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Integrating Geology and Geophysics to 'Uncover' Porphyry Deposits in BC

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Project Info

A large region within British Columbia's Quesnel Terrane has high potential for porphyry copper±gold deposits but is covered by extensive glacial till. The regional bedrock geology is weakly constrained because of poor bedrock exposure, and exploration efforts have been limited due to the perceived thickness of cover material. There is great opportunity to improve the geological knowledge of the critical ore forming rocks and to understand the true cover thicknesses of glacial deposits through use of publically-available geophysical data.

This project, **'Identification of New Porphyry Potential Under Cover in Central British Columbia'**, part of Geoscience BC's **Central Interior Copper-Gold Research (CICGR) project**, uses primarily existing geological and geophysical data to provide new interpretations of the geology and porphyry potential within the 'big gap' between the Mount Milligan and Mount Polley porphyry deposits. The success of this project will depend on improving our understanding of the relationships between the critical ore-forming rocks, their physical properties and geophysical responses.

This project will take advantage of existing, underused data and models previously collected and developed for Geoscience BC, specifically data from their QUEST project, and will incentivize new exploration in this difficult but prospective porphyry corridor.

Goals of the project:

1. Build a new overburden thickness model

2. Build on the rock property knowledge base for rocks in the Quesnel Terrane

3. Use integrated geological and geophysical data to interpret bedrock geology, and model select features of interest in 3D

4. Use the thickness model and advanced interpretations to prioritize porphyry targets

VTEM Conductivity Inversion

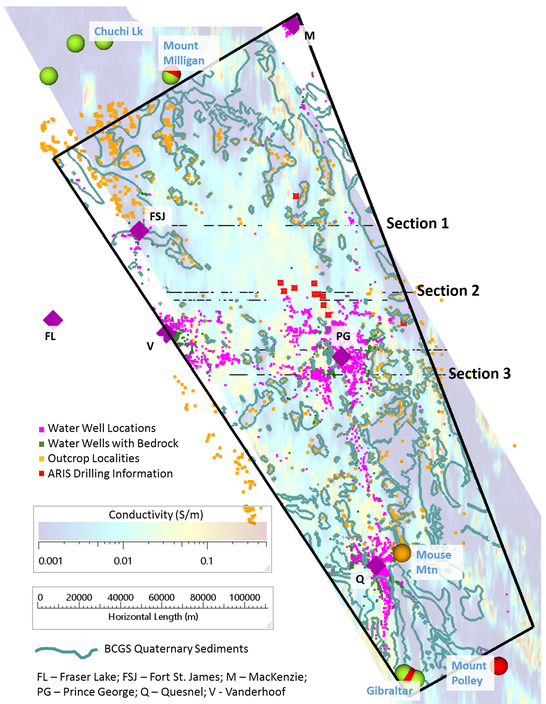
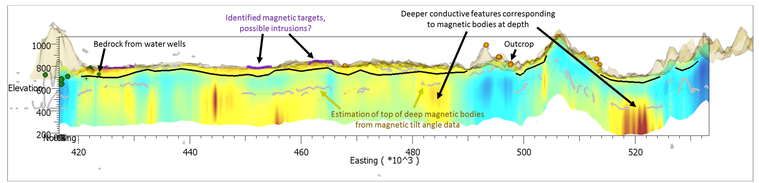
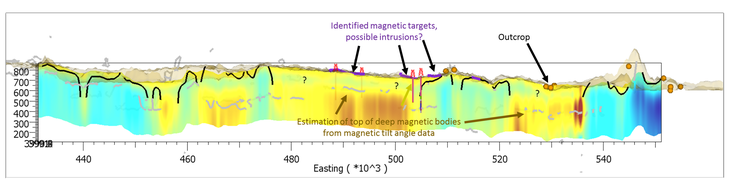


Figure 1. QUEST VTEM conductivity model drape at 164 m depth is shown overlain by some of the publicly available data to be used for constraining overburden thickness models. Constraining data shown include water well data, outcrop locations, mineral exploration drilling data, and existing surficial geology maps. Outline of the project area in black.



Section 1



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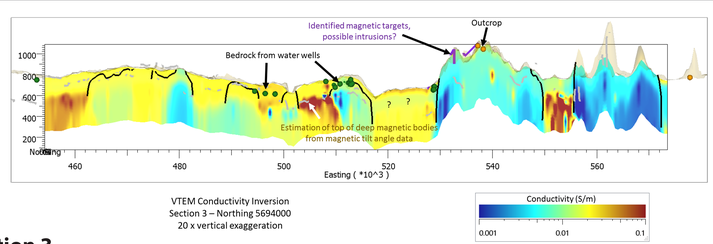

Section 3

VTEM Magnetic Inversion

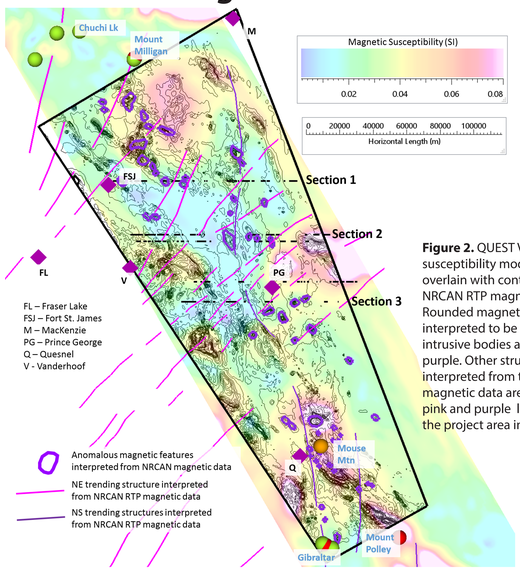

Figure 2. QUEST VTEM magnetic susceptibility model (500 m grid), overlain with contours from NRCAN RTP magnetic data. Rounded magnetic anomalies interpreted to be potential intrusive bodies are outlined in purple. Other structures of interest interpreted from the NRCAN magnetic data are indicated by pink and purple lines. Outline of the project area in black.

Acknowledgements

The authors gratefully acknowledge Geoscience BC for supporting this project. Peter Kowalczyk, Paul Schiarizza, Yao Cui, Paul Jago, and Matias Sanchez all provided insight and guidance during project planning and for interpretations to date. Johanna McWhirter is thanked for providing ongoing project management support.

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