MONTHLY UPDATE REPORT - PRIMROSE SOUTH
09-21-067-04 W4M

FEBRUARY 17 TO MARCH 23, 2015

1 Introduction

The Canadian Natural Resources Limited Primrose South in situ oil sands project is located in the Cold Lake Air Weapons Range approximately 65 km north-northeast of Bonnyville, Alberta. Canadian Natural operations staff discovered a bitumen emulsion flow to surface (FTS) area at 09-21-067-04 W4M on June 24, 2013. The bitumen emulsion FTS area is beneath an unnamed water body within the Canadian Natural Primrose South production area.

On September 24, 2013, Alberta Environment and Sustainable Resource Development (ESRD) issued an Environmental Protection Order (EPO No. EPO-2013-33/NR), requesting the preparation of a Comprehensive Remedial Plan (CRP), as well as, the preparation of a monthly progress report. This report addresses the requirement of the progress report, summarizes the progress towards the realization of the CRP, and includes data collected and reported between February 17 and March23, 2015.

2 Summary of Activities to Date

2.1 Individual Plan Submissions

As required by the EPO, the CRP includes the development, submission, and implementation of several specific plans. As of March 23, 2015, the status of these plans have not changed.

2.2 Water Management for Dewatering and Refilling

Activities related to dewatering and refilling were completed on June 22, 2014. There is no new information to report.

3 Water Body Monitoring

In accordance with the Water Body Restoration Plan, an extensive water quality and water quantity monitoring program was implemented on March 19, 2014. This program complements the ongoing water quality and quantity monitoring implemented in June 2013.

Details of the monitoring program are provided in the following subsections.

3.1 Water Quantity Monitoring

3.1.1 Basins 1, 3, and 4, Borrow Pit, and Downstream Fen

No new staff gauge readings were taken during this reporting period due to winter conditions.

3.1.2 Within Containment Structure

Pumping of water from within the containment structure was discontinued on December 18, 2014. Water within the containment structure has been allowed to fill up to the same level as water in Basin 1 of the water body.

3.2 Water Quality Monitoring

3.2.1 Basins 1, 3, and 4 and Downstream Fen

The next scheduled sampling event is May 2015, after spring freshet.

3.2.2 Containment Area

Water sampling within the containment area was discontinued once pumping stopped on December 18, 2014.

3.3 Aquatic Surveillance

Daily monitoring for bitumen emulsion and sheen within the water body was discontinued on November 8, 2014, due to freezing conditions. During the ice flooding study, which ended March 6, no bitumen emulsion pellets or sheen were observed in the flood water pumped from the water body.

3.4 Erosion and Sedimentation Prevention

No erosion or sediment prevention monitoring activities were completed during this reporting period.

3.5 Bitumen Emulsion Containment

Construction of the fissure containment structure (FCS) is complete and regular monitoring of the bitumen emulsion recovery pipes is ongoing. No bitumen emulsion was recovered during the reporting period. No bitumen emulsion was observed in the recovery sumps of the water collection trench that is located at the base of the access pad or in the shallow monitoring wells screened in the clay soils beneath the access pad during the reporting period.

3.6 Wildlife Management

No injured, distressed, or deceased wildlife were observed within or around the water body during this reporting period.

3.7 Waste Management

The recovery of fluids from the FCSs began on December 19, 2014. There was no fluid recovered from the FCSs during this reporting period.

4 Conclusions

The work conducted at the 9-21 FTS site from February 17 to March 23, 2015, included:

- completing monthly monitoring of the site
- the ice flooding study, completed March 6