

Oil Sands Monitoring (OSM)

2016-2017 PROJECT PLAN SUMMARY

Project Name:	W1-1-3 Groundwater Monitoring
Type of Project:	Long Term Monitoring
Delivery Agent:	Alberta Environment and Parks
Project Contact:	Guy Bayegnak (AEP) Guy.Bayegnak@gov.ab.ca/ Cynthia McClain (AEP) cynthia.mcclain@gov.ab.ca
Budget:	\$ 800,000

Project Description:

This project is designed to optimize groundwater monitoring effort across the 3 sub-regions of the Lower Athabasca: North Athabasca Oil Sands (NAOS), South Athabasca Oil Sands (SAOS) and Cold Lake - Beaver River (CLBR), by minimizing effort duplication and eliminating redundancy. The project will implement a purpose-built stratified monitoring network, capable of detecting spatial and temporal changes, in groundwater in oil sands development areas. This will enable the acquisition of high quality groundwater data, which in turn will enable advanced data analysis methodologies, to establish cause-effect relationships, including source, pathway, and receptors.

Project Objectives:

This project is intended to answer the following questions:

1. Are temporal or spatial changes in groundwater quality and quantity occurring in the oil sands area?
2. Can we identify what is causing the changes; are changes due to oil sands development activities or are changes due to change in weather and climate?
3. What are the potential consequences of observed changes?

Key Outcomes:

- Identify causes for trends and unexpected changes in groundwater quality observed in the NAOS
- Establish the origin of hydrocarbon detected in surficial sand wells in the NAOS
- Assess factors influencing water levels in the SAOS
- Establish a fingerprint of elements that may potentially limit the use of groundwater, such as arsenic, or uranium
- Establish consistent guidance for groundwater data acquisition and validation for future monitoring work.

Geographic Scope:

This project targets the 3 sub-regions of the Lower Athabasca Region, including the North Athabasca Oil Sands (NAOS), South Athabasca Oil Sands (SAOS) and Cold Lake - Beaver River (CLBR).

Associated Data and Reports:

Anticipated to produce a technical report detailing field activities, data analysis and findings