

42014NW0037 2.3903 PAYS PLAT LAKE

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WINSTON LAKE PROJECT
ROCK GEOCHEMICAL SURVEY
FOR THE
ANDERSON CLAIMS
(TB 519245 - 519248 incl.)
NTS 42-D-14-W

APRIL 10, 1981

IAN D. PIRIE
CORPORATION FALCONBRIDGE COPPER
THUNDER BAY, ONTARIO

SUMMARY:

Seventy-nine rock geochemical samples were collected on the claim group while traversing 4.6 km of pre-existing lines. All samples were analysed for Cu and Zn and 31 of these samples were also analysed for Na_2O , all by atomic absorption techniques. The results were averaged with similar rock types in areas outside the claim group. Contour intervals were selected and the contouring was correlated with the geology.

The survey succeeded in detecting a possible extension of the Anderson showing as well as another stratigraphic horizon with anomalous Cu and Zn. A southeasterly trending sodium depletion zone cuts the felsic metavolcanics and diorite.

INTRODUCTION:

The subject claims are underlain by granite, diorite and felsic volcanic units metamorphosed to schists and gneisses (Figure 2). Disseminated sulphides, principally chalcopyrite with minor pyrite, pyrrhotite and sphalerite, occur in a quartz-biotite [±] garnet schist interlayered with quartz-feldspar-biotite gneiss (Anderson Showing).

Seventy-nine rock geochemical samples were collected on the claim group and analysed for copper, zinc and sodium by atomic absorption techniques. The chemical data have been compiled and plotted to indicate anomalous geochemical patterns. The geochemical anomalies are assumed to be associated with stratigraphic zones in the felsic volcanic rocks where the metals were precipitated.

LOCATION AND ACCESS:

The claim group is located on the southeastern shore of Winston Lake. It is accessible using the Winston Lake trail that joins a 23 kilometer road winding south to a point on the Trans-Canada Highway #17 located 18 km. west of Schreiber, Ontario. (Figure 1). Alternatively, the area can be reached by float plane from Pays Plat located on the north shore of Lake Superior.

TOPOGRAPHY AND VEGETATION:

The area of the claim group is very rugged. Steep cliffs (15- 25 meters) are found along the eastern shore of Winston Lake and associated with a northeast-trending fault which separates the diorite from felsic metavolcanics (Figure 2). Relief is approximately 25 meters. Outcrop exposures account for 40% of the area. Areas with no visible outcrop were covered with jack pine, spruce and small stands of poplar and birch.

PROPERTY STATUS:

The 4 claims, TB 519245, 519246, 519247 and 519248, were staked by Corporation Falconbridge Copper personnel on August 21st, 1979 and recorded September 13th, 1979. Corporation Falconbridge Copper, P. O. Box 40, Commerce Court West, Toronto, Ontario, M5L 1B4, is the current holder of these claims.

PREVIOUS WORK:

Disseminated pyrrhotite and pyrite with minor chalcopyrite and sphalerite was discovered in quartz-biotite-feldspar gneisses by L. C. Anderson in 1952. In 1953, Andowan Mines drilled 5 shallow holes totalling 424 feet to test the mineralized zone. Up to 5% pyrrhotite and minor amounts of disseminated chalcopyrite were encountered in the drill core but no assays were reported. In 1965, Zenmac Metal Mines drilled 2 holes for a total of 723 feet. Disseminated pyrite, chalcopyrite and massive pyrite and pyrrhotite over 0.5 feet was reported but no assays are available.

The claim group has been previously mapped at a reconnaissance scale (1 inch = ¼ mile) by the Ontario Government (Pye, 1964). The schists and gneisses exposed in the area were interpreted as metasediments.

No previous lithogeochemical surveys have been carried out on the property.

LITHOGEOCHEMISTRY:

Seventy-nine rock geochemical samples were collected by two students on September 15th and 16th, 1979. The 4.6 km of pre-existing lines spaced 100 meters apart were traversed and samples were collected every 50 meters except where changes in rock type warranted a closer sample spacing. Sampling of lake shore outcrop on claims TB 519246 and TB 519247 supplemented the grid work.

Average sample weight was 2 pounds (avg. 1 kg). Primary crushing was achieved by passing each sample through jaw and cone crushers. A riffle table was used to half each sample. The reject portion was permanently stored. The remaining half was pulverized to approximately - 200 mesh. One gram of the pulp was used for base metal determinations. Pulps are also permanently stored.

Each of the 79 samples were analysed for Cu and Zn by Metriclab Inc., located in Ste-Marthe Sur Le Lac, Quebec. Na₂O was analysed for 31 of these samples. Hydrofluoric acid and Aqua regia digestions were used to decompose the sample prior to analysis using an atomic absorption technique.

RESULTS:

To obtain statistically meaningful results, the analyses for the 79 samples were averaged with analyses of similar rock types that outcrop north and south of the subject claims. Table 1 lists the multi-element statistics. Appropriate contour intervals were selected on the basis of geometric means and deviation coefficients. Contouring was performed paying particular attention to the geology.

Several geochemical anomalies are indicated on the enclosed geochemical plans (Figures 3, 4, 5). Major coincidental anomalies are briefly described below.

1. A northeast-trending moderate to strong copper and zinc anomaly is found on the northern edge of claim TB 519245. This zone is located along strike from the Anderson Showing and could be related to undiscovered mineral occurrences.
2. Southeast of the Anderson Showing, but still within the felsic meta volcanics is another northeasterly trending copper enrichment zone. Zinc is weakly anomalous in the northeastern part of this zone but becomes moderately anomalous near the felsic volcanic-granite contact. A southeasterly trending sodium depletion zone cuts this zone and extends into the felsic metavolcanics which outcrop in claim TB 519247.
3. The diorite is weakly anomalous in copper.

CONCLUSIONS:

The lithochemical survey was successful in outlining areas of anomalous metal content. A zone northeast of the Anderson Showing and a northeasterly trending zone to the southeast both appear to be stratigraphically controlled. Further investigation is warranted in these areas.

APRIL 10th, 1981.



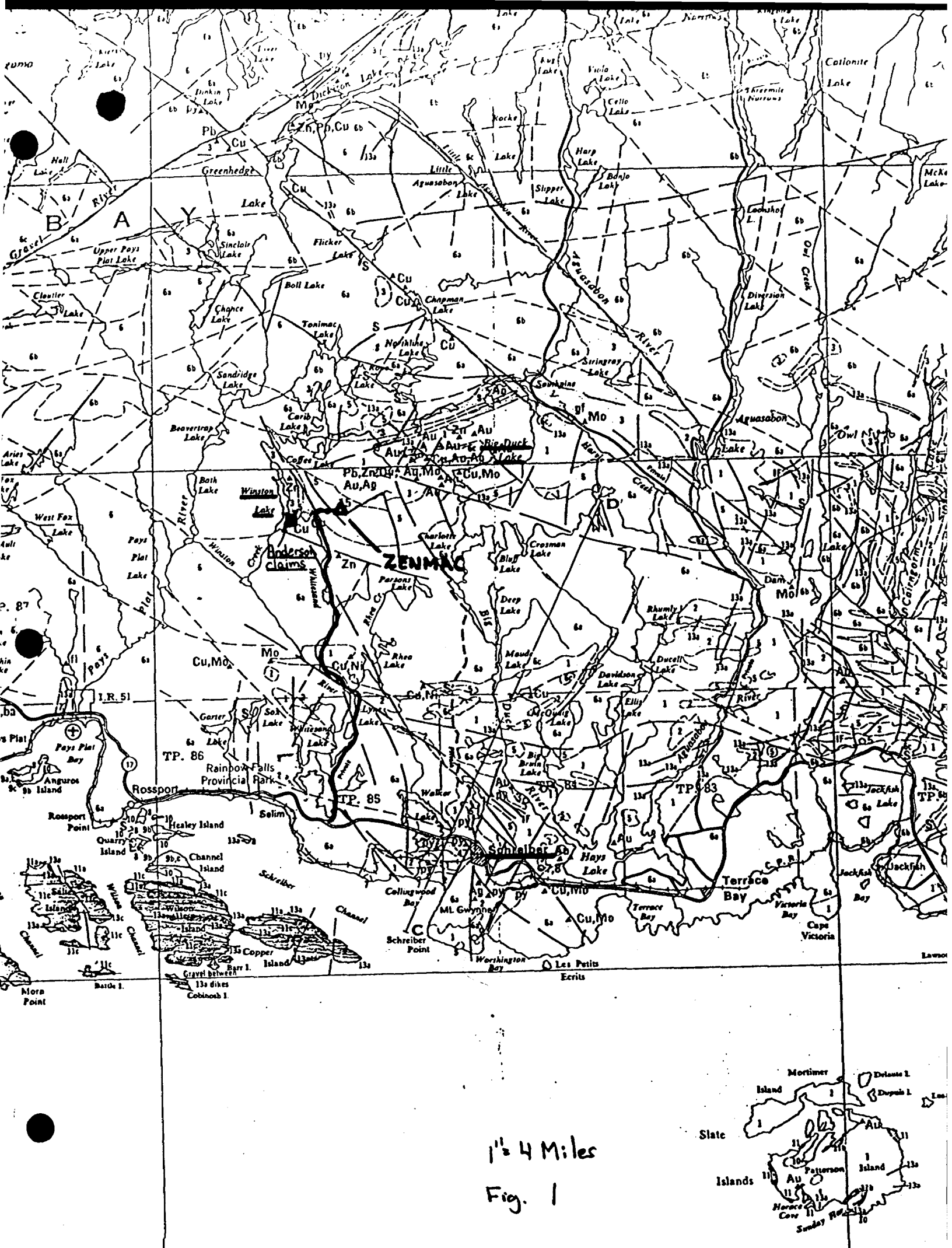
IAN D. PIRIE

REFERENCES

Pye, E. G. 1964: Mineral Deposits of the Big Duck Lake Area.
O D M Geological Report No. 27.

TABLE I MULTI-ELEMENT STATISTICS - WINSTON LAKE

	ELEMENT	NUMBER	MINIMUM	MAXIMUM	ARITH MEAN	STAND DEVN	GEO MEAN	DEVN
Gabbro/Amphibolite Diorite	Na ₂ O...%	10	0.15	3.04	1.53	1.12	1.01	3.0127
	Cu...PPM	68	1.00	457.00	47.66	78.62	20.69	4.1841
	Zn...PPM	68	2.00	287.00	35.96	41.46	20.94	3.0317
Felsic Meta-volcanics	Na ₂ O...%	212	0.10	6.62	2.77	1.74	1.87	2.9933
	Cu...PPM	488	1.00	218.00	10.91	20.73	4.84	3.2259
	Zn...PPM	488	2.00	363.00	50.98	58.29	29.40	2.9071
Granitoid Rocks	Na ₂ O...%	36	1.24	5.58	4.21	1.01	4.04	1.3887
	Cu...PPM	122	1.00	123.00	10.99	16.15	6.14	2.7797
	Zn...PPM	122	2.00	331.00	41.20	43.20	27.71	2.6393



APPENDIX "A"

ANALYSES

<u>SAMPLE NO.</u>	<u>Cu (ppm)</u>	<u>Zn (ppm)</u>	<u>Na₂O (wt. %)</u>	<u>SAMPLE NO.</u>	<u>Cu (ppm)</u>	<u>Zn (ppm)</u>	<u>Na₂O (wt %)</u>
WI-106	2	42		WI-932	2	270	3.11
107	3	44		933	11	88	
108	1	30		934	24	127	2.82
109	6	38	4.02	935	43	22	
110	1	5		936	3	5	5.17
259	31	33		937	3	70	
904	22	105		938	5	2	
905	218	23	1.56	939	3	24	
906	224	25	1.44	940	4	40	
907	35	48		941	10	58	
908	12	33		942	39	43	3.19
909	46	62	4.09	943	3	46	
910	17	47		944	94	184	0.45
911	44	4	1.59	945	5	43	
912	65	7		946	2	67	2.74
913	14	71		947	1	4	
914	27	126	3.83	948	3	6	
915	8	53		949	7	78	4.10
916	12	137	1.60	950	3	6	4.51
917	4	170	0.25	951	2	2	
923	3	45	4.35	952	23	21	
924	16	15	5.73	953	2	85	1.17
925	37	58	1.49	954	1	41	
926	2	29	0.16	955	1	9	
928	1	36	4.01	956	22	5	2.25
929	6	138		957	1	103	
930	3	92	4.30	959	4	64	
931	1	45		960	1	7	4.84
WI-961	30	30	5.27	WI-973	1	17	
962	6	68	3.66	974	6	12	
963	1	17		975	3	46	
964	11	12	3.45	976	4	22	
965	2	55		977	63	34	
966	2	21	3.06	978	10	32	
967	15	33		979	42	3	
968	1	24	4.57	980	19	68	
969	5	2		981	37	26	
970	429	7		982	5	136	
971	51	5		986	2240	49	
972	100	301					



Ministry of N

GEOPHYSICAL - GEOL
TECHNICAL D



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

Type of Survey(s) LITHOGEOCHEMICAL
Township or Area PAYS PLAT - M 2522 - NTS 42-D-14
Claim Holder CORPORATION FALCONBRIDGE COPPER
P.O. BOX 40, COMMERCE COURT WEST, TORONTO, ONTARIO
Survey Company CORPORATION FALCONBRIDGE COPPER M5L 1B4
Author of Report IAN D. PIRIE
Address of Author c/o CFC - 2606 VICTORIA AVE. EAST.
Covering Dates of Survey Sept. 15/79 - Mar. 31/81 THUNDER BAY, ONT
(linecutting to office)
Total Miles of Line Cut N/A

MINING CLAIMS TRAVERSED
List numerically

TB.....519245.....
(prefix) (number)
TB.....519246.....
TB.....519247.....
TB.....519248.....

<u>SPECIAL PROVISIONS</u> <u>CREDITS REQUESTED</u>	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_____	
	Geochemical_____	

AIRBORNE CREDITS (Special provision credits do not apply to airborne surveys)

Magnetometer_____ Electromagnetic_____ Radiometric_____

(enter days per claim)

DATE: 4/5/81 SIGNATURE: *I.D. Pirie*
Author of Report or Agent

Res. Geol. _____ Qualifications 2.3902.

Previous Surveys

File No.	Type	Date	Claim Holder
			<u>I.D.</u>

TOTAL CLAIMS 4

If space insufficient, attach list

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 _____

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 _____

GEOCHEMICAL SURVEY - PROCEDURE RECORD

Numbers of claims from which samples taken TB 519245, TB 519246, TB 519247, TB 519248

Total Number of Samples 79

Type of Sample ROCK
(Nature of Material)

Average Sample Weight 2 POUNDS

Method of Collection ROCK HAMMER

Soil Horizon Sampled N/A

Horizon Development N/A

Sample Depth N/A

Terrain RELATIVELY FLAT

Drainage Development MODERATE TO GOOD

Estimated Range of Overburden Thickness 0 - 5 METERS

SAMPLE PREPARATION

(Includes drying, screening, crushing, ashing)

Mesh size of fraction used for analysis - 200 MESH

General _____

ANALYTICAL METHODS

Values expressed in: per cent
p. p. m.
p. p. b.

Cu, Pb, Zn, Ni, Co, Ag, Mo, As, -(circle)

Others Na₂O

Field Analysis (N/A tests)

Extraction Method _____

Analytical Method _____

Reagents Used _____

Field Laboratory Analysis

No. (N/A tests)

Extraction Method _____

Analytical Method _____

Reagents Used _____

Commercial Laboratory (189 tests)

Name of Laboratory METRICLAB INC.

Extraction Method AQUA REGIA, HF

Analytical Method ATOMIC ABSORPTION

Reagents Used AQUA REGIA, HF, HCl

General _____

SELF POTENTIAL

Instrument _____ Range _____

Survey Method _____

Corrections made _____

RADIOMETRIC

Instrument _____

Values measured _____

Energy windows (levels) _____

Height of instrument _____ Background Count _____

Size of detector _____

Overburden _____

(type, depth – include outcrop map)

OTHERS (SEISMIC, DRILL WELL LOGGING ETC.)

Type of survey _____

Instrument _____

Accuracy _____

Parameters measured _____

Additional information (for understanding results) _____

AIRBORNE SURVEYS

Type of survey(s) _____

Instrument(s) _____

(specify for each type of survey)

Accuracy _____

(specify for each type of survey)

Aircraft used _____

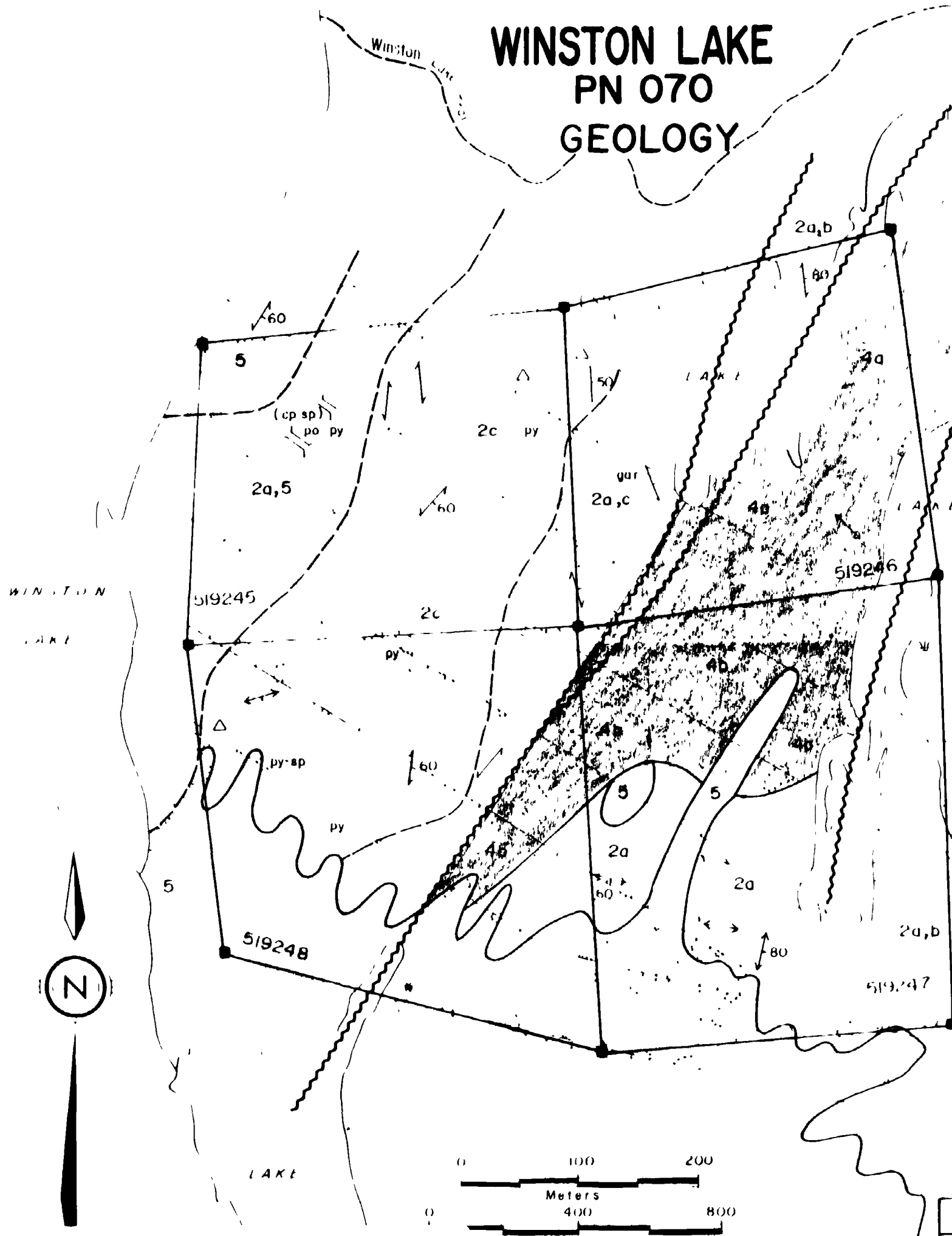
Sensor altitude _____

Navigation and flight path recovery method _____

Aircraft altitude _____ Line Spacing _____

Miles flown over total area _____ Over claims only _____

WINSTON LAKE PN 070 GEOLOGY

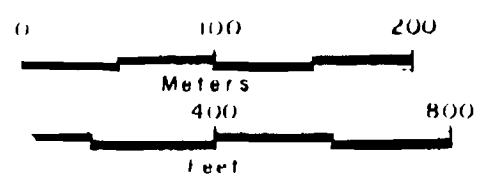


LEGEND

- [5] GRANITE
- [4] a) GABBRO/AMPHIBOLITE
b) DIORITE
- [2] a) QUARTZ-FELDSPAR-BIOTITE GNEISS
b) QUARTZ MUSCOVITE SCHIST
c) QUARTZ-BIOTITE GARNET GNEISS/SCHIST

SYMBOLS

- CLAIM LINE AND POSTS
- /// GEOLOGICAL CONTACT (DEFINED, ASSUMED)
- /// BEDDING, GNEISSOCITY, SCHISTOSITY
- x OUTCROP (LARGE, SMALL)
- △ LAPILLI
- ⋈ TRENCH
- PICKET LINE

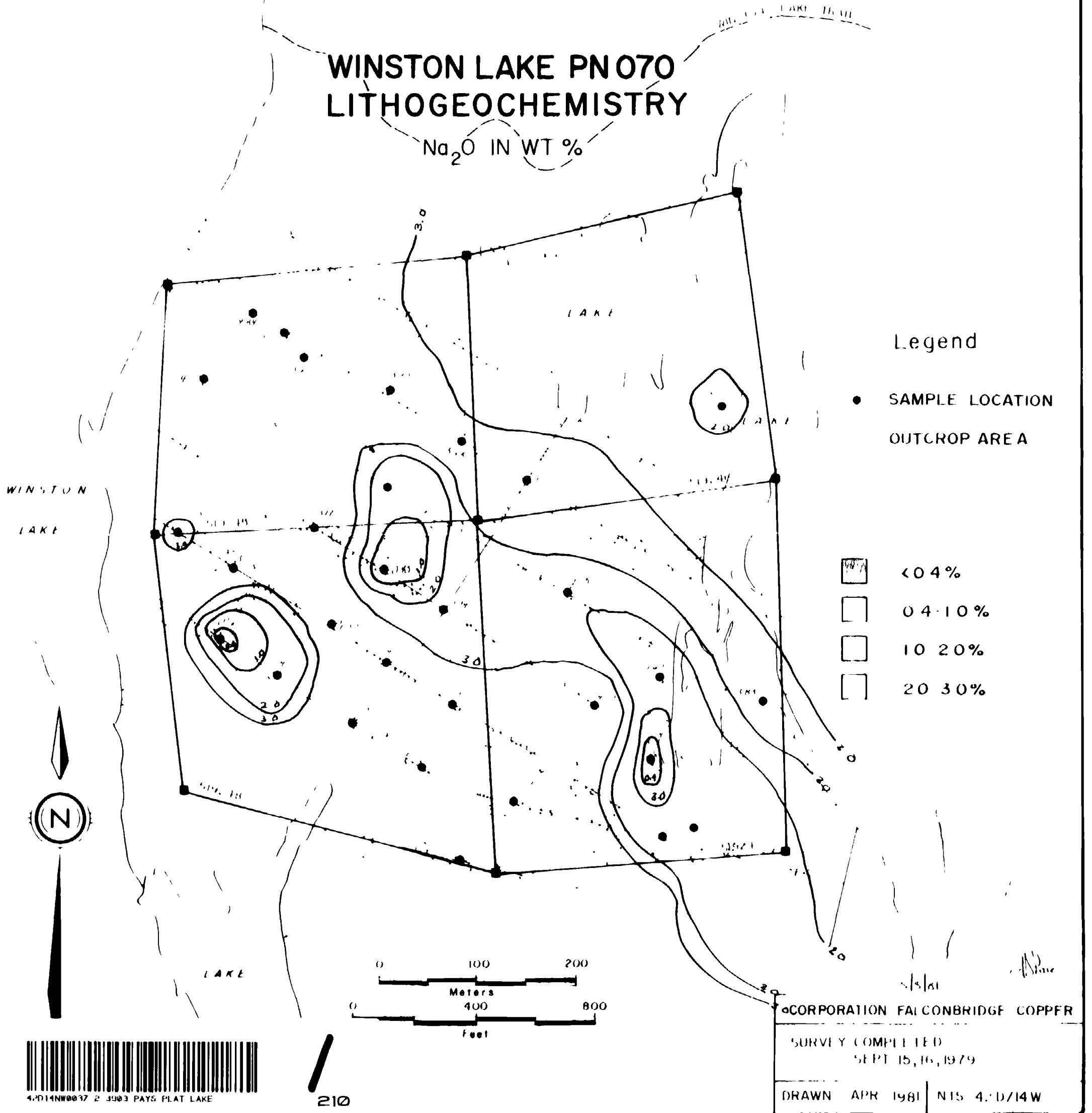


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CORPORATION FALCONBRIDGE COPPER	
MAPPED BY	IDP, PI
ON	SEPT 15-18, 1979
DRAWN	APR 1981
NTS	420/14 W

WINSTON LAKE PN 070 LITHOGEOCHEMISTRY

Na₂O IN WT %



Legend

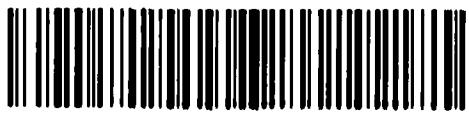
● SAMPLE LOCATION
 OUTCROP AREA

□	<0.4%
□	0.4-10%
□	10-20%
□	20-30%

CORPORATION FALCONBRIDGE COPPER

SURVEY COMPLETED
 SEPT 15, 16, 1979

DRAWN APR 1981 NIS 4: D/14W

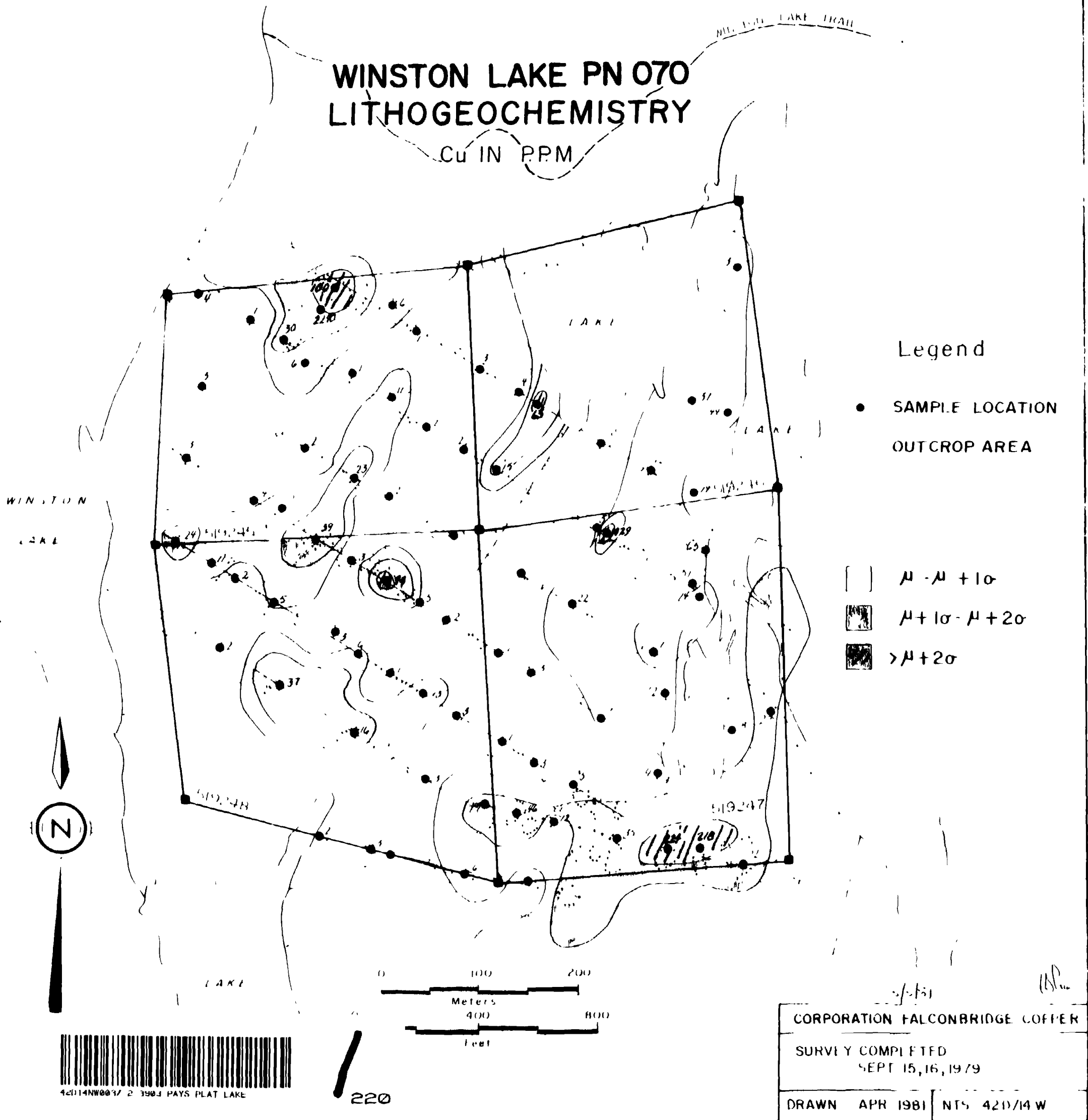


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WINSTON LAKE PN 070 LITHOGEOCHEMISTRY

Cu IN P.P.M



Legend

- SAMPLE LOCATION
- OUTCROP AREA

- $\mu - \mu + 1\sigma$
- $\mu + 1\sigma - \mu + 2\sigma$
- $> \mu + 2\sigma$

CORPORATION FALCONBRIDGE COPPER

SURVEY COMPLETED
SEPT 15, 16, 1979

DRAWN APR 1981 NTS 421/14 W

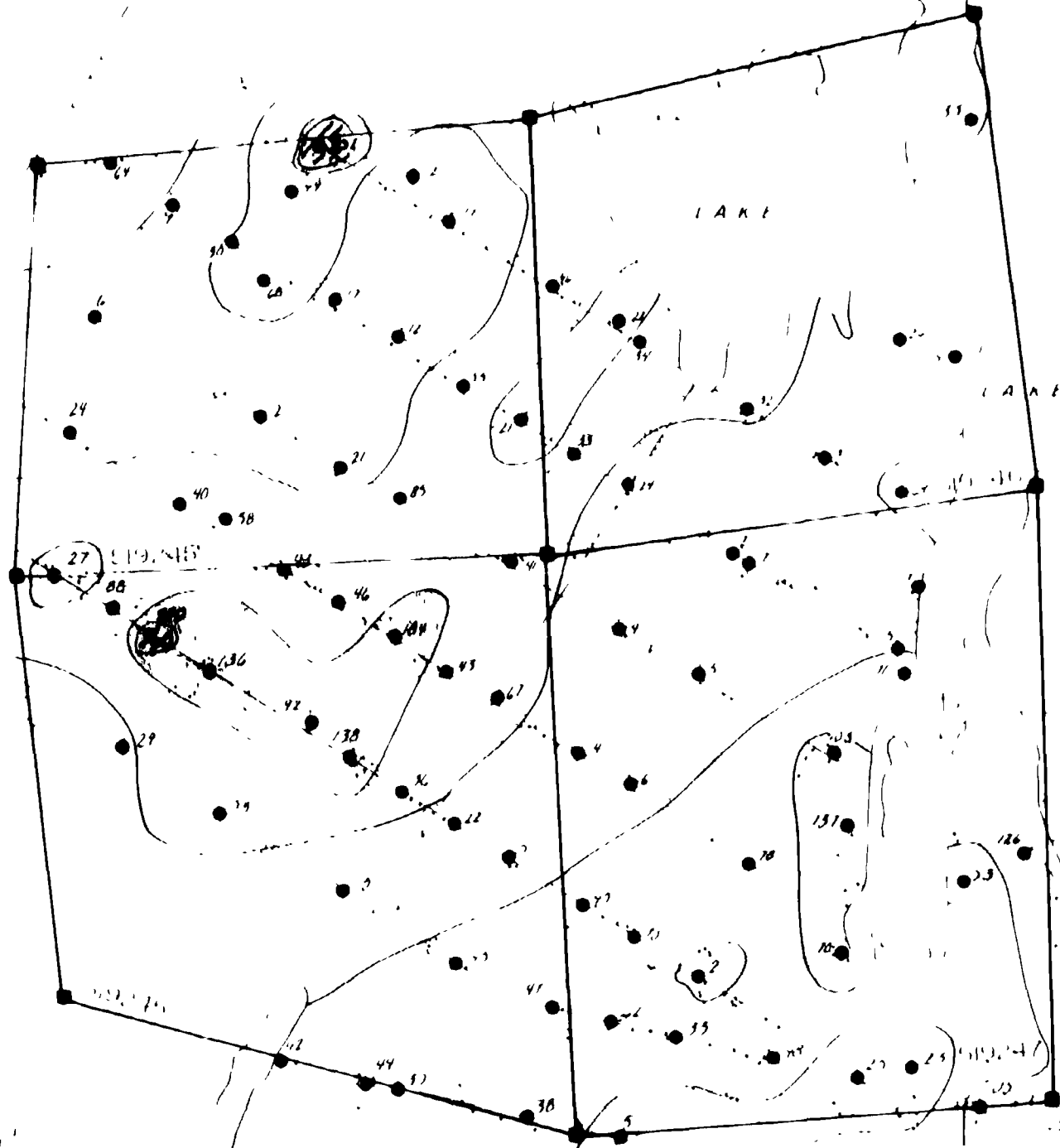


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220

WINSTON LAKE PN070 LITHOGEOCHEMISTRY

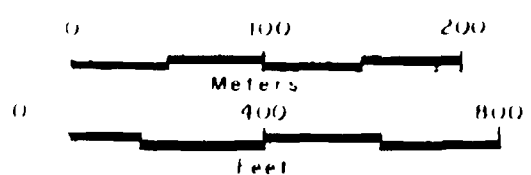
Zn IN PPM



Legend

- SAMPLE LOCATION
- OUTCROP AREA
- $\mu - \mu + 1\sigma$
- $\mu + 1\sigma - \mu + 2\sigma$
- ▨ $> \mu + 2\sigma$

WINSTON
LAKE



4-PD14NW0037 2 3903 PAYS PLAT LAKE

5/5/81
CORPORATION FALCONBRIDGE COPPER
SURVEY COMPLETED
SEPT 15, 16, 1979
DRAWN: APR 1981 NTS-42D/14W