

SEP 2 9 1997

Gold Commissioner's Office VANCOUVER, B.C.

A GEOPHYSICAL REPORT

<u>ON</u>

#### INDUCED POLARIZATION SURVEYING

Rock Creek Area, B.C. 49°, 20'N, 118° 55'W N.T.S. 82 E/7

Claims surveyed: ROI1 TO 4 DAN 1, 2 WARD 1, 3 LOT 2300 LOT 2301

Survey Dates: July 9th to 25th, 1997

FOR

EMJAY ENTRPRISES LTD.

Surrey, British Columbia

by

PETER E. WALCOTT & ASSOCIATES LIMITED

Vancouver, British Columbia

SEPTEMBER 1997

GEOLOGICAL SURVEY BRANCH

**ASSESSMENT REPORT** 

Geophysical Services

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#### SURVEY SPECIFICATIONS.

Between July 9th and 25th, 1997, Peter E. Walcott & Associates Limited carried out induced polarization (I.P.) surveying over parts of the Roidan property, located in the Rock Creek area of British Columbia, for Emjay Enterprises Ltd.

The survey was conducted over eight widely spaced compass lines that were established by the previous operator of the property, and that were rehabilitated and brushed out for passage, and chained by the I.P. crew.

Measurements (first to sixth separation) of apparent chargeability (the I.P. response parameter) and resistivity were made every 25 metres along the lines using the pole dipole method of surveying with a 25 metre dipole.

The I.P. data are presented on individual pseudosections bound in this report at 1:2500. In addition the 21 point filter chargeability and resistivity are presented in contour form on plan maps of the line grid at 1:10,000.

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### **PROPERTY, LOCATION & ACCESS**

The property is located in the Greenwood Mining Division of British Columbia and consists of the following:

Claim Name	<u>Units</u>	Record No.	Anniversary
ROI1-4	4	328178 - 81	July 18TH
DAN 1-4	4	329760 - 63	August 9th
DAN 5 - 12	8	348572 - 79	July 19th
BAR 1 - 2	2	356866 - 67	June 26th
WARD 1	20	333049	Dec. 8th
WARD 2	20	333050	Dec. 8th
WARD 3	20	333051	Dec. 8th
WARD 4	20	333052	Dec. 8th
Reverted Crown (	Frants		
LOT 1462	1	350993	Sept. 30th
LOT 2300	1	350994	Sept. 30th
LOT 2301	1	350995	Sept. 30th
LOT 2646	1	350996	Sept. 30th
LOT 2847	1	350997	Sept. 30th
LOT 2865	1	350995	Sept. 30th
LOT 30245	1	350999	sEPT.30TH

The claims are situated some two and a half kilometres north of the confluence of Guttridge Creek with the Kettle River and on the west side of the latter, and some 45 kilometres north of the community of Rock Creek, British Columbia.

Access to the property is readily available via Hwy 33 and good logging roads from either Rock Creek to the south or Beaverdell to the north.

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### PREVIOUS WORK.

Previous work on the property consisted of prospecting, sampling, drifting, etc. throughout the past century.

In recent years geochemical sampling and induced polarization surveys have been carried out on the property.

The results of the more recent work are documented in reports held and/or available to Emjay Enterprises.



### GEOLOGY.

The property is mostly underlain by volcanic - sedimentary rocks of the Anarchist Group - Permian/Carboniferous in age - intruded by granodiorites of the Nelson Group of Middle Jurassic age.

For further information the reader is referred to reports held by Emjay Enterprises and to a 1997 report on the property by R.E. Gale, Ph.D., P.Eng.



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### PURPOSE.

The purpose of the I.P. survey was to investigate the nature of the reponse over the known showing and favourable geochemical area of interest in the prospective host, the pyritic volcanoclastics and sediments, in an effort to better outline and define targets for borehole investigation.



#### SURVEY SPECIFICATIONS.

The induced polarization (I.P.) survey was conducted using a pulse type system, the principal components of which are manufactured by Huntec Limited of Metropolitan Toronto, Ontario, and BRGM Instruments of Orleans, France.

The system consists basically of three units, a receiver (BRGM), a transmitter and a motor generator (Huntec). The transmitter, which provides a maximum of 7.5kw d.c. to the ground, obtains its power from a 7.5kw 400 c.p.s. three phase alternator driven by a gasoline engine. The cycling rate of the transmitter is 2 seconds "current-on" and 2 seconds "current-off" with the pulses reversing continuously in polarity. The data recorded in the field consists of careful measurements of the current (I) in amperes flowing through the current electrodes  $C_1$  and  $C_2$ , the primary voltages (V) appearing between any two potential electrodes,  $P_1$  through  $P_7$ , during the "current-on" part of the cycle, and the apparent chargeability, ( $M_a$ ) presented as a direct readout in millivolts per volt using a 100 millisecond delay and a 1000 millisecond sample window by the receiver, a digital receiver controlled by a micro-processor - the sample window is actually the total of ten individual windows of 100 millisecond widths.

The apparent resistivity  $(f_a)$  in ohm metres is proportional to the ratio of the primary voltage and the measured current, the proportionality factor depending on the geometry of the array used. The chargeability and resistivity are called apparent as they are values wich that portion of the earth sampled would have if it were homogeneous. As the earth sampled is usually inhomogeneous the calculated apparent chargeability and resistivity are functions of the actual chargeability and resistivity of the rocks.

The survey was carried out using the "pole-dipole" method of Surveying. In this method the current electrode,  $C_1$ , and the potential electrodes,  $P_1$  through  $P_7$ , are moved in unison along the survey lines at a spacing of "a" (the dipole) apart, while the second current electrode,  $C_2$ , is kept constant at "infinity". The distance, "na" between  $C_1$  and the nearest potential electrode generally controls the the depth to be explored by the particular separation, "n", traverse.

On this survey a 25 metre dipole was employed and first to sixth separation readings were obtained.

In all some 16.0 kilometres of lines were established and some 16.0 kms I.P. traversing were completed using the above method.



#### DISCUSSION OF RESULTS.

The I.P. survey over the area surveyed showed the property to exhibit a moderate variable chargeability background as expected from pyritic volcaniclastic and sedimentary rocks above which several complex zones of higher chargeability response are discernible as can be seen from the respective pseudosections.

Due to the large line separation (300 metres) it is difficult to establish line to line correlation between these zones. However the writer has attempted to make some broad correlation by constructing contour plans of the 21 point filter chargeability and resistivity data - Maps W-556-1 & 2 respectively.

The resistivity maps - Map W-556-2 - shows the south east quadrant and more to exhibit resistivities of generally less than 1000 ohm-metres.

Two more areas of lower resisitivity are clearly discernible, one on the western extremity of the grid centred on Line 9100N, and the other running SSW across the grid from 8500E on Line 10300N to 9000E on Line 8200N (part of bigger low in the south) reflecting the drainage.

The break and offset of the resistivity highs between Line 9100N and 9400N suggest the presence of an east-west fault.

Another possible northeasterly trending fault is suggested by the line of lows on Lines 8200, 8500, 8800 and 9100N respectively.

The plan map of the chargeability data - Map W-556-1 - shows the presence of three large zones and two smaller zones of higher chargeability as outlined by the 26 millivolt per volt contour.

The strongest of the larger zones is located in the southeast corner of the grid and is associated with scattered anomalous Au and As soil values near the contact between the Anarchist group and the dioritic intrusive.

Similarly the northeasterly trending complex shaped high in the northeastern section is associated with a similarly trending narrower Au - As anomalous zone. Higher resistivities are associated with its highest values on Line 10000N.

The third of these zones is associated with the resistivity low centred at the western end of Line 9100N. It is also correlatable with an anomalous Au trend at its northern end on Line 9700N.

The stronger of the two smaller zones occurs around the creek on Line 9100N. It is coincident with a northeasterly trending As anomaly.



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#### DISCUSSION OF RESULTS cont'd

The last of the zones is centred around 9000E on Line 10000N, is associated with a resistivity high, and has no known geochemical assocation.

In addition to these a number of smaller zones are discernible as mostly one line closures on Map W-556-1. Of most interest are the two anomalies on the western portion of Line 9400N near a mapped contact and associated as anomalous values.

Other chargeability zones - mostly one dipole maximum width - are shown on the individual pseudosections.

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#### SUMMARY, CONCLUSIONS & RECOMMENDATIONS

Between July 9th and 25th, 1997, Peter E. Walcott & Associates Limited undertook a line re-establishment and induced polarization surveying programme over part of a property, located in the Rock Creek area of British Columbia, for Emjay Enterprises Ltd.

The I.P. survey, carried out on widely spaced lines, located the presence of numerous complex chargeability highs composed for the most of narrow single dipole responses which made line to line correlation difficult if not nigh improbable.

These responses are presumably due to pyrite concentrations in the underlying rocks in shears, veins, altered material, etc.

As a result the writer recommends that these anomalous responses be carefully studied with the known geology and geochemistry in an effort to determine their causative sources.

He further recommends that laboratory measurements of chargeability and resistivity be made on representative rock samples to better understand the responses obtained here.

Respectfully submitted,

PETER E. WALCOTT & SOCIATES LIMITED

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Peter E. Walcott, P.Eng. Geophysicist

Vancouver, B.C. September 1997

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# APPENDIX

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# COST OF SURVEY

Peter E. Walcott & Associates Limited undertook the survey on a contract basis.

The total cost of services provided was \$31,222.60 of which \$4,061.72 was attributed to the Roidan Group.

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# PERSONNEL EMPLOYED ON SURVEY

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. 9th - 24th, 7	
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### CERTIFICATION.

I, Peter E. Walcott, of the City of Coquitlam, British Columbia, hereby certify that:

- 1. I am a graduate of the University of Toronto in 1962 with a B.A.Sc. in Engineering Physics, Geophysics Option.
- 2. I have been practising my profession for the last thirty five years.
- 3. I am a member of the Association of Professional Engineers of British Columbia and Ontario.  $\wedge$

Peter E. Walcott, P.Eng.

Vancouver, B.C. September 1997





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EMJAY ENTERPRISES LTD. INDUCED POLARIZATION SURVEY CONTOURS OF APPARENT CHARGEABILITY NUM, A 23 MS, EI PONT RIVER POLLOPICLA MAY, EI TO MER ROLDW PROFERTY, ROCK CHECK AREA GREENWOOD M. D. BL. C. N. T. S. BZ E/7 JULY 1997 Mop No. W558-1 Processed: August 1997 Processed by: PETER E, WALCOTT & ASSOC, LTD. (10

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