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CAB 13
DORMANT

ELECTROMAGNETIC SURVEY
OF
ROSSLAND MINES PROPERTIES

82F/4

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TRAIL CREEK M.D.
49°N - 118°W

W.M. Sirola, P.Eng. Aug./Oct., 1962.

82F/4

KERR-ADDISON GOLD MINES LIMITED

ELECTROMAGNETIC SURVEY

OF

ROSSLAND MINES PROPERTIES

Located one mile South of Rossland, B. C.

TRAIL CREEK M.D.

49°N - 118°W

By

W. M. SIRCLA, P.Eng.

September, 1962.

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in 1947, it may be seen that some of the vein structures which were detected by the Self-Potential Survey are also indicated in a general way by magnetic highs. Examples of this are:-

- (a) The series of magnetic highs (10,000 gammaes) at the north end of Lines 8W. - 20W. which occur on the "Sunset", "Phoenix" and "Nest Egg" claims.
- (b) A weak magnetic high (2,000 - 2,500 gammaes) coincides with the S.P. and E.M. conductors south of the road on Line 4W. - 8E. This conductor area was mapped in detail because of the high S.P. and E.M. anomalies. Both of these anomalies suggested graphitic rocks and, on investigation, this was found to be the case. However, there is a 1' wide vein exposed in a pit near the centre of the anomaly and an adit, now covered, has been driven to the vein from a point approximately 100' below the outcrop. The dump from this adit showed pyrite, pyrrhotite, galena and sphalerite in a pyritic, highly carbonaceous schist of the Mt. Roberts formation. The weak magnetic anomaly is attributed largely to pyrrhotite. On Lines 4E. and 8E., at the south base line, a strong magnetic high (7,000 - 9,000 gammaes) probably denotes a branch of the "Blue Bird - Mayflower" vein system.

The results of this limited amount of magnetic work may be summarized as follows:-

1. Some of the vein structures are detectable with a magnetometer. In other cases, there appears to be a greater concentration of magnetite in the wall rocks. A number of Arvale magnetometer readings were taken on the outcrops of various veins and the outcrop usually gave higher readings than the immediately adjacent wall rock.
2. In order to accurately detect the very numerous, small veins in the South Belt, magnetic work would have to be done on 50', or even 25' centres.
3. Some of the magnetic highs, but not all, coincide with the electrical anomalies.
4. Most of the magnetic highs tend to be narrow and lenticular but the rocks on the "Phoenix" claim contain considerable magnetite over several hundreds of feet.

These conclusions obviously apply only to the area covered by the Magnetic Survey and not to the South Belt as a whole.

KERR-ADDISON GOLD MINES LIMITED

319 United Kingdom Building,
409 Granville Street,
VANCOUVER 2, B. C.

Roseland Mining Company Ltd.,
1403 Burrard Building,
Vancouver 5, B. C.

Attention: Mr. A. Fisher

Noranda Exploration Company Ltd.,
2256 West 8th Avenue,
Vancouver, B. C.

Attention: Mr. R. Munzie

Consolidated Mining & Smelting Co.,
355 Burrard Street,
Vancouver, B. C.

Attention: Mr. E. H. Caldwell

Kerr-Addison Gold Mines Limited,
Ste. 1600 - 44 King Street, West,
Toronto 1, Ont.

Attention: Dr. P. M. Kavanagh

Gentlemen:

Re: Roseland Mines Geophysical Survey

The accompanying Report deals only with the Electromagnetic Survey performed last fall on the properties of Roseland Mining Company Ltd. The Report was designed largely for assessment purposes and it was felt that it should be augmented by a summary of the other types of work carried out.

MAGNETIC SURVEY:

A limited amount of magnetic work was done in certain portions of the property to determine if sufficient magnetic contrast exists between the veins of the South Belt and the rocks in which they occur to make them detectable by that method. The instrument used was an Askania magnetometer. In addition, checks were made right over some of the veins themselves with an Arveis pocket magnetometer.

On the accompanying 300' scale magnetic map, on which we have superimposed the results of the Self-Potential Survey made by Roseland Mines in/

GEOCHEMICAL SURVEY:

A Geochemical Survey was not considered desirable or necessary over most of the South Belt, but it was decided to use the method, on an experimental basis, on the series of E.M. conductors extending westward from Lines 56W. - 80W.

The more Northerly E.M. conductor showed values of 65 - 100 p.p.m. of total copper in the soils. In the case of the Southerly conductor, a geochemical anomaly of 65 - 100 p.p.m. extends westward from Lines 68W. - 80W. There is a similar copper soil anomaly midway between the two E.M. conductors.

The shape and amplitude of the soil copper anomalies were such that we did not feel the area justified further investigation.

GOLD ORE INTERSECTION IN DIAMOND DRILL HOLE #471:

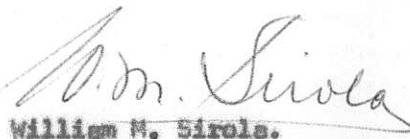
This hole was drilled horizontally from a crosscut on the 1200' level of the "Leroy Mine" and is shown on the Askania Magnetometer Survey Plan.

At the collar of the hole there is an intersection of 5.5' of 0.91 ozs. Au. The drill hole is approximately 1000' below surface and on the boundary between the "Abraham Lincoln" claim on the west, the "Sunset" claim to the south and the "Phoenix" claim on the east. It is quite possible that this intersection represents the down-dip extension of the "Sunset" vein which, on surface, dips 60° N. Surface sampling of this vein by C. M. & S. indicated a width of 1' with values up to 1.64 ozs. of Au, but subsequent work on three levels was disappointing. The westerly extensions of the drill hole intersection were drifted on by C. M. & S., on the 1200' level, but we have no Assay Plan for this work. Since the deep workings are flooded, the only approach would be to carry out a program of surface diamond drilling. We have decided against this procedure because of the difficulty and high cost of attempting to follow this intersection up dip, and because of the disappointing results on, and near the surface of the vein.

OTHER POSSIBILITIES:

Another area of possible investigation would be to investigate by diamond drilling any veins which occur near the south contact of the monzonites, which would enter the more favourable augite-porphyrites down-dip. Not too much is known about the dip of the south contact, but there are at least suggestions that the dip is to the north. Basically, however, the problem here is that the exact dip of the contact is not known and, in the main, the vein structures are quite narrow.

March 4th, 1963.


William M. Sirola.

INTRODUCTION

In June of 1962, an Agreement was reached between Rossland Mining Co. Ltd. and Noranda - Kerr-Addison, whereby Noranda - Kerr-Addison would explore the Rossland Mining Co. Ltd. properties. These properties consisted of:-

- (a) 42 Crown Granted mineral claims held by Rossland Mining Co. Ltd.
- (b) 27 Crown Granted claims optioned from Consolidated Mining & Smelting Co. of Canada Ltd.
- (c) 43 claims held by location in the name of Noranda Exploration Co. Ltd.

All of these claims are located in the so-called South Belt of Rossland which embraces the southern contact of a large monzonite stock.

The area has been investigated by various interests in the past, but only a minor amount of production has resulted from these efforts.

A program consisting of Line Cutting, an E.M. Survey, and limited Magnetometer and Geochemical Surveys was carried out.

This Report deals only with the E.M. Survey which encompassed all, or portions of 60 claims of the above-mentioned groups.

SCHEDULE OF CLAIMS COVERED BY THE REPORTROSSLAND MINING CO. LTD. CLAIMS:

<u>Claim:</u>	<u>Lot No:</u>	<u>Claim:</u>	<u>Lot No:</u>
Alcove Fraction	11460	Little Jack Fraction	1080
Alfa	1506	Mayflower #2	1274
Badger	1227	Modena	1694
Black Rock	1021	Monday	995
Black Horse	1059	Novalty	958
Blue Bird	1053	Olla Podrida	799
Camp Bird	1283	Phoenix	953
Consolation	1282	Paris Belle	531
Celtic Queen	987	Rainy Day	1339
Copper Queen	1210	Roderick Sho	1493
Derby	958	Red Eagle	1615
Olla Fraction	4920	Richmond	1508
Emeralda Fraction	2980	Spitzes Fraction	2520
Fairview	1058	Snowflake fraction	13116
Fool Hen	3297	St. Paul	1208
Friday	13117	St. Peter Fraction	11475
Green Crown	1232	Tuesday	1278
Golden Dawn	1349	Tat Fraction	3298
Homestake	936	Tourmaline	457
Hattie Brown	1047	Venus	1213
Lily May	1052	Young America	1233

CONSOLIDATED MINING & SMELTING CO. LTD. CLAIMS:

<u>Claim:</u>	<u>Lot No:</u>	<u>Claim:</u>	<u>Lot No:</u>
Abe Lincoln #1	1296	Latest Out	959
Alabama	1343	Mery O.	1514
Almaden	2678	Mispickle	1761
Annie E. Fraction	1457	Old Hundred	1617
Buckeye Fraction	12277	Ollie fraction	12276
Crown Point	981	Palo Alto	950
Curlew	1220	R. Lee	1187
Deer Park	932	Runover	2195
Florence	1354	Sunday Sun #2	1161
Freeburn	957	Sunset #2	954
Colden Terra	1338	Tramway	1826
Gold Hunter	1342	Treadwell	1194
Grand Prize	933	Wide West	1267
Hidden Treasure	930	Wolverine #2	927
Jo-Jo	1160		

SCHEDULE OF CLAIMS COVERED BY THE REPORTNORANDA EXPLORATION CO. LTD. CLAIMS:

<u>CLAIM:</u>	<u>RECORD NO:</u>	<u>TAG NO:</u>	<u>STAKING DATE:</u>	<u>RECORDING DATE:</u>
M.R. No. 1	1070	414931	Feb. 24/62	March 9/62
M.R. No. 2	1071	414932	"	"
M.R. No. 3	1072	414933	Feb. 25/62	"
M.R. No. 4	1073	414934	"	"
M.R. No. 5	1074	414935	"	"
M.R. No. 6	1075	414936	"	"
M.R. No. 7	1076	414937	"	"
M.R. No. 8	1077	414938	"	"
M.R. No. 9	1078	414939	Feb. 26/62	"
M.R. No. 10	1079	414940	"	"
M.R. No. 11	1080	414941	"	"
M.R. No. 12	1081	414942	"	"
M.R. No. 13	1082	414943	"	"
M.R. No. 14	1083	414944	"	"
M.R. No. 15	1084	414945	"	"
M.R. No. 16	1085	414946	"	"
M.R. No. 17	1086	414947	"	"
M.R. No. 18	1087	414948	"	"
M.R. No. 19	1088	414957	Feb. 28/62	"
M.R. No. 20	1089	414958	"	"

Cont'd.....

SCHEDULE OF CLAIMS COVERED BY THE REPORTNORANDA EXPLORATION CO. LTD. CLAIMS:

<u>CLAIM:</u>	<u>RECORD NO:</u>	<u>TAG NO:</u>	<u>STAKING DATE:</u>	<u>RECORDING DATE:</u>
L.R. No. 1	1090	414951	Feb. 27/62	March 9/62
L.R. No. 2	1091	414952	"	"
L.R. No. 3	1092	414953	"	"
L.R. No. 4	1093	414954	"	"
L.R. No. 5	1094	414955	"	"
L.R. No. 6	1095	414956	"	"
R.L. No. 7	1096	414949	"	"
R.L. No. 8	1097	414950	"	"
At Last Fraction	1098	351270	Mar. 1/62	"
R.L. No. 6	1099	351260	Feb. 27/62	"
R.L. No. 7	1100	351264	"	"
R.L. No. 8	1101	351267	"	"
M.R. No. 2	1102	351261	Feb. 24/62	"
M.R. No. 22	1103	351265	Feb. 28/62	"
R.M. No. 1	1108	414921	Feb. 24/62	March 6/62
R.M. No. 2	1109	414922	"	"
R.M. No. 3	1110	414923	"	"
R.M. No. 4	1111	414924	"	"
R.M. No. 5	1113	414980	Feb. 28/62	"
R.L. No. 2 Fraction	1112	351259	"	"
R.L. No. 1 Fraction	1114	351258	Feb. 27/62	"
"A" Fraction	1115	351257	Feb. 28/62	"
"C" Fraction	1116	351256	"	"

DOMINION OF CANADA:
 PROVINCE OF BRITISH COLUMBIA.
 To Wit:

In the Matter of :-

ELECTROMAGNETIC SURVEY
 OF
 ROSSLAND MINES PROPERTIES
 TRAIL CREEK MINING DIVISION

I, WILLIAM M. SIROLA

of 319 - 409 Grenville Street, VANCOUVER 2, B. C.

in the Province of British Columbia, do solemnly declare that : the following is a true and accurate statement of costs involved in the above Survey.

C O S T S T A T E M E N T

<u>NAME:</u>	<u>JOB:</u>	<u>TIME:</u>	<u>RATE:</u>	<u>TOTAL:</u>
Lefevre; R.	Line Cutting Contractor	16 miles	\$ 90 per mile	\$1,440.00
Nyman; W.	Geophysical Operator	Aug. 27/Oct. 27	\$500 per month	1,000.00
Taylor; J.	Technician	"	\$350 per month	700.00
Robertson; A.	Compass Man	"	\$325 per month	650.00
Sirola; W. M.	Supervision	30 days	\$ 30 per day	<u>900.00</u>
				<u>\$3,250.00</u>

S U M M A R Y O F T O T A L C O S T S

Wages and Salaries	\$ 4,690.00
Camp Operating	1,500.00
Motor Vehicle Operation (1 rented Truck & 1 Landrover)	750.00
	<u>\$ 7,940.00</u>

And I make this solemn declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath and by virtue of the "Canada Evidence Act."

Declared before me at the City
 of Vancouver, in the
 Province of British Columbia, this
 day of 1963, A.D.

A Commissioner for taking Affidavits within British Columbia or
 A Notary Public in and for the Province of British Columbia.

ELECTROMAGNETIC SURVEY

Three East/West base lines, 2,000' apart, were cut and chainage pickets established at 100' intervals. Ten North/South control lines were then cut and chained to accurately establish the positions of the base lines.

The E.M. Survey was conducted on North/South traverses 400' apart with readings at 100' intervals, except where anomalous conditions justified closer spacing. Where North/South lines were not cut out, the traverse was run by pace and compass and marked with ribbon at 100' intervals.

The equipment used was a Crone Geophysics dual frequency, E.M. unit. Both the operator and the assistant are equipped with a single-coil, transmitter-receiver. Both men transmit and receive from one another. This type of shoot-back procedure eliminates elevation effects. When a conductor is located with the higher frequency, it is then checked with the lower frequency. This process tends to eliminate superficial conductors. A total of fifty-three lines were covered in the Survey.

INTERPRETATION OF ELECTROMAGNETIC SURVEY

From previous work done by various organizations, it is well known that the South Belt of the Rossland Camp contains numerous narrow veins, 1' - 6', mineralized with pyrite, pyrrhotite, galena and sphalerite. The gold content is usually low compared to veins in the northern part of the Camp and silver values average 3 - 5 ozs. per ton. Sporadically higher silver values have been found. The veins can occur in the monzonites, the augite-porphyrites or in sediments of the Mt. Roberts Group. The most favourable host rock is the augite-porphyrite.

The accompanying map of the E.M. results shows three principal anomalous areas:-

- (1) Lines 16E. - 36E. at approximately 1200'N.
of the centre base line.

Interpretation of E.M. Survey (Cont'd.):

- (2) Lines 56W. - 76W. at approximately 900'N. of the centre base line.
- (3) Lines 0 and 4E. at 1100'S. and 800'S. of the centre base line.

Location (1) indicates the presence of the Homestake vein. Some early mining has been done to a depth of 200' on this vein and it has been traced over a length of 700' on surface. The vein is 6' wide and has a 1' wide band of mixed sulphides on each wall.

Location (2) probably delineates a typically narrow vein, for which reason no effort was made to strip or diamond drill this location.

Location (3) is mapped in detail because of the high negative intensity of the anomaly. The core of the anomaly was found to contain a 1' wide vein of mixed sulphides in pyritized carbonaceous slaty Mt. Roberts formation. The strike of the vein is N.45°E. and the depth is 65°S.E.

CONCLUSIONS

The Crone E.M. method proved effective in locating some of the better conductors in the South Belt of the Rossland Camp. The only persistent new conductor was found in the area between Lines 60W. and 76W. The other two persistent conductors found had both been investigated in prior years by workings of one form or another. Numerous weak, non-persistent conductors were found which were not considered worthy of further investigation.

September, 1962.

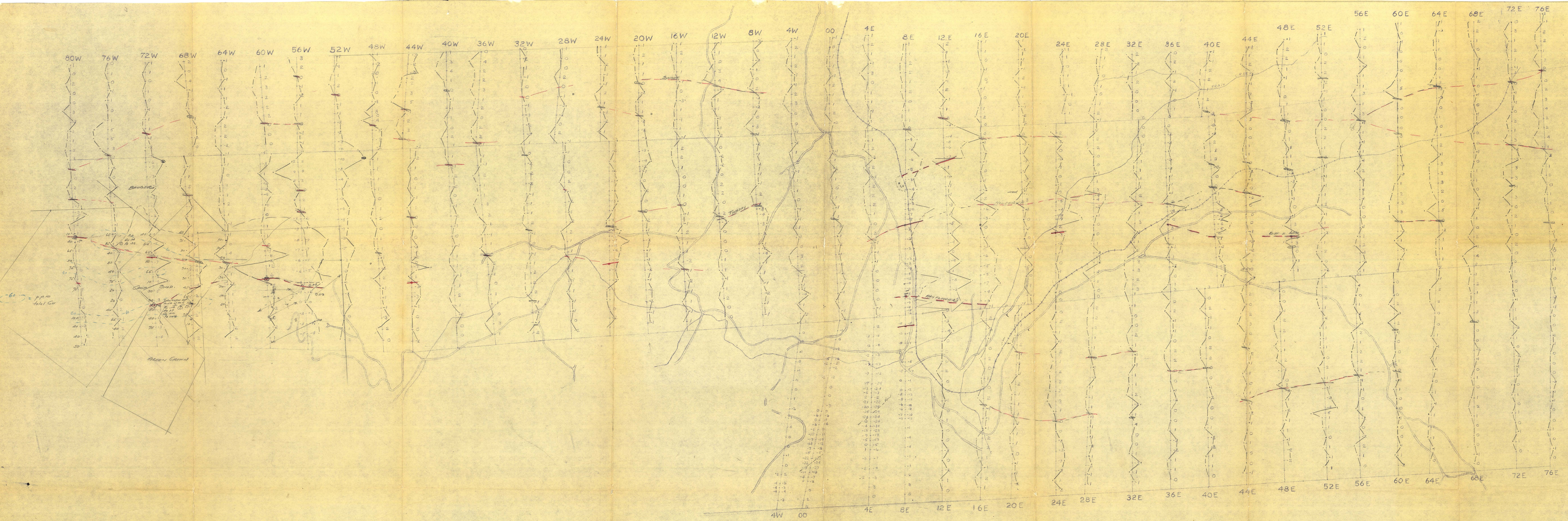

WILLIAM M. SIROLA, P.Eng.

SCHEDULE OF ACCOMPANYING MAPS

- (1) Key Map *missing 9th March 67*

 - (2) Plan of Electromagnetic Survey -
Scale: 1" = 300'

 - (3) Claim Map showing Roseland Mines Properties -
Scale: 1" = 500'
-



Note:
 Hi Frequency readings plotted to right
 Lo Frequency readings plotted to left

