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GEOPHYSICAL AND ROCK CHIP SAMPLING REPORT

ON THE

CASTLE #2 MINERAL CLAIM RECORD NO. 1232 LIARD MINING DIVISION NTS 104 G/16 E LATITUDE: 57% PM LONGITUDE: 130° 22.45'W 40.5' /2.1'

> OWNER: TECK CORPORATION 1199 WEST HASTINGS STREET VANCOUVER, B.C. VGE 2K5

FILMED

OPERATOR: TECK EXPLORATIONS LIMITED 1199 WEST HASTINGS STREET VANCOUVER, B.C. V6E 2K5

BY

GUDMUND LOVANG

GEOLOGICAL BRANCH ASSESSMENT REPORT

11 14 March, 1986

Vancouver, B.C.

## TABLE OF CONTENTS

Introduction	1
Property Definition	1
Previous Work	1
Geology	2
Work Done:	2
Grid	2
Magnetometer Survey	2
VLF-EM Survey	3
Self Potential Survey	4
Rock Chip Sampling	4
Conclusion and Recommendation	5
Itemized Cost Statement	6
Statement of Qualifications - Gudmund Lovang Certificate of Qualifications - Ron Schneider Certificate of Qualifications - Peter G. Folk	7 8 9
Appendix - Assay Certificate following page	9
Figure 1Location Mapfollowing pageFigure 2- Claim Mapfollowing pageFigure 3- Magnetometer Map, Scale 1:2,500In poorFigure 4- VLF-EM Survey Map, scale 1:2,500In poorFigure 5- Self Potential Survey Map, Scale 1:2,500In poorFigure 6- Rock-chip and Grab Sample Map, Scale 1:2,500In poor	1 ket ket ket

# Page

#### - 1 -

#### INTRODUCTION

The Castle #2 mineral claim, consisting of 12 units, is located approximately 15 km west of Iskut on the northern part of Klastline Plateau. Elevations range from 1,670m to 2,130m.

The property is situated well above timberline with gentle to moderate topography. A medium size stream flows diagonally through the claim in a northwesterly direction.

Vegetation is restricted to mainly grass which provides a food source for the numerous mountain goats and sheep within the general area.

Access to the claim is by helicopter from Tenajon Motel, which is located on Highway No. 37.

Claim location and index map are included as Figures 1 and 2.

The present investigation was centered on the wide gossan zone which extends along the above-mentioned watercourse. A geochemical soil survey in 1980 (P.G. Folk) indicated the presence of gold within the zone.

The work was carried out by employees of Teck Explorations Limited during the period July 18 to July 27, 1985 and consisted of the following surveys:

Magnetometer7.VLF-EM7.Self potential5.Rock chip and grab samples8

7.8 line-km 7.2 line-km 5.0 line-km 82 metres

#### PROPERTY DEFINITION

The Castle #2 mineral claim, record no. 1232(3) of 12 units, was staked by Teck personnel in March of 1980. Adjoining to the east, the Castle #1 claim (15 units) was also staked at this time but later allowed to lapse.

Teck Corporation of Vancouver, B.C. is the current owner.

#### PREVIOUS WORK

Sumitomo Metal Mining Canada Ltd. held a larger group of claims in this area in the early 1970's called the "Jo" group. The Castle #2 claim covers part of this ground.





Sumitomo carried out a geochemical soil survey of 25 line-miles. The samples were analysed for Cu. Particulars are contained in Assessment Report No. 3291. A small diamond drilling program following the soil survey was not filed for assessment. Two drill sites dating back to this program have been identified on the Castle #2 ground (Figure 6).

Work by Teck in 1980 and 1981 consisted of geological mapping, soil geochem and rock-chip sampling. Assessment Report No. 9117 by P. G. Folk and 9878 by G. Schellenberg describe the work done at this time.

#### GEOLOGY

The property is underlain by Upper Triassic purple and greenish andesite flows and pyroclastics cut by younger felsite and feldspar porphyry dykes.

A strong gossan zone up to 150 metres wide runs through the property along the creek valley in a northwesterly direction. The zone is highly fractured and pyritized with recent ferricrete deposits on the more waterlogged level ground.

Although outcrops are relatively scarce with talus covering the slopes, the depth of cover is not great, probably averaging about 2m.

#### WORK DONE

#### Grid

The present work was centered on the strong gossan zone which has been the target for recent exploration work. The 1980 grid was rehabilitated with fresh pickets and corrected for slope. Silva compass, hip chain and clinometer were used for station determinations.

#### Magnetometer Survey

Instrument: EG & G Geometrics proton magnetometer, model G 816/826.

7.8 line-km were traversed on lines 100 metres apart with readings recorded at 25 meter intervals.

Base stations were established along the base line from 10W to 24W. The maximum diurnal variation was 12 gammas in about one hour. The grid lines were then looped and read back to base line. All readings were adjusted for for diurnal correction. The corrected values are plotted on Figure 3.

Isomagnetic lines are drawn at 500 gamma intervals and show the general magnetic trend to be northwesterly. This conforms to the strike of the rock formation as indicated by P. G. Folk (Assessment Report 9117).

The magnetic high on Lines 16W, 17W and 18W at about 1+50S is, as yet, unexplained. Analogous VLF-EM or self-potential anomalies are absent.

The generally broad magnetic low in the center of the grid probably represents an area of a more intense alteration of the rocks.

The moderate magnetic high on Lines 10W, 11W and 12W probably is a stratabound concentration of magnetite. Magnetite was reported by P. G. Folk in this area in the 1980 mapping (Assessment Report 9117).

#### VLF-EM Survey

Instrument: Crone Radem

Transmitter monitored: Annapolis, Maryland

7.2 line-km were traversed on lines 100 metres apart. Dip angle readings of in-phase components were recorded at 20 metre intervals along the northeast-southwest grid lines.

Conductors with a northwest and west strike would be picked up by using the Annapolis signal. Possible conductors striking north and northeast, however, may be missed or give a weak response.

The data was filtered by using the Fraser method and the positive numbers are plotted on Figure 4 on the right side of the grid lines. The raw data is plotted on the left side of the grid lines.

The weak to moderately strong anomalies following the stream valley is interpreted as representing a fault zone. At sample site 4, a 2.5 metre wide fault zone was excavated (see Figure 6). The parallel and more persistent conductor to the northeast may represent the main fault.

The offset of the main conductor at Line 17W and again at 24W is a possible indication of north-trending cross structures. An abundant concentration of quartz-barite veins and stringers in the north flowing tributaries of the main stream is suggestive of this.

#### Self Potential Survey

Instrumentation: Digital Multimeter, 2 porous pots, 300 metre wire.

Only part of the established grid could be surveyed due to snow remnants. Attempts were made to obtain readings in the snow-covered areas without success. As a result, only about 5 line-km were completed.

The long wire method was employed with 18W on the base line chosen as base point. Values along the base line were then established by reading in both directions. In extending the line beyond 300 metres an overlap of 2 stations was made and the average value calculated. A potential at base point of -50 mV was chosen and added to all readings in order to eliminate positive values. The values on the grid lines were established by tieing into the corrected values on the base line.

Pot corrections were made several times a day.

The results of the survey are shown on Figure 5.

The objective of the survey was to outline near surface mineralization. Due to lack of continuity in the survey caused by snow remnants, the anomalies are not contoured on Figure 5. However, target selection for rock-chip sampling was based on results of the SP survey and the presence of outcrop exposures considered.

#### Rock-Chip Sampling

A total of 35 rock-chip and grab samples were collected at 11 sites over a total of 82 metres. The sample sites were selected based on available outcrops in areas of strong self potential response. Site 4 was sampled based on a high geochemical soil value in gold (1.7 ppm) which was obtained in the 1980 survey.

The samples were shipped to Acme Analytical Laboratories in Vancouver, B.C. for Cu, Ag and Au assays. A few samples were also assayed for W and Ba. Details of the assay technique are included in the heading of the Laboratory Assay Sheet (Appendix).

Sample sites and results are shown on Figure 6.

Practically all samples were anomalous in gold with a peak value of 0.301 oz/ton. The best section is from Site 2 with 0.233 oz/ton Au over 3 metres in siliceous volcanic rock.

All gold values greater than 0.1 oz/ton occur in areas with quartz/barite veining but not necessarily in the veins, as can be seen from Sites 1 and 2. See Figure 6.

The strongest SP response is from the predominantly overburden-covered area of Sites 5 and 6. The best values obtained here carried 0.216 oz/ton Au over 1 metre from Site 5B and 0.124 over 2 metres from Site 6. The bleached volcanic rock contains aboaut 20% of pyrite with minor chalcopyrite. Stringers of guartz and barite are also present.

Angular to sub-angular, one-half metre diameter boulders containing 50% pyrite with some chalcopyrite occur upstream from sample Site 6. Two samples were collected and returned 0.058 and 0.232 oz/ton Au. The boulders appear to be of local origin in an area of strong self-potential response and may represent a mineral occurrence of significant grade and size.

#### CONCLUSION AND RECOMMENDATION

Gold values in the 0.2 to 0.3 oz/ton range with associated values in Ag, Cu and barite occur within a highly altered large gossan in a volcanic and sub-volcanic environment. The gold occurs within silicified zones and highly pyritized zones within the volcanics and is in part related to self-potential anomalies.

Investigation so far carried out by Teck has been on surface in this largely overburden-covered anomalous area. The overburden mantle appears to be thin, probably not exceeding two metres and therefore will not pose serious problemsfor further hand-trenching and diamond drilling. Further exploration is warranted on the Castle #2 claim. A program of additional self potential measurements, trenching and Winkie diamond drilling to shallow depths is recommended.

Respectfully submitted,

Gudmund Lovang Peter

### ITEMIZED COST STATEMENT

# Personnel

G. Lovang, Prospector July 18-27, 1985 10 days @ \$157.75/day		3	\$1,570.75
R. Schneider, Technologist July 18-27, 1985 10 days @ \$110/day			1,100.00
Transportation			
Frontier Helicopters to and from Dease Lake twice July 20 and July 27, 1985			1,813.90
Vehicle Rental			
4-Wheel drive Blazer (Vancouver-Iskut-St July 18, 19 and 27, 1985 3 days @ \$25/day	:ewart)	- E	75.00
Laboratory Cost			
35 rock samples 10 assays for Cu, Ag, Au, W @ \$25 10 ICP analyses for Ba @ \$6.50 25 assays for Cu, Ag, Au @ \$16 Sample preparations 35 x \$2.50	\$250.00 65.00 400.00 <u>87.50</u>		802.50
Accommodation, Meals, Groceries			
July 19, 20 and 27, 1985 - Motel July 19-27, 1985 - Groceries - 9 days @	137/day		150.54 333.00
Expendable supplies			252.86
Report preparation, drafting, printing			1,000.00
			\$7,392.05

#### STATEMENT OF QUALIFICATIONS

#### Gudmund Lovang 1132 Semlin Drive Vancouver, B.C. V5L 4K2

- 1970-1985: Mineral exploration and prospecting in British Columbia, Yukon, Northwest Territories, Ontario and Western United States for Teck Corporation and associated companies.
- 1984-1985: Geochemistry Course, University of British Columbia, "Exploration Geochemistry".
- 1974: Geophysical Course, British Columbia Institute of Technology.
- 1973-1974: Geology Course, British Columbia Institute of Technology, "General Interest Geology".
- 1973: Prospecting Course, British Columbia Institute of Technology, "Introduction to Geology and Prospecting".

March 14, 1986 Vancouver, B.C.

Gudmund Lovang, Prospector

### CERTIFICATE OF QUALIFICATIONS

#### Ron Schneider R.R. 1, Ritchie Drive Cawston, B.C. VOX 1CO

I hereby certify that:

- I graduated from British Columbia Institute of Technology in "Mining Technology" in 1972.
- Since graduation I have worked at Dankoe Mines and Brenda Mines as well as in the general exploration field in British Columbia.

March 14, 1986 Vancouver, B.C.

Schneider, Technologist Ron

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#### PETER G. FOLK, P.ENG.

I hereby certify that:

- I am a graduate of the University of British Columbia in 1971 with a B.A.Sc. degree in geological engineering.
- 2. I am a member in good standing of the Association of Professional Engineers of the Province of British Columbia.
- 3. I have worked since graduation as an exploration geologist and mine geologist in Canada and the United States.
- The work described herein was done under my direction.

March 14, 1986 Vancouver, B.C.

E ANALYTICAL LABORATORIES LTD. 852 E.HASTINGS ST.VANCOUVER B.C. V6A 1R6 PHONE 253-3158 TELEX 04-53124 DATE RECEIVED: AUG & 1985

DATE REPORT MAILED:

Aug 15/85-

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#### ASSAY CERTIFICATE

1.00 GRAM SAMPLE IS DIGESTED WITH SOML OF 3-1-2 OF HCL-HN03-H2D AT 75 DEG. C FOR ONE HOUR. AND IS DILUTED TO 100ML WITH WATER. DETECTION FOR BASE METAL IS .012. - SAMPLE TYPE: ROCK CHIPS AU\$ 10 GRAM REGULAR ASSAY BA\$ BY EDTA DEGESTION AND ICP

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21206 21207 21208 21208 21208 21209 21209 21210 .15	.07 .05 .14 1.00 .07	.004 .001 .019 .233 .004	.01 .01 .01 .01 .01	36.61 13.16 3.12 .79 .81	
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