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Report on the
2022 Helicopter-Borne Geophysical Survey
Texmont property, Porcupine Mining Division, Northeastern Ontario
NTS 42A03

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Summary

Canada Nickel Company (“CNC”) contracted the services of Balch Exploration Consulting Inc. (BECI) to carried out an AirTEM survey in Texmont township near Kirkland Lake, Ontario, Canada. The objective of the survey is to define the boundaries of an ultramafic intrusion using the total magnetic intensity and to determine where it is most strongly serpentinized using the electromagnetic response. Exploration in the area dates to the late 1940s with airborne magnetic surveys and follow up groundwork, that resulted in the making of a compartment shaft as well as five drifts. The mine operated from July 1971 to December 1972. Exact figures are not available, but it is estimated that a maximum of 255,000 tons were milled during this period.

An AirTEM survey consisting of magnetic and electromagnetic measurements, has been flown over the Texmont Property located south of Timmins, Ontario. The property consists of several mineral claims held by Canada Nickel, as well as fourteen mining leases, in the search for large tonnage, low grade nickel, cobalt, and platinum group elements (PGE) mineralization.

The Texmont Property is located approximately 37 km south of the town of Timmins with access through Pine Street south, a road that extends north south from Timmins and it reaches Highway 560 on its south end. Access to the property is achieved through an old gravel road located approximately at the km 37 marker, which then continues approximately 7km east after leaving Pine Street.

The exploration model is based on the presence of large ultramafic sills largely composed of dunite that have been serpentinized to liberate the nickel from the silicate mineral olivine resulting in nickel grades ranging from 0.15-0.35% Ni with a typical average grade of 0.25% Ni. Their proximity to surface makes them suitable for large-scale open pit mining methods.

The AirTEM survey has confirmed the magnetic feature with associated week EM response that is consistent with serpentinized ultramafic intrusions. The intrusion has approximate dimension of 2 km along strike by 250 m across strike with a strike direction of 10^{o} (NNE) and a steep dip to the east.

The trend identified on the Texmont Property is confirmed by previous drilling in the 1960s, as well in the early 2000s, which intersected serpentinized ultramafics. The next phase of exploration, begun in the winter of 2022, with a narrow spacing drill program aiming to “infill” areas not properly covered in the historic programs. The goal will be to combine the available and verified historic drillhole information, together with the new information from the winter 2022/2023 drill program in order to produce an accurate and current resource estimate.

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1.0 Introduction

Canada Nickel Company Inc. is advancing the next generation of nickel-cobalt sulphide projects to deliver nickel and cobalt required to feed the high growth electric vehicle and stainless-steel markets. Canada Nickel Company is pursuing the development of processes to allow the production of net zero carbon nickel, cobalt, and iron products. Canada Nickel is currently anchored by its 100% owned flagship Crawford Nickel-Cobalt Sulphide Project and continues to explore its regional properties in the Timmins-Kirkland Lake districts.

The Texmont Property is located 75 kilometres south of Crawford but only 37 km south of Timmins. The property consists primarily of an ultramafic body having a preliminarily defined strike length of 2.0 kilometres. This prospect was more recently tested by Fletcher Nickel Inc (2008) which intersected a series of komatiite, peridotites and altered peridotites containing strong sulphide mineralization.

CNC contracted BECI to complete an AirTEM survey from October 23rd to October 24th, 2022, totaling 47 kilometres of flight lines. The objective of this survey was to identify the extents of the ultramafic intrusion using the total magnetic intensity and to determine where it is most strongly serpentinized using the electromagnetic response.

2.0 Property Description, Location and Access

The Texmont Property is in the Porcupine Mining District, Northern Ontario, Canada, starting approximately 37 km south of Timmins (Figure 1). The survey covered a single block covering the entire length and width of the mining leases.

The Property is located within the NTS topographic sheet 042A03. The approximate centre of the property is located at UTM coordinates 484900E, 5335000N Zone 17U NAD83. The Texmont Target is comprised of 14 single mining cells and 14 mining leases totaling approximately 397 hectares (Figure 2).

The mining claims are registered to Canada Nickel Company Inc (100%), at the time of this report. Table 1 summarizes the land tenure.

The closest access road is Pine Street south, which starts in the town of Timmins, and extends south towards highway 560. At km 37, one gravel road off Pine Street, provides access to the property, roughly 7 km east from the Pine Street intersection. The base of operations was Cedar Meadows, located in Timmins.

Figure 1. Texmont Property Regional location.

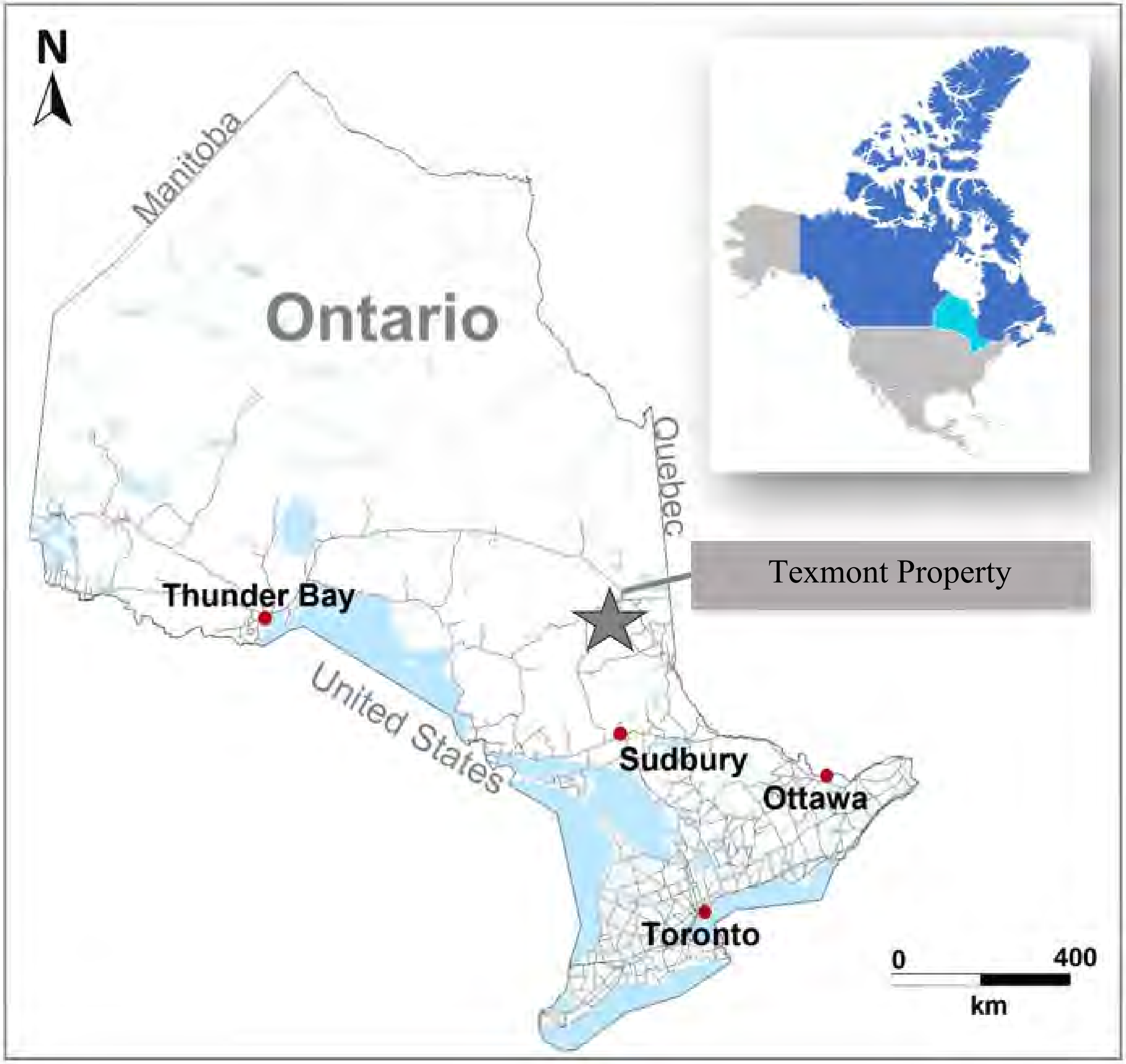


Figure 2. Texmont Property claim fabric.

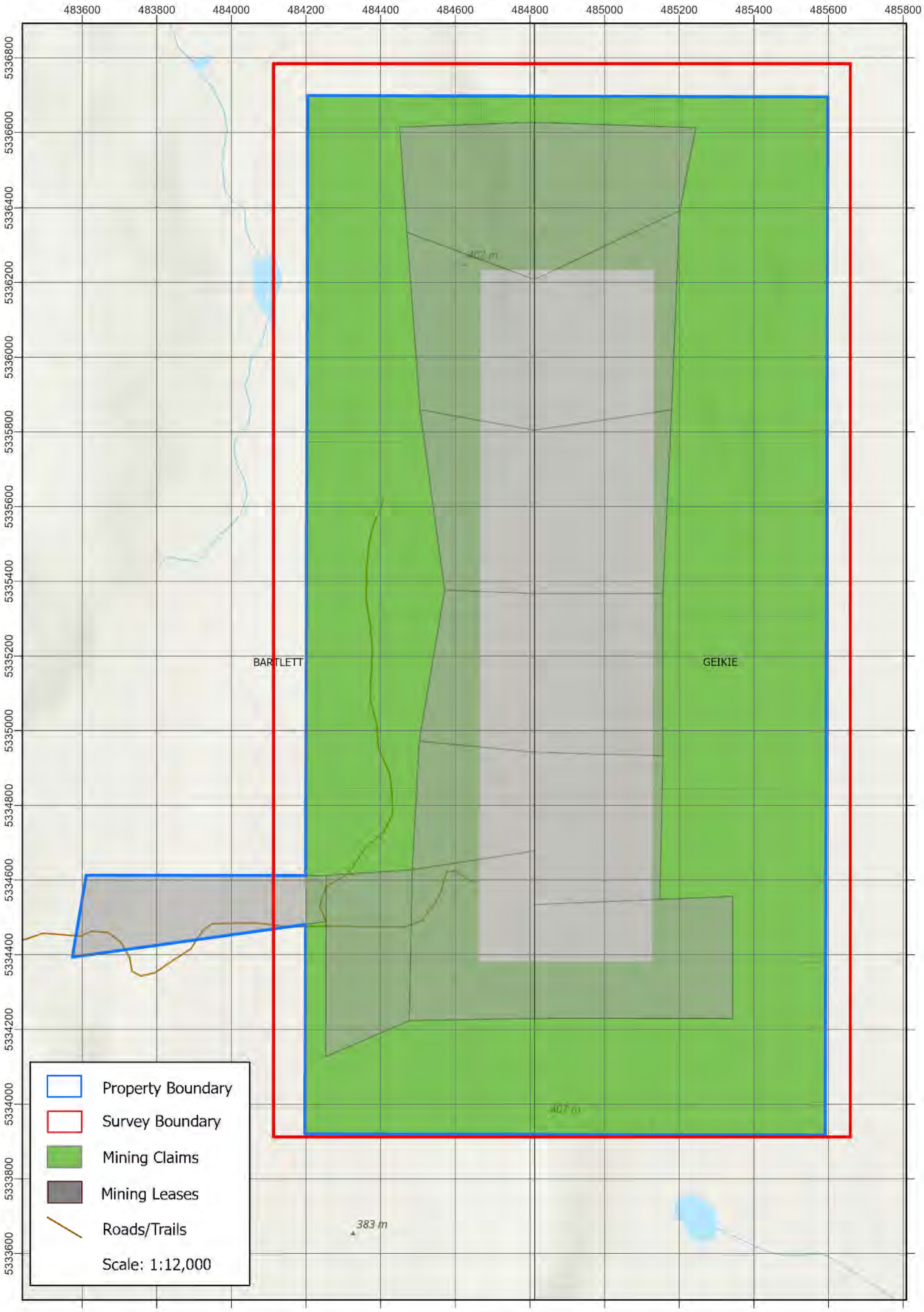


Table 1. Land Tenure details of the Texmont Property. Source MLAS.

Claim #	TYPE	ISSUE_DATE	CLAIM_DUE		Tenure #	TYPE	Rights
549297	SCMC	2019-05-04	2023-05-04		LEA-20041	Lease	MSR
549298	SCMC	2019-05-04	2023-05-04		LEA-20038	Lease	MSR
549299	SCMC	2019-05-04	2023-05-04		LEA-20028	Lease	MSR
549422	SCMC	2019-05-07	2023-05-07		LEA-20033	Lease	MSR
584044	SCMC	2020-04-13	2023-04-13		LEA-20030	Lease	MSR
584045	SCMC	2020-04-13	2023-04-13		LEA-20031	Lease	MSR
584046	SCMC	2020-04-13	2023-04-13		LEA-20032	Lease	MSR
584047	SCMC	2020-04-13	2023-04-13		LEA-20029	Lease	MSR
584048	SCMC	2020-04-13	2023-04-13		LEA-20034	Lease	MSR
584049	SCMC	2020-04-13	2023-04-13		LEA-20035	Lease	MSR
584043	SCMC	2020-04-13	2023-04-13		LEA-20039	Lease	MSR
591707	SCMC	2020-05-24	2023-01-24		LEA-20037	Lease	MSR
591708	SCMC	2020-05-24	2023-01-24		LEA-20040	Lease	MSR
591709	SCMC	2020-05-24	2023-01-24		LEA-20036	Lease	MSR

3.0 Climate, Physiography, Infrastructure

3.1 Climate

The Property lies within the Subarctic Climate zone, which has short, cool summers and long, cold winters, with precipitation mostly in the form of snow. Snow squalls occur from October to June, and the frost-free period hardly exceeds 90 days. During summer months, the temperatures can reach 30°C and higher, and in the winter the temperatures can drop below -40°C. Occasionally, fieldwork is not permitted due to forest fire danger and the MNR may prevent access during such times.

The Property is also part of the Boreal Shield ecozone which has relatively low tree growth rates and timber volumes compared with other forested ecozones in Canada (see data @ http://nlwis-snite1.agr.gc.ca/plant00/index.phtml). Tree species in the Boreal Shield ecozone include white and black spruce, balsam fir, tamarack, trembling aspen, white pine, red pine, jack pine, maple, eastern red cedar, eastern hemlock, paper birch, among others. Mammals include but not limited to, moose, black bear, wolf, chipmunk, beaver, muskrat, snowshoe hare. Waterfowl are seen on lakes during the ice-free season, and fish can be abundant in some lakes and the larger perennial streams.

3.2 Physiography

The Properties display a typical “Laurentian Shield” landscape composed of rough forest covered ridges and outcrops filled in between with boulder and gravel glacial tills, as well as swampy tracts, beaver ponds and small lakes. Eskers occur to the south and west and extensive moraine ridges can be seen on forest access roads. The nearest main waterway is the Redstone River about 2 km to the east of the Texmont Property. The Redstone is a part of the Arctic Ocean drainage system of North America flowing into James Bay. Flood stage occurs on the Redstone during the spring (late May and early June), as it drains northwards from the Arctic-Atlantic watershed just a few kilometers to the south. Elevation above sea level is *circa* 360 m.

Previous geological mapping indicates that <5% of the properties comprise outcrop. On the Texmont Property, outcrops of komatiitic ultramafics, including nickel sulphide mineralized outcrop, is visible immediately south of the former Texmont Mine.

3.3 Infrastructure

Northeastern Ontario, especially the Timmins and Kirkland Lake areas, has a long exploration and mining history focused on VMS and gold deposits that dates back to the turn of the 20th century. A complete range of mining and exploration services and suppliers are available in Timmins, as well as Kirkland Lake, including exploration supplies, diamond drilling companies, machine shops, mining equipment, motels, restaurants, and a large base of skilled personnel. The well-serviced Victor M. Power airport is located 10 km north of Timmins, with flights to Toronto and several small communities. Kirkland Lake also operates its own de-certified airport regulated by Transport Canada. The airport is located 8 km from Kirkland Lake.

4.0 Exploration History

Exploration in the area dates to the early 1950s with geophysics and drilling predominantly. The property was thoroughly explored during the 1950 and 1960s, culminating with the initial exploitation of the deposit in 1971, however it was short lived due to diesel prices and the economic viability of the property.

Work resumed in the 1980s, but no significant work was completed until the 2000s. Table 2 acquired from the Ontario Assessment File Database (OAFD) summarizes the work reported in the area.

Table 2. Historic Exploration work completed in Texmont property (source: OAFD)

AFRI_FID	Year	Company	Description
42A03NE0021	1972	Texmont Mines Ltd	Electromagnetic, Magnetic / Magnetometer Survey
42A03NE0056	1971	Texmont Mines Ltd	Electromagnetic, Magnetic / Magnetometer Survey
42A03NE0103	1951	Dominion Gulf Co	Geological Survey / Mapping, Magnetic / Magnetometer Survey
42A03NE0068	1955	Dominion Gulf Co	Diamond Drilling
42A03NE0060	1965	Texmont Mines Ltd	Electromagnetic, Magnetic / Magnetometer Survey
42A03NE0058	1965	Texmont Mines Ltd	Electromagnetic, Magnetic / Magnetometer Survey
42A03NE2009	2004	Pele Mountain Resources Inc	Assaying and Analyses, Diamond Drilling
42A03NE0013	1992	Bhp-Utah Mines Ltd	Compilation and Interpretation - Ground Geophysics, Electromagnetic, Electromagnetic Very Low Frequency, Geochemical, Geological Survey / Mapping, Magnetic / Magnetometer Survey, Open Cutting, Overburden Studies
42A03NE2001	1992 - 1993	Bhp Minerals Canada Ltd	Assaying and Analyses, Compilation and Interpretation - Diamond Drilling, Electromagnetic, Electromagnetic Very Low Frequency, Geochemical, Geological Survey / Mapping, Magnetic / Magnetometer Survey, Open Cutting
42A03NE8840	1993	Bhp Minerals Canada Ltd	Geochemical, Geological Survey / Mapping
42A03NE0092	1958	Sturdy Mines Ltd	Electromagnetic
42A03NE0099	1961	Sturdy Mines Ltd	Diamond Drilling
42A03NE1103	1952	Dominion Gulf Co	Diamond Drilling
42A03NE0062	1959 - 1960	Noranda Exploration Co, Ultra-Shawkey Mines Ltd	Electromagnetic, Geological Survey / Mapping
42A03NE0027	1989	Inco Gold Co	Electromagnetic, Geological Survey / Mapping, Magnetic / Magnetometer Survey, Prospecting by Licence Holder
42A03NE0091	1965	Conigo Mines Ltd	Electromagnetic, Magnetic / Magnetometer Survey
42A03NE2003	1998	John Charles Grant, Yvon Collin	Electromagnetic Very Low Frequency, Geological Survey / Mapping, Magnetic / Magnetometer Survey, Open Cutting
42A03NE0028	1988	Norwin Resources Ltd	Airborne Electromagnetic Very Low Frequency, Airborne Magnetometer

42A03NE2008	2003	D Lalonde, R Robitaille	Electromagnetic, Linecutting, Magnetic / Magnetometer Survey
42A03NE0055	1970	Texmont Mines Ltd	Electromagnetic, Magnetic / Magnetometer Survey
42A03NE0066	1952	Dominion Gulf Co	Diamond Drilling
20000004211	2008 - 2009	Eloro Resources Inc, Fletcher Nickel Inc, Pele Mountain Resources Inc	Assaying and Analyses, Geological Survey / Mapping
42A03NE0097	1970	Silver Summit Mines Ltd	Diamond Drilling
20000000252	2005	Eloro Resources Inc	Linecutting, Magnetic / Magnetometer Survey
20000003912	2008 - 2009	Fletcher Nickel Inc	Linecutting, Magnetic / Magnetometer Survey
20000004701	1952	Dominion Gulf Company	Geological Survey / Mapping, Magnetic / Magnetometer Survey
20000005481	2006	Pele Mountain Resources Inc	Induced Polarization, Linecutting
20000005503	2008	Fletcher Nickel Inc	Microscopic Studies
20000005494	2006	Fetcher Nickel Inc	Assaying and Analyses, Overburden Drilling
20000001576	2006	Eloro Resources Ltd	Induced Polarization
20000007407	2012	Fletcher Nickel Inc	Airborne Electromagnetic, Airborne Magnetometer
20000007920	2012	Fletcher Nickel Inc	Capping of Shafts, Raises, Stopes and Crown Pillars
20000007887	2007 - 2009	Fletcher Nickle Inc	Assaying and Analyses, Diamond Drilling
20000000134	2008	Fletcher Nickel Inc	Induced Polarization, Linecutting, Magnetic / Magnetometer Survey
20000002400	2006	Fletcher Nickel Inc	Induced Polarization, Linecutting, Magnetic / Magnetometer Survey
20000003516 20000003628 20000003618 20000003488	2007 - 2008	Fletcher Nickel Inc	Assaying and Analyses, Diamond Drilling

5.0 Geological Setting

The following summarized regional and property geology has been largely derived from Butler's 43-101 compliant technical report completed on the properties in 2006 and revised in 2007.

5.1 Regional Geology

The Texmont Property reside in the western Abitibi greenstone belt (Figure 3) - an Archean supracrustal complex made up mostly of volcanic-dominated oceanic assemblages spanning the period 2.75 to 2.67 Ga (Jackson and Fyon, 1991). Among the volcanics are smaller turbidite basins (flysch) spanning the period 2.70 to 2.68 Ga. Later shoshonitic (± trachyte) alkali volcanics and sub-aerial alluvial-fluvial sequences formed around 2.68 to 2.67 Ga and are commonly preserved along the margins of late tectonic deformation zones often termed "breaks" in the Canadian geological literature.

Extensive gneiss domes surround the Abitibi greenstone belt, and batholiths also intrude the greenstones consisting of tonalite-trondjhemite-granodiorite ("TTG") suite, a granodiorite suite, and some syenitic stocks.

Greenstone volcanic assemblages in the Abitibi may be subdivided as follows:

a) Primitive komatiite and/or tholeiite assemblages. Nickel ores have yet to be found in these assemblages possibly because the komatiites were not kept in crustal holding chambers long enough to incorporate wall rocks and, thereby, achieve local sulphur saturation due to the ingestion of wall-rock silica. (Shima and Naldrett, 1975; see also Lesher and Stone, 1996; Lesher and Keays, 2002).

b) A bimodal assemblage of komatiite and/or tholeiite, along with significant volumes of acid volcanics: In the western Abitibi, extensive rhyolite-dacite with a banded iron formation cap can be overlain immediately by komatiitic eruptions. Both volcanogenic massive sulphide ("VMS") deposits and komatiitic nickel sulphide deposits can be found in these assemblages. (e.g., Lesher and Stone, 1996; Lesher et al., 2001).

c) More evolved komatiite and/or tholeiite volcanics probably erupted from "short-lived" crustal holding chambers, but without acid volcanics and cherty interflow beds - nickel sulphides can be found in these assemblages.

d) Tholeiite-dominated suites characterized by mixed or alternating magnesian and ferroan basalt-andesite volcanics.

e) Tholeiite-dominated floods containing either magnesian or ferroan units.

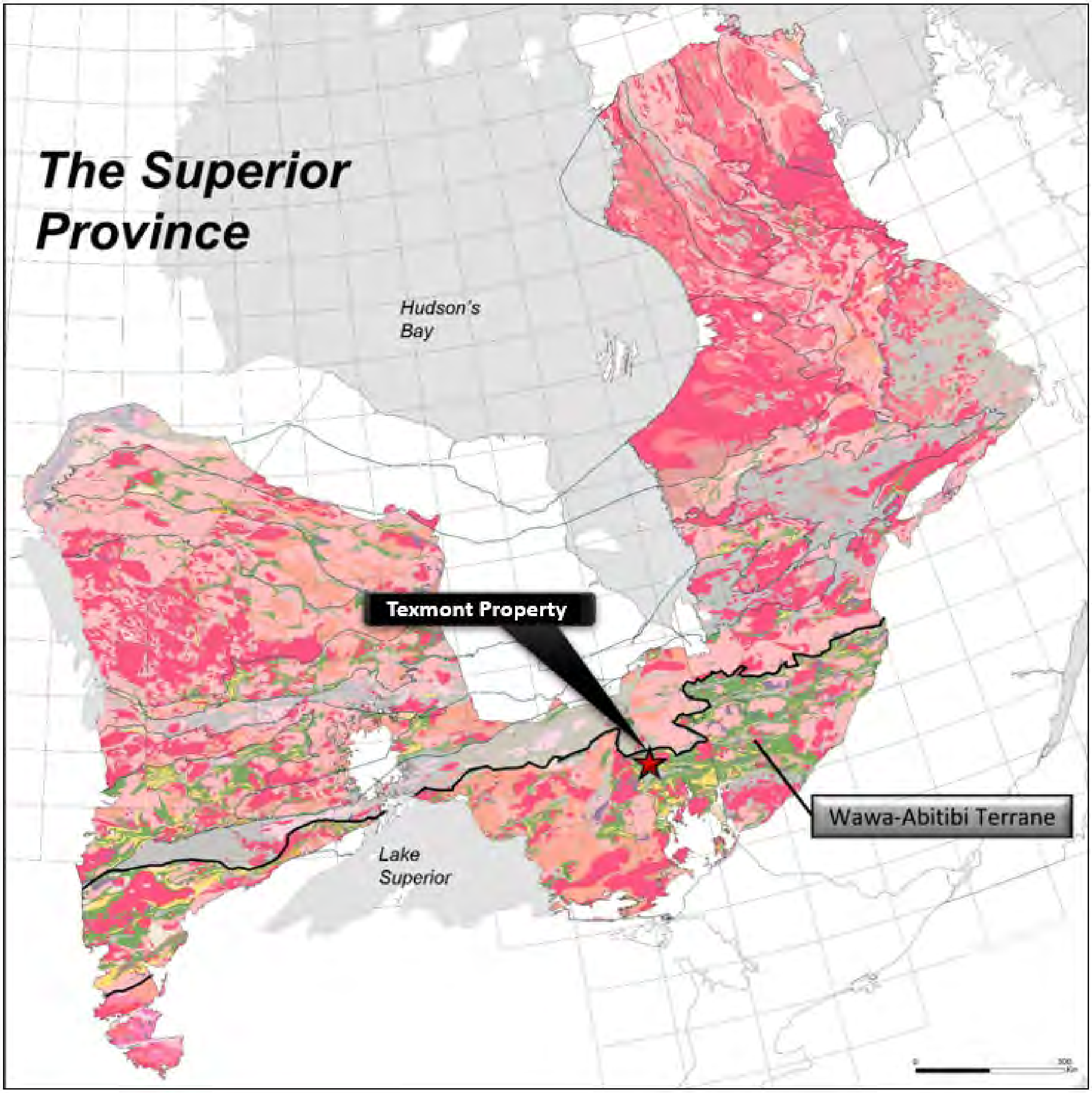
f) Ultramafic and mafic units, as well as felsic units associated with significant thicker banded iron formations - not just interflow cherty beds.

g) Intermediate to felsic-dominated units: Subalkaline volcanics with significant volatiles - pyroclastics and coarser fragmentals are common.

h) Intermediate volcanic flows of subalkaline character

i) Turbidite-dominated assemblages (flysch basins).

Figure 3. Regional geological location of the Texmont Property.



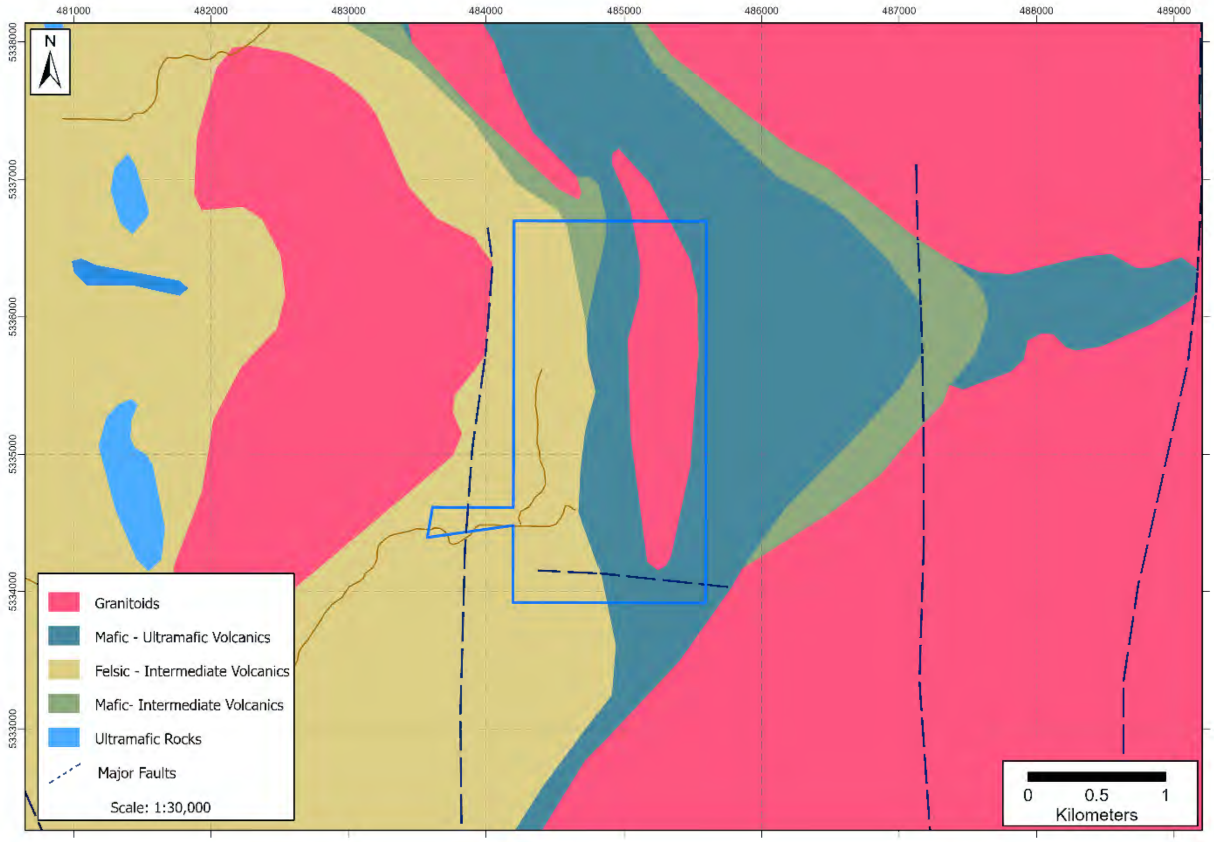
5.2 Property Geology

Mapping by the OGS in Bartlett, Geikie, English and Zavitz Townships was done in the period 1967 to 1971 (OGS Map 2290, Bright and assistants, 1967; Map 2364, Pyke and assistants, 1971), and recompiled by Ayer *et al*. (2003). Komatiitic flows can be recognized by spinifex textures – original bladed to skeletal dendritic olivine and pyroxene. These rock types occur on the Texmont Property and are seen in drill core. Texmont Property ultramafics were described by Pyke (1975) as being a series of komatiitic lavas and sills.

The general stratigraphy of the property follows a north-south axis, with intermediate to felsic volcanics and sedimentary rocks in the western part and ultramafic rocks in the eastern part. As described by Houlé and Solgadi (2007): "the Bartlett dome area is a homoclinal sequence facing eastward composed of supracrustal metavolcanic and metasedimentary rocks intruded by large felsic intrusions." The western intermediate to mafic volcanics and the sedimentary rocks belong to the Deloro assemblage (Houlé et al., 2008) while the ultramafic rocks, along with minor mafic volcanic rocks, form the Tisdale assemblage (Houlé et al., 2008).

The ultramafic rocks (Tisdale assemblage) are generally massive. Komatiites have been observed in the south-eastern part of the property only. Spinifex textures at the tops of lava flows indicate that units face to the east, and that dips are steep to the east. The mafic volcanics (Tisdale assemblage) occur only in the northern part, as a band between the sedimentary units and the ultramafic rocks. The intermediate to felsic volcanic rocks are mostly tuff, often clastic. They are restricted to the western part of the property.

Figure 4. Texmont area geology (OGS).



6.0 Mineralization

The sulphide distribution at the Texmont Deposit has been described as a mineralized zone near the central part of the ultramafic sequence. The zone dips steeply east and trends somewhat obliquely (N20°E) to the general northerly trend of the enclosing ultramafic flows. This somewhat oblique trend of the mineralized zone may be more apparent than real due to considerable crossfaulting. The sulphide mineralogy consists mainly of pentlandite and pyrrhotite with minor millerite, heazlewoodite, pyrite, and chalcopyrite. The sulphides are disseminated and occur as intercumulus "blebs" in cumulate-textured peridotite. Generally, mineralized zones are extensively carbonatized (OGS Study 20, p. 25).

There are three (2) documented and registered Mineral Deposit Inventory (MDI) occurrences within the Texmont Property. Details are provided below in Table 3.

Table 3. MNDM registered mineral occurrences in the Texmont Property.

MDI ID Number	Occurrence Name	Easting	Northing	Commodity
MDI42A03NE00032	Silver summit DH2	484,580	5,335,420	Nickel
MDI41P10NW00028	Texmont Mine	484,800	5,334,550	Nickel

*Coordinates in NAD83 Zone 17N

7.0 2022 AirTEM Survey

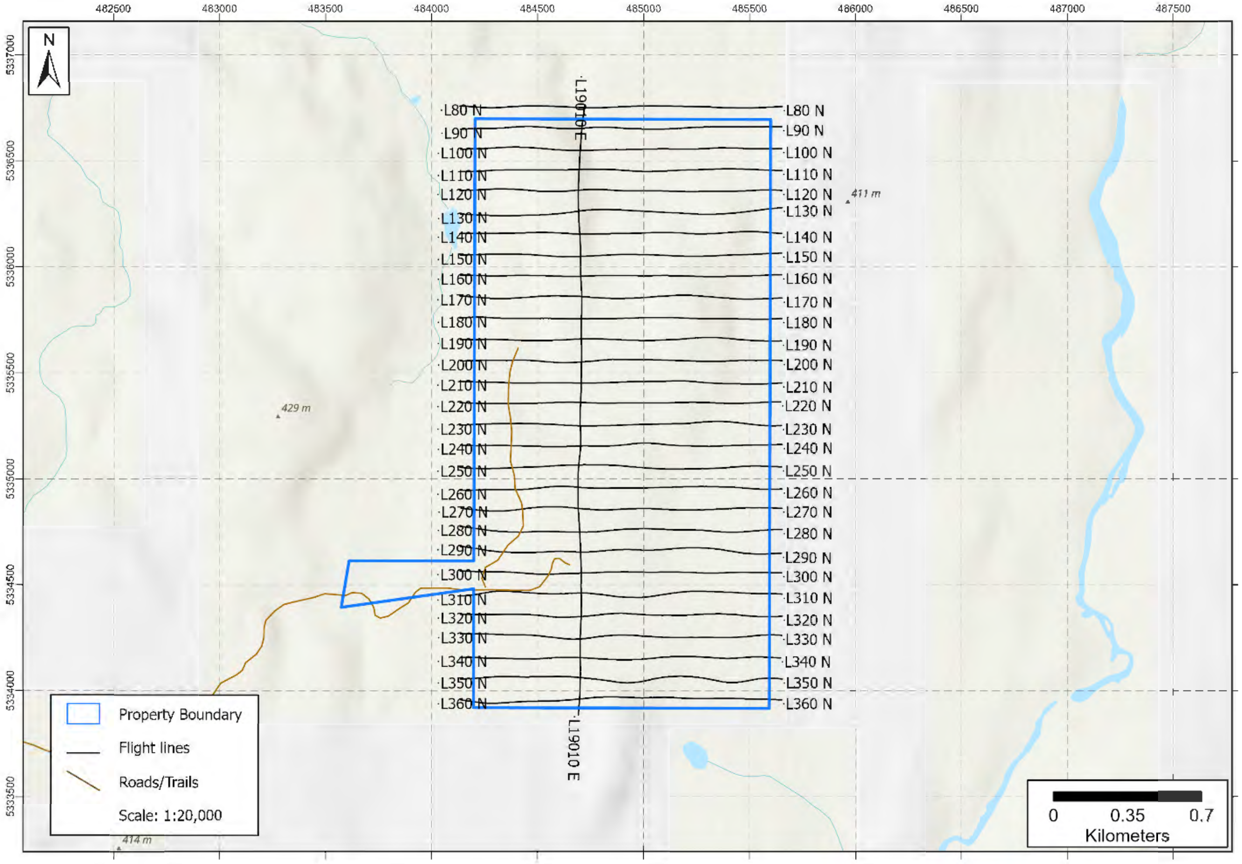
From October 23rd to October 24th, 2022, CNC contracted BECI to complete an AirTEM survey consisting of magnetic and electromagnetic measurements to be flown over 47 km in the Texmont Property (Table 4).

Table 4. CNC 2022 Summary of flight line and tie line specifications

Area (km^2)	Type	Lines	Spacing (m)	Direction (deg)	Height (m)	Planned (km)	Actual (km)
4.5	Flight	29	100	90°/270°	40	43.5	44.1
	Tie	1	0	0°/180°	40	3.0	2.9
	Totals					**45.5**	**47.0**

The survey was flown using the WGS-84 Datum. The Datum used to produce this report as well as the map products, grids and database is WGS-84. The projection is UTM, ZONE 17 N. All references to UTM coordinates in this report are based on the WGS-84 Datum. (Figure 5). Fuel was cached in an enclosed fuel truck owned and operated by HeliExplore. The fuel truck was located at the base camp, in the parking lot of Cedar Meadows, Timmins.

Figure 5. Location of 2022 Texmont flight and tie lines within the survey block.



7.1 Survey System

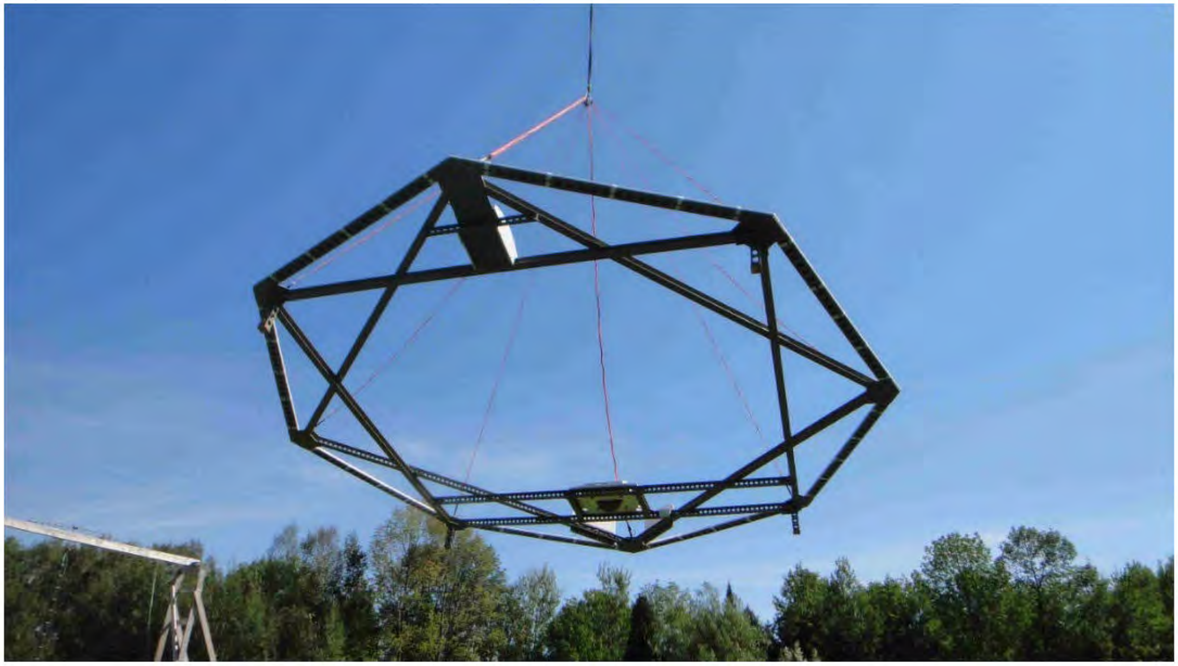
The survey system is comprised of an electromagnetic airframe and magnetic sensor housing connected to the helicopter via a tow cable and related and ancillary electronics and sensors inside the helicopter to control navigation, power, and survey height. Combined, this system measures the response from conductive sources in the surface and sub-surface, including sub-surface conductors containing minerals such as pyrrhotite and pyrite and the magnetic response from features containing minerals such as magnetite. The positions of these responses are measured using a differential GPS antenna and receiver. Flight height is measured by radar altimeter.

7.2 Electromagnetic System

The electromagnetic system (Figure 6) was developed by Triumph Instruments (Triumph) and is known as AirTEM^{TM}, a helicopter time domain electromagnetic (HTEM) system that is designed for mineral exploration, oil & gas exploration, and geologic mapping. AirTEM^{TM} is based on the concept of a concentric transmitter and receiver geometry originally developed by Wally Boyko.

The AirTEM^{TM} (TS-150) system features an 8.54 m diameter transmitter weighing approximately 500 Kg and producing up to 150,000 Am2 in transmitted power. The system records the full waveform and "X", "Y" and "Z" coil measurements for improved interpretation of complex conductor responses. Measurements of the total magnetic field are also provided.

Figure 6. The Triumph AirTEM^{TM} TS-150 HTEM System.



Features

- Rigid concentric geometry
- Full waveform recording
- Software selectable base frequency
- Software selectable on-time period
- dB/dt off-time and on-time profiles
- Total magnetic field

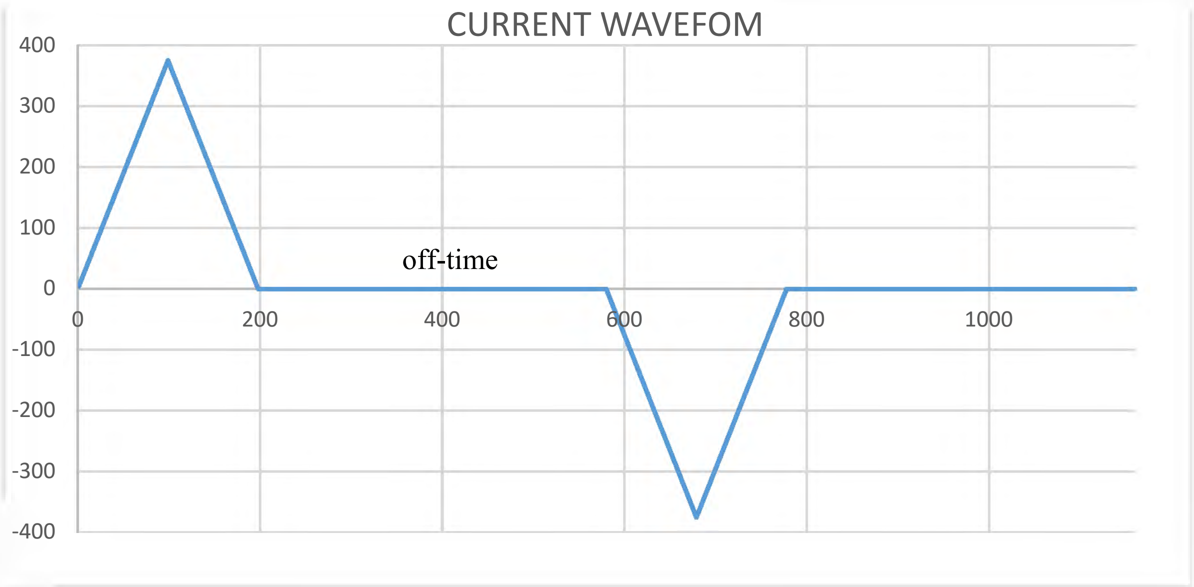
Advantages

- Excellent early off-time response
- On-time conductance discrimination
- Excellent performance in rugged terrain
- Direct drilling of targets
- Improved nomogram correlation
- Interpretation software readily available

7.3 System Waveform

The AirTEM^{TM} system uses a bipolar linear triangular pulse as shown in Figure 7. The on-time pulse is 33% of the half-cycle. The up-going and down-going portions of the pulse are 95% symmetric with the down-going pulse being slightly shorter in time duration.

Figure 7. The transmitter full cycle waveform is bi-polar and triangular with 95% on-time linearity.



7.4 Base Frequency

This survey was flown using a 90 Hz base frequency. At this frequency the bi-polar waveform produces half-cycles 180 times per second. The total half cycle period is the inverse of 180 Hz or 5,556 µs. For a one third duty cycle the on-time pulse is 1,850 µs in duration and the off-time pulse is 3,704 µs.

The data is stacked to a 10 Hz output sample rate. Each stack is the average of 18 half-cycles, 9 positives and 9 negatives. The negative half-cycles are rectified before being added to the positive cycles. The rectified and stacked half-cycles are stored at the 10 Hz sample rate.

The half-cycle is sampled at 105 kHz or one sample every 9.48 µs producing 580 half-cycle samples, 193 during the transmitter on-time and 387 during the off-time. During the on-time there are 99 up-going samples and 94 down-going samples.

7.5 Time Channels

The time channels are defined on a logarithmic scale starting at channel 10. Channels 1 through 9 are linearly spaced, have a 5 µs width and start 10 µs after the end of the on-time pulse. For a 90 Hz base frequency there are 41 off-time channels. The time channels used are listed in Table 4.

Table 5. Time channels for the TS-150.

Channel #	Start time (ms)	Channel #	Start time (ms)	Channel #	Start time (ms)
1	0.0100	**18**	0.1455	**35**	1.4448
2	0.0150	**19**	0.1655	**36**	1.6595
3	0.0200	**20**	0.1885	**37**	1.9063
4	0.0250	**21**	0.2150	**38**	2.1901
5	0.0300	**22**	0.2454	**39**	2.5164
6	0.0350	**23**	0.2803	**40**	2.8916
7	0.0400	**24**	0.3205	**41**	3.3230
8	0.0450	**25**	0.3667	**42**	3.8190
9	0.0500	**26**	0.4199	**43**	4.3893
10	0.0557	**27**	0.4810	**44**	5.0451
11	0.0622	**28**	0.5512	**45**	5.7992
12	0.0698	**29**	0.6320	**46**	6.6662
13	0.0784	**30**	0.7249	**47**	7.6631
14	0.0884	**31**	0.8317	**48**	8.8093
15	0.0998	**32**	0.9545	**49**	10.1273
16	0.1130	**33**	1.0957	**50**	11.6427
17	0.1281	**34**	1.2581		

7.6 Magnetic System

The airborne magnetometer system consists of the housing, the sensor and control module and Larmour frequency counter. The counter output rate is 10 Hz in digital RS 232 format. Power is provided to the sensor electronics via a 28 VDC power cable on the tow cable which is terminated to a 5-pin connector at the magnetometer housing. This cable also contains conductors that carry the RS 232 signal.

The magnetometer sensor is a model CS-3 made by Scintrex Limited. It is an optical split-beam cesium magnetometer and consists of a sensor head with a 3-m cable connected to a sensor driver. The output of the sensor driver is a Larmour frequency which is linearly proportional to the earth's magnetic field. The CS-3 is shown in Figure 8 and the sensor specifications are given in Table 5.

Figure 8. Scintrex CS-3 magnetometer sensor, cable, and electronics.

The Larmour frequency is input into a frequency counter made by Triumph Instruments. The counter can convert the magnetic field to a theoretical accuracy of 0.2 pT. The output of the frequency counter is a digital value of the magnetic field with +/- 0.001 nT resolution. This value is transmitted to the EM console at a 10 Hz output rate.

The Larmour counter is not synchronized to the EM transmitter but is synchronized instead to the EM data system. This allows the frequency counter to average down the magnetic field caused by the on-time pulse from the EM transmitter. The noise resulting from lack of synchronization to the EM transmitter is removed using a high-cut frequency filter during processing which also removes the effects of dropouts when the magnetometer sensor loses lock with the magnetic field (common during turnarounds).

The magnetometer sensor housing is made from a thin-wall fiberglass tube (see Figure 9). The manufacturer is AeroComp of London, Ontario. Within the housing a two-axis gimbal holds the sensor and can be rotated in both the horizontal and vertical plane. The sensor was set to the point 45^o degrees forward with a 25^o azimuth for this survey. The housing contains the sensor driver electronics and the Larmour frequency counter.

Figure 9. Airborne magnetometer housing with tow cable.

A GSM-19 base station magnetometer (manufactured by Gem Systems) was used to record variations in the earth's magnetic field and referenced into the master database using a GPS UTC time stamp. This system is based on the Overhauser principle and records the total magnetic field to within +/- 0.02 nT at a one (1) second time interval.

The base station unit was erected in a geomagnetically quiet location behind Long Point Lodge near a river (Figure 10). The data was reviewed periodically to ensure a quiet environment.

Figure 10. Base station magnetometer used for diurnal corrections.

Table 6. Scintrex CS-3 specifications.

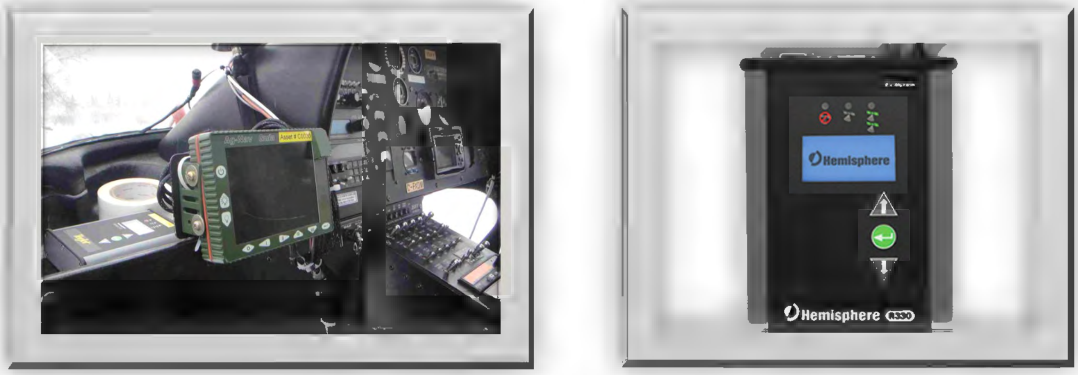
Operating Principal	Self-oscillation split-beam Cesium Vapor (non-radioactive Cs-133)
Operating Range	15,000 to 105,000 nT
Gradient Tolerance	40,000 nT/meter
Operating Zones	10° to 85° and 95° to 170°
Hemisphere Switching	a) Automatic b) Control voltage c) Manual
Sensitivity	0.0006 nT √Hz rms
Noise Envelope	Typically, 0.002 nT P-P, 0.1 to 1 Hz bandwidth
Heading Error	+/- 0.25 nT (inside the optical axis to the field direction angle range 15° to 75° and 105° to 165°)
Absolute Accuracy	<2.5 nT throughout range
Output	a) Continuous Larmor frequency proportional to the magnetic field (3.49857 Hz/nT) sine wave signal amplitude modulated on the power supply voltage b) Square wave signal at the I/O connector, TTL/CMOS compatible
Information Bandwidth	Only limited by the magnetometer processor used
Sensor Head	Diameter: 63 mm (2.5”) Length: 160 mm (6.3”) Weight: 1.15 kg (2.6 lb.)
Sensor Electronics	Diameter: 63 mm (2.5”) Length: 350 mm (13.8”) Weight: 1.5 kg (3.3 lb.)
Cable, Sensor to Sensor Electronics	3 m (9’ 8”), lengths up to 5 m (16’ 4”) available
Operating Temperature	-40°C to +50°C
Humidity	Up to 100%, splash proof
Supply Power	24 to 35 Volts DC
Supply Current	Approx. 1.5 A at start up, decreasing to 0.5 A at 20°C
Power Up Time	Less than 15 minutes at -30°C

7.7 Navigation

Navigation was provided by the AgNav Incorporated (AgNav-2 version) GPS navigation system (Figure 11 - left) for real-time locating while surveying. The AgNav unit was connected to a Tee-Jet GPS receiver (Figure 11 – right).

Also used was a Garmin 19x antenna and receiver located on the HTEM airframe. The Garmin 19x, which is capable of sub five-meter accuracy, was sampled at 10 Hz.

Figure 11. AgNav main console (left) and Tee-Jet GPS receiver (right).



The radar altimeter transmitter and receiver antenna were fixed to the rear skids of the helicopter (one antenna on each skid) approximately 36” apart. The coaxial cables were fed through the floor of the helicopter and routed along the floor. Both coaxial cables connected to the controller which was located near the TDEM-2400 control unit. On the output side of the controller (Figure 12 - left) a proprietary 16-bit A/D convertor was connected proving digital input to the TDEM-2400 via RS 232 format. The altimeter signal was also fed into a digital read-out unit (Figure 12 - right) mounted on the dashboard of the helicopter in clear vision of the pilot to provide height above ground navigation.

Figure 12. Freeflight radar altimeter controller and digital readout.

7.8 Helicopter

The helicopter used (Figure 13) was an AS 350 SD2 with registration C-GYWB, owned and operated by Heli Explore Inc., based in La Sarre, Quebec, and contracted by BECI (together with an experienced pilot) to carry out the survey.

Figure 13. The survey used an AS 350 SD2 as shown below.

7.9 Personnel

The following personnel were involved in the survey.

Table 7. Summary of personnel.

Individual	Position	Description
Patrice Tremblay	Pilot	Helicopter pilot
Dan LeBlanc	Operator	Operated/maintained equipment
Stephen Balch	Processing	On-site processing, line-leveling, drift correction, diurnal corrections, tie-line leveling, reporting. Contractor representative
Chris Balch	Mapping	Plotting maps, printing report, folding, and binding
Edwin Escarraga	Geologist	Client representative

7.10 Data Acquisition

Data was collected through the main console (the TDS-2400, see Figure 14) which contained both the acquisition system and dc-dc power control module (booster circuit) for the transmitter coil. The TDS-2400 has a hardware controller that sets the timing for the four (4) 24-bit A/D converters that sample at 9.48 µs. The controller also generates and transmits the timing control signals to the transmitter driver located on the airframe.

The main controller also performs synchronization between the transmitter and receiver and all ancillary information (GPS, MAG, EM, RAD ALT). The ancillary information is digitized and stored at a rate of 10 Hz. The resulting data string is transmitted to a laptop computer and stored on an internal hard drive.

Figure 14. Triumph TDS-2400 EM console and acquisition system.

A rugged laptop computer running the Windows 10 operating system controls the incoming data stream from the TDS-2400. The software on the laptop (AirDAS) is capable of real-time acquisition with no data loss from 25 Hz to 300 Hz for a duty cycle that can vary from 10% to 50% (nominally set at 33%).

During the survey the Operator can monitor the incoming differential GPS data, radar altimeter, magnetometer, and all EM profiles.

After each flight data is copied from the laptop internal hard drive onto a memory stick. While there is no limit on the maximum file size during acquisition, the processing software can only process up to five (5) continuous hours of recorded data. For longer flights the data can be broken into two files.

7.11 Data Processing

Preliminary data processing is performed using BECI proprietary methods. This includes compensation, filtering and line leveling of the HTEM data. This also includes calculation of the vertical magnetic gradient, analytic signal, digital terrain model, bird height, and merging of the base station magnetic data (sampled at 1.0 sec) with the survey data (sampled at 0.1 sec).

The helicopter pilot uses "ideal" flight lines as guidance during surveying as displayed on the real-time AgNav system with the aid of a helicopter mounted GPS. A separate GPS mounted to the bird is used to record actual position. The sample rate of the GPS is 10 Hz, the same as the EM, MAG and ancillary data collected in flight.

The GPS unit outputs both latitude, longitude and easting, northing values, all in the WGS-84 Datum, using a UTM Projection. The positional data is not filtered but occasional bad data points are interpolated using a linear algorithm.

The radar altimeter is located under the base of the helicopter. The helicopter mounted radar altimeter is used to maintain terrain clearance by the pilot. A digital indicator is mounted on the dashboard of the helicopter. This installation is approved by a licensed helicopter engineer provided by the helicopter operator.

The EM data is processed using BECI proprietary software designed to compensate, filter and level both the off-time and on-time data.

The first step in processing is to determine the transmitter shut-off time and align the time gates to this position. The length of time that the transmitter is on is known as the on-time. The time gates are logarithmically spaced in the off-time and linearly spaced in the on-time.

The second processing step is the calculation of the system background transient. This is done at a suitable flight height, nominally 1,000 feet or higher, beyond the effect of any earth conductivity. During this time EM data is collected for a period of 50 seconds and averaged into a single background transient. This is subtracted from the transients recorded online.

The third step is to assign the flight line numbers to each data point so that the flight can be separated into flight lines within Geosoft.

Line-leveling and drift-correction are achieved on a flight-by-flight basis using the background transients, recorded at the start and end of each flight.

Filtering the data involves a two-step process. Spikes are removed using an algorithm based on the Naudy non-linear filtering algorithm. This is followed by an 11-point Hanning filter that has the effect of smoothing the profiles over an equivalent distance of approximating twice the nominal flight height.

Micro-leveling of the late time channels is also performed before the data file is written to disk. Conductor picks and Tau time constants are determined at this point as well.

B-field processing of the time channels uses a fully integrated on-time in addition to the integrated off-time (i.e., full waveform). The early off-time channels are evaluated for possible primary field leakage (this involves a compensation filter based on linearly derived correlation between the late on-time and early off-time samples). The exact methodology is considered proprietary.

The magnetic data (i.e., MAG from the airborne sensor and BMAG from the ground sensor) is collected without a lag time (i.e., synchronous with the HTEM data and UTC time), therefore a lag time correction is not applied. In areas where the MAG sensor has become unlocked (e.g., most often during turnarounds), the total magnetic field values are replaced with a dummy value (“*”) and the data is later interpolated in Geosoft.

The raw ASCII survey data files and BMAG ASCII data files are imported into BECI software and merged using UTC time, common to both files. A quality control check of the BMAG data is made on a day-to-day basis.

Diurnal magnetic corrections are applied to the MAG data using the BMAG data. The base station data (i.e., BMAG) is linearly interpolated from a 1.0 sec sample rate to 0.1 sec to correspond to the flight data after the BMAG has been filtered with a 60 second filter.

Once the diurnal field is subtracted from the MAG data, a heading correction is applied, and the resulting total magnetic intensity (TMI) is micro-leveled.

8.0 Results

Results of the magnetic survey are presented in the form of the total magnetic intensity (TMI) which is shown in Figure 15 and the 1st vertical derivative of the TMI as shown in Figure 16. The magnetic data are dominated by the highly magnetic response of the serpentinized ultramafic unit located below Firth Lake.

The anomalous EM response is shown for early off-time (Figure 17), mid-off-time (Figure 18), late-off-time (Figure 19).

Figure 15. Total Magnetic Intensity (TMI) over the survey block.

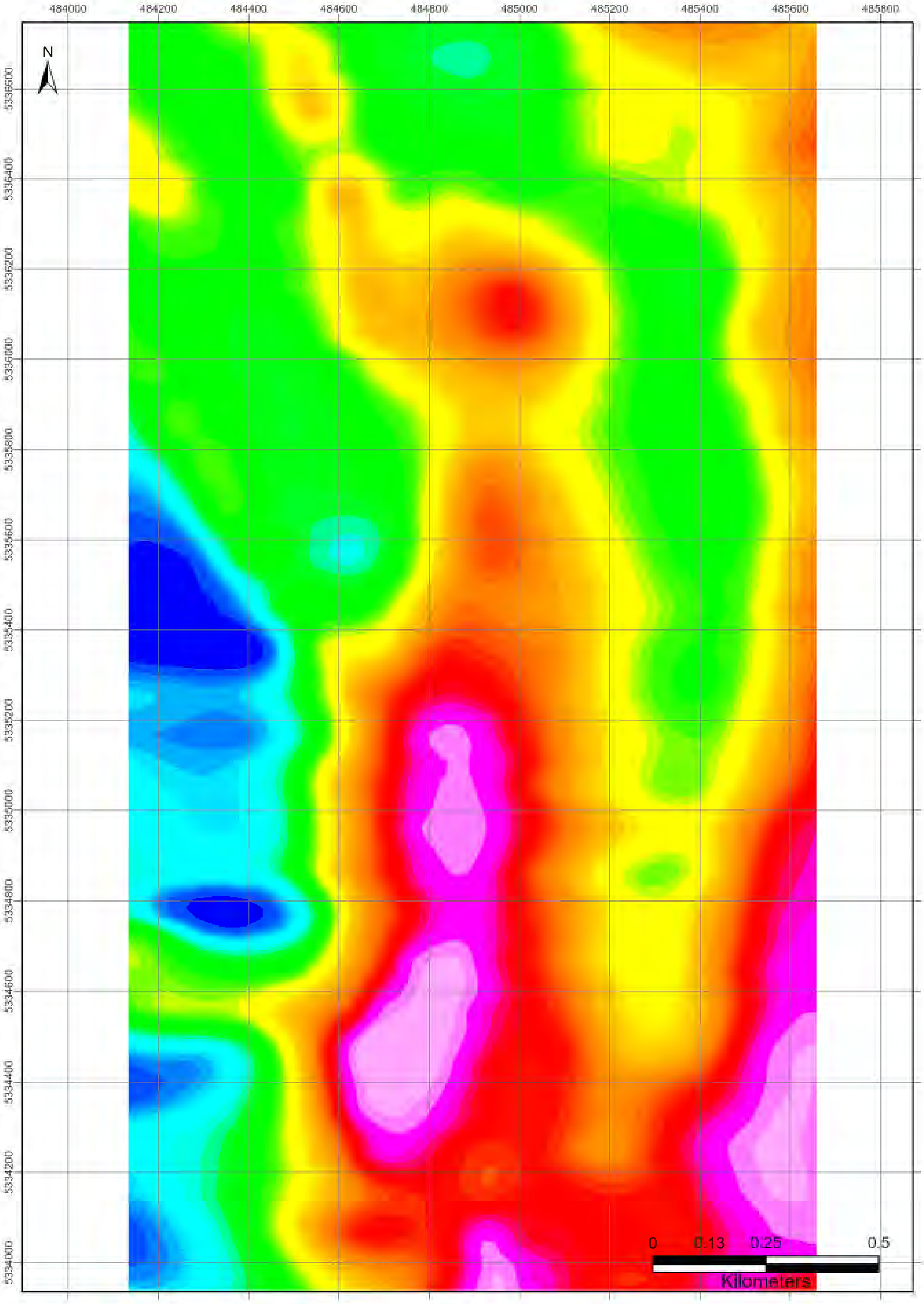


Figure 16. First Vertical Derivative (1VD) over the survey block.

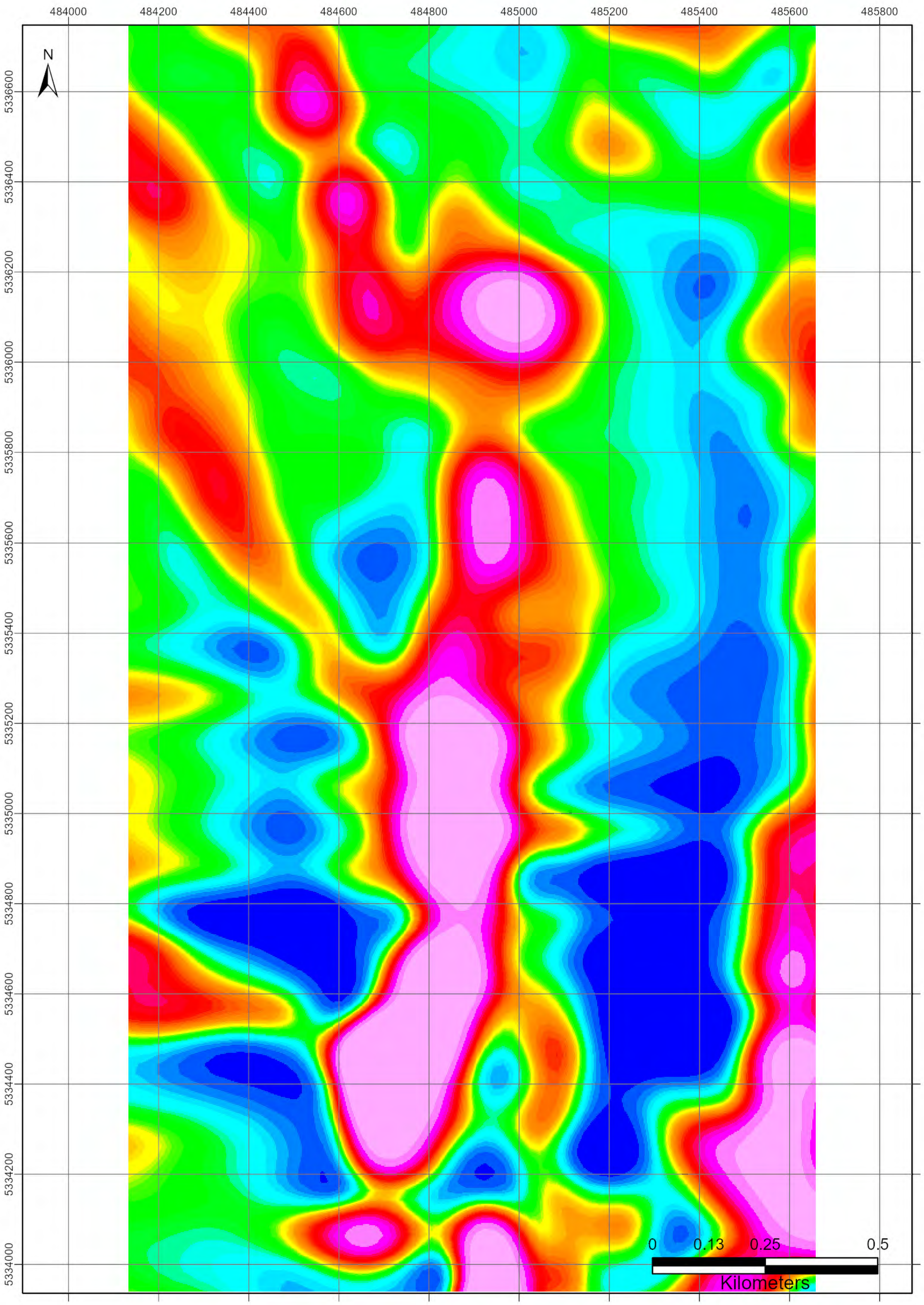


Figure 17. Image of the Early Off-Time (Zoff[0]) over the survey block.

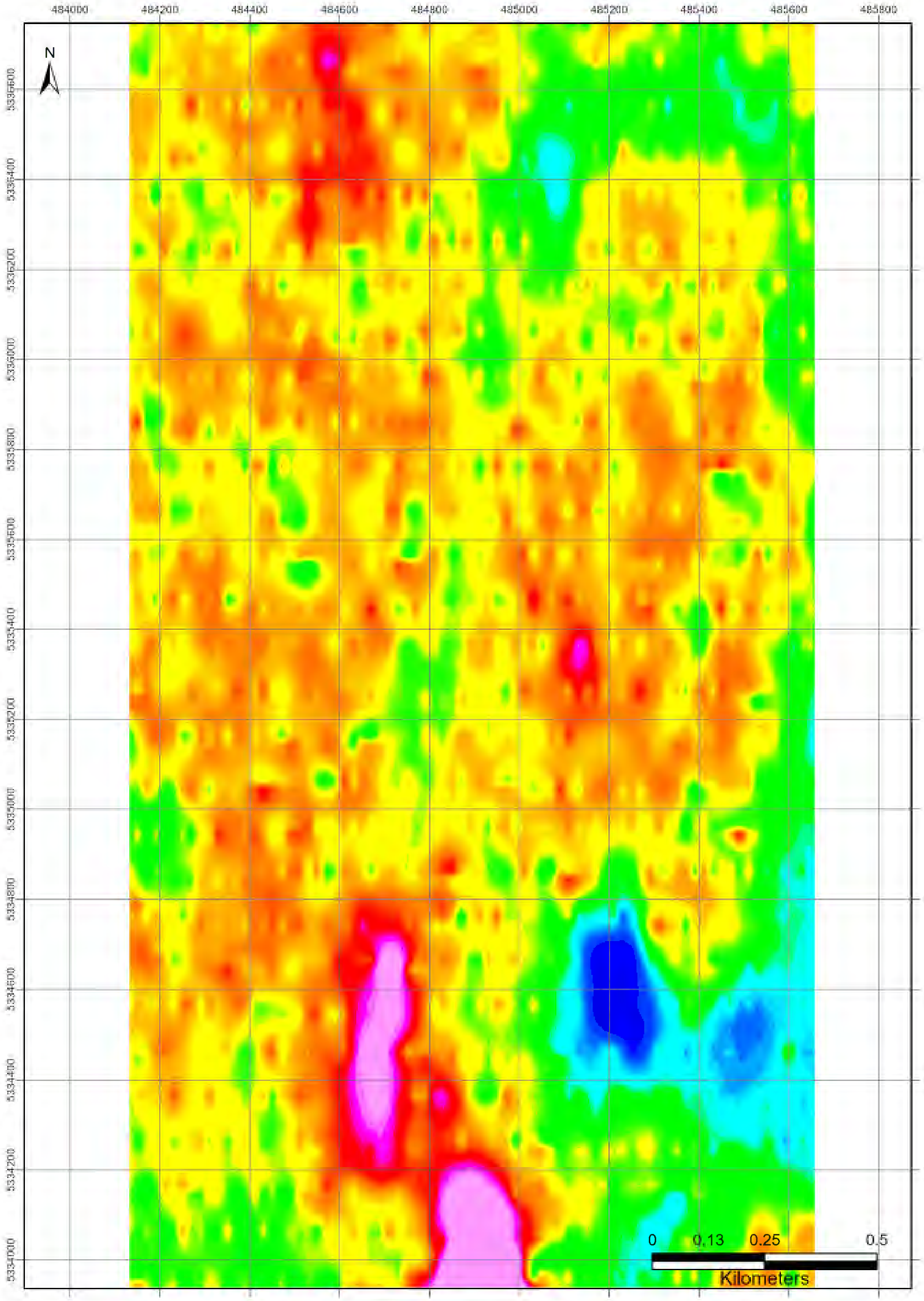


Figure 18. Image of the Mid Off-Time (Zoff[19]) over the survey block.

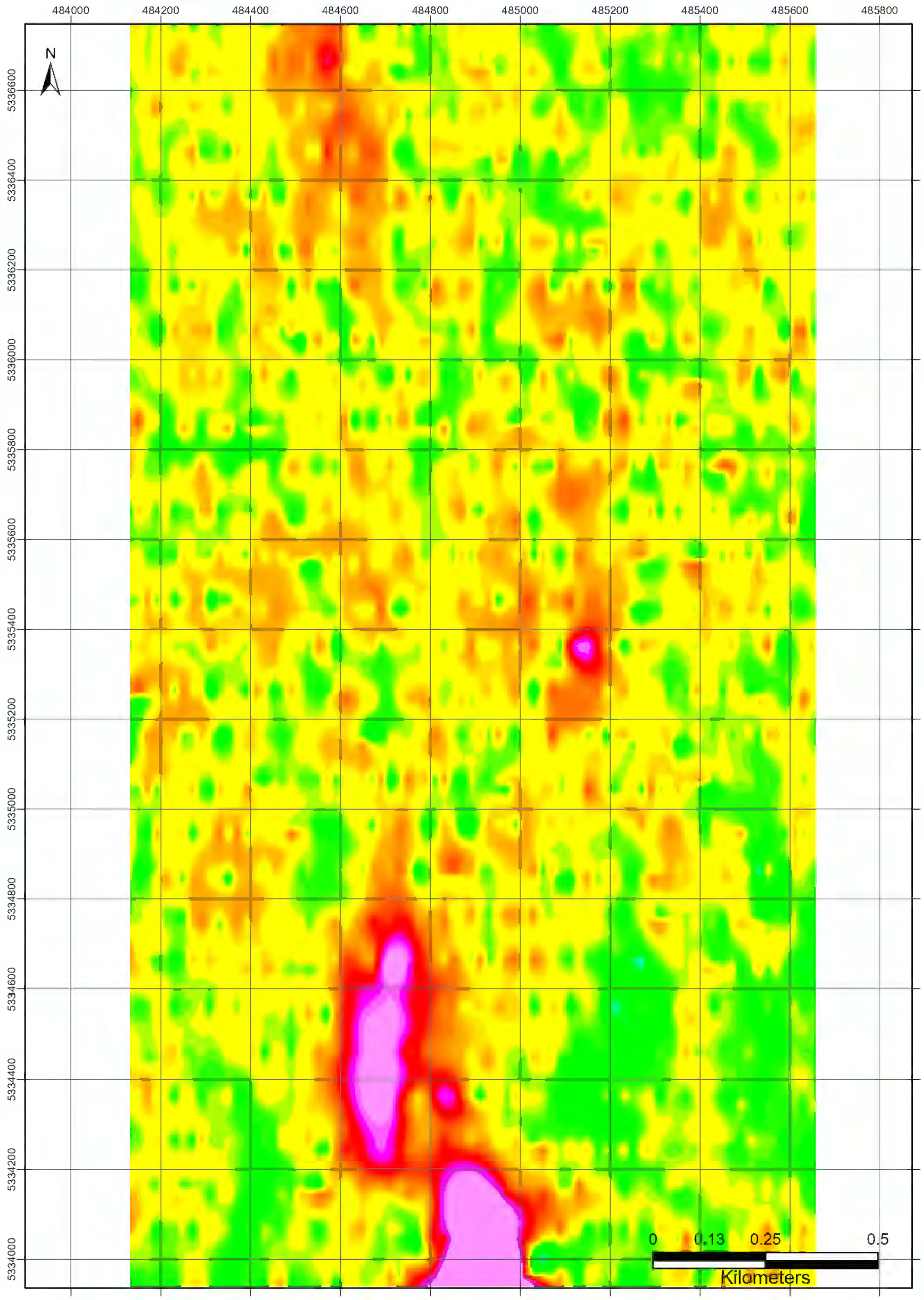
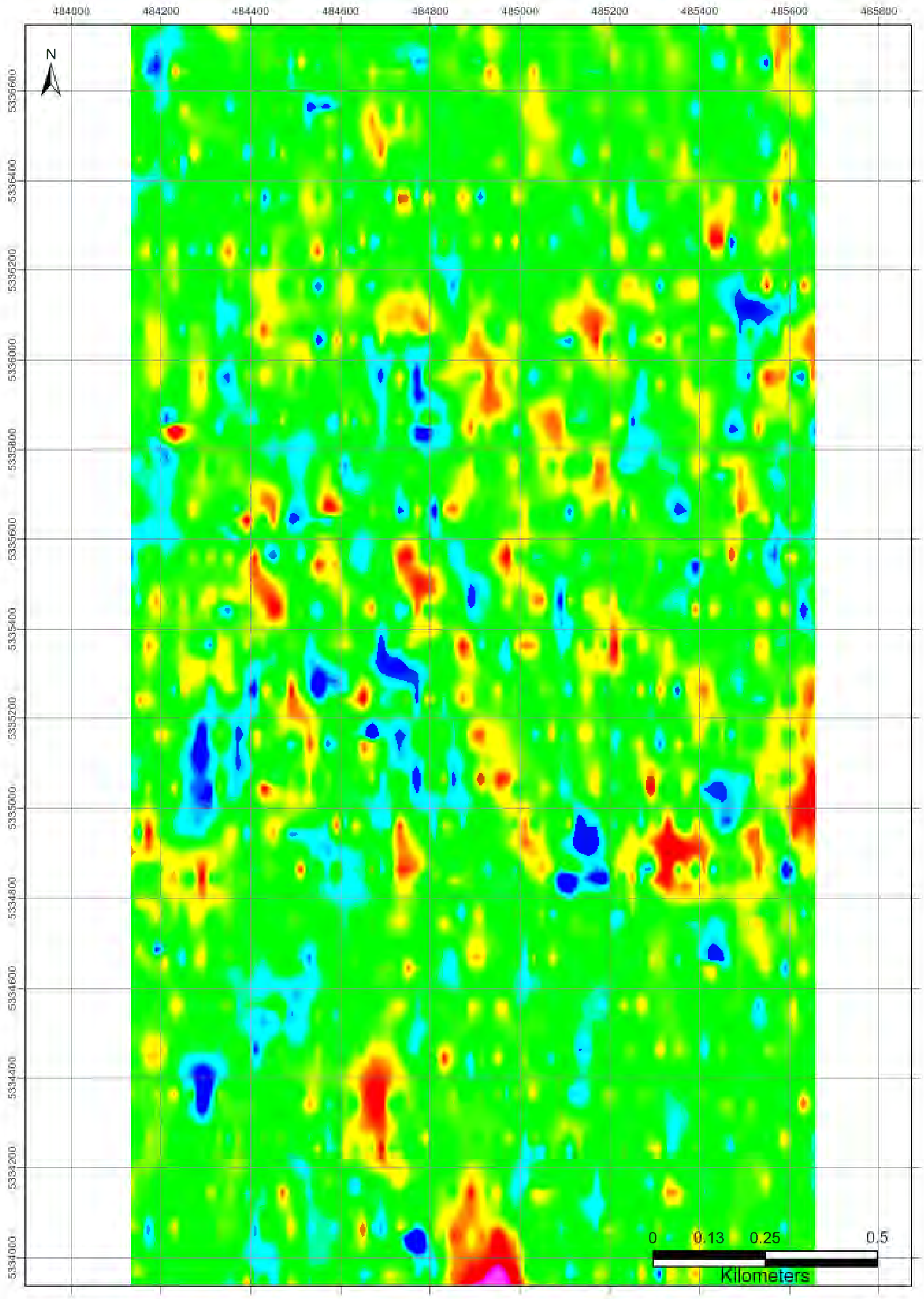


Figure 19. Image of the Late Off-Time (Zoff[39]) over the survey block.



9.0 Recommendations and Conclusions

The 2022 Airborne survey succeeded at identifying a major magnetic feature with an associated weak EM response. The feature may be consistent with serpentinized ultramafic intrusions (like the Crawford Intrusion, for example). The intrusion has approximate dimension of 2 km along strike by 250m width, with a strike direction of 10^o (NNE) and a steep dip to the east.
The trend identified on the Texmont Property is confirmed by previous drilling in the 1960s and more recently in the late 2000s which intersected serpentinized ultramafics.

The next phase of exploration will focus on “infill” drilling and merging of historical datasets, in order to produce a NI 43-101 ready resource estimate.

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Statement of Qualifications

I, Edwin Escarraga, P.Geo., of Canada Nickel Company, do hereby certify that:

1) I am a Senior Geologist employed by Canada Nickel Company, with a business address at 130 King St West. Suite 1900, Toronto ON, M5X 1E3.
2) I graduated with a M. Sc degree of Geology from Acadia University in 2010.
3) I am a Professional Geoscientist (P.Geo.) registered with the Professional Geoscientists of Ontario (PGO No. 2859) and I am a member of the Prospectors and Developers Association of Canada.
4) I am responsible for the preparation of this report titled "Report on the 2022 Helicopter-Borne Geophysical Survey Texmont property", Porcupine Mining Division, Northeastern Ontario, NTS 42A03.
5) I have no prior involvement with the property that is the subject of this Report.

Dated this 23rd day of January 2023.

Edwin Escarraga

Edwin Escarraga, P.Geo. (PGO # 2859)