

US EPA ARCHIVE DOCUMENT

**U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION V
POLLUTION/SITUATION REPORT #112**



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



Excavation Work at MP 21.5 Oxbow

US EPA ARCHIVE DOCUMENT

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From: Ralph Dollhopf, U.S. EPA, Federal On-Scene Coordinator

Date: 8/18/2011

Reporting Period: 0700 hours 8/8/2011 through 0700 hours 8/15/2011

1. Site Data

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

2. Previous Response Actions and Current Response Governance

- Previous response actions performed to date may be found in SITREPs #1 through #111.
- 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 8/8/2011 through 0700 hours on 8/11/2011 and 0700 hours on 8/11/2011 through 0700 hours on 8/15/2011.

3. Operations

- This operational phase of the response consisted of: 1) Air Operations; 2) Waste Management; 3) Environmental Compliance including Control Point Management; 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 the operational periods, six overflights were conducted for situational awareness.

3.2 Waste Management Branch

3.2.1 Decontamination Unit

- Equipment and boom decontaminated during the operational periods are presented in Table 1.

3.2.2 Transportation and Disposal Unit

- 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 the Mile Post (MP) 4.5 and MP 21.5 Oxbow excavation sites.

3.3 Environmental Compliance Branch

3.3.1 Operations and Maintenance (O&M)

- During the operational periods, Enbridge 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. Daily O&M activity and progress tracking information is presented in Table 6.
- O&M personnel continued to install and enhance surface and subsurface containment as necessary. Hard boom, X-Tex curtain, absorbent boom, and t-posts were installed at existing and new locations throughout the Kalamazoo River from MP 4.55 to MP 33.98, the Morrow Lake Delta, and Morrow Lake.
- Teams continued to perform sheen sweeps along the Kalamazoo River from MP 11.25 R1 to MP 15.6 and between Control Points E4 and E6.
- Teams continued to re-configure boom utilizing an open containment strategy in the area between MP 19.85 and MP 29.1.

3.4 Response Action Branch

3.4.1 Overbank Surface Cleanup Unit

- During the operational periods, overbank surface cleanup work was conducted along the Kalamazoo River and islands within the Kalamazoo River. Enbridge focused on oil recovery in overbank ponded areas using stingers and tillers. Teams also removed tar patties using approved techniques to eliminate visible surface contamination. Overbank surface cleanup progress information is presented in Table 7.

3.4.2 Overbank Excavation Unit

- During the operational periods, teams continued excavation, dewatering, and maintained erosion control and stabilization at 4.50 L1 and 21.50 Oxbow.

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 between Morrow Lake and the Delta. Recovery operations followed the approved submerged oil recovery tool box techniques including flushing and other mechanical agitation techniques.
- During the operational periods, teams conducted site preparation and recovery operations throughout the Kalamazoo River, focusing on the area above Ceresco, the Mill Pond, MP 18 to MP 26, the Morrow Lake Delta, and Morrow Lake. Submerged oil recovery and cleanup progress information is presented in Table 8.
- On August 12, 2011, teams began recovery operations in the center channel above Ceresco Dam. Operations were discontinued when oil breached containment and travelled downstream of the dam. On August 13, 2011, teams completed installation of a temporary control point at MP 10.8.
- Teams began reassessment poling from the confluence of Talmadge Creek and the Kalamazoo River downstream. By August 13, 2011, teams poled from the confluence to MP 2.65. Light, moderate, and heavy sheen were observed.

3.5 Monitoring Branch

3.5.1 Surface Water and Sediment Sampling

- Enbridge continued soil, sediment, and surface water sampling in accordance with the existing Sampling and Analysis Plan (SAP). Samples collected as reported by Enbridge are provided in Table 9.
- Enbridge continued to conduct turbidity and dissolved oxygen monitoring throughout the Kalamazoo River, focusing on active submerged oil recovery work locations. Enbridge also continued qualitative analysis of submerged oil particulates using a gabion basket system.
- Analytical results from the unknown substance found near MP 15.05 and MP 15.65 during the last operational period exhibited biomarkers for both oil and sewage. Additional analytical testing will be conducted during the next operational period.

3.5.2 Air Monitoring and Sampling

- Enbridge continued to implement the 2011 Community Air Monitoring and Sampling Plan. Teams also conducted air monitoring and sampling at work area locations for worker safety and maintained an odor response team. EPA performed oversight of air monitoring and sampling plan implementation. Air sampling and monitoring information is provided in Tables 9 and 10.

3.6 Wildlife Branch

- The Wildlife Branch continued to provide medical health assessment, treatment, and release of rehabilitated wildlife under US Fish and Wildlife Service (USFWS) direction.
- Throughout the operational period, the Wildlife Branch conducted turtle trapping and release along the Kalamazoo River. Trapping information is presented in Table 11.
- The Wildlife Branch performed fish relocation from submerged oil recovery and excavation sites based on dissolved oxygen and turbidity monitoring results.

4. Planning

4.1 Situation Unit

- Situation Unit personnel observed and documented progress in all operational areas and continued to assess areas of interest including locations of oil sheen, oil removal, and decontamination activities. Significant observations during the operational periods include:
 - Remedial Investigation work continued along Talmadge Creek.
 - Submerged oil recovery work continued upstream of Ceresco Dam. Significant quantities of surface sheen were noted as crews began work in the center channel. Sheen and sediment escaped containment and traveled over the dam. Sheen was observed in the river channel from MP 6.0 to MP 7.0.
 - Enbridge continued Legacy Projects at 15 Mile Road, Wheatfield Road, and McCormick Street.
 - Vegetation removal and submerged oil recovery work continued at the Morrow Lake Delta and the fan of Morrow Lake. Enbridge continued assembly and use of large pontoon mounted excavators for work in the area.
 - Enbridge continued dewatering and excavation work at MP 4.5 and MP 21.25 Oxbow. Sheen and sediment were intermittently noted breaching the sheet piling containment.

4.2 Environmental Unit

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

5. Command

5.1 Safety

- Safety personnel continued to conduct work site safety inspections, focusing on activities at MP 4.5 and MP 21.50 Oxbow excavation sites and electrical safety. No major safety issues were observed.
- Throughout the operational periods, minor first aid incidents occurred, including 3 insect stings, a slip and fall, 3 cuts, 3 instances of poison ivy exposure, 2 falls from a boat into the water, 2 boat accidents, a twisted ankle, and 2 vehicle accidents. All the affected personnel returned to work.
- Field operations were shutdown at approximately 1300 hours on August 13, 2011 due to adverse weather conditions.

5.2 Public Information

- During these two operational periods, the Public Information Officer (PIO) coordinated media interviews, prepared for the public meeting, and maintained a booth at the Calhoun County Fair.
- The number of public inquires reported by Enbridge for this period is presented in Table 12.

6. Landowner Environmental Issues

- Landowner environmental issues reported by Enbridge for the operational periods are presented in Table 13.

7. Finance

- The current National Pollution Funds Center (NPFC) ceiling is \$35.7 Million. Approximately 89.2% of the ceiling has been spent through August 14, 2011. As of August 1, 2011, the latest average 7-day burn rate was \$85,866 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

- The Multi-Agency Coordination (MAC) Group continues to meet weekly to discuss 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 Public Health Department
 - 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 14.

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	August 2011						
		14	13	12	11	10	9	8
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	4	0	0	1	1	1	1	0
Air Boats	3	0	0	1	2	0	0	0
Vehicles	8	0	0	8	0	0	0	0
Boom (feet)	6550	0	600	1400	1150	1550	1850	0
Miscellaneous Items	48	0	0	18	1	2	25	2

Table 2 - Soil and Debris Shipped Off Site (as of 8/14/2011)

Waste Stream	Cumulative	Disposal Facility
<i>Haz Soil (yd³)</i>	19,644	<i>Envirosafe (Oregon, OH)</i>
Non-Haz Soil & Debris (yd ³) (Excluding Ceresco Dredge)	27,278	Terra/C&C
<i>Non-Haz Soil & Debris (yd³) (Excluding Ceresco Dredge)</i>	64,815	<i>Westside Recycling (Three Rivers, MI)</i>
<i>Non-Haz Soil (yd³) (Ceresco Dredge Only)</i>	5,562	<i>EQ/Republic (Marshall, MI)</i>
<i>Haz Debris (yd³)</i>	12,075	<i>EQ/Michigan Disposal (Wayne, MI) and Republic (Marshall, MI)</i>
Non-Haz Household Debris (ton)	933	EQ/Republic (Marshall, MI); C&C
Non-Haz Impacted Debris (ton)	3,550	

Shaded and italicized items are discontinued waste streams.

Table 3 – Oil/Water Collected by Location (as of 8/14/2011)

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	1,939,600
Site A	316,464
Other Locations*	1,334,025
Subtotal	15,874,633
Sludge**	474,215
Total Oil/Water	15,400,418

* 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 8/14/2011)

Stream	Destination Company	Destination Location	Cumulative Volume (gallons) †
Hazardous Water	Dynecol	Detroit, MI	3,594,579
Non-Haz Water	Battle Creek POTW	Battle Creek, MI	893,980
Non-Haz Water	Dynecol	Detroit, MI	913,642
Non-Haz Water	Liquid Industrial Waste	Holland, MI	285,307
Non-Haz Water	Plummer	Kentwood, MI	70,000
<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^a</i>		<i>825</i>
<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>
Total			15,395,886

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 8/14/2011)

Item	Cumulative (gallons)
Oil/Water Collected	15,400,418
Oil/Water Shipped Off-Site	15,395,886
Total Oil/Water Remaining On-Site	4,532

Table 6 – Daily Activity/Progress

	August 2011						
	14	13	12	11	10	9	8
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	108	108	108	108	108	108	108
Boom Locations							
Control Points	10	10	10	10	10	10	10
Protective Containment Sites	35	35	35	35	35	35	35
River Erosion Sites	26	26	26	26	26	26	26
Total Surface Hard Boom (ft)	47,425	46,175	46,175	42,725	42,425	42,325	42,325
[Control Point Surface Hard Boom]	[29,000]	[26,450]	[26,450]	[26,450]	[26,250]	[26,250]	[26,250]

Table 7 – Overbank Surface Cleanup Progress (as of 8/14/2011)

	Tar Patty Sites	Strike Sites
Sites Identified for Cleanup	237	57
Cleanup Complete and Completeness Check Form Signed	151	0
Percent Complete	63.7%	0.0%

Table 8 – Submerged Oil Recovery and Cleanup Progress (as of 8/14/2011)

Sites Identified for Cleanup	209
Cleanup Complete and Completeness Check Form Signed	65
Percent Complete	31.1%

Table 9 – Samples Collected By Enbridge

Sample Type	Total	August 2011						
		14	13	12	11	10	9	8
Surface Water	42	0	0	0	14	6	11	11
Private Well	54	0	0	12	11	11	10	10
Groundwater	0	0	0	0	0	0	0	0
Sediment	33	0	0	0	15	18	0	0
Soil	28	0	3	3	9	3	5	5
Air	106	0	18	18	17	19	16	18

Table 10 – Real Time Air Monitoring Counts By Enbridge

Monitoring Location	Total	August 2011						
		14	13	12	11	10	9	8
Community	1755	82	319	270	308	278	252	246
Odor Response	12	0	0	0	0	9	0	3
Work Area	682	0	18	115	133	143	124	149

Table 11 – Wildlife

Location/Media	Total	August 2011						
		14	13	12	11	10	9	8
Turtles in Captivity	49	49	54	52	48	45	69	67
Turtles Captured (Oiled) – Field Cleaned	52	8	5	13	5	8	1	12
Turtles Captured (Oiled) – Admitted to Wildlife Center	26	3	2	4	5	3	7	2
Turtles Captured (Un-oiled) – Field Released	156	8	3	10	45	45	18	27
Turtles Released from Captivity	51	8	0	5	5	27	6	0

Table 12 – Public Inquiries Received by EPA and Enbridge

Location/Media	Total	August 2011						
		14	13	12	11	10	9	8
Marshall Community Center	24	0	0	4	6	6	8	0
Oil Spill Public Information Hotline	12	0	0	0	2	5	1	4
Website	0	0	0	0	0	0	0	0
Total Public Inquiries	36	0	0	4	8	11	9	4

Table 13 – Landowner Environmental Issues (as of 8/14/2011)

Issues this Period	Issues Undergoing Evaluation	Issues Considered Addressed
0	12	0

Table 14 - Financial Summary

Item	Expended (Cumulative) as of 8/14/2011)
ERRS Contractors	
EQM (EPS50802) T057	\$ 1,199,522
T060	\$ 213,636
LATA (EPS50804) T019	\$ 1,161,082
ER LLC (EPS50905) T040	\$ 683,330
Total ERRS Contractors	\$ 3,257,571
Other Contractors	
Lockheed Martin (EPW09031) – TAGA Support	\$ 185,951
T&T Bisso (EPA:HS800008)	\$ 882,087
Total Other Contractors	\$ 1,068,038
START Contractor – WESTON (EPS50604)	
T030-Response	\$ 15,091,780
T032-Sampling	\$ 183,597
T037-Doc Support	\$ 931,665
Total START Contractor	\$ 16,207,042
Response Contractor Sub-Totals	\$ 20,532,651
EPA Funded Costs: Total EPA Costs	\$ 5,104,945
Pollution Removal Funding Agreements – Total Other Agencies	\$ 1,823,682
Sub-Totals	\$ 27,461,278
Indirect Cost (16.00%)	\$ 4,393,805
Total Est. Oil Spill Cost	\$ 31,855,083
Oil Spill Ceiling Authorized by USCG	\$ 35,700,000
Oil Spill Ceiling Available Balance	\$ 3,844,917

Shaded items are discontinued

Table 15 - Personnel On-Site

Agency/Entity	August 2011						
	14	13	12	11	10	9	8
U.S. EPA	0	4	4	5	6	6	6
START	0	45	50	50	50	51	51
MDEQ	0	1	4	4	6	4	4
MDEQ Contractors	0	6	9	10	10	9	9
Calhoun County Public Health	0	0	0	4	0	0	0
Calhoun County (CC) EM	0	0	0	0	0	0	0
City of Battle Creek	0	0	0	0	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	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	0	0	0	0
Michigan State Police EMD	0	0	0	0	0	0	0
Enbridge – Operations	42	100	183	204	204	202	187
Enbridge – Field	116	591	583	592	560	545	480
Enbridge – Security & Flaggers	7	7	7	7	7	7	7
Enbridge – Wildlife and Comm.	12	12	17	17	17	16	15
Total	177	766	857	897	860	840	759

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