

827868

APPRAISAL REPORT  
ON  
THE VELVET MINE  
ROSSLAND AREA  
TRAIL CREEK MINING DIV. B. C.

FOR

KENDALL MINING & EXPLORATION CO. LTD.  
1747 West 3rd Avenue  
VANCOUVER, B. C.

BY

J. P. ELWELL, P.Eng  
1030 - 510 West Hastings Street  
VANCOUVER, B. C.

MAY 2nd 1978

TABLE OF CONTENTS

	<u>Page</u>
SUMMARY .....	1
INTRODUCTION .....	2
LOCATION AND ACCESS .....	2
PROPERTY .....	3
HISTORY .....	3
GENERAL GEOLOGY .....	4
KENDALL-ALLAN DIAMOND DRILLING CO. AGREEMENT .....	5
GENERAL APPRAISAL AND CONCLUSIONS .....	5

MAPS

LOCATION MAP OF VELVET MINE CLAIMS

follows p. 3

APPRAISAL REPORT ON THE  
VELVET MINE, ROSSLAND AREA,  
TRAIL CREEK MINING DIVISION, B. C.

SUMMARY

This report makes a general appraisal of the Velvet Mine, owned by Kendall Mining and Exploration Co. Ltd., in respect to a proposed agreement between the company and Allan Diamond Drilling Co. Ltd. whereby the latter company would carry out \$50,000 worth of diamond drilling on the property to earn a maximum of 200,000 shares and a 20% interest in the claims at no cost to Kendall.

After a review of the past production history of the mine, and the possibility of finding additional ore, it is concluded that the agreement would be favorable and equitable to Kendall Mining, provided that the drilling program is monitored by the company's engineer.

## INTRODUCTION

This report, prepared at the request of Kendall Mining and Exploration Co. Ltd. consists of an appraisal of the Velvet Mine located near Rossland, B. C., in respect to a particular contract entered into between Kendall Mining and Exploration, and Allan Diamond Drilling Co. Ltd. of Merritt, B. C.

The writer has not examined the mine, and it is felt that very little purpose would be served by an inspection at this point, as the mine has been inoperative for several years and a certain amount of cleanup and rehabilitation would be required before any new data could be obtained on the mineralization or geological structures. However there are a number of mine plans, geological sections, and assay data available from work by Hill, Starck and Associates Ltd., and Rayrock Mines Ltd., which have been made available for study, and the conclusions drawn in the report is based on this, and other data believed reliable.

No attempt will be made at this time to estimate the overall value or potential of the mine, the purpose being solely to determine if the proposed agreement between Kendall and Allan Diamond Drilling (to be discussed in a following section), would be beneficial to the company.

## LOCATION AND ACCESS

The Velvet Mine is located about 3 km north of the Canada-U.S.A. boundary (Lat 49°N) and about 17 km southwest of the town of Rossland, in the Trail Creek Mining Division of B. C. The mine is on the northwest slope

of Sophie Mountain, the workings ranging from about 3600 to 2900 feet in elevation.

Access to the property is by way of the Rossland-Grand Forks highway. A Location Map accompanies this report.

PROPERTY

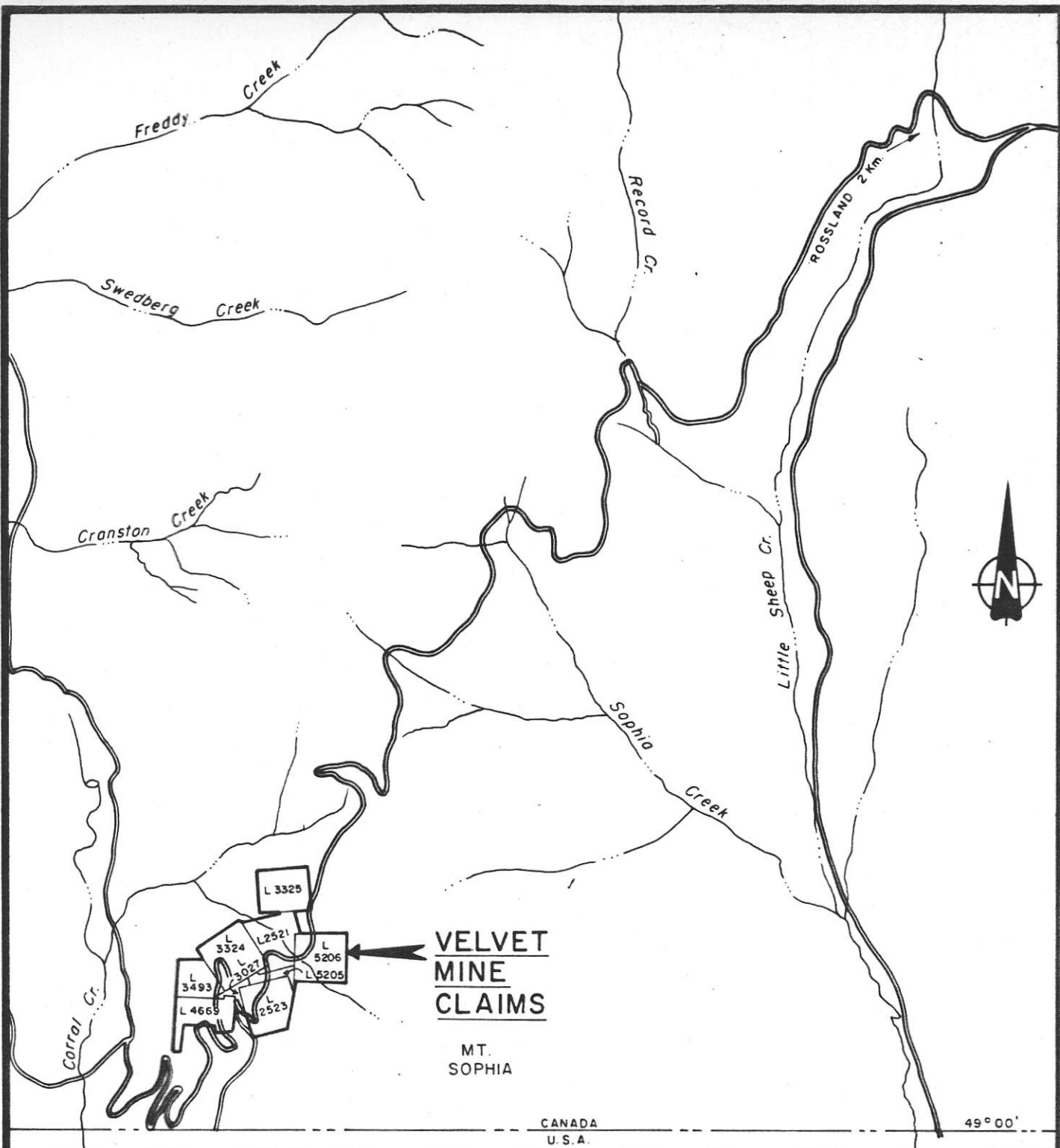
The Velvet Mine property consists of nine Crown Granted mineral claims as follows:-

<u>Name</u>	<u>Lot No.</u>
Copper Wonder	3493
Princess	4669
Velvet	2521
Portland	2523
Last Chance	3027
Whoop Up	3324
Tootsie	3325
Velvet Fr.	5205
Bluebell	5206

Legal status of the claims has not been varified by the writer.

HISTORY

According to the B. C. Minster of Mines Reports, the property was discovered in 1896, when the Velvet claim was staked, the other claims being recorded in 1897, and considerable mining and development work has been done by several companies up to 1965. The production reported in the Minster of



**VELVET  
MINE  
CLAIMS**

MT.  
SOPHIA

CANADA  
U.S.A.

49° 00'



**KENDALL MINING & EXPLORATION CO. LTD.**

**LOCATION MAP  
OF  
VELVET MINE CLAIMS**

ROSSLAND AREA, TRAIL CREEK MIN. DIV., B.C.

**SCALE 1:50,000**

DRAWN FROM MAP 82F/4W

APRIL 2, 1978

J.P. ELWELL, P. Eng.

Mines Report from 1901 to 1965 is 135,104 tons of ore yielding 22,617 oz. Au, 27,262 oz. Ag and 3,409,583 lbs. Cu.

The mine was originally developed by a vertical shaft with six levels, the No. 4 level being driven to the surface for drainage. Later the No. 8 level adit was driven and connected to the bottom of the shaft by raises. This is now the main haulage adit.

The property is now owned by Kendall Mining and Exploration Co. Ltd., having been purchased from United Cardigan Developments Ltd. by agreement dated March, 1978 (subject to approval by regulatory authorities)

#### GENERAL GEOLOGY

The detailed structural geology and mineralization of the Velvet Mine will not be covered in this report, but in general, the county rock consists of volcanics of the Rosslund group. These have been cut by a number of replacement-fissure veins having a general strike north-south, and a steep dip to the west down to the 600 level. Below the 600 level, some complex folding and faulting has resulted in a synclinal effect, with some ore zones being flat, or having a reverse dip. Geological cross sections prepared by Rayrock Mines Ltd in 1966 show this in some detail, and in Henry Hill's report of 1957, he states that in his opinion this is a favorable structural condition.

The ore bodies mined to date are lenticular in shape, varying in width up to 15 feet. The economic minerals present consist of gold, silver and copper, associated with pyrite and other sulphides.

KENDALL-ALLAN DIAMOND DRILLING CO. AGREEMENT

By Memorandum of Agreement signed 2nd April 1978, Allan agrees to complete at his sole cost, a diamond drilling program on the claims of a minimum of \$50,000 expenditure. Kendall agrees that after an expenditure of \$20,000, Allan shall have earned a 5% interest in the claims, and shall receive 50,000 shares of Kendall stock. For each subsequent \$10,000 spent by Allan on drilling up to \$50,000, Allan shall receive an additional 5% interest and 50,000 shares, or a total of a 20% interest and 200,000 shares if the program is completed.

If ore is encountered, Allan will carry out a bulk sampling program at his expense of not more than 20,000 tons.

GENERAL APPRAISAL AND CONCLUSIONS

Since the discovery of the property in 1896 until the mid 1960's a large amount of mining and development has been done on the property and there has been considerable capital outlay in the mining and milling plants. It is not known what profit, if any, the previous operators realized, but the fact that the large capital investments were made indicates encouraging results, and responsible geologists in the 1950's and 1960's have all recommended continued exploration and development when gold was \$35.00 per oz. and silver at around \$1.00 per oz. Since that time, gold and silver have increased in price at least five times, which should more than compensate for increased production costs for new ore if found.



Under the proposed agreement, Kendall stands to gain \$50,000 worth of exploration diamond drilling on their property at no cost except for the issuance of 200,000 shares and the assignment of a 20% interest to Allan.

If the drilling is done in a competent and efficient manner, it is felt that the probabilities of locating economic mineralization with this amount of drilling, which should be at least 3,000 feet, is well worth the assignment of the stock and property interest by Kendall, provided that the results of each drill hole are reviewed and sampled by an engineer representing Kendall, who will report to the company on the results achieved, and ensure that the drill holes are laid out to the best advantage for geological information, and that maximum footage is being drilled for the funds expended.

May 2nd 1978

  
J. P. FOWELL, P.Eng.

C E R T I F I C A T E

I, James Paul Elwell, of 4744 Caulfield Drive, West Vancouver, B. C.,  
do hereby certify that:

1. I am a Consulting Mining Engineer residing at 4744 Caulfield Drive,  
West Vancouver, B. C., and with an office at 1030 - 510 West Hastings  
Street, Vancouver, B. C. V6B 1L8
2. I am a graduate of Mining Engineering from the University of Alberta  
in 1940, and am a Registered Professional Engineer in the Province  
of British Columbia.
3. I have no personal interest, directly or indirectly in the properties  
or in Kendall Mining & Exploration Ltd. securities, nor do I expect  
to receive directly or indirectly any interest in such property or  
securities.
4. The findings in the report are from data obtained from the reports  
and maps referred to.

DATED at VANCOUVER, B. C. this 2nd day of May, 1978

  
JAMES PAUL ELWELL, P.Eng.

## INTRODUCTION

During the period November 17-24, 1981 Glen E. White Geophysical Consulting & Services Ltd. conducted a VLF-electromagnetometer survey over the Velvet Mine near Rossland, B.C. A total field magnetic intensity magnetometer survey was conducted coincidentally by Velvet Mines personnel. The data is also included in this report.

The purpose of the survey was to try and trace at surface known veins of auriferous and argentiferous chalcopyrite-magnetite mineralization.

## PROPERTY

The property consists of a group of old Crown grant mineral claims numbers; Copper Wonder, Lot No. 3493, Princess, Lot No. 4669, Velvet, Lot No. 2521, Portland, Lot No. 2523, Last Chance, Lot No. 3027, Whoop Up, Lot No. 3324, Tootsie, Lot No. 3325, Velvet Fraction, Lot No. 5205 and Bluebell, Lot No. 5206, as illustrated on Figure 1.

## LOCATION AND ACCESS

The Velvet Mine is located about 1½ km north of the Canada - U.S.A. boundary, on the northwest slope of Sophie Mountain. Rossland, B.C. is situated some 11 km north-east of the claims. Access is by some 25 km of mountained gravel road. Known as the old Rossland-Grand Forks highway. Lat. 49°01'N, Long. 117°55'W, N.T.S. 82 F/4W.

### GENERAL GEOLOGY

The Velvet Mine is discussed extensively by John O Rud Geological Consultant in his report dated November 1981. He mentions that the property is described by Drysdale in G.S.C. Memoir 77. The original claim was located in 1896 on gold-copper mineralization. The mine contains eight levels and was explored up to 1968. The underlying geology is an andesite of the Rosslund Formation. The andesite has been altered to a greenstone with coarse siliceous, chlorite and epidotized phases and intruded by a series of porphyritic syenite and medium grained granodiorite dykes. The dykes dip steeply to the west, range in width from five to twenty feet and show pronounced chill borders. Underlying the andesite is a serpentinite which forms a roof pendant over a major intrusive known as the Coryell batholith. The mineral veins are found in large shear zones in the serpentinite and generally strike north 10 degrees east and dip 50 to 80 degrees west. The largest mineral shoots are formed at the intersection of shear zones with dykes or small subsidiary shears.

### SURVEY GRID

The survey grid was established by Velvet Mines personnel previous to the survey work. It consists of east-west lines spaced 200 feet apart (60 m) with stations at 100 foot (30 m) intervals. Some 7 miles (11 km) of work was completed.

### PROTON PRECESSION MAGNETOMETER SURVEY

The magnetometer survey was carried out utilizing two GSM-8 proton precession magnetometers. One of these was operated in conjunction with a CMG MR-10 base magnetometer recorder to allow diurnal and micropulsation variation removal. Operator precautions of demagnetization and consistency were observed and field clock to base magnetometer timing skew was maintained within one second per day. Corrected, unfiltered data are plotted on each of the base-maps.

### VLF-ELECTROMAGNETOMETER SURVEY

This survey was conducted using a Geonics EM-16 VLF-Electromagnetometer. This instrument acts as a receiver only. It utilizes the primary electromagnetic fields generated by VLF marine communication stations. These stations operate at a frequency between 15-25 KHZ, and have a vertical antenna-current resulting in a horizontal primary field. Thus, this VLF-EM measures the dip-angle of the secondary field induced in a conductor.

For maximum coupling, a transmitter station located in the same direction as the geological strike should be selected, since the direction of the horizontal electromagnetic field is perpendicular to the direction of the transmitting station.

Readings were taken at 30 m intervals and the data filtered in the field by the operator as described by D.C. Fraser, Geophysics Vol. 34, No. 6 (December 1969). The advantage of this method is that it removes the dc and attenuates long spatial wave lengths to increase resolution of local anomalies, and phase shifts the dip-

angle data by 90 degrees so that crossovers and inflections will be transformed into peaks to yield contourable quantities.

#### DISCUSSION OF RESULTS

The total field magnetic intensity data shows considerable variation consistent with a greenstone-serpentinite lithology. The veins were reported to trend just east of north, however the high magnetic values are definitely biased in a northwest direction. This may suggest a preferred foliation direction within the serpentinite. A general background value is some 500 gammas, magnetic highs reach 1000 to 3000 gammas and magnetic lows 200 to -160 gammas. The number of magnetic highs scattered throughout the survey area likely relate to concentrations of magnetite mineralization either as veins or within the serpentinite. There is a considerable amount of iron scrape in the survey grid from the mine, pipes and a townsite which has burnt down. Undoubtedly this has contributed to some of the responses. An interesting dipole response occurs around the baseline 500W on line 100N in an area of several shafts. Here the magnetic high could join the one at 300W on line 300N which would form a northeast trend and continue to line 1100N. This magnetic high forms the eastern edge of a circular magnetic plateau of some 750 gammas. The magnetic high on line 100S-1000W continues northward and forms the western edge. This circular plateau like feature is defined to the north by a northeast trending magnetic low which intersects another low in the area of line 700N-1500W. This other low commences in the northwest corner of the survey grid and continues southeastward to line 100S where it is drawn southwestward pos-

sibly by a northeast-southwest shear zone. Certainly a number of old trenches occur in this area likely heralding the presence of mineralization.

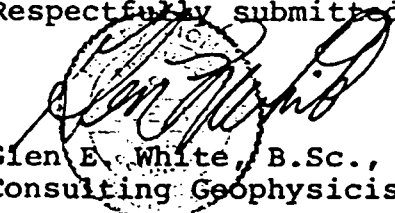
The VLF-electromagnetometer survey was conducted using Annapolis Maryland as Seattle was off the air. However both stations are at a poor induction angle. The VLF-EM data is overwhelmed by a pipeline and a telephone line which traverse the grid. In spite of this, two very interesting features are noted. The dipole magnetic high on line 100N-500W is associated with a strong conductive anomaly which trends northeastward parallel to the magnetic high. The second well defined trend is a negative one which commences in the northwest corner of the survey grid coincident with the magnetic low and trends southeastward diagonally across the survey grid. This zone is reflected in the magnetic contours as well. It suggests a major lithologic or structural discontinuity.

#### CONCLUSION AND RECOMMENDATIONS

The VLF-EM and ground magnetometer surveys indicated a number of interesting features. The old workings at 100N-500W have a strong magnetic and electromagnetic reflection. These workings are on the eastern edge of a magnetic plug like feature. A pronounced magnetic low and coincident reverse electromagnetometer crossover trend form a northwest-southeast diagonal across the survey grid. This zone is intersected by a pronounced south-west trending magnetic low in the area of line 700N-1500W and is considered a prime exploration area. A number of other magnetic highs were obtained which could best be evaluated by a program of soil sampling and geological mapping.

A deep penetrating time domain electromagnetometer system would assist in searching for more deeply buried massive sulphide targets.

Respectfully submitted,



Glen E. White, B.Sc., P.Eng.,  
Consulting Geophysicist