

US EPA ARCHIVE DOCUMENT

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION V  
POLLUTION/SITUATION REPORT #89



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

**US EPA ARCHIVE DOCUMENT**



**To:** Lt. Paul Baker, Kalamazoo County Sheriff's Office  
 James Rutherford, Calhoun County Public Health Department  
 Durk Dunham, Calhoun County Emergency Management  
 Brian Whitsett, Michigan State Police, Emergency Management.  
 Mark DuCharme, MDNRE  
 Mike McKenzie, City of Battle Creek  
 Susan Hedman, U.S. EPA Regional Administrator  
 James Sygo, MDNRE

**From:** Ralph Dollhopf, U.S. EPA, Federal On-Scene Coordinator  
 Tricia Edwards, U.S. EPA, On-Scene Coordinator  
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**Date:** 03/08/2011

**Reporting Period:** 12:00 hours 02/28/2011 through 12:00 hours 03/07/2011

**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**

See SITREP #51 for a comprehensive description of preliminary operations. Previous response actions performed to date may be found in Situation Reports (SITREPs) #1 through #88.

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 Natural Resources and the Environment (MDNRE). 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: 02/28/2011 12:00 through 03/07/2011 12:00.

**3. Operations**

This current operational phase of the response consists of: 1) Operations and Maintenance (O&M); 2) Drinking/Groundwater Monitoring; 3) Decontamination; and 4) Other Operations.

**3.1 Operations and Maintenance (O&M)**

Teams inspected O&M locations. In general, team activities included an inspection of containment boom to ensure proper placement and effectiveness. Additionally, O&M operations (i.e., access road construction, excavation) continued. Teams performed inspection for readily visible oil or oil-saturated soils. A summary of significant actions for this period is presented in Table 1.

**Table 1 – O&M Actions**

<b>Activity</b>	<b>Number of Locations</b>	<b>Location (MP)</b>
Sheen and/or Product Observation	12	2.0 (B5); 2.25 L2; 2.75 I1; 3.25 IA; 3.75 IC (left and right); 4.25 IE; 4.50 L1; 6.00 R4; 6.00 L2; 7.00 R1; 11.25 R1; 11.25 R2
O& M Plans Approved	1	Spring Deployment Plan
Excavation Work Plans Approved	4	3.25 Island A; 3.75 Island C; 4.25 Island E; 10.75 L2 SO
Aqua Barrier Installation	0	
Pre-Excavation Activities (i.e., dewatering, bridges, sheet pile, staging, etc.)	1	3.25 Island A; 3.75 Island C
Excavation	0	

A summary of the quantity of sites in the O&M process as reported by Enbridge is summarized below.

**Table 2 – O&M Maintenance and Monitoring Areas**

<b>O&amp;M Process</b>	<b>Area Status</b>
	<b>3/7/2011</b>
Active	3
Monitoring	37
Recommended to Cleared	5
Signed Off	56
<b>Total</b>	<b>101</b>

**3.2 Drinking and Groundwater Monitoring**

Drinking water well sampling of 19 wells was performed during this period by Enbridge under MDNRE and public health agencies oversight.

### 3.3 Decontamination

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

**Table 3 - Equipment Decontamination**

Location/Media	Total	March 2011						
		7	6	5	4	3	2	1
Frac Tanks	1	0	0	0	0	0	0	1
Vac Trucks-Tankers	1	1	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
Marine Vessels	0	0	0	0	0	0	0	0
Vehicles	0	0	0	0	0	0	0	0
Boom (feet)	1,100	300	0	0	450	0	250	100

N/R = Not reported by Enbridge.

### 3.4 Additional Operations

#### 3.4.1 Air Operations

There were 4 over-flights for situational awareness during this operational period. Air Operations personnel observed and documented O&M progress in all operational areas; and continued to investigate/report areas of interest, ice jams, oil mobilization and decontamination.

#### 3.4.2 Environmental Compliance and Oversight

Continued waste management characterization, documentation and coordination. Coordination with the MDNRE continues, particularly with regards to MDNRE concurrence of work contemplated by Enbridge in ecologically sensitive areas during operations.

#### 3.4.3 Monitoring Branch

Under MDNRE 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 MDNRE) and a reduced sampling frequency as approved by the MDNRE.

Samples reported by Enbridge are provided below.

**Table 4 – Samples Collected By Enbridge**

Sample Type	Total	March 2011						
		7	6	5	4	3	2	1
Surface Water	14	5	0	0	0	4	2	3
Private Well Samples	19	0	0	0	0	2	8	9
Groundwater Samples	5	0	0	0	0	0	1	4
Sediment Samples	9	0	0	0	0	4	2	3
Soil Samples	0	0	0	0	0	0	0	0

#### 4. Landowner Environmental Issues

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

**Table 5 – Landowner Environmental Issues**

Issues this Period	Issues Undergoing Evaluation	Issues Considered Addressed
0	11	1

#### 5. Progress Metrics

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

**Table 6 - Boom and Aqua Dam Report**

Metric	March 2011						
	7	6	5	4	3	2	1
# Boom Locations [# control points included]	34 [4]	34 [5]	33 [5]	33 [4]	33 [4]	33 [4]	33 [4]
Total Surface Boom Deployed (ft) [control point qty in ft]	13,650 [3,500]	13,650 [4,500]	13,150 [4,500]	13,150 [3,500]	13,150 [3,500]	13,150 [3,500]	13,450 [3,200]
# Aqua Dam Locations	11	14	14	14	14	17	17
Aqua Dam Deployed (ft)	1,165	1,485	1,485	1,485	1,485	1,815	1,815

NR = Not Reported by Enbridge

**Table 7 - Soil and Debris Shipped Off Site as of 3/7/2011**

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)	70,565	Westside Recycling (Three Rivers, MI); Terra/C&C and EQ/Republic (Marshall, MI)
Non-Haz Soil (yd <sup>3</sup> ) (Ceresco Dredge Only)	5,562	
Haz Debris (yd <sup>3</sup> )	12,075	EQ/Michigan Disposal (Wayne, MI) and Republic (Marshall, MI)
Non-Haz Household Debris (ton)	236	EQ/Republic (Marshall, MI); C&C
Non-Haz Impacted Debris (ton)	1,564	

**Table 8 – Oil/Water Collected by Location (as of 3/7/2011)**

Location	Cumulative (gallons)
Division A	5,338,315
Division B	4,843,782
Division C	1,604,206
Division D	121,106
Division E	47,438
Decontamination	1,295,881
Site A	57,972
Other Locations*	1,173,440
<b>Total</b>	<b>14,482,140</b>

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

**Table 9 – Oil/Water Separation 3/7/2011 (Enbridge Facility in Griffith, IN)**

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

**Table 10 - Oil/Water Remaining On-Site 3/7/2011**

Item	Cumulative (gallons)
Oil/Water Collected	14,482,140
Oil/Water Shipped Off-Site	14,440,715
<b>Total Oil/Water Remaining On-Site</b>	<b>41,425</b>
(Oil/Water Remaining at Frac Tank City)	(32,653)
[Oil/Water Remaining at Site A]	[8,772]

**Table 11 - Liquid Shipped Off-site as of 3/7/2011**

Stream	Destination Company	Destination Location	Cumulative Volume (gallons) †
Hazardous Water	Dynecol	Detroit, MI	3,594,579
Oil/Water	Enbridge Facility	Griffith, IN	2,171,813
Treated Non-Haz Water	Liquid Industrial Waste	Holland, MI	370,200
Treated Non-Haz Water	Plummer	Kentwood, MI	4,976,140
Hazardous Water	Safety Kleen <sup>a</sup>		825
Non-Haz Water	Dynecol	Detroit, MI	252,878
Treated Non-Haz Water*	Dynecol	Detroit, MI	150,700
Treated Non-Haz Water*	Battle Creek POTW	Battle Creek, MI	1,968,700
Non-Haz Water	Battle Creek POTW	Battle Creek, MI	487,220
Sludge			467,660
<b>Total</b>			<b>14,440,715</b>

\* 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.

**6. Support Operations**

**6.1 Planning**

The Planning Department coordinated with Enbridge Planning to return to ICS and developed a new planning cycle.

**Environmental Unit**

Nothing to report.

### *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 and/or Houston.

### *Documentation Unit*

Continued organization and archiving of electronic and paper files.

### *6.2 Safety*

A few medical waste needles (Sharps Waste) were encountered by workers collecting debris. Since training and the proper equipment is required for handling and disposal of these items, crews are reminded to secure the area and notify Enbridge Safety for collection of any Sharps Waste found. Enbridge is developing applicable safety protocols for Sharps Waste.

A discharge of an unknown substance was observed emanating from a sewer outfall into the Kalamazoo River at MP-19.0 on March 4, 2010. Oil spill response personnel notified the local Emergency Management authorities and evacuated the immediate area of the release, in accordance with existing health and safety plan/protocols for the oil spill response.

Warming trends during daytime hours and freezing trends overnight cause daytime ice melt followed by nighttime refreezing. This leads to regular early morning ice formation. Field operations were not performed on March 5 and 6, 2011 due to anticipated heavy rains. Changing weather conditions cause challenges to operations and emphasized the need for situational awareness of surroundings.

The restroom trailer that caught fire during the previous operational period was removed from the Incident Command Center and replaced.

Workers are reminded to wear floatation device when working within 10 feet of the river and to wear appropriate PPE when using a chain saw, face shield, chaps, etc. Additionally, Personal Flotation Devices (PFDs) will be required for personnel in areas located between a waterway's edge and nearby top of slopes. Safety inspections occurred throughout the operational area.

### *6.3 Public Information*

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

**Table 12 – Public Inquiries Received by EPA and Enbridge**

Location/Media	Total	March 2011						
		7	6	5	4	3	2	1
Marshall Community Center	1	0	0	0	1	0	0	0
Oil Spill Public Information Hotline	9	6	0	0	1	0	1	1
Enbridge Response Website (www.response.enbridgeUS.com)	1	0	0	0	1	0	0	0
<b>Total Public Inquiries</b>	<b>10</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>0</b>

## 6.4 Finance

The current NPFC issued ceiling is \$31.2 Million. Approximately 81.9% of the ceiling has been spent through March 5, 2011. As of March 4, 2011, the weekday average burn rate was \$25,673 per day. These cost summaries reflect only EPA-funded expenditures for the incident. A summary of these expenses is presented below.

**Table 13 - Financial Summary**

Item	Expended (Cumulative) as of 3/5/2011
<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	\$ 150,000
T&T Bisso (EPA:HS800008)	\$ 1,255,000
<b>Total Other Contractors</b>	<b>\$ 1,405,000</b>
<b>START Contractor – WESTON (EPS50604)</b>	
T030-Response	\$ 9,493,495
T032-Sampling	\$ 180,214
T037-Doc Support	\$ 576,921
<b>Total START Contractor</b>	<b>\$ 10,250,630</b>
<b>Response Contractor Sub-Totals</b>	<b>\$ 15,285,665</b>
<b>EPA Funded Costs: Total EPA Costs</b>	<b>\$ 5,013,250</b>
<b>Pollution Removal Funding Agreements – Total Other Agencies</b>	<b>\$ 1,723,682</b>
<b>Sub-Totals</b>	<b>\$ 22,022,597</b>
Indirect Cost (16.00%)	\$ 3,523,616
<b>Total Est. Oil Spill Cost</b>	<b>\$ 25,546,213</b>
<b>Oil Spill Ceiling Authorized by USCG</b>	<b>\$ 31,200,000</b>
<b>Oil Spill Ceiling Available Balance</b>	<b>\$ 5,653,787</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 Natural Resources and the Environment
- 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 in Table 14.

**Table 14 - Personnel On-Site**

Agency/Entity	March 2011						
	7	6	5	4	3	2	1
U.S. EPA	6	1	2	5	6	6	4
START	12	5	6	13	14	13	12
Calhoun County Public Health	0	0	0	0	1	0	0
Calhoun County (CC) EM	0	0	0	0	1	0	0
City of Battle Creek	0	0	0	0	1	0	0
City of Marshall	0	0	0	0	1	0	0
Kalamazoo Sheriff	0	0	0	0	0	0	0
MDNRE	1	0	0	2	2	2	1
Michigan State Police EMD	0	0	0	0	1	0	0
NOAA – National Weather	0	0	0	0	0	0	0
USFWS	0	0	0	0	0	0	0
Enbridge – Operations	13	0	4	13	18	17	14
Enbridge – Operations Contractor	89	14	20	66	86	84	86
Enbridge – Field	0	0	0	0	0	0	0
Enbridge – Field Contractors	102	25	81	105	91	84	86
<b>Total</b>	<b>223</b>	<b>45</b>	<b>113</b>	<b>204</b>	<b>222</b>	<b>206</b>	<b>203</b>

\*Enbridge Operations included with 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>.