

US EPA ARCHIVE DOCUMENT

U.S. ENVIRONMENTAL PROTECTION AGENCY  
POLLUTION/SITUATION REPORT  
Kalamazoo River/Enbridge Spill - Removal POLREP-SITREP



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Region V



**Subject:** SITREP # 49  
Kalamazoo River/Enbridge Spill  
Z5JS  
Marshall, MI  
Latitude: 42.2395273 Longitude: -84.9662018

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**Date:** 9/13/10

**Reporting Period:** 1900 hours 9/11/10 to 1900 hours 9/12/10

## 1 Introduction

### 1.1 Background

#### 1.1.1 Site History

##### Background Information

Site Number: Z5JS

D.O. Number:

Response Authority: OPA

Response Lead: PRP

NPL Status: Non NPL

Mobilization Date: 7/26/2010

Demob Date:

CERCLIS ID:

ERNS No.:

FPN#: E10527

Contract Number:

Action Memo Date:

Response Type: Emergency

Incident Category: Removal Action

Operable Unit:

Start Date: 7/26/2010

Completion Date:

RCRIS ID:

State Notification:

Reimbursable Account

#### 1.1.2 Incident Category

Emergency Response - Pipeline Rupture

#### 1.1.3 Site Description

A 30-inch pipeline ruptured, releasing crude oil (NRC report of 19,500 barrels) into a culvert leading to Talmadge Creek. Talmadge Creek is a tributary to the Kalamazoo River. The response site is along Talmadge Creek and the Kalamazoo River running from Marshall, Michigan, to downstream of Battle Creek, Michigan. The Kalamazoo River is bordered by marshland and developed properties for the approximate 30-mile stretch of the response site.

#### 1.1.4 Preliminary Removal Assessment/Removal Site Inspection Results

Approximately 30 miles of the Kalamazoo River have been impacted. The Kalamazoo River experienced flooding before and after the spill. The river levels later fell and stranded oil in some backwaters, wetlands and floodplains. Talmadge Creek was boomed off at the confluence to the Kalamazoo River. Containment and absorbent boom were deployed along the Kalamazoo River and Talmadge Creek. Containment and absorbent boom also were deployed in Morrow Lake.

### 1.1.5 Enforcement Activities, Identity of Potentially Responsible Parties

Enbridge is the RP.

On July 27, 2010, EPA issued an Administrative Order under section 311(c) of the Clean Water Act to Enbridge. Enbridge has submitted and EPA has approved the following deliverables required by the Order including but not limited to: *Operational Health and Safety Plan; Pipeline Repair Workplan; Sampling and Analysis Plan; Quality Assurance Project Plan; Oil Containment and Recovery Plan; Source Area Remediation Plan; Remediation Plan for Downstream Impacted Areas; and Waste Treatment, Transportation, and Disposal Plan.*

## 1.2 Incident Objective and Command Emphasis

The following incident objectives and command emphasis are taken from the IAP for the Operational Period September 10, 2010, 0700 to September 12, 2010, 0700.

### Incident Objectives

1. Ensure health and safety of the public and response and recovery personnel.
2. Ensure effective transition of regulatory oversight of the oil impacted areas from EPA to MDNRE jurisdiction as appropriate.
3. Maintain the isolation of the Kalamazoo River from up-gradient source area.
4. Contain and recover oil and contaminated vegetation in Talmadge Creek and Kalamazoo River.
5. Maintain effective unified communications with cooperating and assisting agencies and the public.
6. Perform remediation and restoration of all affected public and private areas of river and river systems.
7. Provide protection of environmentally and culturally sensitive areas including wildlife and historic properties.
8. Protect threatened and endangered species and continue to recover and rehabilitate injured wildlife.
9. Continue to collect, coordinate, manage and communicate environmental and public health data including maintenance of Joint Information Center function.

### Command Emphasis

1. Finalize submerged oil containment and recovery tactics for highest priority targets in the Kalamazoo River and at Morrow Lake.
2. Develop a plan to ensure thorough assessment of overbank and areas of concern.
3. Complete necessary grade restoration and stabilization work plans along Talmadge Creek in accordance with MDNRE guidance.
4. Finalize a Ground Water Monitoring Plan to facilitate lifting of the Bottled Water Advisory.

## 1.3 Strategic Considerations

- 1) Begin submerged oil recovery.
- 2) Emphasis with Enbridge to prioritize submerged oil recovery locations. Focus remains on Ceresco Dam area.
- 3) Implement plans to augment the identification and documentation of overbank areas of concern.

## 2 Current Activities

### 2.1 Operations Section

#### 2.1.1 Narrative

The response site extends from the pipeline break to the dam at the end of Morrow Lake. Operationally, the response has been divided into two Oil Recovery and Cleanup Branches: East and West. These branches have been geographically divided into five Divisions, A through E, with Division A starting at the pipeline break and Division E ending at the western edge of Morrow Lake (see attached map). The East Branch includes Divisions A and B and the West Branch includes Divisions C, D and E. Division C is currently an area of command emphasis and has been further subdivided into four groups performing similar response activities in order to accelerate cleanup progress in that Division. Certain control points are denoted by division letter then control point number (i.e., C3 refers to control point three within Division C). Additionally the entire length of the site is now divided into one-quarter mile sections.

The Unified Command organizational charts (ICS 207 forms) are presented in Figures 1- 4. The ICS 207 Forms describe in detail the work breakdown structure for the response action.

The following activities occurred during the reporting period from 1900 hours on September 11, 2010 to 1900 hours on September 12, 2010:

#### Division A

Division A has been extended to incorporate the portion of Talmadge Creek from Location A4 to Division Drive.

#### Enbridge reported the following:

- Placement of sorbent boom along Talmadge Creek.
- Updating and maintaining the EPA hit list along Locations A5, A6, and B2.
- Ongoing maintenance of silt fences.
- Continuing backfilling and restoration of Talmadge Creek at Location A5.
- Continuing backfilling operations at Location A6.
- Ongoing maintenance of mat roads in Divisions A and B.

#### EPA observed the following:

- Placement of fibrous log boom in Locations A6 and A5.
- Placement of erosion control matting in Location A6.
- Modified excavation operations per “Approach for Source Contamination Removal, Verification, and Backfill” addendum to the work plan.
  - Four excavation and test pit construction crews are operational.
  - Ninety-eight sections have been prepared.
  - Seventy-one, 6-hour test pit sections have been cleared.
  - Twenty-one, 48 hour test pit sections have been cleared, and backfill operations have commenced.
- Continuing hauling operations from soil staging area adjacent to the source.
- Continuing as needed operation of wood chipper depending on quantity of mats and trees delivered at any given time.



- Staging of contaminated log boom, sorbent pads, and collection bags are staged adjacent to the wood chipper.
- Collection bags and contaminated materials were observed to be put through the chipper and hauled off with wood material and contaminated soil.
- Continuing silt fence repair with silt fence removed from A6.4 to Division Road.
- Continuing backfilling and dewatering operations on the west side of Talmadge Creek at Location A5 and A6.
- Staging of peat fill material, soil and aggregate mix for backfill operations next to source area.

## **Division B**

### Enbridge reported the following:

- Preparation and staging of materials and equipment for night operations. Completed construction of material storage area on 16 Mile Road north of Location B3.
- Electro shock testing by MDNRE.
- DECON area moving from Location B5 to Yard 4.
- Continued to address safety issues on the matt roads.
- Continuing maintenance of silt fences and booms at Locations B4 and B5.
- Excavation of 14 test holes at Location B4.
- Continuing testing at Location B2.7.

### EPA observed the following:

- Excavation of 11 test pits at Location B4, east of 15 ½ Mile Road.
- Excavation of test pits at Location B2.7 with START oversight.
- MDNRE granted letter approval for interim stream bank and floodplain restoration plan in Division B.
- Approximately 300 test pits in Division B:
  - Thirty-eight sections have been prepared,
  - No sections cleared by 6 hour test,
  - No sections cleared by 48 hour test.
- Ongoing repair of silt fences throughout Division B.
- Continuing ongoing as needed repair and replacement of log boom throughout Division B as recommended by START and EPA.
- Continuing suspension of excavation operations in Locations B3 and B5.
- Soil staging, processing and ongoing hauling operations in Yard 4.

## **Oversight Monitoring Group**

### River Branch Task Force 1 observed the following:

- Test pit excavation at Location B2.7.
- Backfilling and seeding/mulching operations completed at Location A1 to A4.
- Suspension of vacuum truck operations at Location B5.
- Snare boom in need of replacement at Location B5.
- Backfilling operations on hold pending MDNRE approval at Location B4.
- Ongoing backfilling, test pit, and clearance operations in coordination with EPA in Locations A5 through A6.

- Ongoing silt fence operations at Locations B2, B2.5, and B2.7.
- Continuing suspension of excavation activities at Location B2, B2.5, B2.7, and B5.
- Hand skimming operations are ongoing at Location B2.
- Vacuum trucks continue to skim rainbow sheen and dense free product from Talmadge Creek at Location B3.
- Boom maintenance operations are ongoing at Locations B2, B2.5, B2.7, and B4.

River Branch Task Force 1 reported the following:

- Sheen in standing water along a cell berm in the Division A, A2 and A3 boundary. RP is using sorbent material to remove sheen.
- Discussions with RP regarding an amendment to the work plan for test pit construction and observation.
- START GIS will continue to provide maps with locations of contaminated areas for Locations A5, A6, B2, B4, and B5 to the Kalamazoo River. These maps are provided to the RP.

**Division C**

Enbridge reported the following:

- Strike Team support at Location C1.5.
- Continuing boat operations, shoreline cleanup, and maintenance of sorbent booms at Location C0.
- Removal and disposal of containment boom deployed at Location C0.4.
- Continuing skimming operations at Location C1.
- Decontamination of equipment as necessary at Location C3.
- Continuing clean up on islands at Location C3.2.
- Continuing cleanup of island and shorelines at Locations C3.7 and C0.3.
- Construction of containment area for soil crate storage at Location C3.7.
- Continuing cleanup of shoreline and hot spots at Location C4.85 and C0.5.
- Continuing cleanup of hot spots at C0.5, C3.9, and C4.85,
- Collection of debris at Location C4.8, C4.85, C5, and C1.5.

EPA observed or reported the following:

- From MP2.25 to MP6 (Group 1):
  - Suspension of all flushing operations except for a minimal amount of work on Island F and MP 5.25.
  - Oil removal from left descending bank of MP4.25 to MP 4.5.
  - Removal of vegetation and reinforcing boom on left descending bank of MP1.75 to MP 2.0.
- MP6.5 to MP10 (Group 2):
  - SCAT step 4 clearance of all areas except MP 8.25 and MP 8.5.
- From MP10 to MP15 (Group 3 and 4):
  - Overbank vegetation clearing along right descending bank at MP10.25
  - Overbank activities along left descending bank at MP10.50, and MP10.75 to MP 11.75 and right descending bank of MP12.5.
  - Dewatering and excavation activities along right descending bank at MP11.25



- Identified many areas of pooled oil and heavily contaminated vegetation at the overbank area along the left descending bank between MP10.75 and MP11.75. Numerous backwater channels were also identified.

USCG observed the following:

- Shoreline and overbank activities along left descending bank at MP13.75 and right descending bank at MP15.0.
- Observed area of tar balls and sheen at MP14.25 approximately 20 feet from shore.

**Division D**

Enbridge reported the following: (No new activities reported)

- Presence of three boats at Location D2.

EPA observed the following: (No new activities reported)

- Ongoing maintenance of both lines of gabion boxes.
- Ongoing boom maintenance in all areas.
- Shoreline cleanup:
  - Hot washing of rocks at MP16.5 through MP16.75 and at Angel Street Bridge.
  - Removal of upper 2 inches of impacted soil at Location D1.5. Sorbent boom remains to catch any sheen remnants.

**Division E**

Enbridge reported the following:

- Debris removal and boom maintenance at Location E1.
- Shoreline cleanup activities at Location E2 per SCAT document.
- Demobilization from Location E4.5.
- Maintenance of booms and gabion box inserts and clean up of shorelines per SCAT recommendation at Location E0.5.

EPA observed the following:

- Sampling and Submerged Oil Task Force operations in Morrow Lake.
- Sheen observed on Morrow Lake.
- Oiled swans on Morrow Lake.
- Skimmer boats demobilized from Morrow Lake and placed on standby at Location D3.

Further evaluation of areas previously referred to the Submerged Oil Task Force from Location E0.5 to the Michigan Street Bridge. Four of the nine areas were delisted and five were prioritized into one of three categories (high, medium, low) for further attention.

**2.1.2 Branch Operations**

In addition to the East and West Recovery Branches, EPA, USCG and Enbridge Operations have five Branches that conduct activities in all Divisions: DECON, Environmental Compliance and Oversight; Monitoring; Wildlife Environmental/Damage Assessment; and Air Ops.

## Technical Services Group

EPA reported the following: (No new activity reported)

- Survey of overbank areas in Division C:
  - Multiple instances of cleaned areas continue to leach oil.
  - Continuing removal may jeopardize tree roots and create erosion issue along the river bank.
  - Recommend identifying alternatives to soil and vegetation removal. One consideration may be raking peat moss into these areas then cover with sediment curtain and stake in place.

## Environmental Compliance and Oversight Branch

Enbridge reported the following: (No new activities reported)

- Oversight of backfill operations in Locations A5, A6, and Division B.
- Continuing oversight of SCAT inspection teams.
- Continuing waste management characterization, documentation, and coordination.

Transportation and Disposal reported the following:

- Investigation of waste stream generation at locations within Division B and C.
- Observed mixing and loading of soil with debris within Division A soil staging area including:
  - PPE,
  - Booms, and
  - Vegetative material.
- Following Addendum 1.0 for correlating TPH/Oil and Grease values and waste stream mass for the purpose of auditing Enbridge's calculation for recovered oil.
- Ongoing daily QA/QC of data.

## DECON Branch

Enbridge reported the following:

- Continued construction of central DECON area at Location C0.5. Construction anticipated to be complete by September 14, 2010.
- Central staging area at C0.5 is operational.
- DECON area moving to Yard 4, Cell 2. The new DECON area anticipated to be operational within two days.

EPA reported the following:

- Assessment of readiness of the DECON area at Location C0.5.
- Ongoing regular assessment of DECON operations within Frac Tank City, confirming adherence to the Enbridge Decontamination of Equipment and Personnel Work Plan, (Revised September 5, 2010) and documenting activities using the DECON checklist.
- Continued reconnaissance of DECON sites within Divisional locations.

## Monitoring Branch

Primary responsibility for air sampling activities was turned over to Enbridge personnel on 08/28/10.

Enbridge reported the following: (No new activities reported)

- Focused air sampling programs are continuing around the Baker Estates Mobile Home Park, the Day Care, Ceresco Dam, and the source area.
- Ongoing real time monitoring for benzene and VOCs.
- Continuation of air sampling program to collect 24-hour summa mini-can samples, grab samples, and passive dosimeter samples in addition to the real-time air monitoring samples.
- Collection of samples as indicated in Table 1:

**Table 1 - Samples Collected as of 9/12/10 1515**

<b>Sample Type</b>	<b>Number collected</b>
Air Monitoring	Not Reported
Surface Water	14
Vertical Water Column Samples	0
Private Well Samples	12
Sediment Samples	2
Sheen Samples	0
Other	0
Soil Samples	0

EPA reported the following actions or observations:

- Duplicate air monitoring conducted at 13 locations with no benzene or other air contaminants detected.
- One START team continued oversight of CTEH air monitoring crews in Divisions A through E.
- One START oversight team shadowed the Enbridge surface water sampling team and took one split sample in Division C.
- Collection of samples as indicated in Table 2.

**Table 2 - Samples Documented in SCRIBE as of 9/12/10**

<b>Media</b>	<b>Sample Type</b>	<b>Number collected</b>
Air	Summa Canister	0
Air	Tedlar Bags	0
Air	Monitoring Locations	13
Surface Water	Grab	1
Sediment	Grab	0

Two SCAT teams reported the following:

- Conducted SCAT re-evaluations in Divisions E at MP 24.5, MP25, MP26.75, MP 27.25, and MP28.75.

Three Submerged Oil Task Force teams reported the following:

- Met with Enbridge to refine priority submerged oil areas based upon independent assessment of the Kalamazoo River and Morrow Lake.
- Team A:
  - Poling and delineation of priority areas at MP12.5 and MP13.25.
    - Approximately 40 to 45 poling locations.
    - Backwater area around MP 12.5 observed lot of sheen and oil globules with agitation.
    - Some areas have silt depth up to four feet.
    - Backwater area around MP 12.75 has water velocity of approximately 1.1 ft/second.
    - Area on south bank near MP 13.0 is dry. There is no water from possible backwater area.
    - Backwater area around MP 14.75 has water velocity of approx. 0.5 ft/second.
  - Collected 2 Quantitative sample locations
    - Target Depth – 2 feet
    - Predominantly organics and silt over sand.
    - Good recovery, target depth not reached at all locations due to sand/gravel.
    - Submerged oil noted at both locations.
- Team B:
  - Assessed and delineated at MP 26.5 to MP 27.75.
    - Observed eight transects and poled at each 2-3 locations.
  - Observed significant sheen at cove on north bank at MP 26.75.
  - Observed sheen and oil globules on vegetation of small island at MP 26.5.
  - Collected two quantitative cores.
    - Top silt and sand on bottom.
    - 95-100 % recovery.
    - Sheen and submerged oil noted for both samples.
- Team C:
  - Poling around the in-place silt curtain and upstream side of delta area at start and at start of oxbow where river enters Morrow Lake.
  - Completed twenty-two poling locations.
  - Three areas of sheen and surface globules observed. One at western end of Delta and two at influence of oxbow to the river.
  - Continuous sheen flowing from oxbow into delta area at section boomed off from main channel.
  - Impacted swan observed near 35th Street Bridge reported to United States Fish and Wildlife Services.
  - Collected four soil cores.
    - Organic silt with sand below.
    - Significant oil noted.
    - Recovery ~75 - 100%.

- Team D:
  - Performed hydrographic survey of Morrow Lake.
    - Recorded survey control points.
  - Performed sediment core logging oversight and collected one split sediment sample.

### **Environmental Unit:**

#### EPA reported the following:

- Worked with Counter-Measure evaluator on submerged oil and overbank definition in areas near MP 28.
- Interpreted “mud flats” at Location E0.5
- Evaluated and prepared response to Draft Supplemental Modification to the Response Plan for Downstream Impact Area Strategy and Tactics for Permanent Recovery of Submerged Oil and Oil-Contaminated Sediment.

#### The Overbank Group reported the following:

- Three areas referred to SCAT.
- Dewatering, mat placement, and debris staging operations at MP11.25.
- Forty-eight bags filled at MP11.25
- Continuing overbank work on the right descending bank between MP11.5 to MP12.0

### **Wildlife Environmental Damage Assessment Branch**

#### USFWS reported the following:

- Participated in Environmental Advisory Group providing suggestions for updating cleanup recommendations:
  - Input to mechanized removal plans.
  - Input to fertilizer use to stimulate biodegradation.
- Briefed Unified Command on turtle capture and habitats.
- NDRA teams compiling floodplain data into GIS format.
- Monitoring live skunk traps near the ICP.
- Continuing planning and coordination for fish survey to be conducted on September 14.
- Responding to hotline calls.
- Continuing trap preparation at MP15.
- Turtle, Canadian goose, heron, and beaver trapping continue.

As of September 11, 2010 at 0700, the wildlife center reported 269 animals in captivity and 897 released to date.

### **Air Ops Branch**

Since August 23, 2010, both the EPA START Situation Unit FOB and Enbridge have been using the Enbridge funded helicopter for their daily over-flights. The EPA helicopter will be available, as needed, for IC and other federal needs.

#### Enbridge reported observing the following during two over flights:

- Changes in Sheen:
  - No sheen at Locations A5, A6, B2, B3, and B4.7.

- Continuing minor sheen at pond area before I-69.
- Minor contained sheen at Control Point B5.
- Sheen contained by booms at a few areas in Division C.
- No sheen upstream and downstream of the peninsula at Ceresco Dam.
- Continuing sheen within containment at north and south areas upstream of Ceresco Dam. Sheen appears to be originating from activity at the north banks upstream of the dam.
- Sheen at approximately MP12.
- Sheen at Mill Pond and Morrow Lake Delta being contained by boom systems.
- No sheen at the culvert next to Angel Street.
- Sheen upstream of MP 21.50, downstream of Location E2, and at Location E27.75.
- Less sheen on the near shores of the oxbow and no sheen in the main section of the river.
- Light sheen upstream of Location E0.5.
- No sheen on Morrow Lake and shores.
- Operational Observations:
  - Source area shows more vegetation growth.
  - Presence of new vegetation in the seeded areas across Division A.
  - Bank stabilization and test pit activities in Division A.
  - Backfilling operations continue throughout Division A.
  - Two soil cells in Division A were being worked on.
  - Multiple test pits in Division B.
  - Continuing boom DECON at Location B5.
  - Significant activity at Frac Tank City DECON area; however there were fewer Frac Tanks.
  - Creek restoration preparation in Division B.
  - Staging of creek restoration materials to the north of the access site via 16 Mile Road.
  - Decontamination pad with liner at Area B, former soil management unit at Cell 2.
  - Heavy activity in Division C.
  - Continuing booming around islands in Division C.
  - Construction of DECON/Roll-off staging area at Location C0.5.
    - Increase in equipment present.
    - HDPE liner for containment area complete.
    - Installation of sand bedding and aggregate is complete.
  - Continuing boom activity at the peninsula above Ceresco Dam and at the dam itself.
  - Silt curtain boom observed near Ceresco Dam.
  - Inactivity at experimental submerged oil treatment cells upstream of Ceresco Dam.
  - Control point in Division C established across the river, south of the peninsula.
  - Stone channel with concrete canal downstream of Mill Pond.
  - Maintenance of silt curtain boom downstream of Control Point D-1.
  - Few boat activities at the shore at Area D.
  - Boat and worker activities were observed at Control Point E0.5.
  - Oil absorbent pads upstream of Control Point E1.
  - Six boats on Morrow Lake.



EPA observed the following during one over flight:

The over flight was conducted prior to any rain event.

- Changes in sheen:
  - No evidence of oil or sheen was visible from the air in Locations A1 through A5.
  - No sheen noted along the shorelines of Talmadge Creek through A6.
  - Visible sheen was observed in the pond at Location B3 just east of Interstate 69. Booming strategies were modified from yesterday with a skimmer installed to remove oil sheen.
  - Visible spotty sheen was noted on the pond at Location B4.5 of Talmadge Creek.
  - Visible sheen observed at the confluence of Talmadge Creek with Kalamazoo River (B5). Visible evidence of sheen was noted within the webbed booming configuration.
  - Sheen was noted coming from the left descending bank at MP3.5 where workers were noted. Sheen was extending beyond the boom into the river.
  - Sheen was noted up and downstream of the peninsula and along the south and northern shorelines upstream from Ceresco Dam. The three submerged oil test cells were still in place along the southern shoreline above the dam. Sheen was noted upstream of the test cells.
  - Sheen extended from the bank below MP13.25 in to the river no boom was observed. Sheen appeared to be flowing/seeping from a wetland area.
  - Some sheen near the island at MP14.5 and in the Mill Pond near Location C6. Sheen was contained with the booms at the Mill Pond location.
  - Sheen in the river at between MP20.75 and MP21 in Division D.
  - Significant sheen in the oxbow area at MP21.25 (D4.25) just west of Custer Road. Booms located within oxbow appeared to be saturated and requiring replacement.
  - Sheen observed right descending bank at Location E3.
  - Sheen was observed along right descending bank at MP24 and left descending bank at MP27 and MP30.75.
  - Significant sheen was observed within all of Morrow Lake delta. No oil or sheen was observed on Morrow Lake.
- Operational Observations:
  - Standing water was observed on the ground cover throughout Division A. Sprouts of new vegetation could be seen across Location A1 and A4. Restoration work has begun in Location A5, new peat soils and erosion preventative matting observed along the banks of Talmadge creek.
  - Observed excavators graders, and trucks between Locations A5 and A6.
  - Several confirmation test pits were observed along the shorelines of Talmadge Creek in Location A5 extending in A6.
  - No workers were noted on Islands A, B, C, D, E, and F in Division C.
  - The new decontamination pad located near MP4.5 appears to be completed.
  - Shoreline cleanup was observed along the north shore of the Kalamazoo River upstream of the peninsula and Ceresco Dam.
  - Observed the island at MP8.5 that has been cordoned off due to H&S concerns. No changes or activity noted.
  - Observed heavy cleanup between MP10 and MP12.25 in Division C.

### 2.1.3 Progress Metrics

All progress metrics in Section 2.1.2 are as reported by Enbridge unless otherwise indicated.

#### Boom Report

**Table 3 - Boom Report (9/12/10 1900)**

Number of Locations	25
Boom Deployed (feet)	113,225

#### Soil and Debris Waste Tracking

**Table 4 - Soil and Debris Waste Tracking (9/11/10)**

Waste Stream*	Quantity Shipped	Cumulative Quantity Shipped
Haz Soil (yd <sup>3</sup> ) <sup>a</sup>	0	15,344
Non Haz Soil (yd <sup>3</sup> ) <sup>b</sup>	945	20,454
Haz Debris (yd <sup>3</sup> ) <sup>c</sup>	0	12,075
Non Haz Debris (ton) <sup>c</sup>	59.43	976

\* Information for water (other than daily quantity shipped) is reported in other tables below. Quantity awaiting disposal is estimated.

- Haz (Benzene)-impacted soil is being sent to EnviroSafe (Oregon, OH).
- Non Haz soil is being sent to Westside Recycling (Three Rivers, MI) and EQ/Republic (Marshall, MI).
- Roll-off boxes containing waste sorbents, boom, pads, plastic, PPE, and oiled vegetation and biomass are being sent to EQ facility (Michigan Disposal) in Wayne, MI and Republic (Marshall, MI).

## Oil/Water Recovery Tracking

Note: Some of the values in the tables below have been audited and reconciled by Enbridge and may not correlate with previously reported values.

**Table 5 –Oil water collected by location (9/11/10, 0700)**

Location	Cumulative Total Collected (gallons)
Division A	4,951,818
Division B	3,430,575
Division C	826, 250
Division D	117,825
Division E	50,030
DECON	111,640
Other Locations*	172,401
<b>TOTAL</b>	<b>9,660,539</b>

\* Includes Frac, DECON, and Wildlife Center.

**Table 6 - Oil water Separation (9/11/10, 0000)**

Oil-Water - Enbridge Facility in Griffith, IN Facility (gallons)	
Oil	699,823
Other Material	1,382,983
<b>TOTAL</b>	<b>2,082,806</b>

**Table 7 – Liquid Shipped Off-site (9/11/10, 0000)**

Oil/Water leaving Site	Destination	Daily Quantity Shipped (Gallons)	Cumulative Quantity Shipped (Gallons)
Haz Water	Dynecol, Detroit, MI	15,096	2,107,501
Oil/Water	Enbridge Facility, Griffith, IN	0	2,082,806
Treated Non Haz Water	Liquid Industrial Waste Services, Holland, MI	0	370,200
Treated Non Haz Water	Plummer, Kentwood, MI	59,000	1,684,800
Haz Water	Safety Kleen <sup>a</sup>	0	715
Treated Non Haz Water *	Dynecol, Detroit, MI	0	134,200
Treated Non Haz Water *	Battle Creek POTW	0	1,968,700
<b>Totals</b>		<b>74,096</b>	<b>8,348,922</b>

\* Treated Non Haz Water no longer sent to this location.

a. New Age lab water and methanol mix generated by mobile laboratory.

† Volumes have decreased due to an EPA audit conducted 09/03 through 09/06. Results concurred with Enbridge

**Table 8 - Oil/Water Volume Summary (Gallons)**

Oil/Water Collected <sup>a</sup>	9,660,539
Oil/Water Shipped Off-site <sup>b</sup>	8,348,922
<b>OIL/WATER REMAINING ON-SITE</b>	<b>1,311,617</b>

a. As of 9/12/10, 0700

b. As of 9/11/10

## 2.2 Planning Section

### Data Management Unit

The Data Management Unit reported the following:

- No report received.

### Situation Unit Field Observers

Situation Unit FOB observed the following:

- At Division A:
  - Continuing backfilling operations.
  - Silt fence maintenance along Talmadge Creek.
  - Sheen in standing water in Location A3 and A4.
  - Rainbow sheen in standing water in A2 along dividing berm between Location A2 and A3. The sheen was documented on the A1-A6 hot spots map and will be given to the RP.
- At Division B:
  - Silt fence maintenance along Talmadge Creek.
  - No obvious adverse effects from the rainfall.
- At Division C near Ceresco Dam:
  - Only skimming operation at spillway. No other activities witnessed.
  - No testing being conducted in the silt containment area during the observed period.
- At Division C MP 11.25:
  - Ongoing excavation operations.
  - Air boat mounted portable vacuum system operations.
  - Ongoing cleanup operations.
- At Location E3 to E4.5:
  - Skimming boats demobilizing from the site.
  - No apparent boat inspection log at launch point at Location E4.5.
  - Lake bottom sensing radar operations on trolling boat.
  - Water quality buoy-mounted sensors.
  - Ongoing cleanup and debris collection operations.
  - Varying levels of sheen from no sheen to
    - Slight sheen at boat launch at Location E4.
    - No sheen with wave action at Location E4.
    - No sheen between MP37.5 and MP40.0.

- No sheen at MP37.15, MP37.0, and bridge area of Location E3.
- Patchy sheen to oil sheen with prevalent oil flecks in mudflat area of Location E4.5.
- Patches of light sheen at Location E4.5.

### **2.2.1 Anticipated Activities for Next Reporting Period**

In the next operational period, Operations anticipates final clearance of Division A and bank stabilization in Division B as well as performing the same or similar activities as in the previous operational period, with a focus on activities in Division C.

### **2.2.2 Issues**

Calhoun County public health reported the following:

- No report received.

### **2.3 Logistics Section**

Logistics reported the following:

- MEDL started utilizing Trailer 14, Medical Unit Trailer.
- Posted updated ICP trailer lay-out maps.
- One skunk and one opossum captured in live skunk traps.

### **2.4 Safety Reports**

The following health and safety items were noted:

- Damp soil conditions at East Branch soil handling area eliminated fugitive dust and ash issues.
- Strong odors noted above Ceresco Dam.
- Boat traffic in area above Ceresco Dam should be limited to workers only.

Enbridge Safety Officer reported the following Health and Safety issues:

- Four minor first aid incidents reported at Locations C0.0, C3.2, Frac Tank City, and an unknown location. Workers were treated and returned to duties.

EPA Safety Officer reported the following Health and Safety issues:

- EPA had no safety incidents to report.
- Met with LifeCare Management and reviewed Medical Unit Leader duties.
- Accompanied the Enbridge Sampling Team and two START teams to Location C 8.25. START performed air on the island where workers become ill during cleanup operations. Air monitoring showed no detects on the PID and results of up to 2000 ppm on the FID. Enbridge collected 9 Tedlar bags, four 24-hour Summa canisters and composite soil samples at the source. The samples were submitted for analysis and results are pending.

### **2.5 Liaison Officer**

The Liaison Officer reported the following actions:

- No report received.

## 2.6 Finance Section

The current NPFC issued ceiling was \$18 million. Approximately 86.6% of the ceiling had been spent through September 11, 2010, with a burn rate of \$188,256 per day. These cost summaries reflect only EPA-funded expenditures for the incident.

**Table 9 - FPN E10527 - Enbridge Pipeline Oil Spill (09/11/10)**

<b>ERRS Contractors</b>		<b>Est. Expended</b>	<b>Est Burn Rate (Lastest Daily)</b>
EQM (EPS50802)	T057	\$1,250,017	\$0
	T060	223,634	1,600
LATA (EPS50804)		1,451,396	0
ER LLC (EPS50905)		723,669	0
<b>ERRS Contractors</b>		<b>\$3,648,716</b>	<b>\$1,600</b>
TNT Bisso		840,000	27,000
<b>START Contractor</b>			
WESTON (EPS50604)		5,118,361	66,073
<b>Response Contractor Sub-Totals</b>		<b>\$9,607,077</b>	<b>\$94,673</b>
<b>EPA Funded Costs:</b>			
Total EPA Costs		2,916,203	50,950
Pollution Removal Funding			
<b>Total Other Agencies</b>		<b>915,120</b>	<b>16,667</b>
Sub-Totals		\$13,438,400	\$162,290
Indirect Cost (14.15%)		2,150,144	25,966
<b>Total Est. Oil Spill Cost</b>		<b>\$15,588,544</b>	<b>\$188,256</b>

## 2.7 Information Officer

The Public Information Office reported the following activities:

- Distributed 1,400 copies of fact sheet to community.
- Initiated new "How clean is clean" fact sheet.

**Media Inquiry Line (877-440-7157)<sup>a</sup>**

Calls received during last reporting period: 0

<sup>a</sup> No update provided for the Media Inquiry Line



Enbridge reported the following call volume and community center visits:

**Oil Spill Public Information Hotline (800-306-6837)<sup>b</sup>**

Calls received during last reporting period: 0

**Community Center Visits<sup>c</sup>: 6**

Visits by location during last reporting period:

Battle Creek	4
Marshall	2

Enbridge reported that it received 0 inquiries from its [www.response.enbridgeUS.com](http://www.response.enbridgeUS.com) website.

## 2.8 Response Actions to Date

Response Actions to date may be found in Situation Reports 1 through 48.

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<sup>b</sup> No update provided for the Oil Spill Public Information Hotline

<sup>c</sup> No update provided for the Community Center visits

### **3 Participating Entities**

#### **3.1 Unified Command**

U.S. EPA  
MDNRE  
Michigan State Police Emergency  
Management Division  
City of Battle Creek  
Cooperating and Assisting Agencies

Calhoun County Public Health  
Department  
Calhoun County Emergency Management  
Kalamazoo County Sheriff  
Enbridge (Responsible Party)

#### **3.2 Cooperating and Assisting Agencies**

ATSDR  
Calhoun Conservation District  
Calhoun County Commission  
City of Kalamazoo  
City of Marshall  
Emmett Township  
Fredonia Township  
Kalamazoo County Office of Emergency  
Management  
Marshall Area Firefighters Ambulance  
Authority

Marshall Police Department  
Marshall Township Government and Fire  
Department  
Michigan Department of Agriculture  
MDCH  
NOAA  
Oakland County HAZMAT/RRTN  
PHMSA  
USCG  
U.S. Department of the Interior/USGS  
USFW

#### **3.3 Congressional Presence**

State Representative Jase Bolger  
State Representative Kate Segal  
State Representative Ken Kurtz  
State Representative Phil Browne  
State Representative Phyllis Browne  
State Representative Bob Geuck  
State Representative Tanya Schuitmaker  
State Senator Mike Nofs  
U.S. Congressman Mark Schauer  
U.S. Senator Carl Levin  
U.S. Senator Debbie Stabenow

#### 4 Personnel On Site

**Table 10. Personnel On Site 9/12/10**

Agency/Entity	Numbers Reported
EPA	42
START	43
Calhoun County Public Health Dept. (CCPH)	2 <sup>a</sup>
Calhoun County (CC) Sheriff	6
City of Battle Creek	3
Kalamazoo Sheriff	2
MDNRE	8 <sup>a</sup>
Michigan State Police (MSP)	1
NOAA - National Weather Service	2
NOAA- NRDA	2 <sup>a</sup>
USCG	3
USFWS	2
USFWS Contractors	0
Enbridge ICP*	84
Enbridge ICP Contractor*	323
Enbridge Field	14
Enbridge Contractors Field	1235
<b>Total</b>	<b>1772</b>

<sup>a</sup> No update provided.

\*Site personnel not previously included in count. Consist of Enbridge staff and contractors in ICP.

## 5 Definition of Terms

ATSDR	Agency for Toxic Substances and Disease Registry
CCPH	Calhoun County Public Health
CIC	Community Involvement Coordinator
CTEH	Center for Toxicology and Environmental Health
DMU	Data Management Unit
EMT	Emergency Medical Technician
ENVL	Environmental Unit Leader
EPA	Environmental Protection Agency
EQM	Environmental Quality Management
ER	Environmental Restoration
ERRS	Emergency and Rapid Response Services
ERT	Emergency Response Team
EU	Environmental Unit
FOB	Field Observer
GLNPO	Great Lakes National Program Office
H <sub>2</sub> S	Hydrogen Sulfide
HASP	Health and Safety Plan
IAP	Incident Action Plan
IC	Incident Commander
ICP	Incident Command Post
IN	Indiana
JIC	Joint Information Center
LEL	Lower Explosive Limit
LNO	Liaison Officer
LSC	Logistics Section Chief
MDA	Michigan Department of Agriculture
MDCH	Michigan Department of Community Health
MDMB	Michigan Department of Management and Budget
MDNRE	Michigan Department of Natural Resources and Environment
MI	Michigan
MIOSHA	Michigan Occupational Safety and Health Administration
MP	Mile Post
NOAA	National Oceanic and Atmospheric Administration
NPFC	National Pollution Fund Center
NRC	National Response Center
NRG	National Response Group
OSHA	Occupational Safety and Health Administration
PHMSA	Pipeline and Hazardous Materials Administration
PIO	Public Information Officer
POTW	Publicly Owned Treatment Works
Ppbv	Parts Per Billion Volume
PPE	Personal Protective Equipment
ppm	Parts Per Million
PVC	Polyvinyl Chloride
QA/QC	Quality Assurance/Quality Control
RP	Responsible Party
SCAT	Shoreline Contamination Assessment Team
START	Superfund Technical Assessment and Response Team
T&D	Transfer and Disposal
UC	Unified Command
USCG	United States Coast Guard

USDA  
USDOT  
USFWS  
U.S. EPA  
VOCs  
yd<sup>3</sup>

United States Department of Agriculture  
United States Department of Transportation  
United States Fish and Wildlife Service  
United States Environmental Protection Agency  
Volatile Organic Compounds  
Cubic Yards

## **6 Source of Additional Information**

### **6.1 Additional Information**

For additional information please refer to <http://www.epa.gov/enbridgespill.html>. For sampling analysis data, please see <http://response.enbridge.com/response/main.aspx?id=13168>.

### **6.2 Reporting Schedule**

SITREPs have been created daily and will continue until the UC establishes a different reporting schedule, in conjunction with the planning cycle.

## **7 Situational Reference Materials**

See attached Map, entitled “Kalamazoo River/Enbridge Spill Overview Map,” for more information.

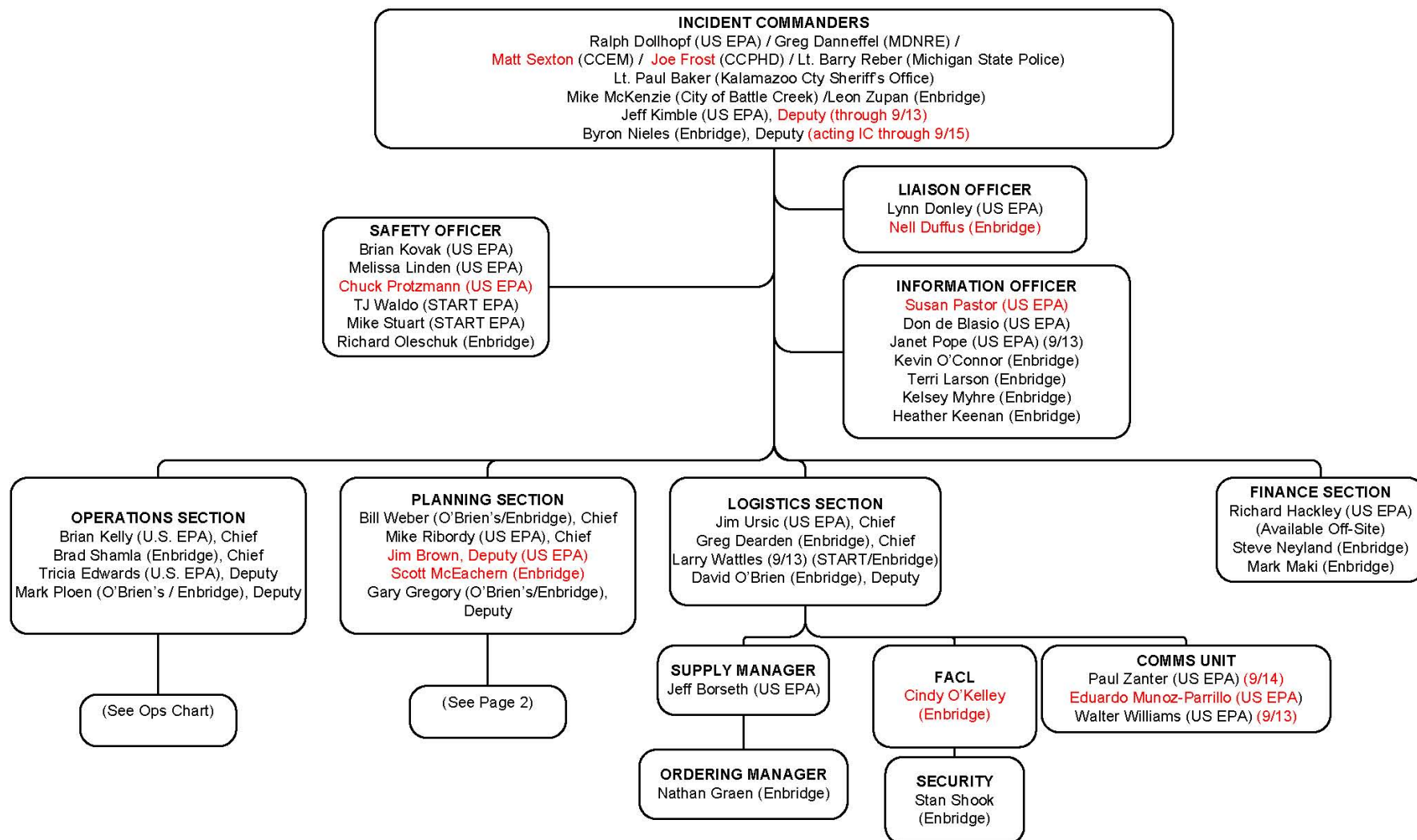
See attached Unified Command Organizational Charts (ICS 207) entitled, “Enbridge Pipelines Response Unified Command”, “Planning Section”, “Operations”, and “Division C.”





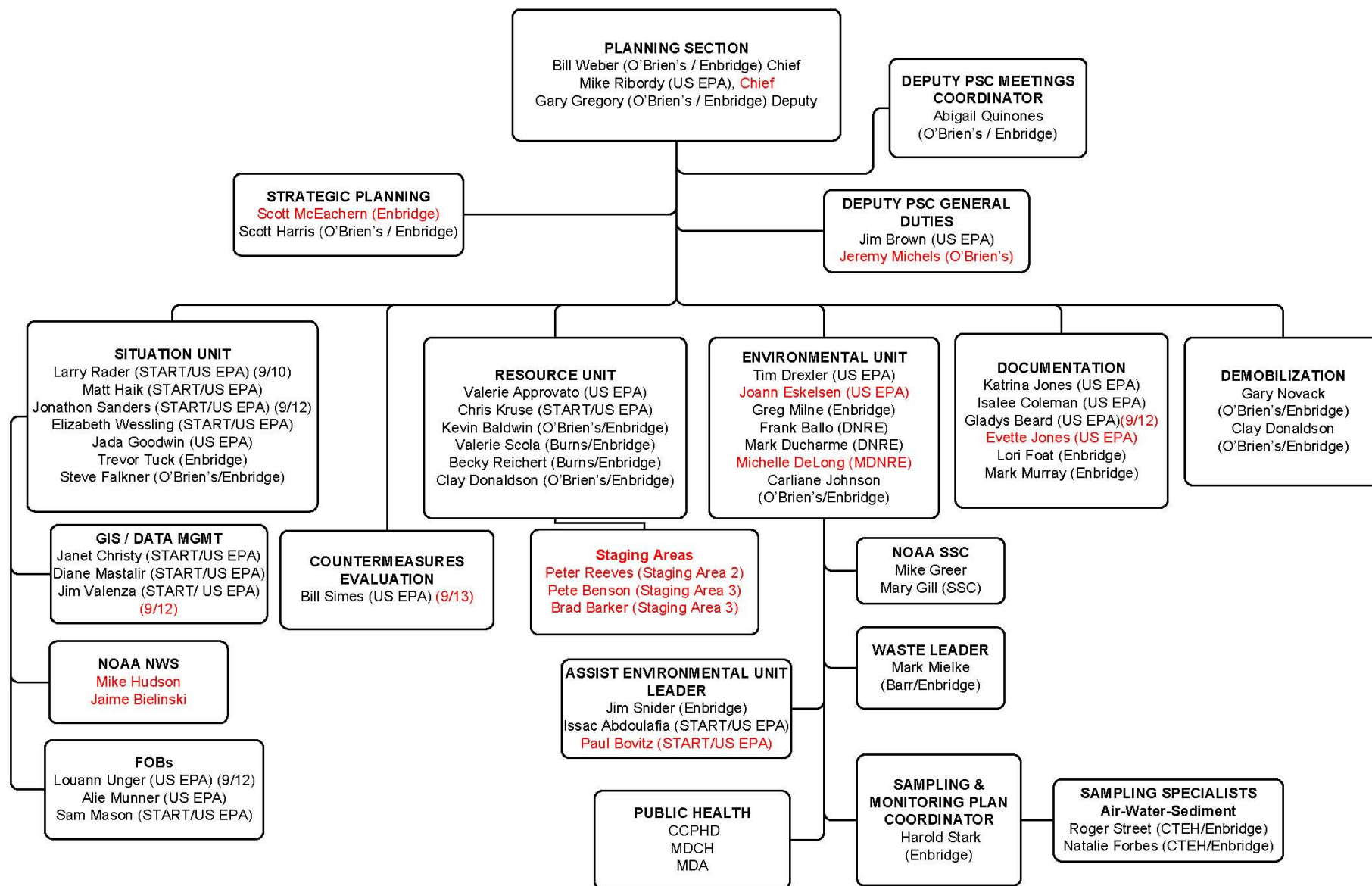


## Enbridge Pipelines Response Unified Command



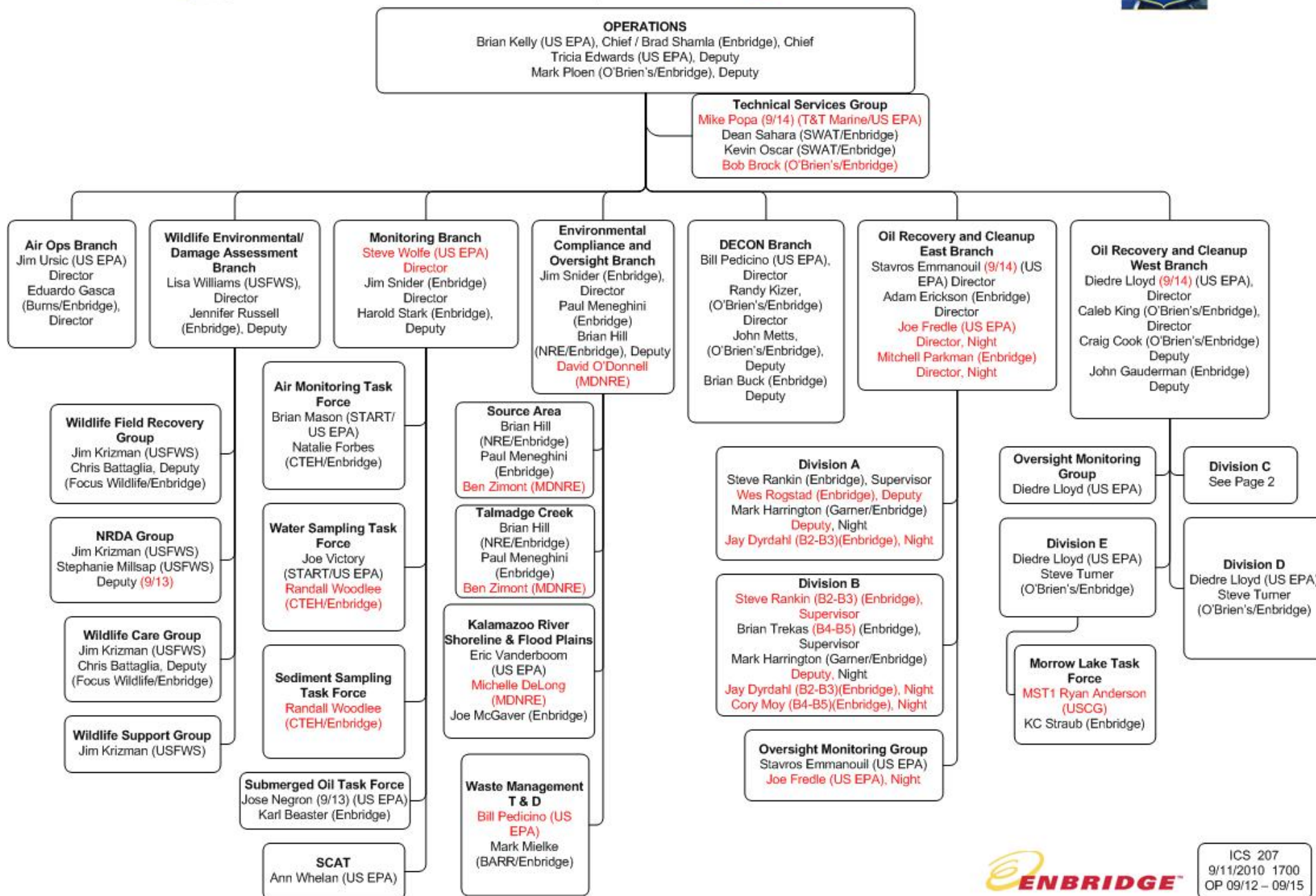
ICS 207  
 9/09/2010 1700  
 OP 9/12 - 9/15







## Operations



ICS 207  
 9/11/2010 1700  
 OP 09/12 - 09/15

