2.2614

HORIZONTAL ELECTROMAGNETIC

AND

PROTON MAGNETIC SURVEY

PERFORMED BY

GEOSOL

FOR

FALCONBRIDGE COPPER MINES LIMITED

AT

LARDER LAKE GROUP

ONTARIO

September - October, 1977.

R. LEE
Geophysicist

INTRODUCTION:

Geophysical surveys were undertaken between September 20/77 and October 2/77 by Robert Lee (party chief), D. Bourgoin (geophysical operator) and R. Moyle (mag. operator) contracting under the name GEOSOL for Falconbridge Copper Mines Ltd. Geosol was to perform horizontal electromagnetic and proton magnetometer surveys in order to delineate and extend known sulphide occurances and to locate new conductors and magnetic anomalies.

INSTRUMENTATION:

The following instrumentation was used in the survey.

-Horizontal Electromagnetic:

model - Apex Maxmin II

parameters - Inphase and Quadrature components of the secondary field

mode of operation: Transmitter coil plane and receiver coil plane horizontal (Max - coupled; horizontal loop mode). Used with reference cable.

reading repeatability - ± 1%

coil seperation - main map area - 400 foot
- detail map area - 200 foot

operation frequencies - main map area - 1777 HZ and 444 HZ
- detail map area - 3555 HZ and 888 HZ

-Proton Magnetometer:

model - Geometrics - Exploranium model G-816

repeatability and accuracy - ± 5 gammas

range - 20,000 to 90,000 gammas

field - total magnetic field.

LOCATION & ACCESS:

The property is located in N.W. Hearst Township and N.E. McElroy Township South of highway 66 and West of highway 624, between Larder Lake and Grassy Lake in Timiskaming district Ontario. A series of bush roads traverse the property. A major one joins with highway 624 just West of the Spoon Bay arm of Larder Lake.

SURVEY CLAIMS:

The claims covered by the H.E.M. and proton magnetic survey include the following contiguous group:

MC ELROY TWP.	HEARST TWP.
L 319450	P 40080
L 341108	P 40081
L 341109	P 41648
L 367391	P 41649
L 411212	P 41650
L 411213	P 42435
L 440994	P 45203
L 440995	P 45204
L 441476	P 50522
L 441477	P 50523
L 441847	P 50524
L 442480	L 92591
L 442482	L 92592
L 442483	L 92593
L 476600	L319452
L 476642	L319453
L 476663	L373247
L 767390	L411211
MR 25.	L429935
	L429936
	L447513
	L447514
	L447515
	L476446
	L476447
	L476601
	L476664
	L476665
	L476666
	L477384
	L477385

Approximate location of these claims with the survey lines is indicated on the accompanying magnetic map.)

SURVEY METHOD:

Horizontal electromagnetic:

The survey was performed on parallel lines 400 feet apart except in the detail area where 200 foot parallel lines were used.

Readings in 2 frequencies were taken every 100 feet except where anomalous readings began to be evident. In those instances, 50 foot readings were taken. In the case of the detail grid, more then half the readings were at 50 foot intervals.

Magnetic:

This survey was performed to coincide with the H.E.M. survey but readings were also taken along base lines and tie lines where deemed necessary to outline more fully, certain bedrock features. Readings were taken every 100 feet except where anomalous readings began to become evident. In those cases, 50 foot readings were taken.

H.E.M. R[illegible] AND CALCULATIONS OF WIDTH, DEPTH AND CONDUCTIVITY [illegible]

INTERPRETATION OF H.E.M. ANOMALIES

LINE NO.	CHAINAGE HIGH FREQ.	CHAINAGE LOW FREQ.	WIDTH HIGH FREQ.	WIDTH LOW FREQ.	DEPTH HIGH FREQ.	DEPTH LOW FREQ.	σT HIGH FREQ.	σT LOW FREQ.
feet	feet	feet	feet	feet	feet	feet	mhos	mhos
72 E	16+50 N	16+30 N	200'	150	120	150	13.85	12.38
68 E	16+40 N	16+20 N	—	0	100	90	14.78	29.93
64 E	15+60 N	15+70 N	0	—	60	80	8.3	17.18
60 E	17+20 N	17+10 N	—	0	50	30	5.54	6.93
56 E	13+50 N	13+80 N	—	—	20	—	1.04	0.15
52 E	30+70 N	30+40 N	0		20	25	1.43	0.14
52 E	10+20 N	9+70 N	0	0	120	120	8.31	15.3
52 E	8+30 N	8+30 N	0	0	130	140	8.31	15.3
48 E	5+50 N	5+60 N	100	100	30	30	11.55	40.64
48 E	2+10 S	2+00 S	0	0	0	0	3.93	13.3
48 E	3+80 S	3+50 S	0	0	0	0	3.93	13.3
20 E	13+00 N	12+90 N	90	50	0	10	0.416	—
20 E	9+40 S	9+30 S	0	50	0	40	0.647	3.97
12 E	26+40 N	26+20 N	40	150	40	40	0.97	3.23
4 E	19+60 N	19+40 N	50	150	—	230	—	24.0
4 E	3+70 S	3+80 S	0	0	—	—	2.68	11.6
4 E	4+50 S	4+70 S	0	0	60	90	2.68	11.6
4 E	16+30 S	16+30 S	—	—	—	—	—	—
2 E	44+30 N	44+40 N	—	—	0	10	9.24	17.5
2 E	44+10 N	43+80 N	—	—	0	10	9.24	17.5
2 E	42+80 N	42+90 N	—	—	10	20	9.24	17.5
0	44+70 N	44+50	—	—	0	15	10.16	2.12
0	1+20 S	1+20 S	—	—	150	40	1.48	3.97
0	2+20 S	2+20 S	—	—	40	30	1.48	3.97
2 W	44+70 N	44+70 N	20	10	20	25	18.0	66.5
4 W	45+20 N	45+20 N	—	—	0	0	20.8	33.25
4 W	42+30 N	42+60 N	—	—	20	40	2.66	—
4 W	1+80 N	1+30 N	—	—	40	60	—	5.9
6 W	46+60 N	46+20 N	—	—	0	0	25.4	29.5
6 W	44+50 N	44+25 N	—	—	0	0	25.4	29.5
6 W	42+60 N	42+80 N	—	—	0	0	25.4	29.5
6 W	41+40 N	41+50 N	—	—	0	0	25.4	29.5
8 W	47+00 N	47+80 N	—	—	35	70	12.93	36.0
8 W	45+50 N	45+80 N	—	—	30	80	12.93	36.0
8 W	41+20 N	—	—	—	0	—	10.85	46.18
8 W	40+80 N	41+00 N	—	—	20	0	10.85	46.18
10 W	47+90 N	47+80 N	0	0	40	50	11.08	14,03
10 W	46+50 N	45+95 N	0	0	55	70	11.08	14.03
10 W	41+50 N	40+80 N	0	0	0	0	9.69	24.0
10 W	39+50 N	39+50 N	0	0	20	0	9.69	24.0
16 W	47+50 N	47+20 N	?	?	35	40	1.02	4.99
48 W	5+40 N	5+40 N	0	50	100	—	—	4.34
52 W	33+30 N	33+00 N	0	50	35	80	1.11	6.65
52 W	5+35 N	6+00 N	0	0	45	75	3.88	6.93
52 W	—	4+70 N	—	0	—	24	—	6.93
56 W	6+70 N	6+90 N	0	30	100	110	1.62	6.19
60 W	9+90 N	9+90 N	0	40	90	80	4.53	7.2
64 W	10+80 N	11+00 N	0	0	120	80	3.46	19.4

MAGNETIC CORRELATION WITH H.E.M. CONDUCTORS:

MAGNETIC COINCIDENCE WITH

H.E.M. ANOMALIES

LINE NO.	CHAINAGE	INTENSITY (gammas)		LOCATION
72 E	16+50 N	1000	High	About 100' South
68 E	16+40 N	500	High	About 100' South
56 E	13+50 N	3000	High	Coïncident
	13+50 N	5000	Low	150' South
52 E	30+70 N	200	High	Coïncident
	10+20 N	200	High	Coïncident
	8+30 N	100	High	Coïncident
48 E	2+10 S	3000	High	Coïncident
12 E	26+40 N	300	High	About 200' South
4 E	19+60 N	3000	High	About 100' North
	16+30 S	400	Low	About 200' South
2 E	44+30 N	1000	High	Coïncident
	44+10 N	1000	High	Coïncident
	42+80 N	2000	High	Coïncident
0	44+70 N	1000	Low	Coïncident
	1+20 S	200	Low	Coïncident
	2+20 S	100	High	Coïncident
2 W	44+70 N	3000	High	Coïncident
4 W	45+20 N	500	High	Coïncident
4 W	42+50 N	4000	High	Coïncident
8 W	45+50 N	500	High	Coïncident
8 W	42+10 N	10000	High	About 100' South
8 W	40+80 N	10000	High	About 100' North
48 W	5+40 N	4000	High	About 100' South
52 W	5+35 N	3000	High	About 200' South
52 W	33+30 N	100	Low	Coïncident

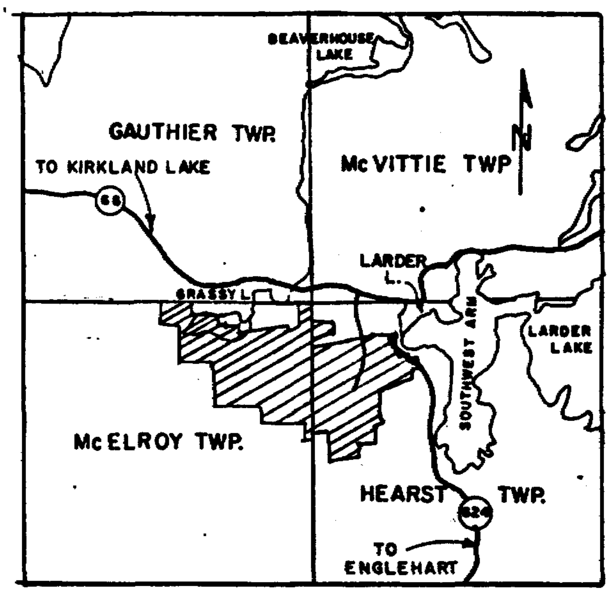
CONCLUSIONS:

The surveys were successful in locating and defining many electromagnetic conductors and magnetic anomalies. Further surveys are required in several areas to completely define some anomalies or in order to define their proper orientation.

Robert M. Lee

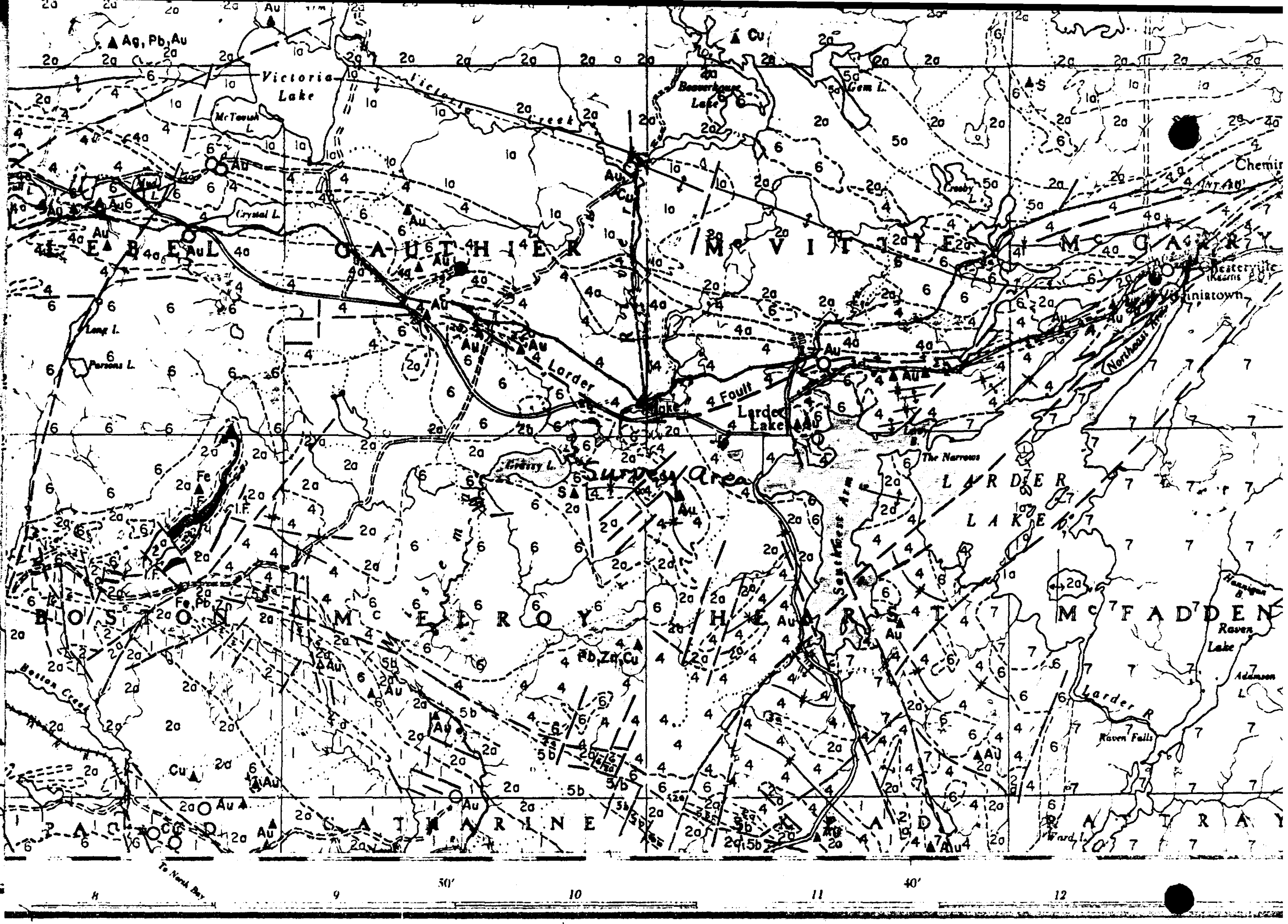
R. Lee
Geophysicist.

INDEX MAP

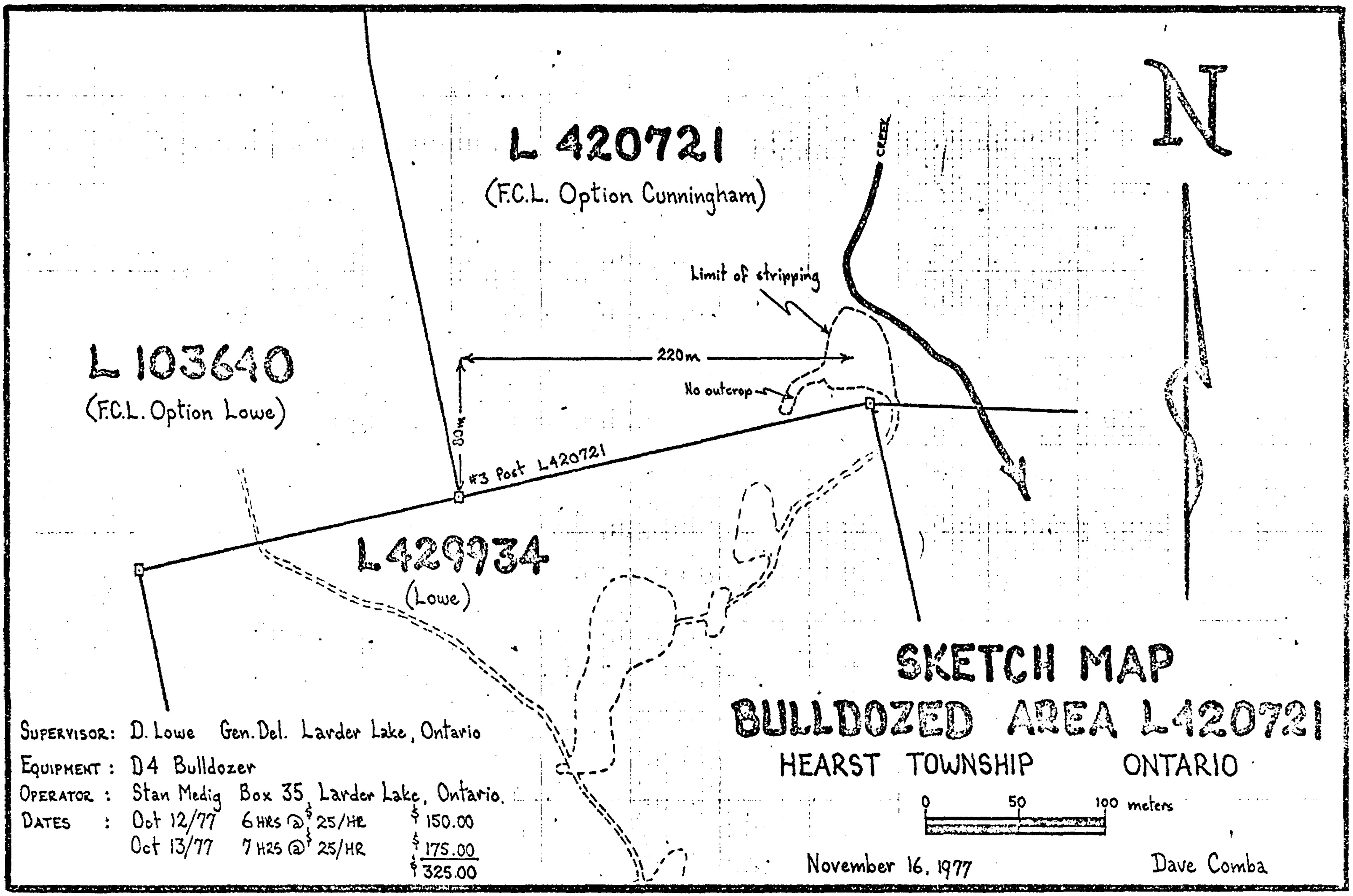


SCALE 1" = 4 MILES

2 1 0 2 4 6 8 MILES



Base map from National Topographic Series Sheets 42A/SE a


L 420721
(F.C.L. Option Cunningham)
CREEK
N
Limit of stripping
220m
No outcrop
80m
#3 Post L420721
L 103640
(F.C.L. Option Lowe)
L429934
(Lowe)
SKETCH MAP
BULLDOZED AREA L420721
HEARST TOWNSHIP ONTARIO
0 50 100 meters
November 16, 1977
Dave Comba
Supervisor: D. Lowe Gen. Del. Larder Lake, Ontario
Equipment: D4 Bulldozer
Operator: Stan Medig Box 35 Larder Lake, Ontario.
Dates: Oct 12/77 6 HRS @ $25/HR $150.00
Oct 13/77 7 HRS @ $25/HR $175.00
$325.00

PRELIMINARY GEOLOGICAL REPORT

of the

LARDER LAKE PROPERTIES

November 1977

by Dave Comba

mapping by: Dave Comba, MSc.
Evanna Simpson, BSc.
Janet King

FALCONBRIDGE COPPER LIMITED
Noranda, Quebec

SUMMARY

Ninety-one adjoining claims in Hearst and McElroy Townships, Larder Lake Mining Division Ontario, have been acquired by option and staking during the past 18 months to cover approximately five miles of stratabound semi-massive sulphides.

The claims are underlain by Archean felsic, mafic and ultramafic meta volcanics. Metasediments comprising graphite, shales, thin bedded greywackes and conglomerates, conformably and unconformably overly volcanics or are intercalated between flows. Semi-massive to massive sulphides, principally pyrite and pyrrhotite, occur in graphitic horizons interbedded with volcanic flows and sediments. Significant concentrations of sphalerite, chalcopyrite and argentiferous galena may occur with graphite-rich sediments. Hydrothermally altered volcanic rocks frequently occur in the footwall of the main volcanic sediment interface.

The volcanics and sediments have been intruded by dykes of syenite, diorite, quartz feldspar porphyry, diabase, pyroxenite, and lamprophyre.

The rocks are isoclinally folded into a synclinal structure about an inferred east-west axis, and appear to have been refolded about a northeast trending axis. Parasitic folds are numerous. Northwest and northeast trending faults transect the property.

Argentiferous lead, zinc and copper mineralization in shafts, trenches and drill holes located in pyrite-rich graphitic horizons has been used to select high priority exploration targets. Maxmin II H.E.M. and proton magnetometer surveys are used to locate favourable horizons beneath overburden. These include:

A) The north limb Croxall, King and Watling zones.

B) The south limb MR-25, Boundary and Amax zones.

A. Three specific targets have been selected from the north limb stratigraphy:

1) <u>Croxall Pits Area</u> (McElroy Township) A twenty foot shaft on a sulphide-rich graphitic sediment near the main volcanic sediment contact reportedly bottomed in massive sphalerite (Abraham O.D.M. Vol. LIX, Part VI, 1950). Specimens of massive pyrite, argentiferous galena and semi-massive sphalerite

cur on the dump. Samples of breccia containing lapilli sized clasts of massive pyrrhotite with traces of chalcopyrite have also been retrieved from adjacent muck piles. The pyrrhotite is magnetic. A magnetic high occurs in the volcanic footwall 100' northeast of the shaft.

In 1957 Big Jackpot Mines Limited drilled 4 of 5 holes under the main Croxall showings over a 400' east-west strike length. All holes intersected visible pyrite, pyrrhotite, sphalerite, and galena in graphitic sediments, although no assays were made. (Dr. Wm. Gerrie, Swastika Lab. per.comm.).

One 500' check hole is proposed.

2) King Zone (McElroy Township) A weakly conductive H.E.M. anomaly without magnetic correlation occurs along a roughly east-west strike length for 2000 ft. The conductor is assumed to lie between komatiites (F.W.) and high·Mg tholeiitic basalts (H.W.). One 400' hole is proposed, and additional H.E.M. coverage will be employed from existing N-S picket lines to extend the zone to the west.

3) Watling Zone (Hearst Township) An apparent N-S trending conductor has been picked up from N-S lines in the estimated vicinity of Watling Larder Mines D.D.H. #18 (1951). The hole was split and assayed for gold with negligible results and the collar pulled. In 1953 the chief geologist for Wright-Hargreaves Mines assayed 1" samples collected every 6" from split core stored on the property. An intersection grading 2.58% Zn and 1.29% Pb over 118' is reported, the remaining core was destroyed by fire. The area is devoid of outcrop. Additional geophysical surveys from new E-W lines are proposed.

B. Three possible targets have been selected within the south limb stratigraphy.

1) MR.25 Zone (McElroy Township) A northwest trending H.E.M. conductor with low chargeabilities and no magnetic correlation has been traced for approximately 2000'. Due to claim boundary considerations which are no longer applicable, only the easternmost 600 feet has been tested to shallow depths:

WRIGHT-HARGREAVES HOLE #4(1954)	1.05% Pb, 1.90% Zn, 0.38% Cu / 18.5
AMAX #37 (1968)	0.04 oz Ag, 0.49% Zn, 0.05% Cu / 12.5
AMAX #36 (1968)	0.28 oz Ag, 3.36% Zn, 0.05% Cu / 13.5'

Three holes are proposed for 1600'. Additional H.E.M. coverage from existing picket lines and a new grid over the ice of Grassy Lake is contemplated.

2) Boundary Zone (McElroy-Hearst Townships) Approximately one mile east of the MR-25 zone two H.E.M. conductors on separate horizons occur in the vicinity of two shallow shafts of 1906 vintage. Rock and soil geochem sampling by Sogemines (H.D.McLeod) 1960 and the Ontario Department of Mines (Dr. Wm. Wolfe) 1972 give strongly anomalous values for zinc and anomalous values for lead and copper in the area.

Detailed geophysical coverage on new east-west lines is recommended.

3) Amax Conductor Zone (Hearst Township) A mile east of the township boundary an H.E.M. conductor with magnetic correlations is traceable over an apparent strike length of 2000'. Two AMAX holes, approximately 1000' apart returned:

AMAX #40	1.22% Pb, 2.86% Zn, 0.09% Cu / 7.2'
AMAX #42	0.49% Pb, 1.97% Zn / 9.5'
	0.78% Pb, 3.87% Zn / 1.9'
	1.58% Zn, 1.15% Cu / 2.2'

Two holes are proposed for 1000'.

LOCATION AND ACCESS

The claim group is situated on the southwestern outskirt of the Larder Lake Townsite. Highway 624 between Englehart and Larder Lake passes within 300 feet of the easternmost claim. The north boundary lies from 1500 to 5000 feet south of Highway 66 to Kirkland Lake. A number of jeep roads provide excellent access to 30% of the property.

TOPOGRAPHY AND VEGETATION

A north trending esker ridge dominates the east end of the claim group. The ridge slopes steeply to the east and is utilized by a local ski club. To the west the esker slopes gradually to the township boundary. West of the boundary the area is characterized by gently undulating hills and broad flat swampy areas. A few larger hills with steep cliff-like slopes are present south and northeast of Grassy Lake. The west end of the property is covered by a wide shallow section of the Mesima River, aptly named Grassy Lake. Topographic relief on the claim group does not exceed 200'.

The entire area is heavily forested with secondary growth spruce, hemlock, and cedar in wet areas and with balsam, pine, poplar and birch occurring on the better drained slopes. Bedrock exposures account for only 10% of the total area and 90% of these exposures are overgrown with moss.

PROPERTY

A contiguous block of 91 claims was acquired in Hearst and McElroy Townships Ontario and includes the following separately acquired properties:

1) The Lowe Group (46 claims) - optioned from prospector D. Lowe, January 1st 1977.
2) Claims staked by Falconbridge Copper Limited: June-July 1976 (28) and October 1977 (3).
3) The Croxall Property (11 claims) - optioned from J. Croxall June 20th 1976.
4) The Hudson Bay Mines Ltd. Claim MR-25 - optioned November 20, 1976.
5) The Cunningham Claims (2) - optioned fron consultant L. Cunningham, March 1st 1977.

PREVIOUS WORK

Prospecting for Au and Ag by stripping, blasting and trenching has been intensively but sporadically pursued in McElroy and Hearst Townships since 1903. Four small shafts had been sunk on lead-zinc showings by 1906, but the Ag tenor of the galena could not compare with the bonanza ores of Cobalt. Successive waves of explorationists searching for Au swept through the area leaving a patchwork of small patented claim holdings. Only in recent years have sufficient numbers of the old patented claims lapsed for taxes that it has been possible to accumulate reasonably sized blocks of ground.

Amax Exploration Incorporated, under the direction of Stan Watowich, completed a systematic survey of over 70% of the present property using modern geophysical methods. Searching for nickel orebodies within peridotites Amax completed the following program between 1968 and 1970:

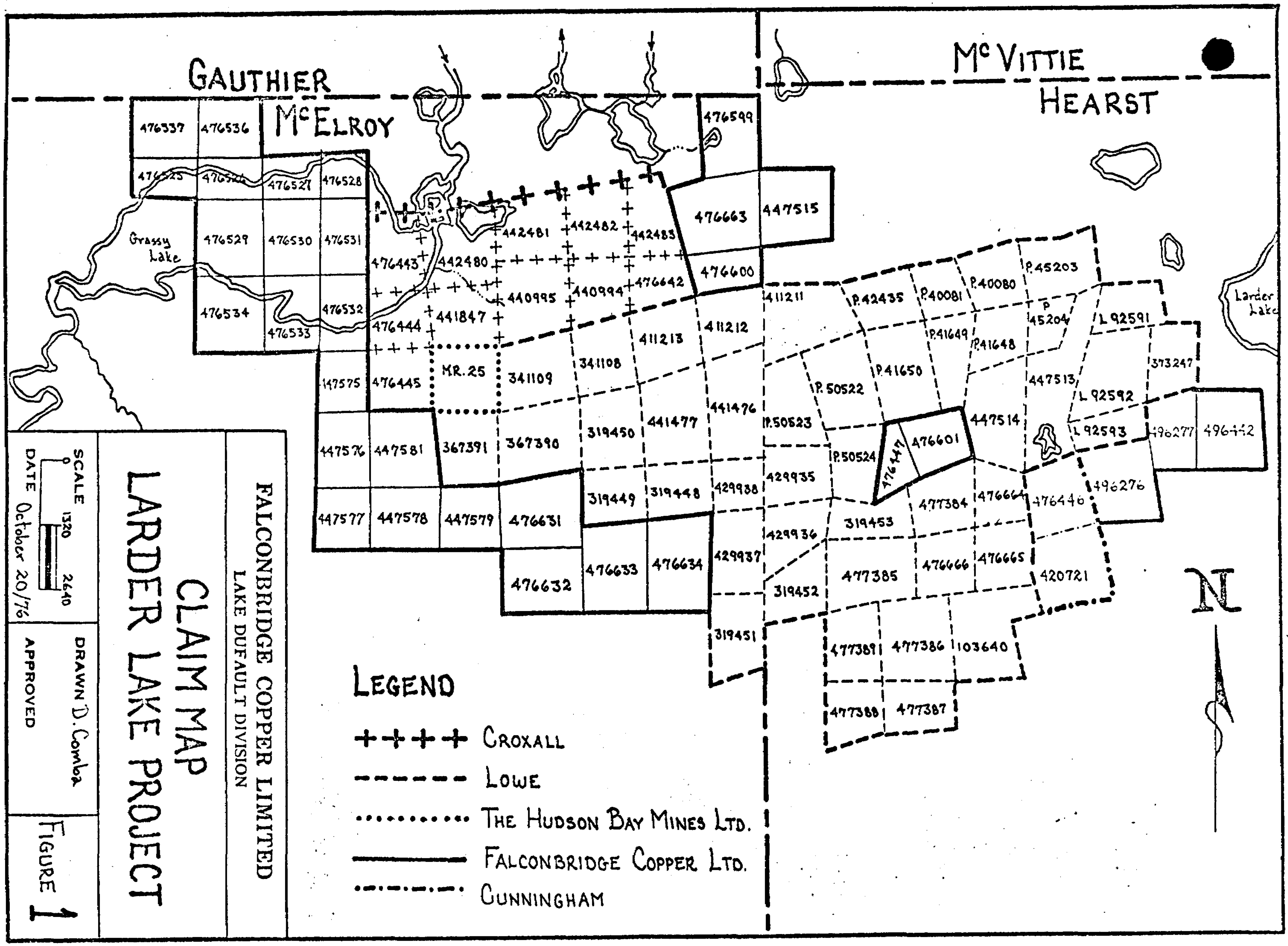
1) line cutting on 200 foot centres
2) a geological survey
3) a magnetometer survey
4) VLF surveys in two directions
5) Vertical Loop coverage of most VLF conductors
6) and I.P. survey over the peridotites in McElroy Twp.
7) diamond drilling of 9 holes totalling 9,384 feet.

Other groups whose data is on record in F.C.L. files and has been incorporated into reports and maps include the following:

1) a) Ontario Department of Mines (1972) Dr. W. J. Wolfe, geochemist, carried out test work in the Kirkland Lake area. Eighteen "B" horizon soil samples were collected near the Hearst-McElroy boundary in the vicinity of two 1906 era shafts. The area is highly anomalous in zinc with above normal copper and lead concentrations.

b) (1950) E. M. Abraham 1" = 1000' scale geology map of McElroy and parts of Boston Townships.

c) (1947) J. E. Thomson 1"= 1000' scale geology maps of Hearst and McFadden Townships.


GAUTHIER
McELROY
McVITTIE
HEARST
Grassy Lake
Larder Lake
MR. 25
LEGEND
CROXALL
LOWE
THE HUDSON BAY MINES LTD.
FALCONBRIDGE COPPER LTD.
CUNNINGHAM
N
SCALE
1320
2640
DATE October 20/76
CLAIM MAP
LARDER LAKE PROJECT
FALCONBRIDGE COPPER LIMITED
LAKE DUFAULT DIVISION
DRAWN D. Comba
APPROVED
FIGURE 1

3

2) The Hudson Bay Mines Limited (1971) - conducted EM16, magnetometer and Vertical Loop surveys over two small areas of the property.

3) Cunningham (1974) - EM16 and magnetometer check survey over reported Canico airborne conductor. Conductor located on F.C.L. claim 476663 immediately west of township boundary.

4) a) Falconbridge Nickel Mines Ltd. (1965) property examination by W. G. Robinson and S. Watowich

b) (1969) property examination of Lowe's patented claims by Dr. H. Squair.

5) Vitro Minerals (1962) - local S.P. survey followed by approximately 1200' drilling in six holes. Majority of holes drilled parallel to contact with negative results.

6) Sogemines Development Company Ltd. (1960) - soil and bedrock samples from claims 429935 and 36 adjacent to the Hearst-McElroy boundary. Anomalous lead-zinc values were located in vicinity of two 1906 era shafts, and west of the #4 post of claim 429935.

7) Big Jackpot Mines Limited (1957) drilled 4 of 5 holes under the main Croxall pits on claim 440995. None of the holes were assayed, but visible lead and/or zinc sulphides were noted in graphite-rich sedimentary sections as follows:

B.J. #1	278.1 to 341.6 ft.		54.5'
#2	128.0 to 139.5 ft.		11.5'
#3	175.3 to 179.0 ft.	- 18" lost core	2.7'
	203.0 to 256.0	- 18" lost core	53.0'
#4	227.3 to 234.2		]
	DILATED BY DYKE		] 43.9'
	259 to 296 ft. (especially 262 to 270		]

The logging was done by the late Dr. W. Gerrie of the Swastika Laboratory.

8) Wright-Hargreaves Mines Limited (1954-55) aerial and ground geophysics by Dr. Hans Lundberg. Five drill holes, totalling 2,332 feet. Three of the holes were drilled in peridotite with negative results. The best remaining hole #WH-4 intersected 1.05% Pb, 1.90% Zn and 0.38% Cu over 18.5' in a graphitic tuff. Additional packsack holes were attempted near #WH-4 but

lacked sufficient depth to further test the conductor; many stopped in overburden.

9) Watling-Larder Mines (1951) - drilled twenty shallow holes (± 200') in the northeast sector of the property. Hole #1 was drilled under an exposure of green carbonate. The remaining holes were drilled in areas devoid of outcrop to test projections of known faults and magnetic anomalies. Prospector Davey Lowe recalls that two holes contained specks of visible gold, while two others contained long sections of lead, zinc and copper sulphide mineralization. The latter two holes were #13 and #18. Watling-Larder geologist John Jewel split all the core for Au in 1951. In 1953 Wright Hargreaves' chief geologist resampled hole #18 for base metals. A section 118' long reportedly averaged 2.58% Zn and 1.2% Pb. Hole #13 was destroyed in a core shed fire before it could be resampled (Lowe pers.comm.).

THE FALCONBRIDGE COPPER EXPLORATION PROGRAM

A program of stripping and detailed geological mapping has indicated the presence of previously unrecognized rhyolitic and ultramafic lavas. Mineralized graphitic horizons have been located at or near volcanic sediment contacts and between lavas of komatiitic and thoeliitic composition.

Six hundred rock geochem samples for copper, lead, zinc have been collected.

Magnetometer and H.E.M. surveys have been carried out over the north limb of a synclinal structure, to cover this area for the first time systematically, and extend this coverage to known geophysical anomalies on the south limb.

Work by F.C.L. to date has included the following, in chronological order:

a) property evaluation
b) diamond drilling on known anomalies for assessment purposes. Two holes for 1011'
c) cutting of a north-south grid with line spacings at 200' or 400' spacings depending on anticipated outcrop density. Total 68.7 miles.
d) extensive stripping and detailed geological mapping in the field at 1"= 100'. Mapping plotted at 1"= 400'.
e) collection of 97 rock geochem samples to assist geological compilation.
f) collection of 600 rock geochem samples for copper, lead, and zinc
g) 35.57 line miles of proton magnetometer and Maxmin II H.E.M. survey.

SECTION 1 GENERAL GEOLOGY

General Statement

The F.C.L. property is underlain by an arcuate NW-SE trending syncline that has been segmented by faulting. The core of the syncline is occupied by sediments with minor volcanic intercalations. The sediments may lie conformably or unconformably upon volcanics. Two ages of sedimentation are inferred. High-magnesian tholeiitic basalt and komatiitic lavas form the rim of the syncline. Clasts and possible thin flows of rhyolite (calc-alkaline?) occur at or above the main volcanic sediment interface. Semi-massive to massive sulphides, principally pyrite and pyrrhotite, occur in several graphitic horizons interbedded with volcanic flows and/or sediments. Significant concentrations of lead, zinc and copper mineralization are present in some of the iron sulphide-rich graphitic beds. Hydrothermal alteration of volcanic rocks frequently occurs near the main volcanic sediment interface, particularly in McElroy Township on the north limb of the syncline. The rocks are isoclinally folded into a synclinal structure about an inferred east-west axis, and appear to have been refolded about a series of northeast trending axes. Parasitic folds are numerous. Northwest and northeast trending faults transect the property. Dykes of syenite, diorite, quartz feldspar porphyry, diabase pyroxenite and lamprophyre have been mapped. A thermal contact aureole adjacent to the McElroy syenitic stock lies along the southern margin of the claim group.

Stratigraphy

Stratigraphically the area is divided into two main parts:

1) Ultramafic, mafic and felsic volcanics stratigraphically underlying and intercalated with sedimentary rocks and forming the limbs of the main synclinal structure.

2) Sedimentary stratigraphy in the core of the syncline.

The volcanic stratigraphy consists of the mapable differentiating trends of komatiitic, tholeiitic and calc-alkalic? suites of volcanic rocks, encompasing such types as peridotite, magnesium-rich tholeiitic basalt, and rhyolite. All volcanics are assigned a Keewatin age in government publications.

I. Volcanic Stratigraphy (based on the Jensen Cation Classification)*

a) Komatiites are dark grey-green to black on a fresh surface, fine to medium grained, and may be weak to strongly carbonated. Only ultramafic (peridotitic) komatiites have been recognized on the property. Olivine is the major mafic mineral. The weathered surface is light blue-grey just after stripping, but upon more prolonged exposure may turn rusty peach brown to buff. Volcanic structures associated with these rocks include: olivine spinifex, polygonite (egg shell breccia) and elephant hide weathering. Irregular clots and dyke-like bodies of spinifex and irregular patches of polygonite as exposed in limited hand stripped areas served only to confirm rock type identification, and was not used for attitude determinations. Excellent top determinations from komatiitic flows were obtained from outcrops exposed by bulldozing on an uncompleted forestry access road L24W, 7N. Pillow-like structures in komatiitic rocks were identified by Janet King on line 6E, 31N and confirmed by Larry Jensen of the O.D.M.. Variolite-like structures are commonly developed in the komatiites. Magnetic intensity varies greatly, apparently dependent upon alteration.

b) High-magnesian tholeiitic basalts are light to medium grey on a fresh surface, aphanitic to fine grained, and are frequently chloritized. The weathered surface is generally light to medium green to grey. Gradational contacts with intercalated komatiitic lavas makes precise identification difficult in many areas. Field distinctions are often based on the non-magnetic nature of high-magnesian lavas and presence of pillow structures. Most pillows on the property tend to have thin selvages and frequently contain less than 10% amygdules. Concentric cooling fractures were noted in a few pillows but scarcity of outcrop prevented the use of these uniquely structured flows as markers. Some tholeiitic lavas are variolitic or spherulitic. Pillow breccias and incipient pillows account for 10% of the flows, pillows for 50-60%, the remainder being massive. Numerous thin intercalations of mafic tuff occur between flows north of 37N between lines 52W - 56W.

c) Rhyolites (calc alkaline?) are medium to dark grey on fresh surfaces and weather white. Most are strongly feldspar porphyritic and may contain small

*Jensen, L.S. 1976 A new cation plot for classifying sub-alkalic volcanic rocks O.D.M. Miscellaneous Paper 66 artz phenocrysts. Thin flows may exist at 32N, 16W and 17N, 10E. In most occurrences rhyolite clasts are mixed with clasts of ultramafic komatiite. This bimodal clastic rock was given the field name "Con-Agg" (conglomerate-agglomerate). At 18N, 10E a 20 foot thick vertically dipping bed is graded and contains cross bedding in the fine clastic top. Tops are to the east, indicated current direction from the northeast.

Felsics account for 1-2% of the known volcanics of the property, but little is known or can be inferred about their genesis due to limited exposure. Rhyolitic flows or clastic rocks containing rhyolite fragments occur within sedimentary rocks. Host sedimentary rocks are usually heterogeneous conglomerates that contain clasts of all rock types exposed in the area. The restrictive bimodal nature of the "Con-Aggs" suggest that they are distal pyroclastics related to coexisting ultramafic and felsic erruptive centres. Exposures of similar but coarser clastic equivalent occur east of the property in Larder Lake (Island CC) and southeast of the property along highway 624 in Skead Township.

2. Sedimentary Stratigraphy

Mapping of the sediments commenced in McElroy Township in the vicinity of the Croxall showings (claim L-440995), an area of relatively high outcrop density. Field names defined in McElroy Township have been assigned to small isolated exposures of sediments in Hearst Township with some misgivings. The devised subdivisons have a recognized limited applicability. Data collected on clast size, composition and style of sedimentation suggests two main sedimentary groupings. Both contain coarse conglomerates and finer clastic equivalents, and are assigned a Timiskaming age in government publications. Fine grained equivalents are usually indistinguishable, the subdivisions listed below are primarily assigned on features observed in pebble to cobble conglomerates.

a) The older of the two groups appears to be associated with the close of volcanism and may occasionally be hydrothermally altered. Lithologically the older group has been separated into two major field subdivisions:

(i) P & G (Pink and Green) thinly bedded greenish greywacke, grit to pebble sized conglomerates with rare cobble to boulder sized clasts. When light weathering clasts exceed 1-2 mm they frequently appear to be light pink or white rhyolite set in a more mafic matrix. P & G sediments may in fact be related to the

Con-Aggs" described in the previous volcanic section on rhyolites. Clasts may be rounded or very angular. Primarily occurs in a 200-300 foot wide band on the north limb of the main syncline in McElroy Township adjacent to the volcanics. Fine-grained sandy to graphitic argillaceous beds may be intercalated especially in Hearst Township. Particle size gradation is characterized by a colour gradation from light to dark as the particles become smaller.

In the vicinity of the Croxall pit area the sedimentary sequence is somewhat different. Immediately overlying intensely hydrothermally altered pillows and pillow breccias is a less intensely altered volcaniclastic containing fragments of massive pyrite. The volcaniclastic is about 30' thick. Finely bedded greywackes, including possible tuffs, conformably overlie the volcaniclastic and grade over 25' into dark graphitic sediments. Dump material from the main Croxall pit contains streaks of pyrite, sphalerite, galena, carbonate and quartz in graphitic sediments. Breccias containing angular clasts of high magnesian tholeiitic 90%, rhyolite 8% and massive pyrrhotite with traces of chalcopyrite 2% can also be found on the dump.

(ii) Croxall Conglomerate stratigraphically overlying the main Croxall showings, outcrops in a narrow band north of the main P & G sequence and lenses out approximately 900 feet east of the main pit. Five hundred feet west of the pit this conglomerate is truncated by a northwest trending fault. Weathered Croxall conglomerate has a greyish cast. Fragments of rhyolite, bedded cherty tuff or quartzite(?),massive iron sulphide, bedded greywacke and slate, komatiite, tholeiite, and rare plutonic rocks are well supported in a sandy matrix. Size gradation over several feet and zones containing preponderances of similar lithology give exposures a layered appearance. Clasts rarely exceed 6" and are usually prolate with their long axis parallel to the volcanic sediment contact. Jensen (pers.com.) believes these heterogeneous conglomerates are turbidites.

A similar conglomerate outcrops in Hearst Township on the northwest portion of claim 447515. This conglomerate has a more chlorite-rich matrix than the type Croxall. A thin band of Croxall conglomerate outcrops in the northeast corner of claim 477386 Hearst Township.

It is important to note that clasts of jaspilite (iron formation) and trachytic lava are not present in either of the older sedimentary subdivisions.

(b) V.M. (Variety Mix) sediments occur primarily in the centre of the main synclinal structure in McElroy Township and in a few places in the western part of Hearst Township. The distribution pattern is undoubtedly influenced by the paucity of outcrop in Hearst Township.

The V.M. sediments are characterized by a great variety of fragment types and dense packing of clasts. In addition to fragments of all the stratigraphically lower rocks on the property, the V.M. conglomerates frequently contain syenitic clasts up to 50% by volume and clasts of reddish trachyte lava 20-30% (Jensen pers.com.). Fragments may be angular, but typically are sub rounded to rounded and appear to have been deformed into oblate shapes parallel to the synclinal axis. The overall colour of the V.M. conglomerates is reddish where it overlies P&G sediments in McElroy Township. Fine clastic sections resemble arkoses. The colour changes to green stratigraphically higher in the section as the synclinal axis is approached. The colour change is due to progressive chloritization, beginning in the matrix areas and eventually altering large syenite clasts from pink to green with whitish rims. Although this younger sediment is likely Timiskaming in age, no jaspilitic (iron formation) clasts are known.

(c) Sediments? that appear to be closely associated with felsic and ultramafic volcanism outcrop sparsely in Hearst Township and rarely in McElroy Township. Bimodal breccias of feldspar porphyry rhyolite and komatiitic volcanics resemble to some extent P & G sediment, and may be a near source equivalent. In the field these breccias were dubbed "Con-Aggs" (conglomerate-agglomerates) because of the ambiguity of their origin. Felsic content varies from 20% to 100%; the totally felsic members may represent extremely large clasts (Jensen pers.com.) or thin flows. At 18N, 10E a 20 foot thick bed grades from coarse boulders to grit and contains cross beds in the fine clastic top. The bimodal nature of the "Con-Agg" breccias compared to the heterogeneity of adjacent sediments suggests that they are distal pyroclastics related to coexisting ultramafic and felsic eruptive centres. The heterogeneous character of most of the sediments seems to reflect to a large degree the nature of the underlying rocks. However, the rhyolite content of all conglomerates is higher than might be anticipated from a survey of its distribution in the volcanic sequences.

Intrusives

Due to the small size of most hand stripped exposures and the overall scarcity of outcrop suitable for stripping, it has not been possible to delineate intrusive trends or swarms. Dykes of the following composition have been mapped; syenite, diorite, quartz feldspar porphyry, diabase, pyroxenite and lamprophyry. Numerous mafic dykes of tholeiitic composition occur in pillowed exposures, perhaps having once acted for feeders to overlying flows.

A number of dykes contain pebble sized clasts of exotic rock types that presumably underly the area and through which the intrusives have passed. These pebble dykes are usually lamprophyre, but at 40+50N, 54W the matrix appears to be tholeiitic basalt. On line 20E between 34S and 36S occasional syenite clasts from pebble to cobble in size appear in tholeiitic basalt. No dyke like margins were located by stripping and the origin of these syenite clasts remains enigmatic.

A large syenitic stock bounds the property to the southwest.

Alteration

Most of the volcanic and sedimentary rocks appear to have been subject to low or middle greenschist metamorphism. A thermal contact aureole surrounds the syenite stock that bounds the southwest boundary of the claim group. Upper amphibolite facies are developed within this aureole and are best observed south of 20S, between lines 16E and 36E. Within this zone volcanics are dark green on both fresh and weathered surfaces. Epidote in pods and stockwork veinlets may account for up to 35% of the rock. High magnesian tholeiitic basalts resemble iron-rich tholeiites within the aureole and are frequently magnetic. In some of the more slaty horizons an unidentified contact mineral has developed (7N, 4W; 15N, 34W). It occurs as small metacrysts as great as .5 cm in diameter spotted throughout the horizon. It may be andalusite or chloritoid, but no positive determinations were made. The metacrysts are resistant to weathering compared to the host and the field term "knobbies" is used to describe the texture. A similar but less intensely developed chloritic? spotting may be developed in lavas (22N, 58W).

Carbonate alteration of varying intensity is associated with komatiitic lavas. In Hearst Township green carbonates (fuschite) outcrop 45S, 46E and 20N, 25E. In McElroy Township carbonate alteration along shear planes, polygonal joints and flow breccia matrix areas results in very irregular, even jagged surfaces on many of the komatiitic exposures.

Pillowed volcanics within a few hundred feet of the sediment contact commonly have rusty, hydrothermally altered selveges. Close to the contact the lavas may be so intensely hydrothermally altered that little of the rocks primary structures and textures remain. Adjacent sediments may also be altered, frequently making the precise volcanic sediment contact difficut to position. This is particularly true on the north limb of the syncline in Hearst Township on claims 476663, 476600 and 476642 and to a lesser extent on 440995.

Resistant weathering chloritic alteration may be developed in pillow intersticies, selveges, and matrix areas to in situ brecciated basalts. This alteration was first observed in F.C.L. diamond drill holes LL 77-1 and LL 77-2, and was investigated by Ted Muir (Mineralogy Report No. 1038). Similar alteration was observed in outcrop near hole # LL 77-1 between 4S and 15S, 45E to 50E and at three other locations: 10N, 8W; 45N, 5W and 29+50S, 39+50E. Sulphides normally associated with these chloritic in situ breccias are pyrite and pyrrhotite with traces of chalcopyrite.

Restricted zones of silicification associated with fractures were mapped in sediments close to the synclinal axis. Quartz veins (and carbonate veins) are ubiquitous with green carbonates.

Structure

In McElroy Township where outcrops are relatively plentiful, a major east-northeast trending synclinal structure has been mapped. The nose of the syncline occurs 2000 feet southeast of Grassy Lake on claim 441847. Sediments of apparently two different ages occupy the core of the syncline. The limbs of the syncline are only crudely symmetrical, partly as a result of the lensy shaped volcanic flows. Volcanics, and more rarely sediments, adjacent to the McElroy syenite stock are pervasively sheared parallel to the syenite contact. On the property this shearing trends northwesterly and is most evident in outcrops on the southwest corner of claim MR-25 and all of claim 476445.

A northwest trending fault zone intersects the nose of the major syncline. Imbricate faults within the zone are marked by intense shearing (40 + 50N, 59+50W) or flow banded felsic dykes (14+50N, 44W) in outcrop, but normally lie beneath topographic depressions controlling the drainage pattern. Near McElroy's east boundary northeast trending faults appear to parallel the hinge line of a fold that warps the trend of the synclinal axis from east-northeast to northwest.

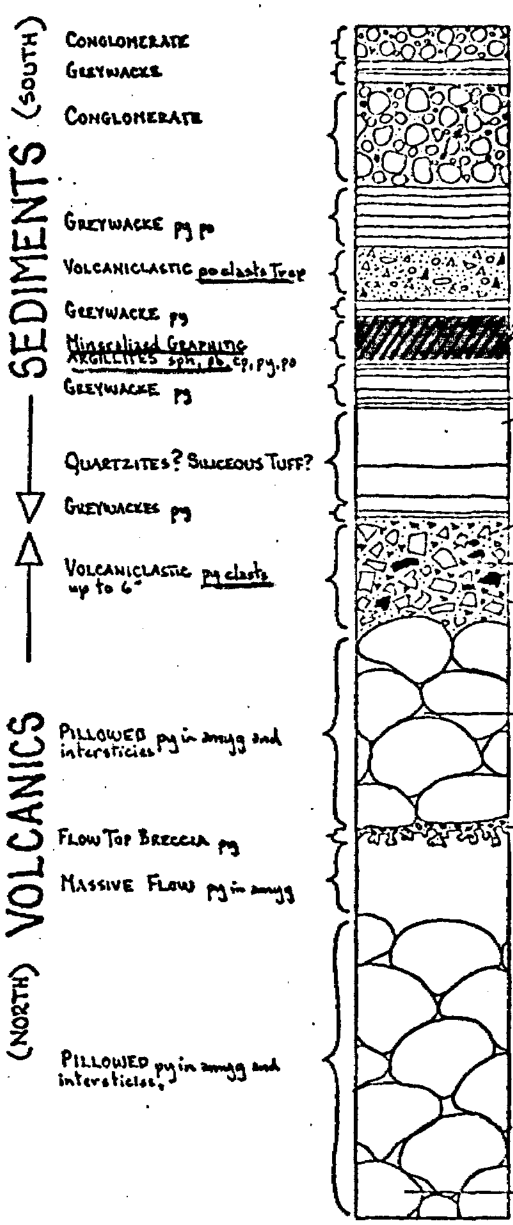
Economic Geology

At the beginning of the field season it was assumed that sulphide-rich graphitic beds occurred at one stratigraphic horizon at the base of the main sedimentary sequence. FIGURE 2 illustrates a stratigraphic section through the volcanics (F.W.) sediment (H.W.) contact on the north limb of the syncline at the Croxall showing, claim L-440995 (30N, 45W). This contact was traced northeasterly into Hearst Township, the last exposure on claim L-411211 (20N, 6E) occurring approximately a mile east of the Croxall pit. Similar geology on the south limb of the syncline was intersected by F.C.L. drill holes LL 77-1 (17N, 46E) and LL 77-2 (27N, 48E). With the exception of the Croxall showings, only trace amounts of chalcopyrite and sphalerite are associated with semi-massive to massive bedded pyrite and magnetic pyrrhotite. Pyrite nodules may account for up to 80% of the sulphides present. The horizon commonly produces magnetic expression, and coincident H.E.M. conductors occur on claims L-440995, L-476600, L-476663 in McElroy Township and claims L-411211, L-447514, L-447513(?) and L-92592(?) in Hearst Township. On the latter two claims Amax (1969-70) drill holes #40 and #42 intersected significant base metal values, but due to complex structural relationships the mineralization may occur at a different horizon.

A second major stratigraphic zone occurs in the footwall to the Croxall horizon. A thin sedimentary sequence of bedded tuffs and/or greywackes with graphitic lenses may occur at the contact between high magnesian tholeiitic basalts (H.W.) and komatiitic lavas (F.W.). On the south limb this horizon has been tested on claims L-367391, L-367390 and L-319450, McElroy Township, by the following holes:

D.D.H.	LOCATION	INTERSECTION
WRIGHT HARGREAVES 1954 - #4	(4+15N,54+30W)	1.90% Zn, 1.03% Pb, 0.38% Cu / 18.5'
AMAX 1969 - #35	(8+60N,38+00W)	Dyked out or faulted out.
AMAX 1969 - #36	(6+70N,48+00W)	3.36% Zn, 0.05% Cu, 0.15 oz Ag / 13.5'
AMAX 1969 - #37	(3+85N,54+00W)	0.49% Zn, 0.05% Cu, 0.04 oz Ag / 12.5'

The horizon is characterized by H.E.M. conductors with low chargeabilities and no magnetic response.



Cu PPM	Zn % or PPM	Pb % or PPM	Ag oz/TON	Fe %	Mg %	Co PPM	Cd PPM	Mn PPM	Ni PPM	Au oz/TON	Co/Cu	Co/Ni	SiO_2 %	TiO_2 %
27	5.20	10.30	1.80	2.05	0.20	118	290	145	103	0.001	4.37	1.15		
92	10.35	2.78	0.37	3.55	0.80	133	510	340	137	0.001	1.44	0.97		
66	10.70	1.10	0.63	3.85	1.43	140	530	500	130	0.001	2.12	1.08		
100	169	15	0.07	2.65	0.87	20	8	510	100	0.001	0.20	0.20	65.50	0.40
122	96	400	0.12	14.80	0.30	187	10	258	183	0.001	1.53	1.02		
125	198	10	0.08	4.50	0.73	58	9	530	110	0.001	0.46	0.53	49.70	1.11
75	84	13	0.13	23.70	0.27	200	13	160	175	0.002	2.67	1.14		
192	193	20	0.12	15.50	1.32	165	10	550	238	0.001	0.86	0.69		
91	259	10	0.04	5.00	0.87	47	6	670	140	0.001	0.52	0.34		
265	218	15	0.07	4.60	0.43	40	7	675	113	0.002	0.15	0.35	45.30	1.17

NOT TO SCALE

IDEALIZED STRATIGRAPHIC SECTION
MAIN CROXALL SHOWING

McElvoy Township

LARDER LAKE MINING DIVISION

FIGURE 2

Sampled June 1/76

D. Comba Nov. 10/76

Amax hole #39 (2N,2W) intersected 1.26% Zn, 0.16% Cu,/4.8' and terminated in graphite-rich sediments on a contact with a komatiitic footwall. A series of pits and trenches on claims L-411213, L-411212 McElroy Township, contain pyrite and pyrrhotite with traces of chalcopyrite, sphalerite and galena in graphitic sediments near the synclinal axis, and approximately 1000 feet stratigraphically higher than the Croxall mineralization FIGURE Other mineralized horizons may exist, especially in Hearst Township where overburden covers approximately 95% of the surface area.

A Model for the Geological History and Possible Ore Forming Process

Komatiitic and high-magnesian basaltic flows were extruded into a roughly east-west trending basin or fault zone. Graphitic sediments and sulphides were deposited at some interflow contacts. Sulphides are thought to be related to fumarolic activity. During the closing stages of mafic volcanism fumarolic activity hydrothermally altered many of the uppermost flows. Locally derived sediments were deposited as the basin closed tectonically by N-S compression. Fumarolic action waned but some sediments are hydrothermally altered and exhalites occur within the sedimentary succession. Clasts of massive pyrite and pyrrhotite occur within the immature sediments. Coarse clastic bimodal breccias (komatiite and rhyolite [calc-alkaline?]) and possible flows intercalate with locally derived sediments. The basin continued to be squeezed by north-south compression. Younger immature sediments were dumped into the basin. Tectonism closed the basin in a tight isoclinal syncline. The syncline was refolded about northeast trending axes and was segmented by northwest and northeast trending faults. Sulphides, particularly argentiferous galena, is remobilized into E-W trending tensional fractures and deposited in quartz-carbonate veinlets.

Several priority exploration targets have been selected on the Larder Lake claims using the above associations as specific guides within the broader conceptual framework of the genesis of massive sulphide deposits.

SECTION II PRIORITY EXPLORATION TARGETS

Two major zones corresponding to the limbs of the synclinal structure are rated as priority targets. They include:

A) North limb

1) Croxall showing area McElroy Township
2) King H.E.M. conductor zone McElroy Township
3) Watling Larder Mines D.D.H. #18 area Hearst Township

B) South limb

1) MR 25, H.E.M. conductor zone McElroy Township
2) Boundary zone conductors township line
3) Amax conductor zone Hearst Township.

These areas are considered significant because each represents a favourable environment for base metal sulphides that has not been adequately tested. Argentiferous lead, zinc and copper mineralization in shafts, trenches and drill holes are treated as geochemical anomalies. Maxmin II H.E.M. and proton magnetometer surveys locate favourable stratigraphy beneath overburden.

A NORTH LIMB

1 CROXALL SHOWING AREA (McElroy Township)

The volcanic sediment contact in the vicinity of the Croxall showings (30N,45W) is a high priority exploration target for the following reasons:

(a) The shaft dump and adjacent stripped areas consititute the best exposures of hydrothermally altered lavas and basemetal mineralization associated with graphitic sediments.

(b) Breccia specimens containing lapilli sized clasts of massive pyrrhotite with traces of chalcopyrite occur on the dump. A magnetic high occurs in the volcanic footwall 100 feet northeast of the dump.

(c) Four holes drilled beneath the pit area in 1957 by Big Jackpot Mines Limited intersected galena and/or sphalerite within iron sulphide-rich graphitic sediments as follows:

B.J. #1	287.1 to 341.6 ft.		54.5'
B.J. #2	128 to 139.5 ft.		11.5'
B.J. #3	175.3 to 179 ft. 203 to 256 ft.	less 18" lost core	2.7' 53'
B.J. #4	227.3 to 234.2 ft. DILATED BY DYKE 259 to 296 ft. (especially 262 to 270)	]]]	43.9'

The holes were not assayed because the promoters were only interested in "massive sulphides". The holes were competently logged by the late Dr. Wm. Gerrie of the Swastika Laboratory, Swastika, Ontario. The mineralization appears to widen (estimated true width 40 feet) at depth 200' - 240' (deepest intersection).

Conclusions and Recommendations Re: Croxall Showing Area

The area was covered by a partially completed Vertical Loop geophysical survey by Amax (1968) with no conductors. The zone responded well to a V.L.F. survey by Croxall in 1975. The recently completed H.E.M. survey failed to pick up a conductor. The proton magnetometer survey records a high 100 feet north east of the central Croxall pit. For reasons not clear to the writer, the graphitic sediments, host to disseminated and semi-massive beds and veinlets of sphalerite and galena, do not respond well to E.M. methods. I.P. coverage is not proposed, since it would probably only confirm the V.L.F. data. Topographic irregularities and variable overburden depths rule against gravimetric surveys.

One 500 foot hole is proposed to retest this excellent environment below the B.J.M. D.D.H. #1 intersection. The hole would be drilled under Croxall's V.L.F. conductor and into the magnetic anomaly in the volcanic footwall. The hole would be collared at (28+00N, 44+00W) and drilled north at 50°.

2 KING H.E.M. CONDUCTOR (McElroy Township)

A weakly conductive H.E.M. anomaly without magnetic correlation occurs between 44N to 47N from 0W to 20W, approximately 3000 feet northeast of the Croxall showings. The conductor corresponds to a CANICO (1968) airborne anomaly that was subsequently traced out with V.L.F. by Cunningham (1974). The anomalous horizon is presumed to lie in a relatively thin sedimentary (tuffaceous?) screen between komatiites (F.W.) and high-magnesian tholeiitic basalts (H.W.).

clusions and Recommendations Re: King H.E.M. Conductor

Geophysical response and geological setting similar to MR-25 on south limb.

One hole collared at 48+75N, 10W and drilled south at 45° for 400' is proposed. Additional H.E.M. coverage will be employed from existing N-S picket lines to extend the zone to the west.

3 WATLING LARDER D.D.H. #18 AREA (Hearst Township)

No assay sheets have been located, but a reported 118' of hole #18 graded 2.58% Zn and 1.2% Pb. The hole was drilled, logged and split for Au by consulting geologist John Jewel in 1951. The Au assays (negligible) are in F.C.L. files. The writer has met and talked with Mr. Jewel on several occasions, but no new information was acquired. In 1953 the chief geologist for Wright-Hargreaves Mines Limited collected 1" specimens of split core at 6" intervals and assayed them for lead-zinc. (Hole #13 reportedly containing similar mineralization was destroyed in a core shed fire.) Mr. Frank O'Conner, owner of Canadian Gems and Minerals Limited of Kirkland Lake was then a field man and draftsman for Wright-Hargreaves. He recalls plotting the average base metal values on a compilation map. A copy of this map is in F.C.L. files. Mr. O'Connor unsuccessfully searched his extensive collection of Wright-Hargreaves exploration files for the actual assay sheets. The casing for hole WL-18 was pulled. The closest outcrop, a rusty sediment, lies 1100' to the northwest.

An H.E.M. anomaly with low conductivity and little magnetic response was picked up at 30+55N, 52+00E. A north-south trend parallel to the picket lines is suggested by high in-phase values for line 56E. Detailed EM-16 coverage in two directions is in progress.

WL-18 had 57' of casing, but had to be reamed to 77' after drilling through a "ledge". Overburden at the present H.E.M. anomaly is estimated to be 20' to 25'.

Conclusions and Recommendations Re: Watling Larder D.D.H.-18 Area

O'Conner's recollections closely collaborate those of prospector Davey Lowe. Hole WL-18 can be regarded as a geochemical anomaly of the first order. Between O'Conner's compilation map and Lowe's estimates, WL-18 was collared somewhere in the vicini· . 24N to 27N between 52E to 56E and drilled southeast.

Detailed H.E.M. and/or gradient I.P. coverage is recommended in two directions. A recognized authority should be contacted to interpret the data. One or two short holes are proposed as follow up.

B SOUTH LIMB

1 MR-25 H.E.M. CONDUCTOR (McElroy Township)

A northwest trending H.E.M. conductor with low chargeabilities and no magnetic correlation has been traced for appoximately 2000'. Due to claim boundary considerations (i.e. MR-25) which are no longer applicable, only the easternmost 600 feet has been tested to shallow depths:

D.D.H.	LOCATION	INTERSECTION
AMAX 1969 - #36	(6+70N, 48+00W)	3.35% Zn 0.05% Cu 0.15 oz Ag / 13.5'
AMAX 1969 - #37	(3+35N, 54+00W)	0.49% Zn 0.05% Cu 0.04 oz Ag / 12.5'
WRIGHT-HARGREAVES 1954 - #4	(4+15N, 54+30W)	1.90% Zn 1.03% Pb 0.38% Cu / 18.5'

The mineralization is associated with graphitic lenses intercalated with relatively thin sedimentary sequences of bedded tuffs, and/or greywackes. In the vicinity of hole AMAX 1969 #36 the sediments lie at the contact between komatiites (F.W.) and high magnesian tholeiitic basalts (H.W.). West of 50W the sediments appear to be bounded by tholeiitic basalts. Outcrops in the vicinity of the shaft on MR-25 (12+50N, 59+35W) and the conductor axis are rusty and tectonically deformed. Specimens of massive to semi-massive galena, pyrite and sphalerite in a quartz carbonate host occur in the shaft's dump.

Conclusions and Recommendations Re: MR-25 H.E.M. Conductor

The shaft on patented claim MR-25 was sunk on a quartz carbonate vein that lies parallel to strong shearing developed near the nose of the main synclinal structure. Base metals within the vein are interpreted as remobilizations from a "source-bed" lying nearly normal to the shearing. The "source-bed's" sub-surface trace is interpreted as the H.E.M. conductor axis. Previous drill holes have intersected the "source-bed" 950' to 1400' southeast of the shaft.

Three holes are proposed for 1600 as follows:

LOCATION (estimate)	AZIMUTH	DIP	LENGTH	REMARKS
(4+00N, 51+20W)	360°	-45°	400'	H.E.M. conductor 300' east of W.H. #4
(8+00N, 60W)	360°	-45°	800'	H.E.M. conductor 40' wide, will pass beneath MR-25 shaft
(12+50N, 64W)	180°	-45°	400'	H.E.M. conductor near junction of MR-25 vein and "source-bed"

Additional H.E.M. coverage from existing picket lines and a new grid over the ice of Grassy Lake is contemplated to extend the conductor.

2 BOUNDARY ZONE (McElroy-Hearst Townships)

Approximately one mile east of the MR-25 zone three H.E.M. conductors and AMAX hole #39 (0N, 2W) appear to occur on three separate horizons in the vicinity of two shallow shafts of 1906 vintage. Geologic contacts strike at low angles to the picket lines. Rock and soil geochem sampling by Sogemines (H.D. McLeod) 1960 and the Ontario Department of Mines (Dr. Wm. Wolfe) 1972 give strongly anomalous values for zinc near AMAX hole #39 and anomalous values for lead and copper in the area. Hole #39 intersected 1.26% Zn, 0.16% Cu over 4.8 feet. A thousand pounds of massive galena has been removed from trenches near the shafts by Canadian Gems and Minerals Limited, Kirkland Lake. The trenches are located in contorted greywackes close to the volcanic sediment contact. The 1906 era shafts were sunk on east-west trending quartz carbonate veins in the volcanics. In 1962 Vitro Minerals drilled 4 short holes, primarily at the veins and sub-parallel to strike of the host rocks.

Conclusions and Recommendations Re: Boundary Zone

Argentiferous galena, sphalerite and chalcopyrite associated with E-W trending quartz-carbonate veins is interpreted as remobilized base metal from one or more adjacent "source-beds". H.E.M. conductors are thought to represent the sub-surface trace of the "source-beds".

Detailed geophysical coverage is recommended from unsurveyed N-S picket lines and new E-W lines. Due to structural complexities, geophysical interpretation should be made by a recognized authority.

3 AMAX CONDUCTOR ZONE (Hearst Township)

A mile east of the township boundary an H.E.M. conductor with magnetic correlations is traceable over an apparent east-west strike length of 2000'. Two AMAX holes, approximately 1000' apart returned:

HOLE	LOCATION	INTERSECTIONS	REMARKS
AMAX - #40 Az 360° 365'	(12+75N, 55+40E)	1.22% Pb,2.86% Zn,0.09% Cu / 7.2'	Apparently south dip
AMAX #42 Az 012°? 1200'	(11+75N, 66+25E)	0.49% Pb, 1.97% Zn / 9.5' 0.78% Pb, 3.87% Zn / 1.9'	Apparently dip changed to north as hole went down dip? Hole started AX and finished EX.
		1.59% Zn, 1.15% Cu / 2.2'	Not surveyed.

On line 72E a conductor estimated to be 150' - 200' wide lies at a depth of 120' - 150' around 16+35N. A magnetic anomaly lies to the south around 14N. On line 60E a narrow conductor with weak chargeability and weak magnetic correlation is centered around 17+15N. This latter anomaly is several hundred feet north of the inferred east-west trend.

Conclusions and Recommendations Re: Amax Conductor Zone

Two or three holes are proposed for 1000' to 1500'. The first 500 foot hole would be drilled from north to south on line 72E assuming a north dip (geophysics suggests vertical). If this hole intersects the anomalous zone at a reasonable angle, the program would be reduced to two holes, the second drilled from south to north on line 60E. Consideration should also be given to redrilling the section cut by hole AMAX #42 but from north to south and at depth, since 1.10% Cu/3.1' was intersected from 1132.2 to 1135.3.

East-west geophysical lines should be cut west of line 64E to cover a possible branching of the conductor to the northwest.

— Dave Comba —

ROCK GEOCHEMICAL SURVEY

of the

LARDER LAKE PROPERTIES

by Dave Comba MSc.

N.T.S. 32 D-4

FALCONBRIDGE COPPER LIMITED

Noranda, Quebec

February, 1978

ACCOMPANYING MAPS 1" = 400'

Copper (ppm) - Cu

Northwest sheet (McElroy Township)
Northeast sheet (Hearst Township)
Southeast sheet (Hearst Township)

Zinc (ppm) - Zn

Northwest sheet (McElroy Township)
Northeast sheet (Hearst Township)
Southeast sheet (Hearst Township)

Lead (ppm) - Pb

Northwest sheet (McElroy Township)
Northeast sheet (Hearst Township)
Southeast sheet (Hearst Township)

SUMMARY

Six hundred rock geochemical samples were collected while traversing 68.7 miles of grid lines. Samples were analyzed for copper, lead and zinc by atomic absorption techniques and the results averaged on an IBM 370 computer. Contour intervals were selected from the multi-element statistics. Contouring was correlated with known geological and drill data.

The survey succeeded in detecting base metal sulphides at the main volcanic sediment contact, and also confirmed the existence of other stratigraphic horizons.

INTRODUCTION

The subject claims are underlain by Archean felsic mafic and ultramafic metavolcanics. Metasediments comprising graphite, shales, thin bedded greywackes and conglomerates conformably and unconformably overly volcanics or are intercalated between flows. Semi-massive to massive sulphides, principally pyrite and pyrrhotite, occur in graphitic horizons inter-bedded with volcanic flows and sediments. Significant concentrations of sphalerite, chalcopyrite and argentiferous galena may occur with graphite-rich sediments. Hydrothermally altered volcanic rocks frequently occur in the footwall or the main volcanic sediment interface.

Six hundred rock geochemical samples were collected and analyzed for copper, lead and zinc by atomic absorption techniques. The chemical data have been compiled and plotted to indicate anomalous geochemical patterns, The geochemical abnormalities are assumed to be associated with metal-exhalative processes which are likely to be confined to the walls of pipes or vents through which mineralizing solutions passed and to stratigraphic zones in volcanic rocks and associated sedimentary rocks where the metals were precipitated.

LOCATION AND ACCESS

The claim group is situated on the southwestern outskirt of the Larder Lake Townsite. Highway 624 between Englehart and Larder Lake passes within 300 feet of the easternmost claim. The north boundary lies from 1500 to 5000 feet south of Highway 66 to Kirkland Lake. A number of jeep roads provide excellent access to 30% of the property.

TOPOGRAPHY AND VEGETATION

A north trending esker ridge dominates the east end of the claim group. The ridge slopes steeply to the east and is utilized by a local ski club. To the west the esker slopes gradually to the township boundary. West of the boundary the area is characterized by gently undulating hills and broad flat swampy areas. A few larger hills with steep cliff-like slopes are present south and northeast of Grassy Lake. The west end of the property is covered by a wide shallow section of the Mesima River, aptly named Grassy Lake.

Topographic relief on the claim group does not exceed 200'.

The entire area is heavily forested with secondary growth spruce, hemlock, and cedar in wet areas and with balsam, pine, poplar and birch occurring on the better drained slopes. Bedrock exposures account for only 10% of the total area and 90% of these exposures are overgrown with moss.

PROPERTY

A contiguous block of 91 claims was acquired in Hearst and McElroy Townships, Ontario, and includes the following separately acquired properties:

1) The Lowe Group (46 claims) - optioned from prospector D. Lowe, January 1st 1977.

2) Claims staked by Falconbridge Copper Limited: June-July 1976 (28) and October 1977 (3)

3) The Croxall Property (11 claims) - optioned from J. Croxall June 20th, 1976.

4) The Hudson Bay Mines Ltd. Claim MR-25 - optioned November 20th, 1976.

5) The Cunningham Claims (2) - optioned from consultant L. Cunningham March 1st, 1977.

PREVIOUS WORK

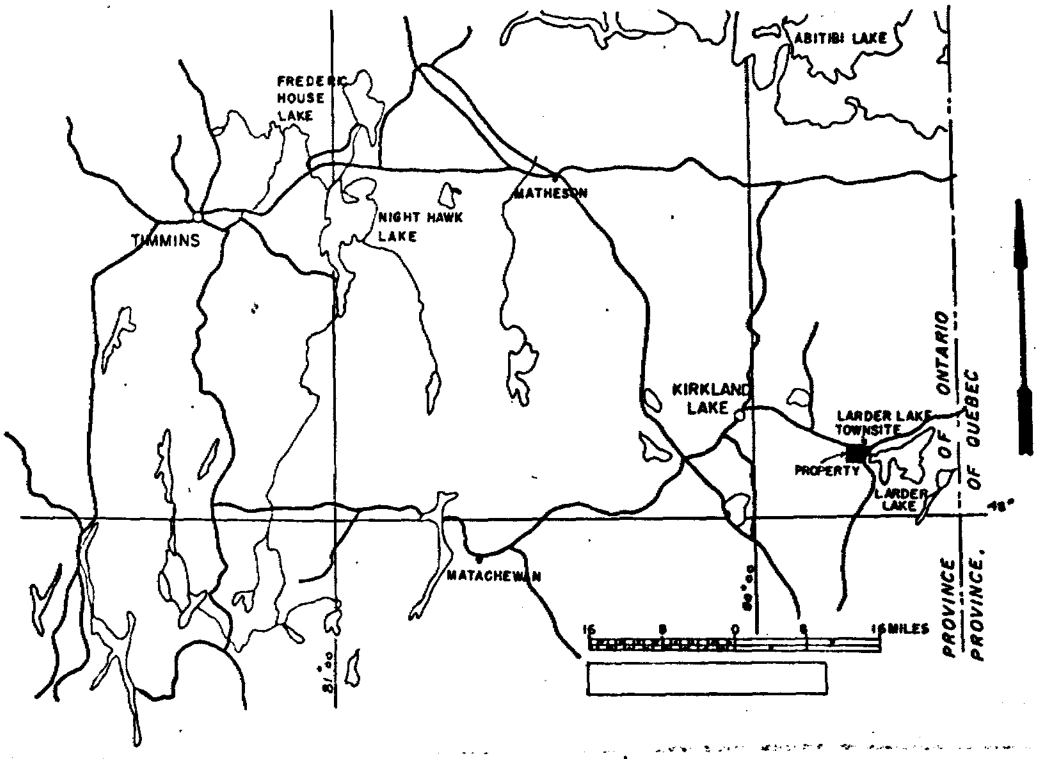
Two successful geochemical surveys of limited areal extent have been made along the Hearst-McElroy boundary between the four and five miles posts. In chronological order:

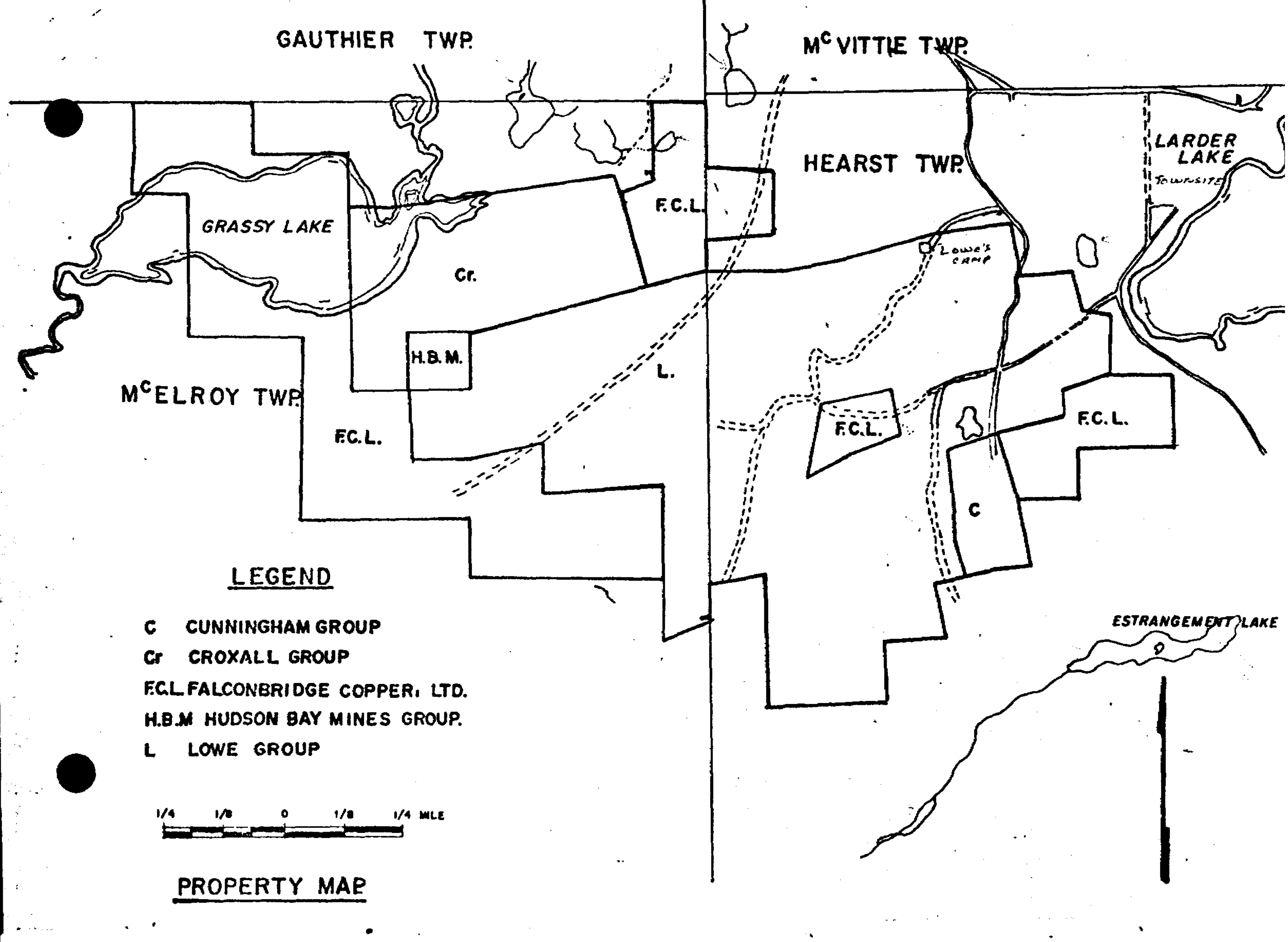
(1) Sogemines Development Company Ltd. (1960) Mr. H. D. McLeod took an undetermined number of soil and bedrock samples from claims L-429935 and L-429936. Anomalous lead-zinc values were located in the vicinity of two 1906 era shafts, and west of the #4 post of claim L-429935.

(2) Ontario Department of Mines (1972) Dr. W. J. Wolfe, geochemist, carried out test work in the same area sampled by Sogemines. Eighteen "B" horizon soil samples were collected. The area is highly anomalous in zinc with above normal copper and lead concentrations.

THE FALCONBRIDGE COPPER ROCK GEOCHEM PROGRAM

Six hundred rock geochem samples were collected by four students during September and October 1977. 68.7 miles of north-south grid lines were traversed. Lines are spaced at 200' or 400' intervals. Samplers were issued reduced Xerox copies of 1" = 100' geological maps to assist in locating out-


ABITIBI LAKE
FREDERICK HOUSE LAKE
MATHESON
NIGHT HAWK LAKE
TIMMINS
KIRKLAND LAKE
LARDER LAKE TOWNSITE
PROPERTY
LARDER LAKE
MATACHEWAN
PROVINCE OF ONTARIO
PROVINCE OF QUEBEC


GAUTHIER TWP.
McVITTIE TWP.
HEARST TWP.
LARDER LAKE Townsite
GRASSY LAKE
Cr.
F.C.L.
H.B.M.
L.
Lowe's Camp
McELROY TWP.
C
ESTRANGEMENT LAKE
LEGEND
C CUNNINGHAM GROUP
Cr CROXALL GROUP
F.C.L. FALCONBRIDGE COPPER, LTD.
H.B.M HUDSON BAY MINES GROUP.
L LOWE GROUP
PROPERTY MAP

ops between lines. Samples were routinely taken at 100' intervals unless changes in rock type warranted closer spacing. In volcanic sequences attempts were made to sample pillow selvages and/or interstices. Weathered rind material was trimmed off all samples. Average sample weight ranged from 0.50 lb. to 0.75 lb.

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 is permanently stored. The remaining half was pulverized to approximately 160 mesh. One gram of pulp was used for base metal determinations. Pulps are permanently stored.

Each of the 600 samples was analyzed for copper, lead and zinc in the Assay Laboratory of the Company's Lake Dufault Division, Noranda, Quebec. A total of 1800 determinations were made by atomic absorption methods. Sample decomposition was achieved by adding 15 ml. of concentrated nitric acid and a few drops of bromine to each gram of pulp. The solution was placed on a hot plate to drive off the bromine. 10 ml. of concentrated hydrochloric acid were added followed, after about 5 minutes, by a further 5 ml. of concentrated hydrochloric acid. The mixture was evaporated to dryness and allowed to cool. 5 ml. of hydrochloric acid and 10-15 ml. of water were added to disolve the residue and the solution allowed to stand for 15 minutes. Finally 2 ml. of 5% lanthanum chloride solution were added and the solution bulked to 100 ml. with demineralized water.

RESULTS

Chemical data was averaged on an IBM 370 computer. (Refer APPENDIX B) Table 1 lists the multi-element statistics. Contour intervals were selected as follows:

contour interval 1 = geometric mean

contour interval 2 = geometric mean x deviation coefficient

contour interval 3 = geometric mean x deviation coefficient x deviation coefficient

contour interval 4 = geometric mean x deviation coefficient^3

contour interval 5 = geometric mean x deviation coeffieient^4

To facilitate the correlation between geochemical data and known geological and drill data, contouring was performed on a light table using geologic and drill compilation base maps. Faults, known and inferred, were traced onto geochemical plans.

Numerous above average geochemical abnormalties are indicated on the enclosed geochemical plans. Major coincidental anomalies are briefly described below.

A. NORTH LIMB LARDER LAKE SYNCLINE

1. An arcuate band along the north boundary of the property in McElroy Township is weakly anomalous. More anomalous values for copper, lead zinc may occur within the zone, particularly on line 36W. Outcrop density is low. An H.E.M. conductor underlies the eastern section of the band on claim L-476663.

2. Isolated highs and semi-continuous weak anomalies mark the main volcanic sediment contact in McElroy Township, particularly on claims L-440994, L-476642 and L-476600. In Hearst Township the same contact occurs in the southwest corner of claim L-411211. Numerous pits and trenches occur in graphitic sediments adjacent to the contact. The Croxall showings at 30N between lines 44W and 46W have a footwall of black, hydrothermally altered volcanics. Lapilli sized clasts of massive iron-sulphides occur in the sedimentary hangwall rocks. Suprisingly, no geochemical anomalies are associated with the Croxall showings.

B. SOUTH LIMB LARDER LAKE SYNCLINE

1. Anomalous zones detected by Sogemines (1960) and the Ontario Department of Mines (1972) adjacent to the township boundary were detected and extended. Two stratigraphic horizons are indicated.

2. Along the east side of the property in Hearst Township on claims L-47664, and L-447514 strongly anomalous zones were picked up in what is known locally as the McCrea showings. Extensive stripping by prospector D. Lowe and drilling by Siscoe (1940) and Falconbridge Copper (1977) has failed to indicate base metal mineralization of economic significance.

3. Only isolated highs are recorded on patented claim MR-25 and adjacent claims in the southwest corner of the property in McElroy Township. Gossan zones adjacent to old pits and trenches, and an H.E.M. conductor

TABLE 1

MULTI-ELEMENT STATISTICS

LARDER LAKE 1977 SURFACE ROCK GEOCHEM

MEASURE	ELEMENT	NUMBER	MINIMUM	MAXIMUM	ARITHMETIC MEAN	STANDARD DEVIATION	GEOMETRIC MEAN	DEVIATION COEFFICIENT
ppm	Copper (Cu)	600	12.00	2710.00	95.74	165.22	69.76	1.9792
ppm	Zinc (Zn)	600	16.00	6000.00	104.92	260.76	73.53	1.9775
ppm	Lead (Pb)	600	2.00	268.00	17.37	26.20	12.14	2.1195

with interesting base metal values in drill holes had led to the expectation of more significant anomalies.

CONCLUSIONS

The subject survey is the first attempt at systematically sampling a large geologic structure in the area with the intent of locating alteration pipes and stratigraphic horizons related to metal-exhalative processes. The survey succeeded in detecting base metal sulphides at the main volcanic sed-imwnr contact, and also confirmed the existence of other stratigraphic horizons.

Compatible soil geochemical techniques should be evolved to assist tracing anomalous zones in areas of extensive overburden.

Dave Comba, MSc.
Geologist
Falconbridge Copper Limited
Exploration Division

```
                                                        VV          VV    MM         MM
                                                        VV          VV    MMM       MMM
                                                        VV          VV    MMMM     MMMM
        SUBMITTING USERID:   FNMLDF                3333333333   7777777777777MM  000000000
                                                  333333333333   777777777777  MM00000000000
                                                  33     VV33        VV   77M   M00    MM  00
  REMOTE COMMAND FUNCTION:   PRINT                        V33      VV   77MM    00    MM  00
                                                      33333V     VV   77 MM    00    MM  00
                                                      33333VV   VV   77  MM    00    MM  00
            CMS FILE NAME:   LL                             33VV VV   77   MM    00    MM  00
                                                            33 VVV    77   MM    00    MM  00
                                                  33        33        77         00        00
            CMS FILE TYPE:   DATA                 333333333333        77         00000000000
                                                   3333333333         77          000000000

                                                      IBM COMPUTING CENTRE: TOROVM
```

VM

370

Sample I.D.		Cu	Zn	Pb
26L	1	63	54	10
26L	2	257	1020	67
26L	3	57	96	63
26L	4	173	475	40
26L	5	82	78	12
26L	5A	70	45	15
26L	6	120	144	14
26L	7	36	52	10
26L	8	40	400	13
26L	9	76	44	10
26L	10	47	62	12
26L	11	115	54	13
26L	12	300	255	22
26L	13	190	213	26
26L	14	103	108	20
26L	15	192	320	17
26L	16	93	70	13
26L	17	110	58	15
26L	18	130	207	20
26L	19	123	143	15
26L	20	107	86	28
26L	21	100	55	23
26L	22	65	77	16
26L	23	83	56	18
26L	24	115	170	32
26L	24A	86	45	17
26L	25	143	225	24
26L	26	42	80	15
26L	27	45	27	12
26L	28	100	44	13
26L	29	128	207	16
26L	30	108	243	22
26L	31	86	103	15
26L	32	63	66	17
26L	33	48	50	12
26L	34	45	58	14
26L	35	30	25	8
26L	36	54	67	13
26L	37	97	100	20
26L	37A	197	137	17
26L	38	255	31	268
26L	39	275	550	25
26L	40	130	380	13
26L	41	102	303	12
26L	42	1045	270	258
26L	42A	84	44	10
26L	43	161	675	13
26L	44	270	68	212
26L	45	40	148	16
26L	46	208	215	11
26L	47	147	355	16
26L	48	118	312	16
26L	[illegible]	61	267	14
26L	[illegible]	41	110	7
26L	51	137	128	16
26L	52	80	124	8
26L	53	59	70	16

26L	54	18	152	20
26L	55	103	128	11
26L	56	91	77	5
26L	57	77	76	10
26L	58	85	42	4
26L	59	50	27	3
26L	60	29	33	3
26L	61	83	47	7
26L	61A	87	46	13
26L	62	110	36	16
26L	63	190	94	8
26L	64	66	57	12
26L	65	106	54	6
26L	66	120	505	8
26L	67	122	59	6
26L	68	198	30	5
26L	69	146	164	21
26L	70	80	112	9
26L	71	122	70	10
26L	72	59	81	9
26L	73	38	128	15
26L	74	620	56	7
26L	74A	78	115	7
26L	75	47	36	5
26L	76	1050	59	12
26L	77	167	69	6
26L	78	123	91	14
26L	79	104	88	13
26L	79A	93	47	8
26L	80	41	99	10
26L	81	72	78	26
26L	82	122	52	25
26L	83	125	71	8
26L	84	111	58	13
26L	85	107	58	20
26L	86	200	452	16
26L	87	81	82	12
26L	88	66	35	8
26L	89	96	119	24
26L	90	29	42	11
26L	91	140	46	7
26L	92	101	18	11
26L	93	31	40	10
26L	94	59	72	10
26L	95	21	30	9
26L	96	57	100	12
26L	97	49	44	11
26L	98	77	130	15
26L	98A	93	48	10
26L	99	107	80	7
26L	100	73	82	24
26L	101	37	67	11
26L	102	80	42	10
26L	1[illegible]	51	34	7
26L	1[illegible]	53	50	5
26L	10[illegible]	77	92	11
26L	106	154	54	5

26L	107	282	91	11
26L	108	108	73	7
26L	109	184	52	18
26L	110	54	84	18
26L	111	70	62	12
26L	111A	61	75	6
26L	112	72	133	26
26L	113	55	32	18
26L	114	76	30	13
26L	115	168	67	10
26L	116	88	63	25
26L	116A	90	47	14
26L	117	520	80	18
26L	118	170	110	17
26L	119	72	78	10
26L	120	74	83	18
26L	121	66	77	12
26L	122	62	84	13
26L	123	75	82	27
26L	124	130	106	16
26L	125	350	110	15
26L	126	168	144	12
26L	127	213	180	30
26L	128	310	200	23
26L	129	110	105	15
26L	130	58	66	14
26L	131	95	50	23
26L	132	138	47	13
26L	133	86	55	10
26L	134	245	290	25
26L	135	2300	6000	197
26L	135A	87	47	10
26L	136	40	74	74
26L	137	50	32	16
26L	138	96	125	10
26L	139	78	103	12
26L	140	52	48	13
26L	141	53	53	9
26L	142	118	48	14
26L	143	80	167	22
26L	144	235	430	24
26L	145	70	38	8
26L	146	62	337	12
26L	147	63	100	10
26L	148	52	43	23
26L	148A	43	72	78
26L	149	50	127	23
26L	150	52	100	10
26L	151	126	97	18
26L	152	37	72	22
26L	153	87	47	17
26L	153A	65	43	19
26L	[illegible]	88	117	18
26L	[illegible]	34	163	15
26L	156	37	48	12
26L	157	44	152	20
26L	158	30	83	17

26L	159	42	94	15
26L	160	50	88	50
26L	161	26	68	54
26L	162	78	67	17
26L	163	86	86	16
26L	164	110	52	13
26L	165	113	137	33
26L	166	158	68	20
26L	167	83	35	23
26L	168	12	38	12
26L	169	60	68	22
26L	170	28	55	18
26L	171	57	57	40
26L	172	82	82	20
26L	172A	80	47	15
26L	173	60	50	10
26L	174	87	153	23
26L	175	45	45	8
26L	176	135	54	10
26L	177	92	46	8
26L	178	147	60	12
26L	179	53	93	14
26L	180	45	75	13
26L	181	43	90	22
26L	182	76	103	12
26L	183	70	97	14
26L	184	87	53	44
26L	185	83	78	22
26L	185A	42	90	18
26L	186	52	88	26
26L	187	88	102	25
26L	188	360	84	21
26L	189	26	58	12
26L	190	81	82	25
26L	190A	88	53	13
26L	191	35	74	15
26L	192	120	84	34
26L	193	90	97	27
26L	194	82	77	20
26L	195	101	228	17
26L	196	163	166	20
26L	197	158	173	16
26L	198	90	81	36
26L	199	78	67	17
26L	200	90	85	26
26L	201	70	83	21
26L	202	117	132	32
26L	203	170	112	30
26L	204	93	87	32
26L	205	81	98	28
26L	206	74	89	15
26L	207	110	79	13
26L	708	120	58	19
26L	[illegible]09	121	71	10
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26L	211	200	200	17

26L	212	197	162	21
26L	213	68	85	18
26L	214	555	425	102
26L	215	94	358	22
26L	216	147	180	20
26L	217	264	178	16
26L	218	192	154	30
26L	219	44	51	11
26L	220	42	80	24
26L	221	102	99	11
26L	222	101	142	33
26L	222A	47	60	16
26L	223	123	89	32
26L	224	126	98	16
26L	225	37	40	7
26L	226	70	53	13
26L	227	75	91	14
26L	227A	90	50	15
26L	228	50	71	12
26L	229	49	59	8
26L	230	53	40	8
26L	231	42	42	7
26L	232	53	52	14
26L	233	55	46	10
26L	234	41	61	51
26L	235	67	41	8
26L	236	93	42	8
26L	237	51	34	5
26L	238	47	29	10
26L	239	38	37	11
26L	240	42	29	12
26L	241	83	73	15
26L	242	62	64	12
26L	243	57	77	10
26L	244	83	90	12
26L	245	100	59	8
26L	246	61	830	215
26L	246A	98	49	13
26L	247	87	114	14
26L	248	62	110	46
26L	249	66	88	17
26L	250	63	92	16
26L	251	63	75	6
26L	252	48	44	6
26L	253	40	36	15
26L	254	37	21	5
26L	255	106	122	21
26L	256	60	37	24
26L	257	77	52	7
26L	258	61	63	12
26L	259	73	42	17
26L	259A	65	97	17
26L	[illegible]	76	64	16
26L	[illegible]	40	30	13
26L	262	27	40	20
26L	263	57	51	16
26L	264	38	78	18

26L	264A	119	66	46
26L	265	78	126	24
26L	266	30	71	14
26L	267	35	50	8
26L	268	40	78	15
26L	269	16	46	13
26L	270	29	30	8
26L	271	72	72	12
26L	272	70	51	16
26L	273	56	49	28
26L	274	111	41	15
26L	275	39	50	22
26L	276	58	63	31
26L	277	12	54	17
26L	278	57	35	7
26L	279	50	70	20
26L	280	20	112	15
26L	281	68	40	10
26L	282	48	64	7
26L	283	24	39	16
26L	283A	86	48	8
26L	284	73	86	14
26L	285	24	28	16
26L	286	50	18	17
26L	287	53	48	15
26L	288	40	116	20
26L	289	78	118	30
26L	290	65	52	9
26L	291	28	48	9
26L	292	28	36	26
26L	293	91	190	11
26L	294	97	128	15
26L	295	91	91	52
26L	296	185	102	7
26L	296A	71	55	17
26L	297	83	108	8
26L	298	83	136	14
26L	299	127	125	16
26L	300	80	60	9
26L	301	292	100	20
26L	301A	98	49	15
26L	302	88	173	38
26L	303	67	49	25
26L	304	280	255	12
26L	305	88	116	14
26L	306	65	102	19
26L	307	110	174	20
26L	308	86	195	25
26L	309	84	58	23
26L	310	87	91	23
26L	311	72	69	20
26L	312	75	120	14
26L	313	82	67	17
26L	314	78	56	12
26L	[illegible]	61	70	26
26L	316	73	111	33
26L	317	345	159	46

26L	318	17	108	22
26L	319	51	48	12
26L	320	43	76	14
26L	320A	85	47	13
26L	321	68	46	14
26L	322	70	77	30
26L	323	84	37	10
26L	324	67	84	17
26L	325	31	53	7
26L	326	73	110	22
26L	327	61	80	14
26L	328	27	57	11
26L	329	19	92	13
26L	330	142	125	20
26L	331	60	100	21
26L	332	48	79	13
26L	333	127	350	13
26L	333A	141	131	19
26L	334	24	46	6
26L	335	21	66	8
26L	336	39	63	5
26L	337	53	65	8
26L	338	50	80	8
26L	338A	93	54	11
26L	339	96	103	7
26L	340	75	73	6
26L	341	31	86	7
26L	342	27	72	7
26L	343	45	35	4
26L	344	23	30	3
26L	345	36	44	11
26L	346	43	52	8
26L	347	320	200	115
26L	348	400	840	230
26L	349	91	65	13
26L	350	40	60	12
26L	351	40	113	15
26L	352	18	18	2
26L	353	125	212	9
26L	354	72	131	11
26L	355	62	125	11
26L	356	101	147	12
26L	357	68	82	8
26L	357A	96	61	13
26L	358	81	143	13
26L	359	82	108	12
26L	360	134	151	12
26L	361	88	91	10
26L	362	182	98	22
26L	363	90	64	7
26L	364	215	180	14
26L	365	63	58	12
26L	[illegible]6	61	78	14
26L	[illegible]7	126	92	7
26L	368	52	92	7
26L	369	32	39	5
26L	370	72	113	10

26L	370A	133	150	6
26L	371	77	106	23
26L	372	46	76	16
26L	373	80	100	12
26L	374	119	175	23
26L	375	54	83	14
26L	375A	98	58	10
26L	376	104	72	8
26L	377	33	42	4
26L	378	12	151	8
26L	379	29	66	4
26L	380	19	21	3
26L	381	23	34	5
26L	382	78	71	9
26L	383	53	41	8
26L	384	65	28	4
26L	385	104	63	12
26L	386	56	53	6
26L	387	133	433	11
26L	388	88	125	185
26L	389	71	42	33
26L	390	19	36	7
26L	391	36	38	7
26L	392	77	39	6
26L	393	116	95	10
26L	394	64	108	33
26L	394A	92	47	9
26L	395	73	112	16
26L	396	90	77	5
26L	397	52	93	18
26L	398	72	39	35
26L	399	70	77	17
26L	400	85	84	51
26L	401	64	71	15
26L	402	35	30	5
26L	403	51	83	5
26L	404	29	51	15
26L	405	103	87	13
26L	406	80	100	18
26L	407	21	88	13
26L	407A	65	73	13
26L	408	20	73	10
26L	409	42	113	12
26L	410	37	73	7
26L	411	33	40	6
26L	412	21	44	4
26L	412A	91	57	10
26L	413	52	71	8
26L	414	36	30	7
26L	415	46	60	9
26L	416	55	27	8
26L	417	58	62	24
26L	418	81	51	21
26L	419	68	88	22
26L	[illegible]	48	38	5
26L	421	35	34	7
26L	422	63	120	18

26L	423	51	113	16
26L	424	61	156	13
26L	425	61	73	7
26L	426	94	82	11
26L	427	42	168	4
26L	428	54	105	61
26L	429	67	100	13
26L	430	51	42	10
26L	431	79	69	10
26L	431A	97	56	11
26L	432	94	145	11
26L	433	77	102	23
26L	434	29	60	6
26L	435	30	61	10
26L	436	51	67	7
26L	437	50	43	11
26L	438	90	75	12
26L	439	91	92	13
26L	440	42	35	9
26L	441	63	62	10
26L	442	65	39	7
26L	443	177	350	8
26L	444	106	68	27
26L	444A	41	31	7
26L	445	58	60	7
26L	446	56	120	17
26L	447	37	65	12
26L	448	126	41	11
26L	449	96	77	10
26L	449A	86	49	11
26L	450	54	138	25
26L	451	110	60	7
26L	452	12	16	4
26L	453	65	49	9
26L	454	42	46	9
26L	455	105	56	18
26L	456	142	46	41
26L	457	39	38	6
26L	458	191	53	13
26L	459	42	44	8
26L	460	55	30	5
26L	461	530	610	23
26L	462	252	338	14
26L	463	105	133	9
26L	464	110	132	10
26L	465	88	163	10
26L	466	41	68	14
26L	467	108	147	18
26L	468	50	90	12
26L	468A	94	55	9
26L	469	71	98	30
26L	470	49	109	10
26L	471	25	40	10
26L	[illegible]	133	125	8
26L	473	62	85	4
26L	474	71	75	6
26L	475	73	84	14

26L	476	62	110	12
26L	477	70	95	26
26L	478	89	56	20
26L	479	73	93	14
26L	480	81	31	20
26L	481	38	93	11
26L	481A	71	53	12
26L	482	89	333	3
26L	483	18	88	7
26L	484	98	94	10
26L	485	45	97	9
26L	486	48	69	11
26L	486A	88	52	10
26L	487	42	62	7
26L	488	26	133	21
26L	489	50	58	19
26L	490	89	65	16
26L	491	57	84	20
26L	492	51	60	7
26L	493	15	17	2
26L	494	14	22	6
26L	495	39	27	3
26L	496	67	43	8
26L	497	43	70	8
26L	498	57	36	10
26L	499	60	50	17
26L	500	48	77	14
26L	501	65	34	15
26L	502	56	89	14
26L	503	30	39	5
26L	504	42	28	3
26L	505	33	43	5
26L	505A	92	52	8
26L	506	57	63	4
26L	507	177	57	6
26L	508	22	59	7
26L	509	80	44	4
26L	510	46	37	3
26L	511	12	52	6
26L	512	118	57	8
26L	513	33	35	3
26L	514	54	35	4
26L	515	48	49	8
26L	516	78	48	11
26L	517	57	50	36
26L	518	72	70	26
26L	518A	53	52	6
26L	519	113	74	9
26L	520	80	41	6
26L	521	38	45	6
26L	522	380	110	8
26L	523	45	46	9
26L	523A	90	46	10
26L	524	109	123	5
26L	[illegible]	28	29	4
26L	526	22	32	3
26L	527	30	19	4

26L	528	24	26	6
26L	529	78	53	16
26L	530	36	84	15
26L	531	45	25	10
26L	532	47	81	16
26L	533	32	54	14
26L	534	42	52	38
26L	535	57	45	9
26L	536	28	48	10
26L	537	53	68	16
26L	538	64	65	34
26L	539	40	34	7
26L	540	60	40	7
26L	541	52	65	5
26L	542	62	60	4
26L	542A	85	46	9
26L	543	72	390	4
26L	544	38	28	4
26L	545	48	31	3
26L	546	83	61	5
26L	547	55	49	6
26L	548	240	191	47
26L	549	103	38	4
26L	550	97	48	5
26L	551	14	44	5
26L	552	25	28	2
26L	553	73	72	41
26L	554	53	26	3
26L	555	82	43	8
26L	555A	110	45	4
26L	556	113	71	6
26L	557	59	63	9
26L	558	104	83	6
26L	559	27	40	5
26L	560	90	40	5
26L	560A	100	67	7
26L	561	86	36	3
26L	562	64	60	7
26L	563	29	52	4
26L	564	43	47	6
26L	565	116	34	7
26L	566	120	37	8
26L	567	114	44	4
26L	568	53	36	3
26L	569	124	167	3
26L	570	110	53	7
26L	571	38	25	4
26L	572	52	20	5
26L	573	43	34	18
26L	574	58	26	6
26L	575	75	37	2
26L	576	81	23	3
26L	[illegible]	53	32	3
26L	[illegible]	98	53	2
26L	579	102	65	2
26L	579A	92	60	10
26L	580	22	29	7

26L	581	37	36	5
26L	582	65	42	7
26L	583	23	42	2
26L	584	100	57	5
26L	585	68	190	56
26L	586	23	46	5
26L	587	70	42	4
26L	588	126	78	78
26L	589	123	35	10
26L	590	56	91	172
26L	591	19	26	8
26L	592	61	27	8
26L	592A	71	193	53
26L	593	86	29	2
26L	594	110	28	2
26L	595	31	41	2
26L	596	87	180	13
26L	597	148	182	24
26L	598	41	36	7
26L	599	108	44	5
26L	600	100	34	2

```
                VV          VV     MM          MM
                VV          VV     MMM        MMM
                VV          VV     MMMM      MMMM
 3333333333     7777777777777MM   000000000
333333333333    777777777777  MM00000000000
33        VV33        VV   77M   M00    MM   00
            V33      VV   77MM    00    MM   00
       33333V      VV   77  MM    00    MM   00
       33333VV    VV   77   MM    00    MM   00
           33VV VV   77     MM    00    MM   00
           33 VVV    77     MM    00    MM   00
33         33        77           00         00
333333333333         77           00000000000
 3333333333          77            000000000
```

SUBMITTING USERID: FNMLDF

REMOTE COMMAND FUNCTION: PRINTA

CMS FILE NAME: PKT

CMS FILE TYPE: RSLT

IBM COMPUTING CENTRE: TOROVM

```
*PROGRAM FCX010

* CONTROL LISTING

DS   REF.
CTRL I= 5   O= 6
DATA I=11   O= 6

NO. ELEMENTS= 3

NO. LEVELS= 1

INPUT REC FMT
(T3,A1,I1,T17,3F8.0)

TITLE
LARDER LAKE, 1977 SURFACE ROCK SAMPLES

ELEMENT NAMES
CU   PPMZN   PPMPB   PPM
```

FALCONBRIDGE COPPER LIMITED (LAKE DUFAULT DIVISION)

GEOLOGY DEPARTMENT -- \EXPLORATION

MULTI-ELEMENT STATISTICS

LARDER LAKE, 1977 SURFACE ROCK SAMPLES

L

ELEMENT		NUMBER	MINIMUM	MAXIMUM	ARITH MEAN	STAND DEVN	GEOM MEAN	DEVN
CU	PPM	600	12.00	2710.00	95.74	165.22	69.76	1.9792
ZN	PPM	600	16.00	6000.00	104.92	260.76	73.53	1.9775
PB	PPM	600	2.00	268.00	17.37	26.20	12.14	2.1195

* PROGRAM FDX010

* JOB COMPLETED

SUBMITTING USERID: FNMLDF

REMOTE COMMAND FUNCTION: PRINTA

CMS FILE NAME: GRAM

CMS FILE TYPE: RSLT

```
                 VV          VV     MM          MM
                 VV          VV     MMM        MMM
                 VV          VV     MMMM      MMMM
  3333333333     77777777777777MM    000000000
 333333333333    777777777777   MM00000000000
 33       VV33          VV    77M    M00     MM   00
           V33        VV    77MM     00      MM   00
        33333V       VV    77 MM     00      MM   00
        33333VV     VV    77   MM    00      MM   00
           33VV VV       77    MM    00      MM   00
           33 VVV        77    MM    00      MM   00
 33        33            77          00           00
 333333333333            77          00000000000
  3333333333             77           000000000
```

IBM COMPUTING CENTRE: TOROVM

```
FALCONBRIDGE  COPPER  LIMITED  ( LAKE  DUFAULT  DIVISION  )          GEOLOGY  DEPARTMENT  --  EXPLORATION
 LARDER LAKE, 1977 SURFACE ROCK SAMPLES                                    * L                                    * NO TRFM  * CU   PPM

 0/0  COUNTS...+....+....+....+....+....+....+....+....+....+....+....+....+....+....+....+....+....+....+....+....+....+....+...
 56.0    336+                                                                                                                  +
 54.7    328+00000                                                                                                             +
 53.3    320+00000                                                                                                             +
 52.0    312+00000                                                                                                             +
 50.7    304+00000                                                                                                             +
 49.3    296+00000                                                                                                             +
 48.0    288+00000                                                                                                             +
 46.7    280+00000                                                                                                             +
 45.3    272+00000                                                                                                             +
 44.0    264+00000                                                                                                             +
 42.7    256+00000                                                                                                             +
 41.3    248+00000                                                                                                             +
 40.0    240+0000000000                                                                                                        +
 38.7    232+0000000000                                                                                                        +
 37.3    224+0000000000                                                                                                        +
 36.0    216+0000000000                                                                                                        +
 34.7    208+0000000000                                                                                                        +
 33.3    200+0000000000                                                                                                        +
 32.0    192+0000000000                                                                                                        +
 30.7    184+0000000000                                                                                                        +
 29.3    176+0000000000                                                                                                        +
 28.0    168+0000000000                                                                                                        +
 26.7    160+0000000000                                                                                                        +
 25.3    152+0000000000                                                                                                        +
 24.0    144+0000000000                                                                                                        +
 22.7    136+0000000000                                                                                                        +
 21.3    128+0000000000                                                                                                        +
 20.0    120+0000000000                                                                                                        +
 18.7    112+0000000000                                                                                                        +
 17.3    104+0000000000                                                                                                        +
 16.0     96+0000000000                                                                                                        +
 14.7     88+0000000000                                                                                                        +
 13.3     80+0000000000                                                                                                        +
 12.0     72+0000000000                                                                                                        +
 10.7     64+0000000000                                                                                                        +
  9.3     56+0000000000                                                                                                        +
  8.0     48+0000000000                                                                                                        +
  6.7     40+0000000000                                                                                                        +
  5.3     32+0000000000                                                                                                        +
  4.0     24+0000000000                                                                                                        +
  2.7     16+000000000000000                                                                                                   +
  1.3      8+000000000000000                                                                                                   +
           ...+....+....+....+....+....+....+....+....+....+....+....+....+....+....+....+....+....+....+....+....+....+....+...
              0        300       600       900       1200      1500      1800      2100      2400      2700
REAL X = ( PLOT X +        0 ) * 10 POWER       0
```

FALCONBRIDGE COPPER LIMITED (LAKE DUFAULT DIVISION) GEOLOGY DEPARTMENT -- EXPLORATION
LARDER LAKE, 1977 SURFACE ROCK SAMPLES * L \ * NO TRFM * ZN PPM

0/0	COUNTS
89.6	.
87.5	525+00000
85.4	.00000
83.3	500+00000
81.2	.00000
79.2	475+00000
77.1	.00000
75.0	450+00000
72.9	.00000
70.8	425+00000
68.7	.00000
66.7	400+00000
64.6	.00000
62.5	375+00000
60.4	.00000
58.3	350+00000
56.2	.00000
54.2	325+00000
52.1	.00000
50.0	300+00000
47.9	.00000
45.8	275+00000
43.7	.00000
41.7	250+00000
39.6	.00000
37.5	225+00000
35.4	.00000
33.3	200+00000
31.2	.00000
29.2	175+00000
27.1	.00000
25.0	150+00000
22.9	.00000
20.8	125+00000
18.7	.00000
16.7	100+00000
14.6	.00000
12.5	75+00000
10.4	.0000000000
8.3	50+0000000000
6.2	.0000000000
4.2	25+0000000000
2.1	.0000000000

0 6 12 18 24 30 36 42 48 54 60

REAL X = (PLOT X + 0) * 10 POWER 2

```
FALCONBRIDGE  COPPER  LIMITED  ( LAKE  DUFAULT  DIVISION  )          GEOLOGY  DEPARTMENT  --  EXPLORATION
 LARDER LAKE, 1977 SURFACE ROCK SAMPLES                                        * L                                 * NO TRFM  * PB   PPM

 0/0  COUNTS..+....+....+....+....+....+....+....+....+....+....+....+....+....+....+....+....+....+....+....+...
 60.0   360+                                                                                              +
 58.7   352+     00000                                                                                    +
 57.3   344+     00000                                                                                    +
 56.0   336+     00000                                                                                    +
 54.7   328+     00000                                                                                    +
 53.3   320+     00000                                                                                    +
 52.0   312+     00000                                                                                    +
 50.7   304+     00000                                                                                    +
 49.3   296+     00000                                                                                    +
 48.0   288+     00000                                                                                    +
 46.7   280+     00000                                                                                    +
 45.3   272+     00000                                                                                    +
 44.0   264+     00000                                                                                    +
 42.7   256+     00000                                                                                    +
 41.3   248+     00000                                                                                    +
 40.0   240+     00000                                                                                    +
 38.7   232+     00000                                                                                    +
 37.3   224+     00000                                                                                    +
 36.0   216+     00000                                                                                    +
 34.7   208+     00000                                                                                    +
 33.3   200+     00000                                                                                    +
 32.0   192+     00000                                                                                    +
 30.7   184+     00000                                                                                    +
 29.3   176+     00000                                                                                    +
 28.0   168+     00000                                                                                    +
 26.7   160+     00000                                                                                    +
 25.3   152+     00000                                                                                    +
 24.0   144+0000000000                                                                                    +
 22.7   136+0000000000                                                                                    +
 21.3   128+0000000000                                                                                    +
 20.0   120+0000000000                                                                                    +
 18.7   112+0000000000                                                                                    +
 17.3   104+0000000000                                                                                    +
 16.0    96+0000000000                                                                                    +
 14.7    88+0000000000                                                                                    +
 13.3    80+0000000000                                                                                    +
 12.0    72+0000000000                                                                                    +
 10.7    64+000000000000000                                                                               +
  9.3    56+000000000000000                                                                               +
  8.0    48+000000000000000                                                                               +
  6.7    40+000000000000000                                                                               +
  5.3    32+000000000000000                                                                               +
  4.0    24+000000000000000                                                                               +
  2.7    16+000000000000000                                                                               +
  1.3     8+00000000000000000000                                                                          +
          ...+....+....+....+....+....+....+....+....+....+....+....+....+....+....+....+....+....+....+...
             0       300       600       900      1200      1500      1800      2100      2400      2700
REAL X = ( PLOT X +        0 ) * 10 POWER      -1
```

```
                  VV          VV    MM          MM
                  VV          VV    MMM        MMM
                  VV          VV    MMMM      MMMM
         3333333333    7777777777777MM  000000000
        333333333333   777777777777  MM00000000000
        33        VV33         VV    77M   M00    MM   00
                    V33       VV    77MM    00    MM   00
                  33333V    VV    77 MM     00    MM   00
                  33333VV   VV   77  MM     00    MM   00
                      33VV VV    77  MM     00    MM   00
                      33 VVV     77  MM     00    MM   00
        33            33         77         00         00
        333333333333             77         00000000000
         3333333333              77          000000000
```

SUBMITTING USERID: FNMLDF

REMOTE COMMAND FUNCTION: PRINTA

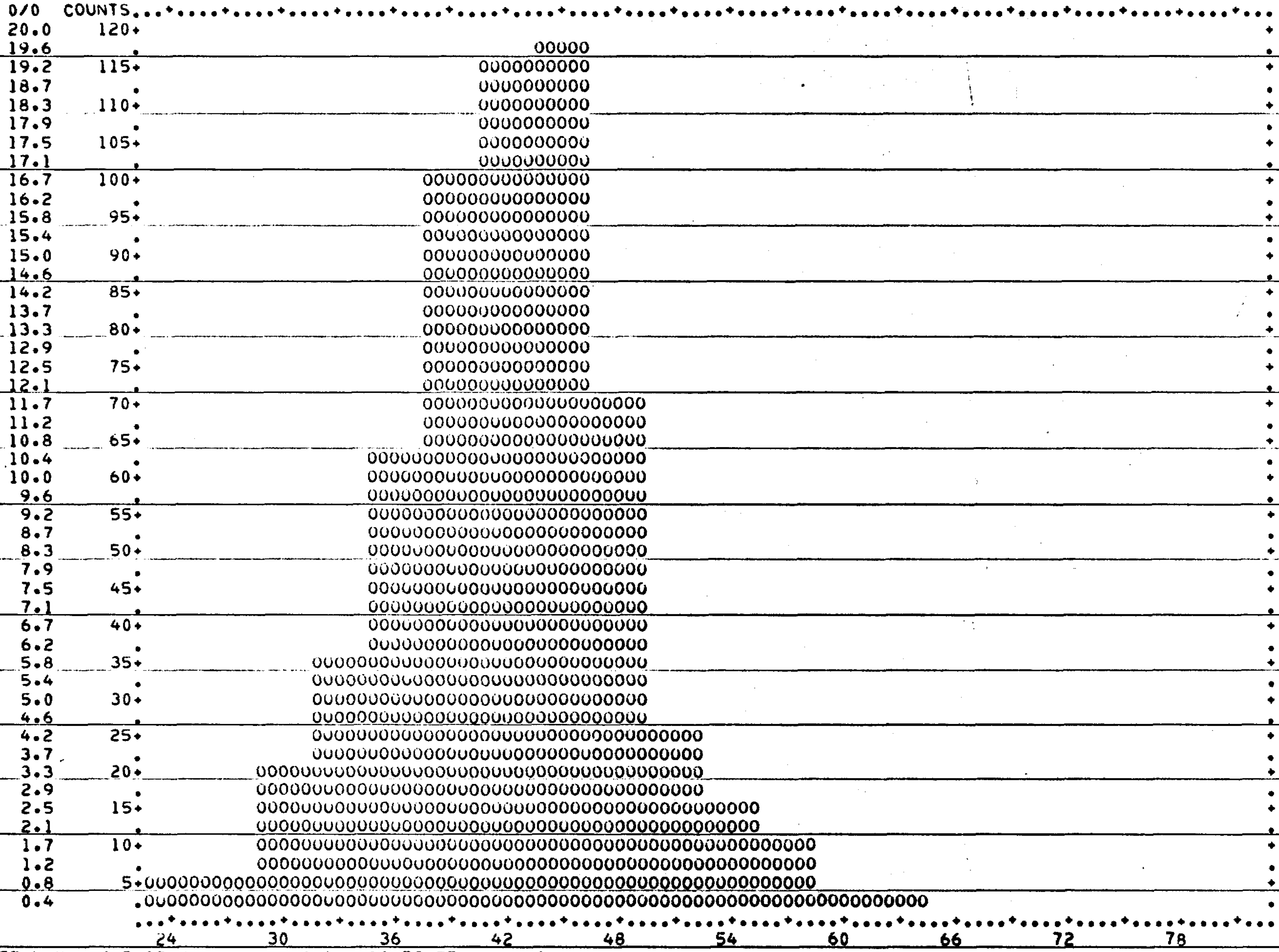
CMS FILE NAME: GRAM

CMS FILE TYPE: RSLT

IBM COMPUTING CENTRE: TOROVM

FALCONBRIDGE COPPER LIMITED (LAKE DUFAULT DIVISION) GEOLOGY DEPARTMENT -- EXPLORATION

LARDER LAKE, 1977 SURFACE ROCK SAMPLES * L * LN * CU PPM



REAL X = (PLOT X + 0) * 10 POWER -1

FALCONBRIDGE COPPER LIMITED (LAKE DUFAULT DIVISION) GEOLOGY DEPARTMENT -- EXPLORATION

LARDER LAKE, 1977 SURFACE ROCK SAMPLES * L * LN * ZN PPM

```
  0/0  COUNTS.....+.....+.....+.....+.....+.....+.....+.....+.....+.....+.....+.....+.....+.....+.....+.....+.....+.....+.....+.....+.....
 20.0    120+
 19.6       .                         00000
 19.2    115+                         00000
 18.7       .                         0000000000
 18.3    110+                         0000000000
 17.9       .                         0000000000
 17.5    105+                         0000000000
 17.1       .                         0000000000
 16.7    100+                    000000000000000
 16.2       .                    000000000000000
 15.8     95+                    000000000000000
 15.4       .                    000000000000000
 15.0     90+                    000000000000000
 14.6       .                    000000000000000
 14.2     85+                    000000000000000
 13.7       .                    000000000000000
 13.3     80+                    000000000000000
 12.9       .               00000000000000000000
 12.5     75+               00000000000000000000
 12.1       .               00000000000000000000
 11.7     70+               00000000000000000000
 11.2       .               00000000000000000000
 10.8     65+               00000000000000000000
 10.4       .               00000000000000000000
 10.0     60+               0000000000000000000000000
  9.6       .               0000000000000000000000000
  9.2     55+               0000000000000000000000000
  8.7       .               0000000000000000000000000
  8.3     50+               0000000000000000000000000
  7.9       .               0000000000000000000000000
  7.5     45+               0000000000000000000000000
  7.1       .               0000000000000000000000000
  6.7     40+               0000000000000000000000000
  6.2       .               000000000000000000000000000000
  5.8     35+          00000000000000000000000000000000000
  5.4       .          00000000000000000000000000000000000
  5.0     30+          00000000000000000000000000000000000
  4.6       .          00000000000000000000000000000000000
  4.2     25+          00000000000000000000000000000000000
  3.7       .          00000000000000000000000000000000000
  3.3     20+          00000000000000000000000000000000000
  2.9       .          00000000000000000000000000000000000
  2.5     15+          0000000000000000000000000000000000000000
  2.1       .          0000000000000000000000000000000000000000
  1.7     10+          0000000000000000000000000000000000000000     00000
  1.2       .     0000000000000000000000000000000000000000000000000000000
  0.8      5+     000000000000000000000000000000000000000000000000000000000000
  0.4       .     00000000000000000000000000000000000000000000000000000000000000000
            .....+.....+.....+.....+.....+.....+.....+.....+.....+.....+.....+.....+.....+.....+.....+.....+.....+.....+.....+.....+.....
                  30        36        42        48        54        60        66        72        78        84
REAL X = ( PLOT X +        0 ) * 10 POWER      -1
```

```
FALCONBRIDGE  COPPER  LIMITED  ( LAKE  DUFAULT  DIVISION )        GEOLOGY  DEPARTMENT  --  EXPLORATION
 LARDER LAKE, 1977 SURFACE ROCK SAMPLES                                   * L                                  * LN        * PB   PPM

  0/0 COUNTS...+....+....+....+....+....+....+....+....+....+....+....+....+....+....+....+....+....+...
 22.0    132+                                                                                          +
 21.5    129+                                   00000                                                  +
 21.0    126+                                   00000                                                  +
 20.5    123+                                   00000                                                  +
 20.0    120+                                   00000                                                  +
 19.5    117+                                   00000                                                  +
 19.0    114+                                   00000                                                  +
 18.5    111+                                   00000                                                  +
 18.0    108+                                   00000                                                  +
 17.5    105+                                   00000                                                  +
 17.0    102+                              0000000000                                                  +
 16.5     99+                              0000000000                                                  +
 16.0     96+                              0000000000                                                  +
 15.5     93+                              0000000000                                                  +
 15.0     90+                              0000000000                                                  +
 14.5     87+                              0000000000                                                  +
 14.0     84+                              0000000000                                                  +
 13.5     81+                              0000000000                                                  +
 13.0     78+                              0000000000                                                  +
 12.5     75+                              0000000000                                                  +
 12.0     72+                              000000000000000                                             +
 11.5     69+                              000000000000000                                             +
 11.0     66+                              000000000000000                                             +
 10.5     63+                    00000     000000000000000                                             +
 10.0     60+                    00000     000000000000000                                             +
  9.5     57+                    0000000000000000000000000                                             +
  9.0     54+                    0000000000000000000000000                                             +
  8.5     51+                    0000000000000000000000000                                             +
  8.0     48+               000000000000000000000000000000                                             +
  7.5     45+               000000000000000000000000000000                                             +
  7.0     42+               000000000000000000000000000000                                             +
  6.5     39+               00000000000000000000000000000000000                                        +
  6.0     36+               00000000000000000000000000000000000                                        +
  5.5     33+               00000000000000000000000000000000000                                        +
  5.0     30+               00000000000000000000000000000000000                                        +
  4.5     27+               00000000000000000000000000000000000                                        +
  4.0     24+               00000000000000000000000000000000000                                        +
  3.5     21+               00000000000000000000000000000000000                                        +
  3.0     18+               0000000000000000000000000000000000000000                                   +
  2.5     15+          000000000000000000000000000000000000000000000                                   +
  2.0     12+          000000000000000000000000000000000000000000000                                   +
  1.5      9+00000     00000000000000000000000000000000000000000000000000                              +
  1.0      6+00000     00000000000000000000000000000000000000000000000000                              +
  0.5      3+00000     0000000000000000000000000000000000000000000000000000000               00000     +
            ...+....+....+....+....+....+....+....+....+....+....+....+....+....+....+....+....+....+...
               6        12        18        24        30        36        42        48        54
 REAL X = ( PLOT X +        0 ) * 10 POWER      -1
```

File 2.2614

Ministry of Natural

GEOPHYSICAL – GEOLOGICA
TECHNICAL DATA

Ontario

32D04SE0278 2.2614 HEARST

900

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) Geophysical (2)

Township or Area McElroy-Hearst Townships

Claim Holder(s) Falconbridge Copper Limited

Box 40 Commerce Court West, Toronto, Ont

Survey Company Geosol

Author of Report Robert Lee

Address of Author Box 549, Noranda, P.Q. J9X 5B1

Covering Dates of Survey September 20/77, October 2/77
(linecutting to office)

Total Miles of Line Cut

SPECIAL PROVISIONS CREDITS REQUESTED

ENTER 40 days (includes line cutting) for first survey.

ENTER 20 days for each additional survey using same grid.

	DAYS per claim
Geophysical	
—Electromagnetic	20
—Magnetometer	20
—Radiometric	
—Other	
Geological	
Geochemical	

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

Magnetometer ____ Electromagnetic ____ Radiometric ____
(enter days per claim)

DATE: Feb 9 1978 SIGNATURE: R. A. Lee
Author of Report or Agent

L.D.

Res. Geol. ____ Qualifications ____

Previous Surveys

File No.	Type	Date	Claim Holder

OFFICE USE ONLY

MINING CLAIMS TRAVERSED
List numerically

Refer attached schedule
(prefix) (number)

If space insufficient, attach list

TOTAL CLAIMS

GEOPHYSICAL TECHNICAL DATA

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

Number of Stations: Refer maps
Number of Readings: every 100' except at anomali

Station interval: Main map area 100' detail 50'
Line spacing: Main map area 400' detail 200'

Profile scale: 20% = 1" except detail map 10% = 1"

Contour interval: every 1000 gamma except near background, every 200 gamma

MAGNETIC

Instrument: Proton Magnetometer GEOMETRICS Exploration Model G-816

Accuracy — Scale constant: ±5 gammas

Diurnal correction method: Distributing drift according to time

Base Station check-in interval (hours): 1 hour

Base Station location and value: as on base line on maps provided

ELECTROMAGNETIC

Instrument: APEX Maxmin II

Coil configuration: Horizontal (Max-coupled; horizontal loop mode). Reference cable

Coil separation: Main map area 400 feet. Detail map area 200 feet.

Accuracy: ±1%

Method: ☐ Fixed transmitter ☐ Shoot back ☒ In line ☐ Parallel line

Frequency: Main map area 1777 Hz and 444 Hz. Detail area 3555 Hz and 888 Hz.
(specify V.L.F. station)

Parameters measured: Inphase and Quadratine components of the secondary field.

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:

SCHEDULE A

GEOPHYSICAL SURVEYS LARDER LAKE CLAIMS

THE MINING ACT REPORT OF WORK

OPTION	CLAIM NUMBER	DAYS
LOWE	L-341108	40
	L-341109	40
	L-411211	40
	L-411212	40
	L-411213	40
	L-367390	40
	L-367391	40
	L-319450	40
	L-429935	40
	L-429936	40
	L-441476	40
	L-441477	40
	L-319453	40
	L-447513	40
	L-447514	40
	L-476664	40
	L-477384	40
	L-373247	40
FALCONBRIDGE COPPER LIMITED	L-476447	40
	L-476599	40
	L-476600	40
	L-447515	40
	L-476663	40
	L-476601	40

OPTION	CLAIM NUMBER	DAYS
CROXALL	L-440994	40
	L-440995	40
	L-476642	40
	L-441847	40
	L-442480	40
	L-442481	40
	L-442482	40
	L-442483	40

32 claims

File 2.2614

Ontario

Ministry of Natural Resources

GEOPHYSICAL – GEOLOGICAL – GEOCHEMICAL TECHNICAL DATA STATEMENT

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) Geological

Township or Area McElroy - Hearst

Claim Holder(s) Falconbridge Copper Limited
Box 40 Commerce Court West, Toronto, Ont.

Survey Company Falconbridge Copper Limited

Author of Report C. David A. Comba, MSc.

Address of Author Box 866 Haileybury, Ontario

Covering Dates of Survey April 1977 to October 1977
(linecutting to office)

Total Miles of Line Cut 68.7 miles

SPECIAL PROVISIONS CREDITS REQUESTED

ENTER 40 days (includes line cutting) for first survey.

ENTER 20 days for each additional survey using same grid.

	DAYS per claim
Geophysical	
--Electromagnetic	
--Magnetometer	
--Radiometric	
--Other	
Geological	40
Geochemical	

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

Magnetometer ______ Electromagnetic ______ Radiometric ______
(enter days per claim)

DATE: February 10/78 SIGNATURE: Dave Comba
Author of Report or Agent

OFFICE USE ONLY

Res. Geol. ______ Qualifications ______

Previous Surveys

File No.	Type	Date	Claim Holder

MINING CLAIMS TRAVERSED
List numerically

Refer Schedule A attached
(prefix) (number)

If space insufficient, attach list

TOTAL CLAIMS ______

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 ____________________

SCHEDULE A

GEOLOGICAL MAPPING LARDER LAKE CLAIMS

THE MINING ACT REPORT OF WORK

OPTION	CLAIM NUMBER	DAYS
LOWE	L-341108	40
	L-341109	40
	L-411211	40
	L-411212	40
	L-411213	40
	L-367390	40
	L-367391	40
	L-319450	40
	L-429935	40
	L-429936	40
	L-429937	40
	L-441476	40
	L-441477	40
	L-319453	40
	L-447513	40
	L-447514	40
	L-476664	40
	L-476665	40
	L-476666	40
	L-477384	40
	L-477385	40
	L-477386	40
	L-477387	40
	L-477388	40
	L-477389	40
	L-373247	40
	L-103640	40
	L-429938	40
FALCONBRIDGE COPPER LIMITED	L-476447	40
	L-476599	40
	L-476600	40
	L-447515	40
	L-476663	40
	L-476601	40

OPTION	CLAIM NUMBER	DAYS
CROXALL	L-440994	40
	L-440995	40
	L-476444	40
	L-476445	40
	L-476642	40
	L-441847	40
	L-442480	40
	L-442481	40
	L-442482	40
	L-442483	40

44 claims

File 2.2614

Ontario

Ministry of Natural Resources

GEOPHYSICAL – GEOLOGICAL – GEOCHEMICAL TECHNICAL DATA STATEMENT

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) Geochemical

Township or Area McElroy-Hearst

Claim Holder(s) Falconbridge Copper Limited
Box 40, Commerce Court West, Toronto, Ont.

Survey Company Falconbridge Copper Limited

Author of Report C. David A. Comba MSc

Address of Author Box 866, Haileybury, Ontario

Covering Dates of Survey September 1977 October 1977
(linecutting to office)

Total Miles of Line Cut

SPECIAL PROVISIONS CREDITS REQUESTED

ENTER 40 days (includes line cutting) for first survey.

ENTER 20 days for each additional survey using same grid.

	DAYS per claim
Geophysical	
--Electromagnetic	
--Magnetometer	
--Radiometric	
--Other	
Geological	
Geochemical	20

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

Magnetometer ______ Electromagnetic ______ Radiometric ______
(enter days per claim)

DATE: February 10/'78 SIGNATURE: Dave Comba
Author of Report or Agent

MINING CLAIMS TRAVERSED
List numerically

Refer Schedule A attached
(prefix) (number)

TOTAL CLAIMS

If space insufficient, attach list

OFFICE USE ONLY

Res. Geol. ______ Qualifications ______

Previous Surveys

File No.	Type	Date	Claim Holder

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 ______

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 ______________

GEOCHEMICAL SURVEY – PROCEDURE RECORD

Numbers of claims from which samples taken 43

Total Number of Samples 600

Type of Sample (Nature of Material) Rock

Average Sample Weight 0.5 to 0.75 lbs

Method of Collection Grid lines spaced at 200' or 400' intervals. 68.7 miles

Soil Horizon Sampled

Horizon Development

Sample Depth

Terrain

Drainage Development

Estimated Range of Overburden Thickness

SAMPLE PREPARATION

(Includes drying, screening, crushing, ashing)

Mesh size of fraction used for analysis Primary crushing (jaw crusher, cone crusher, riffle table) Pulp pulverized to 160 mesh. 1 gram used for basemetal determinations, 7 grams for gold.

General Samplers issued reduced Xerox copies of 1"= 100' geological maps to assist in locating outcrops between lines. Sample interval 100' unless rock type change warranted closer spacing. In volcanic sequences pillow selveges and flow tops sampled.

Both pulp and rejects are permanently stored.

ANALYTICAL METHODS

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

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

Others

Field Analysis (tests)

Extraction Method

Analytical Method

Reagents Used

Field Laboratory Analysis

No. (tests)

Extraction Method

Analytical Method

Reagents Used

Commercial Laboratory (tests)

Name of Laboratory Lake Dufault Assay Office

Extraction Method Acid leech

Analytical Method Atomic absorption

Reagents Used Nitric acid, bromine, hydrochloric acid, lanthanum chloride

General 15 ml of concentrated nitric acid and a few drops of bromine are added to one gram of pulp and placed on a hot plate. 10 ml of concentrated hydrochloric acid are added, followed by a further 5 ml in approximately 5 min. After evaporation and cooling, 5 ml of concentrated hydrochloric acid and 10-15 ml of water are added. 2 ml of 5% lanthanum chloride is added after 15 min, and the solution bulked to 100 ml. with demineralized water.

SCHEDULE A

GEOCHEMICAL SURVEY LARDER LAKE CLAIMS

THE MINING ACT REPORT OF WORK

OPTION	CLAIM NUMBER	DAYS	OPTION	CLAIM NUMBER	DAYS
LOWE	L-341108	20	CROXALL	L-440994	20
	L-341109	20		L-440995	20
	L-411211	20		L-476444	20
	L-411212	20		L-476445	20
	L-411213	20		L-476642	20
	L-367390	20		L-441847	20
	L-367391	20		L-442480	20
	L-319450	20		L-442481	20
	L-429935	20		L-442482	20
	L-429936	20		L-442483	20
	L-441476	20			
	L-441477	20			
	L-319453	20			
	L-447513	20			
	L-447514	20			
	L-476664	20			
	L-476665	20			
	L-476666	20			
	L-477384	20			
	L-477385	20			
	L-477386	20			
	L-477387	20			
	L-477388	20			
	L-477389	20			
	L-373247	20			
	L-103640	20			
FALCONBRIDGE COPPER LIMITED	L-476447	20			
	L-476599	20			
	L-476600	20			
	L-447515	20			
	L-476663	20			
	L-476601	20			

2.2614

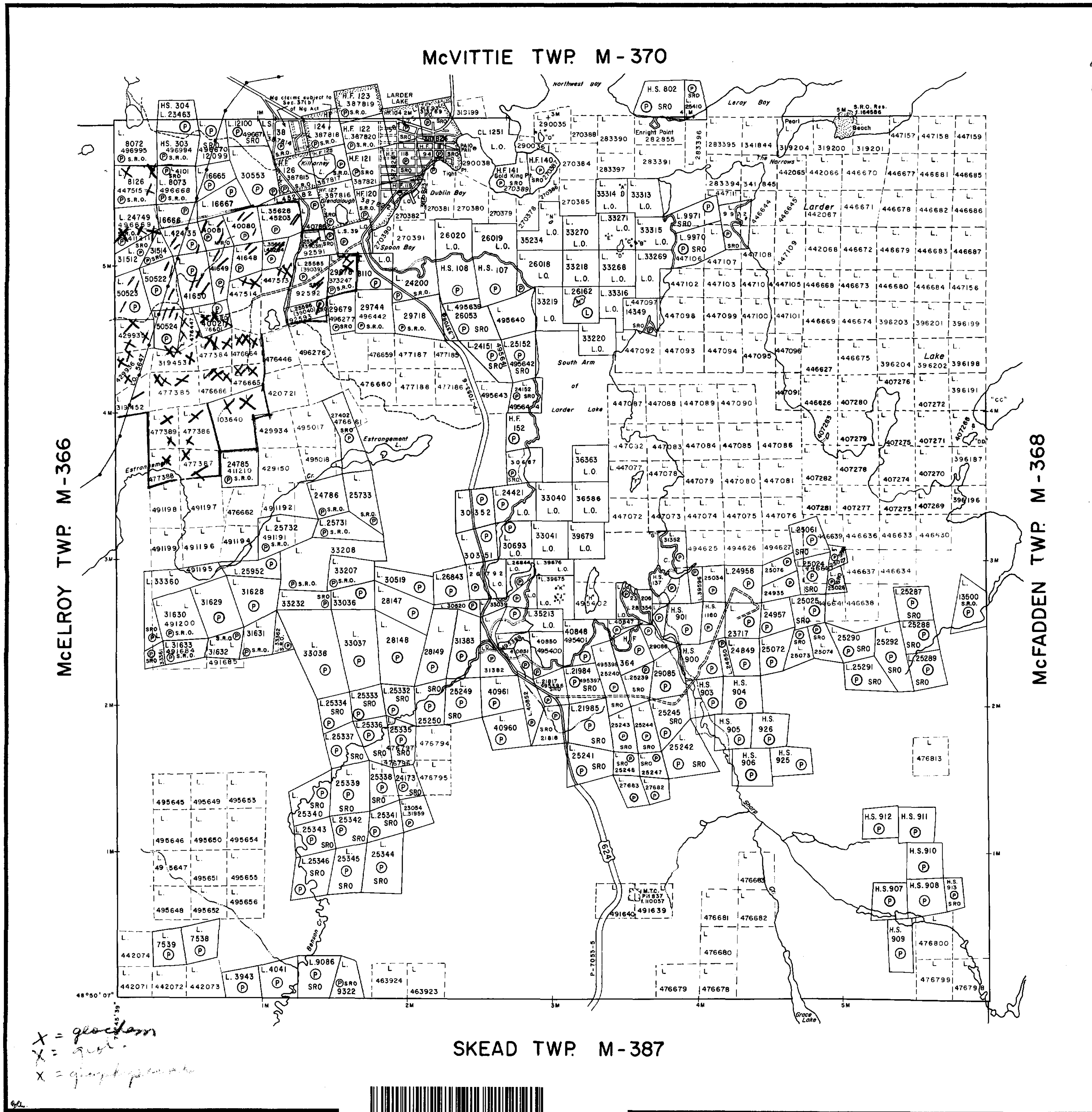
THE TOWNSHIP OF

HEARST

DISTRICT OF TIMISKAMING

LARDER LAKE MINING DIVISION

SCALE: 1-INCH — 40 CHAINS



LEGEND

PATENTED LAND	● or Ⓟ
CROWN LAND SALE	C.S.
LEASES	Ⓛ
LOCATED LAND	Loc.
LICENSE OF OCCUPATION	L.O.
MINING RIGHTS ONLY	M.R.O.
SURFACE RIGHTS ONLY	S.R.O.
ROADS	
IMPROVED ROADS	
KING'S HIGHWAYS	
RAILWAYS	
POWER LINES	
MARSH OR MUSKEG	
MINES	
CANCELLED	C.
PATENTED S.R.O.	◓

NOTES

400' Surface Rights reservation along the shores of all lakes and rivers.

Township of Hearst lies entirely within the CORPORATION of the TOWNSHIP of LARDER LAKE. File: 129282.

Staking of mining claims within the Town of Larder Lake shown thus ▨ subject to Sec. 37(b) of the Mining Act (R.S.O. 1970).

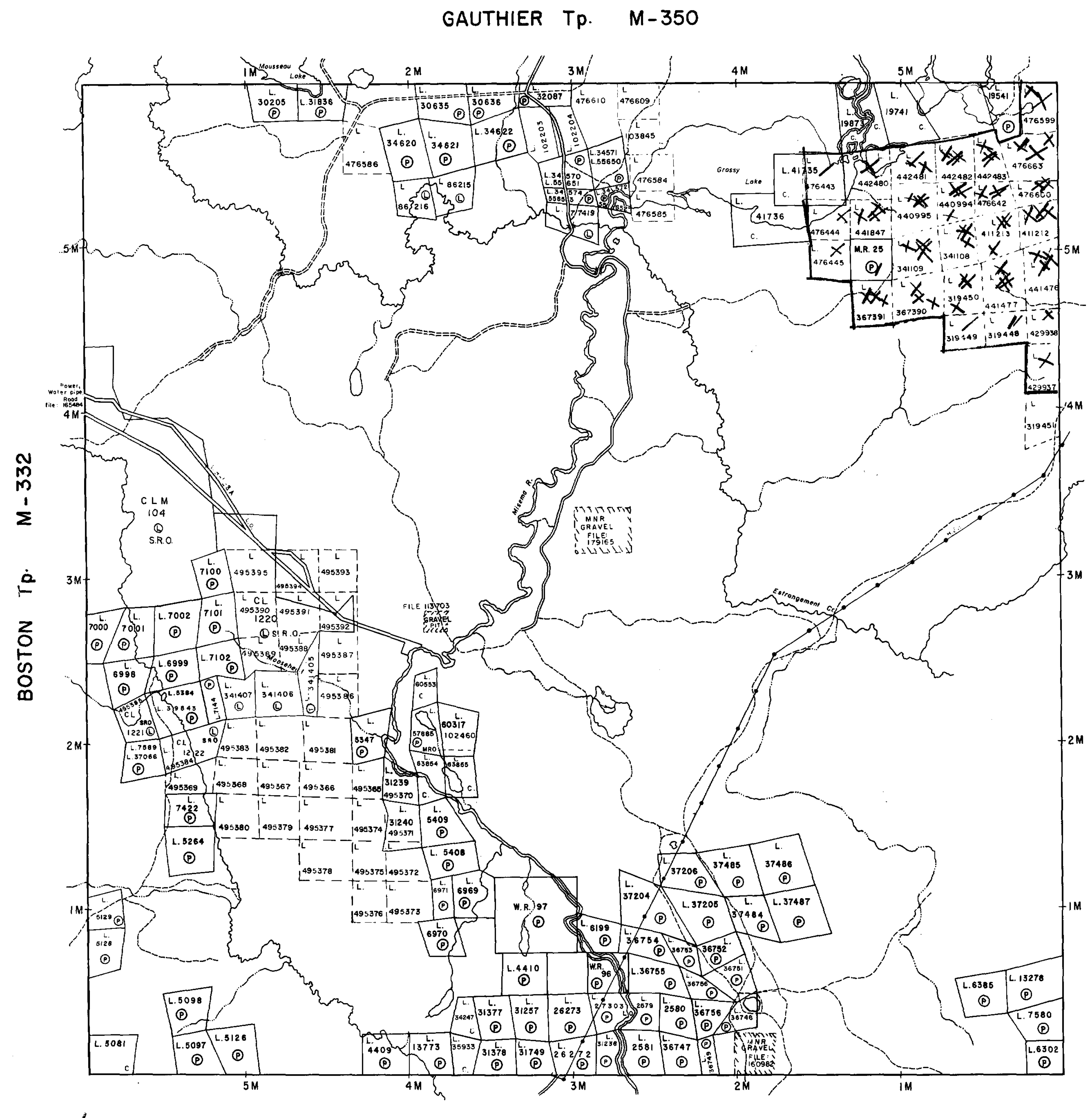
DATE OF ISSUE
FEB 22 1978
SURVEYS AND MAPPING BRANCH

PLAN NO. M-354

ONTARIO
MINISTRY OF NATURAL RESOURCES
SURVEYS AND MAPPING BRANCH

32D04SE0278 2.2614 HEARST

200



2.2614

THE TOWNSHIP OF

Mc ELROY

DISTRICT OF TIMISKAMING

LARDER LAKE MINING DIVISION

SCALE: 1-INCH = 40 CHAINS

LEGEND

PATENTED LAND	● or Ⓟ
CROWN LAND SALE	C.S.
LEASES	Ⓛ
LOCATED LAND	Loc.
LICENSE OF OCCUPATION	L.O.
MINING RIGHTS ONLY	M.R.O.
SURFACE RIGHTS ONLY	S.R.O.
ROADS	
IMPROVED ROADS	
KING'S HIGHWAYS	
RAILWAYS	
POWER LINES	
MARSH OR MUSKEG	
MINES	⚒
CANCELLED	C.
PATENTED FOR SURFACE RIGHTS ONLY	◓

NOTES

400' Surface rights reservation along the shores of all lakes & rivers

Areas withdrawn from staking under Section 43 of the Mining Act. (R.S.O. 1970)

Order No.	File	Date	Disposition

DATE OF ISSUE
FEB 22 1978
SURVEYS AND MAPPING BRANCH

PLAN NO. M-366

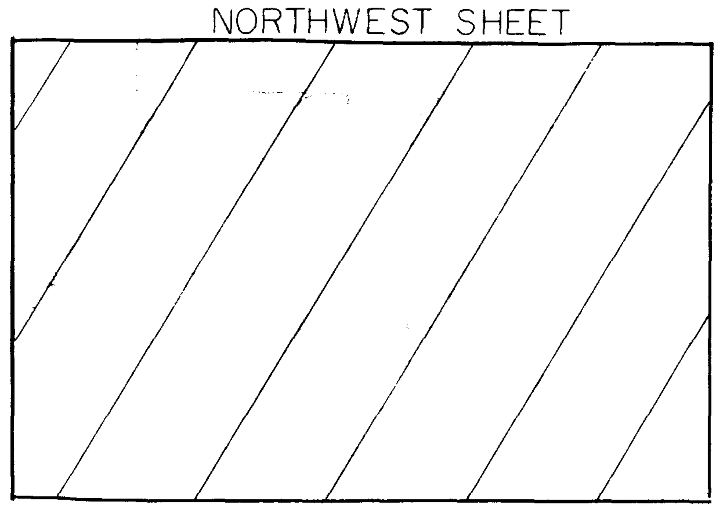
ONTARIO
MINISTRY OF NATURAL RESOURCES
SURVEYS AND MAPPING BRANCH

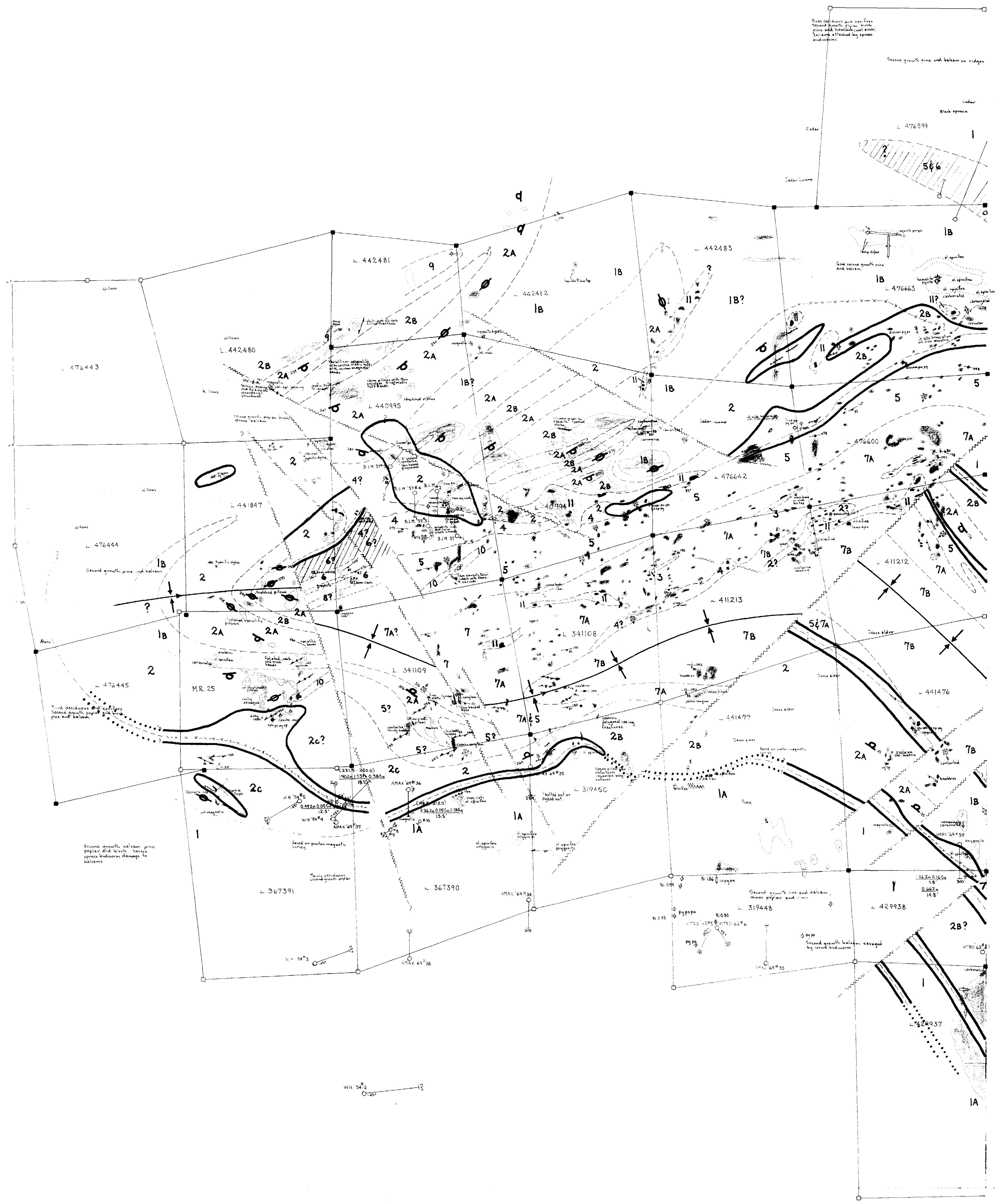
X = geochem.
X = geol.
X = geophysical

32D04SE0278 2.2614 HEARST

210

NORTHWEST SHEET





LEGEND

VOLCANICS

1 KOMATIITIC LAVAS: Relatively unaltered peridotite 1A, altered 1B.

2 HIGH MAGNESIAN THOLEIITIC LAVAS: Pillowed 2A, massive 2B, sheared 2C.

3 RHYOLITE

SEDIMENTS

4 CROXALL CONGLOMERATE: Turbidite conglomerates

5 P&G: Thinly bedded greenish greywacke, grit to pebble sized conglomerates with rare cobble to boulder sized clasts.

6 CON-AGGS: Conglomerate and/or agglomerate with variable bimodal composition (ultramafic and rhyolite). May be related to P&G

7 VARIETY MIX: Syenitic and trachyte lava clasts up to 50% by volume, 7A conglomerate, 7B thinly bedded greywacke, grit to pebble sized conglomerates

8 CHERTS-ARKOSES

INTRUSIVES

9 SYENITE

10 PYROXENITE

11 GABBRO

INTRUSIVES Cont'd

12 DIABASE

13 LAMPROPHYRES

REFERENCE

Claim post located by F.C.L. personnel

Claim post located by earlier explorationists

Road

Truck road

A.T.V. trail

Drill hole

Outcrop outline

Geological contact

Inferred geological contact

Shear

REFERENCE Cont'd

Strike, dips

Graded bed

Pit or trench

Pillowed tops indeterminate

Pillowed tops indicated

Overturned beds

Synclinal axis, plunge indicated

FAULT

Lake or pond

H.E.M. conductor

Gossan, rusty zone

Breccia

Flow breccia

LARDER LAKE PROJECT

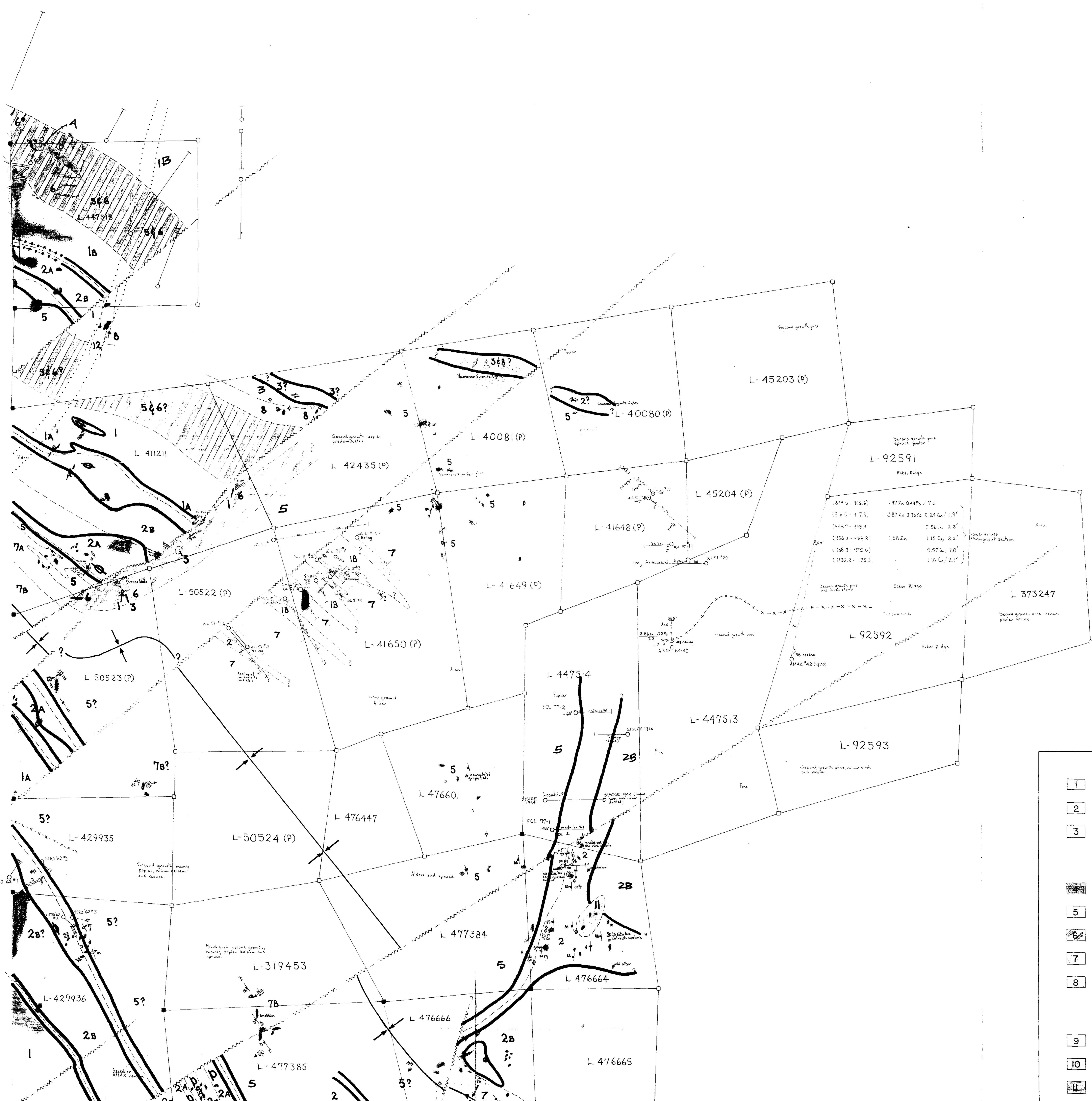
LAKE DUFAULT DIVISION

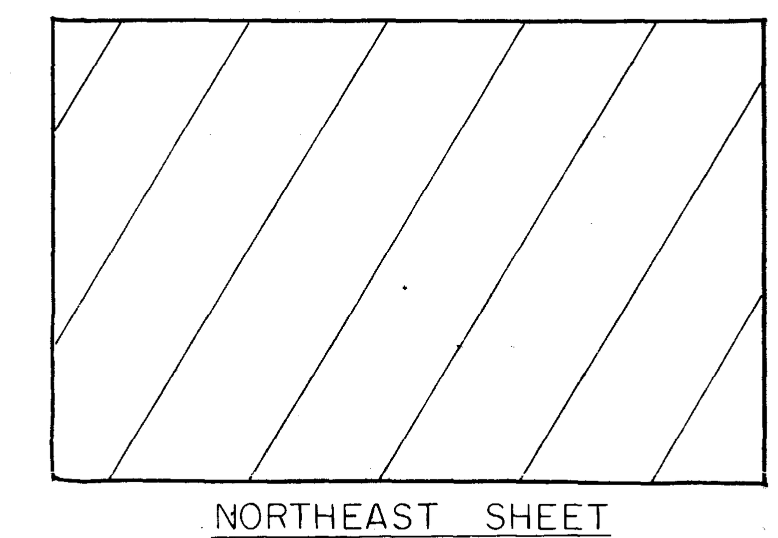
NORTHWEST SHEET

2.2614

1

220





NORTHEAST SHEET

LEGEND

2.2614

VOLCANICS

1 KOMATIITIC LAVAS: Relatively unaltered peridotite 1A, altered 1B.

2 HIGH MAGNESIAN THOLEIITIC LAVAS: Pillowed 2A, massive 2B, sheared 2C.

3 RHYOLITE

SEDIMENTS

4 CROXALL CONGLOMERATE: Turbidite conglomerates.

5 P&G: Thinly bedded greenish greywacke, grit to pebble sized conglomerates with rare cobble to boulder sized clasts.

6 CON-AGGS: Conglomerate and/or agglomerate with variable bimodal composition (ultramafic and rhyolite). May be related to P&G.

7 VARIETY MIX: Syenitic and trachyte lava clasts up to 50% by volume, 7A conglomerate, 7B thinly bedded greywacke, grit to pebble sized conglomerates.

8 CHERTS-ARKOSES

INTRUSIVES

9 SYENITE

10 PYROXENITE

11 GABBRO

INTRUSIVES Cont'd

12 DIABASE

13 LAMPROPHYRES

REFERENCE

Claim post located by F.C.L. personnel

Claim post located by earlier explorationists

Road

Truck road

A.T.V. trail

Drill hole

Outcrop outline

Geological contact

Inferred geological contact

Shear

REFERENCE Cont'd

Strike, dips

Graded bed

Pit or trench

Pillowed tops indeterminate

Pillowed tops indicated

Overturned beds

Synclinal axis, plunge indicated

FAULT

Lake or pond

H.E.M. conductor

Gossan, rusty zone

Breccia

Flow breccia

FALCONBRIDGE COPPER LTD.

LARDER LAKE PROJECT

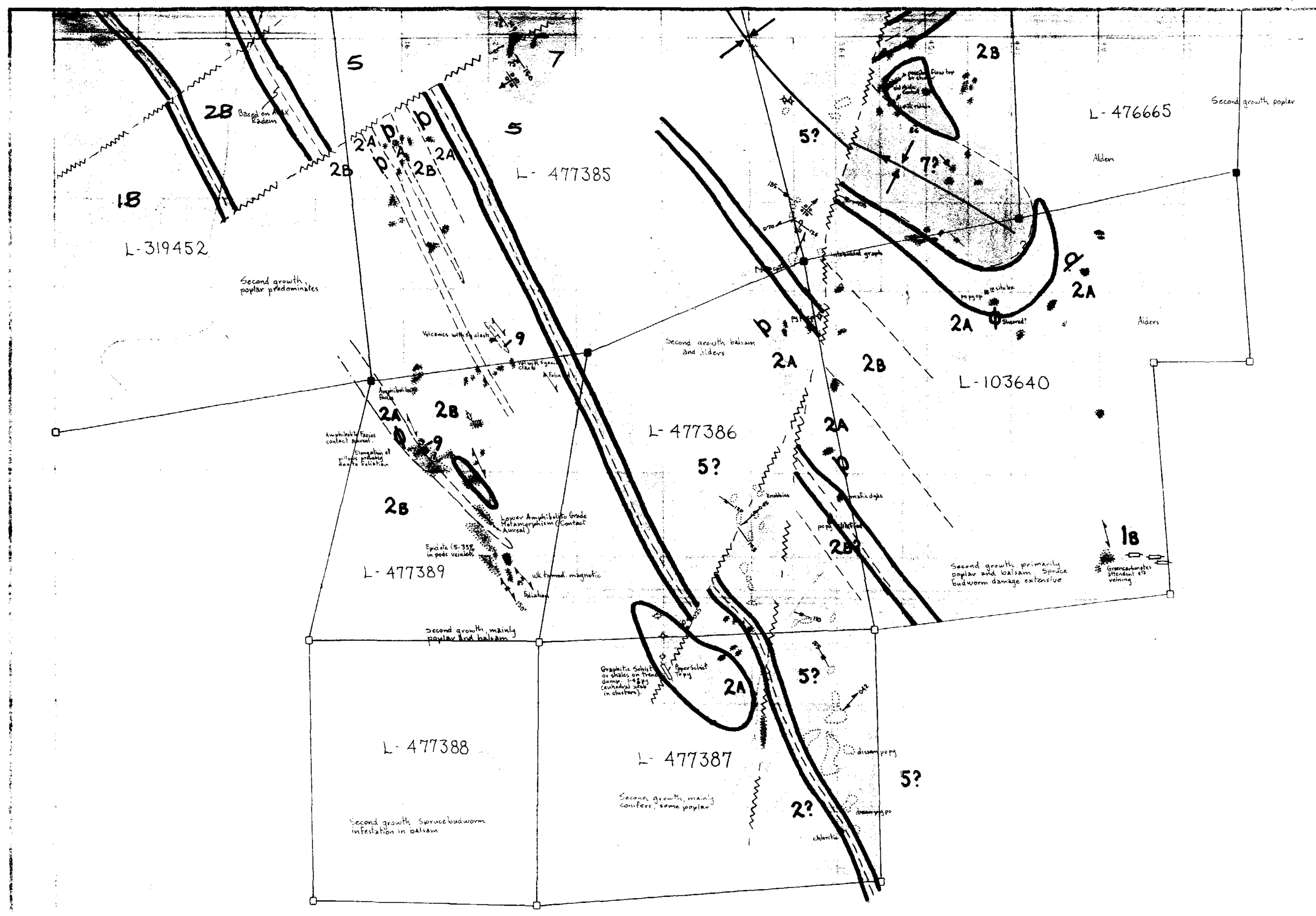
NORTHEAST SHEET

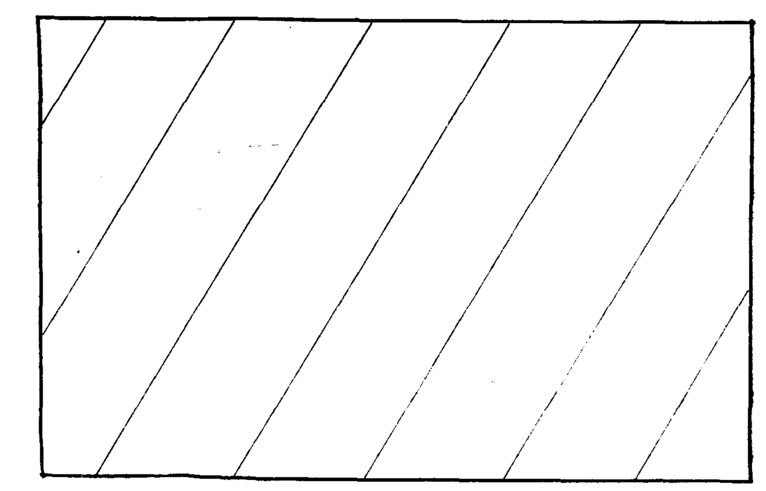
Coloured by Jane Smith
Dave Cooke

2.2614

1

230





SOUTHEAST SHEET

LEGEND

2.2614

VOLCANICS

1 KOMATIITIC LAVAS: Relatively unaltered peridotite 1A, altered 1B.

2 HIGH MAGNESIAN THOLEIITIC LAVAS: Pillowed 2A, massive 2B, sheared 2C.

3 RHYOLITE

SEDIMENTS

4 CROXALL CONGLOMERATE: Turbidite conglomerates

5 P&G: Thinly bedded greenish greywacke, grit to pebble sized conglomerates with rare cobble to boulder sized clasts.

6 CON-AGGS: Conglomerate and/or agglomerate with variable bimodal composition (ultramafic and rhyolite). May be related to P&G.

7 VARIETY MIX: Syenitic and trachyte lava clasts up to 50 % by volume, 7A conglomerate, 7B thinly bedded grey wacke, grit to pebble sized conglomerates.

8 CHERTS–ARKOSES

INTRUSIVES

9 SYENITE

10 PYROXENITE

11 GABBRO

INTRUSIVES Cont'd

12 DIABASE

13 LAMPROPHYRES

REFERENCE

Claim post located by F.C.L. personnel

Claim post located by earlier explorationists

Road

Truck road

A.T.V. trail

Drill hole

Outcrop outline

Geological contact

Inferred geological contact

Shear

REFERENCE Cont'd

Strike, dips

Graded bed

Pit or trench

Pillowed tops indeterminate

Pillowed tops indicated

Overturned beds

Synclinal axis, plunge indicated

FAULT

Lake or pond

H.E.M. conductor

Gossan, rusty zone

Breccia

Flow breccia

2.2614

Coloured by- Jerri Smith
— Dave Cook —

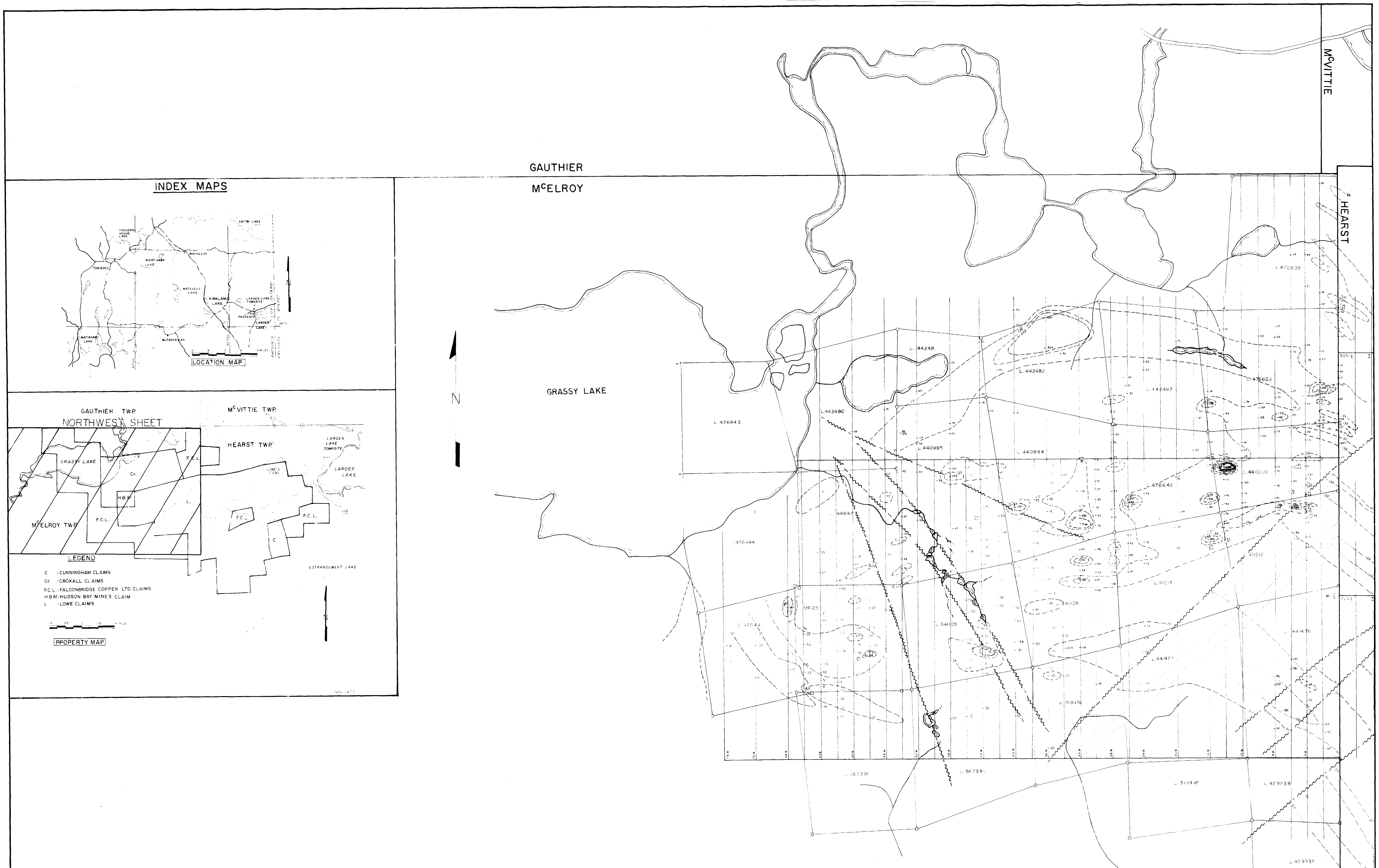
LARDER LAKE PROJECT

FALCONBRIDGE COPPER LTD.
LAKE DUFAULT DIVISION

SOUTHEAST SHEET

1

240



LEGEND

Element	Sample N°	Min.	Max.	Arith. Mean	Standard Dev.	Geom. Mean	Dev.
COPPER(Cu)	600	12	2710	95.7	165.2	69.76	1.9792

Contour intervals: Geom. Mean, Geom. Mean x Dev, Geom. Mean x Dev. x Dev. etc.

LARDER LAKE PROJECT

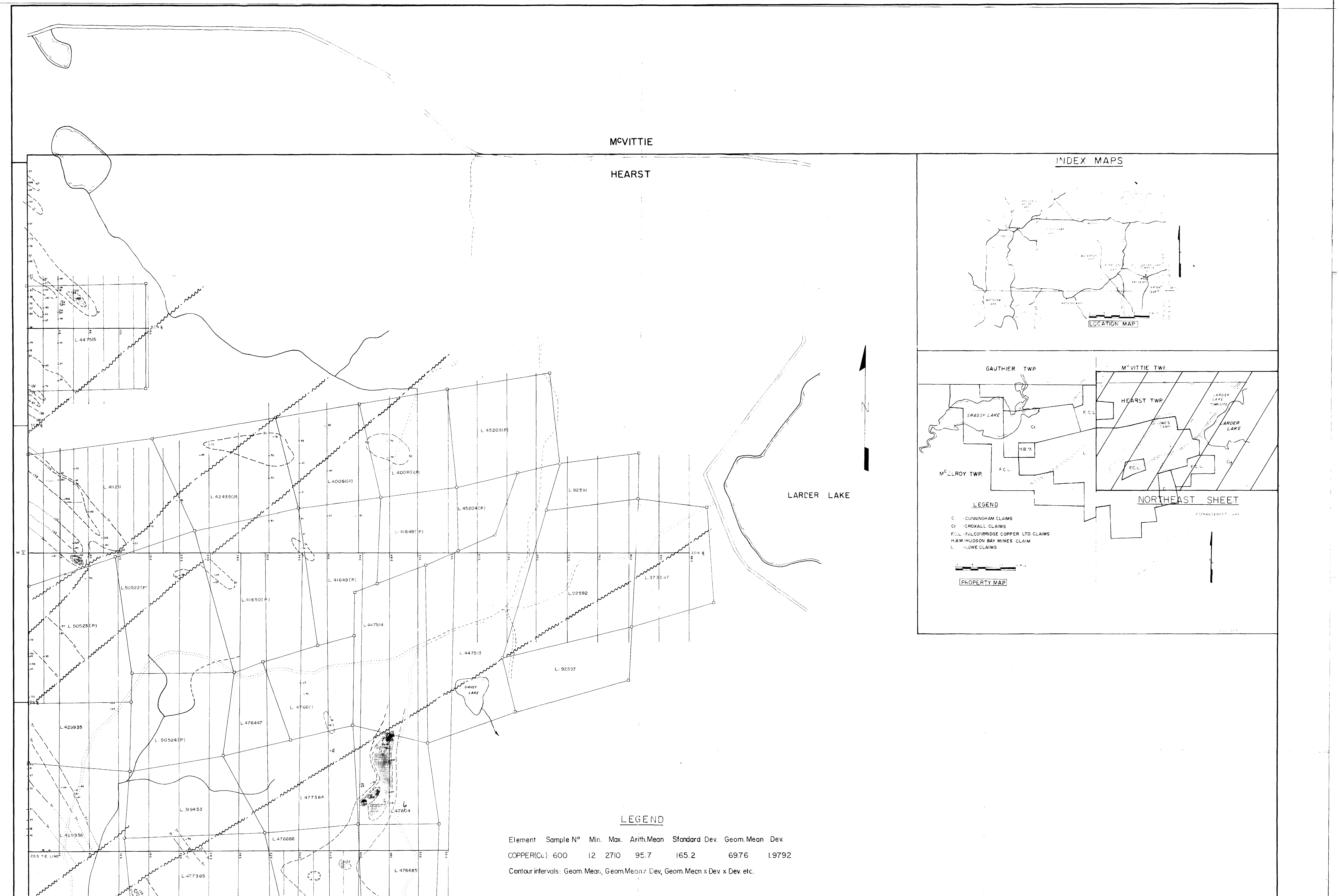
FALCONBRIDGE COPPER LTD.
LAKE DUFAULT DIVISION

Cu ROCK GEOCHEM
NORTHWEST SHEET
ppm

1" = 400'

2.2614

250



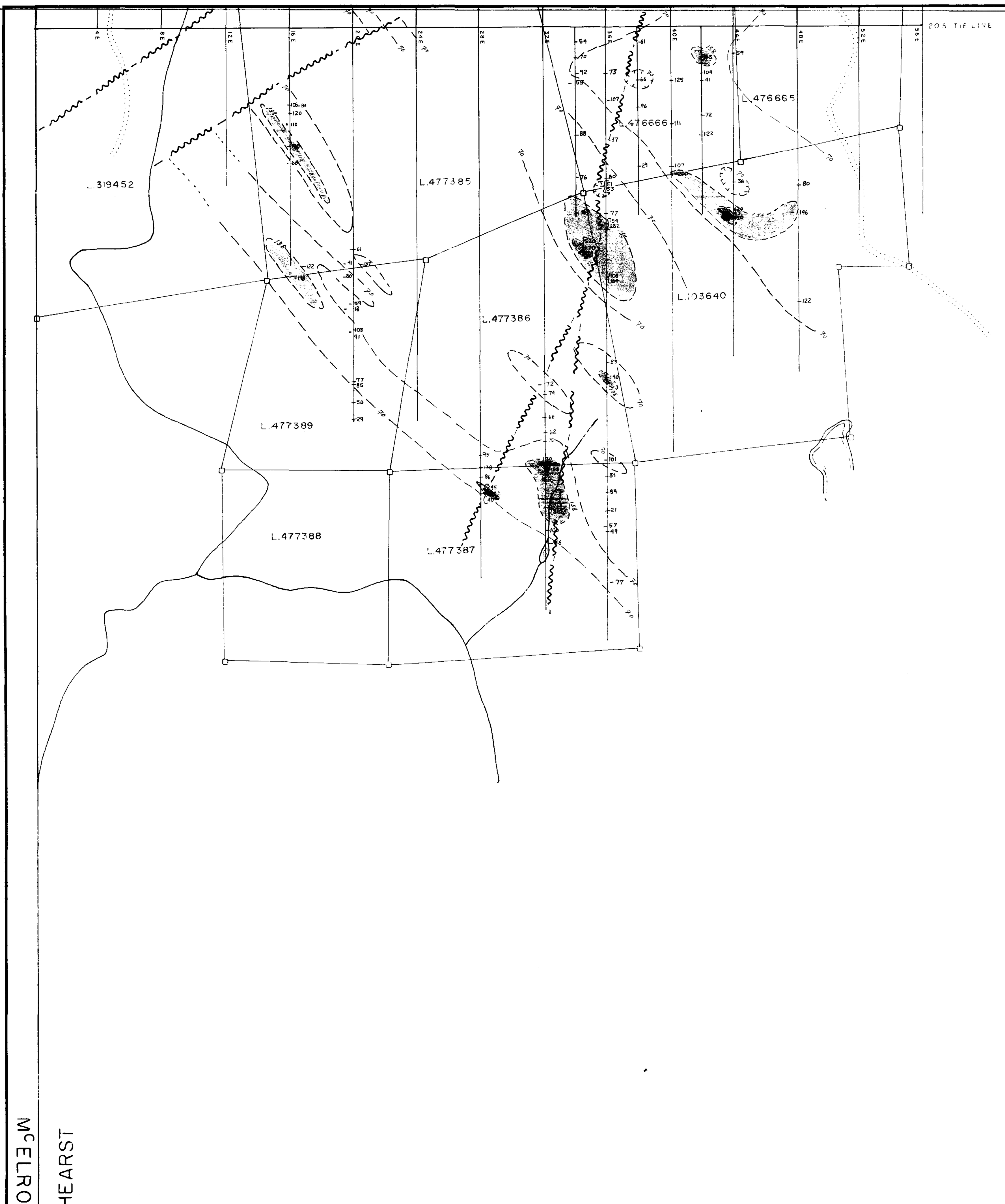
LARDER LAKE PROJECT

FALCONBRIDGE COPPER LTD.
LAKE DUFAULT DIVISION

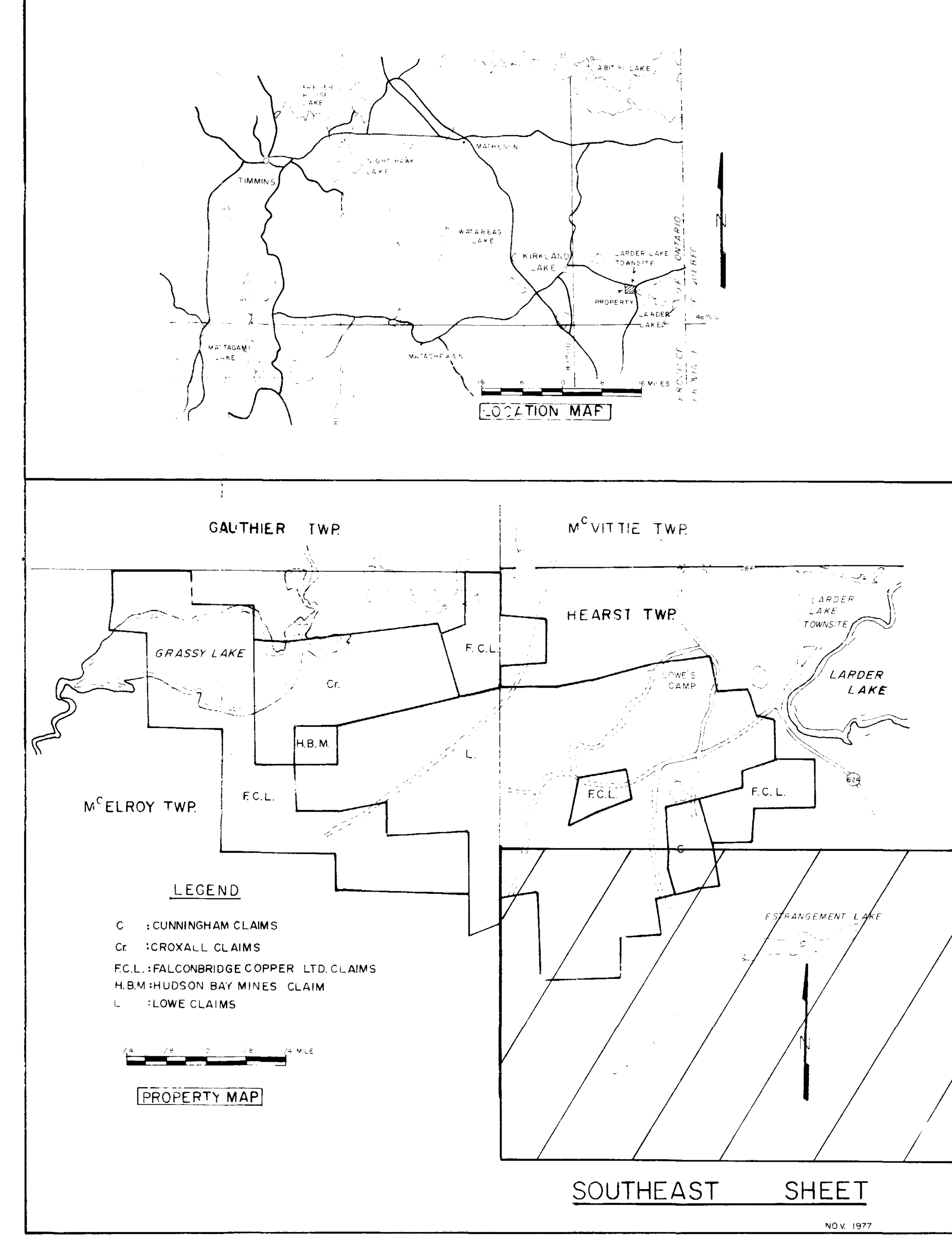
Cu. ROCK GEOCHEM
NORTHEAST SHEET
p.p.m.

1" = 400'

2.2614



INDEX MAPS



LEGEND

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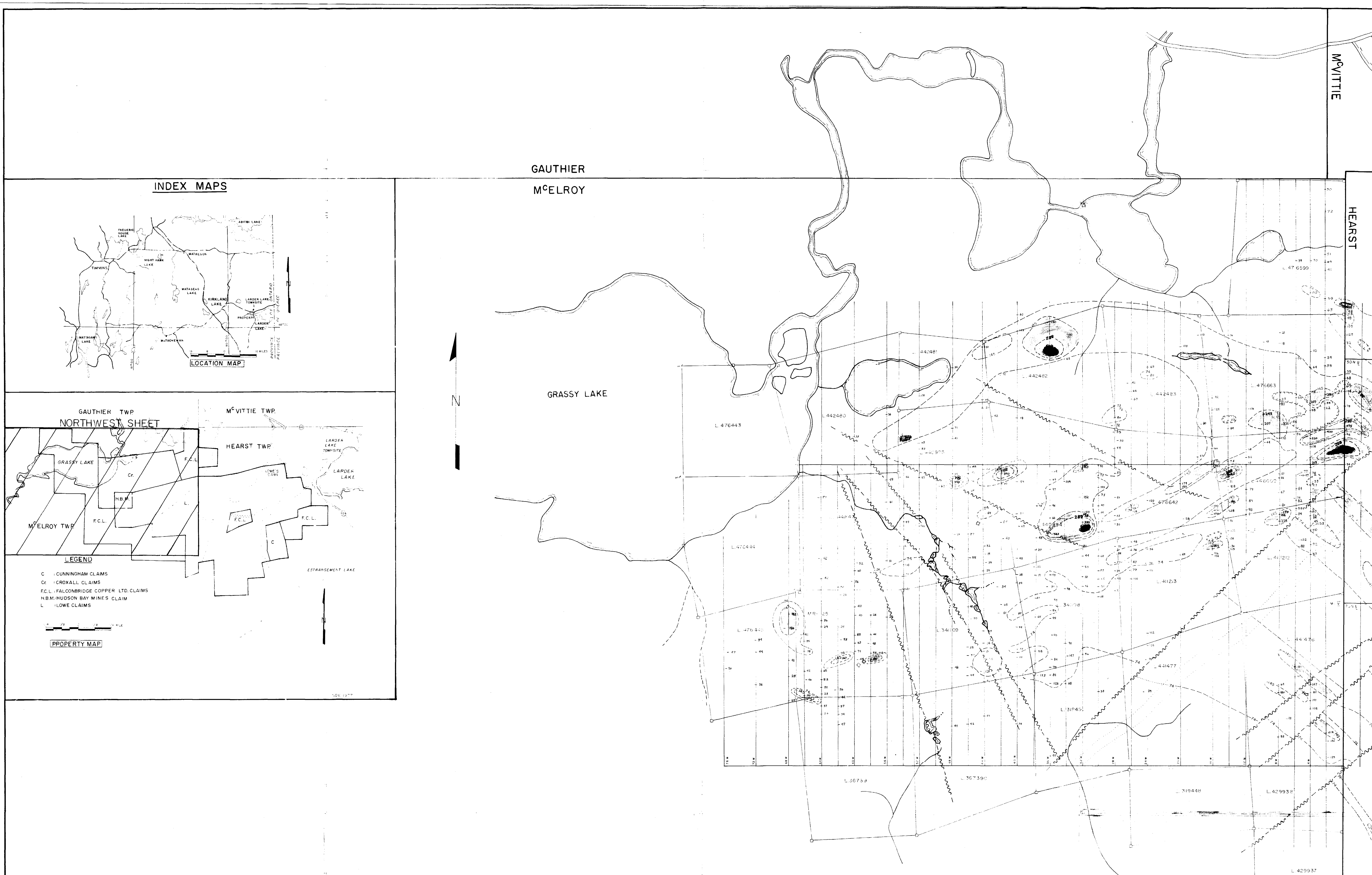
LARDER LAKE PROJECT

FALCONBRIDGE COPPER LTD.
LAKE DUFAULT DIVISION

Cu ROCK GEOCHEM
SOUTHEAST SHEET
p.p.m.

1" = 400'

2.2614



LEGEND

Element	Sample N°	Min	Max	Arith.Mean	Standard Dev	Geom. Mean	Dev
Zinc(Zn)	600	16	6000	104.9	260.8	73.53	1.9775

Contour intervals: Geom. Mean, Geom. Mean x Dev, Geom. Mean x Dev. x Dev. etc.

LARDER LAKE PROJECT

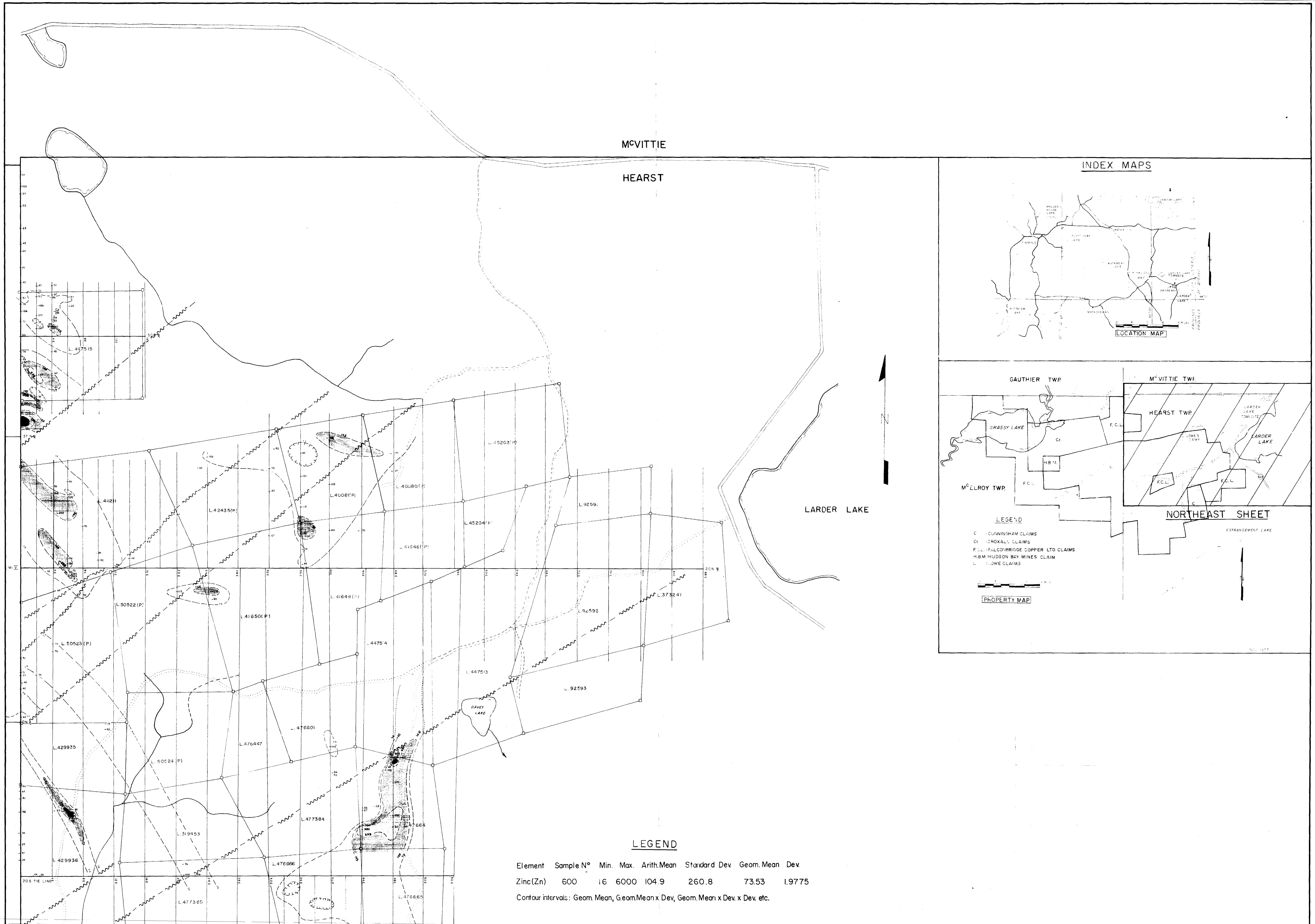
FALCONBRIDGE COPPER LTD.
LAKE DUFAULT DIVISION

Zn ROCK GEOCHEM
NORTHWEST SHEET
ppm

1" = 400'

2.2614

280



LEGEND

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Contour intervals: Geom. Mean, Geom. Mean x Dev., Geom. Mean x Dev. x Dev. etc.

LARDER LAKE PROJECT

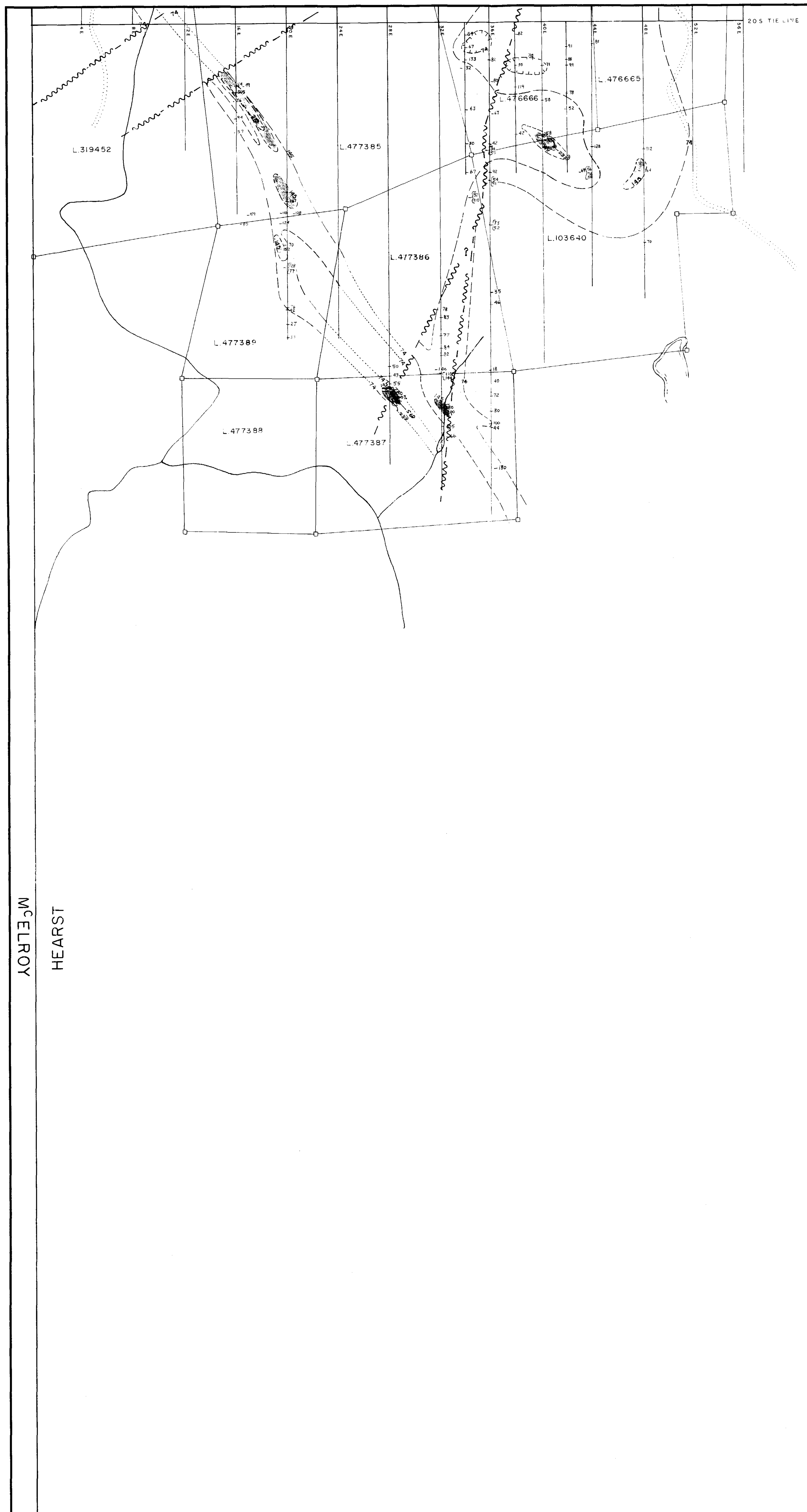
FALCONBRIDGE COPPER LTD.
LAKE DUFAULT DIVISION

Zn ROCK GEOCHEM
NORTHEAST SHEET
p.p.m.

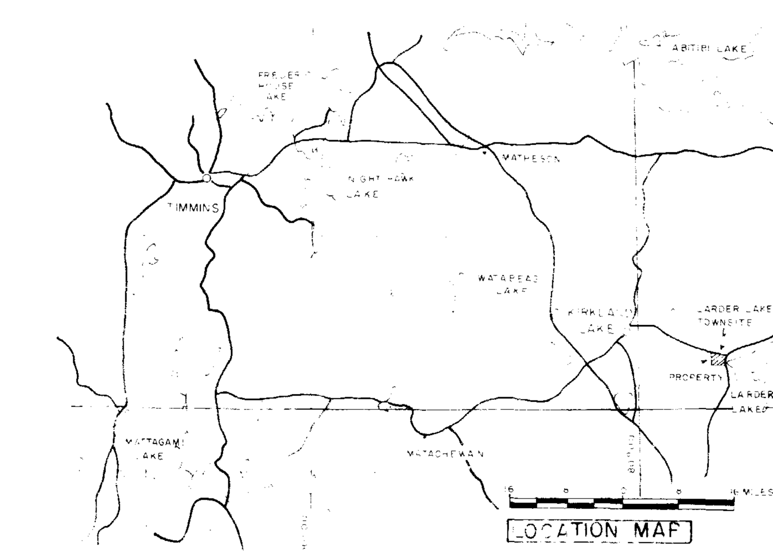
1" = 400'

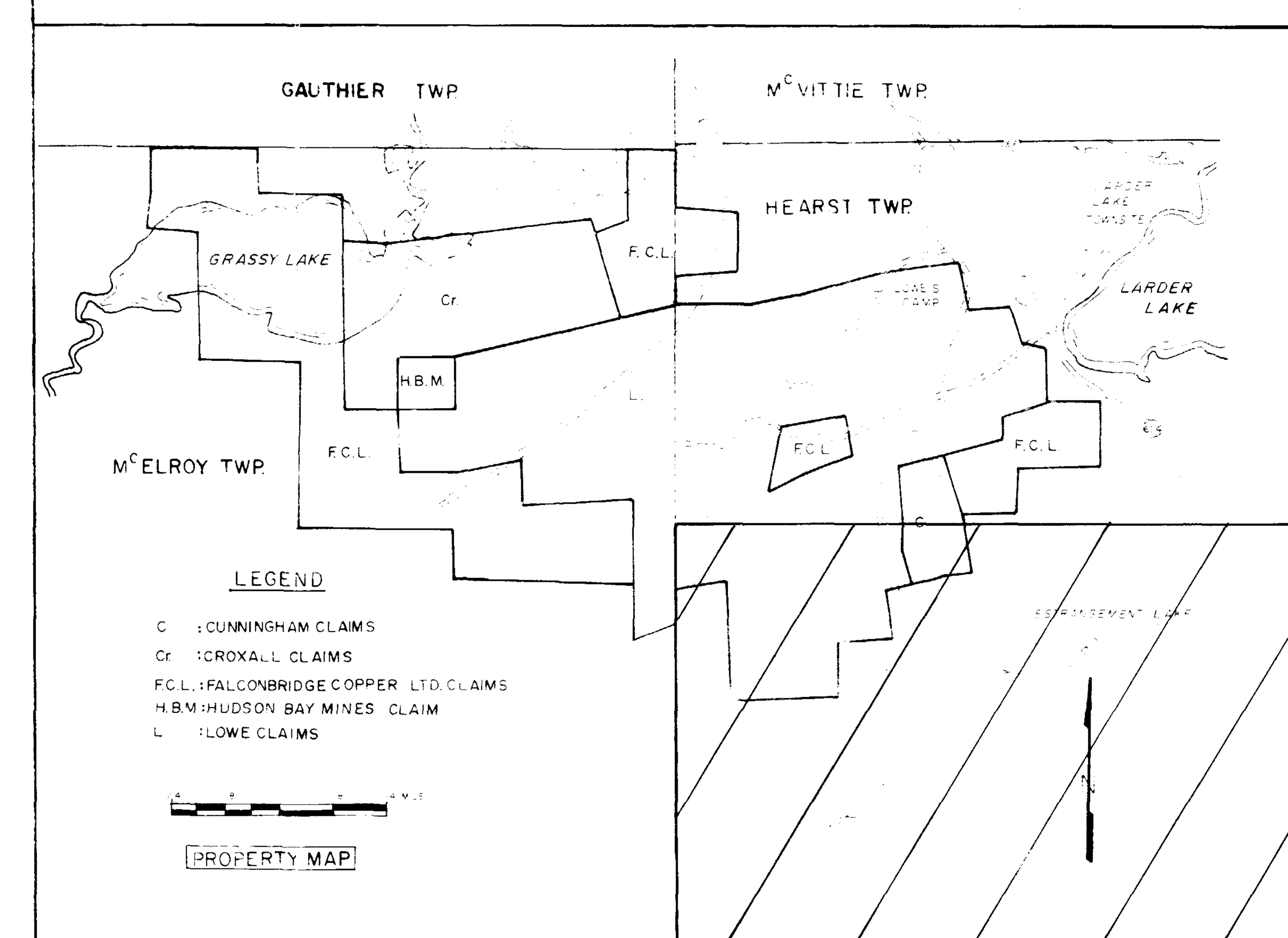
2.2614

290



INDEX MAPS





SOUTHEAST SHEET

NOV. 1977

LEGEND

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Contour intervals: Geom.Mean, Geom.Mean x Dev, Geom.Mean x Dev. x Dev. etc.

LARDER LAKE PROJECT

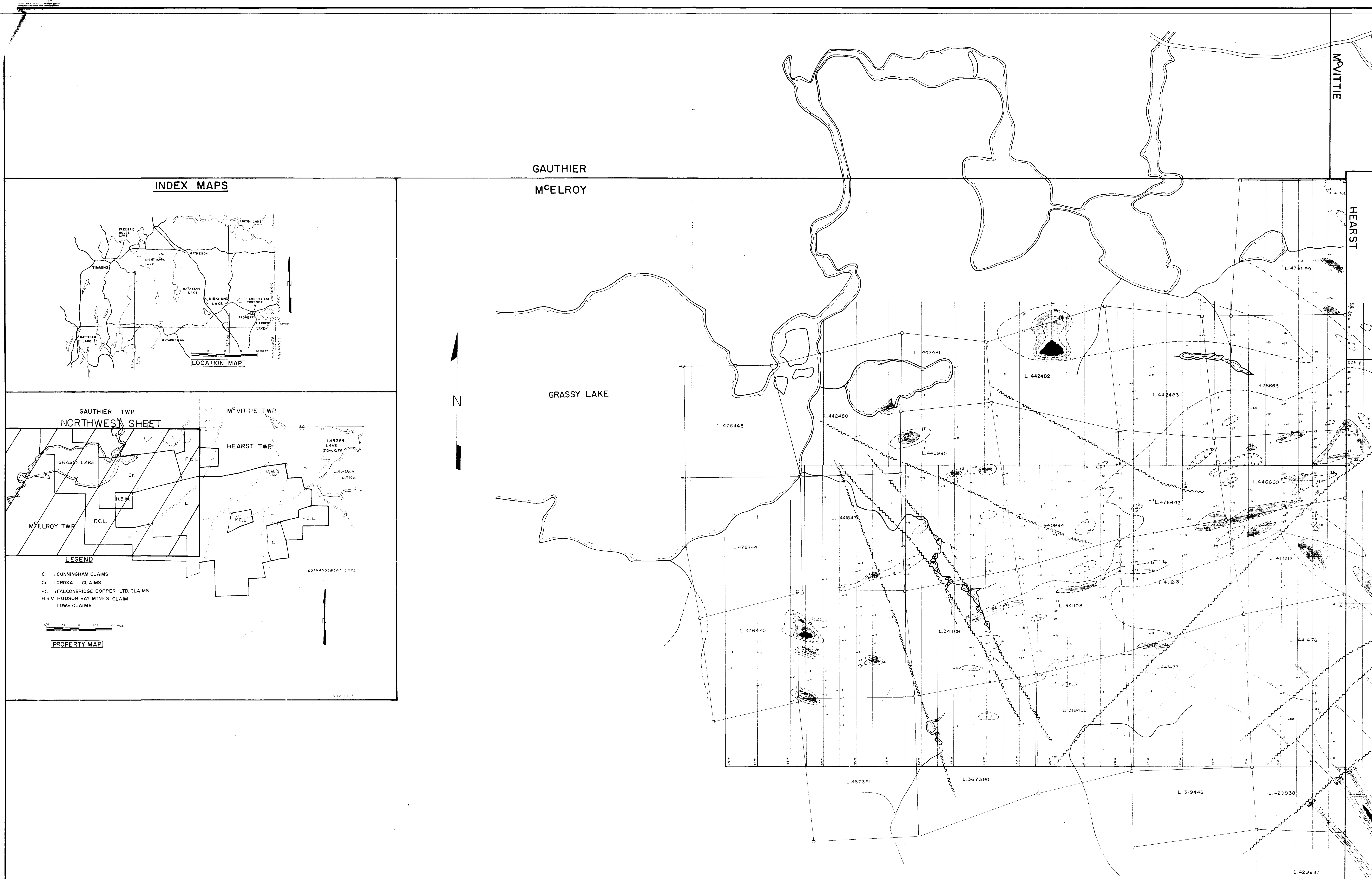
FALCONBRIDGE COPPER LTD.
LAKE DUFAULT DIVISION

Zn ROCK GEOCHEM
SOUTHEAST SHEET
p.p.m.

1" = 400'

2.2614

300



LEGEND

Element	Sample Nº	Min.	Max.	Arith Mean	Standard Dev.	Geom Mean	Dev.
LEAD(Pb)	600	2	268	17.4	26.4	12.14	2.1195

Contour intervals: Geom Mean, Geom Mean x Dev., Geom Mean x Dev. x Dev. etc.

LARDER LAKE PROJECT

FALCONBRIDGE COPPER LTD.

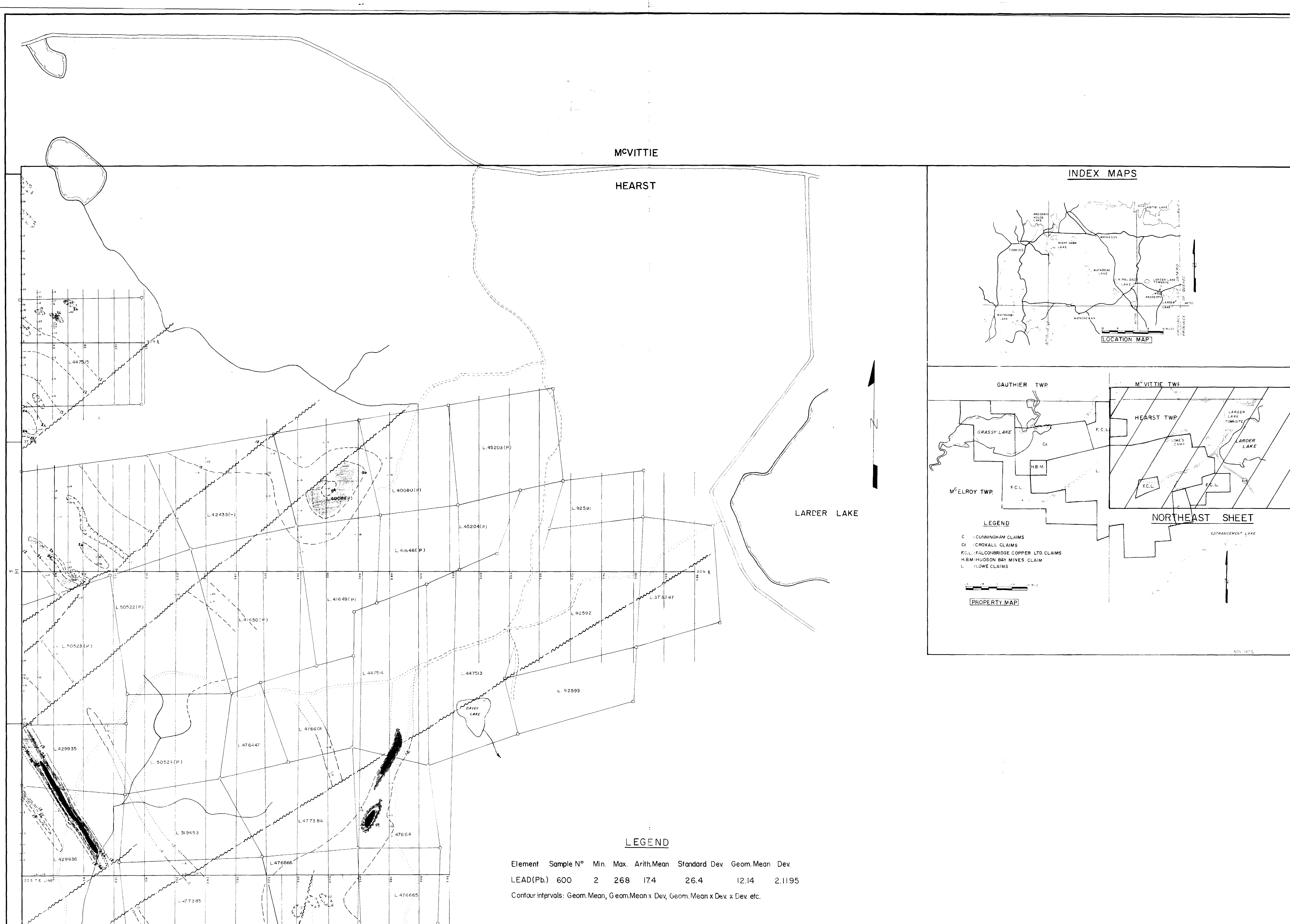
LAKE DUFAULT DIVISION

Pb ROCK GEOCHEM
NORTHWEST SHEET
ppm

1" = 400'

2.2614

310



LARDER LAKE PROJECT

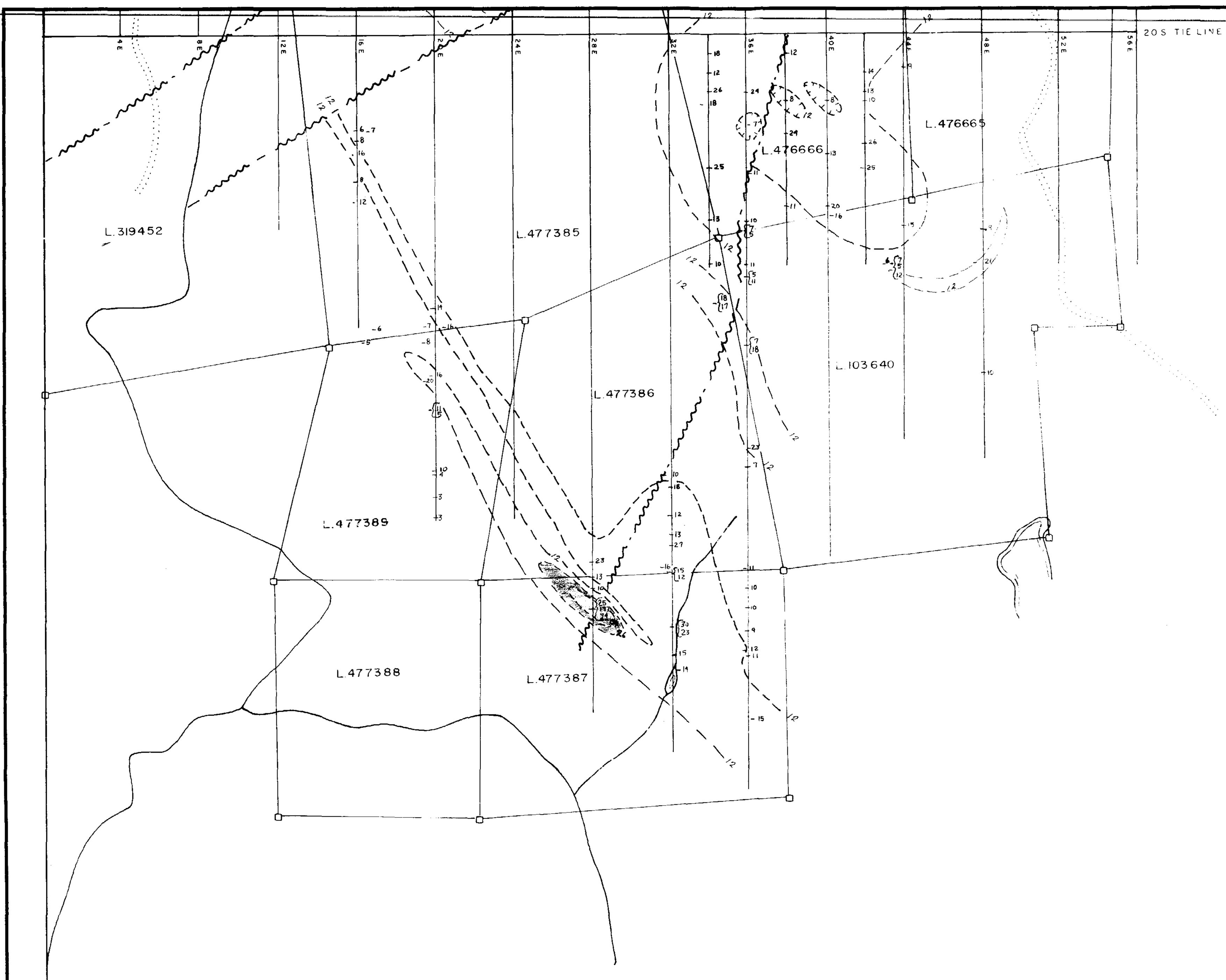
FALCONBRIDGE COPPER LTD.
LAKE DUFAULT DIVISION

Pb. ROCK GEOCHEM
NORTHEAST SHEET
p.p.m.

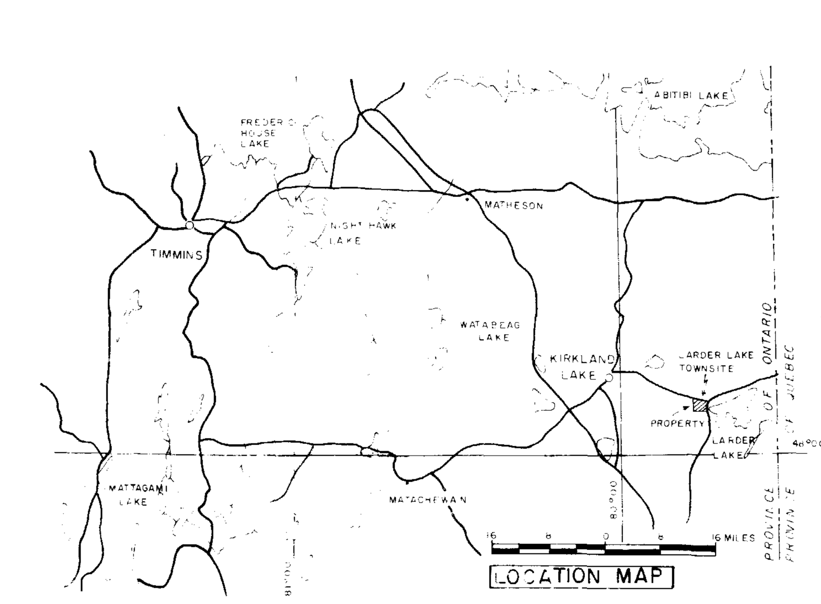
1" = 400'

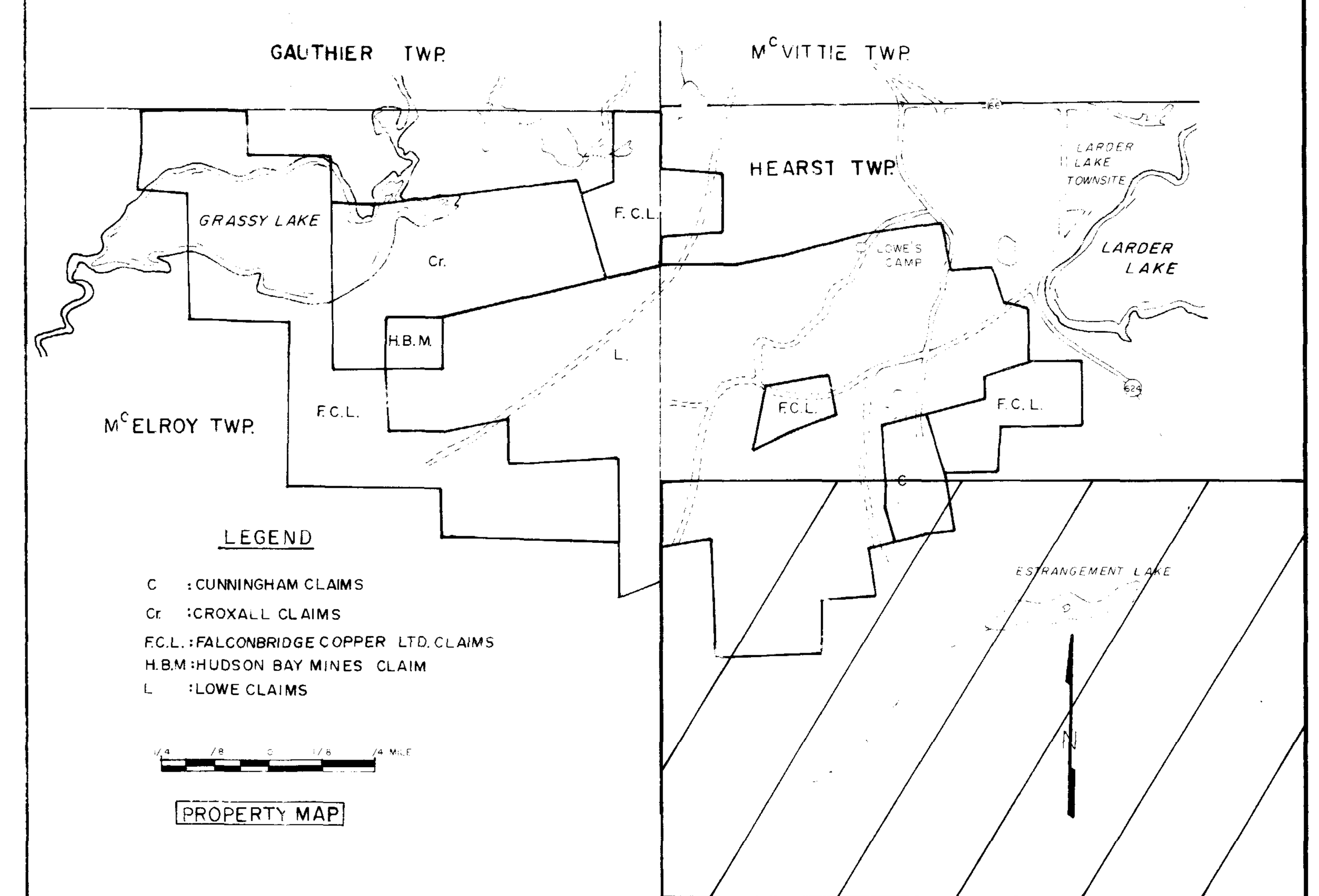
2.2614

320



INDEX MAPS





LEGEND

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Contour intervals: Geom.Mean, Geom.Mean x Dev, Geom.Mean x Dev x Dev. etc.

LARDER LAKE PROJECT

FALCONBRIDGE COPPER LTD.
LAKE DUFAULT DIVISION

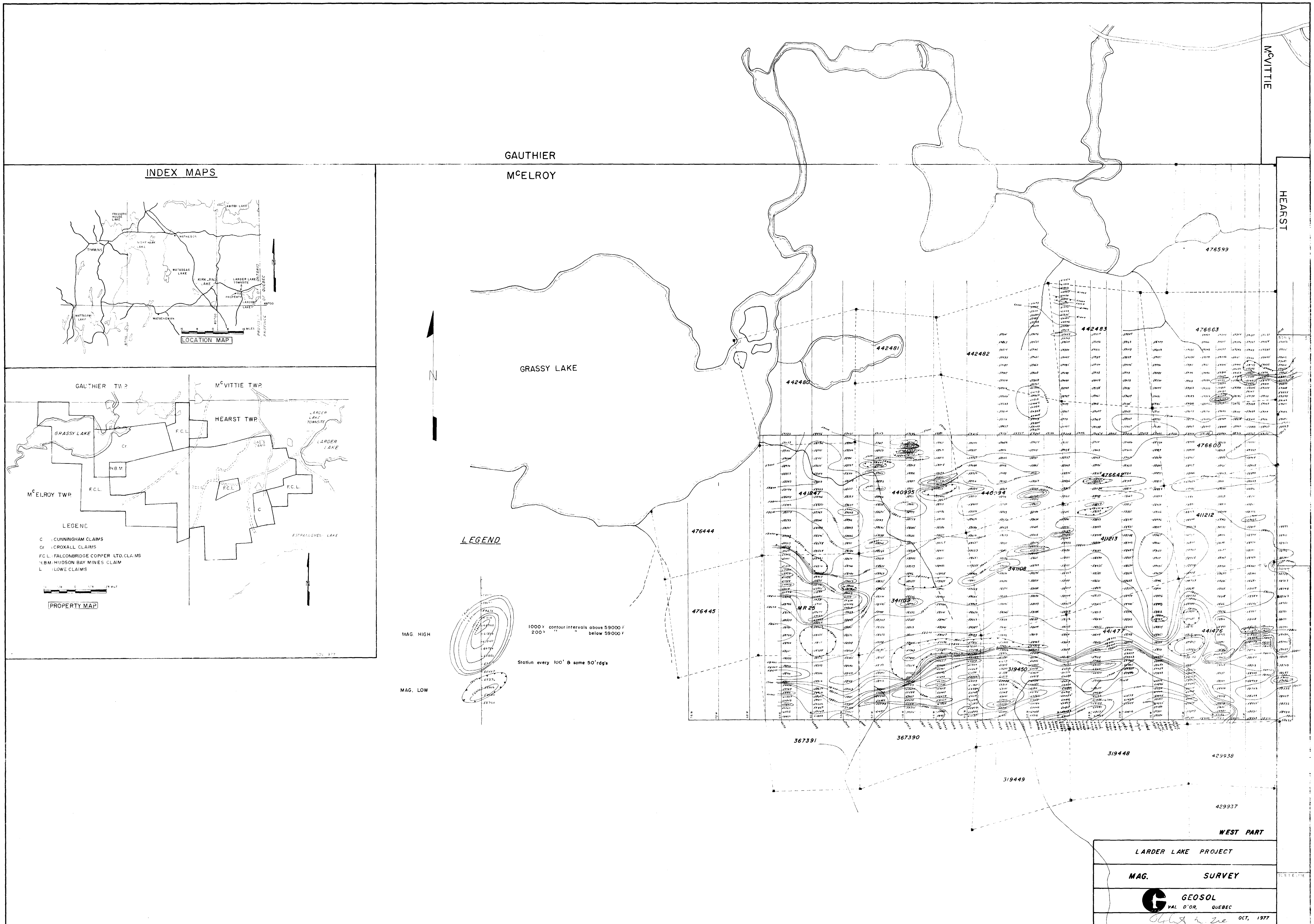
Pb ROCK GEOCHEM
SOUTHEAST SHEET
ppm

Dave Coutts

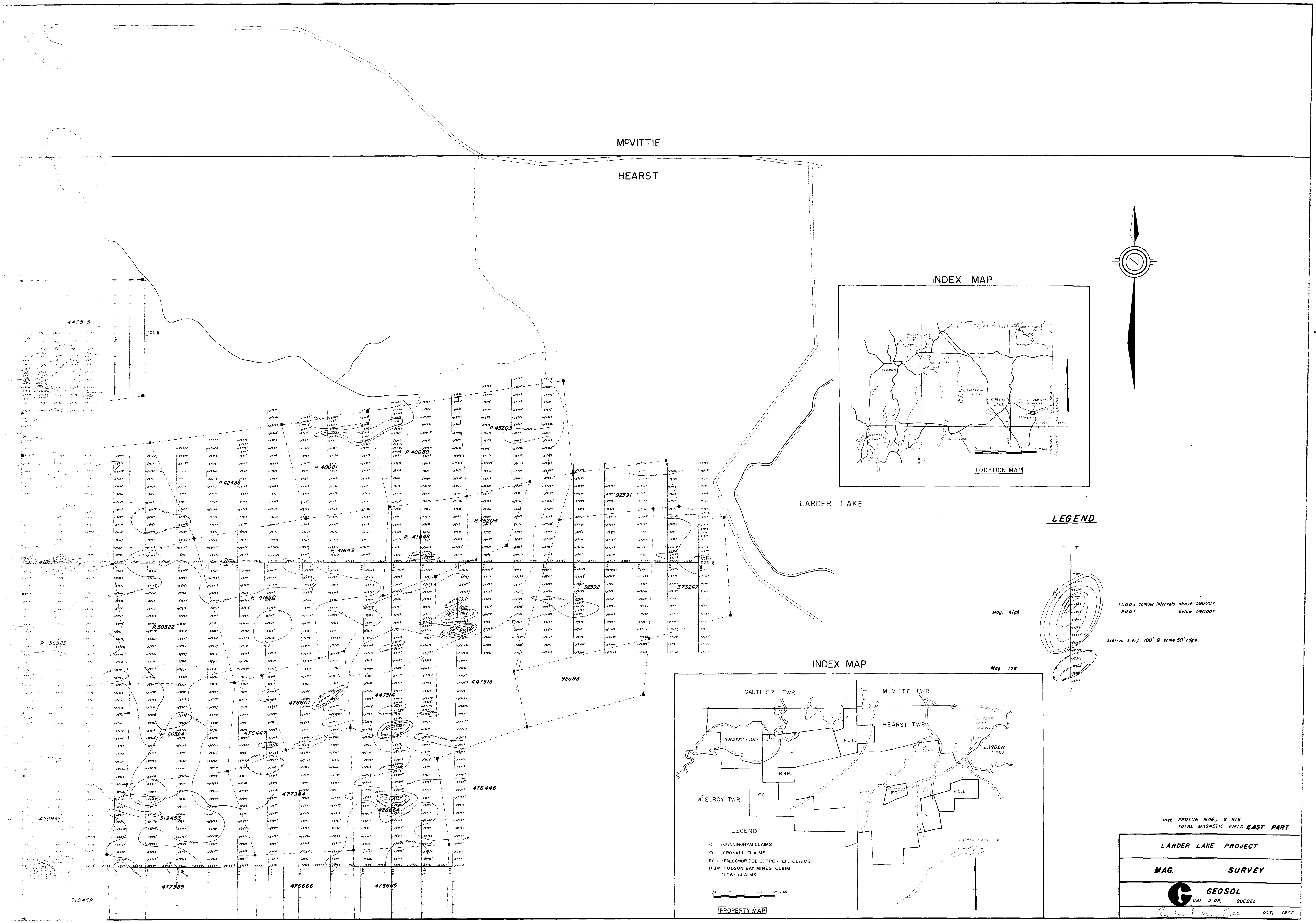
1" = 400'

330

2.2614



FALCONBRIDGE COPPER LTD.
LAKE DUFAULT DIVISION

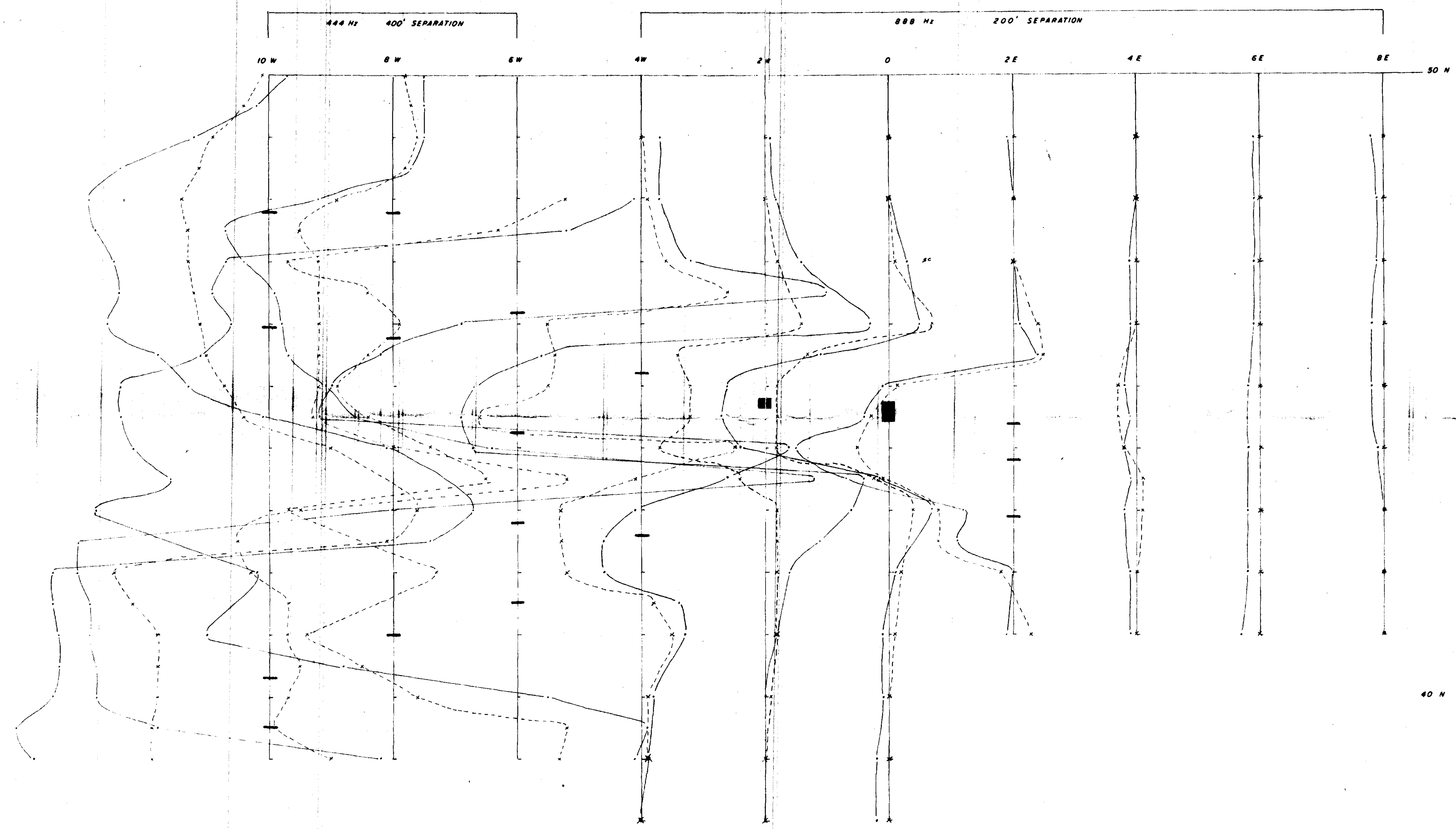


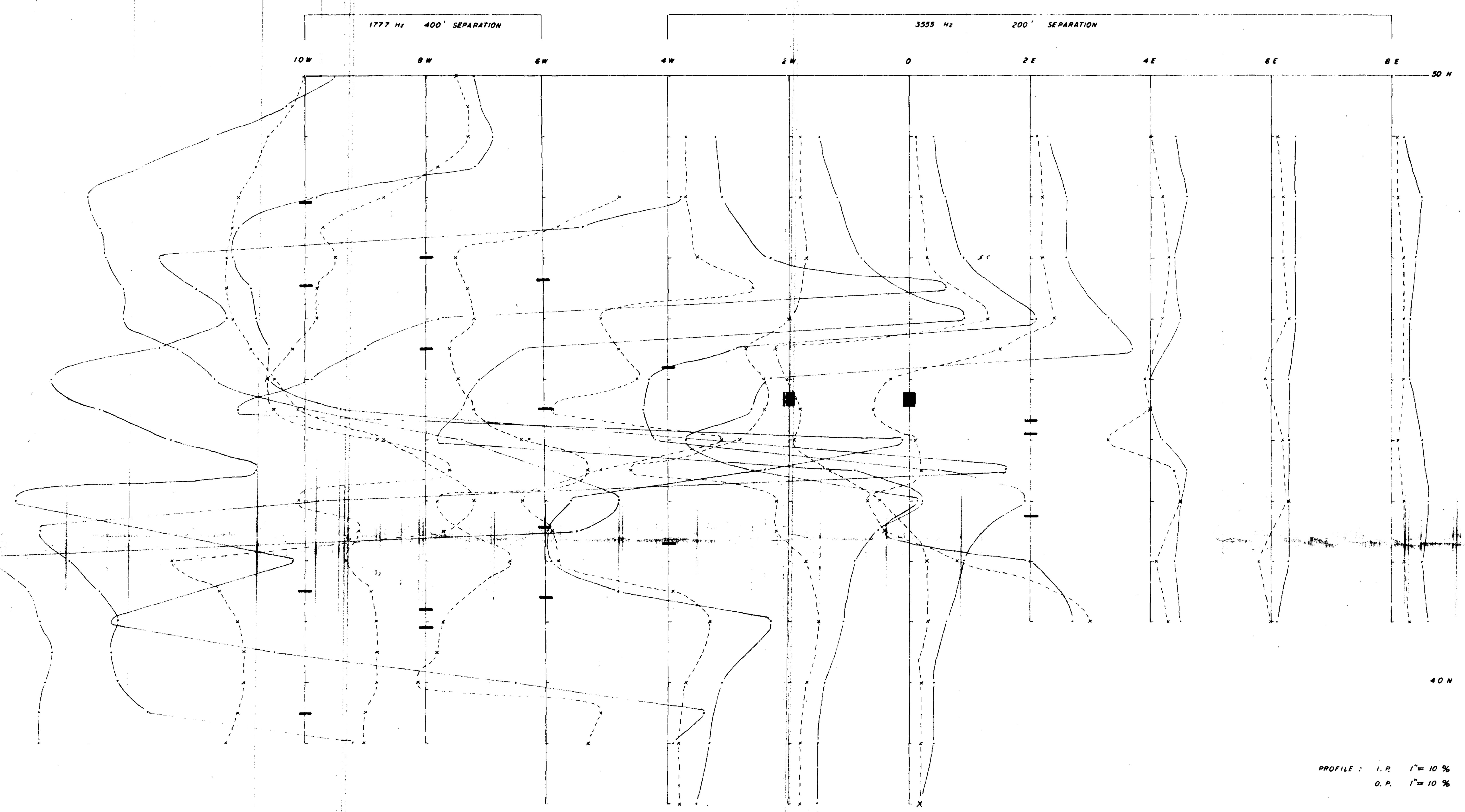
FALCONBRIDGE COPPER LTD.
LAKE DUFAULT DIVISION

2.2614

1" = 400'

350





PROFILE : I.P. 1" = 10 %
O.P. 1" = 10 %

2.2614

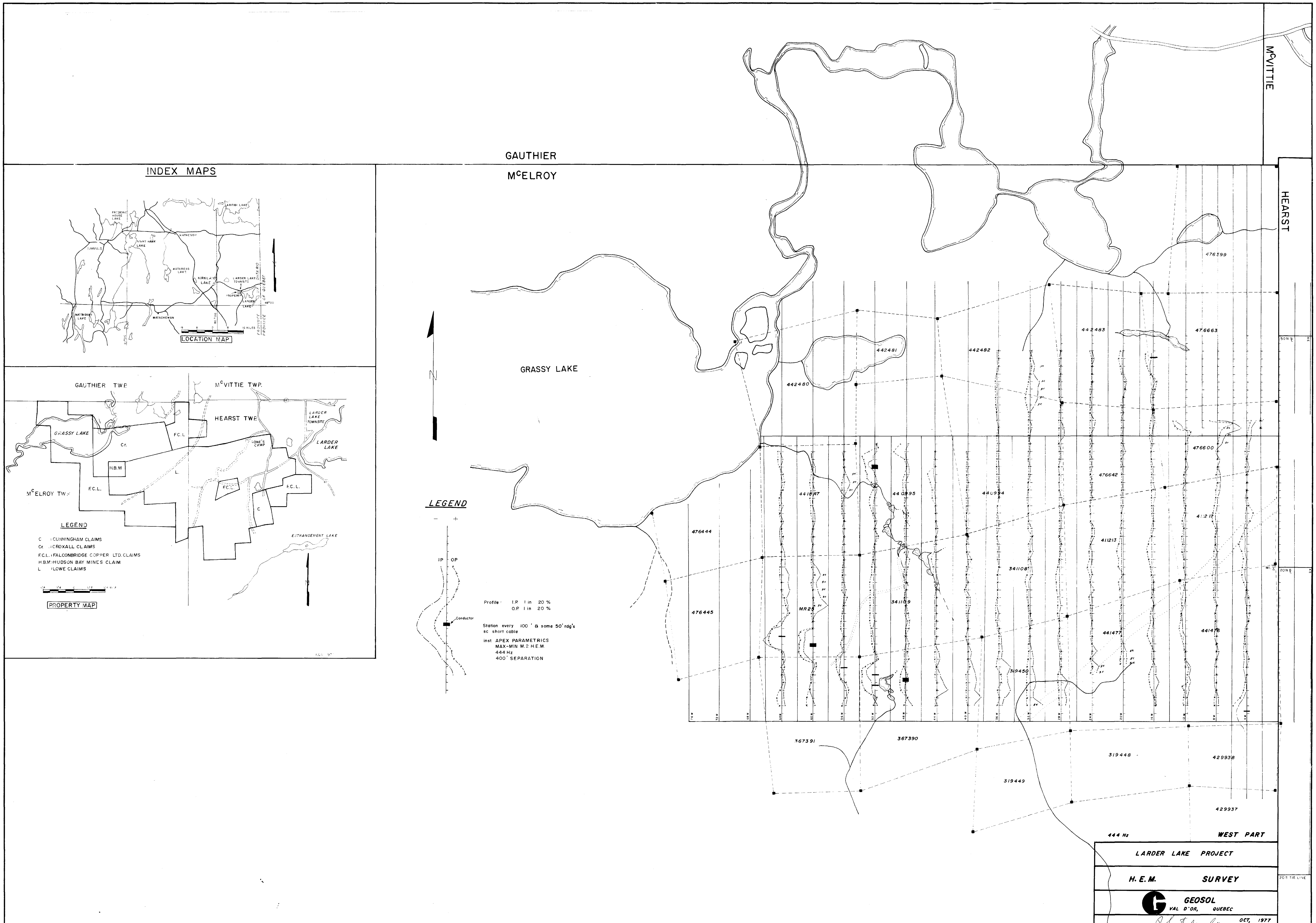
MAP "A"

FALCONBRIDGE COPPER LTD.
LARDER LAKE PROJECT

H. E. M. SURVEY

GEOSOL
VAL D'OR, QUEBEC

SCALE : 1" = 100' OCT, 1977



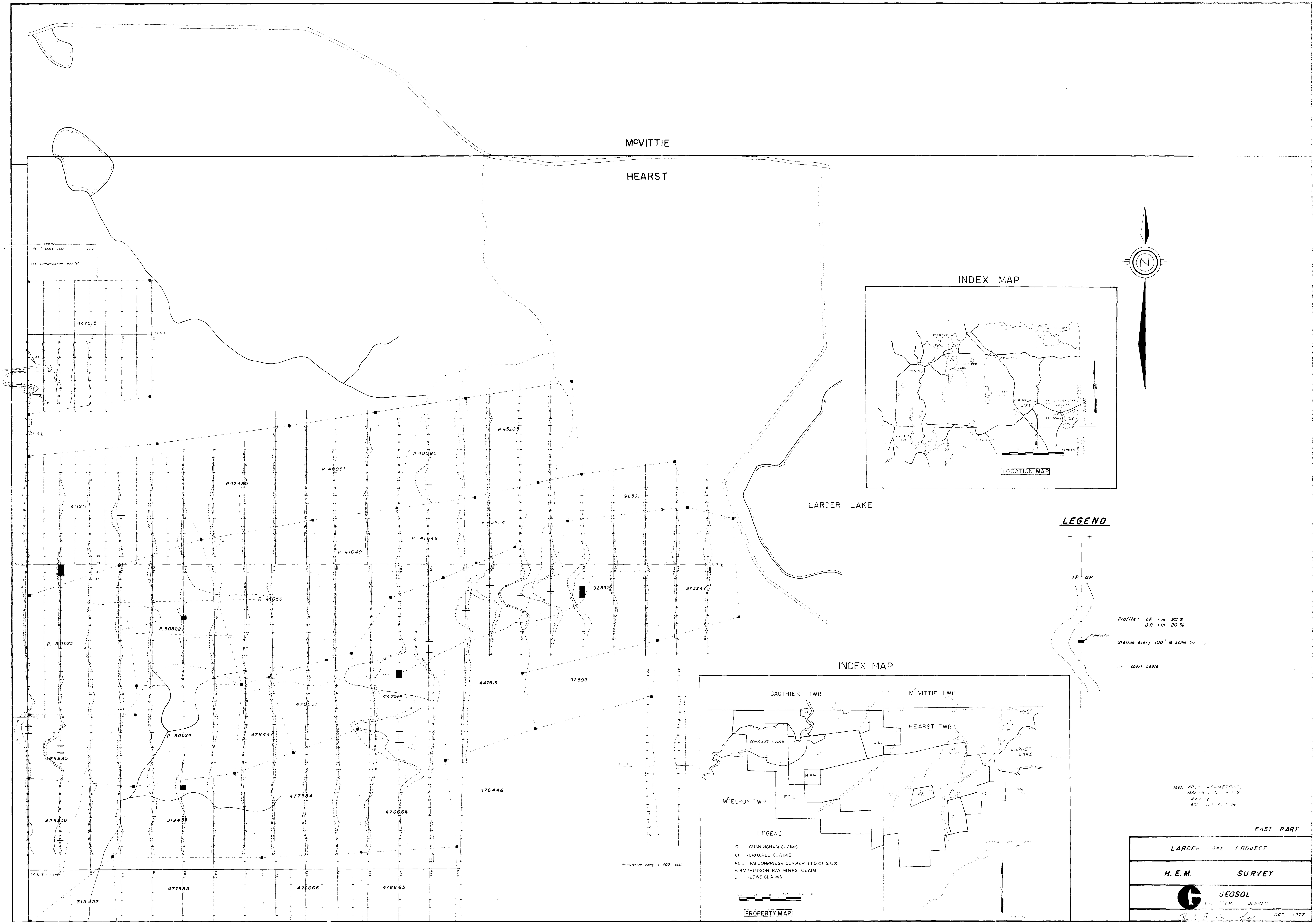
FALCONBRIDGE COPPER LTD.

LAKE DUFAULT DIVISION

2.2614

1" = 400'

370



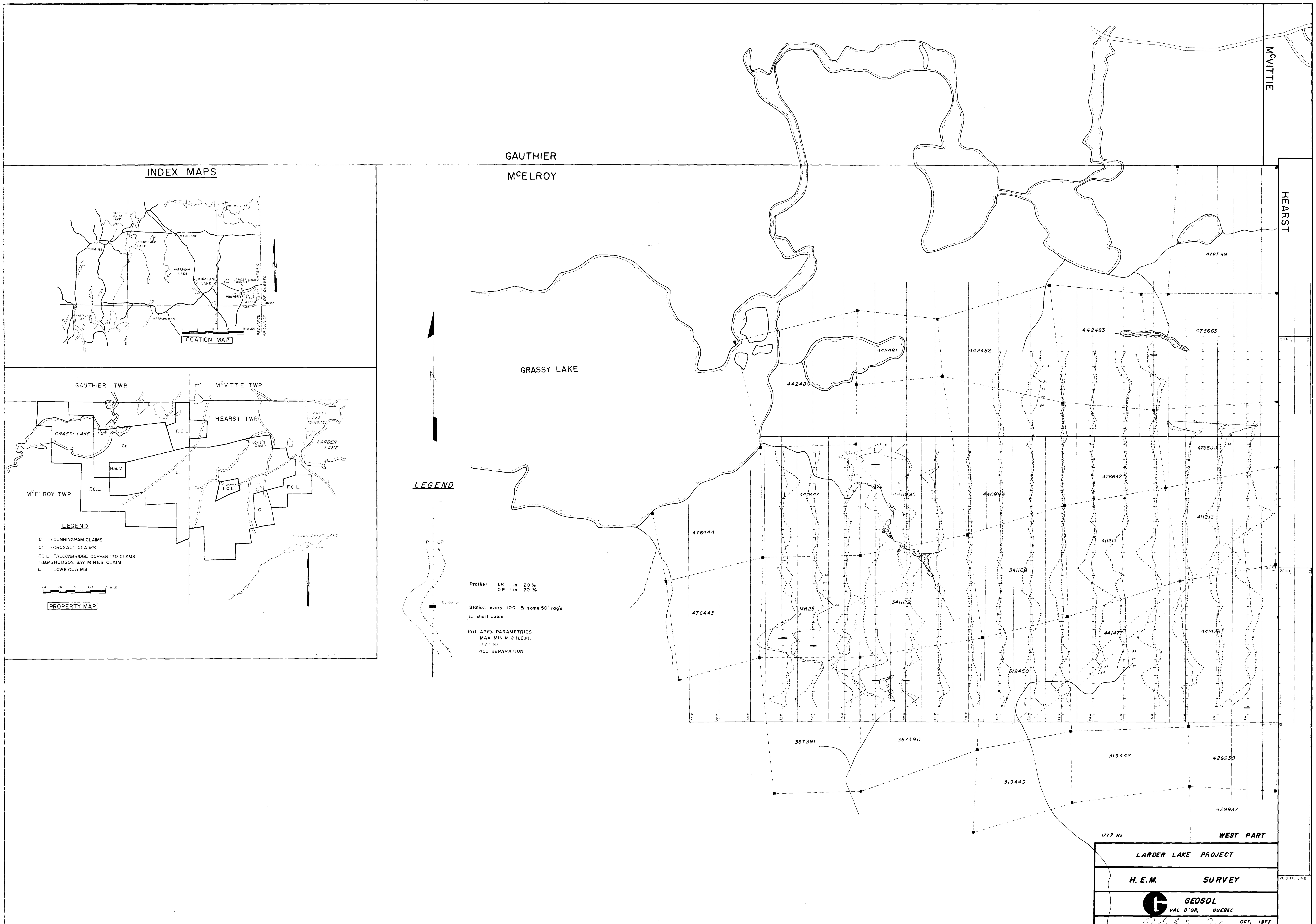
FALCONBRIDGE COPPER LTD.

LAKE DUFAULT DIVISION

2.2614

1" = 400'

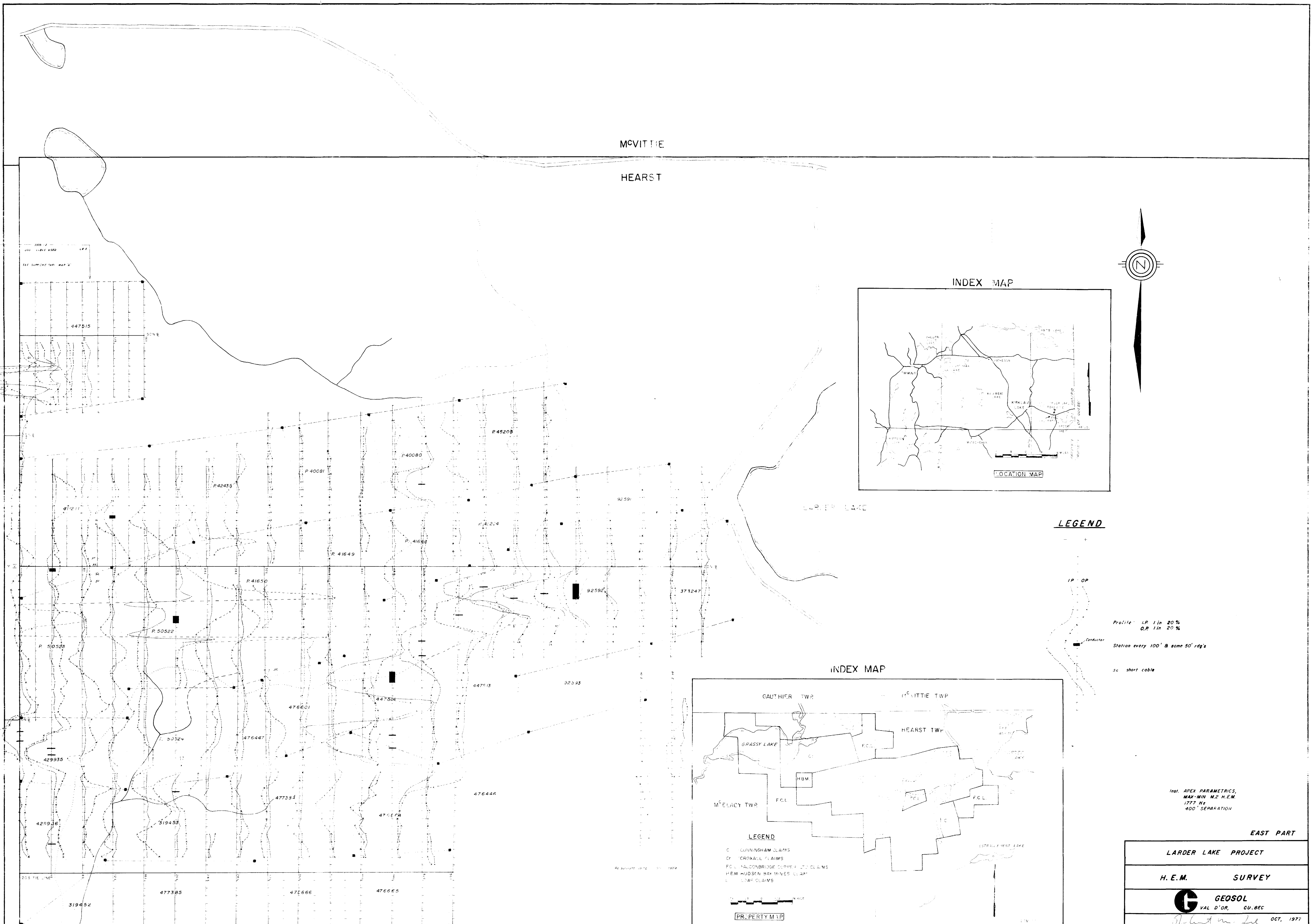
380



FALCONBRIDGE COPPER LTD.
LAKE DUFAULT DIVISION

1" = 400'

390



FALCONBRIDGE COPPER LTD.
LAKE DUFAULT DIVISION

2.2614

1" = 400'

410