

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**

HAMMOND REEF SOUTH PROPERTY

FINLAYSON LAKE AND SAWBILL BAY AREAS, ONTARIO

THUNDER BAY MINING DIVISION

FOR

APOLLO EXPLORATION INC.

Prepared by:

Joerg M. Kleinboeck, P.Geo.

January 19th, 2023

TABLE OF CONTENTS

1. INTRODUCTION	3
2. PROPERTY DESCRIPTION AND LOCATION	3
2.1 Location and Access	3
2.2 Topography and Vegetation.....	3
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	12
7. REFERENCES	13

LIST OF FIGURES

Figure 1: Location of the Hammond Reef South Property, Ontario, Canada	4
Figure 2: Tenure of the Hammond Reef South Property	6
Figure 3: Property Geology (after MRD 126 Rev.)	9

APPENDICES

Appendix I: Statement of Qualifications

Appendix II: Detailed Claim List

Appendix III: Prospectair Geosurveys Inc. Geophysical Report on the Hammond Reef Property

Appendix IV: Maps

1. INTRODUCTION

In September 2022, Prospectair Geosurveys Inc. (“Prospectair”) was contracted by Apollo Exploration Inc. (“Apollo”) to complete a high-resolution heliborne magnetic survey on their 100% owned Hammond Reef South Property (“Property”).

The Property is situated within the Thunder Bay Mining Division approximately 20 km northeast of the town of Atikokan within the Finlayson Lake and Sawmill Bay Areas, Ontario.

The Property is comprised three non-contiguous blocks of claims that total 64 staked mining claim cells, and cover a combined area of approximately 1,280 ha. The Property is bounded by UTM NAD83 Z15N coordinates 608,620E to 618,220E, and 5,413,240N to 5,420,285N.

From September 13th to 17th, 2022, Prospectair completed a 352 line-km high-resolution heliborne magnetic survey covering the claims that comprise the Property. Flight lines were orientated at 325° at 50 m spacings, with perpendicular tie lines flown at 500 m spacings.

2. PROPERTY DESCRIPTION AND LOCATION

2.1 Location and Access

The Property is situated within the Thunder Bay Mining Division approximately 20 km northeast of the town of Atikokan, Ontario, and within the Finlayson Lake and Sawmill Bay Areas (Figure 1, Figure 2).

Access to the Property is provided by Marmion Lake where a boat can be used to access the Property in the summer months, and a snowmobile used in the winter months. Highway 622 provides access to a boat launch on Marmion Lake at 603,400E/5,411,360N.

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 ponds, streams, and lakes. The elevation of the Property ranges from approximately 411 to 474 m ASL. 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 Hammond Reef South Property, Ontario, Canada.

2.3 Claims

The Property is comprised three non-contiguous blocks of claims that total 64 staked mining claim cells, and cover a combined area of approximately 1,280 ha. The Property is bounded by UTM NAD83 Z15N coordinates 608,620E to 618,220E, and 5,413,240N to 5,420,285N.

A list of claims is provided in Appendix II, and Map 1, located within the back pocket, displays the claim tenure of the Property. Figure 2 also shows the claim fabric with respect to local resources such local waterways, access roads, etc.

The author has not sought a formal legal opinion with regard to the ownership status of the claims comprising the Property and has in all aspects of tenure relied on materials made available on the NDMNRF's website (<https://www.mlas.mndm.gov.on.ca>) which states that the claims are 100% owned by Apollo.

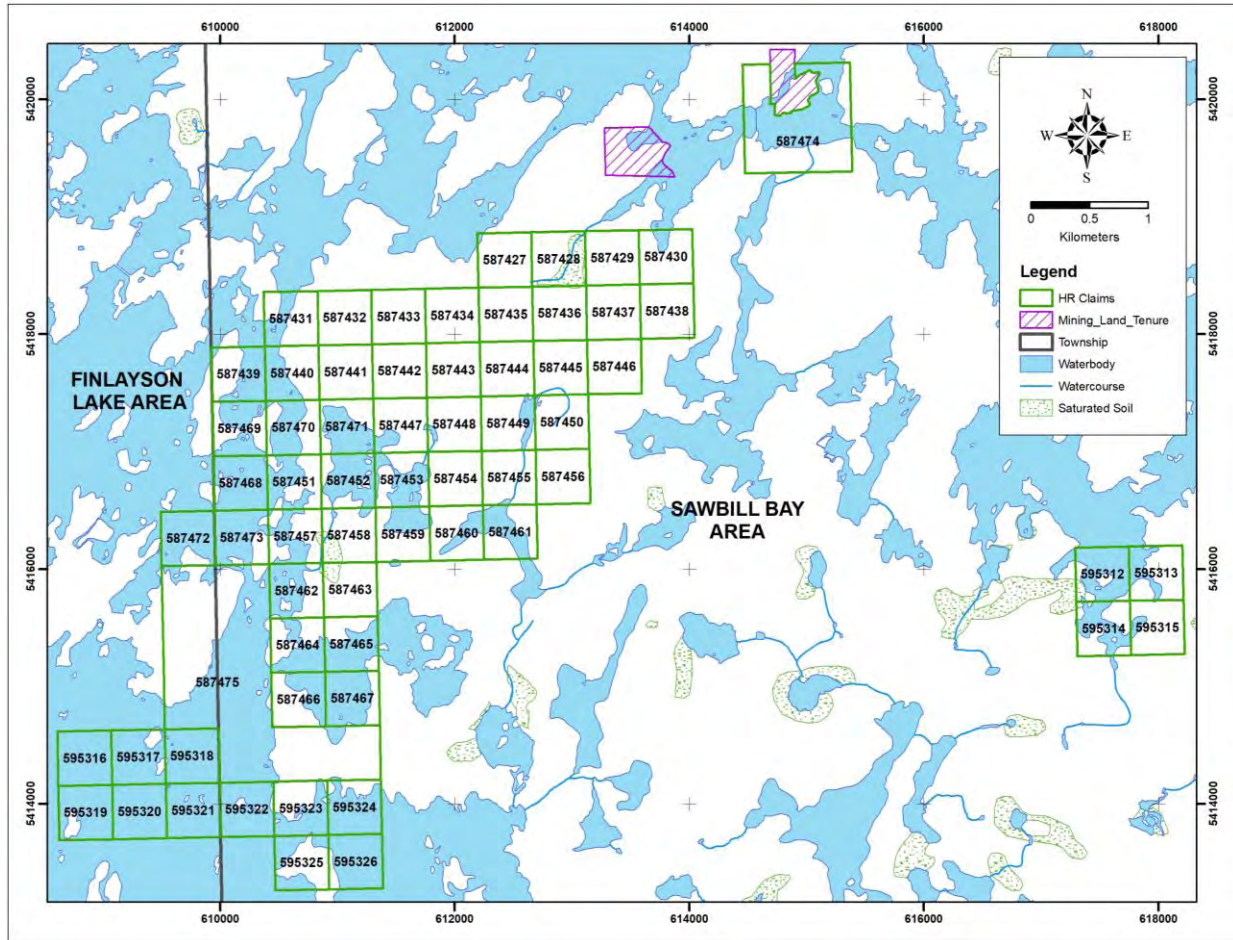


Figure 2: Tenure of the Hammond Reef South Property

3.0 PREVIOUS WORK

The Property has seen a limited amount of historical exploration. A brief summary of the historical work is provided below that has been mostly derived from Stewart (2021).

1988: Ovaltix Inc. completed a heli-borne MAG and VLF-EM survey over the Richard Lake Area which covered part of the southern portion of the Property.

1997: Pentland Firth Ventures Ltd. completed prospecting in the Sawbill Bay Area. On sample, located on the northern block, returned 4.08 g/t Au from a sericite altered pyrite-bearing rock.

1999: Total Energold Corp. collected 2,181 humus samples and 441 grab samples along 250 m spaced lines over the parts of the Property. The program identified several weak to strong humus anomalies in the northeastern part of the Property along with some anomalous gold values in the rock samples.

2009: Sparton Resources Inc. collected 169 grab and 125 b-horizon soil samples on claims that encompass the current Property. Eight samples returned values > 0.1 g/t Au with a maximum of 3.44 g/t Au. The results from the sampling implied that there may be two potential mineralized trends associated quartz-bearing lineaments striking 040° and 055°. Soil samples, collected at 25 m spaced intervals returned anomalous values that correlate with the mineralized grab samples.

2011: Osisko Hammond Reef Gold Ltd. completed a heli-borne magnetic gradient survey over parts of the Property.

4.0 GEOLOGY

4.1 Property Geology

The Property is located at the southern margin of the Wabigoon sub province of the Archean Superior Province of the Canadian Shield.

The Property is underlain by granitoid rocks of the Marmion Batholith which has been described by Stone (2010) as a fine to coarse-grained, massive, foliated, to gneissic, white to grey biotite tonalite to granodiorite containing 5 to 20% biotite and amphibolite inclusions, as well as foliated and banded hornblende-biotite tonalite to granodiorite gneiss that is commonly folded with layers of felsic granular tonalite to granodiorite alternating with diorite and amphibolite units (Stewart, 2021).

The Property is situated 5 km south of Agnico Eagle Mines Ltd's Hammond Reef Project, which is a large tonnage, low-grade gold deposit hosted within variably sheared and altered granitoid rocks. Gold is associated with fine grained pyrite mineralization proximal or within fractures, veinlets, or veins filled chlorite, calcite, and quartz.

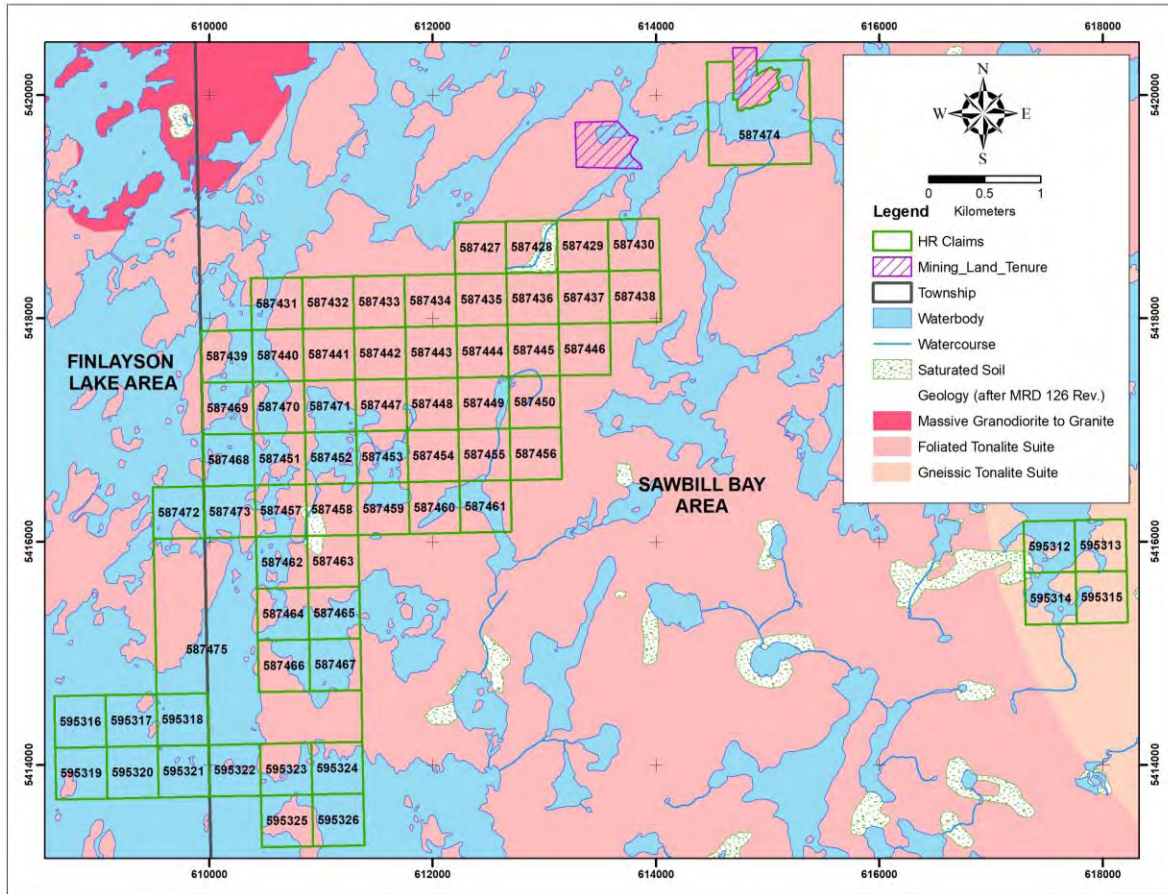


Figure 3: Property Geology (after MRD 126 Rev.)

5.0 SUMMARY OF THE HIGH-RESOLUTION HELIBORNE MAGNETIC SURVEY

From September 13th to 17th, 2022, Prospectair completed a 352 line-km high-resolution heliborne magnetic survey covering the claims that comprise the Property. Flight lines were orientated at 325° at 50 m spacings, with perpendicular tie lines flown at 500 m spacings.

The geophysical survey was completed on mining claims 595320, 595319, 595317, 595316, 595322, 595321, 595318, 587475, 587473, 587472, 587469, 587468, 587439, 595326, 595325, 595324, 595323, 595315, 595314, 595313, 595312, 587474, 587471, 587470, 587467, 587466, 587465, 587464, 587463, 587462, 587461, 587460, 587459, 587458, 587457, 587456, 587455, 587454, 587453, 587452, 587451, 587450, 587449, 587448, 587447, 587446, 587445, 587444, 587443, 587442, 587441, 587440, 587438, 587437, 587436, 587435, 587434, 587433, 587432, 587431, 587430, 587429, 587428, and 587427.

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 39 m, and 20 m for the magnetometer. The average flying speed 27.4 m/s.

The survey was successful in mapping the magnetic properties of the Property that will assist Apollo with completing future fieldwork.

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

6. INTERPRETATION AND CONCLUSIONS

The high-resolution heliborne magnetic survey completed by Prospectair was successful in mapping the geophysical (magnetic) properties of the Hammond Reef South Property. The low amplitude signal variations indicate the presence of felsic intrusive rocks mostly underlying the Property with linear moderate to strong anomalies corresponding with mafic intrusive dykes. A large curved feature on the northern portion of the Property is suggestive of a geological contact having a lower magnetic intensity than the unit to the south. It is possible that the massive granite to granodiorite unit shown in Figure 3 is larger than shown and extends further south, however, this would have to be confirmed in the field.

The survey also outlined several anomalies in the southern main block of the claims that may be caused by mafic intrusions.

Further work should include the following:

- 1) A geophysical/structural interpretation of the airborne geophysical magnetic data is suggested to identify structural features that may be favourable to host gold mineralization. The historical results from past prospecting and geochemical surveys should be compiled to aid in this interpretation. This work will greatly assist Apollo with directing future fieldwork that should include geochemical surveys, prospecting, till sampling, and geological mapping.

7. REFERENCES

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.

Stewart, J. 2021. Assessment Report on the Hammond Reef South Project, prepared for Abitibi Royalties.

Stone, D. 2010. Precambrian Geology of the central Wabigoon Sub-province area, northwestern Ontario; Ontario Geological Survey, Open File Report 5422.

APPENDIX I: STATEMENT OF QUALIFICATIONS

STATEMENT OF QUALIFICATIONS

I, Joerg Martin Kleinboeck of 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 any securities of Apollo Exploration Inc. and I do not have any interest in the claims that comprise the Hammond Reef South Property.



Joerg Martin Kleinboeck
January 19th, 2023
North Bay, Ontario

APPENDIX II: CLAIM DETAILS

Township / Area	Tenure ID	Tenure Type	Anniversary Date	Work Required	Work Applied	Total Reserve
FINLAYSON LAKE AREA	595320	Single Cell Mining Claim	2022-06-10	800	0	0
FINLAYSON LAKE AREA	595319	Single Cell Mining Claim	2022-06-10	800	0	0
FINLAYSON LAKE AREA	595317	Single Cell Mining Claim	2022-06-10	800	0	0
FINLAYSON LAKE AREA	595316	Single Cell Mining Claim	2022-06-10	800	0	0
FINLAYSON LAKE AREA,SAWBILL BAY AREA	595322	Single Cell Mining Claim	2022-06-10	800	0	0
FINLAYSON LAKE AREA,SAWBILL BAY AREA	595321	Single Cell Mining Claim	2022-06-10	800	0	0
FINLAYSON LAKE AREA,SAWBILL BAY AREA	595318	Single Cell Mining Claim	2022-06-10	800	0	0
FINLAYSON LAKE AREA,SAWBILL BAY AREA	587475	Multi-cell Mining Claim	2023-05-06	3600	3600	0
FINLAYSON LAKE AREA,SAWBILL BAY AREA	587473	Single Cell Mining Claim	2023-05-06	400	400	0
FINLAYSON LAKE AREA,SAWBILL BAY AREA	587472	Single Cell Mining Claim	2023-05-06	400	400	0
FINLAYSON LAKE AREA,SAWBILL BAY AREA	587469	Single Cell Mining Claim	2023-05-06	400	400	0
FINLAYSON LAKE AREA,SAWBILL BAY AREA	587468	Single Cell Mining Claim	2023-05-06	400	400	1761
FINLAYSON LAKE AREA,SAWBILL BAY AREA	587439	Single Cell Mining Claim	2022-05-06	800	0	0
SAWBILL BAY AREA	595326	Single Cell Mining Claim	2022-06-10	800	0	0
SAWBILL BAY AREA	595325	Single Cell Mining Claim	2022-06-10	800	0	0
SAWBILL BAY AREA	595324	Single Cell Mining Claim	2022-06-10	800	0	0
SAWBILL BAY AREA	595323	Single Cell Mining Claim	2022-06-10	800	0	0
SAWBILL BAY AREA	595315	Single Cell Mining Claim	2023-06-10	400	400	0
SAWBILL BAY AREA	595314	Single Cell Mining Claim	2023-06-10	400	400	1540
SAWBILL BAY AREA	595313	Single Cell Mining Claim	2023-06-10	400	400	0
SAWBILL BAY AREA	595312	Single Cell Mining Claim	2023-06-10	400	400	0
SAWBILL BAY AREA	587474	Multi-cell Mining Claim	2022-05-06	3200	0	1570
SAWBILL BAY AREA	587471	Single Cell Mining Claim	2023-05-06	400	400	0
SAWBILL BAY AREA	587470	Single Cell Mining Claim	2023-05-06	400	400	0
SAWBILL BAY AREA	587467	Single Cell Mining Claim	2022-05-06	800	0	0
SAWBILL BAY AREA	587466	Single Cell Mining Claim	2022-05-06	800	0	0
SAWBILL BAY AREA	587465	Single Cell Mining Claim	2022-05-06	800	0	0
SAWBILL BAY AREA	587464	Single Cell Mining Claim	2022-05-06	800	0	0
SAWBILL BAY AREA	587463	Single Cell Mining Claim	2022-05-06	800	0	0
SAWBILL BAY AREA	587462	Single Cell Mining Claim	2022-05-06	800	0	0
SAWBILL BAY AREA	587461	Single Cell Mining Claim	2022-05-06	800	0	0
SAWBILL BAY AREA	587460	Single Cell Mining Claim	2023-05-06	400	400	0
SAWBILL BAY AREA	587459	Single Cell Mining Claim	2023-05-06	400	400	0
SAWBILL BAY AREA	587458	Single Cell Mining Claim	2023-05-06	400	400	0
SAWBILL BAY AREA	587457	Single Cell Mining Claim	2023-05-06	400	400	0
SAWBILL BAY AREA	587456	Single Cell Mining Claim	2022-05-06	800	0	0
SAWBILL BAY AREA	587455	Single Cell Mining Claim	2022-05-06	800	0	0
SAWBILL BAY AREA	587454	Single Cell Mining Claim	2022-05-06	800	0	0
SAWBILL BAY AREA	587453	Single Cell Mining Claim	2022-05-06	800	0	0
SAWBILL BAY AREA	587452	Single Cell Mining Claim	2022-05-06	800	0	0
SAWBILL BAY AREA	587451	Single Cell Mining Claim	2022-05-06	800	0	0
SAWBILL BAY AREA	587450	Single Cell Mining Claim	2022-05-06	800	0	0
SAWBILL BAY AREA	587449	Single Cell Mining Claim	2022-05-06	800	0	0
SAWBILL BAY AREA	587448	Single Cell Mining Claim	2022-05-06	800	0	0
SAWBILL BAY AREA	587447	Single Cell Mining Claim	2022-05-06	800	0	0
SAWBILL BAY AREA	587446	Single Cell Mining Claim	2022-05-06	800	0	0
SAWBILL BAY AREA	587445	Single Cell Mining Claim	2022-05-06	800	0	0
SAWBILL BAY AREA	587444	Single Cell Mining Claim	2023-05-06	400	400	0
SAWBILL BAY AREA	587443	Single Cell Mining Claim	2023-05-06	400	400	0
SAWBILL BAY AREA	587442	Single Cell Mining Claim	2023-05-06	400	400	0
SAWBILL BAY AREA	587441	Single Cell Mining Claim	2023-05-06	400	400	0
SAWBILL BAY AREA	587440	Single Cell Mining Claim	2023-05-06	400	400	0
SAWBILL BAY AREA	587438	Single Cell Mining Claim	2022-05-06	800	0	0
SAWBILL BAY AREA	587437	Single Cell Mining Claim	2022-05-06	800	0	0
SAWBILL BAY AREA	587436	Single Cell Mining Claim	2022-05-06	800	0	0
SAWBILL BAY AREA	587435	Single Cell Mining Claim	2022-05-06	800	0	0
SAWBILL BAY AREA	587434	Single Cell Mining Claim	2022-05-06	800	0	0
SAWBILL BAY AREA	587433	Single Cell Mining Claim	2023-05-06	400	400	0
SAWBILL BAY AREA	587432	Single Cell Mining Claim	2023-05-06	400	400	0
SAWBILL BAY AREA	587431	Single Cell Mining Claim	2023-05-06	400	400	0
SAWBILL BAY AREA	587430	Single Cell Mining Claim	2022-05-06	400	0	0
SAWBILL BAY AREA	587429	Single Cell Mining Claim	2022-05-06	400	0	0
SAWBILL BAY AREA	587428	Single Cell Mining Claim	2022-05-06	400	0	0
SAWBILL BAY AREA	587427	Single Cell Mining Claim	2022-05-06	400	0	0

APPENDIX III: GEOPHYSICAL REPORT

Technical Report

High-Resolution Heliborne Magnetic Survey

***Hammond Reef Property, Atikokan Area
Thunder Bay Mining Division, Ontario, 2022***

***Apollo Exploration Inc.
150 King Street West, Suite 2800
Toronto, ON, Canada
M5H 1J9***



Prospectair Geosurveys

Dynamic Discovery Geoscience



Prepared by:
Joël Dubé, P.Eng.

October 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 LOCATION5
 FIGURE 2: SURVEY LOCATION AND BASE OF OPERATION.....6
 FIGURE 3: SURVEY LINES AND HAMMOND REEF PROPERTY CLAIMS.....8
 FIGURE 4: C-GBOU ROBINSON R-4410
 FIGURE 5: EXAMPLE OF A MAGNETIC BASE STATION SETUP13
 FIGURE 6: RESIDUAL TOTAL MAGNETIC INTENSITY WITH EQUAL AREA COLOR DISTRIBUTION18
 FIGURE 7: RESIDUAL TOTAL MAGNETIC INTENSITY WITH LINEAR COLOR DISTRIBUTION19
 FIGURE 8: FIRST VERTICAL DERIVATIVE OF TMI20
 FIGURE 9: TILT ANGLE DERIVATIVE.....21

TABLES

TABLE 1: SURVEY BLOCK PARTICULARS.....6
 TABLE 2: TECHNICAL SPECIFICATIONS OF THE R-44 ROBINSON HELICOPTER10
 TABLE 3: MAG LINE DATA CHANNELS.....22
 TABLE 4: MAPS DELIVERED22
 TABLE 5: GRIDS DELIVERED23

I. INTRODUCTION

Prospectair Geosurveys conducted a heliborne high-resolution magnetic (MAG) survey for the mineral exploration company Apollo Exploration Inc. on its Hammond Reef Property located in the Atikokan area, Thunder Bay Mining Division, Province of Ontario (Figure 1). The survey was flown from September 13 to 17, 2022.

Figure 1: **General Survey Location**

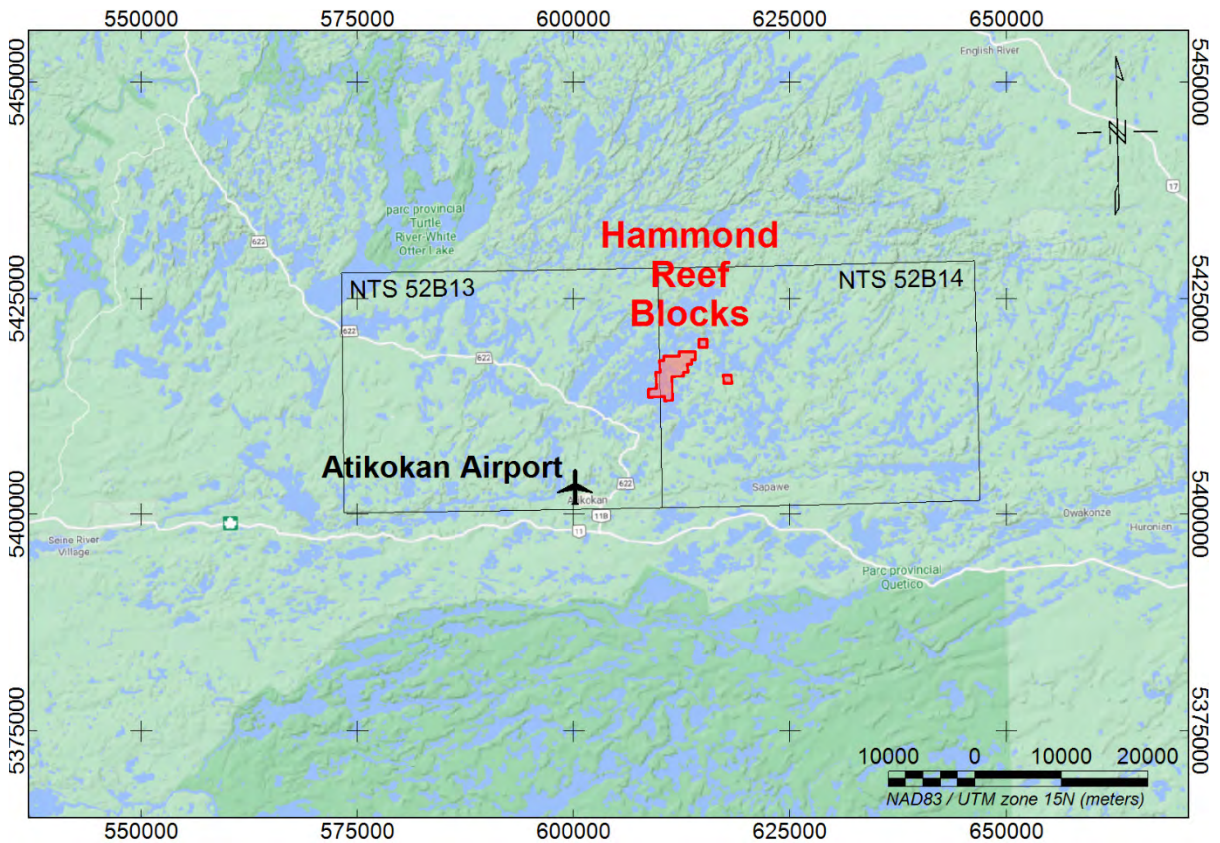


Two survey blocks were flown, referred to as Main and SE (southeast), for a total of 352 l-km. Note that the Main block is subdivided into two nearby areas. A total of 8 production flights were performed using Prospectair’s Robinson R-44, registration C-GBOU. The helicopter and survey crew operated out of the Atikokan Airport located 15 km to the southwest of the block (Figure 2).

Table 1: Survey block particulars

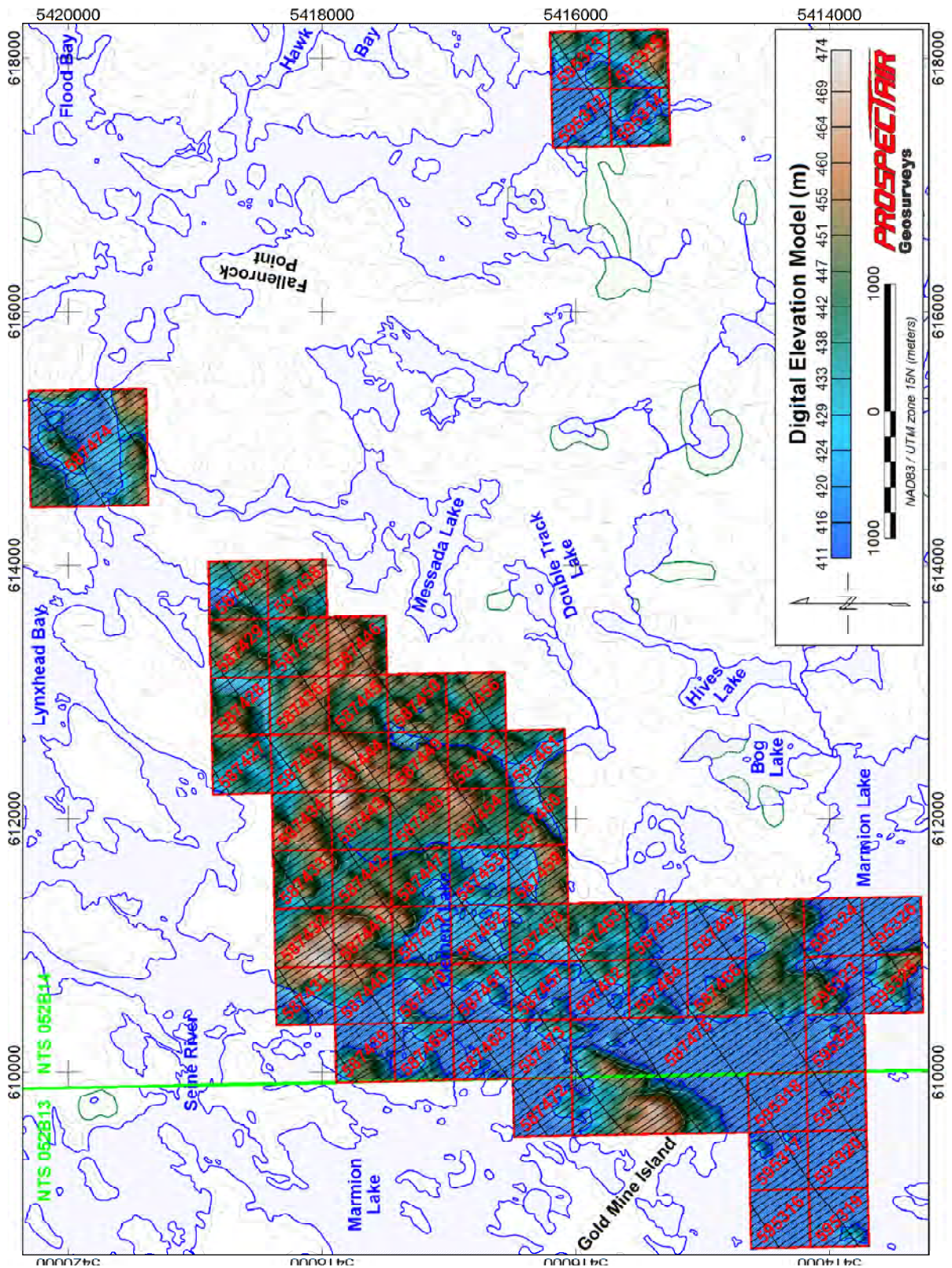
Block	NTS Mapsheet	Line-km flown	Flight numbers	Dates Flown
Hammond Reef Main	052B13, 052B14	333 l-km	Flt 1, 2, 3, 4, 5, 7	Sep. 13 to 17
Hammond Reef SE	052B14	19 l-km	Flt 6, 8	Sep. 14 to 17

Figure 2: Survey Location and base of operation



The Hammond Reef blocks were flown with traverse lines at 50 m spacing and control lines spaced every 500 m. The survey lines were oriented N325 for both blocks, and the control lines were oriented perpendicular to traverse lines. The average height above ground of the helicopter was 39 m and the magnetic sensor was at 20 m. The average survey flying speed was 27.4 m/s. The survey area is covered by forest, lakes and some wetlands. The topography is mostly gently undulating, with a few low-level hills. The elevation is ranging from 411 to 474 m above mean sea level (MSL). The blocks overlap different parts of the large Marmion Lake. Highway 622, which links the town of Atikokan to the village of Dinorwic further to the northwest, passes less than 5 km to the southwest of the Main block's southwest tip. Coordinates outlining the survey block are given in Appendix A, with respect to NAD-83 datum, UTM projection zone 15N. The location of the Hammond Reef 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 Hammond Reef 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 Hammond Reef Block:

- Traverse lines: Azimuth N325, 50 m spacing.
- Control Lines: Azimuth N055, 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 Atikokan Airport from September 13 to 17, 2022. The data acquisition required 8 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 airport, at latitude 48.7798429°N, longitude 91.6321260°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 20 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 15 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) is presented in Figure 6 for the entire survey. The TMI data are very settled on both blocks. On the Main block, they are varying over a range of 437 nT, with an average of -127 nT and a standard deviation of 32 nT, while they vary over a very limited range of 167 nT on the SE block, with an average of -131 nT and a standard deviation of 21 nT.

The magnetic textures and low amplitude signal variations seen throughout the blocks are typical of felsic intrusive rocks, with meta-sedimentary or volcanic rocks occurrences also considered possible locally. Weak magnetic anomalies, occurring either in compact or linear shapes, are likely related to small size stocks or dykes, or to volcanic/meta-sedimentary bands with slight concentrations of pyrrhotite. One magnetic feature occurring at the north end of the Main block depicts a curved magnetic anomaly with a sharp change in response patterns on either side. This feature clearly indicates a geological contact zone with higher background values to the south and subdued magnetic responses to the north. The strongest anomaly of the survey occurs along this margin, at the northernmost edge of the Main block. Stronger anomalies are best seen on Figure 7 which shows the residual TMI data with a linear color distribution. Note however that these stronger anomalies are actually very weak in absolute terms.

Magnetic lineaments are very variable in strike in the area. Several lineaments appear curved, either indicating internal structures of large size intrusions, or regional folding structures. The most extensive magnetic lineament is generally striking NW-SE and is occurring in the central part of the Main block. It likely pertains to a dyke of intermediate to mafic composition. 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 Hammond Reef 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

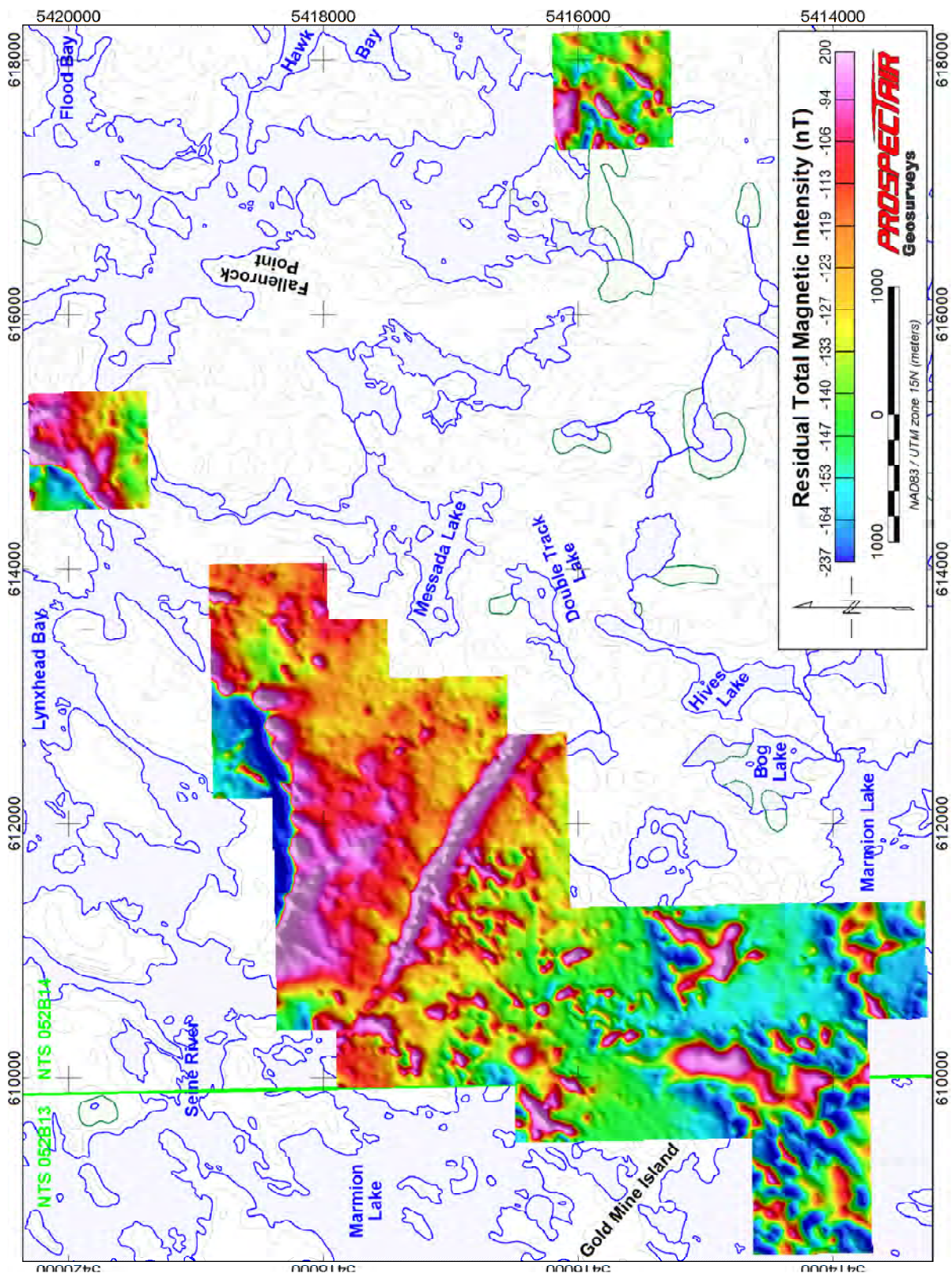


Figure 7: Residual Total Magnetic Intensity with linear color distribution

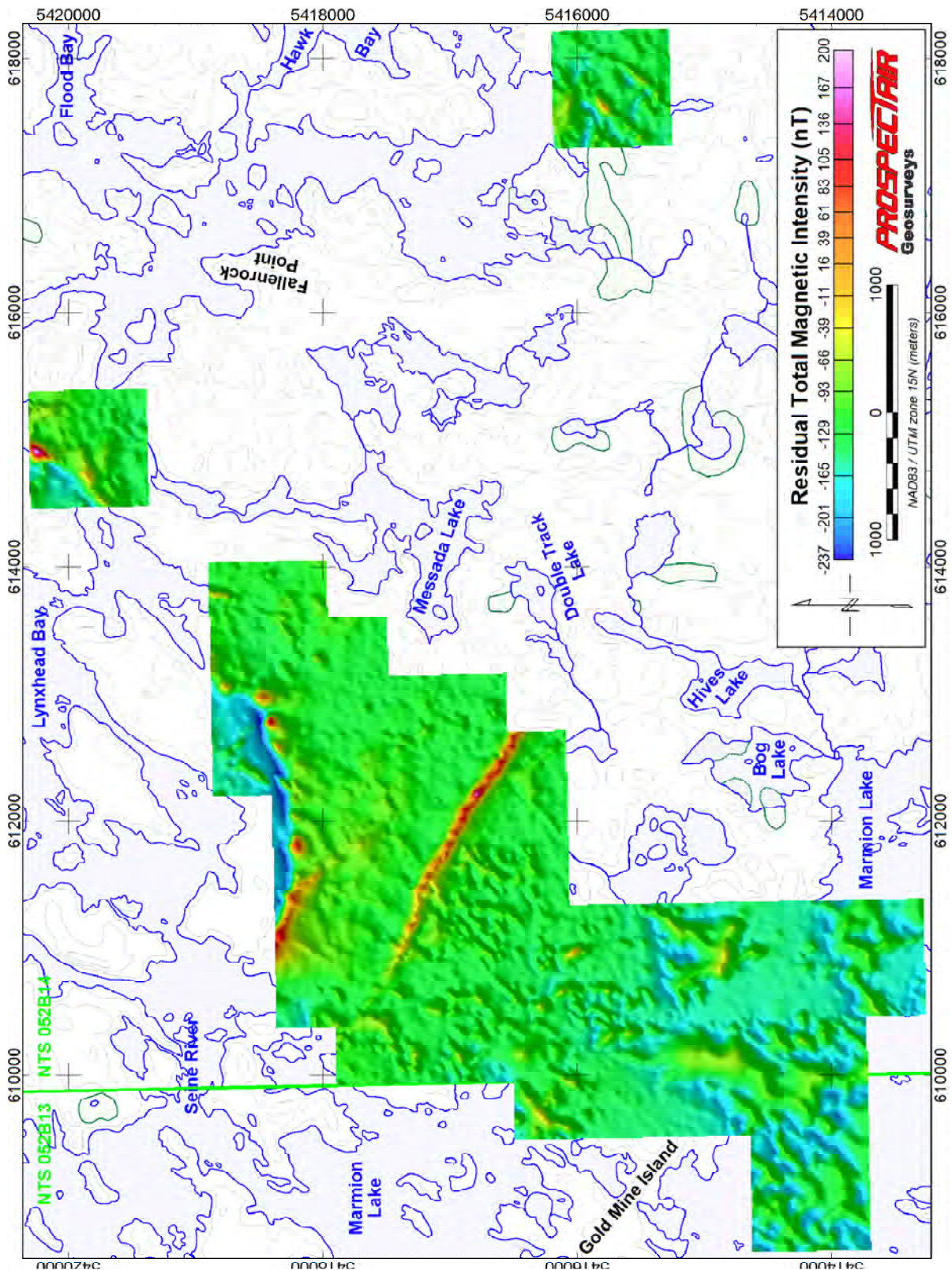


Figure 8: First Vertical Derivative of TMI

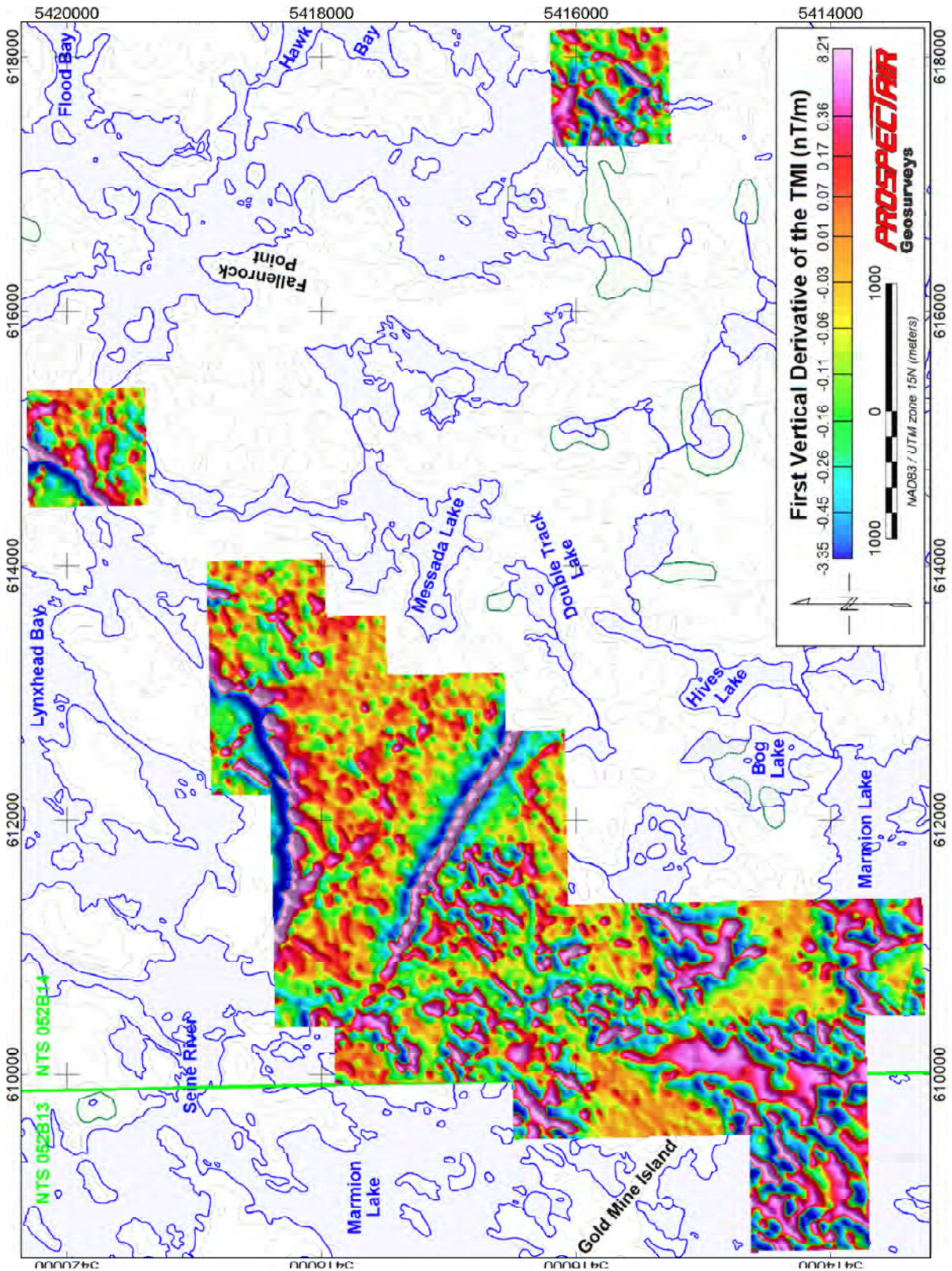
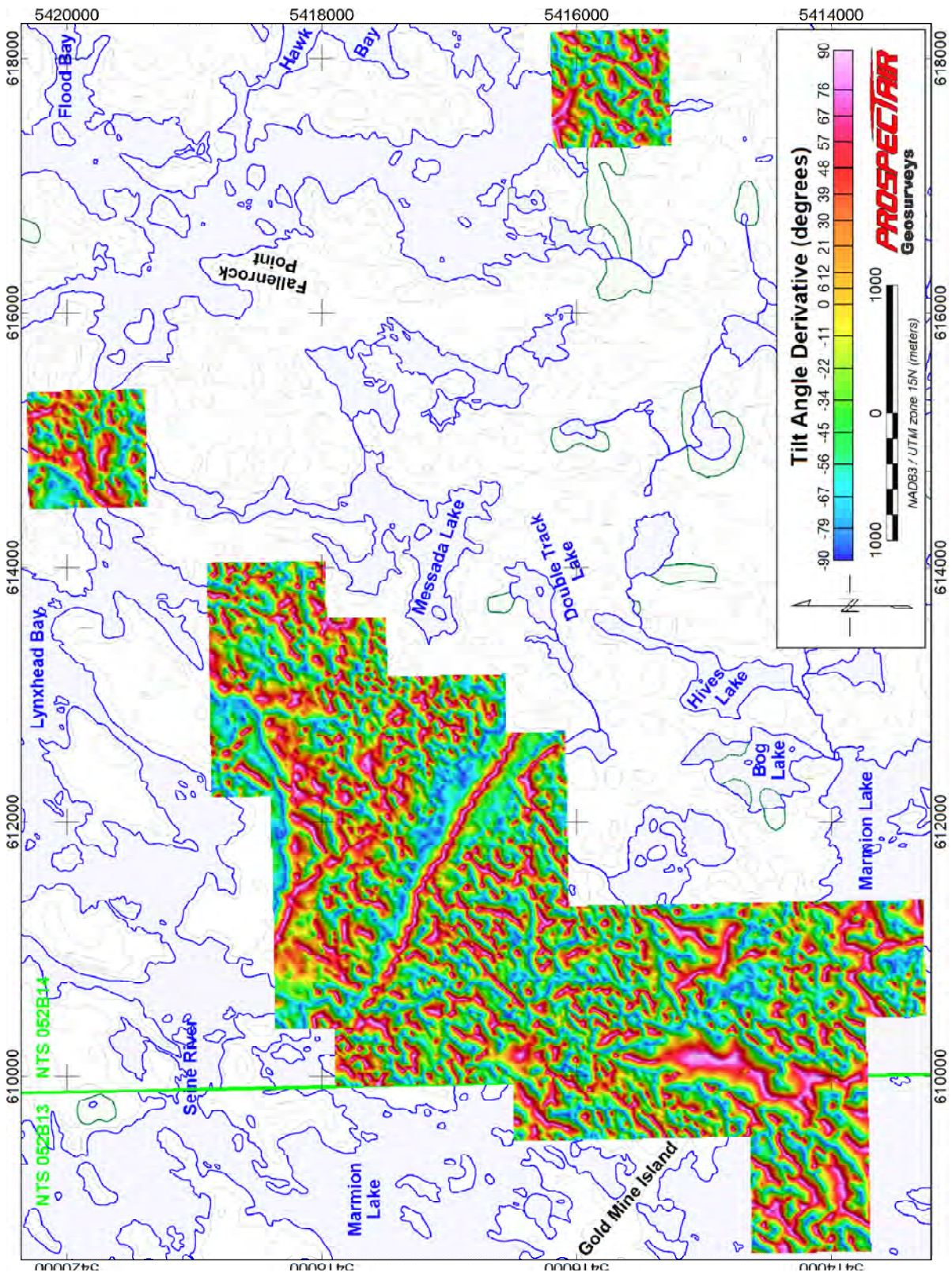


Figure 9: Tilt Angle Derivative



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 15N	m
2	UTM_Y	UTM Northing, NAD-83, Zone 15N	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 referred to NAD-83 datum in the UTM projection Zone 15 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 referred to NAD-83 in the UTM projection Zone 15 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.
October 20, 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 20th day of October, 2022




Joël Dubé, P.Eng. #100194954

X. Appendix A – Survey block outline

Hammond Reef Main Block, southwest part

Easting	Northing
611391	5413280
610470	5413262
610460	5413725
608627	5413689
608609	5414620
609525	5414639
609489	5416491
609947	5416500
609920	5417890
610378	5417899
610369	5418362
612200	5418398
612191	5418862
614028	5418899
614047	5417967
613589	5417958
613598	5417495
613140	5417486
613159	5416559
612701	5416550
612710	5416087
611336	5416059

Hammond Reef Main Block, northeast part

Easting	Northing
615392	5419385
614471	5419366
614452	5420298
615373	5420316

Hammond Reef SE Block

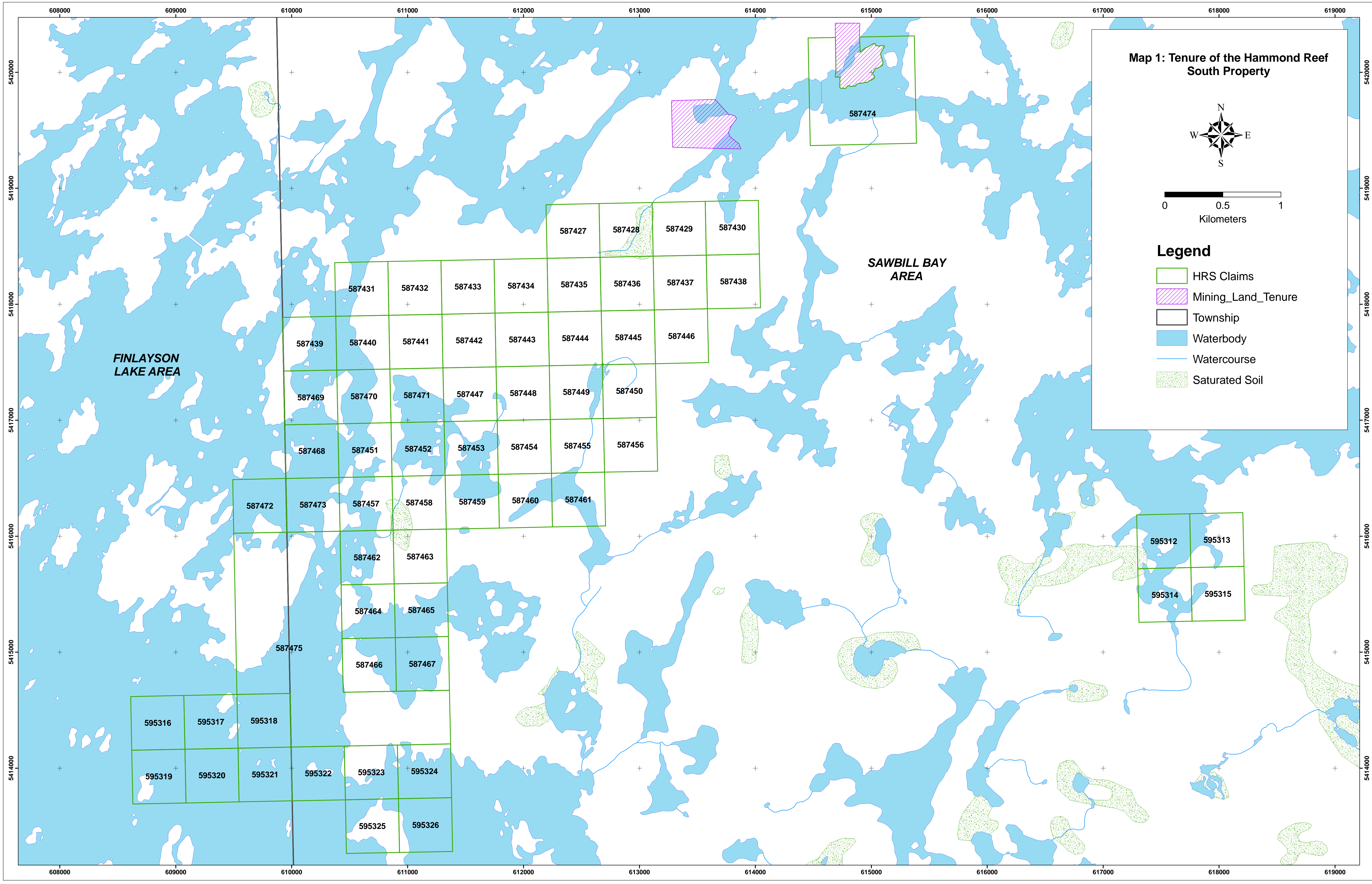
Easting	Northing
618228	5415274
617311	5415255
617306	5415261
617287	5416186
618208	5416206

XI. Appendix B – Property claims covered by the survey

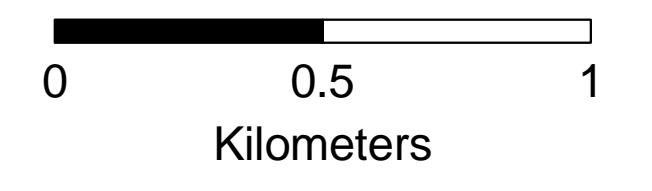
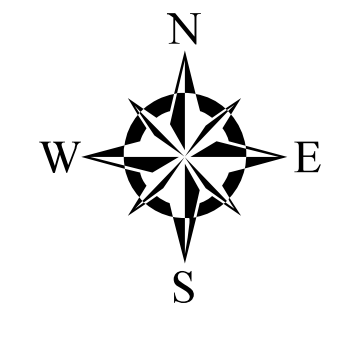
Tenure number	Holder	l-km within claim
587427	(100) ABITIBI ROYALTIES INC.	13.531
587428	(100) ABITIBI ROYALTIES INC.	13.531
587429	(100) ABITIBI ROYALTIES INC.	13.531
587430	(100) ABITIBI ROYALTIES INC.	13.531
587434	(100) ABITIBI ROYALTIES INC.	13.531
587435	(100) ABITIBI ROYALTIES INC.	13.531
587436	(100) ABITIBI ROYALTIES INC.	13.531
587437	(100) ABITIBI ROYALTIES INC.	13.531
587438	(100) ABITIBI ROYALTIES INC.	13.531
587439	(100) ABITIBI ROYALTIES INC.	13.531
587445	(100) ABITIBI ROYALTIES INC.	13.531
587446	(100) ABITIBI ROYALTIES INC.	13.531
587447	(100) ABITIBI ROYALTIES INC.	13.537
587448	(100) ABITIBI ROYALTIES INC.	13.537
587449	(100) ABITIBI ROYALTIES INC.	13.537
587450	(100) ABITIBI ROYALTIES INC.	13.537
587451	(100) ABITIBI ROYALTIES INC.	13.537
587452	(100) ABITIBI ROYALTIES INC.	13.537
587453	(100) ABITIBI ROYALTIES INC.	13.537
587454	(100) ABITIBI ROYALTIES INC.	13.537
587455	(100) ABITIBI ROYALTIES INC.	13.537
587456	(100) ABITIBI ROYALTIES INC.	13.537
587461	(100) ABITIBI ROYALTIES INC.	13.537
587462	(100) ABITIBI ROYALTIES INC.	13.537
587463	(100) ABITIBI ROYALTIES INC.	13.537
587464	(100) ABITIBI ROYALTIES INC.	13.537
587465	(100) ABITIBI ROYALTIES INC.	13.537
587466	(100) ABITIBI ROYALTIES INC.	13.544
587467	(100) ABITIBI ROYALTIES INC.	13.544
587474	(100) ABITIBI ROYALTIES INC.	54.099
595316	(100) ABITIBI ROYALTIES INC.	13.544
595317	(100) ABITIBI ROYALTIES INC.	13.544
595318	(100) ABITIBI ROYALTIES INC.	13.544
595319	(100) ABITIBI ROYALTIES INC.	13.544
595320	(100) ABITIBI ROYALTIES INC.	13.544
595321	(100) ABITIBI ROYALTIES INC.	13.544
595322	(100) ABITIBI ROYALTIES INC.	13.544
595323	(100) ABITIBI ROYALTIES INC.	13.544
595324	(100) ABITIBI ROYALTIES INC.	13.544
595325	(100) ABITIBI ROYALTIES INC.	13.544
595326	(100) ABITIBI ROYALTIES INC.	13.544
587431	(100) ABITIBI ROYALTIES INC.	13.531
587432	(100) ABITIBI ROYALTIES INC.	13.531
587433	(100) ABITIBI ROYALTIES INC.	13.531
587440	(100) ABITIBI ROYALTIES INC.	13.531
587441	(100) ABITIBI ROYALTIES INC.	13.531
587442	(100) ABITIBI ROYALTIES INC.	13.531
587443	(100) ABITIBI ROYALTIES INC.	13.531

Tenure number	Holder	l-km within claim
587444	(100) ABITIBI ROYALTIES INC.	13.531
587457	(100) ABITIBI ROYALTIES INC.	13.537
587458	(100) ABITIBI ROYALTIES INC.	13.537
587459	(100) ABITIBI ROYALTIES INC.	13.537
587460	(100) ABITIBI ROYALTIES INC.	13.537
587468	(100) ABITIBI ROYALTIES INC.	13.537
587469	(100) ABITIBI ROYALTIES INC.	13.537
587470	(100) ABITIBI ROYALTIES INC.	13.537
587471	(100) ABITIBI ROYALTIES INC.	13.537
587472	(100) ABITIBI ROYALTIES INC.	13.537
587473	(100) ABITIBI ROYALTIES INC.	13.537
587475	(100) ABITIBI ROYALTIES INC.	121.882
595312	(100) ABITIBI ROYALTIES INC.	13.537
595313	(100) ABITIBI ROYALTIES INC.	13.537
595314	(100) ABITIBI ROYALTIES INC.	13.537
595315	(100) ABITIBI ROYALTIES INC.	13.537




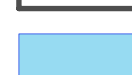


MAPS



Map 1: Tenure of the Hammond Reef South Property



Legend

-  HRS Claims
-  Mining_Land_Tenure
-  Township
-  Waterbody
-  Watercourse
-  Saturated Soil

FINLAYSON LAKE AREA

SAWBILL BAY AREA

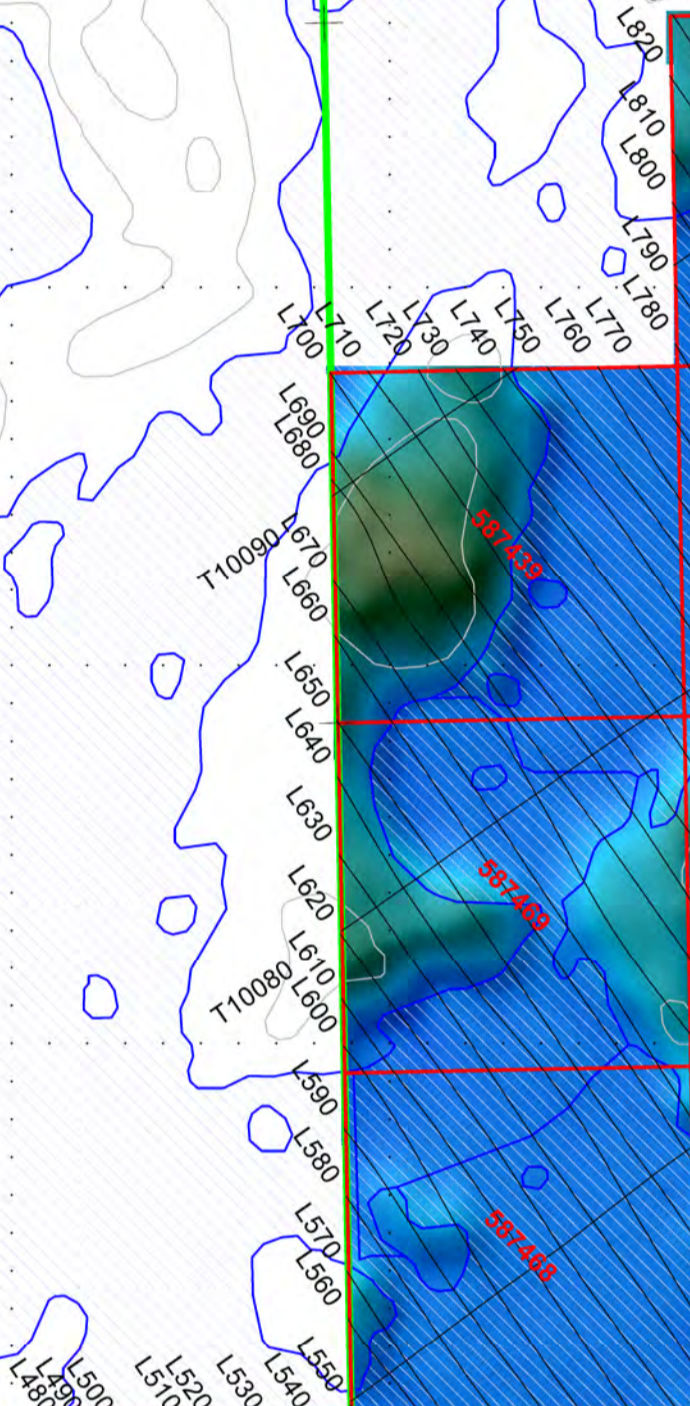
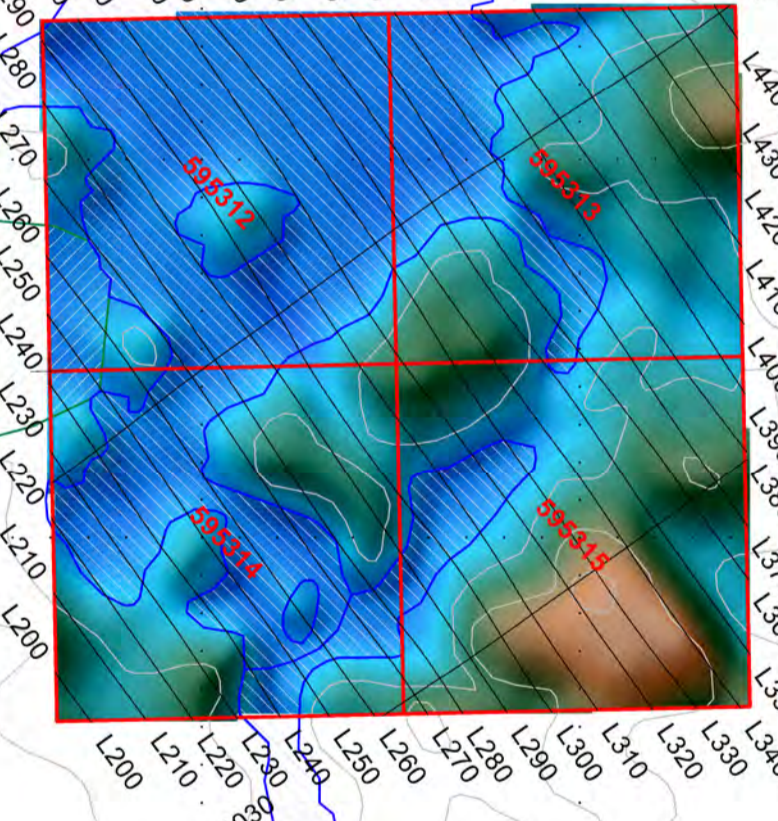
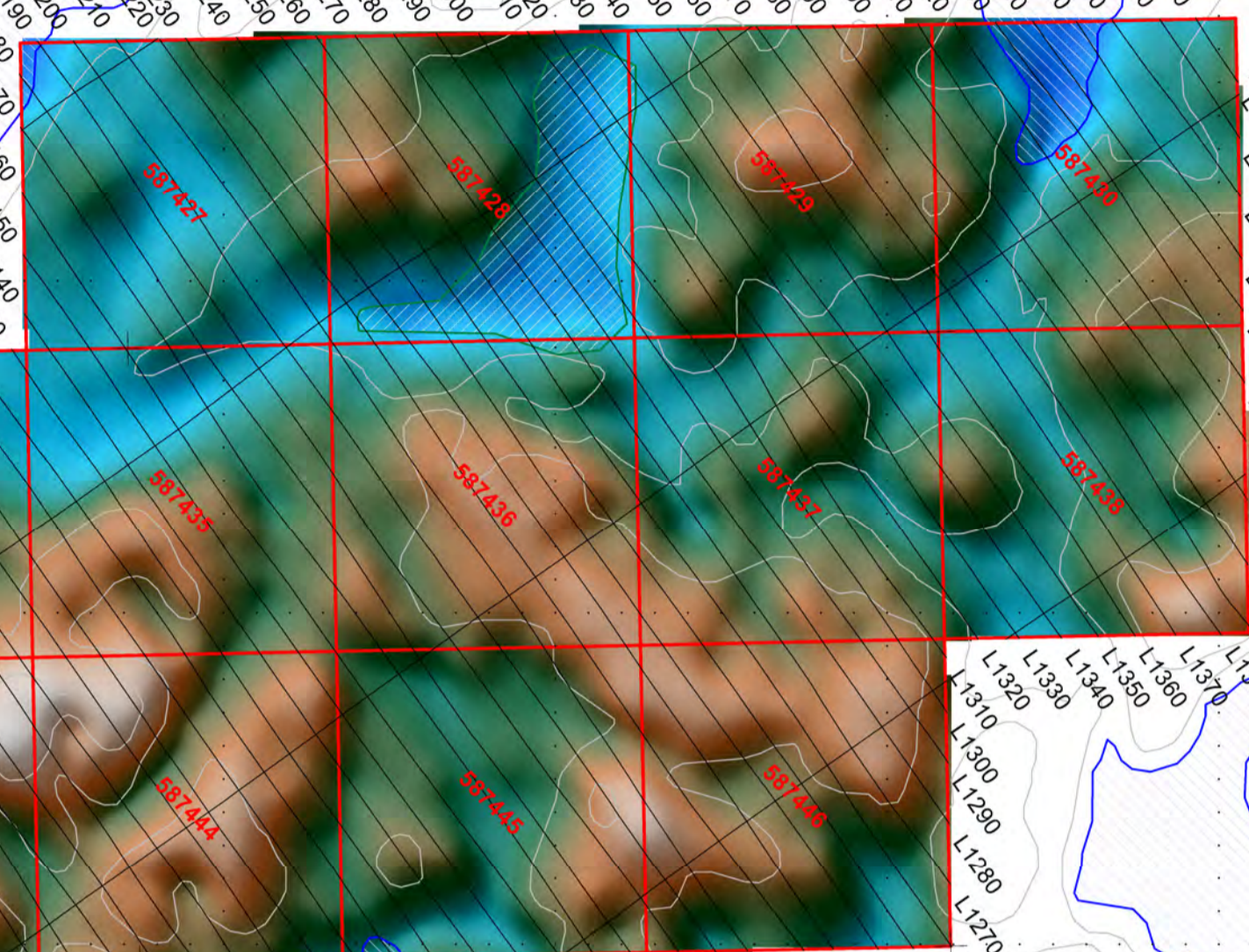
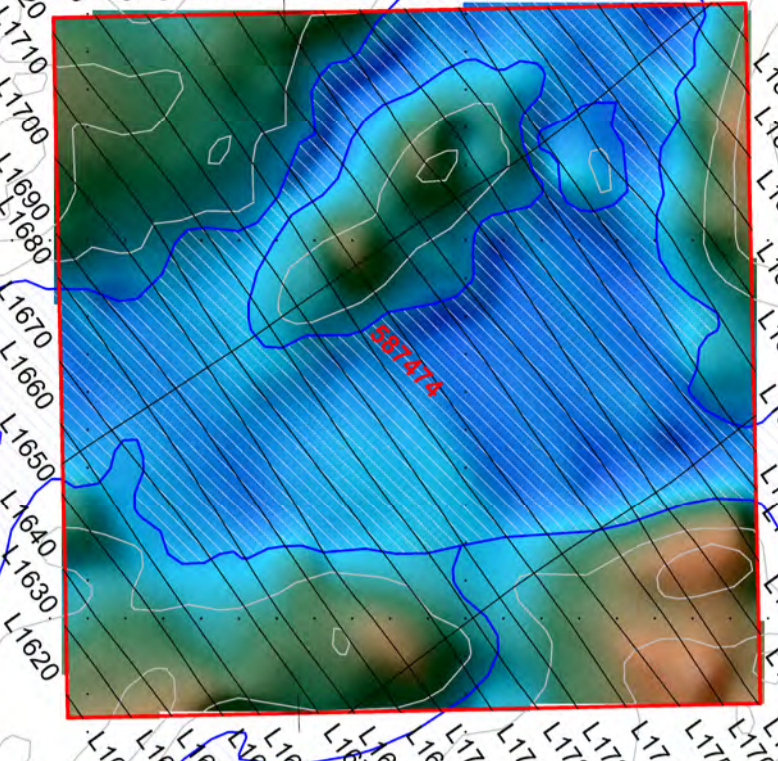
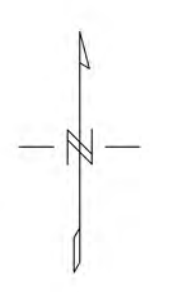
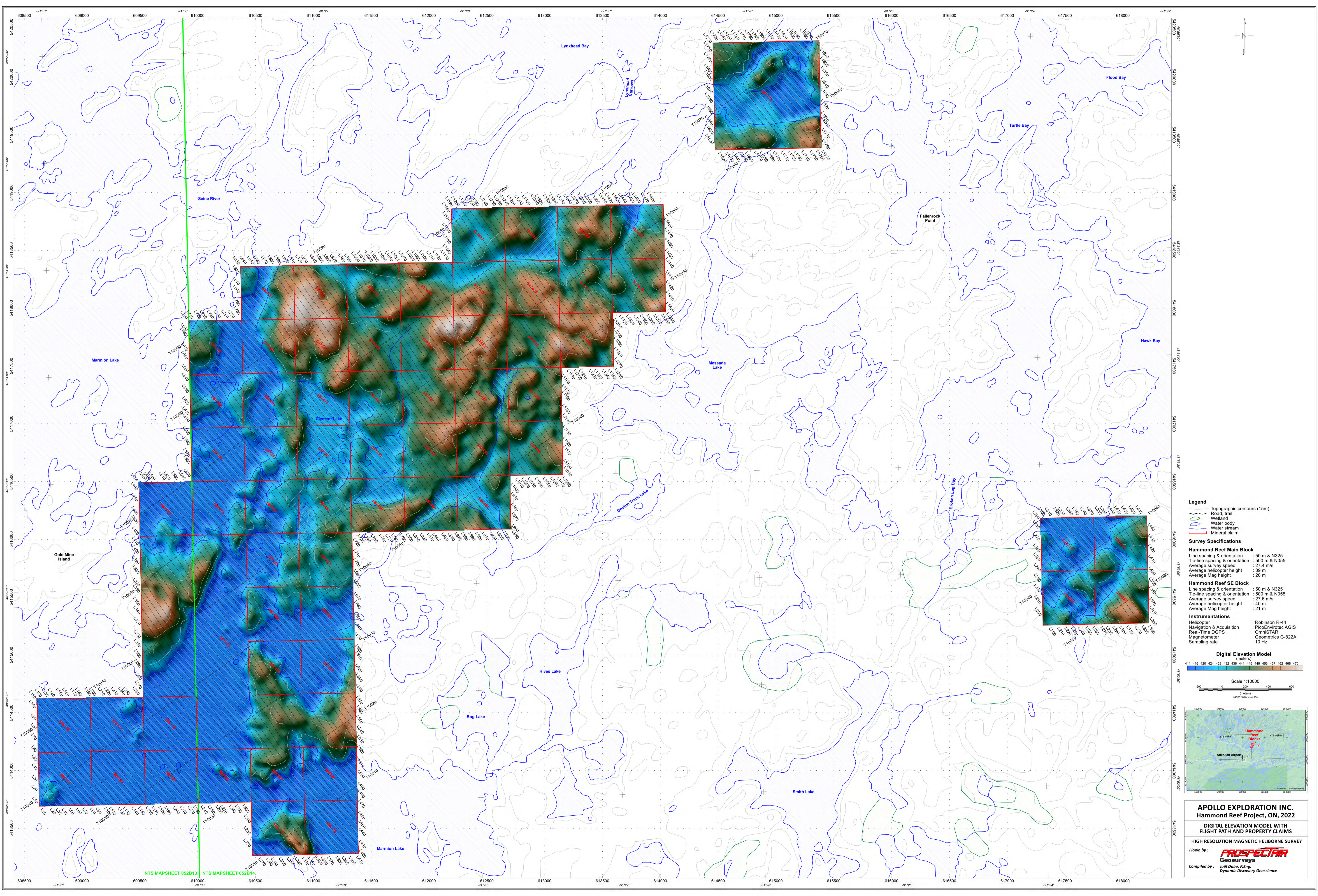
595316	595317	595318
595319	595320	595321
595322	595323	595324
595325	595326	

587427	587428	587429	587430
587431	587432	587433	587434
587435	587436	587437	587438
587439	587440	587441	587442
587443	587444	587445	587446
587469	587470	587471	587447
587448	587449	587450	
587468	587451	587452	587453
587454	587455	587456	
587472	587473	587457	587458
587459	587460	587461	
587462	587463		
587464	587465		
587466	587467		

595312	595313
595314	595315

587475						
--------	--	--	--	--	--	--

587474

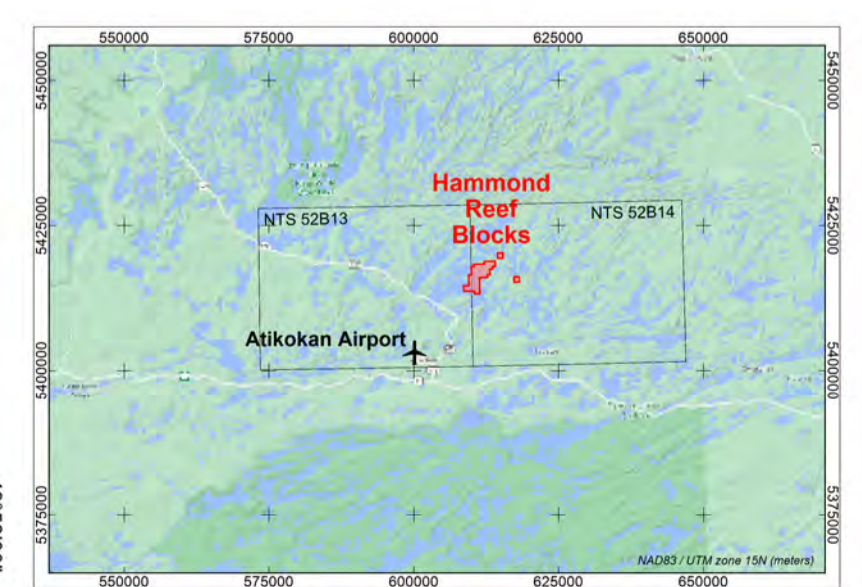
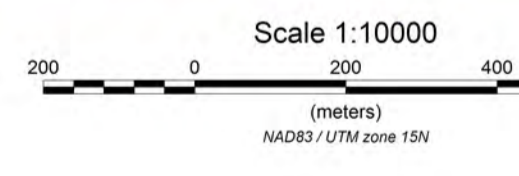
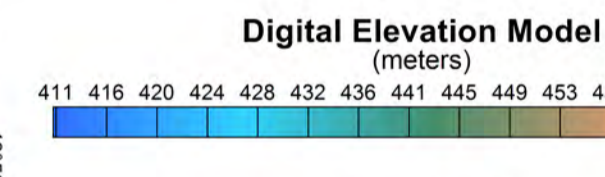


- Legend**
- Topographic contours (15m)
 - Road, trail
 - Wetland
 - Water body
 - Water stream
 - Mineral claim

- Survey Specifications**
- Hammond Reef Main Block**
 - Line spacing & orientation : 50 m & N325
 - Tie-line spacing & orientation : 500 m & N055
 - Average survey speed : 27.4 m/s
 - Average helicopter height : 39 m
 - Average Mag height : 20 m

- Hammond Reef SE Block**
- Line spacing & orientation : 50 m & N325
- Tie-line spacing & orientation : 500 m & N055
- Average survey speed : 27.6 m/s
- Average helicopter height : 40 m
- Average Mag height : 21 m

- Instrumentations**
- Helicopter : Robinson R-44
 - Navigation & Acquisition : PicoEnvirolog AGIS
 - Real-Time DGPS : OmniSTAR
 - Magnetometer : Geometrics G-822A
 - Sampling rate : 10 Hz



NTS MAPSHEET 052B13, NTS MAPSHEET 052B14

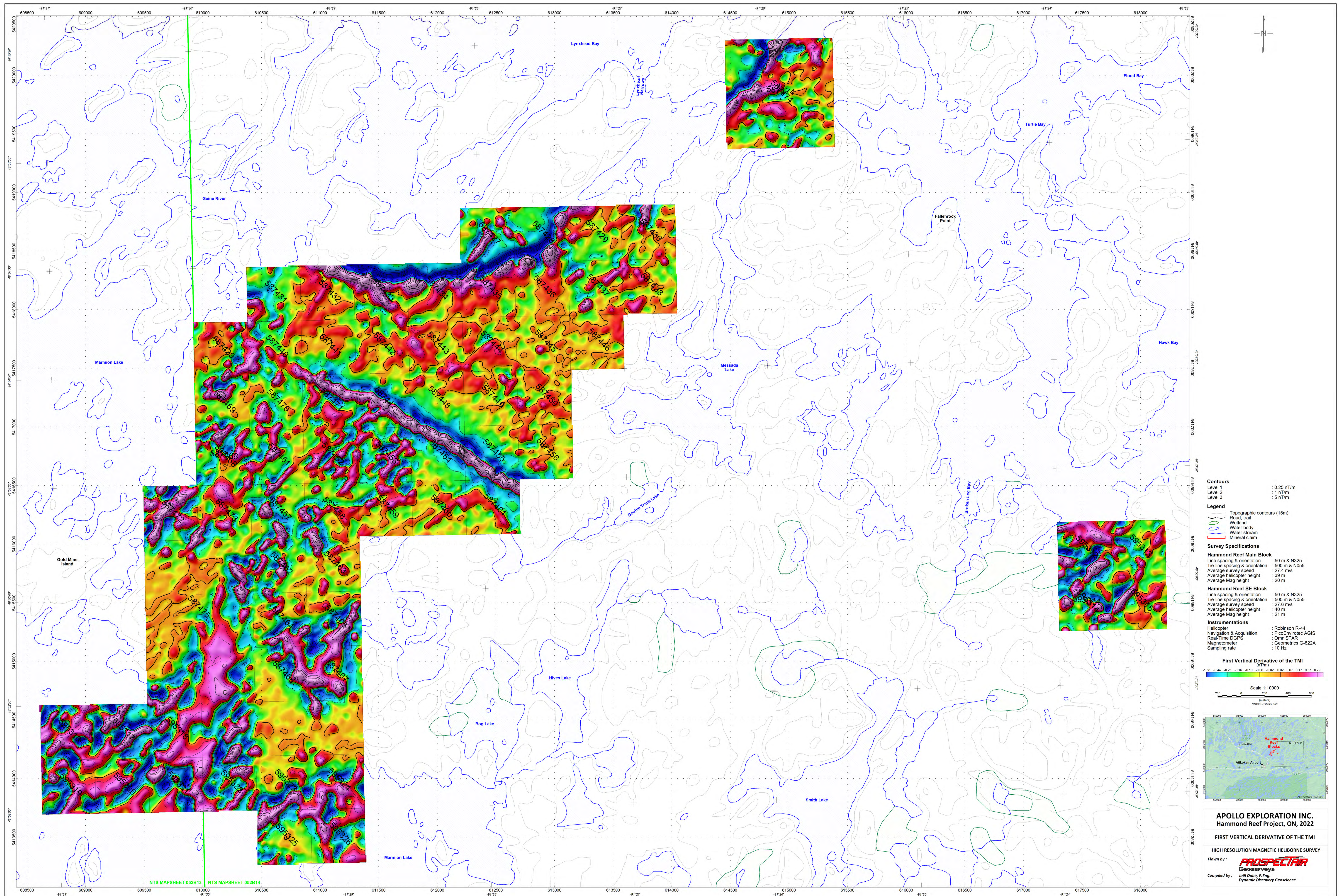
APOLLO EXPLORATION INC.
Hammond Reef Project, ON, 2022

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



Contours

Level 1	: 0.25 nT/m
Level 2	: 1 nT/m
Level 3	: 5 nT/m

Legend

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

Survey Specifications

Hammond Reef Main Block

Line spacing & orientation	: 50 m & N325
Tie-line spacing & orientation	: 500 m & N055
Average survey speed	: 27.4 m/s
Average helicopter height	: 39 m
Average Mag height	: 20 m

Hammond Reef SE Block

Line spacing & orientation	: 50 m & N325
Tie-line spacing & orientation	: 500 m & N055
Average survey speed	: 27.6 m/s
Average helicopter height	: 40 m
Average Mag height	: 21 m

Instrumentations

Helicopter	: Robinson R-44
Navigation & Acquisition	: PicoEnvirotec AGIS
Real-Time DGPS	: OmniSTAR
Magnetometer	: Geometrics G-822A
Sampling rate	: 10 Hz

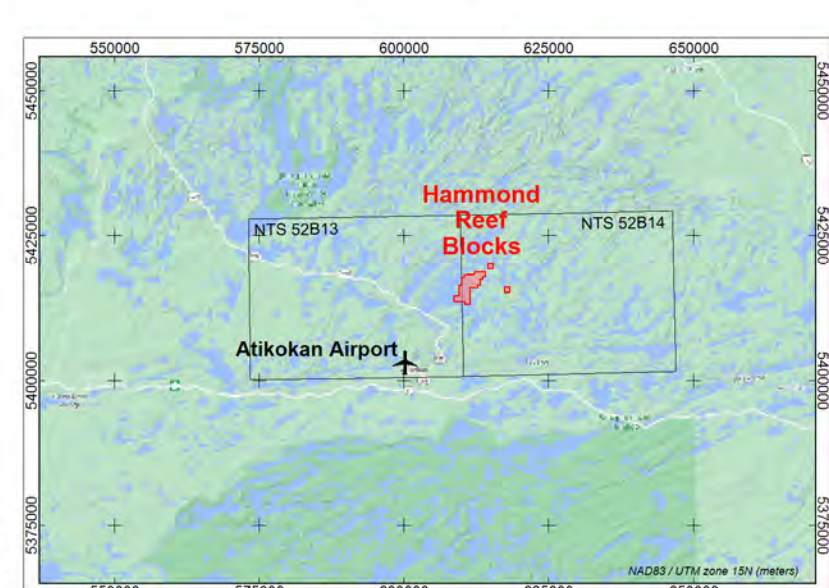
First Vertical Derivative of the TMI (dTMI)

-1.58 -0.44 -0.25 -0.16 -0.10 -0.06 -0.02 0.02 0.07 0.17 0.37 0.79

Scale 1:10000

0 200 400 600

MAGNETIC INTENSITY (nT/m)



APOLLO EXPLORATION INC.
Hammond Reef Project, ON, 2022

FIRST VERTICAL DERIVATIVE OF THE TMI

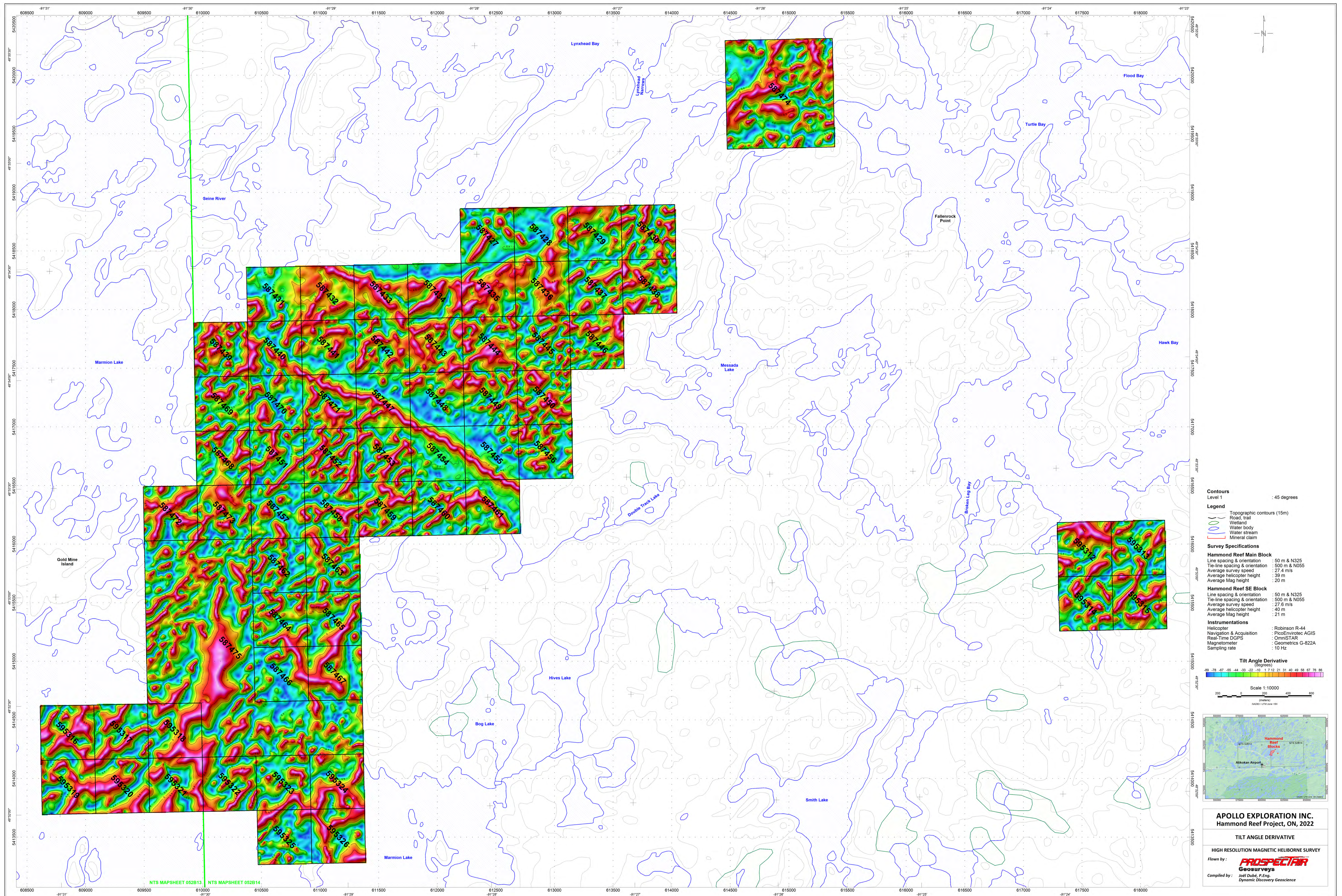
HIGH RESOLUTION MAGNETIC HELIBORNE SURVEY

Flown by: **PROSPECTAR**

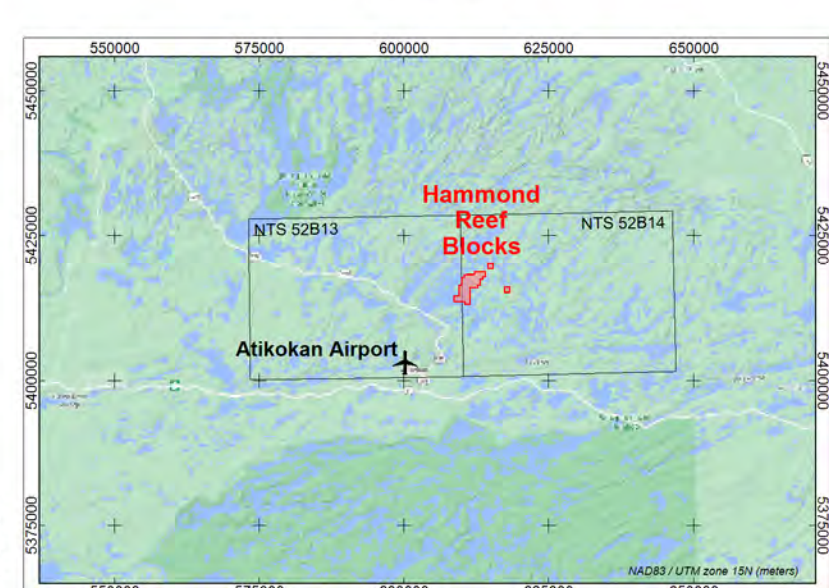
Geosurveya

Compiled by: Jeff Dalek, P.Eng. Dynamic Discovery Geoscience

NTS MAPSHEET 052B13 NTS MAPSHEET 052B14



- Contours**
Level 1 : 45 degrees
- Legend**
- Topographic contours (15m)
 - Road, trail
 - Wetland
 - Water body
 - Water stream
 - Mineral claim
- Survey Specifications**
- Hammond Reef Main Block**
- Line spacing & orientation : 50 m & N325
 - Tie-line spacing & orientation : 500 m & N055
 - Average survey speed : 27.4 m/s
 - Average helicopter height : 39 m
 - Average Mag height : 20 m
- Hammond Reef SE Block**
- Line spacing & orientation : 50 m & N325
 - Tie-line spacing & orientation : 500 m & N055
 - Average survey speed : 27.6 m/s
 - Average helicopter height : 40 m
 - Average Mag height : 21 m
- Instrumentations**
- Helicopter : Robinson R-44
 - Navigation & Acquisition : PicoEnvirotec AGIS
 - Real-Time DGPS : OmniSTAR
 - Magnetometer : Geometrics G-822A
 - Sampling rate : 10 Hz
- Tilt Angle Derivative**
(Degrees)
- Scale 1:10000



APOLLO EXPLORATION INC.
Hammond Reef Project, ON, 2022

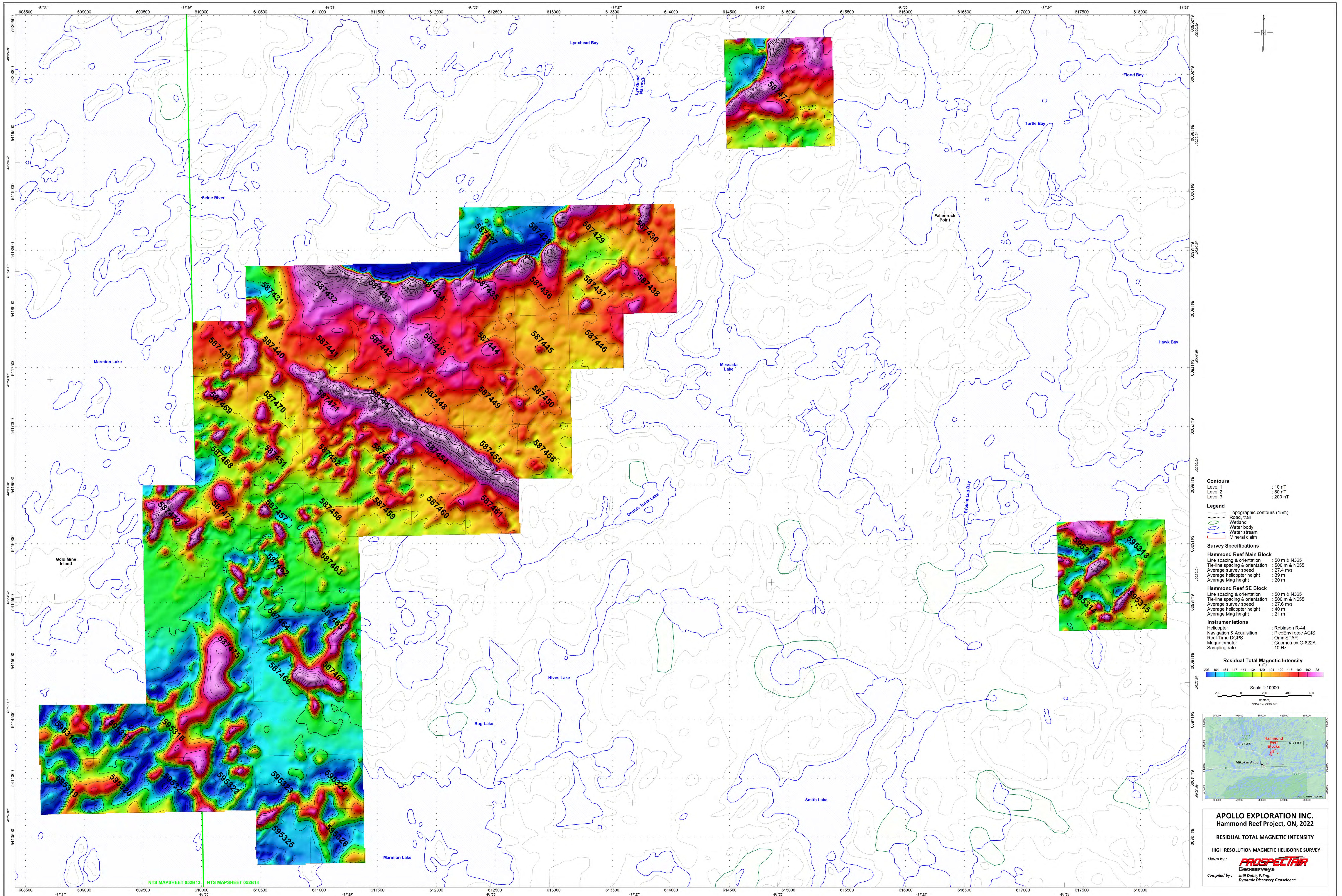
TILT ANGLE DERIVATIVE

HIGH RESOLUTION MAGNETIC HELIBORNE SURVEY

Flown by: **PROSPECTAR**

Compiled by: **GeoSurveya**
Jodi Dalek, P.Eng.
Dynamic Discovery Geoscience

NTS MAPSHEET 052B13 NTS MAPSHEET 052B14



Contours

Level 1	: 10 nT
Level 2	: 50 nT
Level 3	: 200 nT

Legend

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

Survey Specifications

Hammond Reef Main Block

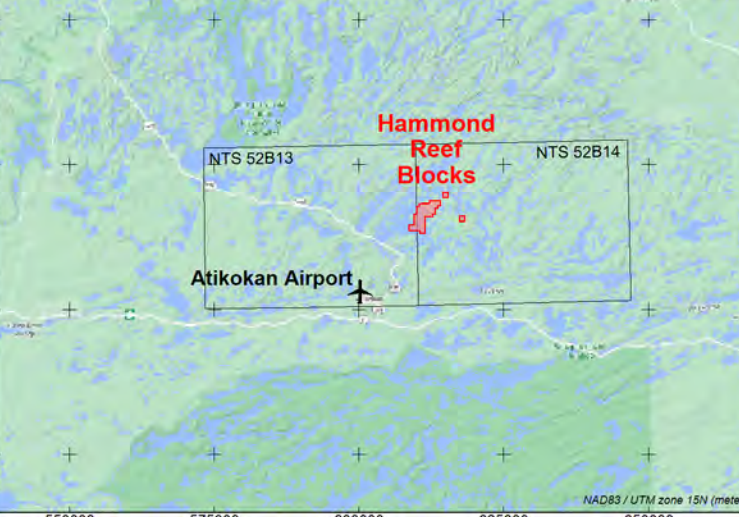
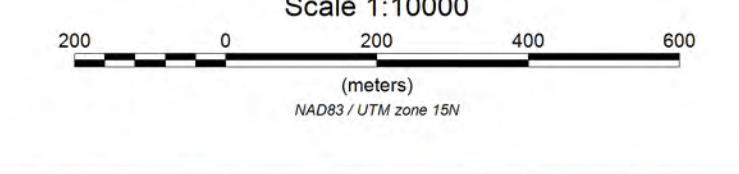
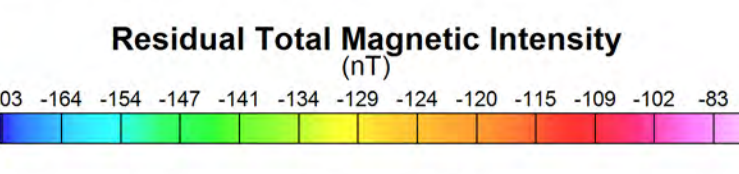
Line spacing & orientation	: 50 m & N325
Tie-line spacing & orientation	: 500 m & N055
Average survey speed	: 27.4 m/s
Average helicopter height	: 39 m
Average Mag height	: 20 m

Hammond Reef SE Block

Line spacing & orientation	: 50 m & N325
Tie-line spacing & orientation	: 500 m & N055
Average survey speed	: 27.6 m/s
Average helicopter height	: 40 m
Average Mag height	: 21 m

Instrumentations

Helicopter	: Robinson R-44
Navigation & Acquisition	: PicoEvo/vec AGIS
Real-Time DGPS	: OmniSTAR
Magnetometer	: Geometrics G-822A
Sampling rate	: 10 Hz



APOLLO EXPLORATION INC.
Hammond Reef Project, ON, 2022

RESIDUAL TOTAL MAGNETIC INTENSITY

HIGH RESOLUTION MAGNETIC HELIBORNE SURVEY

Flown by: **PROSPECTAR**

Compiled by: **GeoSurveya**
Jeff Dalek, P.Eng.
Dynamic Discovery Geoscience

NTS MAPSHEET 052B13 NTS MAPSHEET 052B14