



42A15NW0001 2.14025 HANNA

010

REPORT ON
GEOPHYSICAL WORK
ON
HANNA PROPERTY
HANNA TOWNSHIP
FOR
COMSTATE RESOURCES LTD.

NTS: 42-A/14

RECEIVED

MAR 26 1991

MINING LANDS SECTION

MARCH 1991

S. TAYLOR
TIMMINS GEOPHYSICS LTD.

2.14025

SUMMARY AND RECOMMENDATIONS

HLEM and magnetic surveys were carried out over selected ice covered areas of a 54 claim property in Hanna Township. This survey appends an original survey carried out in the fall of 1990.

The only HLEM anomaly located in the new results corresponds to the western extent of Anomaly 'N'. The magnetic results extend the pattern already established in the 1990 survey.

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1. HLEM RESULTS, 444 Hz (BACK POCKET)
2. HLEM RESULTS, 1777 Hz (BACK POCKET)
3. MAGNETIC RESULTS (BACK POCKET)

INTRODUCTION

During January, 1991, magnetic and horizontal loop electromagnetic (HLEM) surveys were carried out for Comstate Resources Ltd. over selected areas of the Hanna Township Property which could not be surveyed in the original 1990 survey.

The property is located approximately fifty kilometres northeast of the city of Timmins in the Porcupine Mining Division (Figure 1). The claims, over which additional work was carried out are numbered P-1089138, P-1089149 and P-1089158.

The property was accessed via a Concession Road which branches west from Highway 11.

The field data was collected by J. DerWeduwen and L. Varin.

SURVEY DESCRIPTIONS

The grid on the property consists of north-south lines spaced every 125 metres and picketed every 25 metres. The areas surveyed in January are outlined on Figure 3.

The horizontal loop EM survey was carried out with the Apex Parametrics MaxMin I. This instrument measures the in-phase and quadrature components of the secondary field as a percentage of the primary field. Readings were taken every 25 metres using a coil separation of 150 metres and frequencies of 444 and 1777 Hertz.

The magnetic readings were taken with a Scintrex IGS-2/MP-4. This instrument is a proton precession magnetometer which measures the earth's total magnetic

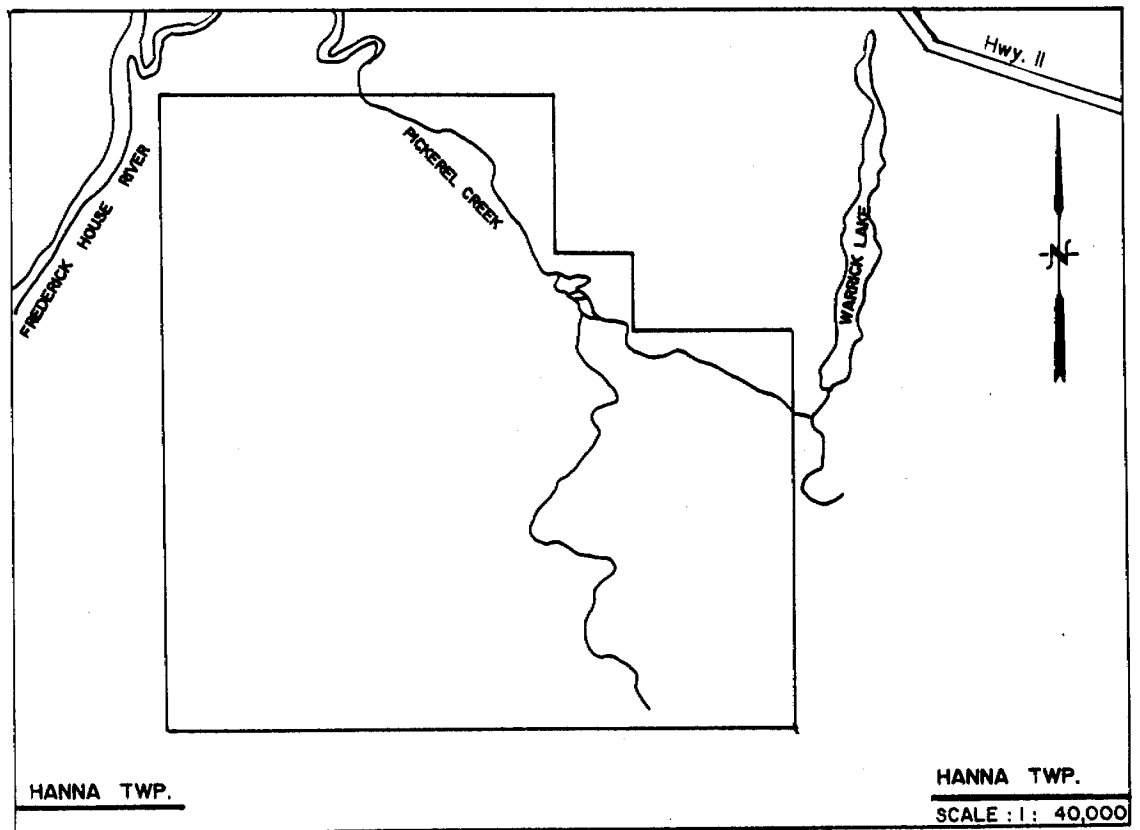
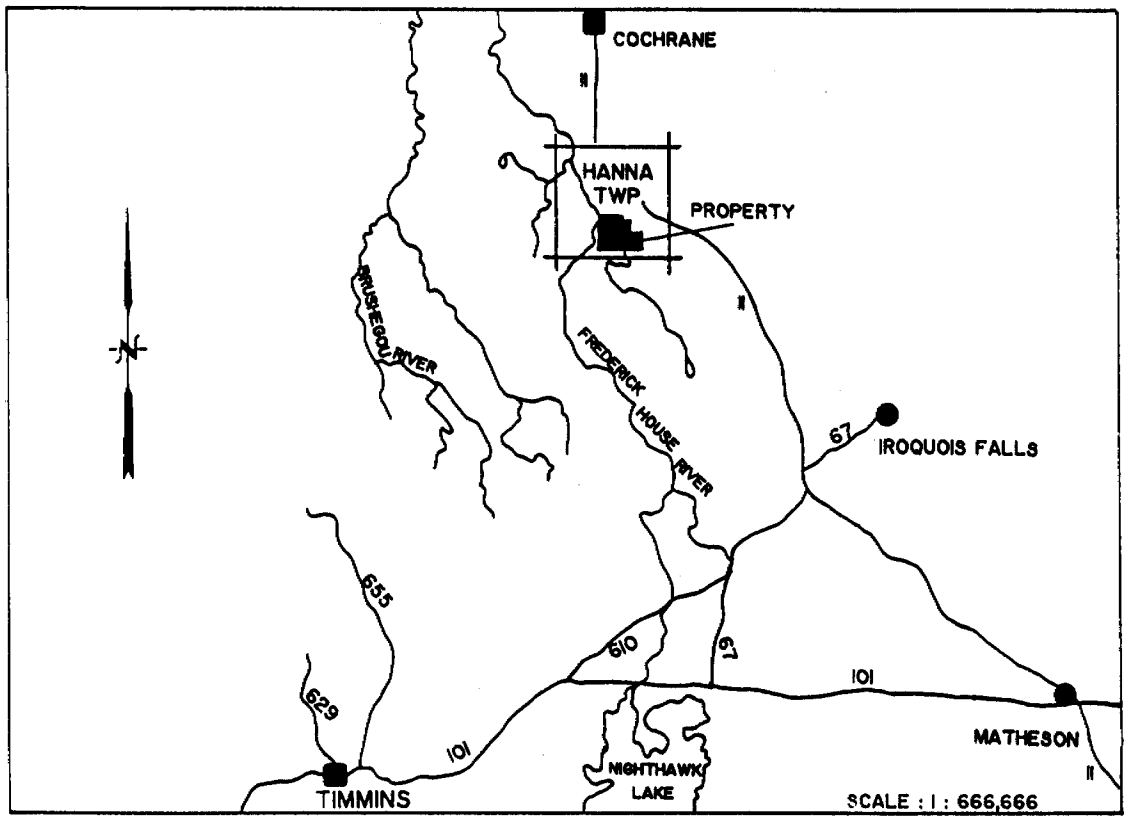
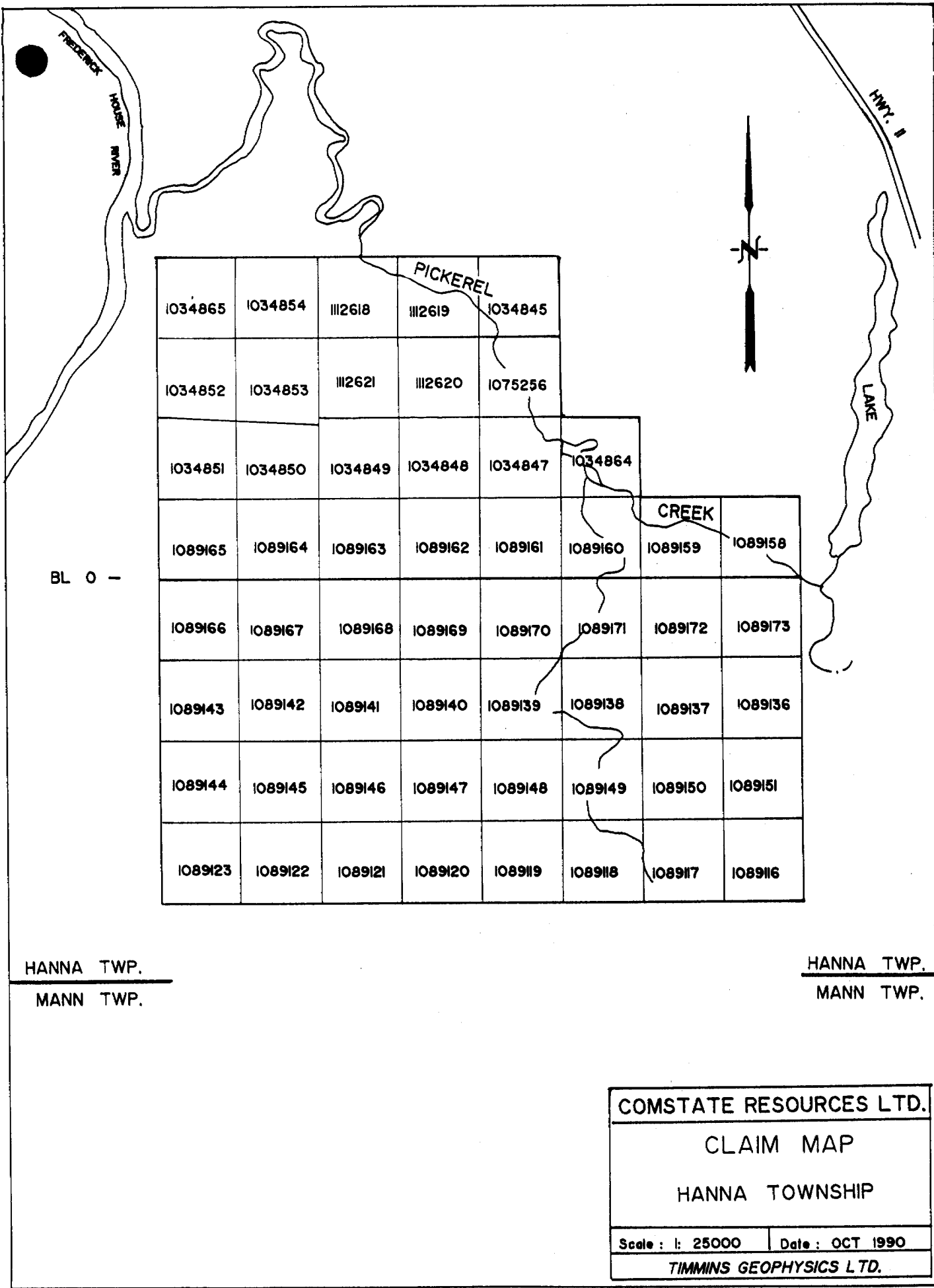


Figure 1(a) (b) : Location Maps



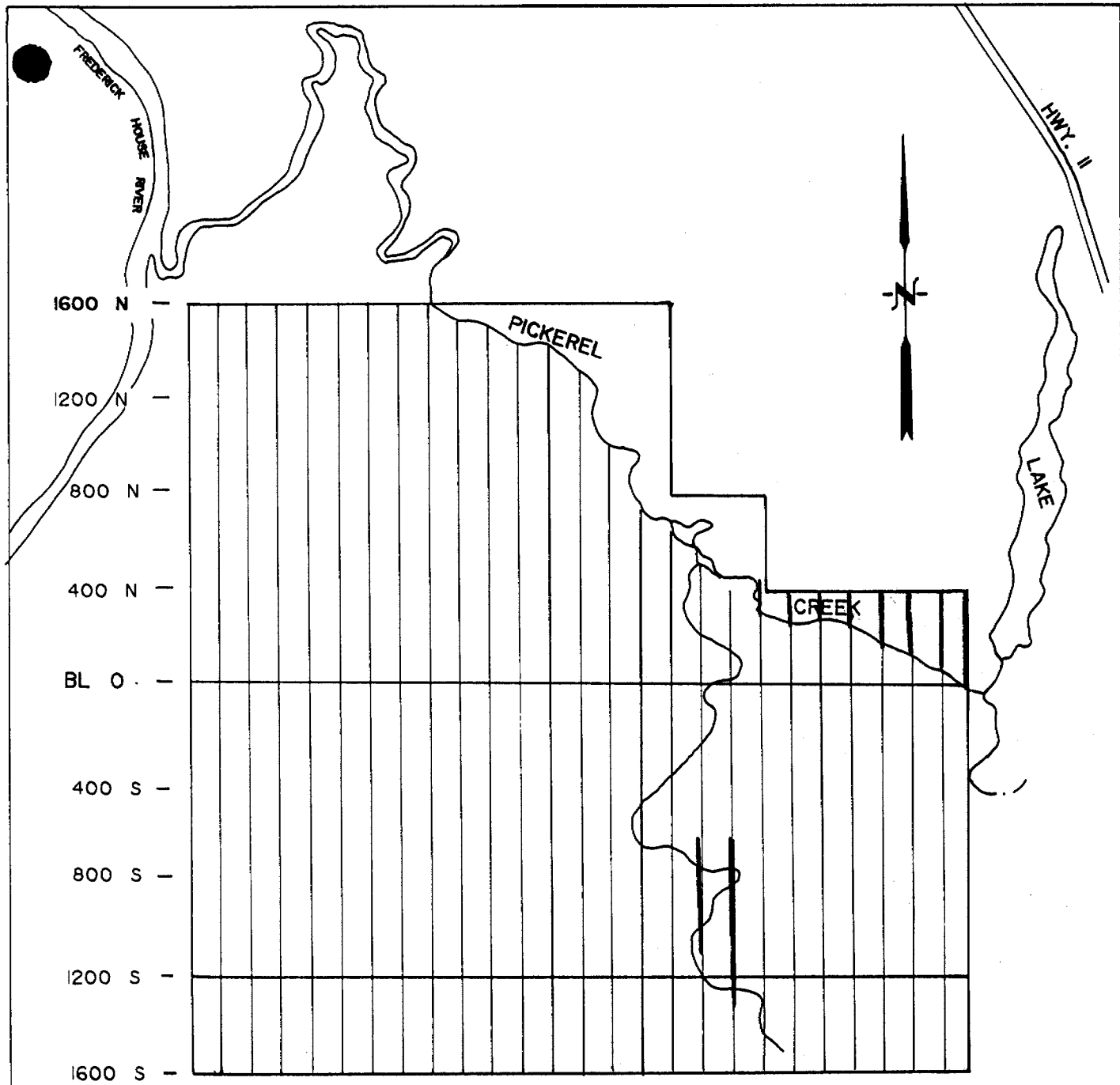
1034865	1034854	112618	112619	1034845			
1034852	1034853	112621	112620	1075256			
1034851	1034850	1034849	1034848	1034847	1034864		
1089165	1089164	1089163	1089162	1089161	1089160	1089159	1089158
1089166	1089167	1089168	1089169	1089170	1089171	1089172	1089173
1089143	1089142	1089141	1089140	1089139	1089138	1089137	1089136
1089144	1089145	1089146	1089147	1089148	1089149	1089150	1089151
1089123	1089122	1089121	1089120	1089119	1089118	1089117	1089116

BL 0 -

HANNA TWP.
MANN TWP.

HANNA TWP.
MANN TWP.

COMSTATE RESOURCES LTD.	
CLAIM MAP	
HANNA TOWNSHIP	
Scale : 1: 25000	Date : OCT 1990
TIMMINS GEOPHYSICS LTD.	



HANNA TWP.
MANN TWP.

- LINE 0
- LINE 125 E
- LINE 250 E
- LINE 375 E
- LINE 500 E
- LINE 625 E
- LINE 750 E
- LINE 875 E
- LINE 1000 E
- LINE 1125 E
- LINE 1250 E
- LINE 1375 E
- LINE 1500 E
- LINE 1625 E
- LINE 1750 E
- LINE 1875 E
- LINE 2000 E
- LINE 2125 E
- LINE 2250 E
- LINE 2375 E
- LINE 2500 E
- LINE 2625 E
- LINE 2750 E
- LINE 2875 E
- LINE 3000 E
- LINE 3125 E
- LINE 3250 E

COMSTATE RESOURCES LTD.	
GRID SKETCH	
HANNA TOWNSHIP	
Scale : 1: 25000	Date : OCT 1990
TIMMINS GEOPHYSICS LTD.	

field to an accuracy of 0.1 gammas. Diurnal variations were monitored every 20 seconds with a Scintrex MP-3 base station magnetometer.

HLEM RESULTS

The results of the 1991 HLEM survey are appended to the 1990 results, and presented on maps 1 and 2 at a scale of 1:5000. The only anomaly located in the new results corresponds to the western extent of Anomaly 'N'.

ANOMALY 'N'

Anomaly 'N' is present between Lines 2125 and 2500 East. It is a very strong conductor at a depth of 80 to 90 metres on the two eastern lines, and a weak conductor at a shallow depth on the two western lines (Table 1). The large width and the shape of the profile indicates there are at least two distinct conductors on Line 2375 East. There are no positive shoulders on the in-phase component and it is assumed that the dip is vertical for calculations. The positive quadrature readings on either side of the anomaly reflect high bedrock topography.

The depth and conductivity on Lines 2125 and 2250 East are not consistent with lines to the east, however, calculations on the new lines may be inaccurate because of the positive quadrature background.

LINE	ANOMALY CENTRE	ANOMALY WIDTH (M)	IP (%)	Q (%)	DEPTH (M)	CONDUCTIVITY THICKNESS (MHOS)	COMMENTS
2125 E	850 S	NARROW	-4	-5	34	4	
2250 E	875 S	NARROW	-4	-10	15	2	
2375 E	921 S	58	-4	-1	>90	100	TWO CONDUCTORS
2500 E	911 S	11	-8	-1	82	>100	ASSUME DIP = 90

Table 1: Anomaly 'N', 444 Hz, 150 metre coil separation.

MAGNETIC RESULTS

The magnetic results are appended to the 1990 survey and plotted on Map 3 at a scale of 1:5000.

The results extend the magnetic patterns already established in the 1990 survey. Anomaly 'N' lies at the southern edge of a major magnetic high.

Mar 20/91
DATE

Sharon Taylor
SHARON TAYLOR
TIMMINS GEOPHYSICS LTD.

APPENDIX A



TO BE ATTACHED AS AN APPENDIX TO TECHNICAL REPORT
FACTS SHOWN HERE NEED NOT BE REPEATED IN REPORT
TECHNICAL REPORT MUST CONTAIN INTERPRETATION, CONCLUSIONS ETC.

Type of Survey(s) GEOPHYSICAL
Township or Area HANNA TOWNSHIP
Claim Holder(s) COMSTATE RESOURCES LTD.
SUITE 901, 1015 4th St. S.W., CALGARY, Alta
T2R 1J4
Survey Company TIMINS GEOPHYSICS LTD.
Author of Report S. TAYLOR
Address of Author P.O. Box 1783, SOUTH PORCUPINE, Ontario
PON 1H0
Covering Dates of Survey Jan. 28/91 - Jan.31/91
(linecutting to office)
Total Miles of Line Cut 1.5 km

MINING CLAIMS TRAVERSED
List numerically

P	1089138
(prefix)	(number)
	1089149
	1089158

SPECIAL PROVISIONS
CREDITS REQUESTED

ENTER 40 days (includes
line cutting) for first
survey.
ENTER 20 days for each
additional survey using
same grid.

Geophysical

DAYS
per claim

-Electromagnetic 10
-Magnetometer 20
-Radiometric _____
-Other _____
Geological _____
Geochemical _____

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

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

DATE: Jan. 20/91 SIGNATURE: Shawn Taylor
Author of Report or Agent

Res. Geol. _____ Qualifications _____

Previous Surveys

File No.	Type	Date	Claim Holder

TOTAL CLAIMS 3

If space insufficient, attach list

OFFICE USE ONLY

GEOPHYSICAL TECHNICAL DATA

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

Number of Stations 57 Number of Readings Mag - 57
Hlem - 100
Station interval 25 metres Line spacing 125 metres
Profile scale 1 cm = 20% (444 Hz) - 1 cm = 40% (1777 Hz)
Contour interval _____

MAGNETIC

Instrument Scintrex IGS-2/MP-4
Accuracy - Scale constant ± .1 gamma
Diurnal correction method Scintrex MP-3 Base Station Magnetometer
Base Station check-in interval (hours) 20 seconds
Base Station location and value Line 250 East - 1220 South
58539

ELECTROMAGNETIC

Instrument Apex Parametrics MaxMin I
Coil configuration Horizontal Loop
Coil separation 150 metres
Accuracy 1%
Method: Fixed transmitter Shoot back In line Parallel line
Frequency 444 Hz - 1777 Hz
(specify V.L.F. station)

Parameters measured In-phase and quadrature components of secondary field measured as percent of primary field.

GRAVITY

Instrument _____
Scale constant _____
Corrections made _____
Base station value and location _____
Elevation accuracy _____

INDUCED POLARIZATION RESISTIVITY

Instrument _____
Method Time Domain Frequency Domain
Parameters - On time _____ Frequency _____
- Off time _____ Range _____
- Delay time _____
- Integration time _____
Power _____
Electrode array _____
Electrode spacing _____
Type of electrode _____



Ministry of Northern Development and Mines

DOCUMENT No. **W 9103 00047**



42A15NW0001 2.14025 HANNA

900

Mining Act
Report of Work
(Geophysical, Geological and Geochemical)

Type of Survey(s) GEOPHYSICS	Mining Division PORCUPINE	Township or Area HANNA TOWNSHIP
Recorded Holder(s) COMSTATE RESOURCES LTD.	2.14025	Prospector's Licence No. T-1127
Address Suite 901, 1015 4th St. S.W., CALGARY, Alberta T2R 1J4		Telephone No. (403)265-6973
Survey Company TIMMINS GEOPHYSICS LTD.		
Name and Address of Author (of Geo-Technical Report) S. TAYLOR, P.O. Box 1783, South Porcupine, Ontario PON 1H0		Date of Survey (from & to) 28 Day 01 Mo 91 Yr 30 Day 01 Mo 91 Yr

Credits Requested per Each Claim in Columns at right		Days per Claim
Special Provisions For first survey: Enter 40 days. (This includes line cutting) For each additional survey using the same grid: Enter 20 days (for each)	Geophysical	
	- Electromagnetic	10 20
	- Magnetometer	10 40
	- Other	
Man Days Complete reverse side and enter total(s) here	Geophysical	
	- Electromagnetic	
	- Magnetometer	
Airborne Credits Note: Special provisions credits do not apply to Airborne Surveys.	Geophysical	
	- Electromagnetic	
	- Magnetometer	

Mining Claims Traversed (List in numerical sequence)					
Mining Claim		Mining Claim		Mining Claim	
Prefix	Number	Prefix	Number	Prefix	Number
P	1089149	MAX	REACHED		
	1089158	H	"		
	1089159	AMENDMENT ATTACHED			
	1089138				

RECORDED
JAN 30 1991

RECEIVED
FEB 28 1991
MINING LANDS SECTION

Total number of mining claims covered by this report of work. 3

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 D. CONDRY P.O. Box 1783 SOUTH PORCUPINE ONT		Telephone No. 235-4592	Date Jan. 30/91	Certified By (Signature) <i>[Signature]</i>
PON 1 H0				

For Office Use Only

Total Days Cr. Recorded 60	Date Recorded JAN 30/91	Mining Recorder ACTG. Robert Bailey
	Date Approved as Recorded	Provincial Manager, Mining Leads "SEE REVISED WORK STATEMENT"

RECEIVED
JAN 30 1991
330 PM *[Signature]*



Ministry of
Northern Development
and Mines

Ministère du
Développement du Nord
et des Mines

Mining Lands Section
159 Cedar Street, 4th Floor
Sudbury, Ontario
P3E 6A5

Telephone: (705) 670-7264
Fax: (705) 670-7262

Your File: W. 9106.00047
Our File: 2.14025

June 13, 1991

Mining Recorder
Ministry of Northern Development
and Mines
60 Wilson Avenue
Timmins, Ontario
P4N 2S7

Dear Sir/Madam:

RE: Notice of Intent dated May 13, 1991 for Geophysical
(Electromagnetic and Magnetometer) Surveys on mining
claim P. 1089158 in the Township of Hanna.

The assessment work credits, as listed with the above-mentioned
Notice of Intent have been approved as of the above date.

Please inform the recorded holder of these mining claims and so
indicate on your records.

Yours sincerely,

Ron. C. Gashinski,
Provincial Manager, Mining Lands
Mines & Minerals Division

RS
LJS/jl

Enclosures:

cc: Comstate Resources Ltd.
Calgary, Alberta

✓ Assessment Files Office
Toronto, Ontario

Timmins Geophysics Ltd.
South Porcupine, Ontario

Resident Geologist
Timmins, Ontario



Recorded Holder
Comstate Resources Ltd.

Township or Area
Hanna Township

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
Geophysical Electromagnetic <u>10</u> days	P.1089158
Magnetometer <u>20</u> days	
Radiometric _____ days	
Induced polarization _____ days	
Other _____ days	
Section 77 (19) See "Mining Claims Assessed" column	
Geological _____ days	
Geochemical _____ days	
Men days <input type="checkbox"/> Airborne <input type="checkbox"/>	
Special provision <input checked="" type="checkbox"/> Ground <input checked="" type="checkbox"/>	
<input type="checkbox"/> Credits have been reduced because of partial coverage of claims.	
<input type="checkbox"/> Credits have been reduced because of corrections to work dates and figures of applicant.	

Special credits under section 77 (16) for the following mining claims

10 days credit electromagnetic and 0 days magnetometer: P.1088149.
 5 days credit electromagnetic and 0 days credit magnetometer: P.1089138

Note: Maximum credits allowed under special provisions have been reached with these credits.

No credits have been allowed for the following mining claims

- not sufficiently covered by the survey insufficient technical data filed

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; Section 77(19) - 60.

2.14025

TIMMINS GEOPHYSICS LTD.
P.O. Box 1783
South Porcupine, Ont.
PON 1H0

(705) 235-4592

March 20, 1991

RECEIVED

10/29
MAR 26 1991

MINING LANDS SECTION

Lucille Jerome
Ministry of Northern Development and Mines
159 Cedar Street
SUDBURY, Ontario
P3E 6A5

Dear Lucille,

Enclosed please duplicate copies of the geophysics report for
Hanna Township claims: P-1089138, 1089149 and 1089158.

Please append this to your file number 2.13767.

Regards,

Sharon Taylor

Sharon Taylor

TIMMINS GEOPHYSICS LTD.



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TECHNICAL REPORT MUST CONTAIN INTERPRETATION, CONCLUSIONS ETC.

Type of Survey(s) GEOPHYSICAL
Township or Area HANNA TOWNSHIP
Claim Holder(s) COMSTATE RESOURCES LTD.
SUITE 901, 1015 4th St. S.W., CALGARY, Alta
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Survey Company TIMINS GEOPHYSICS LTD.
Author of Report S. TAYLOR
Address of Author P.O. Box 1783, SOUTH PORCUPINE, Ontario
Covering Dates of Survey Jan. 28/91 - Jan.31/91 PON 1H0
(linecutting to office)
Total Miles of Line Cut 1.5 km

MINING CLAIMS TRAVERSED
List numerically

P 1089138
(prefix) (number)
1089149
1089158

SPECIAL PROVISIONS
CREDITS REQUESTED

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

ENTER 20 days for each additional survey using same grid.

Table with 2 columns: Geophysical, Geological, Geochemical and 1 column: DAYS per claim. Values: Electromagnetic 10, Magnetometer 20, Radiometric, Other, Geological, Geochemical.

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

Magnetometer Electromagnetic Radiometric
(enter days per claim)

DATE: Mar 20/91 SIGNATURE: Shaun Taylor
Author of Report or Agent

Res. Geol. Qualifications 2.8510

Previous Surveys

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

RECEIVED

MAR 26 1991

MINING LANDS SECTION

TOTAL CLAIMS 3

If space insufficient, attach list

OFFICE USE ONLY

GEOPHYSICAL TECHNICAL DATA

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

Number of Stations 57 Number of Readings Mag - 57
H1em - 100

Station interval 25 metres Line spacing 125 metres

Profile scale 1 cm = 20% (444 Hz) - 1 cm = 40% (1777 Hz)

Contour interval _____

MAGNETIC

Instrument Scintrex IGS-2/MP-4

Accuracy - Scale constant $\pm .1$ gamma

Diurnal correction method Scintrex MP-3 Base Station Magnetometer

Base Station check-in interval (hours) 20 seconds

Base Station location and value Line 250 East - 1220 South

58539

ELECTROMAGNETIC

Instrument Apex Parametrics MaxMin I

Coil configuration Horizontal Loop

Coil separation 150 metres

Accuracy 1%

Method: Fixed transmitter Shoot back In line Parallel line

Frequency 444 Hz - 1777 Hz
(specify V.L.F. station)

Parameters measured In-phase and quadrature components of secondary field measured as percent of primary field.

Instrument _____

Scale constant _____

Corrections made _____

Base station value and location _____

Elevation accuracy _____

Instrument _____

Method Time Domain Frequency Domain

Parameters - On time _____ Frequency _____

- Off time _____ Range _____

- Delay time _____

- Integration time _____

Power _____

Electrode array _____

Electrode spacing _____

Type of electrode _____

INDUCED POLARIZATION
RESISTIVITY

SELF POTENTIAL

Instrument _____ Range _____

Survey Method _____

Corrections made _____

RADIOMETRIC

Instrument _____

Values measured _____

Energy windows (levels) _____

Height of instrument _____ Background Count _____

Size of detector _____

Overburden _____

(type, depth - include outcrop map)

OTHERS (SEISMIC, DRILL WELL LOGGING ETC.)

Type of survey _____

Instrument _____

Accuracy _____

Parameters measured _____

Additional information (for understanding results) _____

AIRBORNE SURVEYS

Type of survey(s) _____

Instrument(s) _____

(specify for each type of survey)

Accuracy _____

(specify for each type of survey)

Aircraft used _____

Sensor altitude _____

Navigation and flight path recovery method _____

Aircraft altitude _____ Line Spacing _____

Miles flown over total area _____ Over claims only _____

GEOCHEMICAL SURVEY - PROCEDURE RECORD

Numbers of claims from which samples taken _____

Total Number of Samples _____

Type of Sample _____
(Nature of Material)

Average Sample Weight _____

Method of Collection _____

Soil Horizon Sampled _____

Horizon Development _____

Sample Depth _____

Terrain _____

Drainage Development _____

Estimated Range of Overburden Thickness _____

SAMPLE PREPARATION
(Includes drying, screening, crushing, ashing)

Mesh size of fraction used for analysis _____

General _____

ANALYTICAL METHODS

Values expressed in: per cent
p. p. m.
p. p. b.

Cu, Pb, Zn, Ni, Co, Ag, Mo, As, -(circle)

Others _____

Field Analysis (_____ tests)

Extraction Method _____

Analytical Method _____

Reagents Used _____

Field Laboratory Analysis

No. (_____ tests)

Extraction Method _____

Analytical Method _____

Reagents Used _____

Commercial Laboratory (_____ tests)

Name of Laboratory _____

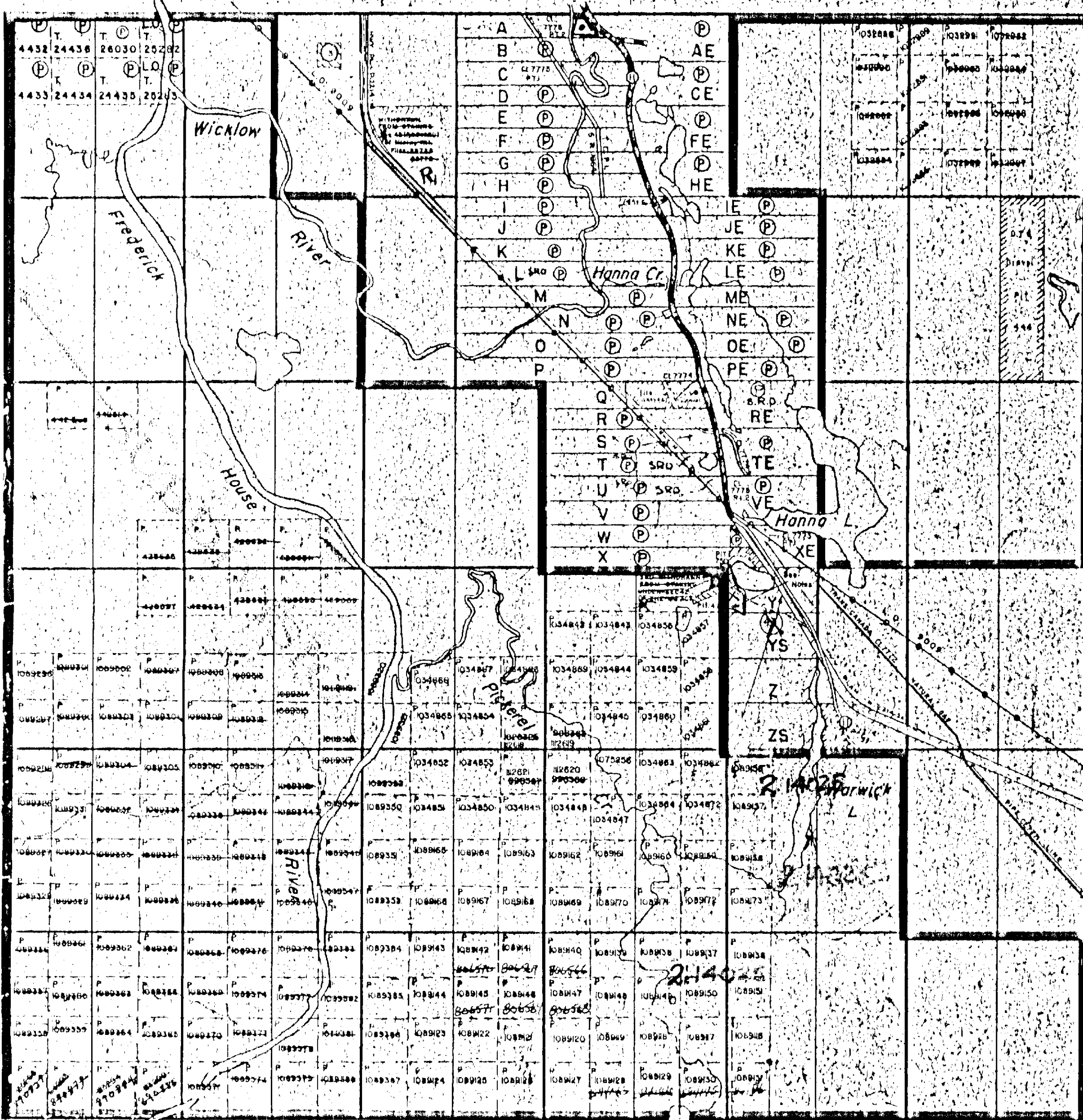
Extraction Method _____

Analytical Method _____

Reagents Used _____

General _____

Lamarche Twp.



THE TOWNSHIP OF







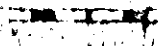
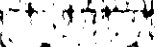


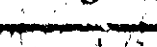
HANNA

DISTRICT OF COCHRANE

PORCUPINE MINING DIVISION

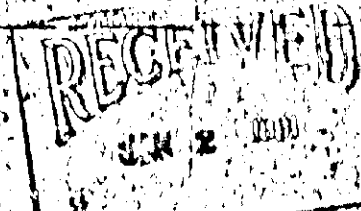
SCALE: 1-INCH=40 CHAINS

LEGEND

- PATENTED LAND 
- CROWN LAND SALE 
- LEASES 
- LOCATED LAND 
- LICENSE OF OCCUPATION 
- ROADS 
- IMPROVED ROADS 
- RAILWAYS 
- POWER LINES 
- MARSH OR MUSKEG 
- KING'S HIGHWAY 

NOTES

400' Surface rights reservation around all lakes & rivers



REG. PLAN NO. M 490 COVERS LOTS "A" TO "X" IN CON. 3 TO CON. 6

Surface Rights Only reserved to Dept. of Lands & Forests shown in this File # 98605

See L.B.F. File 98605 - 22598 No Gravel On Loc. XE & Loc. Y

Disposition	Date	File No.
W 54/73 (43) 88778	8/11/73	88778
W 52/74 88800	12/8/74	88800
W 40/85 88805	5/1/85	88805

making under Section 150 (1)(c)

R1 - S.R. & M.R. REOPENED FOR STAKING L.U.P. - 1

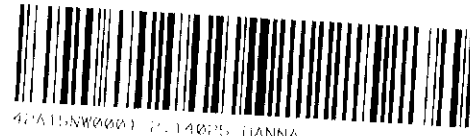
X 400' Required: N.R.O. 74/64

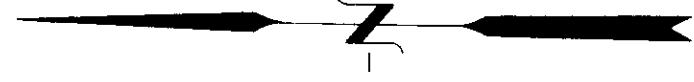
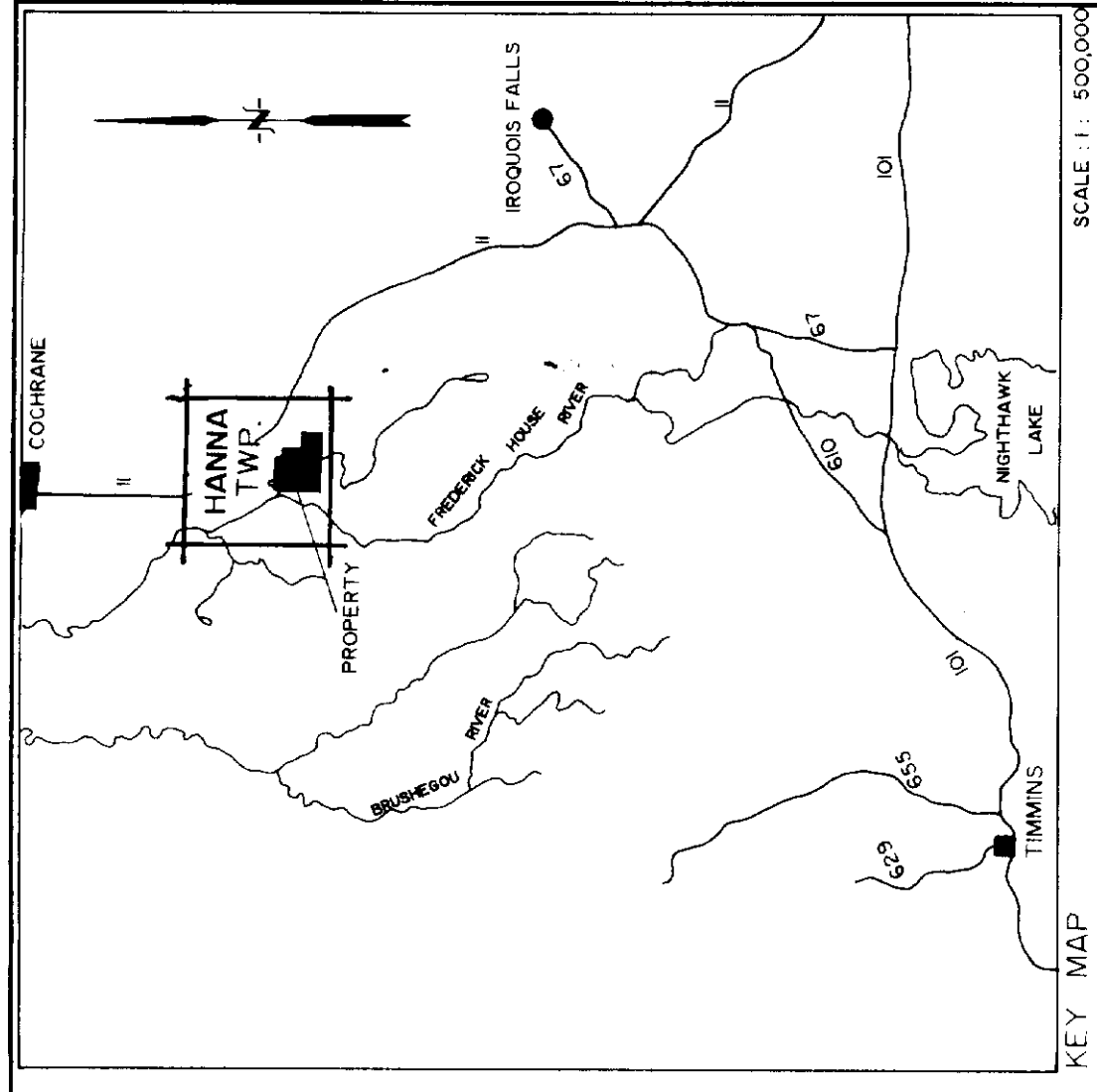
Received May 5/80

PLAN NO. - M 490

ONTARIO
MINISTRY OF NATURAL RESOURCES
SURVEYS AND MAPPING BRANCH

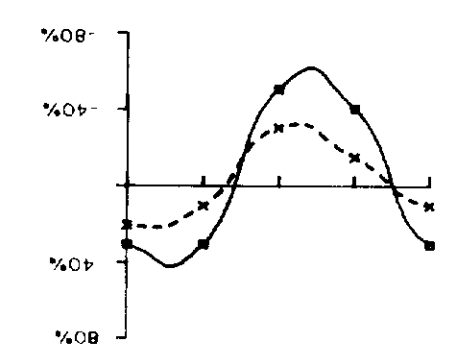
NOTE THAT THIS MAP WAS COMPILED FROM VARIOUS SOURCES. THE ACCURACY IS NOT GUARANTEED. THOSE WHO TAKE MINING STAKES SHOULD CONSULT THE MINING DIVISION FOR DEVELOPMENT INFORMATION. FOR ADDITIONAL INFORMATION CONSULT THE DIVISION HEREON.





Clampnets:
 ■ Located
 □ Unlocated
 --- Anomaly

Instrument : Apex Parametrics MaxMin I
 Frequency : 1777 Hz
 Coil Separation : 150 metres
 Profile Scale : 1 cm = 40%



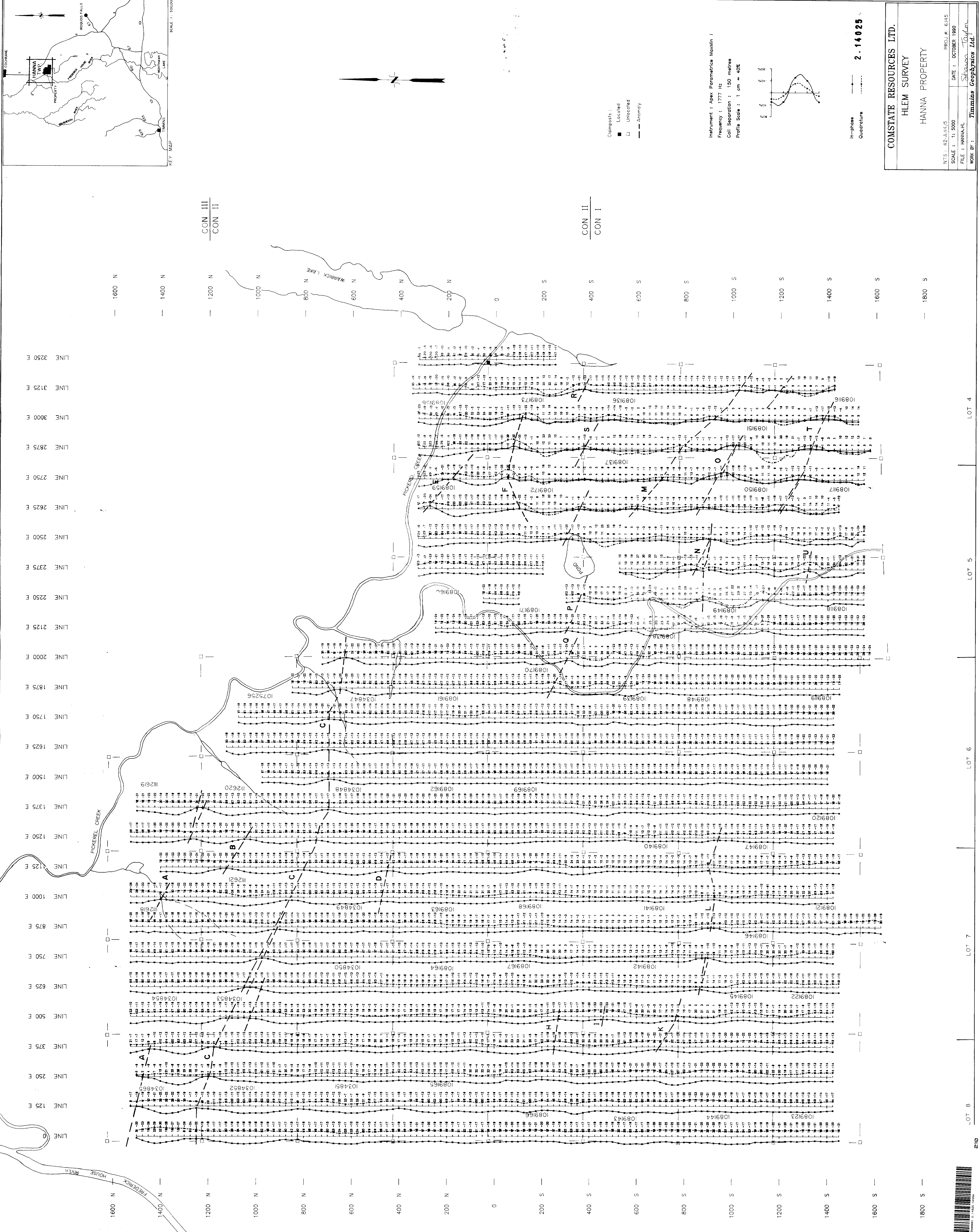
In-phase
 Quadrature
 2.14025

COMSTATE RESOURCES LTD.
 HLEM SURVEY
 HANNA PROPERTY

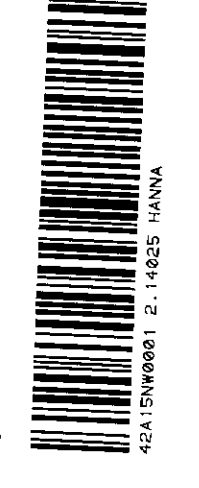
NTS : 42-A/15/5
 DATE : OCTOBER 1990
 FILE : HANNA.HL
 WORK BY : *Shelley Taylor*
 Timmins Geophysics Ltd.

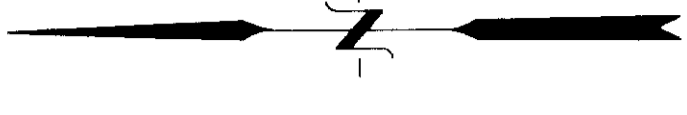
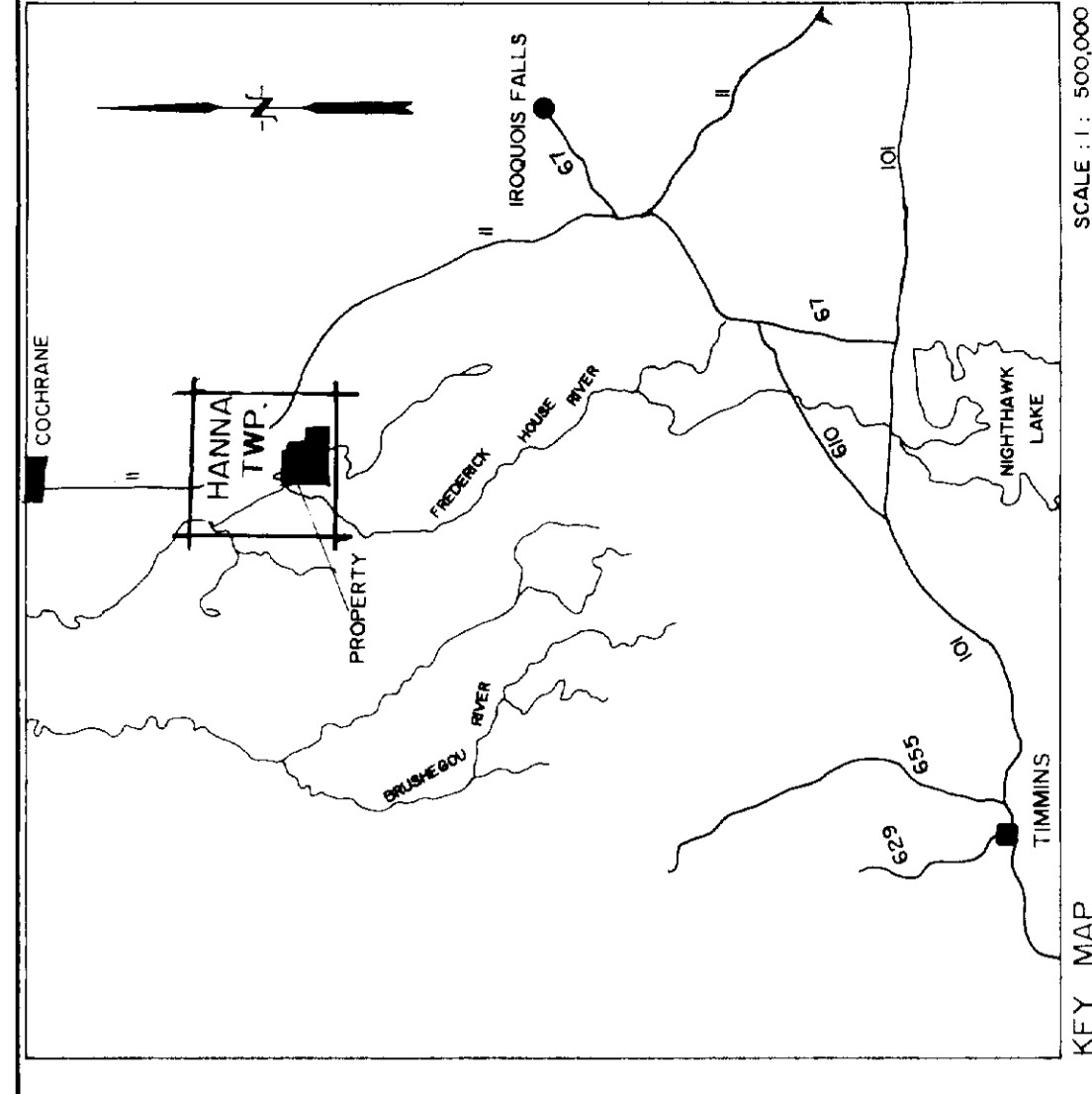
CON III
 CON II

CON II
 CON I



LOT 4
 LOT 5
 LOT 6
 LOT 7
 LOT 8





- Clampnets:
- Located
 - Unlocated
 - Anomaly (444 Hz)
 - ▲ Base Station
 - ~ Possible Faults

Instrument : Scintrex 105-2/MP-4
 Type : Total Field Proton Precession
 Datum Level : 58000 gamma
 Contour Interval : 100 gamma

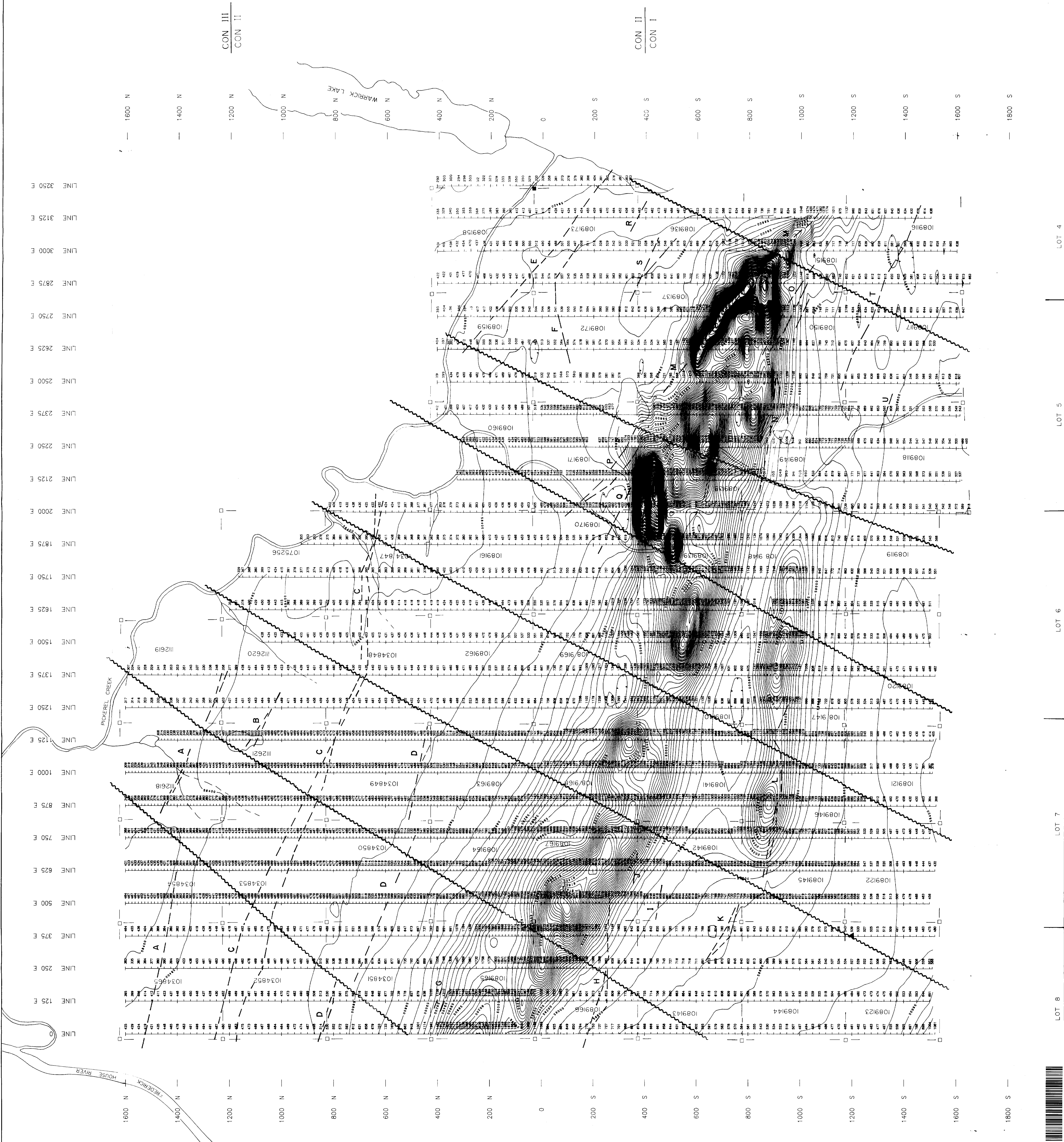
2.14025

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 MAGNETIC SURVEY
 HANNA TOWNSHIP

NTS : 42-A/1/15
 SCALE : 1:5000
 FILE : HANNA.MAG
 WORK BY : *Shannon Taylor*
 Thimmins Geophysics Ltd.

CON III
 CON II

CON II
 CON I



LOT 4

LOT 5

LOT 6

LOT 7

LOT 8

230

