

Case Study

Capturing Invaluable Data Intelligence

*Syncrude Canada Ltd. (Syncrude)
Mildred Lake, Fort McMurray AB, Canada*

> Background

Okane was engaged by Syncrude to assist with planning a large-scale field trial evaluating a variety of centrifuge-dewatered, fine fluid tailings treatment, transport and deposition methods supporting the Mildred Lake Extension project (MLX). Okane installed monitoring instrumentation and provided data management and interpretation services.

> Approach

The field trial consisted of five deposits (including the Gypsum centrifuged cake culvert) and one controlled boundary condition deposit (Environmental Wedge Cell). The original objective of the field trial was to evaluate deposit behaviour with respect to settlement, densification and strengthening over a two-year period. While monitoring of four deposits and the Environmental Wedge Cell ceased in 2012, monitoring of the Gypsum Cake Culvert deposit has continued. Sand caps were placed on the deposit in 2012 and 2013 to investigate the effects of increased surcharge loading.

> Client Benefit

The instrumentation installed in the deposits allowed measurement of volumetric water content, soil matric potential and temperature, positive pore-water pressure, salinity and total pressure. Monitoring of the Gypsum Centrifuge Cake Culvert provides invaluable, ongoing data related to the consolidation and strength profiles in a deep centrifuge derived cake deposit following loading.

“Defining deposition behavior of dewatered fine fluid tailings.”

**Integrated Mine Closure
and Relinquishment Solutions**



TastyCakes, Jamitzky, [2012], Syncrude Tailings Dam - Mildred Lake Settling Basin, Wikimedia.