

EXPLORATION PROPOSAL FOR MASSIVE VOLCANOGENIC SULFIDE & RELATED DEPOSITS

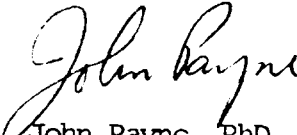
in the STUHINI GROUP VOLCANIC ROCKS, TAKU RIVER AREA, B.C.

The Stuhini Group of Upper Triassic age hosts several formerly producing mines and numerous prospects (see Figure 1). The Big Bull and Tulsequah Chief mines (sphalerite-galena-chalcopyrite) are intimately associated with quartz-sericite-pyrite-altered rhyolites, and obviously are massive volcanogenic deposits, despite the lack of such recognition in the literature. From 1951 to 1957 they produced 1.03×10^6 tons of ore grading 0.08 oz/T Au, 3.3 oz/T Ag, 1.32% Cu, 1.46% Pb, and 6.05% Zn. The Polaris-Taku deposit (Au, Ag with arsenopyrite) occurs in highly fractured and carbonatized Stuhini volcanic rocks. The mineralization may be related to later alteration, but the source of the metals may have been within the Stuhini volcanic rocks. The Ericksen-Ashby prospect (Pb-Zn-Ag) contains several massive sulfide deposits related in origin to rhyolite and numerous "skarn" deposits containing Pb, Zn, Ag, and Mn (rhodonite) in chert breccias; the latter are thought to have formed by replacement at exhalite vents. Known massive sulfide bodies are relatively small, but the grades averaging roughly 0.005 oz/T Au, 6 oz/T Ag, 3% Pb, and 10% Zn are encouraging. Several smaller antimony prospects (Council, Surveyor, and Baker) occur in the Stuhini volcanic rocks.

The Stuhini Group rocks in the region near the Taku River consist mainly of "pyroclastic and related sedimentary rocks of andesitic composition" (Souther, 1971). Neither Souther nor Kerr (1948) mention the presence of rhyolites in this sequence - the rhyolites at Big Bull and Tulsequah Chief are described as "silicified, carbonatized, and albitized andesites charged with finely disseminated pyrite". The thick section of coarse dacitic breccia with felsic volcanic clasts in a quartz-sericite-altered groundmass at Tulsequah Chief is not noted, even though this unit is similar to those described by Sangster (1972) as being typical of volcanic vent areas, and exploration guides to massive sulfide deposits.

On the basis of these data, a thorough investigation of the Stuhini Group rocks near the Taku River is warranted. The study would attempt to outline zones of more-felsic volcanic rocks in the andesitic pile, and prospect these in detail as potential hosts for Pb-Zn-Cu-Ag massive volcanogenic sulfides. The high Ag values in the known deposits are particularly encouraging.

The region to be investigated covers an area of 35 km (NW-SE) by 20 km (NE-SW) at elevations ranging from near sea level to over 6000 feet. The survey should run from early June to mid-September. The field crew would consist of two senior geologists and one or two junior geologists, with two field assistants. If interesting ground were located it would be acquired by staking, and studied in more detail using geochemical and geophysical techniques to aid the geological interpretation. The crew would require daily use of a helicopter with high mobility.


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REFERENCES

- Kerr, F.A., 1948. Taku River Map Area, British Columbia. Geol Survey of Canada, Mem. 248.
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- Souther, J.G., 1971. Geology and Mineral Deposits of Tulsequah Map Area, British Columbia. Geol. Survey of Canada, Mem. 362.