

Massive amounts of material delivered to reclamation site in just one month and installed in extreme temperatures

The Suncor Pond 1 is an oil sands tailings pond located near Fort McMurray, Alberta, Canada. This region experiences an average winter temperature of -19°C , with a record low temperature of -50°C . Full-scale closure and reclamation activities had been underway at the site since 2007. In late 2009, infilling of the pond had been completed.



PROJECT DETAILS

Suncor's Pond 1 Reclamation

LOCATION

Northeastern Alberta, Canada

PRODUCTS USED

BENTOMAT® CL GCL

EASYROLLER™

Deployment System

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CHALLENGE:

A reclamation cover needed to be installed that would act as a barrier against infiltration of surface water, establish a boreal forest environment, and promote plant growth. Also, approximately ten million square feet of material needed to be installed. Due to a tight deadline, it required being installed during the region's cold, winter months.

SOLUTION:

A GCL was selected as the low-permeability hydraulic barrier in the cover system for numerous reasons. It offered low hydraulic conductivity (5×10^{-10} cm/sec) and is not impacted by freeze thaw cycles. The GCL also provided excellent material consistency, which led to less on-site quality control testing. The use of the EASY ROLLER deployment system allowed for a fast and easy installation. Because of the GCL properties, it was able to be installed in the extreme cold, which would not have been possible with a standard compacted clay liner or geomembrane.

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RESULT:

Massive amounts of material were delivered to the site in just a one month time frame with a fraction as many truckloads. To construct a compacted clay liner it would have required 200 times as many trucks to enter the site.

Capping operations were successfully completed in 2010. Suncor's Pond 1 now stands as an industry milestone as the first ever surface reclamation of an oil sands tailings pond.

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