File 63.518

010

REPORT ON GEOMAGNETIC AND GEOLOGICAL SURVEYS

ON

THE SILVERMAN PROPERTY

LACKNER AND McNAUGHT TOWNSHIPS, ONTARIO

SUMMARY

Magnetometer and geological surveys carried out on the Silverman claims in Lackner and McNaught Townships, Ontario have located a number of anomalous zones in what is considered to be a favourable geological setting.

Since important concentrations of magnetite, apatite, columbium, tantalum and uranium have been found in the continuation of these same anomaly areas on the Multi-Minerals property within a few hundred feet of the Silverman boundary, a program of diamond drilling to thoroughly investigate the zones is recommended.

INTRODUCTION

Since the discovery of large bodies of iron and apatite, and subsequently of substantial deposits carrying important values in columbium, tantalum and uranium in the Nemegos area of Ontario, this section has been the scene of intensive mining explorations.

As the important occurrences of these materials have thus far been associated with magnetic anomalies in the nepheline syenite intrusive body, the preliminary explorations of property in this area should therefore include a geomagnetic survey accompanied by geological mapping.

Magnetic and geological surveys were therefore carried out on the Silverman claims in July, August and September, 1954 , as a prelude to more detailed surface prospecting.

PROPERTY, LOCATION, ACCESS

The Silverman group consists of 68 unsurveyed mining claims whose numbers are:

S59252 to 59277 inclusive
S60056 to 60094 inclusive
S60098 to 60100 inclusive

These claims are located in two blocks in the southwest part of Lackner Township and the southeast part of McNaught Township, Ontario in the Sudbury Mining Division .

The property lies about 5 miles northeast of the Nemegos townsite on the Canadian Pacific Railway. Nemegos is some 18 miles east of the divisional point of Chapleau.

The property may be reached by way of a good bush road which has been cut from the railway at Nemegos in to the property of Multi-Minerals Ltd. The property is also accessible by automobile , leaving

the Sudbury-Sault Ste. Marie highway at Iron Bridge or Thessalon and driving north for about 155 miles. There are many old lumbering roads on the group which provide access to various sections of the claims.

The Silverman group is bordered on the west and northwest by the property of Multi-Minerals Ltd., on the east by holdings of Dominion Gulf and by Ontario Rare Metal Mines Ltd. on the southwest.

SURVEY PROCEDURE

As the outline of the major anomaly zone in the area is a horseshoe shaped zone with the open portion to the northeast, picket lines were cut in both east-west and north-south directions. Lines were spaced at 400-foot intervals and observations of vertical magnetic intensity were taken at 100-foot intervals or less where conditions required, using a Watts vertical variometer.

Results were compiled in a geomagnetic contour map on which all values are given in gammas, a unit of magnetic field intensity equal to about 1/50,000th of the earth's total normal field at this latitude.

Closely spaced readings were taken with a ratemeter around all outcrop areas.

GEOLOGY

No government geological maps have yet been made of the area and there is, therefore, a dearth of knowledge concerning the general geological conditions surrounding the Silverman property.

Available maps show granitic rocks bordering the C.P.R. to the south of the property and these continue northwest to Chapleau. Geological mapping and some 60,000 feet of diamond drilling on the adjoining property of Multi-Minerals and much investigation by Dominion Gulf have given some knowledge of the general geology and the co-operation of the staff of these two companies is gratefully acknowledged.

Within an extensive mass of nepheline syenite there is found a horseshoe shaped anomaly zone. Diamond drilling and detailed surface mapping of the anomaly shows that on the property of Multi-Minerals the rocks within this anomaly are much altered, much more dense than the fresh and distinctive nepheline syenite. Certain of these rocks have been mapped as altered volcanics and others as older gneisses by the staff of Multi-Minerals. Very detailed geological examination including much thin-section work by geologists of Dominion Gulf has led them to conclude that the entire series of rocks are phases of this nepheline syenite.

Extensive diamond drilling on the property of Multi-Minerals has outlined a number of magnetite- apatite bodies and also a number of iron - rich bodies carrying important values in columbium, tantalum, and uranium. One of these is said to exceed 1000 feet in length, to be about 200 feet wide and to average about 0.25% columbium pentoxide.

Close traversing of this entire group revealed outcrop in only two parts of the property. In the extreme north portions on [illegible] claims S 59254 and 59255 are 2 very pronounced depressions along

th e sides of which rock is exposed. These depressions stretch in a northerly or northwesterly direction and are about 100 feet below the general level. The rock exposed here is a medium to coarse grained nepheline - biotite-hornblende syenite. Although the magnetometer readings are 2000 to 3000 gammas near the outcrop area on claim S 59255, no magnetite could be detected in the rock.

The other outcrop area is very close to the eastern boundary of the property on claim S 60060. Two small outcrops are exposed near line 40N 92 E. These have been mapped as nepheline syenite gneiss although some quartz was observed in narrow bands. Considerable secondary quartz is evident in both outcrops. These outcrops of gneissic material are thought to represent a contact phase of the syenite with granite lying further to the east.

A vertical drill hole located on claim S 60090 in the southwest part of the property was drilled to a depth of 202' in a fresh pink granite. There is no information available as to the extent of this granite.

The very limited area of outcrop on the claims is surprising. On the east side of Lackner Lake a pronounced hill appears to contain considerable rock outcrop, but in every case these proved to be very large angular blocks of nepheline syenite.

RESULTS OF THE GEOMAGNETIC SURVEY

Results of the magnetometer survey are shown on the accompanying map sheets. The contour lines indicate lines along which magnetic field intensity is equal. Crowding together of these lines in circles or ellipses indicate that magnetic intensity within

such areas is higher than normal in the same way that elevation contours on a topographic map indicate hills and ridges. To accentuate such "highs" the areas have been coloured blue.

The general pattern indicated by the magnetometer survey of the Silverman properties shows a wide zone of above-normal magnetic intensity (coloured yellow to blue) which swings in an arc through the northern and eastern portions of Group No. 1, North Sheet, and the southern portion of Group No. 1, South Sheet. Within the radius of the arc normal intensity of about 700 gammas prevails. Outside of the arc, in the eastern portion of Group No. 1 and all of Group No. 2, magnetic intensity is again normal.

It is readily apparent that the arcuate zone of above-normal readings on the Silverman ground is continuous with the horseshoe-shaped band of nepheline syenite on the Multi-Minerals and Dominion Gulf properties within which local concentrations of magnetite - apatite - columbium - tantalum mineralization were indicated by strong magnetic anomalies in the order of 25,000 to 30,000 gammas. This interpretation is confirmed by the presence of nepheline syenite outcrops in S 59255 within this anomaly zone, but quartz-bearing gneiss (locally called "nepheline syenite gneiss") in S 60060 outside of the anomaly zone in an area of normal magnetic intensity.

Within the anomaly zone, four areas with readings of more than 2000 gammas were outlined. These occur in claims S 59255 in the northwest corner of Group No 1; in S 59276 in the southwest corner of Group No 1; in S 59252 and in S 60065 in the eastern portion of Group No 1. The highest reading of 4904 gammas occurs in S 59255.

At the present stage of exploration in this camp, the significance of these anomalies can not be reliably assessed. As yet, the columbium - tantalum mineralization has been found only in association with much magnetite since only strong magnetic anomalies have been drilled. The columbium - tantalum minerals themselves are non-magnetic and there is therefore a possibility that they may occur with lower concentrations of magnetite.

It is recommended therefore, that the anomaly areas in S 59255 and in S 59276 where magnetic intensity is higher than anywhere on the property, be cross-sectioned by diamond drilling. This will require a total of 5000 feet of drilling at an approximate cost of $15,000.00

CONCLUSIONS AND RECOMMENDATIONS

A geomagnetic survey conducted on the Silverman claims has outlined a number of anomalous areas which are shown on the accompanying map. Geological mapping of the very few outcrop areas shows that a portion at least, of the property is underlain by nepheline syenite which is the host rock for the magnetite, apatite, columbium, tantalum and uranium occurrences on adjoining properties. At least two of the anomaly areas extend from the adjoining Multi-Minerals property to the Silverman property.

The anomalies found are not as strong as those found on the Multi-Minerals property but this does not necessarily mean that important amounts of columbium may not be found associated with the anomaly areas. Diamond drilling is presently being carried out on strong anomaly zones within a few hundred feet of the Silverman boundaries by Multi-Minerals on the west and Dominion Gulf on the

east. In view of the proximity of known bodies of columbium and tantalum, the continuation of anomaly zones from such areas on to the Silverman claims and as heavy overburden precludes further surface investigation, a program of diamond drilling to investigate the anomalous areas is recommended.

Respectfully submitted,

Gardiner Low and Morrow

Toronto, Ontario
November 10, 1954

M.C. Gardiner

815-21

LEGEND

N — Nepheline syenite

Ng — Nepheline syenite gneiss

MAGNETIC INTENSITY

A — 2000 to 3000 B

B — 1500 to 2000 B

C — 1000 to 1500 B

Under 1000 B

SYMBOLS

Traverse line, magnetometer reading, gammas — 1290

Magnetic contour gammas — 1000

Claim corner

Swamp

Rock outcrop with ratemeter readings — 220 240 260 240 200

Direction and dip of jointing — 10° 5°

NINE MILE LAKE

LACKNER LAKE

STREAM

S 59255 S 59254 S 59258 S 59256 S 59260 S 59257 S 59259 S 59264 S 59252 S 59253 S 59261 S 59262 S 59263 S 60056

72N 68N 64N 60N 56N 52N 48N 44N 40N 36N 32N 28N 24N 20N 16N 12N 8N

Geomagnetic Contour Map

SILVERMAN PROPERTY

GROUP NO.1 - NORTH SHEET

LACKNER TOWNSHIP ONTARIO

Scale: 1 inch - 200 feet

GARDINER, LOW & MORROW

TORONTO NOV.4, 1954

Overlaps North Sheet

LACKNER

LAKE

8N

4N

4S

8S

12S

16S

20S

24S

28S

32S

36S

40S

44S

48S

52S

56S

60S

63S

S 59268

S59273

S59274

S59275

S59265

S59266

S59276

S59270

S59277

Overlaps Group No. 2

8E

12E

16E

S60094

Mc NAUGHT

LACKNER

Group 1

Group 2

LOCATION
1 inch - 1/2mi.

TWP 27 TWP 26

G

SILVE

GROUP

LACKNER

Sc

GARD

TORO

McNAUGHT
LACKNER
(Approx)

NA

S 60087
S 60086
S 60085
S 60084
S 60098
S 60088
S 60091
S 60083
S 60092
S 60089
S 60090
S 60082
S 60080
S 60078
S 60079
S 60081

Stream
Road
Pond
Diamond Drill Road
LAKE

55W 52W 48W 44W 40W 36W 32W 28W 24W 20W 16W 12W 8W 4W

te

te gneiss

ITY

2000 to 3000 ft

1500 to 2000 ft

1000 to 1500 ft

Under 1000 ft

ting, mas

idings

S 60056 S 60057 S 60058 S 60059 S 60060 S 60061 S 60062 S 60063 S 60064 S 60065 S 60066 S 60067 S 60068 S 60069 S 60070 S 60071 S 60072 S 60073 S 60074 S 60075 S 60076 S 60077 S 59253 S 59261 S 59262

TEN MILE LAKE

WRIGHT CREEK

POND

POND

Ng

Ng

40N 56E 40N 60E 40N 64E 40N 68E 40N 72E 40N 76E 40N 80E 40N 84E 40N 88E 40N 92E 40N 96E 40N 96E

Contour Map

PROPERTY

NORTH SHEET

ONTARIO

1 - 200 feet

N & MORROW

NOV. 4, 1954

LACKNER

LAKE

Overlaps North Sheet

S 59268

S 59273

S 59265

S 59266

S 59272

S 59274

S 59275

S 59267

S 59271

S 59276

S 59270

S 59277

8N 4N 4S 8S 12S 16S 20S 24S 28S 32S 36S 40S 44S 48S 52S 56S 60S 63S

MAGNETIC INTENSITY

A	Over 3000 γ
B	2000 to 3000 γ
C	1500 to 2000 γ
D	1000 to 1500 γ
	Under 1000 γ

SYMBOLS

Traverse line, magnetometer station, gammas

Magnetic contour, gammas

Claim corner

Swamp

Geomagnetic Contour Map

SILVERMAN PROPERTY

GROUP NO.1 - SOUTH SHEET

LACKNER TOWNSHIP ONTARIO

Scale: 1 inch - 200 feet

GARDINER, LOW & MORROW

TORONTO NOV. 4, 1954

63-518

NA

McNAUGHT
LACKNER

(Approx)

MAGNETIC INTENSITY

- Over 1500γ
- 1000 to 1500γ
- Under 1000γ

SYMBOLS

- Traverse line, magnetometer reading, gammas — 750
- Magnetic contour, gammas — 1000
- Claim corner
- Swamp

Overlaps south sheet Group No. 1

Pond

Diamond Drill Road

S 60084 S 60083 S 60082 S 60078 S 60079 S 60080 S 60081 S 60092 S 60098 S 60093 S 60094 S 60099 S 60100

32W 28W 24W 20W 16W 12W 8W 4W 0 4E 8E 12E 16E 18E

Geomagnetic Contour Map

SILVERMAN PROPERTY

GROUP NO.2

McNAUGHT & LACKNER TWPS. ONT.

Scale: 1 inch - 200 feet

GARDINER, LOW & MORROW
TORONTO NOV. 4 1954