

Alberta Oil Sands Training Seminar Overview

Wyman Briggs
Sector Northern New England
USCG

Participants and Presenters

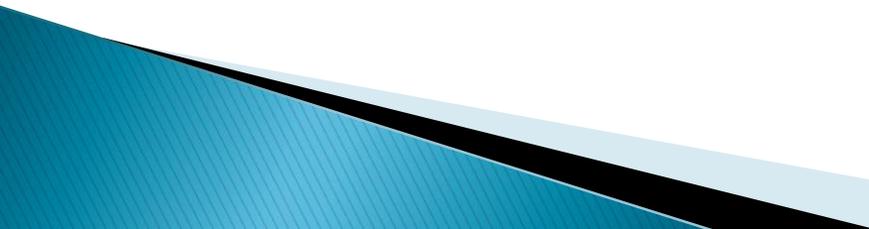
Participants

- ▶ Federal Agencies
 - ▶ EPA, NOAA, USCG, EC
- ▶ State Agencies
 - ▶ ME DEP, NH DES, WA DOE
 - ▶ ME DOT, MEMA, ME IFW
- ▶ Industry
 - ▶ Portland Pipeline, Irving
 - ▶ Marine Spill Resp Corp, NRC
 - ▶ Moran Environmental, ECRC
 - ▶ PanAm Railways, Montreal/
Maine & Atlantic Railway
 - ▶ Friends of Casco Bay

Presenters

- ▶ UNH
- ▶ Canmet Energy
- ▶ WA DOE
- ▶ Canadian Pacific
- ▶ Queen's University
- ▶ Environment Canada
- ▶ Kalium Research

Seminar Goals

1. Oil sands mining and refining process
 2. Specifications and chemical composition of Oil Sands Products
 3. Potential behavior and fate of oil sands when spilled in marine environment
 4. Case studies of oil sands product spills
- ▶ **Driver**: Possible OSP transport through Maine for refining at Irving facility in St John, NB
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Mining and refining

- ▶ Canada #3 oil producer on world stage
- ▶ Largest exporter to US
- ▶ Now 1 mil bbls per day
3 mil bbls in 20 years
- ▶ 2 tons of oil sands =
1 bbl of bitumen
- ▶ Dilute bitumen with
condensate=dilbit or
synthetic crude=synbit



Specs & composition of OSP

- ▶ Bitumen=extra heavy crude oil after biodegradation
- ▶ Diluted by 30% to meet transmission viscosity
- ▶ Sand settles out prior to transport pipelines
- ▶ Bitumen=same density as water. When lose light ends might sink
- ▶ 10-12 different blends



Behavior and fate of spilled OSP

Modified by natural physical, chemical and biological processes including:

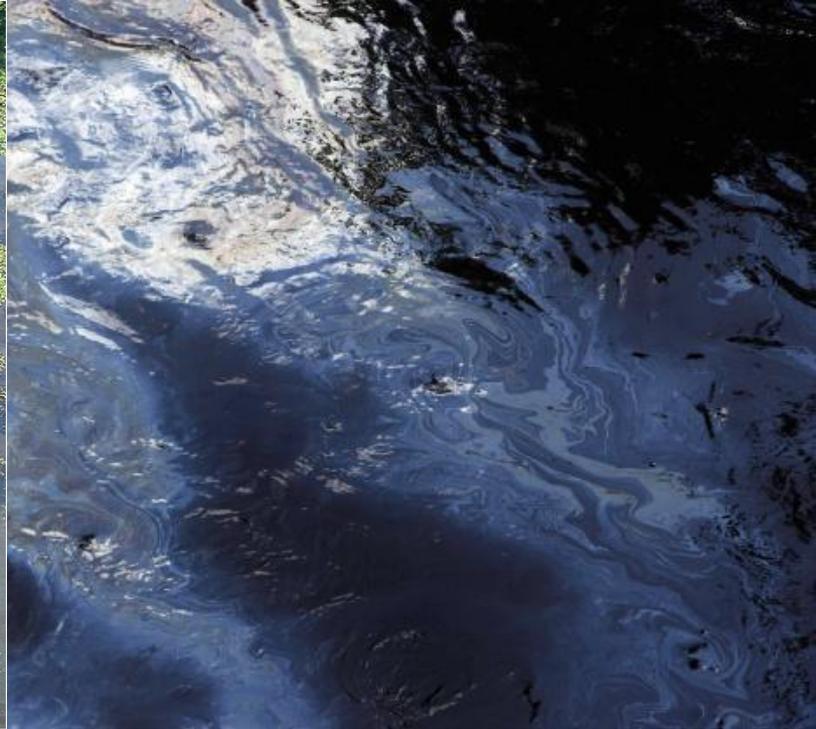
- ▶ Evaporation
- ▶ Dissolution
- ▶ Water uptake
- ▶ Sediment interaction
- ▶ Temperature
- ▶ Biodegradation

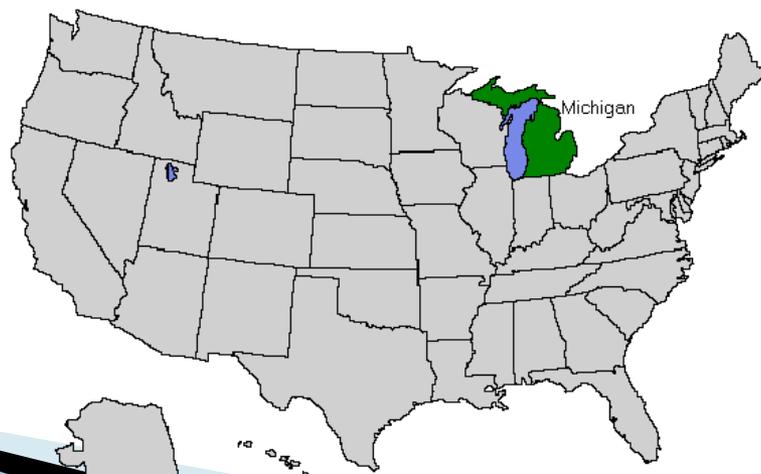
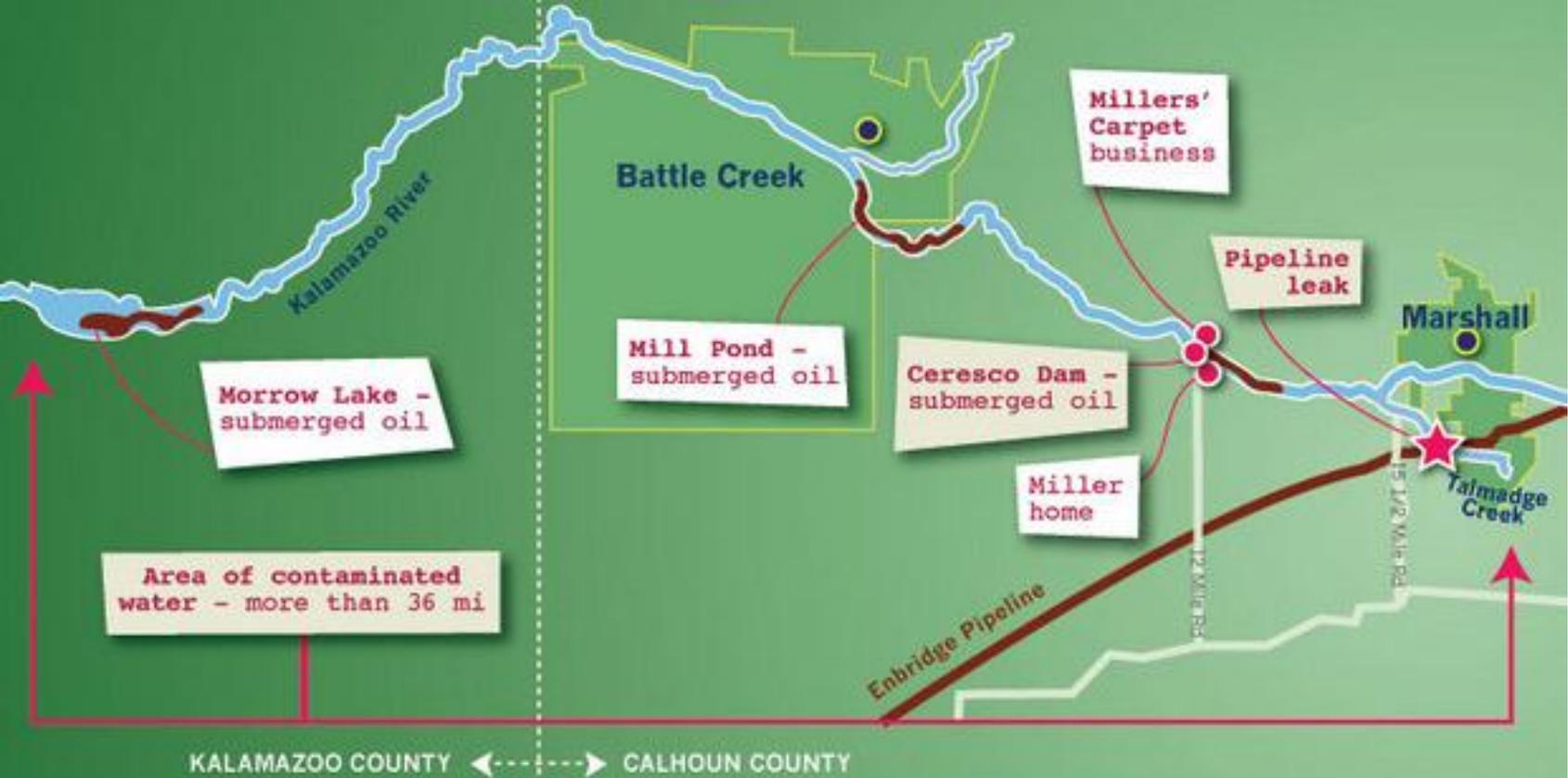


Enbridge Pipeline Spill

- ▶ 840,000+ gallon crude oil spill near Marshall, Michigan.
- ▶ July 2010 – cleanup continuing
- ▶ Cost \$800 million
- ▶ Affected 50 kms of waterways and wetlands
- ▶ 300 people reported symptoms from exposure











Talmadge Creek





Environmental Impacts

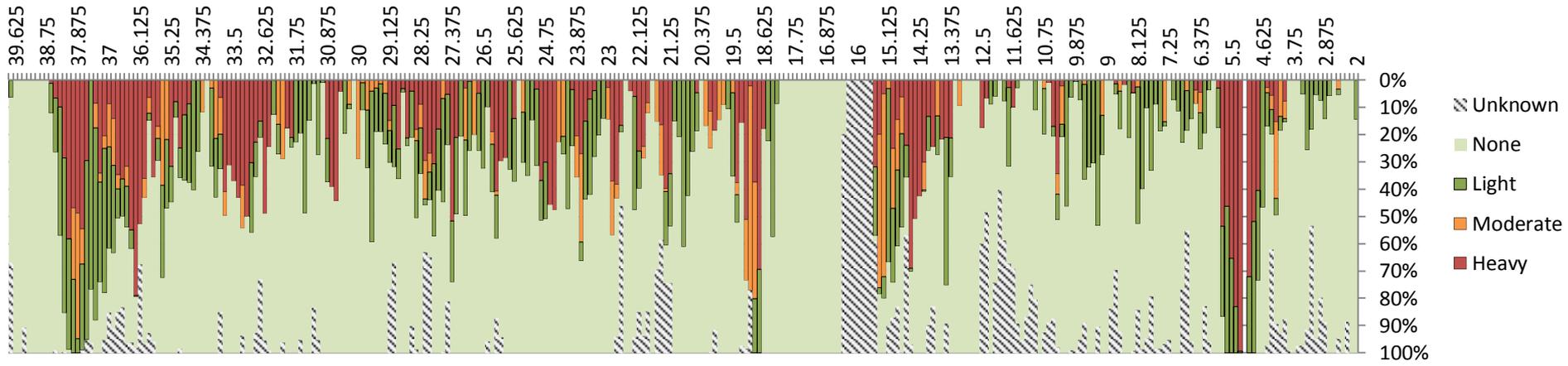


Enbridge Pipeline





Summary of Work 2011 Submerged Oil - Distribution by Area



Submerged Oil Concentrations