

## Oil Sands Monitoring (OSM)

### 2016-2017 PROJECT PLAN SUMMARY

<b>Project Name:</b>	<b>A1-2-1 Ambient Air Passive Monitoring: Athabasca Oil Sands</b>
<b>Type of Project:</b>	Long Term Monitoring
<b>Delivery Agent:</b>	Wood Buffalo Environmental Association (WBEA)
<b>Project Contact:</b>	Bob Myrick (AEP) - bob.myrick@gov.ab.ca Sanjay Prasad (WBEA) - sprasad@wbea.org
<b>Budget:</b>	\$ 1,313,910

#### **Project Description:**

Historically, passive monitoring has been conducted for SO<sub>2</sub>, NO<sub>2</sub>, O<sub>3</sub>, NH<sub>3</sub> and HNO<sub>3</sub> on a monthly cycle in the spring, summer and fall (April - Oct) as well as bimonthly in the winter (Dec & Feb). Beginning in 2015-16, the passive monitoring sampling regime was changed to bimonthly for SO<sub>2</sub>, NO<sub>2</sub>, O<sub>3</sub>, NH<sub>3</sub> and HNO<sub>3</sub>. This resulted in a reduction in helicopter use from nine cycles per year previously, to six cycles (2-3 days each) in 2015/16. The number of co-located passive and active monitoring sites has also been reduced from five Air Monitoring Stations (AMS) to three. For 2016/17, there will be 30 passive collection sites.

The sampling heights for passive samples vary depending on other field monitoring activities. Specifically, the passive collection sites are located in 21 forest health (FH) sites and nine fen monitoring sites. Passive ion exchange resin (IER) paired with bulk open and forest through fall deposition collectors and plant root simulator (PRS) probes are recovered and deployed in spring and fall. These systems measure the transfer of substances derived from both natural and industrial sources from air to soil.

#### **Project Objectives:**

The project aims to monitor air quality and deposition at remote FH ecosystem sites. These FH sites are co-located with continuous monitoring instruments for validation of passive measurements, in order to provide the data necessary to establish cause-effect linkages, which will aid in evaluation of regional ecological responses due to air emissions.

#### **Key Outcomes:**

Data for use in source-receptor study and cause-effect determination for cumulative effects measurement

#### **Geographic Scope:**

Most sites in the Regional Municipality of Wood Buffalo (RMWB), two sites in north-western Saskatchewan.

#### **Associated Data and Reports:**

Monitoring data are quality-assured and sent within four weeks of month-end to the WBEA website for public reporting as well as the AEMERA/AEP data portal. Summarization and reporting are done annually in support of AEMERA/AEP assessments. Results are published as appropriate in peer reviewed scientific literature with open access privileges.