



41P15NE8296 63.6081 CAIRO

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MINISTRY OF NORTHERN  
DEVELOPMENT AND MINES

MAR 27 1991

A REPORT

on

**INCENTIVES OFFICE**

THE CAIRO PROJECT

CAIRO TOWNSHIP

MATACHEWAN, ONTARIO

OMIP GRANT # OM 90-004

for

Biralger Resources Ltd.

by

R.A. Bernatchez, P.Eng.,  
Consulting Geologist

March, 1991

OMIP 90-004



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## INTRODUCTION

Biralger Resources Ltd. carried out an exploration program on its Cairo Property located five (5) miles east of Matachewan, Ontario. The program consisted of surface prospecting, geological mapping, geophysical surveying and diamond drilling. A total expenditure of \$ 57,429.72 was incurred for this program.

The geology in the Matachewan area forms part of the western extension of the Kirkland Lake - Larder Lake suite of trachytic volcanic rocks and Timiskaming sedimentary rocks. They have hosted most of the gold deposits of that area. The gold deposits are hosted within major deformation zones in the Kirkland Lake and Larder Lake area. These deformation zones have now been identified in Holmes, Flavelle and Powell Townships.

Biralger Resources Ltd. has identified on their Property, three of these four major deformation zones, in Holmes and Flavelle Townships. All are known to be auriferous.

The exploration program has identified several other subsidiary fracture zones hosting gold and/or copper mineralization with minor silver values. Biralger has been successful in intersecting a major gold-copper-silver mineralized, fractured, syenite porphyry.

## LOCATION ACCESS AND GRID

The Property is located five (8) kilometres east of Matachewan and along paved Highway 66 east to Kirkland Lake Ontario. Kenogami, on Hwy 11 is located approximately thirty-two kilometres east of the Property along this highway. The majority of the claims are located along the eastern boundary of Cairo Township. The remaining claims are located in Flavelle and Alma Townships to the north and east, respectively, from Cairo Township.

Paved Highway 66 to Kirkland Lake crosses the southeastern corner of the Property on claims 859205, 859204, 859240, 1132183, and 1132182. The Property is well accessed by logging roads.

A total of 15.975 km of grid lines and one base line were cut on the Property in 1990-91. The base line was established at a bearing of N60°E, 35 metres north of No. 2 post on claim 1049547. The grid and picket lines were established at 200 metre intervals along the base line, except for lines 3+00E and line 3+00W. Stations were established at 25 metre intervals along the base line and picket lines. The grid covered all or portions of eighteen (18) claims.

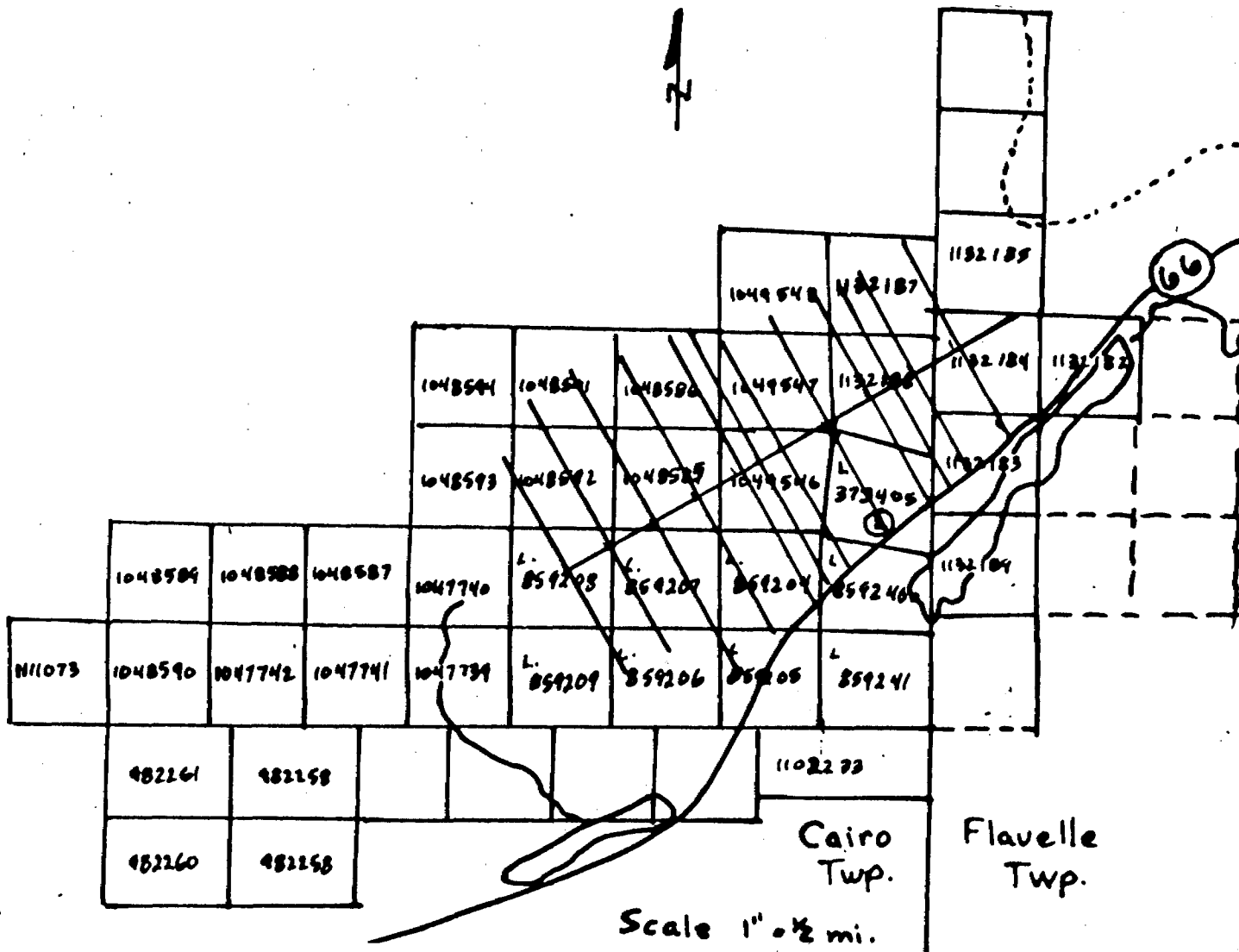
## PROPERTY DESCRIPTION

The Cairo claim group consists of thirty-eight (38) claims located in Cairo and Flavelle Townships eight km east of Matachewan, Ontario. All claims are located in the Larder Lake Mining Division. The claims are numbered:

L 859204	to	-09	inclusive	6
L 859240	and	-41		2
L 982258	to	-61	inclusive	4
L 1047739	to	-742	inclusive	4
L 1048585	to	-594	inclusive	10
L 1049546	to	-548	inclusive	3
L 1102233				1
L 1111073				1
L 1132182	to	-185	inclusive	4
L 1132187	to	-189	inclusive	<u>3</u>
Total				38

Biralger's exploratory work was carried out on the following claims numbered:

L 859204	to	-09,	L 859240
L 1048585,	-586,	-591,	-592
L 1049546	to	-548,	L 1132183 to -185
L 1132187,	L 1132188		



## MAGNETIC SURVEY

The magnetic survey was carried out over the cut grid with a Geometrics Portable proton magnetometer mode G 816. This instrument has an accuracy of +/- 1 gamma and a range of 20,000 to 90,000 gammas. The scale was set at 59,000 gamma scale.

Magnetic readings were taken at every 12.5 metre intervals along the base and picket lines. A total of 15.51 km of readings were taken for a total of 1240 readings. These were plotted on a map scale of 1:2500 and contoured at 100, 250 and 1000 gamma contour intervals.

The 59,000 gamma contour was selected as the datum contour. All readings below this level were considered as magnetic lows.

The base line readings at the intersection of the picket lines were selected as base station reading and the picket line readings were corrected for diurnal variation using the closed loop method of correction. Closed loops were established at every one to one and a half hour intervals with the base line. No base recorder was used during the survey. The accuracy of this method was within +/- 5 gammas.

## MAGNETIC SURVEY RESULTS

The readings were plotted on a map at a scale of 1:2500 and the results showed several areas of magnetic highs and lows. The contoured map shows a general N60°E lineal trend conformable with the local and regional geology and structural trend.

Two distinct areas of magnetic highs were defined in the survey. The first area is located in the southeast portion of the surveyed area near the highway. These magnetic highs correspond with sequences of mafic to intermediate volcanic and sedimentary

rocks containing variable concentrations of magnetite.

A steep gradient is observed at the northwestern edge of this magnetic high which defines the contact between the volcanic sedimentary rock and the Cairo syenite porphyry stock.

A second area of magnetic high response was detected at the northwestern end of the surveyed area. Again, this magnetic high coincided with mafic volcanic rocks. These rocks are not shown on Lovell's geology map No. 2110 (1963). The volcanic rocks have been exposed in this area as a result of recent logging activity, and they have been noted by the author.

The area located north of the base line from line 8+00W to 6+00E is defined as a relatively flat magnetic response with N60°E lineation to the contour lines. Part of the survey in this area from line 2+00W to 12+00W defined a prominent N60°E magnetic low between 4+75N and 6+00N. This magnetic trend corresponds with the McChesney lineament. A moderate thin magnetic high is also located parallel and within this magnetic low. Hole C-91-3 has intersected a mafic dyke which may correspond with this moderate magnetic high anomaly.

The area south of the base line from line 3+00E to 10+00W is also defined by a strong N60° -70° E lineation of rapid repeated successions of magnetic highs and lows. Some of these magnetic lows coincide with known zones of copper-gold mineralization within fractured and altered syenite porphyry and hornblende syenite. These zones contain variable quantities of pyrite, chalcopyrite and quartz veining with minor fluorite, galena and tourmaline.

The mag survey south of the base line from line 10+00W to 12+00W has defined two broad magnetic anomalies. The northerly one is a moderate magnetic anomaly (59,500 gammas) on line 12+00W from 0+00 to 2+50S. The second is a stronger magnetic anomaly defined



on line 10+00 W from 2+00S to 4+00S. Insufficient geological information is available at this time to interpret these anomalies.

#### ELECTROMAGNETIC SURVEY

The survey was carried out using a Geonics EM 16 VLF electromagnetic unit. The survey was done using the Seattle, Washington transmitting station with a frequency of 21.4 kHz. The readings were taken at every 25 metres facing north. In-phase and quadrature readings were taken at every 25 metre station. The results of the readings were plotted on a map at a scale of 1:2500. The survey results were plotted on profile form and are shown on Map B.

A total of 24 conductors were detected in the surveyed area. All of the conductors have a general N40° to 60° E trend. The conductivity varies considerably from area to area.

Conductors with defined crossovers have been defined by a solid dash-dotted line whereas the weak conductors have been defined with a dash-open circle line. The assumed extensions and continuity of some of the conductors have been defined by a short dash line.

Both, the in-phase and quadrature readings have been plotted in profile at a scale of 1" = 40°.

#### EM-VLF SURVEY RESULTS

Numerous conductive zones have been defined with the EM-16 survey unit. They are identified using capital letters as A-A' to Y-Y'. Some weak conductors shown on the map have not been identified, based on their questionable cause.

Several conductors coincide with known zones of mineralization such as conductors A-A', B-B', E-E', F-F', N-N', T-T'. Conductors A-A' and E-E' were intersected in holes C-91-1 and C-91-2 respectively. Hole C-91-1 intersected over 152 metres (500 feet) of mineralized syenite porphyry containing disseminated pyrite and chalcopyrite mineralization. Hole C-91-2 intersected over 91 metres (300 feet) of mineralized syenite porphyry and mafic volcanic rocks. This hole contained consistent concentrations of copper and gold mineralization of open pit grade. Hole C-91-3 intersected 60 metres (200 feet) of mineralized syenite porphyry containing traces of gold and copper. The mineralized zone consisted of narrow veined quartz. The sulphides of pyrite and chalcopyrite were contained as dissemination in both, the syenite and quartz veining. Minor molybdenite, tourmaline and magnetite were also present in the mineralized rocks.

The geophysical survey has defined a major deformation zone of fractured mafic volcanic and syenitic rocks. This zone coincides with the south deformation zone in Flavelle Township, defined by Powell et al 1989. This zone strikes through the northeast corner of Middleton Lake 3.5 kilometres northeast, and strikes towards hole C-91-1 and C-91-2.

#### GEOLOGICAL MAPPING AND PROSPECTING

Several days of prospecting were carried out on the Property during the summer and fall of 1990. Numerous old pits were examined and mapped. Many of the known mineralized showings are located near or within the anomalous trends defined by the magnetic and electromagnetic surveys. The showings are indicated on the magnetic and EM-VLF Maps A and B.

## LOCAL GEOLOGY

Recent prospecting and geological mapping has resulted in redefining the geological environment missed by previous mapping. New outcrops of volcanic rocks consisting of massive and pillowed flows and tuffs have been identified on the Property. A 400 metre sequence of mafic, pillowed and massive flows, tuffs and lapilli tuffs have been observed along the Cairo-Flavelle Township line on claim 1132183. A sequence of Timiskaming sedimentary conglomerates is located at the southern contact of the volcanic rock 15 to 30 metres north of Highway 66. Both rock types have been metasomatized by the intrusion of the Cairo Stock located nearby. These volcanic rocks have also been intruded by syenitic dykes. One such dyke was intersected in hole C-91-2. It returned 3.77 g gold per ton and 0.46% copper over 1.3 metres. Other porphyry units have been observed along the surveyed picket lines 2+00E to 6+00E on claim 1132103.

A second area of volcanic rocks has been located on the northwestern portion of the surveyed area. These volcanic rocks are well defined in the magnetic survey by the high magnetic response similar to that found on claim 1132183 near hole C-91-2.

Seven separate conductive zones have been defined within and east of these volcanic rocks in this area, suggesting potential gold bearing sulphide mineralization similar to that found at holes C-91-1 and C-91-2. Old trenches are located 200 metres northeast of the volcanic rocks. They contain pyrite and chalcopyrite in mineralized syenite porphyry. Chalcopyrite mineralization has also been noted near line 10+00W near 4+00N.

Other rock types in this previously unmapped area, such as quartz diorite, have been noted on line 4+00W at 1+35S.

The Cobalt Sediments are not as extensive as previously indicated on Map No.2078 (Lowell, 1963). They do not form very thick

sequences as observed 2 kilometers southeast of the Property in Flavelle and Cairo Townships. The thickest sequence of Cobalt Sediments seen on the Property is located 50 metres east of line 12+00W at 3+25S. Here, the sequence may have reached a thickness of 12-15 metres. On average, the Cobalt Sediments are about 1 to 5 metres thick elsewhere on the Property.

These rocks have been identified on Maps A and B with symbol C.S.

### STRUCTURE

The geophysical surveys have defined several major and minor shear zones not previously known. To date, ten deformation zones have been defined which coincide with geophysical anomalies.

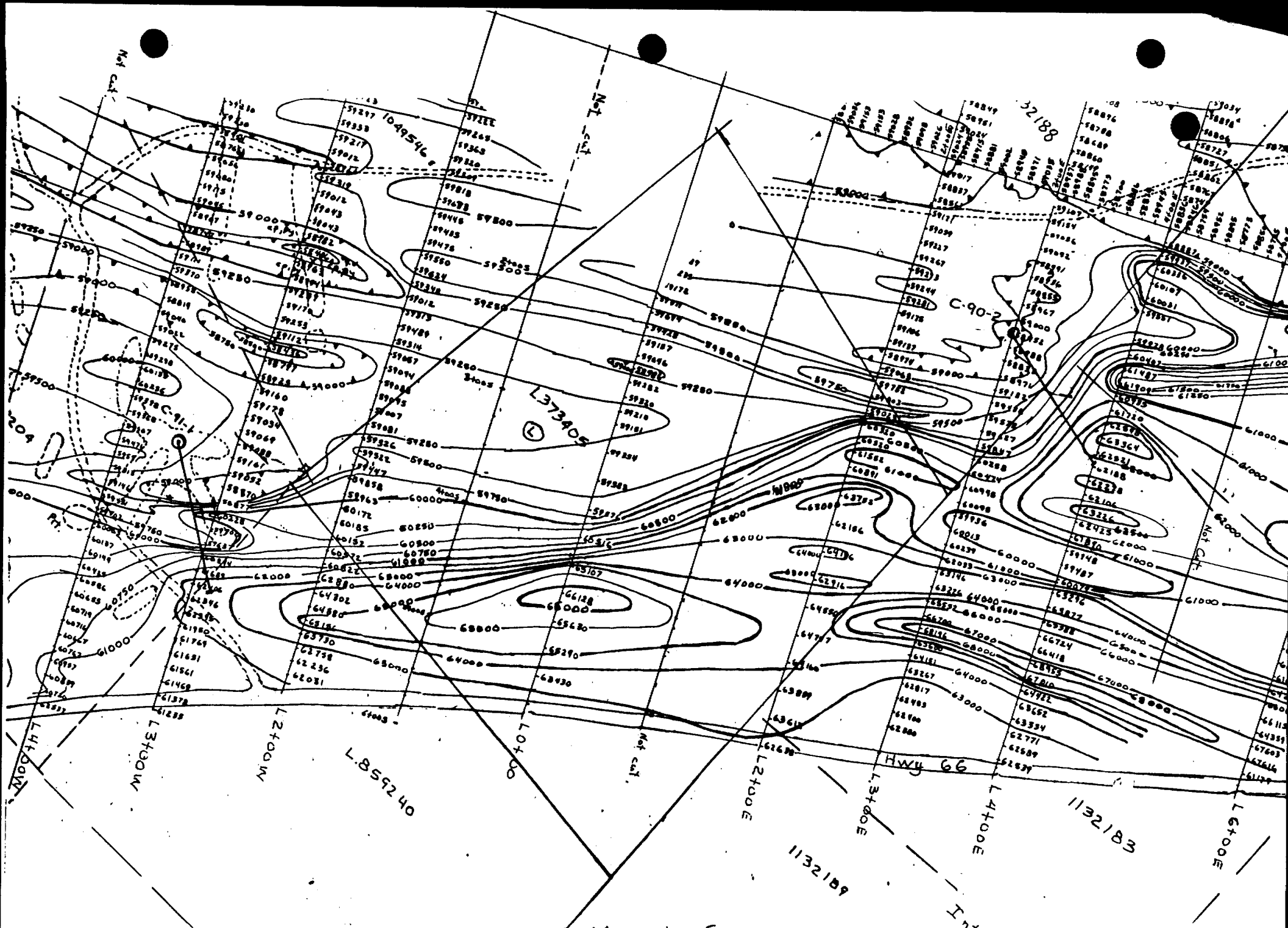
Many of these shear or fracture zones are defined by a lineal magnetic low response caused by silicification of the syenite porphyry. When the sulphide content is abundant enough, the zone becomes conductive.

Areas of low sulphide content can also respond to weak conductivity and may not have a crossover response on the EM-16 unit. All three drill holes, C-91-1, C-91-2, and C-91-3 have intersected mineralized shear zones and all intersected fractured syenite and/or volcanic rocks.

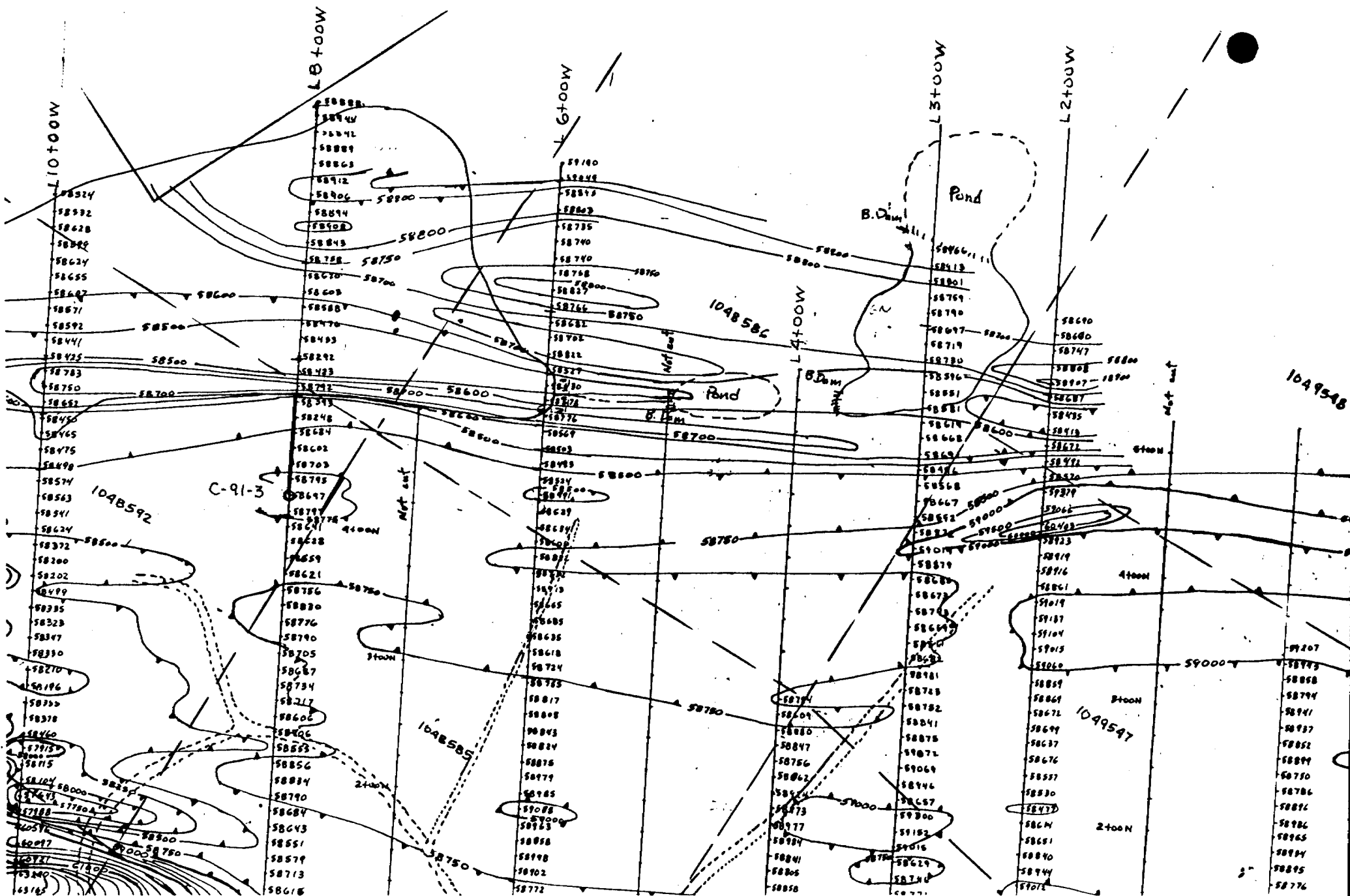
Pillowed flows have been noted on claim 1132183 along its west boundary as well as variolitic pillowed flows at the bottom of hole C-91-1 on claims 859204 and 859240.

## MINERALIZATION

The northeast trending structure plays an important role in hosting the gold-copper and silver mineralization on the Property. These settings are very similar to those found at the two former producing gold mines in Matachewan, namely, the Matachewan Consolidated Mine and the Young-Davidson Mine. The same structures and rock types are also host to the gold mineralization in the Kirkland Lake gold camp. The western extensions of the Kirkland Lake structures have now been traced into the Matachewan camp by Powell et al (1989). (see figure 329.2)



Ground Magnetic Survey  
 Location of C-91-1, c.91-2.



Magnetic Survey  
Location of C-91-3

## CONCLUSIONS

The recent three (3) hole drilling program carried out by Biralger Resources Ltd. has been very successful in defining a major gold-copper-silver syenite porphyry zone. This porphyry zone is located at the southeastern contact of the Cairo Stock. Consistent gold, copper and silver values were obtained from this hole for a total core length of 83 metres (272 feet).

The mineralization in this zone is contained within highly fractured and altered syenitic and volcanic rocks. The best values were obtained from 20.5m to 88.6m (68.1 metres/223.4 feet) which returned 0.72 g Au/t (0.021 oz/ton) and 0.16% Cu. A second zone in this same hole from 103.5m to 105.0m returned 3.77 g Au/t (0.11 oz/ton) and 0.46% Cu over 1.8 metres (5.9 feet).

A second zone of mineralized syenite porphyry was intersected in hole C-91-1 over a width of 150.2 metres (492.8 feet). Copper mineralization was present throughout this section but the best copper values were obtained from 6.8m to 20.9 m averaging 0.17% copper over 14 metres (46 feet). Traces of gold and silver were also detected throughout the mineralized syenite porphyry.

A third drill hole tested a magnetic and electromagnetic anomaly trend coinciding with the McChesney Fault zone located 1 km northwest of hole C-91-1. This hole intersected a well mineralized fractured and altered syenite porphyry. Trace gold and copper values were obtained from sampled core. The hole was not drilled deep enough, however, to intersect another strong conductor located 40-50 metres deeper down into the hole.

The geophysical surveys have defined numerous other anomalies, several coinciding with known copper bearing fractured syenite porphyry. Three such porphyry zones are located on lines 3+00W and 4+00W at 1+25S, 2+50S and 3+25S. Power stripping at these locations in 1989 has exposed a 40 metre wide copper zone at



2+50S on line 3+00W. This and other known copper showings remain untested.

Numerous other conductive zone were detected throughout the surveyed area. Most remain untested and unexplained (or uninterpreted). The potential, however, remains strong for these zones to contain gold and copper mineralization.

A strong conductive zone was detected on line 6+00E at 1+35S, 200 metres east and on strike with the gold-copper-silver zone intersected in hole C-91-2. This conductor represents a major strong exploration target for further drilling east of hole C-91-2.

The gold-mineralization noted on the Property is very similar to the setting found at the two former gold producing Matachewan Consolidated and Young-Davidson Mines. These two mines are located 12 kilometres southwest and on strike with the McChesney fault found on the Biralger Property.

The mineralized zones on the Property are very wide and they have the potential of producing large tonnage low grade open pit copper-gold-silver deposits. This has been confirmed by the grade obtained in hole C-91-2. The width and length of the mineralized zone at hole C-91-2 has not been fully defined. The zone is open in all directions.

The grade of 0.72 g Au/t and 0.16% Cu is comparable to grades obtained in the porphyry copper-gold deposits found in British Columbia. For example: the Fish Lake deposit in B.C. contains 45 million tons averaging 0.304% copper and 0.51 g gold/t with additional reserves of 100 million tons of 0.227% copper and 0.41 g gold/ton; Poison Mountain deposits in B.C. contain 164 million tons of 0.27% copper and 0.007% molybdenum and 0.14 g gold/ton with 72 million tons of higher grade containing 0.3% copper, 0.008% molybdenum and 0.21 g gold/ton.

The gold-copper potential of this area has not been thoroughly tested. The potential for other wide zones of copper-gold mineralization on Biralger' Property in Cairo and Flavelle Townships is very good. Only 18 of their 110 claims in the Matachewan area have been surveyed to date.

### RECOMMENDATIONS

The following program has been recommended for the Property, to make an initial evaluation of the entire Property. Additional line cutting, geophysical surveys, prospecting, geological mapping, power stripping and diamond drilling is highly recommended.

#### PHASE I

Line Cutting - 92 claim @ 8 km/claim		
- 100 km @ \$250./km		\$ 25,000.00
Magnetic and Electromagnetic Surveys		
- 100 km @ \$250./km		25,000.00
Geological Mapping		
- 100 km @ \$125./km		12,500.00
Prospecting - 30 days @ \$150./day		4,500.00
Drilling - 2,000 feet @ \$17./ft		34,000.00
Logging - 2,000 feet @ \$5./ft.		10,000.00
Assaying (core and rock samples)		3,500.00
Project Supervision and Report		15,000.00
		-----
		\$129,500.00
Contingencies 10%		12,950.00
G.S.T. 7%		9,972.00
		-----
	TOTAL	\$152,422.00





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1W-2328-RG1

## Geochemical Analysis Certificate

Company: **BIRAGLER RES**  
 Project:  
 Attn: **RAY BERNATCHEZ**

Date: FEB-20-91

We hereby certify the following Geochemical Analysis of 58 CORE samples submitted FEB-15-91 by .

Sample Number	Section (m)	Interval	Au PPB	AG PPM	CU PPM	MO PPM	ZN PPM	%Cu
C-91-1 51	116.0 - 118.3	2.3	14	0.7	37			
52	118.3 - 120.0	1.7	10	0.5	35	186		
53	120.0 - 122.5	2.5m	Nil	0.4	38			
54	122.5 - 125.5	3.0	10	0.4	137			
55	125.5 - 128.5	3.0	17	0.3	42			
56	128.5 - 130.5	2.0	Nil	0.2	65			
57	130.5 - 133.0	2.5	10	0.6	74			
58	133.0 - 133.4	0.4	103/106	1.8	149			
59	133.4 - 135.8	1.4	10	0.6	81			
60	135.8 - 137.5	1.7	14	1.1	66			
61	137.5 - 140.5	3.0	10	0.5	73			
62	140.5 - 143.5	3.0	Nil	0.4	113			
63	143.5 - 145.0	1.5	Nil	0.5	24			
64	145.0 - 146.5	1.5	10	0.4	21			
65	146.5 - 148.5	2.0	Nil	0.4	51			
66	148.5 - 150.2	1.7	17	0.7	71			
67	150.2 - 152.5	2.3	27/41	0.4	307	103		
68	152.5 - 154.0	1.5	10	0.3	311	71		
69	155.5 - 155.7	0.2	24	0.3	327	73		
C-91-1 1362	0.0 - 2.9	2.9 m	21	0.4	137			
1363	2.9 - 6.8	3.9	10	0.2	329			
1364	6.8 - 9.0	2.2	17	0.2	916			
1365	9.0 - 12.0	3.0	41	0.8	2570			
1366	12.0 - 13.25	1.25	82/99	1.0	1050			
1367	13.25 - 16.35	3.1	10	0.5	506			
1368	16.35 - 17.9	1.55	48	0.8	1750			
1369	17.9 - 19.75	1.75	45	1.1	3230			
1370	19.75 - 20.85	1.1	40	1.3	2590			
1371	20.85 - 22.35	1.5	10	0.8	518			
1372	22.35 - 24.0	1.65	Nil	0.2	39			

Certified by Donna Gardner



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1W-2328-RG1

## Geochemical Analysis Certificate

Company: **BIRAGLER RES**  
Project:  
Attr: **RAY BERNATCHEZ**

Date: FEB-20-91

We hereby certify the following Geochemical Analysis of 58 CORE samples submitted FEB-15-91 by .

Sample Number	Section Interval	Au PPB	AG PPM	CU PPM	MO PPM	ZN PPM
1373	24.0 - 26.85 - 2.85	14	1.0	217		
1374	26.85 - 29.85 - 3.0	17	0.4	148		
1375	29.85 - 32.5 - 2.65	14	0.8	173		
1376	32.5 - 35.5 - 3.0	28	0.6	296		
1377	35.5 - 38.5 - 3.0	41	0.3	443		
1378	38.5 - 41.2 - 2.7	10	0.1	97		
1379	41.2 - 44.5 - 3.3	86	0.9	83		
1380	44.5 - 47.5 - 3.0	27	0.2	80		
1381	47.5 - 50.5 - 3.0	154/165	0.7	517		
1382	50.5 - 53.5 - 3.0	55	0.3	292		
1383	53.5 - 56.5 - 3.0	72	0.5	183		
1384	56.5 - 59.5 - 3.0	51	0.4	151		
1385	59.5 - 62.5 - 3.0	38	0.4	167		
1386	62.5 - 65.5 - 3.0	45	0.5	168		
1387	65.5 - 68.5 - 3.0	27	0.6	143		
1388	68.5 - 71.5 - 3.0	24	0.6	172		
1389	71.5 - 74.5 - 3.0	48/55	0.6	224		
1390	74.5 - 77.5 - 3.0	27	0.6	175		
1391	77.5 - 80.5 - 3.0	21	0.5	133		
1392	80.5 - 83.5 - 3.0	24	0.6	110		
1393	83.5 - 86.5 - 3.0	10	0.3	68		
1394	86.5 - 89.5 - 3.0	34	0.1	135		
1395	89.5 - 92.5 - 3.0	27	0.1	101		
1396	92.5 - 95.5 - 3.0	21	0.1	124		
1397	104.5 - 107.0 - 2.5	10	0.1	76		
1398	107.0 - 109.6 - 2.6	24	0.2	35		
1399	109.6 - 113.5 - 3.9	21/38	0.4	153		
1400	113.5 - 116.0 - 2.5	10	0.3	56		

Certified by Donna Gardner



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## Geochemical Analysis Certificate

1W-2409-RG1

Company: BIRAGLER RES

Date: FEB-28-91

Project:

Copy 1. P.O. BOX 1376, 126 WILLOW RD. ATIKOKAN

Attn: RAYMOND BERNATCHEZ

2. ONT. POT 1C0

We hereby certify the following Geochemical Analysis of 67 SPLIT CORE samples submitted FEB-22-91 by RAYMOND BERNATCHEZ.

Sample Number	C-91-2	Interval m	Au ppb	Au check oz/tun	Au 2nd ppb	Au check 2nd ppb	Ag ppm	Cu ppm	Cu %
70	5.5 - 8.2 m	2.7	45	0.015			0.7	477	0.048
71	8.2 - 11.5 m	3.3	72	0.025			1.0	631	0.063
72	11.5 - 14.5 m	3.0	58	0.002			0.4	506	0.051
73	14.5 - 17.5 m	3.0	110	0.038			0.3	719	0.072
74	17.5 - 20.5 m	3.0	161	0.05			1.2	692	0.069
* 75	20.5 - 23.5 m	3.0	641	0.019			1.3	1530	0.153
76	23.5 - 26.5 m	3.0	614	0.018			0.8	932	0.093
77	26.5 - 29.5 m	3.0	278	0.008			1.3	1510	0.151
78	29.5 - 32.5 m	3.0	667	0.019			1.1	1700	0.170
79	32.5 - 35.5 m	3.0	483	0.014	466		1.3	1470	0.147
80	35.5 - 38.5 m	3.0	439	0.013			1.3	1230	0.123
81	38.5 - 41.5 m	3.0	357	0.010			1.0	1310	0.131
82	41.5 - 44.5 m	3.0	885	0.026			1.3	1800	0.180
83	44.5 - 47.5 m	3.0	466	0.014			0.8	1070	0.107
84	47.5 - 50.5 m	3.0	703	0.021			1.7	1360	0.136
85	50.5 - 53.5 m	3.0	806	0.024	799		1.3	1720	0.172
86	53.5 - 56.5 m	3.0	518	0.015			1.1	2020	0.202
87	56.5 - 59.5 m	3.0	693	0.020			1.0	1410	0.141
88	59.5 - 62.5 m	3.0	483	0.014			1.1	1650	0.165
89	62.5 - 65.5 m	3.0	744	0.022			0.9	1460	0.146
90	65.5 - 68.5 m	3.0	792	0.023			0.9	1520	0.152
91	68.5 - 71.5 m	3.0	919	0.027			0.8	1930	0.193
92	71.5 - 74.5 m	3.0	1639	0.048			1.3	1660	0.166
93	74.5 - 76.3 m	1.8	936	0.027			0.7	482	0.048
94	76.3 - 78.9 m	2.6	1395	0.041	1282		4.1	2230	0.223
95	78.9 - 80.5 m	1.6	1272	0.037			3.7	2100	0.210
96	80.5 - 82.5 m	2.0	715	0.021			1.8	2560	0.256
97	82.5 - 83.5 m	1.0	387	0.011			1.9	1860	0.186
98	83.5 - 85.0 m	1.5	1149	0.034			2.8	3680	0.368
99	85.0 - 86.5 m	1.5	237	0.007			1.2	2290	0.229

\* 88.6 - 20.5 = 68.1  
= 2234 | 228.

10,000 ppm Cu = 1%  
1,000 ppm Cu = 0.1%

Certified by

m = 3.281 ft.

P.O. Box 10, Swastika, Ontario P0K 1T0

Telephone (705) 642-3244.

FAX (705) 642-3300



# Swastika Laboratories

A Division of Assayers Corporation Ltd.

Assaying - Consulting - Representation

Page 2 of 3

1W-2409-RG1

## Geochemical Analysis Certificate

Company: **BIRAGLER RES**

Date: **FEB-28-91**

Project:

Copy 1. P.O. BOX 1376, 126 WILLOW RD. ATIKOKAN

Attn: **RAYMOND BERNATCHEZ**

2. ONT. POT 100

We hereby certify the following Geochemical Analysis of 67 SPLIT CORE samples submitted FEB-22-91 by RAYMOND BERNATCHEZ.

Sample Number	c-91-2 Interval	Au ppb <sup>0.015</sup>	Au check ppb	Au 2nd ppb	Au check 2nd ppb	Ag ppm	Cu ppm
*100	86.5 - 87.6 m	518	6.9'			1.6	1910
101	103.2 - 105.0 m	2969	5.9'	3699	3617	1.9	4570
102	11.5 - 13.0 m	14					66
103	13.0 - 14.5 m	Nil					79
104	17.5 - 20.5 m	10					82
105	20.5 - 23.5 m	Nil					154
106	23.5 - 26.5 m	14					
107	26.5 - 29.5 m	10					
108	29.5 - 32.5 m	Nil					
109	32.5 - 34.0 m	14					
110	34.0 - 35.5	Nil					
111	35.5 - 37.0	10					
112	37.0 - 38.5	7					
113	38.5 - 39.3	Nil					
114	83.25 - 85.0	Nil	Nil				
115	85.0 - 86.5	Nil					
116	86.5 - 88.0	10					
117	88.0 - 89.5	10					
118	89.5 - 91.0	14					
119	91.0 - 92.5	21					
120	92.5 - 94.0 m	24					
121	94.0 - 95.5	10					
122	95.5 - 97.0	17					
123	97.0 - 98.5	7					
124	98.5 - 100.0 m	31	27				
125	100.0 - 101.5	10					
126	101.5 - 103.0 m	14					
127	103.5 - 104.5 m	19					
128	104.5 - 106.0 m	14					
129	106.0 - 107.5 m	14					

Certified by Donna Gardner



# Swastika Laboratories

A Division of Assayers Corporation Ltd.

Assaying - Consulting - Representation

Established 1928

Page 3 of 3

## Geochemical Analysis Certificate

1W-2409-RG1

Company: **BIRAGLER RES**

Date: **FEB-28-91**

Project:

Copy 1. P.O.BOX 1376, 126 WILLOW RD. ATIKOKAN

Attn: **RAYMOND BERNATCHEZ**

2. ONT. POT 1C0

We hereby certify the following Geochemical Analysis of 67 SPLIT CORE samples submitted FEB-22-91 by RAYMOND BERNATCHEZ.

Sample Number		Au ppb	Au check ppb	Au 2nd ppb	Au check 2nd ppb	Ag ppm	Cu ppm
130	107.5 - 109.0	14					
131	109.0 - 110.5	27					
132	110.5 - 113.5	14					
133	113.5 - 117.0	17					
185205		21				0.1	57
185206		14				0.2	46
185207		17				0.3	62

Certified by Wonna Gardner

#63.6081



41P15NE8296 63.6081 CAIRO

OM 90-004

900

THIS SUBMITTAL CONSISTED OF VARIOUS REPORTS, SOME OF WHICH HAVE BEEN CULLED FROM THIS FILE. THE CULLED MATERIAL HAD BEEN PREVIOUSLY SUBMITTED UNDER THE FOLLOWING RECORD SERIES (THE DOCUMENTS CAN BE VIEWED IN THESE SERIES):

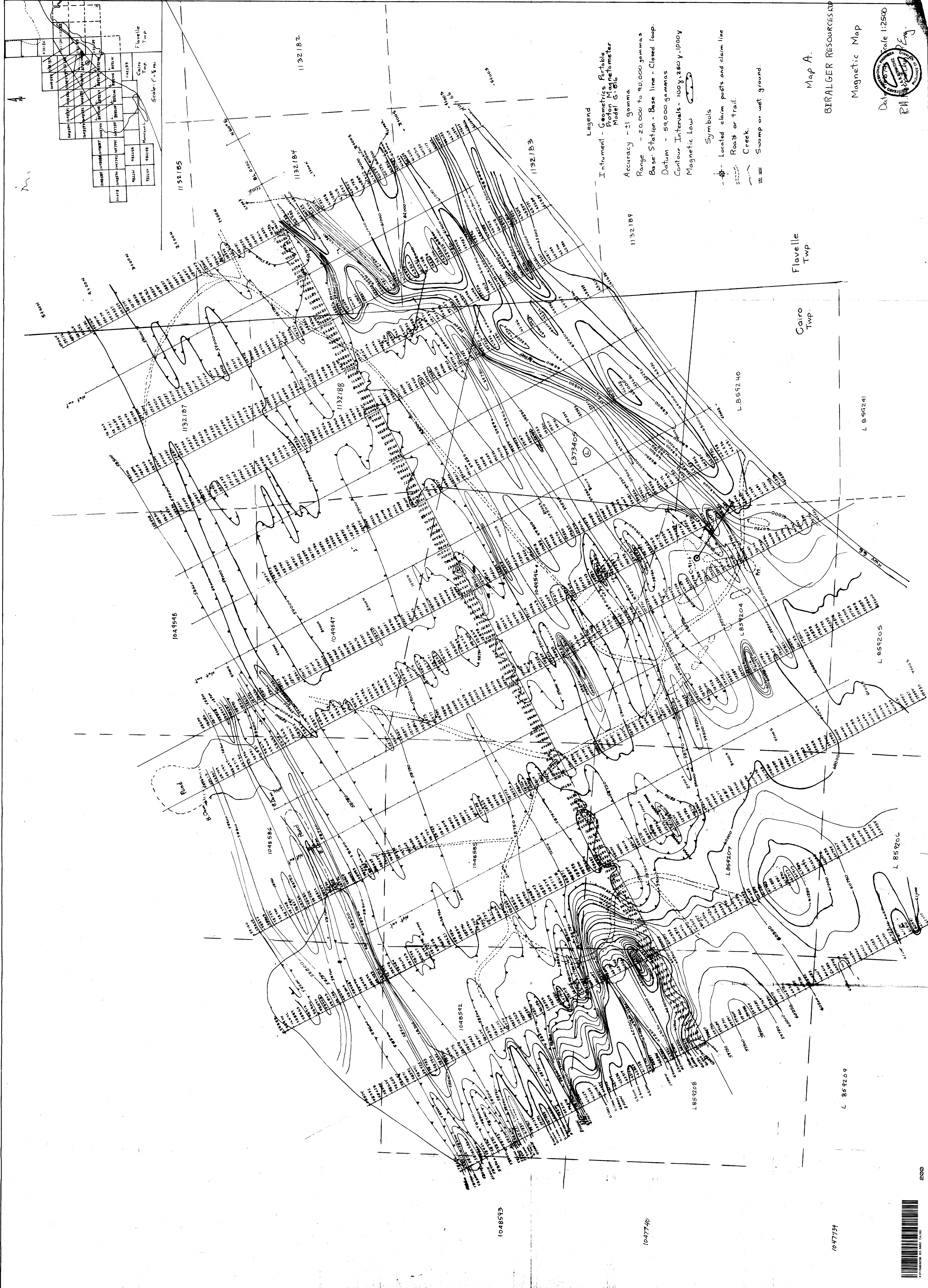
CAIRO WALK REPORT # 23 (W.9180.00191) C-91-01 DPH LOG+SECTION

" " " # 25 (W.9.280.00187) C-91-02 " " "

" " " # 26 (W.9180.00192) C-91-03 " " "

Empty lined area for additional entries.





1048548	1048547	1048546	1048545	1048544	1048543	1048542	1048541	1048540	1048539	1048538	1048537	1048536	1048535	1048534	1048533	1048532	1048531	1048530	1048529	1048528	1048527	1048526	1048525	1048524	1048523	1048522	1048521	1048520	1048519	1048518	1048517	1048516	1048515	1048514	1048513	1048512	1048511	1048510	1048509	1048508	1048507	1048506	1048505	1048504	1048503	1048502	1048501	1048500
1048548	1048547	1048546	1048545	1048544	1048543	1048542	1048541	1048540	1048539	1048538	1048537	1048536	1048535	1048534	1048533	1048532	1048531	1048530	1048529	1048528	1048527	1048526	1048525	1048524	1048523	1048522	1048521	1048520	1048519	1048518	1048517	1048516	1048515	1048514	1048513	1048512	1048511	1048510	1048509	1048508	1048507	1048506	1048505	1048504	1048503	1048502	1048501	1048500

**Legend**

Instrument - Geometrics Portable  
Proton Magnetometer  
Model G-816

Accuracy - ±1 Gamma

Range - 20,000 to 90,000 gammas

Base Station - Base line - Closed loop.

Datum - 59,000 gammas

Contour Intervals - 100, 200, 1,000

Magnetic Low

**Symbols**

- Located claim posts and claim line
- Road or trail
- ~ Creek
- Swamp or wet ground

Map A.

BIRALGER RESOURCES INC.

Magnetic Map

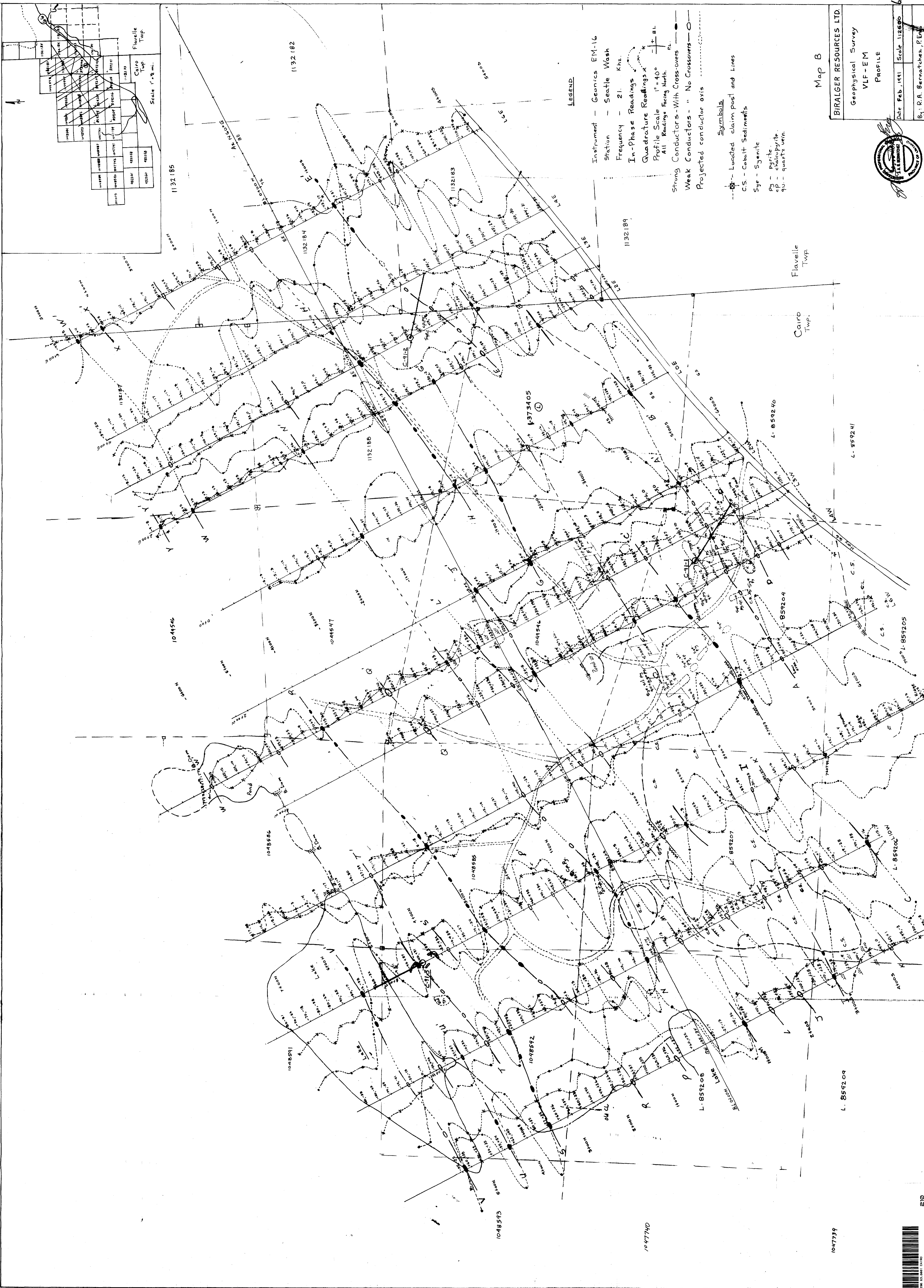
Date: 11/25/00

Scale: 1:2500

63.6081

RAI

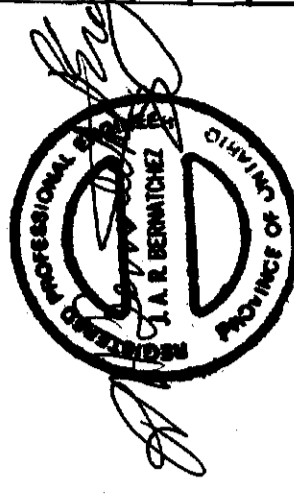




**BIRALGER RESOURCES LTD.**  
 Geophysical Survey  
 VLF-EM  
 PROFILE

Map B

DATE Feb. 1981 Scale 1:25000  
 By: R.A. Bernatchez, P.E.



**LEGEND**

- Instrument - Geonics EM-16
- Station - Seattle Wash
- Frequency - 21 KHz.
- In-Phase Readings
- Quadrature Readings  $\times$
- Profile Scale  $1" = 40'$
- All Readings Facing North.
- Strong Conductors - With Cross-overs
- Weak Conductors - " No Cross-overs
- Projected conductor axis

- Symbols**
- Located claim post and Lines
  - CS - Cobalt Sediments
  - Sy - Syenite
  - Pg - Pyrite
  - ep - chloropyrite
  - qu - quartz vein

1048591	1048592	1048593	1048594	1048595	1048596	1048597	1048598	1048599	1048600
1048601	1048602	1048603	1048604	1048605	1048606	1048607	1048608	1048609	1048610
1048611	1048612	1048613	1048614	1048615	1048616	1048617	1048618	1048619	1048620
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Ms Chesney  
Showing  
A

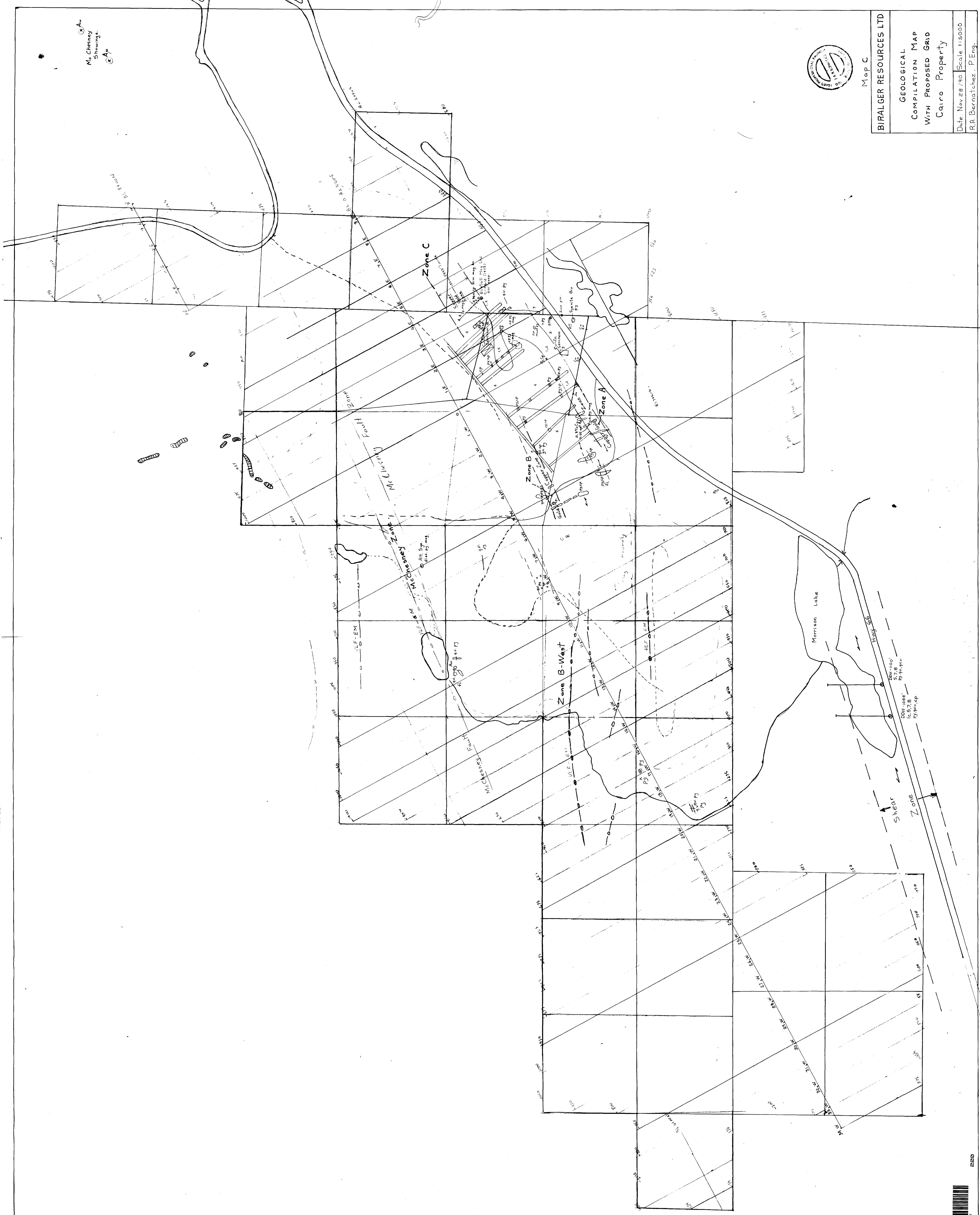


Map C

**BIRALGER RESOURCES LTD**

GEOLOGICAL  
 COMPILATION MAP  
 WITH PROPOSED GRID  
 Cairo Property

Date: Nov 28 / 90 Scale: 1:5000  
 RA Bernatchez, P. Eng.



220

63-6081