

US EPA ARCHIVE DOCUMENT

**U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION V  
POLLUTION/SITUATION REPORT #96**



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



SORT Team, MP-11.75

**To:** Lt. Paul Baker, Kalamazoo County Sheriff's Office  
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**From:** Ralph Dollhopf, U.S. EPA, Federal On-Scene Coordinator  
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**Date:** 04/27/2011

**Reporting Period:** 0700 hours 04/18/2011 through 0700 hours 04/25/2011

### **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 #95.

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 04/18/2011 through 0700 hours 04/25/2011. Active operations between Friday (4/22/2011) through Monday (4/25/2011) were limited to control point maintenance due to the holiday weekend.

### **3. Operations**

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

Sheen, oil and/or tar patties were observed at the following locations inspected by the various operational groups identified herein.

**Table 1 – O&M Actions**

Activity	Number of Locations	Location (MP)
Sheen and/or Product Observation	23	B5, 2.25 L1, 2.25 L2; 3.25 R1, 3.25 IA, 3.75 RIC, 4.5 L1, C 0.5; 5.55N; 9.50 L1; 10.50 L1, 10.75 L2 SO, 11.25 R1, 11.25 R2, 11.50 R1, 12.75 I1, 13.00 R1, 15.25 Mill Pond, 15.50 C6; 17.00 L1; 19.4 D3; 35.20 E3; and 37.75 E4

**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 4/21/2011**

Quarter – mile Segments Completed	171 locations (53.4% 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 4/21/2011**

Sections Completed	4 sections (1.4% of planned sections)
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**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	April 2011						
	24	23	22	21	20	19	18
Under Evaluation for DEQ Compliance	54	54	54	54	54	54	54
Remedial Investigation Plan (DEQ)	5	5	5	5	5	5	5
Remedial Investigation (DEQ)	0	0	0	0	0	0	0
Remediation Plan (DEQ)	2	2	2	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	39	39	39	39
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	April 2011						
		24	23	22	21	20	19	18
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 4 (no flight on 4/18/2011 due to inclement weather) 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	In-progress	In-progress	Pending
FLS-AM	Completed	N/A	In-progress	Pending
Polarimetric Imagery	Completed	N/A	In-progress	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	April 2011						
		24	23	22	21	20	19	18
Surface Water	32	0	0	0	0	2	11	19
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	54	0	0	0	4	16	28	6

**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
0	13	0

**5. Progress Metrics**

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

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

Metric	April 2011						
	24	23	22	21	20	19	18
# Boom Locations	40	40	40	40	40	40	40
[# control points included]	[6]	[6]	[6]	[6]	[6]	[6]	[6]
Total Surface Boom Deployed (ft)	20,700	20,700	20,700	20,700	20,700	20,700	20,700
[ft of control point surface boom]	[6,770]	[6,770]	[6,770]	[6,770]	[6,770]	[6,770]	[6,770]
# Aqua Dam Locations	6	6	6	6	6	6	6
Aqua Dam Deployed (ft)	670	670	670	670	670	670	670
Sand-Super Sacks	39	39	39	39	39	39	39
[Sand Bags]	[1,448]	[1,448]	[1,448]	[1,448]	[1,448]	[1,448]	[1,448]

NR = Not Reported by Enbridge

**Table 10 - Soil and Debris Shipped Off Site as of 4/25/2011**

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)	73,990	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)	671	EQ/Republic (Marshall, MI); C&C
Non-Haz Impacted Debris (ton)	1,831	

**Table 11 – Oil/Water Collected by Location (as of 4/25/2011)**

<b>Location</b>	<b>Cumulative (gallons)</b>
Division A	5,356,315
Division B	4,855,685
Division C	1,891,406
Division D	121,106
Division E	47,438
Decontamination	1,526,313
Site A	189,388
Other Locations*	1,224,440
<b>Subtotal</b>	<b>15,212,091</b>
<b>Sludge**</b>	<b>(467,660)</b>
<b>Total Oil/Water</b>	<b>14,744,431</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 4/25/2011 (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 - Oil/Water Remaining On-Site 4/25/2011**

<b>Item</b>	<b>Cumulative (gallons)</b>
Oil/Water Collected	<b>14,744,431</b>
Oil/Water Shipped Off-Site	14,701,411
<b>Total Oil/Water Remaining On-Site</b>	<b>43,020</b>

**Table 14 - Liquid Shipped Off-site as of 4/25/2011**

<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	625,034
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	843,420
<b>Total</b>			<b>14,701,411</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 in the ICS planning cycle.

#### 6.1.1 Environmental Unit

Continued to review report submittals received from Enbridge.

#### 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. Enbridge safety officers conducted a test of the ICP response to fire and severe weather situations. The test identified gap in the system which are being addressed.

The safety staff continue to provide field support for the reassessment teams and training to new reassessment staff.

### 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	April 2011						
		24	23	22	21	20	19	18
Marshall Community Center	2	0	0	0	0	0	0	2
Oil Spill Public Information Hotline	12	0	0	2	3	1	4	2
Website	0	0	0	0	0	0	0	0
<b>Total Public Inquiries</b>	<b>14</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>3</b>	<b>1</b>	<b>4</b>	<b>4</b>

### 6.4 Finance

The current NPFC issued ceiling is \$31.2 Million. Approximately 85.0% of the ceiling has been spent through April 24, 2011. As of April 24, 2011, the latest average 7-day burn rate was \$33,527 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**

Item	Expended (Cumulative) as of 4/25/2011
<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	\$10,327,971
T032-Sampling	\$ 180,214
T037-Doc Support	\$ 688,563
<b>Total START Contractor</b>	<b>\$11,196,748</b>
<b>Response Contractor Sub-Totals</b>	<b>\$16,231,783</b>
<b>EPA Funded Costs: Total EPA Costs</b>	<b>\$ 4,795,328</b>
<b>Pollution Removal Funding Agreements – Total Other Agencies</b>	<b>\$ 1,823,682</b>
<b>Sub-Totals</b>	<b>\$22,850,793</b>
Indirect Cost (16.00%)	\$ 3,656,127
<b>Total Est. Oil Spill Cost</b>	<b>\$26,506,920</b>
<b>Oil Spill Ceiling Authorized by USCG</b>	<b>\$31,200,000</b>
<b>Oil Spill Ceiling Available Balance<sup>1</sup></b>	<b>\$ 4,693,080</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	April 2011						
	24	23	22	21	20	19	18
U.S. EPA	0	0	0	3	2	2	2
START	0	2	2	22	30	30	29
Calhoun County Public Health	0	0	0	2	1	0	0
Calhoun County (CC) EM	0	0	0	1	0	0	0
City of Battle Creek	0	0	0	1	1	0	0
City of Marshall	0	0	0	1	1	0	0
Village of Augusta	0	0	0	1	0	0	0
Kalamazoo County Public Health	0	0	0	1	1	0	0
Kalamazoo Sheriff	0	0	0	1	0	0	0
MDEQ	0	0	0	10	16	13	11
Michigan State Police EMD	0	0	0	1	0	0	0
NOAA – National Weather	0	0	0	0	0	0	0
USFWS	0	0	0	0	0	0	0
Enbridge – Operations	0	7	7	105	101	150	143
Enbridge – Field	8	17	17	130	143	119	117
<b>Total</b>	<b>8</b>	<b>26</b>	<b>26</b>	<b>279</b>	<b>296</b>	<b>314</b>	<b>302</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>.