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AUG 25 1981

MINING LANDS SECTION



32D045W0204 2.4089 MCELROY

REPORT
GEOPHYSICAL SURVEYS
VLF - EM AND MAXMIN II
BASTARACHE - CASTONGUAY CLAIMS
McELROY TOWNSHIP
LARDER LAKE MINING DIVISION

INTRODUCTION:

A horizontal loop electromagnetic survey and a ground VLF electro-magnetic survey were carried out on a property owned by Corporation Falconbridge Copper.

PROPERTY STATUS:

This property consists of the following 15 claims, all of which are registered in the name of Corporation Falconbridge Copper, P. O. Box 40, Commerce Court West, Toronto, Ontario M5L 1B4, holder of Mining Licence T 556.

LIST OF CLAIMS

LL 550220	LL 550227
550221	550228
550222	524172
550223	524173
550224	524174
550225	524175
550226	524176
	524177

LOCATION AND ACCESS:

The claims are located in the Larder Lake Mining Division, south of the Adams Mine near Kirkland Lake. Access is by two-wheel drive vehicle via the Adams Mine tailings road.

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LINECUTTING:

Twelve miles of line were cut, chained and picketed between October, 1980 and December 1980 by G. Bastarache.

GEOPHYSICAL SURVEYS:

The VLF electromagnetic survey was carried out between October 1980 and December 1980 by G. Bastarache. The instrument used was a Phoenix Geophysics, VLF II. A total of 4.7 miles were surveyed using Cutler, Maine (NAA) as the transmitter station. The readings were taken from 25 to 100 feet apart.

The horizontal loop electromagnetic survey was carried out between March 1, 1981 and March 31, 1981 by D. Laudrum and R. Harwood of W. G. Wahl Ltd. A total of 7.5 miles was surveyed using an Apex Parametrics MaxMin II, operating on frequencies of 1777 Hz and 444 Hz with a coil separation of 250 feet. The readings were taken at 100 foot intervals on lines spaced 400 feet apart.

DISCUSSION OF RESULTS:

The area surveyed is covered in large part by the Adams Mine tailings pond. These tailings are made up of fine clays and sand with variable iron (magnetite) content. The tailings road which passes through the property is made of crushed rock from the mine, again with variable iron content. A slurry pipeline follows the road. These factors give rise to many spurious anomalies which in turn make recognition of valid bedrock anomalies extremely difficult.

All of the conductors detected by the horizontal loop (MaxMin II) survey are thought to be caused by conductive overburden. Factors supporting this interpretation are 1.) Extremely low inphase/quadrature ratios, 2.) presence of the conductors along the edge of the tailings. 3.) conductive response on the high frequency (1777 Hz only).

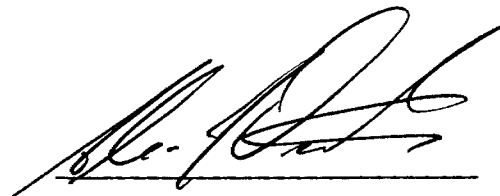
All of the conductors detected by the VLF electromagnetic survey, except one, are thought to be caused by either conductive overburden or culture (roads etc.). This can be seen by the way the conductor axes follow the road, the powerline and the edge of the tailings pond.

Anomaly "C" (VLF) is probably a bedrock conductor. Its length and strength suggest a graphitic horizon in the Temiskaming sediments.

CONCLUSIONS:

Only one bedrock conductor was detected in these surveys. It is probably due to a graphitic horizon in sediments. The presence of tailings, road and powerlines would mask most legitimate responses in the area. It is unlikely that any frequency-domain type geophysical survey would be able to see through to bedrock.

JUNE 30th, 1981
THUNDER BAY, ONTARIO.

A handwritten signature in black ink, appearing to read 'Alex J. Davidson', written over a horizontal line.

ALEX J. DAVIDSON

VLF - EM ANOMALIES

<u>ANOMALY</u>	<u>LINES</u>	<u>DESCRIPTION - INTERPRETATION</u>
"A"	28 NW - 20 NW	Road
"B"	0 - 10 E	Road
"C"	12 W - 10 E	Strong, graphitic horizon in sediments.
"D"	14 W - 8 E	Powerline
"E"	6 W - 0	Moderate, probably conductive overburden

MAXMIN II ANOMALIES

<u>ANOMALY</u>	<u>LINES</u>	<u>DESCRIPTION AND INTERPRETATION</u>
"A"	0 - 4 SE	On 1777 Hz only, overburden
"B"	8 SE - 12 SE	On 1777 Hz only, overburden
"C"	8 SE - 16 SE	On 1777 Hz only, tailings pond
"D"	4 SE - 28 SE	On 1777 Hz only, tailings pond
"E"	8 NW	Strange shape, possible instrument error.
"F"	12 SE - 32 SE	On 1777 Hz only, tailings pond
"G"	4 SE - 24 SE	On 1777 Hz only, tailings pond
"H"	4 NW - 0	Weak on 1777 Hz only.
"I"	4 SE - 16 SE	On 1777 Hz only, edge of tailings pond.

GEOPHYSICAL TECHNICAL DATA

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

Number of Stations APPROX. 600 Number of Readings VLF -600, MAXMIN II 1,200
Station interval 100', 50' 25' Line spacing 400 FEET
Profile scale 1" = 40%
Contour interval NA

MAGNETIC

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

ELECTROMAGNETIC

Instrument APEXX PARAMETIRCS MAXMIN II; PHOENIX VLF II
Coil configuration HORIZONTAL
Coil separation 250 FEET
Accuracy +/- 2% ; +/- 2%
Method: VLF Fixed transmitter [X] Shoot back [X] In line [] Parallel line
Frequency 1777 Hz, 444 Hz CUTLER, MAINE
Parameters measured IN PHASE QUADRATURE DIP, FIELD STRENGTH

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

GAUTHIER Tp. M-350

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 MUSKES —
- MINES —
- CANCELLED —
- PATENTED FOR SURFACE RIGHTS ONLY —

NOTES.

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

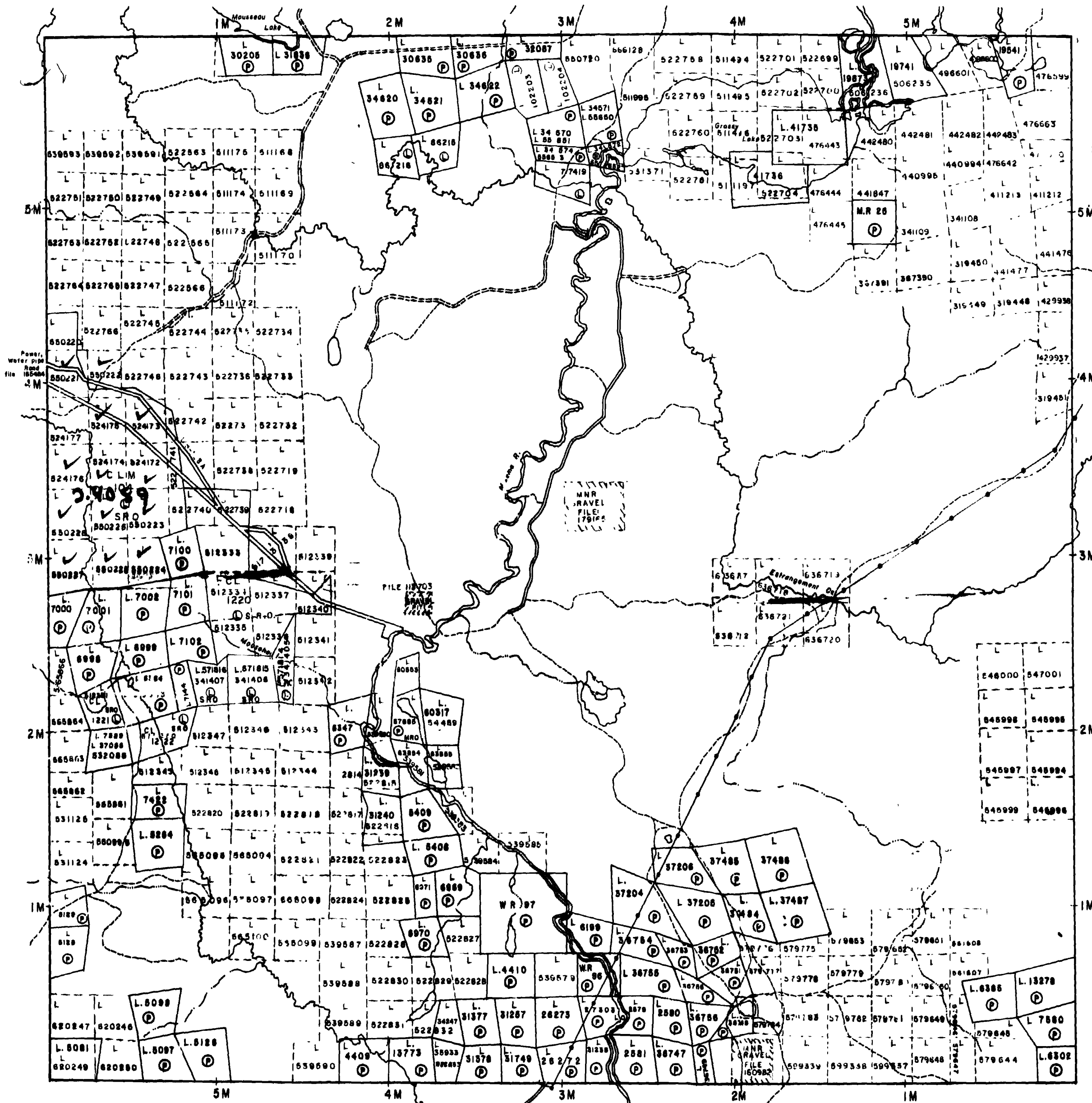
Areas withdrawn from staking under Section 43 of the Mining Act.

File	Date	Disposition

DATE OF ISSUE
DEC 20 1902
Ministry of Natural Resources
TORONTO

PLAN NO. M-366

MINISTRY OF NATURAL RESOURCES
SURVEYS BRANCH



ROSTON Tp. M-332

HEARST Tp. M-354

CATHARINE Tp. M-336



3204896204 2.4889 MCL 507

200

Bastarache - Castonguay Option

Maxmin II Horizontal Loop Survey
Frequency 444 Hz.

2.4089



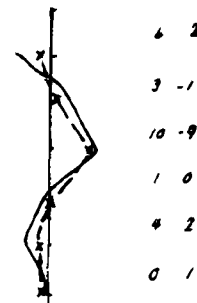
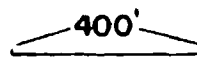
DATE MAY 1981
WYS REF 32-04

DRAWN Jenny I. Lee
DATA [Signature]

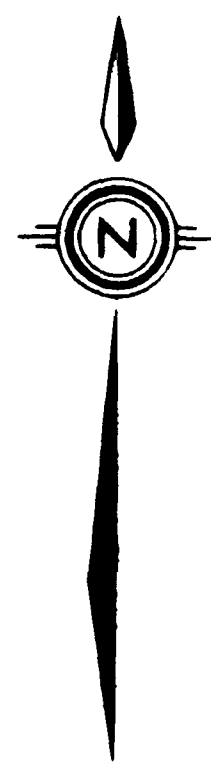
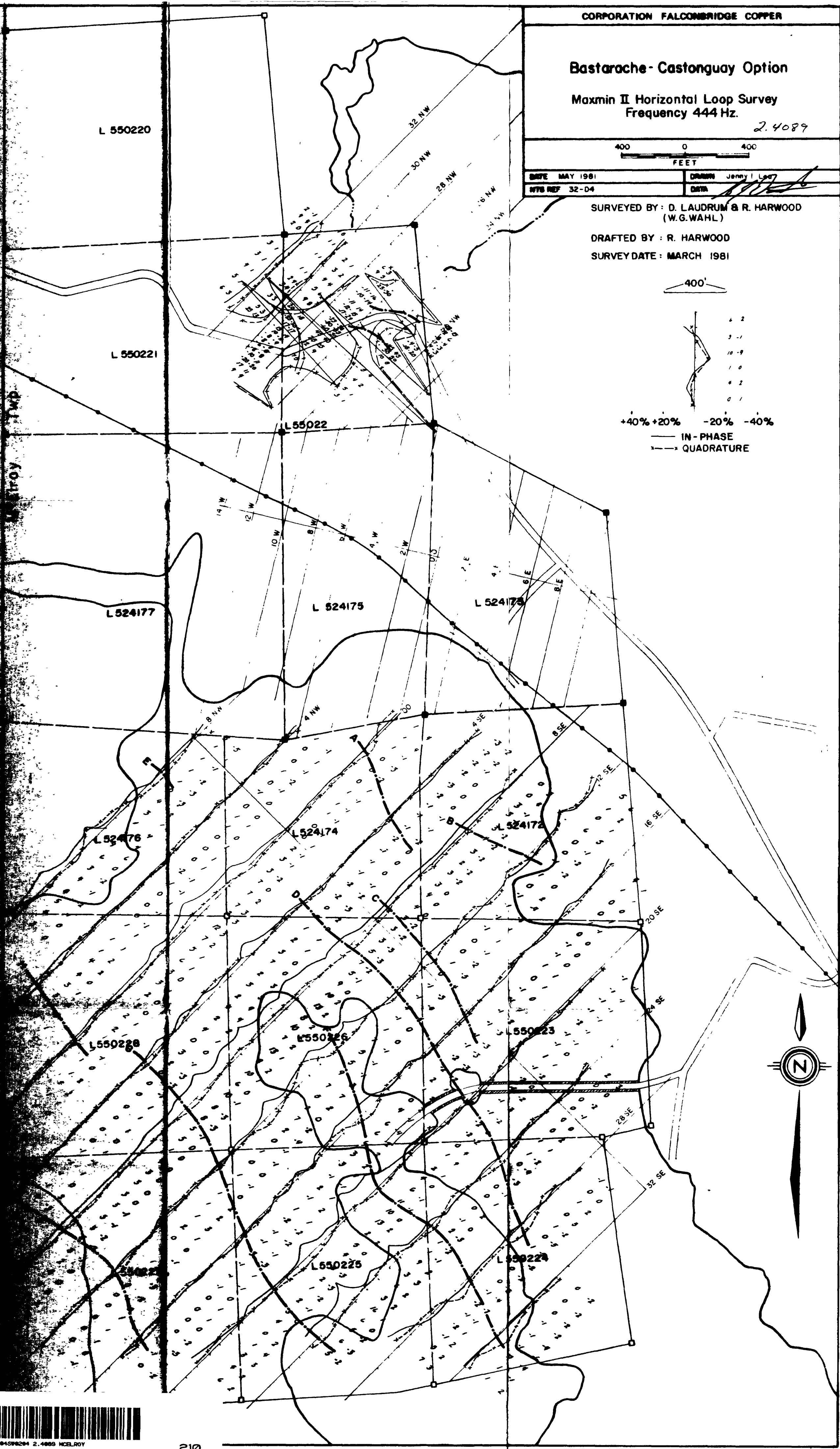
SURVEYED BY : D. LAUDRUM & R. HARWOOD
(W.G. WAHL)

DRAFTED BY : R. HARWOOD

SURVEY DATE : MARCH 1981



+40% +20% -20% -40%
— IN-PHASE
- - - QUADRATURE



Bastarache - Castonguay Option

Maxmin II Horizontal Loop Survey
Frequency 1777 Hz.



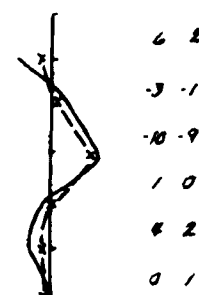
DATE MA. 98
NTS REF 32-04

DRAWN Jenny J. [Signature]
DATA [Signature]

SURVEYED BY: D. LAUDRUM & R. HARWOOD
(W.G. WAHL)

DRAFTED BY: D. LAUDRUM
SURVEY DATE: MARCH 1981

400'



+40% +20% -20% -40%
— IN-PHASE
- - - OUT-PHASE

Boston Twp.
McElroy Twp.

L 550220

L 550221

L 55022

L 524177

L 524175

L 524173

L 524176

L 524174

L 524172

L 550228

L 550226

L 550223

L 550227

L 550225

L 550224



3200459204 2.4089 MCELROY



Bastarache - Castonguay Option

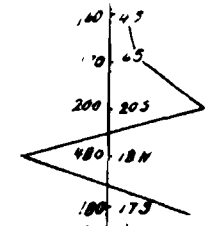
V.L.F. (Phoenix) Survey
Cutler Maine

2.4089



DATE	MA '98	DRAWN	Jenny I. Leo
NTS REF	32-04	DATA	<i>[Signature]</i>

400'



N 40% 20% 20% 40% S
field dip
strength angle

L 550220

L 550221

L 550222

L 524177

L 524176

L 524174

L 524172

L 550228

L 550226

L 550223

L 550227

L 550225

L 550224

Salmon Twp.
McEnroy

