



42A07NW0027 2.6105 MACKLEM

010

R E P O R T

on

ELECTROMAGNETIC (V.L.F.) SURVEY

on

MACKLEM TOWNSHIP PROPERTY

RECEIVED

DEC 6 1983

MINING LANDS SECTION

of

UNITED KINGDOM ENERGY RESOURCES INC.

PORCUPINE MINING DIVISION, ONTARIO

CLAIMS

P-663236 - P-663245

P-663254

P-663263 - P-663264

P-663273

John R. Boissoneault, B.Sc., P.Eng.

Geologist, Engineer

November 4, 1983

2740



010C

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- (a) Electromagnetic Survey Plan
- (b) Location Map

INTRODUCTION:

During the period of September 19 to October 3, 1983, I carried out a radiofrequency (V.L.F.) electromagnetic survey on the Macklem Township property of United Kingdom Energy Resources Inc. This claim block, previously referred to as the "Long Lake Gold Property" lies in the Porcupine Mining Division of northeastern Ontario, about 22 miles east of the City of Timmins.

The property consists of one contiguous, 14 claim block, one and a half miles long, from north to south, and three-quarters of a mile wide along its east-west axis. It lies entirely within Macklem Township in its southeast quarter, coming within one mile of the eastern boundary and within one-half mile of the southern boundary. A good secondary road, known as the "Gibson Lake Road" crosses the northeast corner of the property, and several lesser roads provide access to the eastern part of the claim block. The eastern part of the property is relatively high, forested by jackpines and red pines, but the western and southern parts cover a low lying spruce swamp.

The survey grid consists of north-south, cut out picket lines, 300 feet apart and a cut out, east-west base line, a total of 18.2 miles. The location of the grid relative to the property is shown on the "Electromagnetic Survey Plan" on a scale of 1 inch = 400 feet.

The purpose of the survey was to detect subsurface concentrations of metallicly conductive mineralization,

which might occur beneath the grid covered and within the range of the instrument. Some of the gold bearing deposits, of this part of the Precambrian Shield, occur as concentrations of auriferous pyrite which are sometimes distinguishable from the enclosing rocks by their electrical conductivity. Another purpose was to locate possible mineralized shear zones or other structures which could be related to the occurrence of gold concentrations; these are usually conductive at the high frequency utilized.

Unfortunately, anomalous electromagnetic response are also caused by features which have little or no commercial significance. These are often not distinguishable from features of interest by the geophysical means employed.

GEOLOGICAL BACKGROUND:

The general geology of the Timmins area, and the local geology in the vicinity of the property are well described by K. H. Darke, in his "Preliminary Exploration Report" on the "Long Lake Claim Group" dated January 10, 1983.

The region of Macklem Township is underlain mainly by intermediate to mafic metavolcanics of Archean age, that have a general strike of 70°. These are cut by a major structural break, the "Destor Fault", which runs along the northern boundary of the township, and a series of prominent cross faults which trend about 125° (S-55°-E).

Gold deposits, in Macklem Township, have been found in zones of extensive carbonatization in the intermediate metavolcanics, generally associated with quartz veins in zones of schisting and shearing in the flows. This condition is common among the gold mines of the Timmins-Porcupine area.

The bedrock on the Long Lake property is covered by overburden, but about one-half mile southwest of the claim block, there is a large number of outcrops over a wide area. These consist of carbonatized mafic to intermediate metavolcanics. Here a number of gold bearing quartz veins are found in a carbonate zone lying between two faults belonging to the series previously referred to (125°). These deposits are presently being evaluated by a drilling program which Dome Mines has been conducting for several years.

INSTRUMENTATION AND PROCEDURE:

A Geonics EM-16 electromagnetic receiving unit was used for the survey, with readings taken every 100 feet along the picket lines, to an accuracy of $\pm 1\%$. The instrument is a sensitive radio receiver, tuned to the frequency of a V.L.F. radio communications station which is used as a transmitter. It measures vertical field components of secondary fields, set up in conductive bodies by the primary signal. Two coils with perpendicular axes, allow the measurement of the mechanical tilt angles, of both the inphase and quadrature components of the secondary field. The measurements are expressed in degrees. A

transmitting station is selected, so that the primary field is approximately at right angles to the strike of the geological structures, in the area to be surveyed, and approximately parallel to the grid lines. The V.L.F. radio station in Cutler, Maine, was used for this survey (Frequency 17.8 kilocycles per second). The tilt angles of the inphase and quadrature components of the vertical secondary field, measured during the survey, are plotted as profiles on the survey plan, on a scale of 1 inch = 20%.

SURVEY RESULTS:

The results of the V.L.F. electromagnetic survey reveal several zones of anomalous conductivity on the grid covered. The most interesting of these are the discontinuous conductor "F-F₁" and the conductors "G" and "H", all occurring on the southern part of the claim block. These anomalies, which have a strike of between 120° and 125°, and an almost vertical dip, are strongly indicated, especially "F". In all cases, the point of inflection for both the inphase and quadrature occur at the same place, but in opposite directions. These responses suggest zones of moderate to strong conductivity in the bedrock, overlain by horizontal conductive overburden. The anomalies could be a reflection of a series of faults, belonging to the set of faults described under "Geological Background", since they have a similar strike. The discontinuous nature of conductors F-F₁ could be caused by diabase dikes, which are common in the area and have a strike of 170° (i.e. L-30-W, 27S).

Also of some interest are conductors "E" and "C". Zone "E" is strongly indicated on 3 lines on the west-central part of the property and is similar in character to Zone "F", but it has a somewhat different strike (approximately 100°) and is curved. Zone "C" was detected just south of the base line on line 9 west, and is an area of weaker conductivity and of lower priority. The other anomalies, detected on the claim block, are considerably weaker, and are probably formational, or due to weaker structures.


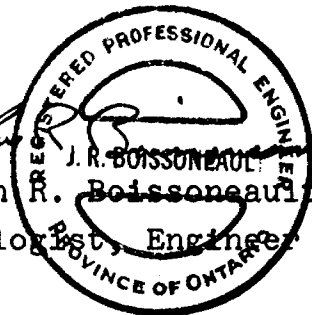
Unfortunately, the absence of magnetic data prohibits further interpretation, or the confirmation of the suggested causes of the anomalies.

CONCLUSIONS AND RECOMMENDATIONS:

It is my opinion that several of the zones of anomalous conductivity, detected by the survey, should be further investigated, especially those in the southern part of the property. This opinion is based not only upon the characteristics of the geophysical responses, but also upon the results of the Dome Mines exploration program, about one mile to the southwest. Here gold occurrences are found in a shear zone lying between a set of faults which have a similar strike to conductors F, G and H on the Long Lake property. The mineralization lies within a large area of intense carbonatization, which has not been delineated; also all indications are that the geological environment (mafic to intermediate metavolcanics) extends to and beyond the Long Lake property.

I recommend that further geophysical work be carried out on the claim block, namely the completion of "Phase 1" as outlined in the previously mentioned report of K. H. Darke. Of particular importance, at this point, is a magnetometer survey, which would provide additional data for interpretation of the anomalies as well as the geology. This could then be followed by the recommended overburden drilling program.

Respectfully submitted,


John R. Boissoneault, B.Sc., P.Eng.
Geologist, Engineer


REGIONAL LOCATION MAP

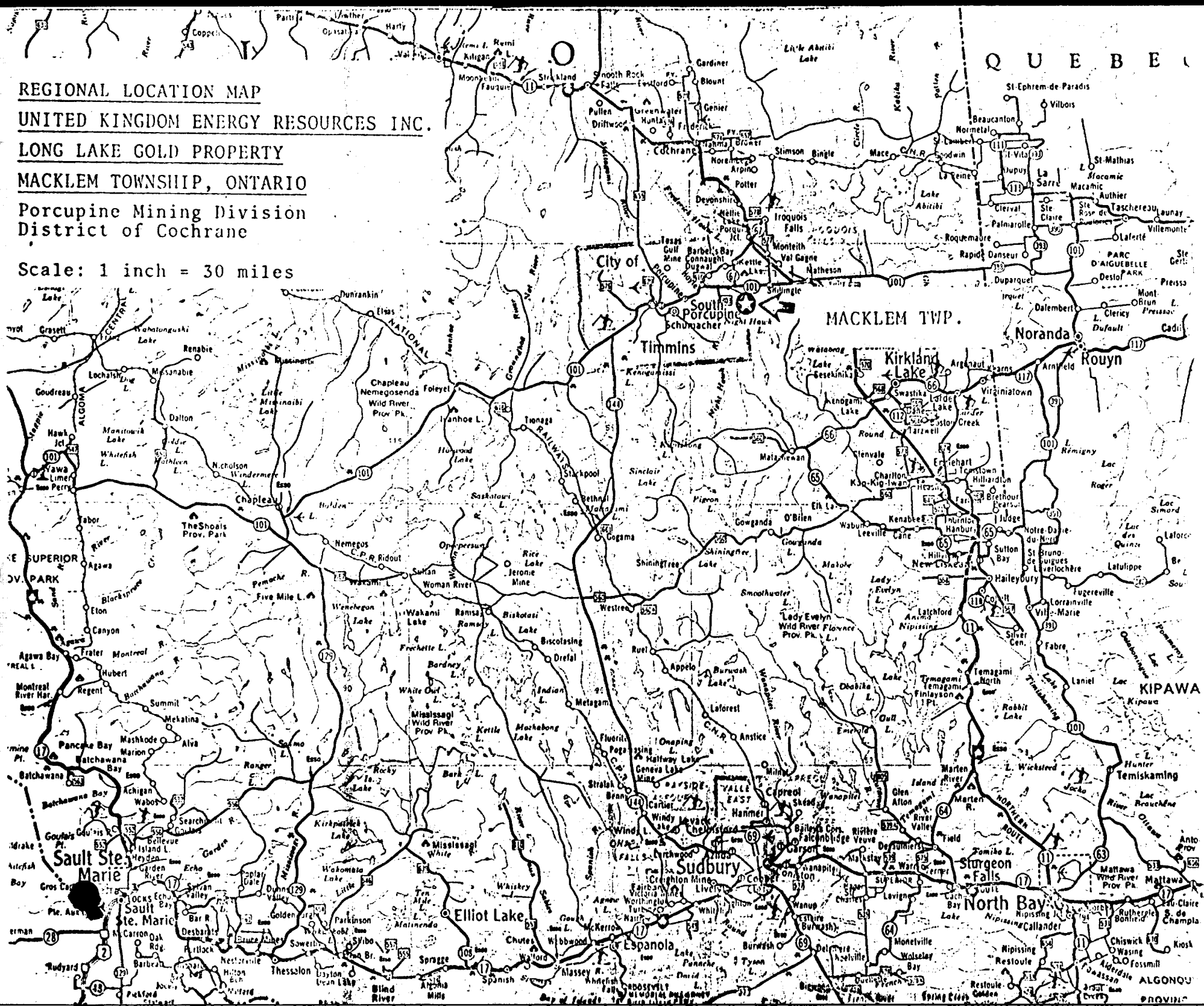
UNITED KINGDOM ENERGY RESOURCES INC.

LONG LAKE GOLD PROPERTY

MACKLEM TOWNSHIP, ONTARIO

Porcupine Mining Division
District of Cochrane

Scale: 1 inch = 30 miles





Ministry of
Natural
Resources

Report of Work
(Geophysical, Geological,
Geochemical and Expenditures)

2.6105



42A07NW0027 2.6105 MACKLEM

900

#308/83

The Ministry of Natural Resources

DO NOT USE SHADDED AREAS BELOW.

| | | | |
|---|---|---|--|
| Type of Survey(s) ELECTROMAGNETIC (VLF) | | Township or Area MACKLEM TOWNSHIP | |
| Claim Holder(s) UNITED KINGDOM ENERGY RESOURCES INC. | | Prospector's Licence No. T-1339 | |
| Address SUITE 808, 409 GRANVILLE ST., VANCOUVER, B.C. V6C 1T2 | | | |
| Survey Company JOHN R. BOISSONEAULT | Date of Survey (from & to) 20 Day 9 Mo. 83 Yr. 3 Day 10 Mo. 83 Yr. | | Total Miles of line Cut 18.2 |
| Name and Address of Author (of Geo-Technical report) JOHN R. BOISSONEAULT | | | |

2.6105

| Credits Requested per Each Claim in Columns at right | | | Mining Claims Traversed (List in numerical sequence) | | |
|--|-------------------|----------------|--|--------|------------------|
| Special Provisions | Geophysical | Days per Claim | Mining Claim | | Expend. Days Cr. |
| | | | Prefix | Number | |
| For first survey: Enter 40 days. (This includes line cutting) | - Electromagnetic | 40 | P | 663236 | 40 |
| | - Magnetometer | | | 663237 | 40 |
| | - Radiometric | | | 663238 | 40 |
| | - Other | | | 663239 | 40 |
| For each additional survey: using the same grid: Enter 20 days (for each) | - Other | | | 663240 | 40 |
| | Geological | | | 663241 | 40 |
| | Geochemical | | | 663242 | 40 |
| | | | | 663243 | 40 |
| Man Days Complete reverse side and enter total(s) here | - Electromagnetic | | | 663244 | 40 |
| | - Magnetometer | | | 663245 | 40 |
| | - Radiometric | | | 663254 | 40 |
| | - Other | | | 663263 | 40 |
| Airborne Credits Note: Special provisions credits do not apply to Airborne Surveys. | Geological | | | 663264 | 40 |
| | Geochemical | | | 663273 | 40 |
| | Electromagnetic | | | | |
| | Magnetometer | | | | |
| | Radiometric | | | | |

RECEIVED
NOV 24 1983
MINING LANDS SECTION

RECORDED
OCT 4 1983
Receipt No. *el*

Expenditures (excludes power stripping)

Type of Work Performed **Oct 04 1983**
A.M. P.M.

Performed on Claim(s) *SR*

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. **14**

Date **Oct. 3, 1983** Reported Holder or Agent (Signature) *John R. Boissoneault*

For Office Use Only

Total Days Cr. Recorded **560** Date Recorded **Oct 4/83** Mining Recorder *Chenley*

Date Approved Recorded **84.3.2** Branching Recorder *[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
JOHN R. BOISSONEAULT, 670 SPRUCE ST. W., TIMMINS, ONT. P4N 6P3

Date Certified **Oct. 4, 1983** Certified by (Signature) *John R. Boissoneault*



Mining Lands Comments

- map requires claim numbers. (okay).

To: Geophysics Mr. R. Barlow.

Comments

Approved Wish to see again with corrections Date Jan 13/84 Signature R Barlow

To: Geology - Expenditures

Comments

Approved Wish to see again with corrections Date Signature

To: Geochemistry

Comments L.D.

Approved Wish to see again with corrections Date Signature

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

Initial Check

MEA. Dec 13, 1983

Assessed

Mary Ellen Anderson Feb 21/84

Approved Reports of Work
sent out

Notice of Intent filed

Approval after Notice of Intent
sent out

Duplicate sent to Resident
Geologist

Duplicate sent to A.F.R.O.

1983 12 12

Mining Recorder
Ministry of Natural Resources
60 Wilson Avenue
Timmins, Ontario
P4N 2S7

Dear Sir:

We have received reports and maps for a Geophysical
(Electromagnetic) survey subey submitted under Special
Provisions (Credit for Performance and Coverage) on
mining claims P 663236 et al in the Township of Macklem.

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 6643
Queen's Park
Toronto, Ontario
M7A 1W3
Phone: (416)965-1380

A. Barr:mc

cc: United Kingdom Energy Resources Inc
Suite 308
409 Granville Street
Vancouver, B.C.
V6C 1T2

cc: John R. Boissoneault
670 Spruce Street North
Timmins, Ontario
P4N 6P3

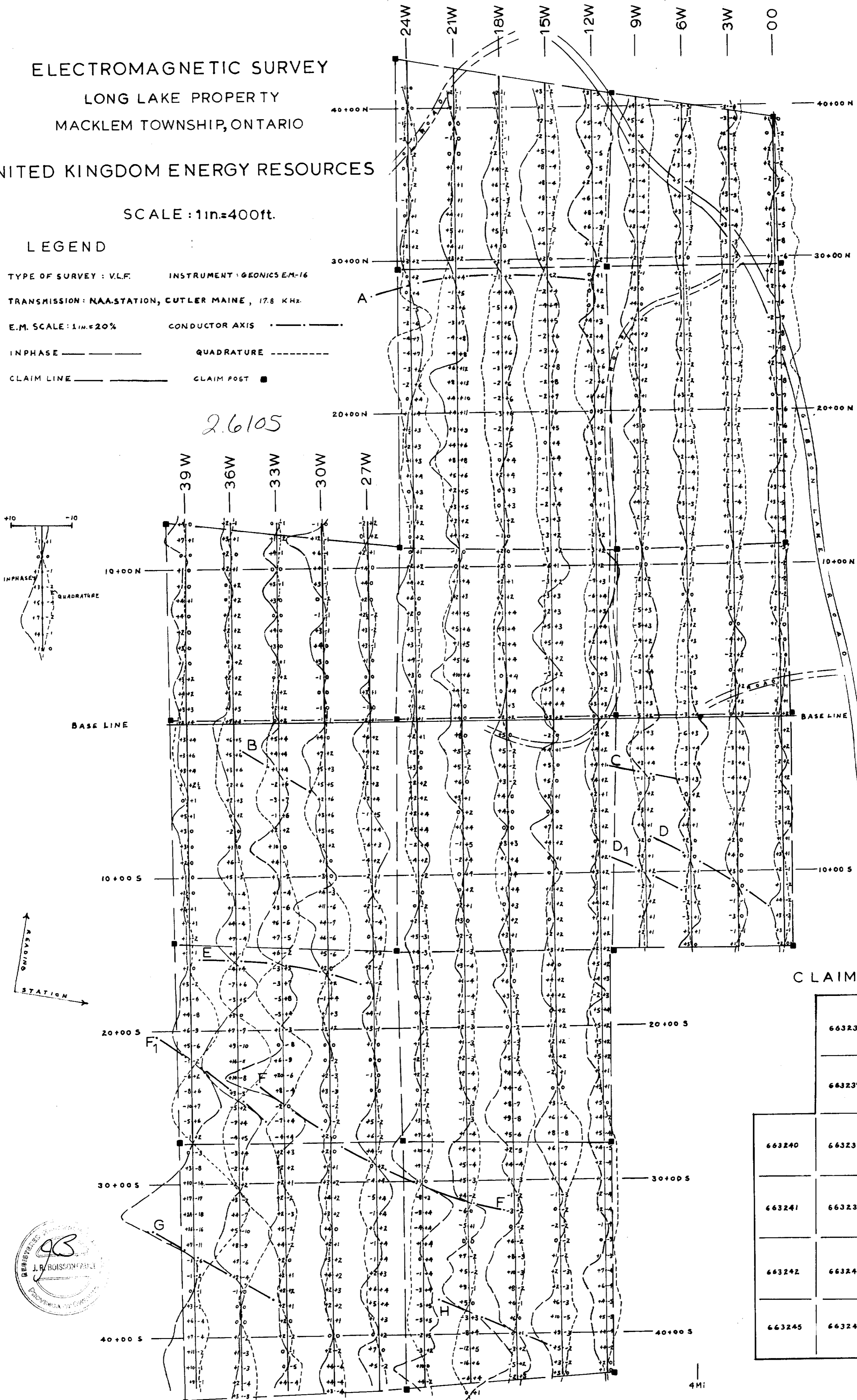
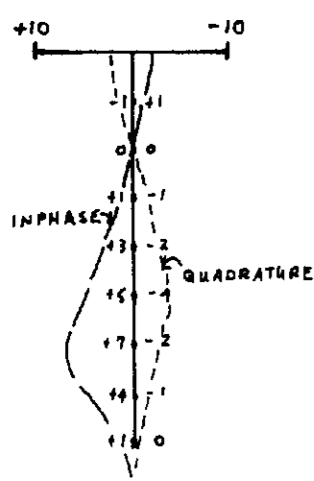
| | EM | | | EM | | | EM |
|----------|----|--|--------|----|--|--------|----|
| P 663226 | ✓ | | 663241 | ✓ | | 663254 | ✓ |
| 37 | ✓ | | 42 | ✓ | | 263 | ✓ |
| 38 | ✓ | | 43 | ✓ | | 264 | ✓ |
| 39 | ✓ | | 44 | ✓ | | 273 | ✓ |
| 40 | ✓ | | 45 | ✓ | | | |

ELECTROMAGNETIC SURVEY
 LONG LAKE PROPERTY
 MACKLEM TOWNSHIP, ONTARIO
 UNITED KINGDOM ENERGY RESOURCES

SCALE : 1 in. = 400 ft.

LEGEND

TYPE OF SURVEY : VLF. INSTRUMENT : GEONICS EM-16
 TRANSMISSION : NAA STATION, CUTLER MAINE, 17.8 KHz.
 E.M. SCALE : 1 in. = 20% CONDUCTOR AXIS
 IN PHASE _____ QUADRATURE - - - - -
 CLAIM LINE _____ CLAIM POST ■



CLAIM BLOCK

| | |
|--------|--------|
| 663236 | 663254 |
| 663237 | 663263 |
| 663240 | 663238 |
| 663241 | 663239 |
| 663242 | 663243 |
| 663245 | 663244 |

Scale : 1 in. = 1/4 Mi.

5 Mi

