CANADIAN EXPLORATION SERVICES LTD

PO Box 219, 14579 Government Road, Larder Lake, Ontario, P0K 1L0, Canada
Phone (705) 643-2345 Fax (705) 643-2191 www.cxsltd.com

Golden Valley Mines Ltd.
Mines de la Vallée de l'Or ltée

Magnetometer and VLF EM

Surveys
Over the
COOK LAKE PROPERTY
Grenfell and Teck
Townships, Ontario

C Jason Ploeger, B.Sc, P.Geo
October 10, 2016

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1. SURVEY DETAILS

1.1 PROJECT NAME

This project is known as the **Cook Lake Property**.

1.2 CLIENT

Golden Valley Mines Ltd.
152 Chemin de la Mine Ecole
Val D'Or, Quebec
J9P 7B6

1.3 LOCATION

The Cook Lake Property is located approximately 8 km west of Kirkland Lake, Ontario. The survey area is located over portions of mining claims 4273229, 3011661, 4263877, 3006938, 3006937, 4273226, 4273225, 4273227, 4273230 and 3007472 located in Grenfell and Teck Townships, within the Larder Lake Mining Division.

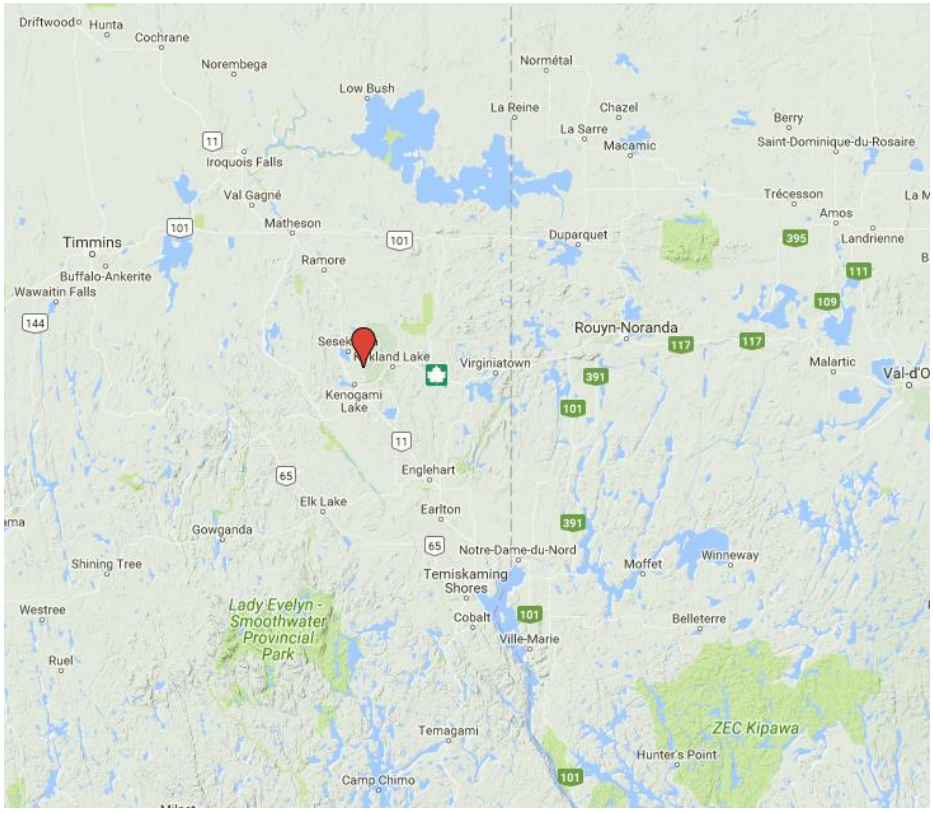


Figure 1: Location of the Cook Lake Property

1.4 ACCESS

Access to the property was attained with a 4x4 truck via the Goldthorp Road. The Goldthorp Road extends north from the town of Chaput Hughes, Ontario. This road was travelled 6.5 kilometers to the project area.

1.5 SURVEY GRID

The traversed lines were established using a GPS in conjunction with the execution of the survey. The GPS operator would establish sample locations while remaining approximately 25m in front of the magnetometer operator. GPS waypoints, magnetic samples were taken every 25m along these controlled traverses. The GPS used was a Garmin GPSMAP 62s with an external antenna for added accuracy.

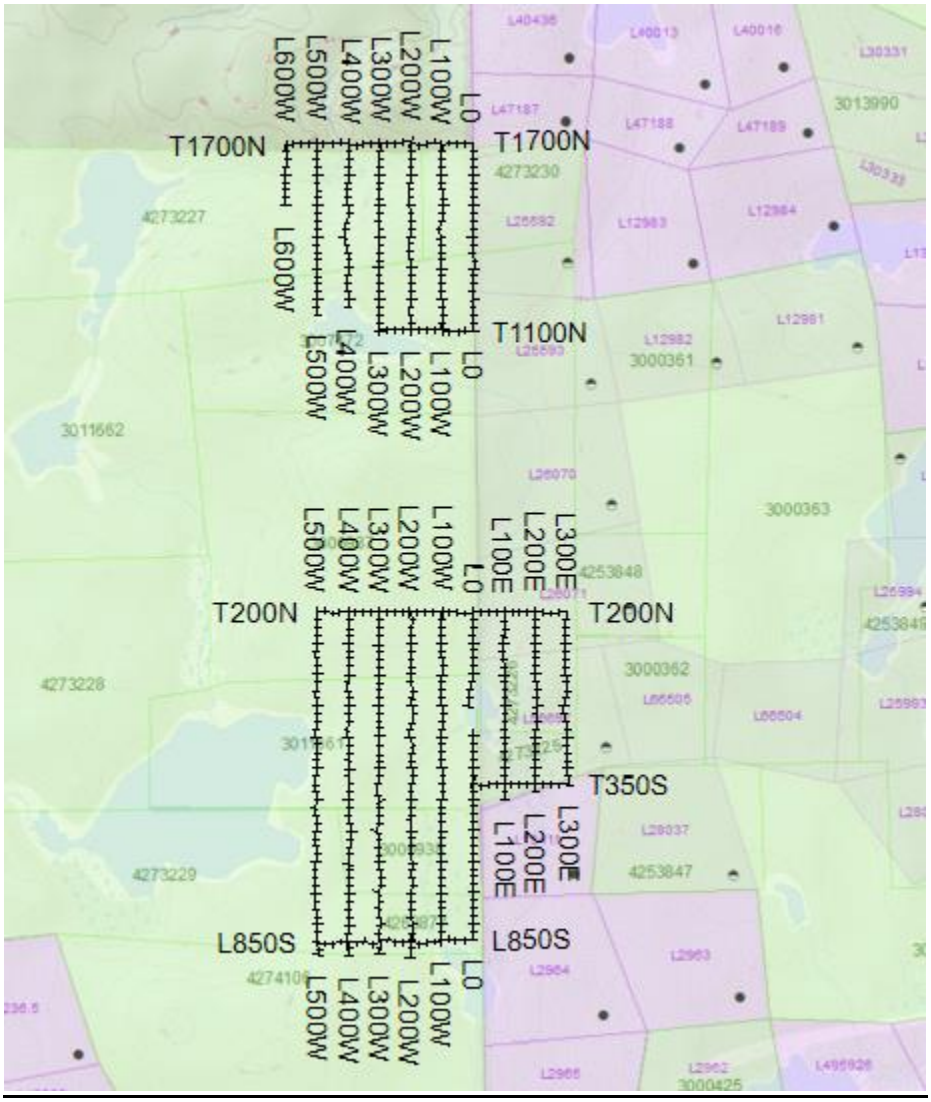


Figure 2: Survey Traverses on Claim Map

2. SURVEY WORK UNDERTAKEN

2.1 SURVEY LOG

Date	Description	Line	Min Extent	Max Extent	Total Survey (km)
October 3, 2016	Locate survey area and perform magnetic and VLF EM surveys.	300E	350S	200N	550
		200E	375S	200N	575
		100E	400S	200N	600
		0	850S	200N	1050
		100W	850S	200N	1050
		200W	900S	200N	1100
		300W	900S	200N	1100
		400W	900S	200N	1100
		500W	900S	200N	1100
		200N	500W	300E	800
		350S	0	300E	300
		850S	500W	0	500
October 5, 2016	Complete magnetic and VLF EM surveys.	0	1100N	1700N	600
		100W	1100N	1700N	600
		200W	1100N	1700N	600
		300W	1100N	1700N	600
		400W	1175N	1700N	575
		500W	1150N	1700N	550
		600W	1500N	1700N	200
		1700N	600W	0	600
		1100N	300W	0	300

Table 1: Survey Log

2.2 PERSONNEL

Two crews were fielded to perform these surveys. The operators consisted of Jason Ploeger of Larder Lake, Ontario and Claudia Moraga of Britt, Ontario. The GPS navigators consisted of Jordan Potts and Bill Bonney, both of Kirkland Lake, Ontario.

2.3 SURVEY SPECIFICATIONS

The survey was conducted with a GSM-19 v7 Overhauser magnetometer and VLF with a second GSM-19 magnetometer in base station mode for diurnal correction.

A total of 14.45 line kilometers of Magnetometer and VLF EM surveys was read over the Cook Lake Property between October 3rd and October 5th, 2016. This consisted of 578 magnetometer and VLF EM samples taken at a 25-meter sample interval.

3. OVERVIEW OF SURVEY RESULTS

3.1 SUMMARY

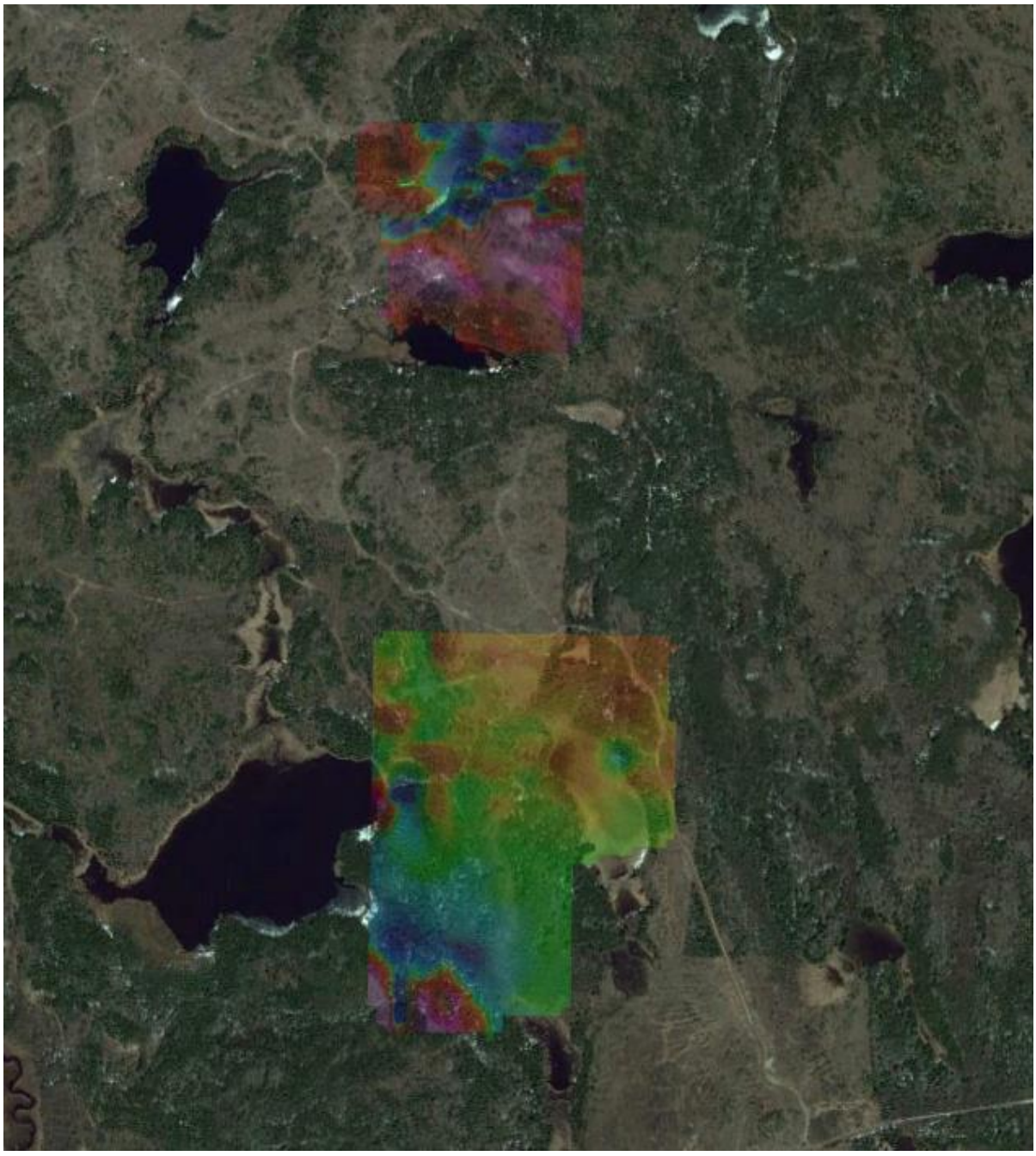


Figure 3: Magnetometer Plan Map on Google

Strong magnetic and VLF EM variations were seen over the survey area.

The most intense magnetic response occurred in the south-western extent of the survey area. This region exhibited a strong increase in magnetic intensity with a VLF signature flanking it. This most likely represents a strong change in the geology, with the magnetic high most likely representing a gabbro.

The northern traverse area exhibits a similar magnetic response. This may also represent a similar geologic unit. Striking through the central region of this magnetic high is an intense magnetic low. This low may be a result of an intrusion, such as a porphyry dike. A strong VLF EM response can also be seen striking at approximately 100 degrees through this magnetic high. This most likely represents a structural feature.

The interaction of this structural feature with the magnetic low between 1500N and 1600N on line 200W should be examined further through prospecting, soil sampling and additional geophysics. The remainder of the property should also be covered with a continuation of the magnetometer and VLF surveys.

APPENDIX A

STATEMENT OF QUALIFICATIONS

I, C. Jason Ploeger, hereby declare that:

1. I am a professional geophysicist with residence in Larder Lake, Ontario and am presently employed as a Geophysicist and Geophysical Manager of Canadian Exploration Services Ltd. of Larder Lake, Ontario.

2. I am a Practicing Member of the Association of Professional Geoscientists, with membership number 2172.

3. I graduated with a Bachelor of Science degree in geophysics from the University of Western Ontario, in London Ontario, in 1999.

4. I have practiced my profession continuously since graduation in Africa, Bulgaria, Canada, Mexico and Mongolia.

5. I am a member of the Ontario Prospectors Association, a Director of the Northern Prospectors Association and a member of the Society of Exploration Geophysicists.

6. I do not have nor expect an interest in the properties and securities of **Golden Valley Mines Limited.**

7. I am responsible for the final processing and validation of the survey results and the compilation of the presentation of this report. The statements made in this report represent my professional opinion based on my consideration of the information available to me at the time of writing this report.

C. Jason Ploeger, P.Geo., B.Sc.
Geophysical Manager
Canadian Exploration Services Ltd.

Larder Lake, ON
October 10, 2016

APPENDIX B

THEORETICAL BASIS AND SURVEY PROCEDURES

TOTAL FIELD MAGNETIC SURVEY

Base station corrected Total Field Magnetic surveying is conducted using at least two synchronized magnetometers of identical type. One magnetometer unit is set in a fixed position in a region of stable geomagnetic gradient, and away from possible cultural effects (i.e. moving vehicles) to monitor and correct for daily diurnal drift. This magnetometer, given the term 'base station', stores the time, date and total field measurement at fixed time intervals over the survey day. The second, remote mobile unit stores the coordinates, time, date, and the total field measurements simultaneously. The procedure consists of taking total magnetic measurements of the Earth's field at stations, along individual profiles, including Tie and Base lines. A 2 meter staff is used to mount the sensor, in order to optimally minimize localized near-surface geologic noise. At the end of a survey day, the mobile and base-station units are linked, via RS-232 ports, for diurnal drift and other magnetic activity (ionospheric and sferic) corrections using internal software.

For the gradiometer application, two identical sensors are mounted vertically at the ends of a rigid fiberglass tube. The centers of the coils are spaced a fixed distance apart (0.5 to 1.0m). The two coils are then read simultaneously, which alleviates the need to correct the gradient readings for diurnal variations, to measure the gradient of the total magnetic field.

VLF Electromagnetic

The frequency domain VLF electromagnetic survey is designed to measure both the vertical and horizontal in-phase (IP) and Quadrature (OP) components of the anomalous field from electrically conductive zones. The sources for VLF EM surveys are several powerful radio transmitters located around the world which generate EM radiation in the low frequency band of 15-25kHZ. The signals created by these long-range communications and navigational systems may be used for surveying up to several thousand kilometres away from the transmitter. The quality of the incoming VLF signal can be monitored using the field strength. A field strength above 5pT will produce excellent quality results. Anything lower indicates a weak signal strength, and possibly lower data quality. A very low signal strength (<1pT) may indicate the radio station is down.

The EM field is planar and horizontal at large distances from the EM source. The two components, electric (E) and magnetic (H), created by the source field are orthogonal to each other. E lies in a vertical plane while H lies at right angles to the direction of propagation in a horizontal plane. In order to ensure good coupling, the strike of possible conductors should lie in the direction of the transmitter to allow the H vector to pass through the anomaly, in turn, creating a secondary EM field.

The VLF EM receiver has two orthogonal aerials which are tuned to the frequency of the transmitting station. The direction of the source station is located by rotating the sensor around a vertical axis until a null position is found. The VLF EM survey procedure consists of taking measurements at stations along each line on the grid. The receiver is rotated about a horizontal axis, right angles to the traverse and the tilt recorded at the null position.

APPENDIX C

GSM 19

Specifications

Overhauser Performance

Resolution: 0.01 nT
Relative Sensitivity: 0.02 nT
Absolute Accuracy: 0.2nT
Range: 20,000 to 120,000 nT
Gradient Tolerance: Over 10,000nT/m
Operating Temperature: -40°C to +60°C

Operation Modes

Manual: Coordinates, time, date and reading stored automatically at min. 3 second interval.
Base Station: Time, date and reading stored at 3 to 60 second intervals.
Walking Mag: Time, date and reading stored at coordinates of fiducial.
Remote Control: Optional remote control using RS-232 interface.
Input/Output: RS-232 or analog (optional) output using 6-pin weatherproof connector.

Operating Parameters

Power Consumption: Only 2Ws per reading. Operates continuously for 45 hours on standby.
Power Source: 12V 2.6Ah sealed lead acid battery standard, other batteries available
Operating Temperature: -50°C to +60°C

Storage Capacity

Manual Operation: 29,000 readings standard, with up to 116,000 optional. With 3 VLF stations: 12,000 standard and up to 48,000 optional.

Base Station: 105,000 readings standard, with up to 419,000 optional (88 hours or 14 days uninterrupted operation with 3 sec. intervals)

Gradiometer: 25,000 readings standard, with up to 100,000 optional. With 3 VLF stations: 12,000, with up to 45,000 optional.

Omnidirectional VLF

Performance Parameters: Resolution 0.5% and range to ±200% of total field. Frequency 15 to 30 kHz.

Measured Parameters: Vertical in-phase & out-of-phase, 2 horizontal components, total field coordinates, date, and time.

Features: Up to 3 stations measured automatically, in-field data review, displays station field strength continuously, and tilt correction for up to ±10° tilts.

Dimensions and Weights: 93 x 143 x 150mm and weighs only 1.0kg.

Dimensions and Weights

Dimensions:
Console: 223 x 69 x 240mm
Sensor: 170 x 71mm diameter cylinder
Weight:
Console: 2.1kg
Sensor and Staff Assembly: 2.0kg

Standard Components

GSM-19 magnetometer console, harness, battery charger, shipping case, sensor with cable, staff, instruction manual, data transfer cable and software.

Taking Advantage of a "Quirk" of Physics

Overhauser effect magnetometers are essentially proton precession devices except that they produce an order-of magnitude greater sensitivity. These "supercharged" quantum magnetometers also deliver high absolute accuracy, rapid cycling (up to 5 readings / second), and exceptionally low power consumption.

The Overhauser effect occurs when a special liquid (with unpaired electrons) is combined with hydrogen atoms and then exposed to secondary polarization from a radio frequency (RF) magnetic field. The unpaired electrons transfer their stronger polarization to hydrogen atoms, thereby generating a strong precession signal-- that is ideal for very high-sensitivity total field measurement. In comparison with proton precession methods, RF signal generation also keeps power consumption to an absolute minimum and reduces noise (i.e. generating RF frequencies are well out of the bandwidth of the precession signal).

In addition, polarization and signal measurement can occur simultaneously - which enables faster, sequential measurements. This, in turn, facilitates advanced statistical averaging over the sampling period and/or increased cycling rates (i.e. sampling speeds).

- The unique Overhauser unit blends physics, data quality, operational efficiency, system design and options into an instrumentation package that ... exceeds proton precession and matches costlier optically pumped cesium capabilities

APPENDIX C

GARMIN GPS MAP 62S

Physical & Performance:	
Unit dimensions, WxHxD:	2.4" x 6.3" x 1.4" (6.1 x 16.0 x 3.6 cm)
Display size, WxH:	1.43" x 2.15" (3.6 x 5.5 cm); 2.6" diag (6.6 cm)
Display resolution, WxH:	160 x 240 pixels
Display type:	transflective, 65-K color TFT
Weight:	9.2 oz (260.1 g) with batteries
Battery:	2 AA batteries (not included); NiMH or Lithium recommended
Battery life:	20 hours
Waterproof:	yes (IPX7)
Floats:	no
High-sensitivity receiver:	yes

Interface:	high-speed USB and NMEA 0183 compatible
Maps & Memory:	
Basemap:	yes
Preloaded maps:	no
Ability to add maps:	yes
Built-in memory:	1.7 GB
Accepts data cards:	microSD™ card (not included)
Waypoints/favorites/locations:	2000
Routes:	200
Track log:	10,000 points, 200 saved tracks
Features & Benefits:	
Automatic routing (turn by turn routing on roads):	yes (with optional mapping for detailed roads)
Electronic compass:	yes (tilt-compensated, 3-axis)
Touchscreen:	no
Barometric altimeter:	yes
Camera:	no
Geocaching-friendly:	yes (paperless)
Custom maps compatible:	yes
Photo navigation (navigate to ge-otagged photos):	yes
Outdoor GPS games:	no
Hunt/fish calendar:	yes
Sun and moon information:	yes

Tide tables:	yes
Area calculation:	yes
Custom POIs (ability to add additional points of interest):	yes
Unit-to-unit transfer (shares data wirelessly with similar units):	yes
Picture viewer:	yes
Garmin Connect™ compatible (online community where you analyze, categorize and share data):	yes

- *Specifications obtained from www.garmin.com*

APPENDIX D

LIST OF MAPS (IN MAP POCKET)

Posted profiled TFM plan map (1:2500)

1) Q2257-GOLDENVALLEY-COOK LAKE-MAG-CONT

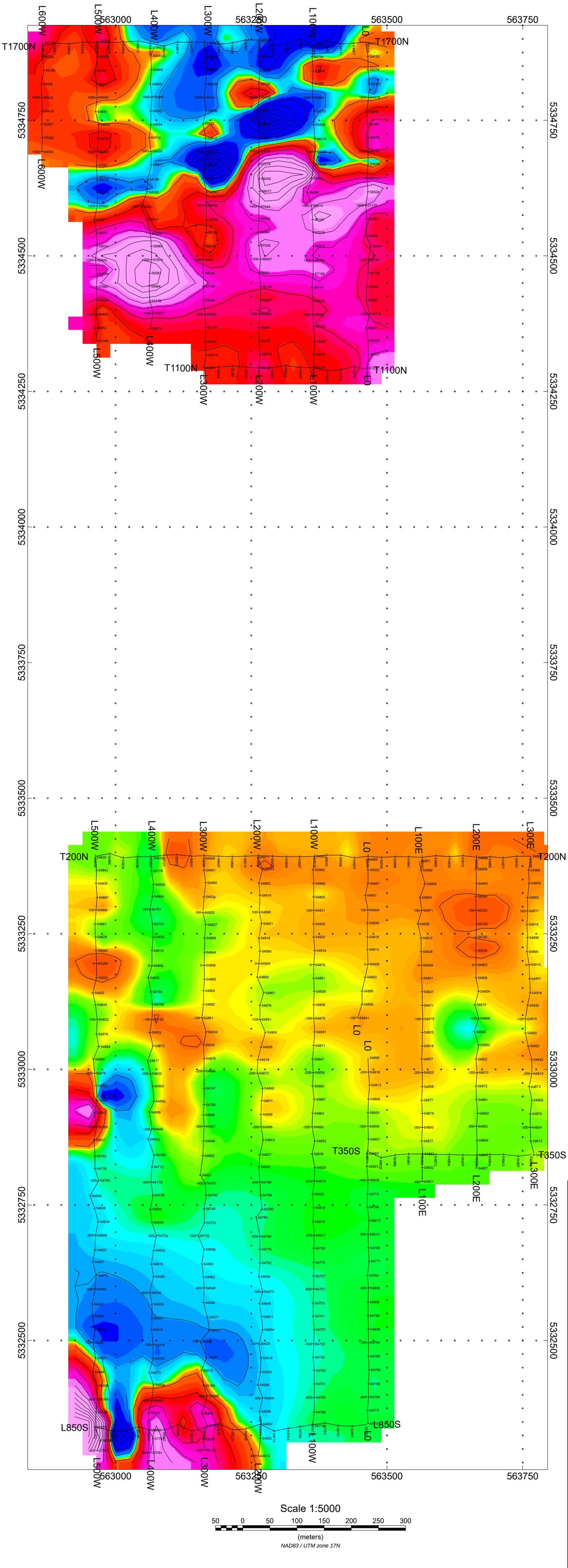
Posted profiled Fraser Filtered VLF EM plan map (1:2500)

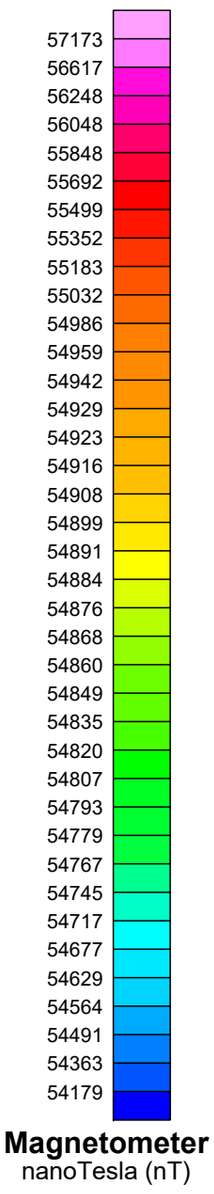
2) Q2257-GOLDENVALLEY-COOK LAKE-VLF-NML

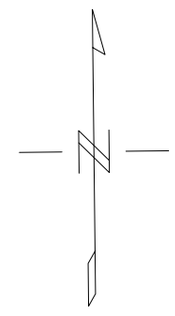
Traverse Lines on Claim Map (1:25000)

3) Q2257-GOLDENVALLEY-COOK LAKE-TRAVERSE

TOTAL MAPS=3







Golden Valley Mines Ltd.
Mines de la Vallée de l'Or ltée

COOK LAKE PROPERTY
Grenfell and Teck Townships, Ontario

TOTAL FIELD MAGNETIC CONTOURED PLAN MAP
Base Station Corrected

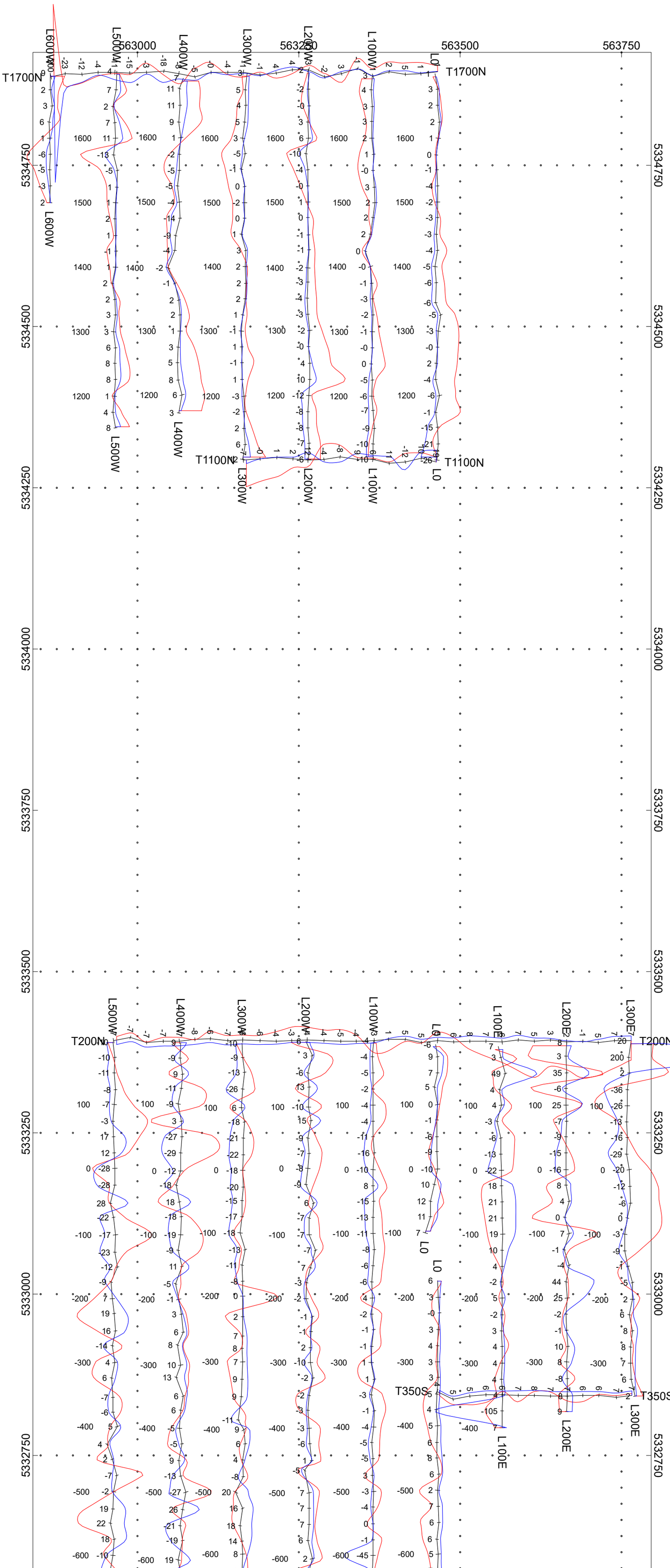
Posting Level: 0nT
Field Inclination/Declination: 74degN/12degW
Station Seperation: 25 meters
Total Field Magnetic Contours: 500nT

GSM-19 OVERHAUSER MAGNETOMETER v7

Operated By: Claudia Moraga, Jason Ploeger
GPS Operated By: Bill Bonney, Jordan Potts
Processed by: C Jason Ploeger, P.Geo.
Map Drawn By: C Jason Ploeger, P.Geo.
October 2016

CANADIAN EXPLORATION SERVICES LTD

Drawing: Q2257-GOLDENVALLEY-COOK LAKE-MAG-CONT



Scale 1:5000

50 0 50 100 150 200 250 300

(meters)

NAD83 / UTM zone 17N

Golden Valley Mines Ltd.
Mines de la Vallée de l'Or ltée

COOK LAKE PROPERTY
Grenfell and Teck Townships, Ontario

VLF IN PHASE/OUT PHASE PROFILE
25.2kHz NML - LAMOUR USA

In Phase: Posted Right/Bottom (Red)
Out Phase: Posted Left/Top (Blue)

Vertical Profile Scales: 2.5 %/mm

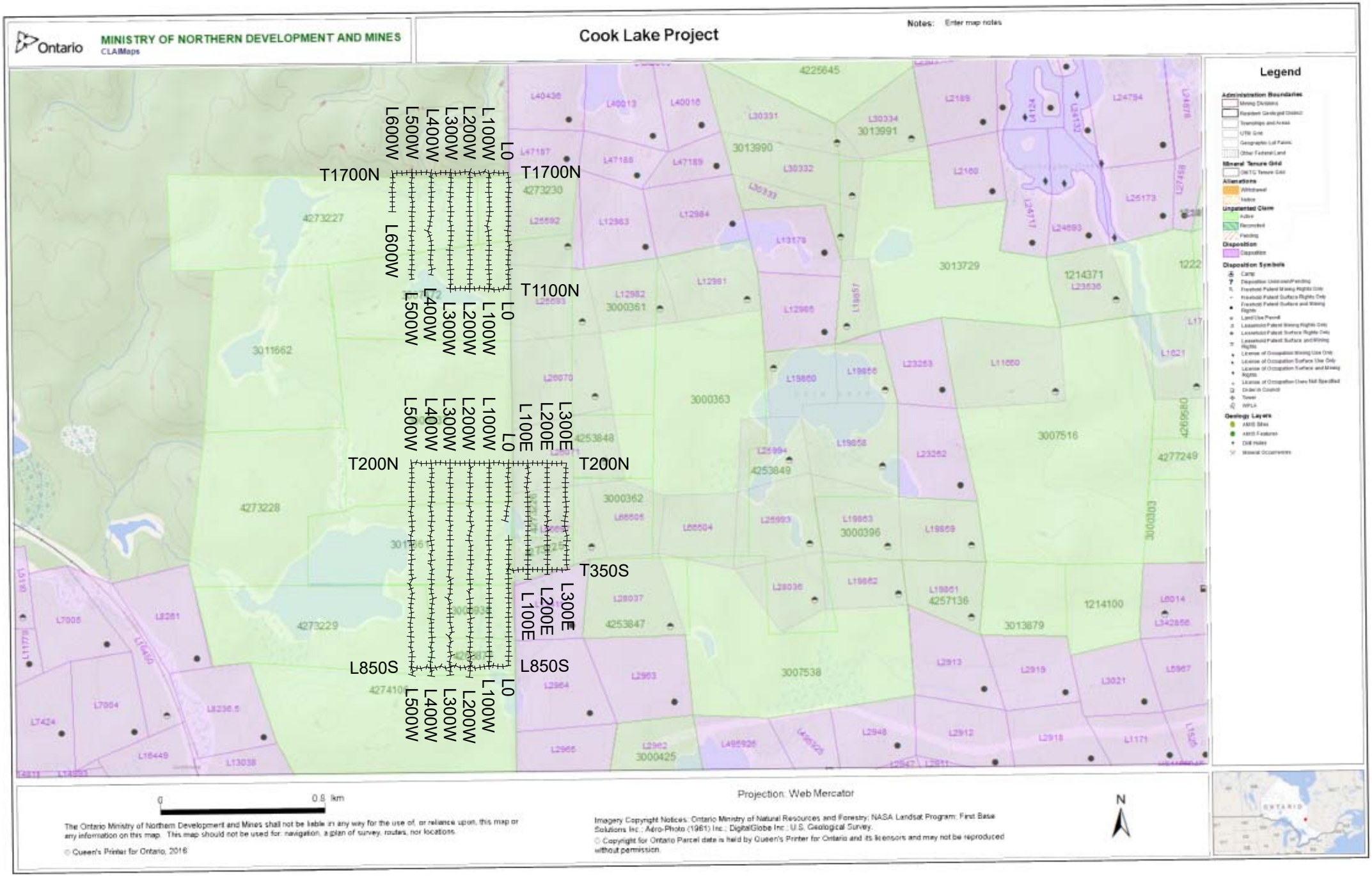
Station Seperation: 25 meters
Posting Level: 0

GSM-19 VLF v7

Operated By: Claudia Moraga, Jason Ploeger
GPS Operated By: Bill Bonney, Jordan Potts
Processed by: C Jason Ploeger, P.Geo.
Map Drawn By: C Jason Ploeger, P.Geo.
October 2016

CANADIAN EXPLORATION SERVICES LTD

Drawing: Q2257-GOLDENVALLEY-COOK LAKE-VLF-NML


Ontario
MINISTRY OF NORTHERN DEVELOPMENT AND MINES
CLAIMaps
Cook Lake Project
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Legend
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T1100N
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L850S
L600W
L500W
L400W
L300W
L200W
L100W
L0
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Projection: Web Mercator
0 0.8 km
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