



31M05NW0014 2.3780 FIRSTBROOK

010

ST. JOSEPH EXPLORATIONS LIMITED

MINING LANDS SECTION

Geological Survey of McLaren Lake Claims

Coleman and Firstbrook Townships

District of Temiskaming

Ontario

Project # 3143

by Douglas Robinson

Cobalt, Ontario.

November 29, 1980.

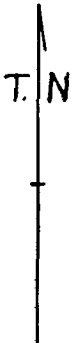
Property and Claim Status

This property consists of 14 claims held by St. Joseph Explorations Limited, 5th Floor, 90 Eglinton Avenue West, Toronto, Ontario. M4R 2E4

This report is filled to fulfil assessment requirements on the following claims in Coleman and Firstbrook Townships:

565761
565762
565763
565764
565765
565766
565767
565768
565769
565770
565771
565772
565773
565774

One claim "1941" owned by another party is in the middle of the claim block at the south west end of McLaren Lake.



LOT-9

LOT-8

LOT-7
CONC-I

565761

565762

565763

565764

FIRSTBROOK TWP.

565769

565768

565767

565766

565765

COLMAN
TWP.

1941

565770

565771

565772

565773

565774

CON-IV

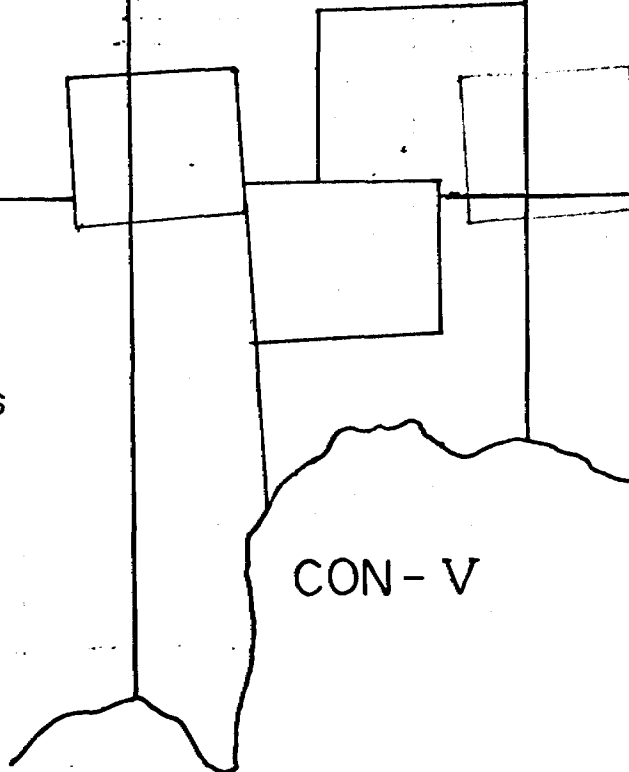
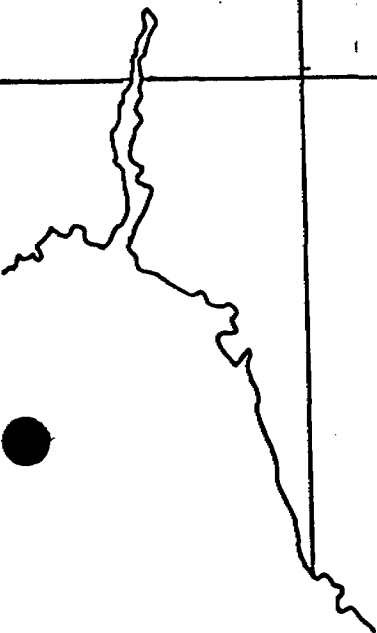
LOT-21

LOT-20

LOT-19

1" = 20 CHAINS

CON-V



Location and Access

McLaren Lake grid is located at 47° 24' N and 79° 50' west (NTS 31 M/5W). Access to the property is by 5½ miles of gravel forest access road west from hyway 11.

Previous Work

This property has previously been explored by Copperfields and Conwest. Conwest drilled a single hole, DDH # 7801 - 1 on claim # 565761 to test a horizontal loop EM conductor for base metal sulphides. This hole had 25 meters of overburden (vertical) and 27 meters of Huronian sediments. The conductor was well bedded Keewatin graphitic argillite and quartzite.

Geological Work 1980

Geological mapping on 1:2500 scale was done on 100 meter spaced lines with stations every 25 meters. The mapping was done by Douglas R. Robinson, Box 1125, Haileybury, Ontario. POJ lKO between the dates of Aug. 29, 1980 and Nov. 7, 1980.

Claims S-565761 to S-565774 inclusive were mapped and 40 days work credits per claim are applied for under special provision credits for performance and coverage of claims.

Numerous grab samples and random chip samples were taken to determine if silver mineralization is present.

Summary of Geology

This claim group is underlain by Huronian sediments resting unconformably on Keewatin volcanics and sediments. One area at the north east corner of the claim group has had the Huronian cover rocks eroded exposing Keewatin volcanics.

The Huronian Sediments and volcanics have been intruded by Nipissing Diabase. A north and south diabase, has been recognized. These merge at the west half of the claim group.

The north and south diabases may form a basin structure centred at 4+00 south.

Late Keewanawan diabase dikes cut the Huronian sediments north of the base line.

Detail Geology

10 KEWEENAWAN DIABASE

9 NIPISSING DIABASE

9a Coarse Grained > 1.5 mm Grain Size

Often Red Feldspar, (Includes Veritextured Diabase)

9b Hypersthene Diabase

9c Fine Grained < 1.5 mm Grain Size

9g Red Granophyre 0.5 - 2.0 mm Feldspar plus Quartz

7 FIRSBROOK (HURONIAN)

7a Greenish Grey Greywacks, Silt Size

7b Bedded Mauve Greywacke, Silt Size

7c Well Bedded Greywacke Sand to Silt

Often Green and Pale Pink Banding.

7d Quartzite

6 COLEMAN (HURONIAN)

6a Conglomerate

6b Greywacke

6c Well Bedded or Shaly Greywacke

6d Arkose

6e Quartzite

Angular Unconformity

1 KEEWATIN

1a Basalt, Andesite

1f Sedimentary Rocks

1g Rhyolite

1k Feldspar Porphyry

1m Basic Intrusive Rocks

Keewatin Rocks - A major Huronian hill is preserved as an outcrop area north of the base line and east of line 14+00E. This is the only exposure of Keewatin Rocks and has been mapped as rhyolite (1g) and feldspar porphyry (1k). This

grades from very fine grained green rhyolite to grey or green feldspar porphyry with up to 10% white feldspar phenocrysts to 2 mm. The distinction between massive rhyolite and feldspar porphyry is made when the phenocrysts are prominent.

Much of the rhyolite and feldspar porphyry is brecciated with fragments to 5 cm in a matrix similar to the fragments.

Sedimentary argillites and quartzites (1f) in part strongly carbonated and in part graphic, were reported in hole 780-1 #DDH 780-1 also intersected creamy grey bleached pillowed andesites (1a). These andesites were not carbonated.

The Huronian Keewatin contact is 52 meters below surface. Huronian - Coleman conglomerate (6a) is preserved in one outcrop at 16+70E and D+70N. This is a basal conglomerate that rests directly on the erosional surface of the Keewatin unconformity.

Coleman feldspathic quartzites (6e) with up to 5% pebbles were intersected on hole # DDH 780-1 from the bedrock surface 25 meters below surface to the Keewatin unconformity 52 meters below surface.

The Firstbrook has been divided into four sub units.

The lowest unit is a soft greenish grey greywacke (7a) of silt size particles that is massive to finely laminated. This may in fact be Coleman Formation with the Coleman Firstbrook contact being defined by the first incidence of prominent mauve coloured beds.

The second sub unit of the Firstbrook formation is a well bedded greywacke (7b) of silt size particles. The beds range from 0.5 to 1 cm thick. Unit 7b is soft.

Only the grey green and mauve Firstbrook formation exist north of the northern most Nipissing Diabase.

Only one outcrop of the mauve greywacke exists south of the northern diabase (16+45E, 3+95S).

Between the North and south diabase only units 7c and 7d exist with the exception of mauve greywacke (7b) at 16+45E, and 3+95S.

Unit 7c is a well bedded sequence of greywacke of silt size particles and sand beds. The silt size beds are greenish grey and soft. The sandy beds are pale to medium pink and very hard.

Unit 7c grades upwards to thick bedded quartzites with rare silt beds. The quartzite is pink to medium green depending on the distribution of chlorite. Often the chlorite is concentrated in spots 1 to 3 mm in size with a pink matrix. The pink colour of the matrix may be due to K-feldspar in the quartzite. This quartzite may in fact be Lorrain Quartzite..

Nipissing Diabase - Three types of Nipissing Diabase were recognized in the field.

The normal type of diabase (9c) is fine grained (less than 1.5 mm grain size) 9a is coarse grained diabase (greater than 1.5 mm). Within 9a some pyroxene crystals are over 1.0 cm long. This coarse diabase forms large areas of outcrop as well as local areas within fine grained diabase.

Two outcrop areas of granophyric diabase (9g) were recongnized.

From 11+30E to 12+30E and 7+05S to 7+45S red granophyre with grain size up to 2 mm. occur at the north contact of the south limb of the diabase.

At 9+15E and 3+25S an outcrop was mapped as granophyre diabase. This is distinctly different from the granophyric diabase described above. It is fine grained 0.1 to 0.5 mm. with phenocrysts of pink feldspar to 2 mm. This outcrop also is near the Diabase contact.

Keewenawan Diabase - two areas have been mapped as Keewenawan diabase dikes (10). At 12+10E, 0+90N a diabase dike is exposed that has pits blasted on strong north dipping quartz veins. This diabase is carbonated. A second Keewenawan diabase dike at 14+25E, 2+05N is strongly altered to carbonate and has disseminated pyrite.

Structure

The two major structural features of the claim group are that the diabase contacts and the Huronian Keewatin unconformity .

The diabase forms a major north limb and south limb. Copperfields reports an observed contact at the north edge of the north limb that dips 60° south east. (20+50E, 1+00N) Granophyre was mapped along the north edge of the south limb indicating this contact is the upper contact of the diabase. If this is the upper contact then the south limb must dip north making a east trending basin plunging to the east.

A small area of Nipissing diabase at 13+00E, 2+90S is difficult to explain. It could be a small rolé in the top of the diabase.

The location of the Huronian Keewatin unconformity is uncertain over most of the claim group. North of the northern diabase it is probably less than 100 meters deep. South of the northern diabase the unconformity could be greater than 300 meters. There may be a significant Huronian valley near 9+00E, 2+00N.

It has not been possible to define faults but numerous possible, small to major structures that could host or be associated with Ag Co veins have been marked on the geology map.

Economic Geology

This property has potential for Ag Co vein systems.

A shaft in Nipissing diabase at 12+30E, 1+50S has cobalt arsenide vein material in the dump. Low silver, cobalt values were found in the shaft muck and in place in trenches near the shaft. This shaft is near a major east striking quartz epidote vein. There is potential for Ag ore in this area.

The best untested targets for Ag ore are in the Huronian Sediments north of the northern diabase. Two prime targets stand out.

The first target is the Huronian sediments near the graphitic conductor where the conductor is cut by the Nipissing diabase. This should be tested with a hole to cut the graphitic conductor just below the unconformity. If the Keewatin is mineralized with chalcopyrite sphalerite, galena and ^{pyrrhotite}pyrrhotite the Huronian above is a high priority target and vein systems should be located and followed up by additional drilling.

The second priority is a possible Huronian valley at 9+00E north of the northern diabase. The problems here are confirming the valley and locating favourable vein systems.

Another possible target is the area between the north and south diabases. If this is Firstbrook the potential Ag mineralization may be too deep to be economic and to discover. There is a possibility this area is Coleman quartzite. If this is so then there may be Keewatin rock near surface that would make a potential Nipissing Diabase - Keewatin environment. Another possibility is this area maybe a dome instead of a basin which would give this area potential.

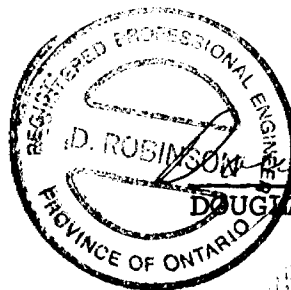
Co-ordinates		Grade oz Ag/ Short ton	Description
Easting	Northing		
1+95E	7+75S	tr	Rock chips of weakly sheared coarse grained N. Diabase with minor Carbonate
4+10E	4+50S	tr	Chips of Pyritic diabase
7+45E	7+80S	tr	Chips of pyritic diabase with Easterly joint set.
7+85E	8+00S	tr	Chips of pyritic Diabase with Easterly Joint Set.
9+25E	3+18S	tr	chips of N. Diab. and Quartzite at (Upper?) Diabase Contact.
10+20E	1+30N	0.17	Grab sample of Qtz vein in Keweenawan diabase dike
10+20E	1+30N	0.07	Wall rock of above vein (Keweenawan Diabase)
10+75E	3+50S	0.02	Quartzite with 3mm carbonate Rombohedrons
10+65E	6+25S	tr	0.3 cm Qtz vein in Quartzite
12+10E	0+95N	tr	Qtz vein in Keeweenawan Diabase
12+32E	1+50S	0.62 ozAg/t 2.92 % Co 1.08% Ni 5.45% As	1.3 cm thick rock chunk with 0.3 cm Massive Arsenides, Pyrite 10% of Sample. Sample from shaft muck.
12+32E	1+50S	0.29oz Ag/t 0.51 % Co	massive diabase with less than 0.1% orthorombic arsenide xls (looks like Safflorite)
12+40E	1+28S	0.06 ozAg/t 0.003% Co	10 cm Qtz Epidote vein in N. Diabase
12+53E	1+43S	0.20 ozAg/t 0.12% Co	N. Diabase from small pit Cobalt bloom in sample.

12+88E	1+30S	0.22 oz. Ag/t 0.038 % Co	Random chips of pyritic N. Diabase in pit. has than or equal to 1% Py. Samples collected over 2 meters.
12+88E	1+30S	tr. Ag.	Repeat of above sample (new sample)
17+00E	1+40S	tr Ag 0.005 Zn	Grab sample of Carbonated Chloritic N. Diabase with specks of red mineral.
19+20E	0+00N	0.06 oz Ag/t 0.003% Co	Feldspar serp. veins in N. Diabase near-North Contact.
14+25E	2+00N	tr Ag 0.014 Cu	Keewenawan Dike? carbonated, pyritic
14+23E	3+35N	0.05 ozAg/t 0.19% Cu	Unconformity-Greywacke on Feldspar porphyry sulphides plus malachite
14+45E	3+55N	0.07 ozAg/t 0.32 % Cu	Sulphides in Keewatin Feldspar porphyry
14+90E	0+55N	tr	Huronian Greywacke

C E R T I F I C A T E

I, DOUGLAS ROBINSON, OF HAILEYBURY, IN THE PROVINCE OF ONTARIO, IN THE DISTRICT OF TEMISKAMING, DO HEREBY CERTIFY AS FOLLOWS:

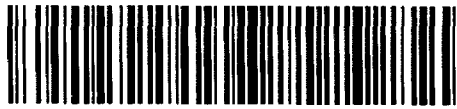
- 1 - THAT I AM A GEOLOGIST AND RESIDE AT 357 LAWLOR STREET, HAILEYBURY, ONTARIO.
- 2 - THAT I GRADUATED IN 1970 FROM HAILEYBURY SCHOOL OF MINES, HAILEYBURY, ONTARIO, WITH A TWO YEAR DIPLOMA IN MINING TECHNOLOGY.
- 3 - THAT I GRADUATED IN 1975 FROM QUEEN'S UNIVERSITY, KINGSTON, ONTARIO WITH AN HONOURS B.Sc. DEGREE IN GEOLOGICAL SCIENCES. (FACULTY OF APPLIED SCIENCE)
- 4 - THAT I AM A MEMBER OF THE ASSOCIATION OF PROFESSIONAL ENGINEERS OF ONTARIO.



Douglas Robinson
DOUGLAS R. ROBINSON



GEO PHYSICAL - GEOLOGICAL
TECHNICAL DATA



31M05NW0014 2.3780 FIRSTBROOK

900

TO BE ATTACHED AS AN APPENDIX
FACTS SHOWN HERE NEED NOT BE REPEATED IN REPORT
TECHNICAL REPORT MUST CONTAIN INTERPRETATION, CONCLUSIONS ETC.

Type of Survey(s) Geological
Township or Area Coleman and Firstbrook
Claim Holder(s) St. Joseph Explorations Limited
90 Eglinton Ave. West, Toronto, Ont.
Survey Company St. Joseph Explorations Limited
Author of Report Douglas Robinson
Address of Author P.O. Box 1125, Haileybury, Ont.
Covering Dates of Survey Aug. 29, 1980 to Nov. 7, 1980.
(linecutting to office)
Total Miles of Line Cut 16.5

MINING CLAIMS TRAVERSED
List numerically

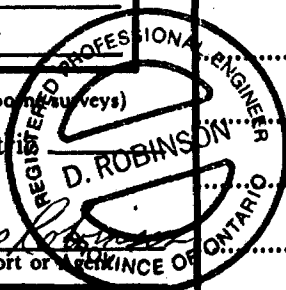
S	-	565761	✓
(prefix)		(number)	
S	-	565762	✓
S	-	565763	✓
S	-	565764	✓
S	-	565765	✓
S	-	565766	✓
S	-	565767	1/2
S	-	565768	3/4
S	-	565769	✓
S	-	565770	✓
S	-	565771	1/4
S	-	565772	✓
S	-	565773	✓
S	-	565774	✓

If space insufficient, attach list

SPECIAL PROVISIONS CREDITS REQUESTED	Geophysical	DAYS per claim
ENTER 40 days (includes line cutting) for first survey.	-Electromagnetic _____	
ENTER 20 days for each additional survey using same grid.	-Magnetometer _____	
	-Radiometric _____	
	-Other _____	
	Geological <u>40</u>	
	Geochemical _____	

AIRBORNE CREDITS (Special provision credits do not apply to airborne surveys)
Magnetometer _____ Electromagnetic _____ Radiometric _____
(enter days per claim)

DATE: Nov. 29 1980 SIGNATURE: Douglas Robinson
Author of Report or PROVINCIAL ENGINEER



Res. Geol. _____ Qualifications 63,1092

Previous Surveys L.O

File No.	Type	Date	Claim Holder

1.5 claims not covered
 $14 \times 40 = 560 \div 15.5$
 $= 36 \text{ days}$
operated as per F.W.M.

TOTAL CLAIMS 14

OFFICE USE ONLY

GEOPHYSICAL TECHNICAL DATA

GROUND SURVEYS --- If more than one survey, specify data for each type of survey

Number of Stations _____ Number of Readings _____
Station interval _____ Line spacing 100 meters
Profile scale _____
Contour interval _____

MAGNETIC

Instrument _____
Accuracy – Scale constant _____
Diurnal correction method _____
Base Station check-in interval (hours) _____
Base Station location and value _____

ELECTROMAGNETIC

Instrument _____
Coil configuration _____
Coil separation _____
Accuracy _____
Method: Fixed transmitter Shoot back In line Parallel line
Frequency _____
(specify V.L.F. station)
Parameters measured _____

GRAVITY

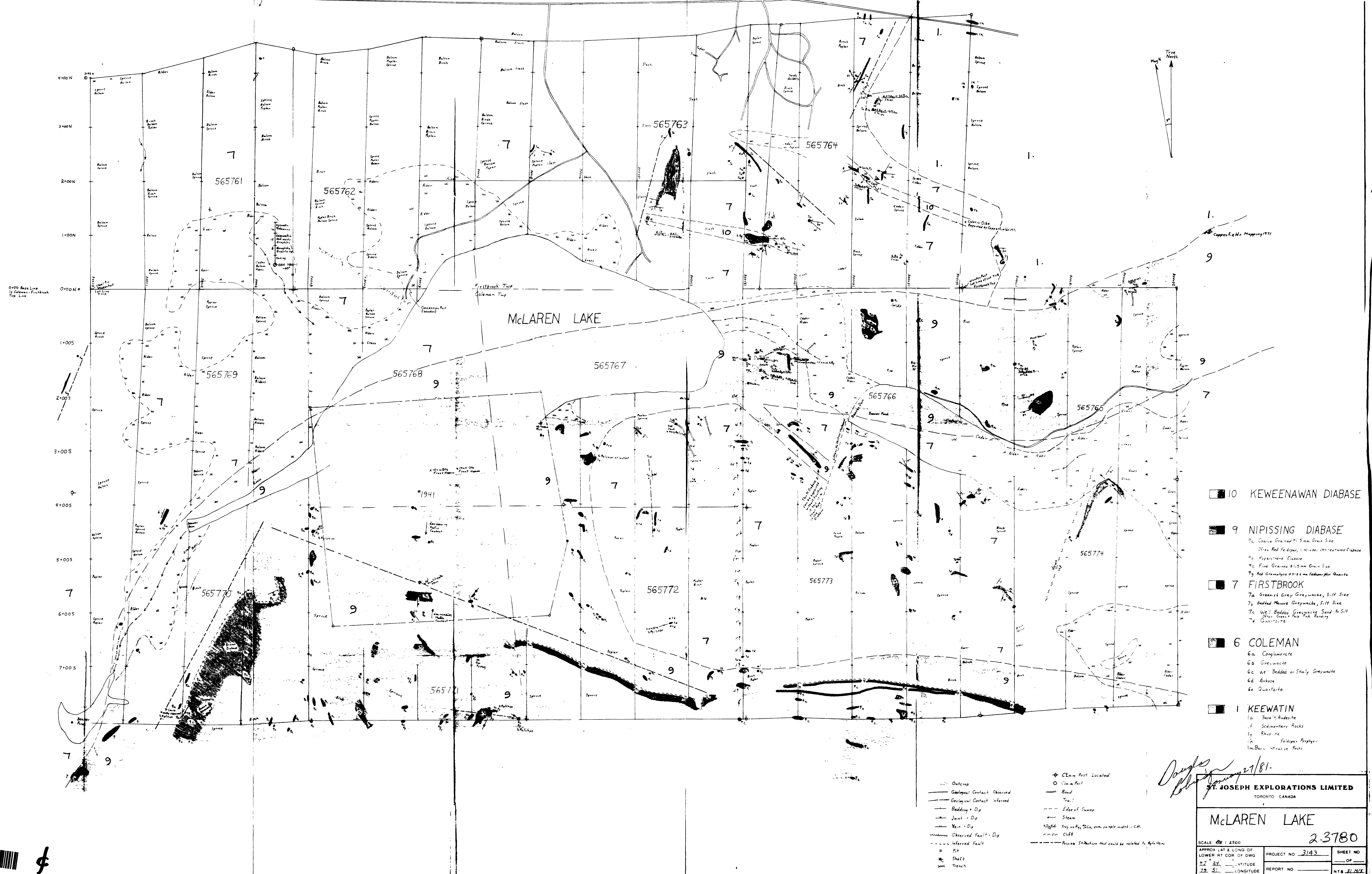
Instrument _____
Scale constant _____
Corrections made _____

Base station value and location _____

Elevation accuracy _____

**INDUCED POLARIZATION
RESISTIVITY**

Instrument _____
Method Time Domain Frequency Domain
Parameters – On time _____ Frequency _____
– Off time _____ Range _____
– Delay time _____
– Integration time _____
Power _____
Electrode array _____
Electrode spacing _____
Type of electrode _____



- 10 KEWEENAW DIABASE
- 9 NIPISSING DIABASE
 - 9a Coarse Grained 7.5mm Grain Size
 - 9b Red Feldspar, Lithic, interstitial Diabase
 - 9c Apatitic Diabase
 - 9d Fine Grained 0.5mm Grain Size
 - 9e Red Granophyre 0.5-2.0mm Feldspar Plus Quartz
- 7 FIRSTBROOK
 - 7a Greenish Grey Greywacke, Silt Size
 - 7b Bedded Massive Greywacke, Silt Size
 - 7c Well Bedded Greywacke Sand to Silt
 - 7d Green Fine Pink Sanding
 - 7e Quartzite
- 6 COLEMAN
 - 6a Conglomerate
 - 6b Greywacke
 - 6c Well Bedded or Shaly Greywacke
 - 6d Arkose
 - 6e Quartzite
- 1 KEEWATIN
 - 1a Basalt Andesite
 - 1b Sedimentary Rocks
 - 1c Rhovite
 - 1d Feldspar Porphyry
 - 1m Basalt Intrusive Rocks

- Outcrop
- Geological Contact Observed
- - - Geological Contact Inferred
- Bedding + Dip
- Joint + Dip
- Vein + Dip
- Observed Fault - Dip
- - - Inferred Fault
- Pit
- Shaft
- Trench
- ◆ Claim Post Located
- Claim Post
- Road
- - - Trail
- - - Edge of Swamp
- Steam
- Trench
- Cliff
- Possible Structure that could be related to Hydrocarbon

D. Joseph
2/1/81

ST. JOSEPH EXPLORATIONS LIMITED
TORONTO, CANADA

McLAREN LAKE
23780

SCALE 1/2500

APPROX LAT & LONG OF LOWER RT COR OF DWG	PROJECT NO. 3143	SHEET NO.
42° 24' N. LATITUDE	REPORT NO.	OF
72° 51' W. LONGITUDE		NTS 31/1/82

