

2016-2017 PROJECT PLAN SUMMARY

Project Name:	A2-1-6 Acid Sensitive Lakes Study
Type of Project:	Focused Study
Delivery Agent:	Alberta Environment and Parks
Project Contact:	Colin Cooke (AEP) - colin.cooke@gov.ab.ca
Budget:	\$ 177,700

Project Description:

This study addresses a recommendation of the Integrated Monitoring Plan for the Oil Sands that a three-level monitoring network be established to detect lake acidification, and to track and explain its development. The focus this year will be on continued sample collection from level two lakes (defined below) and on evaluation and reporting activities to recommend site selection for future years. The network is comprised of:

- a regional lake survey repeated every five to ten years to establish current acidification status (Level one),
- a subset of approximately 50 lakes sampled twice annually to identify chemical changes through trend analysis (Level two), and
- Measurement of all the inputs and outputs of two to four lakes (sampled at least monthly) (Level three) so that they can be used to explain the cause of changes detected in Level two lakes.

Project Objectives:

To monitor and assess regional lake acidification potentially arising from oil sands emissions. The specific objectives are to:

- Sample Level two lakes (50 lakes) as per previous years and continue baseline characterization,
- Systematically sample selected Level three lake ecosystems in SK and AB (this will be part of Clean Air Regulatory Agenda (CARA) program/funding), and
- Enhance ongoing evaluation and reporting activities related to water chemistry results for Level two temporal water quality records.

Key Outcomes:

- A regional assessment of the status and trends in regional lake acidification;
- Projection of the effects of acidifying emissions on the chemistry, structure and function of aquatic ecosystems; and
- Determination of critical loads of acidity for selected lake ecosystems.

Geographic Scope:

Lakes in north-western Alberta; north-eastern Saskatchewan; southern Northwest Territories

Associated Data and Reports:

Data Management, Data Evaluation and Reporting will be done in the last quarter.