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U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION V
POLLUTION/SITUATION REPORT #165

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

Maintenance of the E4 Boom System

To: Susan Hedman, U.S. EPA Regional Administrator
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Christine Kosmowski, City of Battle Creek

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

Date: 10/25/2012

Reporting/Operational Period: 0700 hours 10/11/2012 through 0700 hours 10/18/2012

1. Site Data

Site Number:	Z5JS	**Response Type:**	Emergency
Response Authority:	OPA	**Incident Category:**	Removal Action
Response Lead:	PRP	**NPL Status:**	Non-NPL
Mobilization Date:	7/26/2010	**Start Date:**	7/26/2010
FPN#:	E10527		

2. Operations Section

- The organizational response structure consisted of the following Branches: 1) Submerged Oil; 2) Containment; 3) Kalamazoo River System; and 4) Waste Management.

2.1 Submerged Oil Branch

2.1.1 Submerged Oil Science Group

- The second bi-weekly monitoring round for Phase II sediment traps, including cylindrical sampling device (CSD) sampling, was completed during this operational period, pursuant to the Sediment Trap Monitoring and Maintenance Plan. Poling was not conducted during this round due to water and sediment temperatures being consistently below the 60 degree Fahrenheit requirement.
- Teams re-installed walling tubes after monthly sampling was completed. Analytical results will be used for additional calibration of the hydrodynamic model and to further characterize submerged oil fate and transport.
- Enbridge and the U.S. EPA continued reviewing analytical results from the chemical fingerprint analyses for the oil quantification pilot study and focused on determining identification of pyrogenic and petrogenic background concentrations within the pilot study core samples. Results of the pilot testing will be used to evaluate the UV inspection process for evaluating sediment cores.

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- Sediment cores collected during the agitation effects study and the submerged oil quantification program continue to be held in cold storage pending the results of the pilot testing to validate the UV inspection screening process.

2.1.2 Submerged Oil Compliance Group

- No activities were conducted during this operational period.

2.2 Containment Branch

2.2.1 Containment Compliance Group

- No activities were conducted during this operational period.

2.2.2 Containment Recovery Group

- Pursuant to the Emerging Oil Management Program (EOMP), Enbridge, U.S. EPA, and MDEQ continued to track the location, response, and sheen differentiation test results (when necessary) of each identified location of sheen and/or oil globules. Teams recorded and documented observations of sheen and/or oil globules in the main channel and overbank areas, and conducted sheen testing as necessary. Observations of sheen and/or globules were reported back to Operations Section Chiefs for response (when necessary). See Table 1 for information regarding the total number of sheen differentiation tests conducted, and the results of those tests.
- Daily management of oil sheen and/or globules continued with sweep boats conducting routine recovery activities at Ceresco Dam (MP 5.25 to Ceresco control point), MP 21.5 to MP 28.25, and the Morrow Lake Delta/Morrow Lake, along with other ongoing sweep responses as determined necessary. See Table 2 for information regarding the total number of responses to oil sheen and/or globules by date.
- As of October 18, 2012, a total of 800 feet of surface hard boom is deployed at the Ceresco Control Point. Additionally, a total of 8,400 feet of surface hard boom and 5,350 feet of subsurface half curtain have been deployed at the E4 Containment system boom locations. Teams removed debris accumulated within the boomed areas and continued to monitor the E4 system half-curtain locations using an underwater camera. Adjustments to various half-curtains were made as necessary.
- Installation of 3 CSDs near Ceresco Dam has not been conducted and is pending property owner access permission.
- Teams performed weekly visual inspections of the 7 currently-installed Phase I and II enhanced sediment trap structure locations.

2.3 Kalamazoo River System Branch

2.3.1 Talmadge Creek/Kalamazoo River Remedial Investigation Group

- Enbridge continued Kalamazoo River remedial investigation activities, including hydrocarbon fingerprint evaluation of overbank soils and collection of soil samples for background metals analyses.

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2.3.2 Kalamazoo River Compliance Group

- Restoration and stabilization activities were conducted at various Kalamazoo River Bank Erosion Assessment (KRBEA) sites.

2.3.3 Kalamazoo River Remedial Action Group

- No activities were conducted during this operational period.

2.3.4 Talmadge Creek/Kalamazoo River Monitoring Group

- Monthly surface water monitoring was conducted.
- Monitoring of erosion control devices continued.
- Water level and flow rate information continued to be downloaded daily from three USGS gauging stations at Marshall, Battle Creek, and Comstock.
- Collection of daily water and sediment temperature readings continued at locations where operational tasks were being performed.
- Enbridge conducted weekly monitoring of buoys and signage along the Kalamazoo River.

2.5 Waste Management Branch

- A summary of equipment and boom decontaminated during this reporting period is presented in Table 3.
- Quantities of soil, debris, and liquid shipped off-site during the reporting period are presented in Tables 4 and 5.
- The total amount of recovered oil from the inception of the response has been estimated using actual waste stream volumes, analytical data, and physical parameters of oil-containing media. A summary of the estimated volume of recovered oil is presented in Table 6.

3. Planning

3.1 Situation Unit

- Situation Unit personnel observed and documented progress in operational areas, and documented locations of oil globules and oil sheen through field observations and weekly overflights. Personnel reported observations of sheen/product (globules) to Operations for follow-up testing and/or response, consistent with the EOMP. Specific observations during this period include the repeated observation of oil sheen and globules at Ceresco Dam (MP 5.25 to Ceresco control point), the north and south coves and the main channel of the Morrow Lake fan, and the Morrow Lake Delta. See Section 2.2.2 for additional details regarding the EOMP.
- Photographs were taken and distributed to project participants during Operations, Command and General Staff, and Multi-Agency Coordination (MAC) Group meetings.

3.2 Environmental Unit

- Enbridge, U.S. EPA, and MDEQ will continue to discuss further use of the Kalamazoo River Hydrodynamic Transport Model to support future Operational decisions.

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- The pilot study for validation of the UV inspection process for sediment cores continued, including evaluation of the sediment cores for the possible presence of oil-mineral aggregate (OMA), which may not be visible using current core inspection/UV processes.
- The Environmental Unit continued reviewing analytical results from the chemical fingerprint analyses for the oil quantification pilot study to determine the path forward for logging and processing additional submerged oil quantification cores.
- Enbridge and MDEQ continued to review and track RI progress.

3.3 Documentation Unit

- The Documentation Unit continued organizing and archiving electronic and paper files for post-incident use.

3.4 Resource Unit

- The Resources Unit continued to support production of the Incident Action Plan (IAP), supported the planning efforts of operations, and provided information to Logistics personnel in order to properly prepare and procure resources.
- The Resource Unit continued logistical activities related to the relocation of the EPA/MDEQ Incident Command Post (ICP). The EPA/MDEQ ICP was relocated on October 13, 2012 to a facility in Marshall, MI.

4. Command

4.1 Safety Officers

- Safety personnel continued conducting work-site safety inspections and implementing the plan for integration of public safety and worker safety on the Kalamazoo River.
- On October 15, 2012, an Enbridge contractor strained his lower abdomen while removing a CSD from the river at MP 33.0. The contractor was able to return to work.

4.2 Public Information

- The number of public inquires reported by Enbridge for this period is presented in Table 8.

5. Finance

- The current National Pollution Funds Center (NPFC) ceiling is $52.7 Million. Approximately 90.8% of the ceiling has been spent through October 14, 2012. The latest average 7-day burn rate was $25,900 per day. These cost summaries reflect only U.S. EPA-funded expenditures for the incident. A summary of these expenses is presented in Table 9.

6. Scientific Support Coordination Group (SSCG)

- Recommendations regarding the Net Environmental Benefits Analysis (NEBA), agitation effects study and quantification of submerged oil are being reviewed by the FOSC.

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- SSCG and Enbridge forensic chemists continued periodic conference calls to examine the oil fingerprinting results and compare procedures for applying oil fingerprinting results to measuring Line 6B oil remaining in the Kalamazoo River sediments.

7. Participating Entities

- Entities participating in the MAC include:
  - U.S. Environmental Protection Agency
  - Michigan Department of Environmental Quality
  - Michigan Department of Community Health
  - City of Battle Creek
  - City of Marshall
  - Allegan County Emergency Management
  - Calhoun County Public Health Department
  - Calhoun County Emergency Management
  - Kalamazoo County Health and Community Services Department
  - Kalamazoo County Sheriff
  - Enbridge (Responsible Party)
- For a list of cooperating and assisting agencies, 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 in Table 10.

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/.

10. Clean-up Progress Metrics

Table 1 – Sheen Differentiation Test Results

Description	Total	October 2012						
		17	16	15	14	13	12	11
Sheen Tests Performed	**0**	0	0	0	0	0	0	0
Results Indicated Petroleum Source	**0**	0	0	0	0	0	0	0
Results Indicated Biogenic Source	**0**	0	0	0	0	0	0	0
Inconclusive Test Results	**0**	0	0	0	0	0	0	0

Table 2 – Sheen Responses

Description	Total	October 2012						
		17	16	15	14	13	12	11
Responses	**43**	9	7	11	0	2	7	7

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Table 3 - Equipment Decontamination

Location/Media	Total	October 2012						
		17	16	15	14	13	12	11
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 (linear ft)	**0**	0	0	0	0	0	0	0
Miscellaneous Items	**0**	0	0	0	0	0	0	0

Table 4 - Soil and Debris Shipped Off Site (as of 10/17/2012)

Waste Stream	Cumulative	Disposal Facility
Haz Soil (yd^3)	19,644	Envirosafe (Oregon, OH)
Non-Haz Soil (yd^3) (Excluding Ceresco Dredge)	78,109	SET/C&C
Non-Haz Soil & Debris (yd^3) (Excluding Ceresco Dredge)	64,815	Westside Recycling (Three Rivers, MI)
Non-Haz Soil (yd^3) (Ceresco Dredge Only)	5,562	EQ/Republic (Marshall, MI)
Haz Debris (yd^3)	12,075	EQ/Michigan Disposal (Wayne, MI) and Republic (Marshall, MI)
Non-Haz Household Debris (ton)	1,789	SET/C&C
Non-Haz Impacted Debris (ton)	7,111	

Shaded items are discontinued waste streams.

Table 5 - Liquid Shipped Off-Site (as of 10/17/2012)

Stream	Destination Company	Destination Location	Cumulative Volume (gallons)†
Non-Haz Water	Battle Creek POTW	Battle Creek, MI	1,143,280
Non-Haz Water	Dynecol	Detroit, MI	981,792
Non-Haz Water	Liquid Industrial Waste	Holland, MI	1,376,757
Non-Haz Water	Plummer	Kentwood, MI	416,726
Hazardous Water	*Dynecol*	*Detroit, MI*	*3,594,579*
Oil *Other Material*	*Enbridge Facility*	*Griffith, IN*	*766,288* *1,405,525*
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* [a]		*825*
Treated Non-Haz Water	*Dynecol*	*Detroit, MI*	*150,700*
Treated Non-Haz Water	*Battle Creek POTW*	*Battle Creek, MI*	*1,968,700*
		Total	**17,151,152**

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.

Table 6 – Estimated Recovered Oil (as of 10/15/2012)

Waste Stream Containing Recovered Oil	Destination Company	Destination Location	Estimated Oil Volume in Waste Stream (gallons)
Soil Impacted Soil & Debris	C&C Landfill	Marshall, MI	14,032*
	Envirosafe/ Westside RDF	Oregon, OH	278,665
Geotube Sediment *- (Impacted Sediment)*	*Envirosafe/ Westside RDF*	*Oregon, OH*	*1,298*
Debris - (Roll Off Boxes with Impacted Sorbents, boom, pads, plastic, PPE, vegetation, and biomass)	EQ Michigan	Belleville, MI	34,443
Frac Tank City *- Influent to Carbon Filtration System*	*C&C Landfill*	*Marshall, MI*	*8,109*
Frac Tank City - Water	Dynecol	Detroit, MI	46,176
	Liquid Industrial Waste Services, Inc.	Kentwood, MI	
	Plummers Env. Inc.	Holland, MI	
	BC POTW	Battle Creek, MI	
Ceresco Pretreatment System	*C&C Landfill*	*Marshall, MI*	*90*
A-1 Pretreatment System	*C&C Landfill*	*Marshall, MI*	*9*
Oily Water - RPP	Enbridge Facility	Griffith, IN	766,288
		Total	**1,149,109**

Shaded and *italicized* items represent discontinued waste streams.
*Total updated for analytical received after report generation.

Table 7 – Samples Collected By Enbridge

Sample Type	Total	October 2012						
		17	16	15	14	13	12	11
Surface Water	**18**	0	18	0	0	0	0	0
Private Well	**0**	0	0	0	0	0	0	0
Groundwater	**0**	0	0	0	0	0	0	0
Sediment	**40**	1	2	0	0	0	0	37
Soil	**38**	10	6	8	0	0	7	7
Product	**0**	0	0	0	0	0	0	0
Dewatering	**0**	0	0	0	0	0	0	0
Sheen	**0**	0	0	0	0	0	0	0

Table 8 – Public Inquiries Received by U.S. EPA and Enbridge

Location/Med	Total	October 2012						
		17	16	15	14	13	12	11
Marshall Community Center	**26**	7	2	11	0	0	3	3
Oil Spill Public Information Hotline	**1**	0	0	0	0	0	1	0
Website	**1**	0	1	0	0	0	0	0
Total Public Inquiries	**28**	**7**	**3**	**11**	**0**	**0**	**4**	**3**

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Table 9 - Financial Summary (as of 10/14/2012)

Item		Expended (Cumulative)	
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		***$***	***3,257,571***
Other Contractors			
Lockheed Martin (EPW09031) – TAGA Support		*$*	*198,379*
Lockheed Martin (EPW09031) -Biodegradability Study			*27,357*
T&T Bisso (EPA:HS800008)		*$*	*882,087*
Total Other Contractors		***$***	***1,107,823***
START Contractor – WESTON (EPS50604)			
	T030-Response	$	27,905,292
	T032-Sampling	$	183,567
	T037-Doc Support	$	1,773,364
	Total START Contractor	**$**	**29,862,223**
	Response Contractor Sub-Totals	**$**	**34,227,617**
U.S. EPA Funded Costs: Total U.S. EPA Costs		$	**6,133,864**
Pollution Removal Funding Agreements			
Total Other Agencies		$	2,051,535
Indirect Cost (16.00%)		$	3,598,252
Indirect Cost (8.36%)-payments after 10/1/2011		$	1,310,859
Indirect Cost (10.15%)-payments after 10/1/2012		$	226,983
Cost Documentation/Billing Admin Fee (2.93%)*		$	299,323
	Total Est. Oil Spill Cost	**$**	**47,848,433**
Oil Spill Ceiling Authorized by USCG		$	52,700,000
Oil Spill Ceiling Available Balance		$	**4,851,567**

Shaded and *italicized* items are discontinued

* Effective on EPA Enbridge costs billed to USCG for bills issued after 6/5/12.

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Table 10 - Personnel On-Site

Agency/Entity	October 2012						
	17	**16**	**15**	**14**	**13**	**12**	**11**
U.S. EPA	2	1	0	0	0	4	1
START	13	15	14	3	2	17	15
MDEQ	3	3	5	0	1	6	6
MDEQ Contractors	2	3	3	0	0	2	2
USGS	0	0	0	0	0	0	0
Calhoun County Public Health	0	0	0	0	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	0	0	0	0
Kalamazoo County Public Health	0	0	0	0	0	0	0
Kalamazoo Sheriff	0	0	0	0	0	0	0
MDCH	0	0	0	0	0	0	0
Michigan State Police EMD	0	0	0	0	0	0	0
Allegan County Emergency Mgmt.	0	0	0	0	0	0	0
MDNR	0	0	0	0	0	0	0
Enbridge – Operations Center	26	22	23	0	9	30	33
Enbridge – Kalamazoo River	9	11	9	0	0	8	9
Enbridge – Containment	10	12	10	0	4	11	10
Enbridge – Submerged Oil	6	10	9	0	0	8	10
Enbridge – Waste Management	1	1	1	0	0	1	1
Enbridge – Security & Flaggers	0	4	4	4	4	4	4
Enbridge – Communications Ctr.	18	15	14	0	0	8	7
Total	**90**	**97**	**92**	**7**	**20**	**99**	**98**

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

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