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Red Cross Lake Nickel-Copper-Cobalt

Magmatic Sulfide Potential, Central Newfoundland

Red Cross Lake Project Highlights

- Excellent potential for a new nickel-copper-cobalt magmatic sulfide deposit
- Historical (ca. 1980), shallow-penetrating, single frequency EM conductors coincide with magnetic anomaly
- Paved, all-weather logging road and ATV trail access to property
- Comprises 102 claims over 2,550 ha
- Claims are contiguous with the recent Central Newfoundland gold staking rush

Red Cross Lake Geology

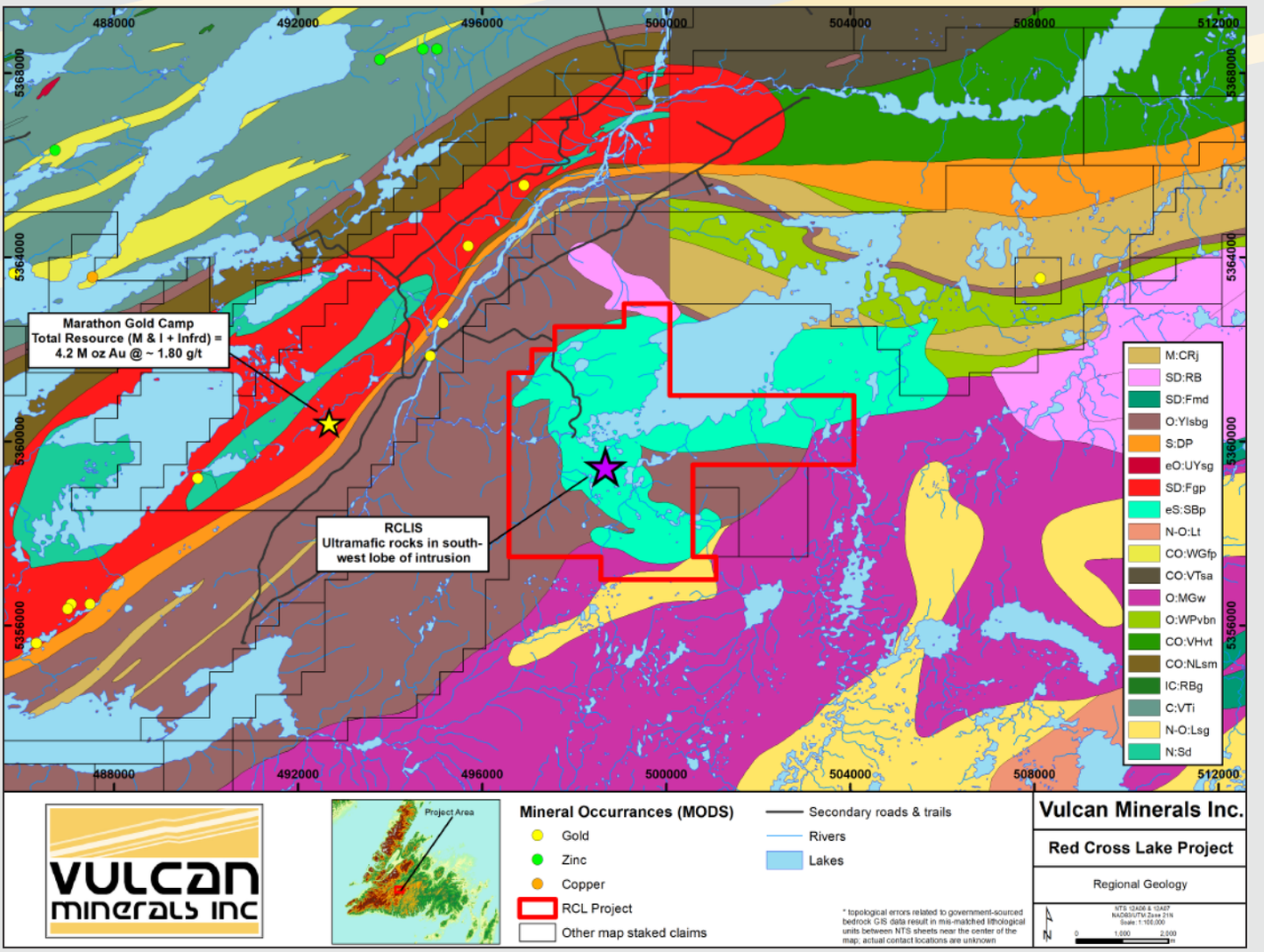
- Red Cross Lake intrusive suite (RCLIS) is a layered mafic-ultramafic intrusion comprising peridotite, troctolite, olivine gabbro
- RCLIS is hosted primarily by metasediments of the Victoria Lake Supergroup
- Emplaced south of the Victoria Lake Shear Zone in a prominent dilational (low-pressure) flexure - structurally controlled magmatic conduit system
- Strong evidence of crustal contamination including sulfide-bearing xenolith belts and magmatic breccias
- Nickel depletion in olivine hosted by troctolite and olivine gabbro suggests that nickel has been extracted by immiscible sulfide melt

Mineralization

- Evidence for local sulfide saturation in ultramafic and mafic units - partially digested sulfide-bearing xenoliths
- Presence of disseminated, net-textured magmatic sulfides pyrrhotite, pentlandite and chalcopyrite in peridotite, troctolite and olivine gabbro
- Differentiated sulfide globules/droplets are evidence of sulfide transport within a magmatic plumbing system

Historical Exploration Highlights

- Limited nickel-focused exploration (Falconbridge-Noranda JV)
- Limited geophysics: regional airborne mag, EM, VLF (1972-80); local ground pulse EM (2004) confirmed the presence of conductors from 1980v survey; these EM conductors overlap with mag and remain untested or shallowly tested, with disseminated sulfides present
- Historical drilling limited to 1200 m in relatively shallow holes



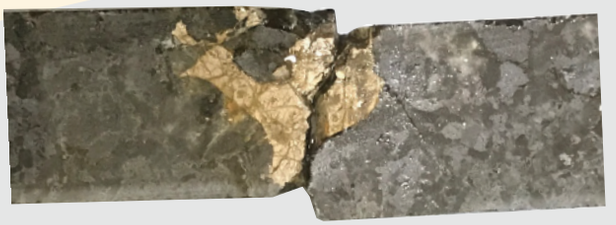
Historical Drillcore

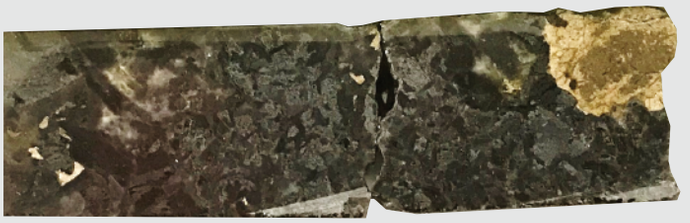
Country Rock (1 & 2)

Country rock contains locally abundant sulfides, which act as a sulfur donor to the nickel-saturated magma as it is emplaced into the crust, which can lead to sulfide saturation.

If sulfide saturation occurs in the presence of nickel-bearing minerals such as olivine, the nickel in the olivine will preferentially diffuse into the sulfide melt, enriching that melt in nickel and ultimately crystallizing nickel sulfides.

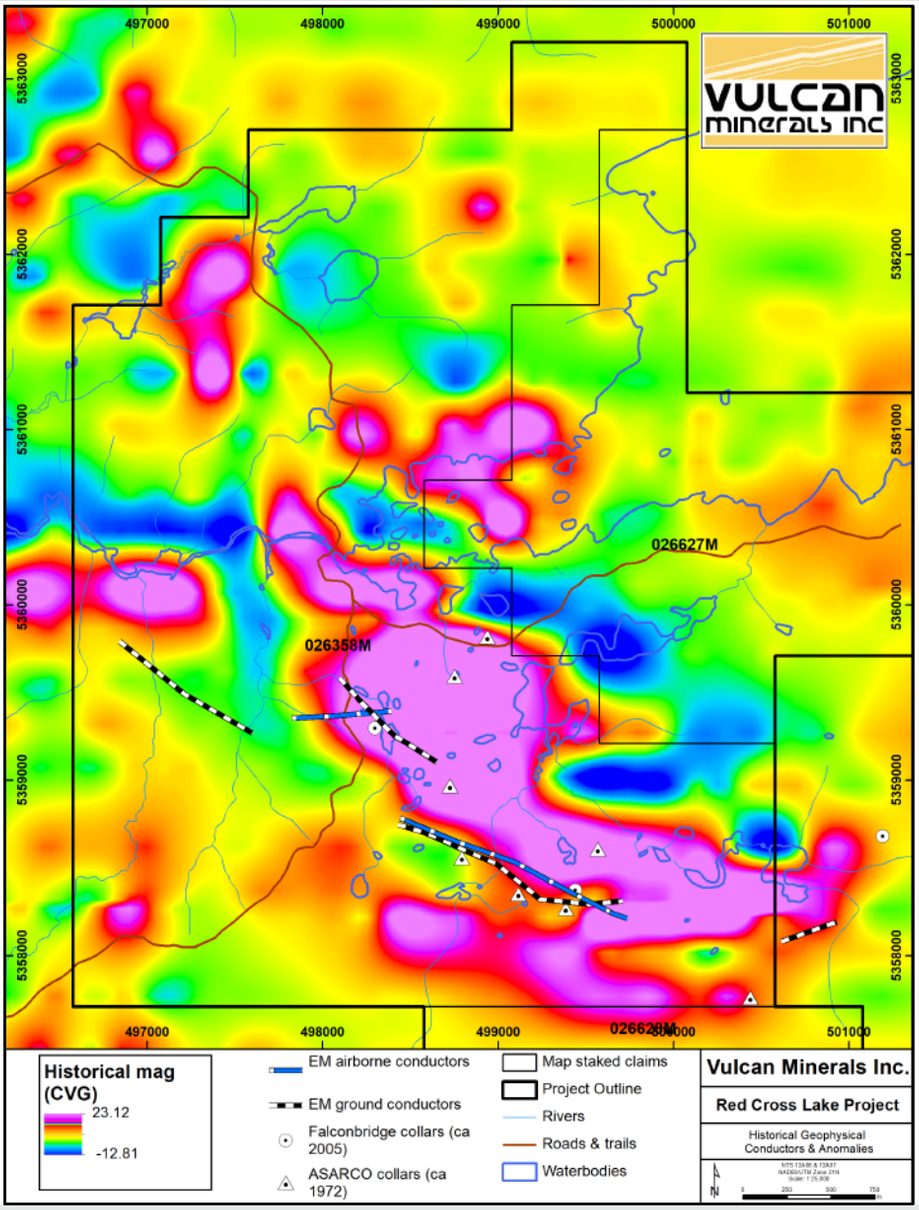
Magmatic Sulfide Globules (3-5)





Under ideal physical and chemical conditions, the sulfide melt can be concentrated, potentially forming a nickel-copper-cobalt deposit.

At Red Cross Lake, sulfide saturation has occurred and globules of magmatic sulfide are present in several historical drillholes. These globules may be considered evidence for the presence of a larger zone of sulfides that are being transported during emplacement.



- Red Cross Lake historical airborne geophysics (ca 1970's) is highlighted by strong magnetic anomalies associated with ultramafic zones in the intrusion

- EM anomalies are coincident with mag features and most often occur along the SW edge of the intrusion

- Historical drilling has not adequately tested these anomalies, mainly because drillholes appear to have had insufficient geophysical and/or geological data at the time of drilling and were drilled with incorrect geometry

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Exploration Upside

- Excellent potential for a new magmatic sulfide deposit

- The Red Cross Lake property is road accessible and based in a mining friendly jurisdiction and is 100% owned by Vulcan

- Vulcan's Red Cross Lake property includes all nickel-prospective zones (olivine-bearing mafic/ultramafic units)

- Multiple historically identified and unexplained EM anomalies underlain by magmatic rocks of the RCLIS

- Favourable tectonic environment: paleocratonic margin, extensional flexure in crustal-scale fault system hosting within-plate mafic-ultramafic complex

- Evidence for country rock contamination and assimilation of sulfidic metasediments; occurrence of sulfide saturation (disseminated and globular sulfides) comprising pyrrhotite, pentlandite and chalcopyrite

Recommended Exploration Program

- Fly high-resolution, deep-penetrating time domain EM and mag survey
- Prospect/map/ground truthing of any anomalies of interest
- Trench and/or drill highest potential anomalies

The Red Cross Lake nickel project is available for option.
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