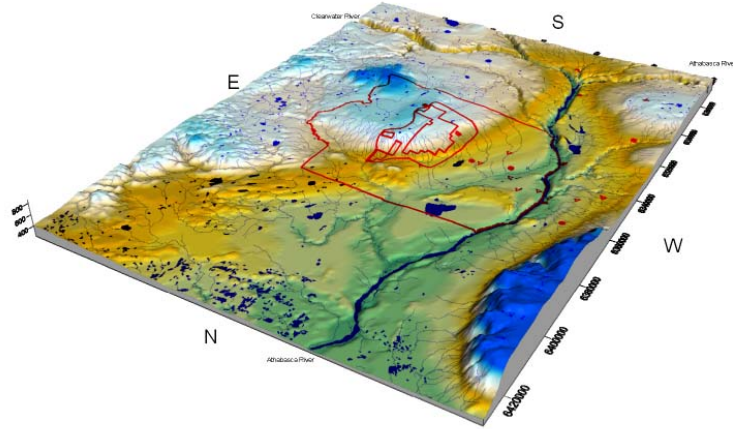


# Review of a SAGD prospect, Athabasca Oil Sands, Alberta

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<b>Project Location:</b>	Athabasca Oil Sands
<b>Client(s):</b>	Mikisew Cree First Nation
<b>Date Completed:</b>	2004
<b>Project Budget:</b>	\$ 20,000

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3D-Digital Elevation Model (DEM) of the principal development area, local and regional study areas for a SAGD prospect in the Athabasca Oil Sands.

## Project Summary

Steam Assisted Gravity Drainage (SAGD) prospects typically have three hydrogeological components to them: water supply for the industrial and steam operation, injection of steam into the oil sand, and injection of waste water into the deep subsurface.

At several planned and existing prospects the water supply is taken from surface water; at the site under review water supply is to be from groundwater. Steam injection tends to create several significant changes to the groundwater regime, as i.e. higher pressure, higher temperature and increased permeability of the bitumen extracted oil sands layer. Within the area of the Athabasca Oil Sands, waste water is typically disposed of in the Cretaceous Basal Sands or into Devonian limestone. At the proposed site waste water will be injected into Devonian limestone layers.

Based on unfavorable drilling results the Applicant had planned to use injection pressures which effectively put the equivalent water head about 500 m above ground. The review recommended additional drilling to locate higher permeable zones. The additional drilling proved to be successful and the necessary injection pressure was reduced significantly such that the equivalent water head for the injection was below the ground surface.

## Services Provided

- \* Evaluation of hydrogeologic data and expected pressure changes due to SAGD steam injection and waste water injection.

## Deliverables or Results

- \* Report on the findings of the review and recommendations derived.