

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

JANUARY 20 TO FEBRUARY 16, 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 and summarizes the progress towards the realization of the CRP and includes data collected and reported between January 20 and February 16, 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 February 16, 2015, the status of these plans has 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 in December 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. No bitumen emulsion was observed in the water collection trench recovery sumps, or in the newly installed shallow monitoring wells surrounding the fissures, during the reporting period. During the ice flooding study currently underway, no bitumen emulsion pellets or sheen have been observed in the flood water pumped from the waterbody.

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 FCS is complete and regular monitoring of the bitumen emulsion recovery pipes is ongoing. No bitumen emulsion was recovered 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 January 20 to February 16, 2015, included:

- completing monthly monitoring of the site
- drilling and installing shallow (<10 m deep) monitoring wells from the surface of the access pad as part of a supplemental Phase II environmental site assessment
- conducting groundwater monitoring of the newly installed shallow monitoring wells