

SUMMARY

The Harrison Lake Nickel Copper Palladium Platinum Massive Sulphide Project located east of Harrison Lake, which is 100 kilometres east of Vancouver, British Columbia, Canada, identified as being very promising has been staked. This compilation report of the data details the active mining operations from 1958 to 1974. Over 700 claims have been located covering the total southern end of the Giant Mascot B.C. Nickel Mine Ultramafic belt.

Discovered in 1923 the main open pit and initial mine development and bulk testing produced in 1936 a 22.7 ton sample grading 2.74 grams per tonne palladium and platinum (0.68 grams per tonne gold). Earlier samples reported 3.98 grams per tonne platinum and palladium and 7.89 grams per tonne gold. Later sampling of the "1500" zone was reported to assay 2.85 grams per tonne platinum and 4.94 grams per tonne palladium.

From 1959 to the curtailment of operations in 1974 a total of 4.2 million of ore was mine and milled with a mill grade of 0.77 % Nickel and 0.34% Copper. Average for the ore pods were 1.19% nickel and 0.46% copper with only minor values of the platinum group minerals "reported. The value of the ore recovered in today's prices would be in excess of \$455 million US. The ore was contained in 26 pods and in the last year of operations the mine recorded almost \$1 million in profit.

Limited exploration has been completed on the ultramafic belt to the north and west of the mine area and the intrusive Spuzzum Diorite. A regional contour soil and stream sediment survey defined a resource of 100 million tonnes grading 0.22% Ni and 0.22% Cu. to the west of the mine area. Various magnetic high anomalies were not investigated at that time and most have been covered by the current staking.

The area of the ultramafic belt is part of the Coastal Plutonic Sequence between the major suture structure along the Fraser River located 8 to 15 kilometres to the east and the Geological Province of Wrangallia - which it represents as its eastern most portion - to the west.

The ultramafic belt is a continuous unit that extends from the Giant Mascot Mine towards Beckeuridge Mountain and Glacier 20 kilometres to the north. The belt is between one to five kilometres wide and intrudes the very sulphide rich metasedimentary rocks of the Chilliwack Formation (just north of the Cogburn Creek a small massive sulphide lens was located).

The main ultramafic belt intrudes the Chilliwack Metasedimentary schists and the Spuzzum Diorite Intrusive during the Late Palaeozoic suggestive of a deep transgressive structure along the eastern margin of the Yalakom-Fraser River Fault zone. The metasediments are fine-grained schists from silts. The medium to fine grained diorite is less than 40% mafic with minor norite phases. The ultramafics have hornblendite reaction zones up to 100 metres in contact with the diorite.

For exploration it was noted that the northeast half of the ultramafic plug that was barren, had little hornblende, while the "ore-rich" southwest half had highly varied hornblende assemblages. Dikes, most predominantly hornblendite, cut the country rock, schists, diorite and ore, and have sharp contacts with the ultramafic rocks. The main structural trend of the ore zones is N75°W, which is parallel to the internal structure of the diorites, the internal arrangement of the ultramafics and the southwest contact of them.

The grade of the recovered ore averages 1.4% Ni, 0.5 % Cu, 1 % chromium, and 0.1% cobalt with 0.02 ounces per ton gold and 0.01 opt platinum metals (Aho 1956 numbers) occurring mainly as pyrrhotite, pentlandite and chalcopyrite. Magnetite, which has been found in other areas to correlate well with PGE's, appears to be an integral part of the sulphide system and with olivine forms cores of the sulphide grains. Pyrite appears to be a later replacement of the pentlandite and in stringers within the ore.

The peridotites and olivine pyroxenites appear to be the best mineralized with the former being the most prolific especially near the margins. The pyroxenites and hornblende pyroxenites contain irregular

distributed and finely disseminated sulphides but that content is increased significantly around and within ore pods or at contacts. The augitic and hornblendic phases of the ultramafic appear to be relatively barren.

From an exploration viewpoint it is obvious that the presence of sulphides and the more ultramafic portions of the intrusive are very significant to identifying areas of higher potential. Both these characteristics should be noted in subsequent fieldwork.

Twenty-six pods of massive sulphide were mined during the history of the operating mine ranging in size from 3,000 tons to 807,000 tons with grades of 0.92% - 2.37% nickel and 0.36% - 0.75% copper. The shoots were described as steeply dipping circular to ellipsoid. The sulphide bodies are 100 feet or more in diameter with their depth extent 5 to 10 times that measure.

The more olivine within the ultramafic intrusion the higher the grade. The coarser "pegmatitic" ultramafic also was correlated with higher sulphide content. The nickel:copper ratio of almost 3:1 drops to 1:1 outward from the core zone of ore. Blebs and stringers of chalcopyrite are found on the edges of the ore pods and extend beyond into the surrounding rock. The ore zones lack of hornblende with +50% olivine and bronzite associated with the massive sulphides, which do not penetrate far into the country rock. Pyroxenite hornblende dikes with sulphides extend irregularly into the wall rock.

The ultramafic units with disseminated sulphides were present in many localities on the claims but there has not been any detailed mapping. The significance of these zones is enhanced with Aho's report indicating that ultramafic rocks are associated with the most prolific part of this belt and, most significantly, any sulphides found were associated with ore bearing areas.

Geophysics appears to have been conducted on the mine area as reported by Aho in the 1950's but the type, scale and reliability of data was not described. Governmental airborne magnetometer surveying, highlighted anomalous magnetic "thumb print" features very similar to the "thumb print" signature covering the old mine area. Tightly spaced line airborne geophysical surveying for a total of 1,200 to 2,000 line kilometres will aid exploration.

Regional government stream sediment geochem surveying was completed which identifies the claim group as an area of very anomalous base metal values. The juvenile soil development in this rugged terrain, suggests the Mobile Metal Ion (MMI) Geochem method is theoretically promising but unknown.

Initial geological prospecting and mapping program on the property collected some samples that were analysed for base metals and platinum group minerals. Disseminated pyrrhotite was observed in the ultramafic rocks along fractures and in rare small veinlets. This is extremely positive to the ultramafics being mineralized. This current prospecting geological mapping program has identified more ultramafics than were previously mapped in the area suggesting a bigger ultramafic belt with a bigger potential for discovery. The similarity of the rock units on the claims and analysis of the ratio of Ni:Cu suggest that some areas have been located already that are extremely promising as they are associated with the "thumb print" magnetics.

From the review of the data distinctive features related to the mine are notable for exploration.

1. Minor mineralization localized near fractures shows depletion in Ni but can be spread out from the main mineralization. The Ni:Cu ratio of 3:1 drops to 1:1.
2. Blebs and stringers of mineralization are found on the edge of the ore pods and extend beyond into surrounding rock.
3. Coarser "pegmatitic" zones and olivine rich zones are associated with higher sulphide content.
4. Sulphides do not penetrate far into the country rock. The presence of sulphides in the more ultramafic portions identifies areas of higher potential.
5. Pyroxenite dikes that can grade into sulphides, extend irregularly into the wall rock.
6. Ore zones lack hornblende.
7. The NE half of the ultramafic plug was barren with little hornblende while the ore rich half had highly variable hornblendic assemblages.

8. The main structural trend of the ore zones is N75°W which is parallel to the internal arrangement of the ultramafics and the adjacent contact.
9. Magnetite is an integral part of the sulphide system.
10. A significant magnetic signature is associated with the old mine (very similar to exactly similar signatures are located on the claims).
11. The ultramafics have hornblende reaction zones up to 100 metres wide in contact with the diorite.
12. Significant EM geophysical response is obtained from the ore pods.

The Harrison Lake ultramafic belt provides an very attractive exploration prospect for platinum group minerals and copper nickel minerals that has not been subjected to recent exploration although hosting one of southern British Columbia's most profitable nickel copper PGM mines.

The ultramafic rocks of the claims are very similar to those found at the Pacific Nickel mine and have significant areas of disseminated sulphides, which in the mine sequence were indicative of nearby ore pods

Following the "Guides to Exploration" outlined above a detailed program of geological and geophysical exploration is proposed. An AEM survey using a helicopter mounted high precision system is required to define the potential targets in the belt will assist in prioritizing drill targets. A budget of \$805,000 Cdn is proposed