

US EPA ARCHIVE DOCUMENT

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION V
POLLUTION/SITUATION REPORT #103



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

US EPA ARCHIVE DOCUMENT



Talmadge Creek Oil Recovery Operations

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: 06/13/2011

Reporting Period: 0700 hours 06/06/2011 through 0700 hours 06/13/2011

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 #102.

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 06/06/2011 through 0700 hours 06/13/2011.

3. Operations

This operations phase of the response consists of: 1) Shoreline and Overbank Re-assessment Technique (SORT) surveys; 2) Poling for submerged oil; 3) Active oil recovery in Talmadge Creek and Kalamazoo river; 4) Operations and Maintenance (O&M); 5) Decontamination; and 5) Other Operations.

Sheen and/or oil were observed at 41 locations inspected by the O&M inspectors.

A summary of active operational/inspection sites as reported by Enbridge is provided below.

Table 1 – Daily Activity/Progress

Type of Site	June 2011						
	12	11	10	9	8	7	6
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	108
Control Points	9	9	9	9	9	9	8
Protective Containment Sites	36	36	36	36	36	36	36
River Erosion Sites	26	26	26	26	26	26	26
Monitoring Well Installation Sites	3	3	3	3	3	3	3

3.1 Oil Recovery Operations

Enbridge presented a plan for the sequencing of upcoming oil recovery operations, which consists primarily of submerged oil removal using a variety of minimally-invasive methods. A few sites will require more invasive activities which may require permitting by the MDEQ. Active oil recovery operations commenced on Talmadge Creek and the Kalamazoo River. Recovery operation techniques used included raking, flushing and other mechanical agitation techniques not requiring permits from the MDEQ.

3.2 Shoreline and Overbank Re-assessment Technique (SORT)

SORT assessments of the shoreline and overbank areas within the floodplain as defined by the inundation model along the Talmadge Creek and Kalamazoo River were completed. Preparation of a revised inundation model continued. A summary of SORT progress for this period is presented below.

Table 2 – SORT Progress as of 6/12/2011

Quarter – mile Segments Completed	553 locations (100% of planned locations)
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3.3 Poling Re-assessment for submerged oil

Poling assessments were not performed Monday May 30 through Saturday June 4 due to elevated water levels in the river. Poling teams resumed reassessment of the creek and river beds for submerged oil deposition on Sunday, June 5. A summary of poling progress for this period is presented below.

Table 3 – Poling Progress on Talmadge Creek as of 6/12/2011

Number of Locations	87
Approximate Total Area:	0.8 acres (32,700 sq ft)
Moderate (37 Locations)	0.2 acres (7,600 sq ft)
Heavy (50 Locations)	0.6 acres (25,100 sq ft)

Table 4 – Poling Progress on Kalamazoo River as of 6/12/2011

Number of locations:	197
Approximate Total Area:	75.1 acres (3,272,900 sq ft)
Moderate (61 Locations)	9.2 acres (402,800 sq ft)
Heavy (136 Locations)	65.9 acres (2,870,100 sq ft)

Table 5 – Poling Progress on Morrow Lake Delta 6/12/2011

Number of locations:	29
Approximate Total Area:	26.0 acres (1,135,900 sq ft)
Moderate (8 Locations)	1.0 acres (45,300 sq ft)
Heavy (21 Locations)	25.0 acres (1,090,600sq ft)

3.4 Strike Team (ST)

Strike Teams (ST) continued to perform focused assessments of areas requiring further assessment, as designated by SORT and poling teams.

3.5 Operations and Maintenance (O&M)

Teams inspected O&M locations. In general, team activities included an inspection of containment and protective boom locations to ensure proper placement and effectiveness and inspection for readily visible oil or oil-saturated soils.

3.6 Decontamination

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

Table 6 - Equipment Decontamination

Location/Media	Total	June 2011						
		12	11	10	9	8	7	6
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
Boats	0	0	0	0	0	0	0	0
Vehicles	0	0	0	0	0	0	0	0
Boom (feet)	750	0	50	500	200	0	0	0

3.7 Additional Operations

3.7.1 Air Operations

There were 6 overflights for situational awareness during this operational period. Air Operations personnel observed and documented progress in all operational areas and continued to assess areas of interest such as oil mobilization, oil removal and decontamination activities.

3.7.2 Environmental Compliance and Oversight

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

3.7.3 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 below.

Table 7 – Samples Collected By Enbridge

Sample Type	Total	June 2011						
		12	11	10	9	8	7	6
Surface Water	35	0	0	0	5	10	10	10
Private Well Samples	32	0	0	7	12	0	0	13
Groundwater Samples	5	0	0	0	5	0	0	0
Sediment Samples	23	0	0	0	5	4	4	10
Soil Samples	35	0	0	7	6	0	0	22

Enbridge continued to develop and implement a comprehensive air monitoring and sampling program. On June 11, 2011, the following number of locations were monitored and/or sampled.

Table 8 – Air Monitoring/Sampling Conducted By Enbridge

Sample Type	June 11
Community Locations	
Summa Canister Samples	6
Real-Time Air Monitoring	105
Response Work Areas	
Summa Canister Samples	8
Real-Time Air Monitoring (Work Area Perimeter)	101
Real-Time Air Monitoring (Work Area)	204

3.7.4 Wildlife Branch

Under Michigan Department of Natural Resources (MDNR) direction, release of rehabilitated wildlife nursed over the winter continued. Relocation of the wildlife care center to control point C 3.2 was completed.

4. Landowner Environmental Issues

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

Table 9 – Landowner Environmental Issues

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

5. Progress Metrics

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

Table 10 - Boom and Aqua Dam Report

Metric	June 2011						
	12	11	10	9	8	7	6
# Boom Locations [# control points included]	47 [9]	47 [9]	46 [8]	46 [9]	46 [9]	46 [9]	46 [9]
Total Surface Boom Deployed (ft) [ft of control point surface boom]	33,000 [14,050]	33,000 [14,050]	32,150 [14,050]	31,350 [14,050]	31,250 [13,950]	31,250 [13,950]	30,550 [13,250]
# Aqua Dam Locations	4	4	4	4	4	4	4
Aqua Dam Deployed (ft)	410	410	410	410	410	410	410
Sand-Super Sacks [Sand Bags]	39 [1,288]	39 [1,288]	39 [1,288]	39 [1,288]	39 [1,288]	39 [1,288]	39 [1,288]

NR = Not Reported by Enbridge

Table 11 - Soil and Debris Shipped Off Site as of 6/12/2011

Waste Stream	Cumulative	Disposal Facility
<i>Haz Soil (yd³)</i>	<i>19,644</i>	<i>Envirosafe (Oregon, OH)</i>
Non-Haz Soil & Debris (yd ³) (Excluding Ceresco Dredge)	9,875	Terra/C&C
<i>Non-Haz Soil & Debris (yd³) (Excluding Ceresco Dredge)</i>	<i>64,815</i>	<i>Westside Recycling (Three Rivers, MI)</i>
<i>Non-Haz Soil (yd³) (Ceresco Dredge Only)</i>	<i>5,562</i>	<i>EQ/Republic (Marshall, MI)</i>
<i>Haz Debris (yd³)</i>	<i>12,075</i>	<i>EQ/Michigan Disposal (Wayne, MI) and Republic (Marshall, MI)</i>
Non-Haz Household Debris (ton)	785	EQ/Republic (Marshall, MI); C&C
Non-Haz Impacted Debris (ton)	1,981	

Shaded and italicized items are discontinued waste streams.

Table 12 – Oil/Water Collected by Location (as of 6/12//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	1,698,840
Site A	306,212
Other Locations*	1,292,804
Subtotal	15,582,500
Sludge**	474,215
Total Oil/Water	15,108,285

* Decontamination Operations, 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 13 – Oil/Water Separation at Enbridge Facility in Griffith, IN (as of 6/12/2011)

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

Table 14 - Liquid Shipped Off-Site (as of 6/12/2011)

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	840,902
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			15,108,140

Shaded and italicized items are discontinued waste streams.

* 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 15 - Oil/Water Remaining On-Site 6/12/2011

Item	Cumulative (gallons)
Oil/Water Collected	15,108,285
Oil/Water Shipped Off-Site	15,108,140
Total Oil/Water Remaining On-Site	145

6. Support Operations

6.1 Planning

The Planning Section 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 provided coordination of reassessment activities including SORT, poling, and aerial imagery.

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

A significant rain and wind event (approaching a 50-year flood event) occurred on Sunday, May 29, 2011. As a result, water levels in the Kalamazoo River and Talmadge Creek rose substantially and were sustained through most of this operational period. High winds also downed numerous trees and power lines. The resulting damage hampered ongoing re-assessment activities. Work was performed and continues to clear trees and debris within the river.

Due to the changing of the seasons, an emphasis continues to be placed on spring weather awareness (heavy rain, fog, swift water, flood watch and rising of water levels) with the work crews. Heat stress and storm damage debris awareness are current focus items.

The safety staff continues to work with and monitor Enbridge Safety operations, provide field support for the re-assessment teams and training to new re-assessment staff. In addition, real-time air monitoring was performed by Enbridge at locations of active oil recovery.

6.3 Public Information

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

Table 16 – Public Inquiries Received by EPA and Enbridge

Location/Media	Total	June 2011						
		12	11	10	9	8	7	6
Marshall Community Center	3	0	0	1	2	0	0	0
Oil Spill Public Information Hotline	4	0	0	2	0	0	2	0
Website	0	0	0	0	0	0	0	0
Total Public Inquiries	7	0	0	3	2	0	2	0

6.4 Finance

The current NPFC issued ceiling is \$31.2 Million. Approximately 91.0% of the ceiling has been spent through June 12, 2011. As of June 12, 2011, the latest average 7-day burn rate was \$45,823 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 17 - Financial Summary

Item	Expended (Cumulative) as of 6/12/2011
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	\$11,669,346
T032-Sampling	\$ 180,214
T037-Doc Support	\$ 813,787
Total START Contractor	\$12,663,347
Response Contractor Sub-Totals	\$17,773,846
EPA Funded Costs: Total EPA Costs	\$ 4,913,681
Pollution Removal Funding Agreements – Total Other Agencies	\$ 1,823,682
Sub-Totals	\$24,471,209
Indirect Cost (16.00%)	\$ 3,915,394
Total Est. Oil Spill Cost	\$28,363,603
Oil Spill Ceiling Authorized by USCG	\$31,200,000
Oil Spill Ceiling Available Balance	\$ 2,813,397

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 18 - Personnel On-Site

Agency/Entity	June 2011						
	12	11	10	9	8	7	6
U.S. EPA	1	1	2	3	2	1	1
START	12	18	23	25	25	27	25
Calhoun County Public Health	0	0	0	1	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	0	0	0	0
Kalamazoo Sheriff	0	0	0	1	0	0	0
MDCH	0	0	0	4	0	0	0
MDEQ	1	0	11	11	11	11	11
MDEQ Contractors	7	4	6	6	6	7	7
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	49	57	114	118	119	118	109
Enbridge – Field	97	136	196	192	194	190	186
Total	166	216	352	363	357	354	339

*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>.