Project Name:	**W3-1-1 Watershed Evaluation and Integration - Establishing a Data Management System for Watershed Data**
Type of Project:	Focused Study
Delivery Agent:	Alberta Environment and Parks
Project Contact:	Anil Gupta (AEP) - anil.gupta@gov.ab.ca
Budget:	$ 125,000

Project Description:

Under the Canada-Alberta Joint Oil Sands Monitoring (JOSM) Plan, large amount of various environmental data has been collected. Considerable efforts were made to interpret and synthesize water data in last fiscal year (2015-16). However, all the collected data have yet to be synthesized and interpreted in an integrated manner (within water component and across other components) to identify patterns & trends and establish possible relationships between trends, environmental events and changing ground conditions. The Scientific Integrity Expert Panel Review (2016) also highlighted the limited integration of activities and reporting within and across the four monitoring components. To address the panel's recommendation, the proposed work plan involves an integrated data syntheses of key environmental data sets collected under JOSM and where possible extending the data series by combining the pre-JOSM environmental monitoring data.

Project Objectives:

The research goal of this proposal is to analyse a subset of long term environmental data as a whole to identify patterns & trends and establish possible relationships between trends, environmental events and changing ground conditions by considering multiple data sets across four monitoring components and also from multiple monitoring locations (spatial scale).

Key Outcomes:

- Compilation of pre- and post JOSM environmental monitoring data sets. Where possible, this project will also attempt to incorporate other ecological and biological data sets to establish intrinsic inter-relationships among various sub-components of environment.
- Compilation of physical data sets e.g. historical land use, land use changes, climate change, watershed area, drainage features, surficial and bedrock geology, and soil types.
- Analysis of environmental data to identify patterns and "hot spots". Analyse the data further to establish "cause" for hot spots and possible consequences.
- Analyse patterns of variation of each water quality parameter with season (time), location (geography), land use activity, proximity to water bodies and meteorology.
- Make recommendations for adaptive monitoring program in future.

Geographic Scope:

Data collected in Oil Sands area of Alberta.

Associated Data and Reports:

No new data will be collected. All data that will be analyzed as part of this project will be on the OS data portal.

2016-2017 PROJECT PLAN SUMMARY