



41P15NE8330 2.5740 CAIRO

010

COMSTATE RESOURCES LTD.

Report on

Electromagnetic (VLF) and  
Magnetic Surveys for the

Cairo Township Property,  
Larder Lake Mining Division  
Ontario

July, 1983

Timmins, Ontario

R. Bald

*July 2.3530*

**RECEIVED**

AUG 10 1983

MINING LANDS SECTION



41P15NE8330 2.5740 CAIRO

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## Introduction

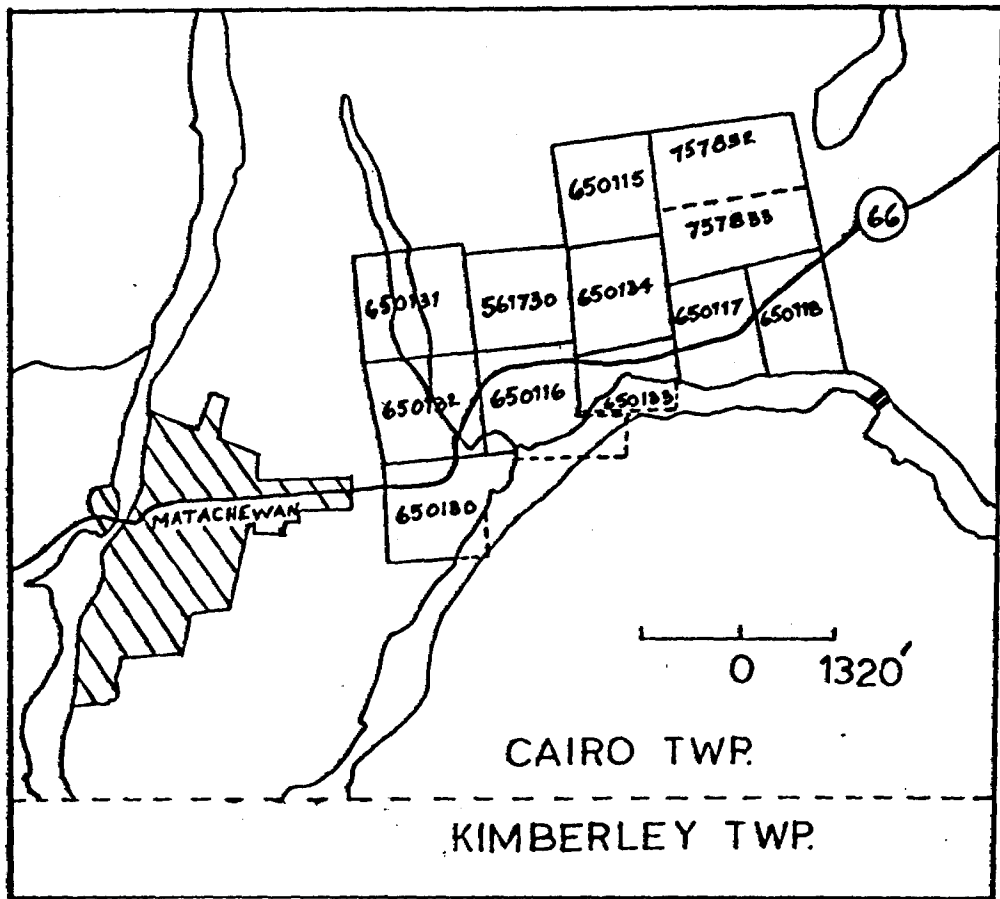
This report covers two geophysical surveys, including electromagnetic and magnetic surveys, carried out over a claim group located about one-quarter mile northeast of the Town of Matachewan, Ontario (Figure 1). The property consists of twelve unsurveyed, contiguous claims of approximately 40 acres each, situated in Cairo Township, District of Timiskaming, Larder Lake Mining Division.

The surveys were conducted by U.T.M. Technical Services Inc., 141 Principale, Rouyn, Quebec, for Comstate Resources, during the period June 1 and 2 for the VLF survey and June 1st to 3rd, 1983, for the magnetic survey.

The claims are currently held by D.R. Pyke, residing at 31 Delair Cres., Thornhill, Ontario. The claims are numbered L561730, L650115 to L650118 inclusive, L650130 to L650134 inclusive, L757832 and L757833.

## Location, Access and Topography

The western edge of the claim group is situated about one-quarter mile northeast of the town of Matachewan, Ontario. Matachewan is about 35 miles southwest of Kirkland Lake, via Highway 66, which transects the property. The northeastern portion of the property is accessible by the Garbage Disposal Road and the northwestern portion is accessible by a trail to Knott Lake. The southern border of the claim group is the Montreal River, thus easily accessible by boat. The Matachewan



CAIRO TOWNSHIP PROPERTY

transformer station is just outside the western margin of the claim group. Large areas of outcrop occur south of Highway 66 and in the northwestern and northeastern corners of the property, whereas the rest of the grid is covered by glacial deposits including eskers and glaciofluvial material (Map 1).

### Previous Work

Following the discovery of gold in 1916, the Matachewan area was mapped by Burrows (1918,1920), Cooke (1919) and subsequently by Dyer (1935) and Lovell (1967).

There are no current assessment records available to the writer concerning the nature or extent of any exploration work undertaken on the Comstate property. Lovell (1967), indicates that the property was formerly held by the Matachewan Hub Pioneer Syndicate, who reportedly excavated a trench 110 feet long near the south central boundary of the claim group. The trench traversed a volcanic-d diabase dike contact bearing white pyrite and minor magnetite contained within a quartz-carbonate matrix.

The property, consisting of ten previously patented mining claims, came open for staking in June, 1981. Two other claims were subsequently added to the northeast corner.

### Regional Geology

The Matachewan area borders the northwest margin of the Round Lake Batholith, and is on the south limb of a major

synclitorium, the axis of which trends westerly approximately seven miles north of the area (Pyke et al, 1973). A large pluton of syenite, the Cairo Stock, underlies the northeast portion of Cairo Township. Volcanic rocks of komatiitic, tholeiitic and calc-alkaline affinities trend westward across Cairo and Powell Townships, but have not as yet been mapped in sufficient detail to be accurately delineated. Intercalated with the volcanic rocks are thick sequences of sedimentary rocks. It is the contact zones of the more southerly sedimentary sequence with the underlying volcanics, in association with syenitic intrusions, which has formed the focal point for the known gold mines in the area.

The north trending Matachewan dike swarm intrudes the Early Precambrian (Archean) rocks, and has been dated at 2485 million years (Fahrig and Wanless, 1963).

Flat-lying Proterozoic sediments of the Cobalt Group unconformably overlie the Archean rocks.

A number of major faults traverse the Matachewan area (Figure 2), notably the Larder Lake Fault zone and the Montreal River Fault. The easterly trending Larder Lake break is in proximity to numerous gold camps throughout its strike length - notably those of Kirkland Lake, Larder Lake, Noranda, Cadillac, Malartic and Val d'Or. The exact positioning of the fault through the Matachewan area is uncertain, but is believed to be as depicted in Figure 2. Furthermore, the Montreal River Fault, which traverses the Matachewan area, shows a spatial relationship to a number of mines or camps - for example: Kidd Creek, Timmins,

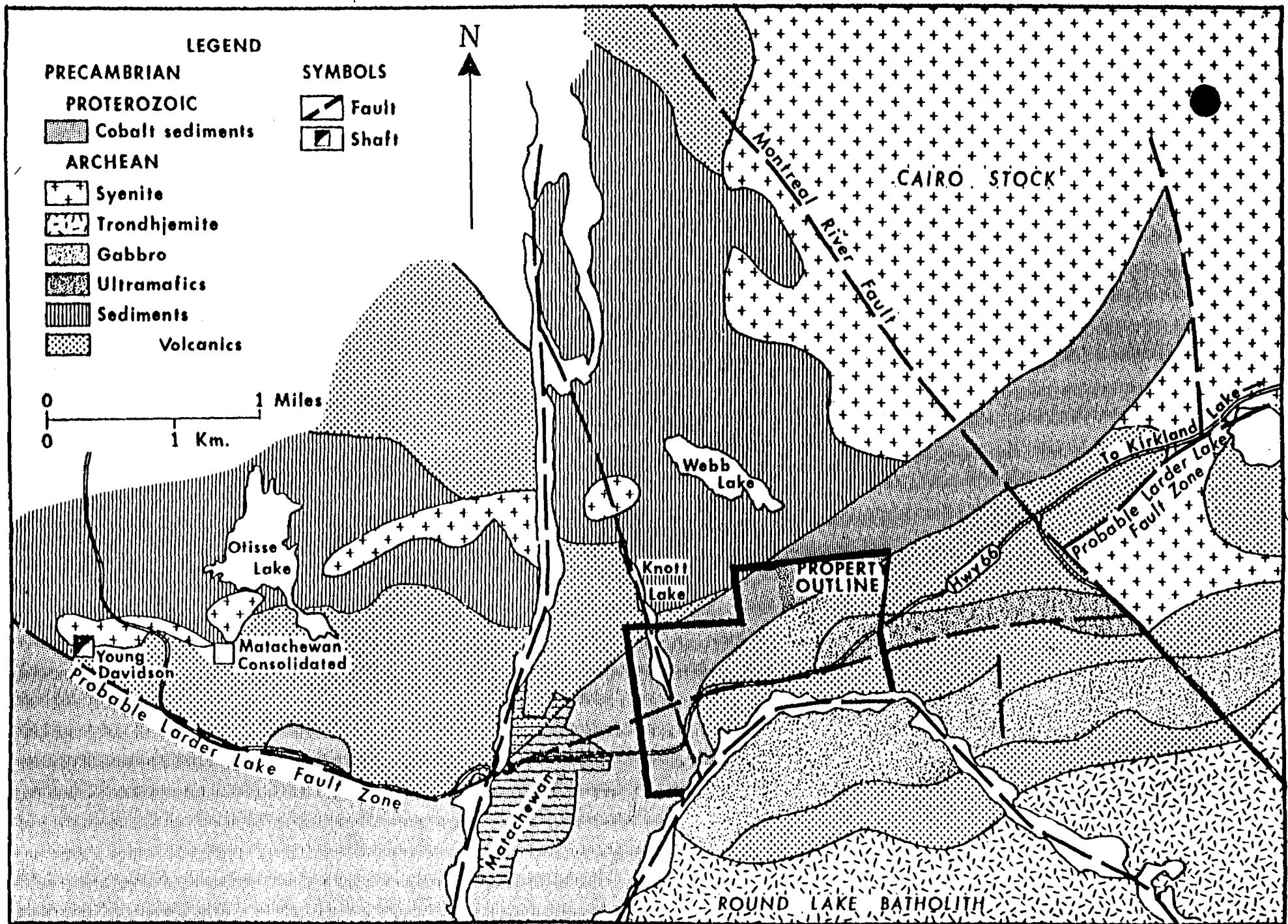


Figure 2 - General geology in the vicinity of Matachewan. (Modified after Lovell, 1967).

and Elk Lake. Numerous other northerly trending faults are known in the Matachewan area, many of which are filled by diabase dikes.

### Property Geology

The property was mapped at a scale of 1" = 200' and the report was filed for assessment, with accompanying map, in July, 1983.

About half the property is covered by relatively flat-lying sediments of the Cobalt Group, consisting largely of moderately well sorted polymictic conglomerates.

A variety of Archean volcanic rocks, largely consisting of mafic flows and lesser intercalated felsic to intermediate pyroclastic rocks are exposed along the south portion of the claim group. Minor cherty sulphide iron formation is also present. A lense of serpentized peridotite extends into the east portion of the claim group. cursory examination by Comstate Resources in 1982, revealed the presence of minor komatiitic volcanic rocks, near the western extremity of the volcanic exposures, that are in fault contact with the underlying mafic volcanic rocks. This fault zone is interpreted to form part of the Larder Lake break. To the east of the property the fault is taken to be coincident with the shear zone at the south margin of the Cairo stock (Lovell, 1967). To the west, the fault largely separates Archean and Proterozoic rocks. Here the volcanic rocks are intensely sheared near the Proterozoic-Archean contact; a drillhole in the Cobalt sediments



immediately south of the proposed Larder Lake fault zone (Figure 2) did not encounter the Archean basement till a depth of 1100 feet (Lovell, 1967).

### Electromagnetic Survey

The V.L.F. (very low frequency) electromagnetic survey was conducted by U.T.M. Technical Services Inc. during the period June 1 to 2nd, 1983, over 21.12 miles (111,500 feet) of previously cut line at 200 foot intervals trending 005° AZ.

The instrument used was a Geonics EM-16 system. Specifications of the unit are attached. The transmitter station used for the present survey was Cutler, Maine (N.A.A.) which uses a frequency of 17.8 kHz, with a radiated power of 1000kW. The instrument has two receiving coils and the parameters measured are:

- 1) the vertical in-phase component (tangent of the tilt angle),
- 2) the vertical out of phase component (quadrature component).

The interpretation of the results uses the relative measurements of these two parameters and it is possible to outline poor conductors such as sheared contacts, breccia zones, faults, alteration zones, in addition to good sulphide or graphite conductors.

Electromagnetic readings were taken at 50 foot intervals for a total of 1977 readings.

### Results

Results of the electromagnetic survey are shown in profile

form on Map 2 at a scale of one inch equals 200 feet.

A relatively wide zone of interference occurs along the power transmission and telephone lines running along Highway 66.

VLF conductors in this area were disregarded during the analysis of the VLF data, although conductors in bedrock may exist along the zone. Nineteen VLF conductors greater than 200 feet long are indicated on Map 2 along with a number of single station anomalies (Table 1). Eleven conductors are underlain by Cobalt sediments, including three which occur within the limits of the garbage dump and may be partly caused by metal garbage. Locally the conductors trend parallel to the strike of the sediments. Seven conductors are underlain by a mafic intrusion with an ultramafic border phase, including two which occur within the limits of the garbage dump and may also be partly caused by metal garbage. These conductors generally strike parallel to the long axis of the intrusion and conductors B, F, P, Q and M may be along the contact between Cobalt sediments and the ultramafic-mafic intrusion. Conductor D is underlain by rhyolite intruded by Matachewan diabase. Along the south margin of the property, the VLF readings appear to indicate a conductor to the south. However, this may be caused by the swiftly flowing Montreal River which forms the south boundary of the claim group.

### Magnetic Survey

The magnetic survey was conducted by U.T.M. Technical Services, Inc. during the period June 1st to 3rd, 1983, over

21.12 miles (111,500 feet) of previously cut lines at 200 foot intervals trending 005° AZ.

A total of 2175 magnetic readings were taken with a Geonics proton magnetometer model G816. The instrument measures the total magnetic field directly in gammas (see enclosed specifications). Readings were taken every 50 feet along lines spaced at 200 foot intervals. Diurnal correction was done by the loop method which involved taking readings continuously along the baseline and re-reading the baseline each time it was crossed when readings were taken along the lines.

### Results

The results of the magnetic survey are shown on Map 3.

Cultural features such as the power transmission line, the telephone line and the garbage dump tend to distort the magnetic values of the underlying rocks. A magnetic low, with values in the order of 57,000 to 58,000 gammas, locally occurs under the power transmission line on the north side of Highway 66. Abundant metal garbage occurs in and around the garbage dump, possibly causing localized magnetic highs. The large area in the western and northern portions that are underlain by Cobalt sediments is characterized by relatively flat magnetic values in the order of about 58,000 to 59,000 gammas. A large area covering the central to west central portions of the grid shows magnetic values of about 60,000 to greater than 64,000 gammas. This area of high magnetic expression possibly outlines an extensive ultramafic-mafic intrusion consisting of

locally magnetic gabbro with a serpentinite border phase, that outcrops in the southwestern part of the property. Locally strongly magnetic, northwesterly trending Matachewan diabase dikes intrude a felsic to mafic Archean metavolcanic sequence in an area bounded on the east by the park, roughly on the north by Highway 66 and the Cobalt sediments on the west. The diabase dikes are characterized by local magnetic highs greater than 60,000 gammas, located at: 1) L6W, 12+00S; 2) L10W and L12W, between 8+00S and 12+00S; 3) L6W, from about 11+00S to L8W, from 7+00S to 3+00S; and 4) L2W, from the river to 10+00S and probably continuing to L4W, from 9+00S to 7+00S. A high magnetic value of greater than 62,000 gammas corresponds to an outcrop of locally graphitic sulphide facies iron formation at L0,6+00S.

#### Conclusions and Recommendations

1. The power transmission and telephone lines along Highway 66 interfere with the bedrock VLF and magnetic values.
2. The garbage dump on the northeast portion of the property contains abundant metal garbage and may cause erroneous VLF and magnetic anomalies.
3. Elsewhere the magnetic survey appears to correspond with the mapped geology, outlining more precisely the ultramafic-mafic intrusion in the southeast-central part of the property.
4. In general, the VLF conductors tend to be broad and weak. The conductors in the mafic intrusion tend to be parallel to the northern margin of the intrusion, possibly outlining zones of different composition or sulphide and/or magnetite-

rich zones. The conductors in the Cobalt sediments which are parallel to the bedding may be caused by contacts between beds of different composition or, in the case of the randomly oriented conductors, may be faults within the Cobalt sediments or overburden effects. The only VLF conductor positively outlined in the Archean metavolcanic rocks warrants further investigation, although the east end may be caused by pyrite-bearing diabase.

5. The VLF conductors, especially those in the ultramafic-mafic intrusion and the metavolcanic rocks warrant further prospecting and sampling.

TABLE 1: Description of VLF Conductors.

<u>Conductor</u>	<u>Length</u>	<u>Approx. Trend</u>	<u>Rock type</u>	<u>Approx. Location</u>	<u>Comment</u>
A	> 800'	Northwest	Cobalt	L20W,7N to L12W,3N	Open at west end; Striking into Knott Lake
B (mag)	> 600'	East-West to northeast	Cobalt? or Mafic intrusion?	L20E,11N to L26E,13N	Parallel to Cobalt- Mafic Intrusion Contact. East end within limits of garbage dump.
C	> 400'	Northeast	Cobalt	L12E,20N to L16E,21N	Roughly parallel to strike of Cobalt
D (mag)	> 200'	East-west	Rhyolite + Diabase	L8W to L6W, 12S	Diabase on east end of conductor.
E	> 200'	East-west	Cobalt	L8W to L6W,7N	
F	> 200'	West-northwest	Cobalt? or mafic intrusion?	L30E,17N to L32E,16N	Within limits of garbage dump; Open at east end; Possibly close to Cobalt-mafic intrusion contact.
G (mag)	> 200'	East-west	Mafic intrusion?	L22E to 24E,5N	Magnetic correspondenc on east end; Roughly parallel to strike of mafic intrusion.
H	> 200'	Northwest	Cobalt	L10E,16N to L12E,14N	
I	> 800'	East-west	Cobalt	L4E,22N to L12E,23N	
J	> 600'	East-west	Cobalt	L2E,13N to L8E,13N	Open at west end; Possibly 2 separate conductors

Table 1 (cont.)

<u>Conductor</u>	<u>Length</u>	<u>Approx. Trend</u>	<u>Rock Type</u>	<u>Approx. Location</u>	<u>Comment</u>
K	>400'	Northeast	Cobalt	L14E,16N to L18E,20N	Within limits of garbage dump.
L	>400'	East-northeast to east-west	Mafic intrusion?	L28E,9N to L32E,10N	Open at east end; Roughly parallel to strike of mafic intrusion; West end within limits of garbage dump.
M (mag)	>200'	West-northwest	Cobalt?	L6E,5N to L8E,4N	Magnetic correspondence on east end.
N	>800'	West-northwest to east-west	Cobalt	L20E,20N to L28E,18N	Within limits of garbage dump.
O (mag)	>400'	East-west	Mafic Intrusion	L2W,2S to L2E,2S	Roughly parallel to strike of mafic intrusion.
P (mag)	>200'	East-west	Mafic Intrusion?	L16E to 18E,9N	Close to Cobalt-mafic intrusion; and parallel to strike of contact.
Q (mag)	>200'	East-west	Mafic Intrusion?	L14E to L16E,8N	Close to Cobalt-mafic intrusion; and parallel to strike of contact.
R	>200'	East-west	Cobalt	L16W to L14W,20S	Open at east end.
S	>200'	East-northeast	Mafic Intrusion	L18E,6S to L20E,5S	Roughly parallel to strike of mafic intrusion; Open at west end.

## References

Burrows, A.G.

1918: The Matachewan gold area; Ont. Bureau of Mines,  
Vol. 27, pt. 1, p. 215-240

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Cooke, H. C.

1919: Geology of Matachewan district, Northern Ontario;  
Geol. Survey of Canada, Mem. 115

Dyer, W.S.

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area; Ont. Dept. of Mines, Vol. 44, pt. 2, p. 1-55  
(published 1936)

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1963: Age and significance of diabase dike swarms of the  
Canadian Shield; Canadian Journal of Earth Sciences,  
Vol. 2, No. 4, p. 278-298

Lovell, H.L.

1967: Geology of the Matachewan area, District of  
Timiskaming; Ont. Dept. of Mines, G.R. 51, 61p.  
Accompanied by Maps 2109, 2110. Scale 1 inch to  $\frac{1}{2}$  mile

Pyke, D.R., Ayres, L.D. and Innes, D.G.

1973: Timmins-Kirkland Lake Sheet, Cochrane, Sudbury and  
Timiskaming Districts; Ont. Div. of Mines, Geological  
Compilation Series, Map 2205, Scale 1 inch to 4  
miles.



EM16 SPECIFICATIONS

MEASURED QUANTITY	In-phase and quad-phase components of vertical magnetic field as a percentage of horizontal primary field. (i.e. tangent of the tilt angle and ellipticity).
SENSITIVITY	In-phase : $\pm 150\%$ Quad-phase : $\pm 40\%$
RESOLUTION	$\pm 1\%$
OUTPUT	Nulling by audio tone. In-phase indication from mechanical inclinometer and quad-phase from a graduated dial.
OPERATING FREQUENCY	15-25 kHz VLF Radio Band. Station selection done by means of plug-in units.
OPERATOR CONTROLS	On/Off switch, battery test push button, station selector switch, audio volume control, quadrature dial, inclinometer.
POWER SUPPLY	6 disposable 'AA' cells.
DIMENSIONS	42 x 14 x 9cm
WEIGHT	Instrument: 1.6 kg Shipping : 4.5 kg

1.3 SPECIFICATIONS

Sensitivity:	±1 gamma throughout range																
Range:	20,000 to 90,000 gammas (worldwide)																
Tuning:	Multi-position switch with signal amplitude indicator light on display																
Gradient Tolerance:	Exceeds 150 gammas/in																
Sampling Rate:	Manual push-button, one reading each 6 seconds.																
Output:	8 digit numeric display with readout directly in gammas																
Power Requirements:	Twelve self-contained 1.5 volt "D" cell, universally available flashlight-type batteries. Charge state or replacement signified by flashing indicator light on display.																
Temperature Range:	Console and sensor: -40° to +85° C Battery Pack: 0° to +50° C (limited use to -15° C; lower temperature operation--optional)																
Accuracy (Total Field):	±1 gamma through 0° to 50° C temperature range																
Sensor:	High signal, noise cancelling, interchangeably mounted on separate staff or attached to backpack																
Size:	Console: 3.5 x 7 x 10.5 inches (9 x 18 x 27 cm) Sensor: 4.5 x 6 inches (11 x 15 cm) Staff: 1 inch diameter x 6 ft. length (3 cm x 2.44 cm)																
Weight:	<table border="0" style="margin-left: 40px;"> <thead> <tr> <th></th> <th style="text-align: right;">lbs.</th> <th style="text-align: right;">Kgs.</th> </tr> </thead> <tbody> <tr> <td>Console (w/batteries):</td> <td style="text-align: right;">5.5</td> <td style="text-align: right;">2.5</td> </tr> <tr> <td>Sensor and signal cable:</td> <td style="text-align: right;">4</td> <td style="text-align: right;">1.8</td> </tr> <tr> <td>Aluminum staff</td> <td style="text-align: right;"><u>2</u></td> <td style="text-align: right;"><u>0.9</u></td> </tr> <tr> <td></td> <td style="text-align: right;">11.5</td> <td style="text-align: right;">5.2</td> </tr> </tbody> </table>			lbs.	Kgs.	Console (w/batteries):	5.5	2.5	Sensor and signal cable:	4	1.8	Aluminum staff	<u>2</u>	<u>0.9</u>		11.5	5.2
	lbs.	Kgs.															
Console (w/batteries):	5.5	2.5															
Sensor and signal cable:	4	1.8															
Aluminum staff	<u>2</u>	<u>0.9</u>															
	11.5	5.2															

Declaration

I, R.C. Bald, submit this document to certify that the following statements are, to the best of my knowledge, true and correct:

1. That I have received the following university degrees:  
Honours B.Sc. in Geology      Laurentian University      1975  
M.Sc. in Earth Science      University of Manitoba      1981
2. That I am a member of the Geological Association of Canada.
3. That I have been working as a geologist for eight years.

Respectfully Submitted,

*Roberta Bald*

R. Bald



Ministry of Na

GEOPHYSICAL - GEOLOGICAL  
TECHNICAL DATA



41P15NE8330 2.5740 CAIRO

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 (Magnetometer, VLF)

Township or Area CAIRO

Claim Holder(s) J. R. PYKE

Survey Company U.T.M. TECHNICAL SERVICES INC.

Author of Report R. BALD

Address of Author #30A - 25 VILLA RD. Toronto Ont

Covering Dates of Survey MAY 17 - AUG 4 / 83  
(linecutting to office)

Total Miles of Line Cut 21.7

MINING CLAIMS TRAVERSED  
List numerically

(prefix)	(number)
L	561730
	650115
	650116
	650117
	650118
	650130
	650131
	650132
	650133
	650134
	757832
	757833

If space insufficient, attach list

SPECIAL PROVISIONS  
CREDITS REQUESTED

DAYS  
per claim

Geophysical	
- Electromagnetic	<u>20</u>
- Magnetometer	<u>20</u>
- Radiometric	
- Other	
Geological	
Geochemical	

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

ENTER 20 days for each  
additional survey using  
same grid.

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

Magnetometer \_\_\_\_\_ Electromagnetic \_\_\_\_\_ Radiometric \_\_\_\_\_  
(enter days per claim)

DATE: Aug 4 / 83 SIGNATURE: J. R. Pyke  
Author of Report or Agent

Res. Geol. \_\_\_\_\_ Qualifications 2 0 0 1 1

Previous Surveys

File No.	Type	Date	Claim Holder

RECEIVED

AUG 10 1983

MINING LANDS SECTION

TOTAL CLAIMS 12

OFFICE USE ONLY

GEOPHYSICAL TECHNICAL DATA

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

Number of Stations 2175 Number of Readings 2175 (MAG) 1977 (VLF)
Station interval 50' Line spacing 200 FT
Profile scale
Contour interval 1000 gamma

MAGNETIC

Instrument Geometrics PROTON Magnetometer Model G-816
Accuracy - Scale constant 1 gamma
Diurnal correction method Loop method (rereading base line). Survey also
Base Station check-in interval (hours) monitored with base stn. recorder in
Base Station location and value Rouyn.

ELECTROMAGNETIC

Instrument GEONICS EM-16
Coil configuration
Coil separation
Accuracy
Method: [ ] Fixed transmitter [ ] Shoot back [ ] In line [ ] Parallel line
Frequency VLF STATION, CUTLER MAINE, 17.8 KHZ
Parameters measured In phase component and quadrature

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 \_\_\_\_\_

Total Number of Samples \_\_\_\_\_

Type of Sample \_\_\_\_\_  
(Nature of Material)

Average Sample Weight \_\_\_\_\_

Method of Collection \_\_\_\_\_

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 \_\_\_\_\_

General \_\_\_\_\_

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 \_\_\_\_\_

Extraction Method \_\_\_\_\_

Analytical Method \_\_\_\_\_

Reagents Used \_\_\_\_\_

General \_\_\_\_\_

Instructions: - Please type or print.  
 - If number of mining claims traversed exceeds space on this form, attach a list.  
 Note: - Only days credits calculated in the "Expenditures" section may be entered in the "Expend. Days Cr." columns.  
 - Do not use shaded areas below.

25740

The Mining Act

Type of Survey(s) **Geophysical** (file L 561730) Township or Area **CAIRO**

Claim Holder(s) **K. CURRISSON** Prospector's Licence No. **K19127**

Address **P.O. Box 1163, Timmins, Ont P4N 1H9**

Survey Company **ATELIER DE DESSIN TECHNIQUE** Date of Survey (from & to) **17 05 83** Total Miles of line Cut **10.9**  
 Day Mo. Yr. Day Mo. Yr.

Name and Address of Author (of Geo-Technical report) **P. BALD P.O. Box 1163, Timmins Ont P4N 1H9**

Credits Requested per Each Claim in Columns at right

Special Provisions	Geophysical	Days per Claim
For first survey: Enter 40 days. (This includes line cutting)	- Electromagnetic	20
	- Magnetometer	20
For each additional survey: using the same grid: Enter 20 days (for each)	- Radiometric	
	- Other	
	Geological	
	Geochemical	
Man Days Complete reverse side and enter total(s) here  IN 28 1983  MINING LANDS SECTION	Geophysical	Days per Claim
	- Electromagnetic	
	- Magnetometer	
	- Radiometric	
	- Other	
Airborne Credits  Note: Special provisions credits do not apply to Airborne Surveys.	Electromagnetic	Days per Claim
	Magnetometer	
	Radiometric	

Mining Claims Traversed (List in numerical sequence)

Mining Claim		Expend. Days Cr.	Mining Claim		Expend. Days Cr.
Prefix	Number		Prefix	Number	
L	561730				
	650130				
	650131				
	650132				
	650133				
	650134				

RECEIVED  
 JUN 20 1983  
 AM 7 18 PM 10 11 21 12 3 4 5 6

Expenditures (excludes power stripping)

Type of Work Performed

Performed on Claim(s)

Calculation of Expenditure Days Credits

Total Expenditures \$  ÷ 15 = Total Days Credits

Instructions  
 Total Days Credits may be apportioned at the claim holder's choice. Enter number of days credits per claim selected in columns at right.

Total number of mining claims covered by this report of work. **6**

For Office Use Only

Total Days Cr. Recorded **240** Date Recorded **JUN 20 1983** Mining Recorder Acting **M. G. W. ...**

Date Approved as Recorded **82.11.29** Granting Inspector **[Signature]**

Date **June 17/83** Recorded Holder or Agent (Signature) **[Signature]**

Certification Verifying Report of Work

I hereby certify that I have a personal and intimate knowledge of the facts set forth in the Report of Work annexed hereto, having performed the work or witnessed same during and/or after its completion and the annexed report is true.

Name and Postal Address of Person Certifying **D.R. Pyke 31 DELAIR CRES THORNHILL ONT L3T 2M3**

Date Certified **June 17/83** Certified by (Signature) **[Signature]**



Instructions: - Please type or print. - If number of mining claims traversed exceeds space on this form, attach a list. Note: - Only days credits calculated in the "Expenditures" section may be entered in the "Expend. Days Cr." columns. - Do not use shaded areas below.

(file 2757832) The Mining Act 2.5740

Form header section containing: Type of Survey(s) Geophysical, Claim Holder(s) B. RAINE, Address 29 3rd Avenue Timmins, Survey Company ATELIER DE DESSIN TECHNIQUE DU NW, Date of Survey 17 05 83 to 16 06 83, Total Miles of line Cut 3.6, Name and Address of Author R. BALD P.O. Box 1163 Timmins Ont L3T2M3

Credits Requested per Each Claim in Columns at right Mining Claims Traversed (List in numerical sequence)

Table with columns: Special Provisions, Geophysical, Days per Claim, Man Days, Airborne Credits. Includes handwritten entries for Electromagnetic (20), Magnetometer (20), and Radiometric (20).

Table with columns: Mining Claim Prefix, Mining Claim Number, Expend. Days Cr. Contains handwritten entries for claims 757832 and 757833.

RECEIVED

MINING LANDS SECTION

RECEIVED JUN 20 1983

Expenditures (excludes power stripping) section with Type of Work Performed, Calculation of Expenditure Days Credits (Total Expenditures \$ + 15 = Total Days Credits), and Instructions.

For Office Use Only section with Total Days Cr. Recorded 80, Date Recorded JUN 20 1983, and signatures of Mining Recorder and Branch Director.

Certification Verifying Report of Work section with a declaration of knowledge, Name and Postal Address of Person Certifying (D. R. Pyke 31 DELAIR CRES THORNHILL ONT L3T2M3), and Date Certified (June 17/83).





Ministry of  
Natural  
Resources

Geotechnical  
Report  
Approval

File  
2.5740

Aug 19/83

Mining Lands Comments

*- report not signed*

To: Geophysics *R. Barlow*

Comments  
*report not signed*

Approved  Wish to see again with corrections

Date *Sept 21/83* Signature *R. Barlow*

To: Geology - Expenditures

Comments

Approved  Wish to see again with corrections

Date \_\_\_\_\_ Signature \_\_\_\_\_

To: Geochemistry

Comments  
*L.O.*

Approved  Wish to see again with corrections

Date \_\_\_\_\_ Signature \_\_\_\_\_

To: Mining Lands Section, Room 6462, Whitney Block. (Tel: 5-1380) *h.j.*

164,165,166

1983 08 12

2,5740

Mr. George J. Koleszar  
Mining Recorder  
Ministry of Natural Resources  
4 Government Road East  
P.O. Box 984  
Kirkland Lake, Ontario  
P2N 1A2

Dear Sir:

We have received reports and maps for a Geophysical  
(Electromagnetic and Magnetometer) survey submitted under  
Special Provisions (credit for Performance and Coverage)  
on Mining Claims 1 561730 et al in the Township of Cairo.

This material will be examined and assessed and a statement  
of assessment work credits will be issued.

Yours very truly,

E.F. Anderson  
Director  
Land Management Branch

Whitney Block, Room 6450  
Queen's Park  
Toronto, Ontario  
M7A 1W3  
Phone:(416)965-1380

A. Barr:mc

cc: Dale R. Pyke  
31 Delair Crescent  
Thornhill, Ontario  
L3T 2M3

cc: K. Cunnison  
P.O. Box 1163  
Timmins, Ontario  
P4N 7H9

cc: R. Raine  
29 3rd Avenue  
Timmins, Ontario  
P4N 1B9

cc: R. Bald  
P.O. Box 1163  
Timmins, Ontario  
P4N 7H9

August 8, 1983  
Timmins, Ontario

Land Management Branch,  
Ministry of Natural Resources,  
Room 6450  
Whitney Block  
Queen's Park  
Toronto, Ontario M7A 1W3

Dear Sir or Madam,

Please find enclosed two copies  
of a geophysical report (VLF-EM and  
Magnetic surveys) on claims L561730, L650115  
to L650118 inclusive, L650130 to L650134 inclusive,  
L757832 and L757833, located in Cairo  
Township, Harder Lake Mining Division.

Sincerely,

Roberta Bald  
% Dale Pyke,  
P.O. Box 1163,  
Timmins, Ontario  
~~#8~~ P4N 7H9

**RECEIVED**

AUG 10 1983

MINING LANDS SECTION

ASSESSMENT WORK BREAKDOWN

1. FIELD WORK

<u>Type of Work</u>	<u>Name &amp; Address</u>	<u>Dates Worked</u>	<u>Number of 8 hour days</u>
YLF-EM Magnetic	U.T.M. Technical Services Ltc. 141 rue Principale, Rouyn, P.Q.		

2. CONSULTANTS

<u>Name &amp; Address</u>	<u>Dates Worked (specify in field or office)</u>	<u>Number of 8 hour days</u>

3. DRAUGHTSMAN, TYPING, OTHERS (specify)

<u>Name &amp; Address</u>	<u>Type of Work</u>	<u>Dates Worked</u>	<u>Number of 8 hour days</u>
U.T.M. Technical Services K. Cunnison	Draughting typing		

TOTAL 8 HOUR TECHNICAL DAYS \_\_\_\_\_

4. LINE-CUTTING

<u>Name</u>	<u>Address</u>	<u>Dates Worked</u>	<u>Number of 8 hour days</u>

TOTAL 8 HOUR LINE-CUTTING DAYS \_\_\_\_\_

ASSESSMENT WORK BREAKDOWN

1. Type of Survey VLF-EM and Magnetic

2. Township or Area Cairo Township

3. Numbers of Mining Claims Traversed by Survey 12 (twelve)

4. Number of Miles of Line Cut 21.12 miles Flown \_\_\_\_\_

\*5. Number of Stations Established \_\_\_\_\_

\*6. Make and type of Instrument Used \_\_\_\_\_

\*7. Scale Constant or Sensitivity \_\_\_\_\_

\*8. Frequency Used and Power Output \_\_\_\_\_

9. Summary of Assessment Credits (details on reverse side)

Total 8 hour Technical Days (Include Consultants, Draughting etc.) \_\_\_\_\_

Total 8 hour Line-Cutting Days \_\_\_\_\_

Calculation

$$\frac{\text{Technical}}{\text{Technical}} \times 7 = \frac{\text{Line-cutting}}{\text{Line-cutting}} = \frac{\text{Number of claims}}{\text{Number of claims}} = \frac{\text{Assessment credits per claim}}{\text{Assessment credits per claim}}$$

The dates listed on this form represent working time spent entirely within the limits of the above listed claims  Check  
If otherwise, please explain \_\_\_\_\_

Dated: August 4, 1983

Signed: Roberta Bald

- Note:
- (A) \* Complete only if applicable.
  - (B) Complete list of names, addresses and dates on reverse side.
  - (C) Submit separate breakdown for each type of survey.
  - (D) Submit in duplicate.

**RECEIVED**

AUG 10 1983

MINING LANDS SECTION



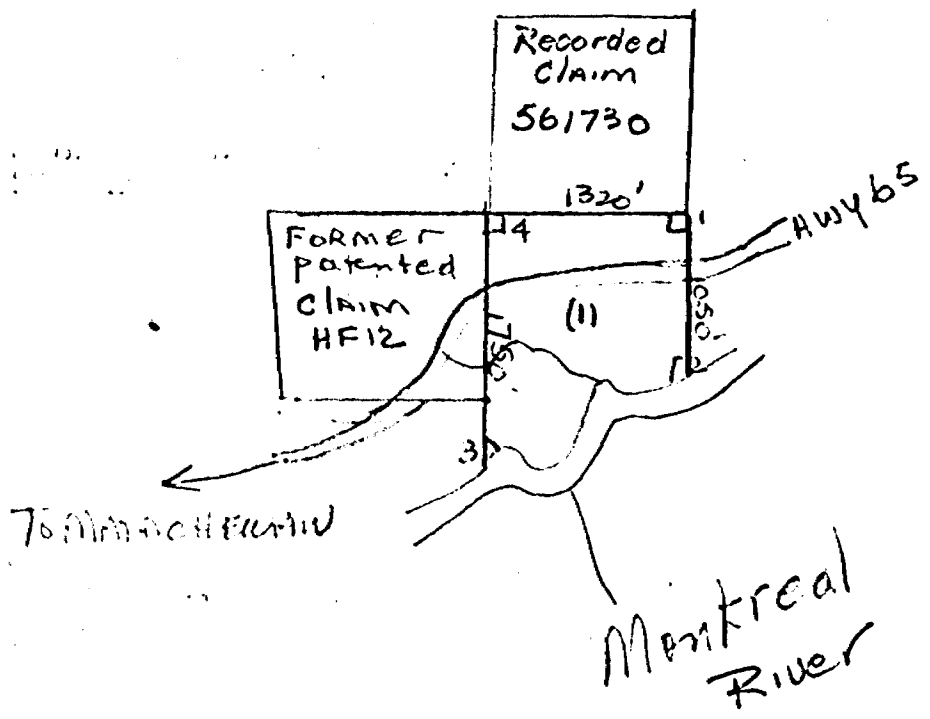


Group Sketch of claims listed on page 1

Scale: 1 inch = 1320 feet  
(20 chains)



CAIRO TWP



P.O. Box 1163  
Timmins, Ont



Canada

32



LAND MANAGEMENT BRANCH  
MINISTRY NATURAL RESOURCES

Whitney Block

QUEEN'S PARK

TORONTO, ONTARIO

M7A 1W3



c

561730

✓

650115

✓

16

14

17

✓

18

✓

650131

✓

32

✓

33

~~✓~~

1/2

34

✓

757832

✓

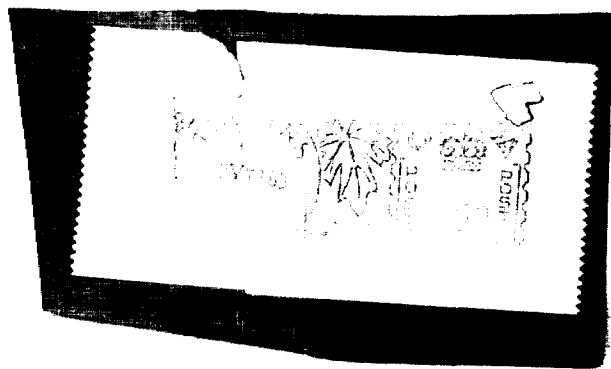
33

✓

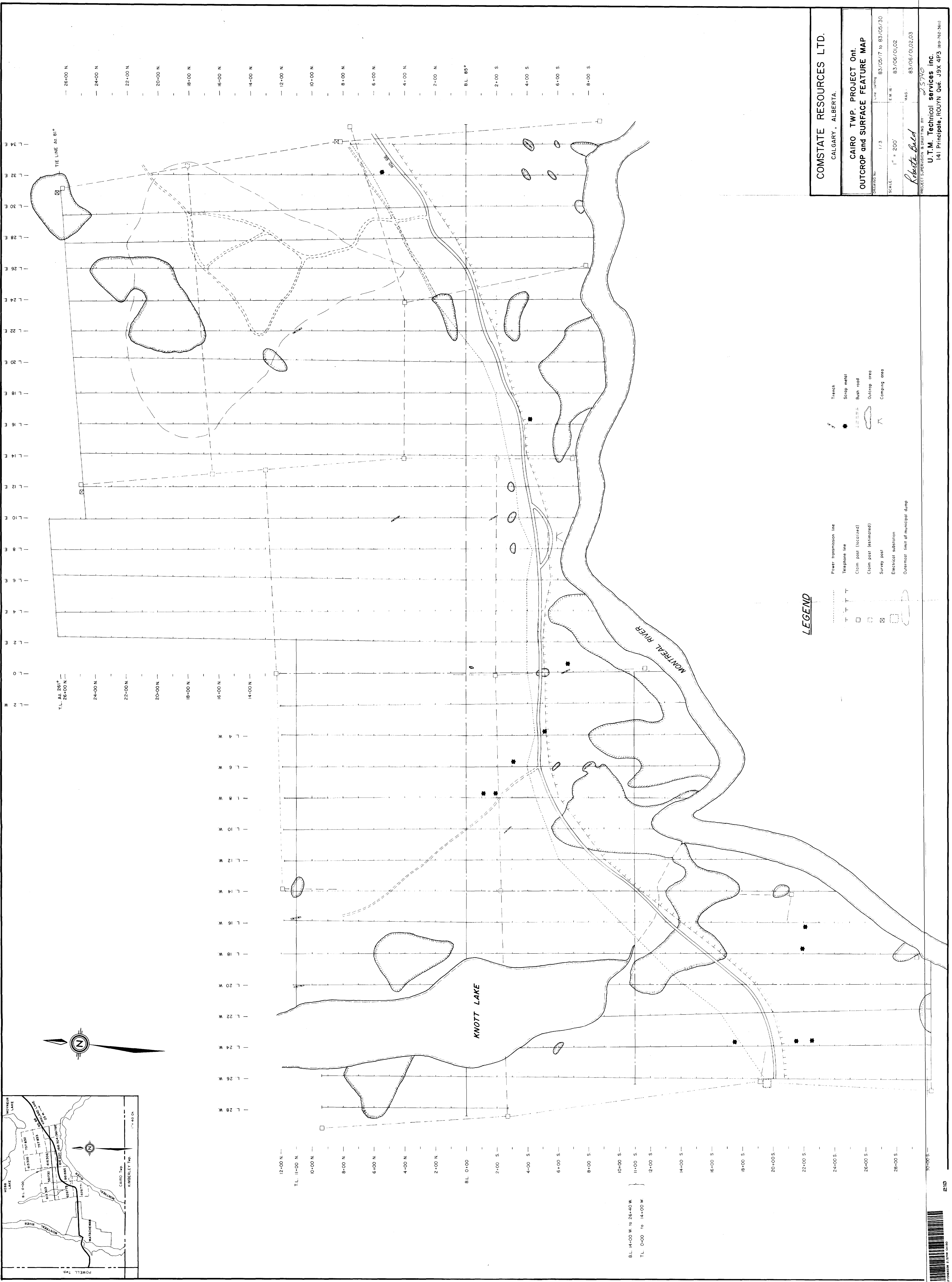
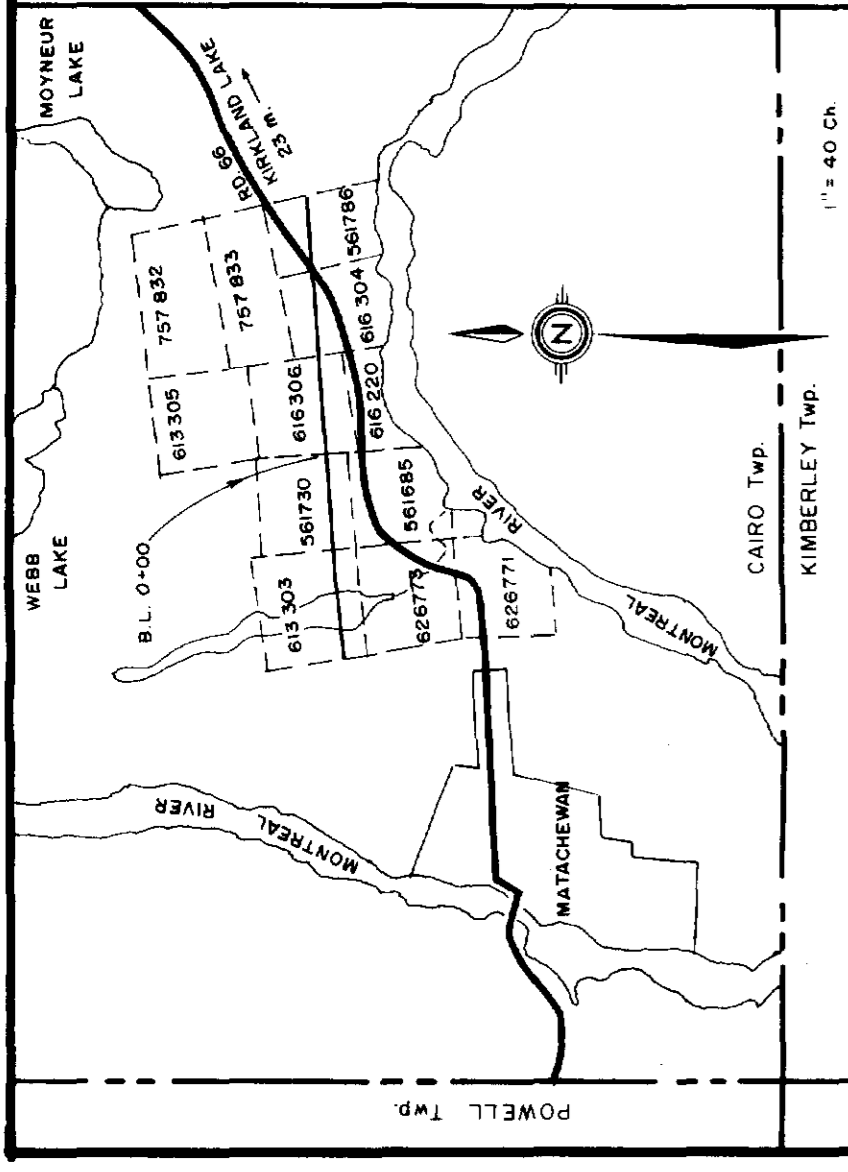
12

650130

✓







**LEGEND**

- Power transmission line
- Telephone line
- Claim post (located)
- Claim post (estimated)
- Survey post
- Electrical substation
- Outermost limit of municipal dump
- Trench
- Scrap metal
- Bush road
- Outcrop area
- Camping area

**COMSTATE RESOURCES LTD.**  
CALGARY, ALBERTA.

**CAIRO TWP. PROJECT Ont**  
**OUTCROP and SURFACE FEATURE MAP**

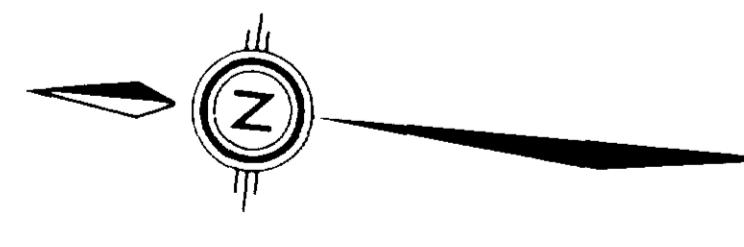
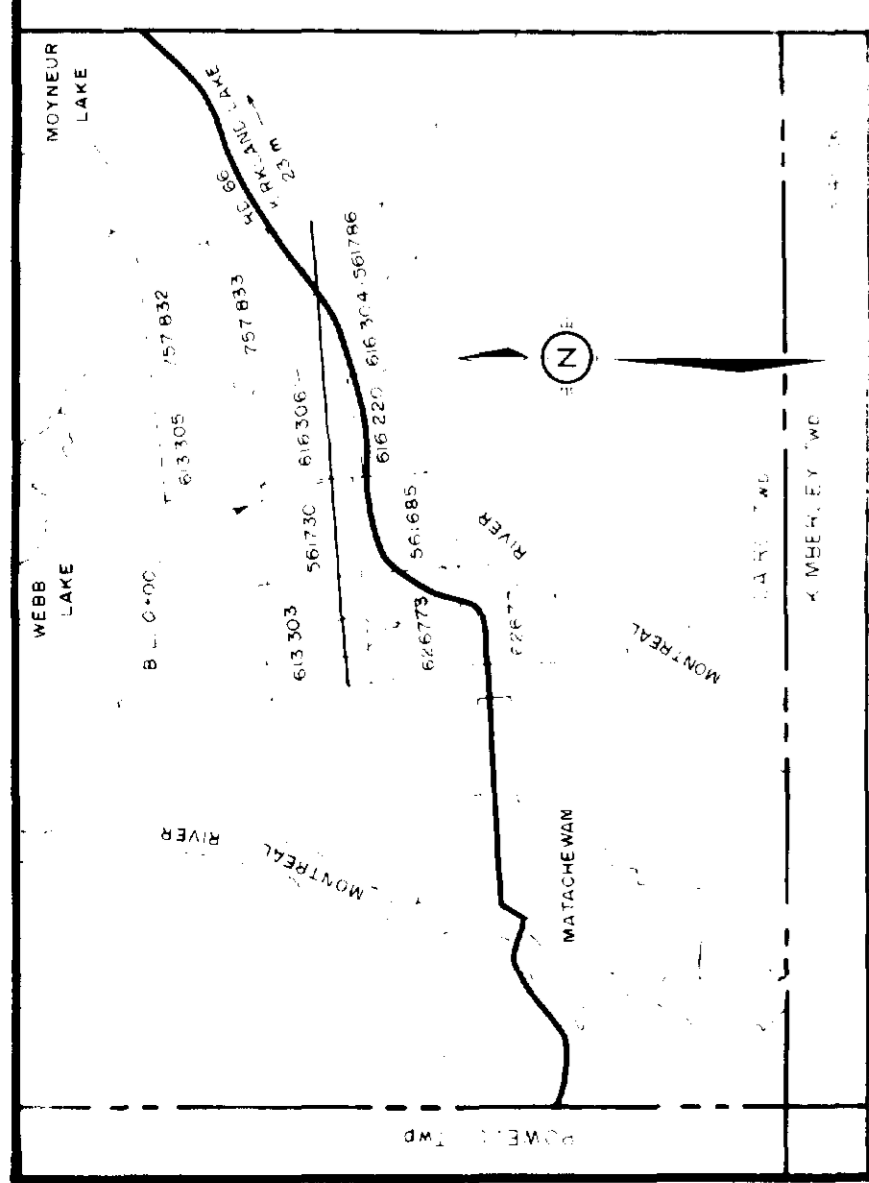
DRAWING NO. 1/3  
SCALE: 1" = 200'  
DATE: 83/05/17 to 83/05/30  
E.M. 16  
83/06/01/02  
83/06/01/02/03

*Roberta Beale*

PROJECT SUPERVISOR: ROBERTA BEALE  
BY: *SMC*

**U.T.M. Technical services inc.**  
141 Principale, ROUYN Que. J9X 4P3 (819-762-3611)





**LEGEND**

- Instrument E.M. 16
- Station N.A.A.
- +10% 0 -10%
- Vertical scale
- IP
- OP

**COMSTATE RESOURCES LTD.**  
 CALGARY, ALBERTA

**CAIRO TWP. PROJECT Ont.**  
 V.L.F. E.M. 16 FREQ. 17.8 KHz.

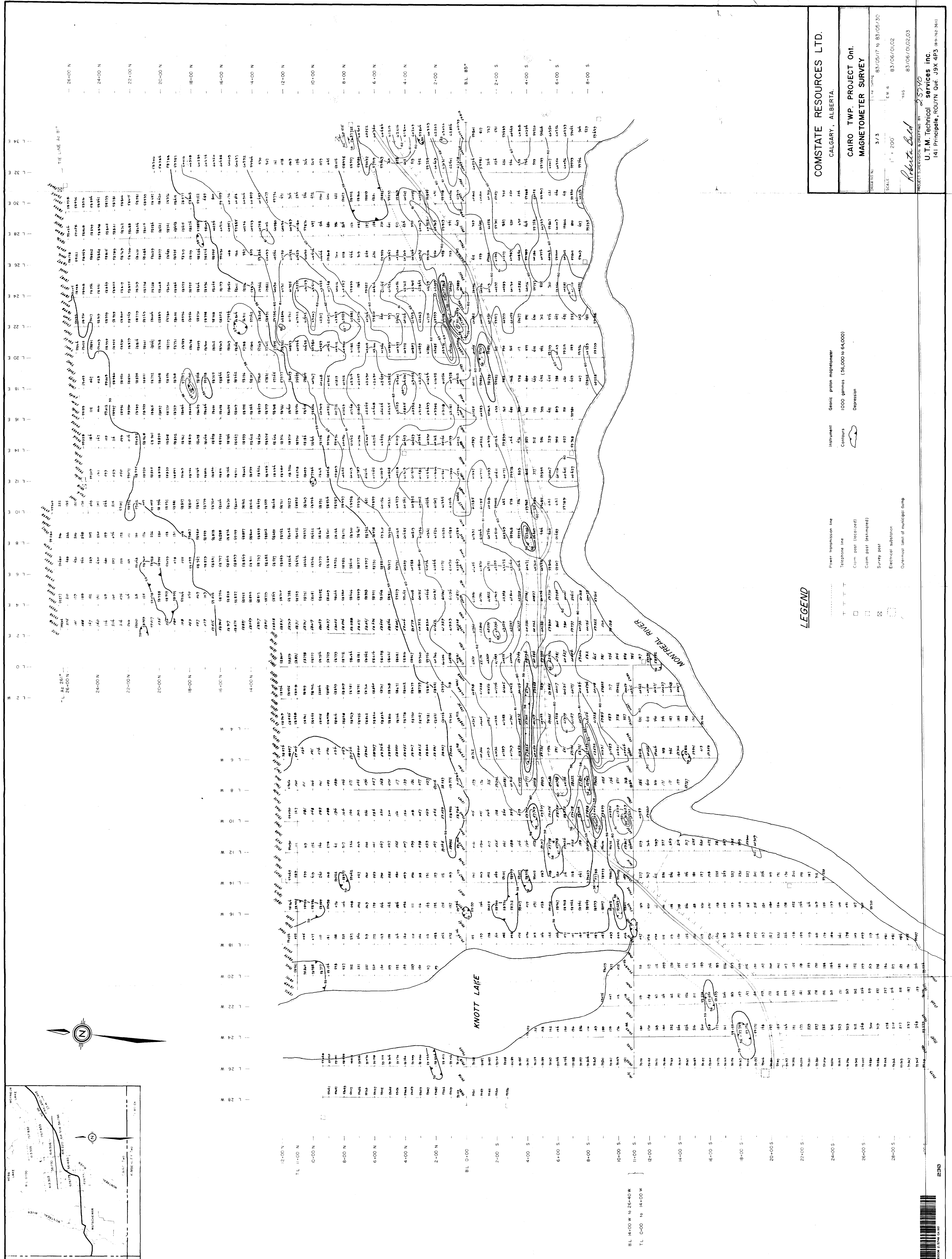
83/517 to 83/537  
 83/06/01/2  
 83/06/02/3

*Roberta Bell*

U.T.M. Technical services inc.  
 141 Principale, ROUYN Qué. J9X 4P3 (87) 477 N







COMSTATE RESOURCES LTD.  
CALGARY, ALBERTA.

CAIRO TWP. PROJECT Omt.  
MAGNETOMETER SURVEY

Scale: 1" = 200'

3/3

83/05/17 to 83/05/30

83/06/01/02

83/06/01/02.03

U.T.M. Technical Services Inc.  
141, Principle, ROUTE 904, J9X 4P3 (88-9-953, 960)

**LEGEND**

- Geonic proton magnetometer  
1000 gammas (56,000 to 64,000)  
Depression
- Instrument  
Contours
- Power transmission line  
Telephone line  
Culm post (located)  
Culm post (estimated)  
Survey post  
Electrical substation  
Overseas limit of municipal dump