

We are committed to providing [accessible customer service](#).

If you need accessible formats or communications supports, please [contact us](#).

Nous tenons à améliorer [l'accessibilité des services à la clientèle](#).

Si vous avez besoin de formats accessibles ou d'aide à la communication, veuillez [nous contacter](#).

**ASSESSMENT REPORT ON A HIGH-RESOLUTION HELIBORNE
MAGNETIC SURVEY**

GEORGIA LAKE WEST & NORTH PROPERTIES

KILKENNY TOWNSHIP AND LAKE JEAN AREA

NIPIGON, ONTARIO

THUNDER BAY MINING DIVISION

FOR



Prepared by:

Joerg M. Kleinboeck, P.Geol.

January 25th, 2023

TABLE OF CONTENTS

1. INTRODUCTION	3
2. PROPERTY DESCRIPTION AND LOCATION	4
2.1 Location and Access.....	4
2.2 Topography and Vegetation	4
2.3 Claims.....	5
3.0 PREVIOUS WORK.....	7
4.0 GEOLOGY	8
4.1 Property Geology	8
5.0 SUMMARY OF THE HIGH-RESOLUTION HELIBORNE MAGNETIC SURVEY	10
6. INTERPRETATION AND CONCLUSIONS	11
7. REFERENCES	12

LIST OF FIGURES

Figure 1: Location of the Georgia Lake West and North Properties, Ontario, Canada.....	5
Figure 2: Tenure of the Georgia Lake West and North Properties	7
Figure 3: Property Geology (after MRD 126 Rev.).....	9

LIST OF TABLES

Table 1: Claim Details	6
------------------------------	---

APPENDICES

Appendix I: Statement of Qualifications

Appendix II: Prospectair Geosurveys Inc. Geophysical Report

Appendix III: Maps

1. INTRODUCTION

In November 2022, Prospectair Geosurveys Inc. (“Prospectair”) was contracted by Recharge Resources Ltd. (“Recharge”) to complete a high-resolution heliborne magnetic survey on their 100% owned Georgia Lake West and North Properties (“Properties”).

The Properties are situated within the Thunder Bay Mining Division and are located approximately 160 km northeast of Thunder Bay, and 85 km southwest of Geraldton, Ontario.

The Properties, located in Kilkenny Township and Lake Jean Area, are comprised of 2 multi-cell staked mining claims totaling approximately 671.5 ha, and are collectively bound by UTM NAD83 Z16N coordinates 422,050E to 428,460E, and 5,475,230N to 5,480,755N.

The Properties, originally staked by Recharge in 2020, were selected due to their proximity to Rock Tech Lithium Inc.’s Georgia Lake Property which contains an Indicated Mineral Resource of 10.6 million tonnes Li₂O, and an additional Inferred Mineral Resource of 4.2 million tonnes Li₂O.

The Georgia Lake West and North Properties do not contain any known mineral occurrences and are thus considered early-stage properties that will require a program of prospecting to evaluate the Properties for their mineral potential. In advance of the fieldwork, Recharge completed a high-resolution heliborne magnetic survey that will be used to direct future work programs.

From November 2nd to 4th, 2022, Prospectair completed a 148 line-km high-resolution heliborne magnetic survey on the Properties. Flight lines were orientated at 325° and flown at 50 m spacings with tie lines flown at 500 m spacings at 054°. The orientation of the survey was optimized to cover any structural features that may control the potential emplacement of rare-element pegmatites.

2. PROPERTY DESCRIPTION AND LOCATION

2.1 Location and Access

The Properties are situated within the Thunder Bay Mining Division and are located approximately 160 km northeast of Thunder Bay, and 85 km southwest of Geraldton, Ontario in Kilkenny Township and Lake Jean Area. The properties are collectively bound by UTM NAD83 Z16N coordinates 422,050E to 428,460E, and 5,475,230N to 5,480,755N.

There is no known access to the Property. Access can be partially provided by ATV trails that branch off of logging roads that connect with Highway 11. An atv trail passes approximately 1 km from the Georgia Lake West Property, and 0.5 km from the Georgia Lake North Property.

2.2 Topography and Vegetation

The Property is characterized by relatively gentle to moderate relief with broad rolling hills and steep ridges that rarely exceed 25 m of elevation above the low-lying bogs, ponds, and streams. The elevation of the Property ranges from approximately 358 to 480 m MSL. The Property is mostly vegetated with white pine and white spruce in the areas of higher relief, with poplar, white birch, and jack pine common in lower relief areas, along with alders and cedar within the swamps.

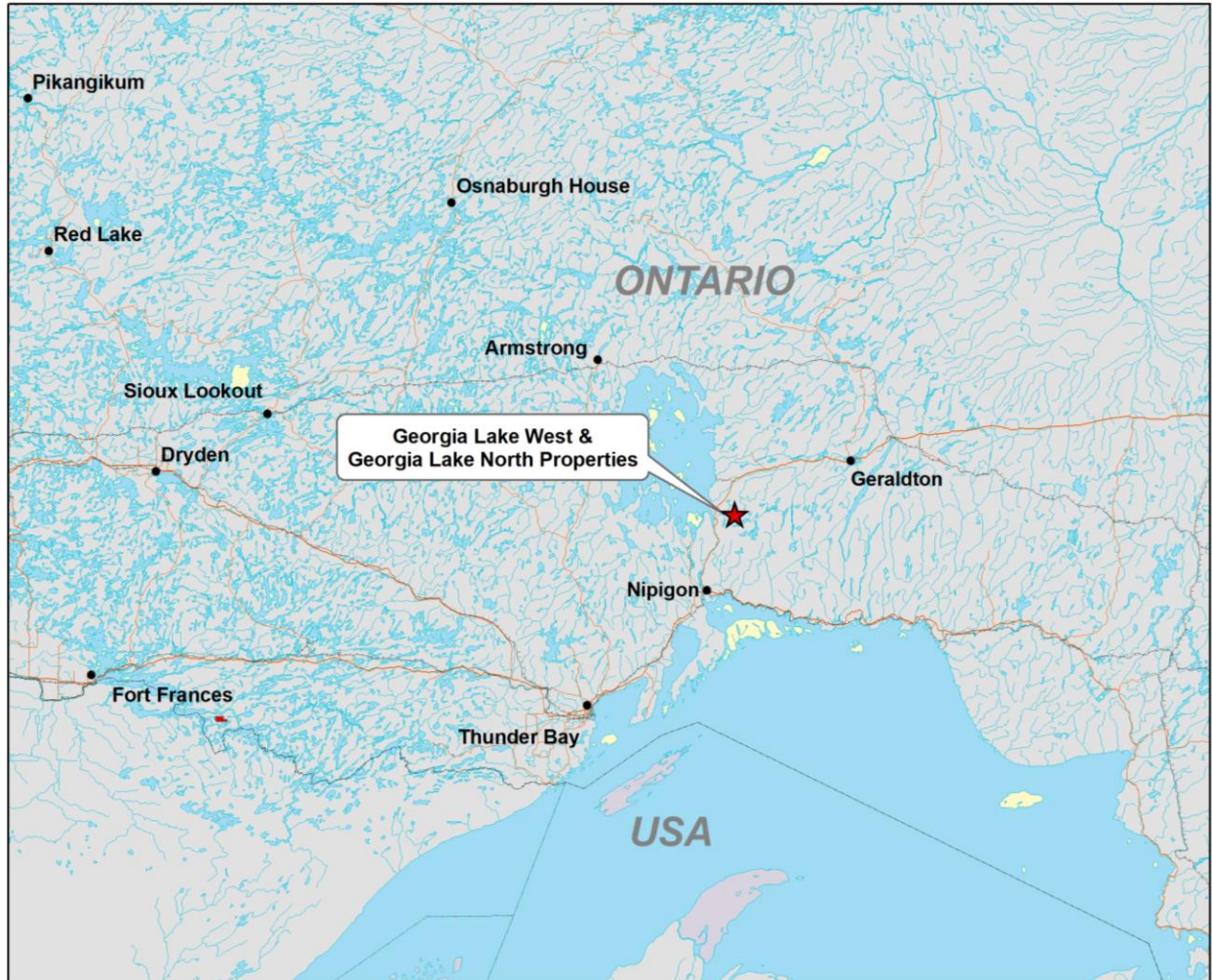


Figure 1: Location of the Georgia Lake West and North Properties, Ontario, Canada.

2.3 Claims

The Properties, located in Kilkenny Township and Lake Jean Area, are comprised of 2 multi-cell staked mining claims totaling approximately 671.5 ha, and are collectively bound by UTM NAD83 Z16N coordinates 422,050E to 428,460E, and 5,475,230N to 5,480,755N.

The Georgia Lake West Property is comprised of one multi-cell mining claim (770242) that covers an area of approximately 251.9 ha. The claim was originally staked on January 18th, 2021, as 12 single-cell mining claims (631349, 631348, 631346, 631344, 631343, 631350, 631351, 631341, 631345, 631340, 631342, and 631347). On December 23rd, 2022, the claims were amalgamated into one multi-cell mining claim (770242).

The Georgia Lake North Property is comprised of one multi-cell mining claim (770243) that covers an area of approximately 419.6 ha. The claim was originally staked on January 18th, 2021, as 20 single-cell mining claims (631359, 631367, 631371, 631362, 631368, 631353, 631355, 631365, 631352, 631358, 631361, 631370, 631357, 631363, 631366, 631369, 631354, 631356, 631360, and 631364). On December 23rd, 2022, the claims were amalgamated into one multi-cell mining claim (770243).

Claims that comprise the Georgia Lake West and Georgia Lake North Properties are 100% owned by Recharge Resources Ltd.

A list of claims is provided in Table 1, and Figure 2 shows the claim fabric with respect to local resources such local waterways, access roads, etc.

Table 1: Claim Details

Property	Township / Area	Tenure ID	Anniversary Date	Work Required	Work Applied	Total Reserve
Georgia Lake North	Kilkenny, Lake Jean Area	770243	2023-01-18	\$8000	\$0	\$0
Georgia Lake West	Kilkenny	770242	2023-01-18	\$4800	\$0	\$0

*claims 770242 and 770243 are currently under extension until October 18th, 2023.

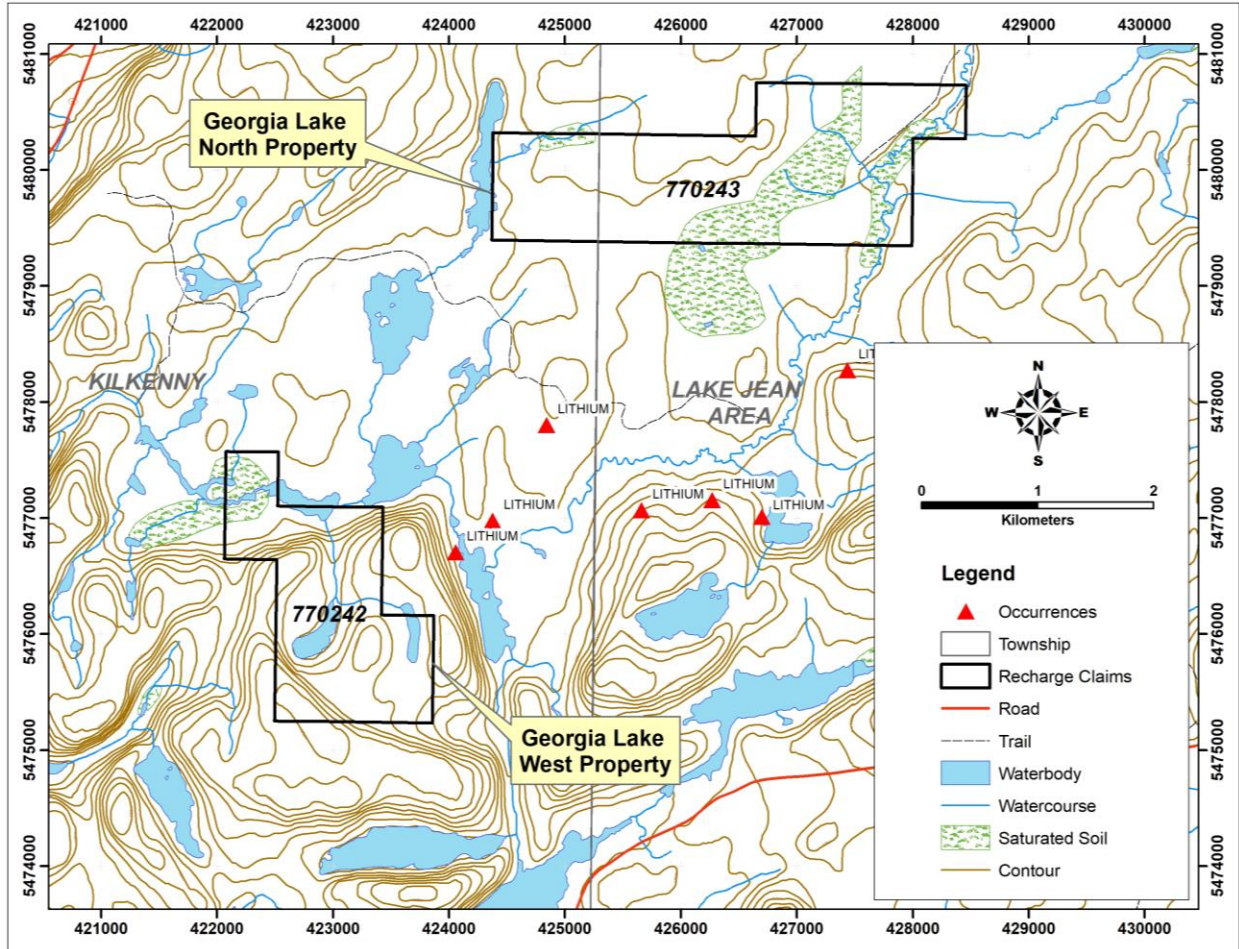


Figure 2: Tenure of the Georgia Lake West and North Properties

3.0 PREVIOUS WORK

There is no known historical exploration work that has been completed on the claims that comprise the Georgia Lake West and North Properties.

4.0 GEOLOGY

4.1 Property Geology

The Properties are located in the Quetico Subprovince within the Superior Province of the Canadian Shield. The Quetico Subprovince consists predominantly of marginal metasedimentary schists of turbidite origin and interior metasedimentary migmatite and peraluminous leucogranite of Archean age. (Percival, 1989).

Both Properties are predominantly underlain by metasediments. At the Georgia Lake West Property however, a Proterozoic-age mafic sill (Logan) is shown to overlie the metasediments and covers approximately 80% of Property.

The Georgia Lake West and North Properties do not contain any known mineral occurrences. The properties are contiguous to Rock Tech Lithium Inc.'s Georgia Lake Property which hosts several rare-element pegmatite dykes that are associated with southwest orientated granitic rocks that have intruded the metasediments. Rock Tech Lithium Inc.'s Georgia Lake Property contains an Indicated Mineral Resource of 10.6 million tonnes Li_2O , and an additional Inferred Mineral Resource of 4.2 million tonnes Li_2O (www.rocktechlithium.com).

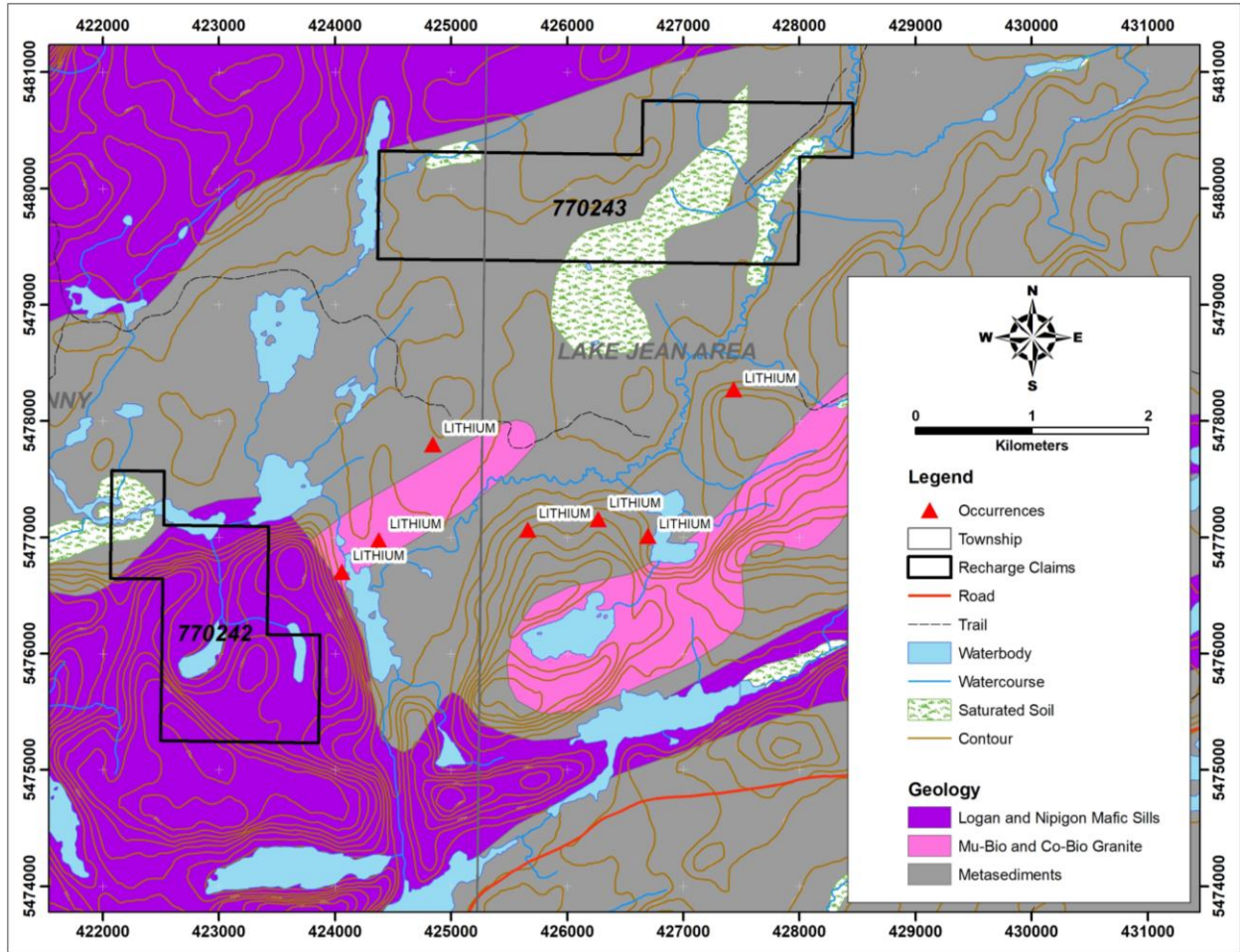


Figure 3: Property Geology (after MRD 126 Rev.)

5.0 SUMMARY OF THE HIGH-RESOLUTION HELIBORNE MAGNETIC SURVEY

From November 2nd to 4th, 2022, Prospectair completed a 148 line-km high-resolution heliborne magnetic survey on mining claims 770242 (Georgia Lake West Property) and 770243 (Georgia Lake North Property). Flight lines were orientated at 325° and flown at 50 m spacings with tie lines flown at 500 m spacings at 054°. The orientation of the survey was optimized to cover any structural features that may control the potential emplacement of rare-element pegmatites.

Under the Mining Act, no exploration plan or permit is required for completing airborne geophysical surveys.

The survey used a Geometrics G-822A magnetometer which have a sensitivity of 0.005 nT and a range of 15,000 to 100,000 nt with a sensor noise of less than 0.02 nT. The optically-pumped Cesium split-beam sensor was mounted inside a bird made of non-magnetic material located 19 m below the aircraft when flying.

A real-time differential DGPS (OmniStar) navigation system provides real-time guidance for the pilot to position data to an absolute accuracy of better than 5 m.

A GEM GSM-19 Overhauser magnetometer was used as a base station. The GSM-19 magnetometer has a resolution of 0.01 nT, and 0.2 nT accuracy over its operating range of 20,000 to 100,000 nT.

The average height above ground of the helicopter was 38 m, and 19 m for the magnetometer. The average flying speed 27.4 m/s.

A detailed report completed by Prospectair can be found in Appendix II, and map products can be found in Appendix III.

6. INTERPRETATION AND CONCLUSIONS

The high-resolution heliborne magnetic survey completed by Prospectair was successful in mapping the geophysical (magnetic) properties of the Georgia Lake West and Georgia Lake North Properties.

In the southeastern portion of the Georgia Lake North Property, a large moderate magnetic domain with settled signal variations is present, and in contrast with the remaining parts of the property, may suggest the presence of felsic intrusive rocks that are not shown on OGS mapping products. A smaller, but similar feature is also located at the southwestern corner of the Property. Ground truthing of these areas is recommended. In conjunction with the ground-truthing/prospecting, till sampling could also be completed along the southern boundary of the Georgia Lake North Property for indicator minerals related to rare-element pegmatite dykes. Several of the other smaller magnetic anomalies that are isolated along the north half of the Property should also be visited to explain the source of the anomalies. The FVD data suggests that the metasedimentary/mafic intrusive is further south than what is shown by OGS mapping products.

In the Georgia Lake West Property, the TMI magnetic data shows the presence of a large magnetic anomaly that corresponds with a large mafic intrusive/Logan sill as shown in Figure 3. Areas outside of the magnetic feature should be ground-truthed/prospected, specifically in the northwest where the rocks present may be Archean in age and not covered by Proterozoic rocks.

The TMI data does show the presence of several lineaments and faults on both Properties that correspond with abrupt changes in the magnetic intensity that are commonly oriented northwest, north-northwest, and northeast. A detailed structural interpretation of the magnetic data is recommended to assist with generating areas where fieldwork should be focused.

7. REFERENCES

Bradley, D, McCauley, A. 2013. A Preliminary Deposit Model for Lithium-Cesium-Tantalum (LCT) Pegmatites (Ver 1.1, December 2016): US Geological Survey Open-File Report 2013-1008.

Breaks, F.W., Selway, J.B. and Tindle, A.G. 2003. Fertile peraluminous granites and related rare-element mineralization in pegmatites, Superior Province, northwest and northeast Ontario: Operation Treasure Hunt; Ontario Geological Survey, Open File Report 6099, 179p.

Google Earth/Maxar Technologies. 2022.

Ministry of Northern Development, Mines, Natural Resources, and Forestry; Geology of Ontario, Assessment File Research Information (AFRI) found at www.geologyontario.mndm.gov.on.ca.

Ministry of Northern Development, Mines, Natural Resources, and Forestry; Geology of Ontario, Mineral Deposit Inventory Record (MDI) found at www.geologyontario.mndm.gov.on.ca.

Ontario Geological Survey 2011. 1:250 000 scale bedrock geology of Ontario; Ontario Geological Survey, Miscellaneous Release–Data 126 - Revision 1.

Percival, J.A., 1989. A regional perspective of the Quetico metasedimentary belt, Superior Province, Canada. *Can. Journal of Earth Sciences*, v.11, p. 323-326.

APPENDIX I: STATEMENT OF QUALIFICATIONS

STATEMENT OF QUALIFICATIONS

I, Joerg Martin Kleinboeck of 147 Lakeside Drive, North Bay, Ontario, do hereby certify that:

I am a graduate of Laurentian University, Sudbury, Ontario with a B.Sc. Geology, 2000, and have been practising my profession as a geologist since.

I am a member with the Association of Professional Geoscientists of Ontario (#1411).

I have an active prospector's license for the province of Ontario (#1002600).

I am a member of the Prospectors and Developers Association of Canada.

I do not own securities of Recharge Resources Ltd. and I do not have an interest in the mining claims that comprise the Georgia Lake West and Georgia Lake North Properties.



Joerg Martin Kleinboeck

January 25th, 2023

North Bay, Ontario

APPENDIX I: STATEMENT OF QUALIFICATIONS

STATEMENT OF QUALIFICATIONS

I, Joerg Martin Kleinboeck of 147 Lakeside Drive, North Bay, Ontario, do hereby certify that:

I am a graduate of Laurentian University, Sudbury, Ontario with a B.Sc. Geology, 2000, and have been practising my profession as a geologist since.

I am a member with the Association of Professional Geoscientists of Ontario (#1411).

I have an active prospector's license for the province of Ontario (#1002600).

I am a member of the Prospectors and Developers Association of Canada.

I do not own securities of Recharge Resources Ltd. and I do not have an interest in the mining claims that comprise the Georgia Lake West and Georgia Lake North Properties.



Joerg Martin Kleinboeck

January 25th, 2023

North Bay, Ontario

APPENDIX II: GEOPHYSICAL REPORT

Technical Report

High-Resolution Heliborne Magnetic Survey

***Georgia Lake Property, Nipigon Lake Area
Thunder Bay Mining Division, Ontario, 2022***

***Recharge Resources Ltd.
#600 – 535 Howe Street
Vancouver, BC, Canada
V6C 2Z4***



Prospektair Geosurveys

Dynamic Discovery Geoscience



Prepared by:
Joël Dubé, P.Eng.

December 2022

Dynamic Discovery Geoscience
7977 Décarie Drive
Ottawa, ON, K1C 3K3
jdube@ddgeoscience.ca
819-598-8486



Survey flown by :

PROSPECTAIR
Geosurveys

15 chemin de l'Étang
Gatineau, Québec J9J 3S9
819-661-2029
contact@prospectair.ca

Table of Contents

I.	INTRODUCTION	5
II.	SURVEY EQUIPMENT	9
	AIRBORNE MAGNETOMETER	9
	<i>Geometrics G-822A</i>	9
	REAL-TIME DIFFERENTIAL GPS	9
	<i>Omnistar DGPS</i>	9
	AIRBORNE NAVIGATION AND DATA ACQUISITION SYSTEM	9
	<i>Pico-Envirotec AGIS-XP system</i>	9
	MAGNETIC BASE STATION.....	9
	<i>GEM GSM-19</i>	9
	ALTIMETERS	10
	<i>Free Flight Radar Altimeter</i>	10
	<i>Digital Barometric Pressure Sensor</i>	10
	SURVEY HELICOPTER	10
	<i>Robinson R-44 (registration C-GBOU)</i>	10
III.	SURVEY SPECIFICATIONS	11
	DATA RECORDING	11
	TECHNICAL SPECIFICATIONS.....	11
IV.	SYSTEM TESTS	12
	MAGNETOMETER SYSTEM CALIBRATION	12
	INSTRUMENTATION LAG	12
V.	FIELD OPERATIONS	13
VI.	DIGITAL DATA COMPILATION	14
	MAGNETOMETER DATA.....	14
	<i>General</i>	14
	<i>Tilt Angle Derivative</i>	14
	<i>Gridding</i>	15
	RADAR ALTIMETER DATA.....	15
	POSITIONAL DATA	16
	TERRAIN DATA.....	16
VII.	RESULTS AND DISCUSSION	17
VIII.	FINAL PRODUCTS	22
	DIGITAL LINE DATA.....	22
	MAPS	22
	GRIDS	23
	PROJECT REPORT	23
IX.	STATEMENT OF QUALIFICATIONS	24
X.	APPENDIX A – SURVEY BLOCK OUTLINE	25
XI.	APPENDIX B – PROPERTY CLAIMS COVERED BY THE SURVEY	26

FIGURES

FIGURE 1:	GENERAL SURVEY LOCATION	5
FIGURE 2:	SURVEY LOCATION AND BASE OF OPERATION.....	6
FIGURE 3:	SURVEY LINES AND GEORGIA LAKE PROPERTY CLAIMS	8
FIGURE 4:	C-GBOU ROBINSON R-44	10
FIGURE 5:	EXAMPLE OF A MAGNETIC BASE STATION SETUP	13
FIGURE 6:	RESIDUAL TOTAL MAGNETIC INTENSITY WITH EQUAL AREA COLOR DISTRIBUTION	18
FIGURE 7:	RESIDUAL TOTAL MAGNETIC INTENSITY WITH LINEAR COLOR DISTRIBUTION	19
FIGURE 8:	FIRST VERTICAL DERIVATIVE OF TMI	20
FIGURE 9:	TILT ANGLE DERIVATIVE.....	21

TABLES

TABLE 1:	SURVEY BLOCK PARTICULARS.....	6
TABLE 2:	TECHNICAL SPECIFICATIONS OF THE R-44 ROBINSON HELICOPTER	10
TABLE 3:	MAG LINE DATA CHANNELS.....	22
TABLE 4:	MAPS DELIVERED	22
TABLE 5:	GRIDS DELIVERED	23

I. INTRODUCTION

Prospectair Geosurveys conducted a heliborne high-resolution magnetic (MAG) survey for the mineral exploration company Recharge Resources Ltd. on its Georgia Lake Property located in the Nipigon Lake area, Thunder Bay Mining Division, Province of Ontario (Figure 1). The survey was flown from November 2 to 4, 2022.

Figure 1: General Survey Location

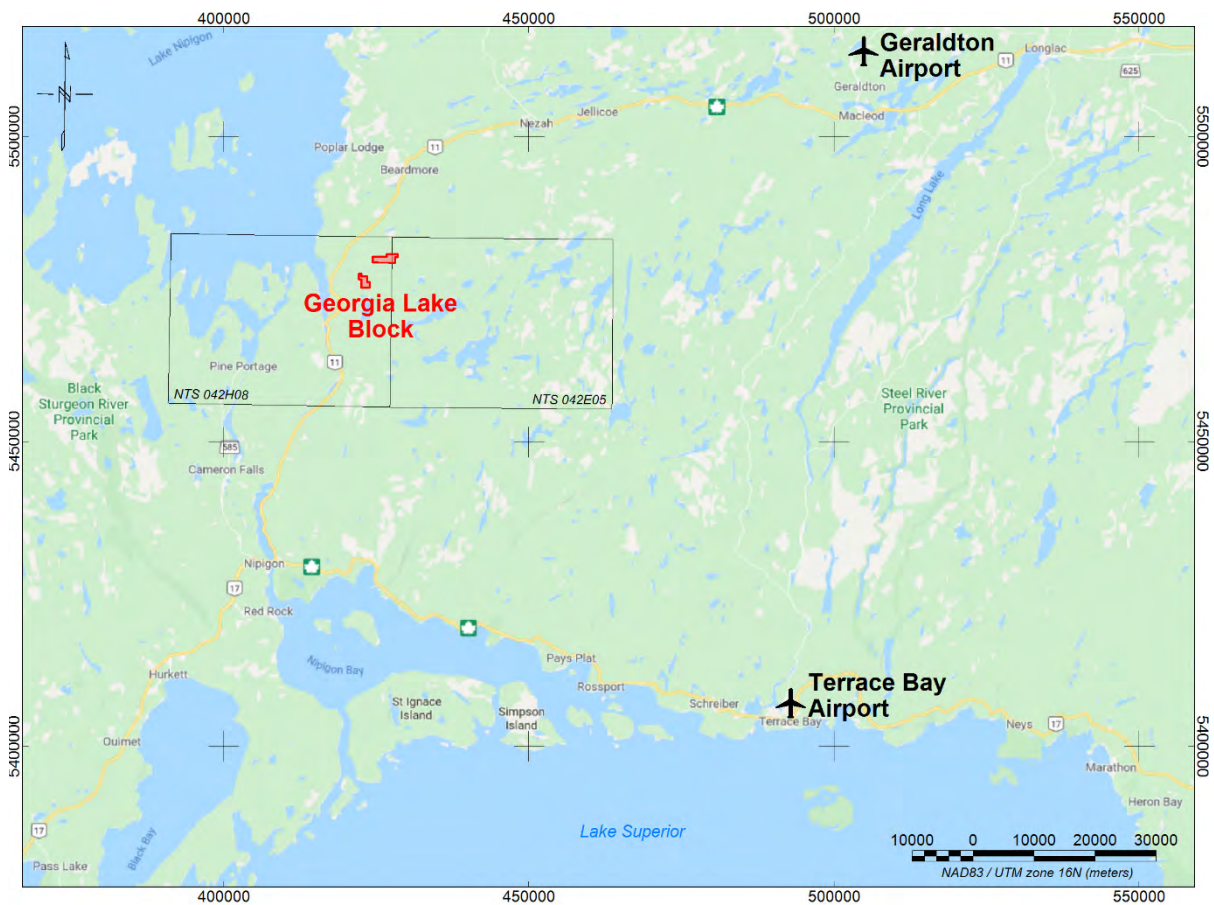


One survey block was flown for a total of 148 l-km. Note that the block is subdivided into two areas. A total of 5 production flights were performed using Prospectair’s Robinson R-44, registration C-GBOU. The helicopter and survey crew operated out of the Geraldton Airport located 85 km to the northeast of the block (Figure 2).

Table 1: Survey block particulars

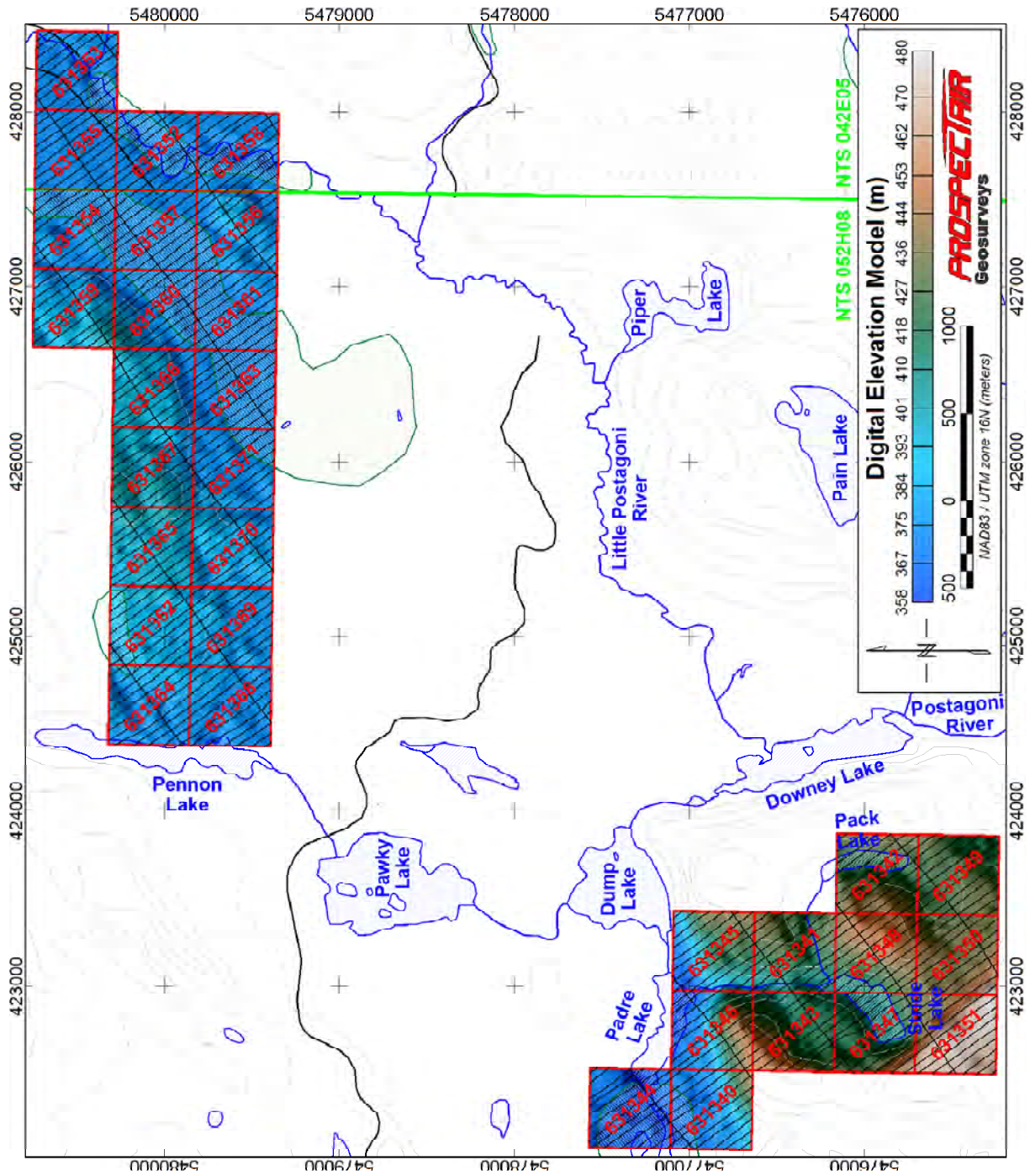
Block	NTS Mapsheet	Line-km flown	Flight numbers	Dates Flown
Georgia Lake	042E05, 052H08	148 l-km	Flt 1 to 5	Nov. 2 to 4

Figure 2: Survey Location and base of operation



The Georgia Lake block was flown with traverse lines at 50 m spacing and control lines spaced every 500 m. The survey lines were oriented N144 and control lines were flown at an azimuth of N054. The average height above ground of the helicopter was 38 m and the magnetic sensor was at 19 m. The average survey flying speed was 29.2 m/s. The survey area is covered by forest, a few lakes and some wetlands. The topography is mostly gently undulating, with only a few low-level hills in the southwest part of the block. The elevation is ranging from 358 to 480 m above mean sea level (MSL). The northeast part of the block is approximately bordered by the Pennon Lake to the west and by the Little Postagoni River to the east. The southwest part of the block is approximately located to the south of Padre Lake and to the west of Pack Lake. It also covers the small Stride Lake. From the ground, the block can be accessed via a network of secondary forestry roads connecting to the Trans-Canada Highway 11 passing less than 4 km to the west of the block. Coordinates outlining the survey block are given in Appendix A, with respect to NAD-83 datum, UTM projection zone 16N. The location of the Georgia Lake Property claims (in red) and of the survey lines is shown on Figure 3. The Property claims numbers, as well as the approximate amount of line-km flown over each claim, are also listed in Appendix B.

Figure 3: Survey lines and Georgia Lake Property claims



II. SURVEY EQUIPMENT

Prospectair provided the following instrumentation for this survey:

Airborne Magnetometer

Geometrics G-822A

The heliborne system used a non-oriented (strap-down) optically-pumped Cesium split-beam sensor. These magnetometers have a sensitivity of 0.005 nT and a range of 15,000 to 100,000 nT with a sensor noise of less than 0.02 nT. The heliborne sensor was mounted in a bird made of non-magnetic material located 19 m below the helicopter when flying. Total magnetic field measurements were recorded at 10 Hz in the aircraft.

Real-Time Differential GPS

Omnistar DGPS

Prospectair uses an OmniStar differential GPS navigation system to provide real-time guidance for the pilot and to position data to an absolute accuracy of better than 5 m. The *Omnistar* receiver provides real-time differential GPS for the Agis on-board navigation system. The differential data set was relayed to the helicopter via the Omnistar network appropriate geosynchronous satellite for the survey location. The receiver optimizes the corrections for the current location.

Airborne Navigation and Data Acquisition System

Pico-Envirotec AGIS-XP system

The Airborne Geophysical Information System (AGIS-XP) is advanced, software driven instrument specifically designed for mobile aerial or ground geophysical survey work. The AGIS instrumentation package includes an advanced navigation system, real-time flight path information that is displayed over a map image of the area, and reliable data acquisition software. Thanks to simple interfacing, the radar and barometric altimeters and the Geometrics magnetometer are easily integrated into the system and digitally recorded. Automatic synchronization to the GPS position and time provides very close correlation between data and geographical position. The AGIS is equipped with a software suite allowing easy maintenance, upgrades, data QC, and project and survey area layout planning.

Magnetic Base Station

GEM GSM-19

A GEM GSM-19 Overhauser magnetometer, a computer workstation and a complement of spare parts and equipment serve as the base station. Prospectair establish the base station in a secure location with low magnetic noise. The GSM-19 magnetometer has resolution of 0.01 nT, and 0.2 nT accuracy over its operating range of 20,000- to 100,000 nT. The ground system was recording magnetic data at 1 Hz.

Altimeters

Free Flight Radar Altimeter

The Free Flight radar altimeter measures height above ground to a resolution of 0.5 m and an accuracy of 5% over a range up to 2,500 ft. The radar altimeter data is recorded and sampled at 10 Hz.

Digital Barometric Pressure Sensor

The barometric pressure sensor measures static pressure to an accuracy of ± 4 m and resolution of 2 m over a range up to 30,000 ft above sea level. The barometric altimeter data are sampled at 10 Hz.

Survey helicopter

Robinson R-44 (registration C-GBOU)

The survey was flown using Prospectair's Robinson R-44 helicopter that handles efficiently the light equipment load and the survey range for magnetic surveys. Table 2 presents the helicopter technical specifications and capacity, and the aircraft is shown in Figure 4.

Table 2: **Technical specifications of the R-44 Robinson helicopter**

Item	Specification
Powerplant	One 195kW (260hp) Textron Lycoming O-540
Rate of climb	1,000 ft/min
Cruise speed	223 km/h – 120 kts
Service ceiling	14,000 ft
Range with no reserve	645 km
Empty weight	635 kg
Maximum takeoff weight	1,090 kg

Figure 4: **C-GBOU Robinson R-44**



III. SURVEY SPECIFICATIONS

Data Recording

The following parameters were recorded during the course of the survey:

In the helicopter:

- GPS positional data: time, latitude, longitude, altitude, heading and accuracy (PDOP) recorded at intervals of 0.1 s;
- Total magnetic field: recorded at intervals of 0.1 s;
- Pressure as measured by the barometric altimeter at intervals of 0.1 s;
- Terrain clearance as measured by the radar altimeter at intervals of 0.1 s;

At the base and remote magnetic ground stations:

- Total magnetic field: recorded at intervals of 1 s;
- GPS time recorded every 1 s to synchronize with airborne data.

Technical Specifications

The data quality control was performed on a daily basis. The following technical specifications were adhered to:

- *Height* – 50m mean terrain clearance for the helicopter except in areas where Transport Canada regulations prevent flying at this height, or as deemed by the pilot to ensure safety. Traverse lines and control lines must be flown at the same altitude at points of intersection; the altitude tolerances are limited to no more than 30 m difference between traverse lines and control lines.
- *Airborne Magnetometer Data* – A 0.5 nT noise envelope not to be exceeded for more than 500 m line-length without a reflight.
- *Diurnal Specifications* – A maximum tolerance of 5.0 nT (peak to peak) deviation from a long chord of one minute at the base station.
- *Flying Speed* – The average ground speed for the survey aircraft should be 120 kph. The acceptable high limit is 180 kph over flat topography.
- *Radar Altimeter* – minimal accuracy of 5%, minimum range of 0-2500 m.
- *Barometer* – Absolute air pressure to 0.1 kPa.
- *Flight Path Following* – The line spacing not to vary by more than 30% from the ideal spacing over a distance of more than 300 m, except as required for aviation safety.

For Georgia Lake Block:

- Traverse lines: Azimuth N144, 50 m spacing.
- Control Lines: Azimuth N054, 500 m spacing.

IV. SYSTEM TESTS

Magnetometer System Calibration

The survey configuration using a bird towed 19 m below any magnetic piece of the helicopter allows the simplification of the magnetic calibration requirement. Consequently, heading error and aircraft movement noise was considered negligible and no correction was applied to the data.

Instrumentation Lag

The magnetometer lag is a combination of two factors: 1) the time difference between when a reading is sensed, and when that value is recorded by the acquisition system, and 2) the time taken for the sensor to arrive at the location of the GPS antenna. The second factor is defined by the physical distance between the GPS antenna and any given sensor, and the speed of the aircraft. The average total magnetic lag value for the AGIS acquisition system has been calculated to 1.85 s for this survey.

V. FIELD OPERATIONS

The survey operations were conducted out of the Geraldton Airport from November 2 to 4, 2022. The data acquisition required 5 flights. At the end of each production day, the data were sent to the Dynamic Discovery Geoscience office via internet. The data were then checked for Quality Control to ensure they fulfilled contractual specifications. The full dataset was inspected prior to provide authorization for the field crew to demobilize. The GSM-19 magnetic base station was set up in a magnetically quiet area close to the block, at latitude 49.4910389°N, longitude 88.0639082°W. The survey pilot was Marc Patenaude and the survey system technician was Johnathan Drolet.

Figure 5: **Example of a magnetic base station setup**



VI. DIGITAL DATA COMPILATION

Data compilation including editing and filtering, quality control, and final data processing was performed by Joël Dubé, P.Eng. Processing was performed on high performance computers optimized for quick daily QC and processing tasks. Geosoft software Oasis Montaj version 2022.1 was used.

Magnetometer Data

General

The airborne magnetometer data, recorded at 10 Hz, were plotted and checked for spikes and noise on a flight basis. An average of 1.85 second lag correction was applied to the data to correct for the time delay between detection and recording of the airborne data.

Ground magnetometer data were recorded at 1 sample per second and interpolated by a spline function to 10 Hz to match airborne data. Data were inspected for cultural interference and edited where necessary. Low-pass filtering was deemed necessary on the ground station magnetometer data to remove minor high frequency noise. The diurnal variations were removed by subtracting the ground magnetometer data from the airborne data and then adding back the average magnetic field value of the ground magnetometer.

The levelling corrections were applied in several steps. First, a correction for altitude was applied by multiplying the First Vertical Derivative (FVD) of the Total Magnetic Intensity (TMI) by the difference between the actual survey altitude and the average survey altitude. Standard levelling corrections were then performed using intersection statistics from traverse and tie lines. After statistical levelling was considered satisfactory, decorrugation was applied on the data to remove any remaining subtle non-geological features oriented in the direction of the traverse lines.

Once the Total Magnetic Intensity (TMI) was gridded, its First Vertical Derivative (FVD) and Second Vertical Derivative (SVD) were calculated to enhance narrow and shallow geological features. Finally, the component of the normal Earth's magnetic field, described by the International Geomagnetic Reference Field (IGRF), has been removed from the TMI to yield the residual TMI.

Tilt Angle Derivative

In order to enhance the subtle magnetic features some more, the Tilt Angle Derivative (TILT) was also computed for this project.

It has been shown that it is possible to use the Tilt Angle Derivative to estimate both the location and depth of magnetic sources (Salem et al., 2007).

When two bodies of different magnetic susceptibility are in contact, the vertical and horizontal gradients along a horizontal line perpendicular to the vertical contact are governed by the following equations:

$$\delta M/\delta h = 2KFc(z_c/(h^2+z_c^2))$$

$$\delta M/\delta z = 2KFc(h/(h^2+z_c^2))$$

where

K = susceptibility contrast

F = magnetic field's strength

c = $1 - \cos^2(\text{field Inclination})\sin^2(\text{field Declination})$

h = location along an horizontal axis perpendicular to the contact

z_c = contact depth

$$\delta M/\delta h = \text{sqrt}((\delta M/\delta x)^2 + (\delta M/\delta y)^2)$$

The Tilt Angle (θ) is defined as

$$\theta = \tan^{-1}[(\delta M/\delta z)/(\delta M/\delta h)]$$

By substitution of the gradients we get

$$\theta = \tan^{-1}[h/z_c]$$

This has two main implications for any given anomaly:

- 1- The 0° angle line is located directly above the contact between a magnetic source and the surrounding rock. This allows for accurate estimation of source location.
- 2- The distance between the 0° and the $+45^\circ$ contour lines as well as the distance between the -45° and the 0° contour lines are equal to the depth of the source at the contact. This allows for a direct estimation of the depth of the source of the anomaly. The depth estimated with this method is actually the distance between the magnetic sensor and the top of the source. Knowing that the sensor was 19 m above the ground in average enables direct depth estimates.

In practice, the signal originating from multiple sources at different depth within a same area will cause juxtaposition of the Tilt Angle values, and complicate location and depth estimation. Nevertheless, the method remains an excellent tool for rapid assessment of sources characteristics, without the need for complex assumptions to be made or heavy computer requirements, as is the case with 3D Euler deconvolution or 3D data inversions.

Gridding

The magnetic data were interpolated onto a regular grid using a bi-directional gridding algorithm to create a two-dimensional grid equally incremented in x and y directions. The final grids of the magnetic data are supplied with a 10 m grid cell size. Traverse lines were used in the gridding process.

Radar Altimeter Data

The terrain clearance measured by the radar altimeter in metres was recorded at 10 Hz. The data were filtered to remove high frequency noise using a 1 sec low pass filter. The final data were plotted and inspected for quality.

Positional Data

Real time DGPS correction provided by Omnistar was applied to the recorded GPS positional data.

Positional data were originally recorded at 10 Hz sampling rate in geographic longitude and latitude with respect to the WGS-84 datum. The delivered data locations are provided in X and Y using the UTM projection zone 16 North, with respect to the NAD-83 datum. Altitude data were initially recorded relative to the GRS-80 ellipsoid, but are delivered as orthometric heights (MSL elevation).

Terrain Data

Terrain elevation data (also referred to as digital elevation model, or DEM) are computed from the altitude of the helicopter, given by DGPS recordings, and the radar altimeter data.

VII. RESULTS AND DISCUSSION

The residual Total Magnetic Intensity (TMI) of the Georgia Lake block, presented in Figure 6, is slightly active and varies over a range of 1,983 nT, with an average of -150 nT and a standard deviation of 176 nT.

Some survey areas, namely in the southeastern half of the northeast part of the block, as well as at the southeast tip of the southwestern part of the block, are dominated by magnetic domains with settled signal variations mostly consisting in very low amplitude anomalies. This is characteristic of areas dominated by meta-sedimentary or intermediate to felsic intrusive rocks. Remaining areas, to the northwest of both parts of the block, are rather characterized by active magnetic variations and stronger anomalies, either on the positive or negative side, which is typical of mafic intrusive rocks. The few magnetic features depicting strong magnetic low anomalies are likely caused by relatively strong magnetic sources affected by remanent magnetization. These stronger positive and negative anomalies are best seen on Figure 7 which shows the residual TMI data with a linear color distribution.

Magnetic lineaments are very variable in orientation throughout the block, depicting a complex fabric of intertwined and deformed linear features. Several lineaments are curved, possibly indicative of intrusions' internal structures or outlines, or of deformation structures. In general terms, magnetic lineaments are related to rock formations that are enriched in magnetic minerals (magnetite and/or pyrrhotite).

In some areas, it is possible to detect structural features offsetting observed magnetic lineaments and causing abrupt interruption or changes of the magnetic response. These features are typically caused by faults, fractures and shear zones. If they are thought to be favorable structures in the exploration context of the Georgia Lake project, they should be paid particular attention and should be the object of a comprehensive structural interpretation, which is beyond the scope of this report.

Shorter wavelength anomalies are greatly enhanced on the FVD (Figure 8) and on the TILT (Figure 9) products. Since the FVD attenuates longer wavelength anomalies, and the TILT enhances very weak amplitude anomalies, they are the preferred products for structural interpretation.

Figure 6: Residual Total Magnetic Intensity with equal area color distribution

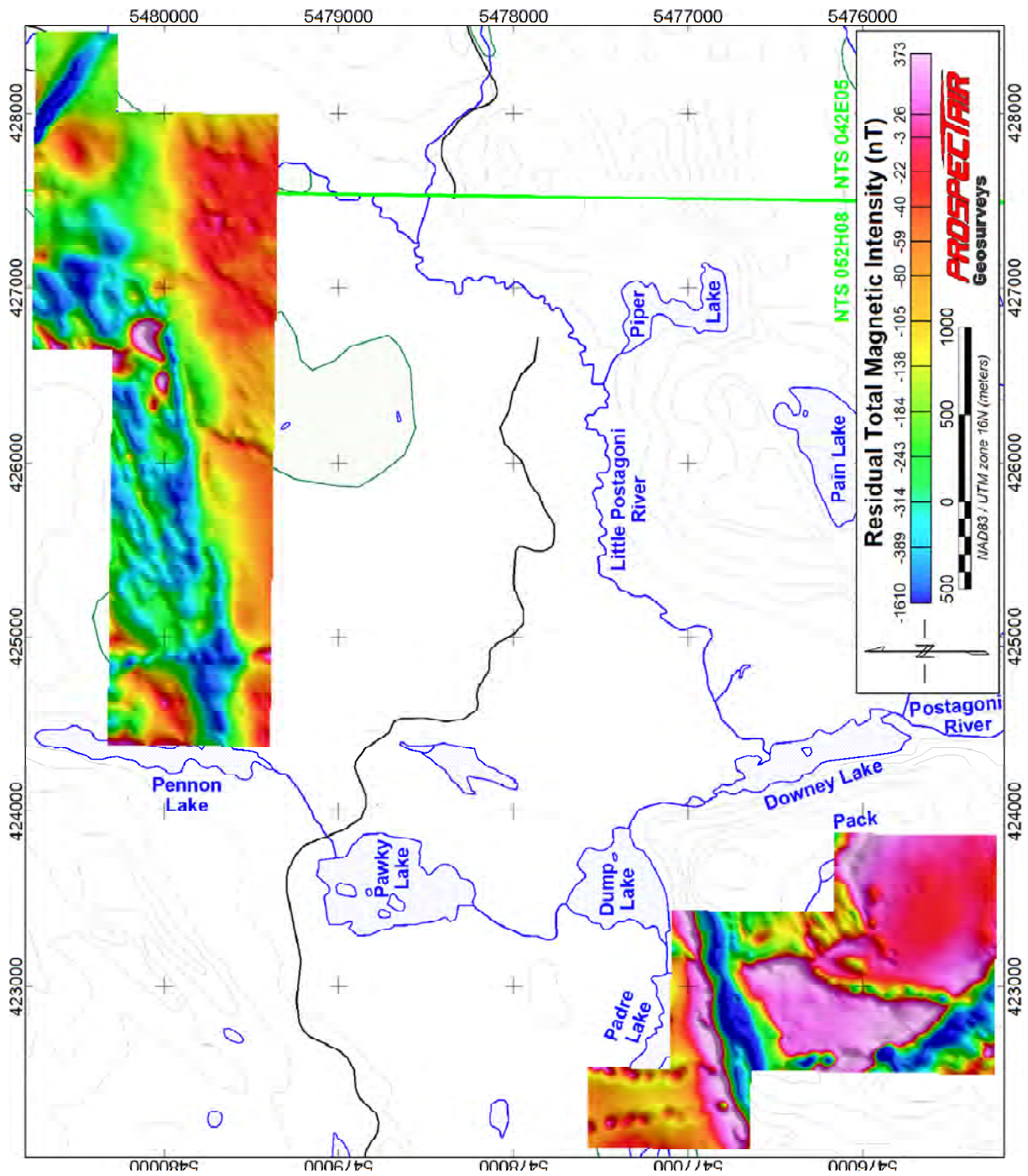


Figure 7: Residual Total Magnetic Intensity with linear color distribution

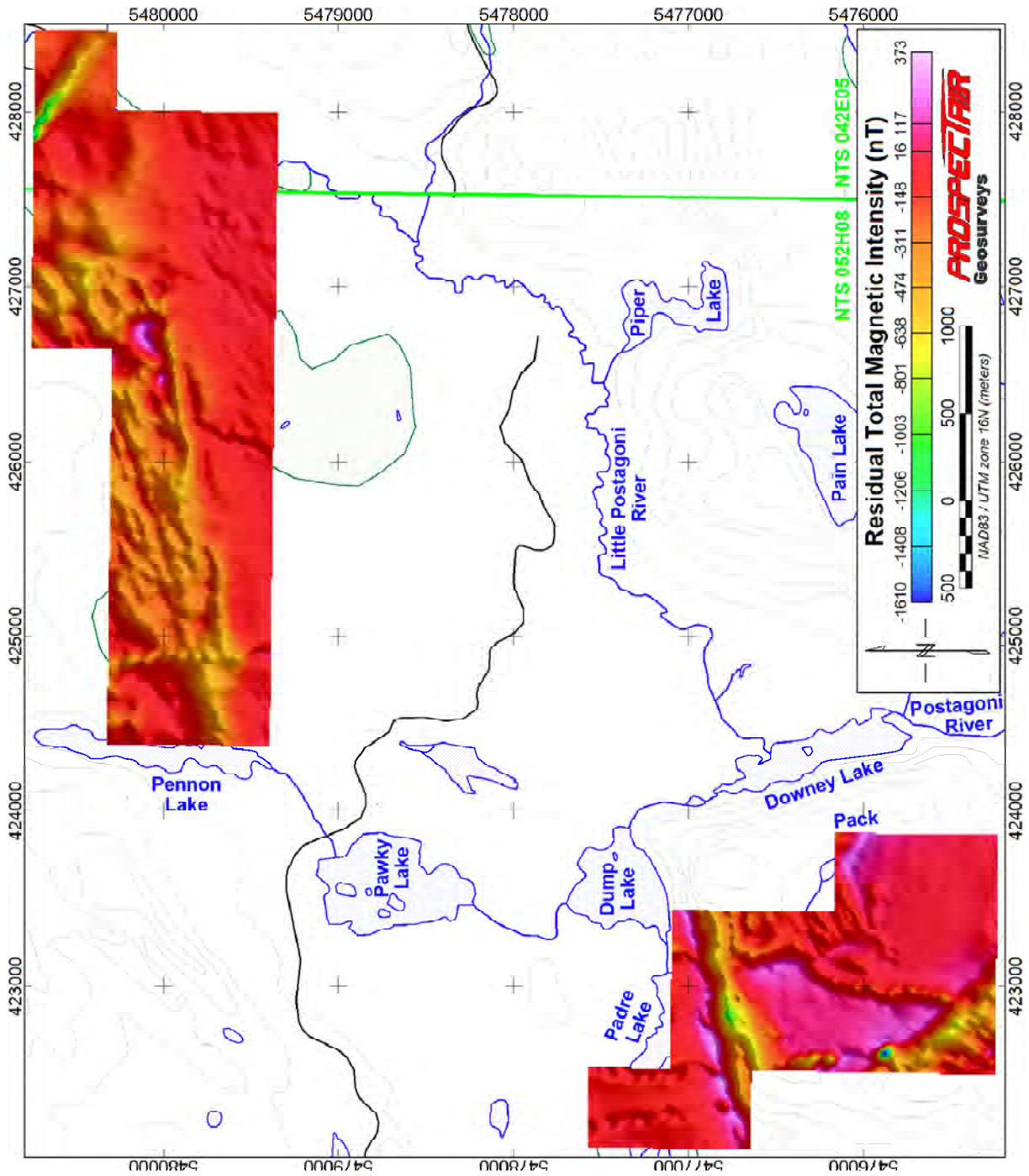


Figure 8: First Vertical Derivative of TMI

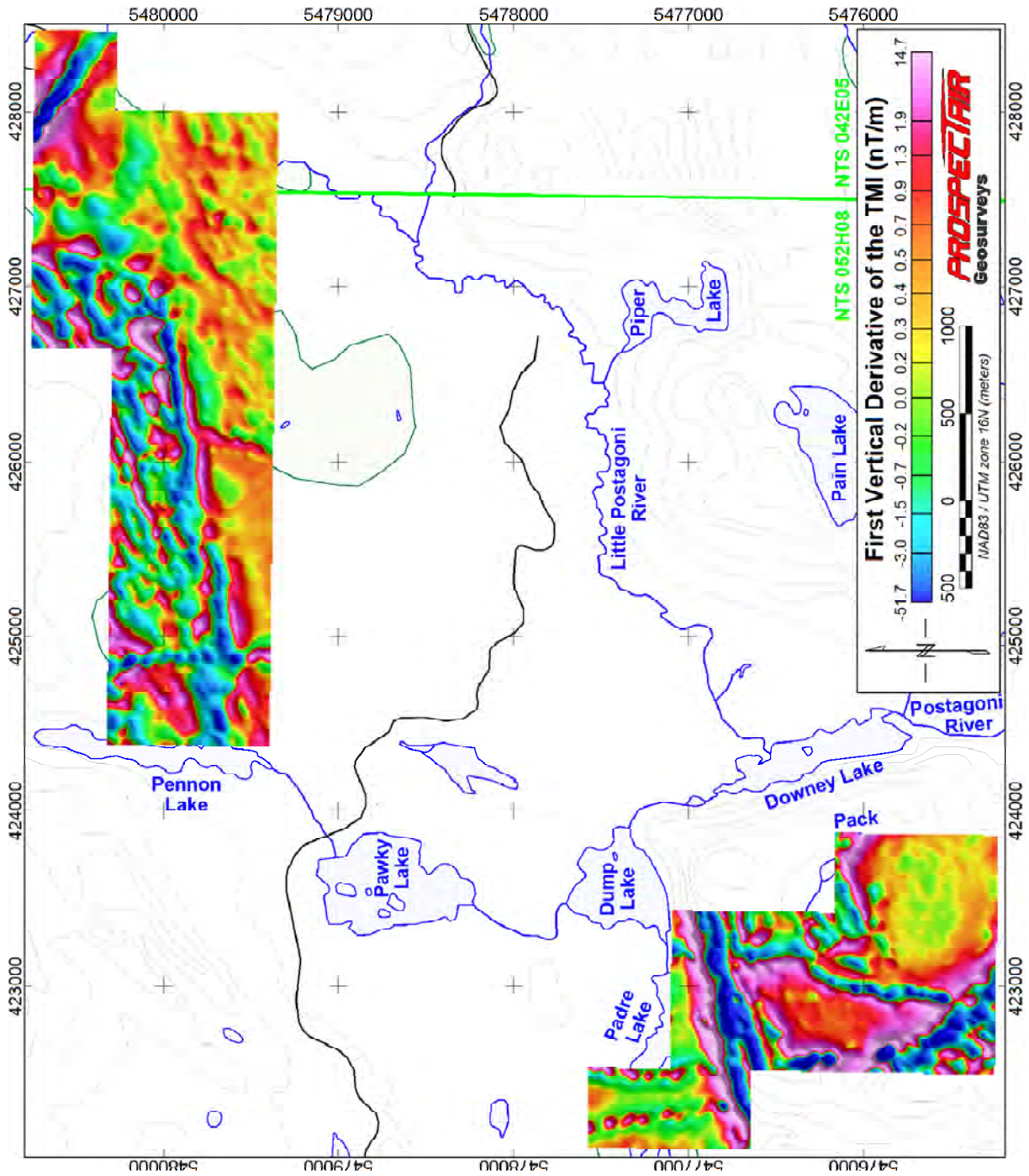
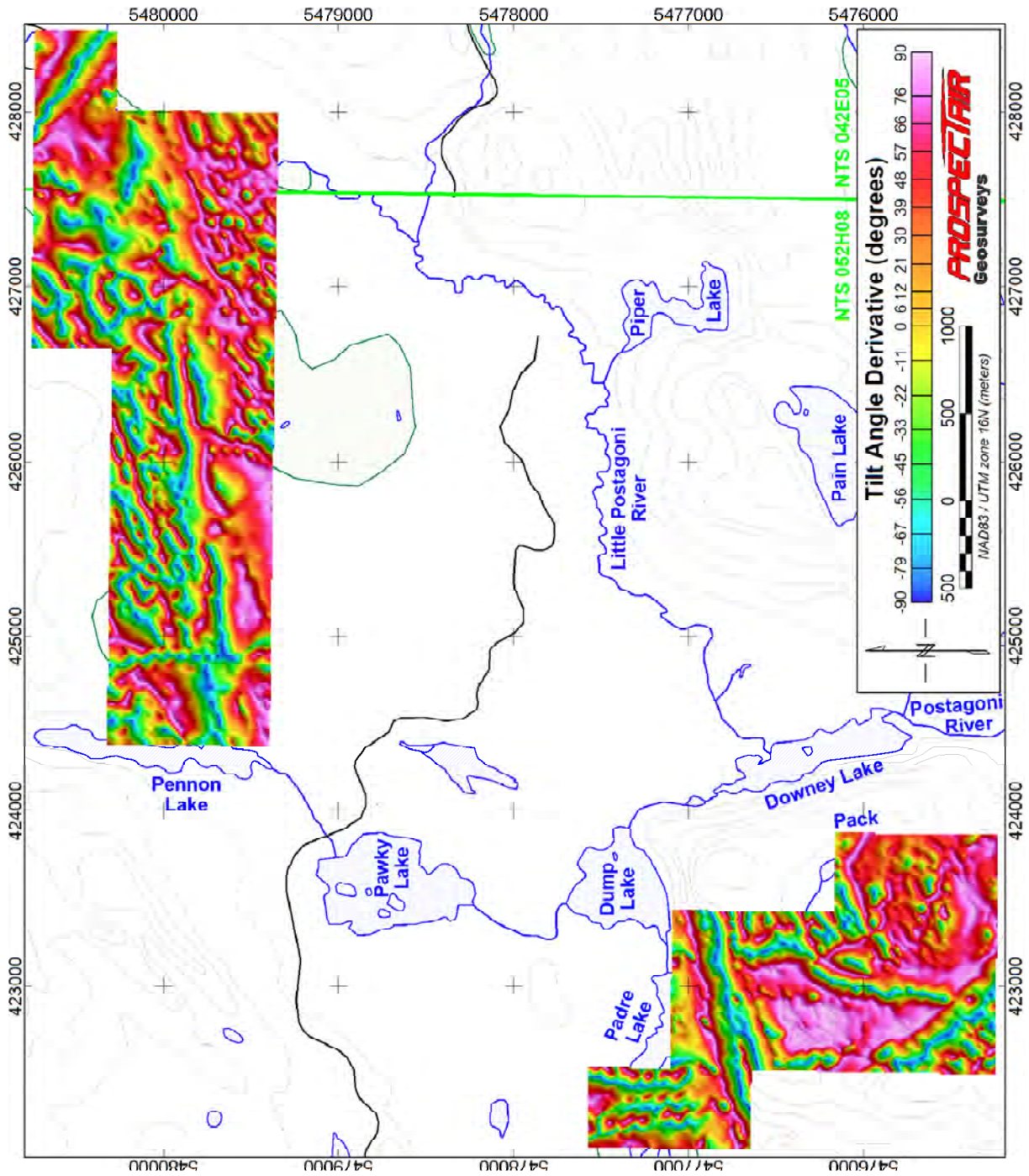


Figure 9: Tilt Angle Derivative



VIII. FINAL PRODUCTS

Digital Line Data

The Geosoft database is provided with the channels detailed in Table 3.

Table 3: **MAG line data channels**

No.	Name	Description	Units
1	UTM_X	UTM Easting, NAD-83, Zone 16N	m
2	UTM_Y	UTM Northing, NAD-83, Zone 16N	m
3	Lat_deg	Latitude in decimal degrees	Deg
4	Long_deg	Longitude in decimal degrees	Deg
5	Gtm_sec	Second since midnight GMT	Sec
6	Radar	Ground clearance given by the radar altimeter	m
7	Terrain	Calculated Digital Elevation Model (w.r.t. MSL)	m
8	GPS_Z	Helicopter altitude (w.r.t. MSL)	m
9	Mag_Raw	Raw magnetic data	nT
10	Mag_Lag	Lagged magnetic data	nT
11	Gnd_mag	Base station magnetic data	nT
12	Mag_Cor	Magnetic data corrected for diurnal variation	nT
13	TMI	Fully levelled Total Magnetic Intensity	nT
14	TMIres	Residual TMI (IGRF removed)	nT

Maps

All maps are referenced to NAD-83 datum in the UTM projection Zone 16 North, with coordinates in metres. Maps are at a 1:10,000 scale and are provided in PDF, PNG and Geosoft MAP formats for the products detailed in Table 4.

Table 4: **Maps delivered**

No.	Name	Description
1	DEM+FlightPath+Claims	Digital Elevation Model with flight path and property claims
2	TMI	Residual Total Magnetic Intensity
3	FVD	First Vertical Derivative of the TMI
4	TILT	Tilt Angle Derivative

Grids

All grids are referenced to NAD-83 in the UTM projection Zone 16 North, with coordinates in metres. Grids are provided in Geosoft GRD format, with a 10 m grid cell size, as well as in the Geotiff format for the products listed in Table 5.

Table 5: **Grids delivered**

No.	Name	Description	Units
1	Terrain	Calculated Digital Elevation Model	m
2	TMI	Total Magnetic Intensity	nT
3	FVD	First Vertical Derivative of TMI	nT/m
4	SVD	Second Vertical Derivative of TMI	nT/m ²
5	TMIres	Residual TMI (IGRF removed)	nT
6	TILT	Tilt Angle Derivative	Degree

Project Report

The report is submitted in PDF format.

Respectfully submitted,




Joël Dubé, P.Eng.
December 15, 2022

IX. STATEMENT OF QUALIFICATIONS

Joël Dubé
7977 Décarie Drive
Ottawa, ON, Canada, K1C 3K3

Telephone: 819.598.8486
E-mail: jdube@ddgeoscience.ca

I, Joël Dubé, P.Eng., do hereby certify that:

1. I am a Professional Engineer specialized in geophysics, President of Dynamic Discovery Geoscience Ltd., registered in Canada.
2. I earned a Bachelor of Engineering in Geological Engineering in 1999 from the École Polytechnique de Montréal.
3. I am an Engineer registered with the Ordre des Ingénieurs du Québec, No. 122937, and a Professional Engineer with Professional Engineers Ontario, No. 100194954 (CofA No. 100219617), with the Association of Professional Engineers and Geoscientists of New Brunswick, No. L5202 (CofA No. F1853), with the Association of Professional Engineers of Nova Scotia, No. 11915 (CofC No. 51099), with Engineers Geoscientists Manitoba, No. 43414. (CofA No. 6897), with Professional Engineers & Geoscientists Newfoundland & Labrador, No. 10012 (PtoP No. N1134) and with the Northwest Territories Association of Professional Engineers & Geoscientists, No. L4447 (PtoP No. P1414).
4. I have practised my profession for 23 years in exploration geophysics.
5. I have not received and do not expect to receive a direct or indirect interest in the properties covered by this report.

Dated this 15th day of December, 2022




Joël Dubé, P.Eng. #100194954

X. Appendix A – Survey block outline

Georgia Lake Block, northeast part

Easting	Northing
427993	5479344
424365	5479393
424378	5480324
426642	5480293
426648	5480757
428464	5480733
428458	5480264
428005	5480270

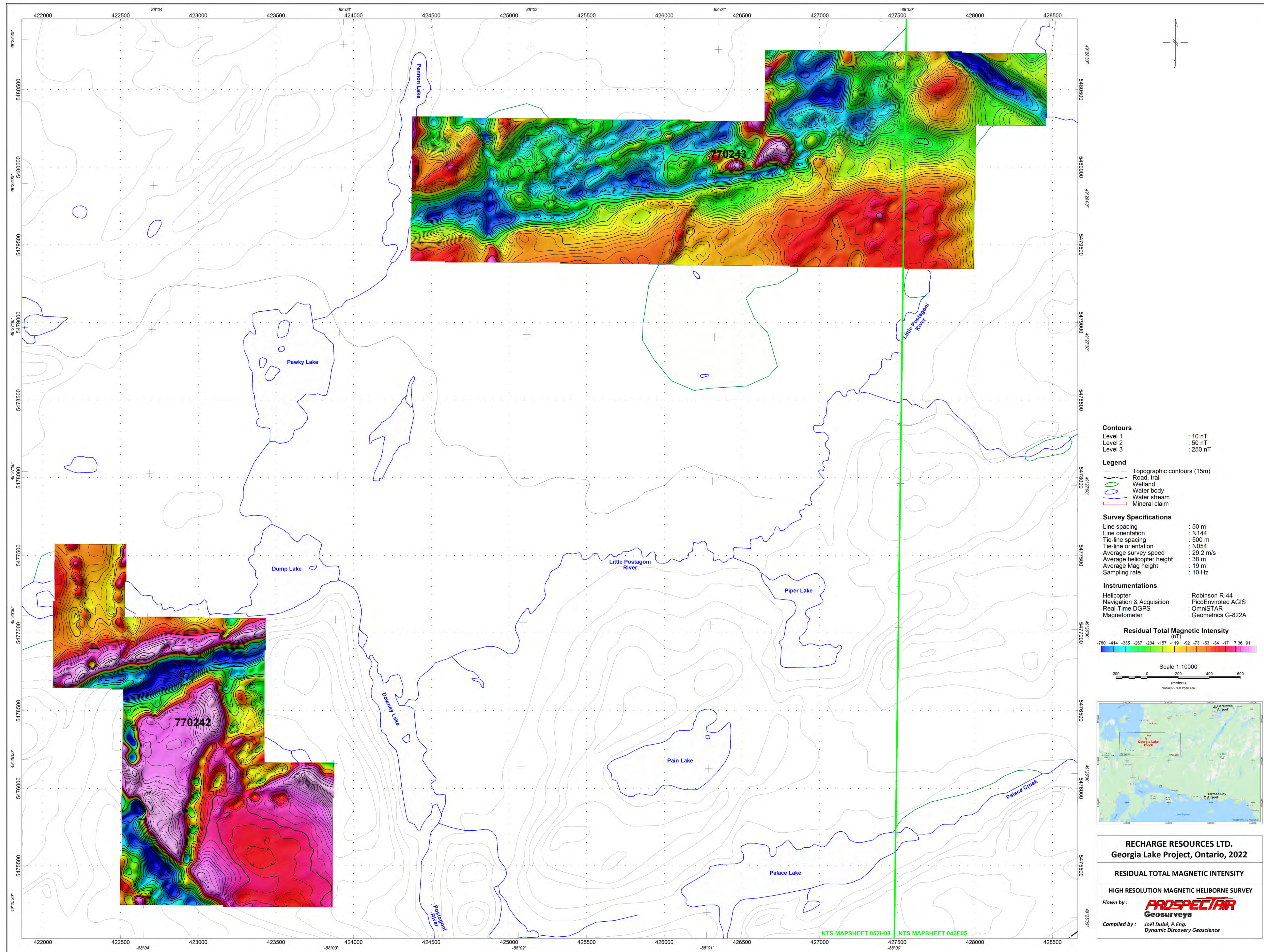
Georgia Lake Block, southwest part

Easting	Northing
423859	5475230
422494	5475249
422514	5476639
422061	5476645
422074	5477577
422532	5477570
422526	5477107
423432	5477094
423419	5476168
423872	5476162

XI. Appendix B – Property claims covered by the survey

Tenure number	Holder	l-km within claim
631340	(100) Recharge Resources Ltd.	4.628
631341	(100) Recharge Resources Ltd.	4.628
631342	(100) Recharge Resources Ltd.	4.628
631343	(100) Recharge Resources Ltd.	4.628
631344	(100) Recharge Resources Ltd.	4.626
631345	(100) Recharge Resources Ltd.	4.628
631346	(100) Recharge Resources Ltd.	4.628
631347	(100) Recharge Resources Ltd.	4.628
631348	(100) Recharge Resources Ltd.	4.628
631349	(100) Recharge Resources Ltd.	4.628
631350	(100) Recharge Resources Ltd.	4.628
631351	(100) Recharge Resources Ltd.	4.628
631352	(100) Recharge Resources Ltd.	4.623
631353	(100) Recharge Resources Ltd.	4.623
631354	(100) Recharge Resources Ltd.	4.623
631355	(100) Recharge Resources Ltd.	4.623
631356	(100) Recharge Resources Ltd.	4.623
631357	(100) Recharge Resources Ltd.	4.623
631358	(100) Recharge Resources Ltd.	4.623
631359	(100) Recharge Resources Ltd.	4.623
631360	(100) Recharge Resources Ltd.	4.623
631361	(100) Recharge Resources Ltd.	4.623
631362	(100) Recharge Resources Ltd.	4.623
631363	(100) Recharge Resources Ltd.	4.623
631364	(100) Recharge Resources Ltd.	4.623
631365	(100) Recharge Resources Ltd.	4.623
631366	(100) Recharge Resources Ltd.	4.623
631367	(100) Recharge Resources Ltd.	4.623
631368	(100) Recharge Resources Ltd.	4.623
631369	(100) Recharge Resources Ltd.	4.623
631370	(100) Recharge Resources Ltd.	4.623
631371	(100) Recharge Resources Ltd.	4.623

APPENDIX III: MAPS

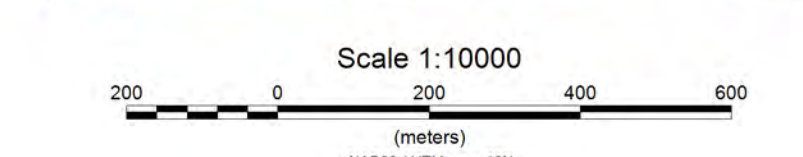
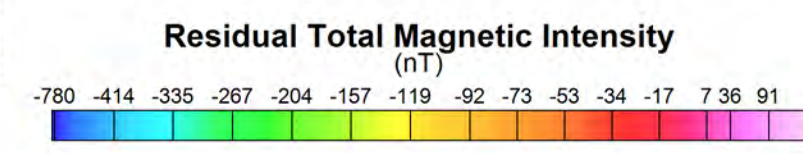


Contours
 Level 1 : 10 nT
 Level 2 : 50 nT
 Level 3 : 250 nT

Legend
 Topographic contours (15m)
 Road, trail
 Wetland
 Water body
 Water stream
 Mineral claim

Survey Specifications
 Line spacing : 50 m
 Line orientation : N144
 Tie-line spacing : 500 m
 Tie-line orientation : N054
 Average survey speed : 29.2 m/s
 Average helicopter height : 38 m
 Average Mag height : 18 m
 Sampling rate : 10 Hz

Instrumentations
 Helicopter : Robinson R-44
 Navigation & Acquisition : PicoEVIrotec AGIS
 Real-Time DGPS : OmniSTAR
 Magnetometer : Geometrics G-822A



RECHARGE RESOURCES LTD.
 Georgia Lake Project, Ontario, 2022

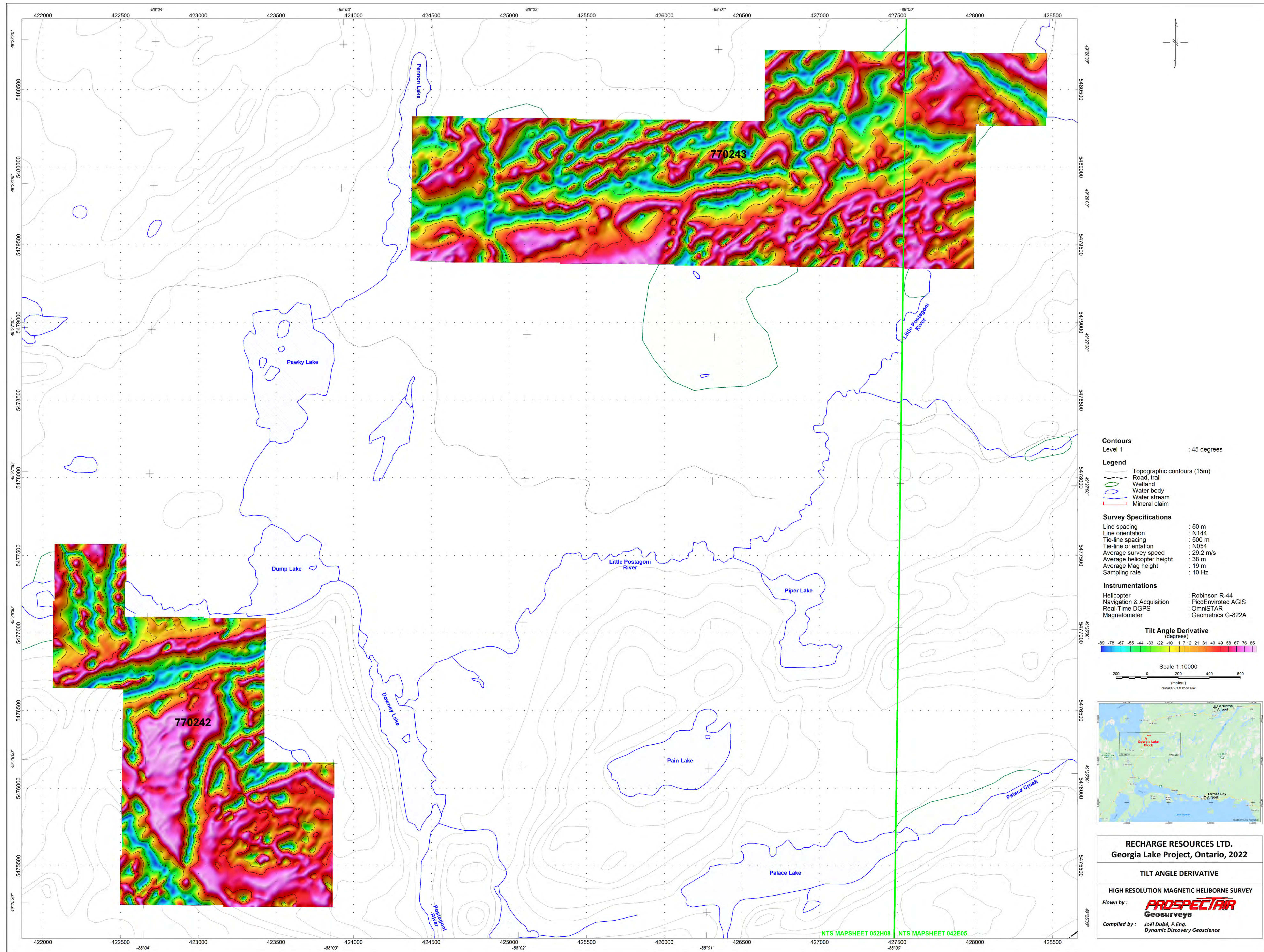
RESIDUAL TOTAL MAGNETIC INTENSITY

High Resolution Magnetic Heliborne Survey

Flown by: **PROSPECTAR Geosurveys**

Compiled by: Joël Dubé, P.Eng.
 Dynamic Discovery Geoscience

NTS MAPSHEET 052H08 | NTS MAPSHEET 042E05



Contours
Level 1 : 45 degrees

Legend

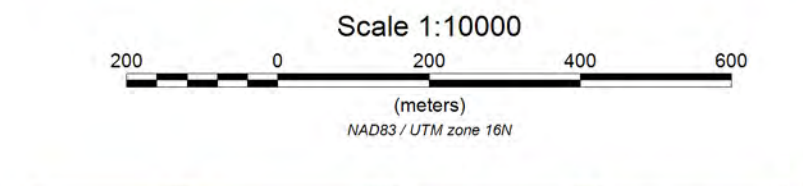
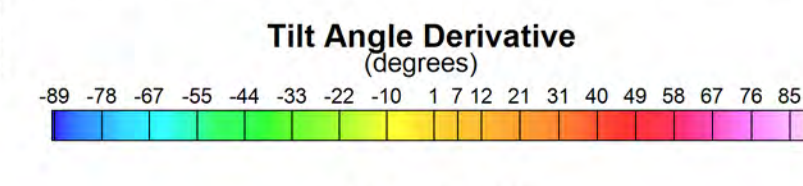
- Topographic contours (15m)
- Road, trail
- Wetland
- Water body
- Water stream
- Mineral claim

Survey Specifications

- Line spacing : 50 m
- Line orientation : N144
- Tie-line spacing : 500 m
- Tie-line orientation : N054
- Average survey speed : 29.2 m/s
- Average helicopter height : 38 m
- Average Mag height : 18 m
- Sampling rate : 10 Hz

Instrumentations

- Helicopter : Robinson R-44
- Navigation & Acquisition : PicoEvirotec AGIS
- Real-Time DGPS : OmniSTAR
- Magnetometer : Geometrics G-822A



RECHARGE RESOURCES LTD.
Georgia Lake Project, Ontario, 2022

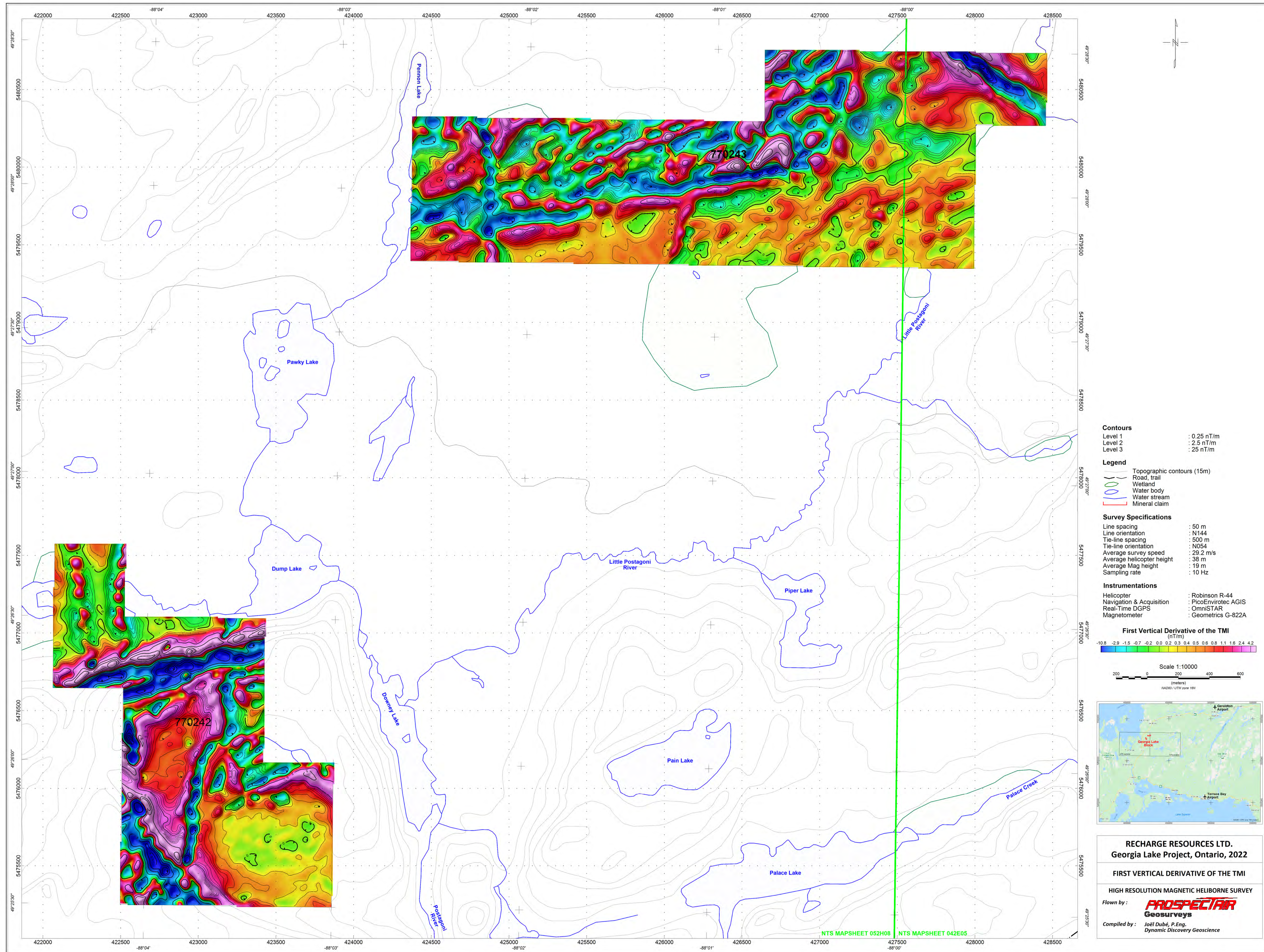
TILT ANGLE DERIVATIVE

HIGH RESOLUTION MAGNETIC HELIBORNE SURVEY

Flown by: **PROSPECTAR Geosurveys**

Compiled by: Joël Dubé, P.Eng.
Dynamic Discovery Geoscience

NTS MAPSHEET 052H08 | NTS MAPSHEET 042E05



Contours

Level 1	: 0.25 nT/m
Level 2	: 2.5 nT/m
Level 3	: 25 nT/m

Legend

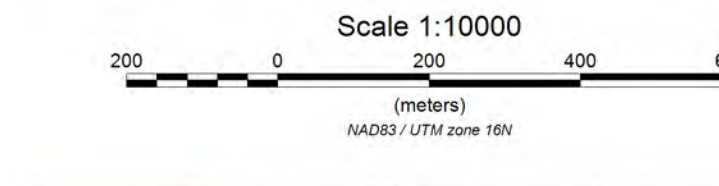
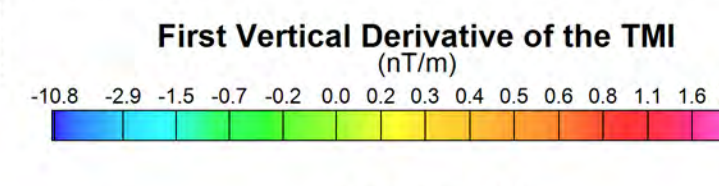
	Topographic contours (15m)
	Road, trail
	Wetland
	Water body
	Water stream
	Mineral claim

Survey Specifications

Line spacing	: 50 m
Line orientation	: N144
Tie-line spacing	: 500 m
Tie-line orientation	: N054
Average survey speed	: 29.2 m/s
Average helicopter height	: 38 m
Average Mag height	: 18 m
Sampling rate	: 10 Hz

Instrumentations

Helicopter	: Robinson R-44
Navigation & Acquisition	: PicoEvirotec AGIS
Real-Time DGPS	: OmniSTAR
Magnetometer	: Geometrics G-822A



RECHARGE RESOURCES LTD.
Georgia Lake Project, Ontario, 2022

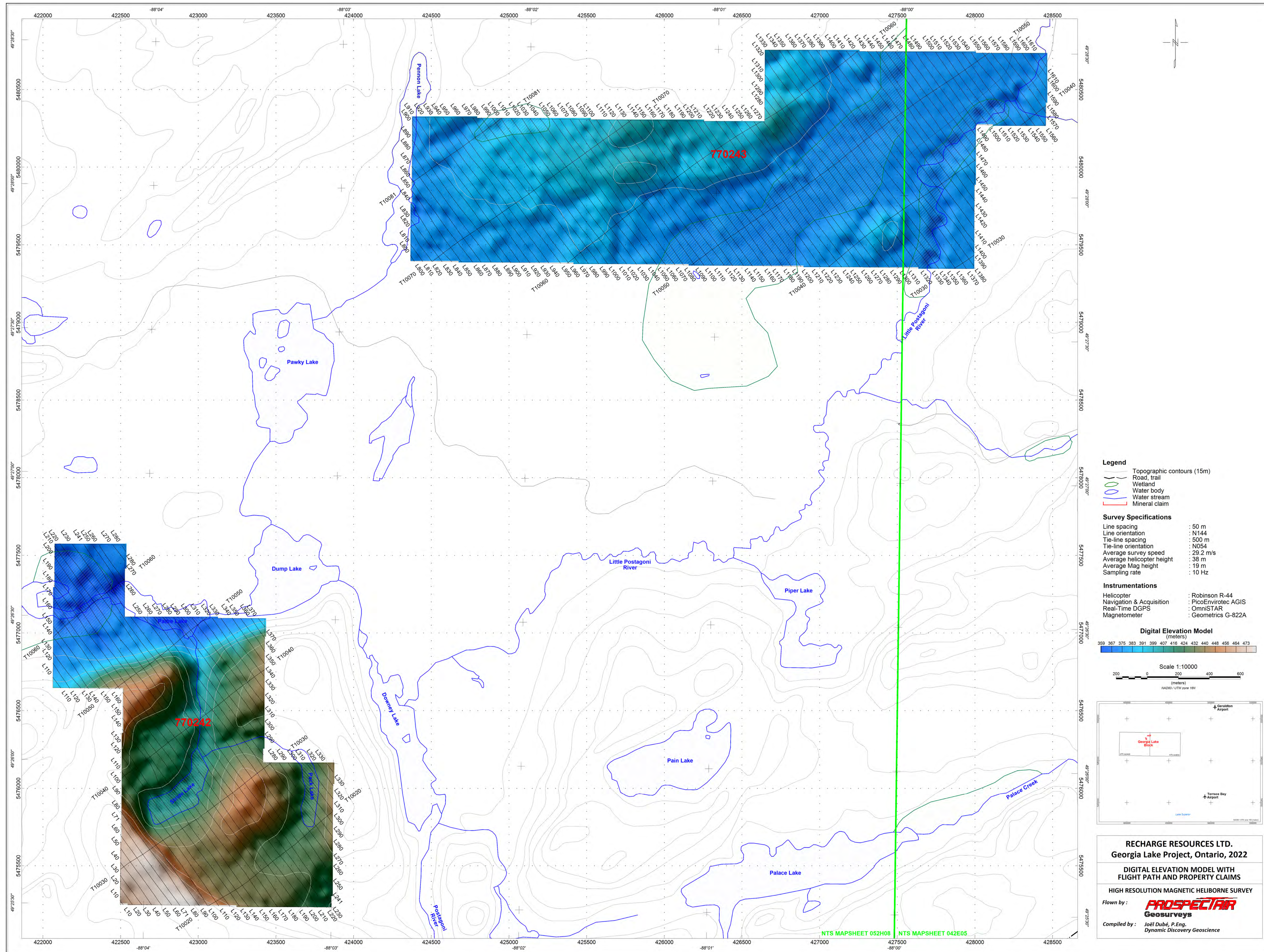
FIRST VERTICAL DERIVATIVE OF THE TMI

HIGH RESOLUTION MAGNETIC HELIBORNE SURVEY

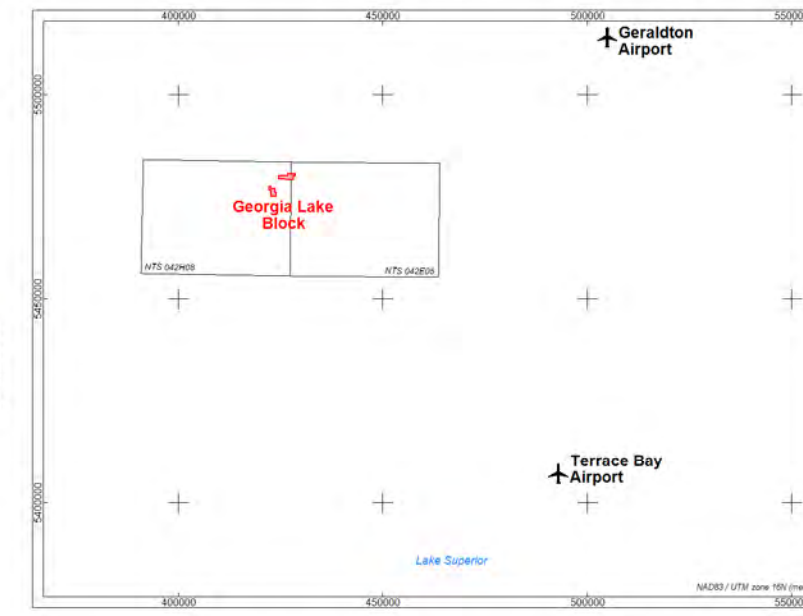
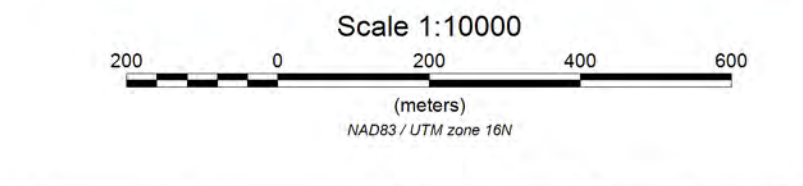
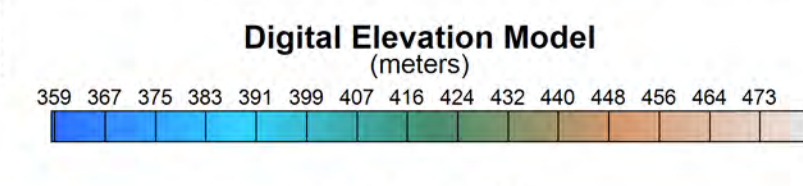
Flown by: **PROSPECTAR Geosurveys**

Compiled by: **Joël Dubé, P.Eng.**
Dynamic Discovery Geoscience

NTS MAPSHEET 052H08 | NTS MAPSHEET 042E05



- Legend**
- Topographic contours (15m)
 - Road, trail
 - Wetland
 - Water body
 - Water stream
 - Mineral claim
- Survey Specifications**
- Line spacing : 50 m
 - Line orientation : N144
 - Tie-line spacing : 500 m
 - Tie-line orientation : N054
 - Average survey speed : 29.2 m/s
 - Average helicopter height : 38 m
 - Average Mag height : 18 m
 - Sampling rate : 10 Hz
- Instrumentations**
- Helicopter : Robinson R-44
 - Navigation & Acquisition : PicoEntrotec AGIS
 - Real-Time DGPS : OmniSTAR
 - Magnetometer : Geometrics G-822A



RECHARGE RESOURCES LTD.
Georgia Lake Project, Ontario, 2022

DIGITAL ELEVATION MODEL WITH FLIGHT PATH AND PROPERTY CLAIMS

HIGH RESOLUTION MAGNETIC HELIBORNE SURVEY

Flown by: **PROSPECTAR Geosurveys**

Compiled by: **Joël Dubé, P.Eng.**
 Dynamic Discovery Geoscience

Property	Claim(s)	# of Units
Georgia Lake West	770242	12
Georgia Lake North	770243	20
		32

Costs

Prospectair Invoice

cost to survey both blocks	\$ 36,168
mob/demob for both blocks	\$ 6,750
report	\$ 1,700
	\$ 44,618

\$44618/32 units

\$1394/unit all inclusive