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MAY 2 - 1973

PROJECTS SECTION

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REPORT ON
AIRBORNE GEOPHYSICAL SURVEYS
SADBURY REGION, ONTARIO
ON BEHALF OF
GULF MINERALS CANADA LIMITED

by:

Jan Klein, M.Sc., P. Eng.,
Geophysicist.

TORONTO, Ontario

March 1973



41114NE0011 0019 CREELMAN

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MAP-2 Specification Sheet
SE-90

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**REPORT ON
AIRBORNE GEOPHYSICAL SURVEYS
SUDBURY REGION, ONTARIO
ON BEHALF OF
GULF MINERALS CANADA LIMITED**

INTRODUCTION

During the period of November 30th to December 5th, 1972, airborne geophysical surveys were undertaken over five separate areas located in the Sudbury Mining Division, Ontario, by Scintrex Surveys Limited on behalf of Gulf Minerals Canada Limited. The survey was conducted out of Sudbury, Ontario and involved the flying of a total of 255 miles of line.

Figure 1 shows the location of the survey areas. These areas were as follows:

- Area 1, lines 1 to 40 - Roberts Township;
- Area 2, lines 41 to 48 - Creelman Township;
- Area 3, lines 49 to 87 - Hutton and Parkin Townships;
- Area 4, lines 88 to 110 - Parkin Township;
- Area 5a and 5b, lines 111 to 171 - Scadding Township.

The airborne surveys included electromagnetic, magnetic and radiometric measurements. The geophysical equipment used for these measurements were a Scintrex SE-90 in-phase and out-of-phase VLF electromagnetic system, a Scintrex MAP-2 nuclear precession magnetometer and a Scintrex GISA-4 four channel radioactive spectrometer. Further information regarding these instruments is given in the Appendix attached.

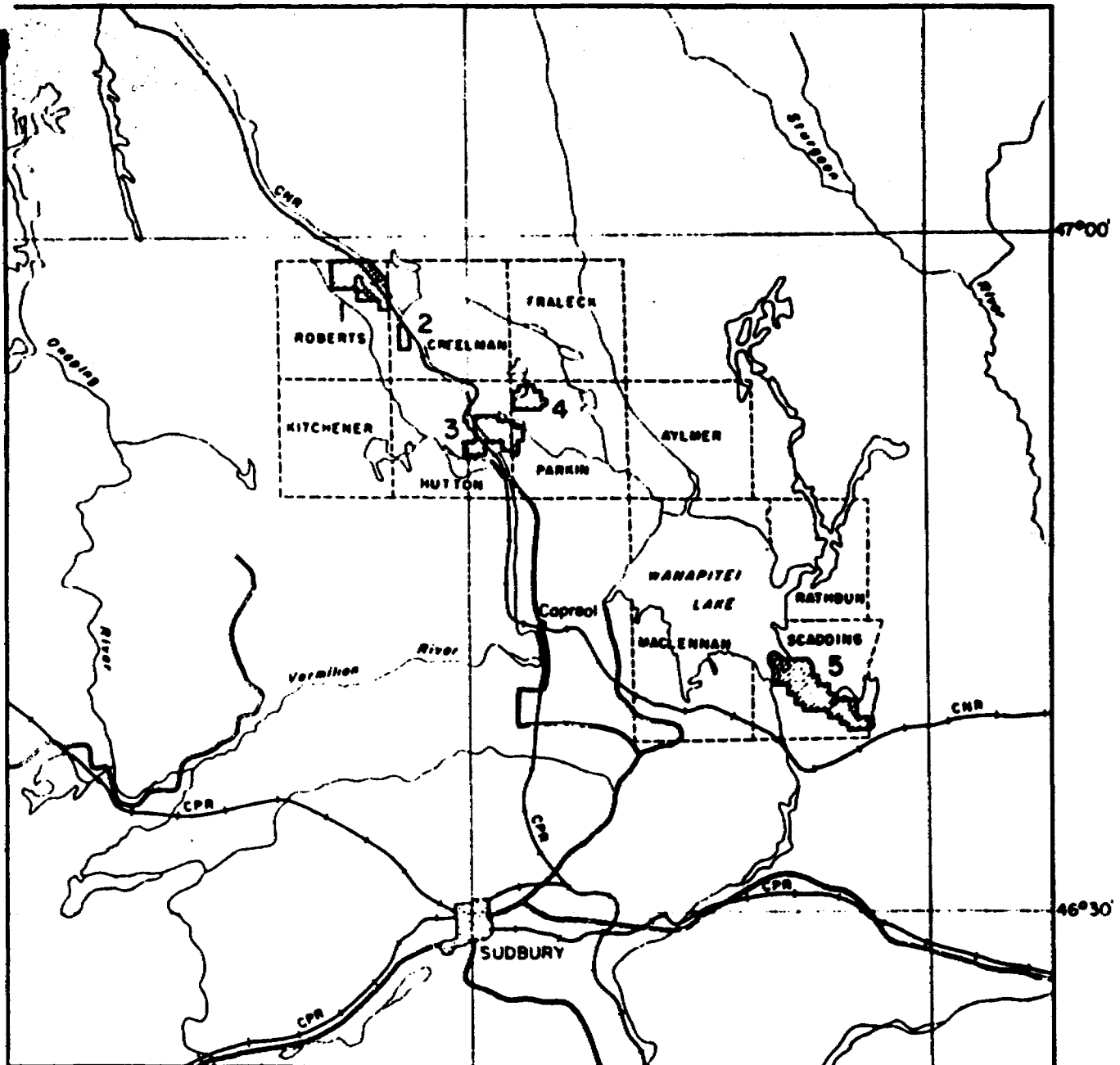
For this survey a Bell Jet Ranger 206-A helicopter, on lease from Pegasus Airlifts, was employed as the transport vehicle.



80°30'

81°00'

80°30'



LOCATION MAP

GULF MINERALS CANADA LIMITED

ROBERTS, CREELMAN, HUTTON, PARKIN, SCADDING TOWNSHIPS AREA
SUDBURY - ONTARIO

AIRBORNE GEOPHYSICAL SURVEY

SCALE 1:500,000



FIGURE 1

The airborne geophysical survey lines were flown in a north-south direction at a nominal 400 ft. line interval. Flight navigation and flight path recovery were based upon photomosaics at the scale of 1" = 400 ft. The survey was flown at a mean altitude clearance of 200 feet with the different sensors installed in a 15 ft. long bird towed 100 feet below the helicopter. The average airspeed was 40 mph. All traverses have been tied by tie lines to facilitate the magnetic contouring. The VLF station employed was Cutler, Maine, transmitting at 17.8 kc.

The purposes of the survey were (1) to map the distribution of radioactive material and subsurface conductors and (2) to obtain structural information on the geological formations. For the first purpose the spectrometer and electromagnetometer were employed and for the latter the electromagnetometer and magnetometer.

PRESENTATION OF DATA

The results of the geophysical survey are presented as follows:

Plates 1, 2, 3, 4, 5a and 5b show the flight lines with fiducial numbers plotted on the greyflexes prepared from the laydown mosaic. Each tenth and fiftieth fiducial are marked and coded on these lines.

The Plates suffixed "R" show the radiometric results plotted on maps on the scale of 1" = 400 feet, overlaying the photomosaics. The results of the broadband channel are shown as profiles along the flight traverse together with the values of individual anomalies. The anomalies are denoted by diamonds along side the traverse lines. The anomaly half width is indicated on the plan by an open bar.



The anomalous values, shown in the four quadrants, are designated by a cross, showing four figures:

| | |
|-------------------------|-----------|
| Top right hand value | Thorium |
| Top left hand value | Uranium |
| Bottom left hand value | Potassium |
| Bottom right hand value | Broadband |

All values are in counts per second above local background. The vertical scale of the profiles is 1 cm = 100 cps.

The Plates suffixed "E" show the VLF electromagnetic results plotted on overlays, as well. The in-phase profiles (vertical scale is 1 cm = 20%) together with interpreted electromagnetic anomalies, are presented. The anomalies are denoted by circles or squares alongside the traverse lines. These circles or squares indicate the crossover point of the profile. A circle is used when the signs of the in-phase and out-of-phase traces are opposite to one another. A square is used when the signs are the same. The full drawn profiles are those obtained on lines flown north. The dashed profiles are those obtained on south flown lines. The sign of deflection is reversed for the latter.

The anomaly width (the horizontal distance between the positive peak and negative peak) is indicated on the plan by an open bar. This width, for the model of a steeply dipping conductor, is an indication of the depth to the conductor.

Conductor intersections are graded in categories 1, 2 and 3 based on the in-phase amplitude (this is peak to peak distortion). The respective crossovers are shaded to reflect this grading, with category 1 fully shaded, category 2 half shaded and category 3 open.



Category 1 represents amplitudes greater than 40%;
Category 2 represents amplitudes of 20% to 40%;
Category 3 represents amplitudes less than 20%.

The plates suffixed "M" show the magnetic results in contour form on overlays on a scale of 1" = 400 feet. The contours are presented at 10 gamma intervals, where gradients permit.

The original airborne traces are recorded on a MFE-6, heat and pressure sensitive chart. The traces are from top to bottom:

| | | |
|-------------|--|---|
| 1st channel | Electromagnetic (In-Phase) | Full scale \pm 50% |
| 2nd channel | Electromagnetic (Out-of-Phase) | Full scale \pm 50% |
| 3rd channel | Magnetometer | Full scale 1000 gammas |
| 4th channel | Magnetometer | Full scale 100 gammas |
| 5th channel | Potassium and Broadband (time shared) | Potassium full scale 300 cps. (long dashes) Broadband scale 1000 cps. (short dashes) |
| 6th channel | Uranium and Thorium (time shared) | Uranium full scale 100 or 300 cps (long dashes) Thorium full scale 100 cps or 300 (short dashes) |
| Side pen 1 | (between channels 2 and 3) | intervalometer |
| Side pen 2 | (between channels 4 and 5) | altimeter |

A chart speed of approximately 2 mm/sec. was used.



GEOPHYSICAL INTERPRETATION

a) VLF Electromagnetic Interpretation

The Scintrex SE-90 is an airborne VLF in-phase and out-of-phase electromagnetic system. The measuring system consists of two coils tuned to the frequency of a selected VLF station. One coil, with its axis horizontal, receives the horizontal primary or reference field. The other coil has a vertical axis which receives primarily the vertical or secondary field. The sensing device can be mounted in a rigid "bird" which is towed below a helicopter or is attached to the structure of the aircraft. The compensator console and ancillary equipment are mounted in the aircraft.

The system employs the VLF radio stations operating in the 15 to 25 kHz frequency band as a source of primary field. At great distance from these transmitters the radiation is trapped in the earth's ionosphere waveguide and has an approximate horizontal magnetic field vector of almost constant amplitude. The Scintrex SE-90 electromagnetic system measures the in-phase and out-of-phase components of the vertical secondary field in percentage to the primary horizontal field. The VLF station employed for the present survey was Cutler, Maine.

A conductor axis is located below the crossover point of the in-phase trace. The out-of-phase polarity, of a steeply dipping body, can be the same or reversed of that of the in-phase, depending mainly on the conductivity of the overburden, its thickness and influence on the steeply dipping body. The parameters influencing this phase rotation are discussed in some detail by Dr. N. R. Paterson and V. Ronka in their paper entitled "Five Years of Surveying with the VLF-EM Method".



Due to the complexity of the VLF records it is often difficult to calculate the depth of the top of the target. In very simple cases, however, the following rules may apply: for bodies represented by a sphere the depth is equal to the horizontal peak to peak distance. For thin cylinders and dike-like sources (represented by vertical half planes), the depth is respectively 0.86 and 0.50 times this distance.

VLF anomalies are produced by a wide range of geological effects. therefore, profiles tend to be very complex and the interpreter may need modern automated techniques such as digitization, filtering, cross correlation, trend analysis, etc., to arrive at an acceptable end product.

VLF interpretation has been mainly qualitative to date, though theoretical work is being done currently at several centers, to investigate the possibility of quantitative interpretation.

Overburden acts like a horizontal sheet or half space of medium conductivity. It is obvious from response curves, showing conductivity x frequency versus amplitudes, that even poorly conductive overburden can give rise to a significant distortion of the electromagnetic field, at VLF frequencies in both IP and OP channels. This overburden sheet can influence the out-of-phase response of a steeply dipping conductor strongly and the quadrature component can show a reverse polarity compared to the in-phase readings. Therefore two different groups of anomalies can be encountered; viz:

- i) Steeply dipping sheets like major faults, sulphide and graphite bodies with no significant overburden or water patches



give rise to the anomalies of the first group. In-phase and out-of-phase traces show coincidental polarities although there may be some off-set in peak locations. Such anomalies are indicated by square symbols on the plans.

ii) Deeper buried steeply dipping conductors, which may be overlain by conductive overburden, form the second group of anomalies. In-phase and out-of-phase traces show reversed polarities on the north to south lines. These anomalies are marked by circular symbols on the plans.

Some conductors which do not reveal any significant out-of-phase response are included in group ii.

Due to the fact that tow cable strain member acts as part of the VLF receiver system some assymetry in the results of north or south flown lines occurs. To establish the sign of the out-of-phase component only the north flown lines have been considered in this evaluation.

b) Magnetic Interpretation

In the Sudbury region, the total intensity, declination and inclination are approximately 58,500γ, 8°W and 75°N, respectively.

Local distortions of the earth's magnetic field occur due to variations in the magnetic properties of the rocks of the upper mantle and crust. These variations, differences in the bulk magnetic susceptibility of rock types, are primarily due to the different concentrations and distributions of magnetic minerals, mainly magnetite, characteristic of each rock type. Magnetic intensity surveys can, therefore, yield information on the distribution of sub-



surface geologic units. In addition faults and other structural features may be manifested by dislocations or disruptions in the magnetic pattern or by persistent changes in magnetic pattern over long distances.

c) Radiometric Interpretation

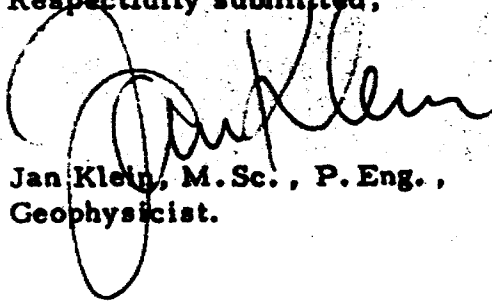
The Scintrex GISA-4 accepts only gamma energies falling above a fixed threshold in each of the four channels. By appropriate proportioning in the analogue computer circuit and assuming equilibrium within the radioactive series, the readout is indicative of what radioactive material is present on the ground.

The amplitude of the individual peak responses of a given source is related to its percent potassium, uranium or thorium respectively, its surface area of exposure to the airborne detector system, the elevation of the aircraft above the ground and its airspeed. Any recorded anomaly could be caused by a high grade concentration over a limited sized area or alternatively, lower grade concentration over a larger area. Attention should be paid to isolated, one line anomalies since these could be due to radiation from a single outcrop of a larger source. Only ground investigation can resolve the significance of each individual anomaly.

On the basis of the radioactive data alone, first priority anomalies show high peak values over background and sharp response. Lower priority anomalies show lower peak values and broader responses.



9
Respectfully submitted,



Jan Klein, M.Sc., P.Eng.,
Geophysicist.





Ontario



41114NE0011 0019 CREELMAN

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Ministry of
Natural
Resources

Telephone
416:965-6918

Mr. J. H. Hughes
Regional Director
Ministry of Natural Resources
P. O. Box 130
Sault Ste. Marie, Ontario
P6A 5L2

Attn.: Mr. E. Craig

Dear Sir:

Re: Mining Claims S 322925 et al, Parkin, Hutton,
Roberts, Creelman, Scadding Townships. File 2.1214

The Airborne Geophysical (Electromagnetic, Magnetometer & Radiometric) assessment work credits as shown on the attached statements have been approved as of the date above.

The mining recorder should inform the recorded holder of these mining claims and so indicate on his records.

Yours very truly,

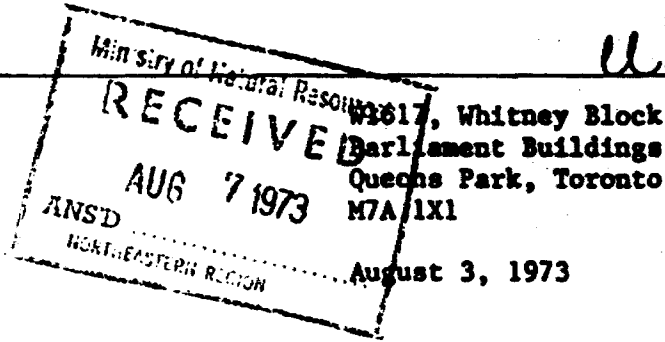
for J. R. McGinn
Director
Lands Administration Branch

OJ/rb

encl.

cc: Gulf Minerals Canada Ltd.
Attn.: Mr. K. A. Morgan

✓cc: Resident Geologist
Sudbury, Ontario



**GEOPHYSICAL - GEOLOGICAL - GEOCHEMICAL
TECHNICAL DATA STATEMENT**

RECEIVED

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.

MAY 2 - 1973

PROJECTS
SECTION

Type of Survey Airborne Geophysical Survey

Township or Area Creelman Township

Claim holder(s) Gulf Minerals Canada Limited

Author of Report Jan Klein, M.Sc., P.Eng.

Address 222 Snidercroft Road, Concord, Ontario

Covering Dates of Survey November 30 - December 5, 1972
(linecutting to office)

Total Miles of Line cut Nil

MINING CLAIMS TRAVERSED
List numerically

| | |
|----------|----------|
| S | 323658 |
| (prefix) | (number) |
| S | 323659 |
| S | 323660 |
| S | 323661 |
| S | 323662 |
| S | 323663 |
| S | 323664 |
| S | 323665 |
| S | 323666 |

| <u>SPECIAL PROVISIONS CREDITS REQUESTED</u> | <u>DAYS per claim</u> |
|---|---------------------------|
| Geophysical | |
| - Electromagnetic _____ | |
| - Magnetometer _____ | |
| - 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 27.2 Electromagnetic 27.2 Radiometric 27.2
(enter days per claim)

DATE: May 1, 1973 SIGNATURE: Jan Klein **PENG.**
Author of Report or Agent

PROJECTS SECTION
Res. Geol. _____ Qualifications _____
Previous Surveys _____

Checked by _____ date _____

GEOLOGICAL BRANCH _____

Approved by _____ date _____

GEOLOGICAL BRANCH _____

Approved by _____ date _____

TOTAL CLAIMS 9

OFFICE USE ONLY

If space is used, attach list

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) Electromagnetic, magnetometer, radiometric

Instrument(s) Scintrex SE-90 VLF, Scintrex MAP-2 magnetometer, Scintrex GISA-4 Spectrometer.
(specify for each type of survey)

Accuracy VLF to + 1%, Magnetics to + 1 gamma, radiometrics to + 10 cps broadband.

Aircraft used Bell Jet Ranger 206-A Helicopter
(specify for each type of survey)

Sensor altitude 100 feet

Navigation and flight path recovery method based upon photo mosaics at a scale
of 1 inch = 400 feet.

Aircraft altitude 200 feet Line Spacing 400 feet

Miles flown over total area 10.92 miles Over claims only 6.16 miles

$6.16 \times 40 = 2464 \div 9 = 27.2$ EM
27.2 Mag 25.6 Rad
(Maximum 80 days)

**GEOPHYSICAL - GEOLOGICAL - GEOCHEMICAL
TECHNICAL DATA STATEMENT**

RECEIVED

**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.**

MAY 2 - 1973

**PROJECTS
SECTION**

Type of Survey Airborne Geophysical Survey
Township or Area Parkin Township
Claim holder(s) Gulf Minerals Canada Limited
Author of Report Jan Klein, M.Sc., P.Eng.
Address 222 Snidercroft Road, Concord, Ontario
Covering Dates of Survey November 30 - December 5, 1972
(linecutting to office)
Total Miles of Line cut Nil

| MINING CLAIMS TRAVERSED List numerically | |
|---|-----------|
| S | 322925 |
| (prefix) | (number) |
| S | 322926 |
| S | 322927 |
| S | 322928 |
| S | 322929 |
| S | 322930 |
| S | 322931 |
| S | 322932 |
| S | 322933 |
| S | 323321 |
| S | 323322 |
| S | 323323 |
| S | 323324 |
| S | 323325 |
| S | 323326 |
| S | 323327 |
| S | 323328 |
| S | 323329 |
| (see attached claim list) | |
| TOTAL CLAIMS | 22 |

If space insufficient, attach list

| <u>SPECIAL PROVISIONS CREDITS REQUESTED</u> | <u>DAYS per claim</u> |
|---|---------------------------|
| Geophysical | |
| - Electromagnetic | |
| - Magnetometer | |
| - 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 29.8 Electromagnetic 29.8 Radiometric 29.8
(enter days per claim)

DATE: May 1, 1973 SIGNATURE: [Signature]
Author of Report or Agent

PROJECTS SECTION
Res. Geol. 63.2598 Qualifications 63.2411
Previous Surveys Geophysical 4 Geological 63.1229,
63.1317, 63A204, Geological

Checked by _____ date _____

GEOLOGICAL BRANCH _____

Approved by _____ date _____

GEOLOGICAL BRANCH _____

Approved by _____ date _____

OFFICE USE ONLY

CLAIM LIST (cont'd)

S 323727
S 323728
S 323729
S 323730

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) Electromagnetic, Magnetometer, Radiometric

Instrument(s) Scintrex SE-90 VLF, Scintrex MAP-2 magnetometer, Scintrex GISA-4 Spectrometer.

Accuracy VLF to ± 1%, Magnetics to ± 1 gamma, radiometrics to ± 10 cps broadband.
(specify for each type of survey)

Aircraft used Bell Jet Ranger 206-A helicopter
(specify for each type of survey)

Sensor altitude 100 feet

Navigation and flight path recovery method based upon photo mosaics at a scale
of 1 inch = 400 feet.

Aircraft altitude 200 feet Line Spacing 400 feet

Miles flown over total area 24.64 miles Over claims only 16.39 miles

$16.39 \times 40 = 6556 \div 22 = 29.8$ EM
29.8 Mag 20.4 Rad
(Maximum 80 da)

**GEOPHYSICAL - GEOLOGICAL - GEOCHEMICAL
TECHNICAL DATA STATEMENT**

RECEIVED

MAY 2 - 1973

**PROJECTS
SECTION**

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 Airborne Geophysical Survey
Township or Area Hutton and Parkin Townships
Claim holder(s) Gulf Minerals Canada Limited

Author of Report Jan Klein, M.Sc., P.Eng.
Address 222 Snidercroft Rd, Concord, Ontario
Covering Dates of Survey November 30 - December 5, 1972
(linecutting to office)
Total Miles of Line cut Nil

**MINING CLAIMS TRAVERSED
List numerically**

| S (prefix) | 323078 (number) |
|--------------------------------------|--------------------|
| S | 323079 |
| S | 323080 |
| S | 323081 |
| S | 323082 |
| S | 323083 |
| S | 323084 |
| S | 323166 |
| S | 323167 |
| S | 323168 |
| S | 323169 |
| S | 323170 |
| S | 345576 |
| S | 345577 |
| S | 345578 |
| S | 346904 |
| S | 346905 |
| (see attached claim list) | |
| TOTAL CLAIMS <u>32 claims</u> | |

If space insufficient, attach list

**SPECIAL PROVISIONS
CREDITS REQUESTED**

**DAYS
per claim**

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

ENTER 20 days for each
additional survey using
same grid.

Geophysical
- Electromagnetic _____
- Magnetometer _____
- Radiometric _____
- Other _____
Geological _____
Geochemical _____

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

Magnetometer 29.9 Electromagnetic 29.9 Radiometric 29.9
(enter days per claim)

DATE: May 1, 1973 SIGNATURE: [Signature] **RENG**
Author of Report or Agent

PROJECTS SECTION

Res. Geol. _____ Qualifications _____

Previous Surveys 63A338 Geophysical

Checked by _____ date _____

GEOLOGICAL BRANCH _____

Approved by _____ date _____

GEOLOGICAL BRANCH _____

Approved by _____ date _____

OFFICE USE ONLY

CLAIM LIST (cont'd)

| | |
|---|--------|
| S | 346906 |
| S | 346907 |
| S | 346908 |
| S | 346909 |
| S | 346910 |
| S | 346911 |
| S | 346912 |
| S | 346913 |
| S | 358000 |
| S | 358001 |
| S | 358002 |
| S | 358003 |
| S | 358004 |
| S | 358005 |
| S | 358014 |

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) Electromagnetic, magnetometer, radiometric.

Instrument(s) Scintrex SE-90 VLF, Scintrex Map-2 magnetometer, Scintrex GISA-4 Spectrometer
(specify for each type of survey)

Accuracy VLF to + 1%, Magnetics to + 1 gamma, radiometrics to + 10 cps broadband.
(specify for each type of survey)

Aircraft used Bell Jet Ranger 206-A helicopter

Sensor altitude 100 feet

Navigation and flight path recovery method based upon photo mosaics at a scale of
1 inch = 400 feet

Aircraft altitude 200 feet Line Spacing 400 feet

Miles flown over total area 46.77 miles Over claims only 23.94 miles

$23.94 \times 40 = 9576 \div 32 = 299.25$ EM 20.2 Rad
21.9 Mag (Maximum 80 days) *of*

**GEOPHYSICAL - GEOLOGICAL - GEOCHEMICAL
TECHNICAL DATA STATEMENT**

RECEIVED

MAY 2 - 1973

PROJECTS
SECTION

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 Airborne Geophysical Survey
 Township or Area Roberts Township
 Claim holder(s) Gulf Minerals Canada Limited
 Author of Report Jan Klein, M.Sc., P.Eng.
 Address 222 Snidercroft Road, Concord, Ontario
 Covering Dates of Survey November 30 - December 5, 1972
 Total Miles of Line cut N11 (linecutting to office)

| <u>SPECIAL PROVISIONS CREDITS REQUESTED</u> | <u>DAYS per claim</u> |
|---|---------------------------|
| ENTER 40 days (includes line cutting) for first survey. | Geophysical |
| | -Electromagnetic _____ |
| | -Magnetometer _____ |
| | -Radiometric _____ |
| | -Other _____ |
| ENTER 20 days for each additional survey using same grid. | Geological _____ |
| | Geochemical _____ |

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

X Magnetometer 31.4 Electromagnetic 31.4 Radiometric 31.4
 (enter days per claim)

DATE: May 1, 1973 SIGNATURE: [Signature]
 Author of Report Agem

| MINING CLAIMS TRAVERSED | |
|--------------------------------|------------------|
| List numerically | |
| S | 323633 |
| (prefix) | (number) |
| S | 323634 |
| S | 323635 |
| S | 323636 |
| S | 323637 |
| S | 323638 |
| S | 323639 |
| S | 323640 |
| S | 323641 |
| S | 323642 |
| S | 323643 |
| S | 323644 |
| S | 323645 |
| S | 323646 |
| S | 323647 |
| S | 323648 |
| S | 323649 |
| S | 323650 |
| S | 323651 |
| S | 323652 |
| (see attached claim list) | |
| TOTAL CLAIMS | 49 claims |

If space insufficient, attach list

OFFICE USE ONLY

PROJECTS SECTION
 Res. Geol. _____ Qualifications _____
 Previous Surveys _____
 Checked by _____ date _____

GEOLOGICAL BRANCH
 Approved by _____ date _____

GEOLOGICAL BRANCH
 Approved by _____ date _____

CLAIM LIST (cont'd)

| | |
|---|--------|
| S | 323653 |
| S | 323654 |
| S | 323655 |
| S | 323656 |
| S | 323657 |
| S | 323703 |
| S | 323704 |
| S | 323705 |
| S | 323706 |
| S | 323707 |
| S | 323708 |
| S | 323709 |
| S | 323710 |
| S | 323711 |
| S | 323712 |
| S | 323713 |
| S | 323714 |
| S | 323715 |
| S | 323716 |
| S | 323717 |
| S | 323718 |
| S | 323719 |
| S | 323720 |
| S | 323721 |
| S | 323722 |
| S | 323723 |

CLAIM LIST (cont'd)

S 323724

S 323725

S 323726

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) Electromagnetic, Magnetometer, Radiometric.

Instrument(s) Scintrex SE-90 VLF, Scintrex MAP-2 Magnetometer, Scintrex GISA-4 Spectrometer.
(specify for each type of survey)

Accuracy VLF to + 1%, magnetics to + 1 gamma, radiometrics to + 10 cps broadband.

Aircraft used Bell Jet Ranger 206-A helicopter
(specify for each type of survey)

Sensor altitude 100 feet

Navigation and flight path recovery method based upon photo mosaics at a scale of
1 inch = 400 feet

Aircraft altitude 200 feet Line Spacing 400 feet

Miles flown over total area 70.82 miles Over claims only 38.51 miles

$38.51 \times 40 = 15404 \div 49 = 31.4 \text{ EM}$
 31.4 Mag 17.2 Rad
(Maximum 80 days)

GJ

GEOPHYSICAL - GEOLOGICAL - GEOCHEMICAL TECHNICAL DATA STATEMENT

RECEIVED

MAY 2 - 1973

**PROJECTS
SECTION**

**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 Airborne Geophysical Survey

Township or Area Scadding Township

Claim holder(s) Gulf Minerals Canada Limited

Author of Report Jan Klein, M.Sc., P. Eng.

Address 222 Snidercroft Road, Concord, Ontario

Covering Dates of Survey November 30 - December 5, 1972
(linecutting to office)

Total Miles of Line cut N11

| <u>SPECIAL PROVISIONS CREDITS REQUESTED</u> | <u>DAYS per claim</u> |
|---|---------------------------|
| ENTER 40 days (includes line cutting) for first survey. | Geophysical |
| ENTER 20 days for each additional survey using same grid. | -Electromagnetic _____ |
| | -Magnetometer _____ |
| | -Radiometric _____ |
| | -Other _____ |
| | Geological _____ |
| | Geochemical _____ |

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

Magnetometer 28.8 Electromagnetic 28.8 Radiometric 28.8
(enter days per claim)

DATE: May 1, 1973 SIGNATURE: [Signature]
Author of Report Agree

PROJECTS SECTION

Res. Geol. _____ Qualifications _____

Previous Surveys _____

Checked by _____ date _____

GEOLOGICAL BRANCH _____

Approved by _____ date _____

GEOLOGICAL BRANCH _____

Approved by _____ date _____

| MINING CLAIMS TRAVERSED | |
|--------------------------------|-----------------|
| List numerically | |
| S (prefix) | 323667 (number) |
| S | 323668 |
| S | 323669 |
| S | 323670 |
| S | 323671 |
| S | 323672 |
| S | 323673 |
| S | 323674 |
| S | 323675 |
| S | 323676 |
| S | 323677 |
| S | 323678 |
| S | 323679 |
| S | 323680 |
| S | 323681 |
| S | 323731 |
| S | 323732 |
| S | 323733 |
| S | 323734 |
| (see attached claim list) | |
| TOTAL CLAIMS | 79 |

If space insufficient, attach list

OFFICE USE ONLY

CLAIM LIST (cont'd)

S 323735
S 323736
S 323737
S 323738
S 323739
S 323740
S 323741
S 323742
S 323743
S 323744
S 323745
S 323746
S 323747
S 323748
S 323749
S 323750

S 323807
S 323808
S 323809
S 323810
S 323811
S 323812
S 323813
S 323814
S 323815
S 323816

CLAIM LIST (cont'd)

| | |
|---|--------|
| S | 346887 |
| S | 346888 |
| S | 346889 |
| S | 346890 |
| S | 346891 |
| S | 346892 |
| S | 346893 |
| S | 346894 |
| S | 346895 |
| S | 346896 |
| S | 346897 |
| S | 346898 |
| S | 346899 |
| S | 346900 |
| S | 346901 |
| S | 346902 |
| S | 346903 |
| | |
| S | 346914 |
| S | 346915 |
| S | 346916 |

CLAIM LIST (cont'd)

| | |
|---|--------|
| S | 357986 |
| S | 357987 |
| S | 357988 |
| S | 357989 |
| S | 357990 |
| S | 357991 |
| S | 357992 |
| S | 357993 |
| S | 357994 |
| S | 357995 |
| S | 357996 |
| S | 357997 |
| S | 357998 |
| S | 357999 |

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) Electromagnetic, Magnetometer, Radiometric.

Instrument(s) Scintrex SE-90 VLF, Scintrex MAP-2 Magnetometer, Scintrex GISA-4 Spectrometer.

Accuracy VLF to + 1%, magnetics to + 1 gamma, radiometrics to + 10 cps broadband.

(specify for each type of survey)

(specify for each type of survey)

Aircraft used Bell Jet Ranger 206-A helicopter.

Sensor altitude 100 feet

Navigation and flight path recovery method based upon photo mosaics at a scale of 1 inch = 400 feet.

Aircraft altitude 200 feet Line Spacing 400 feet

Miles flown over total area 98.42 miles Over claims only 56.83 miles

$56.83 \times 40 = 22732 \div 71 = 28.8 \text{ EM}$
 28.8 Mag 22.4 Rad
(Maximum 80 days)



TECHNICAL ASSESSMENT WORK CREDITS

Recorder Holder .. Gulf Minerals Canada Ltd.

Township or Area .. Parkin Township

Type of Survey and number of Assessment Days Credits per claim

Mining Claims

S. 322925 to 33 inclusive
323321 to 29 inclusive
323727 to 30 inclusive

GEOPHYSICAL

Electromagnetic 29.8 days
Magnetometer 29.8 days
Radiometric 20.4 days
Induced Polarization days

GEOLOGICAL days

GEOCHEMICAL days

Man days Airborne

Special Provision Ground

NOTICE OF INTENT TO BE ISSUED

- Credits have been reduced because of partial coverage of claims.
- Credits have been reduced because of corrections to work dates and figures of applicant.
- NO CREDITS have been allowed for the following mining claims as they were not sufficiently covered by the survey:

The Mining Recorder may reduce the above credits if necessary in order that the total number of approved assessment days recorded on each claim does not exceed the maximum allowed as follows: Geophysical - 80 Geological - 40, Geochemical - 40.



TECHNICAL ASSESSMENT WORK CREDITS

Recorder Holder Gulf Minerals Canada Ltd.
Township or Area Roberts Township

Type of Survey and number of Assessment Days Credits per claim

| Mining Claims | |
|---------------------------|--|
| S. 323633 to 57 inclusive | |
| 323703 to 26 " | |

GEOPHYSICAL

Electromagnetic 31.4 days
Magnetometer 31.4 days
Radiometric 17.2 days
Induced Polarization _____ days

GEOLOGICAL _____ days

GEOCHEMICAL _____ days

Man days Airborne

Special Provision Ground

NOTICE OF INTENT TO BE ISSUED

- Credits have been reduced because of partial coverage of claims.
- Credits have been reduced because of corrections to work dates and figures of applicant
- NO CREDITS have been allowed for the following mining claims as they were not sufficiently covered by the survey:

The Mining Recorder may reduce the above credits if necessary in order that the total number of approved assessment days recorded on each claim does not exceed the maximum allowed as follows: Geophysical - 80 Geological - 40 Geochemical - 40



TECHNICAL ASSESSMENT WORK CREDITS

Recorder Holder ..Gulf Minerals Canada Ltd.....

Township or AreaHutton & Parkin Townships.....

Type of Survey and number of Assessment Days Credits per claim

GEOPHYSICAL

Electromagnetic 29.9 days

Magnetometer 29.9 days

Radiometric 20.2 days

Induced Polarization days

GEOLOGICAL days

GEOCHEMICAL days

Man days

Airborne

Special Provision

Ground

NOTICE OF INTENT TO BE ISSUED

Credits have been reduced because of partial coverage of claims.

Credits have been reduced because of corrections to work dates and figures of applicant.

NO CREDITS have been allowed for the following mining claims as they were not sufficiently covered by the survey:

| Mining Claims | |
|---------------------------|---|
| S. 323078 to 84 inclusive | |
| 323166 to 70 | " |
| 345576 to 78 | " |
| 346904 to 13 | " |
| 358000 to 05 | " |
| 358014 | |

The Mining Recorder may reduce the above credits if necessary in order that the total number of approved assessment days recorded on each claim does not exceed the maximum allowed as follows: Geophysical - 80 Geological - 40 Geochemical - 40.



TECHNICAL ASSESSMENT WORK CREDITS

Recorder Holder Gulf Minerals Canada Ltd.

Township or Area Creelman Township

Type of Survey and number of Assessment Days Credits per claim

Mining Claims

S. 323658 to 66 inclusive

GEOPHYSICAL

Electromagnetic 27.2 days

Magnetometer 27.2 days

Radiometric 25.6 days

Induced Polarization days

GEOLOGICAL days

GEOCHEMICAL days

Man days

Airborne

Special Provision

Ground

NOTICE OF INTENT TO BE ISSUED

Credits have been reduced because of partial coverage of claims.

Credits have been reduced because of corrections to work dates and figures of applicant.

NO CREDITS have been allowed for the following mining claims as they were not sufficiently covered by the survey:

The Mining Recorder may reduce the above credits if necessary in order that the total number of approved assessment days recorded on each claim does not exceed the maximum allowed as follows: Geophysical - 80; Geological - 40; Geochemical - 40;



TECHNICAL ASSESSMENT WORK CREDITS

Recorder Holder Gulf Minerals Canada Ltd.

Township or Area Scadding Township

Type of Survey and number of Assessment Days Credits per claim

GEOPHYSICAL

Electromagnetic 28.8 days

Magnetometer 28.8 days

Radiometric 22.4 days

Induced Polarization days

GEOLOGICAL days

GEOCHEMICAL days

Man days

Airborne

Special Provision

Ground

NOTICE OF INTENT TO BE ISSUED

Credits have been reduced because of partial coverage of claims.

Credits have been reduced because of corrections to work dates and figures of applicant.

NO CREDITS have been allowed for the following mining claims as they were not sufficiently covered by the survey:

| Mining Claims | |
|---------------------------|---|
| S. 323667 to 81 inclusive | |
| 323731 to 50 | " |
| 323807 to 16 | " |
| 346887 to 903 | " |
| 346914 to 16 | " |
| 357986 to 99 | " |

The Mining Recorder may reduce the above credits if necessary in order that the total number of approved assessment days recorded on each claim does not exceed the maximum allowed as follows: Geophysical - 80, Geological - 40, Geochemical - 40.

May 30/73

#17



ONTARIO

THE MINING ACT REPORT OF WORK

A separate form is required for each type of work to be recorded.

To the Recorder of... Sudbury... Mining Division
Gulf Minerals Canada Limited T 403
name of Recorded Holder
Suite 1300 10 King Street East Toronto M5C 1C3 Ontario
Post Office Address

do hereby report the performance of 244.8 days of Airborne electromagnetic surveys
type of work
not before reported to be applied on the following contiguous claims

Table with columns: Claim No., Days, Claim No., Days, Claim No., Days. Includes handwritten entries like 'Cree River Twp.' and 'RECEIVED'.

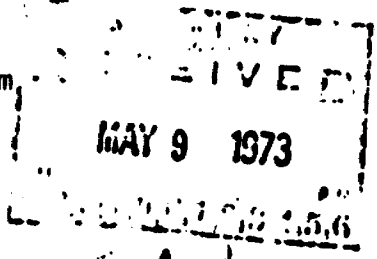
All the work was performed on Mining Claim (s) S 323658 to S 323666
(In the case of geological and/or geophysical survey (s) where more than 18 claims are involved attach a schedule)

READ CAREFULLY: THE FOLLOWING INFORMATION IS REQUIRED BY THE MINING RECORDER.

- For Manual Work, Stripping or Opening up of Mines, Sinking Shafts or Other Actual Mining Operations - Names and addresses of the men who performed the work...
For Diamond and other Core Drilling - Footage, No. and angle of holes and diameter of core...
For Compressed Air or Other Power Driven or Mechanical Equipment - Type of drill or equipment...
For Power Stripping - Type of equipment, Name and address of owner or operator...
For Geophysical, Geological, Geochemical Surveys and Expenditure Credits - the name of author of report...
For Land Survey - the name and address of Ontario Land surveyor.

The Required Information is as Follows: (Attach a list if this space is insufficient)

Author report - Jan Klein, M.Sc., P.Eng.
Covering dates of survey - November 30 - December 5, 1972
Instrument used - Scintrex SE-90 VLF electromagnetic system



Date May 7th 1973
Signature of Recorded Holder or Agent

The Mining Act Certificate Verifying Report of Work

I, K. A. Morgan
Suite 1300, 10 King Street East, Toronto, Ontario
(Post Office Address)

- hereby certify:
1. 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.
2. That the annexed report is true.

Dated May 7th 19 73
Signature

Handwritten number 5323658

THE PENALTY FOR MAKING A FALSE STATEMENT IN THIS REPORT AND/OR CERTIFICATE IS \$500. OR SIX MONTHS IMPRISONMENT OR BOTH

May 30/73



ONTARIO

THE MINING ACT REPORT OF WORK

A separate form is required for each type of work to be recorded.

18

To the Recorder of Sudbury Mining Division

I, Gulf Minerals Canada Limited T 403

Suite 1300 name of Recorded Holder 10 King Street East Toronto M5C 1C3 Ontario Miner's Licence

Post Office Address

do hereby report the performance of 244.8 days of Airborne magnetometer survey type of work

not before reported to be applied on the following contiguous claims

Table with 6 columns: Claim No., Days, Claim No., Days, Claim No., Days. Contains entries for claims S 323658 through S 323666 with days listed as 27.2.

All the work was performed on Mining Claim (s) S 323658 to S 323666 Cuddman Truss (In the case of geological and/or geophysical survey (s) where more than 18 claims are involved attach a schedule)

READ CAREFULLY: THE FOLLOWING INFORMATION IS REQUIRED BY THE MINING RECORDER.

- For Manual Work, Stripping or Opening up of Mines, Sinking Shafts or Other Act. of Mining Operations - Names and addresses of the men who performed the work and the dates and hours of their employment.
For Diamond and other Core Drilling - Footage, No. and angle of holes and diameter of core. Name and address of owner or operator of drill. Dates when drilling was done. Signed core log and sketch in duplicate.
For Compressed Air or Other Power Driven or Mechanical Equipment
Type of drill or equipment. Names and addresses of men engaged in operating equipment and the dates and hours of their employment.
For Power Stripping - Type of equipment. Name and address of owner or operator. Amount expended. Dates on which work was done. Proof of actual cost must be submitted within 30 days of recording.
With each of the above types of work sketches are required to show the location and extent of the work in relation to the nearest claim post. In the case of diamond or other core drilling the sketch must be submitted in duplicate.
For Geophysical, Geological, Geochemical Surveys and Expenditure Credits - the name of author of report. Covering dates of survey (linecutting & office). Type of instrument used. Total amount of expenditure. Technical reports, maps, expenditure breakdown, receipts must be filed in duplicate with the Minister within 60 days of recording.
For Land Survey - the name and address of Ontario Land surveyor.

The Required Information is as Follows: (Attach a list if this space is insufficient)

Author of report - Jan Klein, M.Sc., P.Eng.
Covering dates of survey - November 30 - December 5, 1972
Instrument used - Scintrex MAP-2 magnetometer

MAY 9 1973

Date May 7th, 1973

Signature of Recorded Holder or Agent

The Mining Act Certificate Verifying Report of Work

I, K. N. Morgan Suite 1300, 10 King Street East, Toronto, Ontario (Post Office Address)

hereby certify:

- 1. 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.
2. That the annexed report is true.

Dated May 7th 1973

Signature

5323658

THE PENALTY FOR MAKING A FALSE STATEMENT IN THIS REPORT AND/OR CERTIFICATE IS \$500. OR SIX MONTHS IMPRISONMENT OR BOTH

May 30/73



ONTARIO

THE MINING ACT REPORT OF WORK

A separate form is required for each type of work to be recorded.

19

To the Recorder of.....Sudbury.....Mining Division

I, Gulf Minerals Canada Limited.....T. 403.....

name of Recorded Holder

Miner's Licence

Suite 1300 10 King Street East Toronto M5C 1C3 Ontario

Post Office Address

do hereby report the performance of 248 250 days of Airborne radiometric survey.

Type of work

not before reported to be applied on the following contiguous claims,

| Claim No. | Days | Claim No. | Days | Claim No. | Days |
|-----------|------|-----------|------|-----------|------|
| S 323658 | 27.2 | S 323664 | 27.2 | | |
| S 323659 | 27.2 | S 323665 | 27.2 | | |
| S 323660 | 27.2 | S 323666 | 27.2 | | |
| S 323661 | 27.2 | | | | |
| S 323662 | 27.2 | | | | |
| S 323663 | 27.2 | | | | |

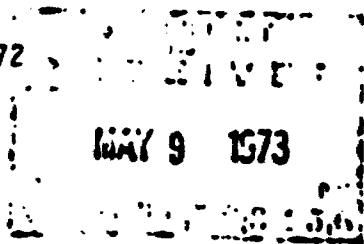
All the work was performed on Mining Claim (s) S. 323658 to S. 323666 Chelmsford
(In the case of geological and/or geophysical survey (s) where more than 18 claims are involved attach a schedule)

READ CAREFULLY: THE FOLLOWING INFORMATION IS REQUIRED BY THE MINING RECORDER.

- For Manual Work, Stripping or Opening up of Mines, Sinking Shafts or Other Actual Mining Operations - Names and addresses of the men who performed the work and the dates and hours of their employment.
- For Diamond and other Core Drilling - Footage, No. and angle of holes and diameter of core. Name and address of owner or operator of drill. Dates when drilling was done. Signed core log and sketch in duplicate.
- For Compressed Air or Other Power Driven or Mechanical Equipment - Type of drill or equipment. Names and addresses of men engaged in operating equipment and the dates and hours of their employment.
- For Power Stripping - Type of equipment. Name and address of owner or operator. Amount expended. Dates on which work was done. Proof of actual cost must be submitted within 30 days of recording.
- With each of the above types of work sketches are required to show the location and extent of the work in relation to the nearest claim post. In the case of diamond or other core drilling the sketch must be submitted in duplicate.
- For Geophysical, Geological, Geochemical Surveys and Expenditure Credits - the name of author of report. Covering dates of survey (linecutting & office). Type of instrument used. Total amount of expenditure. Technical reports, maps, expenditure breakdown, receipts must be filed in duplicate with the Minister within 60 days of recording.
- For Land Survey - the name and address of Ontario Land surveyor.

The Required Information is as Follows: (Attach a list if this space is insufficient)

Author of report - Jan Klein, M.Sc., P.Eng.
Covering dates of survey - November 30 - December 5, 1972
Instrument used - Scintrex GISA-4 Spectrometer



Date May 21st 1973

Signature of Recorded Holder or Agent

The Mining Act Certificate Verifying Report of Work

I, K. A. Morgan.....

Suite 1300, 10 King Street East Toronto Ontario
(Post Office Address)

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.
- That the annexed report is true.

Dated May 7th 19 73

Signature

S. 323658

THE PENALTY FOR MAKING A FALSE STATEMENT IN THIS REPORT AND/OR CERTIFICATE IS \$500. OR SIX MONTHS IMPRISONMENT OR BOTH

May 30/73



ONTARIO

THE MINING ACT REPORT OF WORK

A separate form is required for each type of work to be recorded.

32

To the Recorder of Sudbury Mining Division

I, Gulf Minerals Canada Limited T. 403
name of Recorded Holder Miner's Licence

Suite 1300 10 King Street East Toronto M5C 1C3
Post Office Address

do hereby report the performance of 1,538.6 days of Airborne electromagnetic survey
type of work

not before reported to be applied on the following contiguous claims

| Claim No. | Days | Claim No. | Days | Claim No. | Days |
|-----------|------|-----------|------|-----------|------|
| S 323633 | 31.4 | S 323639 | 31.4 | S 323645 | 31.4 |
| S 323634 | 31.4 | S 323640 | 31.4 | S 323646 | 31.4 |
| S 323635 | 31.4 | S 323641 | 31.4 | S 323647 | 31.4 |
| S 323636 | 31.4 | S 323642 | 31.4 | S 323648 | 31.4 |
| S 323637 | 31.4 | S 323643 | 31.4 | S 323649 | 31.4 |
| S 323638 | 31.4 | S 323644 | 31.4 | | |

(Continued on attached list)

All the work was performed on Mining Claim (s) (see attached land schedule.) Passive Top
(In the case of geological and/or geophysical survey (s) where more than 18 claims are involved attach a schedule)

READ CAREFULLY: THE FOLLOWING INFORMATION IS REQUIRED BY THE MINING RECORDER.

- For Manual Work, Stripping or Opening up of Mines, Sinking Shafts or Other Actual Mining Operations - Names and addresses of the men who performed the work and the dates and hours of their employment.
- For Diamond and other Core Drilling - Footage, No. and angle of holes and diameter of core. Name and address of owner or operator of drill. Dates when drilling was done. Signed core log and sketch in duplicate.
- For Compressed Air or Other Power Driven or Mechanical Equipment
Type of drill or equipment. Names and addresses of men engaged in operating equipment and the dates and hours of their employment.
- For Power Stripping - Type of equipment. Name and address of owner or operator. Amount expended. Dates on which work was done. Proof of actual cost must be submitted within 30 days of recording.
- With each of the above types of work sketches are required to show the location and extent of the work in relation to the nearest claim post. In the case of diamond or other core drilling the sketch must be submitted in duplicate.
- For Geophysical, Geological, Geochemical Surveys and Expenditure Credits - the name of author of report. Covering dates of survey (linecutting & office). Type of instrument used. Total amount of expenditure. Technical reports, maps, expenditure breakdown, receipts must be filed in duplicate with the Minister within 60 days of recording.
- For Land Survey - the name and address of Ontario Land surveyor.

The Required Information is as Follows: (Attach a list if this space is insufficient)

Author of report - Jan Klein, M.Sc., P. Eng.
Covering dates of survey - November 30 - December 5, 1972
Instrument used - Scintrex SE-90 VLF electromagnetic system

MAY 9 1973

Date May 7th 1973

Signature of Recorded Holder or Agent

The Mining Act
Certificate Verifying Report of Work

I, K. A. Morgan
Suite 1300, 10 King Street East, Toronto, Ontario
(Post Office Address)

hereby certify:

1. 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.
2. That the annexed report is true.

Dated May 7th 19 73

Signature

5.323633

THE PENALTY FOR MAKING A FALSE STATEMENT IN THIS REPORT AND/OR CERTIFICATE IS \$500. OR SIX MONTHS IMPRISONMENT OR BOTH

CONTIGUOUS CLAIM LIST (cont'd)

| <u>Claim No.</u> | <u>Days</u> |
|------------------|-------------|
| S 323650 | 31.4 |
| S 323651 | 31.4 |
| S 323652 | 31.4 |
| S 323653 | 31.4 |
| S 323654 | 31.4 |
| S 323655 | 31.4 |
| S 323656 | 31.4 |
| S 323657 | 31.4 |
| | |
| S 323703 | 31.4 |
| S 323704 | 31.4 |
| S 323705 | 31.4 |
| S 323706 | 31.4 |
| S 323707 | 31.4 |
| S 323708 | 31.4 |
| S 323709 | 31.4 |
| S 323710 | 31.4 |
| S 323711 | 31.4 |
| S 323712 | 31.4 |
| S 323713 | 31.4 |
| S 323714 | 31.4 |
| S 323715 | 31.4 |
| S 323716 | 31.4 |
| S 323717 | 31.4 |
| S 323718 | 31.4 |
| S 323719 | 31.4 |
| S 323720 | 31.4 |
| S 323721 | 31.4 |
| S 323722 | 31.4 |
| S 323723 | 31.4 |
| S 323724 | 31.4 |
| S 323725 | 31.4 |
| S 323726 | 31.4 |

LAND SCHEDULE

- S 323633
- S 323634
- S 323635
- S 323636
- S 323637
- S 323638
- S 323639
- S 323640
- S 323641
- S 323642
- S 323643
- S 323644
- S 323645
- S 323646
- S 323647
- S 323648
- S 323649
- S 323650
- S 323651
- S 323652
- S 323653
- S 323654
- S 323655
- S 323656
- S 323657

Collected

- S 323703
- S 323704

LAND SCHEDULE

- S 323705
- S 323706
- S 323707
- S 323708
- S 323709
- S 323710
- S 323711
- S 323712
- S 323713
- S 323714
- S 323715
- S 323716
- S 323717
- S 323718
- S 323719
- S 323720
- S 323721
- S 323722
- S 323723
- S 323724
- S 323725
- S 323726

Interests

May 30/73



ONTARIO

THE MINING ACT REPORT OF WORK

A separate form is required for each type of work to be recorded.

#33

To the Recorder of... Sudbury Mining Division
I, Gulf Minerals Canada Limited T 403
Suite 1300 name of Recorded Holder Toronto M5C 1C3 Miner's Licence Ontario
Post Office Address

do hereby report the performance of ... 1,538.6 days of Airborne magnetometer survey type of work
not before reported to be applied on the following contiguous claims

Table with 6 columns: Claim No., Days, Claim No., Days, Claim No., Days. Lists claims S 323633 through S 323644 with 31.4 days each. Includes '(continued on attached list)'

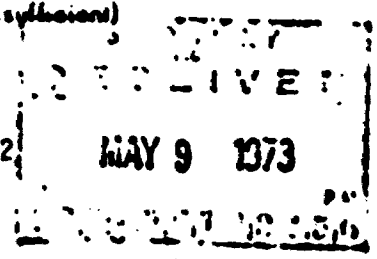
All the work was performed on Mining Claim (s) see attached land schedule (In the case of geological and/or geophysical survey (s) where more than 18 claims are involved attach a schedule)

READ CAREFULLY: THE FOLLOWING INFORMATION IS REQUIRED BY THE MINING RECORDER.

- For Manual Work, Stripping or Opening up of Mines, Sinking Shafts or Other Actual Mining Operations - Names and addresses of the men who performed the work and the dates and hours of their employment.
For Diamond and other Core Drilling - Footage, No. and angle of holes and diameter of core. Name and address of owner or operator of drill. Dates when drilling was done. Signed core log and sketch in duplicate.
For Compressed Air or Other Power Driven or Mechanical Equipment
Type of drill or equipment. Names and addresses of men engaged in operating equipment and the dates and hours of their employment.
For Power Stripping - Type of equipment. Name and address of owner or operator. Amount expended. Dates on which work was done. Proof of actual cost must be submitted within 30 days of recording.
With each of the above types of work sketches are required to show the location and extent of the work in relation to the nearest claim post. In the case of diamond or other core drilling the sketch must be submitted in duplicate.
For Geophysical, Geological, Geochemical Surveys and Expenditure Credits - the name of author of report. Covering dates of survey (linecutting & office). Type of instrument used. Total amount of expenditure. Technical reports, maps, expenditure breakdown, receipts must be filed in duplicate with the Minister within 60 days of recording.
For Land Survey - the name and address of Ontario Land surveyor.

The Required Information is as Follows: (Attach a list if this space is insufficient)

Author of report - Jan Klein, M.Sc., P. Eng.
Covering dates of survey - November 30 to December 5, 1972
Instrument used - Scintrex MAP-2 magnetometer



Date May 7th, 1973

Signature of Recorded Holder or Agent

The Mining Act Certificate Verifying Report of Work

I, K. A. Morgan Suite 1300, 10 King Street East, Toronto, Ontario (Post Office Address)

- hereby certify:
1. 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 some during and/or after its completion.
2. That the annexed report is true.

Dated May 7th 1973

Signature

5.323633

THE PENALTY FOR MAKING A FALSE STATEMENT IN THIS REPORT AND/OR CERTIFICATE IS \$500. OR SIX MONTHS IMPRISONMENT OR BOTH

CONTIGUOUS CLAIM LIST (cont'd)

S323650
↓
S323657

| Claim No. | Days |
|-----------|------|
| S 323650 | 31.4 |
| S 323651 | 31.4 |
| S 323652 | 31.4 |
| S 323653 | 31.4 |
| S 323654 | 31.4 |
| S 323655 | 31.4 |
| S 323656 | 31.4 |
| S 323657 | 31.4 |

S 323703
↓
S323726

| | |
|----------|------|
| S 323703 | 31.4 |
| S 323704 | 31.4 |
| S 323705 | 31.4 |
| S 323706 | 31.4 |
| S 323707 | 31.4 |
| S 323708 | 31.4 |
| S 323709 | 31.4 |
| S 323710 | 31.4 |
| S 323711 | 31.4 |
| S 323712 | 31.4 |
| S 323713 | 31.4 |
| S 323714 | 31.4 |
| S 323715 | 31.4 |
| S 323716 | 31.4 |
| S 323717 | 31.4 |
| S 323718 | 31.4 |
| S 323719 | 31.4 |
| S 323720 | 31.4 |
| S 323721 | 31.4 |
| S 323722 | 31.4 |
| S 323723 | 31.4 |
| S 323724 | 31.4 |
| S 323725 | 31.4 |
| S 323726 | 31.4 |

LAND SCHEDULE

- S 323633
- S 323634
- S 323635
- S 323636
- S 323637
- S 323638
- S 323639
- S 323640
- S 323641
- S 323642
- S 323643
- S 323644
- S 323645
- S 323646
- S 323647
- S 323648
- S 323649
- S 323650
- S 323651
- S 323652
- S 323653
- S 323654
- S 323655
- S 323656
- S 323657

- S 323703
- S 323704

LAND SCHEDULE

- S 323705
- S 323706
- S 323707
- S 323708
- S 323709
- S 323710
- S 323711
- S 323712
- S 323713
- S 323714
- S 323715
- S 323716
- S 323717
- S 323718
- S 323719
- S 323720
- S 323721
- S 323722
- S 323723
- S 323724
- S 323725
- S 323726

May 30/73



ONTARIO

THE MINING ACT REPORT OF WORK

#34

A separate form is required for each type of work to be recorded.

To the Recorder of... Sudbury... Mining Division
Gulf Minerals Canada Limited T 403
name of Recorded Holder
Suite 1300 10 King Street Street East Toronto M5C 1C3 Ontario
Post Office Address

do hereby report the performance of ... 17.2 ... days of Airborne radiometric survey.
not before reported to be applied on the following contiguous claims

| Claim No. | Days | Claim No. | Days | Claim No. | Days |
|-----------|------|-----------|------|------------------------------|------|
| S. 323633 | 17.2 | S. 323639 | 17.2 | S. 323645 | 17.2 |
| S. 323634 | 17.2 | S. 323640 | " | S. 323646 | " |
| S. 323635 | 17.2 | S. 323641 | " | S. 323647 | " |
| S. 323636 | 17.2 | S. 323642 | " | S. 323648 | " |
| S. 323637 | 17.2 | S. 323643 | " | S. 323649 | " |
| S. 323638 | 17.2 | S. 323644 | " | (continued on attached list) | |

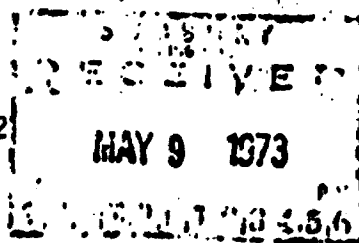
All the work was performed on Mining Claim (s) see attached land schedule Roberts Twp.
(In the case of geological and/or geophysical survey (s) where more than 18 claims are involved attach a schedule)

READ CAREFULLY: THE FOLLOWING INFORMATION IS REQUIRED BY THE MINING RECORDER.

- For Manual Work, Stripping or Opening up of Mines, Sinking Shafts or Other Actual Mining Operations - Names and addresses of the men who performed the work and the dates and hours of their employment.
- For Diamond and other Core Drilling - Footage, No. and angle of holes and diameter of core. Name and address of owner or operator of drill. Dates when drilling was done. Signed core log and sketch in duplicate.
- For Compressed Air or Other Power Driven or Mechanical Equipment
Type of drill or equipment. Names and addresses of men engaged in operating equipment and the dates and hours of their employment.
- For Power Stripping - Type of equipment. Name and address of owner or operator. Amount expended. Dates on which work was done. Proof of actual cost must be submitted within 30 days of recording.
- With each of the above types of work sketches are required to show the location and extent of the work in relation to the nearest claim post. In the case of diamond or other core drilling the sketch must be submitted in duplicate.
- For Geophysical, Geological, Geochemical Surveys and Expenditure Credits - the name of author of report. Covering dates of survey (linecutting & office). Type of instrument used. Total amount of expenditure. Technical reports, maps, expenditure breakdown, receipts must be filed in duplicate with the Minister within 60 days of recording.
- For Land Survey - the name and address of Ontario Land surveyor.

The Required Information is as Follows: (Attach a list if this space is insufficient)

Author of report - Jan Klein, M.Sc., P.Eng.
Covering dates of survey - November 30 to December 5, 1972
Instrument used - Scintrex GISA-4 spectrometer



Date May 7th, 1973

Signature of Recorded Holder or Agent

The Mining Act
Certificate Verifying Report of Work

K. A. Morgan
Suite 1300, 10 King Street East, Toronto, Ontario
(Post Office Address)

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.
- That the annexed report is true.

Dated May 7th 19 73

Signature

S. 323634

THE PENALTY FOR MAKING A FALSE STATEMENT IN THIS REPORT AND/OR CERTIFICATE IS \$500. OR SIX MONTHS IMPRISONMENT OR BOTH

LAND SCHEDULE

- S 323633
- S 323634
- S 323635
- S 323636
- S 323637
- S 323638
- S 323639
- S 323640
- S 323641
- S 323642
- S 323643
- S 323644
- S 323645
- S 323646
- S 323647
- S 323648
- S 323649
- S 323650
- S 323651
- S 323652
- S 323653
- S 323654
- S 323655
- S 323656
- S 323657

S 323703

S 323704

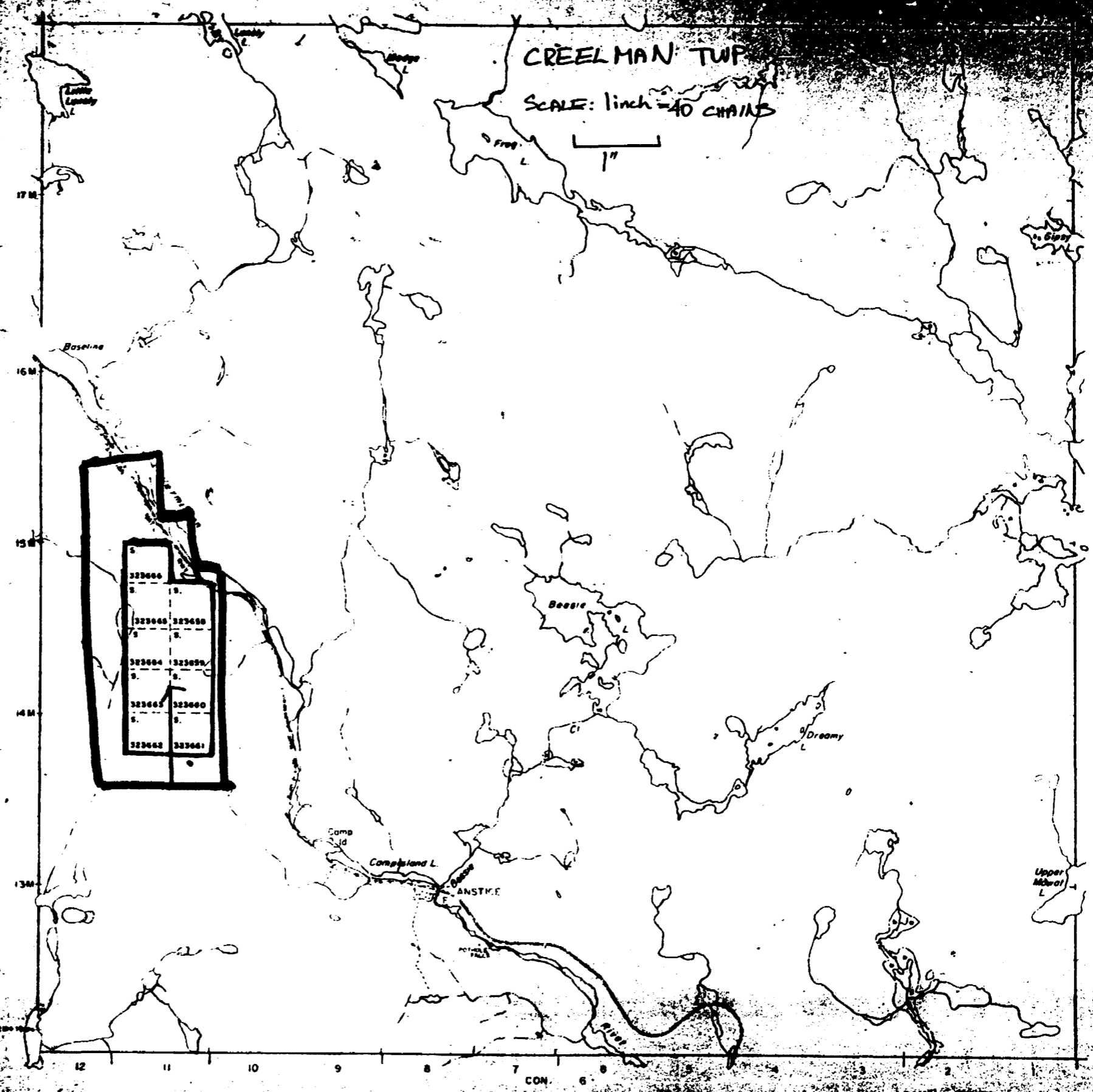
LAND SCHEDULE

- S 323705
- S 323706
- S 323707
- S 323708
- S 323709
- S 323710
- S 323711
- S 323712
- S 323713
- S 323714
- S 323715
- S 323716
- S 323717
- S 323718
- S 323719
- S 323720
- S 323721
- S 323722
- S 323723
- S 323724
- S 323725
- S 323726

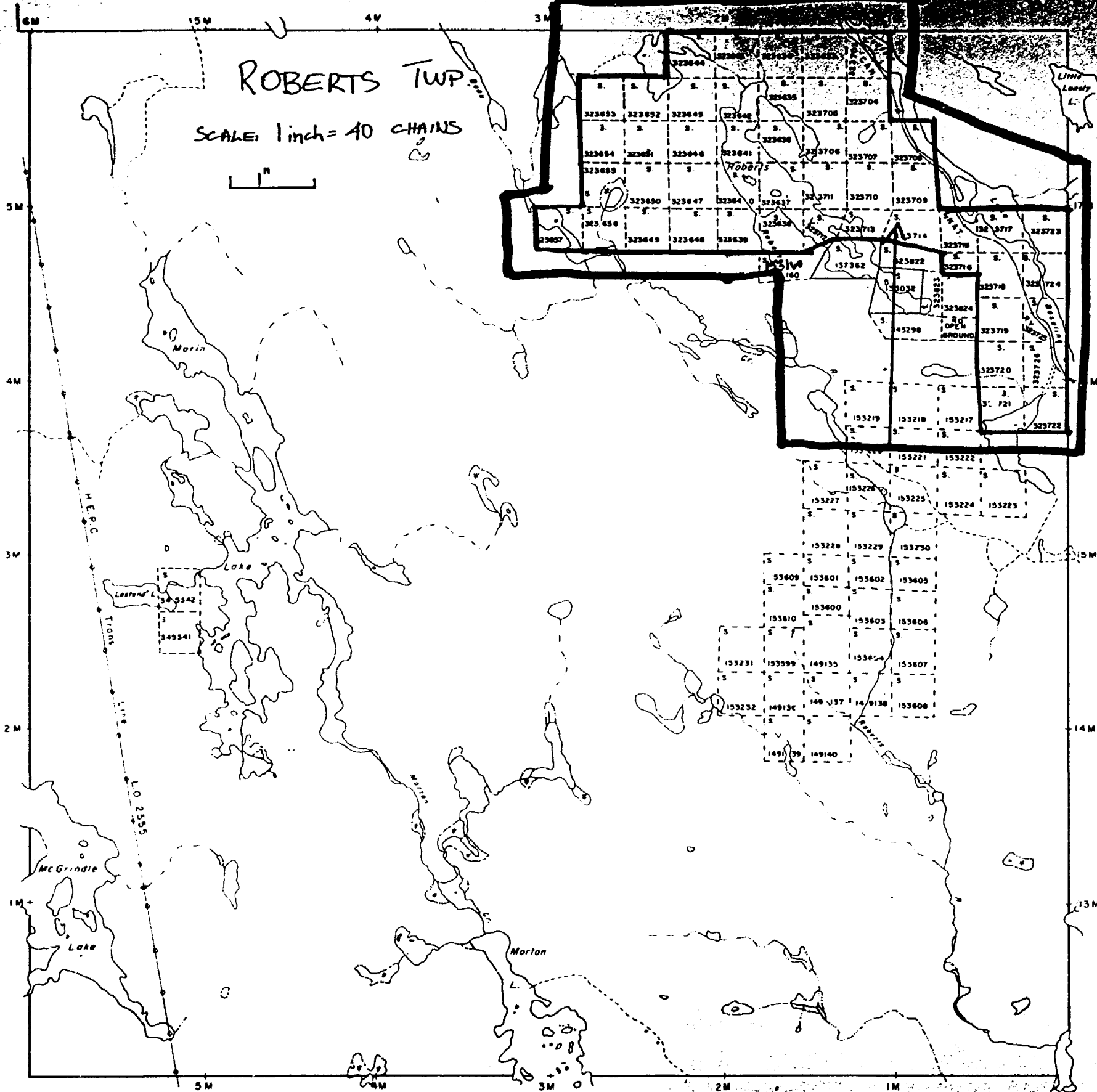
ROBERTS TWP. M. 1078

CREELMAN TWP
SCALE: 1 inch = 40 CHAINS

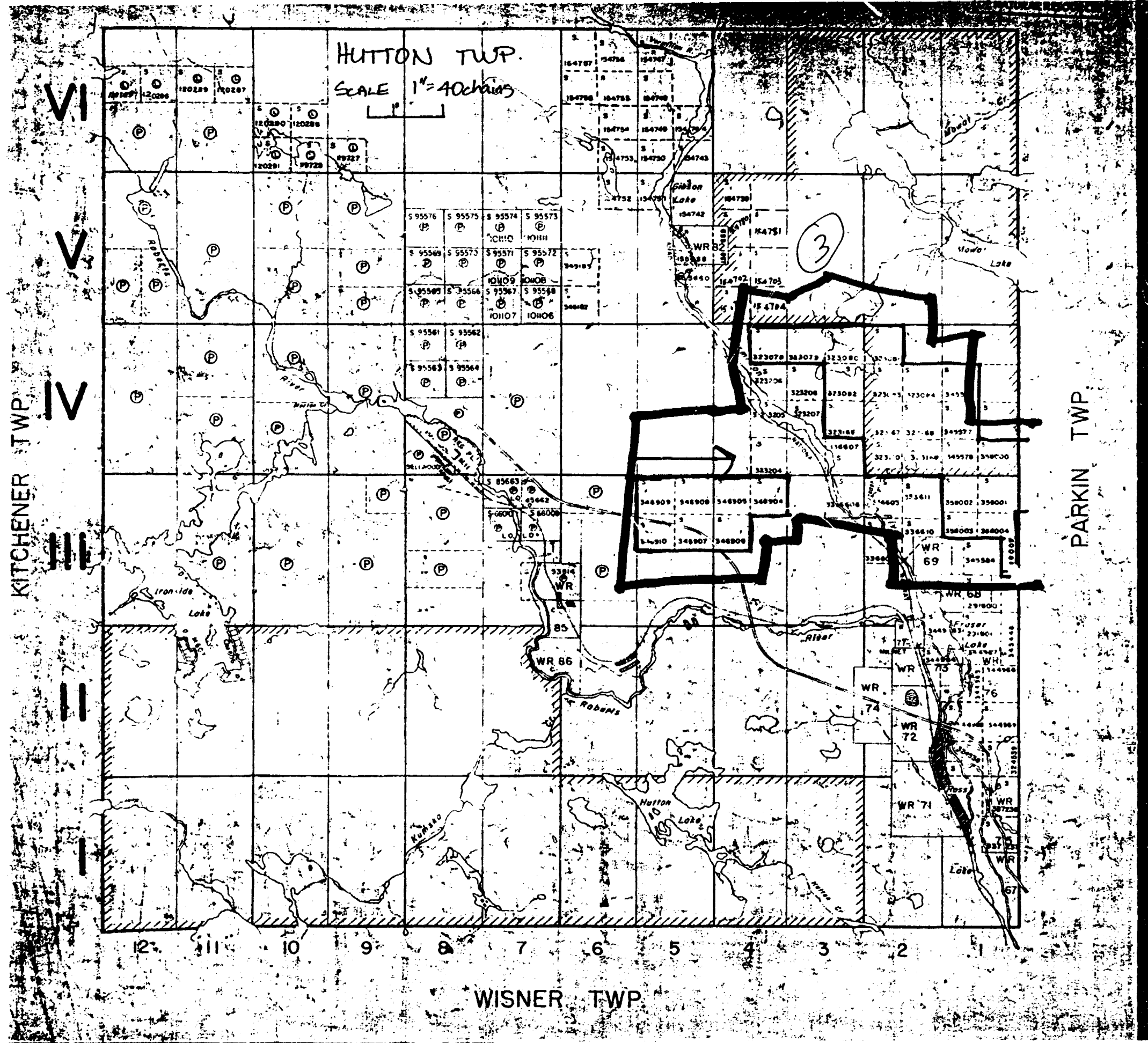
FRALECK TWP. M. 816



Botha Twp. M. 674

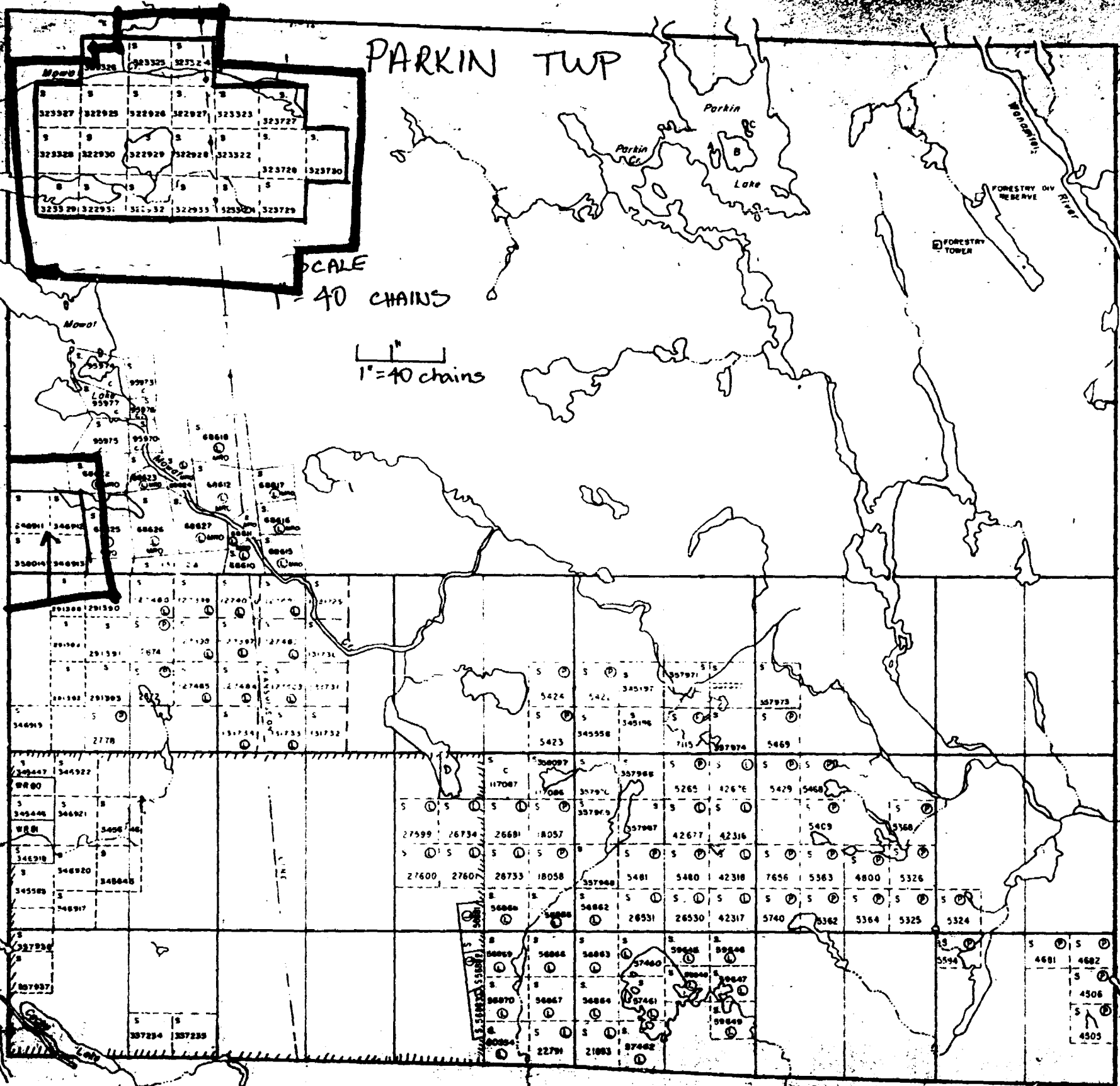


Creelman Twp. M. 737



↑ Fralec Twp. M-816

PARKIN TWP



Hutton Twp. M-944

Aylmer Twp. M-641

12 11 10 9 8 7 6 5 4 3 2 1

Rafabun Twp. - M. 1076

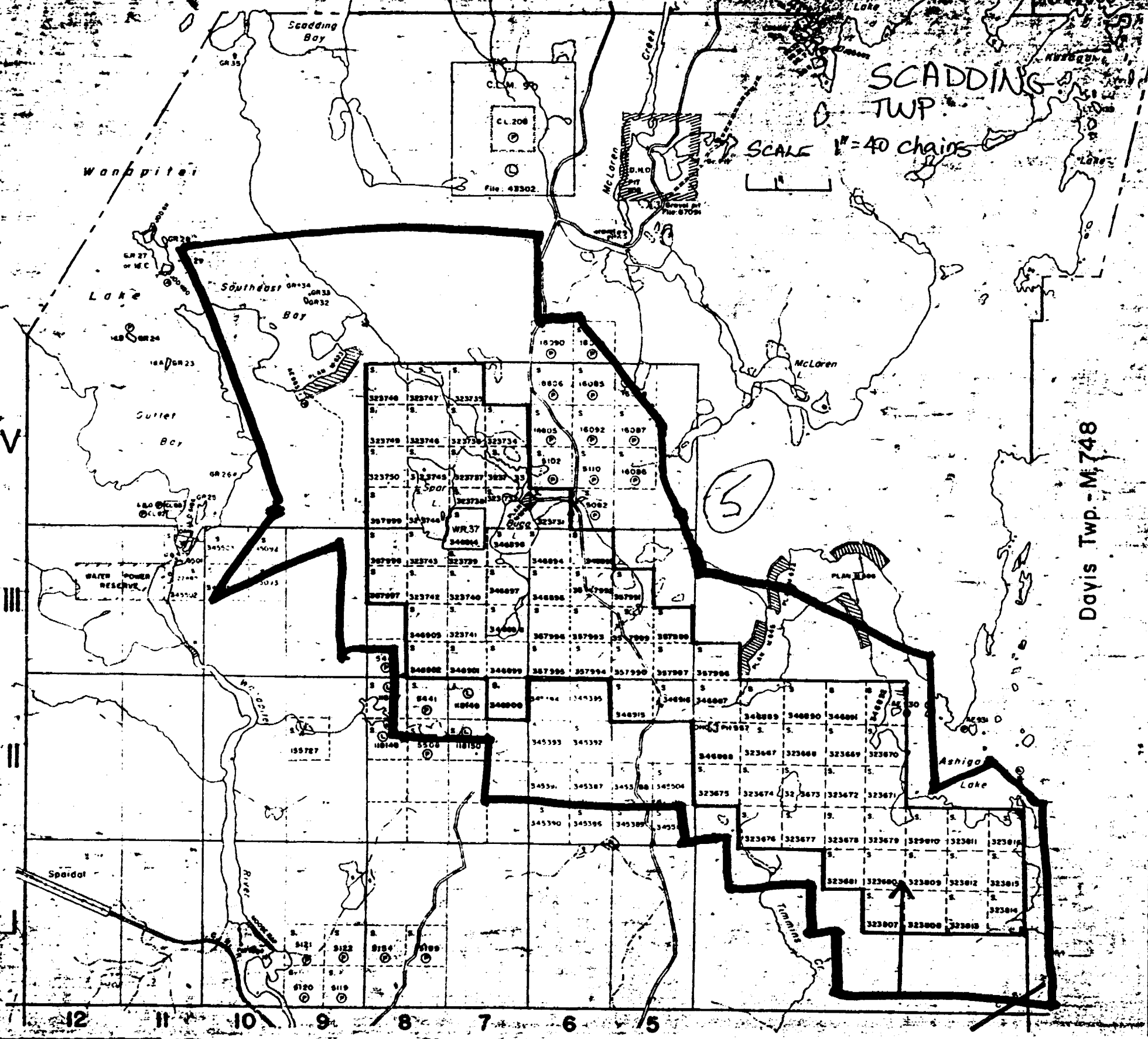
Kelly Twp. - M. 963

SCADDING TWP.

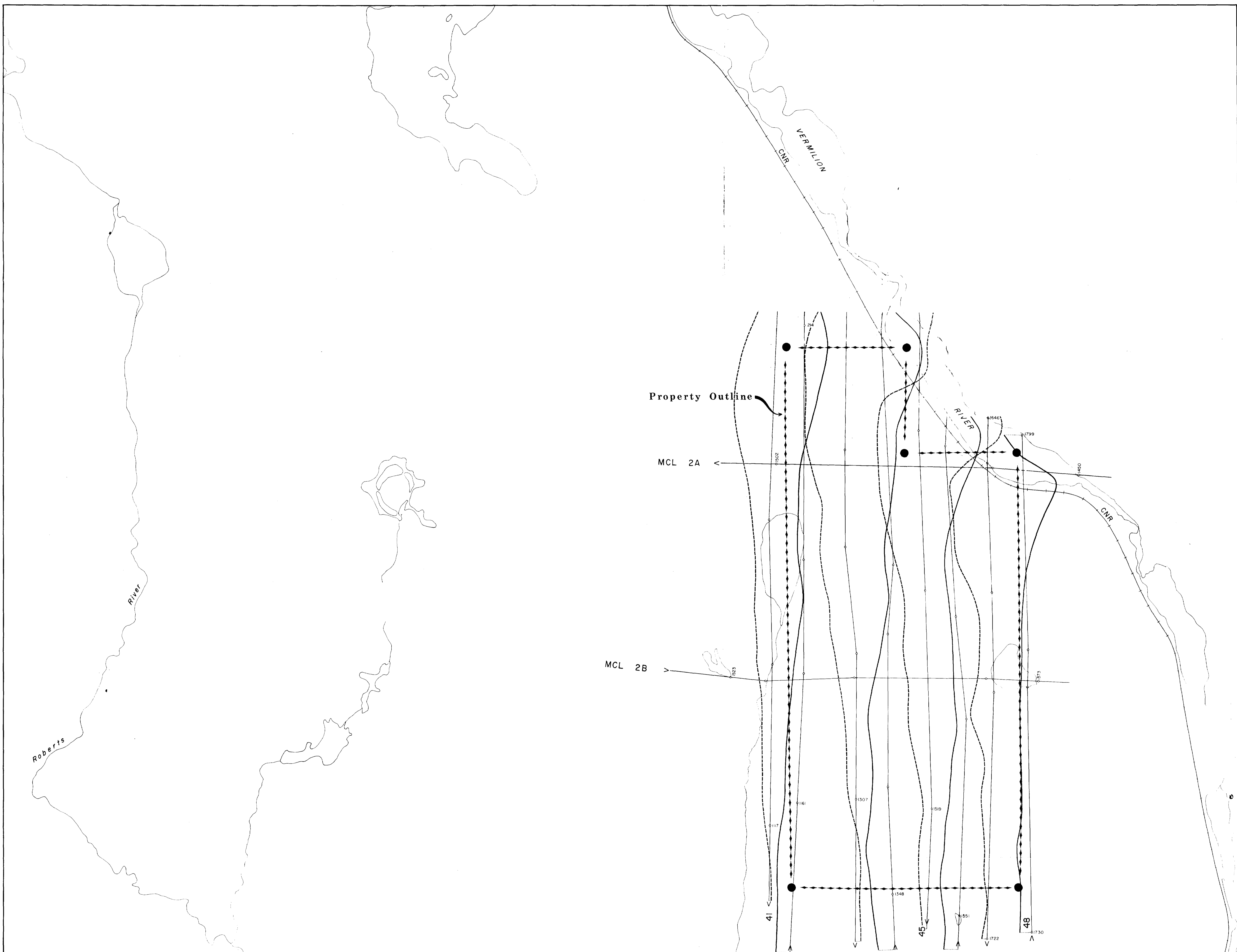
SCALE 1" = 40 chains

MacIennan Twp. - M. 841

Davis Twp. - M. 748



12 11 10 9 8 7 6 5



- LEGEND**
- FLIGHT LINE, NUMBER AND DIRECTION 21
 - CONTROL POINT 2498
 - MEAN FLIGHT LINE SPACING 400 FEET
 - MEAN FLIGHT ALTITUDE 100 FEET
 - IP AND OP PROFILES SHOWING SAME POLARITY
 - IP AND OP PROFILES SHOWING OPPOSITE POLARITY
 - IN-PHASE PROFILE ON NORTH LINE 1cm = 20%
 - IN-PHASE PROFILE ON SOUTH LINE 1cm = 20%
 - 1st CATEGORY ANOMALY IN-PHASE > 40%
 - 2nd CATEGORY ANOMALY IN-PHASE 20% < 40%
 - 3rd CATEGORY ANOMALY IN-PHASE < 20%
 - ANOMALY WITH MAGNETIC COINCIDENCE
 - 70% IN-PHASE / 24% OUT OF PHASE
 - CONDUCTOR ZONE 70/24

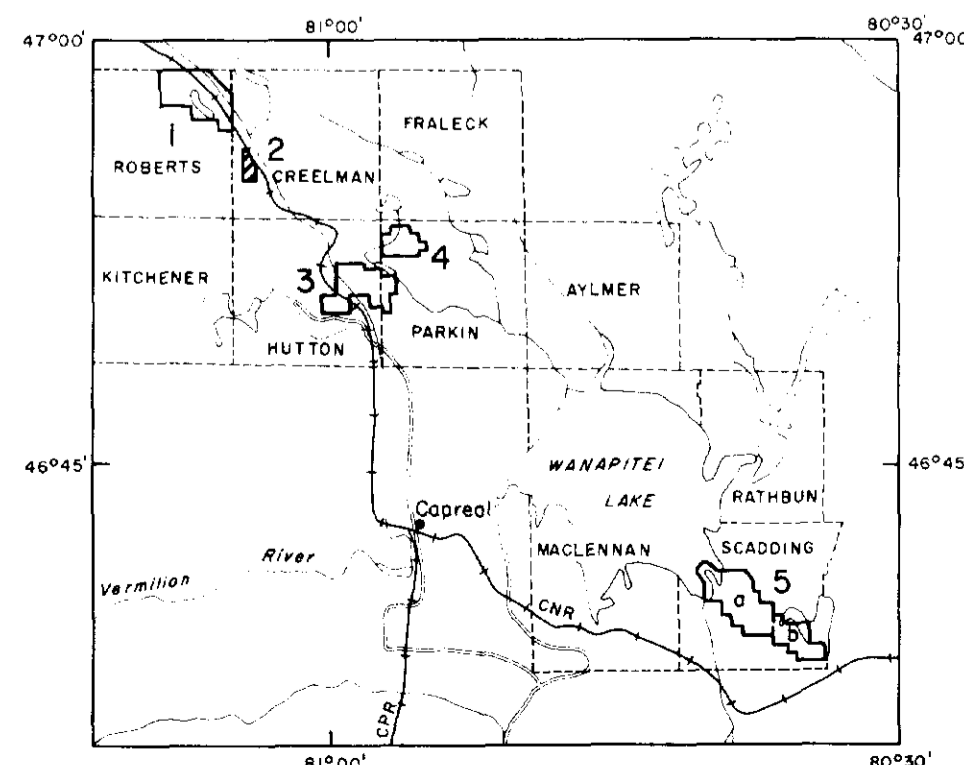


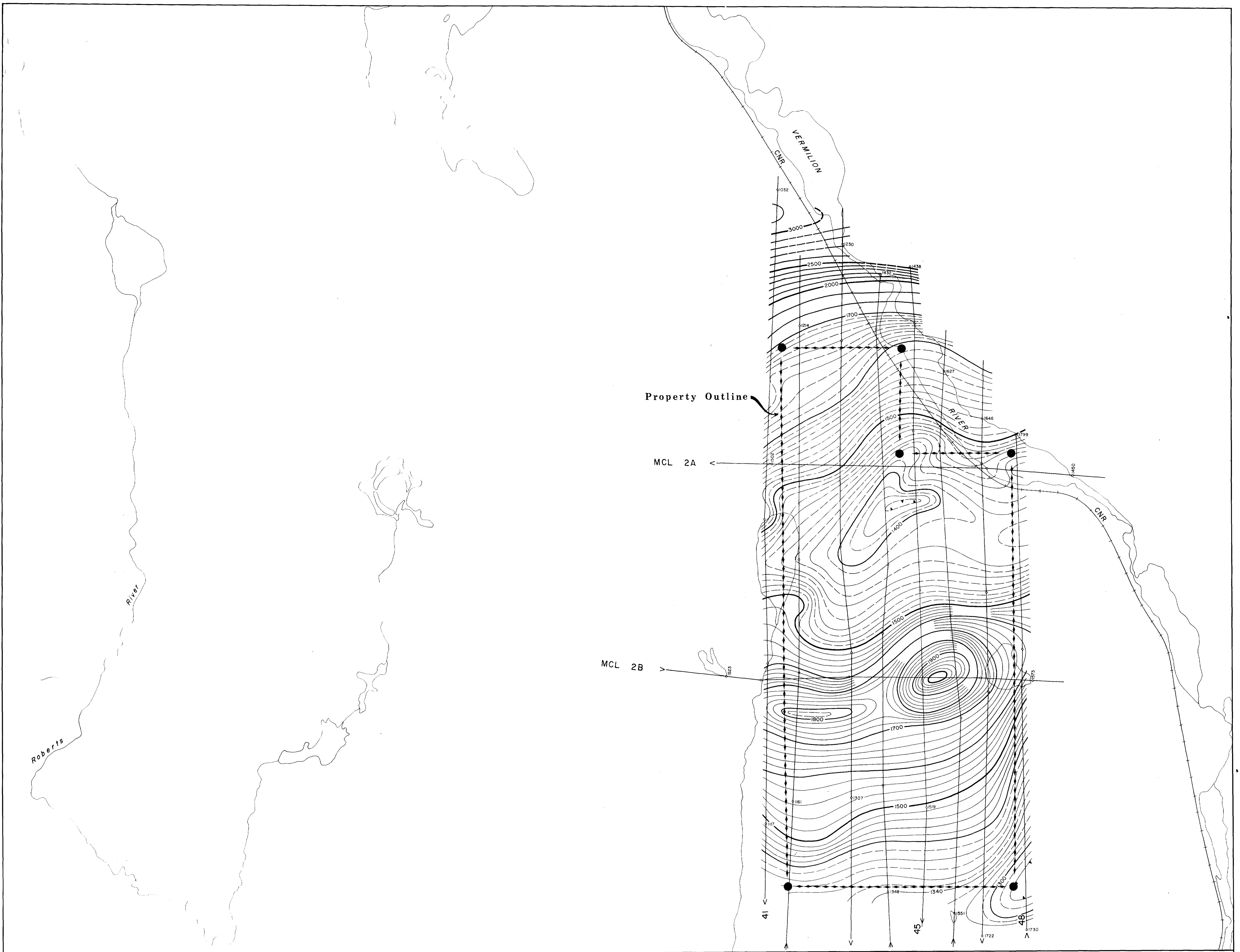
PLATE 2E
 GULF MINERALS CANADA LIMITED
 AREA 2
 CREELMAN - TOWNSHIP, SUDBURY - ONTARIO
AIRBORNE GEOPHYSICAL SURVEY
 SCINTREX MAP-2 MAGNETOMETER
 SCINTREX GISA-4 GAMMA RAY SPECTROMETER
 SCINTREX SE-90 ELECTROMAGNETOMETER

SCALE : 1" = 400'
 FLOWN and COMPILED 1972
 by
 SCINTREX SURVEYS LIMITED

CREELMAN-0019 #1

2.12.14 9:57ft





LEGEND

FLIGHT LINE NUMBER AND DIRECTION > 21

CONTROL POINT 400 FEET

MEAN FLIGHT LINE SPACING 100 FEET

MEAN FLIGHT ALTITUDE 10 GAMMAS

CONTOUR INTERVAL 500 GAMMA CONTOUR

500 GAMMA CONTOUR 100 GAMMA CONTOUR

100 GAMMA CONTOUR 20 GAMMA CONTOUR

20 GAMMA CONTOUR 10 GAMMA CONTOUR

10 GAMMA CONTOUR MAGNETIC LOW

MAGNETIC LOW 58,000 GAMMAS

BASE VALUE 58,000 GAMMAS

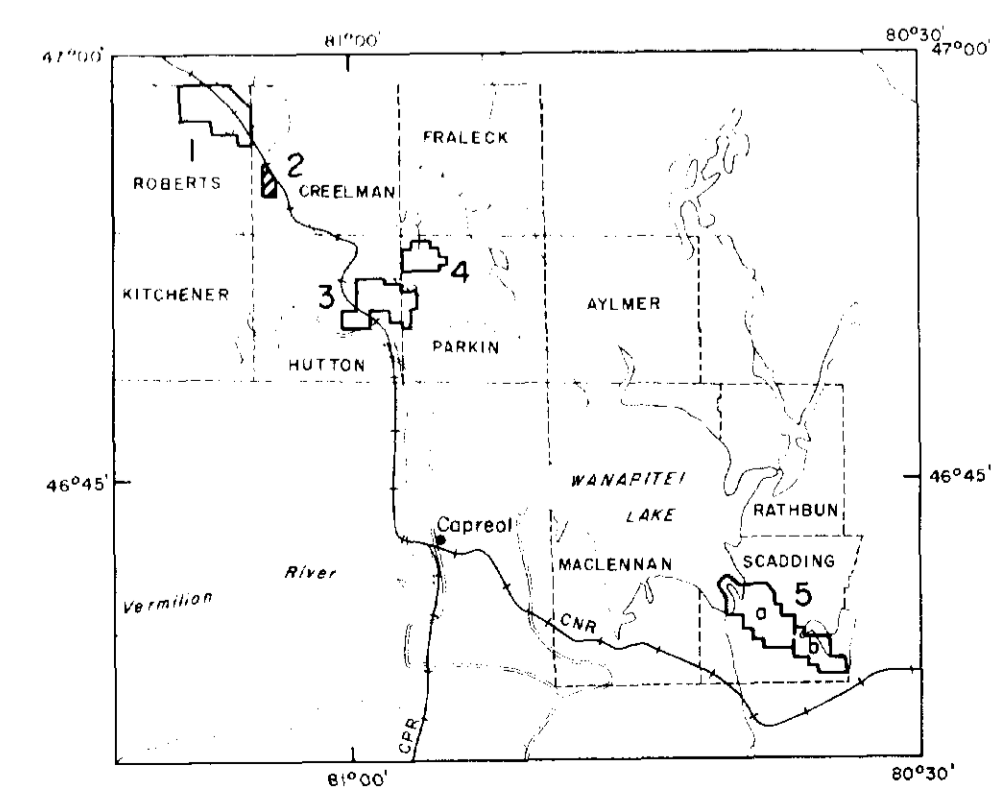


PLATE 2M

GULF MINERALS CANADA LIMITED

AREA 2

CREELMAN - TOWNSHIP, SUDBURY - ONTARIO

AIRBORNE GEOPHYSICAL SURVEY

SCINTREX MAP-2 MAGNETOMETER

SCINTREX GISA-4 GAMMA RAY SPECTROMETER

SCINTREX SE-90 ELECTROMAGNETOMETER

SCALE : 1" = 400'

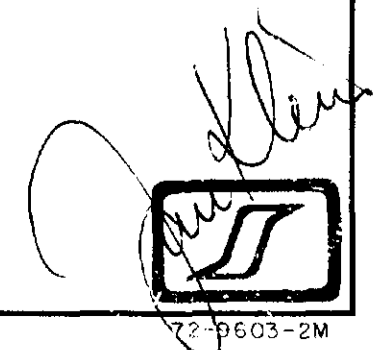
FLOWN and COMPILED 1972

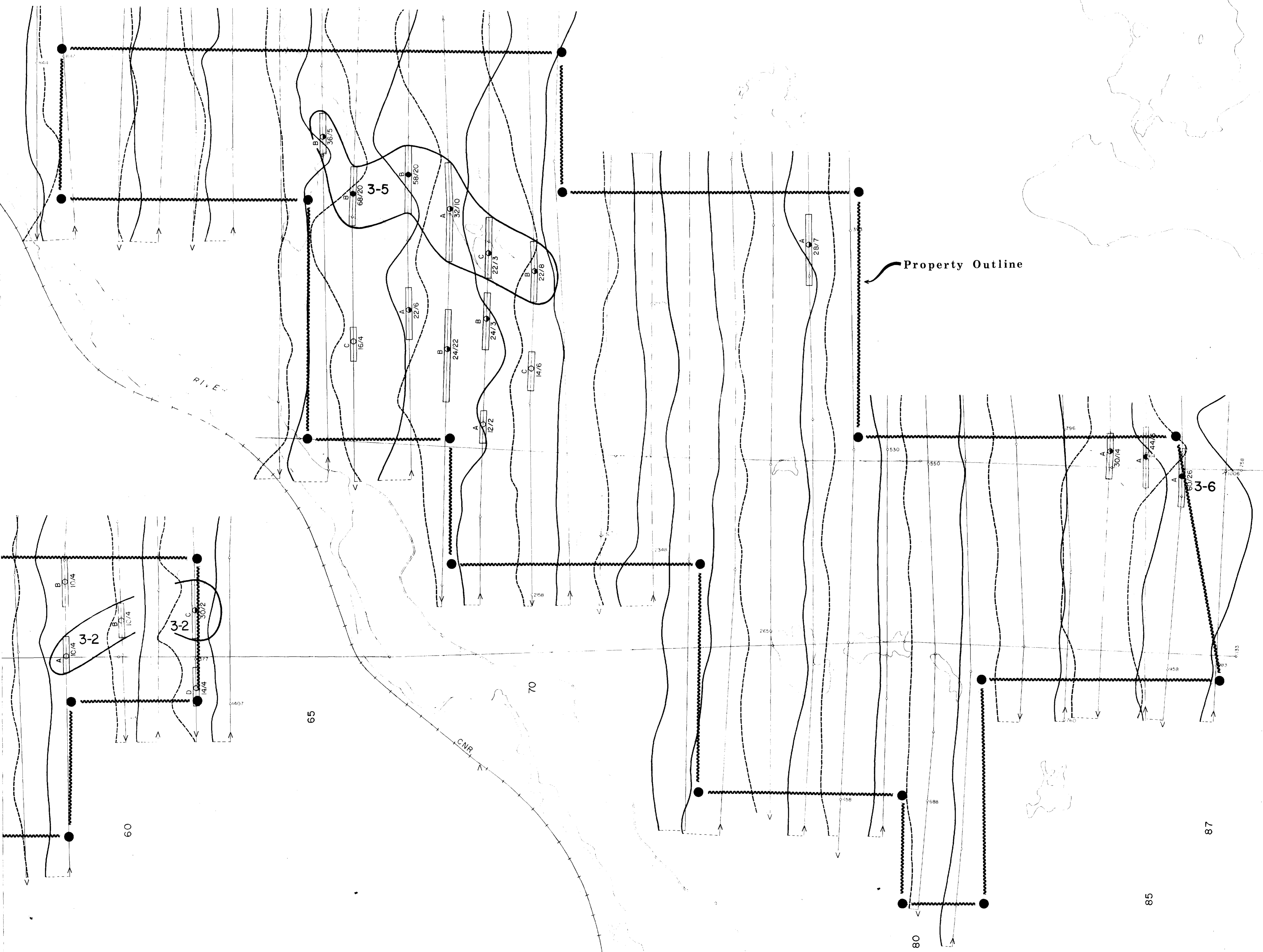
by

SCINTREX SURVEYS LIMITED

CREELMAN-0019 #2

2.12.74 9.29.74





MOWAT LAKE

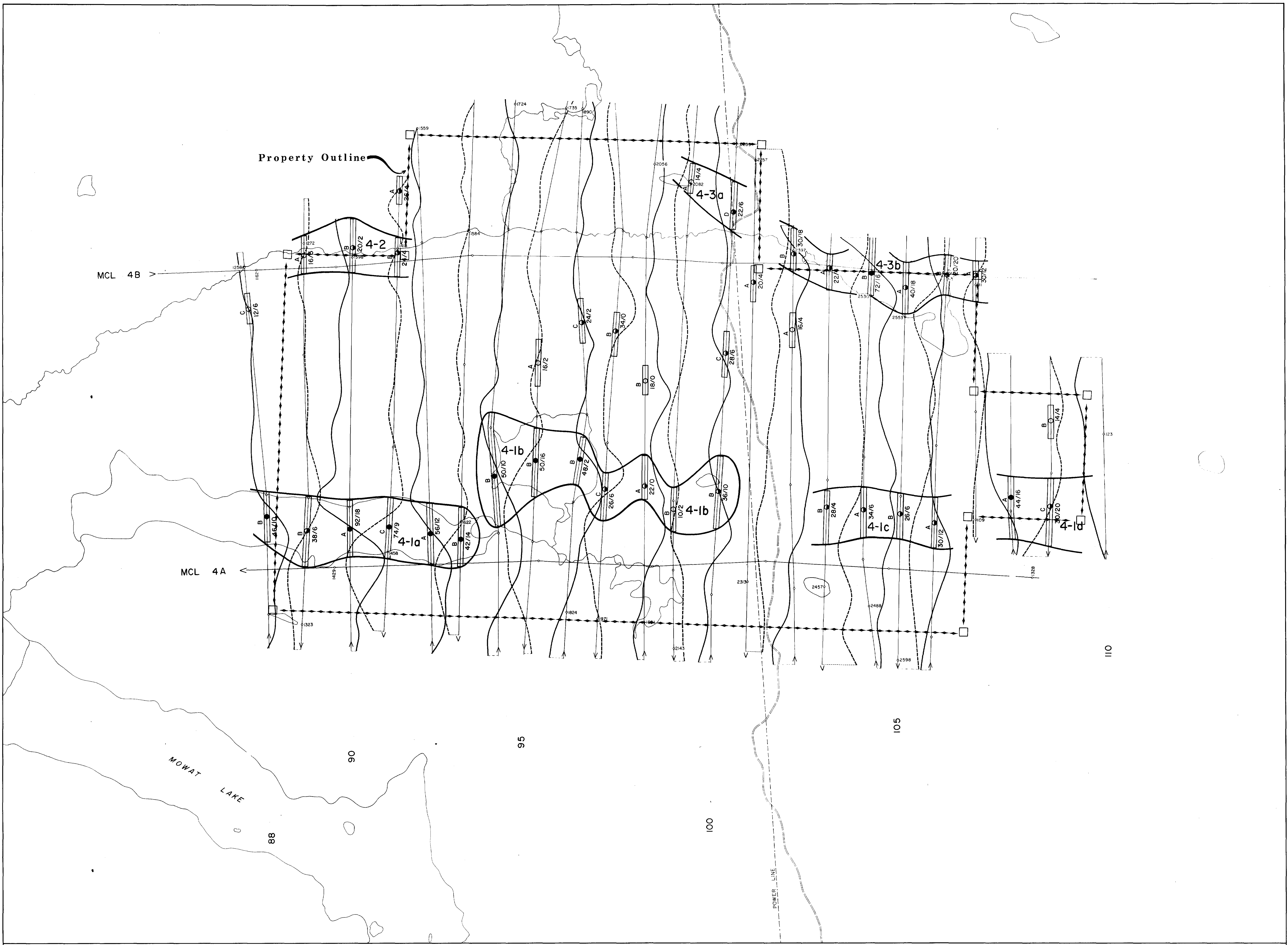
RIVER

Property Outline

CREELMAN-0019-#A



Property Outline



LEGEND

- FLIGHT LINE, NUMBER AND DIRECTION 21
- CONTROL POINT 2498
- MEAN FLIGHT LINE SPACING 400 FEET
- MEAN FLIGHT ALTITUDE 100 FEET
- IP AND OP PROFILES SHOWING SAME POLARITY
- IP AND OP PROFILES SHOWING OPPOSITE POLARITY
- IN-PHASE PROFILE ON NORTH LINE 1cm = 20%
- IN-PHASE PROFILE ON SOUTH LINE 1cm = 20%
- 1st CATEGORY ANOMALY IN-PHASE
- 2nd CATEGORY ANOMALY IN-PHASE 20% < 40%
- 3rd CATEGORY ANOMALY IN-PHASE
- ANOMALY WITH MAGNETIC COINCIDENCE
- 70% IN-PHASE / 24% OUT OF PHASE
- CONDUCTOR ZONE

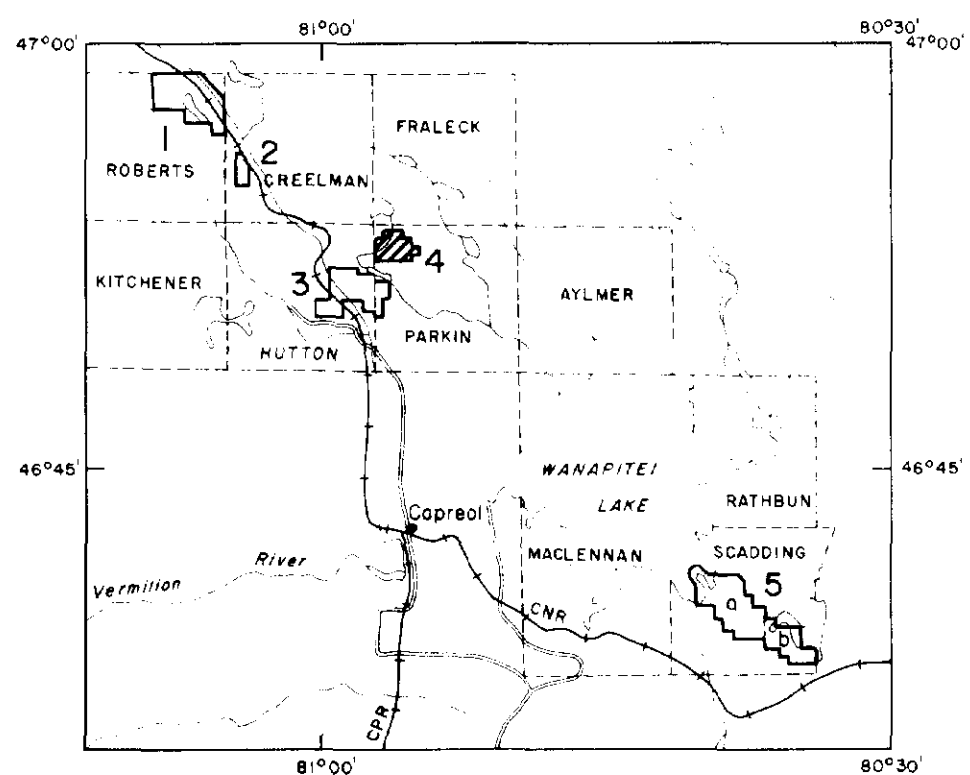
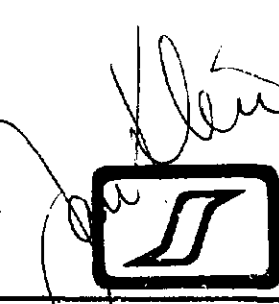


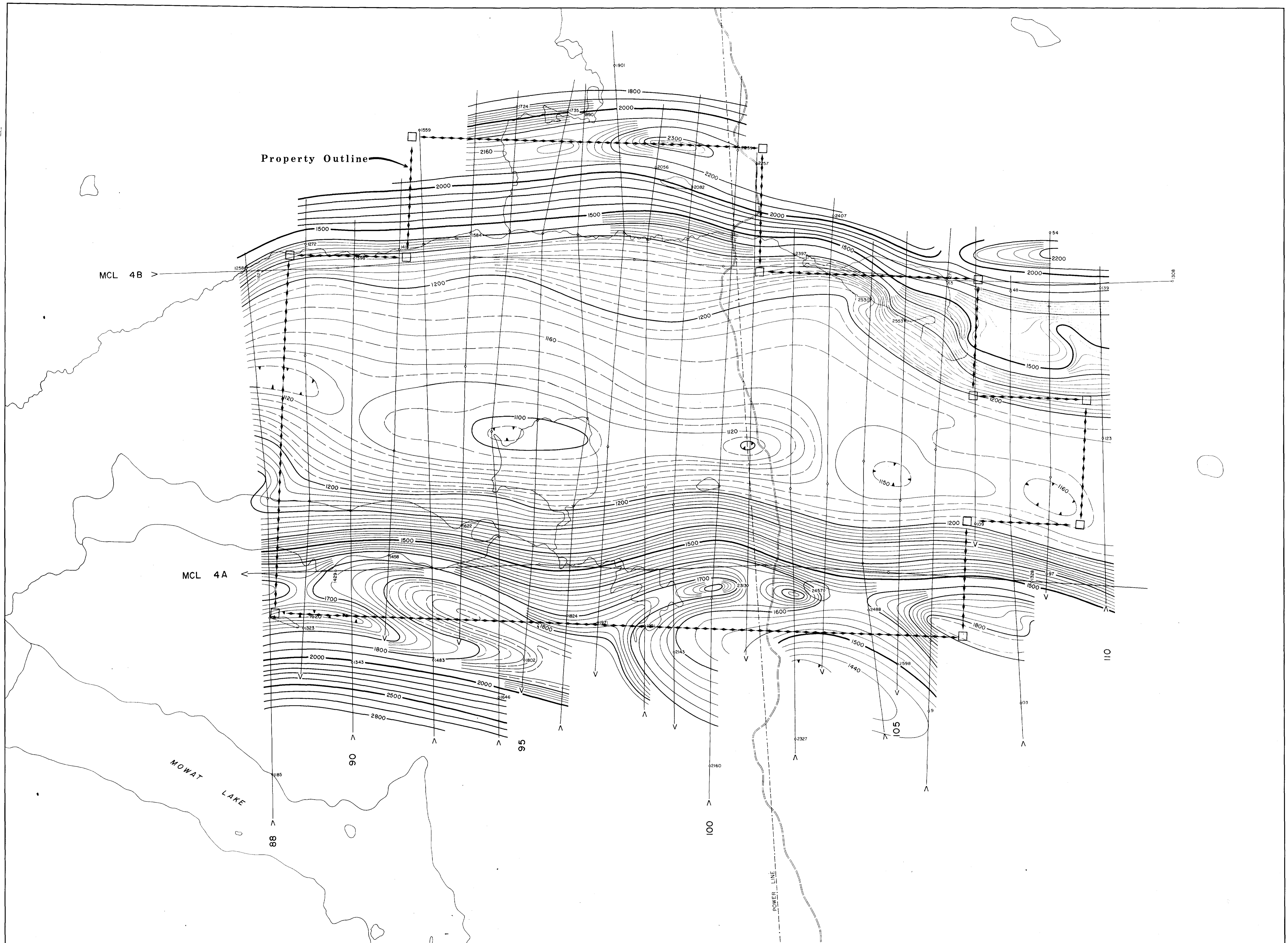
PLATE 4E
 GULF MINERALS CANADA LIMITED
 AREA 4
 PARKIN - TOWNSHIP, SUDBURY - ONTARIO
AIRBORNE GEOPHYSICAL SURVEY
 SCINTREX MAP-2 MAGNETOMETER
 SCINTREX GISA-4 GAMMA RAY SPECTROMETER
 SCINTREX SE-90 ELECTROMAGNETOMETER

SCALE : 1" = 400'
 FLOWN and COMPILED 1972
 by
 SCINTREX SURVEYS LIMITED

CREELEMAN-0019 #7

2.12.14 9.5ft





LEGEND

FLIGHT LINE, NUMBER AND DIRECTION

CONTROL POINT

MEAN FLIGHT LINE SPACING 400 FEET

MEAN FLIGHT ALTITUDE 100 FEET

CONTOUR INTERVAL 10 GAMMAS

500 GAMMA CONTOUR

100 GAMMA CONTOUR

20 GAMMA CONTOUR

10 GAMMA CONTOUR

MAGNETIC LOW

BASE VALUE 58,000 GAMMAS

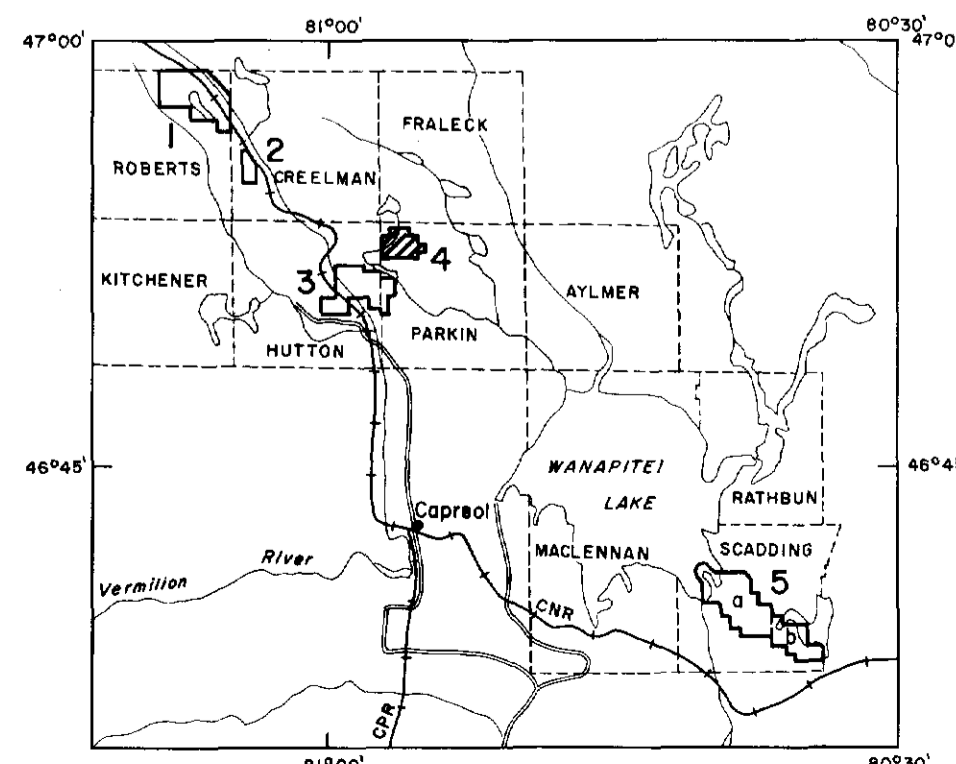


PLATE 4M

GULF MINERALS CANADA LIMITED

AREA 4

PARKIN - TOWNSHIP, SUDBURY - ONTARIO

AIRBORNE GEOPHYSICAL SURVEY

SCINTREX MAP-2 MAGNETOMETER

SCINTREX GISA-4 GAMMA RAY SPECTROMETER

SCINTREX SE-90 ELECTROMAGNETOMETER

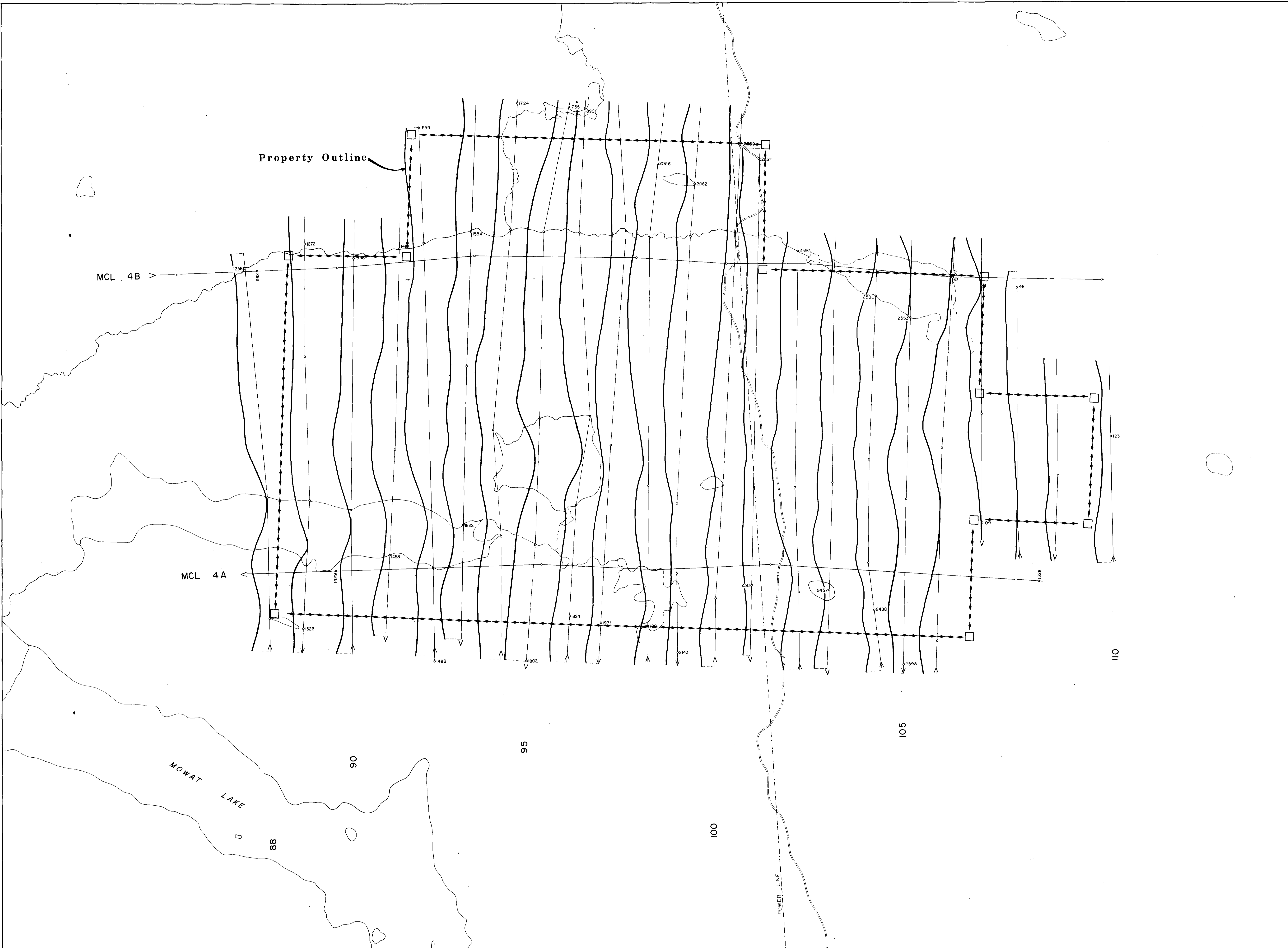
SCALE : 1" = 400'

FLOWN and COMPILED 1972

by

SCINTREX SURVEYS LIMITED





LEGEND

- TOTAL COUNT PROFILE 1cm=100 cps
- ANOMALY PEAK LOCATION AND EXTENT
- ANOMALOUS AMPLITUDES ABOVE BACKGROUND
- 10 - URANIUM ANOMALY IN COUNTS PER SECOND
- 15 - THORIUM ANOMALY IN COUNTS PER SECOND
- 30 - POTASSIUM ANOMALY IN COUNTS PER SECOND
- 300 - BROAD BAND ANOMALY IN COUNTS PER SECOND
- FLIGHT LINE, NUMBER AND DIRECTION
- CONTROL POINT
- MEAN FLIGHT LINE SPACING 400 FEET
- MEAN FLIGHT ALTITUDE 100 FEET

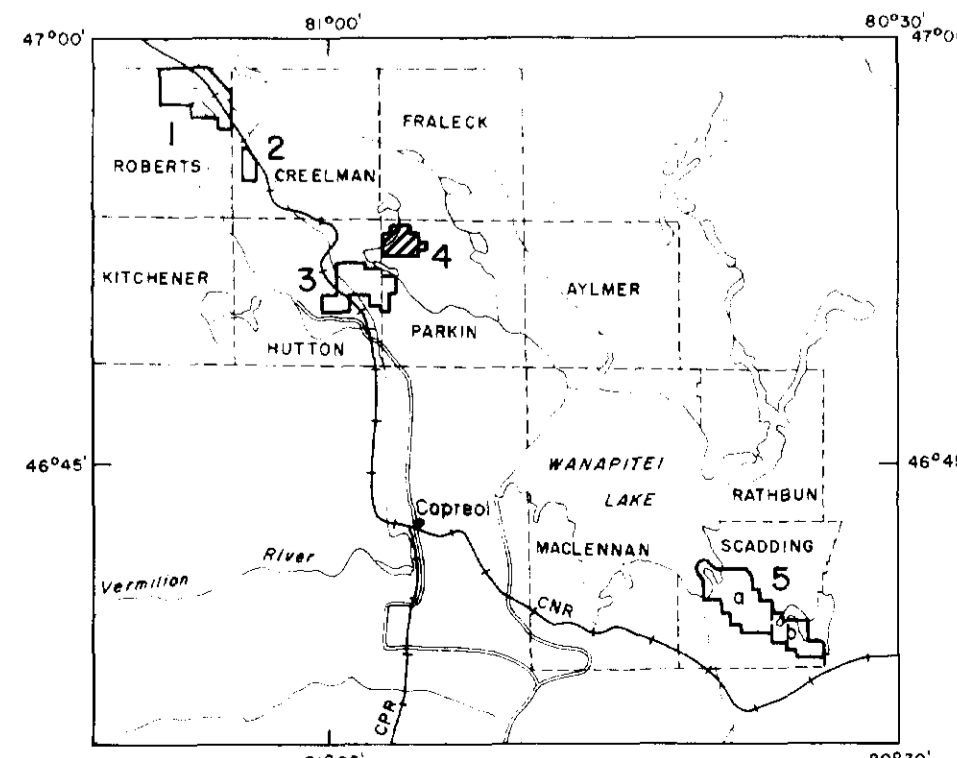
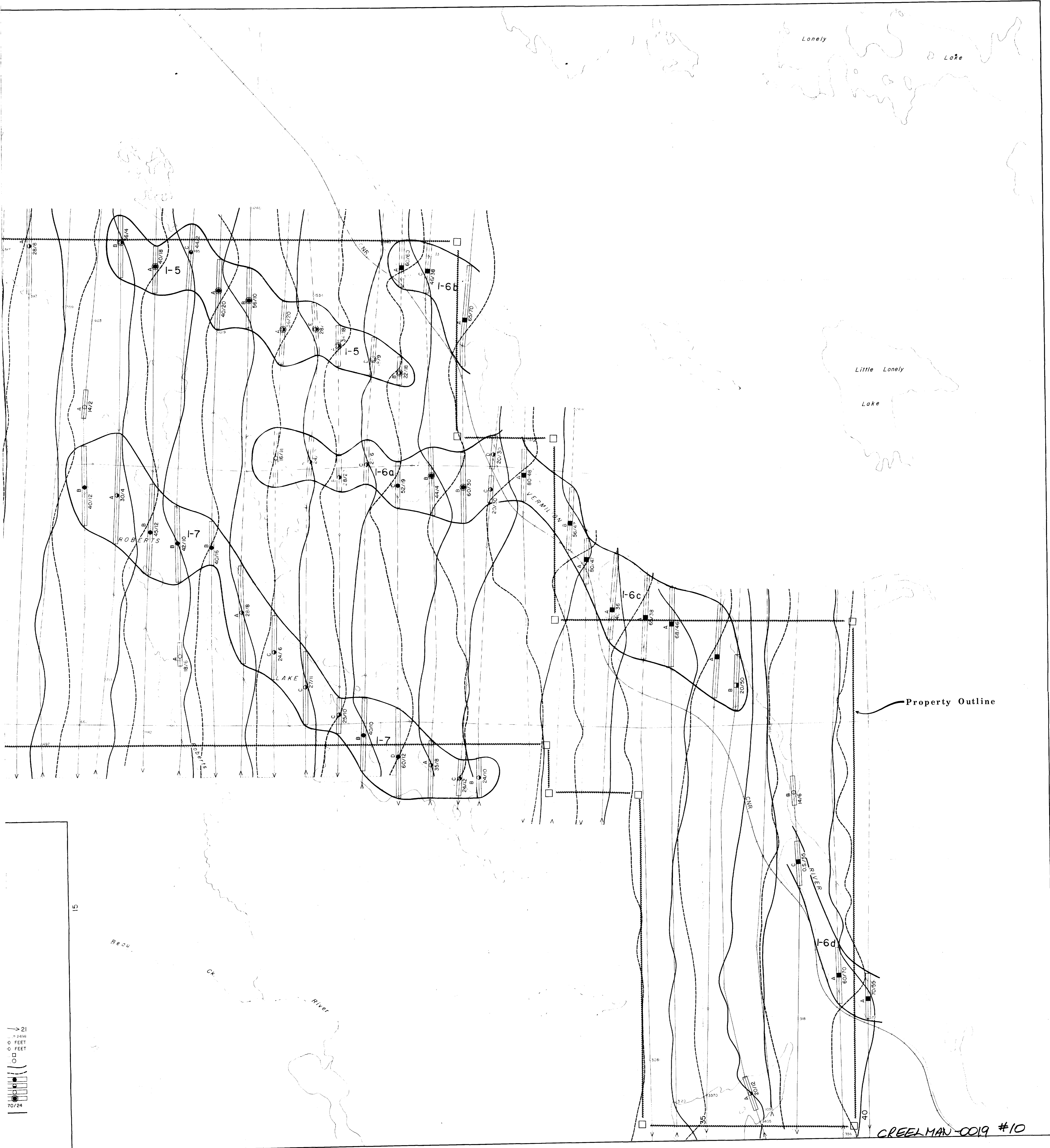


PLATE 4R
 GULF MINERALS CANADA LIMITED
 AREA 4
 PARKIN - TOWNSHIP, SUDBURY - ONTARIO
AIRBORNE GEOPHYSICAL SURVEY
 SCINTREX MAP-2 MAGNETOMETER
 SCINTREX GISA-4 GAMMA RAY SPECTROMETER
 SCINTREX SE-90 ELECTROMAGNETOMETER
 SCALE : 1" = 400'
 FLOWN and COMPILED 1972
 by
 SCINTREX SURVEYS LIMITED





Lonely Lake

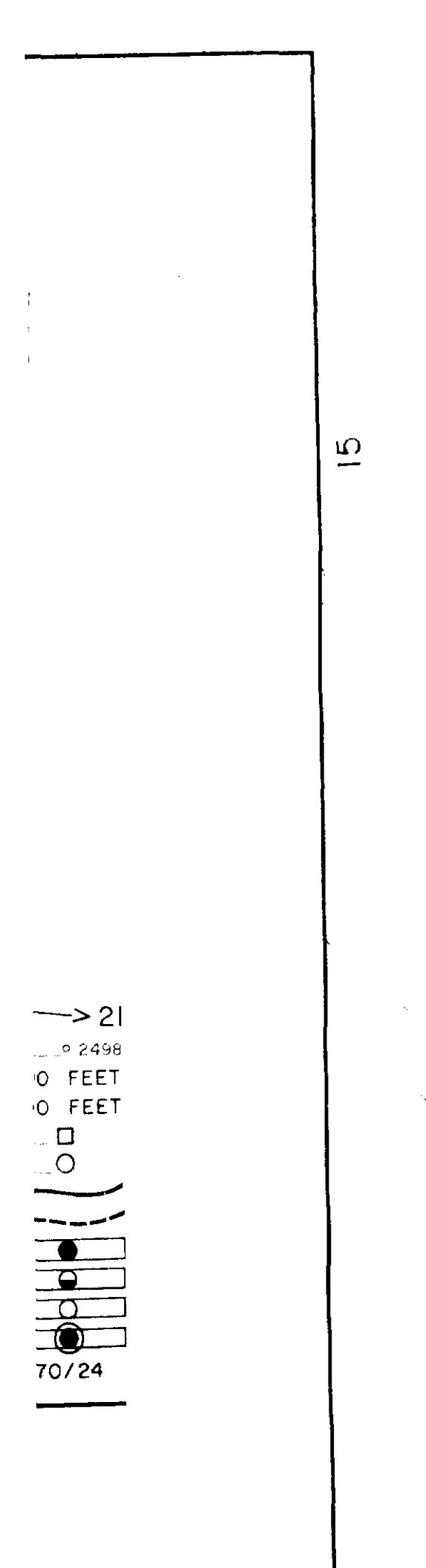
Little Lonely Lake

ROBERTS LAKE

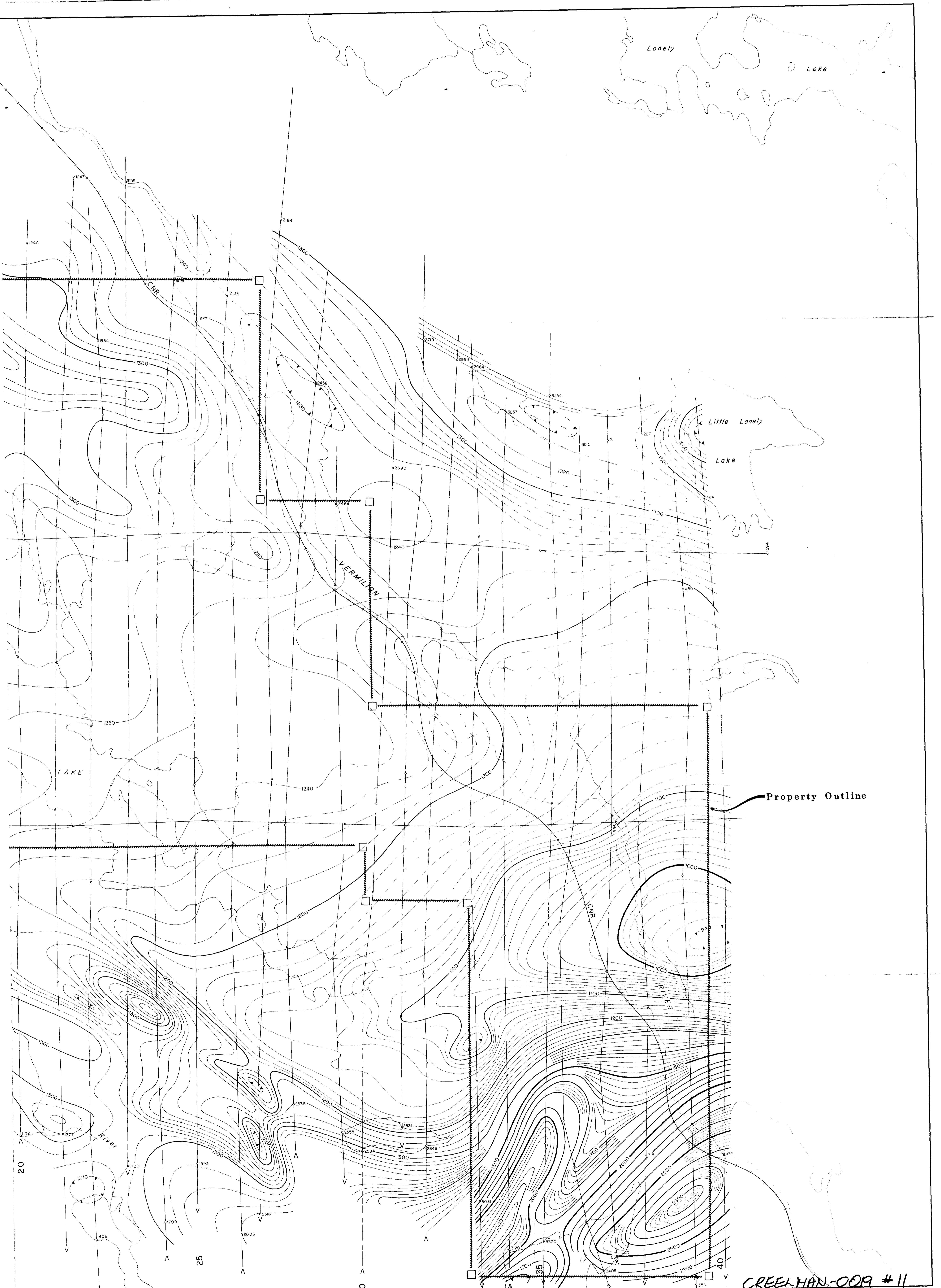
VERMILION RIVER

Property Outline

I-6d



CREELMAN-0019 #10



Lonely

Lake

CNR

VERMILION

Little Lonely
Lake

LAKE

Property Outline

CNR

RIEPP

River

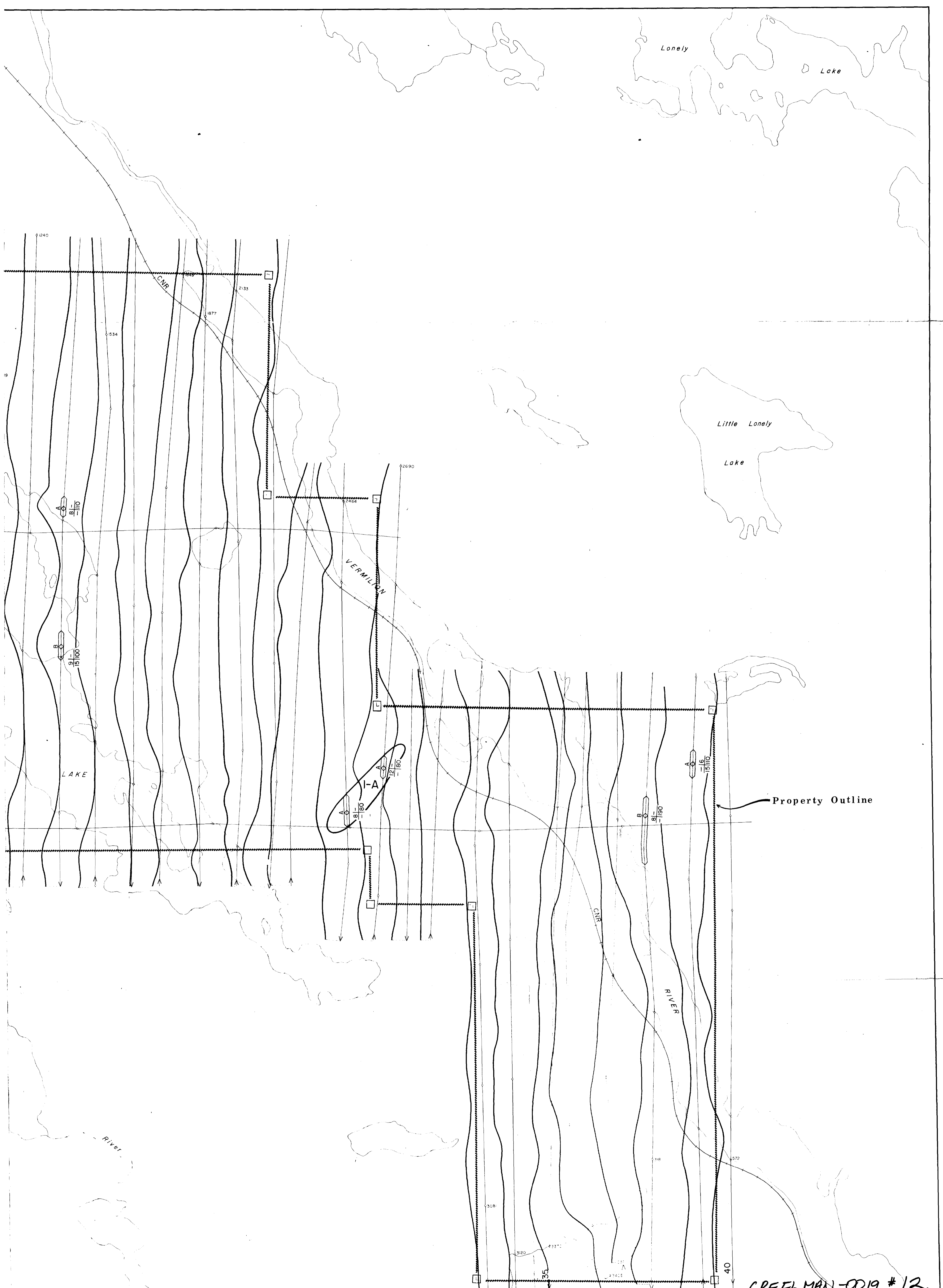
25

30

35

40

CREEKMAN-009 # 11



Lonely

Lake

Little Lonely

Lake

LAKE

VERMILION

I-A

Property Outline

RIVER

CREELMAN-0019 #12

1 000000 21

Outline

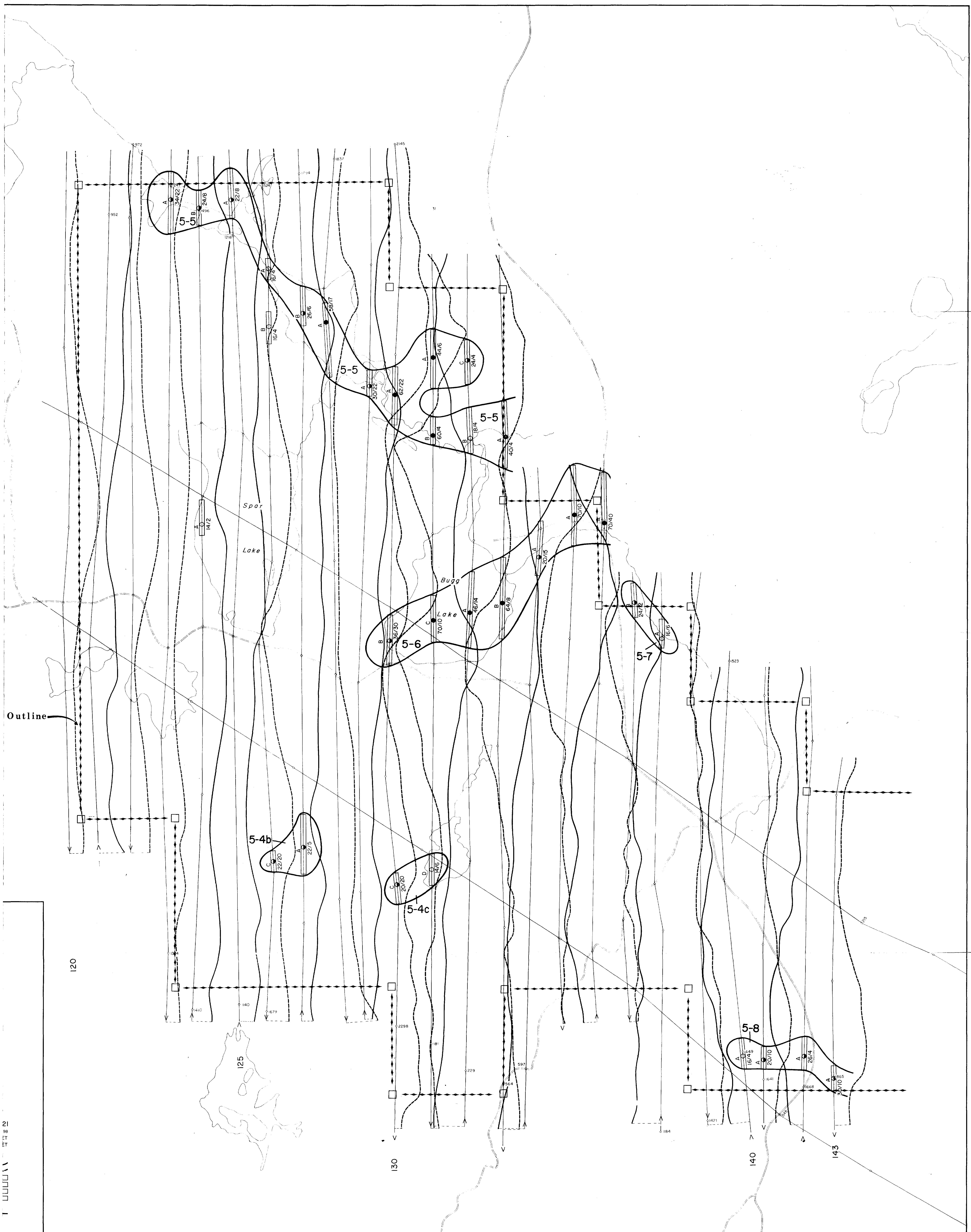
120

125

130

140

143



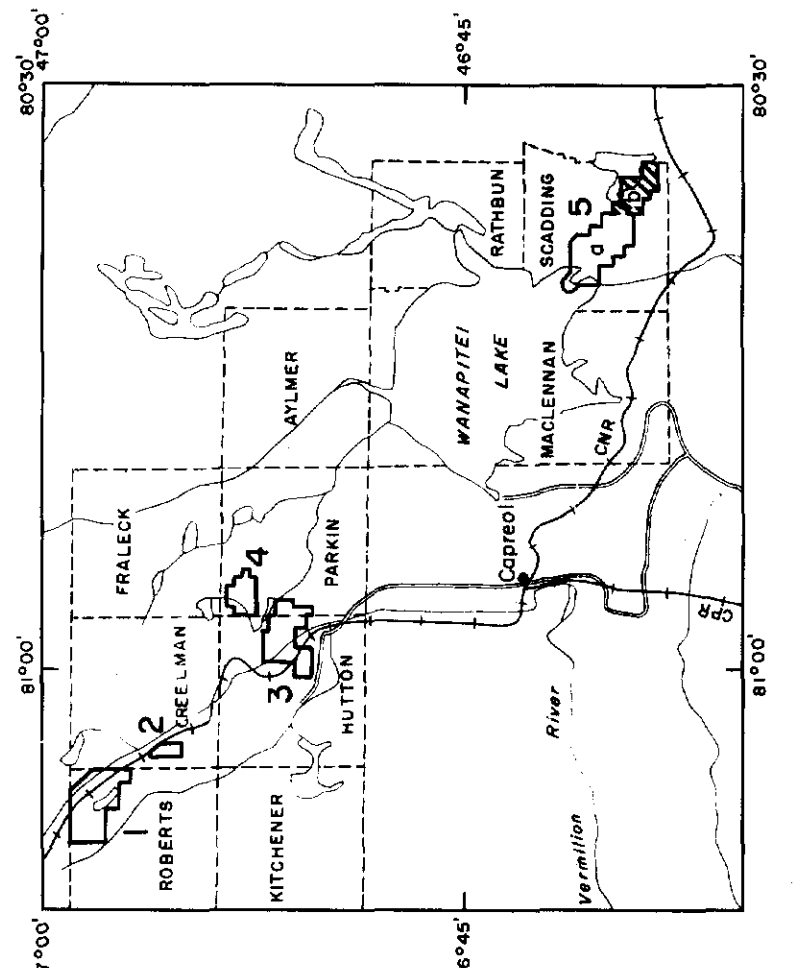
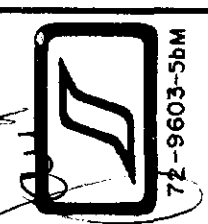
CREELMAN-0019 #13



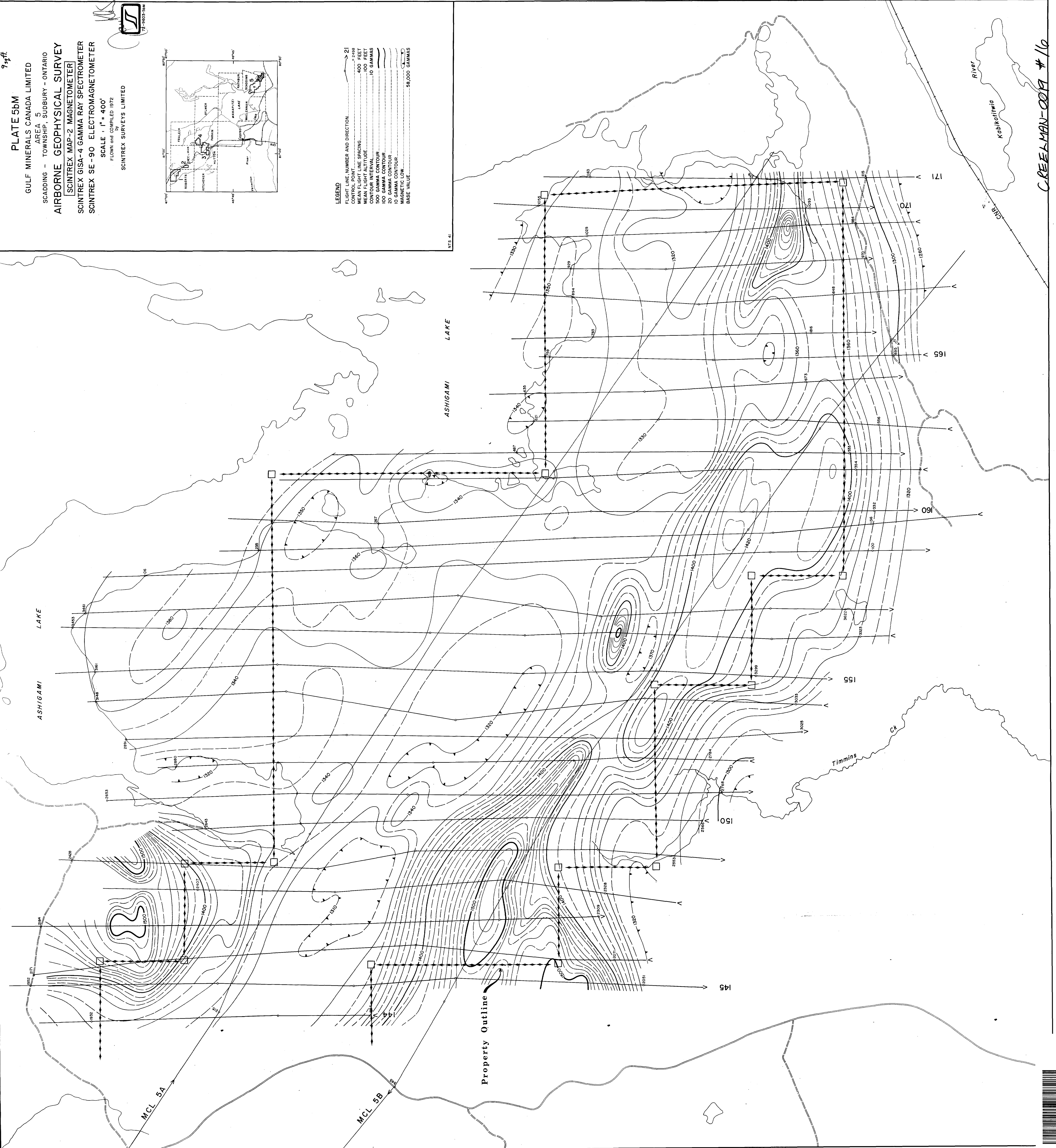
V 21
2498
FEET
FEET
MAS

CREELMAN-0019 #15

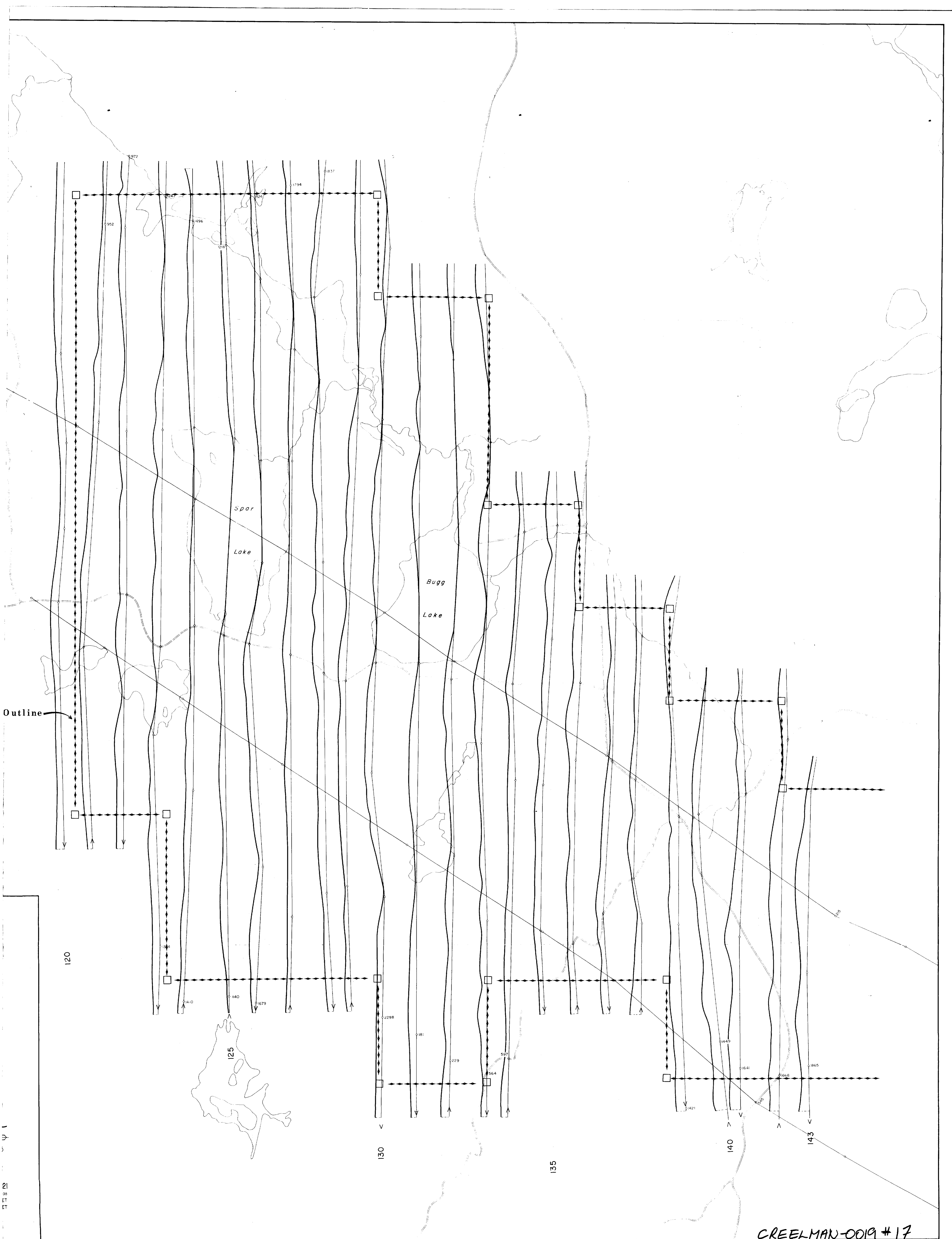
PLATE 5bM
 GULF MINERALS CANADA LIMITED
 AREA 5
 SCADDING - TOWNSHIP, SUDBURY - ONTARIO
AIRBORNE GEOPHYSICAL SURVEY
 SCINTREX MAP-2 MAGNETOMETER
 SCINTREX GISA-4 GAMMA RAY SPECTROMETER
 SCINTREX SE-90 ELECTROMAGNETOMETER
 SCALE : 1" = 400'
 FLOWN and COMPILED 1972
 SCINTREX SURVEYS LIMITED



LEGEND
 FLIGHT LINE NUMBER AND DIRECTION → 21
 CONTROL POINT → 2498
 MEAN FLIGHT LINE SPACING - 400 FEET
 MEAN FLIGHT ALTITUDE - 100 FEET
 CONTOUR INTERVAL - 10 GAMMAS
 500 GAMMA CONTOUR - DASHED LINE
 100 GAMMA CONTOUR - DOTTED LINE
 20 GAMMA CONTOUR - SOLID LINE
 10 GAMMA CONTOUR - SOLID LINE
 MAGNETIC LOW - SOLID LINE
 BASE VALUE - 58,000 GAMMAS



CREELEMAN-007 #16



Outline

120

125

130

135

140

143

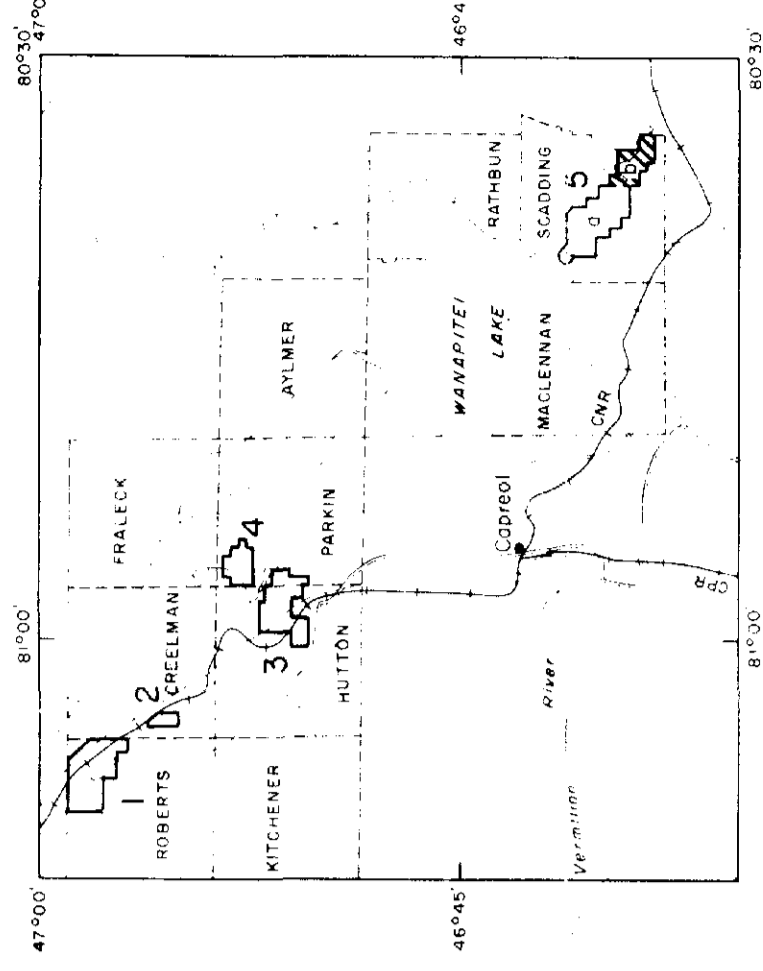
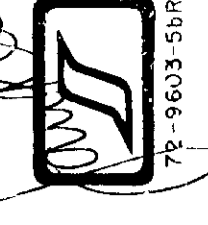
CREELMAN-0019 #17

21
ET
ET

NTS 41

PLATE 5bR
 GULF MINERALS CANADA LIMITED
 AREA 5
 SCADDING - TOWNSHIP, SUDBURY - ONTARIO
 AIRBORNE GEOPHYSICAL SURVEY
 SCINTREX MAP-2 MAGNETOMETER
 SCINTREX GISA-4 GAMMA RAY SPECTROMETER
 SCINTREX SE-90 ELECTROMAGNETOMETER

SCALE: 1" = 400'
 FLOWN and COMPILED 1972
 by
 SCINTREX SURVEYS LIMITED



LEGEND
 TOTAL COUNT PROFILE (cm-100 CPS)
 ANOMALY PEAK LOCATION AND EXTENT
 ANOMALOUS AMPLITUDES ABOVE BACKGROUND:
 10 - URANIUM ANOMALY IN COUNTS PER SECOND
 15 - THORIUM ANOMALY IN COUNTS PER SECOND
 20 - POTASSIUM ANOMALY IN COUNTS PER SECOND
 300 - BROAD BAND ANOMALY IN COUNTS PER SECOND
 FLIGHT LINE NUMBER AND DIRECTION
 MEAN FLIGHT LINE SPACING
 MEAN FLIGHT ALTITUDE

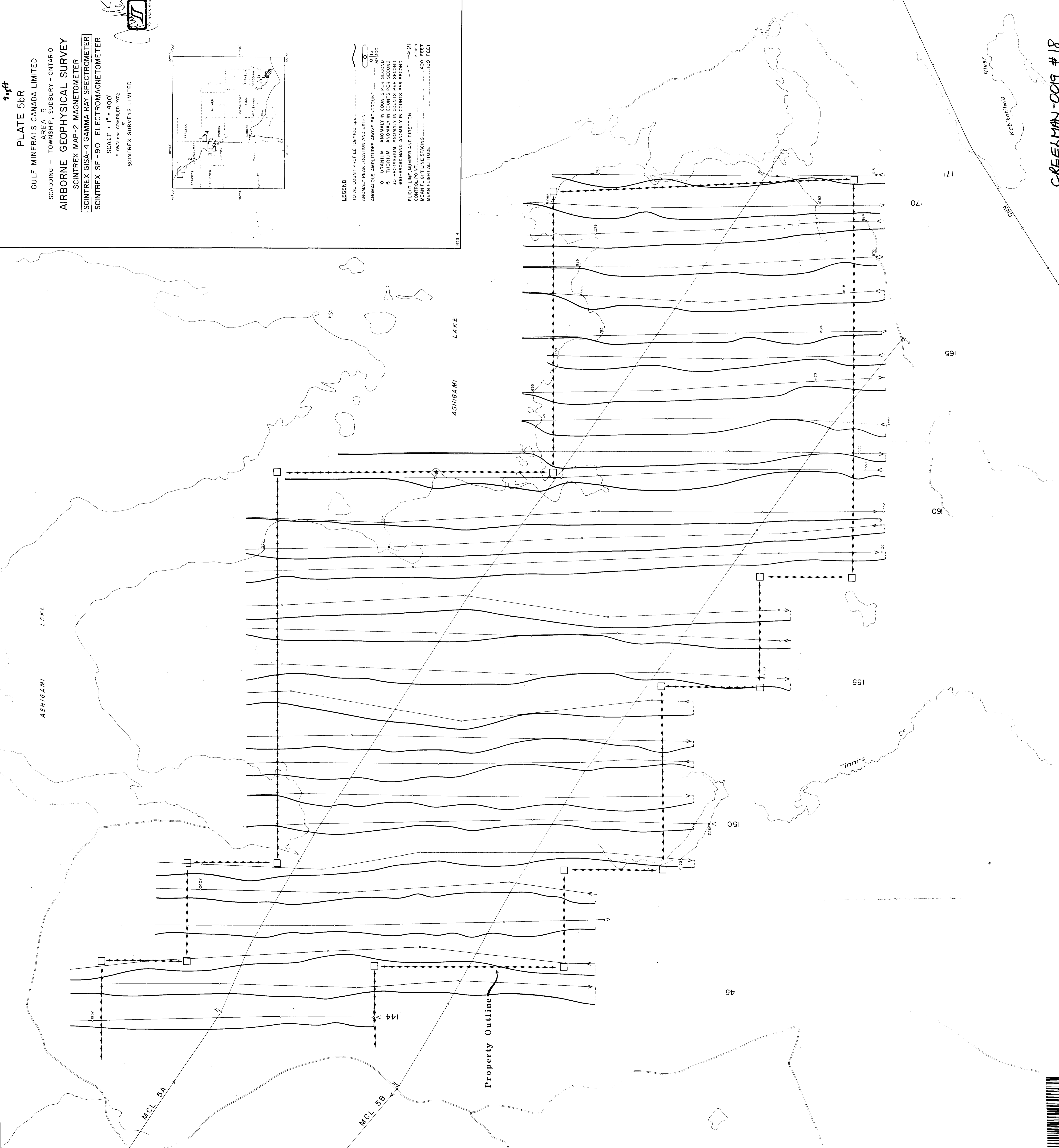
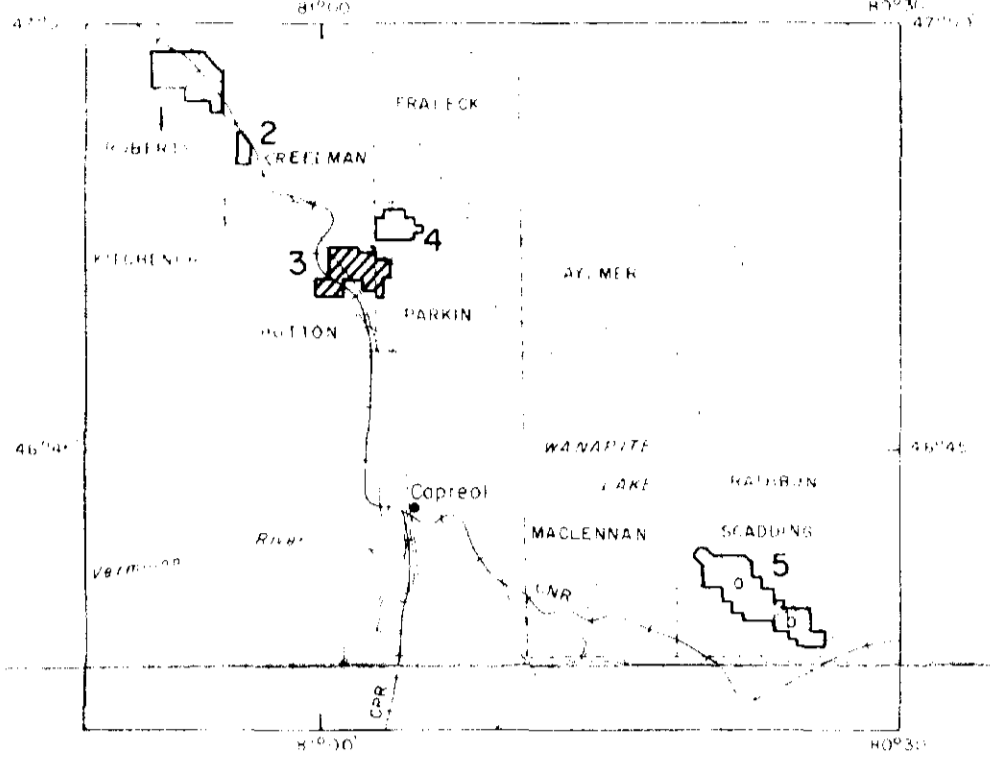
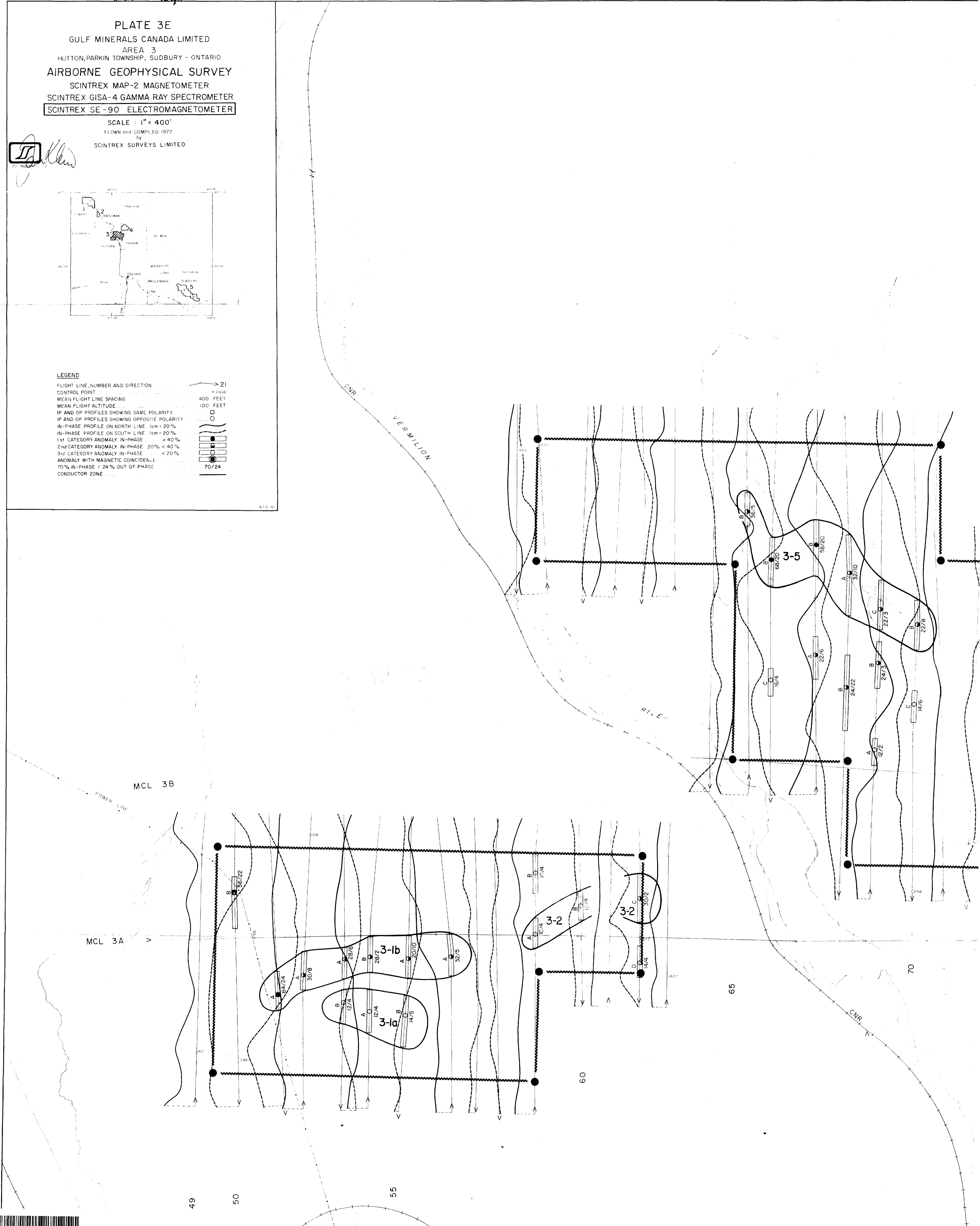


PLATE 3E
 GULF MINERALS CANADA LIMITED
 AREA 3
 HUTTON, PARKIN TOWNSHIP, SUDBURY - ONTARIO
 AIRBORNE GEOPHYSICAL SURVEY
 SCINTREX MAP-2 MAGNETOMETER
 SCINTREX GISA-4 GAMMA RAY SPECTROMETER
 SCINTREX SE-90 ELECTROMAGNETOMETER

SCALE : 1" = 400'
 FLOWN and COMPILED 1972
 by
 SCINTREX SURVEYS LIMITED



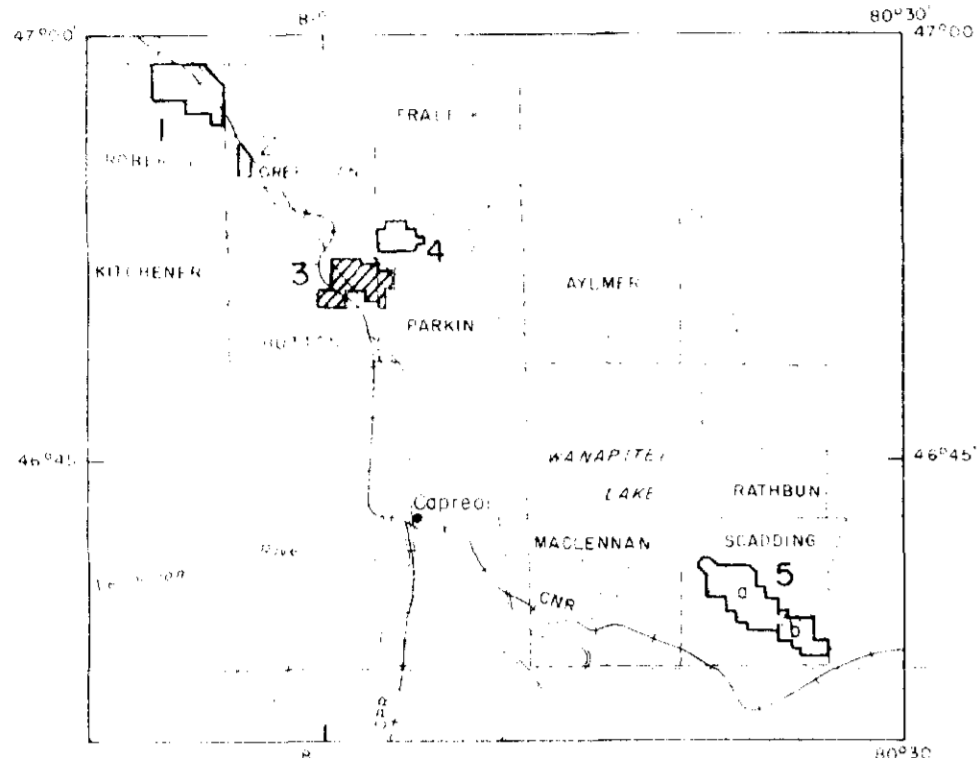
- LEGEND**
- FLIGHT LINE, NUMBER AND DIRECTION
 - CONTROL POINT
 - MEAN FLIGHT LINE SPACING
 - MEAN FLIGHT ALTITUDE
 - IP AND OP PROFILES SHOWING SAME POLARITY
 - IP AND OP PROFILES SHOWING OPPOSITE POLARITY
 - IN-PHASE PROFILE ON NORTH LINE $I_{cm} > 20\%$
 - IN-PHASE PROFILE ON SOUTH LINE $I_{cm} > 20\%$
 - 1st CATEGORY ANOMALY IN-PHASE $> 40\%$
 - 2nd CATEGORY ANOMALY IN-PHASE $20\% < 40\%$
 - 3rd CATEGORY ANOMALY IN-PHASE $< 20\%$
 - ANOMALY WITH MAGNETIC COINCIDENCE
 - 70% IN-PHASE / 24% OUT OF PHASE
 - CONDUCTOR ZONE



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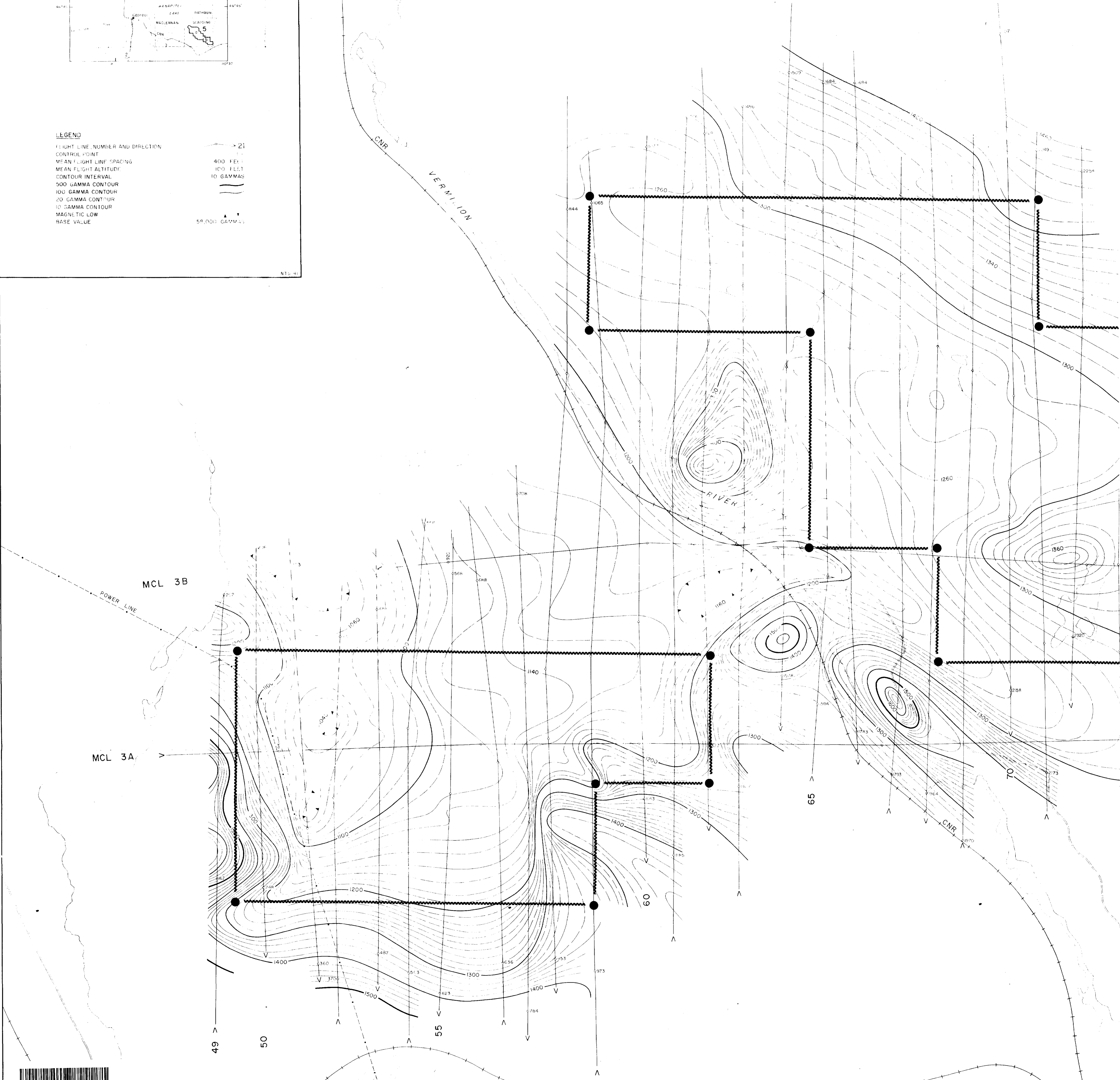
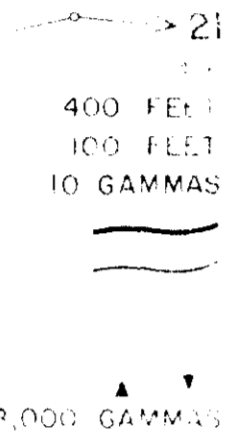
PLATE 3M
 GULF MINERALS CANADA LIMITED
 AREA 3
 HUTTON, PARKIN TOWNSHIP, SUDBURY - ONTARIO
 AIRBORNE GEOPHYSICAL SURVEY
 SCINTREX MAP-2 MAGNETOMETER
 SCINTREX GISA-4 GAMMA RAY SPECTROMETER
 SCINTREX SE-90 ELECTROMAGNETOMETER
 SCALE: 1" = 400'
 FLOWN and COMPILED 1972
 by
 SCINTREX SURVEYS LIMITED

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LEGEND

- FLIGHT LINE, NUMBER AND DIRECTION
- CONTROL POINT
- MEAN FLIGHT LINE SPACING
- MEAN FLIGHT ALTITUDE
- CONTOUR INTERVAL
- 500 GAMMA CONTOUR
- 100 GAMMA CONTOUR
- 20 GAMMA CONTOUR
- 10 GAMMA CONTOUR
- MAGNETIC LOW
- BASE VALUE



2.12.14

12 Sept

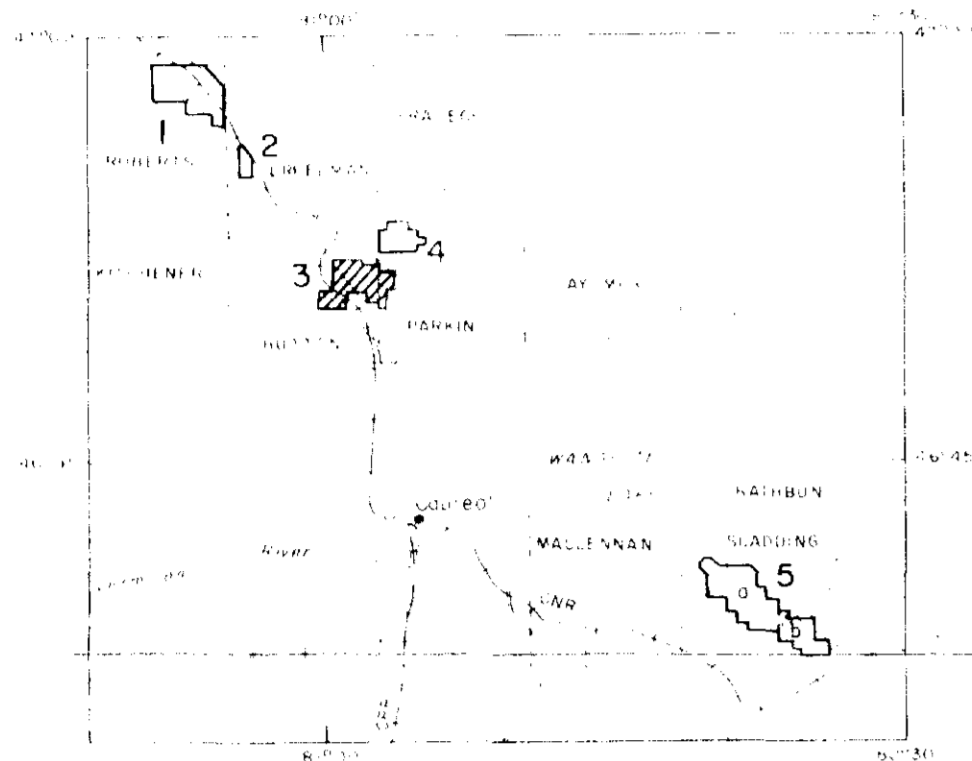
4/6

PLATE 3R
 GULF MINERALS CANADA LIMITED
 AREA 3
 HUTTON, PARKIN TOWNSHIP, SUDBURY - ONTARIO
 AIRBORNE GEOPHYSICAL SURVEY
 SCINTREX MAP-2 MAGNETOMETER
 SCINTREX GISA-4 GAMMA RAY SPECTROMETER
 SCINTREX SE-90 ELECTROMAGNETOMETER

SCALE: 1" = 400'

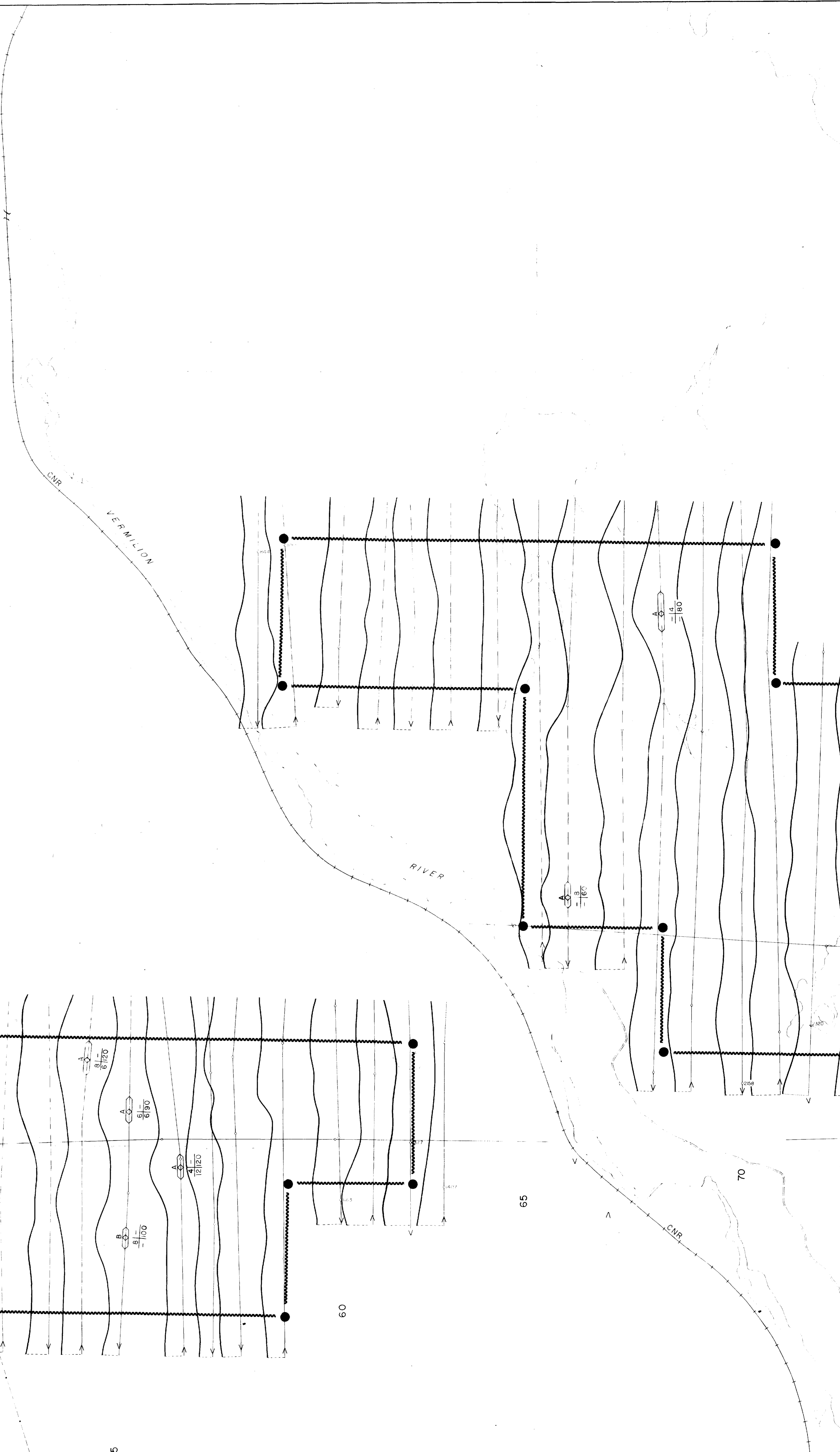
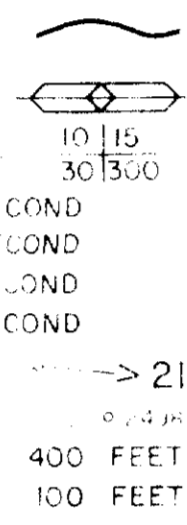
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by SCINTREX SURVEYS LIMITED



LEGEND

- TOTAL COUNT PROFILE 1cm:100 cps
- ANOMALY PEAK LOCATION AND EXTENT
- ANOMALOUS AMPLITUDES ABOVE BACKGROUND
 - 10-15 - URANIUM ANOMALY IN COUNTS PER SECOND
 - 15-20 - THORIUM ANOMALY IN COUNTS PER SECOND
 - 20-30 - POTASSIUM ANOMALY IN COUNTS PER SECOND
 - 300-3000 - BROAD BAND ANOMALY IN COUNTS PER SECOND
- FLIGHT LINE, NUMBER AND DIRECTION
- CONTROL POINT
- MEAN FLIGHT LINE SPACING
- MEAN FLIGHT ALTITUDE



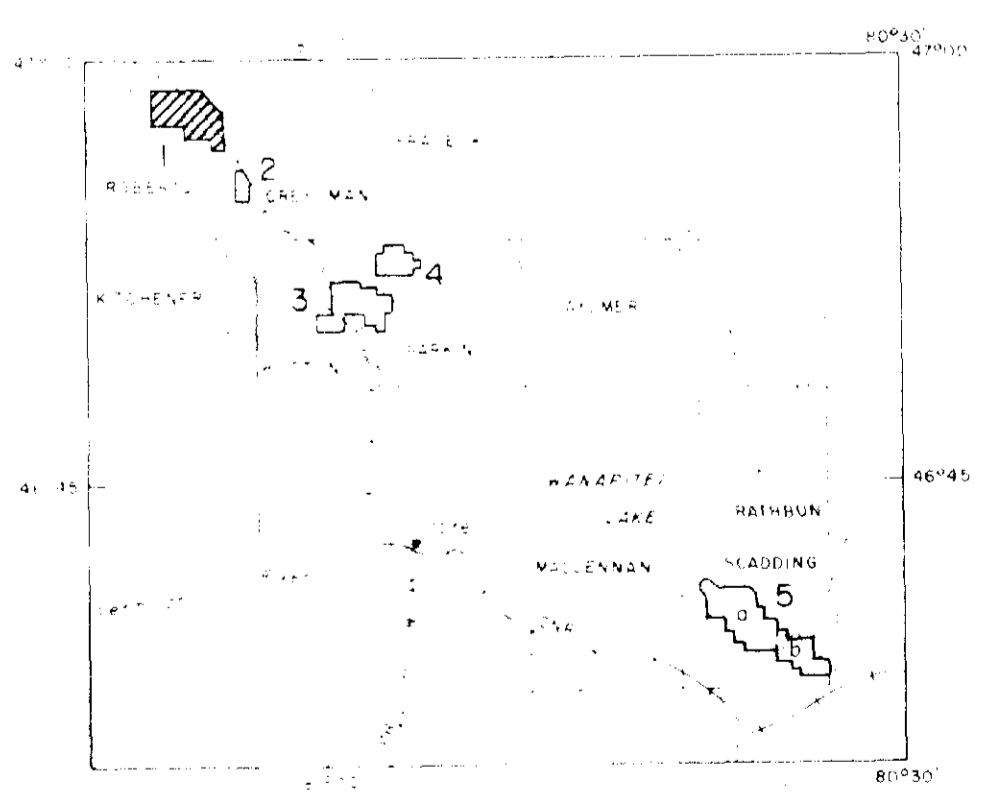
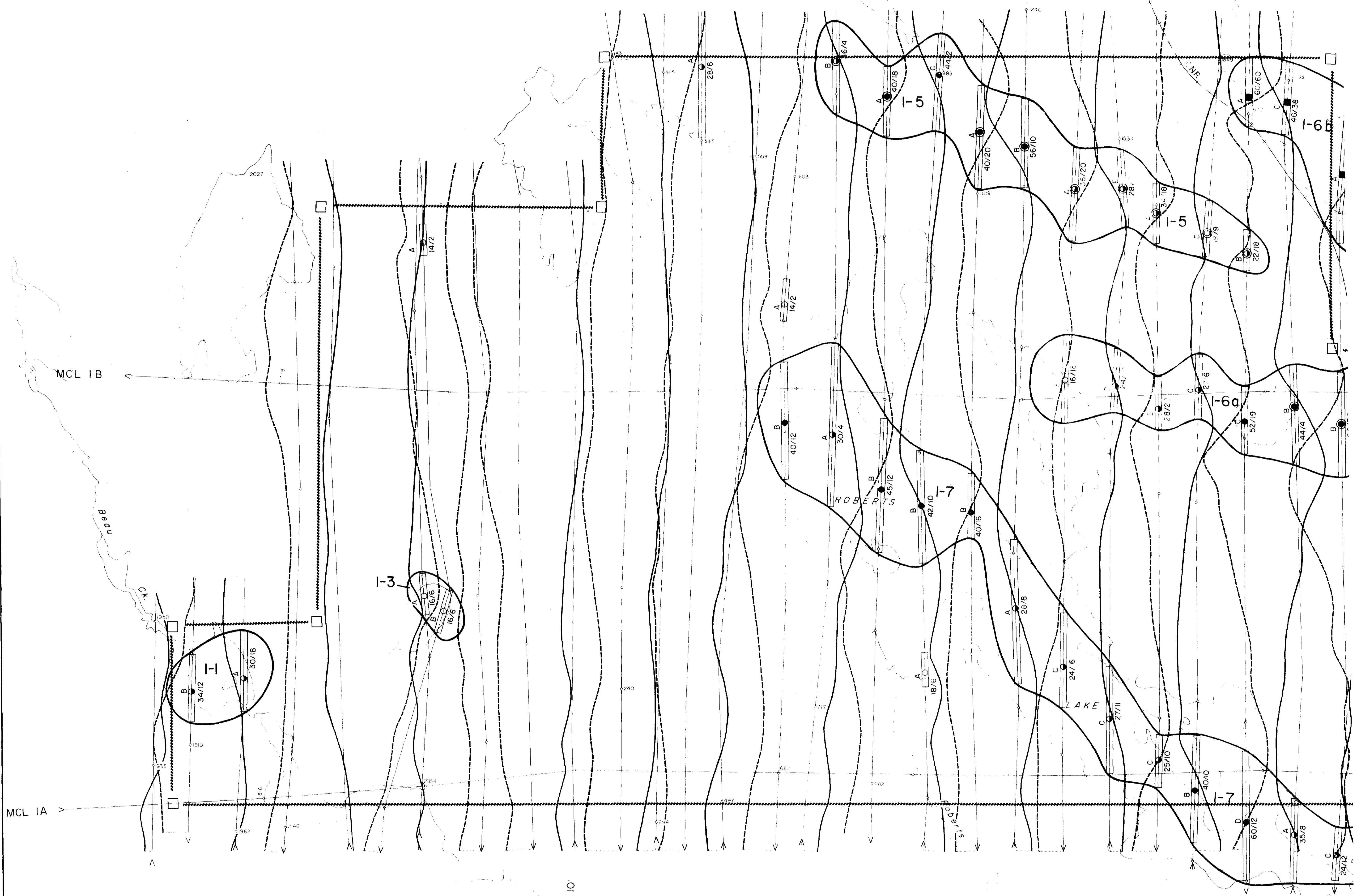


PLATE 1E
 GULF MINERALS CANADA LIMITED
 AREA 1
 ROBERTS - TOWNSHIP, SUDBURY - ONTARIO
AIRBORNE GEOPHYSICAL SURVEY
 SCINTREX MAP-2 MAGNETOMETER
 SCINTREX GISA-4 GAMMA RAY SPECTROMETER
 SCINTREX SE-90 ELECTROMAGNETOMETER

SCALE: 1" = 400'
 FILED AND COMPILED 1972
 SCINTREX SURVEYS LIMITED

LEGEND

| | |
|--|-----------|
| FLIGHT LINE, NUMBER AND DIRECTION | → 21 |
| CONTROL POINT | ○ 24/18 |
| MEAN FLIGHT LINE SPACING | 400 FEET |
| MEAN FLIGHT ALTITUDE | 100 FEET |
| IP AND OP PROFILES SHOWING SAME POLARITY | □ |
| IP AND OP PROFILES SHOWING OPPOSITE POLARITY | ○ |
| IN-PHASE PROFILE ON NORTH LINE | 1cm = 20% |
| IN-PHASE PROFILE ON SOUTH LINE | 1cm = 20% |
| 1st CATEGORY ANOMALY IN-PHASE | > 40% |
| 2nd CATEGORY ANOMALY IN-PHASE | 20% < 40% |
| 3rd CATEGORY ANOMALY IN-PHASE | < 20% |
| ANOMALY WITH MAGNETIC COINCIDENCE | ○ |
| 70% IN-PHASE / 24% OUT OF PHASE | ○ |
| CONDUCTOR ZONE | — 70/24 |



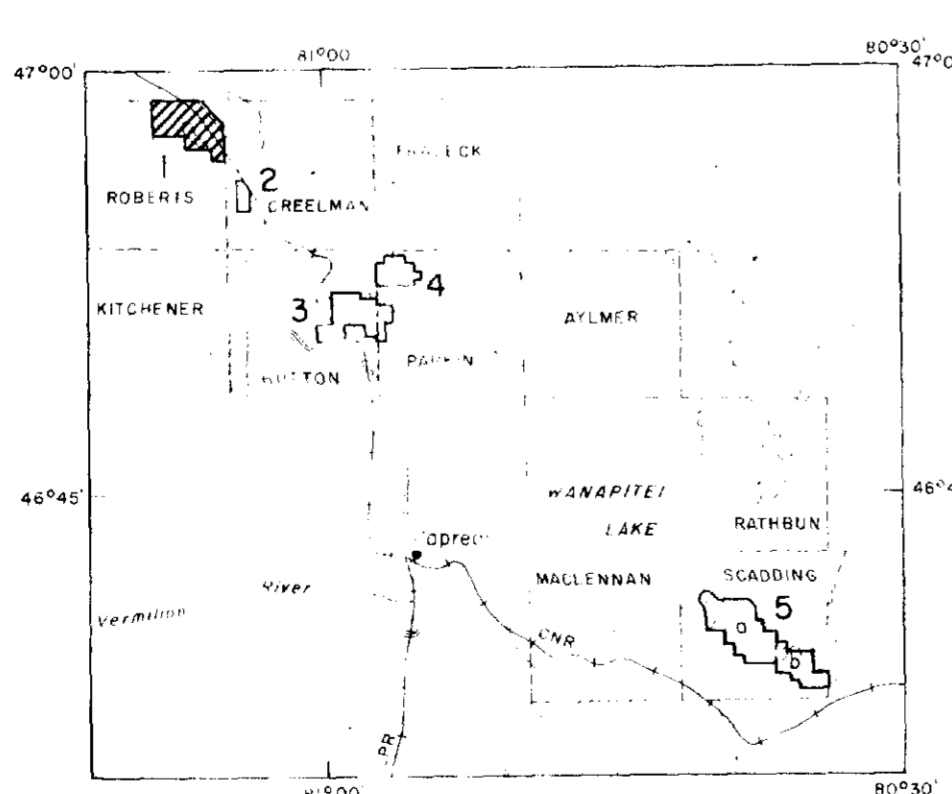
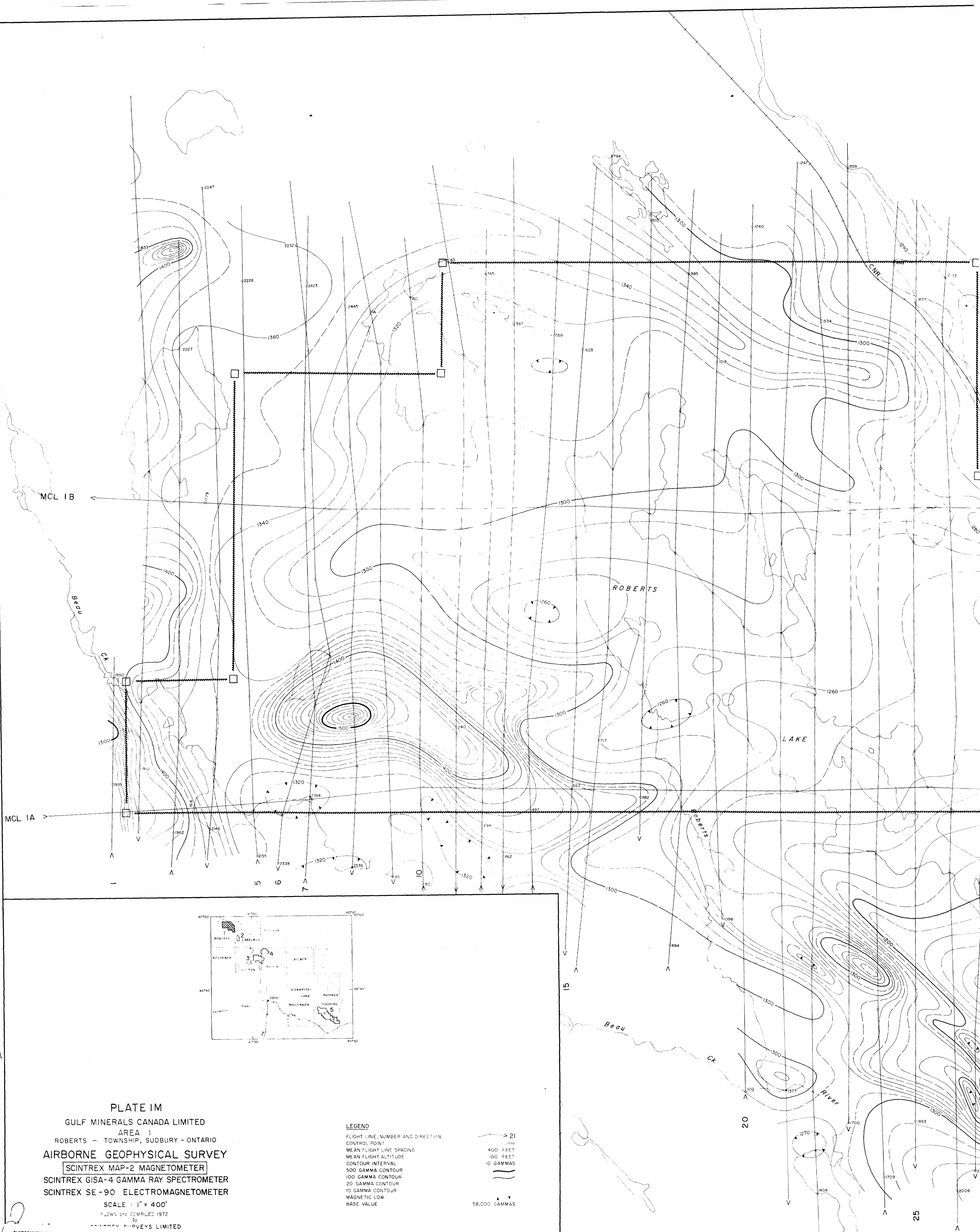
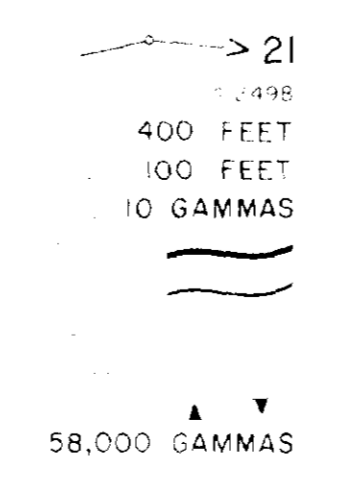


PLATE 1M
 GULF MINERALS CANADA LIMITED
 AREA 1
 ROBERTS - TOWNSHIP, SUDBURY - ONTARIO
 AIRBORNE GEOPHYSICAL SURVEY
 SCINTREX MAP-2 MAGNETOMETER
 SCINTREX GISA-4 GAMMA RAY SPECTROMETER
 SCINTREX SE-90 ELECTROMAGNETOMETER

SCALE : 1" = 400'
 FLOWN and COMPILED 1972
 BY
 GANTREY SURVEYS LIMITED

LEGEND
 FLIGHT LINE, NUMBER AND DIRECTION
 CONTROL POINT
 MEAN FLIGHT LINE SPACING
 MEAN FLIGHT ALTITUDE
 CONTOUR INTERVAL
 500 GAMMA CONTOUR
 100 GAMMA CONTOUR
 20 GAMMA CONTOUR
 10 GAMMA CONTOUR
 MAGNETIC LOW
 BASE VALUE



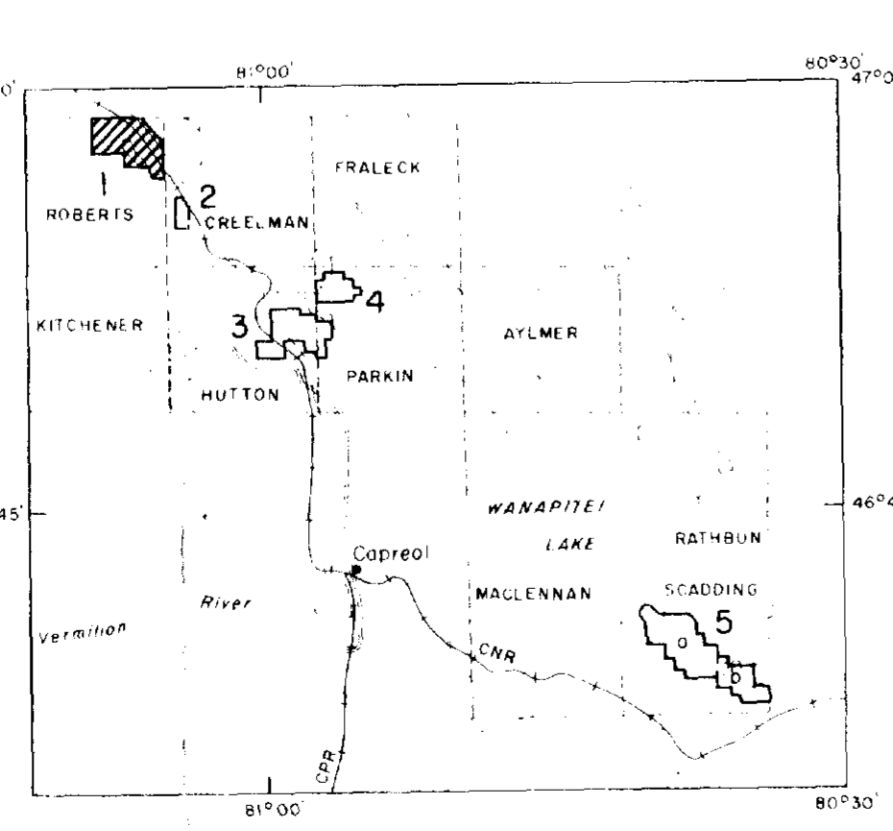
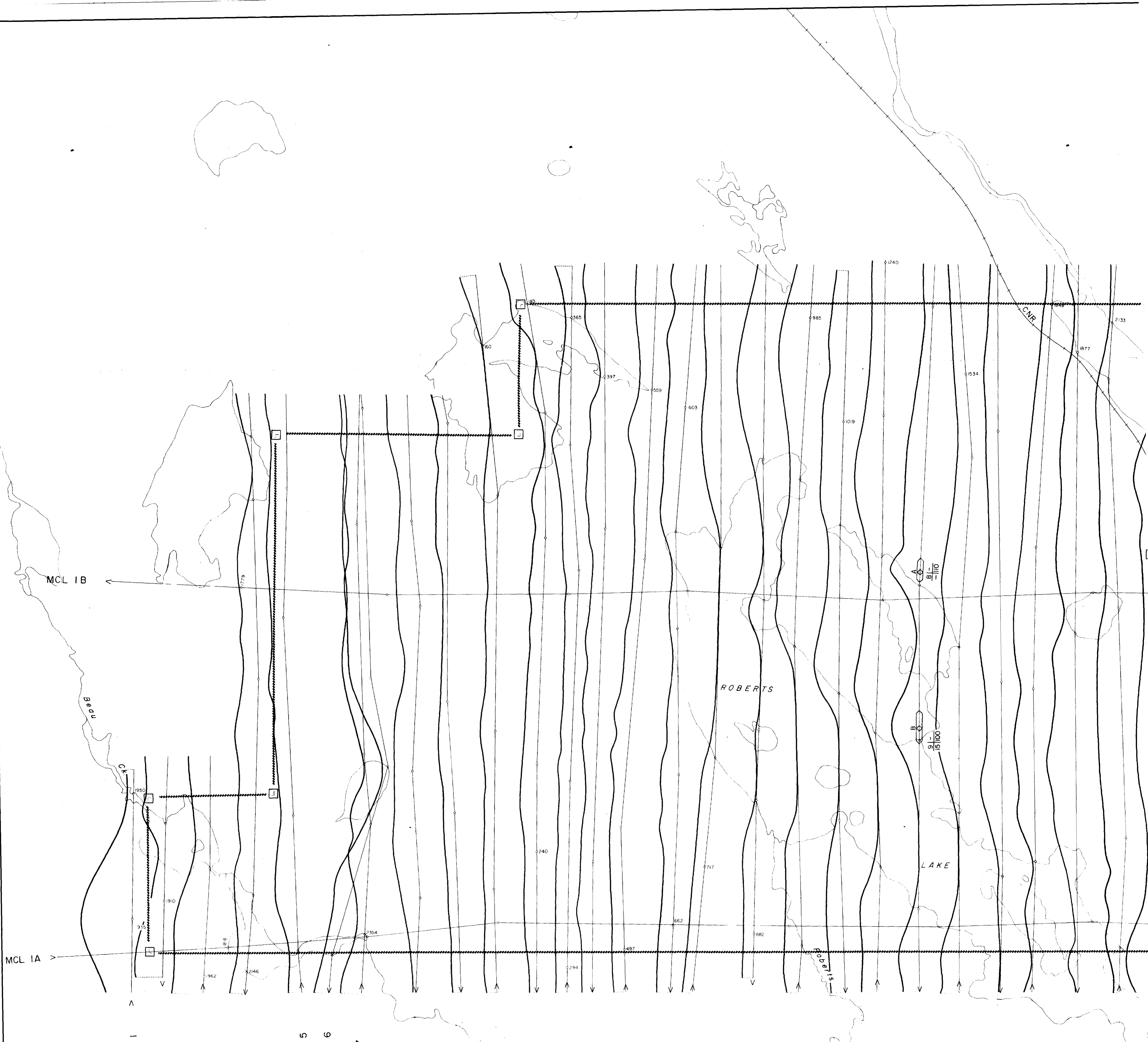


PLATE IR
 GULF MINERALS CANADA LIMITED
 AREA 1
 ROBERTS - TOWNSHIP, SUDBURY - ONTARIO
AIRBORNE GEOPHYSICAL SURVEY
 SCINTREX MAP-2 MAGNETOMETER
 SCINTREX GISA-4 GAMMA RAY SPECTROMETER
 SCINTREX SE-90 ELECTROMAGNETOMETER

SCALE : 1" = 400'
 FLOWN and COMPILED 1972
 by
 SCINTREX SURVEYS LIMITED

LEGEND
 TOTAL COUNT PROFILE 1cm=100 cps
 ANOMALY PEAK LOCATION AND EXTENT
 ANOMALOUS AMPLITUDES ABOVE BACKGROUND
 10 - URANIUM ANOMALY IN COUNTS PER SECOND
 15 - THORIUM ANOMALY IN COUNTS PER SECOND
 30 - POTASSIUM ANOMALY IN COUNTS PER SECOND
 300 - BROAD BAND ANOMALY IN COUNTS PER SECOND
 FLIGHT LINE, NUMBER AND DIRECTION
 CONTROL POINT
 MEAN FLIGHT LINE SPACING 400 FEET
 MEAN FLIGHT ALTITUDE 100 FEET



WANAPITEI LAKE

Southeast Bay

Outlet Bay

Dam

Wanapitei River

Spar Lake

Bugg Lake

Property Outline

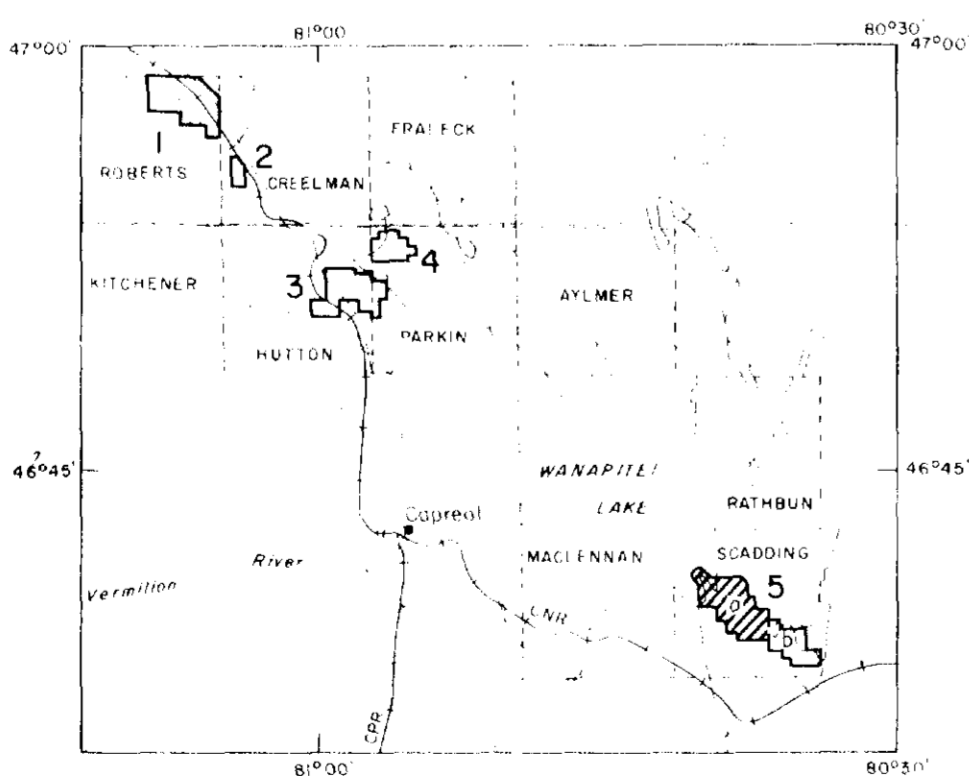


PLATE 5aE

GULF MINERALS CANADA LIMITED

AREA 5

SCADDING - TOWNSHIP, SUDBURY - ONTARIO

AIRBORNE GEOPHYSICAL SURVEY

SCINTREX MAP-2 MAGNETOMETER

SCINTREX GISA-4 GAMMA RAY SPECTROMETER

SCINTREX SE-90 ELECTROMAGNETOMETER

SCALE : 1" = 400'

FLOWN and COMPILED 1972

by SCINTREX SURVEYS LIMITED

LEGEND

- FLIGHT LINE, NUMBER AND DIRECTION
- CONTROL POINT
- MEAN FLIGHT LINE SPACING 400 FEET
- MEAN FLIGHT ALTITUDE 100 FEET
- IP AND OP PROFILES SHOWING SAME POLARITY
- IP AND OP PROFILES SHOWING OPPOSITE POLARITY
- IN-PHASE PROFILE ON NORTH LINE 1cm = 20%
- IN-PHASE PROFILE ON SOUTH LINE
- 1st CATEGORY ANOMALY IN-PHASE > 40%
- 2nd CATEGORY ANOMALY IN-PHASE 20% < 40%
- 3rd CATEGORY ANOMALY IN-PHASE < 20%
- ANOMALY WITH MAGNETIC COINCIDENCE
- 70% IN-PHASE / 24% OUT OF PHASE
- CONDUCTOR ZONE

120

125

130



2.1214

320

NTS 41

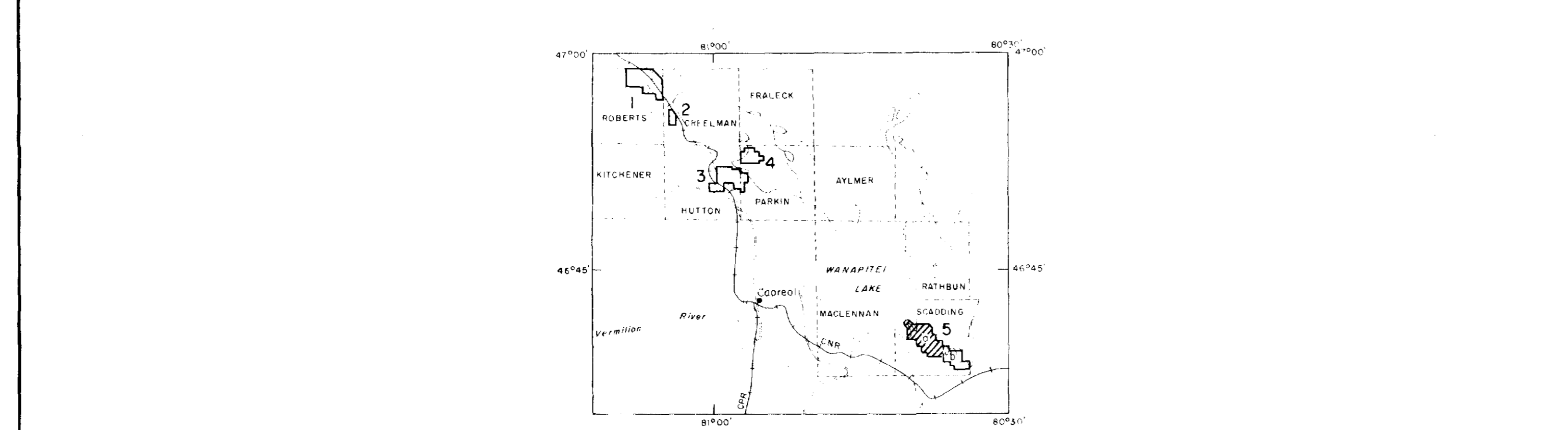
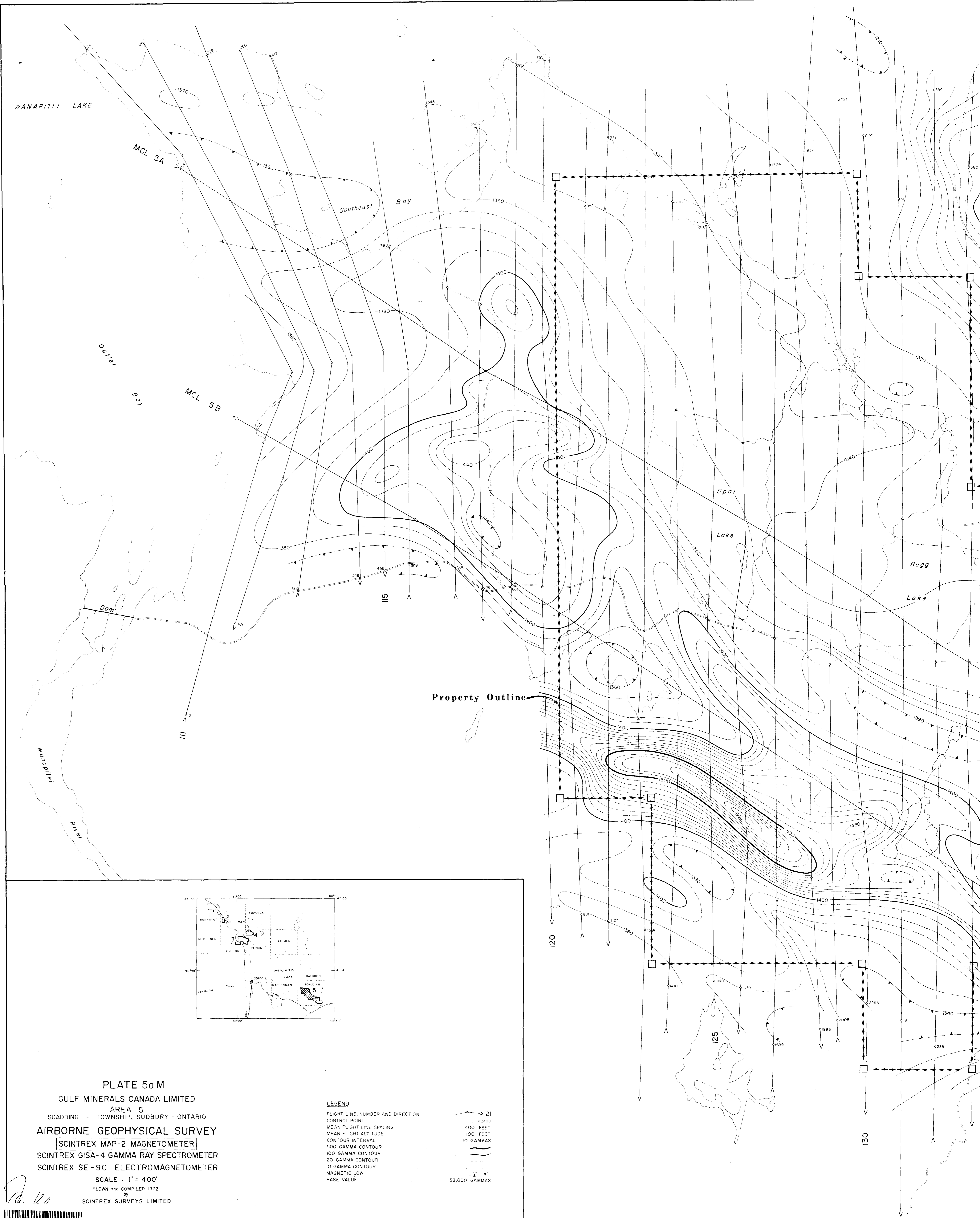
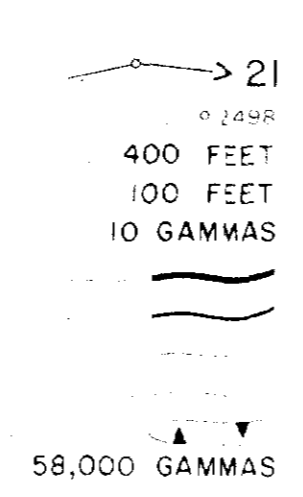


PLATE 5a M
GULF MINERALS CANADA LIMITED
 AREA 5
 SCADDING - TOWNSHIP, SUDBURY - ONTARIO
AIRBORNE GEOPHYSICAL SURVEY
 SCINTREX MAP-2 MAGNETOMETER
 SCINTREX GISA-4 GAMMA RAY SPECTROMETER
 SCINTREX SE-90 ELECTROMAGNETOMETER

SCALE: 1" = 400'
 FLOWN and COMPILED 1972
 by
 SCINTREX SURVEYS LIMITED

LEGEND
 FLIGHT LINE, NUMBER AND DIRECTION
 CONTROL POINT
 MEAN FLIGHT LINE SPACING
 MEAN FLIGHT ALTITUDE
 CONTOUR INTERVAL
 500 GAMMA CONTOUR
 100 GAMMA CONTOUR
 20 GAMMA CONTOUR
 10 GAMMA CONTOUR
 MAGNETIC LOW
 BASE VALUE



WANAPITEI LAKE

Southeast Bay

Outlet

Bay

Dam

Wanapitei

River

Property Outline

Spar

Lake

Bugg

Lake

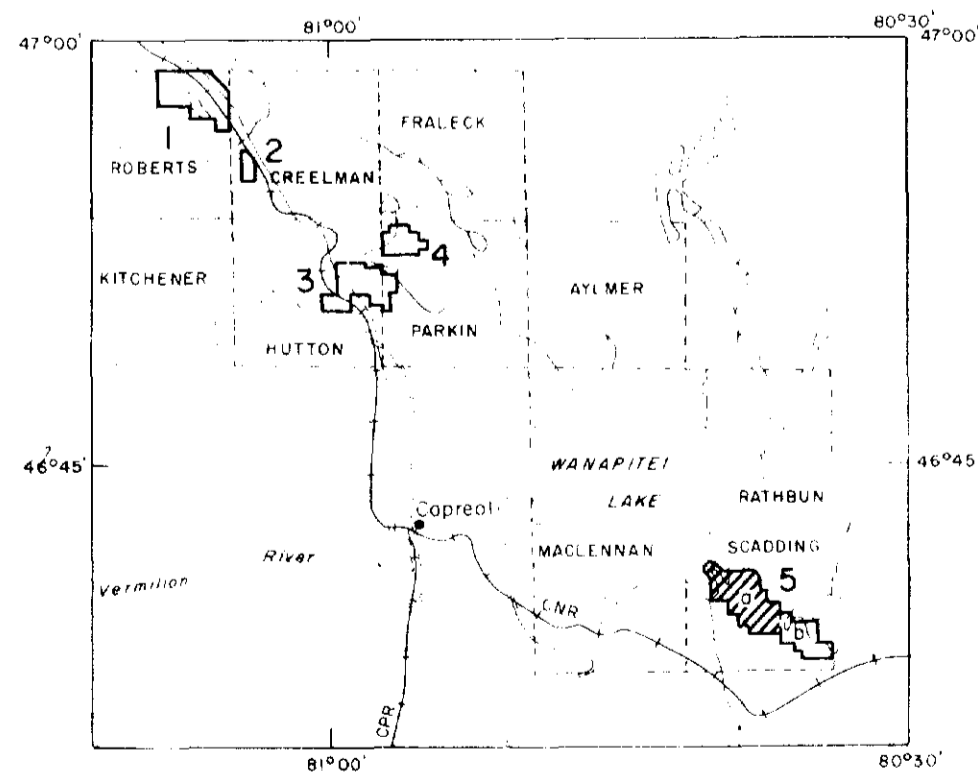


PLATE 5aR

GULF MINERALS CANADA LIMITED

AREA 5

SCADDING - TOWNSHIP, SUDBURY - ONTARIO

AIRBORNE GEOPHYSICAL SURVEY

SCINTREX MAP-2 MAGNETOMETER

SCINTREX GISA-4 GAMMA RAY SPECTROMETER

SCINTREX SE-90 ELECTROMAGNETOMETER

SCALE: 1" = 400'

FLOWN and COMPILED 1972

SCINTREX SURVEYS LIMITED

LEGEND

- TOTAL COUNT PROFILE 1cm=100 cps
- ANOMALY PEAK LOCATION AND EXTENT
- ANOMALOUS AMPLITUDES ABOVE BACKGROUND
 - 10 - URANIUM ANOMALY IN COUNTS PER SECOND
 - 15 - THORIUM ANOMALY IN COUNTS PER SECOND
 - 30 - POTASSIUM ANOMALY IN COUNTS PER SECOND
 - 300 - BROAD BAND ANOMALY IN COUNTS PER SECOND
- FLIGHT LINE, NUMBER AND DIRECTION
- CONTROL POINT
- MEAN FLIGHT LINE SPACING
- MEAN FLIGHT ALTITUDE

120

125

130

