

US EPA ARCHIVE DOCUMENT

**U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION V  
POLLUTION/SITUATION REPORT #98**



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



**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 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:** 05/10/2011

**Reporting Period:** 0700 hours 05/02/2011 through 0700 hours 05/09/2011

### **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 Situation Report (SITREP) #51 for a comprehensive description of preliminary operations. Previous response actions performed to date may be found in SITREPs #1 through #97.

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 05/02/2011 through 0700 hours 05/09/2011.

### **3. Operations**

This current operational phase of the response consists of: 1) Shoreline and Overbank Re-assessment Technique (SORT); 2) Poling; 3) Operations and Maintenance (O&M); 4) Decontamination; and 5) Other Operations.

Sheen and/or oil were observed at the following locations inspected by the environmental inspectors at O&M points identified below.

**Table 1 – O&M Observations**

Activity	Number of Locations
Sheen and/or Product Observation	36

**3.1 Shoreline and Overbank Re-assessment Technique (SORT)**

Five SORT Teams continued reassessment of the shoreline and overbank areas within the floodplain as defined by the inundation model along the Talmadge Creek and Kalamazoo River. A summary of SORT progress for this period is presented below.

**Table 2 – SORT Progress as of 5/08/2011**

Quarter – mile Segments Completed	179 of 320 locations (55.9% of planned locations)
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**3.2 Poling Re-assessment for submerged oil**

Four poling teams began reassessment of the creek and river beds for submerged oil deposition. A summary of poling progress for this period is presented below.

**Table 3 – Poling Progress as of 5/06/2011**

Sections Completed	260 of 567 sections (45.9% of planned sections)
Number of locations	98
Approximate Total Area	6.8 acres (295,100 sq ft)
Moderate (45 Locations)	1.2 acres (53,500 sq ft)
Heavy (53 Locations)	5.5 acres (241,700 sq ft)

**3.3 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 and inspection for readily visible oil or oil-saturated soils. A summary of the number of sites in the O&M process as reported by Enbridge is summarized below.

**Table 4 – O&M Maintenance and Monitoring Areas**

O&M Process	May 2011						
	8	7	6	5	4	3	2
Under Evaluation for DEQ Compliance	54	54	54	56	54	54	56
Remedial Investigation Plan (DEQ)	4	4	4	5	5	5	5
Remedial Investigation (DEQ)	0	0	0	0	0	0	0
Remediation Plan (DEQ)	3	3	3	2	2	2	2
Permit Application Submitted (DEQ)	3	3	3	3	3	3	3
Active	0	0	0	0	0	0	0
Monitoring	39	39	39	37	39	39	37
Recommended to be Cleared	0	0	0	0	0	0	0
<b>Total</b>	<b>103</b>	<b>103</b>	<b>103</b>	<b>103</b>	<b>103</b>	<b>103</b>	<b>103</b>

### 3.4 Decontamination

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

**Table 5 - Equipment Decontamination**

Location/Media	Total	May						
		8	7	6	5	4	3	2
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 (feet)	0	0	0	0	0	0	0	0

### 3.5 Additional Operations

#### 3.5.1 Air Operations

There were 5 over-flights for situational awareness during this operational. Air Operations personnel observed and documented progress in all operational areas and continued to assess areas of interest such as oil mobilization and decontamination activities.

A summary of the status of additional aerial imagery tasks being performed by Enbridge related to reassessment activities is presented below.

**Table 6 – Aerial Imagery for Reassessment**

Technology	Overflight	Ground Controls	Data Compilation	Report Complete
LIDAR	Completed	Completed	In-progress	Pending
FLS-AM	Completed	N/A	Completed	Pending
Polarimetric Imagery	Completed	N/A	Completed	Pending
Aerial Photography	Completed	Completed	In-progress	Pending

N/A = Not Applicable

#### 3.5.2 Environmental Compliance and Oversight

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

#### 3.5.3 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 on the following page.

**Table 7 – Samples Collected By Enbridge**

Sample Type	Total	May						
		8	7	6	5	4	3	2
Surface Water	31	0	0	0	0	5	10	16
Private Well Samples	52	0	0	10	10	12	10	10
Groundwater Samples	0	0	0	0	0	0	0	0
Sediment Samples	0	0	0	0	0	0	0	0
Soil Samples	79	0	0	6	28	14	30	1

#### 4. Landowner Environmental Issues

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

**Table 8 – Landowner Environmental Issues**

Issues this Period	Issues Undergoing Evaluation	Issues Considered Addressed
34	0	34

#### 5. Progress Metrics

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

**Table 9 - Boom and Aqua Dam Report**

Metric	May						
	8	7	6	5	4	3	2
# Boom Locations	44	44	43	43	43	41	41
[# control points included]	[6]	[6]	[6]	[6]	[6]	[6]	[6]
Total Surface Boom Deployed (ft)	26,250	26,250	24,950	24,950	24,650	22,750	22,650
[ft of control point surface boom]	[6,770]	[6,770]	[6,770]	[6,770]	[6,770]	[6,770]	[6,770]
# Aqua Dam Locations	5	5	5	5	5	5	5
Aqua Dam Deployed (ft)	510	510	510	510	510	510	510
Sand-Super Sacks	39	39	39	39	39	39	39
[Sand Bags]	[1,288]	[1,288]	[1,288]	[1,288]	[1,288]	[1,288]	[1,448]

NR = Not Reported by Enbridge

**Table 10 - Soil and Debris Shipped Off Site as of 5/08/2011**

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)	74,170	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)	742	EQ/Republic (Marshall, MI); C&C
Non-Haz Impacted Debris (ton)	1,928	

**Table 11 – Oil/Water Collected by Location (as of 5/06/2011)**

<b>Location</b>	<b>Cumulative (gallons)</b>
Division A	5,356,315
Division B	4,868,279
Division C	1,891,406
Division D	121,106
Division E	47,438
Decontamination	1,563,728
Site A	206,665
Other Locations*	1,249,025
<b>Subtotal</b>	<b>15,303,962</b>
Sludge**	(467,660)
<b>Total Oil/Water</b>	<b>14,836,302</b>

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

\*\* Sludge collected is tracked as a liquid waste; however, after stabilization, the sludge is disposed of as a 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 numbers shown in Table 8.

**Table 12 – Oil/Water Separation 5/08/2011 (Enbridge Facility in Griffith, IN)**

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

**Table 13 - Liquid Shipped Off-site as of 5/08/2011**

<b>Stream</b>	<b>Destination Company</b>	<b>Destination Location</b>	<b>Cumulative Volume (gallons) †</b>
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	728,685
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	866,980
<b>Total</b>			<b>14,828,622</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.

**Table 14 - Oil/Water Remaining On-Site 5/05/2011**

<b>Item</b>	<b>Cumulative (gallons)</b>
Oil/Water Collected	14,836,302
Oil/Water Shipped Off-Site	14,828,622
<b>Total Oil/Water Remaining On-Site</b>	<b>7,680</b>

## 6. Support Operations

### 6.1 Planning

The Planning Department 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 continues to provide coordination of reassessment activities including SORT, poling, and aerial imagery. They stood up two Strike Teams that are a combination of poling and SORT capabilities to address areas previously identified by the SORT teams as not being assessable.

#### 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

Due to the continued changing of the seasons, an emphasis continues to be placed on spring weather awareness (heavy rain, fog, snow, swift water, flood watch and rising of water levels) with the work crews.

The safety staff continue to provide field support for the reassessment teams and training to new reassessment staff. Minor boating safety issues were raised and addressed during the operational period to ensure the safety of all individual working in and on the Kalamazoo River.

### 6.3 Public Information

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

**Table 15 – Public Inquiries Received by EPA and Enbridge**

Location/Media	Total	May						
		8	7	6	5	4	3	2
Marshall Community Center	8	0	0	2	2	4	0	0
Oil Spill Public Information Hotline	9	1	0	2	1	3	2	0
Website	1	0	0	0	1	0	0	0
<b>Total Public Inquiries</b>	<b>18</b>	<b>1</b>	<b>0</b>	<b>4</b>	<b>4</b>	<b>7</b>	<b>2</b>	<b>0</b>

### 6.4 Finance

The current NPFC issued ceiling is \$31.2 Million. Approximately 86.8% of the ceiling has been spent through May 8, 2011. As of May 8, 2011, the latest average 7-day burn rate was \$40,565 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 16 - Financial Summary**

<b>Item</b>		<b>Expended (Cumulative) as of 5/08/2011</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		\$ 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	\$10,711,378
	T032-Sampling	\$ 180,214
	T037-Doc Support	\$ 736,718
<b>Total START Contractor</b>		<b>\$11,628,310</b>
<b>Response Contractor Sub-Totals</b>		<b>\$16,663,345</b>
<b>EPA Funded Costs: Total EPA Costs</b>		<b>\$ 4,853,671</b>
<b>Pollution Removal Funding Agreements – Total Other Agencies</b>		<b>\$ 1,823,682</b>
<b>Sub-Totals</b>		<b>\$23,340,698</b>
Indirect Cost (16.00%)		\$ 3,734,512
<b>Total Est. Oil Spill Cost</b>		<b>\$27,075,209</b>
<b>Oil Spill Ceiling Authorized by USCG</b>		<b>\$31,200,000</b>
<b>Oil Spill Ceiling Available Balance</b>		<b>\$ 4,124,791</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 17 - Personnel On-Site**

Agency/Entity	May						
	8	7	6	5	4	3	2
U.S. EPA	1	2	3	3	3	3	2
START	13	16	22	22	22	21	21
Calhoun County Public Health	0	0	0	1	0	0	0
Calhoun County (CC) EM	0	0	0	1	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	0	0	0	0
MDEQ	2	2	6	7	9	4	4
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	35	36	115	126	128	130	126
Enbridge – Field	40	49	92	96	92	93	97
<b>Total</b>	<b>91</b>	<b>105</b>	<b>238</b>	<b>258</b>	<b>254</b>	<b>251</b>	<b>250</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>.