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GEOPHYSICAL SURVEY

by

Gary **S. Lee, P.Eng.** June 1995

BOCR Mineral Claim Atlin Mining Division, B.C.

Grant Number 310503

NTS Map 104 N/11W Latitude 59° 40', Longitude 133° 26'

> Owner: Marvin Sherman Work done by Gary C. Lee

GEOLOGICAL BRANCH ASSESSMENT REPOR 1595

23,980

Date submitted:

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INTRODUCTION

<u>General</u>

From June 10 to June 15, 1993, a one-man exploration crew (the author) and from June 13 to June 16, 1995 the author and Marvin Sherman, completed a chain and compass grid, a magnetometer survey, and a VLF survey on the BOCR mineral claim. The BOCR claim (310503) consists of nine (9) units (3x3) and is owned by Marvin Sherman.

Location and Access

The property is located 25 kilometres by road from Atlin, B.C. via the Surprise Lake Road and a good four-wheel-drive road up the west side of Boulder Creek, and through the survey area. The property is on the east-facing slope separating Boulder and Birch Creeks. The claim is located about 59°40' north latitude and 133°26' west longitude and was formerly known as the CINBAR claim of Yukon Revenue Mines Limited. The maps on pages 2 and 3 show the location of the property.

<u>History</u>

The general history of the area can be found in two reports: "The Boulder Creek Tungsten Prospect" by Albert Reeve, P.Eng. (September 22, 1978) and "Report on Satellite Remote Sensing and Air Photo Interpretation, Boulder Creek Property" by Ron Robertson (March 1, 1988), and will not be repeated herein. Specifically, in 1943 0.9 tons of cobbed ore assaying 15.2% WO_3 , 0.31 oz/ton Au and 18% Sn was shipped from a prospect which appears to be located on the NE corner of the claim (Reeve, 1978). In 1963 Newmont Mining Corporation carried out a magnetic and geological survey and excavated 12 trenches on the central part of the claim (Reeve, 1978). No records of this work could be located at the time of writing this report.



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LOCATION MAP

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300

KILOMETRES

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<u>History (cont'd)</u>

In 1978 and 1979, Yukon Revenue Mines Ltd. carried out a limited magnetometer, trenching, winkie drill and I.P. (Peter Walcott) program. The drill section on the Winkie drilling can be found on page 6 and some of the I.P. anomalies are located on the map in the pocket. Reeves' report contains maps showing the location of all the trenches, with limited assay results.

Topography

The property ranges from 3700 to 4800 feet and, with the exception of some talus in the NW corner, is easily traversed. The claim is covered by brush, willow, alder and the occasional patch of spruce trees.

Grid and Field Procedure

Both the Newmont (1963) and Yukon Revenue (1978) grids have virtually disappeared from the field. However, upon closer examination, a few old cuttings were found from the Newmont baseline and consequently part of this grid was re-established and are delineated on the map in the pocket. The lines were run at approximately 120 metres in order to correspond with the old Newmont spacing of 400 feet. This made it possible to recover some of the I.P. anomalies which were run at 400 foot spaced lines. The stations are marked with orange and blue flagging at 20 metre intervals (felt pen) and are not re-cut.

Approximately 4000 metres of lines and cross lines (XL) were geophysically surveyed in June 1993. An additional 4000 metres of lines, cross lines and base line were surveyed between June 13 and June 16, 1995.

N 175 - izk Logger . 65 Telegraph 6 12b Bay Bay12 CA 120 17 6 -Creek Pb Ag 12 Deep Bay BARHA Telegraph TAKL S.S. n 8 Gater MT McDonald, 12a MTN VAUGHAN Lake S SU 12a M à 120 LEONARD 13a 1200 Lower McDonald 120 ZX Lake Burnet Eight RUBY .17 Cr. 16a MT. * Mile 1eh 13 12e 6 A 150 Inlet) b 12c 090 12c (16 John (A) e 12b Safety TABLE 17 12 Grad MTN. A St Cove LAKE Taku-b 17 MT TAGISH 1 MARTLIN 13a MUNRO CLAIMS 121 **IDAHO** > 35-36 Scotia Bay 17 BEAVIS H. A LEGEND 0 14 QUATERNARY Atlin Glacial distri allerno 17 BOCR CLAIM TERTIARY AND QUATERNARY CENOZ at and ormer 16a January, 16b Flanner 16 GEOLOGY MAP (104N) IN TERTIARY 15a. quintz in 15 214 G.S.C. - AITKEN - 1960 6 CRETACEOUS OR TERTIARY SLOKO. Acdente, basalt, advise mechane, advise charanter, danter, and related periochald's model, concilomenter, sandmone 14 1:250,000 PHOTO OF TRENCH CONTRINING CRETACEOUS MASSIVE SULPHIDES (RED BROWN) 13a, sledite, 13b, quartz mos 13 JURASSIC (Mey be in per older and vourget 1 COAST INTRUSIONS 12 Michigenetation grands rocks, 12a, Black Mountain body, 12b, Fourth of Ads (Deek body, 12b, per grants, 12d, Mouet Michigenet ports, 2d, educat, 2d), walking grants DRILLING LOCATION JURASSIC ARERGE GROUP Vakanic greywacke, robotow, machanae, shale congloaner music concretionary saidy knewtone 11 TRIASSIC () Greywacke, event, angellete, consideration, helt, state, p impure limentation, unper-10 PENNSYLVANIAN AND PERMIAN Article activities onto death and meta gablers. 94, second red death and meta-gablers. 94, second red second red second red and an analysis of the second red and an analysis of the second red sec CALLE CREEK GROUP 6. Chen, anyliter, chan, yabble conformerate and chen brettin decored quadrate and yabat; more 7 and 8 7. Creasestone and splanet grownerks; denored anyloholder, mixer to smal 8 9. Constant on the transition bretting ROZOIC B. I -mpitting and i PENNSYLVANIAN AND OR PERMIAN 1We 4. Anderer, basalt and rela 5 sandenore, shale 5. Lanestoor May be in part or whelh equivalent to 0, 7, 7 HAN AND/OR EARLIER 34, greentore, choite schit, greywarte, bothe schit, 36, input cystalling limetri 3 PRE-PERMIAN PRECAMBRIAN Quete monoi 2 Hourddeade quarts-feldigar schist and gran Impassing. May be in part aquivalent to 3 Underweisen nach schart recht of incertain possible unend, agen. Anderen, bandt, agglonerene, soft, brecht, ohne and quart, docter possibleren skychte. In ant probable Tennis, probable reprinders to 10 A



4467 1.38 Ag 0.60 Cu 0.41 WO3 0.04 Sm 10.8'- 3.3m. A Geonics EM-16 was employed for the VLF survey with readings taken at 10 and 20 metre intervals. Both the in-phase and quadrature were read. All stations were read by facing the direction of the transmitting station and thence turning clockwise 90° before taking the readings. Most lines had to be read on Maine, Seattle and Hawaii since the conductor directions were unknown. With one or two exceptions, Maine turned out to be the best station and the results are plotted on maps contained in the pocket.

Magnetometer readings were taken at 10 metre spacing with a Scintrex MF-2 fluxgate magnetometer. The instrument reads the vertical component of the earth's magnetic field. Readings were taken to the nearest 10 gammas in short loops and corrected for diurnal. Each loop was subsequently corrected to adjacent loops throughout the survey.

ECONOMIC GEOLOGY

As shown on Aitken's geology map (page 5), there are three geological formations contacting on the property: (1) greenstone and volcanic greywacke; (2) Alaskite; and (3) talc-bearing ultramafic rocks. As seen on the drill section (page 6) there are fluorite skarns and massive sulfides within the above. The sulfides are showing the best assays in Ag, Pb, Zn, Cu, WO₃ and Sn. It is unknown how many of these samples were assayed for gold. It is something to be considered since Boulder Creek has produced placer gold off and on since the turn of the century.

Of more general interest to the south on Pine Creek, in their paper entitled "The Listwanite-Lode Gold Association in British Columbia", C.H. Ash and R.L. Arksey have noted:

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"Linears defined by aeromagnetic lows in serpentinite may delineate zones of carbonatization. Magnetite formed during the serpentinization of ultramafic rocks produces a strong magnetic signature. Carbonatization results in the destruction of magnetite, creating zones of reduced magnetic The susceptibility. application of aeromagnetic lows as an exploration tool in carbonatization delineating zones of in ultramafics has been discussed by Gresens et al (1982). This approach has been applied by Homestake Mineral Development Co. in the Atlin camp and has proven successful (D. Marud, personal communication, 1989)."

PURPOSE

- 1) To see if the massive sulfides can be delineated by VLF and magnetometer association.
- 2) To keep an eye out for magnetic lows which may be good lode prospects, as discussed in the Economic Geology section.
- 3) To investigate the quartz vein at the north end of the property for a geophysical response.

RESULTS

The VLF results plotted can be seen as profiles on the maps contained in the pocket. The location of the VLF conductor axis has been transferred to the magnetometer map and the VLF composite contained in the pocket. Also, the old I.P. results have been transferred to the same map.

INTERPRETATION AND CONCLUSIONS

The conductors are labelled A to G on the magnetometer map and VLF composite contained in the pocket. Conductor A along with its

associated magnetic activity (contrasts) cuts almost directly over the massive sulfide occurrence as seen on the drill section on page 6. Conductor B also has massive sulfides associated on the bottom of the trench on L560S. Thus it is reasonable to assume that this geophysical application is an excellent tool for picking up massive sulfides in the area.

Conductors E and F along with their interesting magnetic contrasts should be explored since there has been no trenching or drilling in these areas to date.

There are numerous I.P. anomalies (from Yukon Revenue map) which should be investigated. Of particular interest are the magnetic lows centred on L730S at 0+60E, L610S at 0+50E and 0+20W with their corresponding I.P. anomalies. These magnetic lows may represent a listwanite occurrence.

The baseline was extended to 120N and six more lines were put in so as to investigate the quartz vein where the hand cobbed ore was supposed to have been shipped from in 1943. The quartz vein is marked on the composite map (crossing Lines 40S, O and 40N) and, as one can see, conductor C is closely associated with it and should be investigated further. Of further interest, conductor D and what looks like the start of conductor G represent new targets. Indeed, on Line 40S at 70E some underground equipment (hand steel, etc.) was found, which indicates that some old-timers were planning to collar a portal and then, for reasons unknown, abandoned it (it being 1943, perhaps they had to go to war). Either continue expanding the geophysical grid in the hopes of locating more targets, or commence a deep trenching and/or drill program to investigate the targets to date. The geophysical data, especially the I.P. profiles, should be examined in detail before spotting any deep drill holes.

BOCR MINERAL CLAIMS Atlin Mining Division, B.C.

VALUE OF ASSESSMENT WORK - GEOPHYSICAL SURVEY

FIELD:

Engineer: 4 days 🛿 350/day	\$1,400.00
Assistant: 4 days @ 220/day	880.00
Magnetometer and VLF rental	160.00
Supplies, groceries, meals	100.00
Truck (4x4): 4 days @ 125/day	500.00
ATV (Argo): 4 days @ 100/day	400.00
Mob/demob	150.00
REPORT:	
Data reduction, plotting, contouring, and	
report composition	600.00
Report typing	60.00
Report reproduction (sepias, etc.)	180.00

TOTAL

\$ 4,430.00

STATEMENT OF QUALIFICATION

I, GARY C. LEE, of the City of Whitehorse in the Yukon Territory HEREBY CERTIFY that:

- 1. I am a self-employed Geological Engineer.
- I am a graduate of the University of Toronto, Toronto, Ontario, with a degree in Applied Science Geological 2. Engineering (Mineral Exploration option).
- 3. I am a member of the Professional Engineering Associations of the Yukon, B.C. and Ontario.
- I supervised and carried out the work described in this 4. report.

Gary C. Lee, P.Eng.

Date: <u>JULY</u> 95 1995





