GEOPHYSICAL ASSESSMENT REPORT
MAGNETOMETER AND HORIZONTAL LOOP EM
EAST BAY PROJECT, ONTARIO
RED LAKE MINING DIVISION

NTS: 52-N-4

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T. Hart M.Sc.
Inco Exploration and
Technical Services Inc.
Copper Cliff, Ontario
P0M 1N0
September, 1990

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1. General

A magnetometer and a horizontal loop electromagnetic survey were carried out over a group of claims near Red Lake, northwestern Ontario. The geophysical surveys were undertaken to determine whether the gold bearing structures located on the properties to the southwest strike onto the East Bay property. The survey was carried out by Lashex Ltd. of Callander, Ontario during the period of March 27 to 31, 1990. The results of the survey outlined several magnetic and electromagnetic anomalies of interest.

2. Location

The property is located on the East Bay of Red Lake, in Bateman Twp, approximately 6 km NE of Cochenour, Ontario (Fig.: 1).

3. Property

The property consists of 9 contiguous claims owned by Inco Limited of Copper Cliff, Ontario. They carry the designations KRL1069957-965, inclusive (Fig.: 2).

4. Previous Work

1976: Cochenour Willans Gold Mines staked the claims the previous year. Magnetic and VLF-EM surveys were completed.

1978: The area was mapped by Pirie and Grant in 1978 for the Ontario Geological Survey.

1978: Selco Mining Corp. optioned the property as part of a larger regional program. A 3 hole, 1,523 ft, diamond drill program was conducted to test the west contact of the East Bay Serpentinite, south of the present claim block.

1978: An airborne magnetic and electromagnetic survey was flown over the area for the Ontario Geological Survey, with the results published as Map P.1573.

1981: Wilanour Resources acquired control of the claims. Magnetic, VLF-EM, and HLEM surveys were conducted. Two diamond drill holes were proposed, but not drilled, and the claims were allowed to lapse.

5. Gridding

A grid was established on the ice by Lashex Ltd. during March, 1990. The base line was oriented at an azimuth of 058°, and cross lines were aligned at 90° to the base line. The cross lines were 100 metres apart, with stations chained in at 25 metre intervals.

6. Geology

The East Bay property is underlain by a sequence of basaltic metavolcanics containing beds of banded iron formation of the Uchi subprovince (Pirie and Grant, 1978; O.G.S. Map P.1569). The

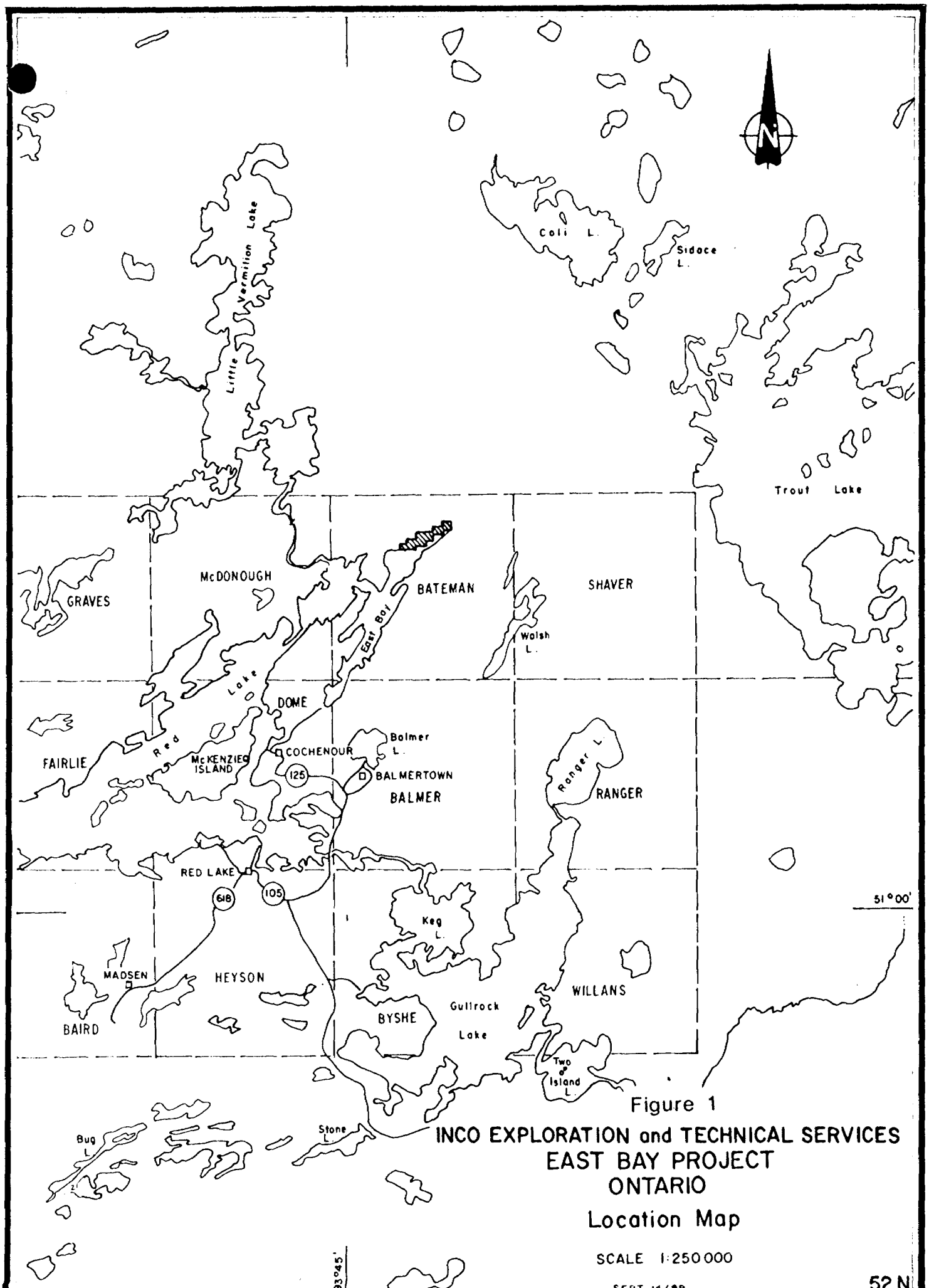


Figure 1

INCO EXPLORATION and TECHNICAL SERVICES
EAST BAY PROJECT
ONTARIO

Location Map

SCALE 1:250000

SEPT. 14/89

52N

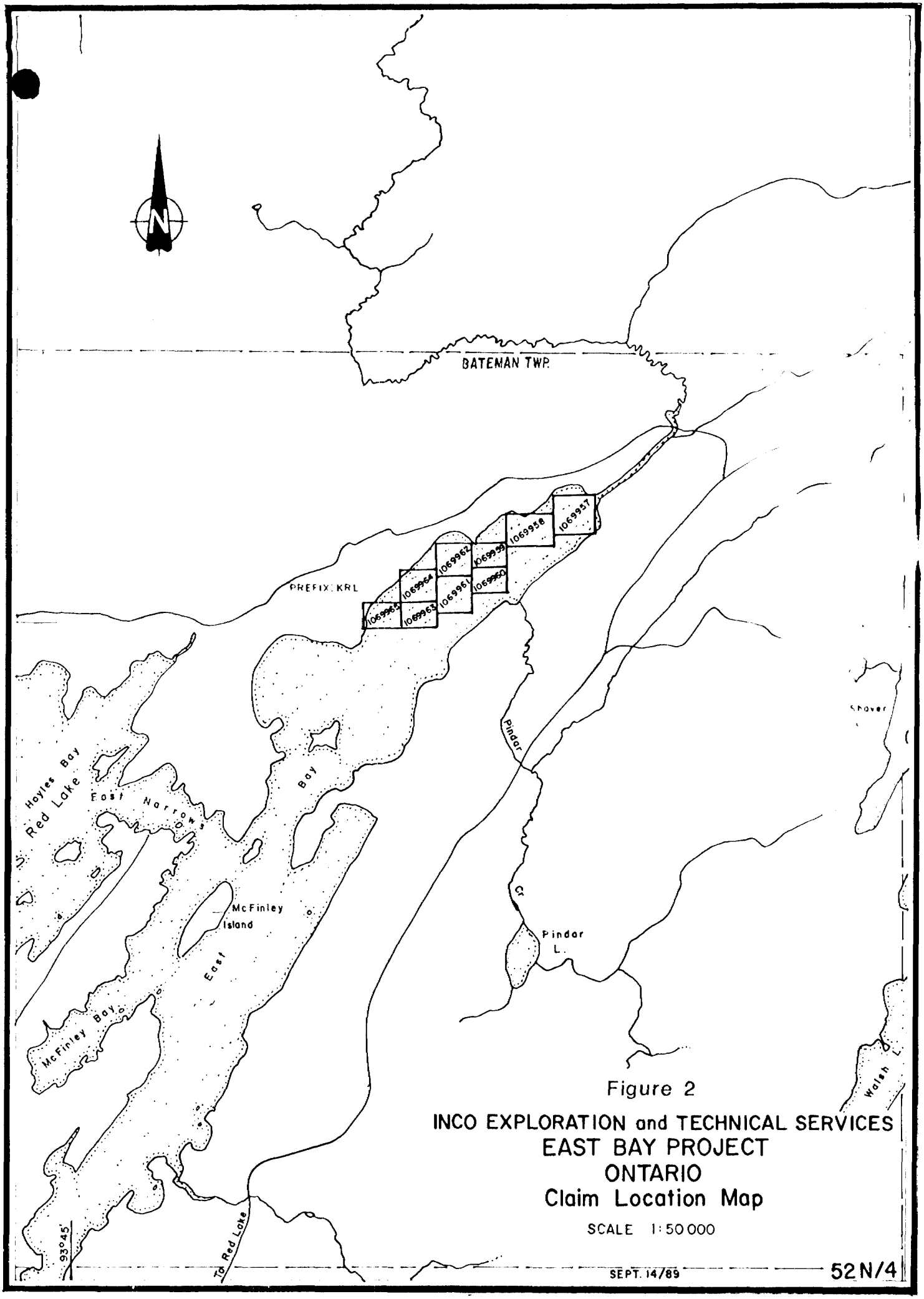


Figure 2

INCO EXPLORATION and TECHNICAL SERVICES

EAST BAY PROJECT

ONTARIO

Claim Location Map

SCALE 1:50 000

SEPT. 14/89

52N/4

metavolcanics are bound to the east by what has been interpreted to be discontinuous lenses of ultramafic, which may be related to the East Bay Serpentinite. Small plugs of late felsic intrusive occur immediately south of the property. This sequence is bound to the northwest and east by granitic batholiths. Regional metamorphism varies from greenschist to amphibolite facies, increasing in grade towards the batholiths.

Bedding in the metasediments trends NE-SW, dips west, with tops to the NW. Foliations are subparallel to the bedding. Isoclinal folding is probably present, but there is a lack of outcrop verifying its existence.

There is no known mineralization on the property, but gold mineralization has been located in drill holes immediately along strike to the SW. A SE trending hole intersected 2.10 g Au/0.20 m and 5.25 g Au/0.48 m in basalts. A NW trending hole intersected 5.95 g Au/0.57 m in silicified tuff, with several other sections assaying 1.4 - 1.75 g Au over narrow widths. Banded iron formation is present in trenches located on the island from which the holes were drilled. The mineralized units and iron formations appear to strike onto the East Bay property.

7. Instruments

The survey was carried out with Omni IV Tie-line magnetometers manufactured by EDA Instruments Inc. of Toronto and a MaxMin II horizontal loop electromagnetic system manufactured by Apex Parametrics Limited of Markham, Ontario. The manufacturers' specifications are appended to this report.

8. Survey Procedures

a) Magnetometer survey: The Omni IV magnetometers measure the earth's magnetic total field magnitude and store the data electronically. A base station magnetometer is positioned near the grid where it is continuously recording the diurnal variations of the earth's magnetic field every half minute. During this time one or more field magnetometers are used to survey the grid. Readings were taken at 12.5 m intervals along the cross lines.

At the end of the day, the survey data are transferred electronically through the microprocessor of the base station magnetometer. The microprocessor of the base station magnetometer automatically corrects the diurnal variations of the magnetic field. The corrected values of the magnetic readings are then stored on computer diskettes. The readings are plotted on maps of 1:2500 scale and their values are mechanically contoured with a contour interval of 20 nT. For the contouring a nine point Hanning filter is applied to the data during the processing as well as a three point Hanning filter to suppress sharp changes of the measured values in order to smooth out the contour lines. Copies of the magnetic contour maps are attached to the back of this report.

b) Electromagnetic Survey: The MaxMin II horizontal loop receiver measures the secondary electromagnetic field as percent changes from the primary field sent out by the transmitting coil at a fixed coil separation. Readings were taken for the in-phase and out-of-phase components of the 888 Hz and 3555 Hz frequencies. The separation of the receiver and the transmitter coils was kept constant at 100 m. Readings were taken at 25 m intervals along the lines.

The digitally recorded field readings are later transferred through a desktop computer and stored on diskettes. The data are used to produce 1:2500 scale maps showing the stacked profiles of the readings from the horizontal loop survey. Any conductors found by interpreting these results are

marked on these maps. Also, the conductor axes are superimposed on the magnetic contour maps.

9. Results

The magnetometer survey established a magnetic background level of about 60050 nT. The strike of the magnetic anomalies is parallel to the base line which runs at an azimuth of 058°. A magnetic anomaly of 300 nT to 700 nT can be traced through the centre of the property surveyed. This anomaly is offset, probably by faulting, at several locations (see lines 500 E, 1600 E and 2100 E). On line 1300 E the width of the anomaly is very narrow which indicates that the depth to the bedrock is very shallow on this line. From the width of the anomaly at this point one has to conclude that the cause of the anomaly is a narrow band of iron formation.

A broader magnetic anomaly can be traced along the eastern boundary of the property. On line 2600 E this anomaly peeks at 1200 nT. These magnetic highs may be caused by a band of mafic volcanics or ultramafics.

The electromagnetic conductor is striking parallel to the magnetic anomalies but is not directly associated with these. The strongest part of the conductor lies between lines 00 and 500 E. The conductivity indicated is high and may be caused by a sulfide or graphite zone in the bedrock. North of line 600 E the conductor weakens and may be offset as is also indicated by the magnetics near line 700 E. It can be traced to line 1700 E where it apparently stops near the property boundary at 150 N. This portion of the conductor may be caused by a shear zone with minor sulfides and/or graphite. A new, very poor conductor starts on line 1500 E at 100 S and can be traced to the northeast end of the property. This conductor is very weak and is caused by material such as a shear zone. There is also a poor conductor indicated by the survey straddling the southern boundary of the property.

10. Summary

The magnetometer and horizontal loop survey on the East Bay property produced a number of interesting geophysical anomalies which warrant further investigations. Because the property is completely water covered, diamond drilling should considered to explain these anomalies.

11. Statistics

Base line surveyed	2.8 km
Crosslines established	13.1 km
Magnetometer readings	1077
Electromagnetic Readings	542

EKB/TH/dh
Sept. 27/90

APPENDIX

Instrument Specifications

EDA Omni IV "Tie Line" Magnetometer

Apex MaxMin II Portable EM

OMNI IV "Tie-Line" Magnetometer

EDA

Specifications

Dynamic Range	18,000 to 110,000 gammas. Roll-over display feature suppresses first significant digit upon exceeding 100,000 gammas.
Tuning Method	Tuning value is calculated accurately utilizing a specially developed tuning algorithm
Automatic Fine Tuning	± 15% relative to ambient field strength of last stored value
Display Resolution	0.1 gamma
Processing Sensitivity	± 0.02 gamma
Statistical Error Resolution	0.01 gamma
Absolute Accuracy	± 1 gamma at 50,000 gammas at 23°C ± 2 gamma over total temperature range
Standard Memory Capacity	
Total Field or Gradient	1,200 data blocks or sets of readings
Tie-Line Points	100 data blocks or sets of readings
Base Station	5,000 data blocks or sets of readings
Display	Custom-designed, ruggedized liquid crystal display with an operating temperature range from -40°C to +55°C. The display contains six numeric digits, decimal point, battery status monitor, signal decay rate and signal amplitude monitor and function descriptors.
RS232 Serial I/O Interface	2400 baud, 8 data bits, 2 stop bits, no parity
Gradient Tolerance	6,000 gammas per meter (field proven)
Test Mode	A. Diagnostic testing (data and programmable memory) B. Self Test (hardware)
Sensor	Optimized miniature design. Magnetic cleanliness is consistent with the specified absolute accuracy.
Gradient Sensors	0.5 meter sensor separation (standard), normalized to gammas/meter. Optional 1.0 meter sensor separation available. Horizontal sensors optional.
Sensor Cable	Remains flexible in temperature range specified, includes strain-relief connector
Cycling Time (Base Station Mode)	Programmable from 5 seconds up to 60 minutes in 1 second increments
Operating Environmental Range	-40°C to +55°C; 0-100% relative humidity; weatherproof
Power Supply	Non-magnetic rechargeable sealed lead-acid battery cartridge or belt; rechargeable NiCad or Disposable battery cartridge or belt; or 12V DC power source option for base station operation.
Battery Cartridge/Belt Life	2,000 to 5,000 readings, for sealed lead acid power supply, depending upon ambient temperature and rate of readings
Weights and Dimensions	
Instrument Console Only	2.8 kg, 238 x 150 x 250mm
NiCad or Alkaline Battery Cartridge	1.2 kg, 235 x 105 x 90mm
NiCad or Alkaline Battery Belt	1.2 kg, 540 x 100 x 40mm
Lead-Acid Battery Cartridge	1.8 kg, 235 x 105 x 90mm
Lead-Acid Battery Belt	1.8 kg, 540 x 100 x 40mm
Sensor	1.2 kg, 56mm diameter x 200mm
Gradient Sensor (0.5 m separation - standard)	2.1 kg, 56mm diameter x 790mm
Gradient Sensor (1.0 m separation - optional)	2.2 kg, 56mm diameter x 1300mm
Standard System Complement	Instrument console; sensor; 3-meter cable, aluminum sectional sensor staff, power supply, harness assembly, operations manual.
Base Station Option	Standard system plus 30 meter cable
Gradiometer Option	Standard system plus 0.5 meter sensor

E D A Instruments Inc.
4 Thorncliffe Park Drive
Toronto, Ontario
Canada M4H 1H1
Telex: 06 23222 EDA TOR
Cable: Instruments Toronto
(416) 425 7800

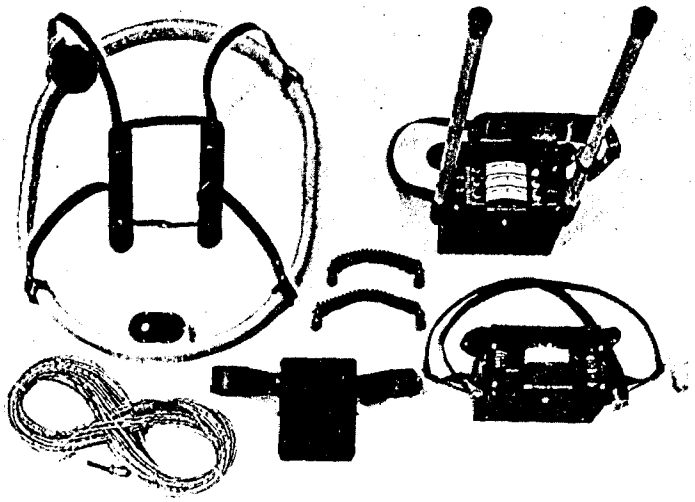
In U.S.A.
E D A Instruments Inc.
5151 Ward Road
Wheat Ridge, Colorado
U.S.A. 80033
(303) 422 9112

Printed in Canada

APEX MAXMIN II PORTABLE EM

- Five frequencies: 222, 444, 888, 1777 and 3555 Hz.
- Maximum coupled (horizontal-loop) operation with reference cable.
- Minimum coupled operation with reference cable.
- Vertical-loop operation without reference cable.
- Coil separations: 25, 50, 100, 150, 200 and 250 m (with cable) or 100, 200, 300, 400, 600 and 800 ft.
- Reliable data from depths of up to 180 m (600 ft).
- Built-in voice communication circuitry with cable.
- Tilt meters to control coil orientation.

NOW ALSO ±4% QUADRATURE FULL SCALE.



SPECIFICATIONS :

Frequencies: 222, 444, 888, 1777 and 3555 Hz.

Modes of Operation:
MAX: Transmitter coil plane and receiver coil plane horizontal (Max-coupled; Horizontal-loop mode). Used with reference cable.
MIN: Transmitter coil plane horizontal and receiver coil plane vertical (Min-coupled mode). Used with reference cable.
V.L. : Transmitter coil plane vertical and receiver coil plane horizontal (Vertical-loop mode). Used without reference cable, in parallel lines.

Coil Separations: 25, 50, 100, 150, 200 & 250m (MMII) or 100, 200, 300, 400, 600 and 800 ft. (MMIIF).
Coil separations in V.L. mode not restricted to fixed values.

Parameters Read:
- In-Phase and Quadrature components of the secondary field in MAX and MIN modes.
- Tilt-angle of the total field in V.L. mode.

Readouts:
- Automatic, direct readout on 90mm (3.5") edgewise meters in MAX and MIN modes. No nulling or compensation necessary.
- Tilt angle and null in 90mm edgewise meters in V.L. mode.

Scale Ranges:
In-Phase: ±20%, ±100% by push-button switch.
Quadrature: ±20%, ±100% by push-button switch.
Tilt: ±75% slope.
Null (V.L.): Sensitivity adjustable by separation switch.

NOW ALSO ±4% QUADRATURE FULL SCALE.

Readability: In-Phase and Quadrature: 0.25 % to 0.5 % ; Tilt: 1 % .

Repeatability: ±0.25% to ±1% normally, depending on conditions, frequencies and coil separation used.

Transmitter Output:
- 222Hz : 220 Atm²
- 444Hz : 200 Atm²
- 888Hz : 120 Atm²
- 1777Hz : 60 Atm²
- 3555Hz : 30 Atm²

Receiver Batteries: 9V trans. radio type batteries (4). Life: approx. 35hrs. continuous duty (alkaline, 0.5 Ah), less in cold weather.

Transmitter Batteries: 12V 6Ah Gel-type rechargeable battery. (Charger supplied).

Reference Cable: Light weight 2-conductor teflon cable for minimum friction. Unshielded. All reference cables optional at extra cost. Please specify.

Voice Link: Built-in intercom system for voice communication between receiver and transmitter operators in MAX and MIN modes, via reference cable.

Indicator Lights: Built-in signal and reference warning lights to indicate erroneous readings.

Temperature Range: -40°C to +60°C (-40°F to +140°F).

Receiver Weight: 6kg (13 lbs.)

Transmitter Weight: 13kg (29 lbs.)

Shipping Weight: Typically 60kg (135 lbs.), depending on quantities of reference cable and batteries included. Shipped in two field/shipping cases.

Specifications subject to change without notific

APEX PARAMETRICS LIMITED
200 STEELCASE RD. E., MARKHAM, ONT., CANADA, L3R 1G2

Phone: (416) 495-1612 Cables: APEXPARA TORONTO Telex: 06-966775 APEXPARA MKHM

NOTE OUR NEW TELEX NUMBER:

Ministry of Northern Development and Mines
Ontario

LAND
Mining Act

Report of Work
(Geophysical, Geological and Geochemical Surveys)

DOCUMENT No. W9002•099

~~Sept. 17~~ Oct 16

Instructions
- Please type or print
- Refer to Section 77 the Mining Act for assessment work requirements and maximum credits allowed per survey type
- If number of mining claims traversed exceeds space on this form attach a list
- Technical Reports and maps in duplicate should be submitted to Mining Lands Section, Mineral Development and Lands Branch

Type of Survey(s)	Mining Division	Township or Area
Geophysical (mag & HLEM)	Red Lake	Bateman M-2139

Recorded Holder(s): Inco Limited — 2.13574 — Prospector's Licence No: A 19231

Address: c/o Inco Exploration and Technical Services Inc. HWY 17 W. Copper Cliff, Ont. POM 1NO — Telephone No: (705) 682-8439

Survey Company: Lashex Ltd. RR 1 Pinecreek Road, Callander, Ont. POH 1HO

Name and Address of Author (of Geo-Technical Report): E.K. Berrer c/o Inco Expl. & Tech. Services Inc. Copper Cliff, Ont.

Date of Survey (from & to): From 22 04 90 (Day Mo Yr) To 24 04 90

Credits Requested per Each Claim in Columns at right

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

Total miles flown over claim(s).

Date: August 13,'90 — Recorded Holder or Agent (Signature): Ian McCaskill

Mining Claims Traversed (List in numerical sequence)

Mining Claim Prefix	Number	Mining Claim Prefix	Number	Mining Claim Prefix	Number
KRL	1069957				
KRL	1069958				
KRL	1069959				
KRL	1069960				
KRL	1069961				
KRL	1069962				
KRL	1069963				
KRL	1069964				
KRL	1069965				

AUG 1990
MINING LANDS SECTION

Total number of mining claims covered by this report of work: 9

Certification Verifying Report of Work

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

Name and Address of Person Certifying: Ian McCaskill c/o Inco Expl. and Tech. Services Inc. Field Explo. Dept. Hwy 17 W.

Copper Cliff, Ont. POM 1NO | Telephone No: (705) 682-8439 | Date: August 13, 1990 | Certified By (Signature): Ian McCaskill

Received Stamp

For Office Use Only

Total Days Cr. Recorded	Date Recorded	Mining Recorder
540	Aug. 17/1990	
	Date Approved as Recorded	Provincial Manager, Mining Lands
	Oct 26/90	Ron C Gashinski

1362 (89/06)

Corallen Lake Area M.2658

Blackbear Lake Area M.2657

McDonough Twp. M.2182

Shaver Twp. M.2202

Balmer Twp. M.2137

2.13574

Hoyles Bay

Red Lake

Narrows

McKinley Bay

McKinley Peninsula

Lake

Walsh L.

Walsh Cr.

Abalord

5th Base Line

51°06'20" approx

THE TOWNSHIP
OF

BATEMAN

DISTRICT OF
KENORA
PATRICIA PORTION

RED LAKE
MINING DIVISION

SCALE: 1 INCH 40 CHAINS

DISPOSITION OF CROWN LANDS

PATENT, SURFACE AND MINING RIGHTS
" , SURFACE RIGHTS ONLY
" , MINING RIGHTS ONLY
LEASE, SURFACE AND MINING RIGHTS
" , SURFACE RIGHTS ONLY
" , MINING RIGHTS ONLY
LICENCE OF OCCUPATION
ROADS
IMPROVED ROADS
KING'S HIGHWAYS
RAILWAYS
POWER LINES
MARSH OR MUSKEG
MINES
CANCELLED

NOTES

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

SAND & GRAVEL

(G1) MTC PIT Nº 1E-13
(G2) MTC " " 1E-11
(G3) MTC " " 1E-12
(G) QUARRY PERMIT
(G4) MNR GRAVEL RESERVE 1E10
(G5) MNR GRAVEL RESERVE 1E11

No OPEN GROUND SEPT. 22/86

RED LAKE MINING DIVISION
JUN 28 1990
RED LAKE ONTARIO

PLAN NO. M.2139

ONTARIO
MINISTRY OF NATURAL RESOURCES
SURVEYS AND MAPPING BRANCH

52N04NE0020 2.13574 BATEMAN

200

500 N

KRL 1069965

KRL 1069964

KRL 1069962

KRL 1069959

KRL 1069963

KRL 1069961

KRL 1069960

BASE LINE 058°

00

500 E

1000 E

1500 E

500 S

EAST BAY

(RED LAKE)

LEGEND

880 Hz — IN PHASE; - - - OUT OF PHASE

3520 Hz — IN PHASE; - - - OUT OF PHASE

CONDUCTOR — STRONG, MEDIUM, WEAK, VERY WEAK

PRIORITY ③

COIL SEPARATION: 100m

2.13574

1 2

0 100 200 300

METRES

INCO EXPLORATION AND TECHNICAL SERVICES INC.

Copper Cliff, Ontario
P0M 1N0

Project: EAST BAY	Area: BATEMAN TP. ONTARIO		
ELECTROMAGNETIC SURVEY		SHEET 1	FIGURE
Supervisor: E.K. BERRER	Instrument: APEX MAX-MIN	Survey date: 03/90	
Compiled by: CONTRACT (LASHEX)	Drawn by: W.E.MARSAW	Date drawn: 08\10\90	Revised:
Scale: 1:2500	File: EBYEM.90	N.T.S. 52N/4	

EAST BAY HEM 2

500 N

KRL 1069959

KRL 1069958

KRL 1069960

KRL 1069957

EAST BAY

(RED LAKE)

BASE LINE 058°

00

2000 E

2500 E

3000 E

3500 E

500 S

LEGEND

880Hz: IN PHASE / OUT OF PHASE

3520Hz: IN PHASE / OUT OF PHASE

CONDUCTOR: STRONG / MEDIUM / WEAK / VERY WEAK

PRIORITY (3)

COIL SEPARATION: 100m

2.13574

1 | 2

0 100 200 300

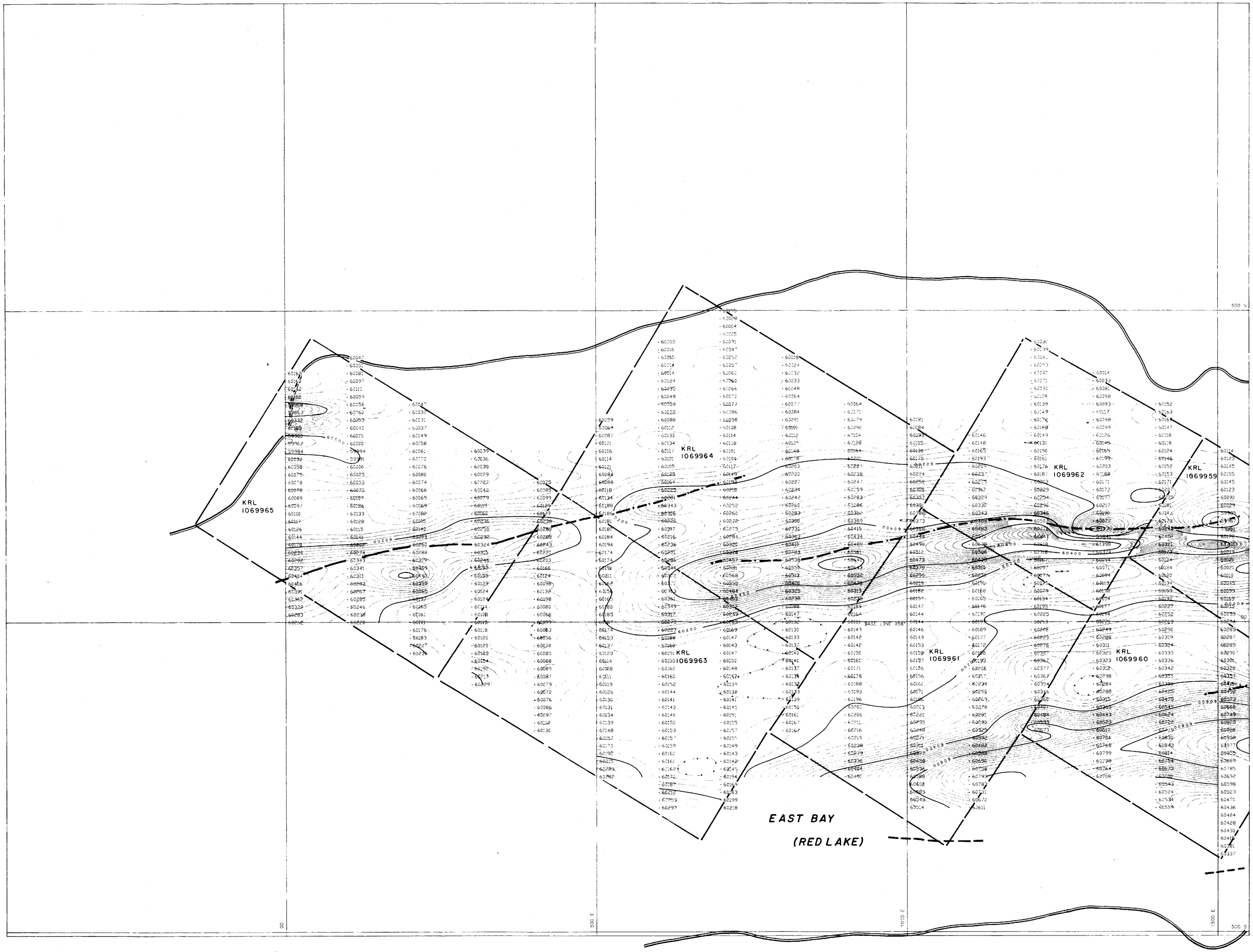
METRES

INCO EXPLORATION AND TECHNICAL SERVICES INC.

Copper Cliff, Ontario
P0M 1N0

Project: EAST BAY	Area: BATEMAN TP., ONTARIO		
ELECTROMAGNETIC SURVEY		SHEET 2	FIGURE
Supervisor: E.K. BERRER	Instrument: APEX MAX-MIN	Survey date: 03/90	
Compiled by: CONTRACT (LASHEX)	Drawn by: W.E. MARSAW	Date drawn: 08/10/90	Revised:
Scale: 1:2500	File: EBYHM.90	N.T.S. 52N/4	

EAST BAY MAG. 1



LEGEND

FILTERED CONTOURS IN nano Tesla (nT)
CONTOUR INTERVAL : 20nT
20 nT LINE
200nT LINE
2000nT LINE
RELATIVE LOW
SPOT LOW
CONDUCTOR (FROM E M SURVEY

2.13574

1 2

0 100 200 300
METRES

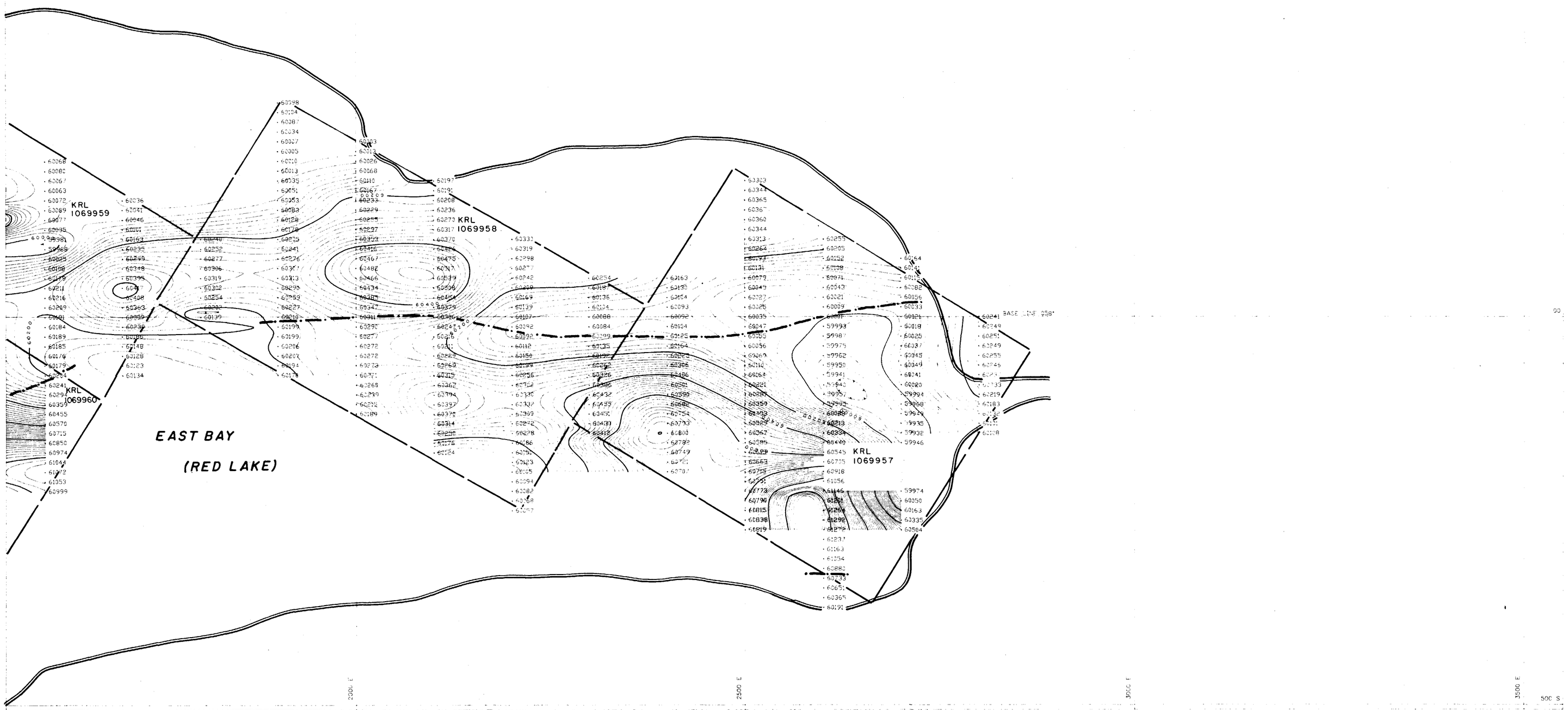
INCO EXPLORATION AND TECHNICAL SERVICES INC.

Copper Cliff, Ontario
P0M 1N0

Project: EAST BAY	Area: BATEMAN TP., ONTARIO		
MAGNETIC SURVEY		SHEET 1	FIGURE
Supervisor: E.K. BERRER	Instrument: EDA OMNI	Survey date: 03/90	
Compiled by: CONTRACT (LASHEX)	Drawn by: W.E. MARSAW	Date drawn: 08/10/90	Revised:
Scale: 1:2500	File: EBYMG.90	N.T.S. 52N/4	

52NW4NE0020 2.13574 BATEMAN

EAST BAY MAG. 2



LEGEND

FILTERED CONTOURS IN nanoTesla (nT)
CONTOUR INTERVAL : 20nT
20nT LINE
200nT LINE
2000nT LINE
RELATIVE LOW
SPOT LOW
CONDUCTOR (FROM E.M SURVEY

2.13574

1 2

0 100 200 300
METRES

INCO EXPLORATION AND TECHNICAL SERVICES INC.

Copper Cliff, Ontario
P0M 1N0

Project: EAST BAY	Area: BATEMAN TP., ONTARIO		
MAGNETIC SURVEY		SHEET 2	FIGURE
Supervisor: E.K. BERRER	Instrument: EDA OMNI	Survey date: 03/90	
Compiled by: CONTRACT (LASHEK)	Drawn by: W.E. MARSAW	Date drawn: 08/10/90	Revised:
Scale: 1:2500	File: EBYMG.90	N.T.S. 52N/4	