Mira Geoscience
...modelling the earth

CLIENT SUCCESS STORY

Geophysical Inversion Modelling and Interpretation

Investcan Energy seeks to predict the depth to granite basement using magnetic and drilling data – they found answers with a Mira Geoscience 3D model

> *"Investcan Energy has retained the services of Mira Geoscience during our ongoing drilling campaign at Flat Bay to help us continually improve our understanding of the depth to granite basement in the area. We drilled the Mira Geoscience model and found they had predicted the depth to granite to within 60 m. The actual depth to granite measured in the well was over 400 m."*
>
> Steve Emberley, Senior Geologist

COMPANY PROFILE

INVESTCAN Energy Corp

St John's, Canada

Investcan Energy Corp. owns a number of on-shore & off-shore oil and gas exploration licences in Newfoundland and Labrador.

Customer since 2012

Summary

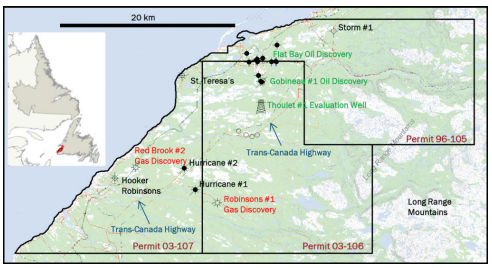


Image Source: http://ezdataroom.com/pdf.php?id=328

Location of the Investcan exploration property in Western Newfoundland.

Investcan Energy is exploring for unconventional oil and gas deposits in western Newfoundland, with a focus on tight oil in an area known as Flat Bay. The geological setting consists of marine evaporites and clastic terrestrial sediments overlying a granite basement. The ability to accurately assess the depth to basement throughout their property will provide a better handle on sediment thicknesses and the structural geology of the area. The aim: knowing the depth to granite before drilling to improve resource targeting in a cost-effective manner.

At Mira Geoscience we know that magnetic data are best interpreted in tight integration with geological data. Our experienced team provides processing, inversion, and interpretation services at each phase of utilizing magnetic data in your project. Airborne, ground, and down-hole magnetic data are modelled using magnetic susceptibility measurements, geological information, and other geophysical data to provide valuable and reliable exploration information to maximize targeting success.

Investcan supplied us with airborne magnetic data in addition to well logs, interpreted seismic lines, and the locations of granite outcrops. Our task was to model a comprehensive top-of-the-granite surface in 3D using the magnetic data and the constraining geological information.

The geophysical modelling effort for Investcan started with a pilot study on a small test area in 2012. Due to the encouraging results, they retained us to perform further work over their entire property. As more drilling data and physical property data are made available, the depth-to-granite model can be continually refined, improving the model's predictive capability.

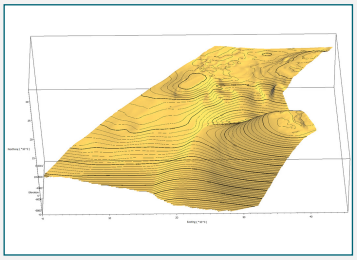
Project objectives:

- Model magnetic data in 3D to estimate the depth to granite basement in the Flat Bay project area
- Constrain the model with the known depths to granite from previously drilled wells
- Constrain the model with surface outcroppings of basement granite
- Integrate regional magnetic data into the modelling process to improve the recovery of basement depth along and beyond the local survey edges
- Provide project deliverables on time and on budget

Results

This 3D geophysical modelling project proved successful. The key outcomes of the project include the following:

- Generation of a 3D depth-to-basement model for the entire area consistent with all geological and geophysical data
- Prediction of the depth to granite basement in areas that have not yet been drilled
- Investcan Energy retained Mira Geoscience for additional basement modelling



Top of the granite basement surface resulting from the 3D modelling of magnetic data constrained by geological, seismic, and well log information.