

New SEDEX (?) and MVT Provinces Discovered Under Shallow Cover in the Southern Georgina Basin

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SK Networks Resources Ltd (SK) is exploring sequences occurring beneath shallow cover within greenfield mineral tenure in the Southern Georgina Basin. A geologic model has been developed for the Mt Whelan area highlighting two distinct geological domains separated by the Pippagitta fault: (1) a western domain with the potential to be a new MVT province based on widespread elevated levels of Pb, Zn, and Ag in drill assays; and (2) an eastern domain, which based on current interpretations has identified potential Mesoproterozoic sequences with SEDEX potential. These potential Mesoproterozoic sequences have not been identified and, based on geophysical responses, are interpreted to be analogous to McArthur Basin or Lawn Hill sequences.

Initial reconnaissance drilling in 2011–2012 identified MVT-style (Pb, Zn, and Ag) mineralization and elevated phosphate within Middle Cambrian limestones of the Georgina Basin to the west of the Pippagitta fault along a basement high. The limestone units were tentatively correlated with the Thornton Limestone or equivalent—e.g., Beetle Creek Formation—and are considered to be prime host rocks for MVT-style mineralization and/or phosphate in the right structural and paleogeographic settings. While preliminary evaluation has highlighted a number of MVT-style drilling targets and a corridor for phosphate testing, the large extent of the tenure holding necessitates further exploration to assess its mineralization potential.

A geologic model was initially constructed using drilling, geologic mapping, and structural interpretations based on regional and high-resolution airborne magnetic datasets. An updated stratigraphic and structural interpretation and model was produced using additional 2D seismic data made available by a 2013 data exchange between SK and Central Petroleum, which is exploring for unconventional oil and gas in the area.

The updated model maps the Thornton Limestone at depth with moderate to high confidence over a laterally continuous area of ~1,500 km². The interpretation has helped identify subcrop limestone within favorable structural (trap) settings near surface and at depth over a broad elongated basement high to the west of the Pippagitta fault. Nearly all drill holes have encountered elevated Pb, Zn ± Ag; maximum values encountered were 0.34%, 1.41% and 17 g/t, respectively. The drilling results are highly suggestive of a fertile MVT-style system and similar to early exploration results reported in other MVT provinces such as the Lennard Shelf.

Drill testing to the east of the Pippagitta fault has provided valuable stratigraphic information confirming a thick sequence of Neoproterozoic tillite, the Field River beds, which was previously unknown in the area. Unconformably(?) underlying the tillite sequence is a prominent sequence of seismic reflectors, which is potentially analogous to less deformed Mesoproterozoic-aged sequences found in the McArthur Basin and Lawn Hill region. The seismic profiles identify areas of interpreted shallow Mesoproterozoic sequences within SK's tenure that are amenable to drill testing. The seismic data has also helped identify major, steeply dipping growth fault zones with multiple movement history. The discovery of new potentially Mesoproterozoic stratigraphy at shallow depths has positive exploration implications given the base metal mineral endowment of similar provinces of the North Australian Craton.