Ontario

Technical Report for MNDM Assessment Purposes, Summer 2022 Drone Magnetometer Survey

Hartman Property

Hartman Township, Kenora Mining Division
Ontario, Canada

Prepared For:

Michael Thompson

Prepared By:
Alexander Hughes and Jordan Quinn

DATE OF COMPLETION:
September 12, 2022

1 Introduction and Summary

The Hartman Property consists of two mining claims within the Hartman Township in the Kenora Mining Division. The property is fully owned by Michael Thompson and located approximately 20 km east of Dryden, Ontario along Highway 17.

Michael Thompson contracted Fladgate Exploration Consulting Corporation ("**Fladgate**") to conduct an unmanned aerial geophysical survey on the Harman property from June 29-30 2022. Fladgate provided all the required geological, geotechnical, and sub-contractor services on the program described herein. The program consisted of 10 North-South flight lines spaced at 50m and 4 West-East tie lines spaced at 200m totaling 9 flown line kilometers. The survey was performed in order to map the magnetic signature of the underlying geology.

The results of the survey indicate the presence of a singular possible east-west trending magnetic anomaly. Subsequent and more detailed geophysical surveys are recommended to enhance the boundaries and locations of magnetic anomalies on the property.

2 Terms of Reference

This report was prepared at the request of Michael Thompson for the use of filing assessment as required under the Ontario Mining Act. Unless otherwise noted, Universal Transverse Mercator ("UTM") coordinates are provided in the datum of NAD83 Zone 15 North.

3 Disclaimer

The author disclaims responsibility for portions of the current report that rely on information from historic assessment files and government maps and reports which may not have been prepared in compliance with current standards.

4 Property Description and Location

The Hartman property is located in the Hartman Township within the Kenora Mining Division in Northwestern Ontario, approximately 20 km east of Dryden, Ontario and 180 km east of Kenora, Ontario (**Figure 1**). The property is centered on UTM coordinates 533,984 mE 5,513,720 mN (NAD83 Zone 15N).

The west boundary of the property can accessed be year-round from Dryden, Ontario by traveling approximately 17 km east on Highway 17, 0.3 km east on Anderson Road, and then 5 km north on Dump Road (**Figure 2**). Hughes Creek runs north-south through the center of the property therefore access to the east boundary is achieved via Anderson Road 2 by traveling 22 km along Highway 11, 12 km north on Highway 72, and then 7 km west on Anderson Road 2 and 6 & 11 Road.

Figure 1 - Hartman Property Location

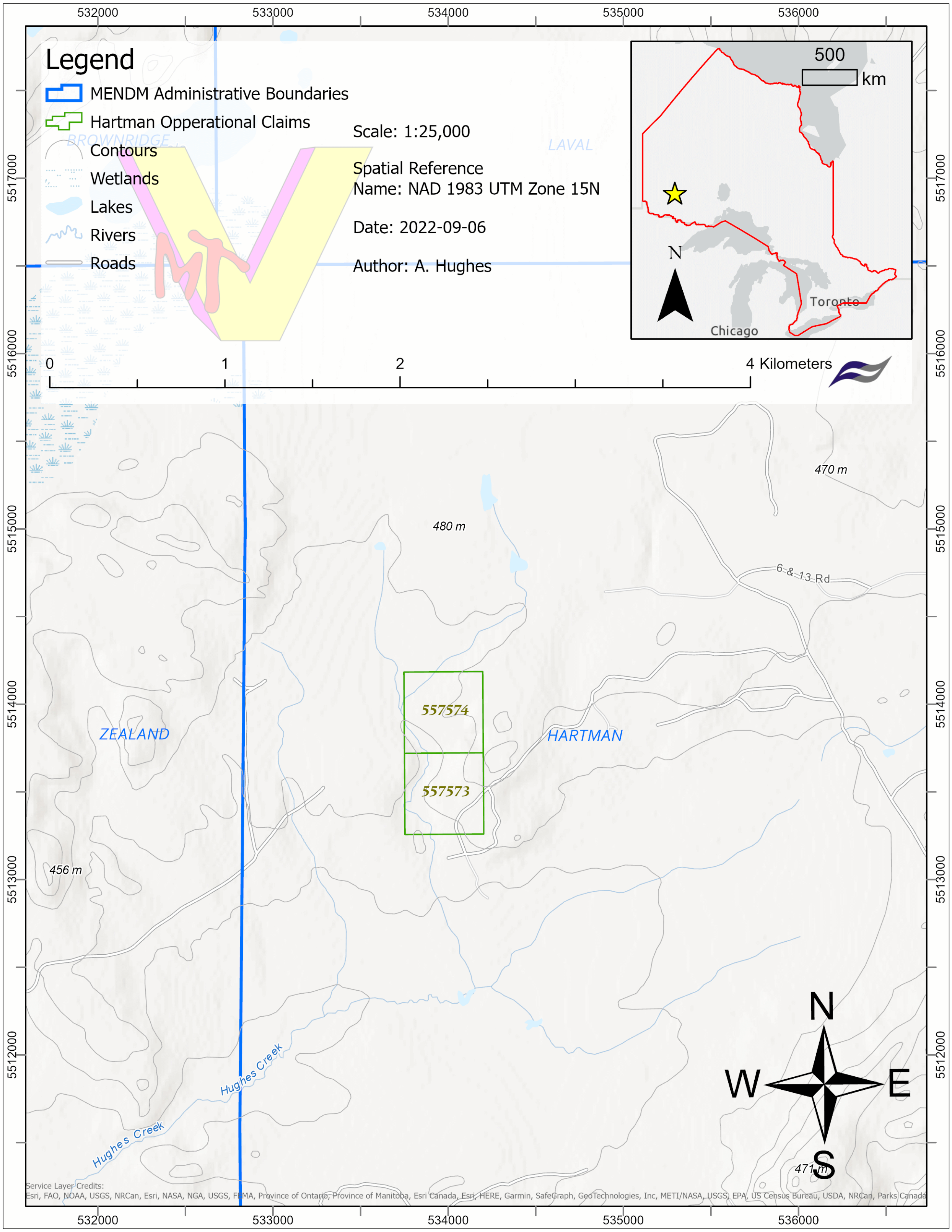


Figure 2 - Hartman Claim Map

Table 1 – Hartman Claims

Claim Number	Township	Units	Ha	Claim Due Date	% Option	Ownership
557574	HARTMAN	1	16	2022-09-12	100	Michael Thompson
557573	HARTMAN	1	16	2022-09-12	100	Michael Thompson

5 Local Resources, and Infrastructure

The closest settlement and source of supplies is the town of Dryden, located approximately 20 km west of the Hartman Property. Most supplies are readily available in Dryden, Ontario. The next closest settlement is the town of Kenora, Ontario 140 km east of the property with services and amenities for industrial, educational, and leisure activities. Local experienced labour is readily available at both locations, as well as the regional offices of the Ministry of Energy, Northern Development and Mines. The property is located in proximity to major rail and hydroelectric infrastructure. There are no permanent structures on the property. Water is available year-round from the many small lakes and rivers within and surrounding the Hartman Property.

6 Climate and Physiography

The bulk of Hartman township is low-lying and swampy, and generally vegetated with alder, spruce and cedar. Hughes Creek provides drainage of the area to the west and south, eventually to Wabigoon Lake. Along the Hartman-Zealand township boundary, west of the property, is an area of flat to rolling sand plains and outwash eskers.

Climate in the area is typical of Northern Ontario, with cold winters and warm summers. Historically, January temperatures average to approximately -22˚C while July averages to a 24˚C high. Work can be done (subject to snow and freezing) for most of the year.

7 Geological Setting

7.1 Regional Geology

The Hartman property is located in the Eagle-Wabigoon-Manitou greenstone belt situated in the Wabigoon Subprovince of the Archean Age Superior Province (**Figure 3**). This belt is situated in a 150-kilometer-wide volcano-plutonic domain with an exposed strike extent of 700 km and extends an unknown distance beneath Palaeozoic strata at either end (Beakhouse, et al., 1995).

South of the Property is the “Wabigoon Fault” (**Figure 3, Figure 4**) which is a major regional fault structure. It separates a northern domain, characterized by generally southward-facing alternating panels of metavolcanic and metasedimentary rocks, from a southern domain of generally northward-facing metavolcanic rocks (Beakhouse G. P., 2000).

The greenstone belt is a volcano-plutonic complex and is one of the four-types of lithotectonic domains within the Superior Province intruded by syn-volcanic to post-tectonic granitoid plutons. The magmatic components of the greenstone belts include ultramafic to intermediate volcanics and more felsic volcanic and pyroclastic. The sedimentary component of greenstone belts includes both clastic and chemical deposits. Plutonic rocks in these domains include synvolcanic tonalitic, quartz dioritic and granodioritic plutons, the emplacement of which is thought to have deformed the greenstone belts into arc forms. Metamorphic grade is generally green schist or sub-green schist grade except for narrow belts or the margins of larger belts which commonly display mineral assemblages typical of low-pressure amphibolite grade rocks (Percival, 2007)

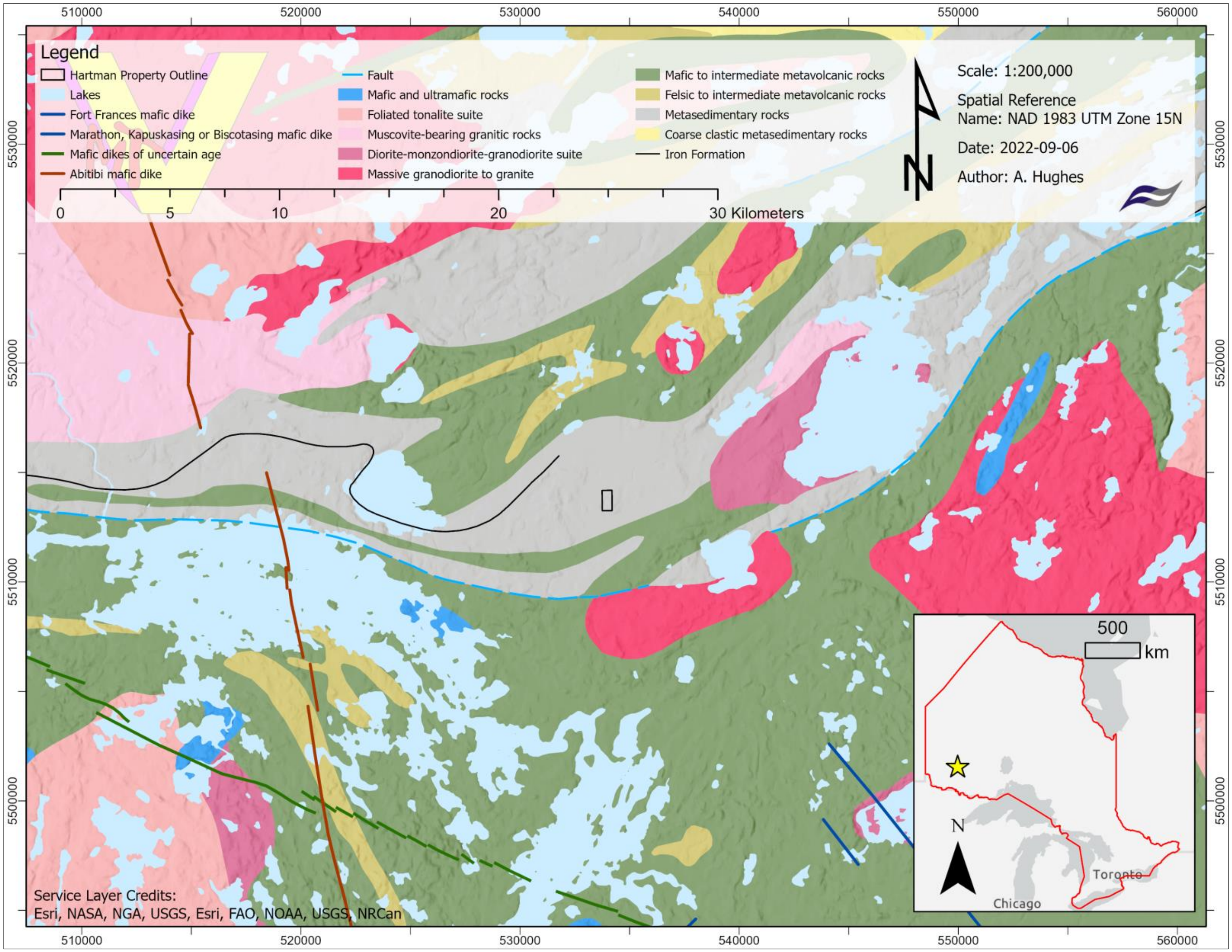


Figure 3 - Regional Geology of Northwestern Ontario

7.1.1 *Hartman Property Geology – Thunder Lake Assemblage*

The earliest descriptions of the local geology were carried out by Satterly (1941) for the Ontario Department of Mines. These were later expanded with the updating of geological maps by the Ontario Geological Survey from 1995 to 2002 (Beakhouse G. , 2002), (Beakhouse G. P., 2001), (Beakhouse G. P., 2000), (Beakhouse, et al., 1995).

Thunder Lake Assemblage, an upper greenschist to lower amphibolite metamorphic grade volcanogenic-sedimentary complex, is typically separated into the “Thunder Lake Sediments” and “Thunder Lake Volcanics” (Beakhouse G. P., 2000). Underlying much of the Project area, the assemblage comprises quartz-porphyritic felsic to intermediate metavolcanic rocks represented by biotite gneiss, mica schist, quartz-porphyritic mica schist, a variety of metasedimentary rocks and minor amphibolite rocks (Dunbar, 2015)

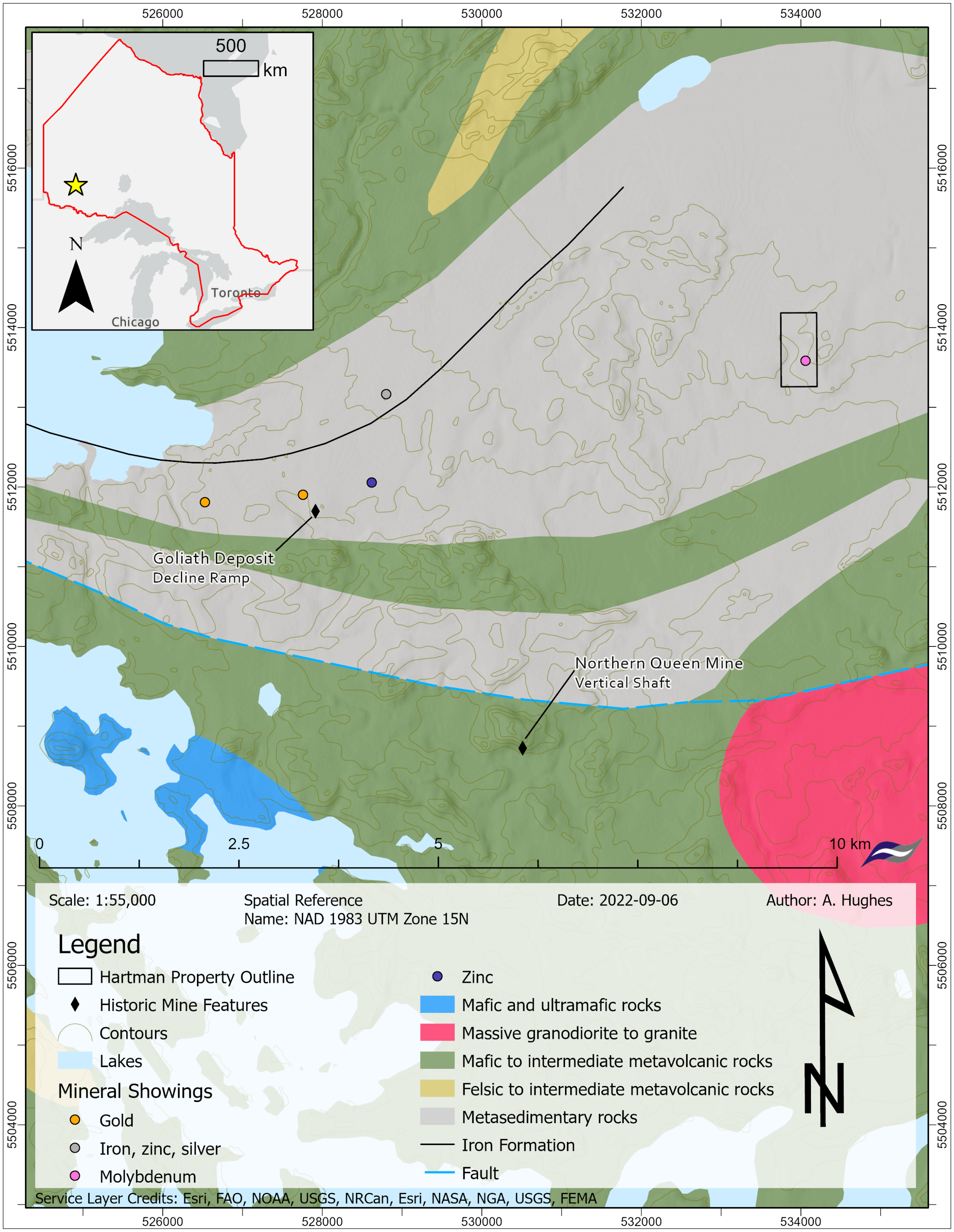


Figure 4 – Hartman Property Geology

8 History of Exploration

1940	The Hartman township was included in a geological mapping project carried out by J. Saterly of the Ontario Department of Mines (Satterly, 1941).
1986 - 1991	Further regional scale mapping and airborne geophysics of the Hartman Township carried out by and B. Berger of the Ontario Geological Survey (Berger, 1990), (Chorlton, 1988) (Chorlton, 1991)
1993	Teck Exploration Ltd. conducts a geophysical survey (magnetics, VLF-EM, and IP) in the Hartman Township with a segment of this occurring over the south portion of the current property boundary (Thorsen, 1993).
1995	Champion Bear Resources conducts an exploration program consisting of ground magnetometer, VLF-EM, and geological mapping (Sears, 1995).
2011	Treasury Metals commissions Fugro Airborne Surveys to complete an airborn magnetic and DIGHEM survey over the Goliath and Gold Cliff properties. The survey covers a segment of the south portion of the current property boundary. The purpose of the survey was to map the geology and underlying structures of the area (Fugro Airborne Surveys, 2011)

9 Current Program

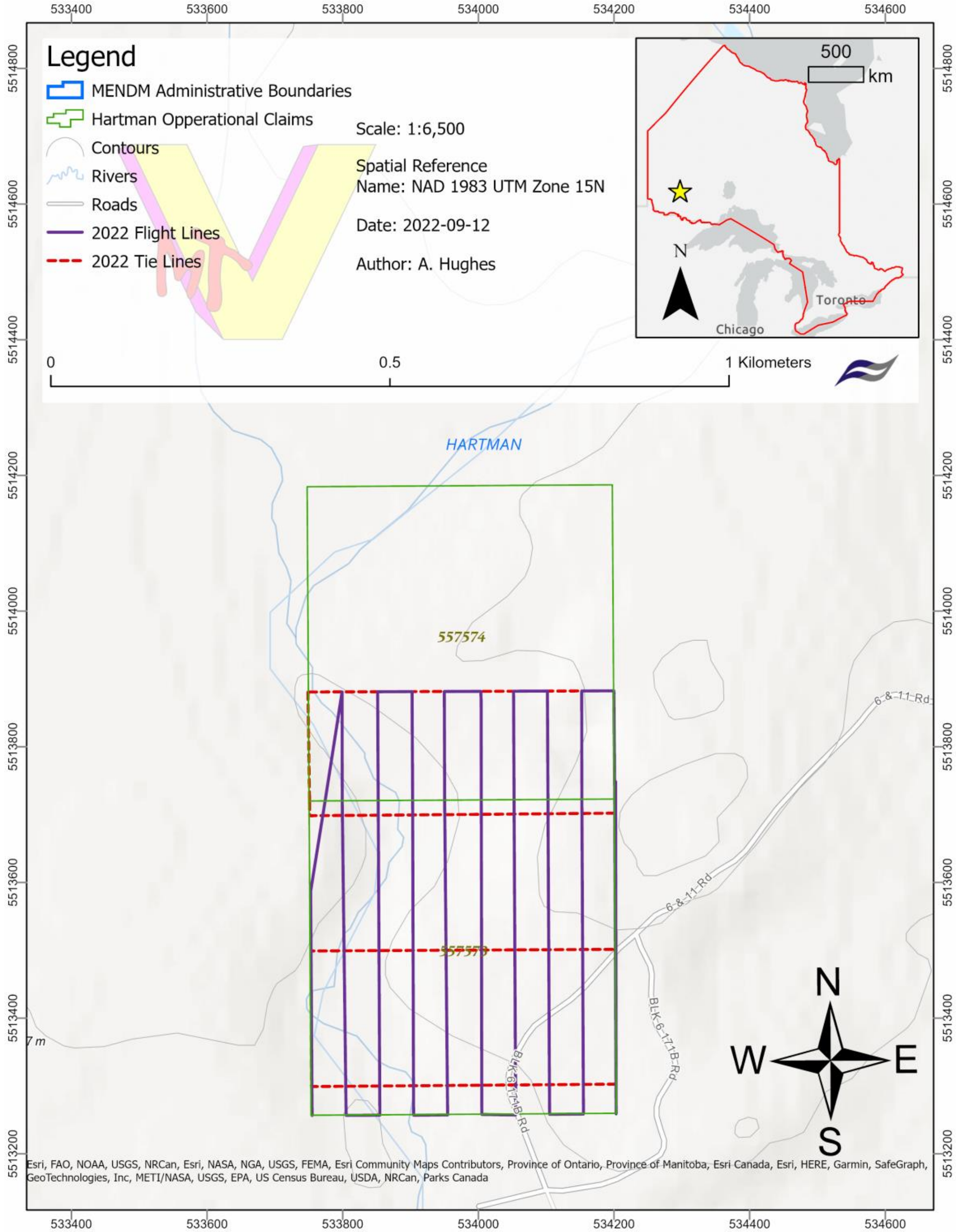
From June 29-30, 2022, a drone magnetic survey was carried out on the Hartman property. The survey consisted of 10 North-South flight lines spaced at 50m and 4 West-East tie lines spaced at 200m (Error! Reference source not found.). The height of the survey was 50m and total line kilometers flown were 9 km. Error! Reference source not found. summarizes the total line kilometers flown per claim on the Werner Lake property. The goal of the survey was to map the magnetic signature of the underlying geology.

Table 2 – Distribution of Work by Mining Claims

Claim #	Line Kilometers Flown
557574	2
557573	7
TOTAL	9

Universal Ground Control Software (UgCS) was used in planning the drone survey. Flight lines were planned as perpendicular as possible to the known underlying geology and at a flight speed of 7.5 m/s.

The principle geophysical sensor used was a Gem Systems Canada GSMP-35U potassium vapor sensor mounted on a UAV platform. A GSM-19 Overhauser Magnetometer base station was used in conjunction with the UAV magnetometer. General specifications of both magnetometers can be found in Appendix 1 of this report: Instrument Specifications.



Esri, FAO, NOAA, USGS, NRCan, Esri, NASA, NGA, USGS, FEMA, Esri Community Maps Contributors, Province of Ontario, Province of Manitoba, Esri Canada, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, US Census Bureau, USDA, NRCan, Parks Canada

Fladgate used the DJI Matrice 600 Pro UAV to complete this survey. Specifications of the UAV used can also be found in Appendix 1 of this report

Figure 5 – Map of Hartman Drone Survey

9.1 Personnel

Field operations were supervised and all technical staff was provided by Fladgate and began with logistics and flight planning on June 29, 2022.

Table 3 – Personnel Log

Name	Working Title	Responsibilities	Dates on Project
Jordan Quinn	Project Geologist	Mobilization, Pilot, Drone route planning, Demobilization, Processing Geophysics/Map Creation, Report writing	June 29-30, 2022; September 11-12, 2022;
Shyla Anderson	Geotechnician	Mobilization, Assist in flight setup and operations, Demobilization	June 29-30, 2022
Alexander Hughes	Geologist	Report writing	September 7, 2022 – September 9, 2022

10 Data Processing

Raw aerial magnetometer data was collected at a rate of 10 Hz while base station data was collected at a rate of 0.5 Hz. Total field and GPS UTC time was recorded with each data point which enabled diurnal corrections to be applied during subsequent data processing. An example of the raw data required to carry out the filtering and processing steps is given in **Table 4**.

Table 4 – Raw Geophysical Drone Data

UTC Time	Total Field Mag (nT)	Lock Status	Signal Strength	UTM Easting	UTM Northing	GPS Altitude (m)	Laser Altimeter (m)
144803.7	55377.1	1	309	454931.73	5366619.93	333	8.66
144803.9	55424.3	1	143	454931.71	5366619.89	333	9.24
144804	55441.3	1	504	454931.7	5366619.86	334	9.48
144804.1	55454.9	1	233	454931.7	5366619.87	334	9.79
144804.2	55465.0	1	152	454931.7	5366619.86	334	10.26
144804.3	55471.9	1	208	454931.7	5366619.85	335	10.58

The raw data was then imported into Oasis Montaj Software to be further processed. The steps involved in filtering the data are as follows:

1. A filter was applied to the data based on the lock parameter of the magnetometer. All values that were recorded that did not have a lock value of 1 were removed. The datapoints which remained after this filter were correctly oriented with the Earth's magnetic field.

2. The second filtering step was based on the geometry of the survey area. Data outside the defined survey area were removed. This included data that was gathered while the UAV was in flight to and from the takeoff/landing site and data that was gathered as the UAV takes corners at the end of survey lines. This step reduced edge effects and insured that sampling points were evenly distributed throughout the survey area.
3. A filter was applied that removed any data that was not collected at the programmed survey elevation. This step removes any data that was collected while the UAV was on the ground in between surveys or while the UAV was rising to the programmed survey elevation.

After the data was filtered, the data was processed for interpretation through the following steps:

1. The Earth's magnetic field was subtracted from the total magnetic field reading of the magnetometer. The resulting residual magnetic field data represents the component of the field that is caused by the subsurface.
2. The second processing step involved the subtracting of the observed diurnal variations from the residual magnetic field data. This was achieved by analyzing the change of the magnetic field in the base station measurements with time and correcting for this change.
3. The residual magnetic data was then leveled and a reduction to pole calculation was performed. The resulting data was then used for various interpolations using Oasis Montaj's gridding and mapping functions.

11 Results

The results of the magnetic survey are presented as a contoured total field map. The results from the magnetic survey indicate a relatively quiet magnetic background in the survey area. There appears to be a north-south trending mag high that is disrupted by an east-west trending low.

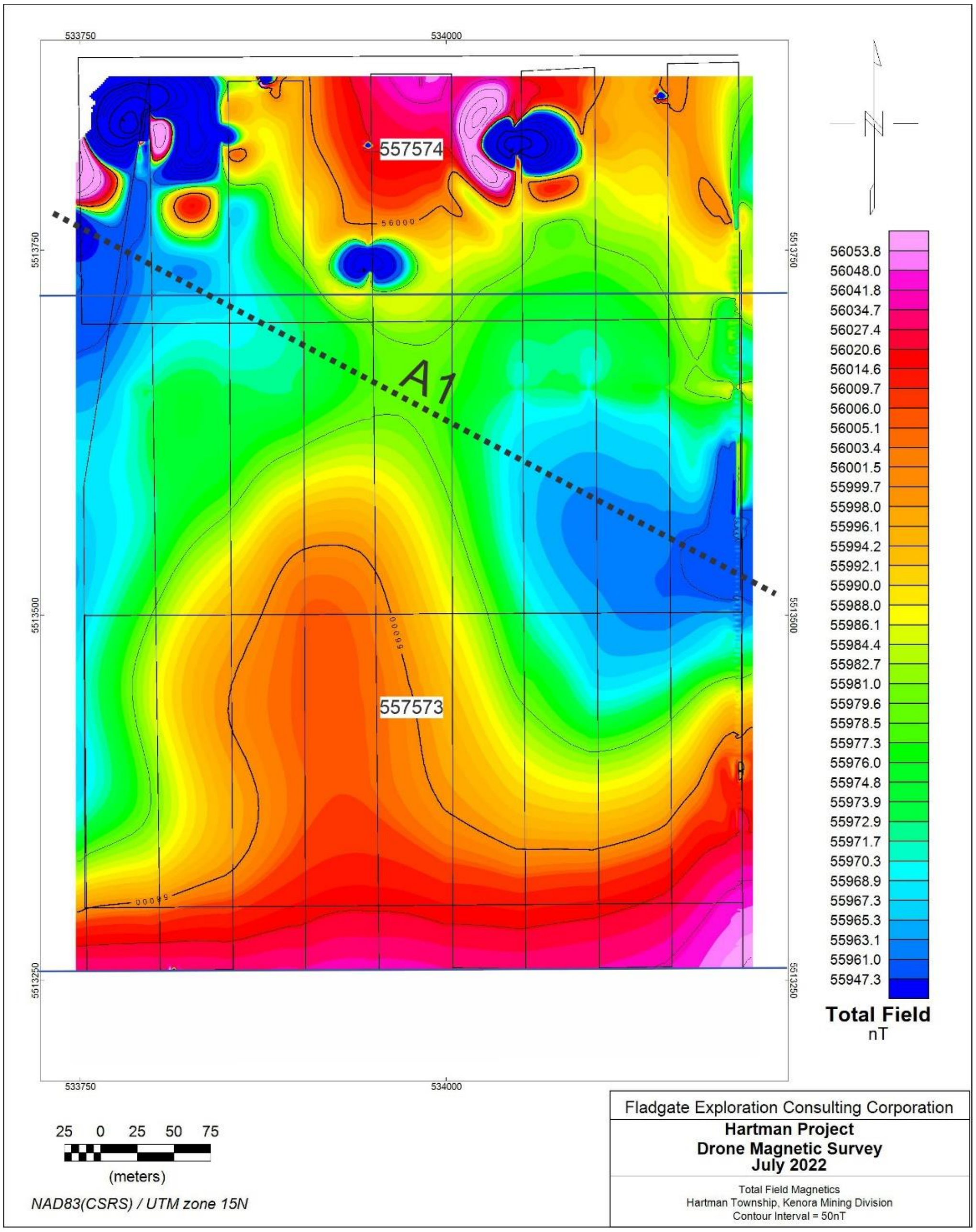


Figure 6 – Total Field Magnetic Map

12 Conclusion and Recommendations

The magnetic survey completed over the Hartman property was successful in mapping magnetic anomalies and underlying geological trends. The east-west trending magnetic anomaly shown in the total field magnetic map could possibly be a small fault which are common in the area trending a similar direction.

It is recommended that another mag survey be flown at a lower elevation in conjunction with a detailed ground mag survey to more confidently confirm the location and origin of this anomaly.

13 References

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14 Statement of Qualification

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CERTIFICATE OF THE AUTHOR

I, **Jordan Quinn**, do hereby certify that:

1. I am an employee of Fladgate Exploration Consulting Corporation, the geological consulting firm tasked with this report.
2. I am a member in good standing of the Association of Professional Geoscientists of Ontario (APGO #3151).
3. I am a graduate of Lakehead University (Hons. B.Sc., 2014).
4. I have practiced geology for 7 years in a variety of settings, mostly in Northwestern Ontario, Canada. I have specific experience in Archean lode gold deposits in Ontario, mostly working as both a production and exploration geologist at various gold mines throughout Ontario.
5. I have no previous involvement with the property that forms the subject of this Technical Report.
6. I am not aware of any material fact or material change with respect to the subject matter of the Technical Report that is not reflected in the Technical Report, the omission to disclose which makes the Technical Report misleading.
7. I consent to the filing of this Technical Report with any stock exchange and other regulatory authority and any publication by them, including electronic publication in the public company files on their website accessible by the public.

Effective Date: September, 2022
Date of signing: September, 2022

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Jordan Quinn, H.B.Sc., P.Geo. (APGO #3151)

Appendix I – Instrument Specifications

GEM GSMP-35UA: Ultra Light-Weight Potassium Magnetometer

Magnetometer Specifications

Sensitivity: 0.0002 nT @ 1 Hz
Resolution: 0.0001 nT
Absolute Accuracy: +/- 0.1 nT
Heading Error: + / – 0.05 nT
Dynamic Range: 15,000 to 120,000 nT
Gradient Tolerance: 50,000 nT/m
Sampling Intervals: 1, 2, 5, 10, 20 Hz
Operating Temperature: -40°C to +55°C

Orientation

Sensor Angle: optimum angle 35° between sensor head axis & field vector.
Proper Orientation: 10° to 80° & 100° to 170
Heading Error: +/- 0.05 nT between 10° to 80°and 360° full rotation about axis.

Environmental

Operating Temperature: -40°C to +55°C
Storage Temperature: -70°C to +55°C
Humidity: 0 to 100%, splashproof

Dimensions & Weight

Sensor: 161mm x 64mm (external dia) with 2m cabling ; 0.43 kg
Electronics Box: 236mm x 56mm x 39mm; 0.46 kg
Option 1 cabling; .125kg
Option 3 light weight battery; .250kg

Power

Power Supply:18 to 32 V DC
Power Requirements: approx. 50 W at start up, dropping to 12 W after warm-up
Power Consumption:12 W typical at 20°C Warm-up Time: <15 minutes at -40°C

Outputs

20 Hz RS-232 output with comprehensive Windows Personal Computer (PC) software for data acquisition and display.

Outputs UTC time, magnetic field, lock indication, heater, field reversal, GPS position (latitude, longitude altitude, number of satellites)

Components

Sensor, pre-amplifier box, 2m sensor /pre-amplifier cable (optional cable 3-5m), manual & shipping case

GSM-19 Overhauser Magnetometer

Performance

Sensitivity: Standard
GSM-19 0.022 nT @ 1 Hz
GSM-19PRO 0.015 nT @ 1 Hz
Resolution: 0.01 nT
Absolute Accuracy: 0.1 nT
Dynamic Range: 20,000 to 120,000 nT
Gradient Tolerance: up to 10,000 nT/m
Samples at: 60+, 5, 3, 2, 1, 0.5, 0.2 sec
Operating Temperature: -40°C to +50°C

Operating Modes

Manual: Coordinates, time, date and reading stored automatically at up to 0.2 sec.
Base Station: Time, date and reading stored at 1 to 60 second intervals.
Remote Control: Optional remote control using RS-232 interface.
Input/Output: RS-232 using 6-pin weatherproof connector with USB adapter.

Memory - (# of Readings in millions)

Mobile: 1.4M
Base Station: 5.3M
Gradiometer: 1.2M
Walking Mag: 2.6M

Dimensions

Console: 223mm x 69mm x 240 mm(8.7x2.7x9.5in)
Sensor: 175mm x 75mm diameter cylinder (6.8in long by 3 in diameter)

Weights

Console with Belt: 2.1 kg Sensor and Staff Assembly: 1.0 kg

Matrice 600

Structure

Diagonal Wheelbase: 1133 mm
Aircraft Dimensions: 1668 mm x 1518 mm x 759 mm (Propellers, frame arms and GPS mount unfolded)
640 mm x 582 mm x 623 mm (Frame arms and GPS mount folded)
Package Dimensions : 620 mm x 320 mm x 505 mm
Intelligent Flight Battery Quantity: 6
Weight (with six TB47S batteries): 9.1 kg
Weight (with six TB48S batteries): 9.6 kg
Max Takeoff Weight: 15.1 kg

Performance

Hovering Accuracy (P-Mode, with GPS) Vertical: ±0.5 m, Horizontal: ±1.5 m
Max Angular Velocity: Pitch: 300°/s, Yaw: 150°/s
Max Pitch Angle: 25°
Max Speed of Ascent: 5 m/s
Max Speed of Descent: 3 m/s
Max Wind Resistance: 8 m/s
Max Flight Altitude above Sea Level: 2500 m
Max Speed: 18 m/s (No wind)
Hovering Time (with six TB47S batteries)* No payload: 35 min, 6 kg payload: 16 min
Hovering Time (with six TB48S batteries)* No payload: 40 min, 5.5 kg payload: 18 min

* The hovering time is based on flying at 10 m above sea level in a no-wind environment and landing with 10% battery level.

Remote Controller

Operating Frequency:

- 920.6 MHz to 928 MHz (Japan)
- 5.725 GHz to 5.825 GHz
- 2.400 GHz to 2.483 GHz

Max Transmission Distance (unobstructed, free of interference) :
- FCC Compliant: 3.1 miles (5 km)
- CE Compliant: 2.1 miles (3.5 km)

EIRP:
- 10 dBm @ 900 M/li>
- 13 dBm @ 5.8 G
- 20 dBm @ 2.4 G

Video Output Port: HDMI, SDI, USB

Dual Users Capability: Master-and-Slave control
Mobile Device Holder: Supports smartphones and tablets
Output Power: 9 W
Operating Temperature: 14° to 104° F (-10° to 40° C)
Storage Temperature:
Less than 3 months: -4° to 113° F (-20° to 45° C)
More than 3 months: 72° to 82° F (22° to 28° C)

Charge Temperature: 32° to 104° F (0° to 40° C)
Built-in Battery: 6000 mAh, 2S LiP
Max Tablet Width: 170 m

Propulsion System

Motor Model: DJI 6010
Propeller Model: DJI 2170

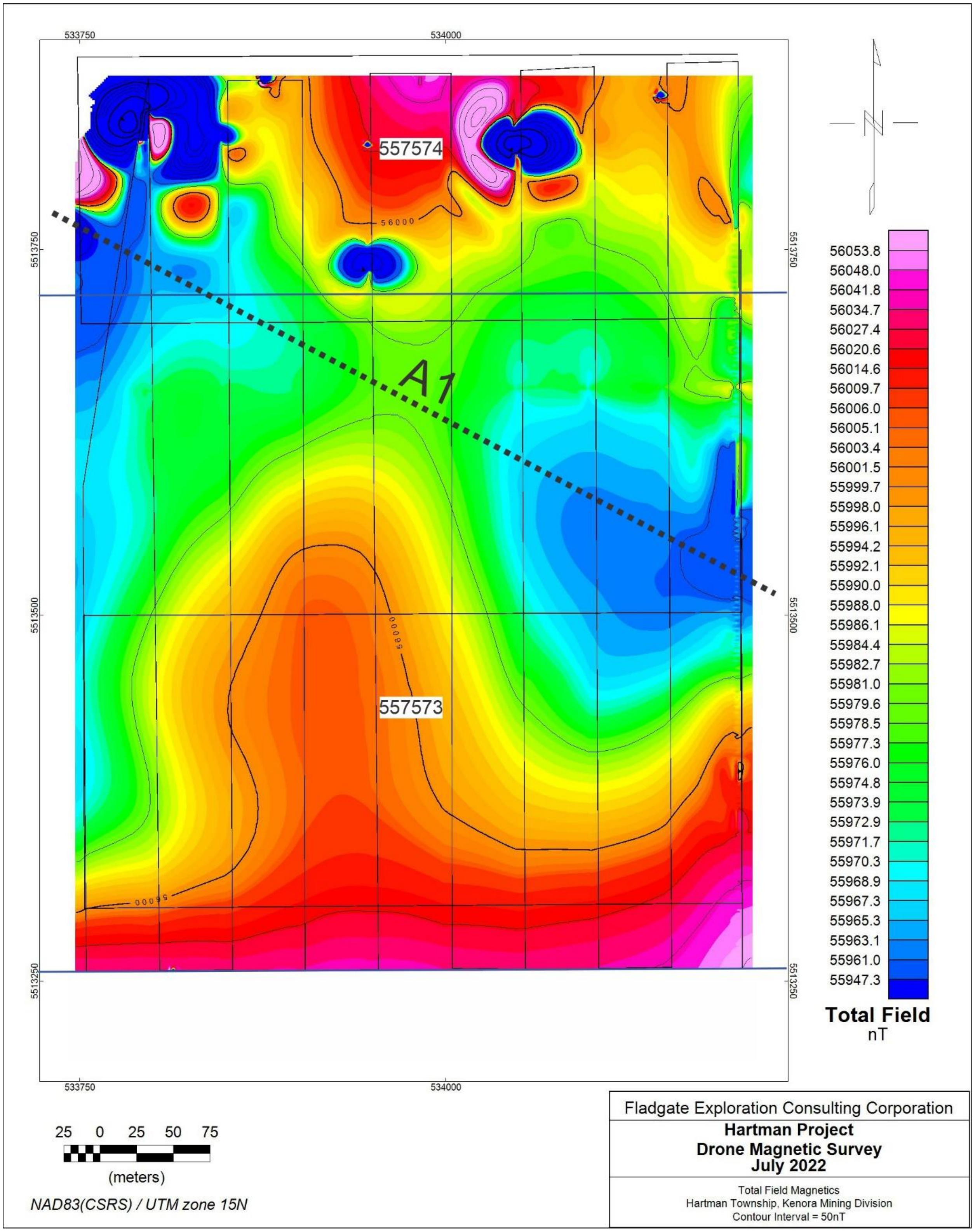
Battery

Model: TB48S
Capacity: 5700 mAh
Voltage: 22.8 V
Type: LiPo 6S
Energy: 129.96 Wh
Net Weight: 680 g
Operating Temperature: 14° to 104° F (-10° to 40° C)
Storage Temperature: Less than 3 months: -4° to 113° F (-20° to 45° C) More than 3 months: 72° to 82° F (22° to 28° C)
Charge Temperature: 41° to 104° F (5° to 40° C)
Max Charging Power: 180 W

Charger

Model: MC6S600
Voltage: Output 26.1 V
Power Rating: 100 W

Appendix II –Maps



Appendix III – Program Expenditures & Cost Per Claim

	Date From MM/DD/YYYY	Date To MM/DD/YYYY	Item	Rate	Per Unit	Units	subtotal
Data Collection	06/29/2022	06/30/2022	Truck Rental	$100	day	2	$200
			Mileage	$0.75	km	750	$563
			Room & Board	$225	day	4	$900
			Line kms	$200	km	9	$1,800
			Mob/DeMob from site	$1,000	day	1	$1,000
			Lift Rental	$150	day	2	$300
						subtotal	*$4,763*
Processing & Report	09/11/2022	09/12/2022	processing	$800	day	2	$1,600
	09/11/2022	09/12/2022	Mag report writing	$700	day	2	$1,400
	09/07/2022	09/09/2022	assessment report writing	$700	day	3	$2,100
						subtotal	*$5,100*
						TOTAL	***$9,863***

Claim #	Cost Per Claim ($)
557574	$2,192
557573	$7,671
TOTAL	$9,863