

2.2804



41P14NE0075 2.2804 HALLIDAY

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MAGNETIC
AND
HORIZONTAL LOOP ELECTROMAGNETIC
SURVEYS
FOR
ESSEX MINERALS COMPANY
HALLIDAY PROJECT
GRASSY RIVER WEST GRID

Timmins, Ontario
May 1978

Peter T. George, P.Eng.
Consulting Geologist

RECEIVED

SEP 25 1978

MINING LANDS SECTION

GRASSY RIVER WEST GRID

Introduction

The following report describes the results of ground geophysical surveys completed for Essex Minerals Company, Halliday Project, Ontario. Line cutting was completed during the period January 4 to February 26, 1978. Geophysical surveys were completed during the period February 4 to April 15, 1978.

Property Description

The property consists of eight contiguous, unpatented mining claims designated as follows:

L500530 to L500532 inclusive

L504868 to L504872 inclusive

Property, Location and Access

The property is located in the northwest sector of Halliday Township west of the Ontario Hydro powerline along the Halliday-Hutt township line. Access to the property is via the Papakomeka Lake road south from Timmins to the Matachewan road then east along the Matachewan road to the Ontario Hydro line that crosses the west side of Hutt Township. The hydro line lies immediately east of the property boundary approximately six miles south of the Matachewan road.

Geophysical Surveys

Magnetic and horizontal loop electromagnetic surveys were completed on the property.

The magnetic survey was carried out utilizing a Scintrex MP-2 Proton Magnetometer capable of reading total field values to an accuracy of ± 1 gamma. Readings were taken at 50 foot intervals on all base lines and cross lines. Base stations were established at 100 foot intervals along all base lines and tie lines. Diurnal variation was corrected for by tying in to the base stations at time intervals generally less than half hour and in no case greater than one hour.

The horizontal loop electromagnetic survey was carried out utilizing an Apex Parametrics Max Min II HEM. The HEM unit measures the in-phase and Quadrature components of the secondary field developed in the vicinity of conductive material. The measurements are accurate to $\pm 1\%$. Readings were taken at 444 Hz and 1777 Hz frequencies utilizing a 400 foot reference cable.

Conductivity-width and depth of overburden determinations are presented on the 444 Hz HEM maps.

Regional Geology

The regional geology of the area is presented on Ontario Department of Natural Resources Compilation Map 2205 (Timmins-Kirkland Lake).

The area is underlain by an Archean volcanic-sedimentary complex locally referred to as the Halliday dome. The general stratigraphic sequence in the area is as follows:

A thick sequence of mafic volcanic rocks is overlain by a felsic volcanic complex consisting of flows, pyroclastics and volcanoclastic sediments. Ultramafic flows or sills are common in the general stratigraphic interval marked by the felsic volcanic-mafic volcanic contact zone. Sedimentary rocks occur intercalated with the volcanic rocks and also occur at the top of the stratigraphic sequence.

Folding in the area is complex but generally occurs about fold axes having an east-west trend. Some large scale cross folding has occurred about north-south trending fold axis.

Two major sets of faults occur in the area. One set has a northeasterly strike direction and the other has a north to north-westerly strike direction.

Three sets of diabase dikes occur in the area. Dikes having a northerly strike direction are probably Matachewan-type. Dikes having a northeasterly strike direction are probably Sudbury-type.

A thin veneer of generally flat lying early Proterozoic sedimentary rocks unconformably overlies the Archean rocks in parts of the area.

Geology and Previous Work

Dowa Mining and AMAX Exploration both have conducted geophysical surveys in the area covered by the present grid and both companies reported one drill hole on the property.

The property is underlain by mafic and felsic volcanic rocks. The strike is generally east-west and stratigraphic tops are to the south.

Geophysical Results

Magnetic Survey:

Maximum magnetic relief on the property is 170 gammas. The low magnetic relief outlines a number of narrow 100 to 150 gamma magnetic anomalies with an east-west strike trend. The anomalies may be due to disseminated pyrrhotite or magnetite within the volcanic strata.

HEM Survey:

Two electromagnetic anomalies were located during the survey.

Anomaly A

Anomaly A occurs from line 36W to line 48W. The best response is on line 40W where the data indicates a zone with a conductivity-width of 15 mhos. The depth of burial varies from 40 to 80 feet along strike and the zone has a maximum thickness of 30 feet. The zone is non magnetic.

Previous drilling indicates that a graphite-pyrite horizon is the cause of the conductivity.

Anomaly B

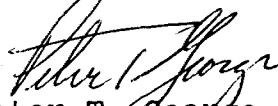
Anomaly B occurs as a weak single line response on line 48W. The anomaly may be caused by conductive overburden as it correlates with the centre of the Grassy River.

Conclusions and Recommendations

No significant new exploration targets were located during the surveys.

No further work is recommended on the property.

Respectfully submitted,



Peter T. George, P.Eng.
Consulting Geologist



Ministry of Natural Resources

GEOPHYSICAL - GEOLOGICAL - (TECHNICAL DATA STATEMENT



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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) Mag., HEM, Line Cutting
Township or Area HALLIDAY TP
Claim Holder(s) Essex Minerals Company
91 Pine St., South, Timmins, Ont.
Survey Company Georex Ltd., P.O. Box 70, Timmins, Ont.
Author of Report Peter T. George, P.Eng.
Address of Author Georex Ltd., P.O. Box 70, Timmins
Covering Dates of Survey MARCH 1 - MAY 30, 1978
(linecutting to office)
Total Miles of Line Cut 7.54

MINING CLAIMS TRAVERSED
List numerically EM
L 500530 1/4 not covered
L 500531
L 500532
L 504868 1/4
L 504869
L 504870
L 504871 1/4
L 504872 1/4
TOTAL CLAIMS 8

SPECIAL PROVISIONS
CREDITS REQUESTED
ENTER 40 days (includes line cutting) for first survey.
ENTER 20 days for each additional survey using same grid.
Geophysical DAYS per claim
-Electromagnetic 40
-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: June 8, 1978 SIGNATURE: Peter T. George
Author of Report or Agent

Res. Geol. L.D. Qualifications 63.2350

Previous Surveys

Table with 4 columns: File No., Type, Date, Claim Holder

If space insufficient, attach list

GEOPHYSICAL TECHNICAL DATA

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

Mag: 796
 Number of Stations HEM: 305 Number of Readings HEM: 1220 Mag: 796
 Station interval Mag: 50' HEM: 100' Line spacing 400'
 Profile scale 1 inch = 20%
 Contour interval 25 to 100 gammas

MAGNETIC

Instrument Scintrex MP-2 Proton Mag.
 Accuracy - Scale constant + 1 gamma
 Diurnal correction method Base Stns. established at 100' intervals along B.L.
 Base Station check-in interval (hours) Maximum 1 hour
 Base Station location and value 00/BW 59245

ELECTROMAGNETIC

Instrument Apex Parametrics Maxmin II
 Coil configuration Horizontal Loop
 Coil separation 400'
 Accuracy + 1%
 Method: Fixed transmitter Shoot back In line Parallel line
 Frequency 444 Hz., 1777 Hz.
(specify V.L.F. station)
 Parameters measured In Phase & Quadrature components of secondary field

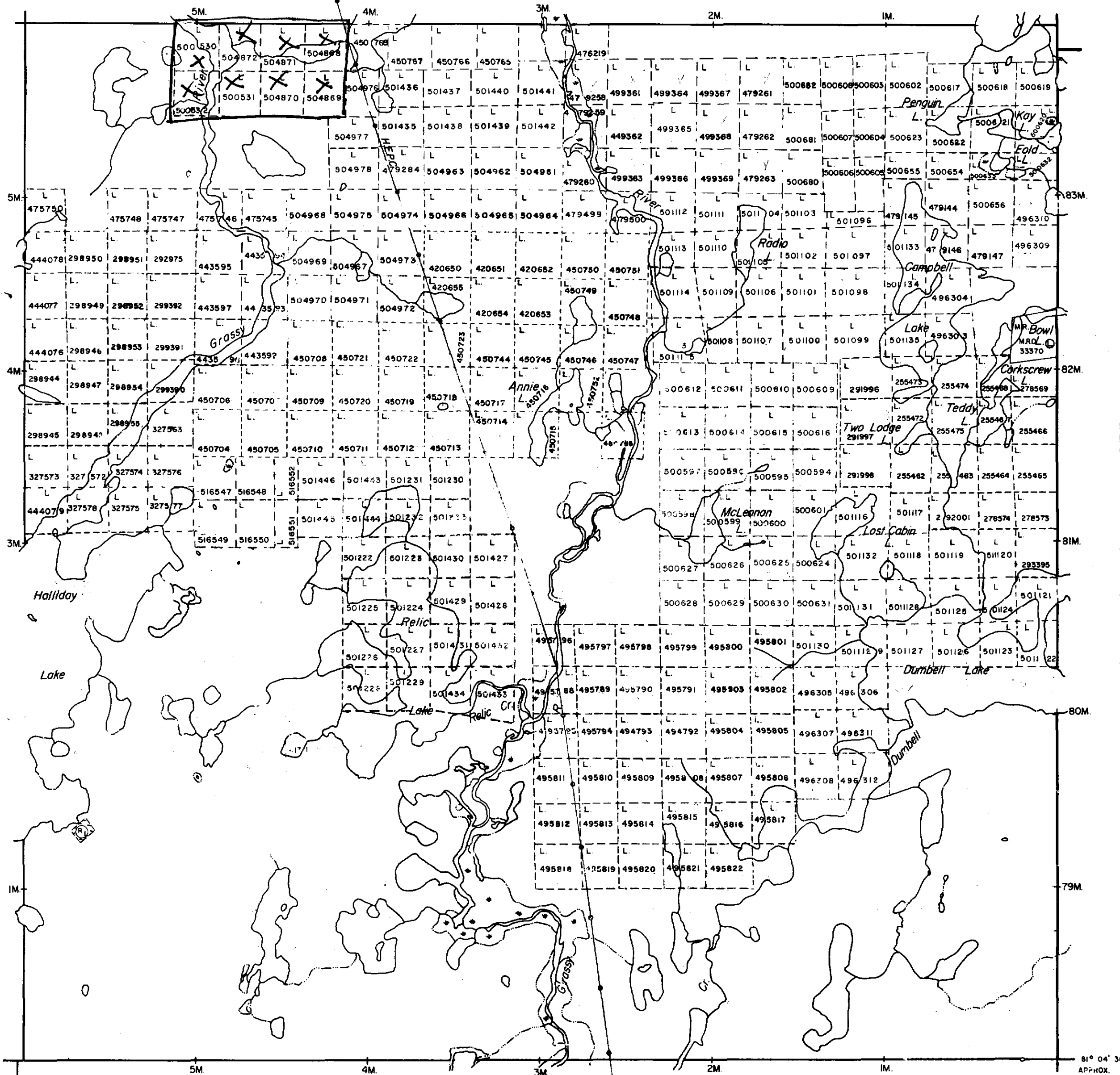
GRAVITY

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 _____

HUTT Twp. M-943



SOTHMAN Twp. M-1121

MIDLOTHIAN Twp. M-235

MOND Twp. M-870

NOTES

400' surface rights reservation along the shores of all lakes and rivers.

Drawn from staking under Section Mining Act (R.S.O. 1990).

Date	Disposition
R. W. 32/77	S.R.O.
189266	S.R.O.
4/3/77	S.R.O.

DATE OF ISSUE
SEP 27 1978
SURVEYS AND MAPPING
BRANCH

LEGEND

- PATENTED LAND (P) or *
 - PATENTED FOR SURFACE RIGHTS ONLY (P) or *
 - LEASE (L)
 - LICENSE OF OCCUPATION (L.O.)
 - CROWN LAND SALES (C.S.)
 - LOCATED LAND (Loc.)
 - CANCELLED (C.)
 - MINING RIGHTS ONLY (M.R.O.)
 - SURFACE RIGHTS ONLY (S.R.O.)
 - HIGHWAY & ROUTE NO. (with route symbol)
 - ROADS (with road symbol)
 - TRAILS (with trail symbol)
 - RAILWAYS (with railway symbol)
 - POWER LINES (with power line symbol)
 - MARSH OF MUSKEG (with marsh symbol)
 - MINES (with mine symbol)
- *used only with summer resort locations or when space is limited

TOWNSHIP OF 2.2804

HALLIDAY

DISTRICT OF SUDBURY

LARDER LAKE MINING DIVISION

SCALE : 1 INCH = 40 CHAINS (1/2 MILE)

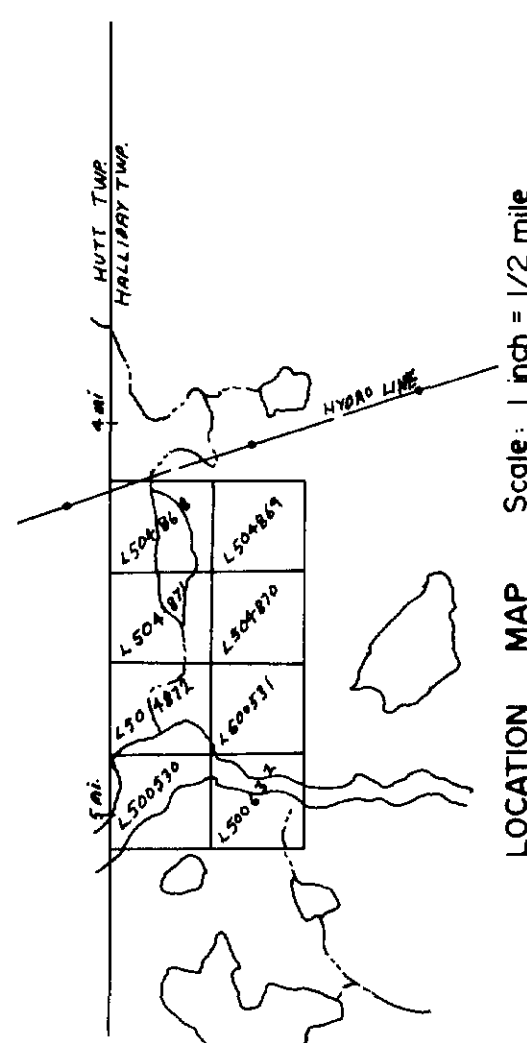
DR. R.W.N. PLAN NO. **M-910**
DATE FEB. 2, 71.

ONTARIO
MINISTRY OF NATURAL RESOURCES
SURVEYS AND MAPPING BRANCH



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81° 04' 30" APPROX.
47° 50' 35"



LEGEND

Conductor Axis
 Conductor Width
 Conductivity Thickness (mhos)/Depth Estimate (ft.)
 In-Phase Profile
 Quadrature Profile
 Profile Scale: 1 inch = 20 %
 Instrument: Apex Parametrics Maxmin II
 Cable: 400' (121.9 m)
 Frequency: 4.44 Hz.

Claim Post
 Witness Post
 Creek
 Swamp
 Lake
 Trail

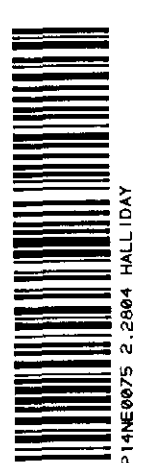
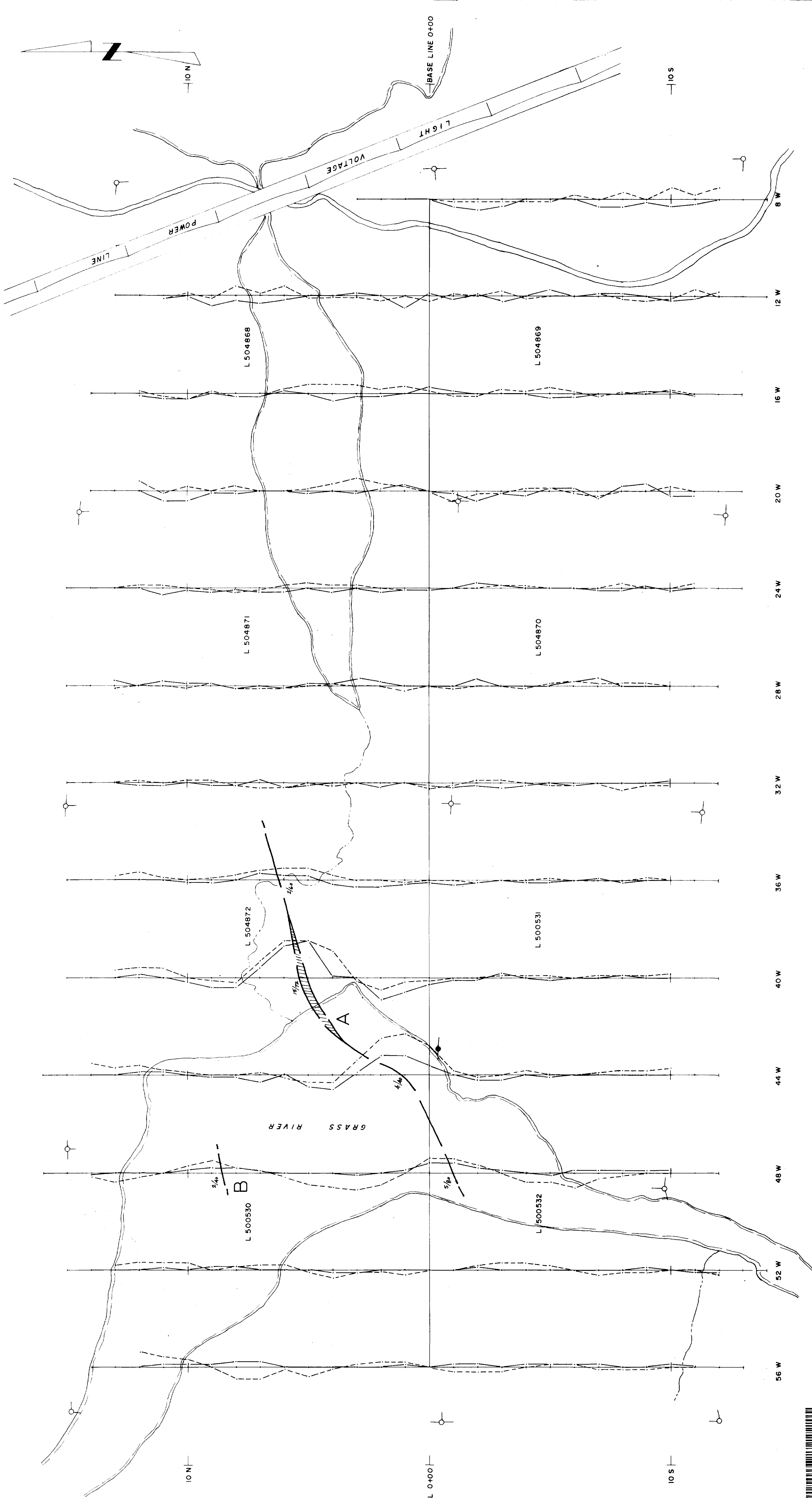
Road
 Fence
 Hydro Line
 Building
 Drill Hole
 Outcrop

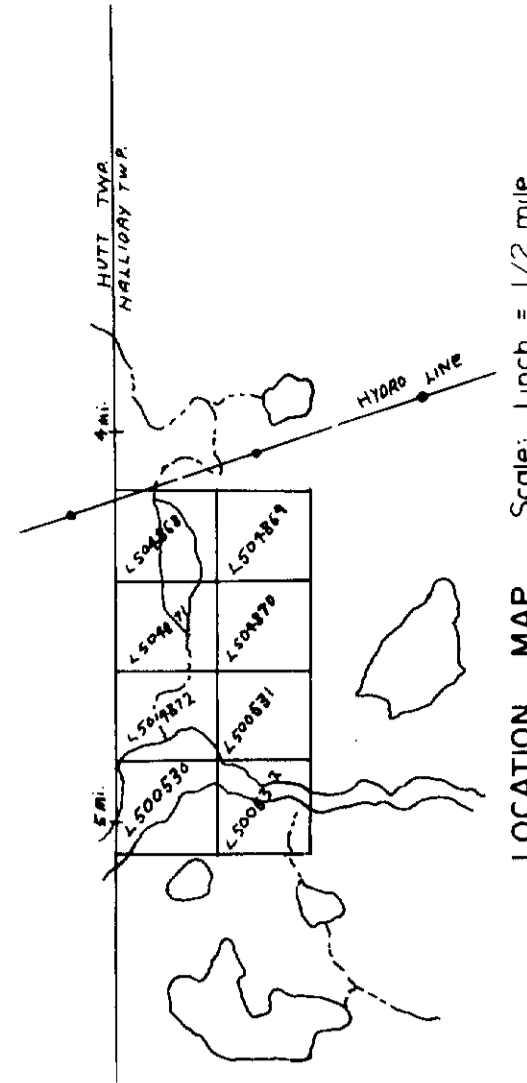
CLIENT **ESSEX MINERALS CO.**
 PROJECT **HALLIDAY**
 GRID **GRASSY RIVER WEST**
H.E.M. SURVEY

Scale: 1 inch = 200 feet
 Drafted By: J. Hol
 Covering Dates: Field Mar. 25-27
 Office April 15-May 30 1978
 Consultant: P.T. George

GEOEX Limited
 Exploration Services and Management
 P.O. Box 70,
 Timmins, Ont.
 (705) 267-3990

Drawing Number **10A**





LEGEND

Conductor Axis
 Conductor Width
 Conductivity Thickness (mhas)/Depth Estimate (ft)
 In-Phase Profile
 Quadrature Profile
 Profile Scale: 1 inch = 20 %
 Instrument: Apex Parametrics Maxmin II
 Cable: 400' (121.9 m)
 Frequency: 1777 Hz

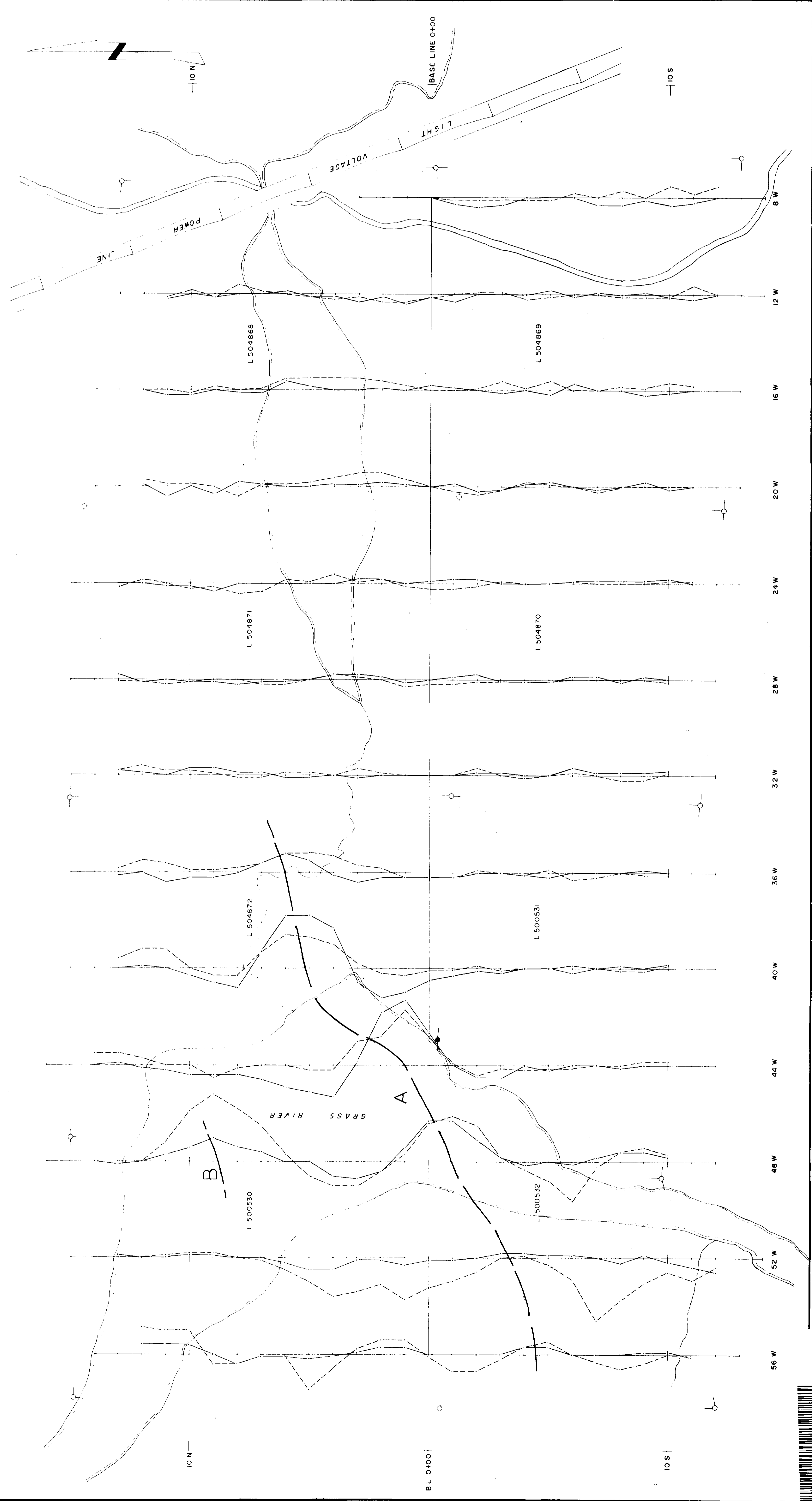
Claim Post
 Witness Post
 Creek
 Swamp
 Lake
 Trail

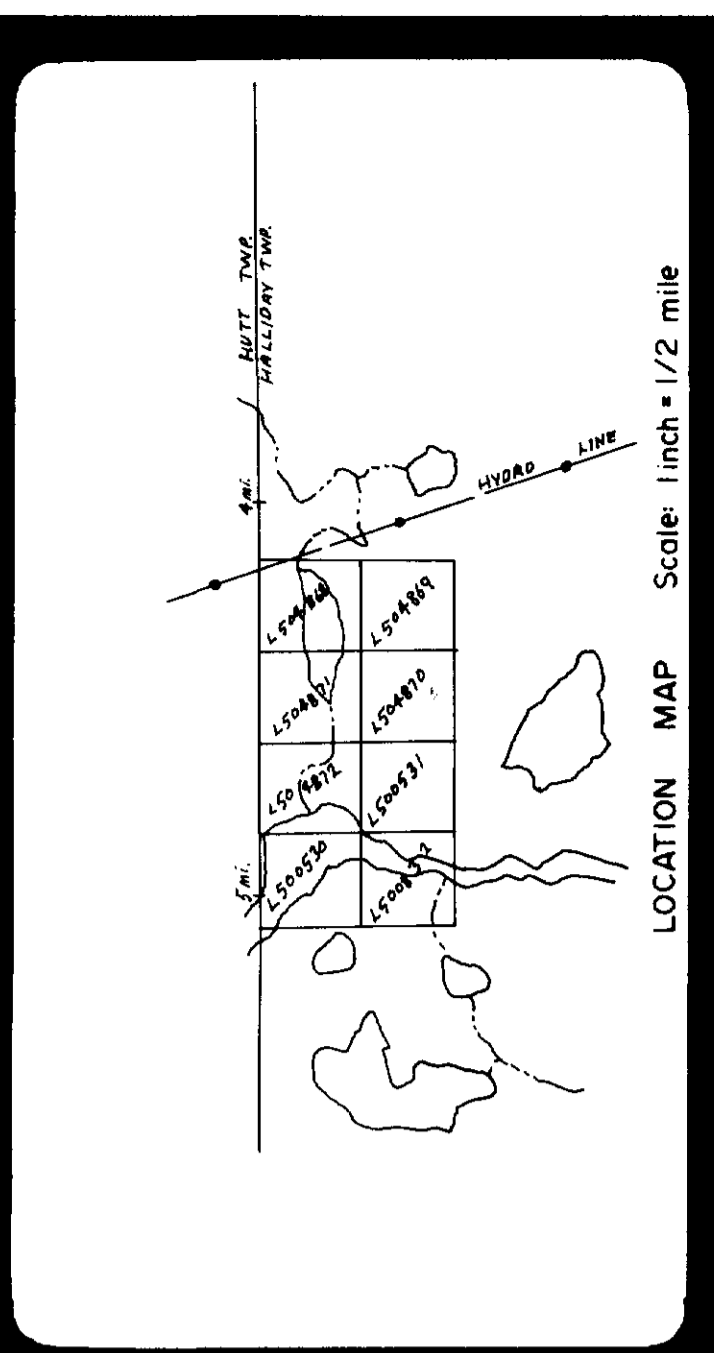
Road
 Fence
 Hydro Line
 Building
 Drill Hole
 Outcrop

CLIENT **ESSEX MINERALS CO.**
 PROJECT **HALLIDAY**
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Scale: 1 inch = 200 feet
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 Consultant: P.T. George
 P.T. GEORGE

GEOEX Limited
 Exploration Services and Management
 P.O. Box 70,
 Timmins, Ont.
 (705) 267-3990
 Drawing Number **10B**





LEGEND

Measurement Station Along Picket Line
 Total Field Value
 Main Base Station
 Magnetic Contour
 Magnetic Depression

Instrument: Scintrex MP-2

CONTOURS: 500 gammas
 100 gammas
 50 gammas
 25 gammas

Clam Post
 Witness Post
 Creek
 Swamp
 Lake
 Trail

Road
 Fence
 Hydro Line
 Building
 Drill Hole
 Outcrop

CLIENT **ESSEX MINERALS CO.**
 PROJECT **HALLIDAY**
 GRID **GRASSY RIVER WEST**
MAGNETOMETER SURVEY

Scale: 1 inch = 200 feet
 Drafted By: W. Wallace
 Covering Dates: Field Mar 25-27
 Office April 15, May 30 1976
 Consultant: P.T. George

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 Exploration Services and Management
 P.O. Box 70,
 Timmins, Ont.
 (705) 267-3990

Drawing Number
10C

