Enbridge Energy, Limited Partnership
(Enbridge) Marshall Pipeline Release

Source Release Area Remediation Plan
Enbridge, Marshall Michigan

July 29, 2010

Prepared by URS Corporation

ENBRIDGE MARSHALL RESPONSE TO PIPELINE RELEASE REMEDIATION PLAN FOR UPSTREAM IMPACTED AREAS

July 29, 2010

The Enbridge pipeline in the vicinity of Marshall, Michigan experienced a release on July 26, 2010. Two main areas have been impacted by this release and include the upstream release area and the downstream release area. The upstream release area is a lowland area with marshy terrain. The downstream areas include impacts to the banks of Talmadge Creek and Kalamazoo River area. This work plan titled "Remediation Plan for Upstream Impacted Areas" will address lowland areas and a separate and companion document titled as "Remediation Plan for Downstream Impacted Areas" that will address the bank and in creek/river areas.

Source Release Area Remediation Plan Overview

The Source Release Area Remediation Plan (Source Remediation Plan) is being submitted in response to a release of crude oil from a pipeline operated by Enbridge near Marshall, Michigan. The source release area (Source Area) is located south of Enbridge pipeline 6B between the pipeline release point and Talmadge Creek. The Source Area consists of wooded lowland with marshy terrain.

The objectives of the Source Remediation Plan are as follows:

- Prevent additional product from entering Talmadge Creek;
- Define the horizontal and vertical extent of impact from the release in the Source Area;
- Evaluate exposure routes and potential receptors;
- Remediate source area; and

- Collect and analyze verification of remediation samples.

Source Area Product Containment

To prevent additional crude oil from entering Talmadge Creek, a low berm (i.e. <5 feet) and temporary impoundment will be constructed and maintained across the marshy area at the point of product entry into Talmadge Creek. The berm will be equipped with underflow culverts to allow surface water to continue to flow into Talmadge Creek. Product will be collected and removed from the ponded surface water behind the berm.

Definition of the horizontal and vertical extent of product impact

The horizontal and vertical extent of crude oil impact will be determined to direct remediation efforts. Methods used to determine the extent of product impact may include the following;

- Visual identification;
- Installation of monitoring wells;
- Analytical data;
- Geophysical surveys;
- Test pits; and
- Hand auger inspections.

Extensive geographical information systems (GIS) mapping of the watershed is available at www.kalamazooriver.net. The location of data points used to define the horizontal and vertical extent of product impact will be collected using a sub meter geographical positioning system (GPS) to be consistent with existing GIS data for the area. The location and corresponding data will be entered into a GIS system. Maps of the known extent of product impact within the Source Area will be regularly updated from the GIS data to efficiently manage the remediation effort.

Receptor Survey

A receptor survey has been implemented and will continue to be modified to effectively identify potential migration pathways and potential receptors for product within the Source Area. If the survey determines that a potential receptor is at risk a site specific monitoring program will be implemented. Monitoring may include sampling of potable wells, groundwater, surface water and air.

Source Area Product Remediation

Product identified within the Source Area will be remediated by excavation and disposal and/or other acceptable means including:

- Installation of product recovery trenches; and
- Vacuuming and skimming.

If the above methods prove to be ineffective, Enbridge will examine other product recovery or control options. Any changes will be communicated to and coordinated with the EPA prior to proceeding. Remediation waste will be transported and disposed of at a USEPA approved disposal facility as outlined in the Waste Treatment, Transportation and Disposal Plan.

Confirmation Sampling

Soil and/or ground water samples will be collected from the excavation to verify that remediation of the Source Area has been completed. The verification samples will be collected following the Michigan Department of Natural Resources and Environment Operational Memoranda *Sampling Strategies and Statistics Training Materials for Part 201 Cleanup Criteria*, dated 2002. This confirmatory sampling plan may be modified as appropriate, based on the excavation observations. All changes will be communicated to and coordinated with the EPA.