Geologic Model

Magmatic Ni-Cu-Co+PGE sulphide deposits typically form by the equilibration of immiscible magmatic sulphide and silicate magma (Naldrett, 2004). The extent to which the sulphides are enriched in Ni-Cu-Co+PGE's is then a measure of not only the composition of the parental magma, but it is a function of the inherent efficiency of the chemical and physical process of equilibration between the two melts; the *R* factor (Naldrett, 2004). Key features commonly associated with Ni sulphide mineralization include; available source of metals (mafic and ultramafic magmas), a source of sulphur (S) to saturate the magma (e.g., sulphidic iron formations), gravitational segregation of dense immiscible sulphide liquid, and concentration of the sulphides into physical traps at the base of intrusions, within conduits, or in rock bodies emplaced in significant shears or fault systems.

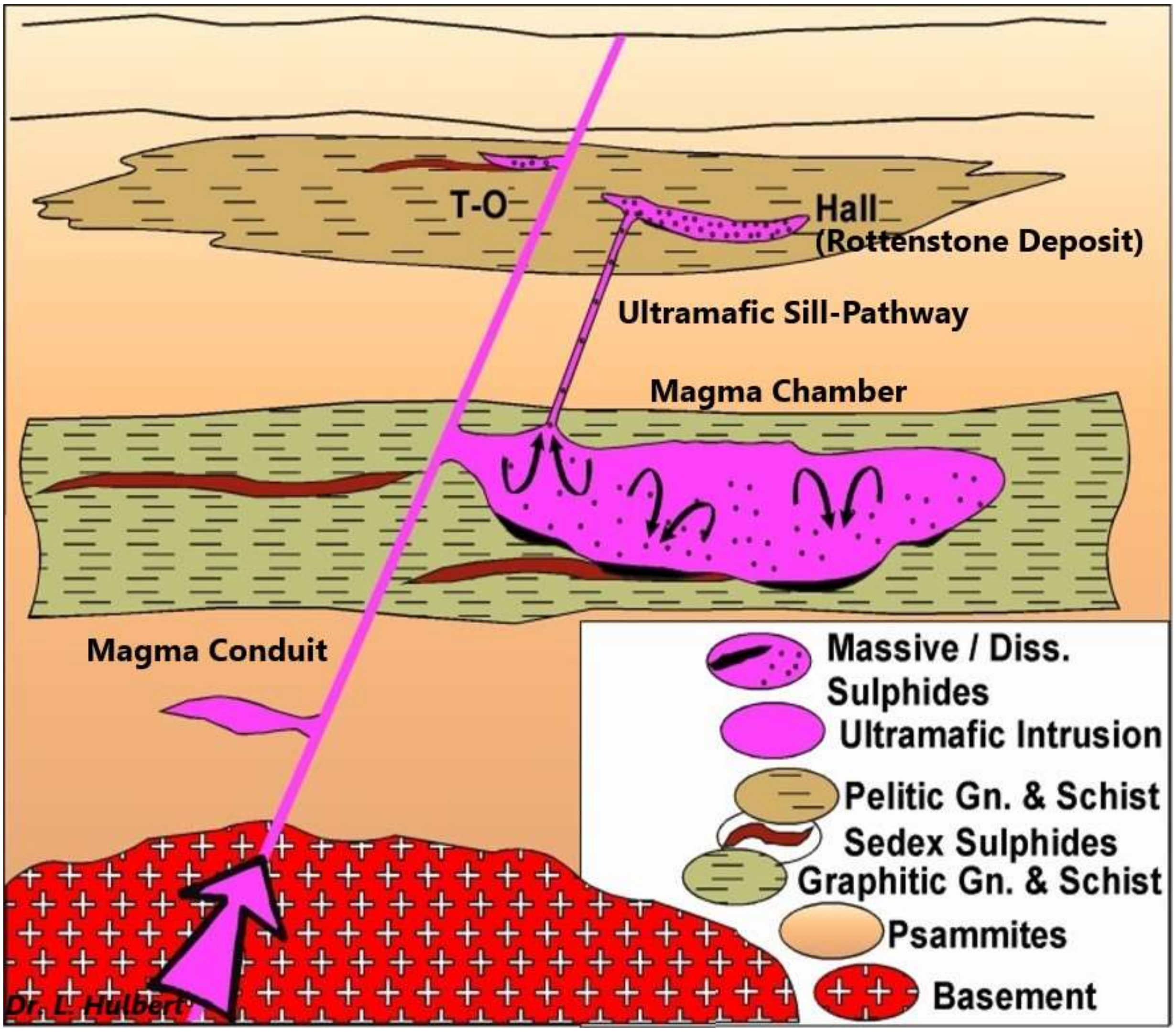
Historic and Fathom exploration to date confirms:

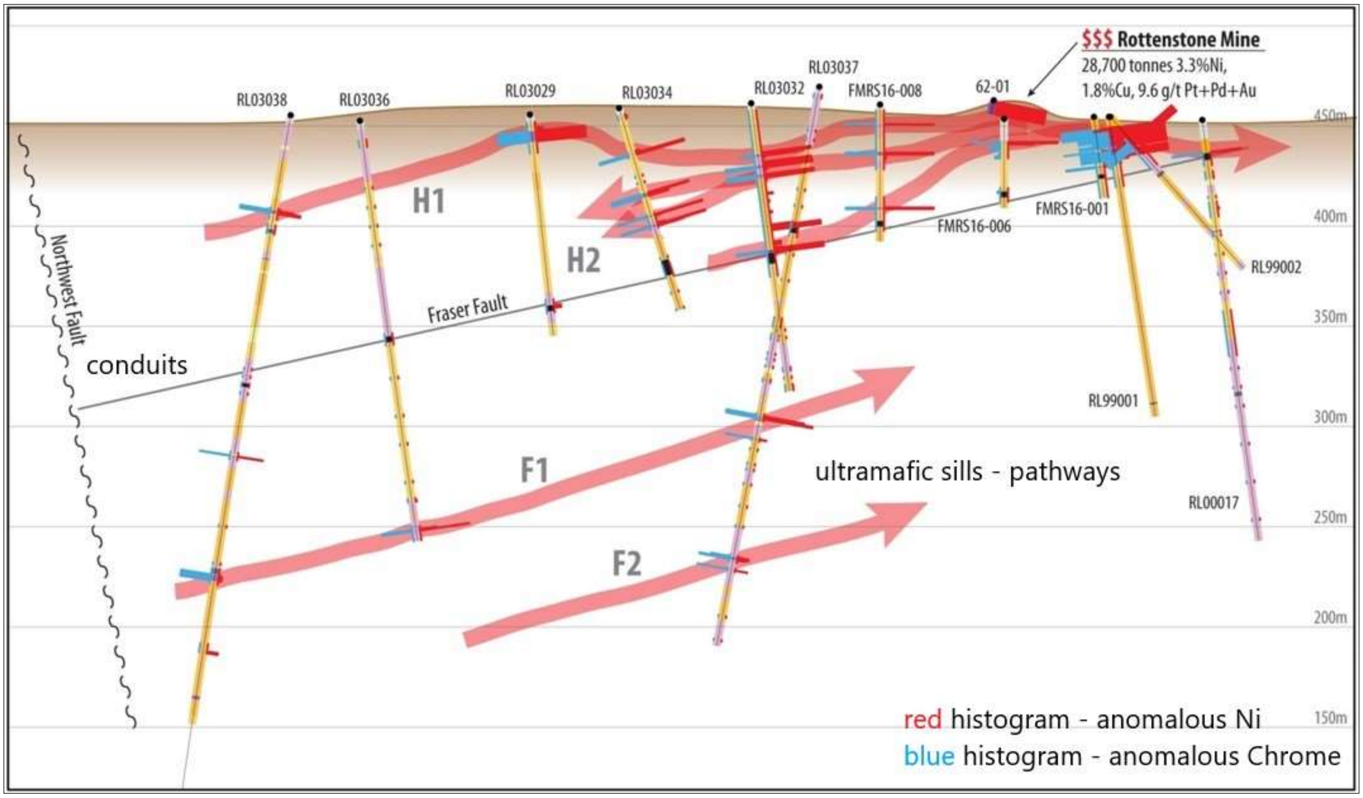
- The occurrence of multiple, mafic – ultramafic bodies, sills and pathways (source of metals) on the Rottenstone property.
- Multiple occurrences of sulphidic iron formation (source of sulphur) on the Rottenstone property.
- The Rottenstone deposit is one known example; is the result of, gravitational segregation within a footwall embayment (physical trap) occurring along a known ultramafic sill(s) – pathway(s) occurring on the Rottenstone property.
- Fathom recognizes multiple regional lineaments indicative of large fault systems (conduits) transecting the Rottenstone property.
- In addition, large regional structural features occur within the Rottenstone property area indicative of possible conduits for emplacement of magmas and physical traps where gravitational segregation and mineral deposit formation can form.

Rottenstone deposit characteristics and facts that cannot be ignored:

- The concentrations of PGE's within the deposit is possibly the richest of any deposit of its type mined in Canada.
- The high sulphide content; up to 50%, of the ore in such a small ultramafic body is rare.
- The extremely high Ni-Cu-Co+PGE grade of Rottenstone ore is a function of the *R* factor; specifically, a very high *R* factor. The *R* factor is; the ratio of, mass of silicate magma to sulphide melt. To achieve the high Ni-Cu-Co plus extremely high PGE grades; a direct result of the high sulphide content of the ore, the sulphides had to have the chance to equilibrate with a large volume of magma enabling the sulphides to scavenge Ni-Cu-Co+PGE's.
- The mineralization at the Rottenstone deposit; that is from bottom to top, massive – matrix – interstitial mineralization, fits the model discussed above.
- Mineralization resulted from sulphides scavenging Ni-Cu-Co+PGE's from an inherently fertile (metal rich) ultramafic magma. As sulphides within the magma increased in size and weight, they settled into a structural trap (a depression) occurring along the footwall (footwall embayment – the Rottenstone deposit) of the sill – pathway in which the ultramafic magma was progressing.
- The very significant metal content in the Rottenstone deposit and apparent small size; <50,000 tonnes, suggests a significantly larger source magma chamber occurring within the Rottenstone property area.

- The inference being, the Rottenstone deposit is part of a large Magmatic system and the Rottenstone deposit is one of several, and very likely larger Ni-Cu-Co+PGE deposits occurring on the Rottenstone property.





500m Composite Long Section Capturing Defined Ultramafic Pathways (red) / Intersections N-S of Rottenstone Mine

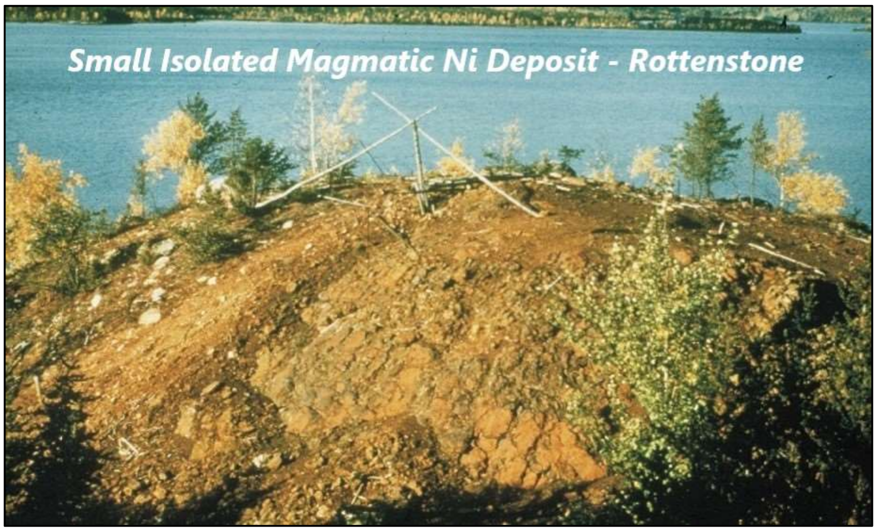
Currently it is difficult to make a direct correlation with the Rottenstone deposit to other Magmatic Ni-Cu-Co+PGE deposits. This is a function of the apparent limited size of the Rottenstone deposit and that other well-mineralized, similar deposits have not been discovered to date in the property area. Furthermore; exploration to date has not defined the source of the Rottenstone deposit; that is, the source magma chamber which further complicates the classification of the deposit type and process. The Paleoproterozoic age of metasedimentary host rocks and the location of the Rottenstone deposit within the Paleoproterozoic Trans Hudson Orogeny, immediately draws comparison to other Paleoproterozoic, Trans Hudson Orogeny hosted Nickel Belts; the Thompson Nickel Belt, The Cape Smith – Raglan Nickel Belt and nickel deposits occurring at Lynn Lake MB. Understanding of the geologic model for Rottenstone is in its infancy; however, some direct observations / comparisons to other similar Paleoproterozoic nickel belts can be made:

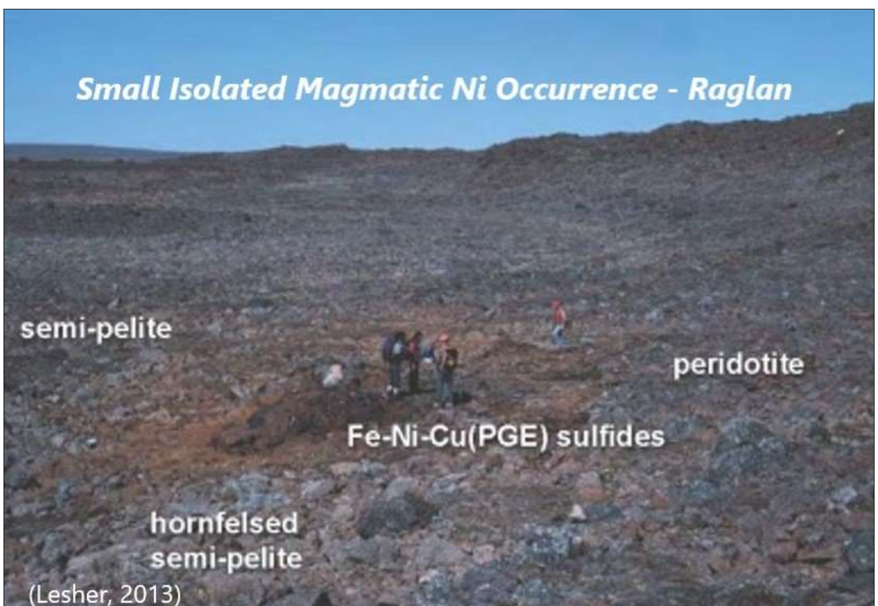
- The Rottenstone deposit would appear to be typical of a deep-rooted, mantle derived, Magmatic Ni-Cu-Co+PGE, ultramafic hosted, sulphidic type of mineral deposit.
- The Rottenstone deposit appears to be the result of metal segregation along a structural trap, footwall embayment occurring along an ultramafic sill-pathway.
- At Rottenstone, stratiform sulphidic iron formations occur in abundance.
- The small, but very high-grade Rottenstone deposit and the proximity of other; albeit not as well mineralized ultramafic occurrences within the property area, suggests a “pod-like” deposition for mineralized lenses / bodies.
- At Raglan, the deposit model consists of multiple sulphide lenses consisting of disseminated, net-textured and massive pyrrhotite-pentlandite-chalcopyrite mineralization contained in individual lenses that average 0.2Mt in size; but lenses can be as small as 0.01Mt (Desharnais, Arne and Bow, 2014).

References:

Desharnais, G., Arne, D., and Bow, C., 2014, West Raglan Technical Report Northern Quebec, Canada, submitted to True North Nickel Inc. and Royal Nickel Corporation by SGS Canada Inc. (NI 43-101 compliant Technical Report).

Naldrett, A.J., 2004, Magmatic sulphide deposits: Geology, geochemistry and exploration: Berlin, Springer, 727 p.





Fe-Ni-Cu-(PGE) sulfide showing, Cross Lake Main Zone