring and sampling program. From June 13 to June 19, 2011, the following number of locations were monitored and/or sampled.

**Table 6 – Air Monitoring/Sampling Conducted By Enbridge**

Sample Type	Quantity
<b>Community Locations</b>	
Summa Canister Samples	44
Real-Time Air Monitoring	1647
Odor Complaint	15
<b>Response Work Areas</b>	
Summa Canister Samples	114
Real-Time Air Monitoring (Work Area Perimeter)	934
Real-Time Air Monitoring (Work Area)	1416

**3.7.4 Wildlife Branch**

The Wildlife Branch continued to provide medical health assessment, treatment, and release of rehabilitated wildlife under Michigan Department of Natural Resources (MDNR) direction.

**4. Landowner Environmental Issues**

Landowner environmental issues, as reported by Enbridge for this period are represented below.

**Table 7 – Landowner Environmental Issues**

Issues this Period	Issues Undergoing Evaluation	Issues Considered Addressed
0	10	1

**5. Progress Metrics**

Progress metrics reported in this section are as reported by Enbridge.

**Table 8 - Boom and Aqua Dam Report**

Metric	June 2011						
	19	18	17	16	15	14	13
# Boom Locations [# control points included]	47 [10]	47 [10]	47 [10]	47 [10]	47 [10]	47 [10]	47 [9]
Total Surface Boom Deployed (ft) [ft of control point surface boom]	33,800 [14,050]	33,800 [14,050]	33,700 [14,050]	33,700 [15,000]	33,700 [13,950]	33,700 [13,950]	33,100 [13,250]
# Aqua Dam Locations	3	3	3	3	3	4	4
Aqua Dam Deployed (ft)	310	310	310	310	310	410	410
Sand-Super Sacks [Sand Bags]	39 [1,288]						

NR = Not Reported by Enbridge

**Table 9 - Soil and Debris Shipped Off Site as of 6/20/2011**

Waste Stream	Cumulative	Disposal Facility
<i>Haz Soil (yd<sup>3</sup>)</i>	<i>19,644</i>	<i>Envirosafe (Oregon, OH)</i>
Non-Haz Soil & Debris (yd <sup>3</sup> ) (Excluding Ceresco Dredge)	9,875	Terra/C&C
<i>Non-Haz Soil &amp; Debris (yd<sup>3</sup>) (Excluding Ceresco Dredge)</i>	<i>64,815</i>	<i>Westside Recycling (Three Rivers, MI)</i>
<i>Non-Haz Soil (yd<sup>3</sup>) (Ceresco Dredge Only)</i>	<i>5,562</i>	<i>EQ/Republic (Marshall, MI)</i>
<i>Haz Debris (yd<sup>3</sup>)</i>	<i>12,075</i>	<i>EQ/Michigan Disposal (Wayne, MI) and Republic (Marshall, MI)</i>
Non-Haz Household Debris (ton)	793	EQ/Republic (Marshall, MI); C&C
Non-Haz Impacted Debris (ton)	2,005	

*Shaded and italicized* items are discontinued waste streams.

**Table 10 – Oil/Water Collected by Location (as of 6/20//2011)**

Location	Cumulative (gallons)
Division A	5,356,315
Division B	4,868,279
Division C	1,891,406
Division D	121,106
Division E	47,438
Decontamination	1,701,090
Site A	306,212
Other Locations*	1,292,804
Subtotal	<b>15,584,650</b>
<b>Sludge**</b>	<b>474,215</b>
<b>Total Oil/Water</b>	<b>15,110,435</b>

\* Decontamination Operations, 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 11 – Oil/Water Separation at Enbridge Facility in Griffith, IN (as of 6/20/2011)**

Item	Cumulative (gallons)
Oil	766,288
Other Material	1,405,525
<b>Total</b>	<b>2,171,813</b>

**Table 12 - Liquid Shipped Off-Site (as of 6/20/2011)**

Stream	Destination Company	Destination Location	Cumulative Volume (gallons) †
<i>Hazardous Water</i>	<i>Dynecol</i>	<i>Detroit, MI</i>	<i>3,594,579</i>
<i>Oil/Water</i>	<i>Enbridge Facility</i>	<i>Griffith, IN</i>	<i>2,171,813</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>
Non-Haz Water	Dynecol	Detroit, MI	840,902
Non-Haz Water	Liquid Industrial Waste	Holland, MI	140,301
<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>
Non-Haz Water	Battle Creek POTW	Battle Creek, MI	893,980
<b>Total</b>			<b>15,108,140</b>

*Shaded and italicized* items are discontinued waste streams.

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

† Cumulative quantities may not reconcile with previous reports (due to auditing).

a. New Age lab water and methanol mix generated by mobile laboratory.

**Table 13 - Oil/Water Remaining On-Site 6/20/2011**

Item	Cumulative (gallons)
Oil/Water Collected	<b>15,110,435</b>
Oil/Water Shipped Off-Site	<b>15,108,140</b>
<b>Total Oil/Water Remaining On-Site</b>	<b>2,295</b>

## **6. Support Operations**

### **6.1 Planning**

The Planning Section coordinated with Enbridge Planning in the ICS planning cycle.

#### **6.1.1 Environmental Unit**

The Public Health Group under the environmental unit is being lead by Linda Dykema, Michigan Department of Community Health. The Public Health Group continues to review report submittals received from Enbridge and evaluate a path forward for the reopening of public parks, bridge and public access points along the river, the Kalamazoo River and Morrow Lake.

The re-assessment task force provided coordination of reassessment activities including SORT, poling, and aerial imagery.

### 6.1.2 Data Management Unit

Continued importing preliminary and validated analytical results into Scribe, exporting daily briefings; and processing and printing maps as requested. Database management is being done in Vernon Hills, IL and/or Houston, TX.

### 6.1.3 Documentation Unit

Continued organization and archiving of electronic and paper files.

### 6.2 Safety

One slip and trip incident requiring transport to a medical facility occurred during this operational period.

The safety staff continues to work with and monitor Enbridge Safety operations, provide field support for the re-assessment and oil recovery teams, and training to new re-assessment staff. In addition, real-time air monitoring was performed by Enbridge at several location within the community and in the vicinity of locations of active oil recovery.

### 6.3 Public Information

The quantity of public inquires reported by Enbridge for this period is presented below.

**Table 14 – Public Inquiries Received by EPA and Enbridge**

Location/Media	Total	June 2011						
		19	18	17	16	15	14	13
Marshall Community Center	17	0	0	5	3	7	0	2
Oil Spill Public Information Hotline	9	0	0	1	0	0	3	5
Website	0	0	0	0	0	0	0	0
<b>Total Public Inquiries</b>	<b>26</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>3</b>	<b>7</b>	<b>3</b>	<b>7</b>

### 6.4 Finance

The current NPFC issued ceiling is \$31.2 Million. Approximately 92.0% of the ceiling has been spent through June 19, 2011. As of June 12, 2011, the latest average 7-day burn rate was \$49,882 per day. These cost summaries reflect only EPA-funded expenditures for the incident. A summary of these expenses is presented on the following page.

**Table 15 - Financial Summary**

<b>Item</b>	<b>Expended (Cumulative) as of 6/19/2011</b>
<b>ERRS Contractors</b>	
EQM (EPS50802) T057	\$ 1,250,065
T060	\$ 204,905
LATA (EPS50804) T019	\$ 1,451,396
ER LLC (EPS50905) T040	\$ 723,669
<b>Total ERRS Contractors</b>	<b>\$ 3,630,035</b>
<b>Other Contractors</b>	
Lockheed Martin (EPW09031) – TAGA Support	\$ 185,464
T&T Bisso (EPA:HS800008)	\$ 1,255,000
<b>Total Other Contractors</b>	<b>\$ 1,440,464</b>
<b>START Contractor – WESTON (EPS50604)</b>	
T030-Response	\$11,923,219
T032-Sampling	\$ 180,214
T037-Doc Support	\$ 830,731
<b>Total START Contractor</b>	<b>\$12,934,164</b>
<b>Response Contractor Sub-Totals</b>	<b>\$18,004,663</b>
<b>EPA Funded Costs: Total EPA Costs</b>	<b>\$ 4,921,590</b>
<b>Pollution Removal Funding Agreements – Total Other Agencies</b>	<b>\$ 1,823,682</b>
<b>Sub-Totals</b>	<b>\$24,749,935</b>
Indirect Cost (16.00%)	\$ 3,959,990
<b>Total Est. Oil Spill Cost</b>	<b>\$28,709,925</b>
<b>Oil Spill Ceiling Authorized by USCG</b>	<b>\$31,200,000</b>
<b>Oil Spill Ceiling Available Balance</b>	<b>\$ 2,490,075</b>

**7. Participating Entities**

A Multi-Agency Coordination (MAC) Group meets weekly regarding the progress of the response. Entities participating in the MAC include:

- U.S. Environmental Protection Agency
- Michigan Department of Environmental Quality
- Michigan State Police Emergency Management Division
- City of Battle Creek
- City of Marshall
- Calhoun County Public Health Department
- Calhoun County Emergency Management
- Kalamazoo County Sheriff
- Enbridge (Responsible Party)

For a list of cooperating and assisting agencies and the congressional presence, 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 below.

**Table 16 - Personnel On-Site**

Agency/Entity	June 2011						
	19	18	17	16	15	14	13
U.S. EPA	0	2	3	3	2	2	2
START	16	21	25	25	27	26	26
Calhoun County Public Health	0	0	0	1	0	0	0
Calhoun County (CC) EM	0	0	0	0	0	0	0
City of Battle Creek	0	0	0	1	0	0	0
City of Marshall	0	0	0	1	0	0	0
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	1	0	0	0
MDCH	0	0	0	4	0	0	0
MDEQ	0	5	8	9	9	8	9
MDEQ Contractors	0	8	10	10	10	9	11
Michigan State Police EMD	0	0	0	0	0	0	0
NOAA – National Weather	0	0	0	0	0	0	0
USFWS	0	0	0	0	0	0	0
Enbridge – Operations	40	80	127	137	129	126	118
Enbridge – Field	65	204	232	262	260	251	211
<b>Total</b>	<b>121</b>	<b>320</b>	<b>414</b>	<b>454</b>	<b>437</b>	<b>422</b>	<b>377</b>

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

## 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/main.aspx?id=13168>.