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SOLSTICE GOLD

2021 Work Report
RLX PROPERTY
Helicopter Borne Airborne Magnetic Survey
Red Lake Area, Ontario
Solstice Gold Corp.

Work Conducted: February 8 to February 13, 2021

NTS: 052N05, 052N06, 052N12

Work conducted by:

Prospectair Geosurveys, Joel Dube - Dynamic Discovery Geoscience

Report prepared by:

Bruce A. Barham, MSc., PGO

Senior Geologist

For: Solstice Gold Corp.

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1.0 SUMMARY

This report presents an airborne magnetic survey completed for Solstice Gold Corp over its RLX Property northwest of Red Lake, Ontario. Previous exploration results completed in the area of the property are also described. Additional exploration beginning with geological mapping and prospecting is recommended.

2.0 INTRODUCTION – EXPLORATION TARGET

This is the first report submitted by Solstice Gold Corp. (Solstice) on its recently acquired RLX Property in the Nungesser Lake area north-east of Red Lake, Ontario. Solstice is a gold explorer with expertise in the Red Lake area. The RLX Property is poorly exposed and has only seen limited exploration in the past. The RLX Property is transected by structures that can be traced directly to gold deposits near Red Lake. Assessment records record rock types on the RLX Property important in the stratigraphy of some Red Lake gold mines. Solstice has initiated the exploration of the RLX Property for its lode gold potential.

This report introduces the results of a helicopter borne airborne magnetic survey conducted over the RLX Property, Red Lake area, Ontario, for Solstice Gold Corp. The high-resolution survey was flown by Prospectair Geosurveys of Gatineau, Quebec between February 8, and February 13, 2021. Appendix A provides project costs and other details pertinent to this submission. A technical report prepared by Joel Dubé (Dynamic Discovery Geoscience) provides the details of the survey in Appendix B. Figure 1 shows the location of the RLX property.

Personnel for the 2021 geophysical program were provided by the contractor, Prospectair Geosurveys, and details are provided in Appendix B. This report is prepared by B. Barham who assisted in the design of the survey, collated the acquired data and prepared the maps for this report.

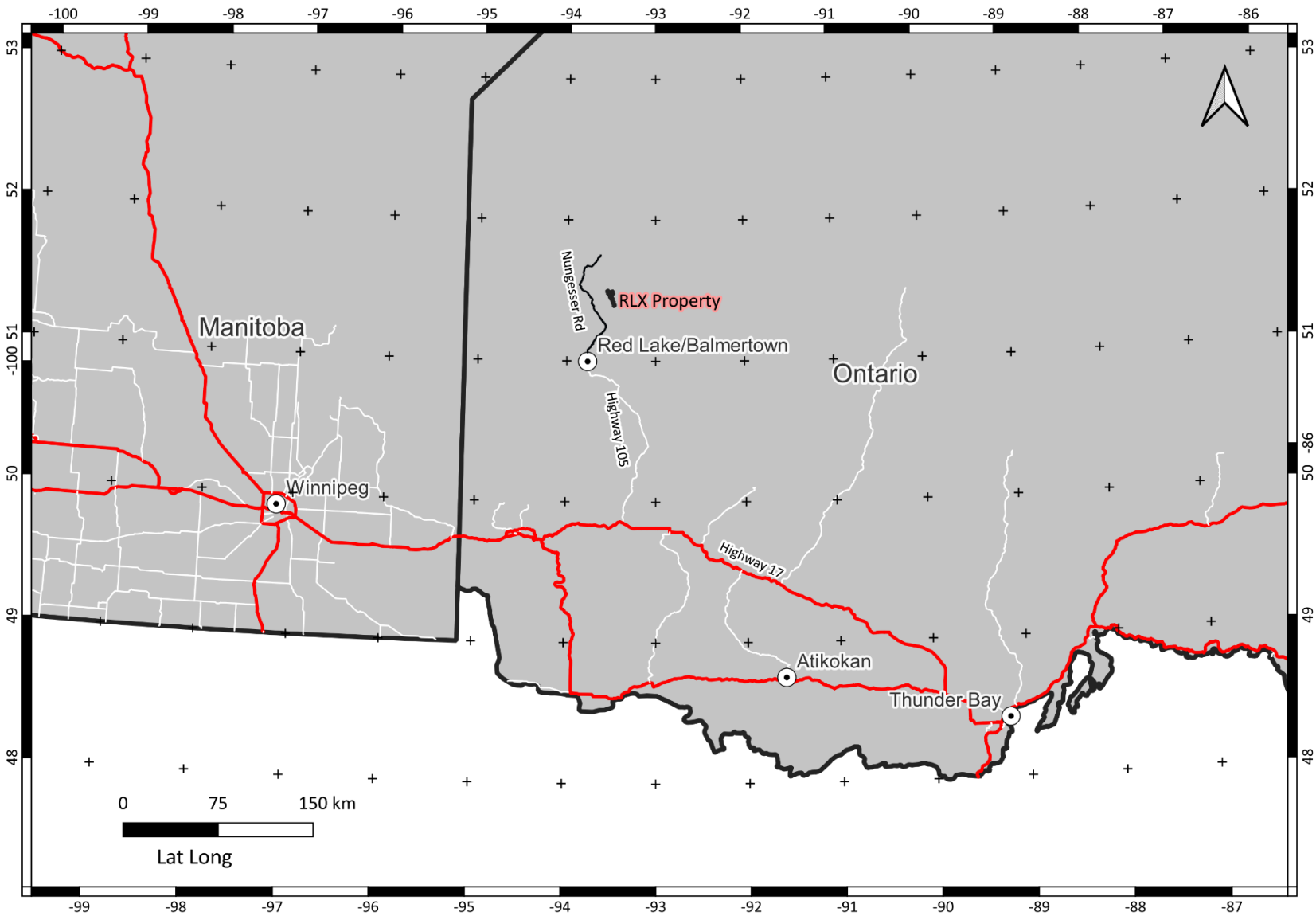


Figure 1: RLX Property Location

3.0 PROPERTY DESCRIPTION, LOCATION

The RLX Property is located about 40 kilometers north-northeast of the Balmertown townsite and consists of multicell claims as shown on Figure 2 and listed in Table 1.

Table 1: RLX Property Claims

Number	Township	Tenure	Issued	Anniversary	Status	Work	Recorded Holder
632352	HANTON LAKE AREA, NUNGESSER LAKE AREA	MC	2021-01-26	2023-01-26	Active	$9,600	(10004221) Solstice Gold Corp.
632353	HANTON LAKE AREA, NUNGESSER LAKE AREA	MC	2021-01-26	2023-01-26	Active	$6,800	(10004221) Solstice Gold Corp.
632354	NUNGESSER LAKE AREA, PRINGLE LAKE AREA	MC	2021-01-26	2023-01-26	Active	$10,000	(10004221) Solstice Gold Corp.
632355	HANTON LAKE, NUNGESSER LAKE, PRINGLE LAKE, STOREY LAKE	MC	2021-01-26	2023-01-26	Active	$9,600	(10004221) Solstice Gold Corp.
632356	NUNGESSER LAKE AREA	MC	2021-01-26	2023-01-26	Active	$6,400	(10004221) Solstice Gold Corp.
632357	HANTON LAKE AREA, NUNGESSER LAKE AREA	MC	2021-01-26	2023-01-26	Active	$7,200	(10004221) Solstice Gold Corp.
632360	HANTON LAKE AREA	MC	2021-01-26	2023-01-26	Active	$2,400	(10004221) Solstice Gold Corp.
632361	HANTON LAKE AREA	MC	2021-01-26	2023-01-26	Active	$2,800	(10004221) Solstice Gold Corp.
632362	HANTON LAKE AREA	MC	2021-01-26	2023-01-26	Active	$5,200	(10004221) Solstice Gold Corp.
632363	HANTON LAKE AREA	MC	2021-01-26	2023-01-26	Active	$5,600	(10004221) Solstice Gold Corp.

The claims were registered by Gravel Ridge Resources Ltd. (10002746) on January 26, 2021 and transferred 100% to Solstice Gold Corp. (10004221) on January 4, 2022. Assessment work was completed when the claims were under option by Solstice Gold Corp.

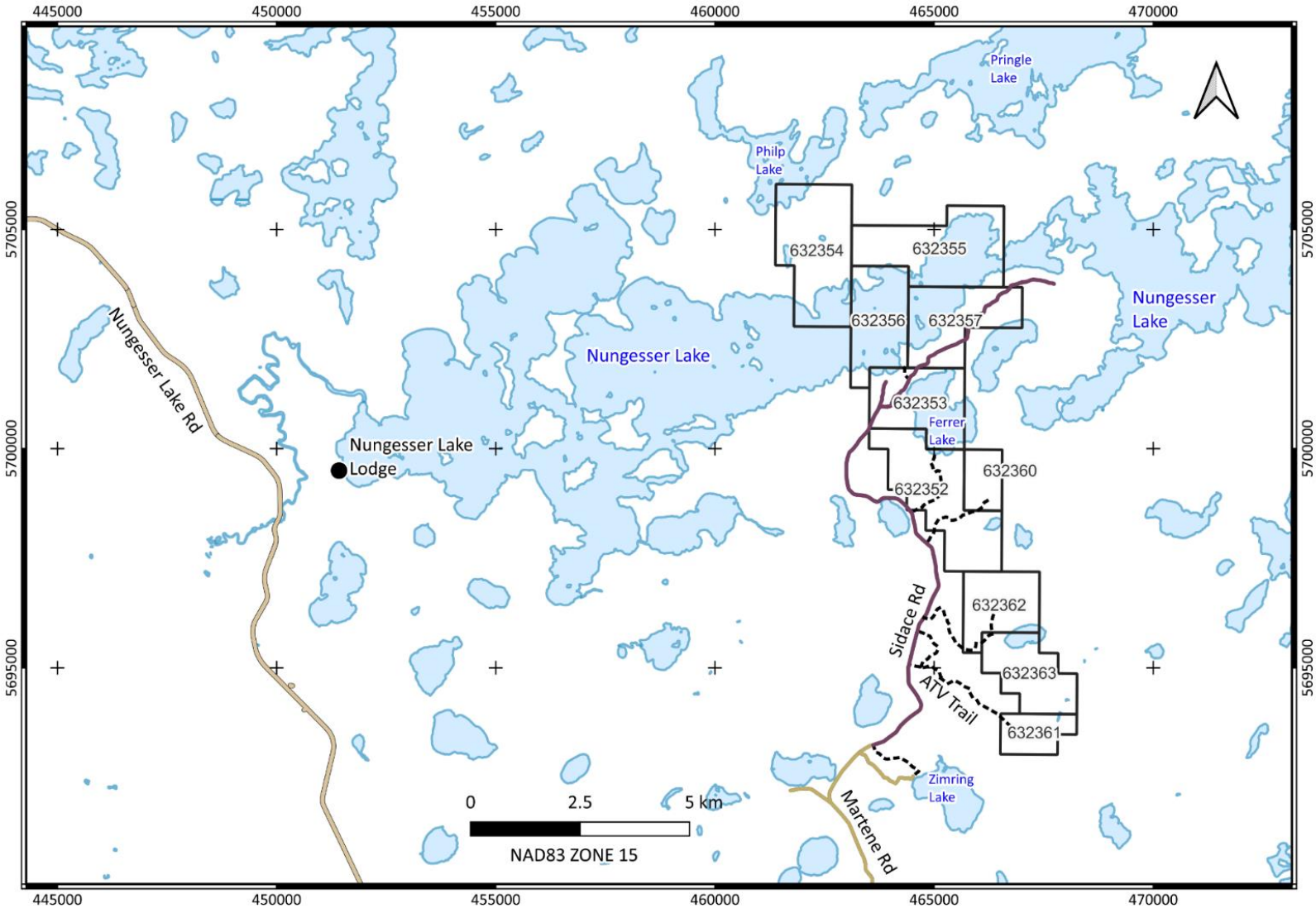
4.0 ACCESS, PHYSIOGRPAHY, CLIMATE, LOCAL RESOURCES

Red Lake, Ontario is a full-service community where lodging, groceries, field gear, vehicle rentals and shipping can be arranged. Additionally, fishing lodges are sometimes available to provide lodging and logistical support for exploration.

The physiography of the project area is characterized by flat to gently undulating terrain with local topographic highs ranging to 50 meters above stream valleys. The Property is mixed mature and logged boreal forest consisting of black spruce in lowlands alternating with pine dominated areas on higher ground and sandy areas. The Property is covered by unconsolidated glacial till and glacio-fluvial sand. There is limited outcrop exposure as a result of the extensive glacial overburden.

The climate of the area is sub-arctic / northern continental with a wide range of temperatures from lows of -40ºC in winter to highs of +35ºC in summer. Snow usually starts to fall in late October to early November and starts to melt in March. During the summer, the area experiences a moderate climate with periodic rain showers and can be impacted by atmospheric depressions centered on Hudson's Bay. The

Figure 2: RLX Claims



area has been subject to extensive forest fire activity in recent years and the mossy forest cover of substantial portions of the RLX Property has been affected.

The property is accessed via the Nungesser Road that intersects Hwy 125 near Balmertown (Figure 3). The following records directions from the intersection of the Nungesser Road with the Coli Road near kilometer 30 of the Nungesser Road where the Sidace gold exploration property is shown on Figure 3. Road names are recorded in the ODM roads and trails database. Take the Coli Road east of the intersection with the Nungesser Road for about 4 kilometers to the intersection with the Martene Road. Travel north on the Martene Road for about 10 kilometers to the intersection with the Sidace Road. Until 2021, truck travel was limited to about 2 kilometers past the Martene Road intersection and only ATV vehicles could travel past this point. In 2021, the Sidace Road was rehabilitated for vehicle travel, removing mostly deadfall and alder growth, making it possible to access the southern shoreline of Nungesser Lake. Stream crossings no longer have installed culverts and so are subject to erosion and may be impassable during times of high-water flow. The Sidace Road and ATV trails originating on the Sidace Road provide direct access to the property.

The property crosses Nungesser Lake towards its northern extent (Figure 2). Access to the northern shore of Nungesser Lake is provided by boat. For work conducted in 2021, boats were rented from the Nungesser Lake Lodge (Figure 3), which also provided lodgings.

5.0 HISTORY

The RLX Property has had limited exploration activity in the past. Much of the work conducted in the area has been of regional scale for exploration target generation using geophysics, soil sampling, and some diamond drilling. Dome Exploration Ltd (1980) conducted more detailed geophysical surveys with follow-up diamond drilling and Rampart Ventures Ltd. conducted overburden sampling, geophysical surveys, geological mapping, and soil sampling over more than 50% of the RLX property between 2003 and 2005 (Bowdidge, 2005, Collins et al., 2005).

Dome Exploration Ltd. conducted an airborne magnetic survey in 1977 performed by Questor Surveys Ltd, using the input method (Pollock, 1978). This survey covered an area of 629 km^2 with a goal of targeting base metal occurrences. Dome Exploration Ltd. followed up on targets generated by airborne surveys with gridding and ground electromagnetic and magnetic surveys in 1988 (Bergmann 1978a, 1978b; Woodard 1979a, 1979b). In 1980, 11 drillholes were completed in the area targeting electromagnetic geophysical anomalies (Dome Exploration Ltd., 1980). Anomalous gold values are reported

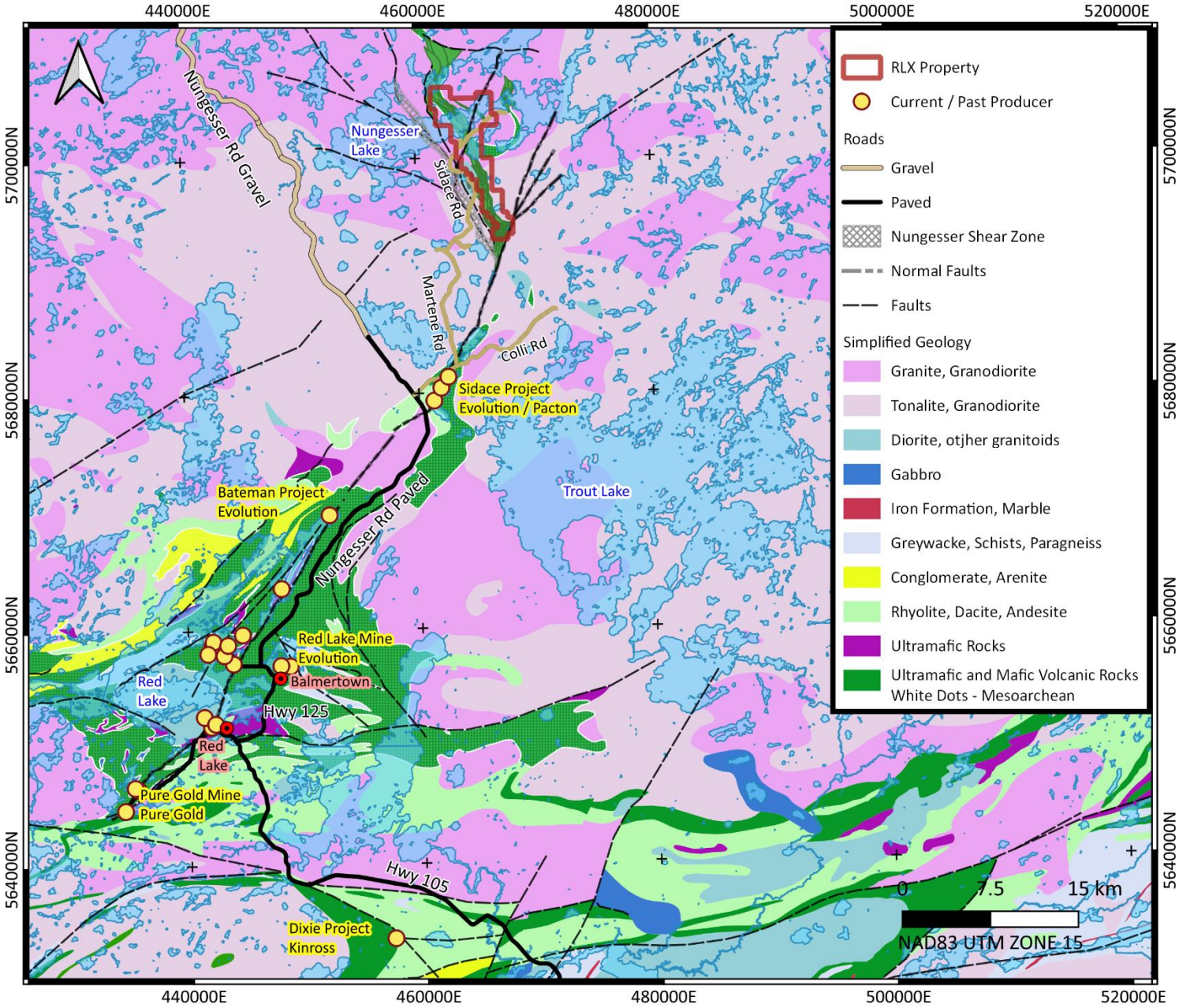


Figure 3: Red Lake Area, Regional Geology, Property Access

in two drill holes while in others trace gold values or no assays are reported. Most drill collars are plotted on Figure 4 and details of the collars are listed in Table 2.

Table 2: Dome Exploration Diamond Drilling

HOLE_ID	_83UTM15E	_83UTM15N	ELEV_M	SIZE	DIP	AZ	OB	LENGTH	NTS_NUM	AREA	NOTE
122A-1	467797	5705048	401	AQ	-52	85	1.8	79.86	52N06NW	Hanton	
122A-1A	467846	5705093	398	AQ	-52	260	3.9	62.79	52N06NW	Hanton	
122A-2	467992	5704792	391	AQ	-51	80	7.9	177.70	52N06NW	Hanton	
122A-2A	468116	5704857	391	AQ	-59	265	17.9	100.89	52N06NW	Hanton	
122B-1	465899	5698527	429	AQ	-49	206	7.9	163.37	52N06NW	Hanton	
122B-2	467334	5697918	430	AQ	-48	90	6.4	118.87	52N06NW	Hanton	
122B-3	464810	5700367	393	AQ	-53	68	16.46	92.96	52N05NE	Nungesser	
122B-4	465108	5700432	393	AQ	-55	68	31.71	108.81	52N05NE	Nungesser	
122B-5	464404	5701886	396	AQ	-52	68	26.83	114.60	52N05NE	Nungesser	
122B-6	463724	5703738	392	AQ	-56	68	21.34	122.83	52N05NE	Nungesser	Anomalous Gold
122B-7	465495	5703770	391	AQ	-54	33	17.9	112.17	52N06NW	Hanton	Anomalous Gold
122B-8	464344	5704579	416	AQ	-53	33	4.57	83.52	52N05NE	Nungesser	
122C-1	467013	5692221	437	AQ	-51	62	21	144.17	52N06NW	Hanton	

NOTE: Collar locations modified from ODM DH database based on review of Dome Exploration Maps. Location, overburden (OB) and elevation in meters.

During the winter of 2004, Rampart Ventures Ltd. subcontracted Terraquest Ltd. who flew an aeromagnetic survey on and near the RLX Property (Barrie, 2004). During the summer of the same year, they completed prospecting, geological mapping, soil sampling and ground geophysical surveys (Bowdidge, 2005). Results of this mapping are discussed further below. Collins et al (2005) report on a trenching and soil sampling program also conducted for Rampart Ventures Ltd. The samples were obtained using an excavator and hand dug pits.

In 2008, an airborne geophysical dataset of magnetic and electromagnetic data was released that covers the greenstone enclaves (Ontario Geological Survey, 2008) described in Buse and Prefontaine (2007). The surveys provide a continuous high-resolution base for exploration in the area and mark many electromagnetic anomaly trends yet to be investigated. Some of the better electromagnetic responses are within the RLX claim group.

Recent geological mapping and rock sampling conducted for Pacton Gold Inc. is reported by Tims (2020) on adjoining claims directly west of the RLX Property. Various intermediate to felsic intrusive rock

types were mapped and only a few supracrustal outcrops were noted. Limited rock sampling did not indicate any mineralized areas. The Pacton property covers the Nungesser Deformation Zone, mapped by Stone (1988), but Tims (2020) does not mention the structure.

The airborne survey described in this report was initiated shortly after the claims were staked.

6.0 REGIONAL AND LOCAL GEOLOGY

6.1 Regional Geology

The property covers the southernmost of several known north-south trending greenstone enclaves in granitic rocks referred to as the Southern greenstone sliver by Buse and Prefontaine (2007) in their study of the McInnes greenstone belt and other supracrustal remnants. To the southwest of the property lies the Red Lake greenstone belt mapped in detail by Sanborn-Barrie et al (2004). Buse and Prefontaine (2004) assert that the Berens River greenstone remnants are the strike equivalent of Red Lake greenstone belt rocks.

The oldest rocks identified by Sanborn-Barrie et al (2004) are volcanic, intrusive, and lesser sedimentary rocks of the Balmer Group (ca 2.98 Ga). An overlying sequence of ca 2.94 Ga volcanic, intrusive and sedimentary rocks is identified as the Ball Group and this age is consistent with the oldest volcanic ages reported by Buse and Prefontaine (2007). They also report both Mesoarchean and widespread Neoarchean granitic intrusive ages. The mapping of Bowdidge (2005) and Tims (2020) support a wide range of intrusive ages at the RLX property.

6.2 Local Rock Types and Structural Geology

Bowdidge (2005) provides an outcrop map covering most of the RLX claim group. On Figure 4, this map is compared to the total field magnetics provided by Dubé (2021) in Appendix B. The claim group is marked by central magnetic low that corresponds with a narrow-deformed belt of meta-volcanic and meta-sedimentary rocks on the map of Bowdidge (2005). The metavolcanic rocks are amphibolites and intermediate to felsic fragmental rocks while the metasediments are clastic biotite gneiss to more mature arkose and quartzite. Small outcrops of chemical metasediments represented by oxide iron formation and marl are reported by Bowdidge (2005). Marl is also reported in drill hole 122-C1 which was completed near the southwest limit of the property by Dome Exploration (1980). Prominent magnetic highs correspond with gabbro bodies shown on the map of Bowdidge (2005) including a distinct anomaly associated with the Sanukitoid gabbro described in Litchblau et al (2001). Sanukitoid plutons are known host platinum group mineralization in the Superior Province of Ontario and are regarded as mantle-derived magmas.

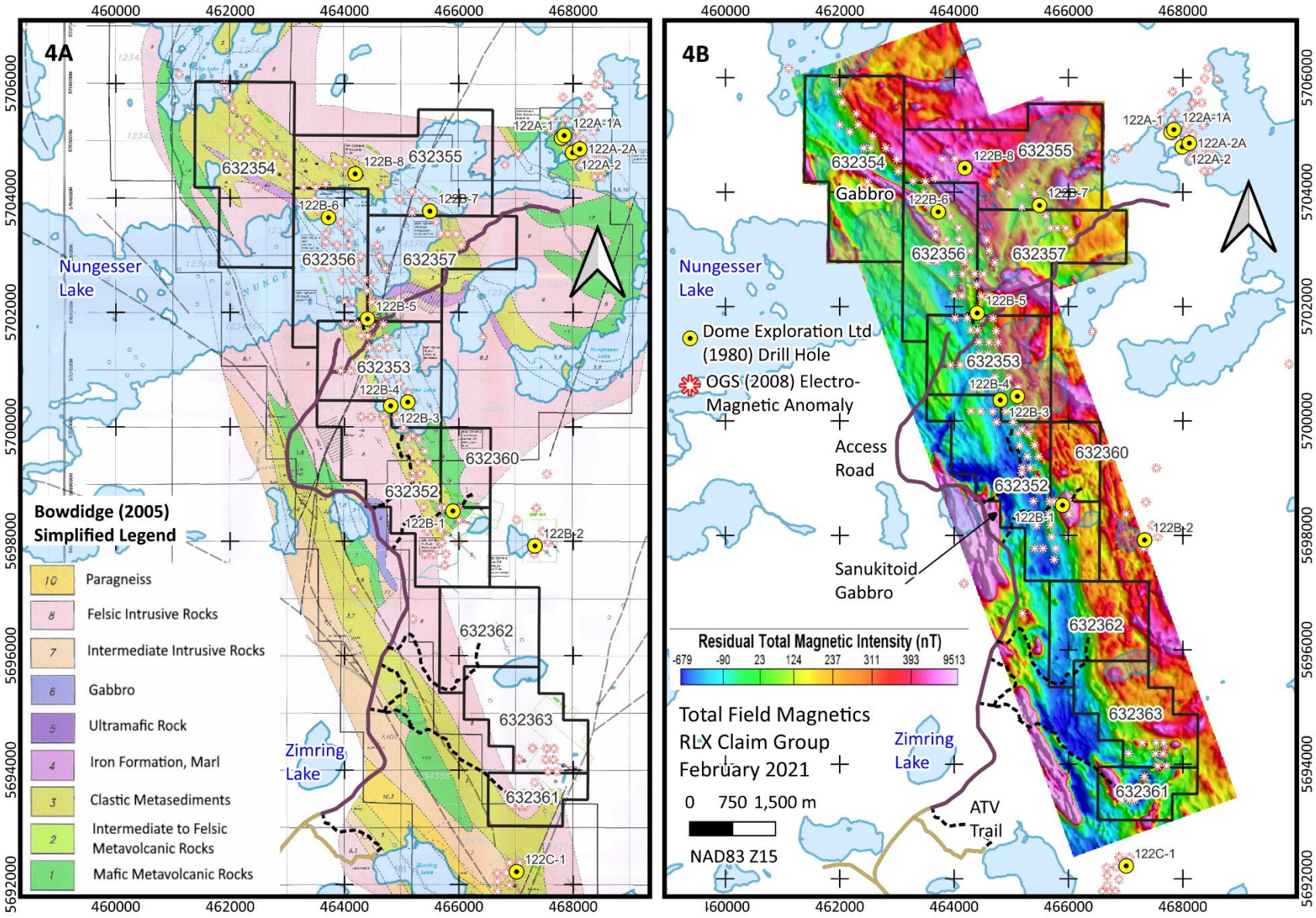


Figure 4: Bowdidge (2005) Geology 4B: Total Field Magnetic Results (2022: This Report)

A northwest trending tectonite (Nungesser Deformation Zone, Figure 3) was mapped by Stone (1988) to the immediate west of the RLX property. The zone is described as a westerly dipping one-kilometer-wide area of schistose, mylonitized and fractured plutonic rocks. A hornblende tonalite body is described as having undergone a one-kilometer sinistral displacement within the zone (Stone, 1988). Bowdidge (2005) mapped these rocks and reports only a few tonalite outcrops exhibiting strong deformation fabrics and maps mature arkosic sediments where Stone (1988) reports tectonized granitoids. Tims (2020) presents detailed mapping in the area reporting some sediments and some granitoids but also does not mention the Nungesser Deformation Zone. Stone (1998) places the development of major mylonite zones among the latest events in the local geologic history broadly coincident with the emplacement of mantle derived Sanuikitoid plutons.

The RLX claim group occurs near the transition between the east-west trending Red Lake greenstone belt to the southwest and north-south trending Berens River greenstone slivers to the north. Sanborn-Barrie et al (2001) describe early north-south (D1) fabrics and folds and northeast – southwest crosscutting D2 fabrics and folds in the Red Lake greenstone belt. Stott et al (2001) report regionally consistent relationships in the Berens River greenstone slivers of D1 fabrics overprinted by D2 dextral shearing producing shallowly south plunging minor folds. Calvert et al (2004) describe an extensional regime interpreted from lithoprobe seismic data that is not reflected in studies of the Red Lake or Berens River greenstones.

Most structural measurements shown on the map of Bowdidge (2005) do not indicate dip direction and where they do, they tend to indicate steeply west dipping rocks. Most structural measurements reported by Tims (2020) indicate NNW-SSE striking foliation and steep westerly dips with some steep easterly dips. Sericite schists are known to mark structures in the area of the Sidace gold zones. A sericite schist has been intersected two drill holes of Dome Exploration Ltd (1980) in the central part of the RLX property suggesting a minimum strike of 1.6 km. Buse and Prefontaine (2007) assert that their mapping of greenstone slivers indicates predominantly east facing overturned west dipping rocks and their age, lithology and geochemistry can be directly correlated with the Red Lake greenstone belt. A comprehensive evaluation of the structure of the RLX property awaits further geological mapping.

6.3 Mineralization

Solstice Gold Corp. acquired the RLX Property for its lode gold potential and believes the rock types and geophysical signature evident at the Sidace gold occurrences are likely present on the RLX Property. Dome Exploration Ltd (1980) reports drill intersected sericite schists, iron formation and skarn that are

associated with gold mineralization in the Sidace area (Power-Fardy and Breede, 2009).

Dome Exploration Ltd (1980) completed thirteen diamond drill holes on or directly adjacent to the RLX property evaluating principally electromagnetic HLEM anomalies (Figure 4). Widespread pyrrhotite as exhalate layers or as secondary disseminations in intrusive rocks appear to be the source of the HLEM anomalies (Figure 4). Dome Exploration Ltd (1980) report anomalous gold values in DDH 122-B6 and DDH 122-B7 collared on the ice of Nungesser Lake (Figure 4). The anomalous values are reported from Quartz Diorite with concentrations of pyrrhotite in DDH 122-B6 and brecciated and silicified quartz feldspar porphyry in DDH 122-B7. Two holes (DDH 122-B3, 122-B5, Figure 4) drilled by Dome Exploration Ltd (1980) intersected intervals of sericite schist suggesting a minimum strike length of 1.6 km. Skarn is also important within the Sidace rocks and is reported in several logs from the Dome Exploration Ltd (1980) drilling. An internal review of the Dome Exploration Ltd (1980) drilling suggests many of the holes failed to explain the anomalies they were targeted to intersect.

Electromagnetic anomalies reported in the OGS (2008) airborne survey are also shown on Figure 4 and support correlation with the Sidace area where electromagnetic anomalies assist in the interpretation of buried stratigraphy.

7.0 EXPLORATION

Exploration of the property is limited to the historical description provided above. The airborne magnetic survey described here constitutes the initial exploration conducted by Solstice Gold Corp. Appendix B (Dubé, 2021) describes the survey and the products resulting from the helicopter airborne survey. These include total field, first vertical derivative and tilt angle derivative treatment of magnetic data as well as a digital elevation model. A discussion of the results is included in Appendix B.

8.0 INTERPRETATION

An initial interpretation of the main elements of the magnetic survey is provided above. Supracrustal rocks correspond to a north northeast-south southwest trending magnetic low continuous over the 14.5 km extent of the airborne magnetic survey. Electromagnetic anomalies reported by the Ontario Geological Survey (2008) define layer parallel anomalies predominantly within this magnetic low. Conspicuous magnetic highs can be correlated with gabbro bodies mapped by Bowdidge (2005) and one of which corresponds to a mantle derived Sanukitoid pluton potentially marking the location of a crustal scale deformation zone. Smaller faults are recognized in the magnetic results as lineaments that truncate and offset magnetic

anomalies. Some of these could be strike equivalents of structures important within gold zones to the southwest. These are identified by Dubé (2021, Appendix B) as possible favourable environments for further exploration. The airborne survey reveals a 14 kilometers low magnetic signature belt corresponding to supracrustal rocks with diagnostic electromagnetic anomalies that regional mapping suggests are correlative with Red Lake greenstone belt rocks. Limited diamond drilling shows that anomalous gold assays and rock types present in known gold mineralized areas occur on the property.

9.0 RECOMMENDATIONS

The magnetic survey provides a powerful base for further exploration of the RLX property. Ground geological mapping and prospecting are recommended to aid in the development of a comprehensive exploration program. Along with prospecting and mapping, a test soil survey should be conducted to evaluate the effectiveness of this technique.

Electromagnetic anomalies (EM) are present at the Sidace gold deposits and the OGS (2008) airborne survey detected EM anomalies on the RLX property. A new tighter spaced combined magnetic/EM survey of the RLX property would assist the tracing and targeting of potential mineralized zones.

Costs of the recommended work are included in Table 3.

Table 3: Recommended Future Work

Work Program	Approximate Cost ($CDN)
Prospecting & Mapping Program	$200,000
Soil Survey	$30,000
Combined magnetic / EM survey	$150,000
TOTAL	**$380,000**

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Woodard, J.A., 1979b. EM and Magnetic Survey for Dome Exploration (Canada) Ltd., Project 122A, Northred in MNDM Assessment File 2.3064.

APPENDIX A: Statement of Qualifications

April 07, 2022

I, Bruce Alexander Barham, do hereby certify that:

1 – I hold a Bachelor of Science, Honours in Geology from the University of Manitoba (1984) and a Master of Science, Geology from Carleton University, Ottawa, Ontario, 1987.

2 – I am a Professional Geoscientist (PGO number 3406) registered with the Professional Geoscientists of Ontario.

3 – I am employed by Solstice Gold Corp. whose head office is Suite 550 - 800 West Pender Street Vancouver, BC, Canada, V6C 2V6

4 – I am the author of this Technical Report on the RLX Property, Red Lake, Ontario.

5 – I supervised the work reported on in this report.

6 – This report is complete and correct to the best of my knowledge.

Signed,

Bruce A. Barham, PGO

Senior Geologist

Solstice Gold Corp.

Calgary, Alberta

APPENDIX B: Report

High-Resolution Heliborne Magnetic Survey
RLX Property, Nungesser Lake Area
Red Lake Mining Division, Ontario, 2021
Technical Report prepared by Joël Dubé, P.Eng. March 2021

Technical Report

High-Resolution Heliborne Magnetic Survey

RLX Property, Nungesser Lake Area
Red Lake Mining Division, Ontario, 2021

Solstice Gold Corporation
800 West Pender Street, Suite 1020
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Prospectair Geosurveys

Dynamic Discovery Geoscience

Prepared by:
Joël Dubé, P.Eng.

March 2021

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Fax: 1.866.605.3653
contact@prospectair.ca

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FIGURES

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I. INTRODUCTION

Prospectair Geosurveys conducted a heliborne high-resolution magnetic (MAG) survey for the mineral exploration company Solstice Gold Corporation on its RLX Property located in the Nungesser Lake area, Red Lake Mining Division, Province of Ontario (Figure 1). The survey was flown from February 8th to 13th 2021.

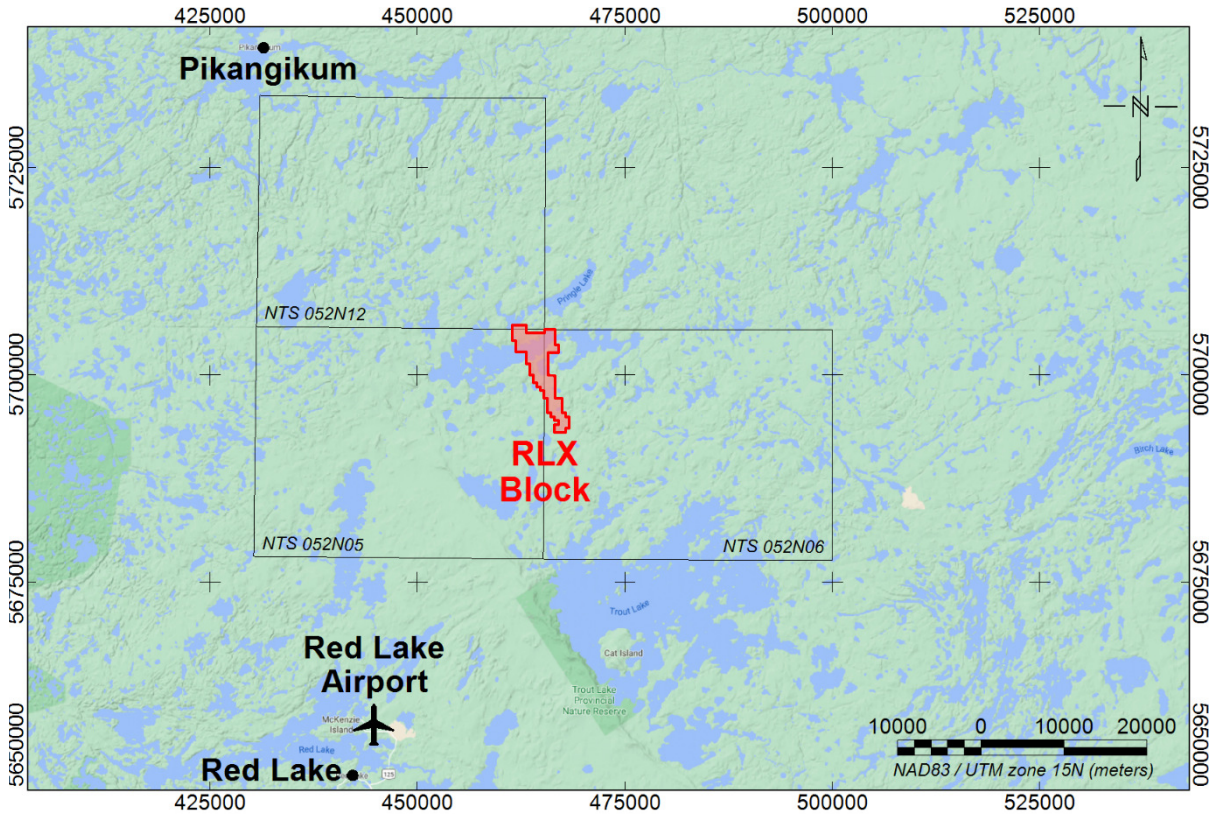
Figure 1: **General Survey Location**

One survey block was flown for a total of 728 l-km. A total of 6 production flights were performed using Prospectair's Eurocopter EC120B, registration C-GTAZ. The helicopter and survey crew operated out of the Red Lake Airport located about 45 km to the south of the block (Figure 2).

Table 1: **Survey block particulars**

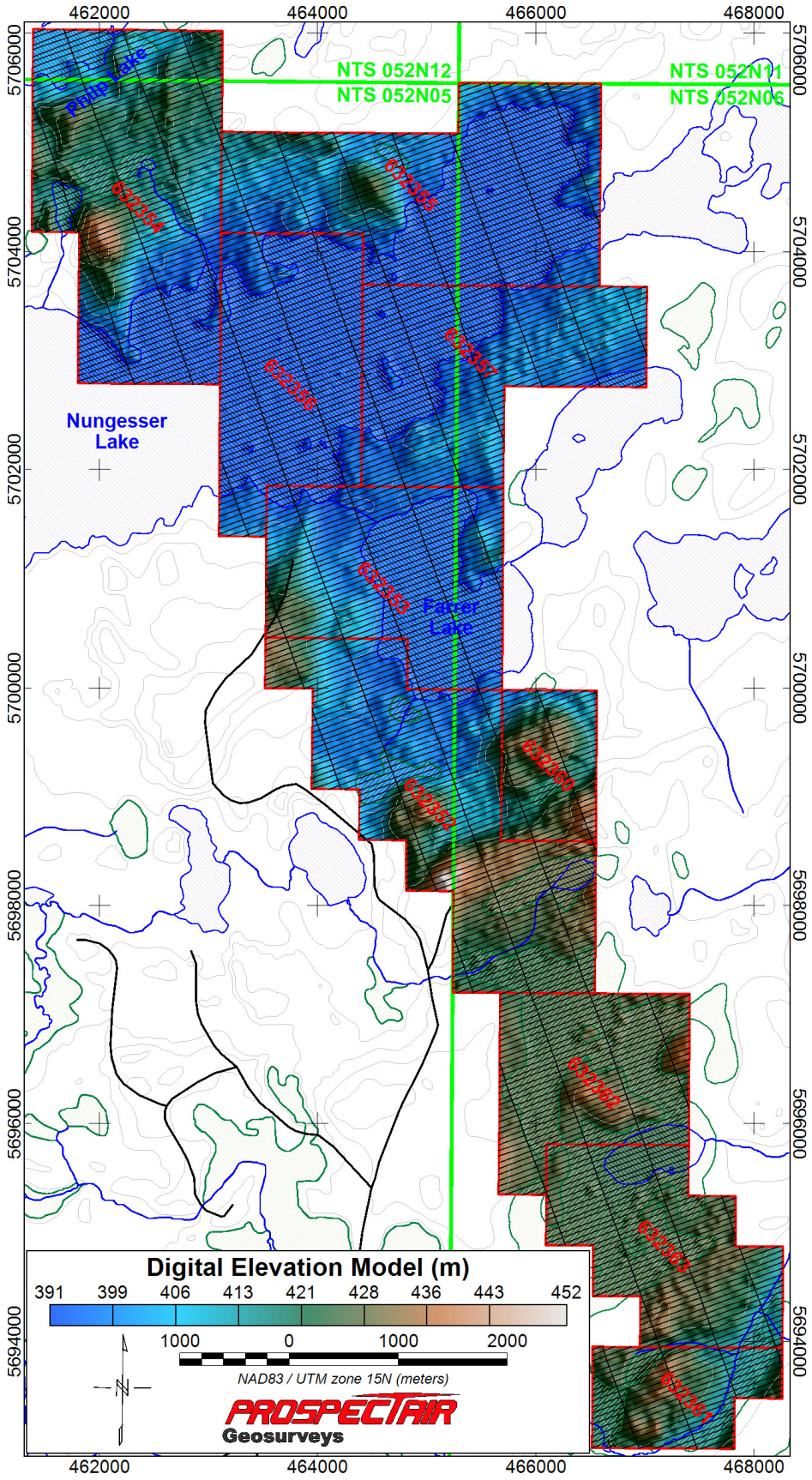
Block	NTS Mapsheet	Line-km flown	Flight numbers	Dates Flown
RLX	052N05, 052N06, 052N12	728 l-km	Flt 1 to 6	February 8th to 13th

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



The RLX block was flown with traverse lines at 50 m spacing and control lines spaced every 500 m. The survey lines were oriented N070 and control lines were flown at an azimuth of N160. The average height above ground of the helicopter was 38 m and the magnetic sensor was at 19 m. The average survey flying speed was 33.0 m/s. The survey area is covered by forest, lakes and a few wetlands, and the topography is generally gently undulating, with a few isolated low-level hills. The elevation is ranging from 391 to 452 m above mean sea level (MSL). The Philip and Farrer lakes, as well as the large Nungesser lake, are all found in the northern half of the survey block. From the ground, the Property can be easily accessed via secondary forestry roads connecting to the main road linking the town of Red Lake (about 50km to the south of the block) to the First Nation Ojibwe Pikangikum community (about 50km to the north of the block). Coordinates outlining the survey block are given in Appendix A, with respect to NAD-83 datum, UTM projection zone 15N. The location of the RLX 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 RLX 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

Eurocopter EC120B (registration C-GTAZ)

The survey was flown using Prospectair's EC120B helicopter that handles efficiently the equipment load and the required survey range. Table 2 presents the EC120B technical specifications and capacity, and the aircraft is shown in Figure 4.

Table 2: **Technical specifications of the EC120B Eurocopter helicopter**

Item	Specification
Powerplant	One 376kW (504hp) Turbomeca Arrius 2F
Rate of climb	1,150 ft/min
Cruise speed	223 km/h – 120 kts
Service ceiling	17,000 ft
Range with no reserve	710 km
Empty weight	991 kg
Maximum takeoff weight	1,715 kg

Figure 4: **C-GTAZ Eurocopter EC120B**

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 RLX Block:

  Traverse lines: Azimuth N070, 50 m spacing.

  Control Lines: Azimuth N160, 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 0.98 s for this survey.

V. FIELD OPERATIONS

The survey operations were conducted out of the Red Lake Airport from February 8th to 13th, 2021. The data acquisition required 6 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 airport, at latitude 51.0703843°N, longitude 93.7952235°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 9.9.1 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 0.98 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 allow 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 allow 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 18 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.

Finally, since the total horizontal gradient, also called First Horizontal Derivative (FHD), is computed as an intermediate product when calculating the TILT values, it is also being offered as part of this report.

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 (CSRS) 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 RLX block, presented in Figure 6, is very active and varies over a range of 10,192 nT, with an average of 188 nT and a standard deviation of 298 nT.

Most of the survey 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. The northeastern half of the block depicts higher background values while its southwestern half is rather characterized by a weaker magnetic background. In a general sense, areas with lower background values and decreased signal variability are likely to be dominated by sedimentary or felsic intrusive rocks, while stronger magnetic bands are probably related to mafic rocks. The strongest magnetic anomalies could relate to magnetite rich iron formations or mafic/ultramafic intrusions. Stronger anomalies are best seen on Figure 7 which shows the residual TMI data with a linear color distribution.

Magnetic lineaments found in the central part of the block are generally striking NNW-SSE. However, lineaments are a lot more variable in orientation both in the northern and southern parts of the block, where they are often curved, and even heavily folded locally, attesting that the area underwent strong 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, which can create low pressure dilation zones. If they are thought to be favorable structures in the exploration context of the RLX 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**

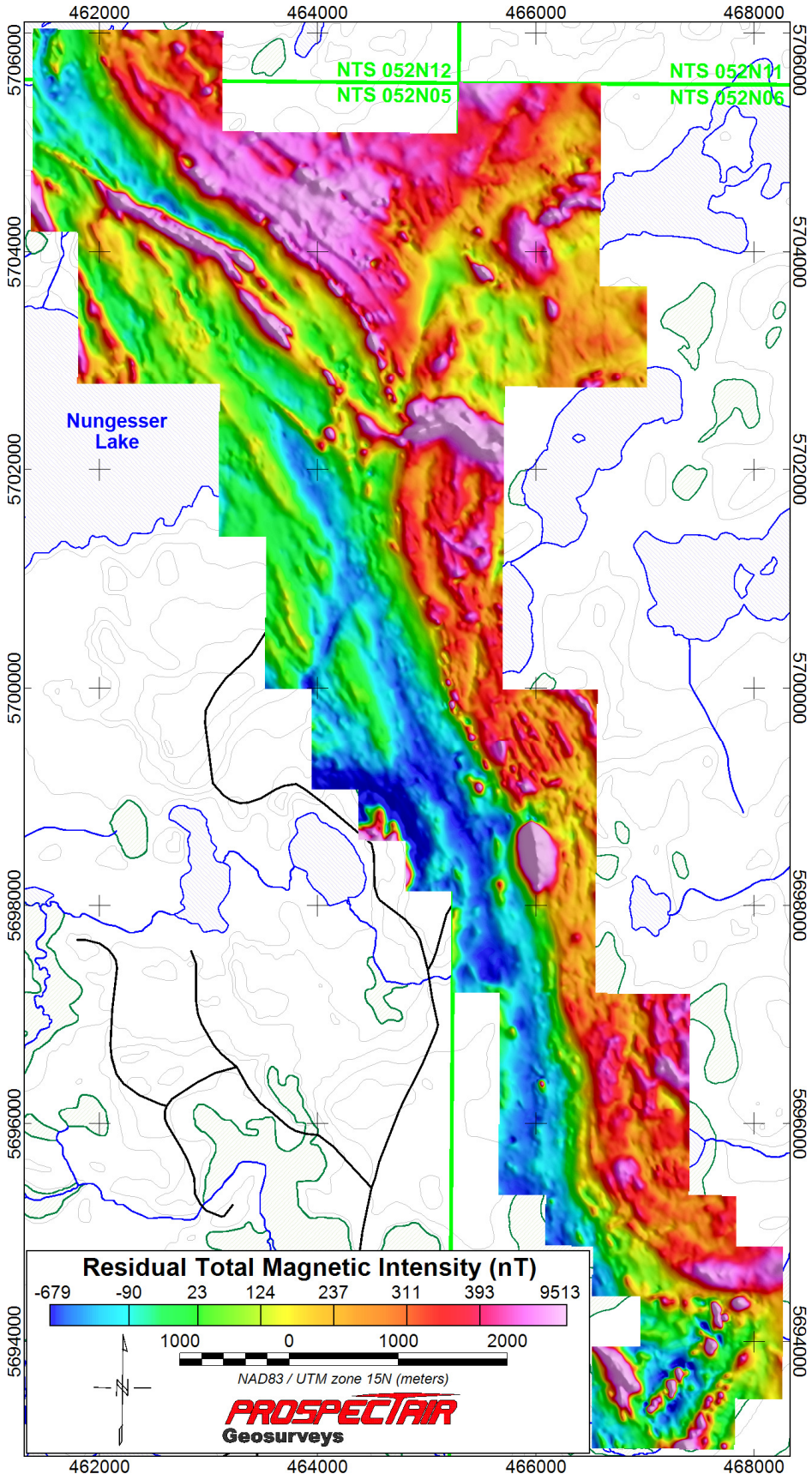


Figure 7: **Residual Total Magnetic Intensity with linear color distribution**

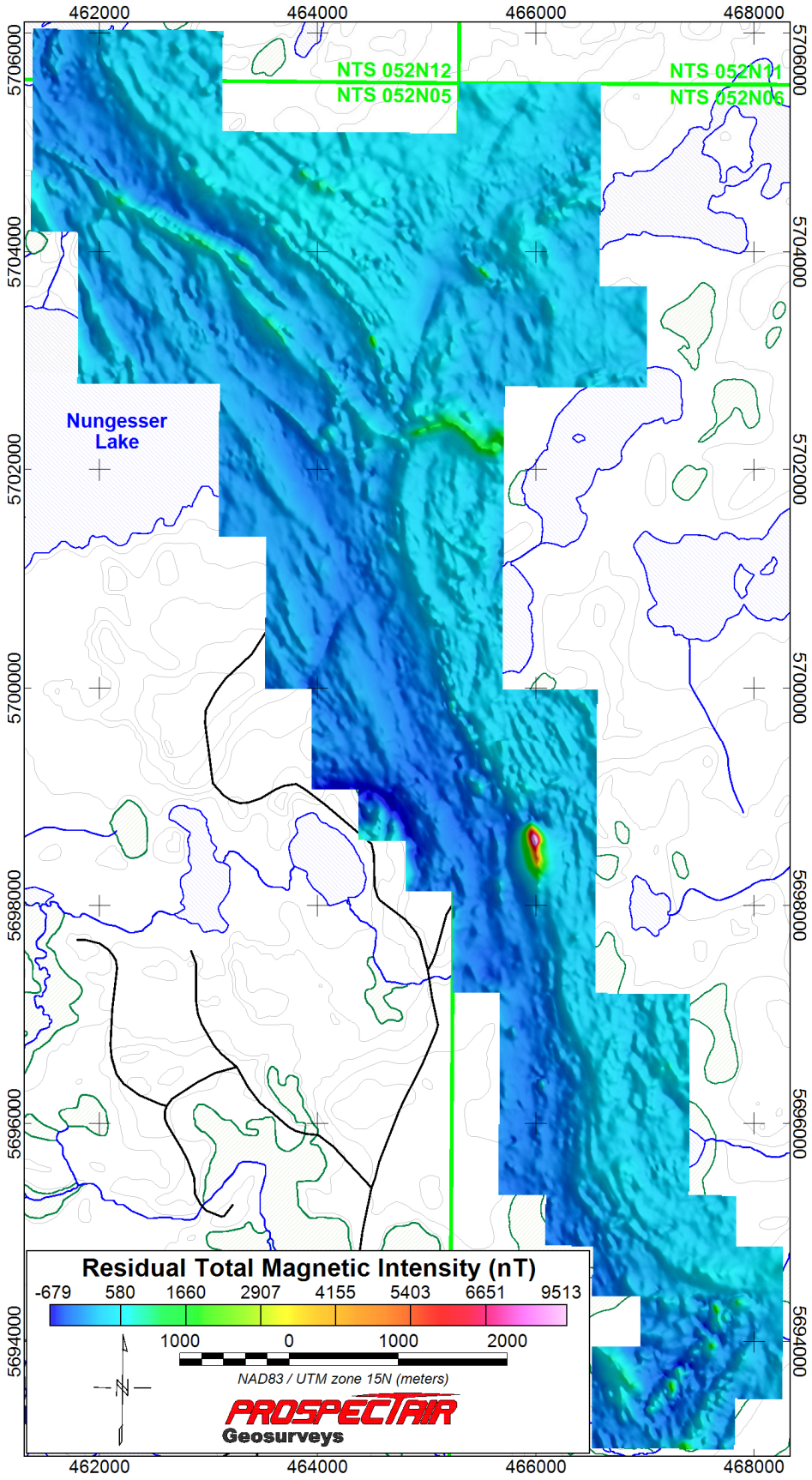


Figure 8: **First Vertical Derivative of TMI**

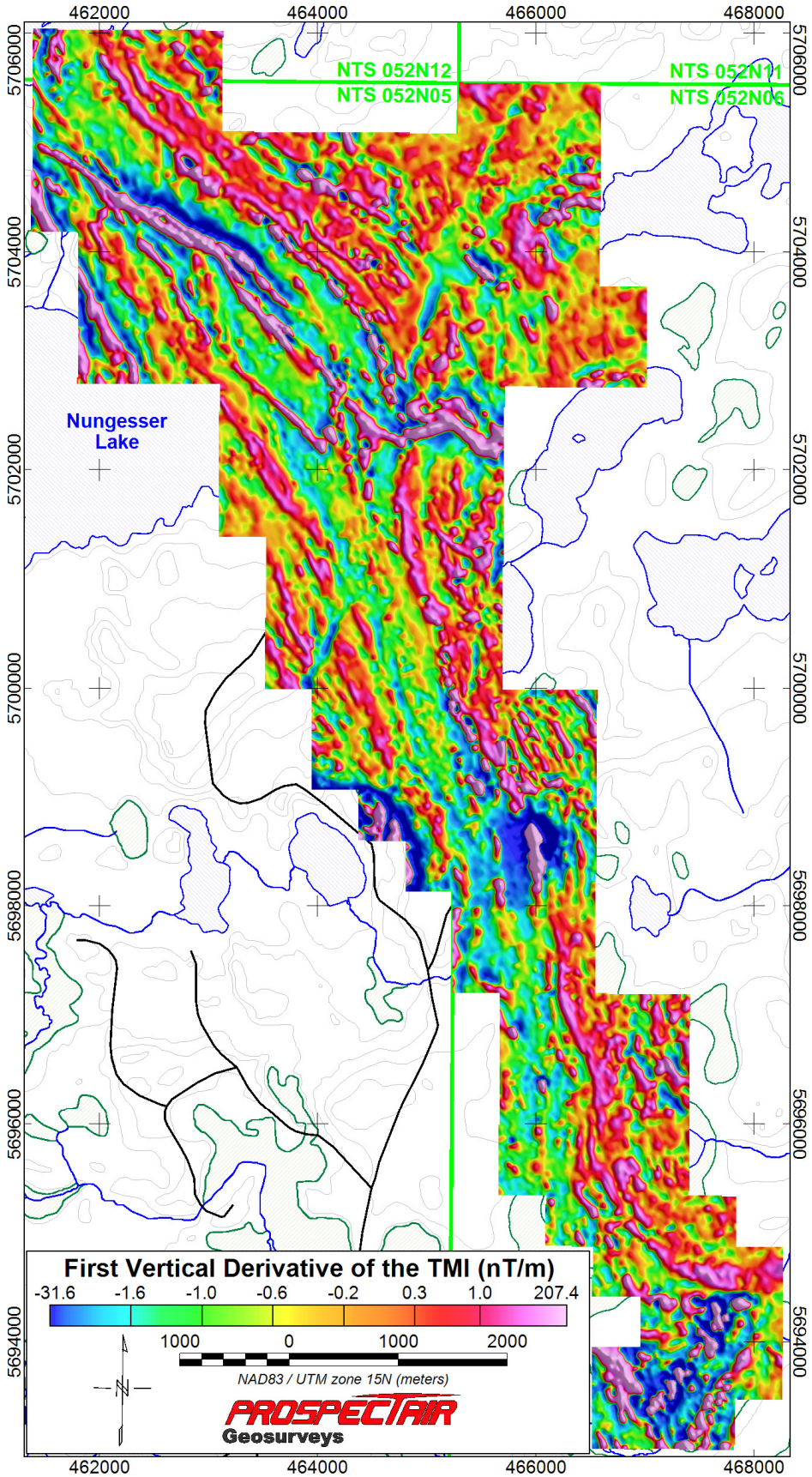
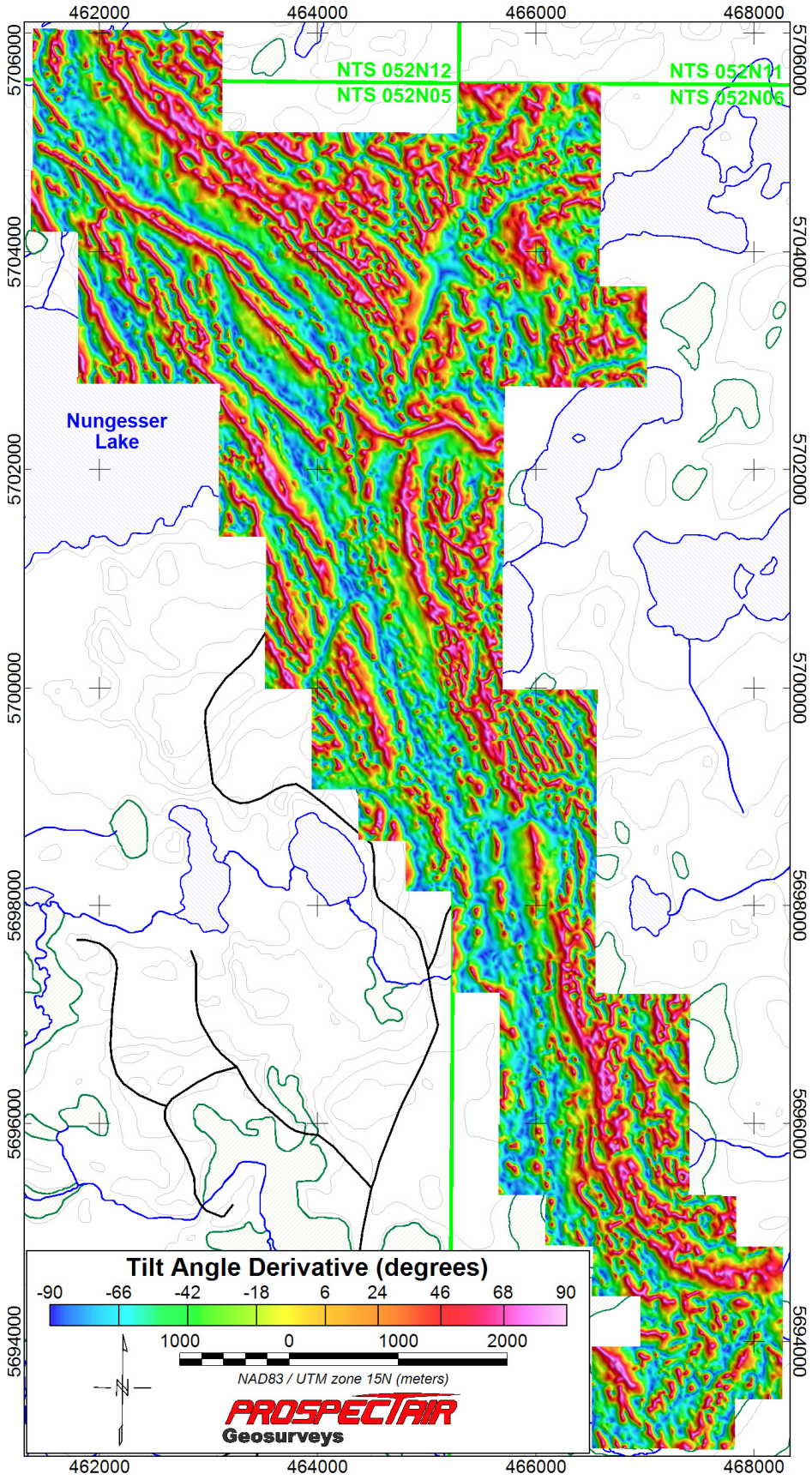


Figure 9: **Tilt Angle Derivative**



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	CDED_DEM	CDED Digital Elevation Model (w.r.t. MSL)	m
8	Terrain	Calculated Digital Elevation Model (w.r.t. MSL)	m
9	GPS_Z	Helicopter altitude (w.r.t. MSL)	m
10	Mag_Raw	Raw magnetic data	nT
11	Mag_Lag	Lagged magnetic data	nT
12	Gnd_mag	Base station magnetic data	nT
13	Mag_Cor	Magnetic data corrected for diurnal variation	nT
14	TMI	Fully levelled Total Magnetic Intensity	nT
15	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 1:20,000 scale and are provided in PDF, PNG, Geotiff 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
8	FHD	First Horizontal Derivative of TMI (total horizontal gradient)	nT/m

Project Report

The report is submitted in PDF format.

Respectfully submitted,

_____

Joël Dubé, P.Eng.
March 29th 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 21 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 29th day of March, 2021

_____
Joël Dubé, P.Eng. #100194954

X. Appendix A – Survey block outline

RLX Block

Easting	Northing
467820	5693017
466510	5693025
466517	5693958
466951	5693955
466954	5694412
466519	5694415
466522	5694879
466087	5694881
466091	5695345
465656	5695348
465668	5697202
465234	5697204
465240	5698131
464805	5698134
464809	5698597
464383	5698600
464375	5698623
464378	5699064
463943	5699067
463950	5699994
463515	5699997
463526	5701387
463091	5701390
463102	5702780
461800	5702790
461810	5704180
461376	5704183
461390	5706042
463130	5706029
463124	5705102
465288	5705087
465291	5705550
466598	5705541
466586	5703688
467019	5703686
467013	5702753
465711	5702762
465692	5699987
466561	5699981
466543	5697201
467412	5697195
467400	5695342
467835	5695339
467832	5694876

468266	5694873
468258	5693477
467823	5693480

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

Tenure number	Holder
632352	(100) Gravel Ridge Resources Ltd.
632353	(100) Gravel Ridge Resources Ltd.
632354	(100) Gravel Ridge Resources Ltd.
632355	(100) Gravel Ridge Resources Ltd.
632362	(100) Gravel Ridge Resources Ltd.
632356	(100) Gravel Ridge Resources Ltd.
632357	(100) Gravel Ridge Resources Ltd.
632360	(100) Gravel Ridge Resources Ltd.
632363	(100) Gravel Ridge Resources Ltd.
632361	(100) Gravel Ridge Resources Ltd.