Ontario

We are committed to providing accessible customer service.
If you need accessible formats or communications supports, please contact us.

Nous tenons à améliorer l’accessibilité des services à la clientèle.
Si vous avez besoin de formats accessibles ou d’aide à la communication, veuillez nous contacter.

REPORT ON A GROUND MAGNETIC SURVEY OVER THE CORBIERE PROPERTY

Ontario, Canada

Mineral tenure ID's: 582645, 582646, 582647' 582648, 582649, 582650, 582651' 583416, 583417. 583418, 583419, 583420, 583421, 583422, 583423, 622104, 622105, 622106, 644855, 644856, 644857, 644858, 644859

NTS: 42-C-02

Field Work performed in-house

Survey Dates 11-24 October 2021

Report By:

David Bingham, B Sc., P. GEO.,

February 2022

For

Manitou Gold Inc.

82 Richmond St East,

Toronto, ON M5C 1P1

Phone: 705-698-1962

Fax: 416-361-0923

Table of Contents

List of Figures

List of Tables

List of Maps

Summary

The Ground Magnetic Survey was carried out by Manitou Gold employees during October 11-24, 2021. Approximately 115.85 km of Mag surveys were conducted using GEM GSM-19W Overhauser Walking Mag Units in combination with a GEM GSM-19 Overhauser Base Mag Unit. Garmin Handheld GPS Units were used for geo-referencing.

While a rigorous mathematical analysis can directly detect contacts and structures, it is dependent on contrasts in magnetic susceptibility or density. A great many contacts and structures may not have any magnetic or gravity contrasts and are derived from existing geological information or inferred from offsets in existing contacts or structures. The solutions presented here are intended as a guide for further interpretation for those with a more complete geological understanding of the project area.

There are a great many small magnetic anomalies, indicating shallow sources. Numerous structural trends and intersections are indicated with the potential field Source Edge Detection (SED) analysis.

However, there appears to be an underlying source evident in the Pseudo-Gravity and regional low resolution magnetics. A 3D susceptibility inversion would most likely confirm this. The deeper source feature seems to be flanked by NNW trending SED Trends with numerous cross features. Structural intersections within and adjacent to the deeper magnetic feature would appear to the most prospective target areas.

Further work consisting of additional geophysics with geological prospecting will be required to advance the project.

1 INTRODUCTION

The exploration objectives of the ground magnetic survey is to map magnetic responses associated with mineralized gold zones covering major geological trends on the property. The Ground Magnetic Survey was carried out by Manitou Gold employees during October 11-24, 2021. Approximately 115.85 km of Mag surveys were conducted. The report and interpretation for this work was prepared by David Bingham (Bingham Geoscience) of Saskatoon, Saskatchewan). The general location of the project is in shown in Figure 1. The project is located in the NW corner of the Corbiere Township, 25 km NW of Wawa, Ontario.

FIGURE 1: PROJECT LOCATION

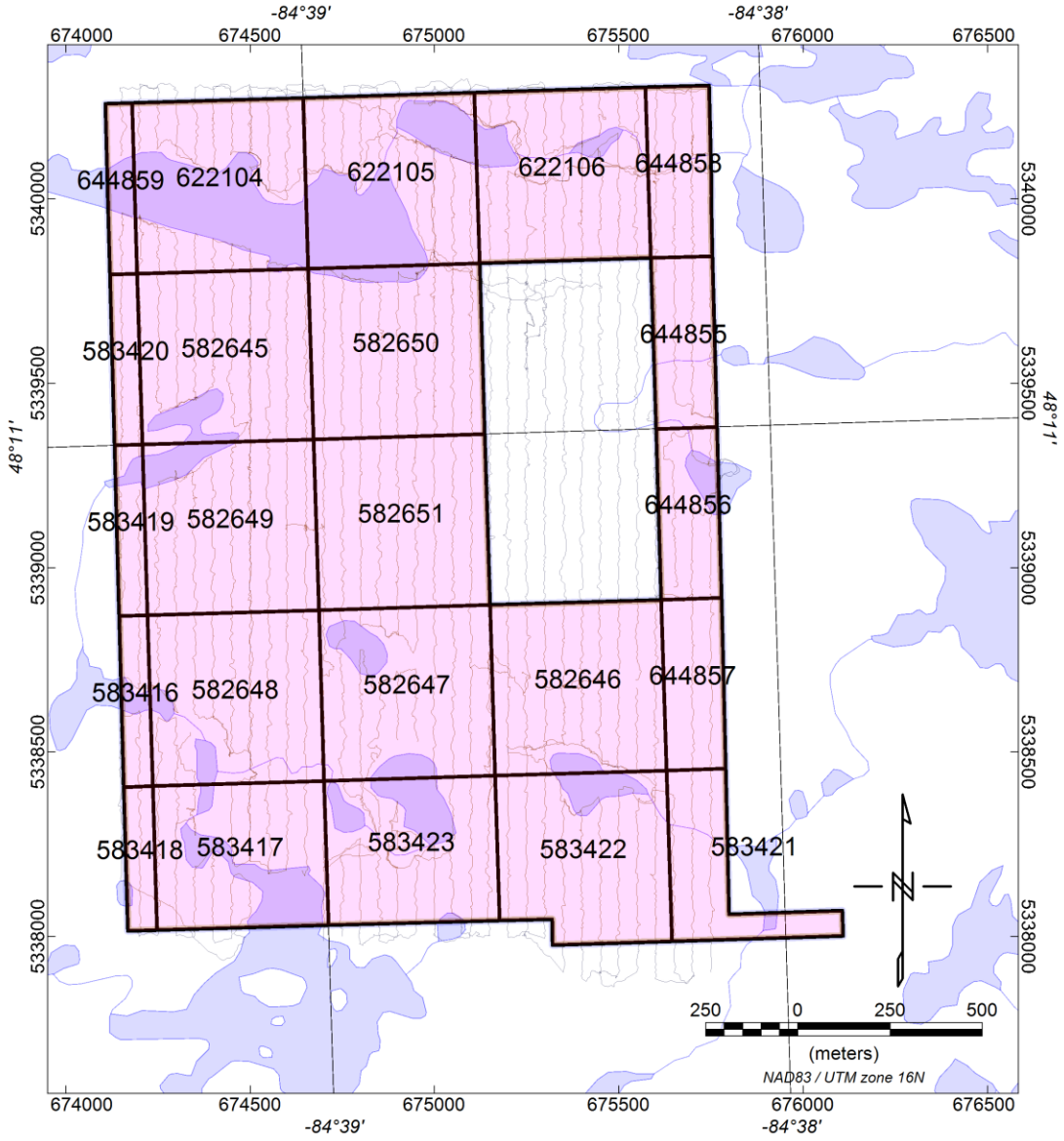


FIGURE 2: DISPOSITION MAP

1.1 PROPERTY STATUS

The property consists of Single Cell Mining Claims 100% owned by Manitou Gold Inc.

Table 1: Mining Claims

Township / Area	Tenure ID	X	Y	Anniversary Date	Tenure Status
CORBIERE	582645	674433	5339572	2022-03-24	Active
CORBIERE	582646	675390	5338674	2022-03-24	Active
CORBIERE	582647	674926	5338660	2022-03-24	Active
CORBIERE	582648	674461	5338646	2022-03-24	Active
CORBIERE	582649	674447	5339109	2022-03-24	Active
CORBIERE	582650	674897	5339586	2022-03-24	Active
CORBIERE	582651	674911	5339123	2022-03-24	Active
CORBIERE	583416	674190	5338638	2022-04-07	Active
CORBIERE	583417	674474	5338219	2022-04-07	Active
CORBIERE	583418	674203	5338211	2022-04-07	Active
CORBIERE	583419	674177	5339101	2022-04-07	Active
CORBIERE	583420	674164	5339564	2022-04-07	Active
CORBIERE	583421	675869	5338221	2022-04-07	Active
CORBIERE	583422	675404	5338214	2022-04-07	Active
CORBIERE	583423	674939	5338233	2022-04-07	Active
CORBIERE	622104	674419	5340035	2022-12-04	Active
CORBIERE	622105	674883	5340049	2022-12-04	Active
CORBIERE	622106	675348	5340064	2022-12-04	Active
CORBIERE	644855	675677	5339610	2023-03-24	Active
CORBIERE	644856	675690	5339147	2023-03-24	Active
CORBIERE	644857	675702	5338684	2023-03-24	Active
CORBIERE	644858	675663	5340073	2023-03-24	Active
CORBIERE	644859	674150	5340027	2023-03-24	Active

1.2 GENERAL GEOLOGY

The project area is in the center of the Michipicoten Greenstone Belt in the Superior Geological Province in Ontario

Except for a small area in the southeastern corner of the Corbiere Township underlain by rocks of the Hawk Lake Granitic Complex, the rocks represent a metavolcanic-metasedimentary supracrustal sequence with its related intrusions. The geology marginal to the Hawk Lake Granitic Complex is complex and consists of septa and blocks of metavolcanics separated by quartz feldspar porphyry intrusive rocks. The quartz porphyry intrusive rocks are interpreted to be equivalent to the medium-grained equigranular granitic rocks of the Hawk Lake Granitic Complex.

1.3 MINERAL EXPLORATION

Large portions Corbiere Township are part of the Algoma Central Railway right-of-way lands and has been subjected to extensive prospecting activity. Historical exploration in the 1900's has primarily focused on the iron range formations. Among others, the Jalore Mining Company Limited, Candela Development Company Limited, Algoma Ore Properties Limited & Canadian Pyrites Limited), prospected and drilled for siderite and iron pyrites.

2 GROUND MAGNETIC SURVEY

The Ground Magnetic Survey was carried out by Manitou Gold employees during October 11-24, 2021. Approximately 115.85 km of Mag surveys were conducted using GEM GSM-19W Overhauser Walking Mag Units in combination with a GEM GSM-19 Overhauser Base Mag Unit. Garmin Handheld GPS Units were used for geo-referencing.

2.1 PERSONNEL

- Jijohn V Augustine
- Sachin Devasia

2.2 GEM GSM-19 OVERHAUSER MAGNETOMETER SPECIFICATIONS

Sensitivity	Standard GSM-19: 0.022nT @ 1Hz GSM-19PRO: 0.015nT @ 1 Hz
Resolution	0.01 nT
Absolute Accuracy	0.1nT
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
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)	Base Station: 5.3M Walking Mag: 2.6M
Console	223mm x 69 mm x 240 mm (8.7 x 2.7 x 9.5 in.)
Sensor	175mm x 75mm diameter cylinder (6.8in long by 3in diameter)
Console with Belt	2.1 kg
Sensor and Staff	1.0 kg

3 MAGNETIC INTERPRETATION

3.1 MAGNETIC DATA PROCESSING AND RESULTS

Potential fields consist of magnetic, gravitational or electric fields. For relatively static fields, such as magnetic or gravity field, it is possible to analyze them with derivative methods and determine source solutions for a given set of observations. The quality and veracity of the solution sets derived are dependent on a number of factors, including noise, type of anomaly, and the data window used to derive a solution. There are a number of techniques used for potential field analysis. The ones used by LSGI are: Euler Deconvolution, Source Edge Detection (SED). While no one method seems to accomplish everything desired for an interpretation, a combination of methods complement each other to develop an interpretation. While a rigorous mathematical analysis can directly detect contacts and structures, it is dependent on contrasts in magnetic susceptibility or density. A great many contacts and structures may not have any magnetic or gravity contrasts and are derived from existing geological information or inferred from offsets in existing contacts or structures.

The solutions presented here are intended as a guide for further interpretation for those with a more complete geological understanding of the project area.

3.1.1 REDUCTION TO THE POLE (RTP)

Magnetic anomalies do not usually have a simple form due to the orientation of the magnetic field (inclination and declination) at the point of measurement. One way to rectify complex anomaly shape is to reduce the magnetic data to the North Pole. The reduction to the pole filter alters the anomaly such that a magnetic high is centred over the source. Flanking lows imply remnance, flat dips or a shallow depth extent. The RTP assists in interpretation as induced sources of all wavelengths are correctly positioned.

3.1.2 THE TILT (TDR) AND TDX DERIVATIVES

Tilt derivative processing also combines the dx, dy and dz derivatives. The tilt and TDX derivative are usually applied to RTP data. The RTP and TDR in combination attempts to place an anomaly directly over its source, similar to the AS and RTP. One of the major positive features of the Tdr is that it is very effective in allowing anomalies to be traced out along strike. This is because the filter performs an automatic gain control which tends to equalize the response from both weak and strong magnetic anomalies.

This can be and asset when attempting to trace units along strike but can also be dangerous as absolute anomaly strengths are lost.

The Tilt and TDX derivatives are calculated as follows:

- TDX Derivative = tan-1 (horizontal gradient/vertical derivative);
- TILT Derivative = tan-1 (vertical derivative/horizontal gradient);

3.1.3 ANALYTIC SIGNAL (AS)

The analytic signal (Figure 2) is a combination of the derivatives (dx, dy, dz) with some unique features. The AS positions anomalies on the edges of the causative body, notwithstanding the geometry of the geomagnetic field or magnetization of the body. For small bodies these peaks merge, resulting in an anomaly directly centered over the causative body. The strength/amplitude of an AS anomaly is also proportional to the susceptibility of the causative body i.e. the greater the proportion of magnetic minerals in the body the larger the AS anomaly. This transformation, which is essentially a first derivative, attenuates sources from depth and emphasizes shallow sources. One disadvantage is that the AS has a tendency to smear anomalies.

3.1.4 EULER DECONVOLUTION

A variety of methods for interpretation of gridded magnetic data, based on the derivative of the magnetic field have been developed, to determine the magnetic sources and estimate their depths (Blakely, 1995). Amongst them, the Euler de-convolution method uses the first order derivative for depth estimation, but it requires an assumption about the nature of the source (structural index). If (0 0 0 x y z) is the position of a magnetic source whose total field f is measured at (x, y, z) and the total field has a regional value of B then Euler's equation reduces to:

$$(x - x_0)\frac{\partial f}{\partial x} + (y - y_0)\frac{\partial f}{\partial y} + (z - z_0)\frac{\partial f}{\partial z} = N(B - f)$$

The degree of homogeneity N is interpreted as a structural index (SI) (Thompson, 1982; Reid et al., 1990) which represents the source type and is a measure of the rate of change of field with distance. The user must choose the structural index that best fits the data. The choice of a proper structural index is crucial in order to attain correct depths and converging solutions over magnetic contacts. An index that is too low gives depths that are too shallow, and an index that is too high gives estimates that are too deep. The correct index for a particular feature gives the best solution clustering and

consequently the best depth estimates. The following table shows structural indices (SI).

SI	Magnetic Field	Gravity Field
0	Contact / Step	Sill / Dyke / Ribbon / Step
1	Sill / Dyke	Cylinder / Pipe
2	Cylinder / Pipe	Sphere
3	Sphere / Barrel / Ordnance	N /A

3.1.5 SOURCE EDGE DETECTION

Source Edge detection is an analytical process that transforms the Total Magnetic Intensity data into a Reduced to the Pole dataset as well as calculates the horizontal gradients and Tilt/TDX derivatives from the TMI data. With these products the peak locations are selected using a grid peak picking algorithm, are stored in the current database and are displayed as symbols on the current map. The Blakely method is used to find peaks in a grid. For each grid cell, the GX compares its value with the values of its eight (8) nearest grid cells in four directions (along the row, along the column, and along both diagonals).There are four sensitivity levels which may be used to determine whether a grid cell will be selected as a peak:

- *Normal (4)* - grid values in all of the nearest grid cells are lower
- *More peaks (3)* - grid values in any three directions are lower
- *Even more peaks (2)* - grid values in any two directions are lower
- *All ridge peaks (1)* - grid values in one direction are lower

A grid value below which you want peaks to be removed from the list is required. A reasonable cut-off level can be determined by examining the grid using the image tool or by examining the related color bar.

3.1.6 PSEUDO GRAVITY

A variety of methods for interpretation of gridded magnetic data, based on the derivative of the magnetic field have been developed, to determine the magnetic sources and estimate their depths (Blakely, 1995). The gravity field calculated from magnetic-field measurements by means of Poisson's relation (q.v.). Calculation involves conversion of susceptibility to density and vertical integration of reduced-to-the-pole magnetic data.

3.2 MAGNETIC RESULTS

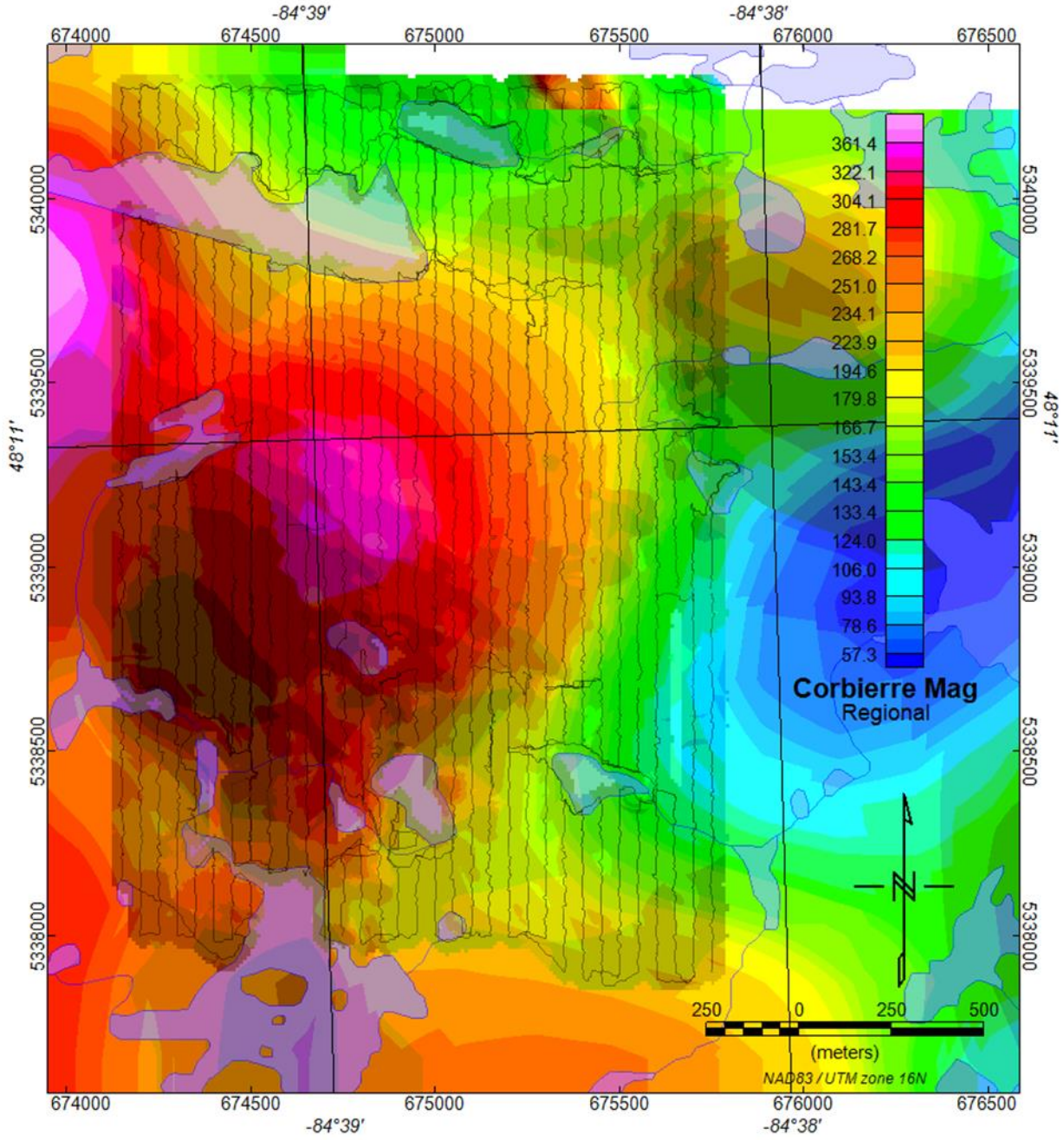


FIGURE 3: REGIONAL MAGNETICS

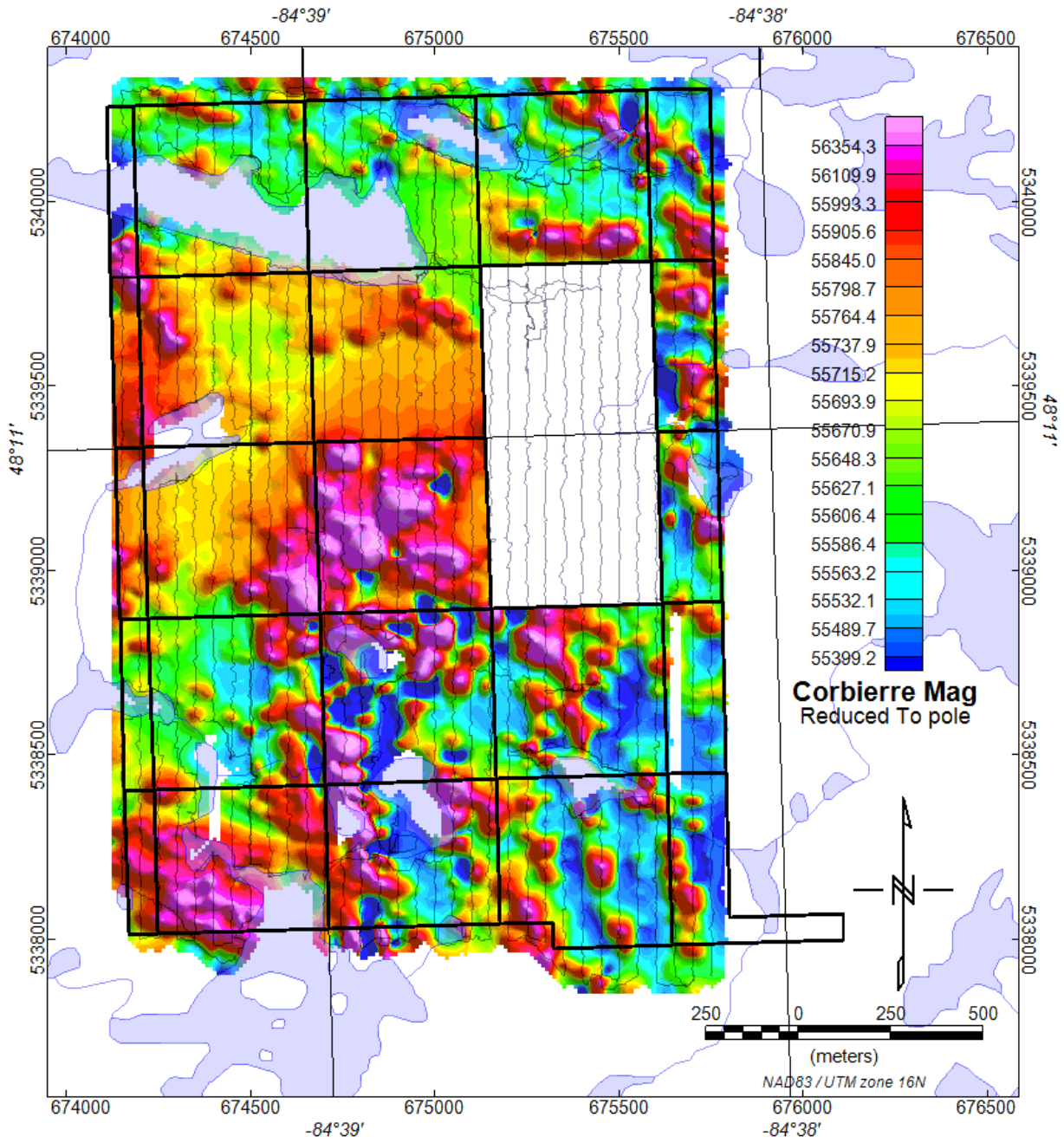


FIGURE 4: TMI REDUCED TO POLE

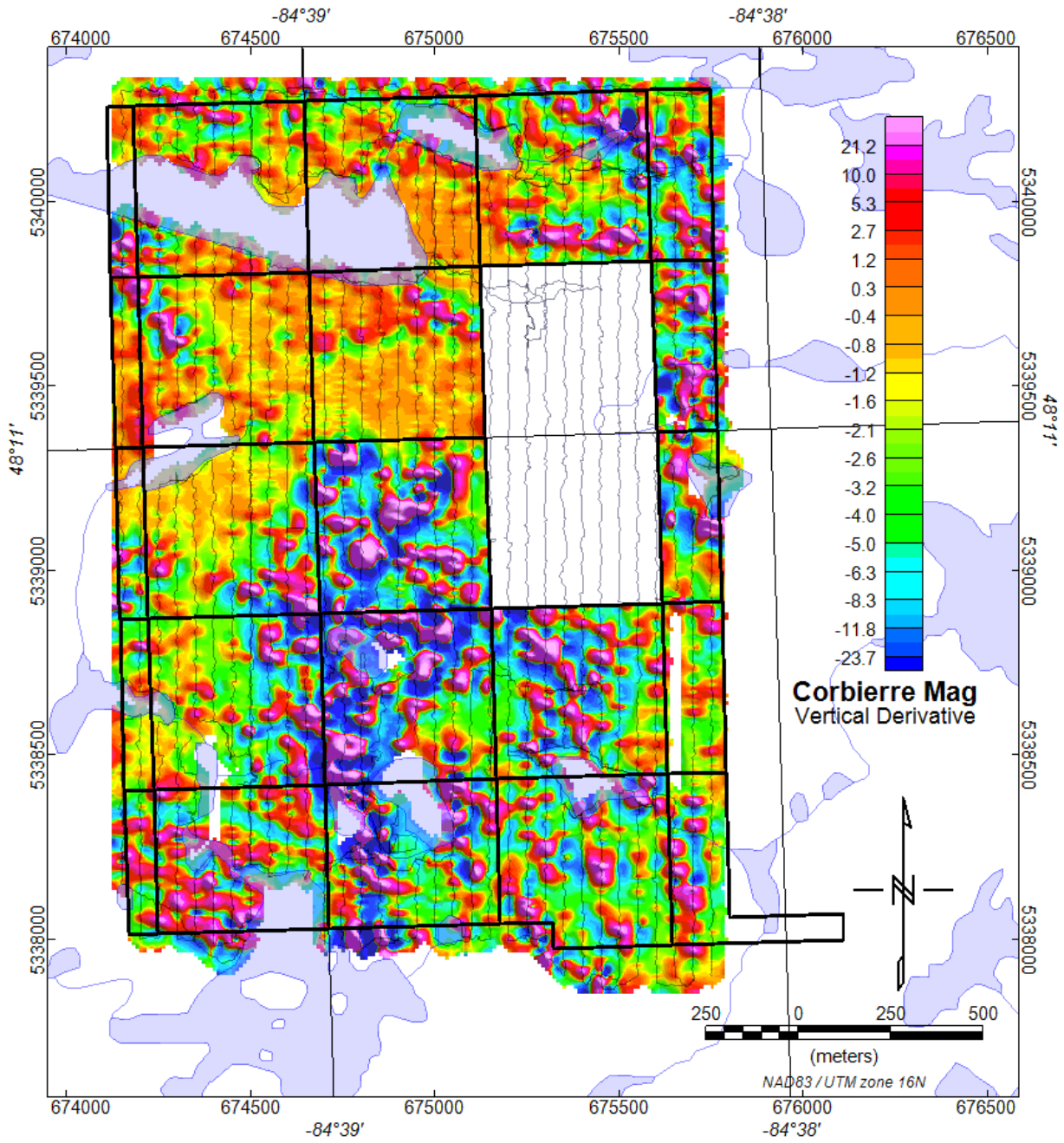


FIGURE 5: VERTICAL DERIVATIVE

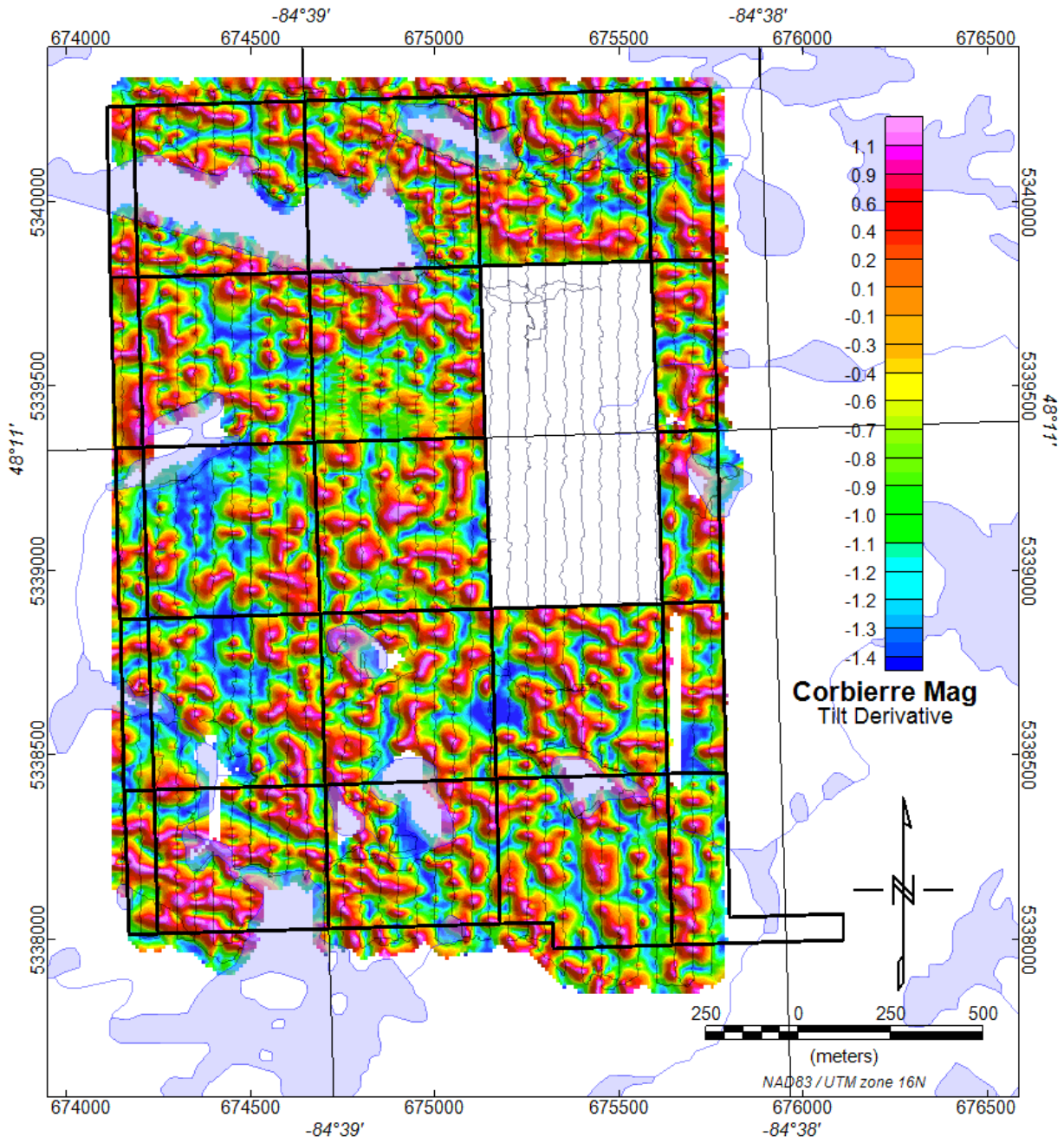


FIGURE 6: TILT DERIVATIVE

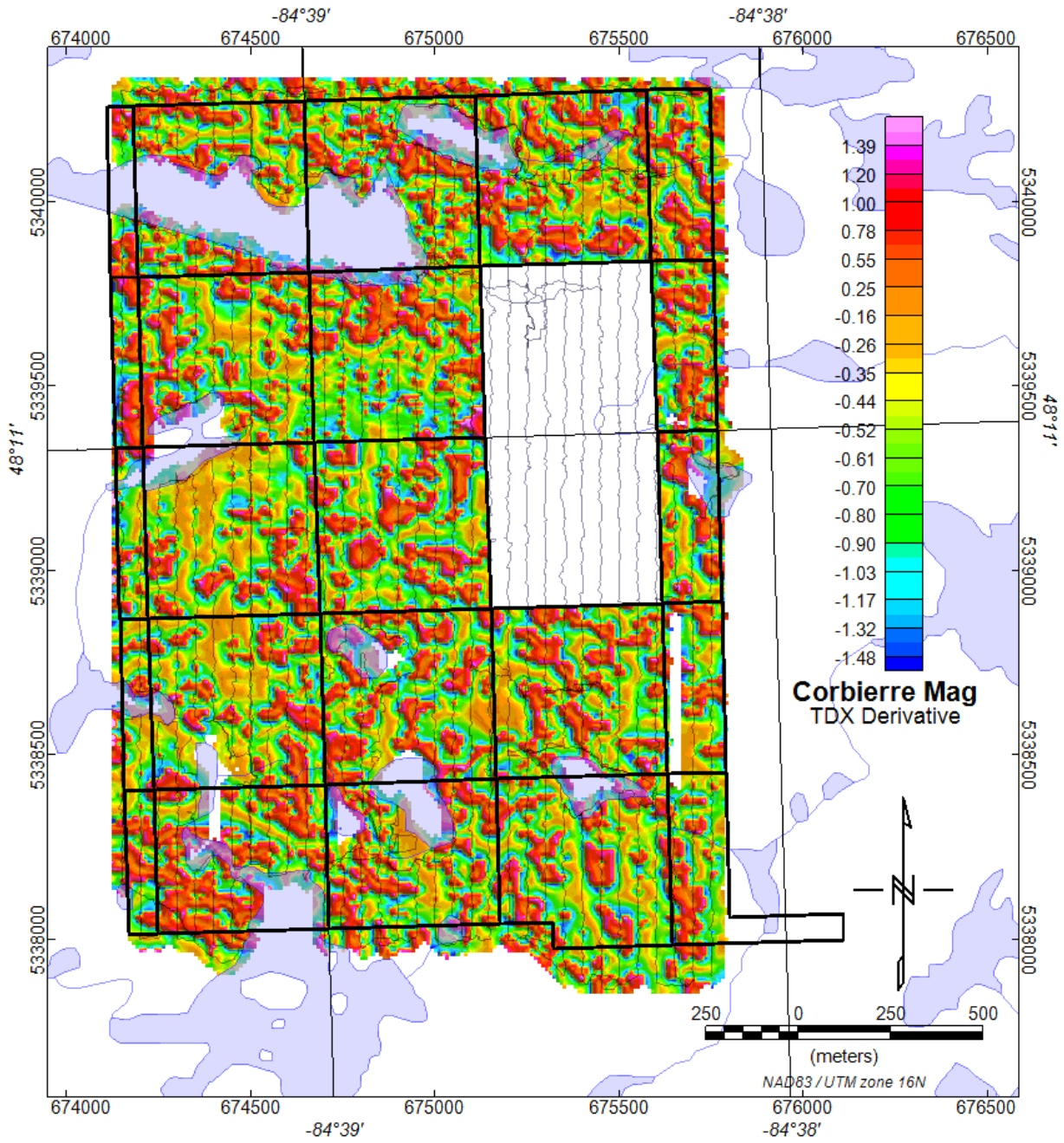


FIGURE 7: TDX DERIVATIVE

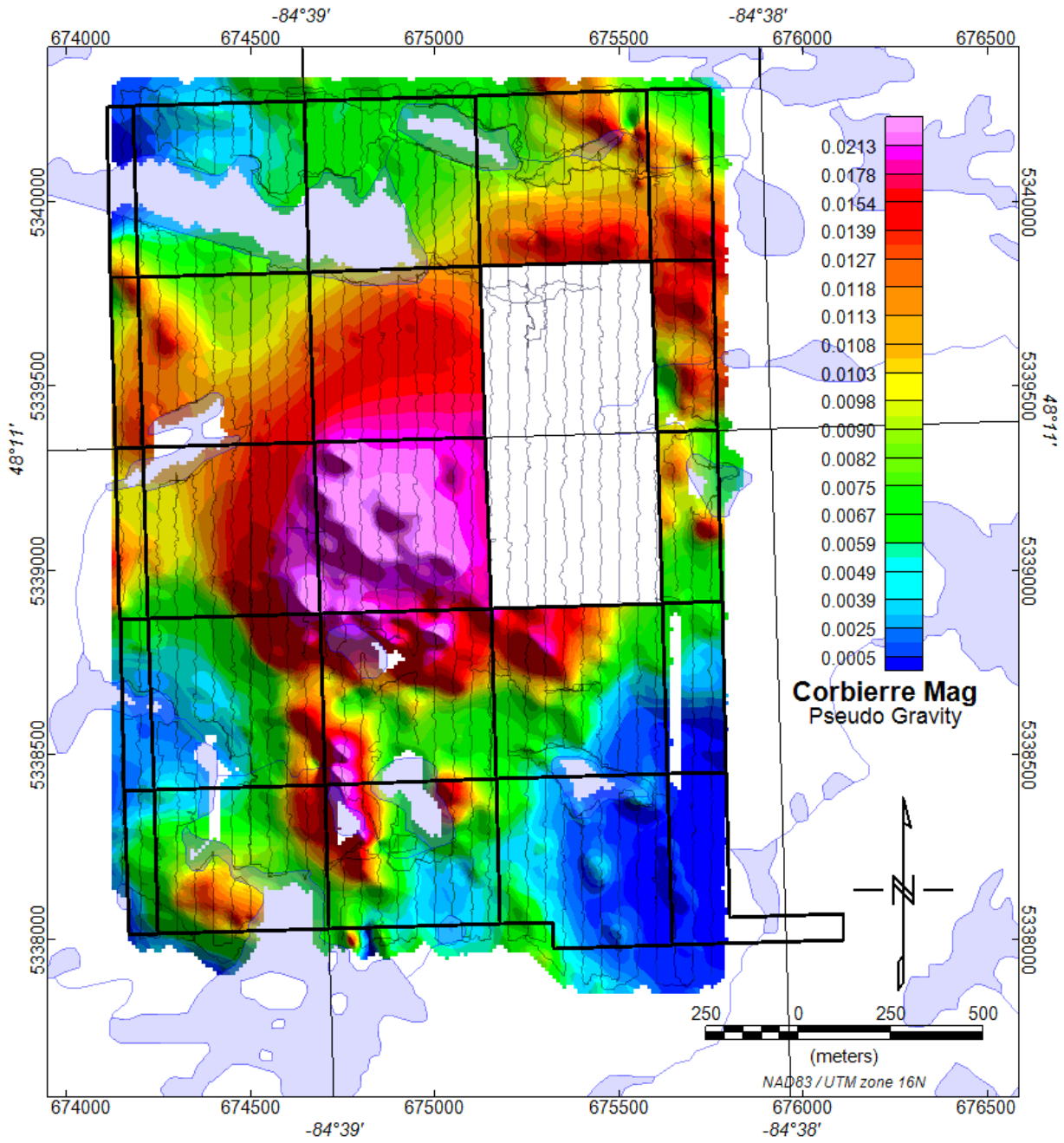


FIGURE 8: PSEUDO GRAVITY

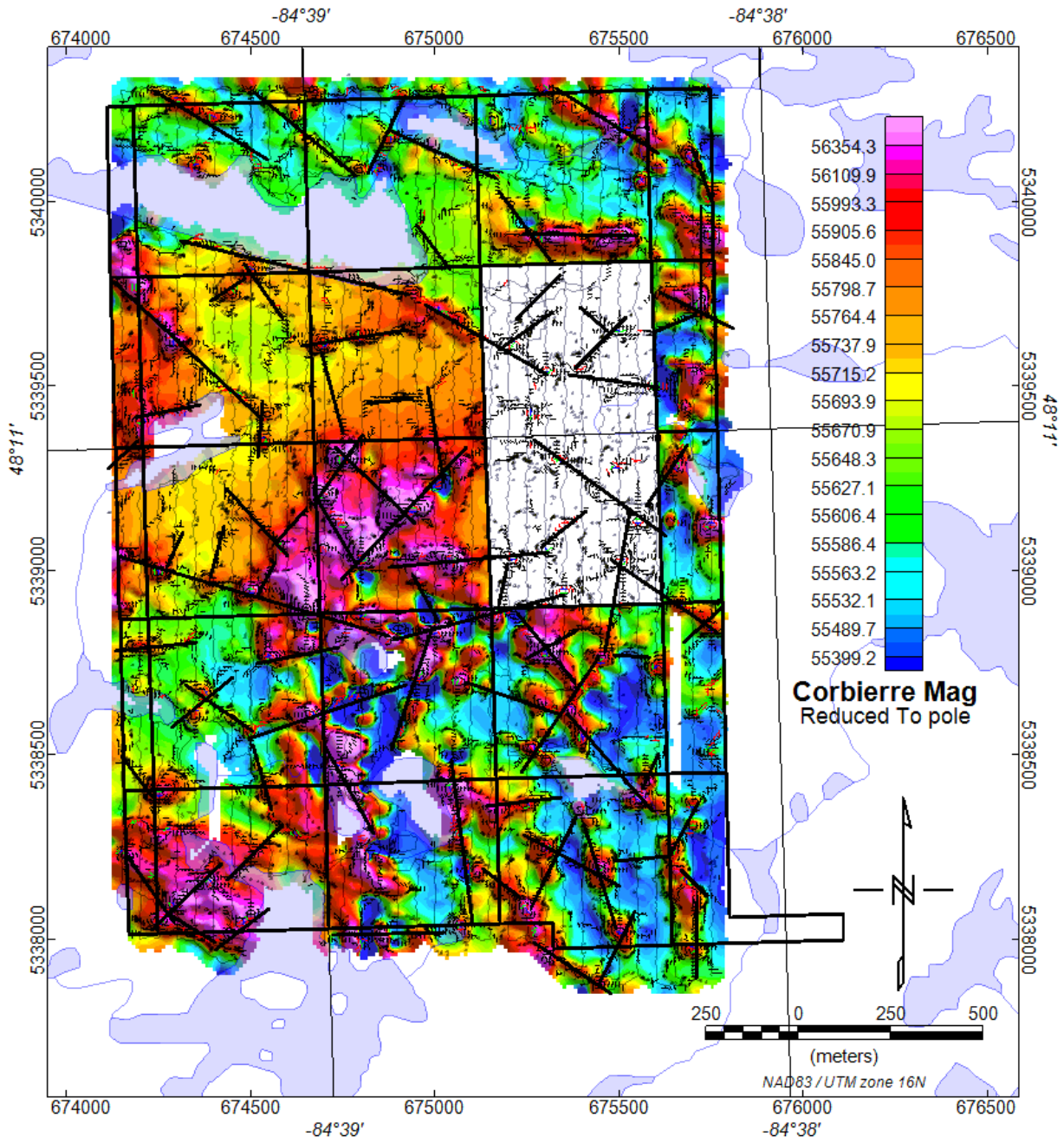


FIGURE 9: MAGNETIC FIELD REDUCED TO POLE WITH EULER & SED SOLUTIONS

3.3 DISCUSSION OF MAGNETIC RESULTS

While a rigorous mathematical analysis can directly detect contacts and structures, it is dependent on contrasts in magnetic susceptibility or density. A great many contacts and structures may not have any magnetic or gravity contrasts and are derived from existing geological information or inferred from offsets in existing contacts or structures. The solutions presented here are intended as a guide for further interpretation for those with a more complete geological understanding of the project area.

There are a great many small magnetic anomalies, indicating shallow sources. Numerous structural trends and intersections are indicated with the potential field Source Edge Detection (SED) analysis.

However, there appears to be an underlying source evident in the Pseudo-Gravity and regional low resolution magnetics. A 3D susceptibility inversion would most likely confirm this. The deeper source feature seems to be flanked by NNW trending SED Trends with numerous cross features. Structural intersections within and adjacent to the deeper magnetic feature would appear to the most prospective target areas.

Further work consisting of additional geophysics with geological prospecting will be required to advance the project.

4 REFERENCES

Blakely, R. J., 1995, Potential theory in gravity and magnetic applications: Cambridge University Press.

Reid, A. B., J.M. Allsop, H. Granser, A. J. Millet, and I.W. Somerton, 1990, Magnetic interpretation in three dimensions using Euler deconvolution: Geophysics, 55, 80–91.

Thompson, D. T., 1982, EULDPH—A new technique for making computer assisted depth estimates from magnetic data: Geophysics, 47, 31–37.

Manitou Gold Inc. Web Site

Various Geosoft Technical notes - including
http://www.geosoft.com/resources/releasenotes/montaj/om64.asp,
http://www.geosoft.com/resources/casestudies/pdfs/GA_cs_2008_01_web.pdf
http://www.geosoft.com/resources/technotes/pdfs/microleveling%20tech%20note.pdf

5 QUALIFICATIONS

STATEMENT OF QUALIFICATIONS

I, David C. Bingham, of the city of Saskatoon, Saskatchewan, hereby certify that;

1. I am a graduate of the University of British Columbia in 1978 with a B.Sc. in Geophysics.

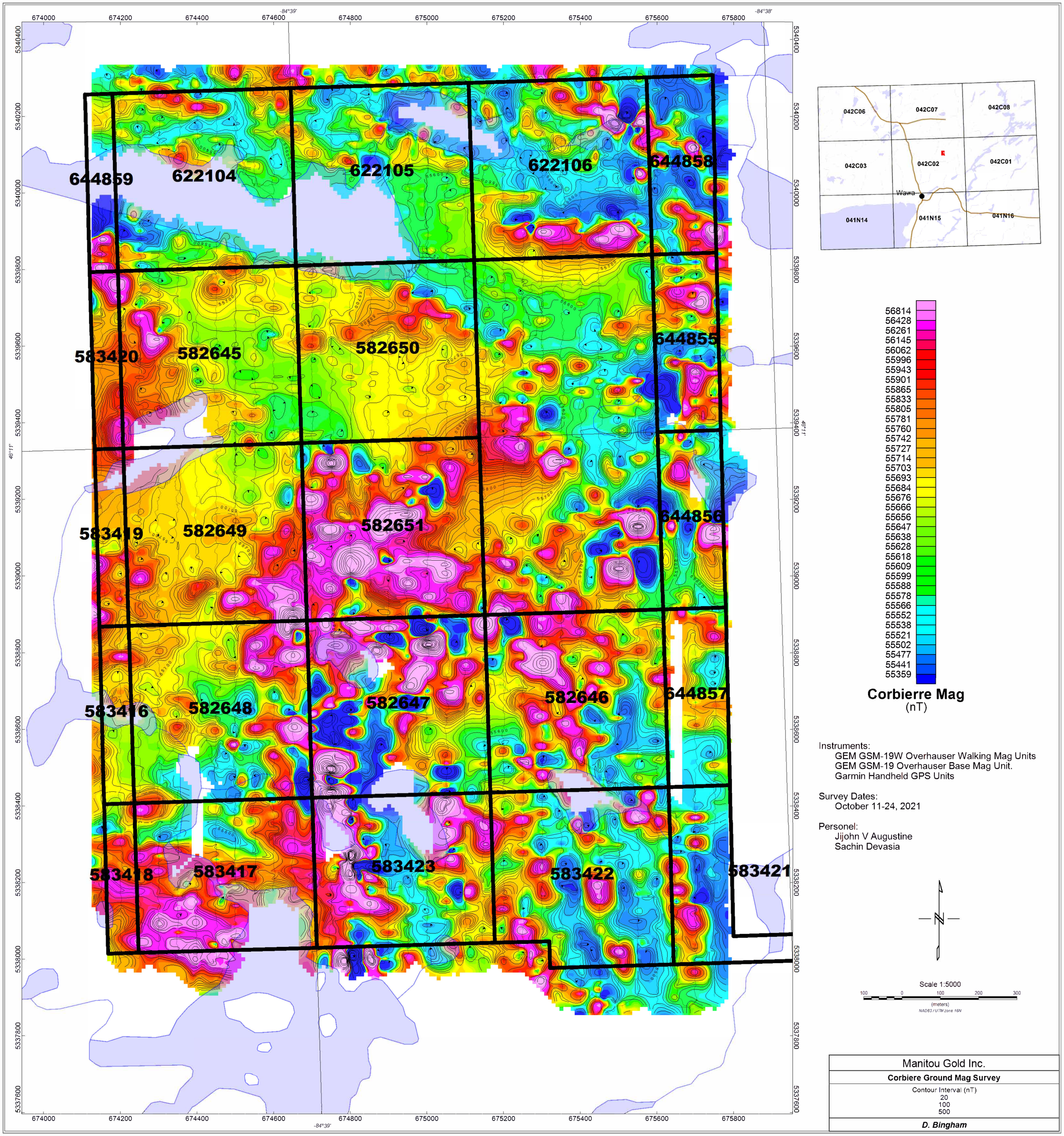
2. I have been practicing my profession since 1978.

3. I am a member in good standing of the Association of Professional Engineers and Geoscientists of Saskatchewan.

4. I am Director and co-owner of Living Sky Geophysics, Inc., a corporate body registered in Saskatchewan and with the Association of Professional Engineers and Geoscientists of Saskatchewan.

5. I hold no interest, direct nor indirect, in Mantou Gold Inc., nor do I expect to receive any.

David C. Bingham, P GEO
Saskatoon, Saskatchewan
February 2022


674000
674200
674400
674600
674800
675000
675200
675400
675600
675800
-84°39'
-84°38'
5340400
5340200
5340000
5339800
5339600
5339400
5339200
5339000
5338800
5338600
5338400
5338200
5338000
5337800
5337600
48°11'
644859
622104
622105
622106
644858
583420
582645
582650
644855
583419
582649
582651
644856
583416
582648
582647
582646
644857
583418
583417
583423
583422
583421
042C06
042C07
042C08
042C03
042C02
042C01
Wawa
041N14
041N15
041N16
56814
56428
56261
56145
56062
55996
55943
55901
55865
55833
55805
55781
55760
55742
55727
55714
55703
55693
55684
55676
55666
55656
55647
55638
55628
55618
55609
55599
55588
55578
55566
55552
55538
55521
55502
55477
55441
55359
Corbierre Mag
(nT)
Instruments:
GEM GSM-19W Overhauser Walking Mag Units
GEM GSM-19 Overhauser Base Mag Unit.
Garmin Handheld GPS Units
Survey Dates:
October 11-24, 2021
Personel:
Jijohn V Augustine
Sachin Devasia
Scale 1:5000
100 0 100 200 300
(meters)
NAD83 / UTM zone 16N
Manitou Gold Inc.
Corbiere Ground Mag Survey
Contour Interval (nT)
20
100
500
D. Bingham

Summary of Expenditures

Row Labels	Sum of Sub-Total
Geophysical	**21,057**
Accommodation & Meals	7,530
Labour, Staff	12,685
Equipment Rental and Supplies	843
Evaluation Activities	**7,650**
Contractor and Consultant	7,650
Grand Total	**28,707**

Invoice Date	Invoice#	Category	Sub Category	Name	Sub-Total	HST	Total	Note
February 24, 2022	2022-003	Evaluation Activities	Contractor and Consultant	Bingham Geoscience	3,400.00	170	3,570	
October 13, 2021		Geophysical	Accommodation & Meals	FACTS Ltd.	1,500.00	195	1,695	Fly-in Camp
October 31, 2021	2021-021	Evaluation Activities	Contractor and Consultant	Bingham Geoscience	4,250.00	213	4,463	
October 21, 2021	2366	Geophysical	Accommodation & Meals	Watson's Skyways	2,080.00	270	2,350	
October 10 to October 30, 2021		Geophysical	Accommodation & Meals	Manitou Gold	1,750.00		1,750	35 days @ 50/da
October 10 to October 30, 2021		Geophysical	Labour, Staff	Manitou Gold	11,728.50		11,729	35 days @ 300/d
October 10 to October 30, 2021		Geophysical	Equipment Rental and Supplies	Various	728.74		729	
October 10 to October 30, 2021		Geophysical	Accommodation & Meals	GERRARD LANTHIER	2,200.00	286	2,486	House lease, Du
October 8 to October 9, 2021		Geophysical	Labour, Staff	Manitou Gold	956.42		956	Checking access
					28,594	**1,134**	**29,728**	

Tenure ID	Percentage of Total	Value of Work Completed
582651	6	1854
582650	6	1842
582649	6	1842
582648	6	1848
582647	7	2041
582646	6	1842
582645	7	1937
583423	5	1558
583422	6	1748
583421	2	614
583420	1	314
583419	1	409
583418	1	172

Invoice Date	Invoice#	Category	Sub Category	Name	Sub-Total	HST	Total	Note
583417	6	1725						
583416	1	285						
622106	6	1841						
622105	7	1933						
622104	7	1956						
644859	1	205						
644858	2	709						
644857	2	614						
644856	2	614						
644855	3	802						
	100	28707						