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# Quantec Geoscience Inc.

# **Geophysical Survey Interpretation Report**



Regarding
TRANSIENT EM 3-D BOREHOLE SURVEYS
JUNIOR LAKE PROPERTY,
near Armstrong, ON
on behalf of
LANDORE RESOURCES CANADA INC.
Thunder Bay, ON
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QG-405 S.T Coulson March 2006 Porcupine, ON

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#### 1. INTRODUCTION

QG Project No:

QG-405

Client Name:

LANDORE RESOURCS CANADA INC.

Client Address:

555 Central Ave., Suite #1,

Thunder Bay, ON P7B 5R1

Project Name:

Junior Lake

Survey Period:

December 9<sup>th</sup> - 20<sup>th</sup>, 2005

Survey Type:

3-D Borehole Profiling Survey

Client Representative:

Jim Garber

Survey Objectives:

a) Using the 3-D Borehole profiling technique, characterize mineralization intersected in drill holes and identify and locate conductive bodies, off-hole within 50m to 100m radius of the borehole.

Report Type:

Interpretation

#### 2. GENERAL SURVEY DETAILS

#### 2.1 Location

General Area:

Lake Nipigon

Province:

Ontario

Country:

Canada

Nearest Settlement:

Armstrong, ON

Nearest Highway:

Hwy. 527

NTS Map Reference:

521/7

Claims Covered:

B4-7 Zone – PA39126 VW Zone - 1217179

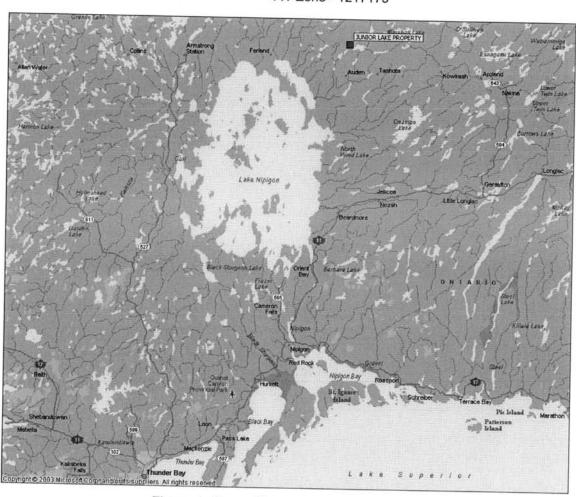


Figure 1: General Location of the Junior Lake Property

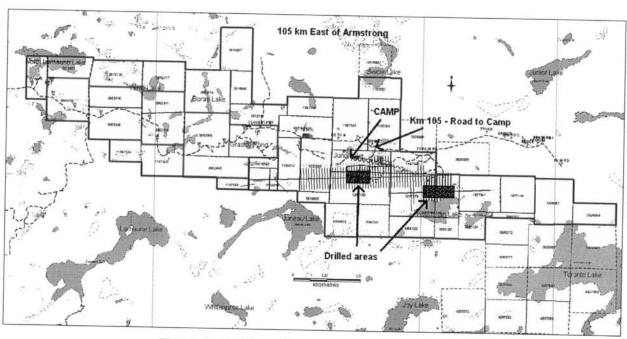


Figure 2: Grid Locations on the Junior Lake Property

#### 2.2 Access

Base of Operations: Armstrong, ON

Distance by Land to Property: Approx. 105km. east of Armstrong on logging roads

Mode of Access to Area:
 Truck

Mode of Access to Holes:
 Snowmobile

#### 2.3 Survey Grids

Coordinate Reference System: Local Grids (UTM, Nad 83, Zone 16 ref.)

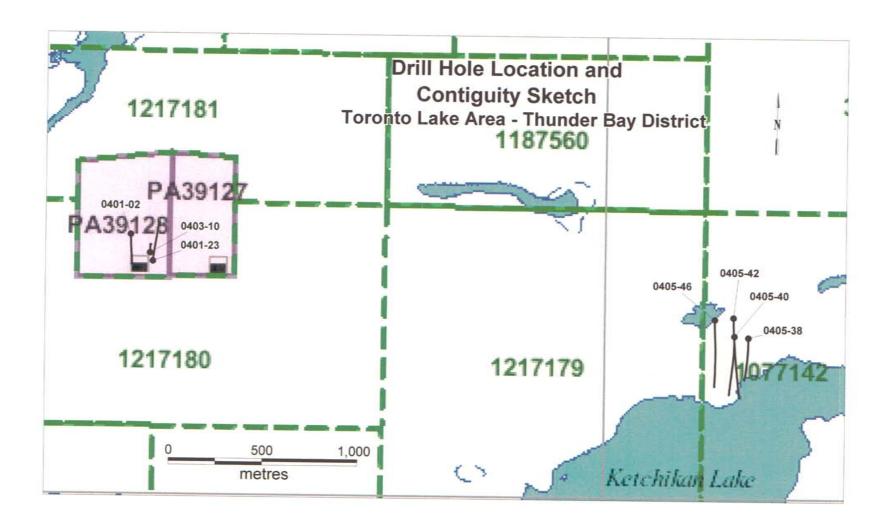
Established By: Landore Resources

Method of Chaining: slope

Base Line Direction:

Line Separation: 100 meters

Station Interval: 25 meters



#### SURVEY WORK

#### 3.1 Generalities

Survey Dates:

December 9<sup>th</sup> - 20<sup>th</sup>, 2005

Survey Period:

12 days

Survey Days:

7.5

Total Survey Coverage: 2,225m (see Table I)

| Hole      | Min Extent | Max Extent | Total Survey (m)   |  |  |
|-----------|------------|------------|--------------------|--|--|
| B4-7 Zone |            |            | Total Survey (III) |  |  |
| 0405-38   | 10         | 170        | 170                |  |  |
| 0405-40   | 10         | 420        | 420                |  |  |
| 0405-42   | 30         | 535        | 505                |  |  |
| 0405-44   |            |            | BLOCKED @ 10m      |  |  |
| 0405-45   |            |            | BLOCKED @ 24m      |  |  |
| 0405-46   | 10         | 445        | 445                |  |  |
| VW Zone   |            | 440        | 445                |  |  |
| 0401-02   | 10         | 400        | 400                |  |  |
| 0401-03   |            |            | BLOCKED @ surface  |  |  |
| 0401-23   | 10         | 270        | 270                |  |  |
| 0403-10   | 10         | 55         | 55                 |  |  |

Table I: Borehole TEM Coverage

#### 3.2 **Specifications**

Method:

Transient Electromagnetic

Technique:

Borehole Profiling

Configuration:

3-D Borehole

Output Power Stage:

Low Power (2.8kW)

Dimension:

Multi-Component 3D (X,Y, and Z)

Borehole and Loop Locations: see Table II

**Borehole Parameters:** 

see Table II

Sampling Interval:

5 meters

| HOLE #    | COLLAR LOCATION<br>(Local & NAD 83, Zone 17) | AZIMUTH/DIP<br>(at surface) | LOOP LOCATIONS (local grid) |
|-----------|--|-----------------------------|-----------------------------|
| B4-7 Zone |  |                             |                             |
| 0405-38   | 3300E, 625S<br>435755E, 5580840N             | 178°/-45°                   | 3000E-3400E;400S-700S       |
| 0405-40   | 3200E, 625S<br>435676E, 5580834N             | 178°/-45°                   | 3000E-3400E;400S-700S       |
| 0405-42   | 3200E, 525S<br>435676E, 5580951N             | 178°/-45°                   | 3000E-3400E;400S-700S       |
| 0405-46   | 3100E, 525N<br>435575E, 5580933N             | 178°/-45°                   | 3000E-3400E;400S-700S       |
| VW Zone   |  |                             |                             |
| 0401-02   | 10E, 35N<br>432483E, 5581370N                | 177°/-70°                   | 100W-100E;0-200N            |
| 0401-23   | 20E, 100S<br>432603E, 5581229N               | 10°/-50°                    | 100W-100E;0-200N            |
| 0403-10   | 110E, 110S<br>432587E, 5581271N              | 357°/-45°                   | 100W-100E;0-200N            |

Table II: Borehole and Loop Location Specifications

#### 3.3 Personnel

Project Supervisor: Woody Coulson, Porcupine, ON

Geophysical Surveyor: Graeme Lillie, Timmins, ON

• Geophysical Assistants: Curtis Chapman, Ottawa, ON

Pat Van de Kraats, Thunder Bay, ON

#### 3.4 Instrumentation

Receiver: Geonics Digital Protem (Time Domain with 30 channels)

• Receiver Coil: Geonics BH43-3D probe (800m cable, winch and switching unit)

• Transmitter: Geonics EM-37 (24-160V<sub>OUT</sub> / 3, 7.5, 30Hz @ 50% duty cycle)

• Power Supply: Geonics GPU 2000, with Honda 5.5HP motor and Georator

alternator (2.8kVA @ 400Hz)

#### 3.5 Parameters

Measurements: Time-rate of change (dB<sub>XYZ</sub>/dt) in millivolts of secondary electro

magnetic field transient (OFF time, see Appendix B), primary

pulse and inclination (2 directions).

On-Time measurements along the shut-off ramp to facilitate the calculation of the Step Response were made using a negative

100µs delay.

**Data Reduction:** 

nanoVolt/metre<sup>21</sup> (using Geonics Datem<sup>TM</sup>)

| Pulse repetition frequency: | 30Hz   |
|-----------------------------|--|
| Gain:                       | 2 - 4  |
| Integration number:         | 15 seconds                                       |
| Loop Sizes:                 | B4-7 Zone - 300m x 400m<br>VW Zone - 200m x 300m |
| Current:                    | 12.5 - 18.5 amps (see plots)                     |
| Turn-off times:             | 350 - 390µs (see plots)                          |
| Gate positions:             | 80-6136 µs (see Appendix C)                      |
| Synchronization mode:       | Crystal  |

Table III: System Parameters for Borehole TEM Surveys

#### **Coil Conventions:**

| COMPONENT | COIL ORIENTATION                                    |
|-----------|---|
| Z         | Positive Axially Up                                 |
| X         | Positive Orthogonal Up along DDH azimuth            |
| Y         | Positive Orthogonal Horizontal and left of DDH axis |

## Table IV: Coil Conventions for Borehole TEM Survey

Component Rotation: Tilt Angle Meters (using Geonics Datem™ software)

**Data Reduction:** 

Profiled data - nanoVolt/metre<sup>2</sup> (using Geonics Datem™ software

- TF reduction using Quantec Geoparse™)

Step Response - % In-Phase (calculated from Protem)

#### 3.6 Measurement accuracy and repeatability

Number of Repeats per Station:

0-1

Number of Repeats per Hole:

2-4

Average Repeatability at Channel 1 and 30: 1-5% in early channels

Worst Repeatability at Channel 1 and 30:

8-10% (estimated)

#### 3.7 **Data Presentation**

#### **Profiles:**

| Profile Format           | Off-Time Data - 4-Axis (see Fig. 3) and Lin-Log (see Fig. 4)                                    |
|--------------------------|---|
| # of Profiles:           | 56  |
| Horizontal Map Scale:    | 1:1000 and 1:2000   |
| Vertical Profile Scales: | Varies to best display data for each component, loop and frequency (see profiles in Appendix G) |
| Components Profiled:     | 3D survey: X, Y and Z   |

Table V: Borehole TEM Profile Specifications.

<sup>&</sup>lt;sup>1</sup> Equivalent to Crone units of nanotesla per second, normalized to a unit current

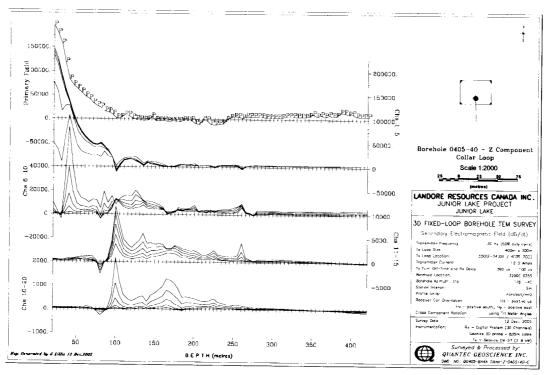


Figure 3: 4-Axis Borehole TEM Profile Format

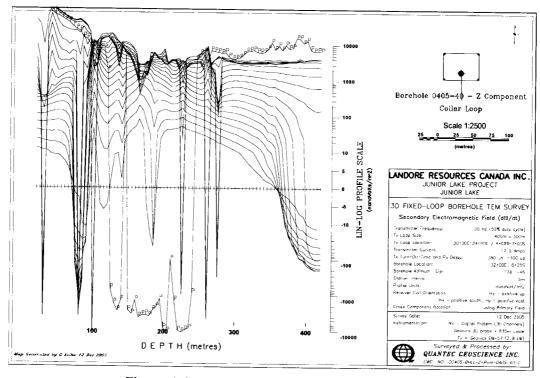


Figure 4: Lin-Log Borehole TEM Profile Format

Digital Data: Daily raw files and processed data (Geosoft .XYZ format) on CD

- a) <u>Unrotated raw data files,</u> according to acquisition date (DDMMYY.RAW ie. 040505.raw)
   Geonics Digital Protem format (refer to Protem manual)
- b) Rotated raw data files, according to hole # followed by the "r" (e.g. 0405r.raw) Geonics Digital Protem format (refer to Protem manual)
- c) Reduced XYZ ASCII data files, according to component, rotation method, hole and loop configuration (i.e. 0405k.xyz where k=component Z, X, Y or T for Total Field)

Column 1: Hole number

Column 2: Station number i.e. Depth down hole (m)

Column 3: Primary pulse (millivolts)

Column 4: Channel 1 secondary rate of decay of TEM field (nanoVolt/m²)

Column 5: Channel 2

-11

Column 23: Channel 20 secondary rate of decay of TEM field (nanoVolt/m²)

#### 4. SURVEY RESULTS

The objective of the borehole TEM surveys at Junior Lake was to characterize mineralization intersected in the drill holes and to identify anomalies located "off-hole" within a 50m – 100m radius of the drill hole which may be related to massive sulphide mineralization. This would prove or disprove the effectiveness of the borehole TEM method for further use in the Junior Lake area. Details concerning the bedrock geology and the full extent of exploration on the properties are not known by the present author. Therefore, the following interpretation is based solely on the TEM survey results.

Borehole responses can be characterized in two (2) key categories, in-hole and off-hole. The Hz or axial component is used to identify the nature of the response i.e. in-hole or off-hole, by the polarity of the response. In hole responses yield predominantly positive responses whereas off-hole responses yield predominantly negative responses. The responses can also include a mixture of both depending on where the drill hole has intersected the body i.e. edge vs centre. The cross components, Hx and Hy provide information with respect to the direction to the centre of the anomaly. The Hx defines direction up and down dip of the hole and Hy defines left or right of the hole (see Appendix B, Figures B5, B6 and B7)

In general, the results of the borehole surveys completed over both the B4-7 and VW Zones are characterized by complex TEM responses due to multiple conductors. For the most part, these are inhole responses which correspond to sulphides and/or magnetite mineralization intersected in the holes. The anomalies are defined in the table below based on their type i.e. in-hole, off-hole, edge. In most cases, a direction of potential improvement of the conductors has been defined. It's interesting to note that although the sulphides mapped in the geologic logs are predominantly low percentage and/or disseminated, there is sufficient amount to create a continuous electrical contact (conductive matrix) and yield the maximum 20 channel responses.

#### B4-7 Zone

The results of the borehole TEM surveys over the B4-7 Zone yielded numerous responses in each hole. The most definitive results were obtained in hole 0401-02. The results in holes 0401-23 and 0403-10 were less so due in part to their location relative to the transmit loop, creating reverse coupled anomalies, and the lack of data in hole 10 due to it's short length. The data obtained in hole 23 is anomalous but inconclusive as to the nature of the responses i.e. in-hole or off-hole due to poor correlation with the geologic logs.

The most significant anomaly was an off-hole response at 50m in hole 0401-02. This cross-over style Hz response suggests the hole sub-parallels a large surface area (>100m) strong conductor lying above or up dip of the hole. This may be the up dip extent of the conductor intersected by the hole at 175m. The other off-hole conductors mapped in hole 02 are either small surface area and/or weak, and are probably related to sulphides tested in the holes.

#### VW Zone

The TEM logs over the VW Zone also yielded numerous responses in each hole. As mentioned above, most of these are in-hole responses related to mineralization intersected in the holes. However, there are some significant off-hole responses which occur at the end of the logged portion of the holes and may be untested.

#### Hole 0405-38:

The majority of the responses in hole 38 are in-hole and correspond to sulphide mineralization intersected in the hole. An edge/off-hole response occurs at 175m but is incomplete due a blockage in the hole restricting logging past this depth. This partial off-hole anomaly suggests a strong conductor exits above (up dip) and left (east) of the hole. This may be related to the magnetite iron formation mapped in the hole.

#### Hole 0405-40

Hole 40 is characterized by numerous in-hole responses which can be correlated to mineralization tested in the hole. As well, a significant off-hole conductor is located at the bottom of hole 0405-40 at 420m. This conductor occurs well below (150m) the more anomalous part of the hole and may be related to unknown mineralization. The long wavelength, negative Hz response clearly indicates a strong, large surface area (>100m) conductor located some distance (50m or more) off the hole. In order to determine a direction to the conductor, complete Hx and Hy responses are necessary. Unfortunately, only half the response exists which has cut these two components short. It appears that the Hx component is trending positive to negative placing the conductor below (down dip) the hole. However, the Hy component has little or no evidence of polarity change which may suggest the conductor is centred along strike or that the response may be further down the hole. If this conductor is directly below the hole and not east or west, then hole 0405-42, drilled to the north, may have tested this conductor. Late time, in-hole and edge responses at 500m and 515m may be the source of this off-hole conductor, but this is not definite.

#### Hole 0405-42

Hole 42 is also characterized by several in-hole and off-hole responses. Again, the in-hole and edge/off-hole responses correlate with mineralization intersected in the hole. The early time off-hole response at 350m may be untested but also insignificant given its poor conductance (12 channels).

The late time off-hole conductor at 410m may be untested as well, since the Hx response does not provide definitive information with respect to the location up or down dip of the hole and there is no evidence of a possible source in hole 40, up dip. This may make this a significant target with an interpreted location approximately 35m left (west) of the hole. As mentioned above, the edge/off-hole response at 500m and 515m may be the source of the off-hole conductor at 420m in hole 40.

#### Hole 0405-46

Hole 46 is similar in character to the other VW holes with numerous in-hole and edge/off-hole responses. Of significance are late time off-hole anomalies at 240m and 440m. The response at 240m is heavily influenced by in-hole conductors adjacent to it on both sides. If this conductor is related to the in-hole responses then the more conductive centre lays approximately 15m above (up dip) and left (east) of the hole.

The off-hole response at the bottom of the hole (440m) is again incomplete and as a result, a direction to the conductor can not be accurately determined.

| HOLE         | ANOMALY<br>DEPTH | ANOMALY<br>TYPE | # CHANNELS<br>RESPONDING | ANOMALY<br>POLARITY                         | COMMENTS  |
|--------------|------------------|-----------------|--------------------------|---|---|
| B4-7<br>Zone |                  |                 |                          |   |   |
| 0403-10      | 15               | In-hole         | 13                       | Hz: -ve<br>Hx: -ve to +ve<br>Hy: +ve?       | Reverse coupled due to loop placement relative to hole. Moderate strength, high amplitude 35m response from small surface area conductor. Probably related to sulphides in the hole.  |
|              | 25               | In-hole         | 20                       | Hz: -ve<br>Hx: +ve to -ve<br>Hy: +ve to -ve | Reverse coupled due to loop placement relative to hole. Strong, high amplitude response from small surface area conductor. Corresponds to sulphide in the hole. Any increase in conductance will be above (down dip) and left (west) of the hole. |

| HOLE     | ANOMALY<br>DEPTH | ANOMALY<br>TYPE | # CHANNELS<br>RESPONDING | ANOMALY<br>POLARITY        | COMMENTS  |
|----------|------------------|-----------------|--------------------------|----------------------------|---|
| 0403-10  | 50               | In-hole         | >20                      | Hz: -ve                    | Hole has tested centre region of strong, small  |
|          |                  |                 | İ                        | Hx: -ve                    | surface area conductor. Response is still chang-  |
|          |                  |                 | 1                        | Hy: -ve                    | ing at the bottom of the hole. Corresponds to   |
| 0404.00  |                  |                 |                          |                            | sulphides in the hole.  |
| 0401-02  | 50               | Off-hole        | 20                       | Hz: +ve to -ve             |   |
|          |                  |                 |                          | Hx: -ve                    | face area possibly depth limited conductor i.e.   |
|          | 1                |                 |                          | Hy: -ve                    | source may sub-parallel hole between surface  |
|          |                  |                 | ĺ                        |                            | and this depth. May be part of a larger more  |
|          | 1                |                 |                          |                            | extensive conductor intersected by the hole at  |
|          | 85               | Off-hole        | 11                       | 11-                        | 175m.   |
|          |                  | 011010          | 11                       | Hz: -ve<br>Hx: -ve to +ve  | Weak, small surface area conductor. Source is   |
|          | <u> </u>         |                 |                          | Hy: +ve to -ve             | located above (up dip) and right (east) of the drill hole.                                    |
|          | 110              | Off-hole        | 20                       | Hz: -ve                    |   |
|          |                  |                 |                          | Hx: -ve to +ve             | Strong small surface area conductor located above the hole. Conductor should continue east    |
|          |                  |                 |                          | Hy: +ve                    | and west of the hole.   |
|          | 175              | In-hole         | 20                       | Hz: -ve                    | Strong, small surface area conductor tested by  |
|          |                  |                 |                          | Hx:-ve                     | hole. Any increase in conductor will be located   |
|          |                  |                 |                          | Hy: +ve to -ve             | right (west) of the drill hole. May be lower edge o   |
|          | 175 - 205        | la halatada     |                          |                            | larger conductor(s) up dip of hole.   |
|          | 173 - 203        | In-hole/edge    | 20                       |                            | Multiple in-hole/edge conductor responses related   |
| 0401-23  | 140 – 200        | ?               |                          |                            | to mineralization in the hole.  |
| 10.20    | 140 - 200        | í í l           |                          |                            | Multiple anomalous responses at 140, 180 and  |
|          |                  |                 |                          |                            | 200. Probably related to sulphides intersected by   |
|          |                  |                 |                          |                            | hole. Complex anomaly polarity due to reverse   |
| VW Zone  |                  |                 |                          |                            | coupling with loop.   |
| 04050-38 | 40               | In-hole         | 20                       | Hz; +ve                    | Holo has tosted steep and the   |
|          |                  |                 |                          | Hx: +ve to -ve             | Hole has tested strong, small to moderate surface area conductor. Any increase in conduc-     |
| 1        |                  | [               |                          | Hy: -ve to +ve             | tance/thickening will be below (down dip) and left  |
|          |                  | ł 1             |                          |                            | (east) of the hole. Corresponds to sulphides in   |
|          |                  |                 |                          |                            | the hole.   |
| ŀ        | 70               | In-hole         | 20                       | Hz: +ve                    | Hole has tested strong, small surface area con-   |
|          |                  | ĺ               |                          | Hx: -ve to +ve             | ductor. Any increase in conductance/thickening  |
| i        |                  |                 |                          | Hy: +ve to -ve             | will be above (up dip) and right (west) of the hole   |
|          | 85               | In-hole         | <del></del>              |                            | Corresponds to sulphides in the hole.   |
|          | 00               | III-IIOIE       | 19                       | Hz: +ve                    | Hole has tested moderate to strong, moderate  |
|          |                  |                 |                          | Hx: -ve<br>Hy: +ve to -ve? | surface area conductor. Zone is expected to   |
|          |                  |                 |                          | rry. +ve to -ve?           | continue up and down dip. Corresponds to sul-   |
|          | 125              | In-hole         | 11                       | Hz: +ve                    | phides in the hole.   |
|          |                  |                 | ,,                       | Hx: +ve                    | Hole has tested weak, small surface area conductor. Any improvement will be right (conductor) |
|          |                  |                 |                          | Hy: +ve to -ve             | tor. Any improvement will be right (west) of the hole.  |
| -        | >170             | Off-hole?       | 20                       | Hz: -ve                    | Incomplete response. Hole has passed by strong  |
|          |                  |                 |                          | Hx: -ve to +ve?            | conductor interpreted to lie above (up dip) and left  |
|          |                  | }               |                          | Hy: -ve to +ve?            | (east) of the drill hole. Direction to conductor is   |
| 0405-40  | 40               | In hale         |                          |                            | tentative due to incomplete response.   |
| U-TUU-4U | 40               | In-hole         | 11                       | Hz: +ve                    | Hole has tested weak, moderate surface area   |
|          |                  |                 |                          | Hx: -ve                    | conductor. Any increase in conductance will be  |
| 1        |                  |                 |                          | Hy: -ve to +ve             | left (east) of the hole. Corresponds to sulphides   |
|          | 80               | Edge/off-hole   | 20                       | Ц-,                        | in the hole.  |
|          |                  |                 | 20                       | Hz: -ve<br>Hx: +ve to –ve  | Small surface area, strong conductor located  |
| İ        | ĺ                |                 |                          | Hy: -ve to -ve             | below (down dip) and left (east) of the hole. May   |
|          |                  |                 |                          | 10 to TVE                  | be thickening of mineralized section from 65m – 107m in the hole.                             |
| [        | 100              | In-hole         | 20                       | Hz: +ve                    | Hole has tested strong moderate surface area  |
| İ        | [                | ]               |                          | Hx: -ve to +ve             | conductor. Any increase in conductance will be  |
|          | İ                |                 | İ                        | Hy: +ve to -ve             | above (up dip) and right (west) of the. Corre-  |
|          | }                |                 |                          |                            | sponds to sulphides in the hole and may be re-  |
|          | 115              | 0"110           |                          |                            | lated to off-hole conductor at 80m.   |
|          | 115              | Off-hole?       | 20                       | Hz: -ve                    | Possible small surface area conductor located   |
|          |                  |                 | ĺ                        | Hx: +ve to -ve?            | below (down dip) the hole.  |
|          |                  |                 |                          | Hy: ¿                      |   |

| HOLE    | ANOMALY<br>DEPTH | ANOMALY<br>TYPE | # CHANNELS<br>RESPONDING | ANOMALY<br>POLARITY | COMMENTS   |
|---------|------------------|-----------------|--------------------------|---------------------|--|
| 0405-40 | 135 – 140        | In-hole         | 20                       | Hz: +ve             | Hole has tested small surface conductor. Any   |
|         |                  |                 |                          | Hx: +ve to -ve?     | increase in conductance will be right (west) of the  |
|         |                  |                 |                          | Hy: +ve to -ve      | hole. Corresponds to sulphides in the hole.  |
| 0405-40 | 165              | In-hole         | 20                       | Hz: +ve             | Hole has tested centre region of strong moderate   |
|         |                  |                 |                          | Hx: +ve to -ve      | surface area conductor. Corresponds to sul-  |
|         |                  |                 |                          | Hy: +ve to -ve      | phides in the hole.  |
|         | 185              | Edge/off-hole   | 20                       | Hz: -ve             | Strong, small to moderate surface area conductor   |
|         |                  |                 |                          | Hx: -ve to +ve      | located above (up dip) and right (west) of the   |
|         |                  | <u></u> .       |                          | Hy: +ve to -ve      | hole. May be related to sulphides in the hole.   |
|         | 225              | In-hole         | 20                       | Hz: +ve             | Hole has tested small surface area conductor.  |
|         |                  |                 |                          | Hx: +ve to -ve      | Any improvement will lie below (down dip) and left   |
|         |                  |                 |                          | Hy: -ve to +ve      | (east) of the hole. Corresponds to sulphides in the  |
|         |                  |                 |                          | 1                   | hole.  |
|         | 260              | In-hole         | 14                       | Hz: +ve             | Hole has tested small surface area weak to mod-  |
|         | İ                |                 |                          | Hx: +ve to -ve      | erate strength conductor. Any improvement will   |
|         |                  |                 |                          | Hy: -ve             | be below (down dip) the hole. Corresponds to   |
|         |                  |                 |                          | 119. 10             | sulphides in the hole.   |
|         | 275              | Off-hole        | 15                       | Hz: -ve             | Moderate strength, small surface area conductor  |
|         |                  |                 |                          | Hx: -ve to +ve?     | located above (up dip) and left (a set) at the distance area conductor                               |
|         |                  |                 |                          | Hy: -ve to +ve      | located above (up dip) and left (east) of the hole.  |
|         | 420              | Off-hole        | 20                       | Hz: -ve             | Corresponds to sulphides in the hole.  |
|         |                  |                 | 20                       | Hx: +ve to -ve?     | Incomplete response from strong, large surface   |
|         |                  |                 |                          | Hy: ¿               | area conductor. Source is interpreted to lie   |
|         |                  |                 |                          | 119. 2              | approx. 50m below (down dip) the hole. Due to  |
|         |                  |                 |                          |                     | incomplete response it cannot be determined  |
| 0405-42 | 145              | Off-hole        | 17                       | Hz: -ve             | whether the conductor lies left or right of the hole.  |
|         |                  |                 | • •                      | Hx: -ve to +ve      | Small to moderate surface area, moderate   |
| _       |                  |                 |                          | Hy: -ve             | strength conductor. Centre located above (up   |
|         | 210 - 215        | Edge/off-hole   | 20                       | Hz: -ve             | dip) the hole.   |
|         | _                |                 |                          | Hx: -ve to +ve      | Hole has tested moderate to large surface area   |
|         |                  |                 |                          | Hy: +ve to -ve      | conductor but more conductive centre lies off hole   |
|         | ĺ                |                 | i                        | Try. The to -ve     | possibly below (down dip) and right (west) of the  |
|         |                  |                 |                          |                     | hole. Probably related to sulphides in the hole at 208m.   |
|         | 275              | In-hole         | 20                       | Hz: +ve             | Hole has tested moderate surface area strong   |
|         |                  |                 |                          | Hx: -ve to +ve      | Conductor Any improvement will live to a strong  |
|         | ĺ                |                 |                          | Hy: +ve to -ve      | conductor. Any improvement will lie above (up  |
|         |                  |                 |                          | 119. 140 to -46     | dip) and right (west) of the hole. Corresponds to sulphides in the hole.                             |
|         | 290              | Off-hole        | 20                       | Hz: -ve             | Moderate surface area, strong conductor located  |
|         |                  |                 |                          | Hx: -ve to +ve      | above (up dip) and right (west) 5 – 10. May be   |
|         |                  |                 |                          | Hy: +ve to -ve      | related to in-hole conductor at 275 and in-hole  |
|         |                  |                 |                          | ,                   | conductor at 225m in hole 40.  |
|         | 335 – 340        | Edge/off-hole   | 20                       | Hz: -ve             | Hole has tested small surface strong conductor   |
|         |                  |                 |                          | Hx: -ve to +ve      | but centre lies off the hole above (up dip) and left   |
|         | i                |                 | 11                       | Hy: -ve to +ve      | (east) of the hole. Corresponds to sulphides and   |
|         |                  |                 | İ                        | ,                   | magnetite in the hole.   |
|         | 350              | Off-hole        | 12                       | Hz: -ve             | Weak conductor locate above and possibly right   |
|         |                  |                 |                          | Hx: +ve to -ve      | (best) of the hole.  |
|         |                  |                 |                          | Hy: +ve to -ve?     | (Soci) of the fiole:   |
|         | 410              | Off-hole        | 20                       | Hz: -ve             | Long wavelength late time negative Hz response   |
|         |                  |                 |                          | Hx: ¿               | suggesting conductor located approx. 35m off the   |
| - 1     |                  |                 | Í                        | Hy: +ve to -ve      | hole. Poorly resolved Hx suggests conductor lies   |
|         |                  |                 |                          | 11,77 10 10 10      | right (west) of the hole.  |
| 0405-42 | 430              | In-hole         | 15                       | Hz: +ve             | Hole has tested moderate area, moderate  |
| ļ       |                  |                 |                          | Hx: -ve to +ve      | strength conductor. Any improvement will be  |
| 1       |                  |                 | ĺ                        | Hy: +ve to -ve      | above (up dip) and right (west) of the hole. Corre-  |
|         |                  |                 |                          | ,                   | sponds to sulphides and magnetite in the hole.   |
|         | 500              | In-hole         | 20                       | Hz: +ve             | Hole has tested small to moderate area conduc-   |
|         | ł                |                 | ==                       | Hx: +ve to -ve?     | tor. Any improvement will be below (down dip)  |
|         |                  |                 | 1                        | Hy:-ve to +ve?      | and left (east) of the hole. Command to  |
|         |                  |                 |                          | ,. 10 10 1461       | and left (east) of the hole. Corresponds to sul-   |
|         | 515 – 520        | Edge            | 20                       | Hz: +ve/-ve         | phides and magnetite in the hole.  |
|         |                  | 30              |                          | Hx: +ve to -ve      | Hole has tested upper edge of strong, small to   |
|         |                  |                 | İ                        | Hy: -ve to -ve      | moderate area conductor. Centre is located be-<br>low (down dip) and left (east) of the hole. Corre- |
|         |                  |                 |                          | . IVVE (U TVE       | IVW (UOWI) GID) AND LETT (EAST) Of the hole. Corre.  |
|         | ĺ                |                 |                          | 1                   | sponds to magnetite IF in hole.  |

| HOLE        | ANOMALY<br>DEPTH | ANOMALY<br>TYPE | # CHANNELS<br>RESPONDING | ANOMALY<br>POLARITY | COMMENTS  |
|-------------|------------------|-----------------|--------------------------|---------------------|---|
| 0405-46     | 120              | Edge/off-hole   | 20                       | Hz: -ve             | Hole has tested laws a day of   |
|             |                  |                 |                          | Hx: -ve to +ve      | Hole has tested lower edge of moderate area,                            |
|             |                  | İ               |                          | Hy: -ve to +ve      | strong conductor. Centre is located above (up                           |
|             |                  |                 |                          | 119. 10 10 146      | dip) and left (east) of the hole. Probably related                      |
| ]           | 160              | Off-hole        | 16                       | Hz: -ve             | to sulphides in hole from 122 – 143m.                                   |
|             |                  |                 | .0                       | Hx: +ve to -ve      | Small area, moderate strength conductor locate                          |
|             |                  |                 |                          | Hy: negative        | below (down dip) of the hole.   |
|             | 190              | In-hole         | 20                       | Hz: +ve             |   |
| 1           |                  |                 | 20                       |                     | Moderate area, strong conductor tested by hole                          |
| 1           |                  |                 |                          | Hx: +ve to -ve      | Any improvement will be below (down dip) and                            |
|             |                  |                 |                          | Hy: -ve to +ve      | left (east) of the hole. Corresponds to sulphides                       |
|             | 215              | In-hole         | 40                       | <del> </del>        | in the hole.  |
|             | 210              | m-noie          | 16                       | Hz: +ve             | Small area, moderate strength conductor tested                          |
|             |                  |                 |                          | Hx: -ve to :ve      | by hole. Any improvement will be above (up din                          |
|             |                  | 1               |                          | Hy: +ve to -ve      | and right (west) of the hole. Corresponds to sul                        |
|             | 240              |                 |                          |                     | phides in the hole.   |
|             | 240              | Off-hole        | 20                       | Hz: -ve             | Strong influence from conductors above and be                           |
| j           |                  |                 | i                        | Hx: -ve to +ve      | low. Late time Hz negative suggests off-hole                            |
|             |                  |                 |                          | Hy: -ve to +ve?     | conductor probably related to other mineralized                         |
| 1           |                  |                 |                          |                     | sections in hole. Centre interpreted to lie above                       |
|             |                  |                 |                          |                     | (up dip) and possibly left (east) of the hole.                          |
| 1           | 255              | Off-hole        | 11                       | Hz:-ve              | Weak off-hole conductor.  |
| İ           |                  |                 |                          | Hx: ?               | Troum on Hole conductor.  |
|             |                  |                 |                          | Hy: ?               |   |
|             | 265              | In-hole         | 20                       | Hz: +ve             | Strong, moderate surface area conductor tested                          |
|             |                  | 1               |                          | Hx: +ve to -ve      | by hole. Any improvement will be below (down                            |
|             | ſ                | J               |                          | Hy: -ve to +ve      | din) and left (cost) of the hale. Costs                                 |
|             |                  |                 |                          | ,. 10 10 10         | dip) and left (east) of the hole. Corresponds to sulphides in the hole. |
| 1           | 285              | In-hole         | 20                       | Hz: +ve             | Strong moderate of  |
|             | ĺ                |                 |                          | Hx: -ve to +ve      | Strong, moderate surface area conductor tested                          |
| ĺ           |                  | Í               |                          | Hy: +ve to -ve      | by hole. Any improvement will be above (up dip                          |
|             |                  |                 | 1                        | 11y. 146 to -46     | and right (west) of the hole. Corresponds to sul-                       |
|             | 295              | Edge            | 20                       | U=                  | phides in the hole.   |
| 1           |                  | go              | 20                       | Hz: -ve             | Small surface area strong conductor. No direc-                          |
| ļ           | 1                |                 | 1                        | Hx:?                | tion due to strong influence from adjacent con-                         |
|             | 335              | Off-hole        | 12                       | Hy: ?               | ductors.  |
|             |                  | OII-HOIE        | 12                       | Hz: -ve             | Weak, small surface area conductor located be-                          |
| J           |                  |                 |                          | Hx: +ve to -ve      | low (down dip) and left (east) of the hole.                             |
|             | 375              | Edge            | 45                       | Hy: -ve to +ve?     |   |
| i           | 0,0              | Luge            | 15                       | Hz: -ve             | Moderate strength, small surface area conductor                         |
| 1           |                  |                 |                          | Hx: -ve to +ve      | There should be evidence in the core. Centre                            |
|             | 390              | Edge            |                          | Hy: ?               | located above (up dip) the hole   |
|             | 390              | Edge            | 20                       | Hz: -ve             | Small surface area strong conductor located righ                        |
| ]           |                  |                 |                          | Hx: -ve to +ve      | (west) and above (up dip) of the hole.                                  |
| <del></del> | 440              |                 |                          | Hy: +ve to -ve      | . ( F = F) of the floid.  |
| }           | 440              | Off-hole        | 20                       | Hz: -ve             | Incomplete response from strong off-hole conduc                         |
|             | ļ                | ĺ               | [                        | Hx: ?               | tor. Accurate direction to source difficult to de-                      |
|             | 1                |                 |                          | Hy: +ve to -ve      | termine due lack of data.   |

Anomaly Table for the Junior Lake Borehole TEM Surveys

#### 5. CONCLUSIONS AND RECOMMENDATIONS

The objective of the TEM surveys over the Junior Lake property has been satisfied through the characterization of mineralization tested in the drill holes and identifying significant "off-hole" anomalies. Although the sulphide mineralization mapped in the geologic logs is of low percentage and/or disseminated, there is sufficient concentrations to create electromagnetic responses as identified in the borehole TEM surveys over the B4-7 and VW Zones. The similar character of responses from both properties suggests the mineralizing system(s) may be related. The biggest problem with the TEM logs are the number of conductors identified and how they relate from hole to hole. The geophysical data should now be correlated with the geologic logs to determine the relative importance of each conductor i.e. barren sulphides vs. economic mineralization, and whether borehole TEM is an effective tool for target discrimination.

Unfortunately, the TEM results over the B4-7 Zone are somewhat inconclusive other than the fact, the mineralization is conductive. The poor results in holes 10 and 23 are probably due in part to the orientation of the mineralization relative to the loop location and energizing direction. A better understanding of the geologic setting may help in loop design in the future.

If the off-hole anomalies identified in the VW holes are geologically significant and untested then follow-up drilling should be considered. The incomplete responses at the bottom of holes 40, 42 and 46 would require deepening of the holes and re-logging to accurately characterize and determine a direction to the targets and may not be considered economically viable. Therefore, if TEM surveys will be used in the future, then holes should be extended 50 to 100 meters past the favourable geologic horizon(s).

RESPECTFULLY SUBMITTED

SHERWOOD COULSON PRACTISING MEMBER . 0944

S.T. Coulson, P.Geo. Senior Geophysicist

#### APPENDIX A

#### STATEMENT OF QUALIFICATIONS

- I, Sherwood T. Coulson, hereby declare that:
  - I am a consulting geophysicist with residence in Porcupine, Ontario and am presently employed in this
    capacity with Quantec Consulting Inc. of Porcupine, Ontario.
  - I am a graduate of Cambrian College, Sudbury, Ontario in 1974 with an Honours Diploma in Geophysical Engineering Technology.
  - 3. I am a practicing member (#0944) the Association of Professional Geoscientists of Ontario.
  - 3. I have practiced my profession in Europe and North America continuously since graduation.
  - I am a member of the Prospectors and Developers Association of Canada and the Porcupine Prospectors and Developers Association.
  - I have no interest nor do I expect to receive any interest, direct or indirect, in the properties or securities of LANDORE RESOURCES CANADA INC.
  - I supervise the survey and interpreted the data. The statements made by me in this report represent my best opinion and judgment based on the information available to me at the time of the writing of this report.

Porcupine, Ontario March 2006

SHERWOOD COULSON PRACTISING MEMBER 0944

> S.T. Coulson, P.Geo. Senior Geophysicist Quantec Geoscience Ltd.

#### APPENDIX B

## SURVEY PROCEDURES AND GENERAL THEORY

## **TEM Surface and Borehole Surveys**

TEM profiling is conducted on lines either adjacent to (Off-Loop mode) or surrounded by (In-Loop mode) a large fixed rectangular transmit loop. Current is passed through the loop which following the Turn-Off, produces a primary magnetic field (H) both inside and outside (Figure B1). This primary field induces a vortex current pattern, which energizes conductors and which in turn create their own secondary magnetic field (Bs). The rate of change of the decaying secondary magnetic flux (dBs/dt) is measured as the vertical (Hz), in-line horizontal (Hx) and/or cross line horizontal (Hy) vector components on surface using an air-core sensor coil. These measurements of the TEM decay (20 log-time slices) are taken during the "Off-Time", using a 30 cycle/sec, base repetition rate.

In keeping with the industry standard, the primary field is always considered positive up inside the loop and negative down outside. Similarly, for secondary EM fields, the receiver coil is oriented positive vertical up for the Hz component. The convention for In-Loop surveys, has the in-line component, Hx oriented either positive east (for grid EW lines) or north (for grid NS lines). The Off-Loop survey convention differs, with the receiver coil orientation for Hx pointing positive away from the transmit loop (for EW or NS lines). Finally, the sign convention in all cases, has the Hy component pointing positive orthogonal to the left of the Hx, according to the right-hand-rule.

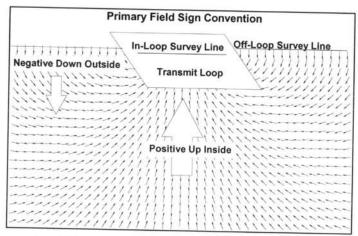


Figure B1: Primary field sign convention for TEM surveys.

The borehole survey is particularly useful to determine the geometrical relationship between a conductor or a complex swarm of conductors around the drill hole. Of particular importance is its application in cases where the drilling is believed to have missed the target of interest. A 3-D borehole survey can effectively determine the direction and distance from the drill hole to the conductor by measuring two orthogonal secondary field components in addition to the axial component. Additionally, conductors located below the end of a drill hole, which either may be too deep and/or have gone previously undetected from surface, may be discovered during the course of a borehole survey.

The probe is manually lowered down the borehole at the end of a cable and, at successive depths, measurements of three (3-D) orthogonal components of the TEM field (Hx, Hy, Hz) are individually obtained in succession by electronically switching the sensor coils in the borehole antenna through the use of a relay/switching system from surface, via the borehole-cable shield. As the probe is free to rotate on its vertical axis, a correction is later applied to the 3-D data in order to rotate the components into their respective coordinate axes.

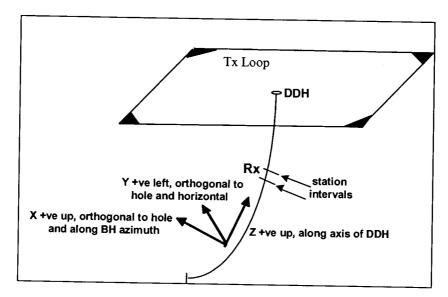


Figure B4: Loop Configuration and Polarity Conventions for 3-D Borehole Surveys

The secondary fields induced decay at a rate proportional to the conductivity-thickness and are then measured and profiled by the borehole sensor-probe.

- a) Hz is positive up along the axis of borehole.
- b) Hx is positive perpendicular to the borehole axis and pointing upward, in a vertical plane, in the direction of the azimuth of the hole,
- c) Hy is positive 90° counterclockwise to Hx and horizontal, according to the right-hand rule.

At the end of each survey day, the stored data are transferred to a microcomputer using PROTEM and edited and viewed using DATEM (both programs written by **Geonics**). From there the data is corrected for the turn-off time, loop area, system gain and current, converted from millivolts to nanoVolts per ampere meter squared or nano-Volts per meter squared and Geosoft formatted XYZ files created using GEOPARSE written by Quantec. The data are then transferred to disk for storage and processing. Report quality field plots are generated on site, using a 24-pin printer in order to monitor the data characteristics and to provide a preliminary interpretation capability.

The following equations govern the transient EM response for buried plate-like conductive bodies<sup>1</sup>

Target Response to Transmitter Current Waveform:

$$emf = \frac{1}{\tau} e^{-t/\tau}$$

where: t = fixed time

e = exponential decay

 $\tau = time constant of conductor$ 

<sup>&</sup>lt;sup>1</sup> From Geonics Limited, EM-37 TEM System Design Parameter, Mississauga, Ont., 1982.

The time constant of the response is alternatively defined as the slope of the lin-log decay curve (Geonics) or, more exactly, as the time channel where the amplitude of the decay collapses to 37% (1/e) of its maximum value. Both  $\tau$  and the analogous decay strength (ie., the number of anomalous channels above background), are commonly used as indicators of conductor quality. This relationship between decay-strength and the conductivity-thickness can easily be demonstrated in the following equation for a vertically dipping conductive sheet:

$$\tau = \frac{\sigma \mu th}{\pi^2}$$
 for a thin plate

where  $\sigma = conductivity of target$ 

 $\mu = magnetic susceptibility$ 

t = thickness of plate

h = vertical extension of plate

thereby giving, for an infinite vertical sheet:

$$\sigma t = \frac{\pi^2}{\mu h} \tau \approx \frac{\tau}{0.31} \text{ mhos/metre (siemens)}$$

From these equations and relationships, it therefore becomes obvious of the common use of the anomaly strength of decay as a simple, rule-of thumb indicator of the relative conductivity-thickness product for TEM surveys.

In addition, the total secondary field is calculated using the three components (Hx, Hy and Hz) in the following formula

$$Htot = \sqrt{Hx^2 + Hy^2 + Hz^2} \, nanoVolt \, / \, Am^2.$$

#### STEP RESPONSE CALCULATION

The Step Response is calculated using Protem written by Geonics Ltd. The program utilizes hole directional information to calculate the theoretical primary response in the presence of no conductors. It then calculates the difference between this theoretical primary and the calculated primary (from the summed secondary field, on ramp and off time) to determine the step response.

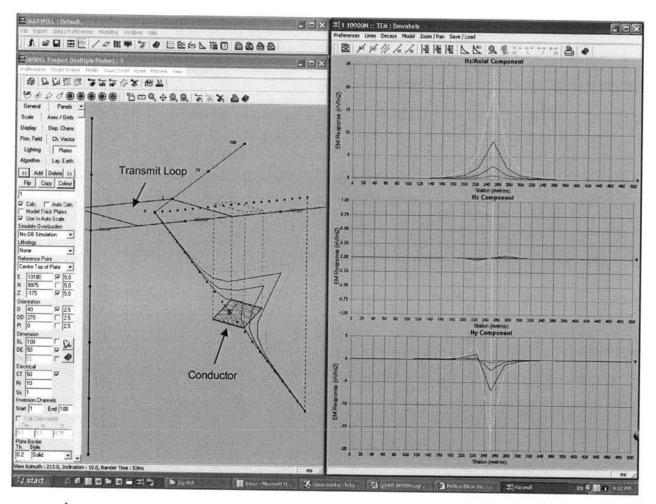


Fig B5: <sup>1</sup>Maxwell Forward Model showing TEM responses from hole intersecting centre of conductor, centred up and down dip and left of centre.

<sup>&</sup>lt;sup>1</sup> Maxwell 4.3 Modeling, Presentation and Visualization software developed by Electromagnetic Imaging Technology, Australia

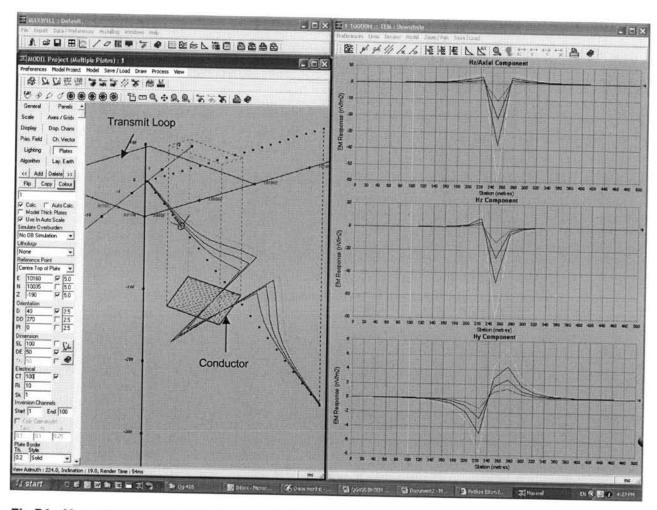


Fig B6: Maxwell Forward Model showing TEM responses from hole intersecting upper edge of conductor and right of centre.

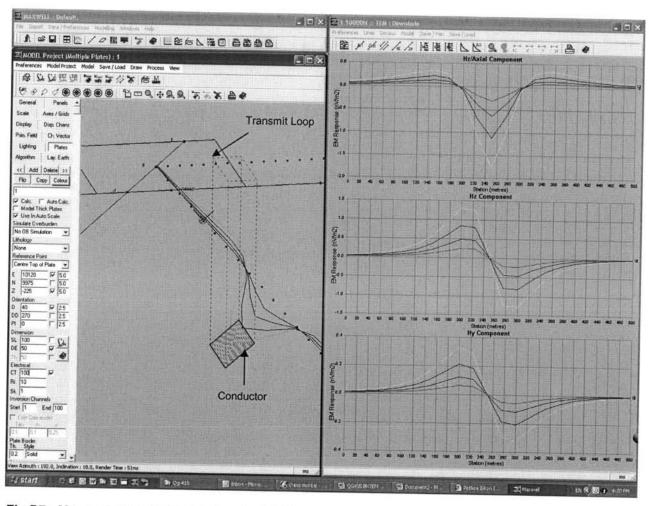


Fig B7: Maxwell Forward Model showing TEM responses from conductor located approximately 50m below the hole (down dip) and right of centre.

#### APPENDIX C

#### INSTRUMENT SPECIFICATIONS

#### GEONICS LIMITED EM-37 Transmitter Technical Specifications

Current Waveform: bipolar square wave.

Repetition Rate: 3Hz, 7.5Hz or 30Hz in countries using 60Hz power line frequency; 2.5Hz, 6.25Hz or 25Hz

in countries using 50Hz power line frequency; all six base frequencies are switch select-

able.

Turn-off Time (t): fast linear turn-off maximum of 450 μsec. at 30 amps into a 300x600 meter loop. De-

creases proportionally with current and the root of the loop area to a maximum of 20  $\boldsymbol{\mu}$ 

sec. Actual value of t read on front panel meter.

Transmitter Loop: any dimensions from 40x40 meters to 300x600 meters maximum at 30 amps. Larger

dimensions at reduced current. Transmitter output voltage switch adjustable for smaller loops. Value of loop resistance read from front panel meter; resistance must be greater

than 1 ohm on lowest setting to prevent overload.

Protection: circuit breaker protection against input over voltage; instantaneous solid state protection

against output short circuit; automatically resets on removal of short circuit. Input volt-

age output voltage and current indicated on front panel meter.

Output voltage: 24 to 160 volts (zero to peak) maximum

Output power: 2800 watt maximum

Motor generator: 5 HP Honda gasoline engine coupled to a 120 volt, three phase, 400 Hz alternator. Ap-

proximately 8 hours continuous operation from built-in fuel tank.

Component Dimensions and Weights

Transmitter Console: 20 by 42 by 32 cm, 20 kg

GPU: 44 by 32 by 21 cm, 65 kg

#### APPENDIX C

#### INSTRUMENT SPECIFICATIONS

#### **GEONICS LIMITED** Digital Protem Receiver System **Technical Specifications**

Measured Quantity: Time rate of decay of magnetic flux along 3 axes

Sensors:

1. (L.F.): Air-cored coil of bandwidth 60 kHz; 100 cm diameter 2. (H.F.): Air-cored coil of bandwidth 850 kHz; 100 cm diameter 3. (3D-3): Three orthogonal component sensor; simultaneous operation 4. (3D-1): Three orthogonal component sensor; sequential operation

20 geometrically spaced time gates for each base frequency gives range from 6  $\mu sec$  to Time channels:

800 msec.

Repetition Rate:

0.3 Hz, 0.75, 3, 7.5, 30, 75 or 285 Hz for 60 Hz power-line networks

(Base Frequency)

Synchronization: (1) reference cable

(switch selectable): (2) high stability (oven controlled) quartz crystals.

Integration time: 2, 4, 8, 15, 30, 60, 120, 240 sec.

Calibration: Internal self calibration

External Q coil calibration (optional)

Keyboards: Two 3 x 4 matrix sealed key pads with positive tactile feedback

Gain: Automatic or manual control

Dynamic Range: 23 bits (132 dB)

**Display Quantity:** (1)Table of time rate of decay of magnetic flux (dB/dt)

(2) Curve of rate of decay of magnetic flux (dB/dt)

(3)Table of apparent resistivity (pa) Curve of apparent resistivity (pa) (4)

(5)Profile of dB/dt

Real time noise monitor (6)

(7)Calibration curve

(8)Data acquisition statistics (real time)

Storage: Solid state memory with capacity for over 3000 data sets

Display: 8 lines by 40 character (240 x 64 dot) graphic LCD

Data Transfer: Standard RS-232 communications port.

Processor: CMOS 68HC000 8 MHz CPU

Receiver Battery: 12 volts rechargeable battery for 8 hours continuous operation. 6 hours in XTAL mode **Receiver Size:** 

34 x 38 x 27 cm

**Receiver Weight:** 

15 kg

**Operating Temp.:** 

-40°C to +50°C

Transmitters:

(1) Geonics TEM47

(2) Geonics TEM57

(3) Geonics TEM37

#### **Gate Locations**

|      | [.    | 30Hz   |       |                | 7.5Hz  |       |       | 3Hz    |       |
|------|-------|--------|-------|----------------|--------|-------|-------|--------|-------|
| Gate | Start | Center | Widt  | Start          | Center | Widt  | Start | Center | Widt  |
|      |       |        | h     |                |        | h     |       |        | h     |
| 1    | 5.800 | 6.800  | 2.000 | 32.00          | 36.00  | 8.000 | 80.00 | 90.00  | 20.00 |
| 2    | 7.800 | 9.110  | 2.625 | 40.00          | 45.25  | 10.50 | 100.0 | 113.1  | 26.25 |
| 3    | 10.40 | 12.00  | 3.250 | 50.50          | 57.00  | 13.00 | 126.3 | 142.5  | 32.50 |
| 4    | 13.70 | 15.90  | 4.375 | 63.50          | 72.25  | 17.50 | 158.8 | 180.6  | 43.75 |
| 5    | 18.00 | 20.80  | 5.500 | 81.00          | 92.00  | 22.00 | 202.5 | 230.0  | 55.00 |
| 6    | 23.50 | 27.00  | 7.000 | 103.0          | 117.0  | 28.00 | 257.5 | 292.5  | 70.00 |
| 7    | 30.50 | 34.80  | 8.500 | 131.0          | 148.0  | 34.00 | 327.5 | 370.0  | 85.00 |
| 8    | 39.00 | 44.40  | 10.75 | 165.0          | 186.5  | 43.00 | 412.5 | 466.3  | 107.5 |
| 9    | 49.80 | 56.30  | 13.00 | 208.0          | 234.0  | 52.00 | 520.0 | 585.0  | 130.0 |
| 10   | 62.80 | 70.30  | 15.00 | 260.0          | 290.0  | 60.00 | 650.0 | 725.0  | 150.0 |
| 11   | 77.80 | 85.90  | 16.25 | 320.0          | 352.5  | 65.00 | 800.0 | 881.3  | 162.5 |
| 12   | 94.10 | 104.7  | 21.25 | 385.0          | 427.5  | 85.00 | 963.0 | 1069   | 212.5 |
| 13   | 115.3 | 129.1  | 27.50 | 470.0          | 525.0  | 110.0 | 1175  | 1313   | 275.0 |
| _ 14 | 142.8 | 159.7  | 33.75 | 580.0          | 647.5  | 135.0 | 1450  | 1619   | 337.5 |
| 15   | 176.6 | 198.4  | 43.75 | 715.0          | 802.5  | 175.0 | 1788  | 2006   | 437.5 |
| 16   | 220.3 | 248.6  | 56.25 | 890.0          | 1002.5 | 225.0 | 2225  | 2506   | 562.5 |
| 17   | 276.6 | 312.3  | 71.25 | 1115           | 1257.5 | 285.0 | 2790  | 3144   | 712.5 |
| 18   | 347.8 | 393.5  | 91.25 | 1400           | 1582.5 | 365.0 | 3500  | 3957   | 912.5 |
| 19   | 439.0 | 497.1  | 116.2 | 1765           | 1997.5 | 465.0 | 4413  | 4994   | 1162  |
| 20   | 555.3 | 629.0  | 147.5 | 2230           | 2525.0 | 590.0 | 5575  | 6313   | 1475  |
| 21   | 702.8 | 797.3  | 188.7 | 2820           | 3197.5 | 755.0 | 7050  | 7994   | 1887  |
| 22   | 891.5 | 1012   | 240.0 | 3575           | 4055.0 | 960.0 | 8940  | 10138  | 2400  |
| 23   | 1131  | 1285   | 306.2 | 4535           | 5147.5 | 1225  | 11338 | 12870  | 3062  |
| 24   | 1438  | 1634   | 391.2 | 5760           | 6542.5 | 1565  | 14400 | 16350  | 3913  |
| 25   | 1829  | 2079   | 498.7 | 7325           | 8322.5 | 1995  | 18310 | 20806  | 4987  |
| 26   | 2328  | 2645   | 636.2 | 9320           | 10592  | 2545  | 23300 | 26475  | 6363  |
| 27   | 2964  | 3370   | 812.5 | 11865          | 13490  | 3250  | 29663 | 33725  | 8125  |
| 28   | 3776  | 4295   | 1036  | 151 <b>1</b> 5 | 17187  | 4145  | 37800 | 42975  | 10362 |
| _ 29 | 4813  | 5473   | 1321  | 19260          | 21902  | 5285  | 48150 | 54750  | 13212 |
| 30   | 6134  | 6978   | 1685  | 24545          | 27915  | 6740  | 61360 | 69800  | 16850 |
|      | 7819  |        |       | 31285          |        |       | 78200 |        |       |

This Table applies to both synchronization modes regardless of which of TEM37, TEM47 and TEM57 transmitters is used, provided that correct Tx model is selected in Header (2.4).

#### APPENDIX C

## INSTRUMENT SPECIFICATIONS

# GEONICS LIMITED BH-43 3-D Borehole Probe with Tilt Sensors Technical Specifications

Measured Quantity:

Time derivative of axial and radial magnetic field

Sensors:

Three orthogonal coils (one axial, two radial)

Overall Length:

334 cm

Maximum Diameter:

3.8 cm

Weight:

9.5 kg

Sensor-Preamplifier Resonant

Frequency:

10 kHz

Sensor Areas:

 $100 \, \text{m}^2$ 

Operating Temperature:

-30 degrees C to +80 degrees C

**Probe Rotation Correction:** 

Two orthogonal tilt meters with range  $\pm 1^{\circ}$  to  $\pm 80^{\circ}$  from vertical

Battery:

Rechargeable NiCd sealed pack for 15 hours continuous operation

Cable

Type:

Two-conductor shield polyurethane jacket Kevlar membrane

Diameter:

5.6 mm

Weight:

40 kg/km

Length:

1800m

## APPENDIX D

# PRODUCTION SUMMARY

| JUNIOR P  | E TEM SURVEYS  |         |         |                |            |
|-----------|--|---------|---------|----------------|------------|
| DONLINGE  | L TEM SORVETS  |         |         |                |            |
| Date      | Description  | Hole #  | Start   | End            | Total Cov- |
| 9-Dec-05  | Mob Timmins to Armstrong. The truck broke down, spent the night in the truck.  |         |         |                | erage      |
| 10-Dec-05 | Got the truck towed to Thunder Bay. Picked up rental truck, transferred equipment and stayed the night in Thunder Bay.   |         |         |                |            |
| 11-Dec-05 | Mob Thunder Bay to Armstrong. Located grid and dummied 0405-44 (blocked). Installed part of the loop on VW. 0.5 mob, 0.5 survey.   | 0405-44 | Blocked | Pleaked        | Di- i      |
| 12-Dec-05 | Finished installing loop. Dummied 0405-38 (blocked at 182m). Dummied and read 0405-40.   | 0405-40 | 10      | Blocked<br>420 | Blocked    |
| 13-Dec-05 | Dummied 0405-42 to 548m. Located and installed loop on B4-7 Zone. Dummied and read 0405-46 to 190m when receiver malfunctioned. Ordered replacement receiver to be shipped to Thunder Bay tonight. The rental truck had oil pump problems on route. Forced to overnight in Thunder Bay as AC cargo closed before receiver arrived. Arranged to pickup replacement truck the next morning. 0.75 survey day. | 0405-46 | 10      | 190            | 410        |
| 14-Dec-05 | Drive Thunder Bay to Armstrong. Finished reading 0405-46.  0.5 survey day.   | 0405-46 | 170     | 445            |            |
| 15-Dec-05 | Read 0405-42.  | 0405-42 | 30      | 535            | 275        |
| 16-Dec-05 | Read 0405-38. Dummied 0405-45 (blocked at 24m). Moved to west loop. Curtis left with rental truck and Pat arrived with Stumpy.   | 0405-38 | 10      | 170            | 505        |
| 17-Dec-05 | Locate dummy and read 0403-10, 0401-23.  | 0403-10 | 10      | 55             | 160<br>45  |
|           |  | 0401-23 | 10      | 270            |            |
| 18-Dec-05 | Located and dummied 0401-03 - casing bent and unable to get dummy probe past casing. Locate, dummy and read 0401-02.   | 0401-02 | 10      | 400            | 260        |
| 19-Dec-05 | Back out to property to retrieve loop and equipment. Demob to Thunder Bay. 0.5 survey, 0.50 demob.   | 0401-02 | 10      | 400            | 390        |
| 20-Dec-05 | Demob Thunder Bay to Timmins.  |         |         |                |            |

Quantec

#### APPENDIX E

#### LIST OF MAPS

LPTEM Borehole Profiles: Multi-Channel 4-Axis and LinLog Profile Plots: (time rate of decay of the secondary electromagnetic field, 3D: X, Y and Z components. 30Hz, 1:2000 scale, nV/m²). Map name QG-396BH"pt"-Tiltrot-"C"-Hole#-"L" – where "pt" is profile type (4A for 4-axis and LL for LinLog), "C" is component (Z, X, Y, TF) and "L" is loop location relative to hole (collar, north, east, south or west)

| Hole      | # Profiles (4-axis and<br>LinLog) | Loop and Hole Location<br>Maps |
|-----------|-----------------------------------|--------------------------------|
| B4-7 Zone | 3/                                | Maps                           |
| 0405-38   | 8                                 |                                |
| 0405-40   | 8                                 |                                |
| 0405-42   | 8                                 |                                |
| 0405-46   | 8                                 |                                |
| VW Zone   |                                   | 1                              |
| 0401-02   | 8                                 |                                |
| 0401-23   | 8                                 |                                |
| 0403-10   | 8                                 |                                |

Total Maps: 58

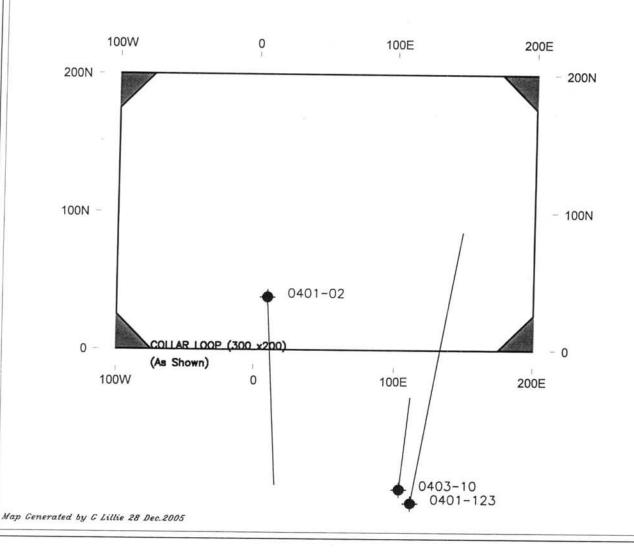
QUANTEC GEOSCIENCE LTD. 3D BHTEM Surveys

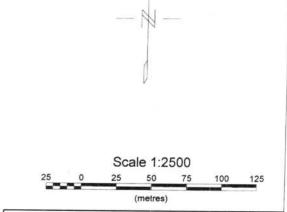
LANDOR RESOURCES CANADA INC.
Junior Lake Property

## APPENDIX F

**PROFILES** 

# BOREHOLE & LOOP LOCATION MAP





# LANDORE RESOURCES CANADA INC. JUNIOR LAKE PROJECT - B4-7 ZONE ARMSTRONG, ON

3D FIXED-LOOP BOREHOLE TEM SURVEY

#### BOREHOLE & LOOP LOCATION MAP

Borehole Parameters: DDH #1 = 0401-02 Location = 0+10E, 35N Azimuth & Dip = 177, -70 DDH #2 = 0403-10 Location = 1+10E, 1+00S Azimuth & Dip = 357, -45 DDH #3 = 0401-123 Location = 0+20E, 1+00S Azimuth & Dip = 10, -50

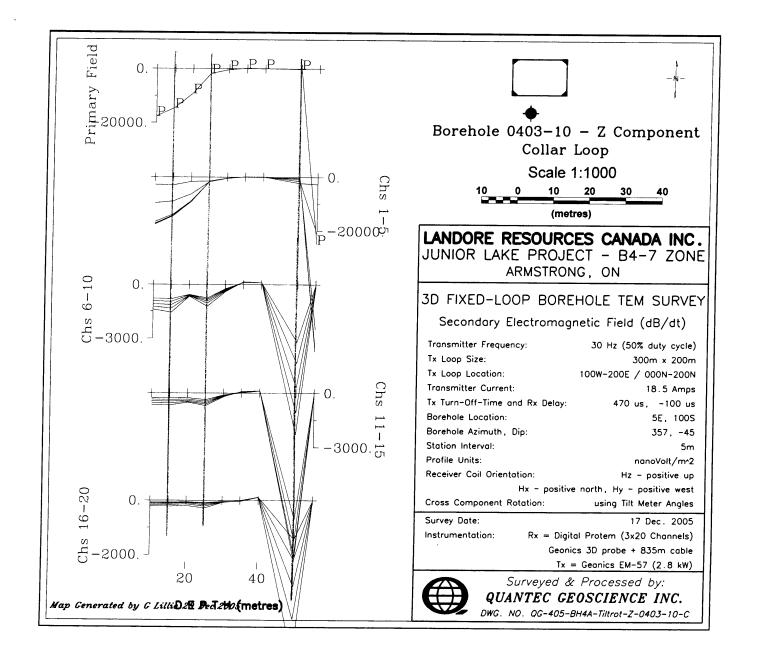
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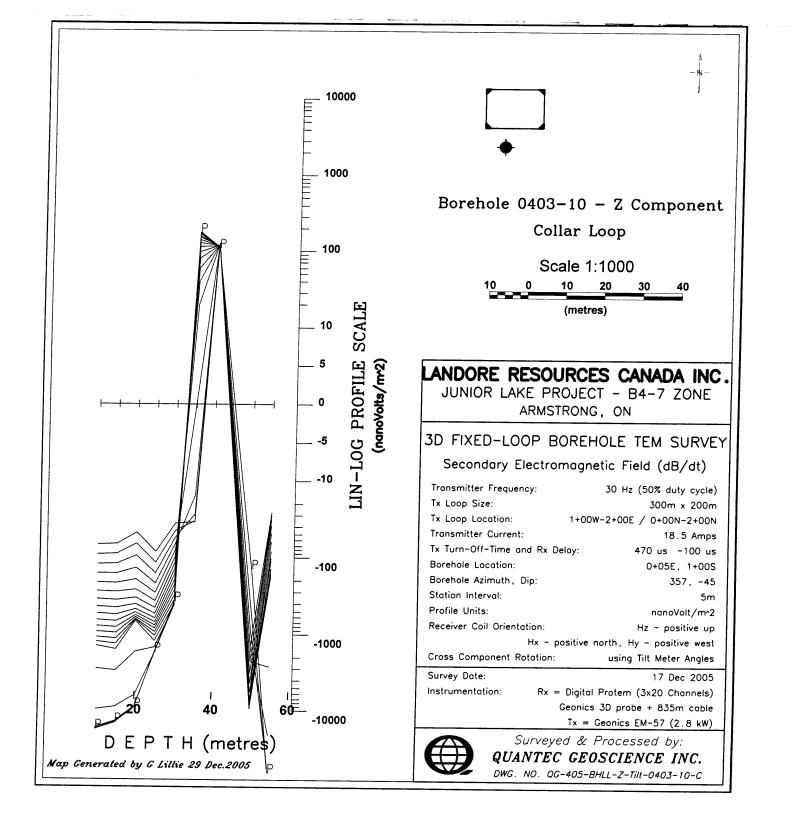
Rx = Digital Protem (3x20 Channels)

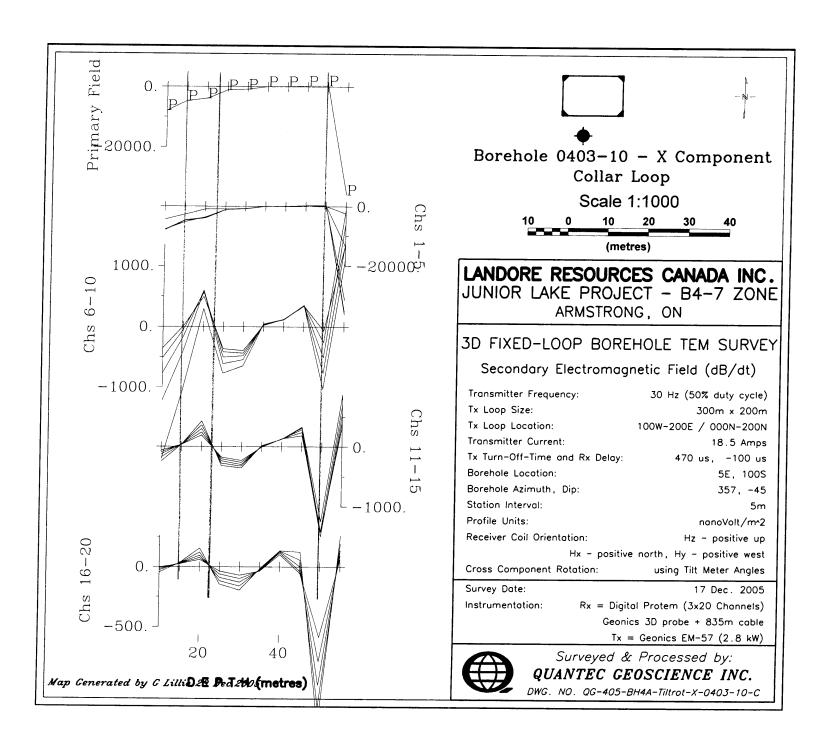
Geonics 3D probe + 835m cable Tx = Geonics EM-57 (2.8 kW)

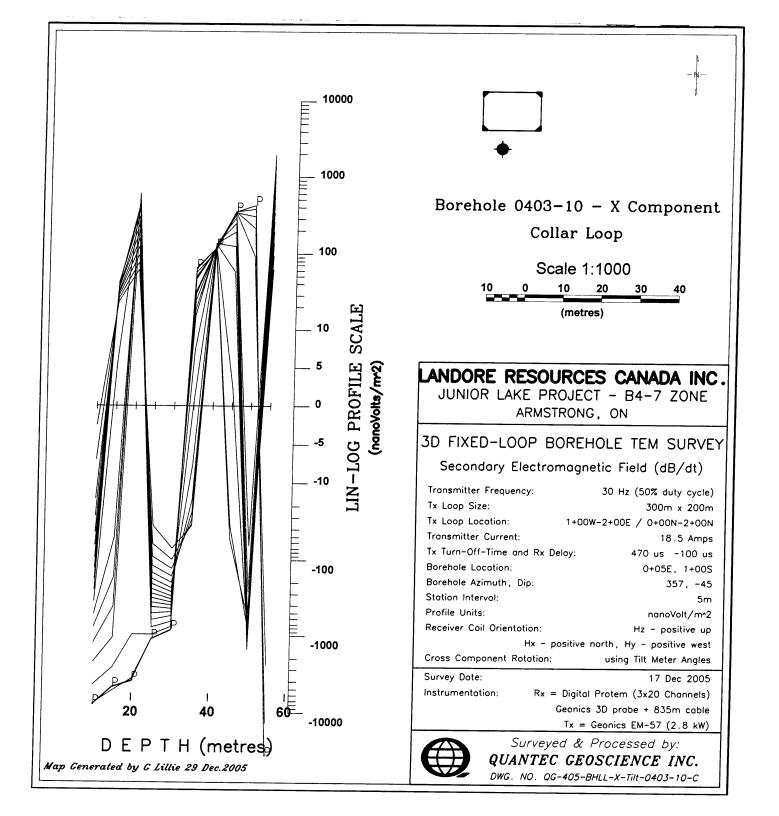


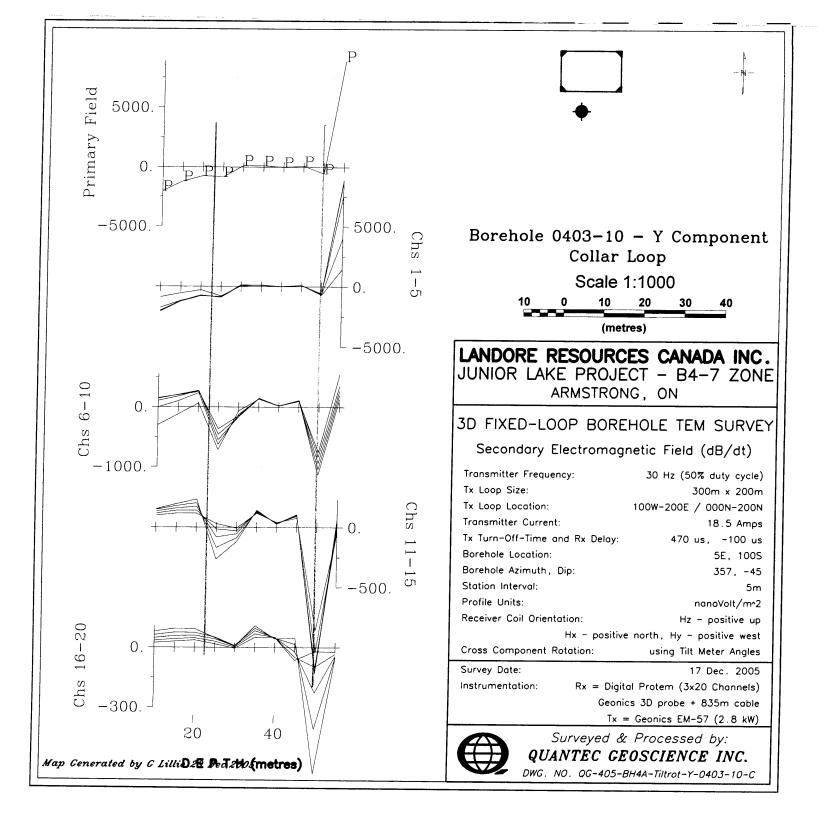
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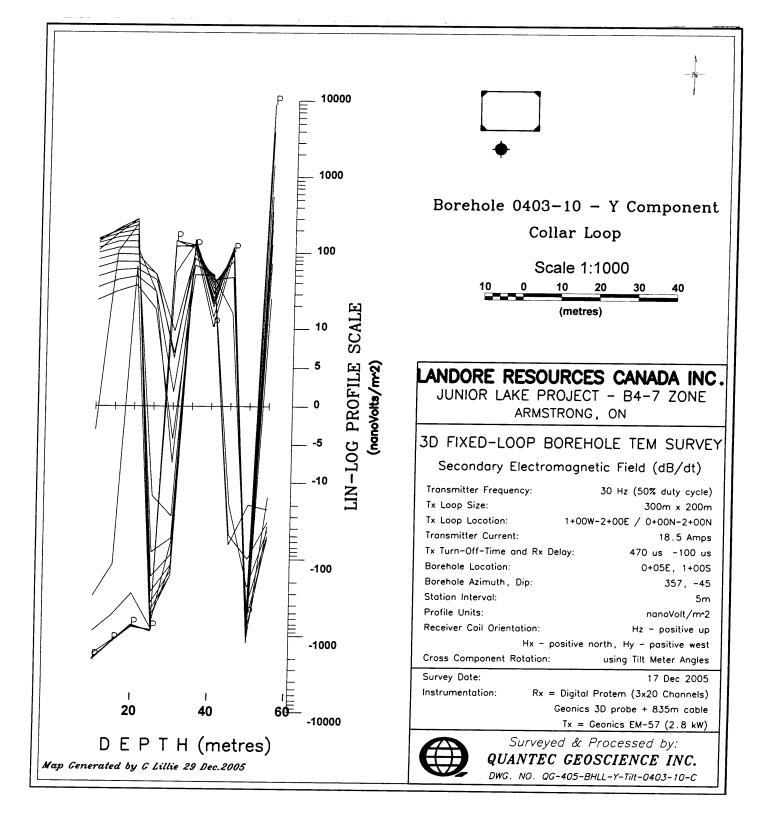


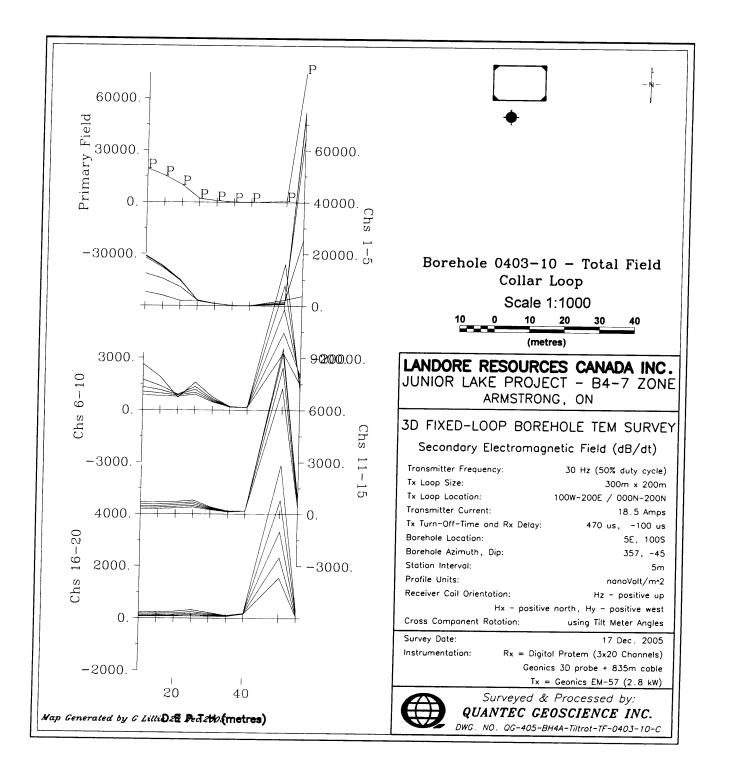


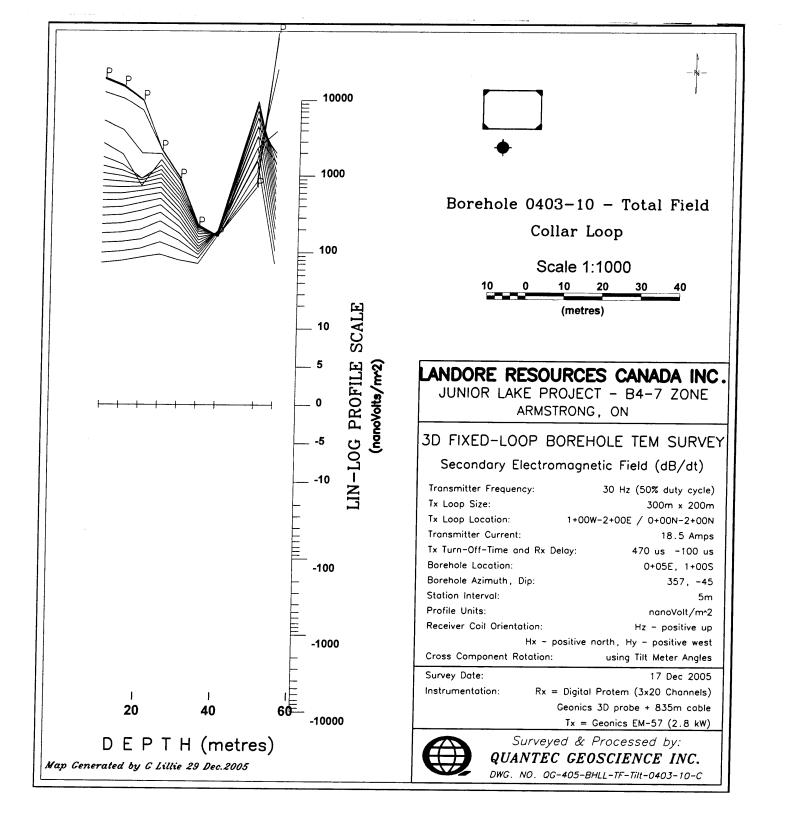


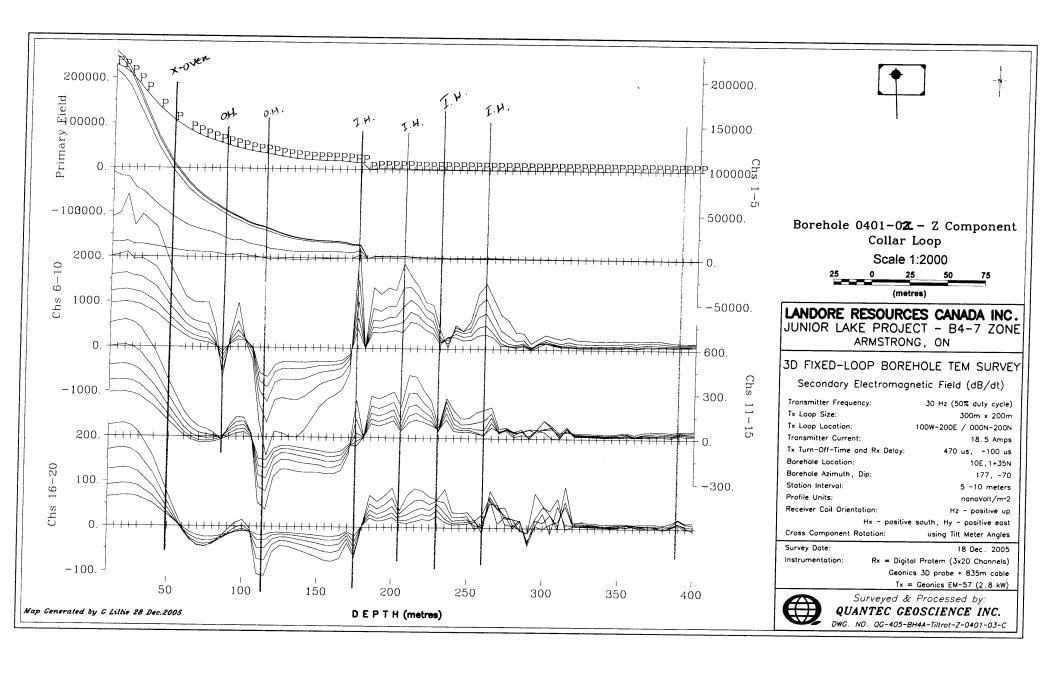


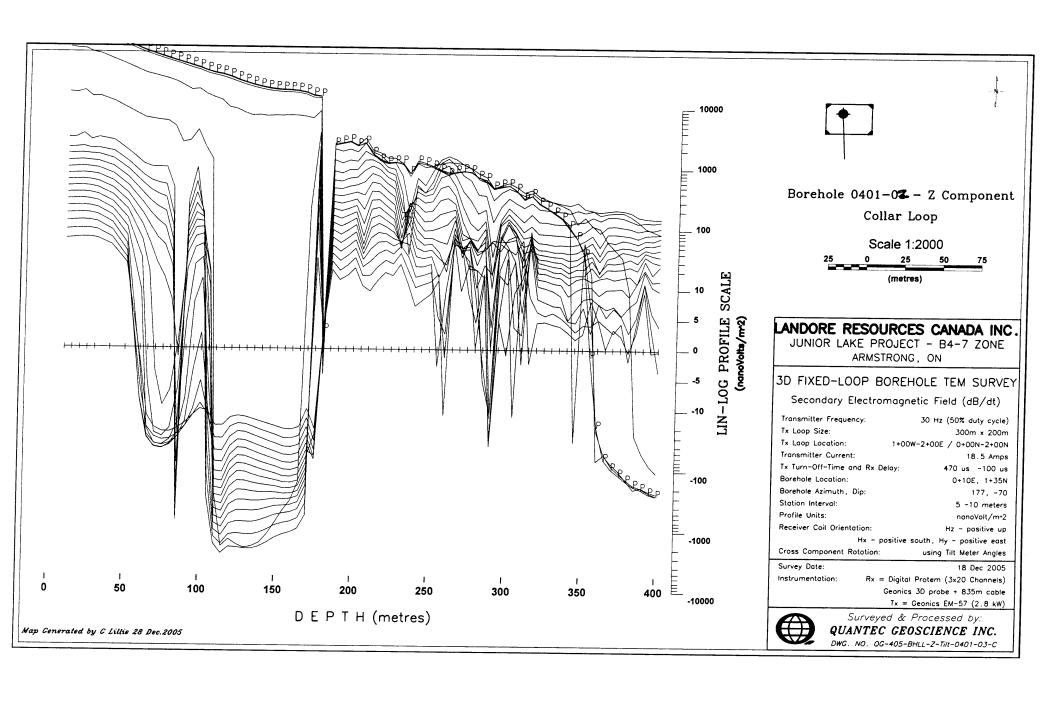


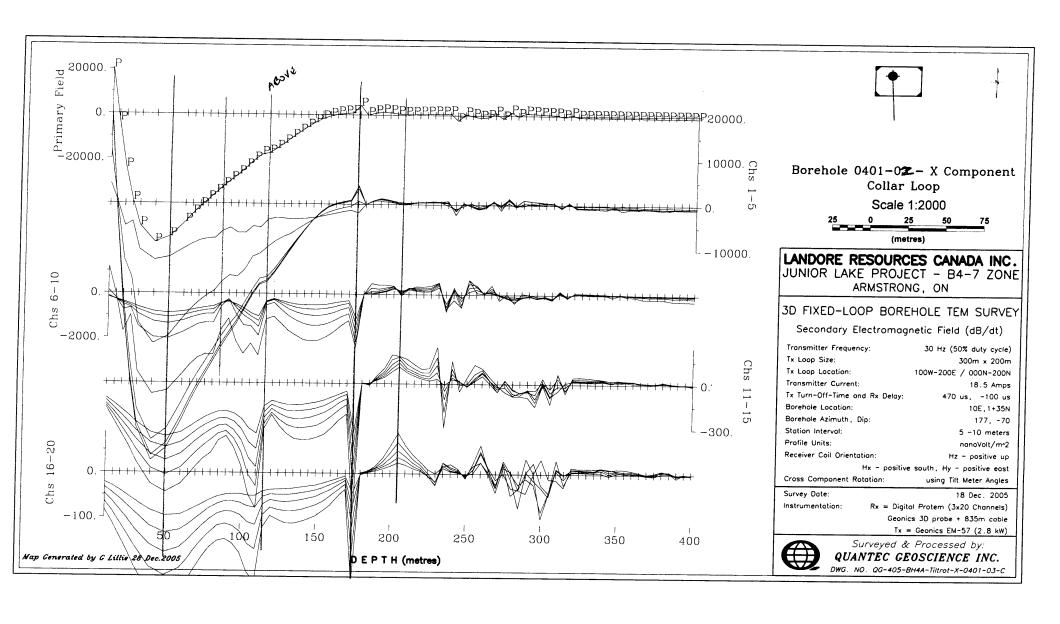


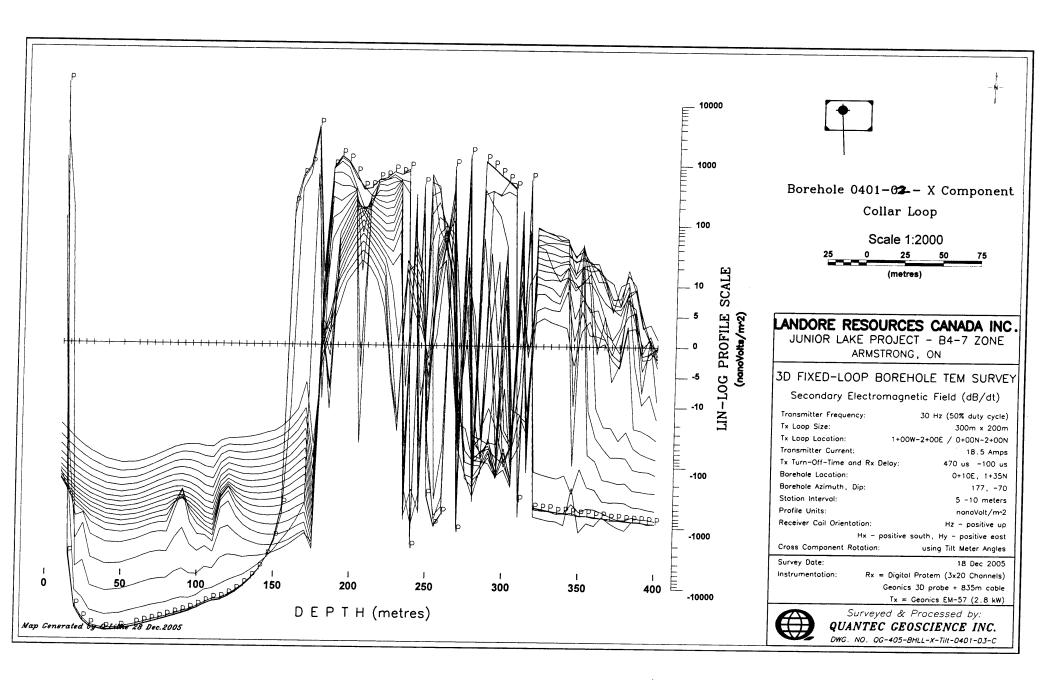


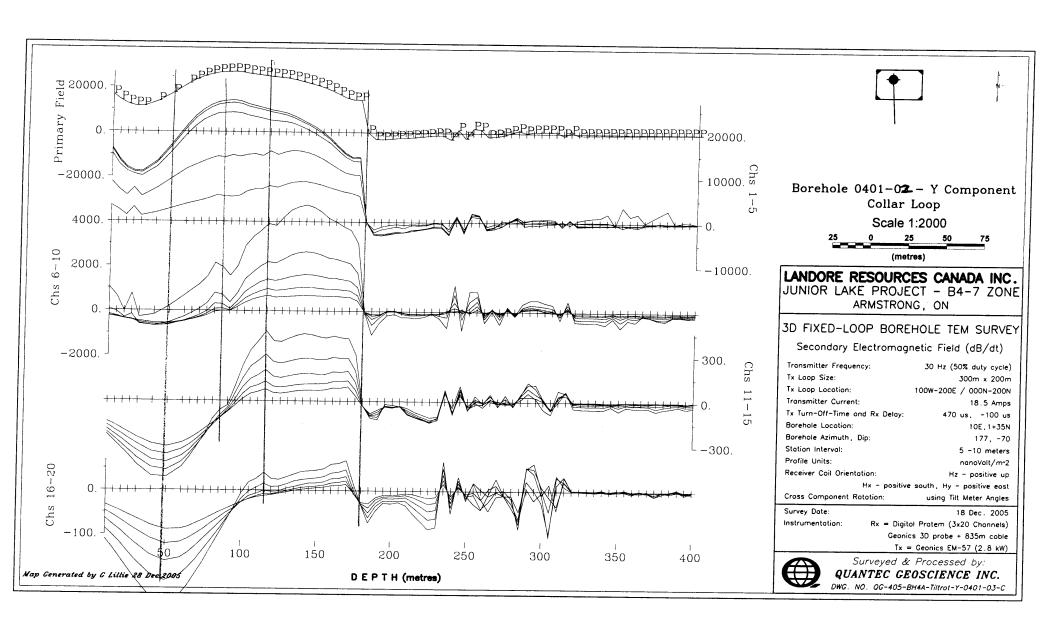


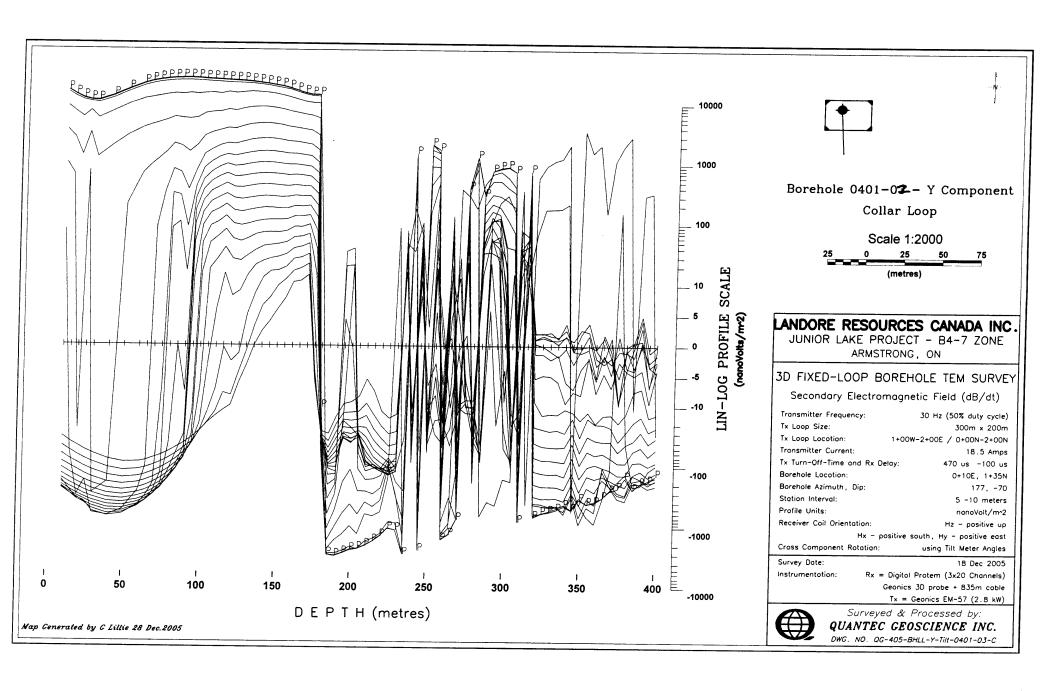


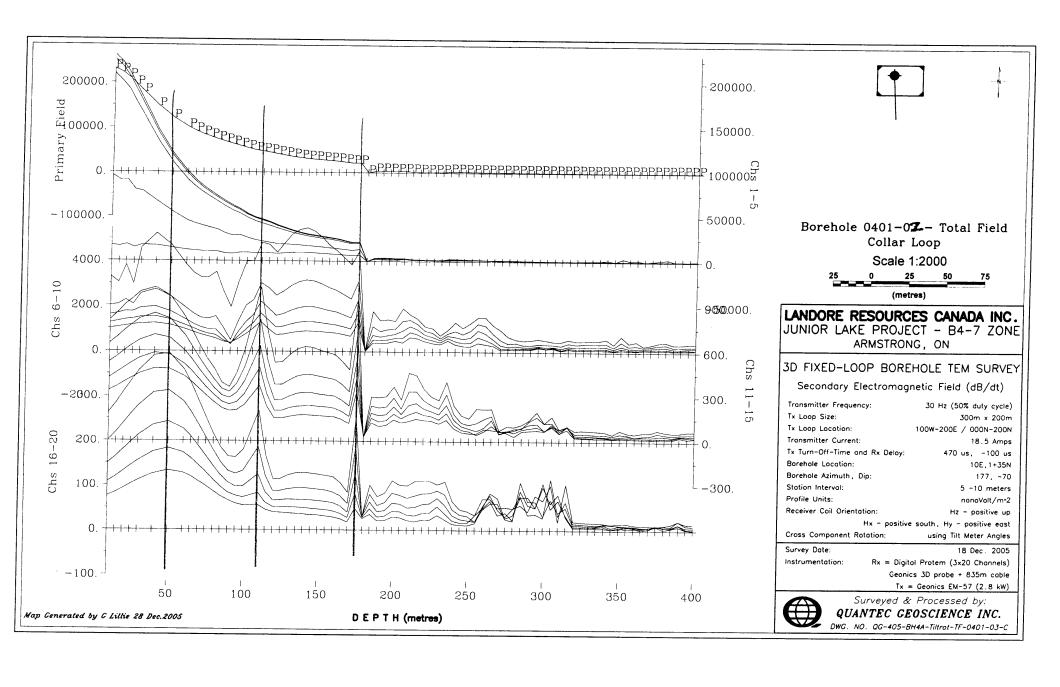


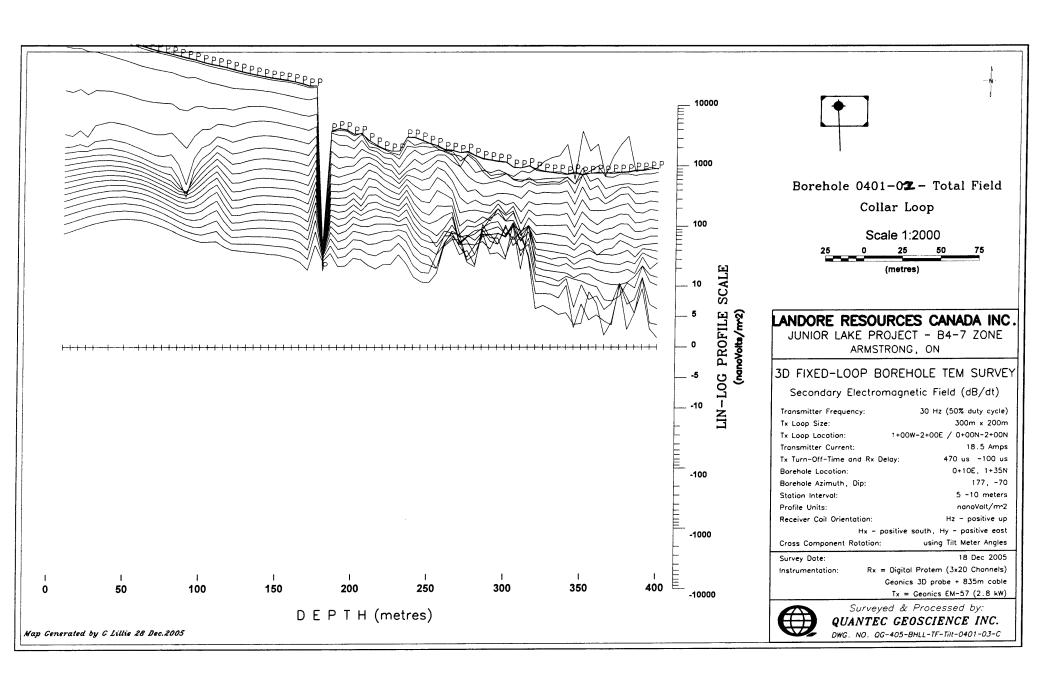


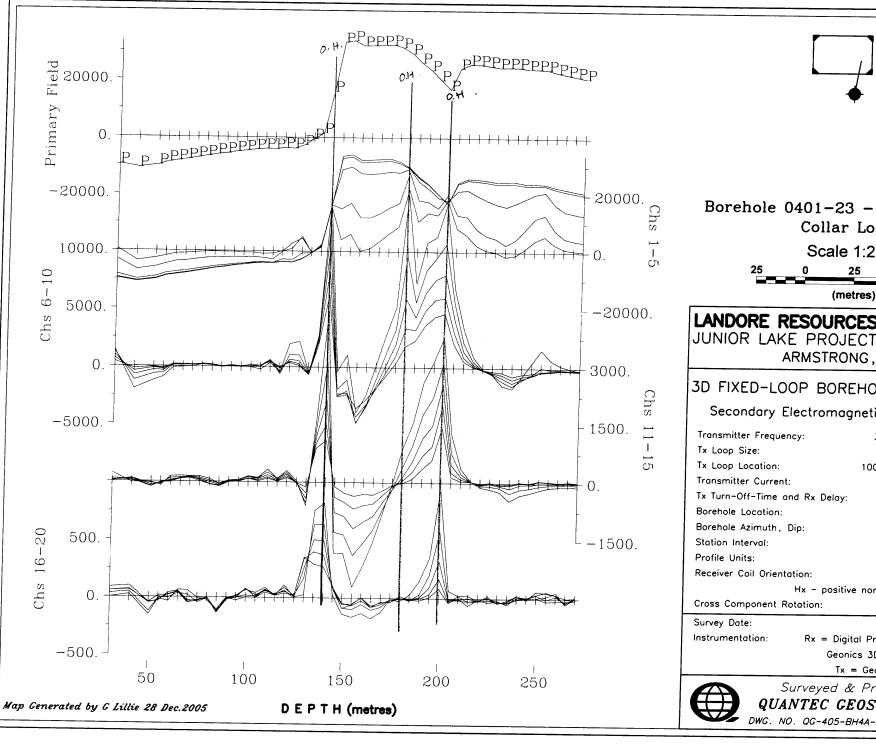














Borehole 0401-23 - Z Component Collar Loop

Scale 1:2000



# LANDORE RESOURCES CANADA INC.

JUNIOR LAKE PROJECT - B4-7 ZONE ARMSTRONG, ON

#### 3D FIXED-LOOP BOREHOLE TEM SURVEY

Secondary Electromagnetic Field (dB/dt)

30 Hz (50% duty cycle)

300m x 200m 100W-200E / 000N-200N

18.5 Amps

470 us, -100 us

110E, 105S

10, -50

5 -10 meters nanoVolt/m^2

Hz - positive up

Hx - positive north, Hy - positive west

using Primary Field

18 Dec. 2005

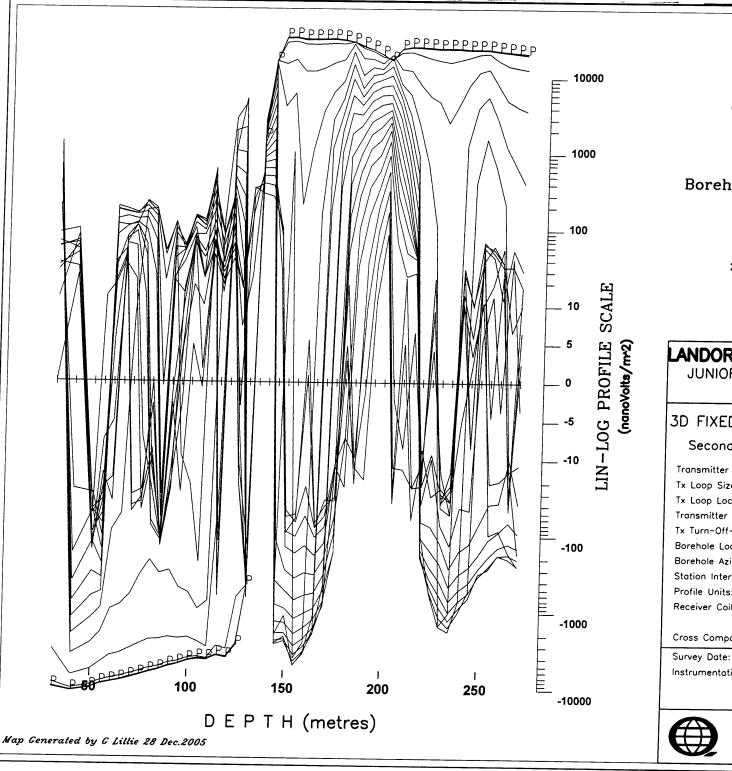
Rx = Digital Protem (3x20 Channels)

Geonics 3D probe + 835m cable

Tx = Geonics EM-57 (2.8 kW)

Surveyed & Processed by: QUANTEC GEOSCIENCE INC.

DWG. NO. QG-405-BH4A-Primrot-Z-0401-23-C





Borehole 0401-23 - Z Component Collar Loop

> Scale 1:2000 (metres)

# LANDORE RESOURCES CANADA INC

JUNIOR LAKE PROJECT - B4-7 ZONE ARMSTRONG, ON

#### 3D FIXED-LOOP BOREHOLE TEM SURVEY

Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency: 30 Hz (50% duty cycle) Tx Loop Size: 300m x 200m Tx Loop Location: 1+00W-2+00E / 0+00N-2+00N Transmitter Current: 18.5 Amps

Tx Turn-Off-Time and Rx Delay: 470 us -100 us Borehole Location: 110E, 105S

Borehole Azimuth, Dip: 10. -50

Station Interval: 5 -10 meters Profile Units: nanoVolt/m^2

Receiver Coil Orientation: Hz - positive up

Hx - positive north, Hy - positive west

Cross Component Rotation: using Primary Field

Instrumentation:

18 Dec 2005 Rx = Digital Protem (3x20 Channels)

Geonics 3D probe + 835m cable

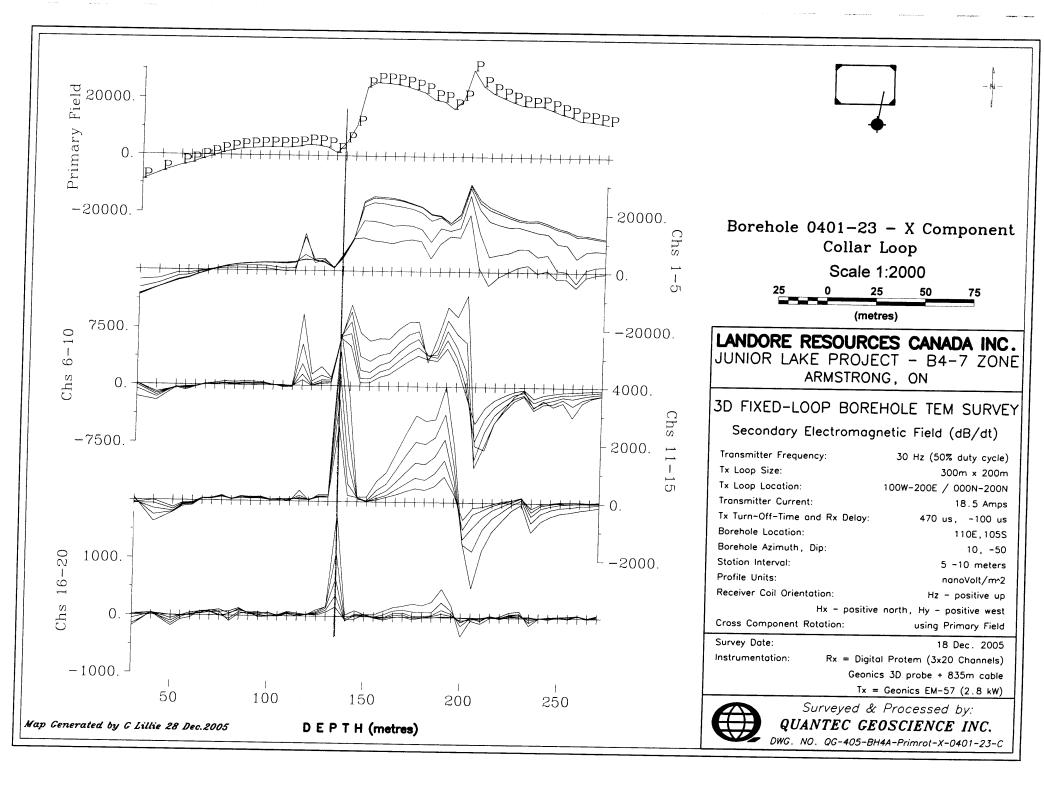
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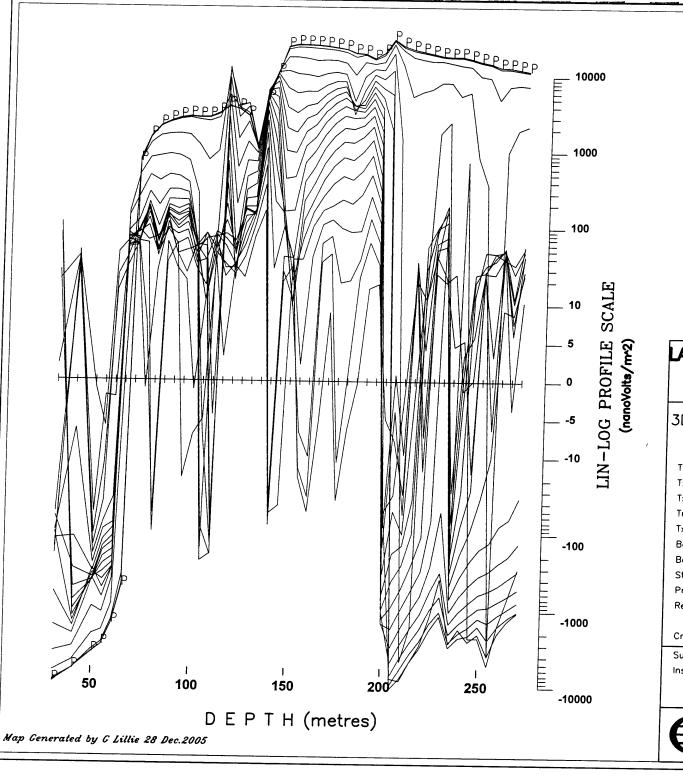


Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-405-BHLL-Z-Prim-0401-23-C







Borehole 0401-23 - X Component Collar Loop

> Scale 1:2000 (metres)

# LANDORE RESOURCES CANADA INC

JUNIOR LAKE PROJECT - B4-7 ZONE ARMSTRONG, ON

# 3D FIXED-LOOP BOREHOLE TEM SURVEY

Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency: 30 Hz (50% duty cycle) Tx Loop Size: 300m x 200m Tx Loop Location: 1+00W-2+00E / 0+00N-2+00N

Transmitter Current: Tx Turn-Off-Time and Rx Delay:

18.5 Amps 470 us -100 us

Borehole Lacation:

110E, 105S

Borehole Azimuth, Dip:

10, -50

Station Interval:

5 -10 meters

Profile Units: Receiver Coil Orientation:

nanoVolt/m^2 Hz - positive up

Hx - positive north, Hy - positive west

Cross Component Rotation:

using Primary Field

Survey Date:

18 Dec 2005

Instrumentation:

Rx = Digital Protem (3x20 Chonnels)

Geonics 3D probe + 835m cable

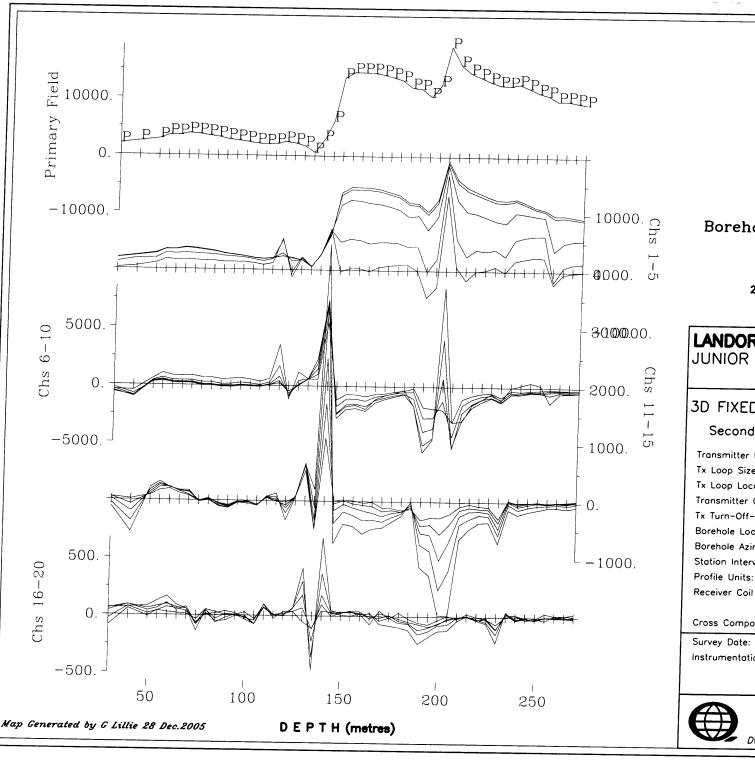
Tx = Geonics EM-57 (2.8 kW)



Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-405-BHLL-X-Prim-0401-23-C





Borehole 0401-23 - Y Component Collar Loop

Scale 1:2000

(metres)

# LANDORE RESOURCES CANADA INC.

JUNIOR LAKE PROJECT - B4-7 ZONE ARMSTRONG, ON

### 3D FIXED-LOOP BOREHOLE TEM SURVEY

Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:

30 Hz (50% duty cycle)

Tx Loop Size:

300m x 200m

Tx Loop Location:

100W-200E / 000N-200N

Transmitter Current:

18.5 Amps

Tx Turn-Off-Time and Rx Delay:

470 us, -100 us

Borehole Locotion:

Borehole Azimuth, Dip:

110E, 105S

Station Interval:

10, -50 5 -10 meters

nonoVolt/m^2

Receiver Coil Orientation:

Hz - positive up

18 Dec. 2005

Hx - positive north, Hy - positive west

Cross Component Rotation:

using Primary Field

Survey Date:

instrumentation:

Rx = Digital Protem (3x20 Channels)

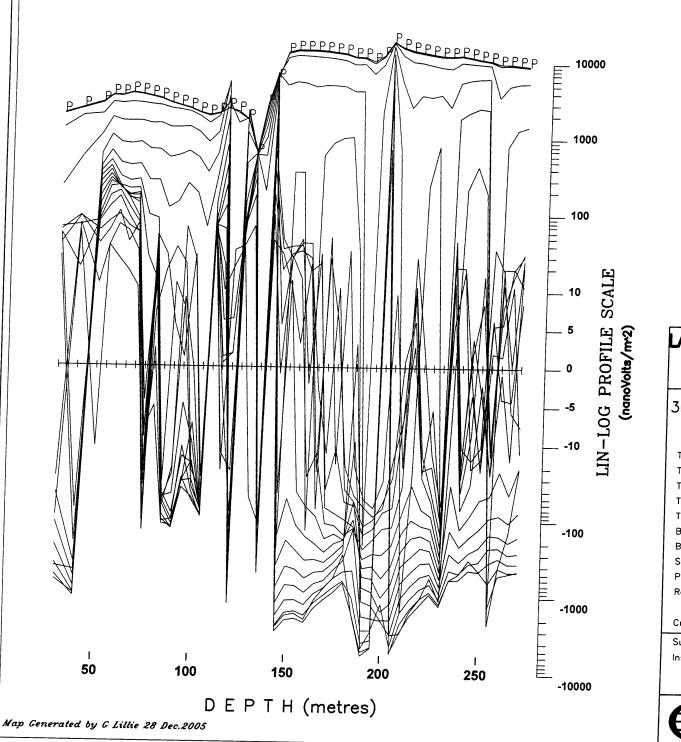
Geonics 3D probe + 835m cable

Tx = Geonics EM-57 (2.8 kW)



Surveyed & Processed by: QUANTEC GEOSCIENCE INC.

DWG. NO. QG-405-BH4A-Primrot-Y-0401-23-C





Borehole 0401-23 - Y Component Collar Loop

> Scale 1:2000 25 0 25 50 75 (metres)

# LANDORE RESOURCES CANADA INC.

JUNIOR LAKE PROJECT - B4-7 ZONE ARMSTRONG, ON

### 3D FIXED-LOOP BOREHOLE TEM SURVEY

Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency: 30 Hz (50% duty cycle)
Tx Loop Size: 300m x 200m
Tx Loop Location: 1+00W-2+00E / 0+00N-2+00N
Transmitter Current: 18.5 Amps
Tx Turn-Off-Time and Rx Delay: 470 us -100 us
Borehole Location: 110E, 105S

Borehole Azimuth, Dip: 10, -50
Station Interval: 5 -10 meters
Profile Units: nanoVolt/m²2

Receiver Coil Orientation: Hz - positive up

Hx - positive north, Hy - positive west

Cross Component Rotation: using Primary Field

Survey Date:

18 Dec 2005

Instrumentation:

Rx = Digital Protem (3x20 Channels)

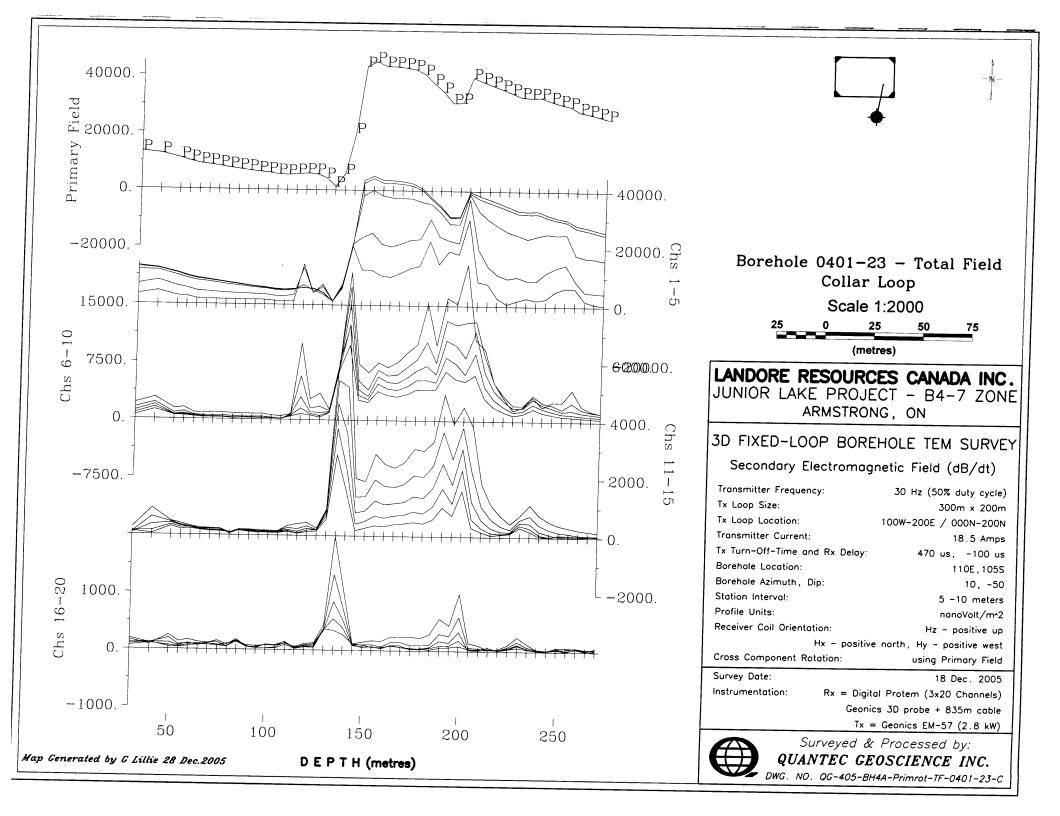
Geonics 3D probe + 835m cable

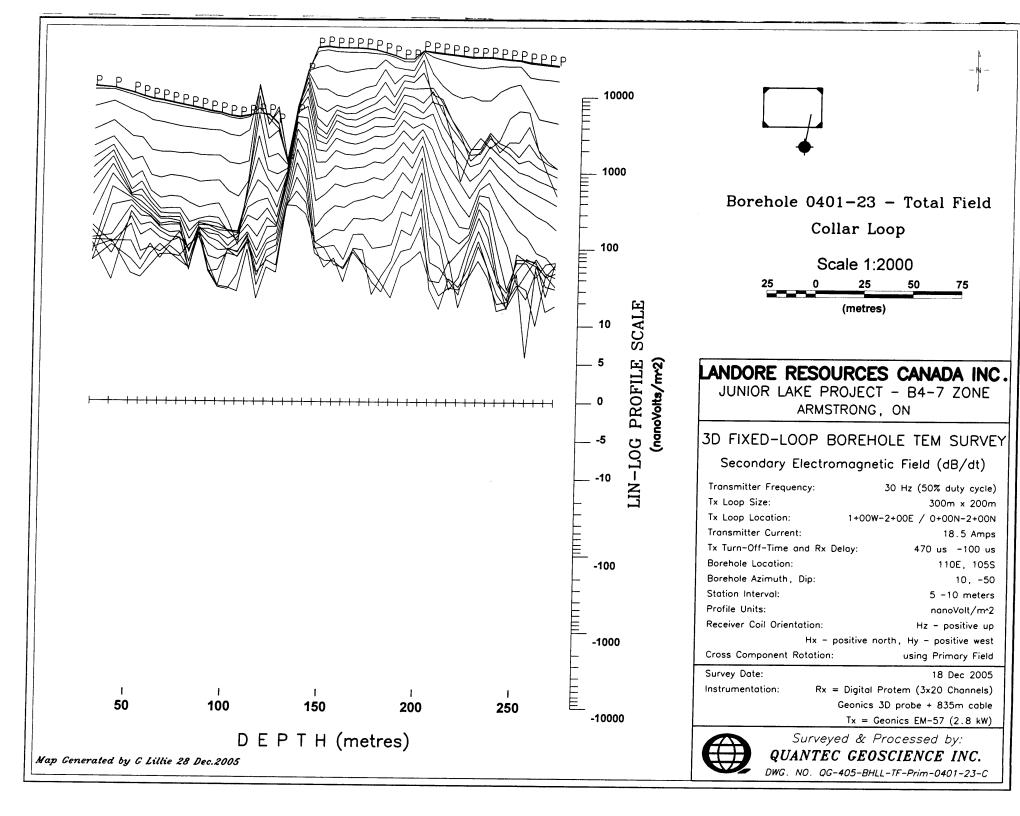
Tx = Geonics EM-57 (2.8 kW)

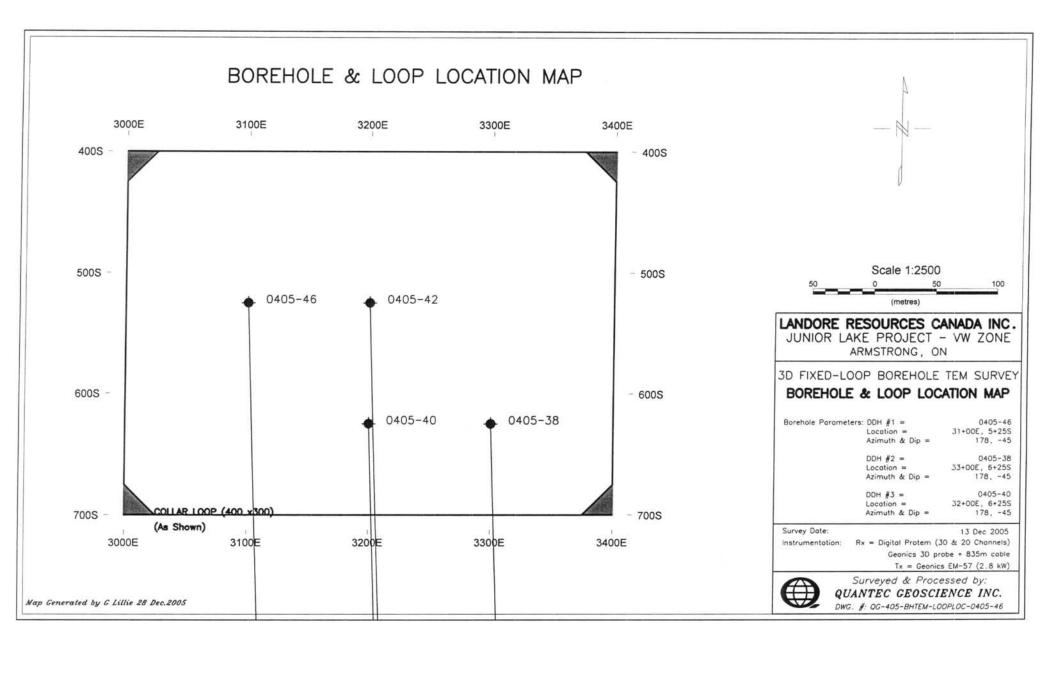


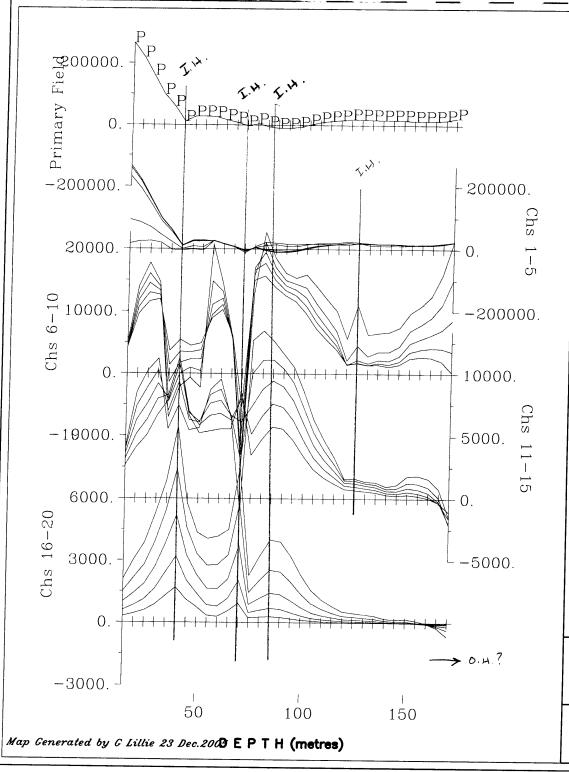
Surveyed & Processed by: **QUANTEC GEOSCIENCE INC.** 

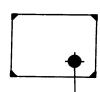
DWG. NO. QG-405-BHLL-Y-Prim-0401-23-C











Borehole 0405-38 - Z Component Collar Loop

Scale 1:2000



LANDORE RESOURCES CANADA INC.
JUNIOR LAKE PROJECT - VW ZONE
ARMSTRONG, ON

#### 3D FIXED-LOOP BOREHOLE TEM SURVEY

Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency: 30 Hz (50% duty cycle)
Tx Loop Size: 400m x 300m

Tx Loop Size: 400m x 300m
Tx Loop Location: 3000E-3400F / 400S-700S

Tx Loop Location: 3000E-3400E / 400S-700S
Transmitter Current: 14.0 Amps

Transmitter Current: 14.0 Amps
Tx Turn-Off-Time and Rx Delay: 415 us, -100 us

Borehole Location: 3300E, 625S

Borehole Azimuth, Dip: 178, -45

Station Interval: 5 - 10 meters

Profile Units: nanoVolt/m^2

Receiver Coil Orientation: Hz - positive up

Hx - positive south, Hy - positive east

Cross Component Rotation: using Tilt Meter Angles

Survey Date:

16 Dec. 2005

Instrumentation:

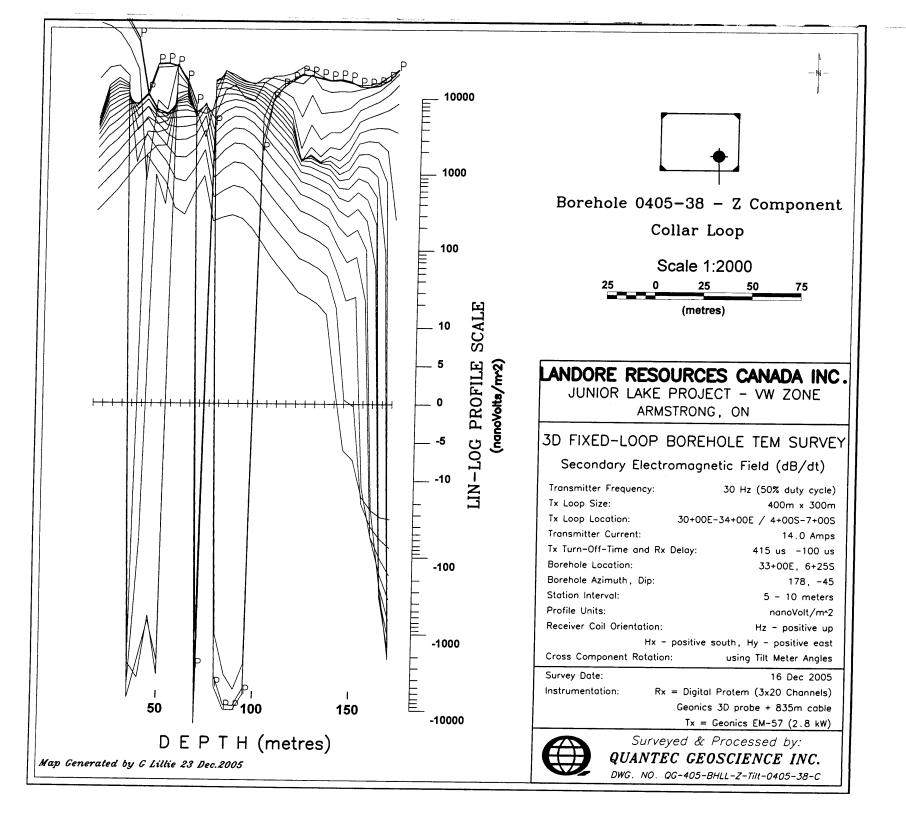
Rx = Digital Protem (3x20 Channels)

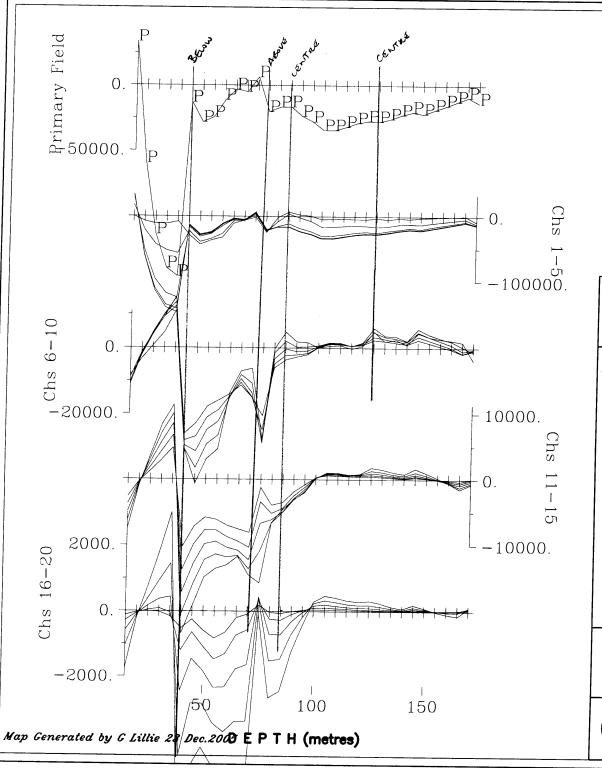
Geonics 3D probe + 835m cable

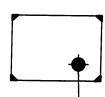
Tx = Geonics EM-57 (2.8 kW)



Surveyed & Processed by: **QUANTEC GEOSCIENCE INC.** DWG. NO. QG-405-BH4A-Tiltrot-Z-0405-38-C







Borehole 0405-38 - X Component Collar Loop

Scale 1:2000



### LANDORE RESOURCES CANADA INC. JUNIOR LAKE PROJECT - VW ZONE

ARMSTRONG, ON

#### 3D FIXED-LOOP BOREHOLE TEM SURVEY

Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:

30 Hz (50% duty cycle)

Tx Loop Size:

400m x 300m

Tx Loop Location:

3000E-3400E / 400S-700S

Transmitter Current:

14.0 Amps

Tx Turn-Off-Time and Rx Delay:

415 us, -100 us

Borehole Location:

3300E, 625S

Borehole Azimuth, Dip:

178. -45

Station Interval:

5 - 10 meters

Profile Units:

nanoVolt/m^2

Receiver Coil Orientation:

Hz - positive up

Hx - positive south, Hy - positive east

Cross Component Rotation:

using Tilt Meter Angles

Survey Date:

16 Dec. 2005

Instrumentation:

Rx = Digital Protem (3x20 Channels)

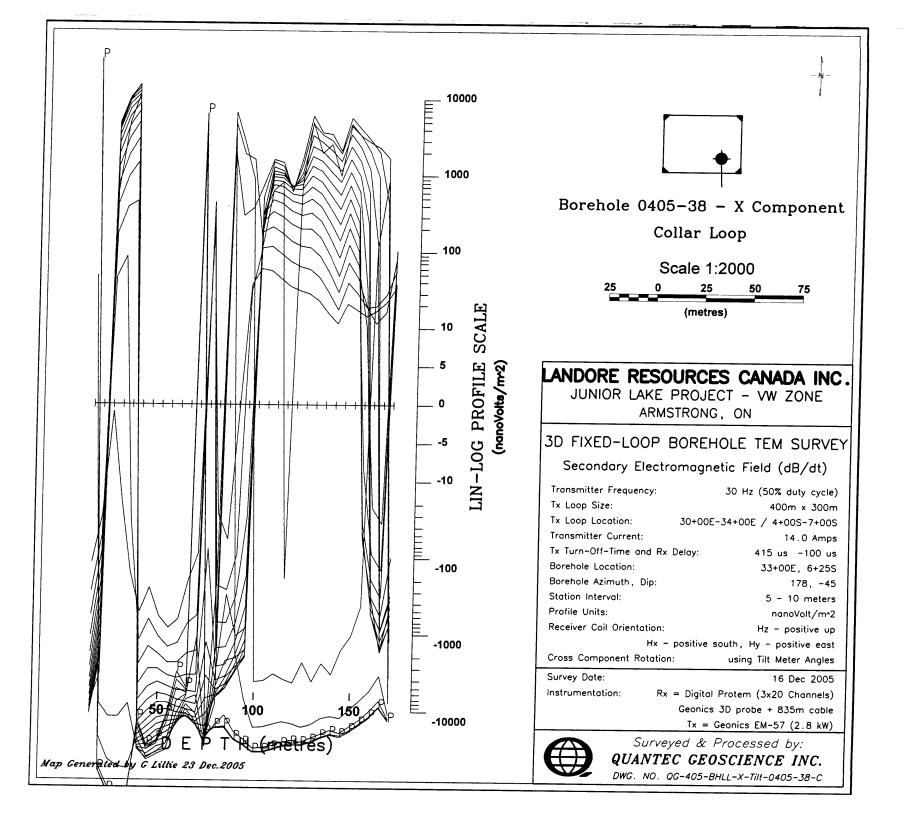
Geonics 3D probe + 835m cable

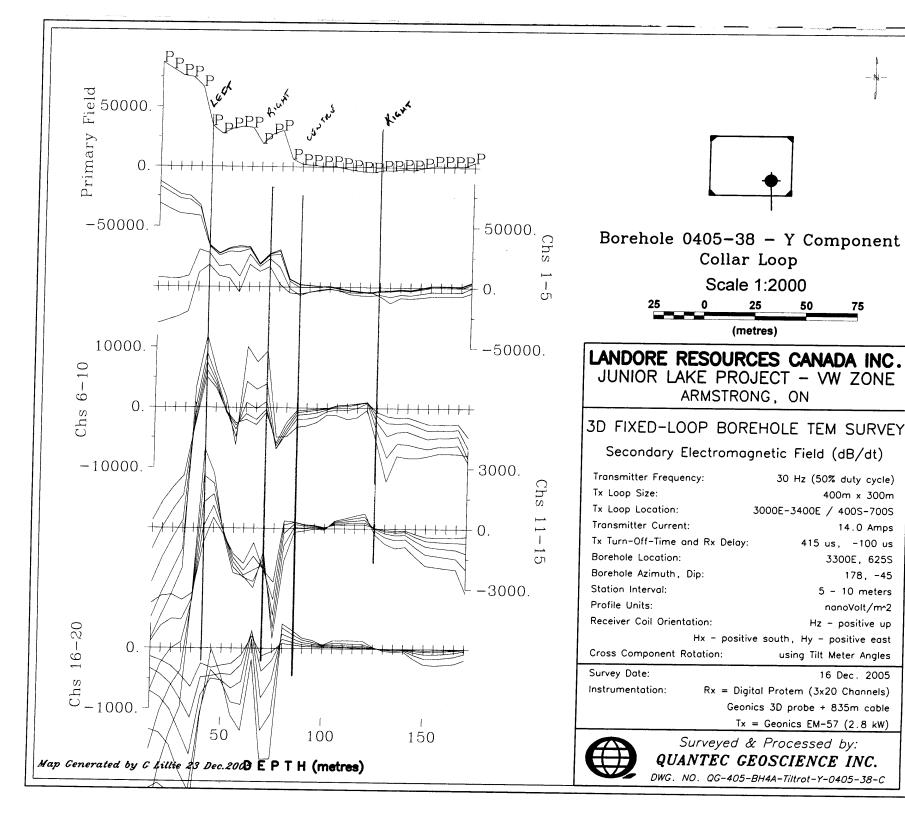
Tx = Geonics EM-57 (2.8 kW)

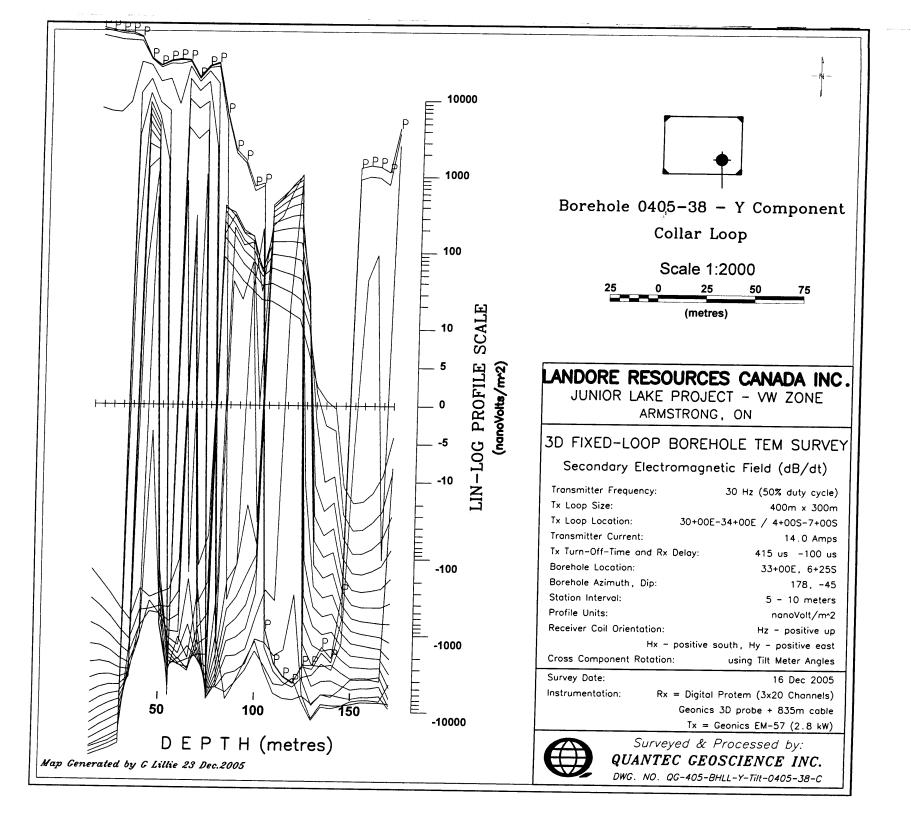


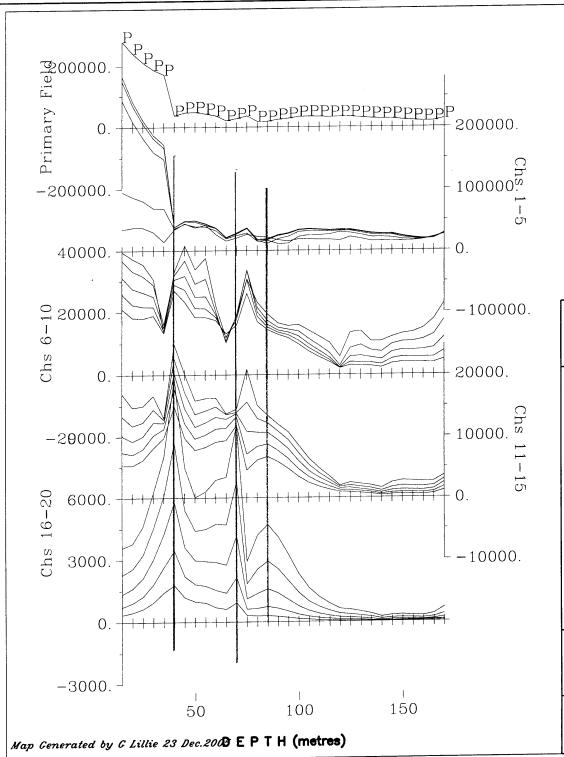
Surveyed & Processed by: QUANTEC GEOSCIENCE INC.

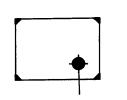
DWG. NO. QG-405-BH4A-Tiltrot-X-0405-38-C











Borehole 0405-38 - Total Field Collar Loop Scale 1:2000

(metres)

#### LANDORE RESOURCES CANADA INC. JUNIOR LAKE PROJECT - VW ZONE ARMSTRONG, ON

### 3D FIXED-LOOP BOREHOLE TEM SURVEY

Secondary Electromagnetic Field (dB/dt)

30 Hz (50% duty cycle) Transmitter Frequency:

400m x 300m Tx Loop Size:

3000E-3400E / 400S-700S Tx Loop Location: 14.0 Amps

Transmitter Current: 415 us, -100 us Tx Turn-Off-Time and Rx Delay:

3300E, 625S Borehole Location:

178, -45 Borehole Azimuth, Dip: 5 - 10 meters

Station Interval: nanoVolt/m^2

Profile Units:

Hz - positive up Receiver Coil Orientation: Hx - positive south, Hy - positive east

using Tilt Meter Angles Cross Component Ratation:

Survey Date:

16 Dec. 2005

Instrumentation:

Rx = Digital Protem (3x20 Channels)

Geonics 3D probe + 835m cable

Tx = Geonics EM-57 (2.8 kW)



Surveyed & Processed by: QUANTEC GEOSCIENCE INC.

DWG. NO. QG-405-BH4A-Tiltrot-TF-0405-38-C

