

NTS 41 P/16

**GROUND GEOPHYSICAL SURVEYS
Magnetometer Surveys Assessment Report**

Afton Twp.

Northern Nickel Mining Inc.

EMERALD LAKE PROPERTY

February 2008.

2-37376



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1.0 SUMMARY:

From February 18 to 24, 2008 a program of grid establishment and geophysical surveying was carried out on the Emerald Lake Property in Afton Township. The property is adjacent to a historic gold mine, the Golden Rose. The purpose of the work was to define the magnetic and conductive traits of the local geology. Northern Nickel Mining Inc. of 4034 Mainway Drive, Burlington, Ontario L7M 4B9 holds the claims under option agreement.

The grid establishment and geophysical surveying were done by David Laronde and Josh Manderstrom on behalf of the contractor Meegwich Consultants Inc. P.O. Box 482, Temagami, Ontario POH 2H0. David Laronde was the field supervisor and the author of this work report. There was a grand total of **20 km** of grid lines established and surveyed with magnetometer and VLF-EM.

2.0 PROPERTY:

The work was done on eight contiguous mining claims that are part of an extensive land holding situated in unsurveyed Scholes and Afton Tp. Only the claims that were worked on are listed below:

CLAIM NO.	DUE DATE	UNITS
470249	March 17, 2008	1
470259	" "	1
470263	" "	1
470264	" "	1

470265	“	“	1
470266	“	“	1
470267	“	“	1
3018306	January 24, 2010		2

3.0 LOCATION AND ACCESS:

The grid is located 40 km southwest of Temagami as the crow flies. Road access to the property is by taking Hwy 805 north from River Valley for 45 km.

4.0 MAGNETOMETER SURVEY:

A total of **20 km** of line was surveyed (**800 readings**) at 25 meter intervals throughout the survey.

4.1 Instrumentation: Gem Systems GSM-19 overhauser magnetometers serial no. 58479 and 712776 were used for field units measuring in nanoteslas (nT) with an accuracy of $\pm 1/100^{\text{th}}$ nT. These instruments have an excellent gradient tolerance at 10,000 nT/m.

A Scintrex EDA Omni IV proton precession magnetometer ser. No. 255228 was used for a base station to monitor the diurnal variation. The base station cycled at 20 second intervals. This instrument has an accuracy of $1/10^{\text{th}}$ nT.

4.2 Survey Results and Interpretation: The results are presented in contour format on plans at 1:5000 scale. Quality control was monitored by comparing several readings at a common base station. This referencing technique confirms good data and checked out on these surveys.

In general the survey has outlined a very intense high found at the shoreline on L 1500 E at 7200 N. The response is partially covered for 100 meters along strike and 300 meters across the width. The intensity ranges up to 87,916 nT over a background of 60,000 nT. This feature is interpreted as the nose or western limit of the iron formation containing the historic Golden Rose gold mine. The balance of the surveyed area gradually decreases in intensity the further away from the iron formation you go. There are a few exceptions of isolated lows on L 1700 and 2400 E.

5.0 VLF Electromagnetic Survey:

A total of **20 km** was surveyed for a total of **800** readings taken at 25 meter stations on lines spaced at 100 meters.

5.1 Instrumentation: A Geonics VLF-EM receiver was used for the survey. The VLF transmitter station was Cutler, Maine NAA transmitting at 24.0 kHz. The measured quantities are the in-phase and quadrature components of the vertical magnetic field measured as a percentage of horizontal primary field (read to a resolution of +/- 1%). All readings were taken facing north.

5.2 Survey Results and Interpretation: The results of the survey are presented in profile format on plans at 1:5000 scale.

The survey picked up two conductors that could be the result of conductive overburden on the lake bottom and not bedrock responses. However conductor A does respond more favourably than B.

6.0 CONCLUSIONS AND RECOMMENDATIONS:

The magnetic survey has achieved the goal of defining the limits of a massive, intensely magnetic body associated with a past producing mine. This feature overshadows any subtlety in magnetics due to its intense nature.

The VLF-EM survey yielded two conductive zones. Conductor A is somewhat interesting as a sulphide conductor and may be followed up with HLEM or I.P.

References

Ontario Geologic Survey Map 2361 Geological Compilation Series
1:250,000

CERTIFICATE OF AUTHOR

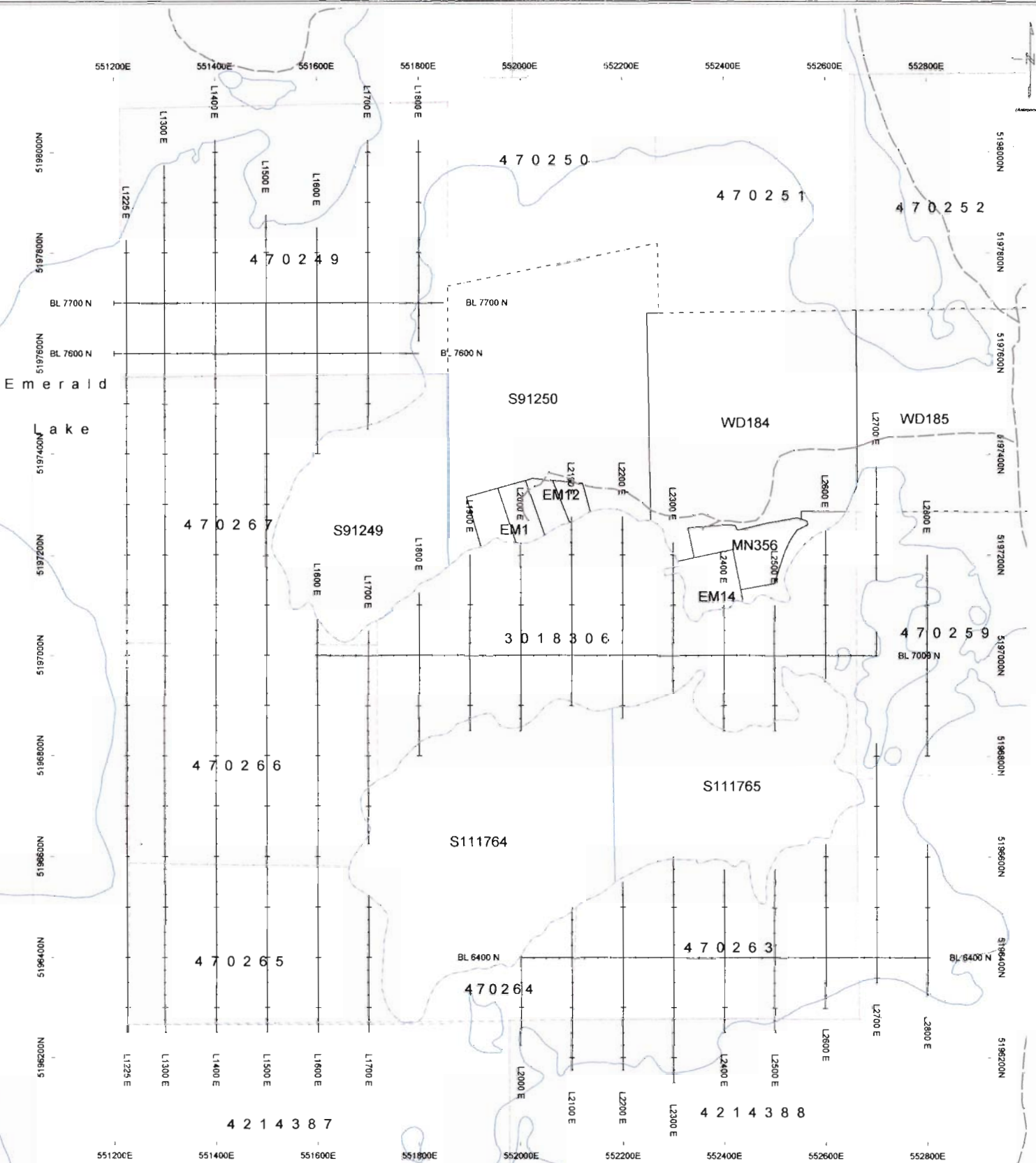
I, David Laronde of the town of Temagami, Ontario hereby certify:

1. That I am a geology engineering technologist and have been engaged in mineral exploration for the past 28 years.
2. That I am a graduate of Cambrian College in Sudbury with a diploma in Geology Engineering Technology 1979.
3. That my knowledge of the property described herein was acquired by field work and documentation.

Dated at Temagami this 29th day of February 2007.

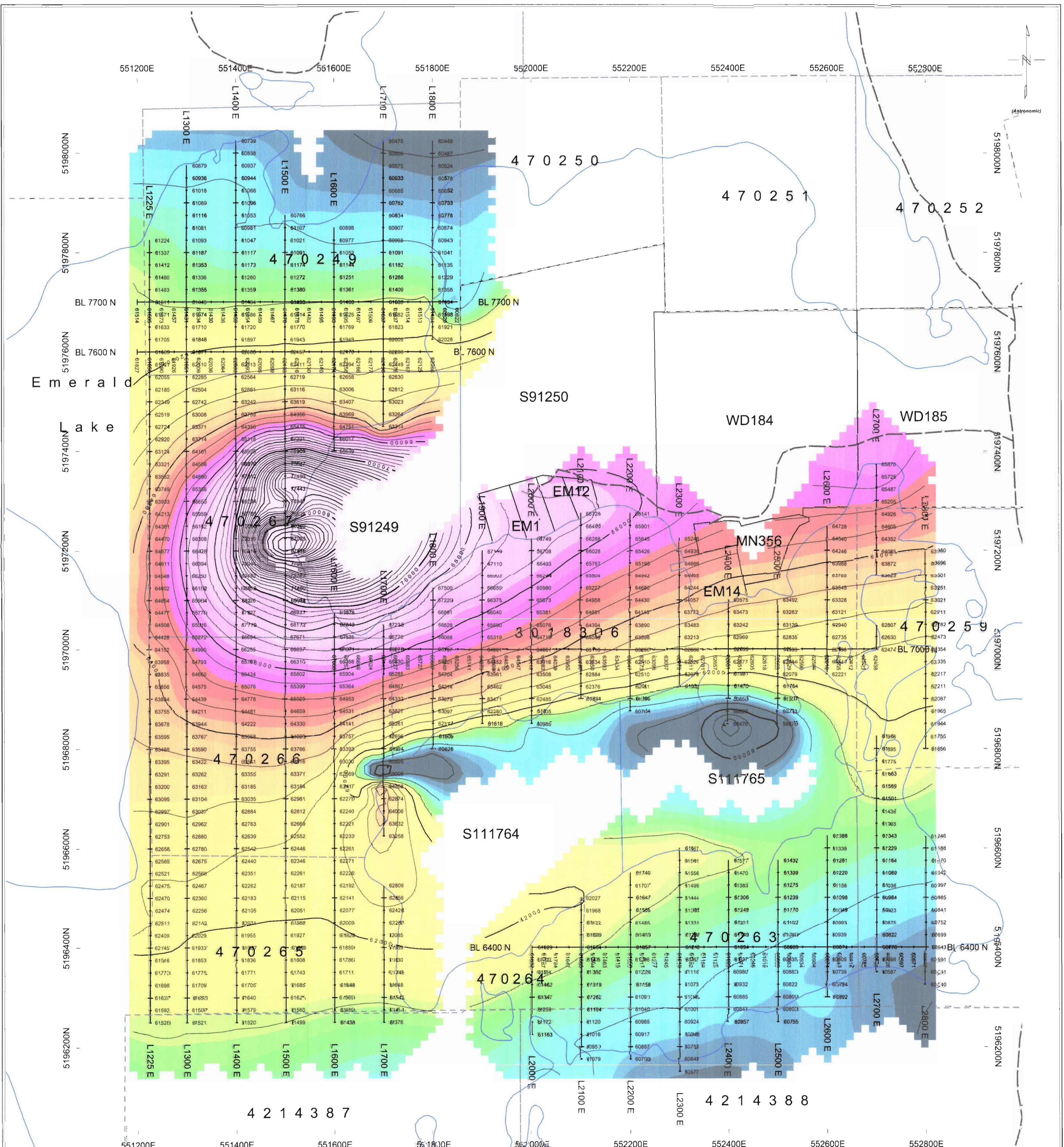


David Laronde

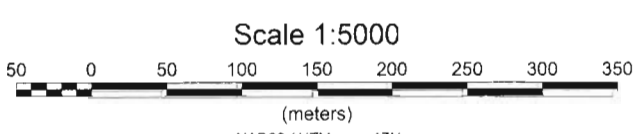


Northern Nickel Mining Inc.		
Emerald Lake Property		
Afton Township, Ontario Sudbury Mining Division		
CLAIM and GRID MAP		
Data Processing and Interpretation by:	Scale 1:10 000	NTS 41 L/16
Wagwich Consultants Inc.	March 2008	

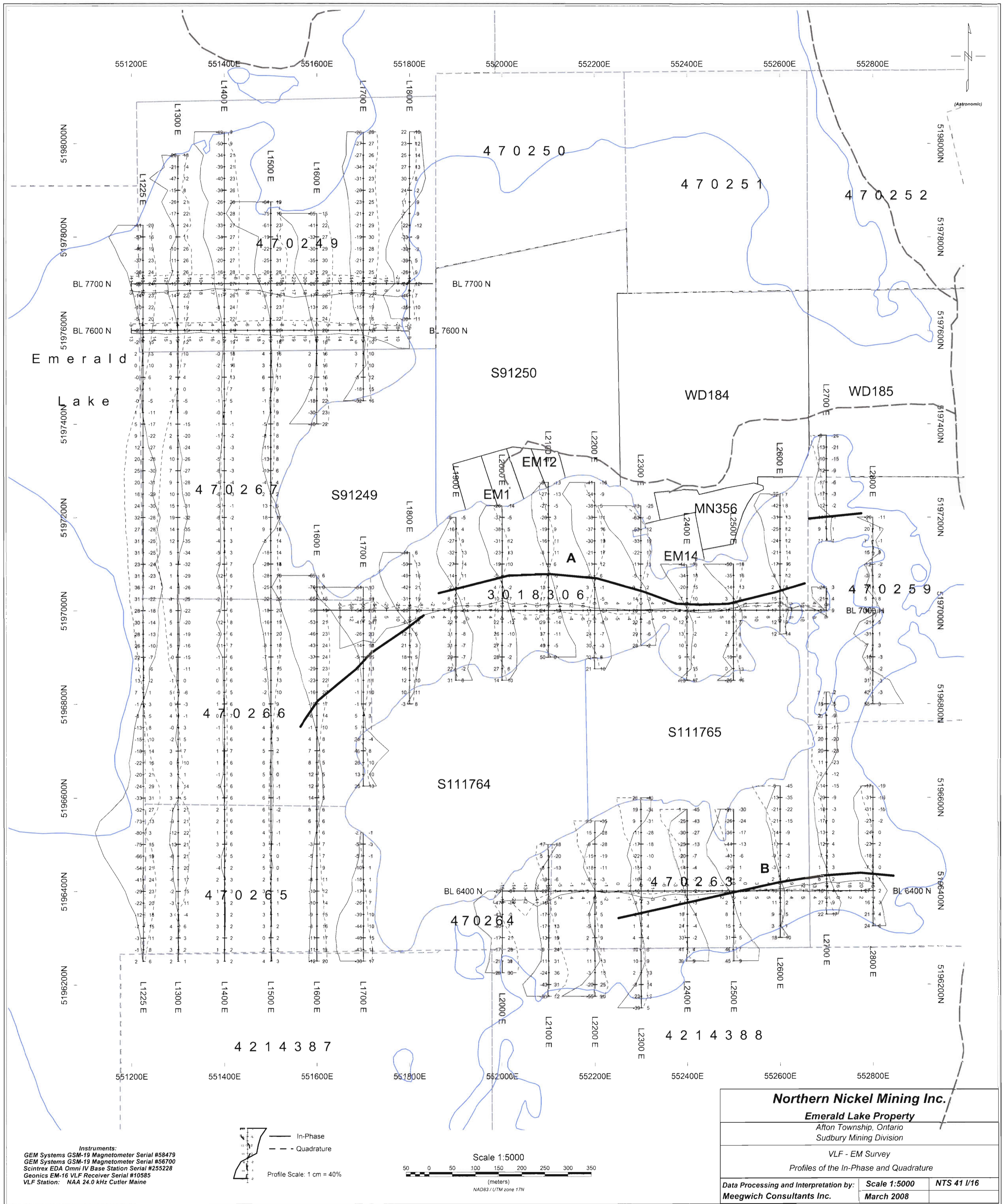




Instruments:
 GEM Systems GSM-19 Magnetometer Serial #58479
 GEM Systems GSM-19 Magnetometer Serial #56700
 Scintrex EDA Omni IV Base Station Serial #255228
 Geonics EM-16 VLF Receiver Serial #10585
 VLF Station: NAA 24.0 kHz Cutler Maine



Northern Nickel Mining Inc.		
Emerald Lake Property		
Afton Township, Ontario Sudbury Mining Division		
Magnetometer Survey Total Field - Contours		
Data Processing and Interpretation by: Meegwich Consultants Inc.	Scale 1:5000 March 2008	NTS 41 I/16



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— In-Phase
 - - - Quadrature
 Profile Scale: 1 cm = 40%

Scale 1:5000
 50 0 50 100 150 200 250 300 350
 (meters)
 NAD83 / UTM zone 17N

Northern Nickel Mining Inc.
Emerald Lake Property
 Afton Township, Ontario
 Sudbury Mining Division

VLF - EM Survey
 Profiles of the In-Phase and Quadrature

Data Processing and Interpretation by: **Scale 1:5000** **NTS 41 I/16**
Meegwich Consultants Inc. **March 2008**