

US EPA ARCHIVE DOCUMENT

**U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION V
POLLUTION/SITUATION REPORT #105**



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

US EPA ARCHIVE DOCUMENT



Control Point E-6

To: Lt. Paul Baker, Kalamazoo County Sheriff's Office
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Durk Dunham, Calhoun County Emergency Management
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Date: 06/28/2011

Reporting Period: 0700 hours 06/20/2011 through 0700 hours 06/27/2011

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 #104.
- 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 06/20/2011 through 0700 hours 06/27/2011.

3. Operations

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

3.1 Air Operations Branch

- There were 6 overflights for situational awareness conducted during this operational period. Air Operations 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.

3.2 Waste Management Branch

3.2.1 Decontamination Unit

- Equipment and boom that were decontaminated during this operational period as reported by Enbridge are presented in Table 1.
- EPA personnel oversaw construction of a new boat decontamination station at E4 boat launch in response to the increased utilization of boat operations in Division E.

3.2.2 Transportation and Disposal Unit

- Enbridge continued phased decommissioning of the waste management area at Site A. Waste management, characterization, and coordination of transportation and disposal continued according to approved plans. Minimal oil and debris shipped were shipped off site during the reporting period as depicted in Tables 2 through 6.
- EPA continued oversight of waste characterization, transportation, and disposal activities.
- Throughout the operational period, Enbridge staged overbank surface tar patties in Cell B at Frac Tank City, shipped out oil contaminated mats from Site A, continued cleaning and stacking stored material in the yard at Frac Tank City, and transported rain water collected in waste management cells to the Battle Creek POTW as needed.
- On June 22, 2011, EPA conducted oversight of sampling of the SWAT control point roll off box and decanted water at Frac Tank City, soil from Cell B at Frac Tank City, soil from Soil Staging Cell 4 at Site A, and timber mats from Soil Staging Cell 5 at Site A.

3.3 Environmental Compliance Branch

3.3.1 Operations and Maintenance (O&M)

- During the operational period, Enbridge continued to monitor Operations and Maintenance sites and develop work plans for more aggressive activities where applicable. Daily activity and progress information is presented in Table 7.
- EPA continued coordination with the MDEQ, particularly with regards to MDEQ concurrence for work contemplated by Enbridge in ecologically sensitive areas during operations.
- Teams continued inspections of control points, containment boom locations, and protective boom locations. Teams evaluated boom placement, boom effectiveness, and presence of readily visible oil or oil-saturated soils. Throughout the operational period, EPA personnel identified deficiencies in boom inspections and response to maintenance issues.
- Gabion basket monitoring stations were constructed installed in the Morrow Lake Delta for use in assessment of containment effectiveness at MP 37.75 Submerged Oil (SO).

- Teams continued to perform sheen sweeps at locations near the mouth of Lake Morrow from E4 to E5, MP 6.0 RDB1, MP 8.50 RDB, upstream of the containment at MP 15.00, upstream of containment at MP 15.25, MP 17.00, and at the Division B5 sediment trap.
- Teams installed both hard boom and X-TEX curtain at 13 locations in the Kalamazoo River from MP 4.30 to MP 37.75.
- Teams removed aqua dams from MP 9.00, MP 11.50, and MP 21.50.
- On June 21, 2011 teams installed hard boom and sediment curtain Control Point E6 at MP 39.75, just upstream of the Morrow Lake Dam.
- On June 23, 2011, teams installed deflection boom to move organics away from the collection point at MP 5.75 South Ceresco Dam.
- Teams continue to install and enhance surface and subsurface containment as necessary. Boom and aquadam information is presented in Table 8.

3.4 Response Action Branch

3.4.1 Overbank Surface Cleanup Unit

- Overbank surface cleanup operations along Talmadge Creek and the Kalamazoo River continued in accordance with the schedule outlined in Enbridge's Strategic Plan for Summer 2011 operations.
- Enbridge teams removed tar patties using approved techniques to eliminate visible surface contamination. All sites were documented before and after cleanup activities. All recovered materials were handled in accordance with the management practice for proper disposal. All cleaned areas were restored and/or seeded to prevent erosion.
- During this operational period, overbank surface cleanup work was conducted at 17 sites in the Kalamazoo River from MP 7.50 RDB to MP 13.75 Island. Overbank surface cleanup progress information is presented in Table 9.

3.4.2 Overbank Excavation Unit

- Overbank excavation continued in accordance with the schedule outlined in Enbridge's Strategic Plan for Summer 2011 operations.
- During this operational period, teams cleared the access road from MP 11.25 R2 and MP 11.25 R1, moved mats from the staging area down to MP 11.25 R1 and R2, began laying the mat road, and continued to install erosion control measures.

3.4.3 Submerged Oil Recovery and Cleanup Unit

- Submerged oil recovery operations continued on Talmadge Creek and the Kalamazoo River. Recovery operation techniques followed the approved submerged oil recovery tool box and included raking, flushing and other mechanical agitation techniques not requiring permits from the MDEQ.
- During this operational period, oil recovery and cleanup operations on the Talmadge Creek were discontinued due to a breach of the sediment trap, allowing sediment and sheen at the confluence to enter the Kalamazoo River. Operations at the Talmadge Creek will resume when adequate containment is established.
- During the operational period, teams conducted site preparation, first pass recovery, and second pass recovery along Talmadge Creek, at 5 locations in the Kalamazoo River from MP 4.3 to MP 5.25, and at 20 locations in the Kalamazoo River from MP 25.85 to MP 37.75.

3.5 Monitoring Branch

- Under MDEQ direction, 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) with a reduced sampling frequency as approved by the MDEQ. Samples collected as reported by Enbridge are provided in Table 10.
- EPA personnel continued to perform oversight of the Enbridge comprehensive air monitoring and sampling program. The quantity of monitoring and sampling locations is provided in Table 11.

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.

4. Planning

4.1 Situation Unit

- EPA personnel conducted an inspection of the B5 sediment trap and confluence point to verify that no sheen or sediment from Talmadge Creek were breaching the containment and entering the Kalamazoo River.
- EPA personnel observed submerged oil recovery operations and containment of sheen from MP 4.3 to MP 5.75 above Ceresco Dam.
- EPA personnel observed deployment of boom in anticipation of submerged oil recovery operations in the Kalamazoo River from MP 22.0 to the Morrow Lake Delta.
- EPA personnel observed and inspected the newly installed Control Point E6 at Morrow Lake Dam.
- EPA personnel conducted an inspection of the submerged oil work at MP 37.73 on Morrow Lake.

4.2 Environmental Unit

- The Public Health Group under the Environmental Unit is being lead by Dr. 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, bridges and public access points along the Kalamazoo River and Morrow Lake.
- The Recovery Task Force daily 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

- On June 22, 2011, EPA GIS support was mobilized to the Incident Command Post for review of Enbridge re-assessment data, general planning support, and training.

- During the operational period, EPA GIS personnel reviewed and mapped Enbridge Poling Delineation Re-assessment Data.

5. Command

6.1 Safety

- On June 20, 2011, a worker placed a hard hat on the floor of the air boat. The hard hat rolled backwards toward the safety cage and the prop's power pulled the hard hat through the blades. No injuries or damage to the prop occurred. Corrective actions included modifications to all boats with openings greater than 4 inches and administrative controls requiring boat captains and passengers to properly stow equipment.
- Throughout the operational period, minor safety incidents requiring first aid including a bee sting, a scrape, heat stress, and exposure to poison ivy occurred. In all cases, the workers returned to work.
- On June 21, 2011, Enbridge held a Safety Stand-down for all workers at the Incident Command Post in response to the increased number of onsite personnel.

6.2 Public Information

- 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 \$31.2 Million. Approximately 93.3% of the ceiling has been spent through June 26, 2011. As of June 19, 2011, the latest average 7-day burn rate was \$64,693 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 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).

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	June 2011						
		26	25	24	23	22	21	20
Frac Tanks	0	0	0	0	0	0	0	0
Vac Trucks-Tankers	0	0	0	0	0	0	0	0
Roll-Off Boxes	1	0	0	0	0	0	0	1
Yellow Iron (light)	1	0	0	0	0	0	0	1
Yellow Iron (heavy)	0	0	0	0	0	0	0	0
Boats	5	1	0	0	0	4	0	0
Vehicles	0	0	0	0	0	0	0	0
Boom (feet)	300	0	0	0	300	0	0	0

Table 2 - Soil and Debris Shipped Off Site (as of 6/27/2011)

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)	10,235	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)	804	EQ/Republic (Marshall, MI); C&C
Non-Haz Impacted Debris (ton)	2,268	

Shaded and italicized items are discontinued waste streams.

Table 3 – Oil/Water Collected by Location (as of 6/27/2011)

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	1,705,565
Site A	311,874
Other Locations*	1,295,034
Subtotal	15,597,017
Sludge**	474,215
Total Oil/Water	15,122,802

* 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 – Oil/Water Separation at Enbridge Facility in Griffith, IN (as of 6/27/2011)

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

Table 5 - Liquid Shipped Off-Site (as of 6/27/2011)

Stream	Destination Company	Destination Location	Cumulative Volume (gallons) †
<i>Hazardous Water</i>	<i>Dynecol</i>	<i>Detroit, MI</i>	<i>3,594,579</i>
<i>Oil/Water</i>	<i>Enbridge Facility</i>	<i>Griffith, IN</i>	<i>2,171,813</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>
Non-Haz Water	Dynecol	Detroit, MI	849,902
Non-Haz Water	Liquid Industrial Waste	Holland, MI	140,301
<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
Total			15,117,140

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 6 - Oil/Water Remaining On-Site (as of 6/27/2011)

Item	Cumulative (gallons)
Oil/Water Collected	15,122,802
Oil/Water Shipped Off-Site	15,117,140
Total Oil/Water Remaining On-Site	5,662

Table 7 – Daily Activity/Progress

Type of Site	June 2011						
	26	25	24	23	22	21	20
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	106	106	106	106	106	106	106
Control Points	10	10	10	10	10	10	9
Protective Containment Sites	38	38	38	38	37	37	37
River Erosion Sites	26	26	26	26	26	26	26
Monitoring Well Installation Sites	3	3	3	3	3	3	3

Table 8 - Boom and Aqua Dam Report

Metric	June 2011						
	26	25	24	23	22	21	20
# Boom Locations	48	48	49	49	48	48	47
Total Surface Boom Deployed (ft)	39,550	38,250	37,050	37,050	36,050	36,050	33,800
[ft of control point surface boom]	[19,400]	[18,500]	[18,000]	[17,550]	[17,300]	[15,050]	[15,050]
# Aqua Dam Locations	0	0	0	0	2	3	3
Aqua Dam Deployed (ft)	0	0	0	0	210	310	310
Sand-Super Sacks	33	33	33	33	39	39	39
[Sand Bags]	[526]	[526]	[526]	[526]	[1,288]	[1,288]	[1,288]

Table 9 – Overbank Surface Cleanup Progress (as of 6/27/2011)

Quarter – mile Segments Completed: 34*	34 of 240 locations (14.17% of planned locations)
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*This reflects implementation of a new completion verification process.

Table 10 – Samples Collected By Enbridge

Sample Type	Total	June 2011						
		26	25	24	23	22	21	20
Surface Water	31	0	0	0	8	3	11	9
Private Well Samples	0	0	0	0	0	0	0	0
Groundwater Samples	0	0	0	0	0	0	0	0
Sediment Samples	95	0	22	52	15	3	0	3
Soil Samples	13	0	0	0	2	9	0	2

Table 11 – Air Monitoring/Sampling Conducted By Enbridge (for 6/20/2011 – 6/26/2011)

Sample Type	Quantity
Community Locations	
Summa Canister Samples	42
Real-Time Air Monitoring	1402
Odor Complaint	0
Response Work Areas	
Summa Canister Samples	149
Real-Time Air Monitoring (Work Area Perimeter)	906
Real-Time Air Monitoring (Work Area)	711

Table 12 – Public Inquiries Received by EPA and Enbridge

Location/Media	Total	June 2011						
		26	25	24	23	22	21	20
Marshall Community Center	30	0	0	10	7	8	1	4
Oil Spill Public Information Hotline	12	1	0	2	0	1	5	3
Website	0	0	0	0	0	0	0	0
Total Public Inquiries	42	1	0	12	7	9	6	7

Table 13 – Landowner Environmental Issues (as of 6/27/2011)

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

Table 14 - Financial Summary

Item	Expended (Cumulative) as of 6/26/2011
ERRS Contractors	
EQM (EPS50802) T057	\$ 1,250,065
T060	\$ 204,905
LATA (EPS50804) T019	\$ 1,451,396
ER LLC (EPS50905) T040	\$ 723,669
Total ERRS Contractors	\$ 3,630,035
Other Contractors	
Lockheed Martin (EPW09031) – TAGA Support	\$ 185,464
T&T Bisso (EPA:HS800008)	\$ 1,255,000
Total Other Contractors	\$ 1,440,464
START Contractor – WESTON (EPS50604)	
T030-Response	\$12,258,248
T032-Sampling	\$ 180,214
T037-Doc Support	\$ 852,930
Total START Contractor	\$13,291,392
Response Contractor Sub-Totals	\$18,361,891
EPA Funded Costs: Total EPA Costs	\$ 4,913,407
Pollution Removal Funding Agreements – Total Other Agencies	\$ 1,823,682
Sub-Totals	\$25,098,980
Indirect Cost (16.00%)	\$ 4,015,837
Total Est. Oil Spill Cost	\$29,114,817
Oil Spill Ceiling Authorized by USCG	\$31,200,000
Oil Spill Ceiling Available Balance	\$ 2,085,183

Table 15 - Personnel On-Site

Agency/Entity	June 2011						
	26	25	24	23	22	21	20
U.S. EPA	1	2	2	4	2	1	1
START	5	39	34	34	34	32	32
Calhoun County Public Health	0	0	0	2	0	0	0
Calhoun County (CC) EM	0	0	0	0	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	3	0	0	0
Kalamazoo Sheriff	0	0	0	0	0	0	0
MDCH	0	0	0	1	0	0	0
MDEQ	0	0	8	11	3	8	7
MDEQ Contractors	0	6	4	9	8	11	11
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	40	75	141	160	158	142	130
Enbridge – Field	120	257	269	266	267	257	268
Total	166	379	458	492	472	451	449

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