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Assessment Report
on the

Pringle Lake Project

Northwestern Ontario
Red Lake Mining Division
Pringle Lake and Kavanagh Lake Townships
NTS Sheet 052N12

Prepared for

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941 Cobalt Crescent
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P7B5Z4

March 8, 2022

Prepared by:

Brent Clark, P. Geo

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1.0 SUMMARY

Xplore Resource Corp.'s Pringle Lake Project ('The Property') is located in the Red Lake Mining Division of northwestern Ontario. The Property is approximately 280 km northeast of Winnipeg, Manitoba, and 430 km northwest of Thunder Bay, Ontario. The Property is situated along highway 105 just north of Ear Falls south of Red Lake. The Property is 60 km north of the town of Red Lake. The Property consists of 34 single cell mining claims, and two multi cell mining claims (44 cells) for a total area of ~1564 hectares.

The Property is located 60 km north of Red Lake, Ontario, access to the property may be possible by helicopter, by foot, or snowmobile in the winter months.

The Municipality of Red Lake was founded on gold discoveries made in 1925 by Ray and Lorne Howey and George McNeely. The discoveries led to a gold rush peaking in 1926 with a subsequent mining boom in the 1930s and 1940s that resulted in 12 producing gold mines. The Property spans a large block of ground south and east of the South Bay Mine (Cu, Zn) (past producer 1971 to 1981) of 1.45 million tons of ore grading 2.3% copper, 14.7% zinc and 120 g/t silver.

The Red Lake North property is located in northwestern Ontario within Berens River Subprovince, sandwiched between Sachigo Subprovince to the north and the Uchi Subprovince to the south. Berens River Subprovince is dominated by Neoarchean felsic and intermediate plutons with greenstone slivers 2 to 3 km wide *(figure* 3) which are trending northerly. These are remnant forming an extension of the Mcinnes (Sachigo Subprovince) and Red Lake greenstone belt (Uchi Subprovince) according to Buse and Prefontaine (2007).

The greenstones consist of mafic volcanic rock, mostly amphibolites, plus dacitic tuff, wacke and rare rhyolite. Metamorphism grade ranges from upper greenschist to upper amphibolite facies, increasing southward (Buse and Prefontaine 2007). Plutonic rock are strongly foliate and locally mylonitized and fractured within a 1 km-wide zone that strikes approximately 330 degrees through the Nungesser lake area (Stone and Good 1990). This mylonitized zone is located south-west of property.

The property is covered mostly by a blanket of unconsolidated glacial diamicton (till), plus glaciofluvial and glaciolacustrine sediments which are mainly deposited during late Wisconsin ice melt-down of Laurentide ice sheet.

Prospectair Geosurveys conducted a heliborne high-resolution magnetic (MAG) survey on the Pringle Lake Property on August 26th, 2021. One survey block was flown for a total of 345 l-km.

2.0 INTRODUCTION

The Pringle Lake Project ('The Property') lies in the Red Lake Mining Division of Northwestern Ontario (Figure 1). The Report is based on published literature, Ministry of Energy Northern Development and Mines (MENDM) assessment files and work carried out by Xplore Resources Corp. An exploration program consisting of a high resolution airborne magnetic survey was carried out over the property.

The Municipality of Red Lake was founded on gold discoveries made in 1925 by Ray and Lorne Howey and George McNeely. The discoveries led to a gold rush peaking in 1926 with a subsequent mining boom in the 1930s and 1940s that resulted in 12 producing gold mines. The Property spans a large block of ground south and east of the South Bay Mine (Cu, Zn) (past producer 1971 to 1981) of 1.45 million tons of ore grading 2.3% copper, 14.7% zinc and 120 g/t silver.

The Red Lake Greenstone Belt (the "RLGB") hosts one of the most prolific and highest-grade gold camps in Canada, with historical production of more than 25 million ounces of gold. The majority of production has come from four mines: Campbell; Red Lake; Cochenour-Willans; and Madsen. There has been additional production from ten smaller mines (Andrews et al, 1986).

The Red Lake North property is located in northwestern Ontario within Berens River Subprovince, sandwiched between Sachigo Subprovince to the north and the Uchi Subprovince to the south. Berens River Subprovince is dominated by Neoarchean felsic and intermediate plutons with greenstone slivers 2 to 3 km wide *(figure* 3) which are trending northerly. These are remnant forming an extension of the Mcinnes (Sachigo Subprovince) and Red Lake greenstone belt (Uchi Subprovince) according to Buse and Prefontaine (2007).

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The property is covered mostly by a blanket of unconsolidated glacial diamicton (till), plus glaciofluvial and glaciolacustrine sediments which are mainly deposited during late Wisconsin ice melt-down of Laurentide ice sheet.

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Figure 1: Property Location Map

3.0 PROPERTY DESCRIPTION AND LOCATION

The Pringle Lake Project is located in the Pringle Lake Area, and Kavanagh Lake area of the Red Lake Mining Division in northwestern Ontario, approximately 60 km north of the community of Red Lake, ON. The UTM co-ordinates for the approximate centre of the claim block are 455900 m E, 5717200 m N (NAD 83, Zone 15).

The Property consists of 34 single cell mining claims, and two multi cell mining claims (44 cells) for a total area of ~ 1564 hectares. The claims are listed in Table 1 and are shown in Figure 2. The claims are held 100% by Solstice Gold Corp. The total work requirement for the property annually amounts to $31,200.

Exploration program are subject to the guidelines, policies and legislation of the Ontario Ministry of Energy, Northern Development and Mines (“MENDM”), Ontario Ministry of Natural Resources and Federal Department of Fisheries and Oceans regarding surface exploration, stream crossings, and work being carried out near rivers and bodies of water, drilling and sludge disposal, drill casings, capping of holes, storage of core, trenching, road construction, waste and garbage disposal.

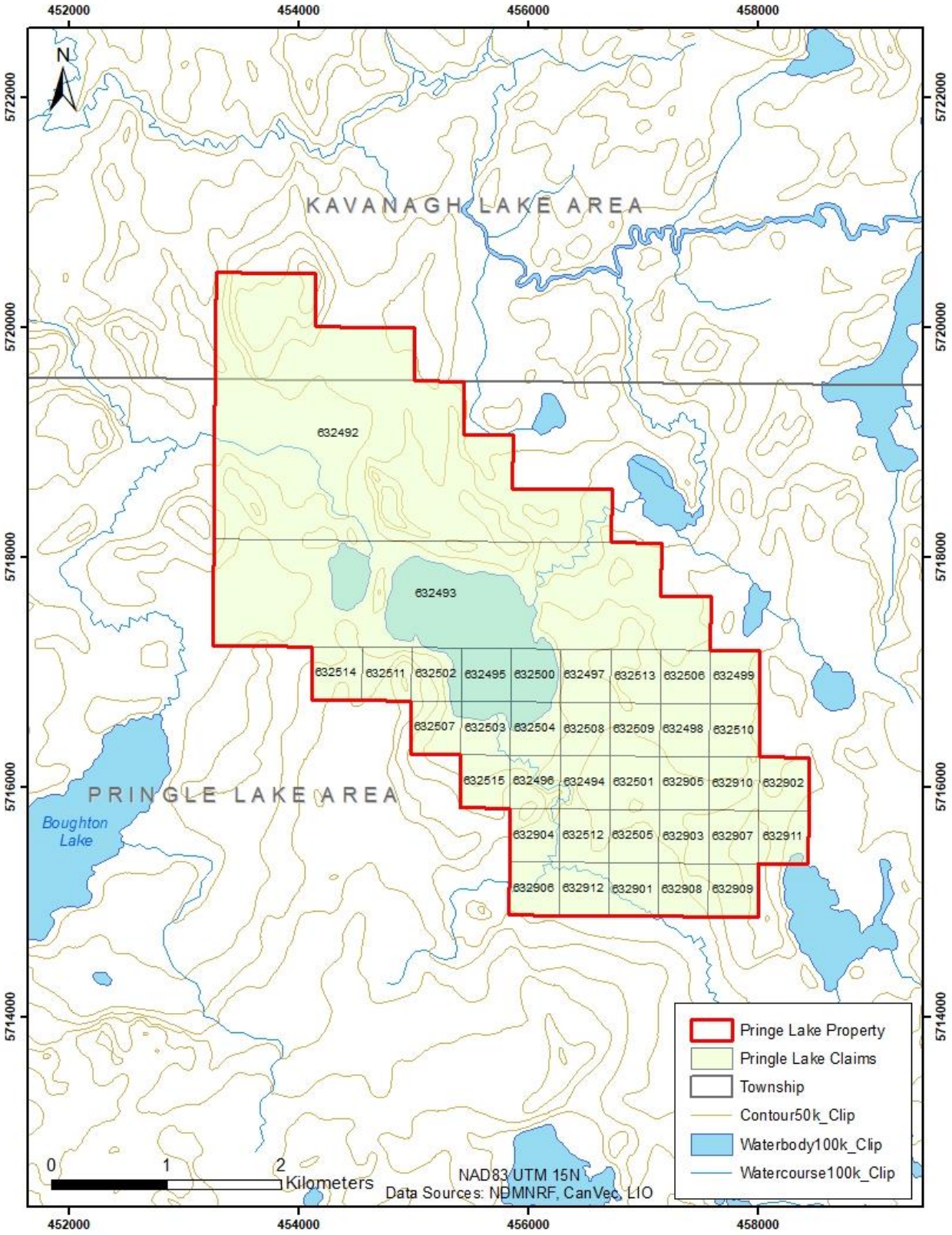
The *Mining Act* (Ontario) requires Exploration Permits or Plans for exploration on Crown Land, which in turn are obtained from the MENDM. The processing periods are 50 days for a permit and 30 days for a plan while the documents are reviewed by MENDM and presented to the Aboriginal communities whose traditional lands may be impacted by the work. The Author recommends the company discuss the recommended exploration with the MENDM to determine the plan and/or permit required as well as the Aboriginal communities to consult.

The Government of Ontario requires expenditures of $400 per year per cell for staked claims, prior to expiry, to keep the claims in good standing for the following year. The Assessment report describing the work done by the company must be submitted by the expiry date of the claims to which the work is to be applied. There are no boundary claims related to the Property.

Table 1: Property Claims List

TENURE ID	HOLDER	ANNIVERSARY	CELL TYPE	WORK REQUIRED	NUMBER OF CELLS
632492	Solstice Gold Corp	2023-01-27	Multi-cell	$10,000.00	25
632493	Solstice Gold Corp	2023-01-27	Multi-cell	$7,600.00	19
632494	Solstice Gold Corp	2023-01-27	Single cell	$400.00	1
632495	Solstice Gold Corp	2023-01-27	Single cell	$400.00	1
632496	Solstice Gold Corp	2023-01-27	Single cell	$400.00	1
632497	Solstice Gold Corp	2023-01-27	Single cell	$400.00	1
632498	Solstice Gold Corp	2023-01-27	Single cell	$400.00	1
632499	Solstice Gold Corp	2023-01-27	Single cell	$400.00	1
632500	Solstice Gold Corp	2023-01-27	Single cell	$400.00	1
632501	Solstice Gold Corp	2023-01-27	Single cell	$400.00	1
632502	Solstice Gold Corp	2023-01-27	Single cell	$400.00	1
632503	Solstice Gold Corp	2023-01-27	Single cell	$400.00	1
632504	Solstice Gold Corp	2023-01-27	Single cell	$400.00	1
632505	Solstice Gold Corp	2023-01-27	Single cell	$400.00	1
632506	Solstice Gold Corp	2023-01-27	Single cell	$400.00	1
632507	Solstice Gold Corp	2023-01-27	Single cell	$400.00	1
632508	Solstice Gold Corp	2023-01-27	Single cell	$400.00	1
632509	Solstice Gold Corp	2023-01-27	Single cell	$400.00	1
632510	Solstice Gold Corp	2023-01-27	Single cell	$400.00	1
632511	Solstice Gold Corp	2023-01-27	Single cell	$400.00	1
632512	Solstice Gold Corp	2023-01-27	Single cell	$400.00	1
632513	Solstice Gold Corp	2023-01-27	Single cell	$400.00	1
632514	Solstice Gold Corp	2023-01-27	Single cell	$400.00	1
632515	Solstice Gold Corp	2023-01-27	Single cell	$400.00	1
632901	Solstice Gold Corp	2023-01-28	Single cell	$400.00	1
632902	Solstice Gold Corp	2023-01-28	Single cell	$400.00	1
632903	Solstice Gold Corp	2023-01-28	Single cell	$400.00	1
632904	Solstice Gold Corp	2023-01-28	Single cell	$400.00	1
632905	Solstice Gold Corp	2023-01-28	Single cell	$400.00	1
632906	Solstice Gold Corp	2023-01-28	Single cell	$400.00	1
632907	Solstice Gold Corp	2023-01-28	Single cell	$400.00	1
632908	Solstice Gold Corp	2023-01-28	Single cell	$400.00	1
632909	Solstice Gold Corp	2023-01-28	Single cell	$400.00	1
632910	Solstice Gold Corp	2023-01-28	Single cell	$400.00	1
632911	Solstice Gold Corp	2023-01-28	Single cell	$400.00	1
632912	Solstice Gold Corp	2023-01-28	Single cell	$400.00	1

Figure 2: Property Claim Map



4.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

The Property is in the northwestern region of Ontario and is best accessed from the major cities of Winnipeg (Manitoba) or Thunder Bay (Ontario), both of which have international airports. The Property is approximately 280 km northeast of Winnipeg, Manitoba, and 430 km northwest of Thunder Bay, Ontario. From these centers, the property can be accessed using Trans-Canada Highway 17 to the town of Vermillion Bay where Ontario Highway 105, the 'Red Lake highway' begins. The property is 60 km North of the Town of Red Lake and is accessible by helicopter.

The Red Lake Municipality, with a population of approximately 5,000, is comprised of six communities: Red Lake, Balmertown, Cochenour, Madsen, McKenzie Island, and Starratt-Olsen. Mining and mineral exploration is the primary industry in the area, with production mainly from Evolution Mining's 3100 tonne/day Red Lake Gold Mine. Since production commenced in 1949, the combined Red Lake Operation has produced more than 25 M oz of gold at an average grade in excess of 20g/t gold (https://evolutionmining.com.au/red-lake/ accessed Sept 23, 2021). Other industries include logging and tourism. The Red Lake airport is serviced by several regional commercial airlines that offer regularly scheduled flights. The Municipality of Red Lake offers a full range of services and supplies for mineral exploration and mining, including both skilled and unskilled labour, bulk fuels, freight, heavy equipment, groceries, hardware and mining supplies.

Power is available from Red Lake, and there is also a generating station at Ear Falls, approximately 70km south of Red Lake, with the power line running along Highway 105. The current land holdings are sufficient to allow for exploration and there are currently no encumbrances related to surface rights impacting the Property.

The climate in the Red Lake area is described as warm-summer humid continental (climate type Dfb according to the Köppen climate classification system). Mean daily temperatures range from -18˚C in January to +18˚C in July. Annual precipitation averages 70 cm, mainly occurring as summer rain showers, and total annual precipitation includes approximately two metres of snow. Snow usually starts falling during late October and starts melting during March but is not normally fully melted until late April. Fieldwork and drilling are possible year-round on the property some swampy areas are more easily accessible in the winter when frozen.

The property is characterized by gently roling landscape with hillls culminating up to 450m. Swamps, bogs and lakes occupy depressed area, representing the plains of the former Agassiz lake beds. Drainage pattern is poorly developed with meandering streams. Forest cover is moderate to dense and typical of boreal forest: white and black spruce, balsam fir, jack pine, white birch, trembling aspen. Outcrops are sparse and mainly distributed on north and center part of the property.

The property is located within the Whitefeather forest area. Currently. There are no restriction on land use else than current environmental regulations. Dialog between Ontario Ministry of Natural Resources and the Pikangikum First Nation are in progress regarding forest management strategy and to delineate protected area within Whitefeather forest area.
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5.0 PROPERTY HISTORY

The first reconnaissance mapping into Red Lake North property area was published by J.A Donaldson (1969) from the Geological Survey of Canada at a scale of 1:253 440. Subsequently, regional map by Ayres et al. provided an overview that outlined greenstone rock from granitoid rock. From 1988 to 1993, D. Stone (Ontario Geological Survey, an Open file Report) made geological mapping of Berens River Subprovince and published a set of map at 1:50 000 scale, provided an outline of the Berens River Subprovince. More recently, Buse and Prefontaine (2007) mapped the Berens rivers area with emphasis on greenstone remnants at a scale of 1 :20 000.

A quaternary geology map (1 :506 880) covering the property was made by V.K. Prest (1963) from the Geological Survey of Canada. Later, P.J, Barnet and al. from Ontario Geological Survey, published a map of the west central-sheet, at a scale of 1:100 000. Federal low-density (800 m spacing) airborne magnetic surveys were published in 1963 by Geological Survey of Canada. Recently, a Geotem1000 System high density (200m spacing) airborne magnetic and deep penetrating electromagnetic survey covering part of the Whitefeather forest area was carried out for the Ontario Geological Survey (2008) at 1:50 000 scale.

2009 – Agnico Eagle

Conducted a sampling campaign over a large area with a series of sampling fences perpendicular to glacial ice-flow and greenstone belt locations. Samples were spaced 250m apart along the fences, with 500m between fences in the vicinity of the greenstone belt. The remainder of the grid had a spacing of 500m along fence and 1km between. These fences are oriented west southwest, perpendicular to the local ice-flow direction.

A total of 636 samples were collected during summer 2009 sampling campaign on their Red Lake North project: 453 glacial sediments, 108 fluvioglacial or morainic sediments, 71 glaciolacustrine sediments, 3 alluviums and one sample of beach sand. A total of 581 samples, 2.5 kg each, were collected for geochemical analysis (cyanide leach method) plus 55 samples, 10 kg in size, were collected for visual examination and extraction of gold grain.

Gold had been deteceted in the glacial sediments on Red Lake North property, indicative of a certain endowment. Interpretation of results is hampered by the local complexity of the glacial geology, which can not be treated as a simple till blanket. A few samples shows significant gold content, but effect of mineralized pebble or a nugget can not be ruled out.

6.0 GEOLOGICAL SETTING AND MINERALIZATION

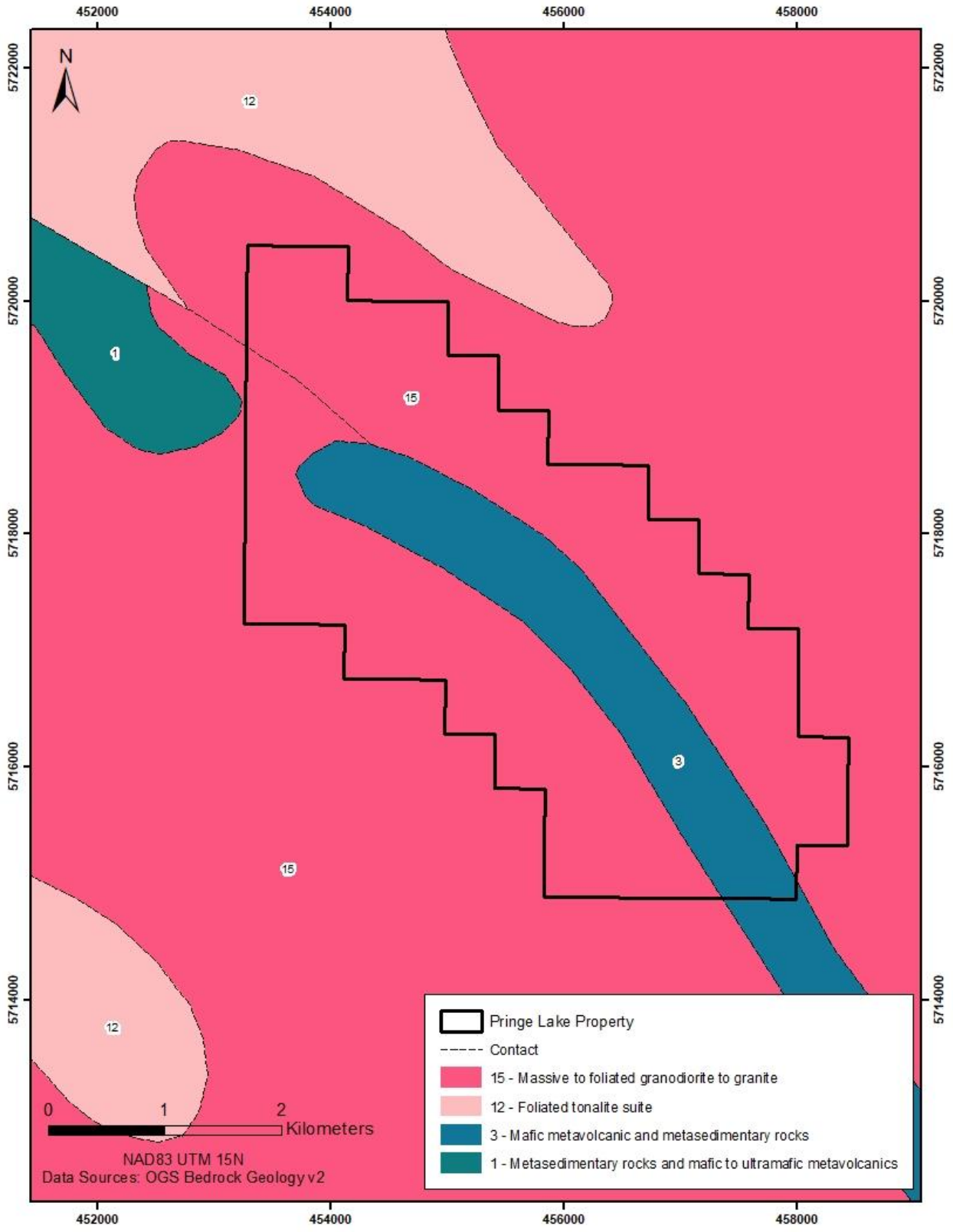
The Pringle property is located in northwestern Ontario within Berens River Subprovince, sandwiched between Sachigo Subprovince to the north and the Uchi Subprovince to the south. Berens River Subprovince is dominated by Neoarchean felsic and intermediate plutons with greenstone slivers 2 to 3 km wide *(figure 3*) which are trending northerly. These are remnant forming an extension of the Mcinnes (Sachigo Subprovince) and Red Lake greenstone belt (Uchi Subprovince) according to Buse and Prefontaine (2007).

The greenstones consist of mafic volcanic rock, mostly amphibolites, plus dacitic tuff, wacke and rare rhyolite. Metamorphism grade ranges from upper greenschist to upper amphibolite facies, increasing southward (Buse and Prefontaine 2007). Plutonic rock are strongly foliate and locally mylonitized and fractured within a 1 km-wide zone that strikes approximately 330 degrees through the Nungesser lake area (Stone and Good 1990).

The Berens Lake South Arm area is interpreted to be the location of a deep-tapping seismic structure. Such structures have a close relationship to gold mining and mineral exploration within the Red Lake District. The South Arm area has received limited historical exploration interest but has some very encouraging characteristics that indicate the presence of excellent opportunities for the discovery of gold mineralization. The identification of a deep-tapping seismic structure that correlates with shear zones from preliminary geological mapping indicates the potential existence of a conduit for migrating gold-bearing fluids.

The property is covered mostly by a blanket of unconsolidated glacial diamicton (till), plus glaciofluvial and glaciolacustrine sediments which are mainly deposited during late Wisconsin ice melt-down of Laurentide ice sheet.

Figure 3: Property Geology

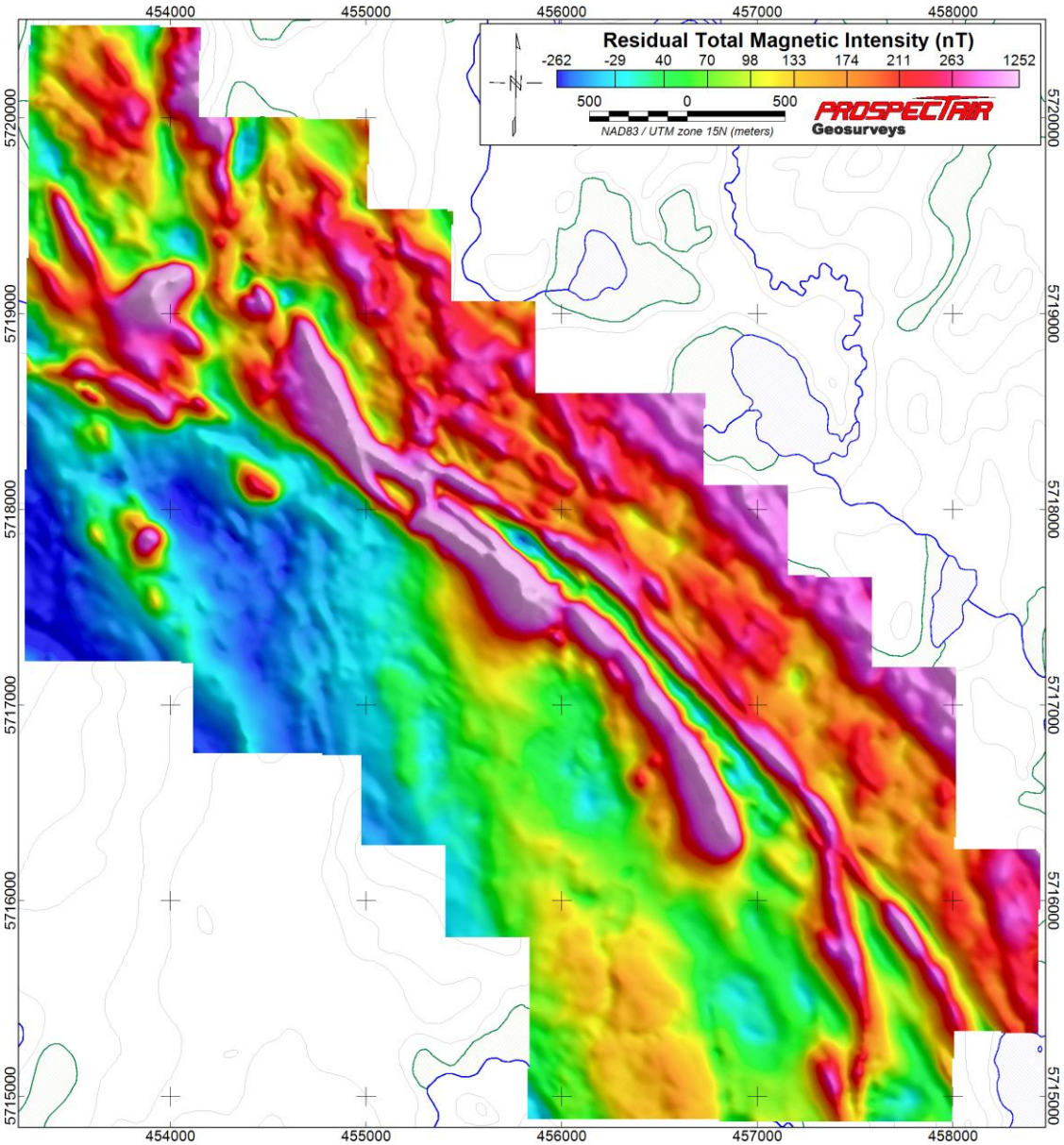


8.0 EXPLORATION

Prospectair Geosurveys conducted a heliborne high-resolution magnetic (MAG) survey on the Pringle Lake Property on August 26th, 2021. One survey block was flown for a total of 345 l-km.

The Pringle Lake block was flown with traverse lines at 50m spacing and control lines spared every 500m. The survey lines were oriented N050 and control lines were flown at an azimuth of N140.

Figure 4: Total Magnetic Intensity (TMI)



9.0 INTERPRETATION AND CONCLUSIONS

The northeastern half of the block is affected by linear magnetic features characteristic of alternating sequences of mafic volcanics with sedimentary or intermediate to felsic volcanic rocks, with possibly some intrusive stocks or dykes locally. In the southwestern half of the block, lower magnetic background values and decreased signal variability are observed, which could relate to a sizable felsic to intermediate intrusion. Another area near the northeast edge of the block depicts decreased signal variability, but with stronger magnetic background values, possibly indicating another larger size intrusion of intermediate to mafic composition. Stronger magnetic anomalies are occurring as a NW-SE oriented central band. These stronger anomalies possibly relate to local iron formations, or to mafic/ultra-mafic volcanic or intrusive rocks.

10.0 RECOMMENDATIONS

A field program consisting of prospecting and mapping should be undertaken to investigate the anomalies and structures identified in the airborne survey and to confirm the lithologies present on the property.

11.0 REFERENCES

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Stone, D. and Good, D., 1990. Precambrian geology, Nungesser Lake. Ontario Geological Survey, Preliminary Map P. 3175, scale 1:50 000.

12.0 CERTIFICATE OF QUALIFICATIONS

Brent Clark
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CERTIFICATE OF QUALIFIED PERSON

I, Brent Clark, P. Geo. (#3188), do hereby certify that:

1. I am a consulting geologist with an office at 941 Cobalt Crescent, Thunder Bay, Ontario.

2. I graduated with the degree of Honours Bachelor of Earth Science (Geology) from Carleton University, Ottawa, Ontario in 2014. I have worked on gold projects in Northwestern Ontario, and Australia.

3. “Assessment Report” refers to the report titled “Assessment Report on the LP Gold Project, Northwestern Ontario, Red Lake Mining Division” dated March,8 2022.

4. I am a registered Professional Geoscientist with the Association of Professional Geoscientists of Ontario (#3188).

5. I have worked as a Geologist since my graduation from university.

6. I am the author of this report and responsible for sections 10 & 11 and editing of the Assessment Report.

7. As of the date of this certificate, and to the best of my knowledge, information and belief, the Assessment Report contains all scientific and technical information that is required to be disclosed to make the Assessment Report not misleading.

Dated this 8th day of March 2022.

“Brent Clark”

_____

APPENDICES

Appendix I – Prospectair Geosurveys Report and Maps

Technical Report

High-Resolution Heliborne Magnetic Survey

Pringle Lake Property, Red Lake North Greenstone Belt area, Red Lake Mining Division, Ontario, 2021

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Prospectair Geosurveys

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September 2021

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FIGURES

TABLES

I. INTRODUCTION

Prospectair Geosurveys conducted a heliborne high-resolution magnetic (MAG) survey for the mineral exploration company Xplore Resources Corp. on its Pringle Lake Property located in the northern extension of the Red Lake Greenstone Belt area, Red Lake Mining Division, Province of Ontario (Figure 1). The survey was flown on August 26th 2021.

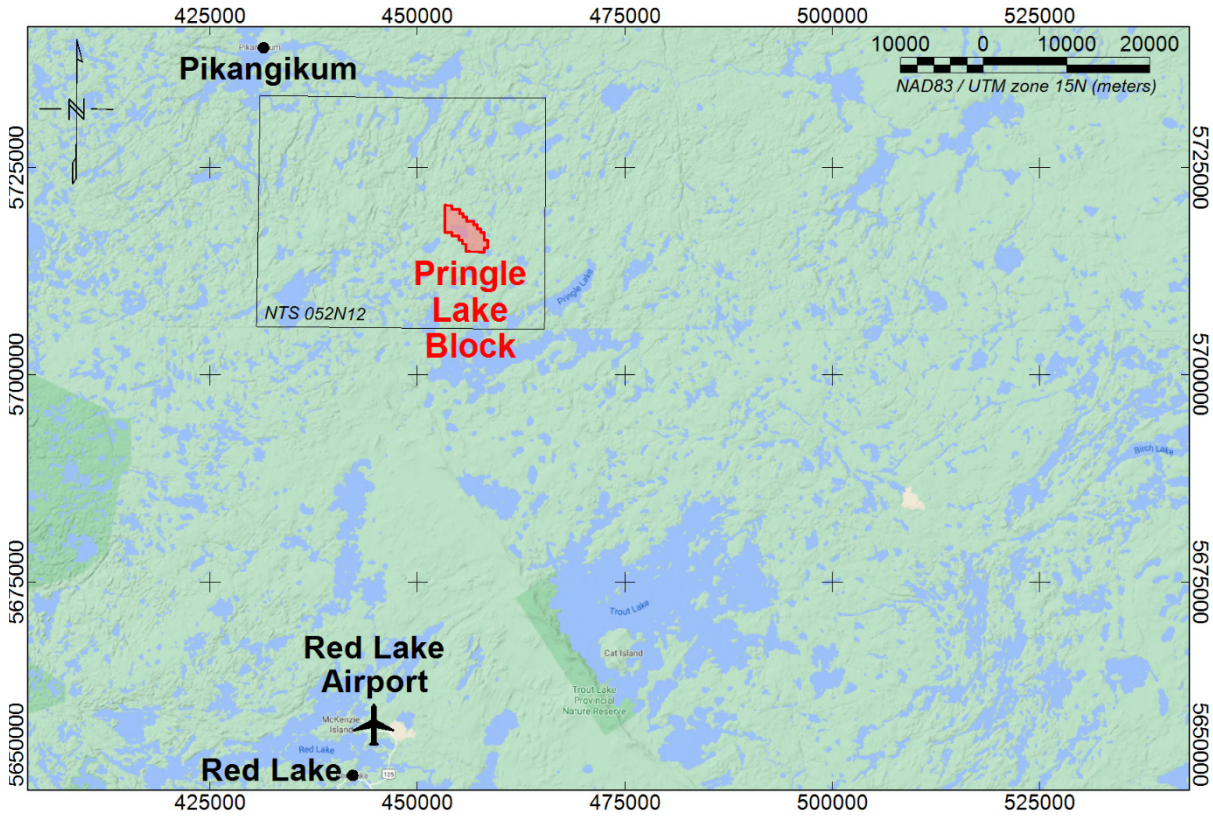
Figure 1: **General Survey Location**

One survey block was flown for a total of 345 l-km. A total of 2 production flights were performed using Prospectair's Robinson R-44, registration C-GBOU. The helicopter and survey crew operated out of the Red Lake Airport located about 60 km to the south of the block (Figure 2).

Table 1: **Survey block particulars**

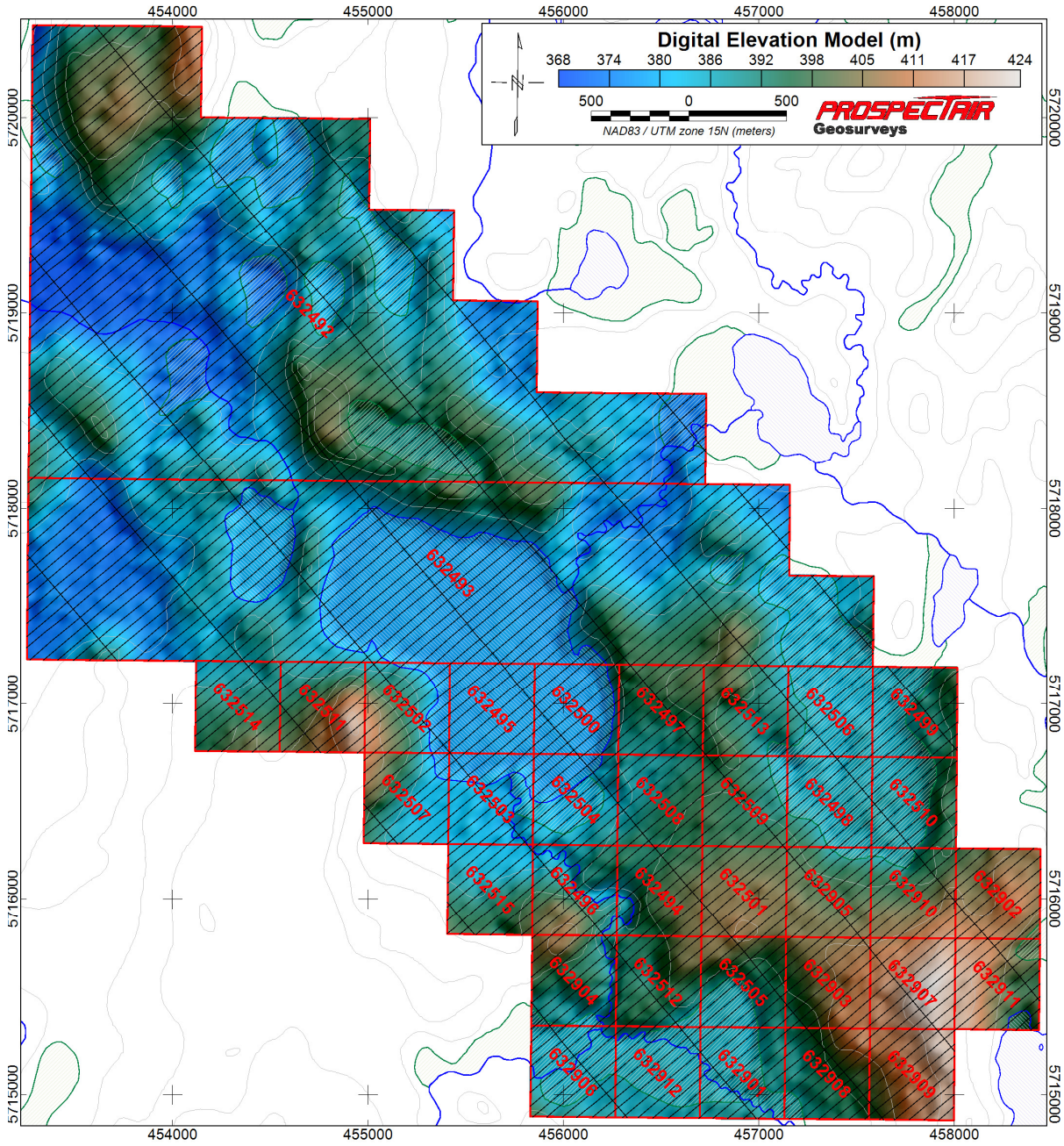
Block	NTS Mapsheet	Line-km flown	Flight numbers	Dates Flown
Pringle Lake	052N12	345 l-km	Flt 1 and 2	Aug. 26th

Figure 2: **Survey Location and base of operation**



The Pringle Lake block was flown with traverse lines at 50 m spacing and control lines spaced every 500 m. The survey lines were oriented N050 and control lines were flown at an azimuth of N140. The average height above ground of the helicopter was 44 m and the magnetic sensor was at 25 m. The average survey flying speed was 34.8 m/s. The survey area is covered by forest, wetlands and lakes. The topography is mostly gently undulating, with a few low-level hills, which are fairly typical characteristics of the area near Red Lake. The elevation is ranging from 368 to 424 m above mean sea level (MSL). The town of Red Lake is found about 60 km to the south of the block, while the Pikangikum village is located approximately 30 km to the northwest of it. The block is approximately located 15 km to the northwest of the large Pringle Lake, and 10 km to the east of Nungessor Road, linking Pikangikum to Red Lake. Coordinates outlining the survey block are given in Appendix A, with respect to NAD-83 datum, UTM projection zone 15N. The location of the Pringle Lake Property claims (in red) and of the survey lines is shown on Figure 3. The Property claims numbers are also listed in Appendix B.

Figure 3: **Survey lines and Pringle 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 Pringle Lake Block:

  Traverse lines: Azimuth N050, 50 m spacing.

  Control Lines: Azimuth N140, 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 0.91 s for this survey.

V. FIELD OPERATIONS

The survey operations were conducted out of the Red Lake Airport on August 26th, 2021. The data acquisition required 2 flights. At the end of the 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 crew accommodations in Red Lake, at latitude 51.030732°N, longitude 93.757661°W. The survey pilot was Dominic Latour and the survey system technician was Jonathan 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 9.10 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 0.91 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 to the airborne data and by adding back the average of the ground magnetometer value.

The levelling corrections were applied in several steps. First of all, 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 body 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° 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 25 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) of the Pringle Lake block, presented in Figure 6, is slightly active and varies over a range of 1,514 nT, with an average of 133 nT and a standard deviation of 154 nT.

The northeastern half of the block is affected by linear magnetic features characteristic of alternating sequences of mafic volcanics with sedimentary or intermediate to felsic volcanic rocks, with possibly some intrusive stocks or dykes locally. In the southwestern half of the block, lower magnetic background values and decreased signal variability are observed, which could relate to a sizable felsic to intermediate intrusion. Another area near the northeast edge of the block depicts decreased signal variability, but with stronger magnetic background values, possibly indicating another larger size intrusion of intermediate to mafic composition. Stronger magnetic anomalies are occurring as a NW-SE oriented central band. These stronger anomalies possibly relate to local iron formations, or to mafic/ultra-mafic volcanic or intrusive rocks. Stronger anomalies are best seen on Figure 7 which shows the residual TMI data with a linear color distribution.

Magnetic lineaments found in the survey block are generally trending from NNW-SSE to WNW-ESE, depicting a complex fabric possibly relating to a system of conjugate structures. Occasional discrete lineaments rather oriented NE-SW, and of limited extents, are also seen locally. Many lineaments appear curved, and some are even possibly folded locally, attesting that the area underwent some deformation events in the past. In general terms, magnetic lineaments are related to rock formations that are enriched in magnetic minerals (magnetite and/or pyrrhotite).

Throughout the block, 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 Pringle 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**

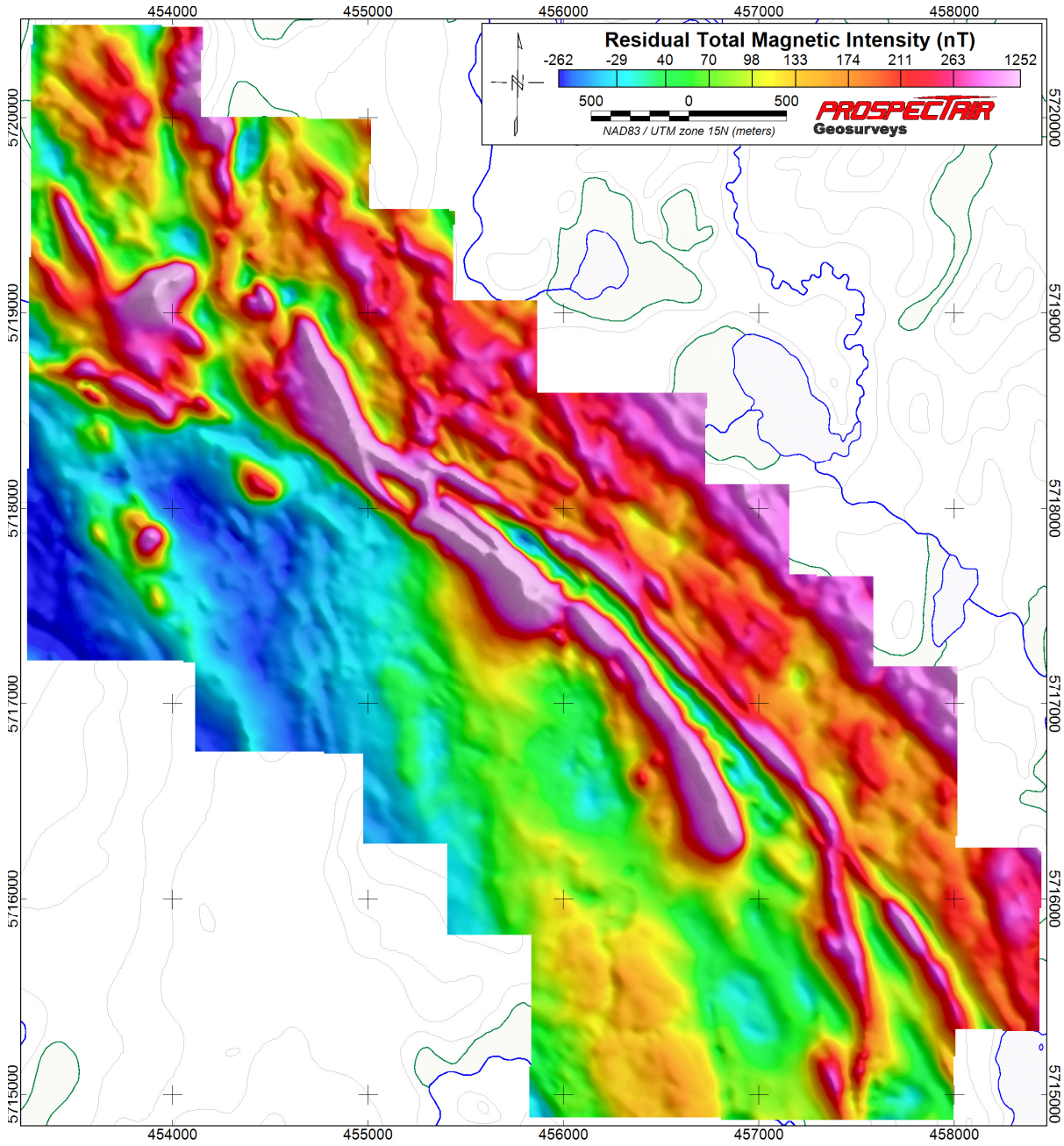


Figure 7: **Residual Total Magnetic Intensity with linear color distribution**

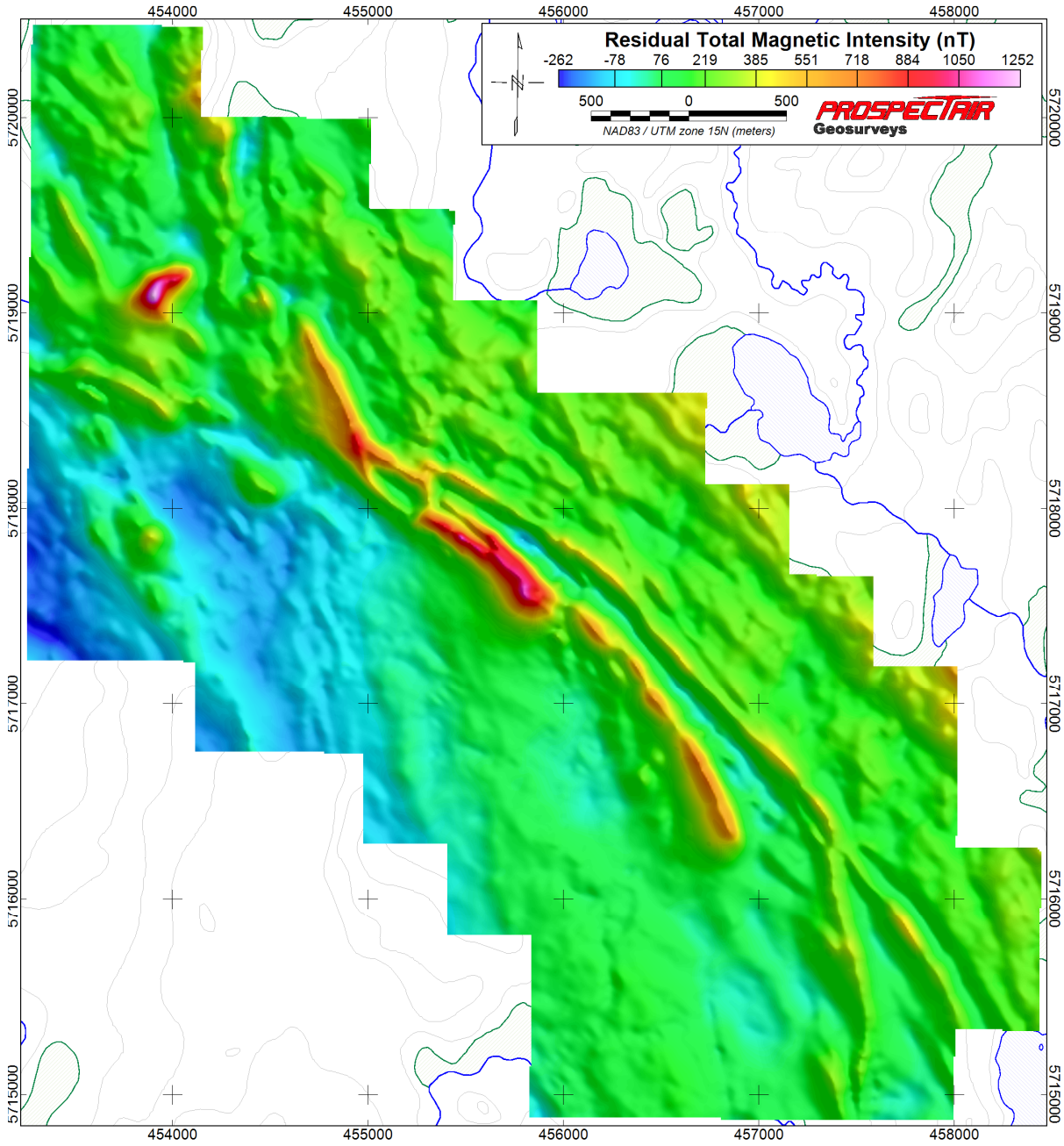


Figure 8: **First Vertical Derivative of TMI**

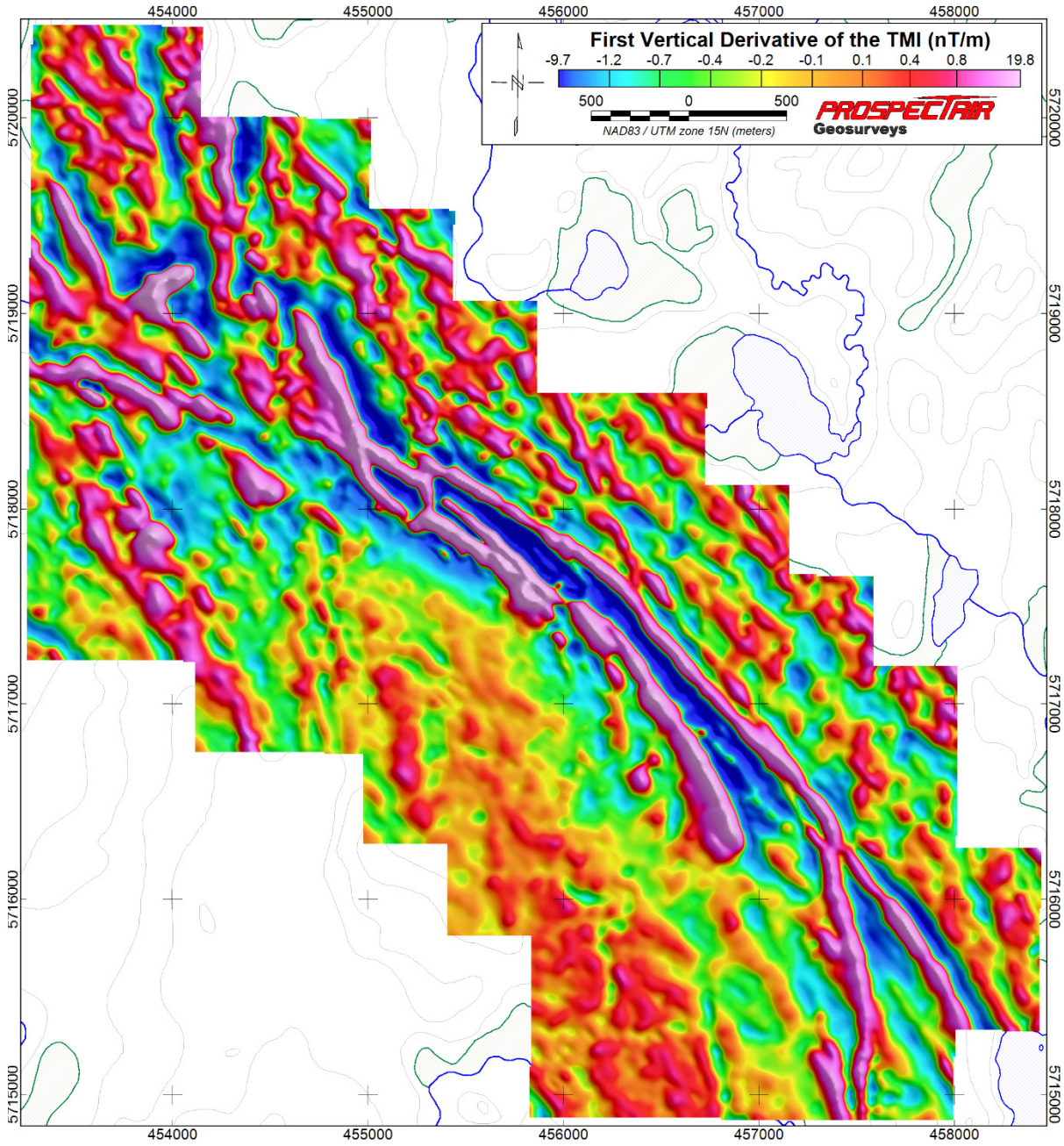
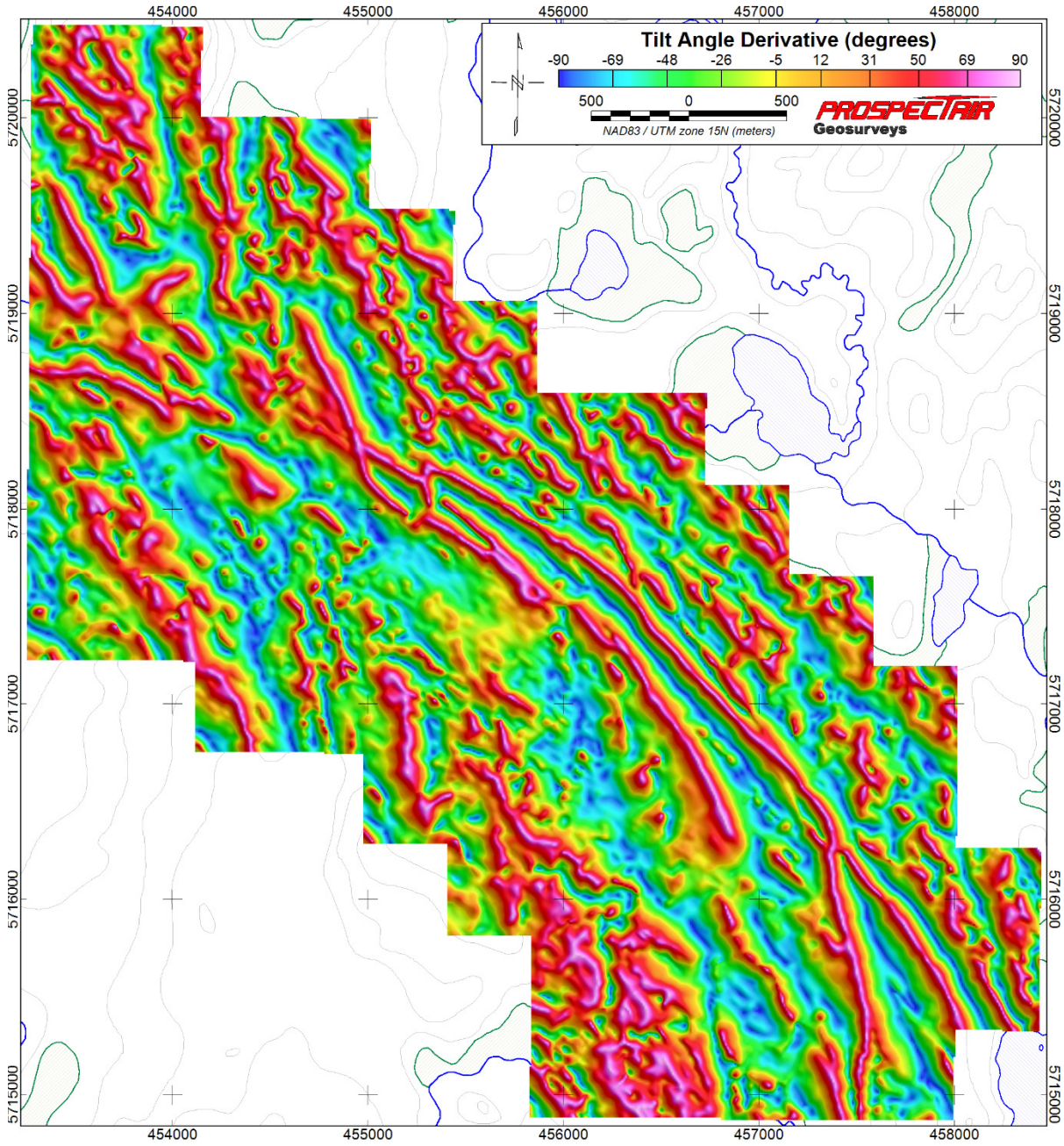


Figure 9: **Tilt Angle Derivative**



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 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	DEM	CDED Digital Elevation Model	m
2	Terrain	Calculated Digital Elevation Model	m
3	TMI	Total Magnetic Intensity	nT
4	FVD	First Vertical Derivative of TMI	nT/m
5	SVD	Second Vertical Derivative of TMI	nT/m^2
6	TMIres	Residual TMI (IGRF removed)	nT
7	TILT	Tilt Angle Derivative	Degree

Project Report

The report is submitted in PDF format.

Respectfully submitted,

_____

Joël Dubé, P.Eng.
September 17th 2021

IX. STATEMENT OF QUALIFICATIONS

Joël Dubé
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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 22 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 17th day of September, 2021

_____
Joël Dubé, P.Eng. #100194954

X. Appendix A – Survey block outline

Pringle Lake Block

Easting	Northing
457996	5714871
455828	5714887
455836	5715814
455403	5715818
455407	5716281
454974	5716285
454978	5716748
454112	5716756
454117	5717219
453251	5717227
453281	5720476
454151	5720468
454147	5720005
455012	5719997
455008	5719534
455441	5719530
455437	5719066
455869	5719063
455865	5718599
456731	5718592
456727	5718128
457159	5718125
457156	5717661
457588	5717657
457584	5717194
458017	5717191
458010	5716264
458429	5716260
458442	5716245
458435	5715328
458005	5715332
458002	5715330

XI. Appendix B – Property claims numbers covered by the survey

Tenure number	Holder
632492	(100) PERRY VERN ENGLISH
632493	(100) PERRY VERN ENGLISH
632494	(100) PERRY VERN ENGLISH
632495	(100) PERRY VERN ENGLISH
632496	(100) PERRY VERN ENGLISH
632497	(100) PERRY VERN ENGLISH
632498	(100) PERRY VERN ENGLISH
632499	(100) PERRY VERN ENGLISH
632500	(100) PERRY VERN ENGLISH
632501	(100) PERRY VERN ENGLISH
632502	(100) PERRY VERN ENGLISH
632503	(100) PERRY VERN ENGLISH
632504	(100) PERRY VERN ENGLISH
632505	(100) PERRY VERN ENGLISH
632506	(100) PERRY VERN ENGLISH
632507	(100) PERRY VERN ENGLISH
632508	(100) PERRY VERN ENGLISH
632509	(100) PERRY VERN ENGLISH
632510	(100) PERRY VERN ENGLISH
632511	(100) PERRY VERN ENGLISH
632512	(100) PERRY VERN ENGLISH
632513	(100) PERRY VERN ENGLISH
632514	(100) PERRY VERN ENGLISH
632515	(100) PERRY VERN ENGLISH
632901	(100) PERRY VERN ENGLISH
632902	(100) PERRY VERN ENGLISH
632903	(100) PERRY VERN ENGLISH
632904	(100) PERRY VERN ENGLISH
632905	(100) PERRY VERN ENGLISH
632906	(100) PERRY VERN ENGLISH
632907	(100) PERRY VERN ENGLISH
632908	(100) PERRY VERN ENGLISH
632909	(100) PERRY VERN ENGLISH
632910	(100) PERRY VERN ENGLISH
632911	(100) PERRY VERN ENGLISH
632912	(100) PERRY VERN ENGLISH