

ATTACHMENT 55 – *NOAA OIL SPILL TRAJECTORY ANALYSIS, AUGUST 4, 2010*

Date: Aug 4, 2010

To: NOAA SSC Liz Jones

FROM: NOAA/Hazardous Materials Response Division
Modeling and Simulation Studies, Seattle, WA 98115

SUBJECT: Pipeline spill at Marshall, Mi.

FOR ADDITIONAL INFORMATION, PLEASE CONTACT Glen Watabayashi,
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The reported scenario:

On Sunday, July 25 and Monday, July 26 about a million gallons of oil was lost from a pipeline in Marshall, Mi. The oil, Cold Lake blend, was spilled into Talmadge Creek which feeds into the Kalamazoo River. The oil is a blend of bitumen(API 11) and condensate(API 69). The blend has an API of about 21 and is made up of 70% bitumen and 30% condensate.

An overflight conducted on Tuesday, Aug 3rd indicated that there was sheens with color moving downriver with the current between Morrow Lake and the spill site but it did not appear that the sheen extended to Morrow Dam.

If any of this initial information is incorrect, please let us know ASAP as it would affect any trajectory implications.

1) River Stage

The river has dropped over 2 feet since the spill began and is expected to remain at about it's current level for the next week.

2) Trajectory Analysis

We do not expect significant amounts of oil to move down river at this point in the spill. Most of the remaining free floating oil will beach along the banks before reaching Morrow Lake. If any floating oil gets to Morrow Lake, we would expect it to be in the form of scattered sheens. Currents in the Lake are weak and we would expect winds of 10 knots or more to dominate the movement of any oil in the Lake.

Between Morrow Lake and Lake Michigan there are several dams which would disperse any sheens that may persist it past Morrow Dam. At this time we do not expect any sheens to reach Lake Michigan.

Note: As the light condensate evaporates and dissolves into the water, the remaining bitumen may actually sink in the freshwater. With the reported API of 11, should the bitumen incorporates any sediment in the river, we would expect it to sink and either collect on the bottom in pockets and holes or move along downriver. We suspect that if there was any oil moving along the bottom, the farthest collection point would be Morrow Lake.

3) Oil Fate

At this point into the spill we would expect most of the condensate to have evaporated or dissolved into the water column. The remaining blend would be either caught up along the banks due to the drop in river level or caught up in Talmage Creek near the source.