

US EPA ARCHIVE DOCUMENT

**U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION V  
POLLUTION/SITUATION REPORT #108**



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

**US EPA ARCHIVE DOCUMENT**



Construction of Bridge to Island at MP 9.50 Historic Bridge Park

**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

**Date:** 7/19/2011

**Reporting Period:** 0700 hours 7/11/2011 through 0700 hours 7/18/2011

### **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 #107.
- 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 (MDEQ). The structure of the response is the Incident Command System (ICS), with the FOSC serving as the Incident Commander (IC).
- The Operational Periods covered in this report are: 0700 hours on 7/11/2011 through 0700 hours on 7/14/2011 and 0700 hours on 7/14/2011 through 0700 hours on 7/18/2011.
- On July 11, 2011, field activities were shut down at approximately 1100 hours due to severe weather.

### **3. Operations**

- This operational phase of the response consisted of: 1) Air Operations; 2) Waste Management; 3) Environmental Compliance; 4) Response Action including Overbank Excavation, Overbank Surface Cleanup, and Submerged Oil Recovery in the Kalamazoo River; 5) Monitoring; and 6) Wildlife Operations.

### **3.1 Air Operations Branch**

- During these two operational periods, five overflights were conducted for situational awareness. On July 11, 2011, the overflight was cancelled due to adverse weather conditions.

### **3.2 Waste Management Branch**

#### ***3.2.1 Decontamination Unit***

- Equipment and boom decontaminated during these two operational periods are presented in Table 1.
- EPA performed an informal audit at Boat Launch C0.4 focusing on boat decontamination. No issues requiring corrective action were noted. EPA will continue to conduct oversight to ensure the approved boat decontamination protocol is followed.

#### ***3.2.2 Transportation and Disposal Unit***

- Enbridge continued phased decommissioning of the waste management area at Soil Staging Area A.
- Waste management, characterization, and coordination of transportation and disposal continued according to approved plans. Quantities of oil and debris shipped off site during the reporting period are presented in Tables 2 through 5.
- EPA continued oversight of waste characterization, transportation, and disposal activities including composite sampling during live loading operations at Mile Post (MP) 11.25 R1 and R2 excavation sites.
- EPA performed a focused inspection at boat launch locations and areas containing impacted debris and municipal solid waste (MSW). In general, MSW and oiled waste were appropriately segregated, labeled, and staged; however, some minor issues requiring corrective action were noted and will be corrected by the end of the next operational period.

### **3.3 Environmental Compliance Branch**

#### ***3.3.1 Operations and Maintenance (O&M)***

- During these two operational periods, Enbridge continued to monitor O&M sites. Daily O&M activity and progress tracking information is presented in Table 6.
- Teams continued inspections of control points, containment boom locations, and protective boom locations. Teams evaluated boom placement, boom effectiveness, and presence of accumulated visible oil or oil-saturated soils. Boom information is presented in Table 6.
- Teams continued to install and enhance surface and subsurface containment as necessary. Hard boom, X-Tex curtain, absorbent boom, t-posts, and cinder block anchors were installed at existing and new locations throughout the Kalamazoo River from MP 5.35 through MP 38.0 and in the Morrow Lake Delta. Teams installed collection points near MP 11.75 and 37.75, installed collection traps at MP 14.35, and began installation of the double containment structure downstream of the fan area of Morrow Lake identified as Control Point E4.5 near MP 38.0.
- Teams replaced the 5 gabion baskets between MP 37.25 to 37.75. Oil was not observed to have collected in the gabion baskets.
- Teams continued to perform sheen sweeps along the Kalamazoo River near MP 6.0, between Control Points E4 and E5, and near MP 10.75.

### **3.4 Response Action Branch**

#### ***3.4.1 Overbank Surface Cleanup Unit***

- During these two operational periods, overbank surface cleanup work was conducted at 16 sites along Talmadge Creek and the Kalamazoo River from MP 2.5 to MP 16.75. Enbridge teams removed tar patties using approved techniques to eliminate visible surface contamination. Recovered materials were handled in accordance with the management practice for proper disposal. Erosion control and stabilization measure were implemented as required at each area of tar patty removal. Overbank surface cleanup progress information is presented in Table 7.
- Overbank surface cleanup activities were not conducted on July 13 and 14, 2011 to allow for re-evaluation of cleanup sites.

#### ***3.4.2 Overbank Excavation Unit***

- During these two operational periods, teams continued excavating impacted soil and maintaining temporary restoration at 11.25 R1 and R2, mobilized mats into Historic Bridge Park at MP 9.5, and constructed a bridge from Historic Bridge Park for access to the island at MP 9.5 in preparation of impacted soil excavation.

#### ***3.4.3 Submerged Oil Recovery and Cleanup Unit***

- Submerged oil recovery operations continued on the Kalamazoo River, Morrow Lake Delta, and in areas surrounding the islands adjacent to Morrow Lake. Recovery operations followed the approved submerged oil recovery tool box techniques including flushing and other mechanical agitation techniques.
- During these two operational periods, teams conducted site preparation and recovery operations at 24 sites along the Kalamazoo River from MP 4.15 to MP 20.6. Teams also conducted vegetation removal, site preparation, and submerged oil recovery at sites in the Morrow Lake Delta. Submerged oil recovery and cleanup progress information is presented in Table 8.

### **3.5 Monitoring Branch**

#### ***3.5.1 Surface Water and Sediment Sampling***

- Under MDEQ direction, soil, sediment and surface water sampling were performed in accordance with the existing Sampling and Analysis Plan (SAP) with a reduced sampling frequency as approved by the MDEQ. Samples collected as reported by Enbridge are provided in Table 9.

#### ***3.5.2 Air Monitoring and Sampling***

- Enbridge continued to implement the 2011 Air Monitoring and Sampling program. The quantity of monitoring and sampling locations is provided in Tables 9 and 10.
- On July 12, 2011, Enbridge received the results of the two air samples collected on July 6 and July 7, 2011 in response to the odor complaints received on July 4 and July 5, 2011. No crude oil volatile organic compounds (VOCs) were detected in either sample.
- On July 13, 2011, Enbridge completed air sampling within river segments being considered for reopening for public use. Enbridge will continue to conduct air monitoring at work area locations for worker safety and will maintain an odor response team.

### 3.6 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.
- Throughout the two operational periods, the Wildlife Branch conducted turtle trapping and release along the Kalamazoo River. Trapping information is presented in Table 11.

## 4. *Planning*

### 4.1 Situation Unit

- Situation Unit personnel observed and documented progress in all operational areas and continued to assess areas of interest such as observations of oil sheen, oil removal and decontamination activities. Significant observations during these two operational periods are as follows:
  - On July 12, 2011, a trail of sheen was observed on Morrow Lake from the central portion of the lake to Control Point E5.
  - On July 13, 2011, sheen was observed outside of containment at MP 5.75.
  - On June 16, 2011, sheen was observed outside of containment at Ceresco Dam.
  - Enbridge constructed a helicopter pad near Morrow Lake at Control Point E4.

### 4.2 Environmental Unit

- The Public Health Group (PHG) under the Environmental Unit continues to be led by Dr. Linda Dykema, Michigan Department of Community Health (MDCH). The PHG continues to review report submittals received from Enbridge and evaluate a path forward for the reopening of the Kalamazoo River, public parks, bridges and public access points along the Kalamazoo River and Morrow Lake.
- The Recovery Task Force conducted coordination of oil recovery activities including overbank surface recovery and submerged oil recovery activities.

### 4.3 Documentation Unit

- Documentation Unit personnel continued organization and archiving of electronic and paper files.

### 4.4 GIS Support

- During these two operational periods, EPA GIS personnel continued to support operations with the generation of site maps.

## 5. *Command*

### 6.1 Safety

- EPA continued to evaluate and monitor the effectiveness of the change in the PPE policy and ensure proper communication of the associated expectations.
- Safety personnel continued to conduct work site visits along the Kalamazoo River. No major safety issues were observed.

- Throughout the two operational periods, minor incidents occurred, including poison ivy exposure, heat stress, and 3 falls into the Kalamazoo River. All the affected personnel were able to return to work. Additionally, an air boat took on water over stern and sank while unloading; however, no injuries resulted.

## 6.2 Public Information

- On July 11 and July 12, 2011, EPA mobilized 2 Public Information Officers (PIOs) to the Incident Command Post (ICP) to assist in media and public inquiries throughout the phased reopening of the Kalamazoo River.
- During these two operational periods, the PIOs coordinated media interviews, conducted site visits with media personnel, developed fact sheets, prepared for public meetings, updated the EPA Enbridge Oil Spill public website, and developed a communication plan for the EPA information booth at the upcoming Calhoun County Fair.
- The quantity of public inquires reported by Enbridge for this period is presented in Table 12.

### 6. *Landowner Environmental Issues*

- Landowner environmental issues, as reported by Enbridge for this period are presented in Table 13.

### 7. *Finance*

- The current National Pollution Funds Center (NPFC) issued ceiling is \$34.2 Million. Approximately 86.6% of the ceiling has been spent through July 17, 2011. As of July 10, 2011, the latest average 7-day burn rate was \$76,025 per day. These cost summaries reflect only EPA-funded expenditures for the incident. A summary of these expenses is presented in Table 14.

### 8. *Participating Entities*

- A Multi-Agency Coordination (MAC) Group continues to meet 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).

### 9. *Personnel On-Site*

- Staffing numbers for the entities and agencies active in the response are presented in Table 15.

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

## 11. Clean-up Progress Metrics

**Table 1 - Equipment Decontamination**

Location/Media	Total	July 2011						
		17	16	15	14	13	12	11
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)	1	0	1	0	0	0	0	0
Yellow Iron (heavy)	0	0	0	0	0	0	0	0
Boats	4	0	4	0	0	0	0	0
Vehicles	0	0	0	0	0	0	0	0
Boom (feet)	0	0	0	0	0	0	0	0

**Table 2 - Soil and Debris Shipped Off Site (as of 7/18/2011)**

Waste Stream	Cumulative	Disposal Facility
<i>Haz Soil (yd<sup>3</sup>)</i>	19,644	<i>Envirosafe (Oregon, OH)</i>
Non-Haz Soil & Debris (yd <sup>3</sup> ) (Excluding Ceresco Dredge)	12,403	Terra/C&C
<i>Non-Haz Soil &amp; Debris (yd<sup>3</sup>) (Excluding Ceresco Dredge)</i>	64,815	<i>Westside Recycling (Three Rivers, MI)</i>
<i>Non-Haz Soil (yd<sup>3</sup>) (Ceresco Dredge Only)</i>	5,562	<i>EQ/Republic (Marshall, MI)</i>
<i>Haz Debris (yd<sup>3</sup>)</i>	12,075	<i>EQ/Michigan Disposal (Wayne, MI) and Republic (Marshall, MI)</i>
Non-Haz Household Debris (ton)	831	EQ/Republic (Marshall, MI); C&C
Non-Haz Impacted Debris (ton)	3,023	

*Shaded and italicized* items are discontinued waste streams.

**Table 3 – Oil/Water Collected by Location (as of 7/18/2011)**

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	1,765,345
Site A	316,464
Other Locations*	1,296,134
Subtotal	<b>15,662,487</b>
Sludge**	<b>474,215</b>
<b>Total Oil/Water</b>	<b>15,188,272</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 4 - Liquid Shipped Off-Site (as of 7/18/2011)**

<b>Stream</b>	<b>Destination Company</b>	<b>Destination Location</b>	<b>Cumulative Volume (gallons) †</b>
<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>
Non-Haz Water	Dynecol	Detroit, MI	877,734
Non-Haz Water	Liquid Industrial Waste	Holland, MI	181,501
<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>15,186,172</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 5 - Oil/Water Remaining On-Site (as of 7/18/2011)**

<b>Item</b>	<b>Cumulative (gallons)</b>
Oil/Water Collected	15,188,272
Oil/Water Shipped Off-Site	15,186,172
<b>Total Oil/Water Remaining On-Site</b>	<b>2,100</b>

**Table 6 – Daily Activity/Progress**

	<b>July 2011</b>						
	<b>17</b>	<b>16</b>	<b>15</b>	<b>14</b>	<b>13</b>	<b>12</b>	<b>11</b>
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	107	107	107	107	107	107	107
Boom Locations							
Control Points	10	10	10	10	10	10	10
Protective Containment Sites	39	39	39	39	38	38	38
River Erosion Sites	26	26	26	26	26	26	26
Total Surface Boom Deployed (ft)	39,875	39,875	38,975	38,975	38,975	38,975	38,975
[ft of control point surface boom]	[19,450]	[19,450]	[19,450]	[19,450]	[19,450]	[19,450]	[19,450]

**Table 7 – Overbank Surface Cleanup Progress (as of 7/18/2011)**

Quarter – mile Segments Completed: 193	193 of 240 locations (80.4% of planned locations)
--	---

**Table 8 – Submerged Oil Recovery and Cleanup Progress (as of 7/18/2011)**

Quarter – mile Segments Completed: 27	27 of 229 locations (11.8% of planned locations)
---------------------------------------	--

**Table 9 – Samples Collected By Enbridge**

Sample Type	Total	July 2011						
		17	16	15	14	13	12	11
Surface Water	32	0	0	6	10	5	11	0
Private Well	26	0	0	10	12	0	1	3
Groundwater	0	0	0	0	0	0	0	0
Sediment	0	0	0	0	0	0	0	0
Soil	122	0	4	12	28	24	54	0
Dewatering	0	0	0	0	0	0	0	0
Air (Odor Complaint)	0	0	0	0	0	0	0	0
Air (River Opening)	62	0	0	0	0	15	27	20

**Table 10 – Real-Time Air Monitoring Conducted By Enbridge**

Monitoring Location	Total	July 2011						
		17	16	15	14	13	12	11
Response Work Area	915	0	150	190	173	199	203	0
Odor Complaint Response	0	0	0	0	0	0	0	0
River Opening	156	0	0	0	0	24	87	45

**Table 11 – Wildlife**

Location/Media	Total	July 2011						
		17	16	15	14	13	12	11
Turtles in Captivity	60	60	65	68	61	59	51	49
Turtles Captured - Oiled	113	5	8	18	17	30	35	0
Turtles Captured – Field Cleaned	70	0	3	11	10	22	24	0
Turtles Captured – Admitted to Wildlife Center	43	5	5	7	7	8	11	0
Turtles Captured – Un-oiled and Field Released	353	12	64	65	65	102	45	0
Turtles Released from Captivity	23	0	9	0	5	0	9	0

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

Location/Media	Total	July 2011						
		17	16	15	14	13	12	11
Marshall Community Center	31	0	0	10	5	5	7	4
Oil Spill Public Information Hotline	13	0	0	3	0	2	5	3
Website	0	0	0	0	0	0	0	0
<b>Total Public Inquiries</b>	<b>44</b>	<b>0</b>	<b>0</b>	<b>13</b>	<b>5</b>	<b>7</b>	<b>12</b>	<b>7</b>

**Table 13 – Landowner Environmental Issues (as of 7/18/2011)**

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

**Table 14 - Financial Summary**

Item	Expended (Cumulative) as of 7/18/2011
<b>ERRS Contractors</b>	
EQM (EPS50802) T057	\$ 1,199,522
T060	\$ 213,636
LATA (EPS50804) T019	\$ 1,161,082
ER LLC (EPS50905) T040	\$ 683,330
<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)	\$ 882,087
<b>Total Other Contractors</b>	<b>\$ 1,068,038</b>
<b>START Contractor – WESTON (EPS50604)</b>	
T030-Response	\$ 13,323,508
T032-Sampling	\$ 180,214
T037-Doc Support	\$ 881,883
<b>Total START Contractor</b>	<b>\$14,385,605</b>
<b>Response Contractor Sub-Totals</b>	<b>\$18,711,214</b>
<b>EPA Funded Costs: Total EPA Costs</b>	<b>\$ 4,988,406</b>
<b>Pollution Removal Funding Agreements – Total Other Agencies</b>	<b>\$ 1,823,682</b>
<b>Sub-Totals</b>	<b>\$25,523,302</b>
Indirect Cost (16.00%)	\$ 4,083,728
<b>Total Est. Oil Spill Cost</b>	<b>\$29,607,031</b>
<b>Oil Spill Ceiling Authorized by USCG</b>	<b>\$34,200,000</b>
<b>Oil Spill Ceiling Available Balance</b>	<b>\$ 4,592,969</b>

**Table 15 - Personnel On-Site**

Agency/Entity	July 2011						
	17	16	15	14	13	12	11
U.S. EPA	0	1	5	6	6	5	2
START	0	40	46	46	44	43	43
MDEQ	0	0	6	8	9	4	4
MDEQ Contractors	0	6	7	7	7	10	10
Calhoun County Public Health	0	0	0	3	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	0	0	0	0
Kalamazoo County Public Health	0	0	0	1	0	0	0
Kalamazoo Sheriff	0	0	0	1	0	0	0
MDCH	0	0	0	1	0	0	0
USGS	0	0	0	1	1	0	0
Michigan State Police EMD	0	0	0	0	0	0	0
Enbridge – Operations	32	66	133	144	144	143	135
Enbridge – Field	36	412	432	404	411	376	377
<b>Total</b>	<b>68</b>	<b>525</b>	<b>629</b>	<b>624</b>	<b>622</b>	<b>581</b>	<b>571</b>

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