

TO: V.A. Preto, Manager,
District Geology,

August 31, 1992

VGS → DG-Smith/lev
Sulphurets
888195

MONTHLY REPORT -- NORTHWEST DISTRICT

CONFIDENTIAL

AUGUST, 1992.

DISTRICT HIGHLIGHTS

***Tatsenshini** mineral potential survey being conducted by EMPR has discovered high copper grade massive sulphide mineralization on Geddes property only 5 km from the camp.

***Manalta** will conduct a 43-hole drill program on the **Telkwa** coal deposit (1570 metres of diamond drilling, 2800 metres of rotary drilling). Drilling will be mainly north of Telkwa River to fill in drilling gaps and extend the limits of coal in the area that would be mined first.

***Golden Bear** (Homestake) has had success in two of its drilling targets- the Fleece Bowl area and deep drilling of the Bear Main structure. Both will be followed up by drilling next year. More detail after the mine is visited in September.

*Rumour of an important new intersection at **Red Mountain**. Gold Fields has an active interest in the project. Drilling continues.

*Gold Fields intersected 0.17 oz/ton gold over 45 feet in its first hole on the **Nizi** property, epithermal gold in a new target area 80 km northeast of Dease Lake. Details under "Field Activities".

***Equity** has laid off 65 more people as pit mining is completed.

FIELD ACTIVITIES

*Visited Placer Dome Inc **Kerr** camp, accompanied by Tom Schroeter and Bob Lane. PDI have completed 10 holes (1400m) at **Kerr** (pre-1992 drilling: 130 million tonnes at 0.6% Cu, 0.4 gpt Au) and 22 holes (5280m) in the **Sulphurets Gold Zone** (pre-1992 drilling: 18 million tonnes at 0.35% Cu, 0.823 gpt Au). The 1992 program was nearly complete on August 5, tour guides were Brian Fowler, Ron Wells, Steve Price and Gwen Ditson.

Sulphurets

In the **Sulphurets Gold Zone** Cu-Au mineralization and attendant alteration are controlled by structure (Raewyn fault, a splay of overlying Sulphurets thrust) and a monzonite sill (medium grained, 10-20 meters thick). The "ore" zone is 20-90 meters thick and has been drilled over a 900 meter length, but best grades are restricted to a 400 meter interval. Within the monzonite sill early K-feldspar alteration has been overprinted by biotite which is associated with best grades. Pervasive quartz-sericite-pyrite alteration is extensive and forms two prominent cliff gossans that parallel the overlying Sulphurets thrust fault system. The Sulphurets Gold Zone occurs in the

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upper alteration band. Tourmaline is present in the lower alteration band, but apparently no economic mineralization is present.

Above the Sulphurets thrust there is a fault-truncated, weakly developed porphyry copper system. Chalcopyrite and magnetite are peripheral to steeply dipping, trachytic K-feldspar porphyry dikes. Grades are modest and the dikes are cut off by the Sulphurets Thrust.

At Kerr previous sites were redrilled in the hope of improving grades by improved core recovery, but recoveries were only marginally better despite painstaking efforts. One of the causes of drilling problems is a post-mineral brecciation event that is healed by anhydrite/gypsum. Dissolution of the sulphates and the schistose fabric of the ore zone rocks results in deep oxidation and supergene minerals (chalcocite, covellite) in the Rubble Zone. At a 0.3% Cu cutoff the Kerr deposit is 1300 meters long, 100 meters wide and 700 meters deep. Chalcopyrite is the chief copper mineral, a quartz-sulphide crackle breccia contains the best grade. The entire ore zone is a quartz sericite schist zone with sheeted quartz veins parallel to shearing. Green sericite and yellow-brown sericite are present, the latter variety is speculated to indicate a sedimentary protolith. Fragmental volcanic rocks, with minor sediments predominate on the west (hanging wall) of the Kerr shear zone but argillite/siltstone (Stuhini or Unuk Formations?) occurs on the east (footwall) side.

Kerr

*Visited Corona's exploration project at GNC (the claim block that surrounds the Eskay deposit) in the middle of a 7-hole program on August 6. I was shown around by Carl Edmunds and Dave Kuran. Corona is using sound geology to direct drilling of conceptual targets, a marked departure from earlier exploration at Eskay which was driven by good intersections. This new phase of geologic modelling is exemplified by the 800 meter planned depth of the fourth drill hole, which was collared during my visit. The most significant change from the Prime geological map is recognition of a gently north-plunging anticline whose closure is obscured by northerly faults and facies change. The stratigraphic section is well controlled by fossil and radiometric dating. Some new techniques include:

GNC

- trial seismic survey to map basement structures
- chemistry of conformable and discordant footwall alteration
- interpretation of transport direction in hanging wall rocks (Eskay sulphide deposits are linear, filling grabens. Paleotopography determined from the hanging wall may be more useful than doming of the footwall rhyolite.)

*Visited the Spectrum gold project in the Mt Edziza Recreation Area on August 7, at the conclusion of a 6 hole (2331 ft) program supervised by George Norman. Gold occurs in structurally controlled veins near the margin of a Jura-Cretaceous monzonite which exhibits porphyry copper style potassic alteration (Kspar, biotite). Most pre-1992 drilling has been in the QC Zone (614,700 tonnes at 12.3 gpt Au at 5 gpt cutoff according to a Columbia Gold in-house reserve calculation), but current drilling was directed to the 500 Colour Zone (3 holes) and the previously undrilled East Creek Zone (3 holes). Hole 02-87 in the East Creek Zone drilled down a semi-

Spectrum

SULPHURETS GOLD (SULPHSIDE) / KERR

August Report 1992

On August 4th and 5th Bob Lane, Paul Wojdak and I visited the Placer Dome Sulphurets Gold/Kerr projects located approx. 40 km air-miles north of Stewart. Access was gained via helicopter from the Tide Lake airstrip. Hosts at the camp included Brian Fowler (project leader for both projects), Steve Price (Kerr), Ron Wells (contracted consultant - Sulphurets Gold), Gwen Ditson (Kerr), and Lorne Warner (Sulphurets Gold). A total of 8 geologists are involved in the two projects. The size of the camp on Sulphurets Creek has ranged from 28 (now) to 52 persons.

a) SULPHURETS GOLD [MI 104B182]

The 1992 program was budgeted at \$1.3 million and includes 22 diamond drill holes totalling 5300 metres. The 'Main Copper' (Montgomery) fracture-controlled chalcopyrite in intrusive (à la southern BC types) showing occurs above the Sulphurets Thrust and is more typical of a 'porphyry'. The Sulphurets Gold Cu-Au showing occurs below the thrust and includes both tourmaline plus biotite plus albite alteration in strongly altered (silicified) intrusives. The sodium (albite) appears to be peripheral (outboard) to the biotite zone. Dykes appear to control mineralization at the 'Main Copper' showing on the upper plate but do not cross into the lower plate (i.e. mineralization is pre-thrusting). The Sulphurets Gold Zone has been traced by drilling over 900m in length, 15 to 80m in width, and 450m in depth. Chalcopyrite is the main economic mineral; there is no bornite. In 1991, Newhawk returned an assay of 0.59% Cu and 0.61 g/t Au over 117.6m in DDH 91-389. There is a direct 1:1 correlation of Cu:Au. Tourmaline does not occur in mineralized sections (rather peripheral on the southern lower cliff faces). Alteration episodes consisted of an original, early k-spar alteration (best Cu-mineralization) followed by an overprint of biotitic alteration. The 'core' of the altered intrusive (eg. DDH SG-92-2) carries good Cu values for over 100m in thickness. Above the thrust plate, gold values are up to 5 or 10 g/t Au. At the time of our visit, no assays had been received but mineralization appeared to be widespread. This zone plus others such as Mitchell (MI 104B180) and Iron Cap (MI 104B173,174) should provide enough copper and gold to suggest a significant mining scenario.

b) KERR [MI 104B181,188,191,192,194,198]

The purpose of the 1992 program was to "twin" previous drill holes and attempt to increase the grade (by better recoveries). The rock is highly schistose and large 'cavities' were encountered in previous drilling. Preliminary reserves were reported at 126 million tonnes grading 0.61% Cu and 0.27 g/t Au.

Mineralization consisting of chalcopyrite and bornite with minor chalcocite, covellite, and native gold is related to strong silicification and quartz veining along strong north-south shear zone(s) which have been intruded by feldspar porphyry dykes.

To date in 1992, approx. 1400m of core were drilled in 12 holes for a total cost of \$1.3 million. Obviously this was a very expensive, poor-recovery, relatively unsuccessful program. Geologically all core was logged using GEOLOG and thus there will finally be some consistency in the logging. The supergene mineralization will be a significant factor in this project. A total target of 350 million tons of ore is envisaged at KERR.

COMMENT

The 'SULPHSIDE' project which includes most of the porphyry Cu-Au ± Mo prospects on the old 'SULPHURETS' property has the potential for a very large, low grade bulk mineable operation. Access/development logistics will play an important role in feasibility studies.