REPORT

ON

A SELF POTENTIAL SURVEY

OF

MINING CLAIMS S- 93582 - 83 - 84 - 85 - 86 - 87 - 88 - 89 - 90, S-93592 - 93 - 94 - 96 - 97 - 98 - 99 - S-93600 - 601

MCCARTHY TWP. ONT.

The occurrence at Jessie Lake, Claim S-93582, of irregular disseminations of mineral carrying copper, nickel and silver prompted the search for a geophysical method suited to the detection and delineation of this type of deposit.

The method chosen after deciding against two others was the self-potential method. Contrast between mineralized and barren areas was not large at Jessie Lake but was considered sufficient to establish the usefulness of the method.

Utilizing a previously established baseline, east-west lines were cut at two hundred-foot intervals across a favourable diabase-sediment contact as indicated on the accompanying general plan. These were surveyed at 100 foot intervals using two porous pots connected to a suitable potentiometer. Both pots were moved for each reading. Where greater detail was required the pots were spaced fifty feet apart. In cases where negative centres had to be localized for trenching or drilling purposes the single-electrode method was used with twenty-five foot field pot intervals.

Readings were plotted in millivolts as observed and no attempt was made to relate one line to another for reconnaissance purposes.

The general plan shows the results of this self potential work on a scale of 200 feet to one inch - detail areas A & B are shown on two separate plans on a scale of one inch to twenty feet.

Discussion of results.

Although not large, anomalies of interest in detail area "A" are those at 0 plus 50 N, 1 plus 75 W, and 8 plus 50 N, 4 plus 50 W. The former is associated with the main showing at the south end of beaver dam. Contours of these readings give a reasonable indication of the location and trend of the mineralization. At 8 plus 50 N, 4 plus 50 W, changes in the order of 150 MV were recorded with 50-foot pot intervals. These are noteworthy because of their association with copper, nickel and silver assays from nearby outcrops.

Prominent anomalies were observed in detail area "B" where a negative centre of 360 millivolts was recorded by detailed work on line 27 plus 70 N. The source of the polarizing voltage was indicated to be approximately three hundred feet long with a dip to the west. Trenching and drilling indicated that the anomaly was caused by quartz-carbonate stringers with

abundant chalcopyrite and pyrite occurring in diabase. The dip was from 15 to 20 degrees west.

A drill casing left in the ground near the anomaly for a few days was plated with copper when removed.

Other small negative centres are indicated between areas A and B, but no detail work was performed on them.

Cobalt, Ontario,

January, 1958.

JOHN SIROLA

GEOLOGICAL REPORT

CLAIMS S-93582 TO S-93601 INCLUSIVE

McCARTHY TOWNSHIP, ONTARIO

ACCESSABILITY

This group of 20 claims is situated in the extreme north east corner of McCarthy Township in the mining division of Sudbury, Ontario.

The city of Sudbury is 35 miles due south west from the property.

It can be reached by motor vehicle from Sturgeon Falls on highway 17, proceeding north approximately 40 miles through Field, River Valley, and Glen Afton to Grassy Lake. Here a private lumber company road trends north west. At mileage 11.2 a cut off bears due west for 2 miles where it ends on the Sturgeon River. Three-quarters of a mile south on the river by boat is the north east corner of McCarthy Township and the claim group.

OWNERS OF PROPERTY

The present recorded holders of this property are as follows:

10 claims held by Mr. J. N. Freeman, River Valley P.O., Ontario.
Numbered S-93582 to S-93591 inclusive.

10 claims held by Mr. Edwin Eden, River Valley P.O., Ontario.
Numbered S-93592 to S-93601 inclusive.

The geological survey was carried out from August 22, 1956 to October 16, 1956 by:

The Employees of
Prospectors Airways Company Limited,
Suite 1616,
44 King Street West,
Toronto 1, Ontario.

GEOLOGY

TABLE OF FORMATIONS

Keweenawan (Nipissing)

Quartz Diabase

INTRUSIVE CONTACT

Animikean (Cobalt Series)

Pebble Conglomerate, Greywacke, Slate, Quartzite

ANIMIKEAN

Where exposed, the pebble conglomerate, greywacke, and quartzite do not show stratification; the lack is likely due to the thickness of the beds. The pebble conglomerate has a matrix which is similar to the greywacke rock type, and it contains scattered small pebbles at random orientation. The three rock types have close stratigraphic association, and grade from one to the other at short intervals.

In the pebble conglomerate, the greywacke matrix contains inclusions which average about one inch in diameter. The pebbles are less than ten percent of the total rock mass. Where the conglomerate outcrops along the east boundary of the property in claims 93591, 93589, 93587, 93586, and 93585, boulders up to six inches in diameter are sometimes present in the matrix.

In several exposures in claims 93600 in the north part of the group, and in claims 93595 in the southwest corner of the group, the greywacke has been altered to slate.

The quartzite occurring mainly in claims 93594 in the south part of the group, is light brownish-grey in colour and is fine grained.

KEWEENAWAN

The large outcrop area of quartz diabase occurring in the central part of the group and the dike-like mass of similar composition in claims 93596 are assigned to the Keweenawan. The texture is non-ophitic and medium to fine grained. Blebs of coarse diabase, high in ferromagnesians, occur at random in the intrusive, and granophyre diabase is sometimes present; the latter has a brownish-red colour and is coarse grained.

STRUCTURE

The sediments containing the diabase mass in the central part of the group are unstratified where exposed, it is not possible to determine whether the intrusive occurs as a sill or a dike. On the east side of the diabase ridge in claim 93582 there is a weak development of schlieren which strikes north-south and dips gently westward; this feature points to a fairly flat attitude for the diabase.

In the detailed geological mapping in the vicinity of the showing no regular joint patterns are apparent. The most common direction is slightly west of north in parallelism to the long axis of the diabase ridge; steep dips to both the east and west are present in this strike direction. Columnar jointing, a positive aid in determining the attitude of the diabase, was not seen in the course of the mapping.

In claim 93582 on the northeast side of Jessie Lake, a fault is postulated from magnetic and topographical evidence; it follows a creek which flows eastward out of the lake in a channelway incised across the diabase. The strike of the inferred break is about N-70°-E.

SUMMARY OF EXPLORATION AND DEVELOPMENT

Geological and magnetometer surveys of the 20 claim group, detailed geological and magnetometer work in the vicinity of the mineralized showings and seven diamond drill holes for a total footage of 538 feet were done in the summer and fall seasons of 1956. Maps and records in support of the work, as well as a report on the magnetometer survey, accompany this report.

MINERALIZATION

Several small showings of pyrrhotite - chalcopyrite occur in the diabase along the east shore of Jessie Lake. The best of these exposures, in lateral extent, is located directly south of the beaver dam at the mouth of the creek, where the collars of Holes 1 and 4 lie on a flat-lying exposure of diabase. The mineralization consists of pea-sized patches of pyrrhotite and chalcopyrite disseminated in the rock; both minerals occur together in the individual patches.

Holes 2, 3, 5, 6 and 7 were drilled to test for the possible lateral extension of the mineralization, from information supplied by the detailed magnetometer survey in the showing area. The magnetic anomalies were found to be due to diseminated magnetite rather than to pyrrhotite which is found locally in the relatively small showings.

Holes 1 and 2 obtained intersections of pyrrhotite-chalcopyrite mineralization; the core was split and sent for nickel-copper analyses, and the results are shown in the drill logs accompanying this report.

A spatial relationship between the disseminated magnetite in the diabase and the postulated fault lying along the creek declevity in claim 93582 is pointed up by the detailed magnetics. It is possible that development of the magnetite occurred through deuteric effects which were controlled in turn by a pre-consolidation break through the diabase.

J. C. Baker

J. C. Baker.

SS
November 30/56.
2 c.c.

Report on the McCarthy Township, Ontario
Magnetometer Surveys 1956

Sheet #1.

A magnetometer survey was conducted by Mr. J. Sirola of Cobalt, Ontario on claims 93582 - 93601 inclusive McCarthy Twsp. A north - south trending base line was established approximately in the centre of the 20 claim group, east west lines were turned off and cut to the outside boundaries at four hundred foot intervals along the entire length. A total of 15.34 miles of line requiring 764 set ups were surveyed. (reading interval 100 ft.) A radar magnetometer with a sensitivity of 25 gammas per scale division was used for the entire survey.

A work sheet with plotted readings was submitted by J. Sirola, this sheet was contoured at 100 gamma intervals and a geology outline of the rock types on the claims taken from a map by J. Baker scale 1"-200' was superimposed in an effort to establish relationship (magnetic wise) between the sediments and the diabase.

Conclusions.

The survey shows a fine distinction between the conglomerates and the diabase the difference being in the neighbourhood of 200 gammas as shown on the east and west flanks of the geologically outlined diabase. In the diabase proper a few sporatic highs were noted but without any continuity. It is noted that the highest and lowest readings occur around the showing area, these few readings are the only disrupting factor in an otherwise flat area.

The line separation of 400 ft. outlined for the survey is estimated to be too great to get a proper structure pattern or derive any association with mineralization that does occur in thin bands in the diabase.

Sheet #2. (Detailed)

A detailed survey was conducted on the showing area of the Sirola option, the area outlined is from line 400S to 800N of the magnetic grid pattern as laid out on sheet #1, lines have been read 200 ft. east of the common base line and varying from 200 to 600 ft. on the west. (outline shown on index map sheet #2) Additional lines were cut at 100 ft. intervals total mileage cut amounted to .9 miles. The survey run at 500 ft. centres on all lines and additional 50 ft. readings taken north from each set up. A total of 280 readings were taken to complete this pattern.

A radar magnetometer #53 with a sensitivity of 18.8 gammas per scale division was used for the entire survey. Base station control for the survey was sited at 0 + 00 on the base line. An arbitrary value of 3,500 gammas was used as a background for the diabase, the susceptibility of the gabbro diabase family being in this region. 2,500 gammas must be added to all readings on sheet #1 to bring it up to the level of sheet 2 for comparison. It was noted that the readings of sheet 2 check within 50 gammas over an average line with the readings of sheet #1. (in some cases where there is an extreme high this of course could not be done with any degree of accuracy as the placing of the machine could cause a variation of a few hundred gammas in a very short distance.)

Conclusions.

The survey outlined a rather complex magnetic situation where a series of high readings have a corresponding magnetic low immediately opposite. This dipole effect could be attributed to a flat lying body and very shallow in depth. The general strike of this zone is N 45° E, following an apparent weakened condition along a creek which has cut through the diabase sill. Along this pattern samples can be taken at random, all samples containing sparse chalcopyrite and pyrrhotite (magnetic). Crushing

the host rock and testing with a magnet, it was found to contain a small percentage of magnetite, this was done in the area of anomaly #2 and #6, in both instances high magnetic values were obtained. The overall length of this anomalous area is 400 ft. with an average width of 100 ft. A moderate increase of 2 to 300 gammas is noted on anomalies #9 and #10, in both cases pea sized grains of chalcopyrite and pyrrhotite and sparse magnetite was found. There appears to be no connection between these anomalies and the series of anomalies #1 to #8.

DRSD/ss

D. R. S. Doal.

November 28th, 1956

LINE CUTTING AND CHAINING - Main 20 claims

August 22nd to 31st.	- 10 days	2 men	-	Othmer and Wanamaker	80 days
September 3rd to 7th	- 5 days	2 men	-	Othmer and Wanamaker	40 days
September 11th to 13	- 3 days	2 men	-	Othmer and Wanamaker	24 days
September 16th to 20	- 5 days	3 men	-	Baker, Hurst, Sutherland	60 days
					204 days

LINE CUTTING, CHAINING - Central Zone

October 12th to 13th	- 2 days	3 men	-	Doal, McKinnon, Charest	24 days
October 14th	- 1 day	2 men	-	McKinnon and Charest	8 days
					32 days

GEOLOGICAL MAPPING - Main Zone

August 22nd - 31st	- 10 days	1 man	-	J. C. Baker	40 days
September 9th - 14th	- 6 days	2 men	-	J. C. Baker and Sutherland	48 days
					88 days

GEOLOGICAL MAPPING - Main and Central

October 11th - 16th	- 6 days	2 men	-	R. W. Baker and J. C. Baker	48 days

DRAUGHTING

September 1st & 28th, October 1 & 2	- 4 days	1 man	-	J. C. Baker	16 days
October 4th & 5th, October 20th - 24th	- 6 days	1 man	-	R. W. Baker	24 days
November 28th,29th,30th	- 3 days	1 man	-	J. C. Baker	12 days
October 22nd - 25th	- 4 days	1 man	-	D. R. S. Doal	16 days
October 4th - 11th	- 7 days	1 man	-	John Sirola	28 days
October 30th - 31st	- 2 days	1 man	-	John ~~Sirola~~ Goodby	4 days
					100 days

GEOPHYSICAL MAGNETOMETER READINGS - Main Zone

September 9th to 14th	- 6 days	1 man	-	J. Sirola	24 days
September 22nd to 26th	- 5 days	1 man	-	J. Sirola	20 days
					44 days

GEOPHYSICAL CENTRAL ZONE - Mag. Readings

October 14th to 17th	- 4 days	1 man	-	D. R. S. Doal	16 days

REPORTS - OFFICE WORK

November 29th and 30th	- 2 days		-	J. C. Baker	8 days

November 28th, 1956

X James C. Baker,
6 Hill Heights Road,
Apartment 404,
Toronto 14, Ontario

Lyle Hurst,
c/o Beckhurst Lodge,
River Vally, Ontario

Charles Sutherland,
Box 163,
Cobalt, Ontario.

Russel Othmer,
Box 557,
Cobalt, Ontario.

Mike Wanamaker,
Box 95,
Cobalt, Ontario.

X Wilber Charest,
Matheson,
Ontario.

X D. R. S. Doal,
Matheson,
Ontario.

X Errol McKinnon,
659 Ossington Avenue,
Toronto 4, Ontario.

X R. W. Baker,
Box 136,
Beeton, Ontario.

John Sirola,
Box 667,
Cobalt, Ontario.

John Gadsby,
New Liskeard,
Ontario.

X: Employees of
Prospectors Airways Co. Ltd.
Suite 1616
44 King St. West
Toronto, Ont.

McCARTHY TWP.

SUDBURY MINING DIVISION.

DISTRICT OF SUDBURY.

Scale. 40 chains to an inch.

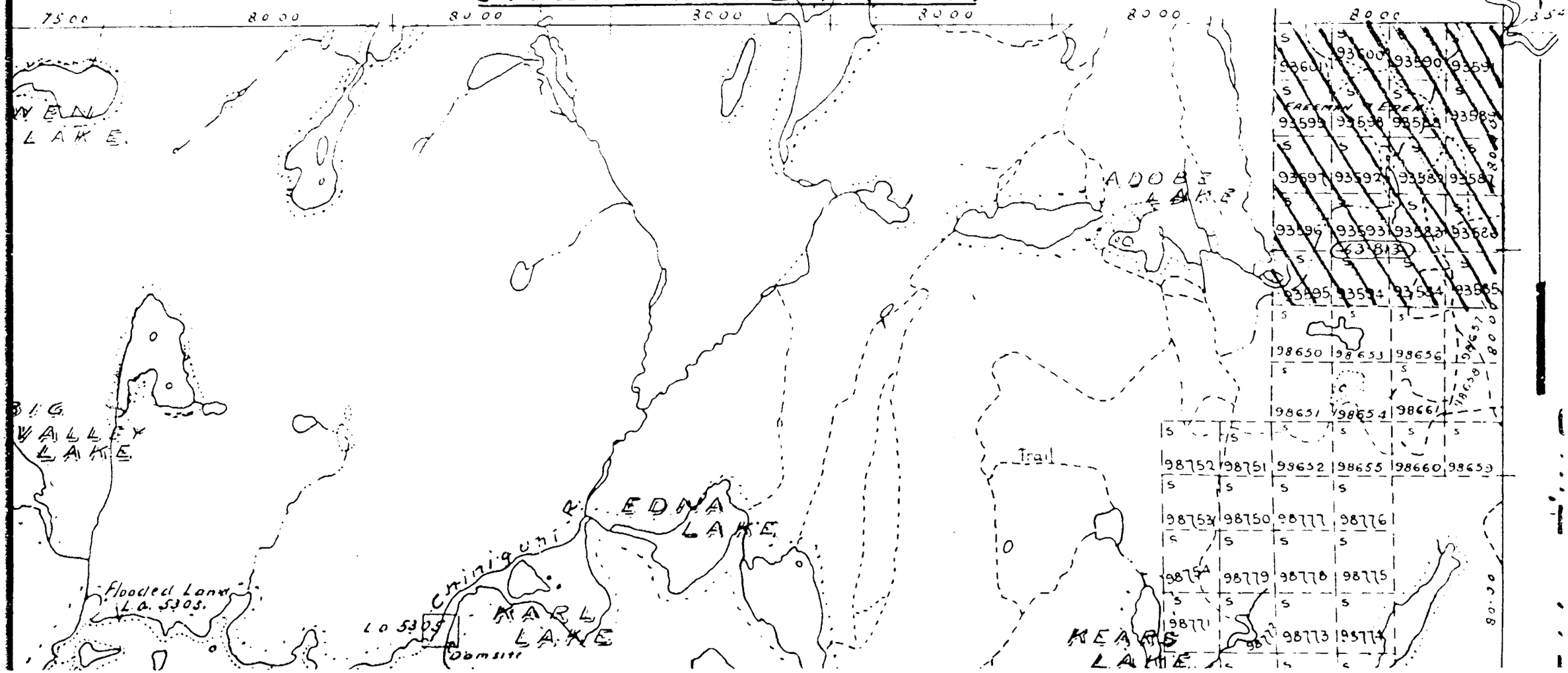
1956

Ast. North

W.

S.

SHEPPARD TWP



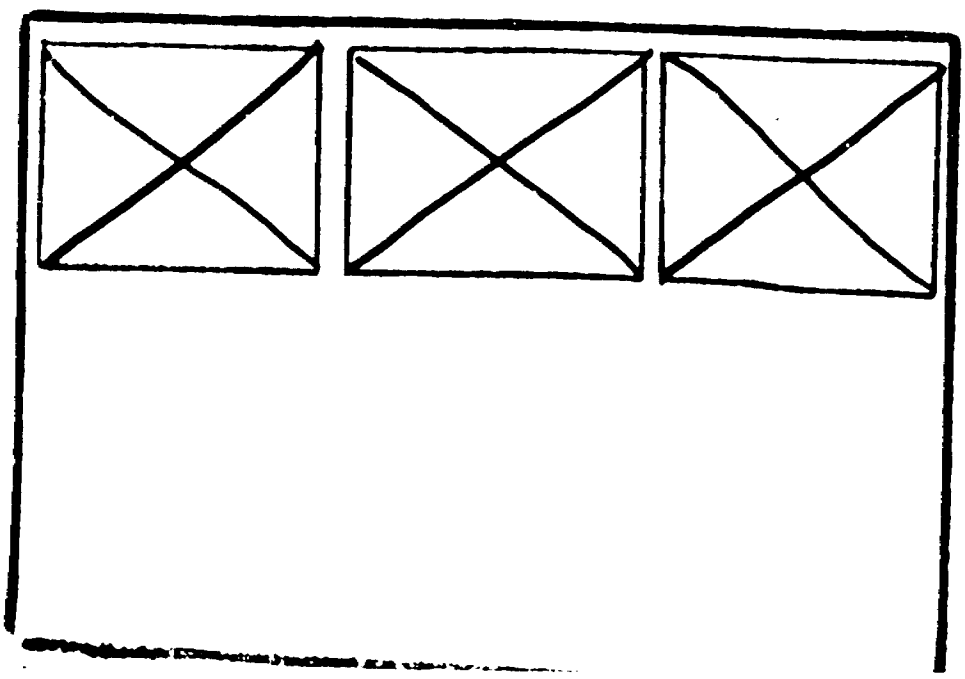
SEE ACCOMPANYING MAP(S) IDENTIFIED AS

MCCARTHY-0012 #1

MCCARTHY-0012 #2

MCCARTHY-0012 #3

LOCATED IN THE MAP CHANNEL IN THE FOLLOWING SEQUENCE (X)



FOR ADDITIONAL

INFORMATION

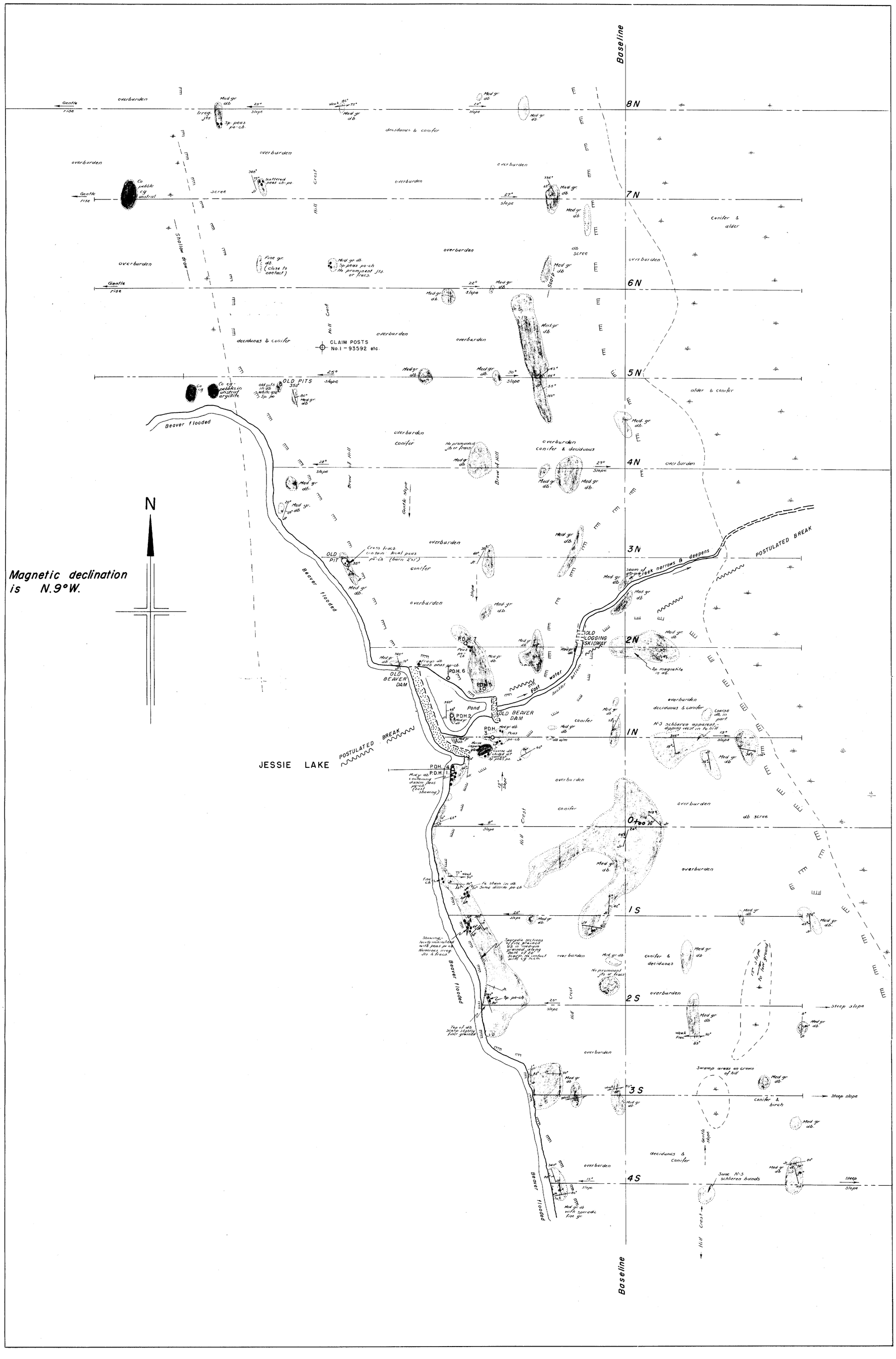
SEE MAPS:

MCCARTHY-0012 #4

#5

#6

#7



N

Magnetic declination is N.9°W.

SYMBOLS

- Strike & Dip of Jointing
- Shearing
- Scarp & High Ground
- Muskeg
- Picket Lines
- P.D.H.5 — Diamond Drill Holes
- Rock Outcrop
- Geological Boundary Assumed
- Med. gr. db. — Medium Grained Diabase
- Po-ch — Pyrrhotite & Chalcopyrite
- Co. cg. — Cobalt Conglomerate

LEGEND

- DIABASE (Nipissing type, non-ophitic texture)
- CONGLOMERATE (Pebble type, unstratified)
- QUARTZITE (Impure)
- SULPHIDE MINERALIZATION
- Overburden = Predominantly Fine Sand Minor Gravel

PROSPECTORS AIRWAYS CO. LTD.

Geological Map Of Sirola Option
Showing Area
Mc Carthy Twp., Sudbury District, Ont.

Scale: 1" to 40'

Oct. 25, 1956

GEOLOGY BY: R.W. Baker
R.W. Baker

SHEPPARD TWP.
McCARTHY TWP.
AFTON TWP.
MACBETH TWP.
STURGEON RIVER

N

Magnetic declination is N. 9° W.

93601 93600 93590 93591
93599 93598 93588 93589
93597 93592 93582 93587
93596 93593 93583 93586
93595 93594 93584 93585

GLACIAL MORAINE RIDGE
JESSIE LAKE
Area of detailed geology
Scarp
High
Abrupt
Base Line

24 N
16 N
12 N
8 N
4 N
4 S
8 S
12 S
20 S
28 S
32

SYMBOLS

- Claim Posts & Lines
- Picket Lines
- Township Boundary Lines
- 65° Strike & Dip of Sediments
- Scarp or High Ground
- Geological Boundary Assumed
- Boundary of Rock Outcrop
- Muskeg & Swamp

LEGEND

- Diabase (Nipissing type)
- Conglomerate
- Slate
- Greywacke
- Quartzite
- cb Carbonatization
- Shearing
- Point of mineralization, chalcopyrite-pyrrhotite. Numbers indicate samples.

INDEX MAP

Sturgeon River
Sudbury
C.P.R.Y.
C.N.R.Y.
North Bay
Lake Nipissing
Georgian Bay

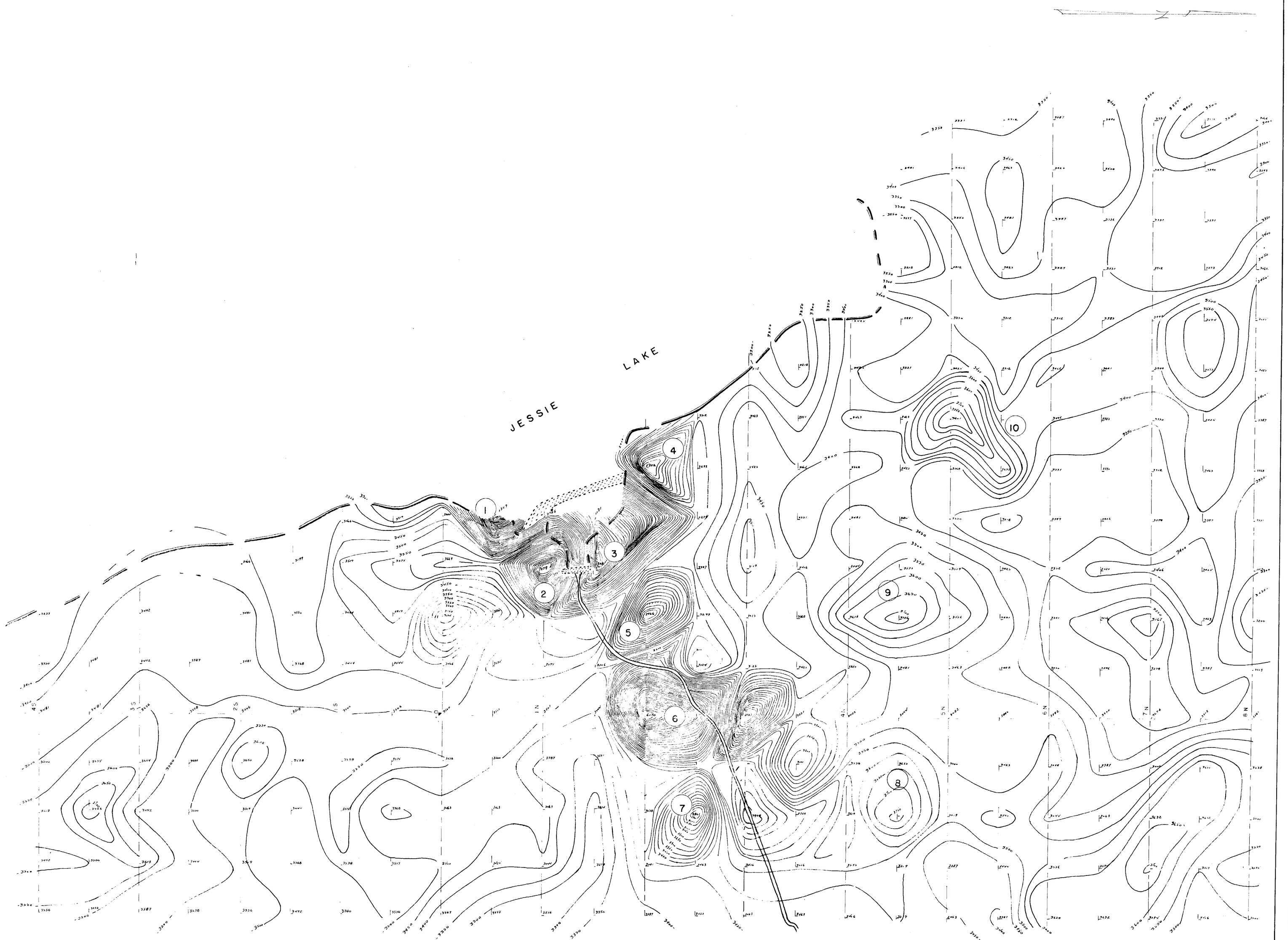
SCALE 1 Inch = 20 Miles

PROSPECTORS AIRWAYS COMPANY LIMITED

GEOLOGICAL MAP OF CLAIMS 93582 TO 93601 INCLUSIVE.
N.E. CORNER OF McCARTHY TWP., SUDBURY MINING DIV. ONTARIO
Scale: 1" to 200'
October 5, 1956
Geology by: J.C. Baker.

McCARTHY-0012 #2

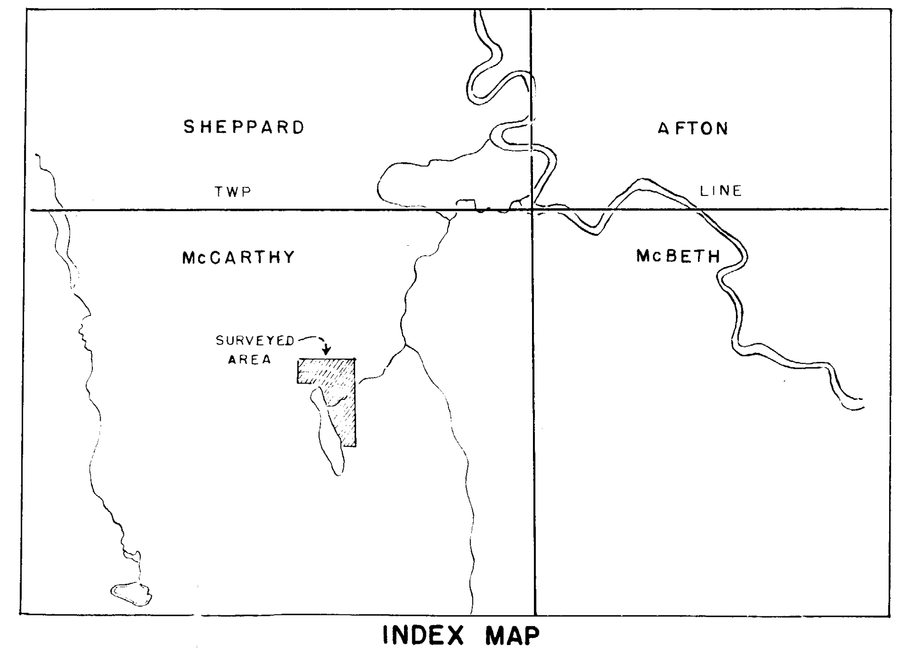
41116NW0114 0012 MCCARTHY
210



NOTES

LEGEND

- Isodynamic contour
- Anomaly depression
- Anomaly number (3)
- Picket line
- Base station



INDEX MAP
Scale 1" to 1/4 mi

PROSPECTORS AIRWAYS CO. LTD.

SIROLA OPTION —

— GEOMAGNETIC MAP

SHEET NO. 2

DETAILED SECTION 4S TO 8N RE SHEET NO 1

SCALE 1 IN TO 40 FT. OCT. 24, 1956

Magnetometer operator D.R.S. Doal
Plotted and contoured D.R.S. Doal

Radar Instrument No. 53 Sensitivity 18.8 gammas P.s.d.

Contour Interval 50 gammas

McCARTHY-0012 #3

POST NO.3
S93595

BASE LINE

35+00S 32+00S 28+00S 24+00S 20+00S 16+00S 12+00S 8+00S 4+00S 0+00 4+00N 8+00N

DIAB.

SULPH. DIAB.

LEGEND

⊕ — MAGNETIC BASE STATION

MAGNETIC CONTOURS

- UNDER 800 GAMMA
- 800 — 900 GAMMA
- 900 — 1000 GAMMA
- 1000 1100 GAMMA
- OVER 1100 GAMMA

PROSPECTOR'S AIRWAYS CO., LTD.

MAGNETOMETER SURVEY

MINING CLAIMS: S93582 – S93601 INCL.

McCARTHY TOWNSHIP

PROVINCE OF ONTARIO

– ONE · INCH · EQUALS · TWO · HUNDRED · FEET –

S 93601

S 93600

S 93591

S 93590

S 93589

S 93599

S 93598

S 93588

S 93597

S 93592

S 93582

S 93587

S 93596

S 93593

S 93583

S 93586

S 93595

S 93594

S 93584

S 93585

DETAIL AREA 'B'

DETAIL AREA 'A'

JESSIE LAKE

CREEK

SHEPPARD TWP. / MCCARTHY TWP. — AITON TWP. / MACBETH TWP.

STURGEON RIVER

SYMBOLS

- CLAIM CORNERS AND LINES
- AREAS OF MAGNETIC HIGHS
- TOWNSHIP BOUNDARY
- S.P. POT INTERVAL . DARK LINE IS APPROXIMATE NEGATIVE CENTRE. POTENTIAL DIFFERENCES IN MILLIVOLTS
- GEOLOGICAL BOUNDARY ASSUMED FROM MAPPING AND MAGNETIC DATA
- (S) POINT OF SULPHIDE MINERALIZATION.
- TRENCH OR STRIPPING
- C CARBONATIZATION

LEGEND

- D DIABASE
- SEDIMENTS
  - CG CONGLOMERATE
  - GW GREYWACKE

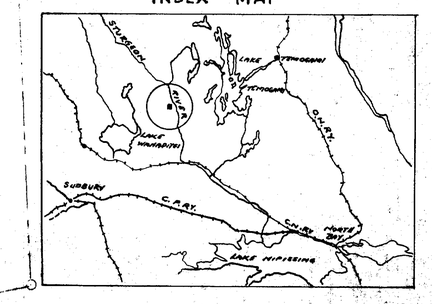
SELF-POTENTIAL SURVEY
No.1 GROUP
McCARTHY TWP.

SCALE 1in.-200ft.

COBALT ONT. NOVEMBER 1957

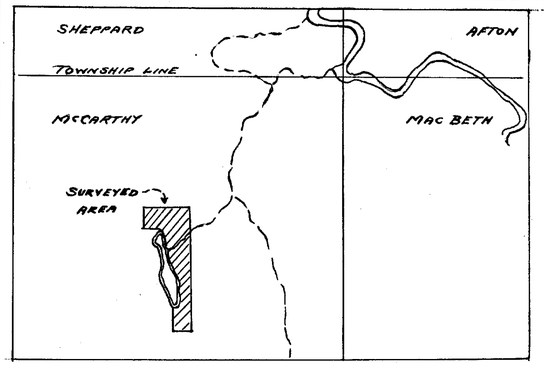
John Swola

INDEX MAP

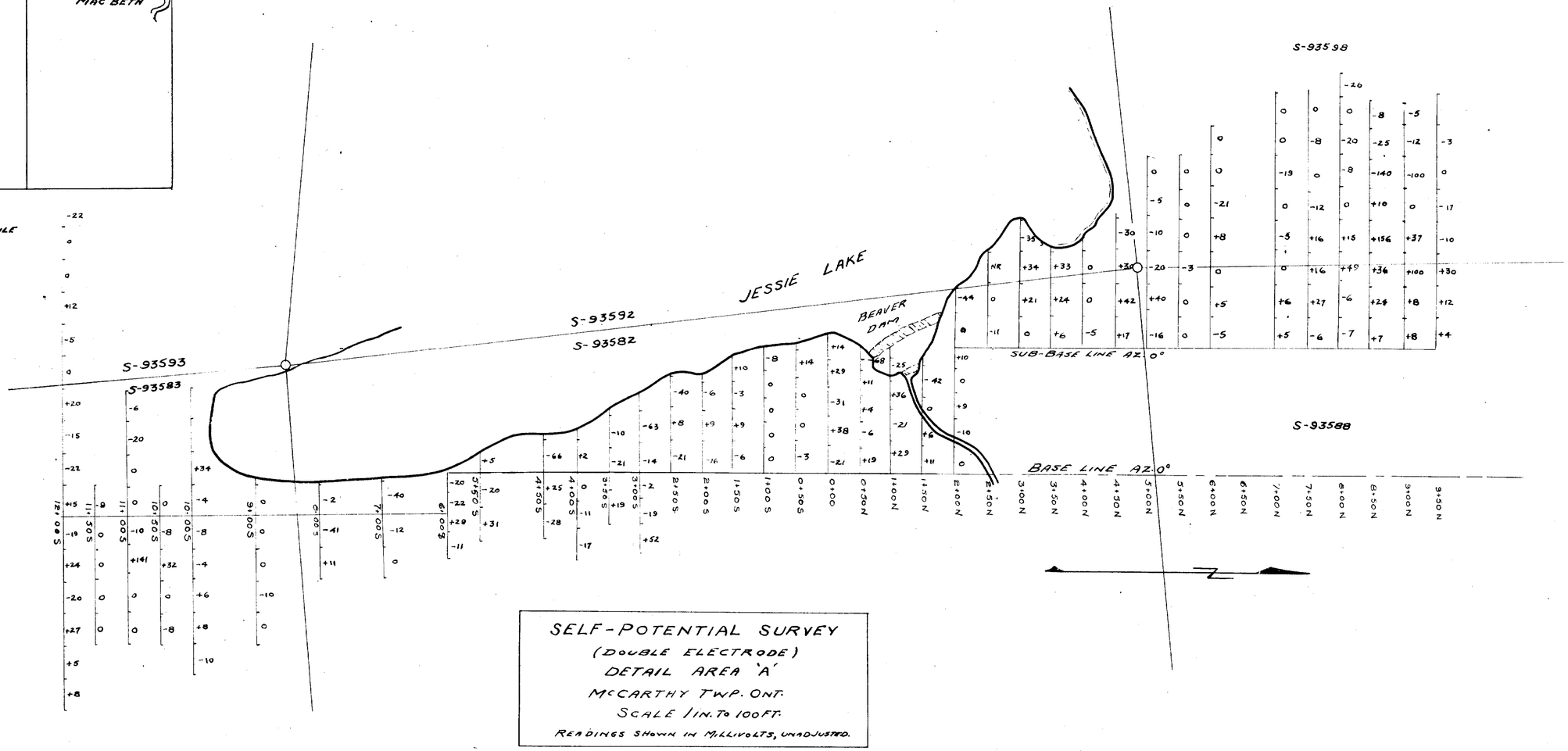


SCALE 1 IN. TO 20 MILES

McCARTHY-0012 #5



INDEX MAP
SCALE 1 IN. TO 1/4 MILE

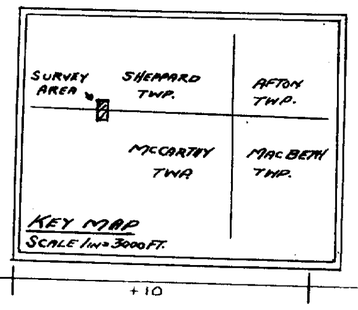


SELF-POTENTIAL SURVEY
(DOUBLE ELECTRODE)
DETAIL AREA 'A'
McCARTHY TWP. ONT.
SCALE 1 IN. TO 100 FT.
READINGS SHOWN IN MILLIVOLTS, UNADJUSTED.

McCARTHY-0012 #6

DETAILED ELECTROMAGNETIC AND SELF-POTENTIAL SURVEY
CLAIM NO. S-93600 - NO.1 GROUP McCARTHY TOWNSHIP

scale: 1 in — 20 ft



30+70N
30+20N
29+70N
29+20N
28+70N
28+20N
27+70N
27+20N
26+70N
26+20N

8+00 WEST LINE BASE SUB

CLAIM LINE, NORTH BOUNDARY, No. 1 GROUP

FROM SELF-POTENTIAL RESULTS BY EM. METHOD CENTER AS OBTAINED

APPARENT NEGATIVE CENTER AS OUTLINED BY CONDUCTOR

EASTERN EDGE OF CONDUCTOR

Db — OUTCROP AREA

Db — OUTCROP AREA

Db

PATCHES OF CHALCO PYRHO. MIN.

ALTERED DIABASE GABBRO

HIGH GROUND

LOW GROUND

LOW GROUND

DENSE UNDERGROWTH

FLATLY DIPPING QUARTZ STRINGER Cu.

Cb NEGATIVE CENTER OF LOWER INTENSITY

Cu STRIPPING ON MINERALIZED ZONE

POT STATIONS

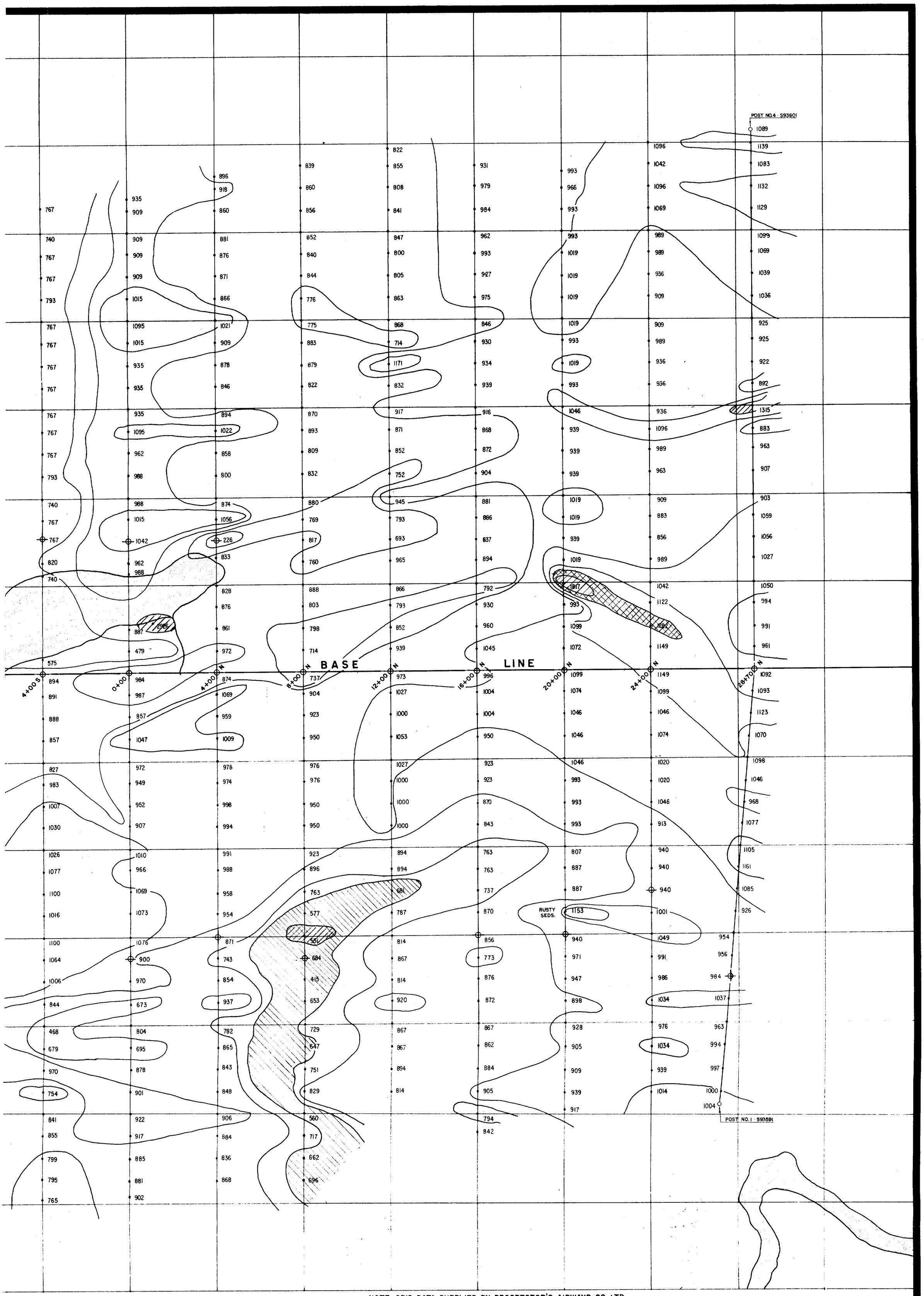
INTRUSIVE(?) RED FELDSPAR Cu. STRIPPING ON QUARTZ VEINS

14

260

NOV, 1957
John Sinclair

McCARTHY-0012 #7



NOTE: GRID DATA SUPPLIED BY PROSPECTOR'S AIRWAYS CO. LTD.

S AIRWAYS CO., LTD.

METER SURVEY

S: S93582 – S93601 INCL.

HY TOWNSHIP

NCE OF ONTARIO

EQUALS · TWO · HUNDRED · FEET –

SURVEY BY:

EXPLORATION GEOPHYSICS
(JOHN SIROLA)
COBALT ONTARIO

McCARTHY-0012 #4