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GPS-positioned Ground Magnetic Survey

Logistics and Interpretation Report

PREPARED FOR

STRIKE COPPER CORPORATION

HAMLIN LAKE PROJECT

Powell Lake Area, Thunder Bay, Ontario, Canada

May 2021

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No:21NT025-MG

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1. SUMMARY

On behalf of Strike Copper Corporation, a GPS-integrated ground magnetic survey was completed over the Hamlin Lake Project located within the Shebandowan greenstone belt.

From **March** 2**8th** to **April 08th**, **2021** (10 days of field work and 2 days of mob/demobilization) a total of **116.88 km** of GPS-integrated magnetic surveying was carried out over the Hamlin Lake property. Survey specifications, instrumentation control, data acquisition, processing and interpretation were all successfully performed within our Quality System framework.

The objective of the geophysical campaign is to improve the geological understanding of the property (assist in lithological discrimination), structural mapping of the property and to locate Fe-rich bodies (magnetite / hematite) where IOCG mineralization may occur.

The ground magnetic survey was conducted by **Marcel Naud** of **Abitibi Geophysics Inc**., on behalf of Strike Copper Corporation.

The study grid consists of of 103 lines (L 1+00W to L 26+50W) of 0.425 to 1.04 km long, regularly spaced at 25 m and oriented N140°. Five tie lines (TL 0+00N to TL 10+00N) spaced every 250 m complete the survey grid.

The magnetic data interpretation successfully mapped the highly magnetic lineament (**HL-01)** where the known Bill's (BT) and Emilio's (ET) mineralized trenches (BT) were discovered, as well as prominent, strong and folded magnetic lineaments (**HL-02a** to **HL-02c**), perceived to be prospective for IOCG occurrences. In addition, a fault network has been interpreted and 3 target zones with significant structural complexity were identified from the Centre for Exploration Targeting (CET) grid analysis method.

As a conclusion, the results obtained from the present ground magnetic survey should be, at a minimum, supported by geological mapping (Litho-geochemical prospecting) over the delineated target zones from CET predictive method and perform an Induced Polarization Survey to detect any possible disseminated sulphides associated with IOCG occurrences.

The Hamlin Lake Project is located in the Kashabowie region, WNW of Thunder Bay, specifically between longitudes 90˚49' 41"˚W and 90˚47' 32'' W, and latitudes 48˚27' 49'' N and 48˚29' 03'' N.

Coordinate Systems: the data and location of the survey grid are provided in four coordinate systems: Universal Transverse Mercator (UTM) projection, Zone 15N, NAD83 datum, North American local datum. Latitude/longitude coordinates, World Geodetic System 1984 (WGS1984).

2. Research Objectives

- *Geological Setting*

The geological setting of the Hamlin Lake area is within the Shebandowan greenstone belt of the Wawa Subprovince in the Superior Province.

Mapping of the Hamlin Lake region exposed five major lithologies consisting of mafic metavolcanic rocks, intermediate metavolcanic rocks, felsic metavolcanic rocks, felsic intrusive rocks, and iron formations (Figure 1).

The most extensive units are volcanic rocks, with rhyolites and andesites being nearly equal in abundance. The felsic metavolcanic rocks vary from rhyolites and quartz-eye rhyolites, through banded ash and lapilli tuffs, to debris flows.

The intermediate metavolcanic rocks consist of dacites and andesites. The mafic metavolcanic rocks were primarily debris flows. The felsic-to-intermediate intrusive rocks consisted of quartz-eye feldspar porphyry and felsic pink breccia.

Oxide facies iron formations are also observed on the Hamlin Lake area. These units are dominated by alternating beds of chert and magnetite.

All of the lithologies observed on the study area have been sheared in a NE-SW direction (~234˚) and have an average dip of 86°N, but the dips range from 65° to 90°N.

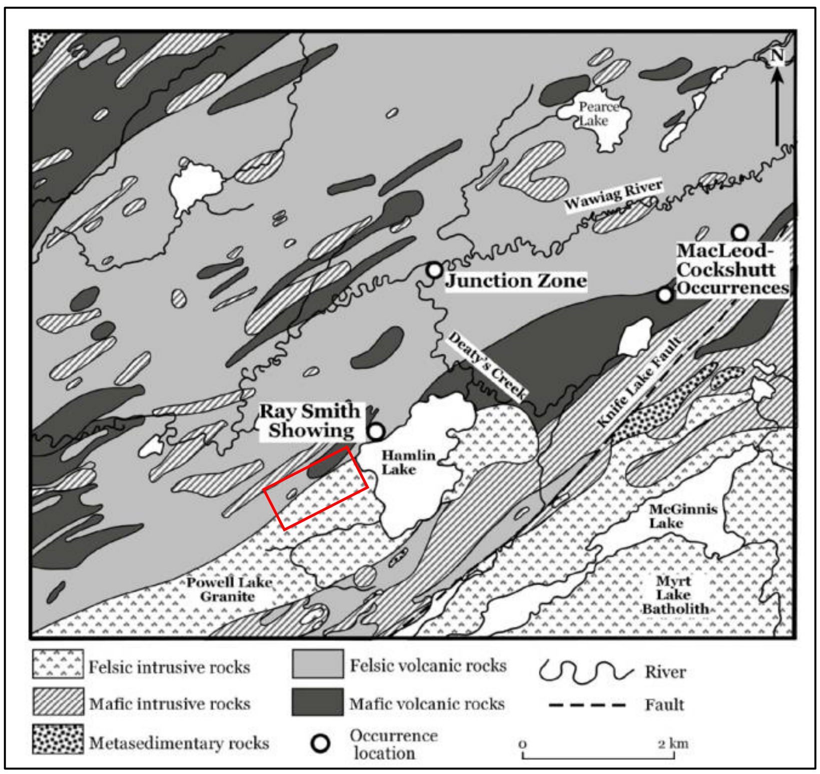

Figure 1. geological map of the area surrounding Hamlin Lake.

❑ *LOCAL GEOLOGY*

The most recent mapping project on the Hamlin Lake area was undertaken by Amy Lynn Shute in 2009 (Figure 2).

- Felsic to Intermediate Metavolcanic Rocks

Felsic to intermediate metavolcanic rocks are the most extensive units mapped in the Hamlin Lake area. These units include massive to porphyritic to tuffaceous rhyolite, dacite and andesite.

- *Rhyolitic Tuff:* The rhyolites range from massive flows containing phenocrysts, to pyroclastic units with chert fragments. All rhyolite units have undergone slight to very strong alteration, from chloritization to sericitization.

- *Dacite Lapilli Tuff*: The dacite unit is the least abundant unit found in the mapping area. Only one dacite flow was recognized in the mapping area; otherwise the dacite samples are found as ash and lapilli tuffs and pyroclastic agglomerates scattered around the mapping area in smaller showings.

- *Andesitic Lapilli Tuff*: The intermediate metavolcanic rocks observed in the mapping area consist of andesites, which are present throughout the area. The andesites are similar in appearance to the rhyolites, with similar grain size and colour, but only slight variations in silica content, making it difficult to distinguish between the two units in the field.

- *Felsic Debris Flow*: Felsic debris flows were occasionally observed on the property and are comprised of chert fragments in felsic volcanic ash.

- Mafic Metavolcanic Rocks

The mafic metavolcanic rocks observed on the property consist of debris flow units. The matrix of the mafic debris flow units is highly chloritized and are locally magnetic. The debris flows contain chert clasts similar to the chert clasts found in the felsic debris flow units.

- Felsic Intrusive Rocks

- *Quartz-Feldspar Porphyry*: Only one quartz-feldspar porphyry outcrop was mapped in the northwestern portion of the mapping area.

- Granite: The intrusive rocks present include localized outcrops of the Powell Lake granite on the shores of Hamlin Lake.

- IOCG breccia: The breccia encompasses a large area on the north shore of Hamlin Lake. It has been traced approximately 1.2 km in length striking to the NE. The brecciated body is up to 200 meters wide and has been traced to approximately to 350 m vertical depth. It was determined after drilling that the breccia underlies the volcanic rocks to the north and is the result of an intrusion. The breccia is polymictic and contains clasts of rhyolite, quartz/feldspar porphyry, diorite, gabbro, chert, and magnetite. Sulfide mineralization is found sporadically throughout the unit.

✓ Mafic Intrusive Rocks

The gabbro observed in the area is located on the east side of Deaty's Creek and is magnetic and brecciated in places. There was only one outcrop of gabbro mapped during this study, but the unit does continue east into the Deaty's Creek area. On surface, the gabbro is fine to medium-grained with feldspar crystals making up the majority of the matrix. The mafic minerals consist of hornblende and pyroxene with minor biotite.

✓ Metasedimentary Rocks

The only metasedimentary rock found in the mapping area are iron formations, and they are located sporadically throughout the mapping area. The iron formations consist of banded chert and magnetite layers. In general, the chert layers are thicker than the magnetite layers; the magnetite layers can vary from 1 mm in thickness to 10 mm, while the chert layers can be several centimeters thick.

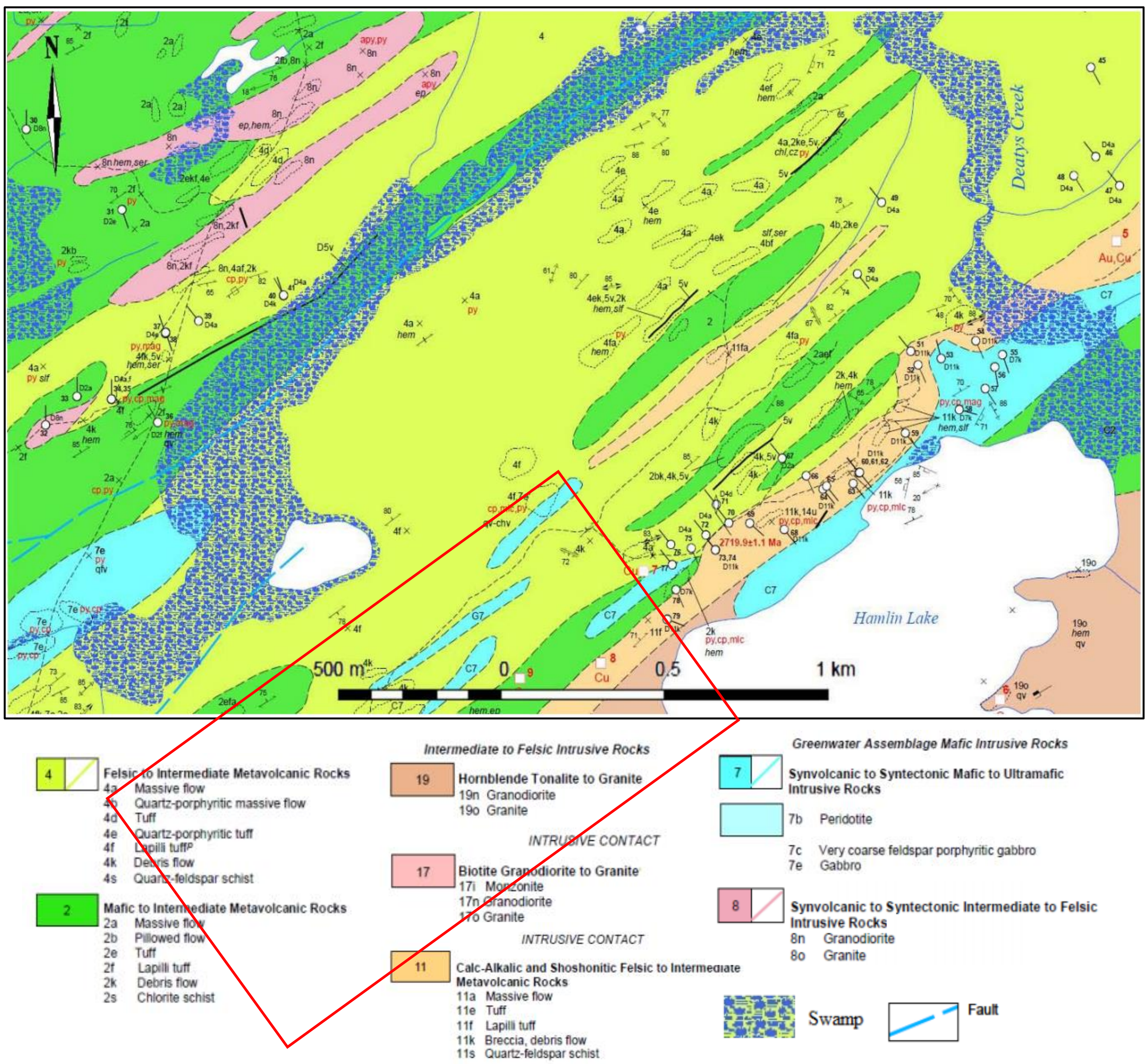

Figure 2. Local geology north of the Hamlin Lake area (by Hart and Metsaranta, 2009).

❑ *Mineralization*

The sulfides found on line seven (LN7) of the geophysical cut lines were one of the first indications that the mineralization in the Hamlin Lake area was VMS related. The LN7 sulfides contain 1.49% copper and 4.0 g/t gold and can be traced for approximately 200 m.

Drilling showed no depth to the exposed sulfides and the copper and gold numbers are inconsistent, so it was concluded that the LN7 sulfides did not warrant further exploration. On surface, the sulfides appear as lenses of massive pyrite in a fine-grained matrix.

The most economically viable unit located in the Hamlin Lake area is <u>pink breccia</u>, which contains low grade copper in the form of chalcopyrite, located in the matrix of the breccia. The initial grades from trenching showed values ranging from 7.78% to 0.1% copper, 6.44 to 0.3 g/t of gold, 1635 to 3 ppm of molybdenum and 81 to 1 g/t of silver.

❑ *Exploration History of Hamlin Lake*

Ray Smith and his partner Red Sanderson found copper mineralization northwest of Hamlin Lake in 1956 (Figure 1). The same year Noranda Mines Limited and Prospector Airways Company optioned 31 claims north of Hamlin Lake. Several conductors were recognized and tested, but only minor mineralization was found.

The first copper showing, still referred to today as the <u>Ray Smith showing</u>, lies only 200 m north of the west side of Hamlin Lake with pyrite and chalcopyrite still exposed.

MacLeod Cockshutt Gold Mines Limited optioned the claims north and NE of Hamlin Lake and carried out an EM survey and drilled holes discovering <u>two important showings</u> in the areas, now called the <u>MacLeod Cockshutt occurrences</u>. In the following years, copper and gold mineralization has been found sporadically in the Hamlin Lake area, but never enough to be economically feasible for mining.

Several companies performed new surveys and tested new conductors in the following 20 years after Ray Smith's discovery.

- ✓ In the 1980's, Kennco Explorations (Canada) Ltd. performed ground magnetometer and VLF-EM surveys on the claims surrounding Hamlin Lake, as well as geological mapping and major element geochemistry.
- ✓ In 1987, Grande Portage Resources Ltd. conducted an induced polarization (IP) survey on the same area followed by trenching and sampling.
- ✓ Recently East West Resource Corp. and Mega Uranium Ltd. have undertaken a number of geophysical and geological surveys in the Hamlin Lake area. The geophysical surveys found numerous new targets warranting further investigation.

The targets were investigated with prospecting, trenching, geological mapping, sampling, and drilling. No deposit has yet been found in relation to the felsic volcanic rocks, but the pink breccia unit located directly north of Hamlin Lake has received the most attention and drilling from East West Resource Corp. after copper mineralization was recognized.

3. Implemented Solution

The Hamlin Lake area has been explored for its copper and gold mineralization for more than 50 years but has only recently been treated to fit the Iron-Oxide Copper Gold (IOCG) model.

As the name implies, the most notable feature that is common to this type of deposit is the association of iron oxides with Cu and Au mineralization, its proximity to crustal scale faults or shear zones, and its spatial relationship with regional granitic suites. Respectively, these are responsible for driving and channeling the fluids involved, and they produce extensive alteration signatures, brecciation, and ore systems.

In this context, ground magnetic surveys can play a key role in locating Fe-rich bodies (magnetite or hematite) where IOCG mineralization may occur, the major faulting structures (fault/shears) that act as conduits in the upwelling and channeling of mineralizing fluids as well as hydrothermal alteration zones.

In March 2021, Strike Copper Corp. commissioned Abitibi Geophysics Inc. to conduct a high-resolution, GPS-positioned ground magnetic survey over the Hamlin Lake property using regular line intervals of 25 m.

The interpretation of the detailed ground magnetic data is intended to establish mineral strike continuity of the Ray Smith showing and Emilio & Bill mineralized trenches westward and locate new target areas for planning subsequent exploration programs (future drilling).

To achieve the geophysical objectives of this project the following steps were carried out:

- Processing magnetic data to provide a high-quality image of the total magnetic intensity and its residual anomaly reduced-to-pole (RTP).
- Generating a high-resolution normalized derivative (first vertical derivative) and illustrate its effectiveness in tracking subtle magnetic features.
- Outlining of the major faulting patterns affecting the Hamlin Lake property.
- Characterizing the delineated magnetic features (estimate their magnetic susceptibility (magnetite content)).
- Highlighting target areas favorable for hosting IOCG deposits using the CET Grid Analysis algorithm designed to detect areas of structural complexity.

4. Geophysical Interpretation

➢ *ANALYSIS OF THE REGIONAL GEOPHYSICAL DATA*

Before initiating analysis of the collected ground magnetic data, it is useful to examine the existing regional magnetic dataset over a larger scale than the detailed survey area. This is to establish the context and to identify structures that may only be recognized with the benefit of a larger field of view.

Thus, analysis of the regional total magnetic field of the Hamlin Lake region shows that the historical Ray Smith showing and the Discovery Lake trench, as well as Bill and Emilio's mineralized trenches are all aligned NE-SW along a same magnetic lineament striking N51° (Figure 3). Interestingly, this prominent magnetic feature continues westward through the study grid and this makes the Hamlin Lake property an attractive target for the discovery of new IOCG targets.

As shown in Figure 3B, the residual amplitudes of the delineated magnetic lineament within the Hamlin Lake area range from 450 to 3490 nT above a magnetic background of approximately 59 475 nT. According to the geological map of the survey area (Figure 2), The outlined magnetic lineament mainly reflects mafic metavolcanic rocks and feldspar porphyritic gabbro. From the regional magnetic maps several faults were also interpreted (Figure 3B and 3C).

To determine which target areas are good candidates to host IOCG mineralization within the Hamlin Lake area, an automatic predictive method known as CET grid analysis was performed on the regional total field reduced to the pole (RTP). The proposed method is based on an image processing technique for the prospectivity analysis of Archaean lode-gold deposits.

The method first finds regions of magnetic discontinuity that correspond to both lithological boundaries and shear zones using a combination of texture analysis and symmetry feature detection techniques. Secondly, it examines the data using fractal analysis to find nearby areas of complex magnetic expression (zones of structural complexity). The most prospective areas are those where inferred structural complexity occurs adjacent to the regions of magnetic discontinuity. A more detailed description on this technique is given on page 10 and in the *Computer & Geosciences 34 article entitled: Towards the automated analysis of regional aeromagnetic data to identify regions prospective for gold deposits (Eun J. Holden & Mike Dentith et al.).*

Indeed, Figure 3D shows that the CET method is able to identify the Ray Smith showing as well as the known mineralized trenches. 3 other target zones favorable for hosting deposits of interest were also highlighted inside the survey grid. The outlined targets could be further explored in more detail.

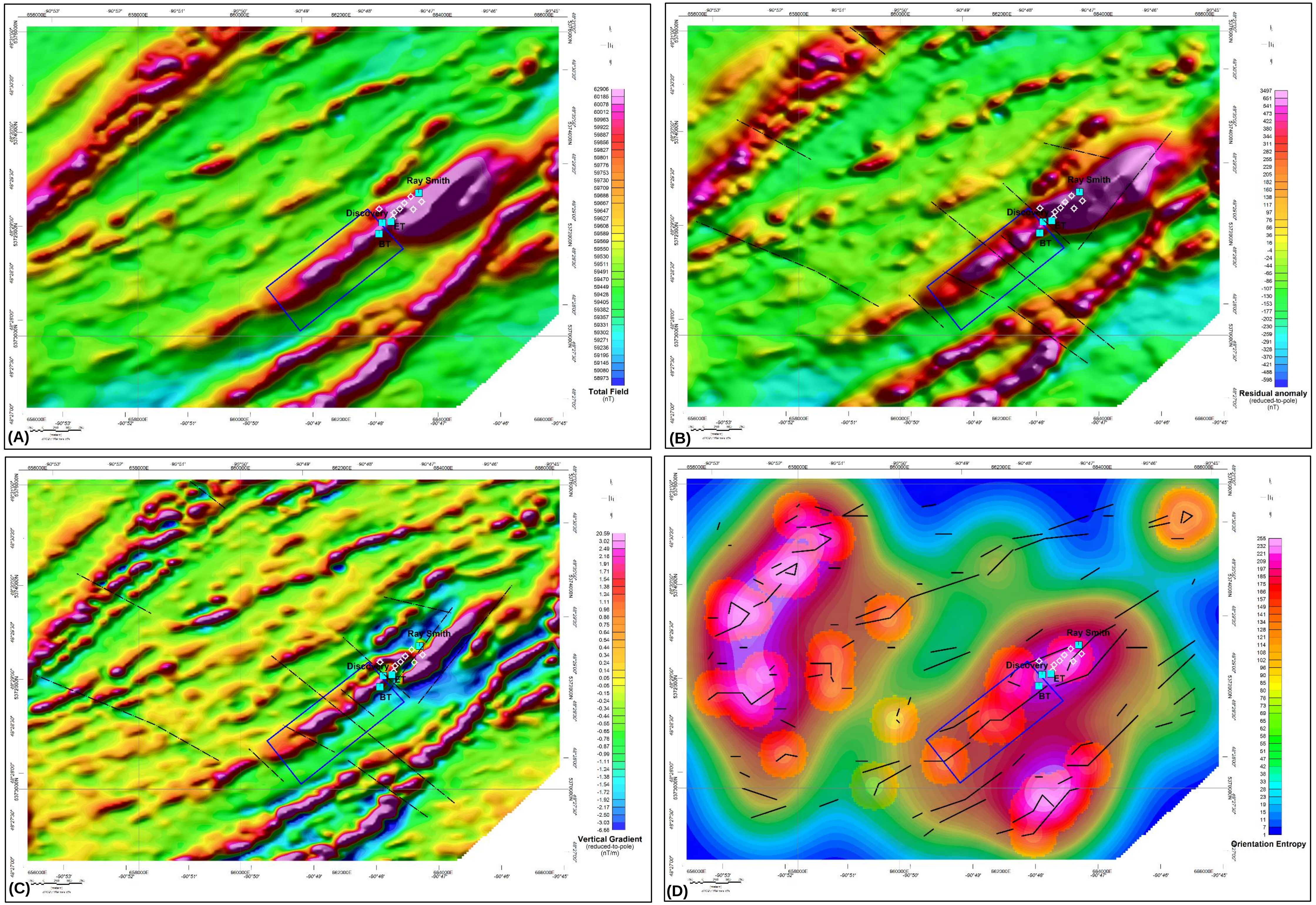

Figure 3. Airborne regional total magnetic field (A), its residual component (B), vertical derivative (C), and the predictive targeting heat map (D) of the Hamlin Lake area.

➢ *ANALYSIS OF THE GROUND MAGNETIC SURVEY*

The ground magnetic data over the Hamlin Lake property was collected along 103 lines in the NW direction at azimuth N140° and spaced 25 m apart (map 1.2 and Figure 10).

The resulting total magnetic field map is presented in Figure 4. As seen, the high-resolution ground magnetic survey has successfully mapped most of the different lithological units laying within the study grid particularly the mafic intrusive rocks composed of feldspar porphyritic gabbro, as well as the mafic to intermediate metavolcanic rocks.

The final recorded total magnetic values over the Hamlin Lake property ranges from 48 685 nT to 78 730 nT, with an average of approximately 56 335 nT. It is important to note that the strongest exceeding 22 000 nT in amplitude, above a local magnetic background of 56200 nT, was identified on line 16+00W at UTM coordinates [661 572 E, 5 371 326 N]. This strong magnetic anomaly surely corresponds to a magnetite-rich source (iron formation) and there is a high probability that IOCG mineralization could be found at this location.

To better understand the distribution of the magnetic amplitudes within the study grid, the residual magnetic anomaly was calculated (Figure 5A) and a special colour bar was applied to it (Figure 5B). This type of image allows us to recognize and clearly distinguish strong magnetic anomalies and differentiate easily between the different geological units if their intensities were known.

In addition, an unconstrained 3D magnetic inversion was performed on the residual anomaly in order to clarify the subsurface geometry and the physical properties of the delineated anomalies. As shown in Figure 7, the recovered magnetic susceptibility model shows moderate to high magnetic susceptibility values ranging from 0 SI to approximately 1.0 SI.

The most dominant features on the total magnetic intensity map are:

- A magnetic lineament labelled **HL-1** was detected in the northeastern part of the study grid. The highlighted feature appears trending N40° to N65° and extends over more than 1.0 km. A few interpreted faults, oriented NW-SE appears to have affected **HL-1** feature. The amplitudes of this lineament range from 1000 to 2960 nT above a local magnetic background of approximately 56 400 nT.

  The 3D magnetic inversion characterized **HL-1** anomaly by magnetic susceptibility values ranging from 0.045 to 0.20 SI. The causative source of **HL-1** appears almost outcropping, steeply dipping, and unrooted. Geologically, **HL-1** feature coincides mainly with mafic and intermediate metavolcanic rocks.

  It should be noted that the copper mineralized trench known as Bill's trench (BT) was discovered within the **HL-01** anomaly (Figure 4A).

- A complex shaped strongly magnetic feature, labelled, **HL-2**, was located in the center of the survey grid, between lines 19+50W and 12+50W. This anomaly seems to be composed of three folded magnetic lineaments (**HL-2a**, **HL-2b** and **HL-2c**) trending NE-SW. The amplitudes of these features vary for the most part between 1000 and 5 000 nT and in some places they reach 10 000 - 22 000 nT. According to the 3D magnetic inversion, their calculated magnetic susceptibility was estimated to be between 0.045 SI and 1.0 SI.

Unfortunately, no geological information is available in this part of the study grid to explain the nature of the identified anomalies, however, based on the strong magnetic amplitudes depicted in this area, the causative sources of the delineated features could correspond to mafic-ultramafic rocks and iron formations. Thus, the delineated target area could be a good candidate to host IOCG mineralization.

To note, negative magnetic amplitudes (≤-500 nT) were recorded in this area. This type of signature may indicate the presence of remanent magnetization. Among these unusual signatures that we found strange (probably artificial), that we verified twice in the field, is at coordinates [661 778 E, 5 371 323 N].

- A broad magnetic anomaly, labelled **HL-3a**, was located south of **HL-2c,** at coordinates [661 838 E, 5 371 160 N]. According to the first vertical derivative of the total field (Figure 6), **HL-3a** appears to consist of two magnetic lineaments (sources) of 140 and 250 m in length, striking NE. The amplitudes of these features were estimated to be between 500 and 900 nT, and their magnetic susceptibility is likely to be between 0.05 and 0.08 SI.

  According to the calculated magnetic susceptibility model, the identified **HL-3a** source seems to continue westward and increase in depth, which is why its amplitudes become less intense.

- A few narrow and discontinued magnetic lineaments (dike like structures) were also highlighted in the NE part of the survey grid. According to the geological map of the study area, these magnetic features correspond to feldspar porphyritic gabbro. The amplitudes of these lineaments vary between 800 and 3000 nT, and their magnetic susceptibility was estimated to be approximately 0.06 SI. The highlighted sources appear as shallow bodies in the recovered magnetic model (Figure 7).

To conclude, a simplified structural map based on the magnetic susceptibility depth slice extracted at an elevation of 395 m (depth of 75 m) was produced, including all the major inferred faults (Figure 8A and map 10.0).

➢ *TARGETING ANALYSIS (HIGHLY FAVOURABLE ZONES)*

Targeting analysis of the ground magnetic data was performed by using an automatic (unsupervised) predictive method known as CET Grid Analysis. The objective of this analysis was to highlight new favorable areas for the exploration of IOCG deposits.

The proposed method highlights zones of high structural complexity using lineaments automatically mapped within the total magnetic field (RTP). First it finds regions of magnetic discontinuity using a combination of texture analysis and bilateral symmetric feature detection, where line-like features representing high local magnetic variations are identified. Using skeletal structures of the identified regions of discontinuity, it then analysis structural associations to locate their intersections as well as to find orientation variations of neighbouring structures. Finally, by applying an accumulative Gaussian weighting, it generates an Orientation Entropy (OE) *Heat map* that highlights the areas that are perceived to be prospective.

The results of the CET Grid Analysis obtained on the Hamlin Lake Project are presented in Figure 8B. **Three target areas** with a complex magnetic expression perceived to be prospective for IOCG occurrences were identified. The most important depicted targets coincide with magnetic anomalies **HL-1** and **HL-02 (a, b, and c**).

Strike Copper geologists can analyse the generated heat map to see if the outlined areas (zones of high-density junction) present any significant interest and could be further explored in more detail.

5. CONCLUSION AND RECOMMENDATION

High-resolution magnetic datasets are considered as essential components of mineral exploration programs. Generally, it is indirectly used to map structures and lithological units where gold or base-metal deposits could be located. In this project, the interpretation of the collected ground magnetic data has somewhat improved the understanding of the geological setting of the Hamlin Lake property, particularly the southwestern part where no geological mapping has been done.

The magnetic data interpretation successfully mapped the high magnetic lineament (**HL-1**) where the known Bill's (BT) and Emilio's (ET) mineralized trenches (BT) are associated. In addition, prominent strong and folded magnetic lineaments (HL-02a to HL-02c), considered favorable targets for hosting IOCG mineralization were delineated in the center of the study grid.

The magnetic data interpretation also allowed the identification of a few faults that may play a key role in the control of the mineralization.

Two of the three favourable target zones that could host IOCG mineralization were proposed to be further explored in more detail, based on the CET grid analysis method.

It should be noted that the magnetic method alone cannot directly identify the IOCG occurrences and the support of other geophysical methods such as Induced Polarization in the case of the Hamlin Lake Project is paramount, as gold mineralization is known to be associated with sulphides (pyrite, chalcopyrite) and magnetite-rich chert.

Thus, the results obtained by the ground magnetic survey should be, at a minimum, supported by the following:

- Geological mapping: the identified targets highlighted with the CET method should be geologically mapped. Lithogeochemical prospecting should be carried out over these targets to prioritize exploration targets.
- Performing a detailed Induced Polarization survey to detect any possible sulfides (pyrite and chalcopyrite) associated with gold mineralization.

The author is confident that the Hamlin Lake Project offers potential for discovering new mineralized zones and our investigation of the anomalous sources identified by the present survey will be positive.

However, our knowledge of the property's geology is not as thorough as the geologist of Strike Copper. Our interpretation is mainly based on the observed geophysical responses.

To maximize the outcome of the present results, Strike Copper Corporation should ensure all available geoscience information are compiled, assessed and, if necessary, redefine the priority and nature of the interpretation proposed in this report.

Respectfully submitted,
Abitibi Geophysics Inc.

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Senior Geophysicist

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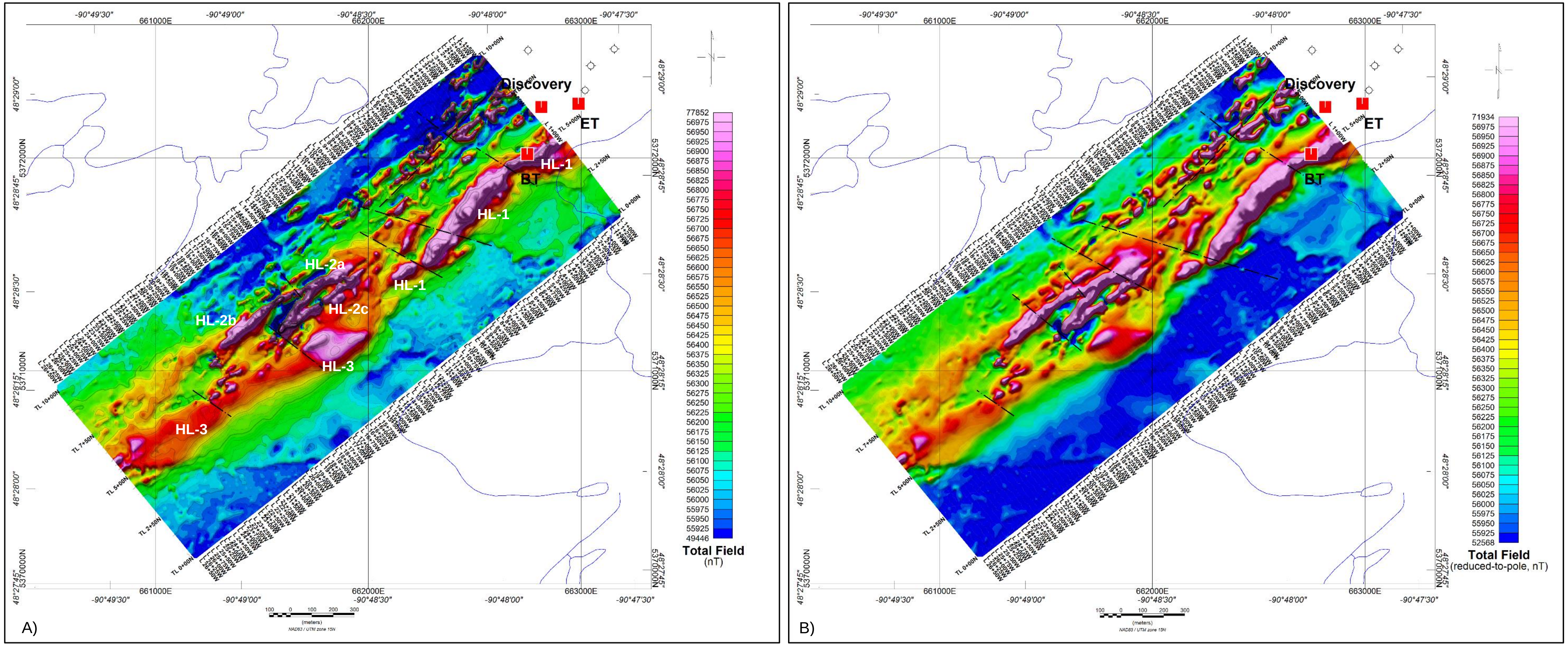

Figure 4. High-resolution magnetic total field (left) and its reduction to the pole (right) of the Hamlin Lake Project.

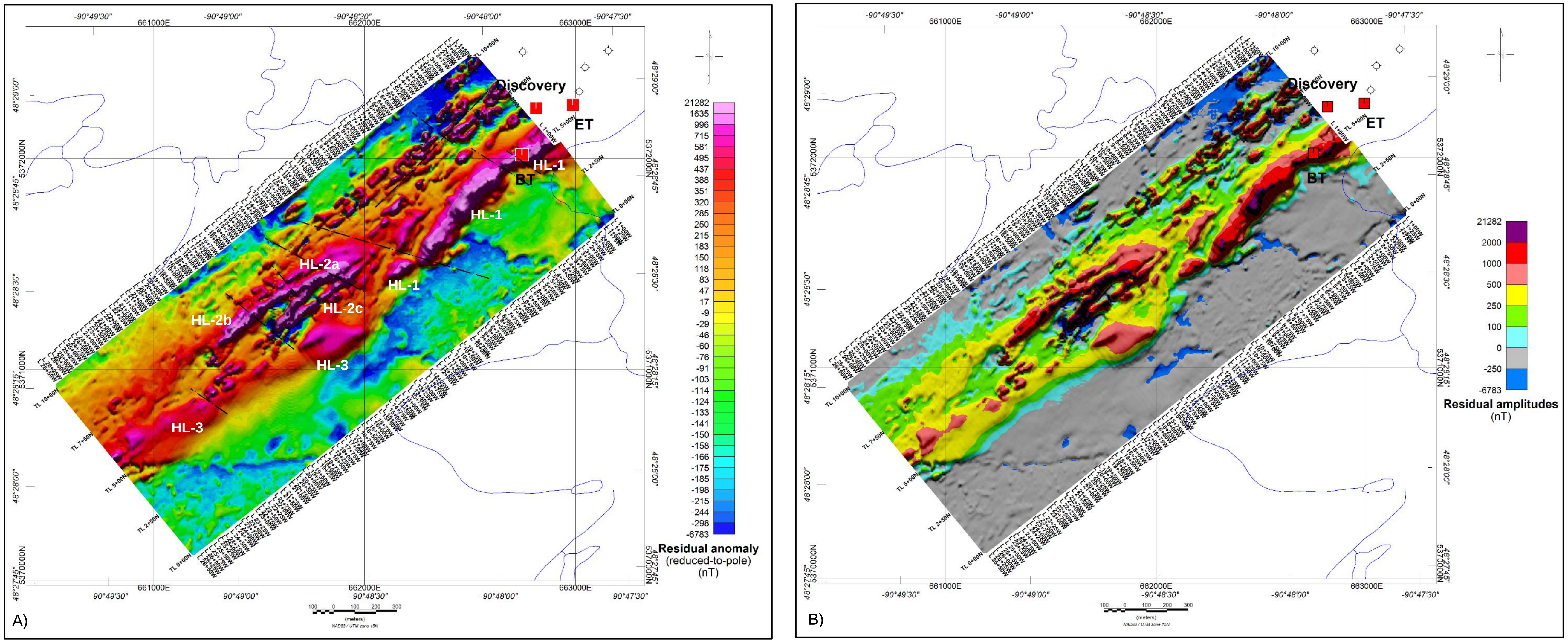

Figure 5. Residual magnetic anomaly reduced-to-pole (A), and distribution of the residual magnetic amplitudes (B), Hamlin Lake Project.

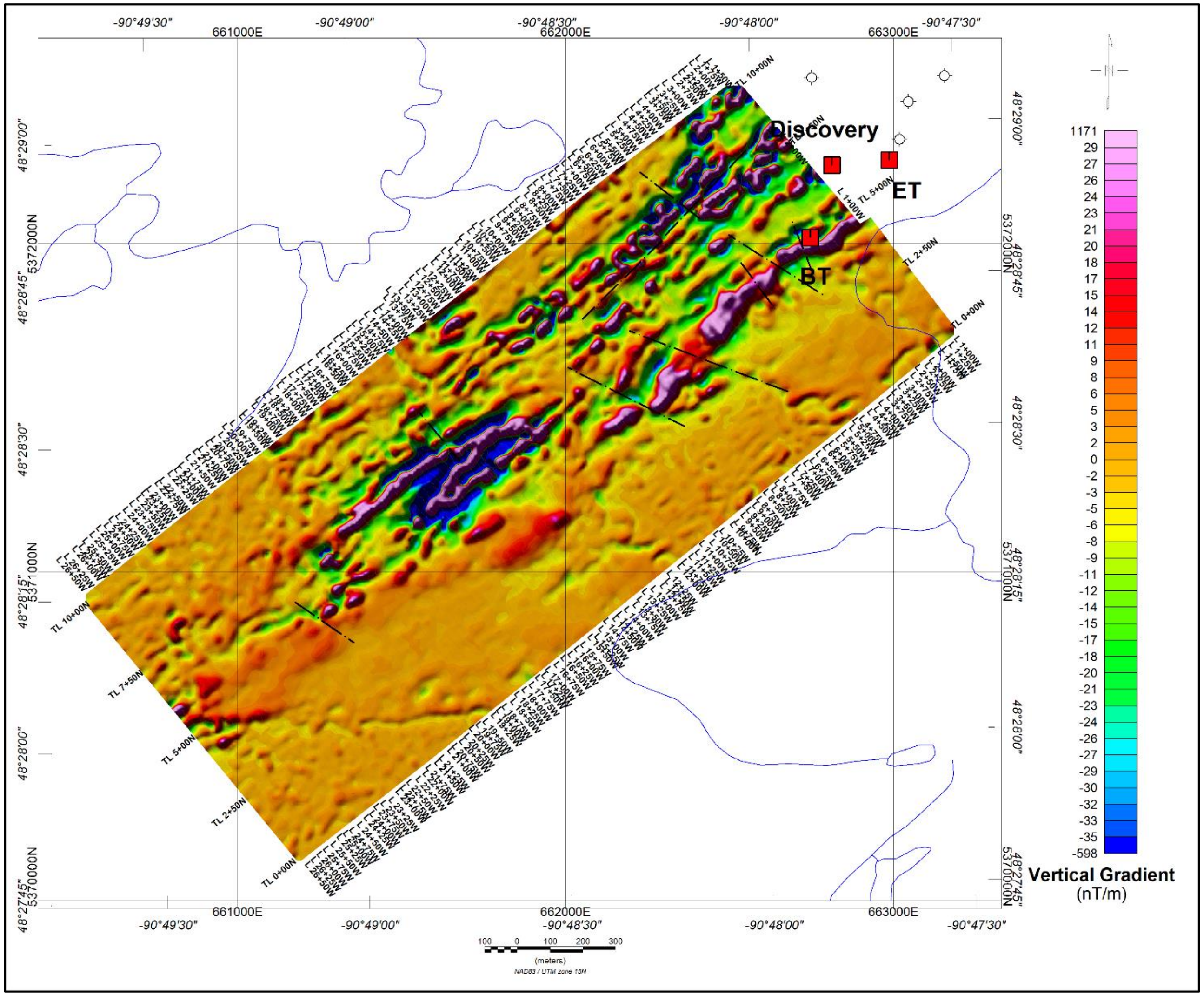

Figure 6. Calculated first vertical derivative of the total magnetic field, Hamlin Lake Project.

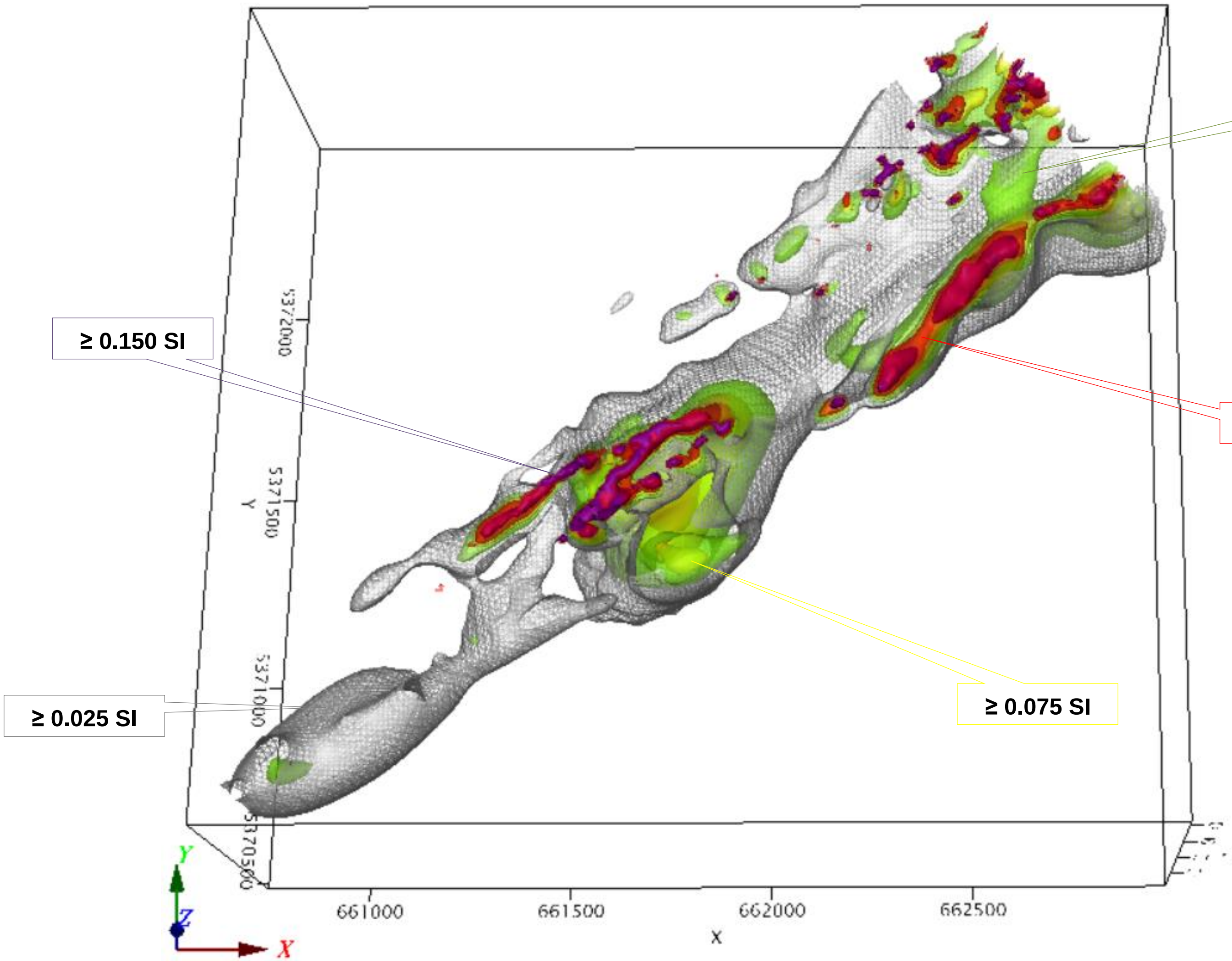

Figure 7. 3D view of the recovered magnetic susceptibility model plotted as isosurfaces, rendered at 0.025 SI.

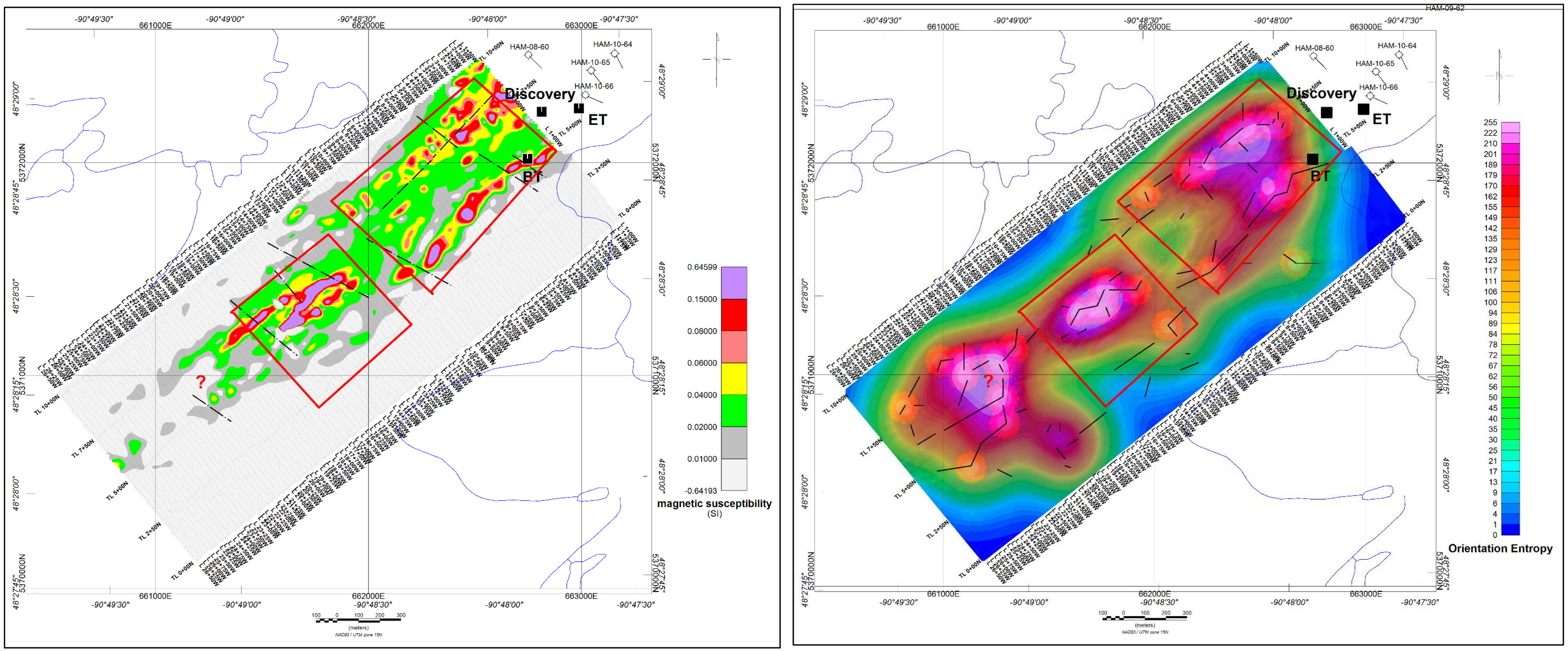

Figure 8. Simplified structural interpretation map (A), and orientation entropy heat map (B), indicating favorable zones for hosting IOCG occurences.

APPENDIX A – FIELDWORK SITE

- *PROJECT ID* — **Hamlin Lake Project**
  (Our reference: **21NT025-MG**)

- *GENERAL LOCATION* — West of Thunder Bay, Ontario, Canada

- *CUSTOMER* — **Strike Cooper Corporation.**
  82 Richmond St. East, Suite 401
  Toronto, ON M5C 1P1
  Tel.: 647-350-6122

- *REPRESENTATIVE* — **Mr. Charles J. Elbourne**
  President & CEO
  Phone: 416-315-6490
  elbourne007@gmail.com

  Mr. Russell Kwiatkowski,
  Director
  Phone: 807-627-5189
  rustykwia@hotmail.com

- *SURVEY TYPE* — GPS-Positioned Ground Magnetic

- *GEOPHYSICAL OBJECTIVES*
  - To improve the geological understanding of the property.
  - To help identify IOCC bearing structures for further exploration.

Figure 9. General location of the Hamlin Lake Project.

APPENDIX A – FIELDWORK SITE (CONTINUED)

- *LOCATION*

  Powell Lake Area, Thunder Bay, Ontario, Canada
  Centred on 48°28’26” N and 90°48’35” W
  NAD83 / UTM zone 15N: 661 860 mE, 5 371 297 mN
  NTS sheet: **52B/07**

- *NEAREST SETTLEMENTS*

  Kashabowie: 33 km north-north-east, as the crow flies.
  Thunder Bay: 116 km east, as the crow flies.

- *ACCESS*

  From the Timberland Motel at Shabaqua, the geophysical crew accessed the survey grid by driving west on Hwy 11 about 40 km and continued south-west on a forested trail by driving for about 54 km.

- *GEOMORPHOLOGY*

  The topography of the project area is relatively flat to gently rolling with elevations ranging from 414 to 467 m above sea level.

  The property physiography is diverse ranging from mature mixed forest to alder swamps typical within Archean terrains.

  Hydrographically, the survey grid is limited by the Hamlin lake to the north-east. A few streams, and swampy areas were encountered throughout the survey grid.

- *MINING LAND TENURE*

  The claim numbers encompassed in the present survey are illustrated on page 21. All the claims are 100% owned by Strike Copper Corp.

- *CULTURAL FEATURES*

  No cultural features were encountered throughout the survey grid.

- *SECURITY AND ENVIRONMENT*

  As part of the Abitibi Geophysics EHS program, crew members received first aid training and were provided with the safety equipment and specialized training for the geophysical techniques utilized on this project. In addition, the crew was provided with a satellite telephone for emergency communication.

  No incident was reported during this project.

- ❑ *SURVEY GRID*

The ground magnetic survey consists of 103 lines (L 1+00W to L 26+50W) regularly spaced at 25 m and oriented N140°. The survey lines vary from 0.425 to 1.04 km in length.

Five tie lines (TL 0+00N to TL 10+00N) spaced every 250 m complete the survey grid.

Refer to Figure 10 for a plan view of the zone covered by the present survey.

- ❑ *COORDINATE SYSTEM*

Local datum : NAD83
Projection type: Universal Transverse Mercator (UTM)
Zone: 15N

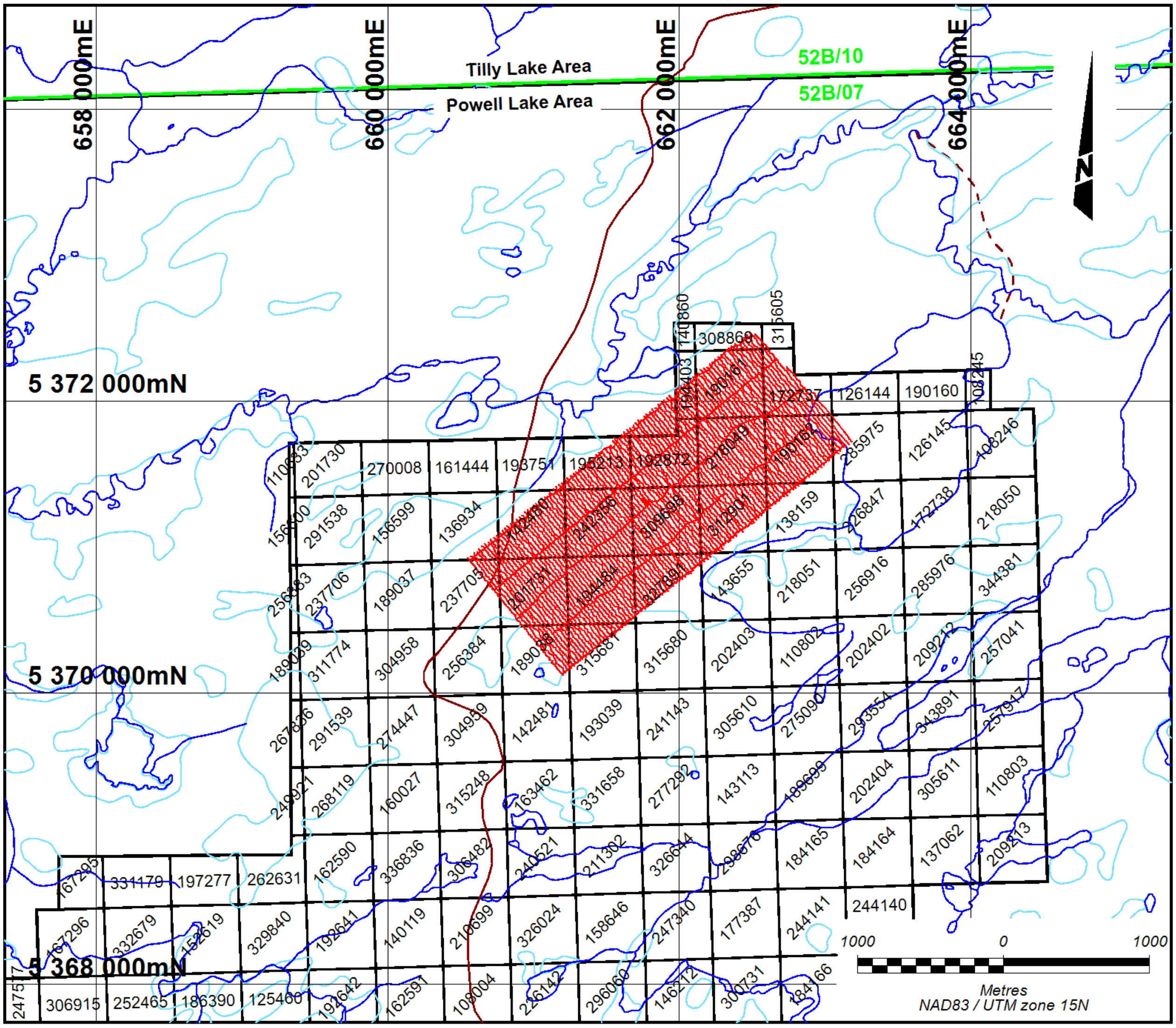

Figure 10. Index of claims and ground magnetic coverage (red lines) over the Hamlin Lake Project.

APPENDIX B – TECHNICAL SPECIFICATIONS

❑ *TYPE OF SURVEY*	Measurement of the Total Magnetic Field (TMF) with GPS readings every 2 seconds. The plotted values were corrected for diurnal variations using readings from a synchronized MAG base station.

❑ *PERSONNEL*

Marcel Naud	Crew chief, geophysical operator
Guillaume O. Poirier	Geophysical operator
Carole Picard, Tech.	Plotting
Madjid Chemam, P.Geo.	QC, interpretation, and report
Pam Coles, P.Geo.	Final quality control

❑ *DATA ACQUISITION* **March 28th to April 08th, 2021**

❑ *SURVEY COVERAGE* **116.88 km**

❑ *FIELD MAGNETOMETERS*

GEM Systems GSM-19 W v6, s/n: 2085540, 7052356
Proton precession magnetometer with overhauser effect

Resolution:	0.01 nT / 1 m
Absolute accuracy:	0.2 nT / 2-5 m
Range:	10 000 to 120 000 nT
Gradient tolerance:	>10 000 nT / m
Samples at:	60+, 5, 3, 2, 1, 0.5, 0.2 sec
Operating Temperature:	-40C to +55C
TMI sensor elevation:	1.8 m above ground

❑ *BASE STATION*

GEM Systems GSM-19 v5, s/n 6072060
Proton precession magnetometer with Overhauser effect

Resolution:	0.01 nT
Absolute accuracy:	0.2 nT
Cycle time:	**10 seconds**
Reference field:	56 200 nT
Location (UTM NAD83):	(660 833 mE; 5 370 965 mN)

- ❑ *QUALITY CONTROL (RECORDS AVAILABLE UPON REQUEST)*

Before the survey:

- ✓ All magnetometers were successfully field-tested on Abitibi Geophysics' private control line.

Every day during data acquisition:

- ✓ Every morning, the operator had to successfully test for any magnetic contamination.
- ✓ In the evening, the geophysical operator reviewed the base station and the mobile unit recordings using our proprietary MAGneto ® processing and QC software.
- ✓ The geophysical operator ensures no active geomagnetic activity would be encountered during the survey by visiting the Space Weather Canada website (www.spaceweather.gc.ca).

At the Base of Operations:

- ✓ Field QCs were inspected and validated.
- ✓ All profiles were inspected, spikes and duplicate readings were removed from the database.

- ❑ *QUALITY STATISTICS*

Table 2. Quality statistics – Ground Magnetic

Hamlin Lake Project – MAG-GPS survey		
Field magnetometer s/n: 7052356		
Reading	**Readings towards**	
	North	South
1	56210.39 nT	56211.31 nT
2	56210.47 nT	56211.43 nT
3	56210.48 nT	56211.51 nT
Average	56210.45 nT	56211.42 nT
Abs. Difference	0.97 nT (< 2 nT)	
Field magnetometer s/n: 2085540		
1	56217.66 nT	56218.16 nT
2	56217.65 nT	56218.28 nT
3	56217.64 nT	56218.43 nT
Average	56217.65 nT	56218.29 nT
Abs. Difference	0.35 nT (≤ to 2 nT)	

APPENDIX C – DATA PROCESSING AND DELIVERABLES

➢ GROUND MAGNETIC DATA PRESENTATION

❑ *TOTAL MAGNETIC FIELD PROFILES*

The corrected and leveled total magnetic field was plotted as profiles using a reference level of 56000 nT and a vertical scale of 5000 nT/cm (1.1).

❑ *TOTAL MAGNETIC FIELD CONTOURS*

The total magnetic field (TMF) was gridded using a Bi-directional Line gridding algorithm with a grid cell size of 6.25 m. One pass of a 3 x 3 Hanning filter was applied to the resulting grid, which was then re-gridded with a cell size of 2.5 m to improve the overall appearance of the final map (1.2).

The Geosoft colour table (Clrb64.tbl) was used with linear interval of 50 nT from 55 800 nT to 57 600 nT.

❑ *CALCULATED VERTICAL GRADIENT CONTOURS*

Using a convolution filter method, the vertical gradient (first vertical derivative) of the total magnetic field is calculated to enhance the high frequency component of the magnetic data and eliminate long wavelength regional effects. This high frequency enhancement resolves the contacts of magnetic features more accurately than the total field response (map 1.4)

The Oasis Montaj color table (Clra64.tbl) was used with linear intervals of 2.5 nT/m from -60 nT/m to +60 nT/m.

❑ *MAPS PRODUCED*

A plot of four geophysical maps produced at scale 1:5000, is inserted in pouches at the end of this report.

All plan maps are registered to the NAD83 / UTM zone 15N, coordinate system at end of the report as collected in the field.

Our Quality System requires that every final map be inspected by at least two qualified persons before being approved and included in a final report.

❑ *DIGITAL DATA*

The above-described maps are delivered in the Oasis Montaj map file format on DVD-Rom.

A copy of all survey acquisition data (ASCII text format) and processed data (Geosoft Montaj databases) are also delivered on DVD-Rom.

REFERENCES

Max Keogh, 2008 – 2010 Diamond Drilling Assessment Report, 2010. Hamlin Property, Thunder Bay Mining Division, Northwestern Ontario, 2010.

Nathan Forslund, Alteration and Fluid Characterization of the Hamlin Lake IOCG Occurrence, Northwestern Ontario, Canada, 2012 Lakehead University.

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Ontario Geological Survey, Ontario Airborne Magnetic and Electromagnetic Surveys Geophysical Data Set 1021 – Revised, Shebandowan Area, 2003.

Mark D. Barton, IOCG Deposits: A Cordilleran Perspective. University of Arizona, Tucson, Arizona, 2009.

P.V. Sunder Raju * and K. Satish Kumar, Magnetic Survey for Iron-Oxide-Copper-Gold (IOCG) and Alkali Calcic Alteration Signatures in Gadarwara, M.P, India: Implications on Copper Metallogeny, 2020.

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Claim number	Total Line Length (km)
136934	1.16
138159	1.29
142480	7.35
143655	0.30
172737	5.13
189038	3.08
190161	8.80
190162	8.84
192872	7.81
193751	0.21
194403	1.61
194484	9.37
195213	5.10
201731	8.88
218049	9.35
237705	1.40
242356	9.36
285975	1.05
308869	0.91
309698	9.42
312901	7.57
315605	0.07
315681	3.26
327891	5.56
Total	116.88

Expenditure Details (Receipt entries)														
Primary Cost Category		Secondary Cost Category	Work Performed		Invoicee	Invoice Reference #	Invoice Date	Billing Unit	Unit Price	# Units	Total Cost (No Tax)	Rounded	Invoice Reference #
Primary Exploration Activity	Work Subtype	Associated Cost Type	Start Date	End Date									
Ground_Geophysical_Survey_Work	Electromagnetics		March 28, 2021	April 8, 2021	Abitibi Geophysics	21-5061	April 12, 2021	Each	$ 32,777.10	1.00	$ 32,777.10	$ 32,777.00	1
Ground_Geophysical_Survey_Work	Electromagnetics		March 28, 2021	April 8, 2021	Abitibi Geophysics	21-5087	May 21, 2021	Each	$ 3,641.70	1.00	$ 3,641.70	$ 3,642.00	2
										Total	$ 36,418.80	$ 36,419.00	