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GEOPHYSICAL REPORT
JOHN CHARLES GRANT
ON THE
STAR LAKE PROPERTY
KEEFER TOWNSHIP
PORCUPINE MINING DIVISION
NORTHEASTERN, ONTARIO

JCGrant

Prepared by: J. C. Grant,
January 2020

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INTRODUCTION:

The services of Exsics Exploration Limited were retained by Mr. Grant to complete two test lines of Induced Polarization, (IP), across a section of a claim block located in the northeast section of Keefer Township of the Porcupine Mining Division in northeastern, Ontario.

The grid lines were completed in a northwest direction commencing in the southeast corner of a bay on Star Lake and both lines were centered on the lake.

PROPERTY LOCATION AND ACCESS:

The Star Lake Property is situated approximately 34 kilometers to the west-southeast of the City of Timmins. The entire claim block is located in the northeast section of the Township, covering the majority of the north and eastern sections Star Lake. The eastern boundary lies about 500 meter to the west of Denton Lake. Highway 101 west lies approximately 800 meters to the south east of the grid area. Refer to Figures 1 and 2 of this report.

Access to the grid areas during the survey period was ideal. Highway 101 travels west from Timmins and approximately 35 kilometers to the west the highway intersects the Star Lake access road which is an all-weather gravel road that services the community of Star Lake which lies about 2 kilometers northwest of the road junctions. This access road provided two wheel drive access to within 300 meters of the south end of the two grid lines covered by the IP program. Travelling time from Timmins to the grid is about 40 minutes. Figures 1 and 2.

Figure 3 is a copy of the two grid lines showing the start and end UTM points for each of the grid lines that were surveyed.

LOCATION MAP



FIGURE 1 LOCATION MAP

PROPERTY LOCATION MAP

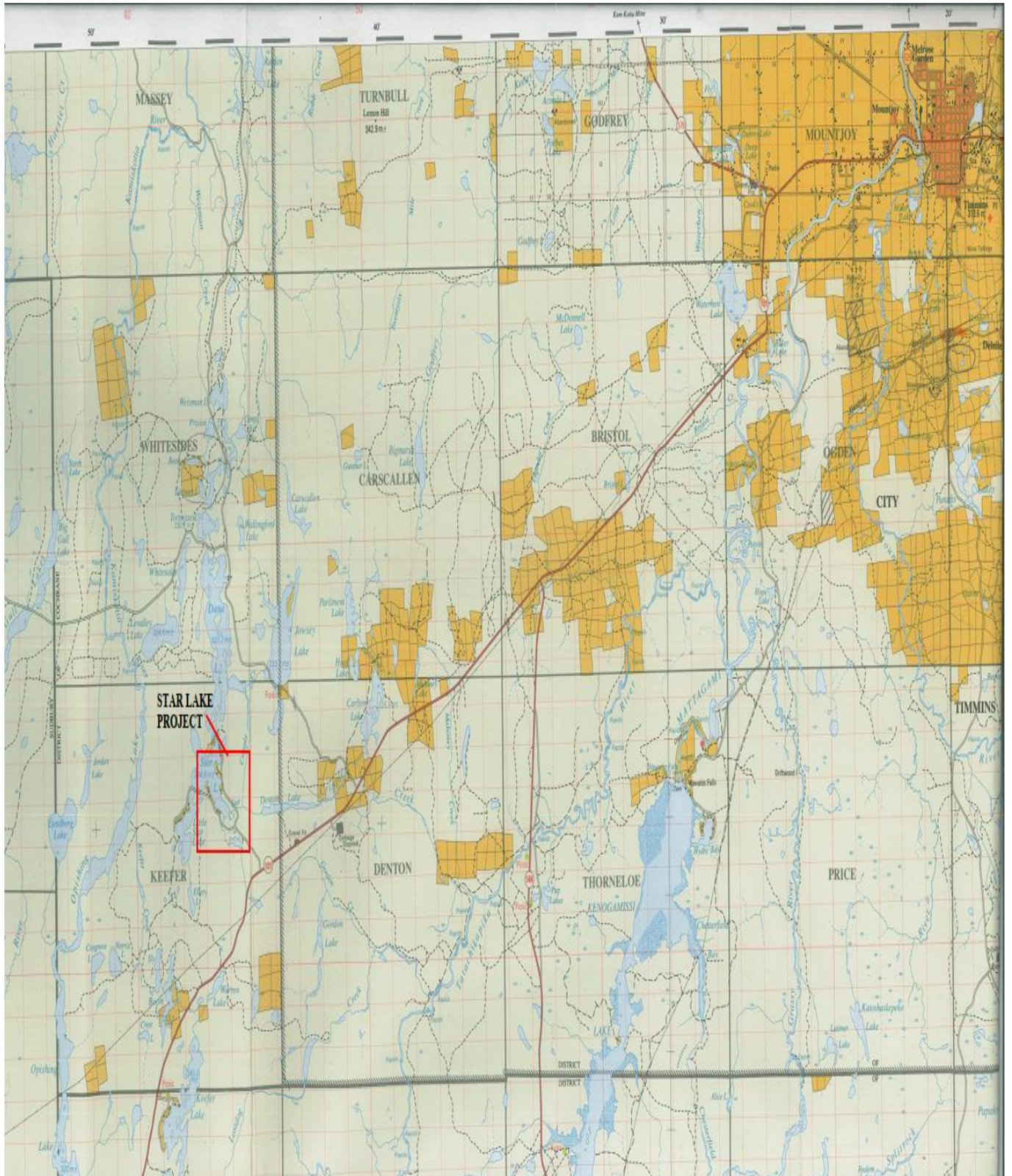
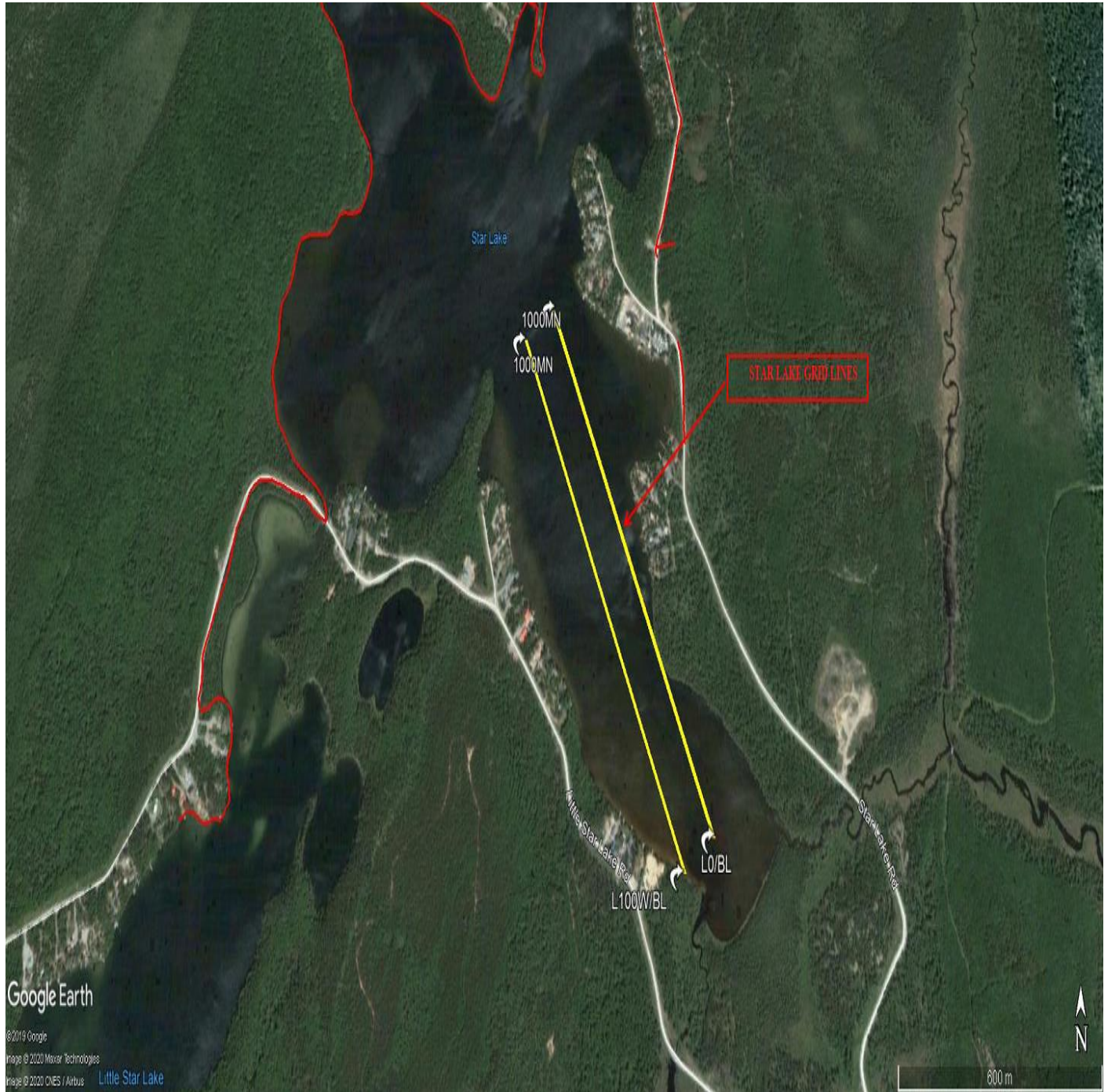


FIGURE 3 GRID LINE ORIENTATION:



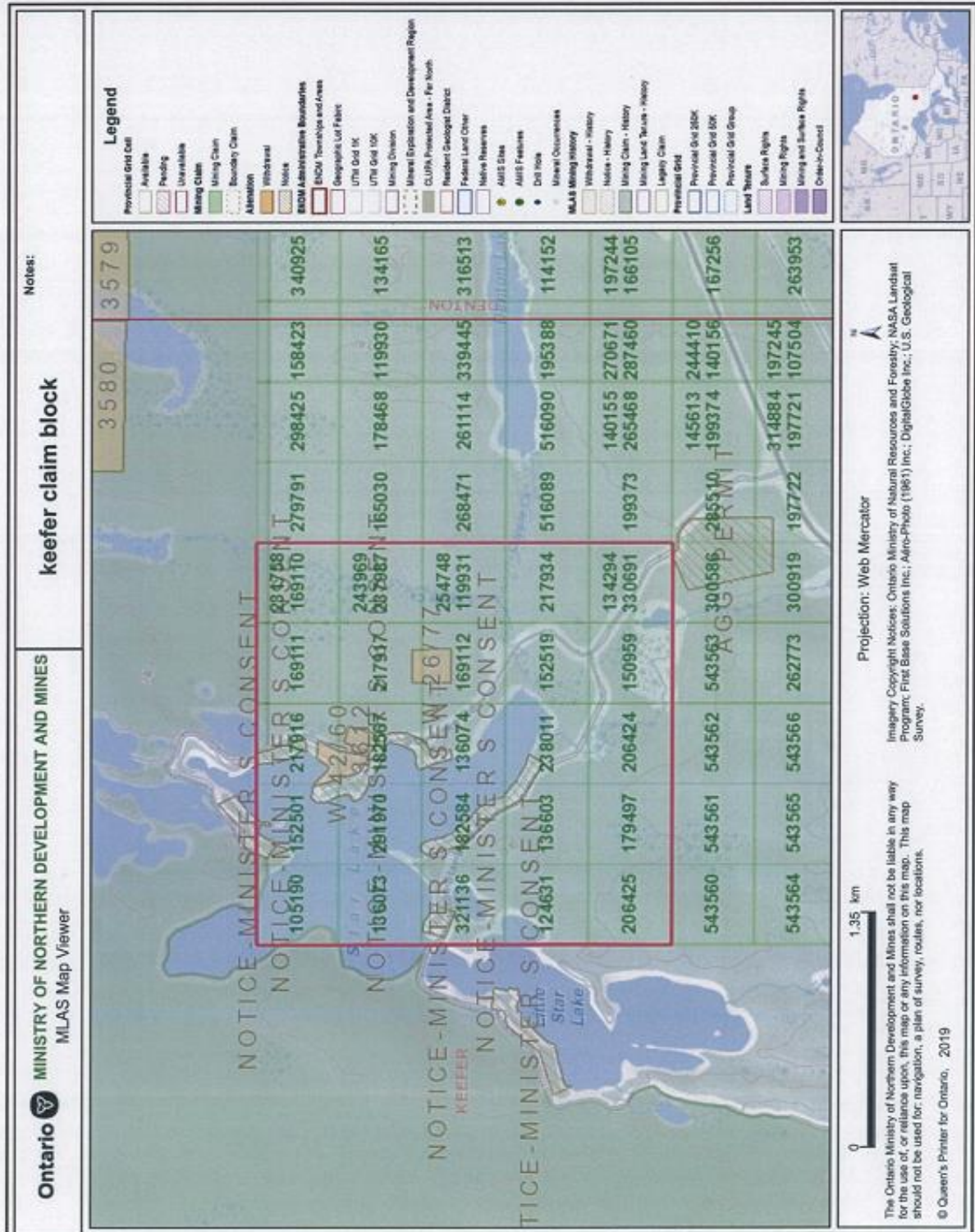
CLAIM BLOCK:

The claim numbers that were covered by the present geophysical survey are outlined in blue on Figure 4 below.

105190, 321136, 291970, 254748, 237987, 217934, 217917, 217916, 182584, 182567, 169112, 169111, 169110, 152519, 152501, 136074, 136073, 124631, 238011, 206425, 206424, 179497, 150959, 136603, 134294

Refer to Figure 4 that was copied from MNDM Plan Map of Keefer Township and shows the location and positioning of the claim block numbers within the Township.

FIGURE 4 CLAIM BLOCK OUTLINE



PERSONNEL:

The field crew directly responsible for the collection of all the raw IP data were as follows.

C. Gloster	Timmins, Ontario
D. Poirier	Timmins, Ontario
J. Francoeur	Timmins, Ontario
G. Martin	Timmins, Ontario
D. Clement	Timmins, Ontario

The program was completed under the direct supervision of J. C. Grant and all of the plotting, interpretation and report was completed by J. C. Grant of Exsics.

GROUND PROGRAM:

The ground program consisted of two grid line approximately 1000 meters in length that commenced at the southeast corner of Star Lake with line 0+00/BL at UTM point 443810E and 5353995N and Line 100MW/BL commencing at 443720E and 5353940N. Both lines ran at an azimuth of 350 degrees from these start points and are completely in the lake, Figure 3. The lines were then covered by an IP survey using the Instrumentation GDD 3.6 kilowatt transmitter and the 8 channel receiver. In all 2 kilometers of lines were completed between January 20th and 21st 2020.

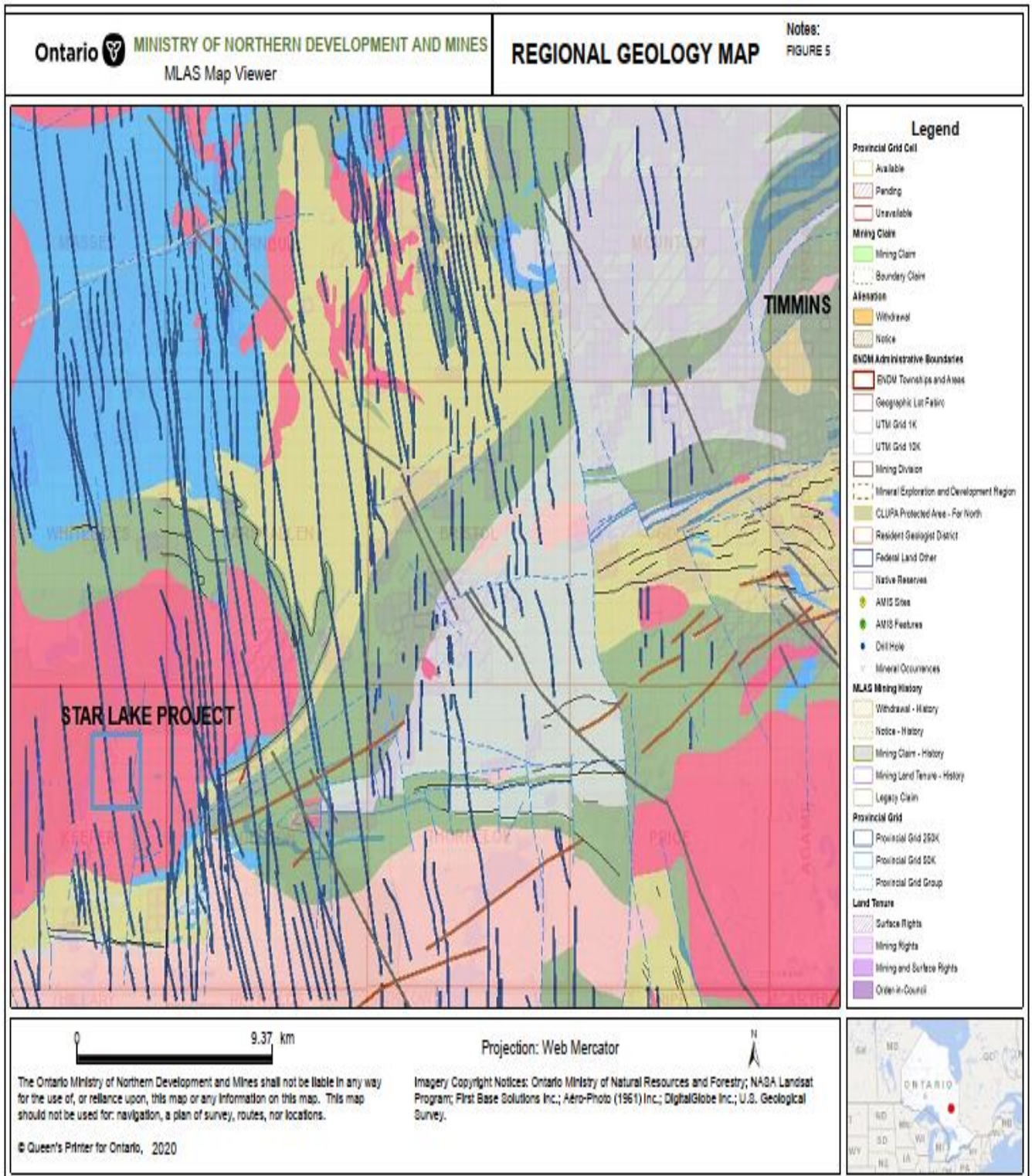
Specifications for these units can be found as Appendix A of this report. The following parameters were kept constant throughout the survey.

IP SURVEY

Station spacing	25 meters
Reading intervals	25 meters
IP method	Time domain
IP array	Pole-Dipole
Delay time	240Ms
Timing	80Ms through 20 windows
Number of electrodes	5 stainless steel
Electrode spacing	25 meters
Parameters measured	Chargeability and Apparent Resistivity

Once the IP survey was completed the data was then plotted as individual line pseudo-sections, one section for each line read. These sections show the contoured results for the collected chargeabilities, resistivities and a calculated metal factor. Interpretations for any and all conductive zones were then put on each section along with corresponding resistivity high correlations. Refer to Figure 3 for grid line locations and orientations.

REGIONAL AND PROPERTY GEOLOGY MAP:



REGIONAL AND PROPERTY GEOLOGY:

The Star Lake Property is generally underlain by granites that have been cross cut by a number of dike like units and two north to northwest striking fault zones. The granites in turn are surrounded by mafic to intermediate metavolcanics along the northern, southern and eastern boundaries. Several narrow bands of felsic metavolcanics are known to intrude into the mafic units.

Regionally the property sits completely within granites and to the north of the main Porcupine Destor Fault Zone that strikes across the Timmins camp.

IP SURVEY RESULTS:

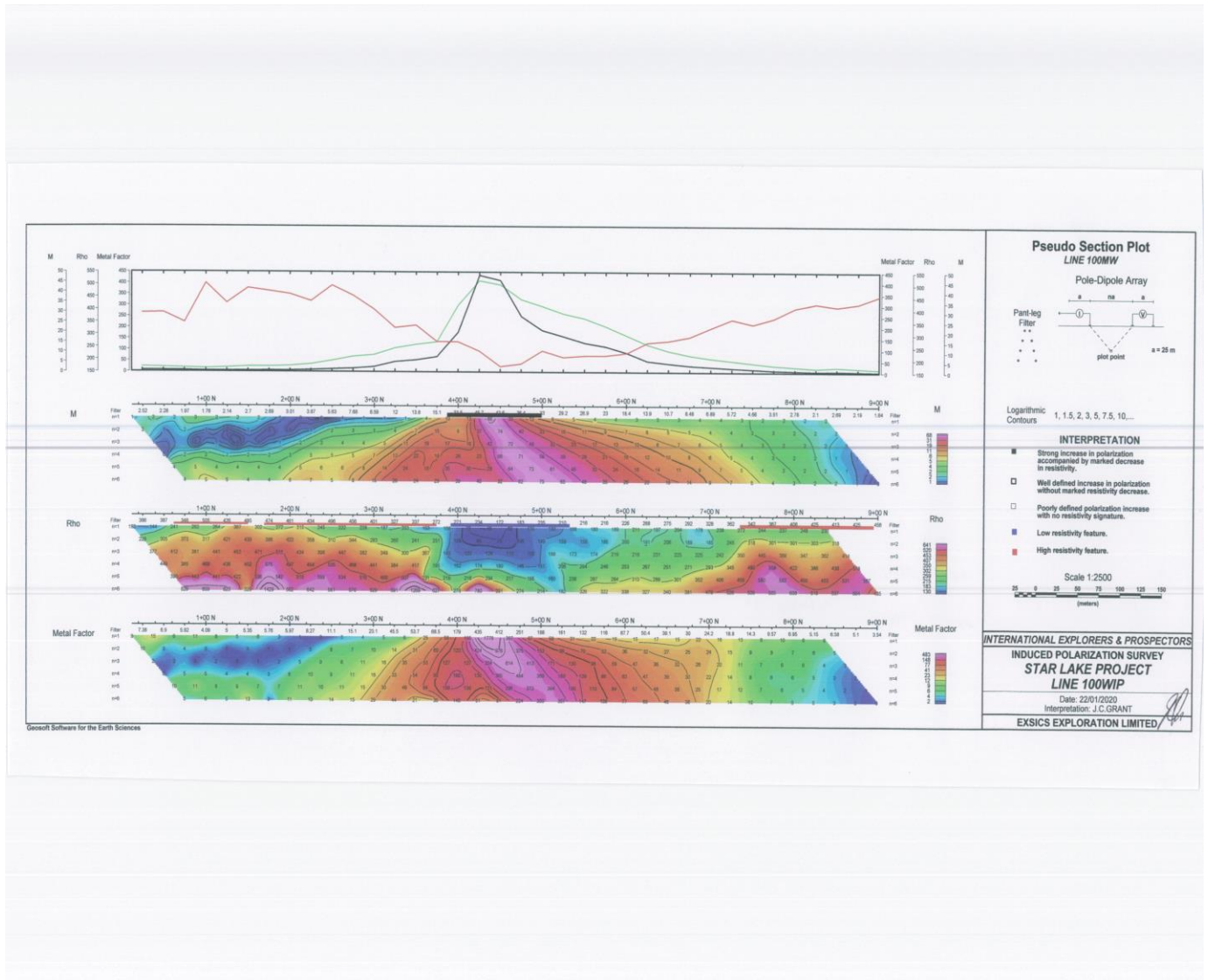
The IP survey was successful in outlining a significant chargeability high with a good resistivity low association suggesting a highly conductive zone. The zone has been well defined on both of the grid lines.

LINE 100+00MW:

Line 100MW outline a very good strong chargeability high situated between 400MN and 500MN. The zone has a good resistivity low association suggesting the target is high conductive.

There does not appear to be any further zones along the length of the survey line. The entire line is within Star Lake approximately 200 meters from the eastern shore line.

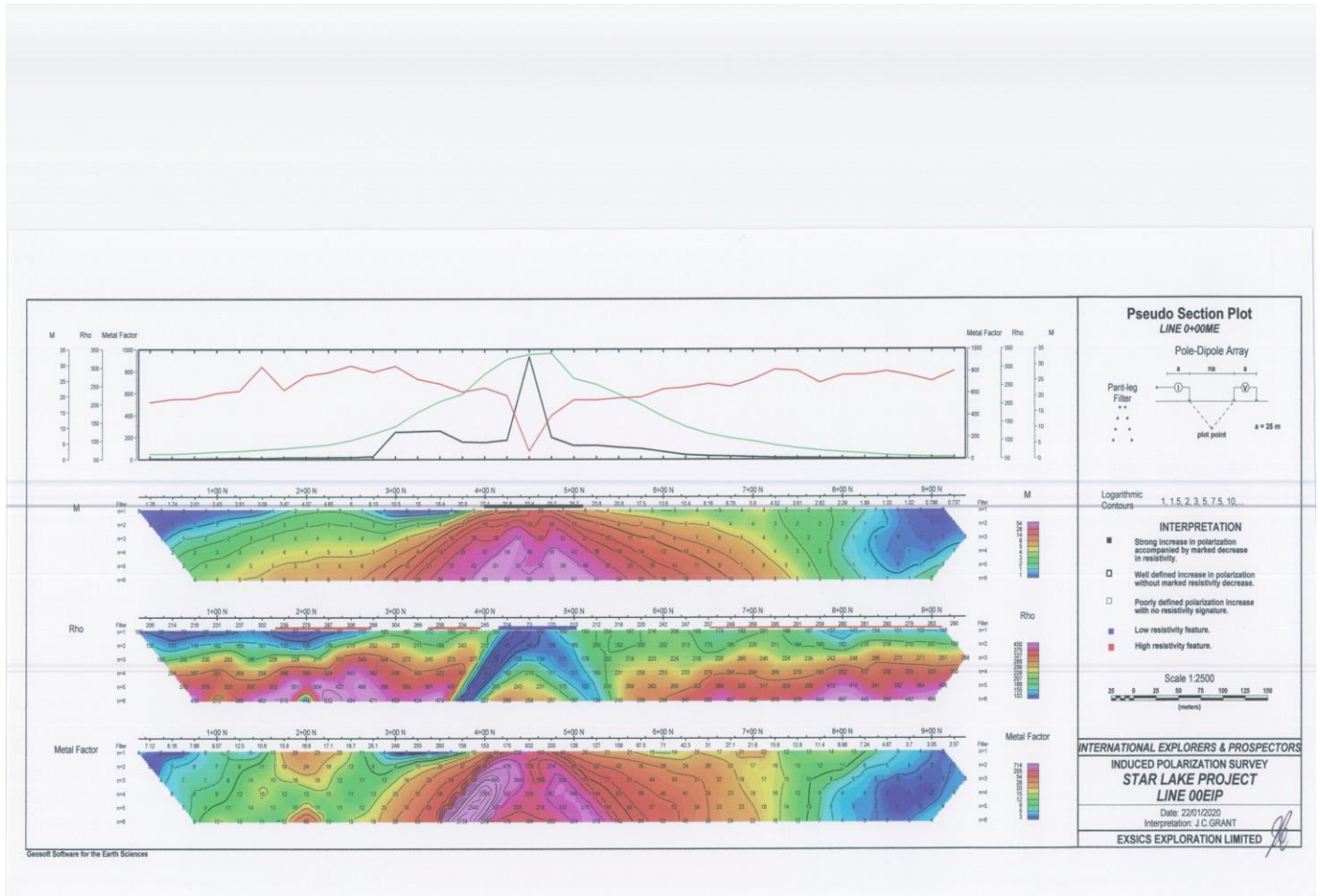
LINE 100MW IP SECTION



LINE 0+00 IP

Line 0+00 outline a very simialr response as line 100MW with a good strong chargeability high situated between 400MN and 500MN. This zone also correaltes to a good resistivity low again suggesting a high conductive zone. There does not appear to be any other areas of interest along the line and this line lies entirely within Star Lake and just off of the eastren shore of the lake.

LINE 0+00 IP SECTION



CONCLUSIONS AND RECOMMENDATIONS:

The survey was successful in outlining a very good strong and highly conductive zone lying between 400MN and 500MN on both grid lines. The zone remains open in both directions and the target at this writing is within the lake just off of the eastern shore.

A magnetic survey over the two lines may help in defining if the zone correlates to a graphite or iron rich formation. Once the survey was done a follow up drill program should be considered to test the target.

Respectfully submitted

JCGrant

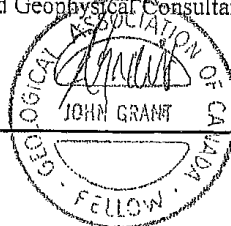
J. C. Grant
January 2020.

CERTIFICATION

I, John Charles Grant, of 108 Kay Crescent, in the City of Timmins, Province of Ontario, hereby certify that:

- 1). I am a graduate of Cambrian College of Applied Arts and Technology, 1975, Sudbury Ontario Campus, with a 3 year Honors Diploma in Geological and Geophysical Technology.
- 2). I have worked subsequently as an Exploration Geophysicist for Teck Exploration Limited, (5 years, 1975 to 1980), and currently as Exploration Manager and Chief Geophysicist for Exsics Exploration Limited, since May, 1980.
- 3). I am a member in good standing of the Certified Engineering Technologist Association, (CET), since 1984.
- 4). I am in good standing as a Fellow of the Geological Association of Canada, (FGAC), since 1986.
- 5). I have been actively engaged in my profession since the 15th day of May, 1975, in all aspects of ground exploration programs including the planning and execution of field programs, project supervision, data compilation, interpretations and reports.
- 6). I have no specific or special interest nor do I expect to receive any such interest in the herein described property. I have been retained by the property holders and or their Agents as a Geological and Geophysical Consultant and Contract Manager.

John Charles Grant, CET., FGAC.



APPENDIX A



Canadian Manufacturer of Geophysical Instrumentation since 1976
Sales, Rental, Customer Service, R&D and Field training

WWW.GDD.CA

IP Receiver Model GRx8-32

«Field users have reported that the GDD IP Receiver provided more reliable readings than any other time domain IP receiver and it reads a few additional dipoles. »



FEATURES

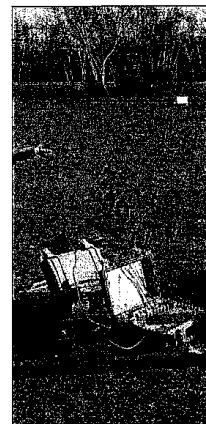
- 8 channels expandable to 16, 24 or 32
- Reads up to 32 ch. simultaneously in poles or dipoles
- PDA menu-driven software / simple to use
- 32 channels configuration allows 3D Survey:
 - 4 lines X 8 channels - 2 lines X 16 channels
 - 1 line X 32 channels
- Link to a PDA by wireless communication or a serial cable
- Real-time data and automatic data stacking (Full Wave)
- Screen-graphics: decay curves, resistivity, chargeability
- Automatic SP compensation and gain setting
- 20 programmable chargeability windows
- Survey capabilities: Resistivity and Time domain IP
- One 24 bit A/D converter per channel
- Gain from 1 to 1,000,000,000 (10^9)
- Shock resistant, portable and environmentally sealed

GRx8-32: This new receiver is a compact and low consumption unit designed for high productivity Resistivity and Induced Polarization surveys. Its high ruggedness allows it to work under any field conditions.

User modes available: Arithmetic, logarithmic, semi-logarithmic, Cole-Cole, IPR-12 and user defined.

IP display: Chargeability values, Resistivity values and IP decay curves can be displayed in real time. The GRx8-32 can be used for monitoring the noise level and checking the primary voltage waveform.

Internal memory: A 4 Go (or more) Compact Flash memory card is used to store the readings. Each reading includes the full set of parameters characterizing the measurements for all channels; the full wave signal for post-treatment processing. The data is stored in flash type memory not requiring any battery power for safekeeping.



Manufactured in Canada by Instrumentation GDD Inc.

New IP Receiver Model GRx8-32 with PDA

GRX8-32: This new receiver is a compact and low consumption unit designed for high productivity Resistivity and Induced Polarization surveys. It features high ruggedness allowing to work in any field conditions

Reception poles/dipoles: 8 simultaneous channels expandable to 16, 24 or 32, for dipole-dipole, pole-dipole or pole-pole arrays.

Programmable windows: The GRX8-32 offers twenty fully programmable windows for a higher flexibility in the definition of the IP decay curve.

User modes available: Arithmetic, logarithmic, semi-logarithmic, Cole-Cole and user define.

IP display: Chargeability values, Resistivity values and IP decay curves can be displayed in real time. The GRX8-32 can be used for monitoring the noise level and checking the primary voltage waveform.

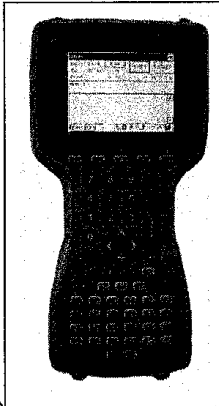
Internal memory: The memory of 64 megabytes can store 64,000 readings. Each reading totalizes one kilobyte and includes the full set of parameters characterizing the measurements on 8 channels. The data is stored in flash memories not requiring any lithium battery for safeguard. The memory can hold many days worth of data. It also stores fullwave form of the signal at each electrode for post-treatment.

Features:

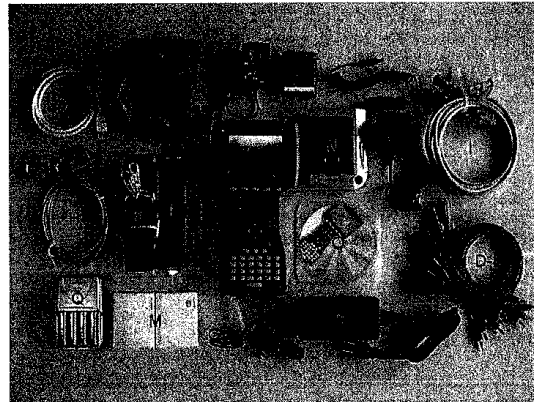
- 8 channels expandable to 16, 24 or 32
- Reads up to 32 ch. simultaneously in poles or dipoles configuration
- PDA menu-driven software / simple to use
- 32 channels configuration allows 3D Survey: 4 lines X 8 channels, 2 lines X 16 channels or 1 line X 32 channels
- Link to a PDA by Bluetooth or RS-232 port
- Real-time data and automatic data stacking
- Self-test diagnostic
- Screen-graphics: decay curves, resistivity, chargeability
- Automatic SP compensation and gain setting
- 20 programmable chargeability windows
- Survey capabilities: Resistivity and Time domain IP
- One 24 bit A/D converter per channel
- Gain from 1 to 1,000,000,000 (10^9)
- Shock resistant, portable and environmentally sealed



GDD IP Receiver model GRx8-32



PDA included with GRX8-32
Standard Juniper -
Allegro CX mobile PDA

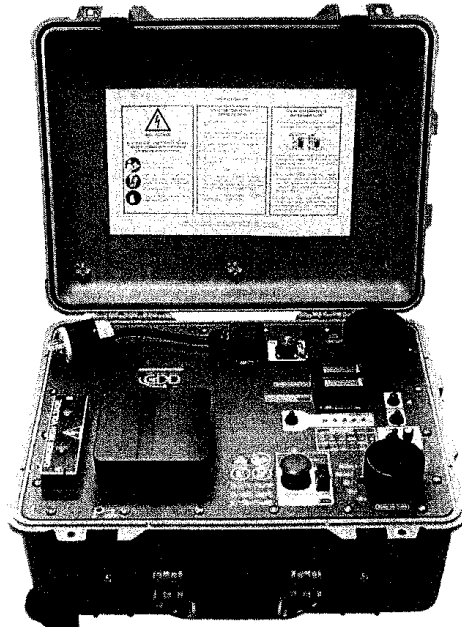


Components included with
GDD IP Receiver GRx8-32

IP Transmitter

Model TxII
5000W-2400V-15A

Instruction Manual

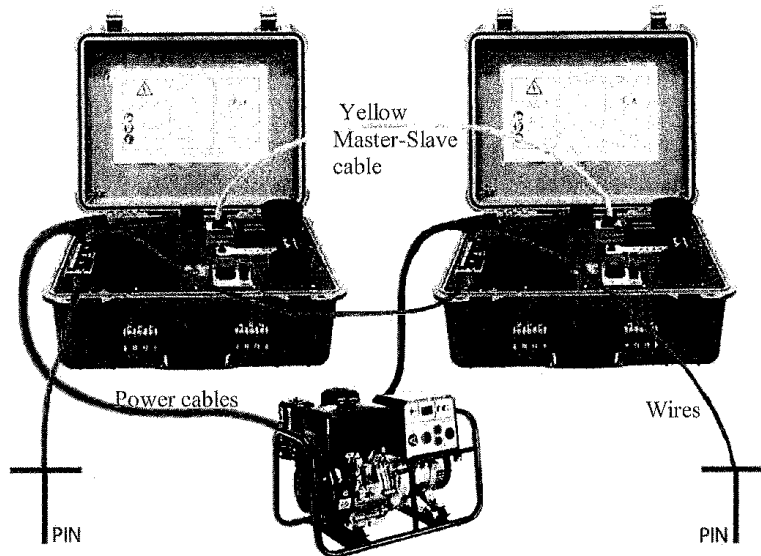


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E-Mail: gdd@gdd.ca
Web site: www.gdd.ca

6. MASTER / SLAVE MODE

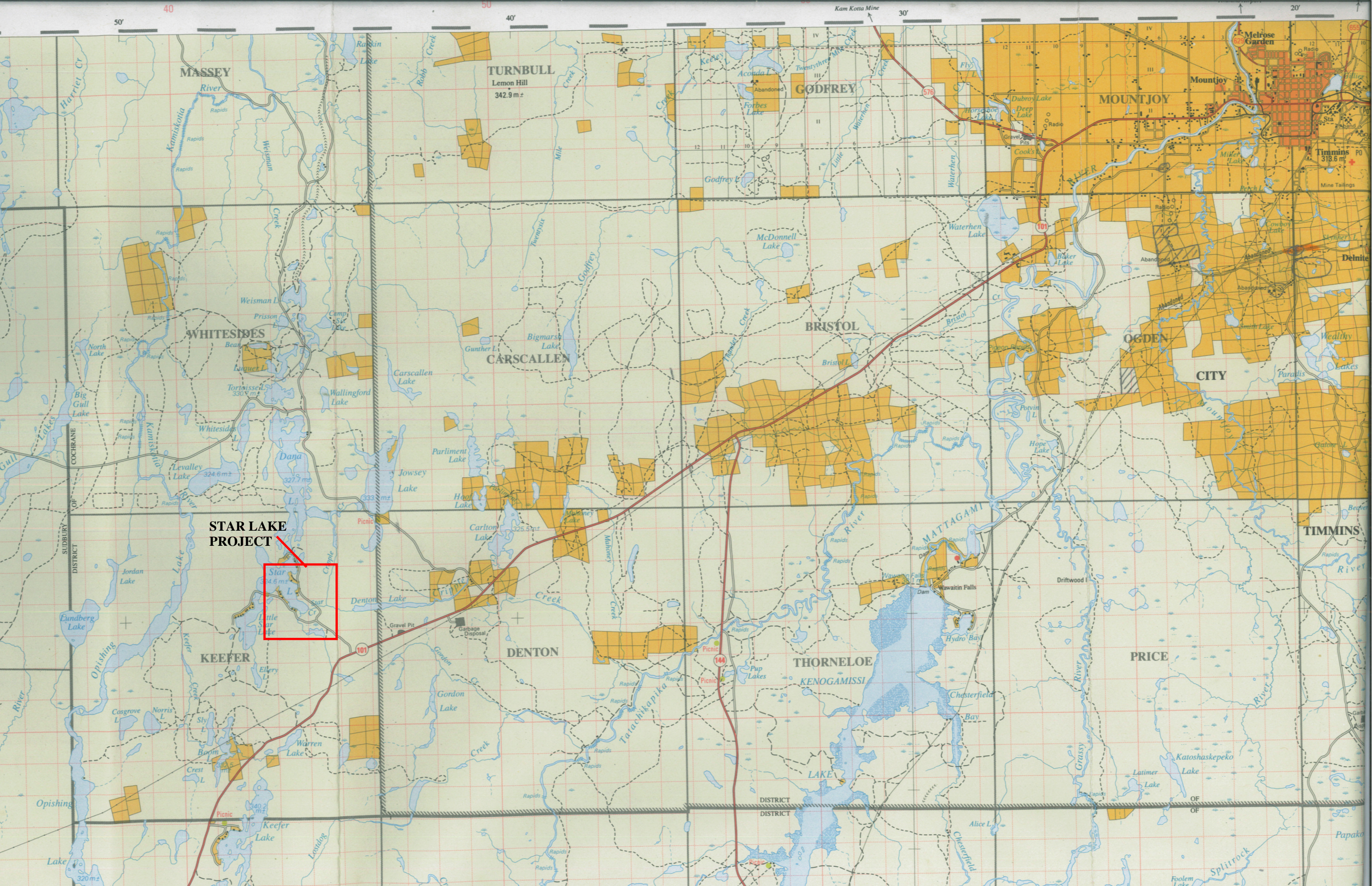
Here are the basic steps for a Master/Slave operation of the TxII:

1. Connect the yellow synchronization cable (Master/Slave) to the transmitters. The Master/Slave cable terminations are different: one is labeled *MASTER* and the other one *SLAVE*. The transmitter is *MASTER* or *SLAVE* according to the termination of the cable connected on its interface. The *MASTER* and *SLAVE* LEDs indicate the mode of each transmitter. (see figure 2, yellow line)
2. Connect an insulated wire between the terminal (A) of one transmitter and the terminal (B) of the other one. (see figure 2, blue line)
3. Connect the two power cables from the transmitters to the generator. (see figure 2, red lines)
4. Drive the electrodes into the ground and connect them to the unused terminals (A) and (B) by using insulated wires. (see figure 2, blue lines)



9. SPECIFICATIONS

Size :	TxII-5000W with a blue carrying case: 34 x 52 x 76 cm TxII-5000W only: 26 x 45 x 55 cm
Weight :	TxII-5000W with a blue carrying case: ~ 58 kg TxII-5000W only: ~ 40 kg
Operating Temperature :	-40°C to 65°C (-40°F to 150°F)
Time Base:	2 s ON+, 2 s OFF, 2 s ON- DC, 1, 2, 4, 8 or 16 s
Output current :	0.030A to 15A (normal operation) 0.0A to 15A (cancel open loop) Maximum of 7.5A in DC mode
Rated Output Voltage :	150V to 2400V Up to 4800V in a master/slave configuration
LCD Display :	Output current, 0.001A resolution Output power Ground resistance (when the transmitter is turned off)
Power source :	220-240V / 50-60Hz



STAR LAKE PROJECT



MASSEY

TURNBULL
Lemon Hill
342.9 m ±

GODFREY

MOUNTJOY

WHITESIDES

CARSCALLEN

BRISTOL

OGDEN

CITY

STAR LAKE PROJECT



DENTON

THORNELOE

PRICE

KEEFER

KENOGAMISSI

TIMMINS

KEEFER

Alice L.

Katoshaskepeko

Latimer Lake

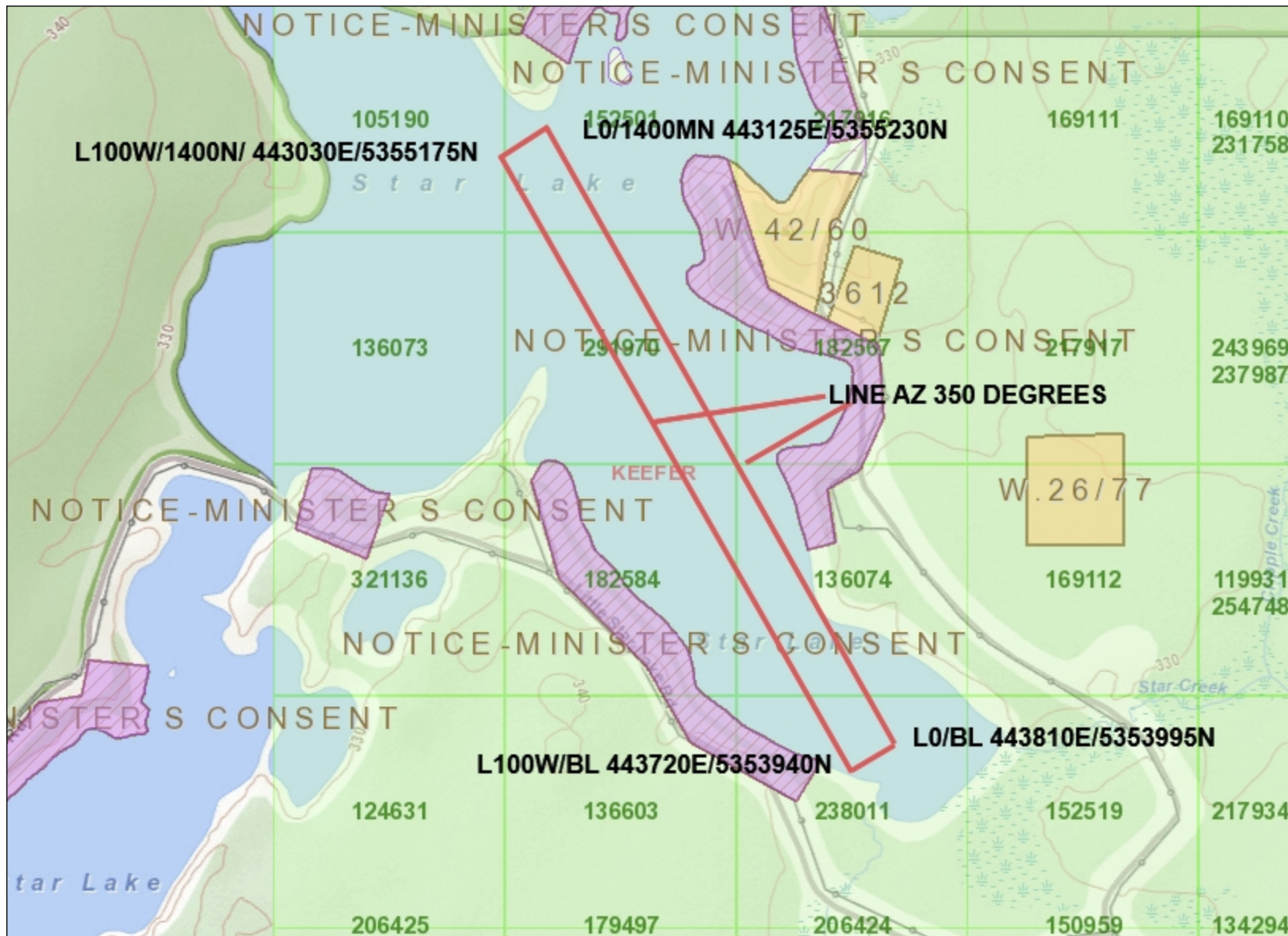
Foolam Lake

Splitrock

Papako

Star L.





Legend

- Provincial Grid Cell**
 - Available
 - Pending
 - Unavailable
- Mining Claim**
 - Mining Claim
 - Boundary Claim
- Alienation**
 - Withdrawal
 - Notice
- ENDM Administrative Boundaries**
 - ENDM Townships and Areas
 - Geographic Lot Fabric
 - UTM Grid 1K
 - UTM Grid 10K
 - Mining Division
 - Mineral Exploration and Development Region
 - CLUPA Protected Area - Far North
 - Resident Geologist District
 - Federal Land Other
 - Native Reserves
- AMIS Sites**
 - AMIS Sites
 - AMIS Features
 - Drill Hole
 - Mineral Occurrences
- MLAS Mining History**
 - Withdrawal - History
 - Notice - History
 - Mining Claim - History
 - Mining Land Tenure - History
 - Legacy Claim
- Provincial Grid**
 - Provincial Grid 250K
 - Provincial Grid 50K
 - Provincial Grid Group
- Land Tenure**
 - Surface Rights
 - Mining Rights
 - Mining and Surface Rights
 - Order-in-Council



Projection: Web Mercator



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