

SAGE GOLD INC.

**REPORT ON
GROUND MAGNETIC AND HORIZONTAL LOOP ELECTROMAGNETIC
SURVEYS**

**JACOBUS PROPERTY,
ELMHIRST, PIFHER AND KABY LAKE TOWNSHIPS,
BEARDMORE AREA,
ONTARIO**

NTS 42E13/E

MINERAL CLAIMS

**TB1067069, TB1109079, TB1195674, TB1195675, TB1195676, TB3005556,
TB3005557, TB3005558, TB3005565, TB3011512, TB3011513, TB3016079,
TB3016080, TB3016081, TB3016168, TB3016169, TB3018953 and TB 3018954.**

Francis L. Jagodits, P. Eng.,
Consulting Geophysicist
October, 2008

TABLE CONTENTS

SUMMARY	1
1. INTRODUCTION	2
2. LOCATION AND ACCESS	2
3. CLAIMS INFORMATION	2
4. HISTORY AND PREVIOUS WORK. and GEOLOGY	2
4.1 History	2
4.2 Geology	6
5. INSTRUMENTATION AND SURVEY PROCEDURES	7
6. PRESENTATION OF THE DATA	8
7. DISCUSSION OF THE RESULTS	8
7.1 Horizontal Loop Electromagnetic Survey	8
7.2 Magnetic Survey	7
8. CONCLUSIONS AND RECOMMENDATIONS	9
9. REFERENCES	11
10. APPENDIX	12
Instrument Specifications.....	13
Writer's Qualifications.....	19
Table III – Personnel.....	20

LIST OF FIGURES

Figure 1	Claim and Location Map.	4
----------	---------------------------------	---

LIST OF TABLES

Table I	Survey Statistics	2
Table II	List of Claims	3
Table III	List of Personnel	20

LIST OF ACCOMPANYING MAPS

(The maps are on the accompanying CD in “.jpg” and “.png” formats.)

Title	Scale
Ground Magnetic Survey, Postings and Profiles of Total Magnetic Field, Jacobus Property, Onoman Project, Beardmore Area, Ontario.	1: 10 000
Ground Magnetic Survey, Contours of Total Magnetic Field, Jacobus Property, Onoman Project, Beardmore Area, Ontario.	1: 10 000
Horizontal Loop Electromagnetic Survey, Postings and Profiles and of In-phase and Quadrature Components; Frequency: 440 Hz. Jacobus Property, Beardmore Area, Ontario.	1: 10 000
Horizontal Loop Electromagnetic Survey, Postings and Profiles and of In-phase and Quadrature Components; Frequency: 1760 Hz. Jacobus Property, Beardmore Area, Ontario.	1: 10 000
Horizontal Loop Electromagnetic Survey, Postings and Profiles and of In-phase and Quadrature Components; Frequency: 3520 Hz. Jacobus Property, Beardmore Area, Ontario.	1: 10 000
Ground Magnetic and Horizontal Loop Electromagnetic Surveys, Interpretation Map. Jacobus Property, Beardmore Area, Ontario.	1:10 000

SUMMARY

During the late winter and early spring of 2008 ground magnetic and horizontal loop electromagnetic surveys were conducted covering claims of the Jacobus Property. The surveys were conducted to locate conductors detected by earlier airborne survey. The results of the surveys are presented, the discussion of the results and the resulting recommendations are contained herein.

1. INTRODUCTION

Sage Gold Inc. contracted D. Roberts of Lac La Ronge, Saskatchewan, to cut and chain the survey lines and tie-lines; the work was accomplished during February and March of 2008. The basic survey line interval is 100 m that was decreased to 50 m within area of special interest (Lines from 1000 to 3000, between Stations 700 and -1000). The magnetic and horizontal loop electromagnetic (HLEM) surveys were conducted by Mtech Geophysics Inc. of Murillo, Ontario which took place during the March and April of 2008. CGI Controlled Geophysics Inc. of Thornhill, Ontario, completed the reduction of the magnetic and prepared the magnetic maps. Figure 1 includes a general location map and shows the claims. The property is located about 50 km northeast of Beardmore, Ontario (Figure 1).

The statistics for the surveys are in Table I. The personnel associated with the surveys are listed in Table III.

TABLE I
SURVEY STATISTICS

Survey	Surveying (line km)
Grid Preparation	201.74
Magnetic Survey	201.74
Horizontal Loop Electromagnetic Survey	154.54

The following report includes claims information, survey description, and discussion of the results, conclusions and recommendations.

2. LOCATION AND ACCESS

The survey area is can be accessed by traveling 19 km north on Hwy 801, that is west of Jellico and east of Beardmore. A bush road, 5 km long leads to directly to property.

3. CLAIMS INFORMATION

The claims that are covered by the ground geophysical surveys are listed below, in Table II

4. HISTORY and GEOLOGY

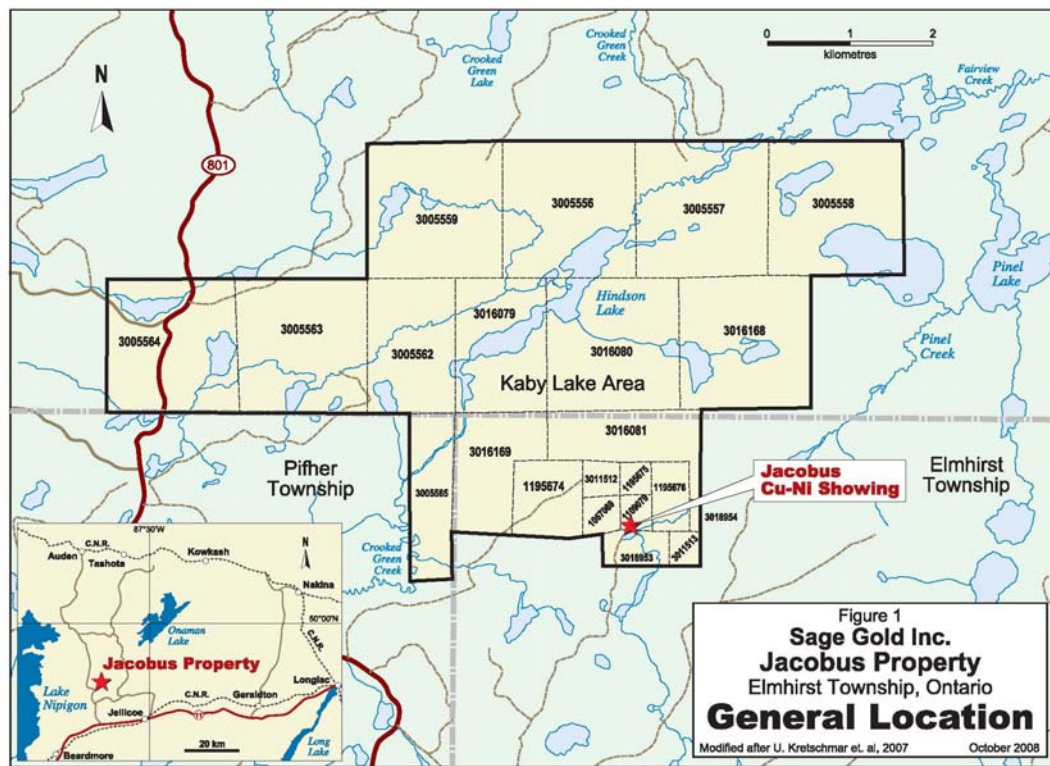
4.1 History

The following is from Kretschmar et al, 2008.

The following section is taken from MacKasey & Wallace (1978):

TABLE II
LIST OF CLAIMS

Claim No.	Recording Date	Units	Township/Area
TB1067069	1989-Jun-01	1	Elmhirst (G-0162)
TB1109079	1989-Jun-01	1	Elmhirst (G-0162)
TB1195674	1992-Nov-04	4	Elmhirst (G-0162)
TB1195675	1992-Nov-04	1	Elmhirst (G-0162)
TB1195676	1992-Nov-04	2	Elmhirst (G-0162)
TB3005556	2006-Oct-20	16	Kaby Lake (G-0059)
TB3005557	2006-Oct-20	16	Kaby Lake (G-0059)
TB3005558	2006-Oct-20	16	Kaby Lake (G-0059)
TB3005565	2006-Oct-20	9	Pifher (G-0141)
TB3011512	2005-Jul-25	1	Elmhirst (G-0162)
TB3011513	2005-Jul-25	1	Elmhirst (G-0162)
TB3016079	2006-Oct-20	12	Kaby Lake (G-0059)
TB3016080	2006-Oct-20	16	Kaby Lake (G-0059)
TB3016081	2006-Oct-20	11	Kaby Lake (G-0059)
TB3016168	2006-Oct-20	16	Kaby Lake (G-0059)
TB3016169	2006-Oct-20	12	Kaby Lake (G-0059)
TB3018953	2005-Sep-15	2	Elmhirst (G-0162)
TB3018954	2005-Sep-15	1	Elmhirst (G-0162)



“In 1947, a copper-nickel showing in a gabbro body was discovered within this claim block by Christianson Prospectors Syndicate, and a number of trenches were dug to test the mineralization. Later in 1947, The International Nickel Company of Canada Limited optioned the property and drilled 9 deep drill holes, but later dropped the option.

In 1957, the area was investigated by the Jacobus Mining Corporation Limited who carried out a geological and geophysical program including magnetometer and electromagnetic surveys. As a result a total of 46 drill holes were put down, most of these in the area of the original trenches on claim 78423 (see J series of holes). This program outlined an estimated 540,250 tons of 0.38% copper and 0.36% nickel in a cylindrical zone within the gabbro body which underlies the southern part of the property (Czikan 1969).

Work continued in 1968 with a series of 9 diamond drill holes having a total length of 2,580 m (8,458 feet). This drilling served to increase the deposit to an estimated 920,000 tons of 0.42% copper and 0.42% nickel.

In 1969, electromagnetic and magnetometer surveys were again conducted over most of the property. This was followed by detailed geological mapping, geochemical work and sampling of existing trenches.

In the spring on 1971 an induced potential survey was conducted in the vicinity of the mineralized zone, and during the winter of 1971/1972 six diamond drill holes were put down to investigate outlying geophysical anomalies. This program did not locate additional significant mineralization. The most recent calculation on the deposit indicates an estimated 937,538 tons of 0.42% copper and 0.41% nickel. The mineralized zone was not drilled off to the northwest where the zone appears to thicken and increase in grade. Further drilling in that area was recommended by Wheadon (1971a).”

In 1993 SEG Explorations Inc. completed line cutting, geological mapping, geophysics and seven diamond drillholes. As described in Baker et al. (1996) “The 1993 program was designed to extend the mineralized zone below the 1000 ft vertical level to 2000 feet. Diamond drilling by SEG Exploration Inc. has substantially expanded the mineral potential on the property beyond the 1972 reserve figures. Further diamond drilling and bore hole geophysics (including PEM) is recommended to identify any extension of mineralized zones down-plunge. Copper-nickel intersections from the 1993 are wide, but further understanding of the shape of the mineralized gabbro is required to fully evaluate this large, magmatic sulfide target.”

In 2006 Sage Gold Inc. carried out a small project on the Property consisting of compilation of previous work from assessment files and location of historic drillhole collars in the field. Reconnaissance traverses were carried out to locate these collars and twenty-one steel collars have been located to date.

The 2006 program also consisted of line cutting, a ground magnetic survey, channel sampling and the completion of two diamond drillholes. A total of 13.2 line km's were cut and chained by Tim Corbeil of Callander Ontario. Pickets were marked with aluminum tape which was engraved with grid locations. A total magnetic intensity survey was carried out by Tim Corbeil of Callander.

In 2007 Sage Gold Inc. carried out a drilling and channel sampling program on the Property. Twenty-seven drillholes were completed during this program totaling 7,306 m.

Sage Gold Inc. also completed a ground geophysical survey over the Property during the winter of 2008.

4.2 GEOLOGY

The following section is derived but modified from MacKasey & Wallace (1978):

Four of the southern claims in the block are underlain by the Pinel Creek intrusion, a body of gabbroic rock. The unit has been studied at length in a B.Sc. thesis by Faust (1973). The remaining claims to the north are underlain by felsic to intermediate metavolcanics, and parts of the easternmost claims occur within the Elmhirst Lake stock. Figure X illustrates the general geology in the area of the Jacobus Cu-Ni showing.

The metavolcanics intruded by the metagabbro body are described by Faust (1973) as massive, flows of dacitic to rhyodacitic composition. The upper contact of the intrusion is found to be sharp in drill core. From the drilling it is estimated that the body forms a sill striking about 070 and dipping between 45° and 60° to the north, and has a thickness of at least 180 m. Faust's study suggests that the body is a differentiated layered mafic-ultramafic sill. Although gabbro and quartz gabbro are by far the most prominent rock types encountered, the occurrence of metapyroxenite and anorthositic gabbro suggested that more ultramafic differentiates may occur within the intrusion.

The sulphide mineralogy consists of pyrrhotite, chalcopyrite, and pentlandite which constitute between 4 and 6% of the gabbro within the mineralized zone. This zone is cylindrical or lensoidal, dipping to the north at about 45°, approximately parallel to the upper contact of the

intrusion, and plunging westward at about 40°. Drilling has shown that it varies between 6 to 45 m, averaging about 12 m in diameter, and extending for at least 300 m in an 060 strike direction.

According to McCulloch (1969), the sulphide mineralization is disseminated interstitially within melanocratic gabbro which contains about 90% ferromagnesian minerals. Non-mineralized gabbro consists of approximately equal amounts of plagioclase and ferromagnesian minerals. Faust (1973) found that mineralization occurred in "normal" gabbro containing 40 to 50% ferromagnesian minerals, whereas no sulphides occurred in the quartz-rich leucocratic gabbro. Examination of polished sections from this deposit by Faust led to the following observations:

- 1) Pyrrhotite, chalcopyrite, and pentlandite are present in that order of abundance. They occur alone or together in the same polished section.
- 2) Pyrrhotite occurs as large irregular blebs, 2 to 3 mm, across, commonly rimmed by chalcopyrite and pentlandite, as fine inclusions in the mafic silicates and subrounded blebs interstitial to the silicate minerals.
- 3) Chalcopyrite also occurs in discrete, irregular masses, in rounded to irregular blebs peripheral to and within the pyrrhotite and as interstitial droplets between silicate minerals.
- 4) Pentlandite occurs as grains peripheral to the pyrrhotite masses and forms flame-like exsolution lamellae along the basal pyrrhotite cleavage direction.

According to Faust (1973) all of the sulphides are embayed or replaced by silicate minerals. The silicates also fill fractures in the sulphide grains. The sulphide textures are attributed to the reaction of the first formed pyrrhotite with the residual sulphide melt to form pentlandite, the exsolution of pentlandite from pyrrhotite at a lower temperature, and the exsolution of chalcopyrite from pyrrhotite at a still lower temperature.

McCulloch (1968) and Faust (1973) both describe the sulphides as a syngenetic magmatic deposit formed after the separation of an immiscible sulphide melt from the crystallizing magma.

5. INSTRUMENTATION and SURVEY PROCEDURES

The survey of the lines and the base line was conducted with a GEM Systems "walking mag" magnetometer that measures the earth's total magnetic field. The diurnal variations of the magnetic field were recorded by a base station magnetometer. A corrected observation was extracted from the "walking mag" database every 12.5 m.

The horizontal loop electromagnetic survey utilized the Max-Min I electromagnetic system manufactured by APEX Parametrics, Uxbridge, Ontario. The in-phase and quadrature phase components of the secondary electromagnetic field were measured at stations 25 m apart. The components were observed at the following transmitter frequencies: 440 Hz, 1760 Hz and 3520 Hz. The separation between the transmitter and receiver was 100 m. Because of the flat terrain corrections for topographic effects were not required.

6. PRESENTATION OF THE DATA

The magnetic and HLEM maps were prepared by CGI Controlled Geophysics Inc. of Thornhill, Ontario. Results are presented on the base map (NAD83; UTM 16N) that shows simplified planimetry, claims and claim numbers. The scale of the maps is 1:10 000.

The magnetic data are presented as solid colour and black contours and as postings and profiles of the corrected magnetic field. The results of the HLEM survey are presented as postings and profiles of the in-phase and quadrature components. Separate maps are prepared for each frequency used. The magnetic and HLEM data are included in the archive disc in Geosoft format together with the above maps in ".jpg" and "png" formats.

7. DISCUSSION OF THE RESULTS

7.1 Horizontal Loop Electromagnetic Survey

The horizontal loop electromagnetic survey results show conductors that are coincident with lake. The behavior of the in-phase and quadrature components implies that the conductors are conductive lake bottom sediments. Further work with the electromagnetic method is not recommended.

7.2 Magnetic Survey

The magnetic domains of the interpretation map were outlined on the basis of varying magnetic characteristics, like magnetic background, strike of the anomalies etc. The magnetic domains exhibit generally uniform magnetic characteristics. Six magnetic domains, marked A, B, C1, C2, D and E were outlined and are discussed below.

The dominant feature of the contour maps is Domain A in the central map area. It is the magnetic expression of the western part of the Elmhirst Intrusion. The intrusion is formed by diorite and gabbro. The increased magnetic coverage over the intrusion afforded the more detailed outline anomalies that reflect rocks of more basic composition. The nearly east-west striking anomalies, along the northern perimeter of the domain

are noteworthy. They may describe a more magnetic horizon near the contact between intrusion and intermediate metavolcanics (see below). This horizon is not as clearly detected elsewhere along the contact. A northwest striking magnetic low in the west of the intrusion is considered as fault zone where magnetite was depleted. The magnetic lows in the centre and the south of the domain are also indications of magnetite depletion. Numerous faults and/or shear zones were interpreted within the domain; the structures appear to be restricted to the intrusion. In the southwest, a prominent, northwest striking fault forms the contact of the intrusion.

Domain B, in the southeast corner of the survey area, covers a zone of somewhat elevated magnetic background with small amplitude anomalies. It is suggested that diorite and gabbro underlies the domain (Kretschmar et al. 2008), albeit less magnetic than the rocks of Domain A.

The magnetic background decreases within Domain C1 in the southwest and Domain C2 in the northeast. The generally short strike length anomalies create a mottled appearance. The domains may be underlain by intermediate composition metavolcanics (Kretschmar et al. 2008). The possible small intrusive body in C2 is noteworthy.

The lower magnetic background covers an area north of the intrusive and is marked as Domain D. Metavolcanic rocks may be covered by the domain, albeit less magnetic than the rocks of C1 and C2.

The background increases in the extreme north of the grid. Domain E covers only a small portion of the grid and is open to the north. More basic composition rocks may be indicated.

The nearly north striking dyke is a later feature that intruded the Elmhirst Intrusive.

8. CONCLUSIONS AND RECOMMENDATIONS

The ground magnetic survey successfully outlined the Elmhirst Intrusion and highlighted the more magnetic phases of the intrusion. It also outlined the zones that are underlain by felsic to intermediate composition metavolcanic rocks. It is recommended that vertical gradient and the tilt angle of the magnetic field should be calculated that would show the magnetic bodies in greater detail.

The horizontal loop electromagnetic survey did not encounter bedrock conductors that would be within the depth of exploration of the coil separation used. Unless there are other reasons, further work with the horizontal loop em method is not recommended.

Respectfully submitted

Francis L. Jagodits, P. Eng., (ON)
Consulting Geophysicist



A handwritten signature in cursive script that reads "Francis L. Jagodits".

9. REFERENCES

- Baker, C. L., Fyon, J.A., Laderoute, D. and Newsome, J.W. (editors). 1996. Report of activities 1995, Resident Geologists: Ontario Geological Survey, Open File Report 5943, 393p.
- Czikan, L., 1969. Unpublished report on the drilling program on the property of Jacobus Mining Corporation Limited in the Northwest Elmhirst Township, Ontario; Assessment File Research Office, Ontario Div. Mines, Toronto, 7p.
- Faust D., 1973. The petrochemistry, petrology, and the economic geology of an Archean mafic intrusion in Elmhirst Township, Ontario, unpublished B.SC. Thesis, Saint Francis Xavier Univ., Nova Scotia, 40 p.
- Kretschmar, U., Hubacheck, P., Therriault, R. and Spaho, M. 2008. Technical Report: on the Jacobus Cu-Ni Property, Thunder Bay Mining Division, N.T.S. 42E13/SEE, Beardmore Area, Ontario. Prepared for Sage Gold Inc.
- MacKasey, W.O. and Wallace, H. 1978. Geology of the Elmhirst and Rickaby Townships. Ontario Geological Survey Report 168.
- McColloch, P. D., 1968. Unpublished report on the geology of the property of The Jacobus Mining Corporation Limited in the Northwestern Elmhirst Township, Ontario; Assessment File Research Office, Ontario Di. Mines, 13p.
- Wheadon, J.N., 1971a. Unpublished report on a drilling program on the property of Jacobus Mining Corporation Limited in northwest Elmhirst Township, Ontario; Assessment Files Research Office, Ontario Div. Mines, Toronto, 8p.

10. APPENDIX

Instrument Specification
Writer's Qualifications
Table III - Personnel

GSM-19

*OVERHAUSER Magnetometer/
VLF System*

GSM-19

*OVERHAUSER Magnetometer/VLF
System*

Features

- Sensitivity = 0.02 nT
- Absolute Accuracy = 0.2 nT
- Sample Rates up to 5 Hz
- Low Power Consumption

General

"Overhauser" Once you experience it, you'll never go back to proton. Overhauser technology brings you sensitivities one to two orders of magnitude better than proton, yet in a light weight package. This is because it consumes an order of magnitude less power than proton, allowing a lighter weight for batteries.

What is the Overhauser technique? The Overhauser sensor contains the electrons' fluid that has been added to a hydrogen rich in the form of "free radical". The resulting mixture yields a sensor with 5000 times gain in proton polarization. Since the Overhauser polarization effect does not require static magnetic fields, but uses radio frequency fields transparent to protons, measurement can be done concurrently with polarization. The result is a sensor with much greater sensitivity, that can be sampled much more rapidly than the standard proton sensor.

Overhauser systems therefore maximize resolution while minimizing power consumption. Even with Walking Gradiometer

systems, sampling at rates of once per second or better are possible; Even in cold temperatures of minus 40 zero degrees Celsius and greater, the internal rechargeable battery can still be relied on for a 10 hour day, or longer.

The GSM-19 Overhauser magnetometer is thus truly a *State-of-the-Art* Magnetometer/VLF system. The GSM-19 offers the data quality, reliability, and extensive list of capabilities, and options, that allow it to meet a very wide spectrum of applications.

Standard Features

The GSM-19 console features a real time graphic display of the current profile. In addition digital display of the current reading, current position, and warning messages are provided. The console design, with internal rechargeable battery pack, allows the unit to be completely sealed against the elements. With the built in heater for the display the GSM-19 is ready to go wherever your surveys may take you.

Tuning is automatic worldwide, with provision for manual override. In high gradient conditions the GSM-19 monitors the signal decay rate and displays a warning message when the gradient becomes too great. Filters for rejection of 50 or 60 Hz noise are provided.

Diurnal corrections may be done in traditional fashion with one unit as a base station and a second unit used as the mobile field unit. At the end of the survey the two units are connected and the field unit creates a corrected data file (which still includes the

raw data file) based on the temporal drift recorded by the base station.

As a standard feature the GSM-19 also offers the capability of making tie point measurements for automatic diurnal corrections. To use this feature the operator records a base value and then loops back to this point periodically during the survey to record another measurement, and thus build a file of the drift. In this way a single instrument may be used to make diurnal corrections.

The RS-232 port on the GSM-19 will output data as it is collected. This allows interface to GPS loggers that will accept RS232 data. The standard GSM-19 may be operated in a remote mode via computer. Memory storage is 512 K in the standard unit, and may be upgraded to 2 MB.

Grid coordinates are stored with either numeric or compass designations. A seven digit number may be used to designate lines and positions. Line and position spacing is entered so that with every reading the position may be automatically updated. An End of Line feature allows the next line to be quickly selected, plus changes the sign on the position spacing. If the previous line had been adding positions as the operator moved, then on the next line, positions will be subtracted as the operator moves. The operator may also easily manually enter his grid position for cases where gaps in the line are necessary.

Terraplus Inc.

52 West Beaver Cr. Rd. #17, Richmond Hill, ON, Canada L4B 1L9

Tel: 905-764-5505

Fax: 905-764-8093

Email: terraplus@compuserve.com

Website: www.terraplus.com

GSM-19

OVERHAUSER Magnetometer/
VLF System

GSM-19

OVERHAUSER Magnetometer/VLF
System

Features

- Sensitivity = 0.02 nT
- Absolute Accuracy = 0.2 nT
- Sample Rates up to 5 Hz
- Low Power Consumption

General

"Overhauser" Once you experience it, you'll never go back to proton. Overhauser technology brings you sensitivities one to two orders of magnitude better than proton, yet in a light weight package. This is because it consumes an order of magnitude less power than proton, allowing a lighter weight for batteries.

What is the Overhauser technique? The Overhauser sensor contains the electrons' fluid that has been added to a hydrogen rich in the form of "free radical". The resulting mixture yields a sensor with 5000 times gain in proton polarization. Since the Overhauser polarization effect does not require static magnetic fields, but uses radio frequency fields transparent to protons, measurement can be done concurrently with polarization. The result is a sensor with much greater sensitivity, that can be sampled much more rapidly than the standard proton sensor.

Overhauser systems therefore maximize resolution while minimizing power consumption. Even with Walking Gradiometer

systems, sampling at rates of once per second or better are possible; Even in cold temperatures of minus 40 zero degrees Celsius and greater, the internal rechargeable battery can still be relied on for a 10 hour day, or longer.

The GSM-19 Overhauser magnetometer is thus truly a *State-of-the-Art* Magnetometer/VLF system. The GSM-19 offers the data quality, reliability, and extensive list of capabilities, and options, that allow it to meet a very wide spectrum of applications.

Standard Features

The GSM-19 console features a real time graphic display of the current profile. In addition digital display of the current reading, current position, and warning messages are provided. The console design, with internal rechargeable battery pack, allows the unit to be completely sealed against the elements. With the built in heater for the display the GSM-19 is ready to go wherever your surveys may take you.

Tuning is automatic worldwide, with provision for manual override. In high gradient conditions the GSM-19 monitors the signal decay rate and displays a warning message when the gradient becomes too great. Filters for rejection of 50 or 60 Hz noise are provided.

Diurnal corrections may be done in traditional fashion with one unit as a base station and a second unit used as the mobile field unit. At the end of the survey the two units are connected and the field unit creates a corrected data file (which still includes the

raw data file) based on the temporal drift recorded by the base station.

As a standard feature the GSM-19 also offers the capability of making tie point measurements for automatic diurnal corrections. To use this feature the operator records a base value and then loops back to this point periodically during the survey to record another measurement, and thus build a file of the drift. In this way a single instrument may be used to make diurnal corrections.

The RS-232 port on the GSM-19 will output data as it is collected. This allows interface to GPS loggers that will accept RS232 data. The standard GSM-19 may be operated in a remote mode via computer. Memory storage is 512 K in the standard unit, and may be upgraded to 2 MB.

Grid coordinates are stored with either numeric or compass designations. A seven digit number may be used to designate lines and positions. Line and position spacing is entered so that with every reading the position may be automatically updated. An End of Line feature allows the next line to be quickly selected, plus changes the sign on the position spacing. If the previous line had been adding positions as the operator moved, then on the next line, positions will be subtracted as the operator moves. The operator may also easily manually enter his grid position for cases where gaps in the line are necessary.

Terraplus Inc.

52 West Beaver Cr. Rd. #17, Richmond Hill, ON. Canada L4B 1L9

Tel: 905-764-5505

Fax: 905-764-8093

Email: terraplus@compuserve.com

Website: www.terraplus.com

MAGNETOMETERS

Equatorial Sensor

In equatorial regions, generally 30 degrees north or south of the equator, magnetic fields reach a nearly horizontal angle with the earth's surface. This requires a conventional proton sensor to be used in an inverted position, and requires the operator to collect data only on east/west lines to maximize the magnetic signal. This is a problem that is a magnitude worse for cesium magnetometers.

The Overhauser technique allows design of an optional sensor completely free of this problem, a sensor that requires no orientation no matter what the latitude of your exploration. This can be a major advantage when working in diverse areas around the world, and when needing to train local operators whose first language may not be your own.

"Walking Mag Option"

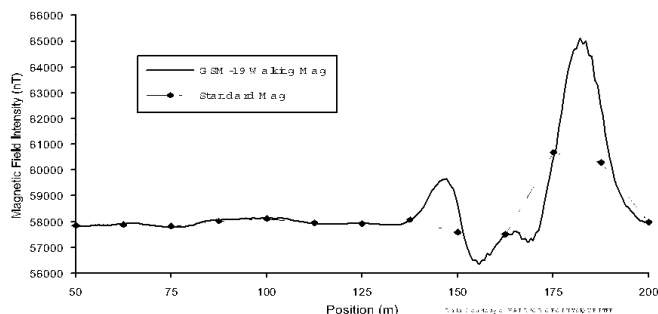
The GSM-19 magnetometer was the first to offer the "Walking Mag" concept. The reason for this is the outstanding advantage the Overhauser sensor has in this application. With the "Walking Mag" option the operator may select a sample rate of up to two samples per second. At this rate Overhauser technology can still deliver a noise level that is quite acceptable, about 0.1 nT, and the lower power consumption means that a full day of surveying can still be done with just the internal rechargeable battery.

As shown in Figure 1 the near continuous data from the "Walking Mag" technique provides increased definition for any type of survey. For surveys with densely spaced grids, such as archaeological or environmental surveys, field productivity is markedly improved, typically by a factor of five.

When in the Walking Mag mode the operator still presets his line and station spacing. When a known station is passed a grid update key is pressed and the current reading is tagged with this station. Readings taken between these marked positions are then linearly interpolated for their grid position when data is transferred to a computer.

A further refinement of the Walking Mag concept is the Hip Chain Option. This option uses a hip chain to trigger the magnetometer to take a reading at discrete intervals. A Hip Chain consists of an optical encoder that records revolutions of a wheel wound with

Near-Continuous Surveys Improve Definition of Magnetic Anomalies



disposable cotton string. The string is tied off at the beginning of a line, and as the operator walks the string is pulled out, and the magnetometer is automatically triggered. With the Hip Chain option sample rates up to five samples per second are supported.

Omnidirectional VLF

The GSM-19 VLF features a three coil design, with new larger coils in 1997, to achieve a non orientation capability with excellent sensitivity. Up to three VLF stations may be recorded, along with the magnetic reading, with the pressing of a single key.

As each VLF station is read the total field strength is displayed. This value may be used to determine if a station's signal is strong enough to obtain useful data. At the end of each reading the in phase, out of phase, and horizontal components are displayed and recorded for each station.

To determine what stations are available the Scan feature may be used. The entire VLF spectrum is scanned and stations with their corresponding signal strength are displayed. Automatic tilt compensation is provided up to ten degrees. Beyond this a warning message appears with display of the amount of tilt in each direction, enabling the operator to correct his position and take the reading again.

For Walking Mag applications a Walking VLF option is also available. With this option a single VLF station may be measured at sampling rates up to once per second. In this mode both magnetic and VLF readings may

be collected at the one hertz rate.

Simultaneous Gradiometer

Many mining, environmental, and archaeological applications may benefit from using the gradient measurement. For near surface anomalies, generally twenty meters depth or less, the gradient anomaly will be larger, and narrower, than the total field anomaly. This permits the more accurate location of the target, and gives better sensitivity. The gradient measurement has the added value of being free from diurnal drift.

The most accurate gradient measurements are made when both sensors are polarized and measured at precisely the same time. In this way any slight movement of the sensor staff pole will not affect the reading. With the GSM-19 Gradiometer Option the pressing of a single key will initiate measurement of both the total field and gradient. Both readings are displayed and stored.

Integrated DGPS

With the GPS Log Option the GSM-19 will display and store GPS data using standard NMEA format. Position accuracy is dependant on the user's DGPS system.

Also offered is an internally mounted GPS board that may be integrated with radio modem for DGPS mode. A range of GPS boards may be offered to meet customer specified accuracy. These are quoted on a case by case basis to take advantage of current technology. Complete systems, with base station, and DGPS software are provided.

Terraplus Inc.

52 West Beaver Cr. Rd. #17, Richmond Hill, ON, Canada L4B 1L9

Tel: 905-764-5505

Fax: 905-764-8093

Email: terraplus@compuserve.com

Website: www.terraplus.com

Extended Remote Control

As an option the GSM-19 may be completely controlled through the RS232 interface. This option includes all controls available from the keypad, such as power on/off, tuning, etc. This option is most useful for observatory applications.

Marine Magnetometers

The Overhauser effect is a major benefit in marine applications. The GSM-19 has been developed into two marine models; the GSM-19M for shallow tow applications with cable lengths of up to 100 meters; and the standard GSM-19 for tow applications with cable lengths of 30 meters. Please see pages ?? for the GSM-19M.

A standard GSM-19 may be used with a marine sensor with up to a 30 meter cable. In this way the same console may be used for both land and marine applications. Users considering this option may want to focus on also including the Walking Mag option so that they will have sample rates that are more appropriate for marine applications.

Specifications

Overhauser Performance

Resolution: 0.01 nT
 Relative Sensitivity: 0.02 nT
 Absolute Accuracy: 0.2nT
 Range: 20,000 to 120,000 nT
 Gradient Tolerance: Over 10,000nT/m
 Operating Temperature: -40°C to +60°C

Operation Modes

Manual: Coordinates, time, date and reading stored automatically at min. 3 second interval.
 Base Station: Time, date and reading stored at 3 to 60 second intervals.
 Walking Mag: Time, date and reading stored at coordinates of fiducial.
 Remote Control: Optional remote control using RS-232 interface.
 Input/Output: RS-232 or analog (optional) output using 6-pin weatherproof connector.

Operating Parameters

Power Consumption: Only 2Ws per reading. Operates continuously for 45 hours on standby.
 Power Source: 12V 2.6Ah sealed lead acid battery standard, other batteries available

Operating Temperature: -50°C to +60°C

Storage Capacity

Manual Operation: 29,000 readings standard, with up to 116,000 optional. With 3 VLF stations: 12,000 standard and up to 48,000 optional.

Base Station: 105,000 readings standard, with up to 419,000 optional (88 hours or 14 days uninterrupted operation with 3 sec. intervals)

Gradiometer: 25,000 readings standard, with up to 100,000 optional. With 3 VLF stations: 12,000, with up to 45,000 optional.

Omnidirectional VLF

Performance Parameters: Resolution 0.5% and range to +200% of total field. Frequency 15 to 30 kHz.

Measured Parameters: Vertical in-phase & out-of-phase, 2 horizontal components, total field coordinates, date, and time.

Features: Up to 3 stations measured automatically, in-field data review, displays station field strength continuously, and tilt correction for up to +10° tilts.

Dimensions and Weights: 93 x 143 x 150mm and weighs only 1.0kg.

Dimensions and Weights

Dimensions:

Console: 223 x 69 x 240mm

Sensor: 170 x 71mm diameter cylinder

Weight:

Console: 2.1kg

Sensor and Staff Assembly: 2.0kg

Standard Components

GSM-19 console, harness, battery charger, shipping case, sensor with cable, staff, instruction manual, data transfer cable and software.

Ordering Information

Description	Order Number
GSM-19 Overhauser Mag.	350-170-0051
Gradiometer Option	350-170-0042
VLF Option	350-170-0069
GES Log Option	350-170-0170
Memory Upgrade per 512	350-170-0065
Analog Output	350-170-0040
Remote Option	350-170-0043
Walking Mag Option	350-170-0072
GSM-19 Shallow Marine Fish	350-170-0105
Equatorial Sensor Option	350-170-0114

Terrapulus Inc.	Tel: 905-764-5505	Email: terrapulus@compuserve.com
52 West Beaver Cr. Rd. #17, Richmond Hill, ON, Canada L4B 1L9	Fax: 905-764-8093	Website: www.terrappulus.com

MAXMIN I-8 ELECTROMAGNETIC SYSTEM SPECIFICATIONS:

FREQUENCIES:	110, 220, 440, 880, 1760, 3520, 7040 & 14080 Hz.	SURVEY DEPTH PENETRATION:	From surface down to 1.5 times coil separation for large horizontal target and 0.75 times coil separation for large vertical target, values typical.
COIL SEPARATIONS:	SET NO. 1: 12.5, 25, 50, 75, 100, 125, 150, 200, 250, 300 and 400 metres (the standard set). SET NO. 2: 10, 20, 40, 80, 80, 100, 120, 160, 200, 240 and 320 metres (selected with grid switch in receiver). SET NO. 3: 50, 100, 200, 300, 400, 500, 600, 800, 1000, 1200 and 1600 feet (selected with grid switch in receiver).	REFERENCE CABLE:	Lightweight unshielded 4/2 conductor teflon cable for maximum operating temperature range and for minimum pulling friction.
TRANSMITTER DIPOLE MOMENTS:	110 Hz: 220 Atm ² 1760 Hz: 160 Atm ² 220 Hz: 215 Atm ² 3520 Hz: 80 Atm ² 440 Hz: 210 Atm ² 7040 Hz: 40 Atm ² 880 Hz: 200 Atm ² 14080 Hz: 20 Atm ²	INTERCOM:	Voice communication link provided for operators via the reference cable.
MODES OF OPERATION:	MAX 1: Horizontal loop or slingram - transmitter and receiver coil planes horizontal and coplanar. MAX 2: Vertical coplanar loop mode transmitter and receiver coil planes vertical and coplanar. MIN 1: Perpendicular mode 1 - transmitter coil plane horizontal and receiver coil plane vertical. MIN 2: Perpendicular mode 2 - transmitter coil plane vertical and receiver coil plane horizontal.	TEMP. RANGE:	Minus 40 to plus 60 degrees Celsius, operating.
PARAMETERS MEASURED:	In-phase and quadrature components of the secondary magnetic field, in % of primary field.	RECEIVER BATTERIES:	Four standard 9 V - 0.6 Ah alkaline batteries. Life 25 hours continuous duty, less in cold weather. Optional 1.2 Ah extended life lithium batteries available (recommended for very cold weather).
READOUTS:	Analog direct edgewise meter readouts for in-phase, quadrature and tilt. Additional digital LCD readouts provided in the optional MMC computer. Interfacing and controls are provided for ready plug-in of the MMC.	TRANSMITTER BATTERIES:	Standard rechargeable gel-type lead-acid 12V-14Ah batteries (4 x 6V - 7.2 Ah) in nylon belt pack. Optionally rechargeable long life 12 V - 14 Ah nickel-cadmium batteries (20 x 1.2 V - 7 Ah) with ni-cad chargers - best choice for cold climates.
RANGES OF READOUTS:	Switch activated analog in-phase and quadrature scales: 0±4%, 0±20% and 0±100%, and digital 0±199.9% autorange with optional MMC. Analog tilt 0±75% and 0±99% grade with MMC.	TRANSMITTER BATTERY CHARGERS:	Lead acid battery charger: 14.4V @ 1.25A, Ni-cad battery charger: 1.4 A @ 16 V, nominal output. Operation from 110 - 120 and 220 - 240 VAC, 50 - 60 Hz, and 12 - 15 VDC supplies.
RESOLUTION:	Analog in-phase and quadrature 0.1 to 1 % of primary field, depending on scale used, digital 0.01 % with autoranging MMC; tilt 1 % grade.	RECEIVER WEIGHT:	8 Kg carrying weight (including the two ferrite cored antenna coils), 9 Kg with MMC computer.
REPEATABILITY:	0.01 to 1 % of primary field, typical, depending on frequency, coil separation and conditions.	TRANSMITTER WT:	16 Kg carrying weight.
SIGNAL FILTERING:	Powerline comb filter, continuous spheric noise clipping, autoadjusting time constant, and more.	SHIPPING WEIGHT:	60 Kg plus weight of reference cables at 2.0 Kg per 100 metre, plus optional items if any, shipped in two aluminum lined field / shipping cases.
WARNING LIGHTS:	Receiver signal and reference warning lights to indicate potential error conditions.	STANDARD SPARES:	Spare transmitter battery pack, spare transmitter battery charger, two spare transmitter retractable connecting cords, spare set of receiver batteries.
		OPTIONS AND ACCESSORIES, PLEASE SPECIFY:	<ul style="list-style-type: none"> ◆ MMC, MaxMin Computer option ◆ Data interpretation and presentation programs ◆ Reference cables, lengths as required ◆ Reference cable extension adapter ◆ Handheld inclinometer for rough terrain ◆ Receiver extended life lithium batteries ◆ Transmitter ni-cad battery & charger option ◆ Minimal, regular or extended spare parts kit
			Specifications subject to changes without notification

93 - 10 - 15

Telephone: (1) 905 852 5875

Facsimile: (1) 905 852 9688

P. O. Box 818, Uxbridge,
Ontario, Canada L9P 1N2
Airport: Toronto International

APEX PARAMETRICS LIMITED

MAXMIN COMPUTER MMC SPECIFICATIONS:

OPERATING SYSTEM:	Menu driven user-friendly hierarchial operating system, interfacing with MaxMin EM System receiver and with personal computers.
DISPLAY:	Extended temperature Liquid Crystal Display, with two lines of 24 alphanumeric characters each.
KEYBOARD:	18 tactile pushbutton keys
BEEPER:	To provide audible operator guidance and to speed up operations, especially in very cold weather.
CLOCK CALENDAR:	Date and Time (year, month, day, hour and minute).
COIL TILT:	Tilt display, with built in tilt sensor and measurement, with $0 \pm 99\%$ topographic grade range and with 1% resolution.
IN-PHASE & QUADRATURE:	$0 \pm 199.9\%$ autoranging programmable gain system with 0.1% resolution for displayed data and 0.01% resolution for stored data.
APPARENT CONDUCTIVITY:	0.1 to 3276 milliSiemens (millimho) per metre available conductivity range, with conductivity arrived at using the quadrature, in-phase, frequency and coil separation data.
PROCESSOR:	16 bit low power CMOS CPU and bus at 6 MHz clock rate.
MEMORY:	ROM: 16 Kb, expandable to 64 Kb. RAM: 256 Kb, static CMOS.
PHYSICAL SIZE:	24.2 x 17.3 x 4.3 cm, to fit inside the MaxMin receiver leather case notebook pocket.
CARRYING WEIGHT:	1.0 Kilogram.
BATTERIES:	Two 9V-0.6Ah alkaline batteries. Battery life 28 hours continuous duty, less in cold weather. Optional 1.2 Ah lithium batteries recommended for very cold temperature operation. One lithium 3 Volt memory back-up battery, type 2032.
CONNECTIONS:	19 pin bayonet connector receptacle to connect to MaxMin receiver with the supplied tubular aluminum connectors. One each of DB25S and DB9S data transfer cords supplied for downloading data to personal computer serial ports.
TEMPERATURE RANGE:	Minus 30 to plus 60 degrees Celsius. Temperature sensing, measurement and display built-in.

Specifications are subject to changes without prior notification.

1988-04-01

Telephone: 1 905 852 5875

Facsimile: 1 905 852 9688

P. O. Box 818, Uxbridge,
Ontario, Canada L9P 1N2
Airport: Toronto International

APEX PARAMETRICS LIMITED

WRITER'S QUALIFICATIONS

Francis L. Jagodits, Dipl. Eng., P. Eng.

This is to certify that I, Francis L. Jagodits,

am a Canadian citizen, residing at 353 Berkeley Street in the City of Toronto, Province of Ontario,

maintain a consulting office at 353 Berkeley Street, in Toronto,

graduated with a degree of Diploma Engineer in geophysical engineering from the Technical University of Sopron, Hungary in 1956,

have worked as professional geoscientist for the past fifty years and as an independent consulting geophysicist for the past twenty years,

am registered as a Professional Engineer in the Province of Ontario and registered as a retired Professional Engineer and Professional Geoscientist in good standing in the Province of Newfoundland and Labrador,

am a member of the Society of Exploration Geophysicist, the Canadian Exploration Geophysical Society and the Prospectors and Developers Association of Canada.

Dated at Toronto

This 10th day of October, 2008.

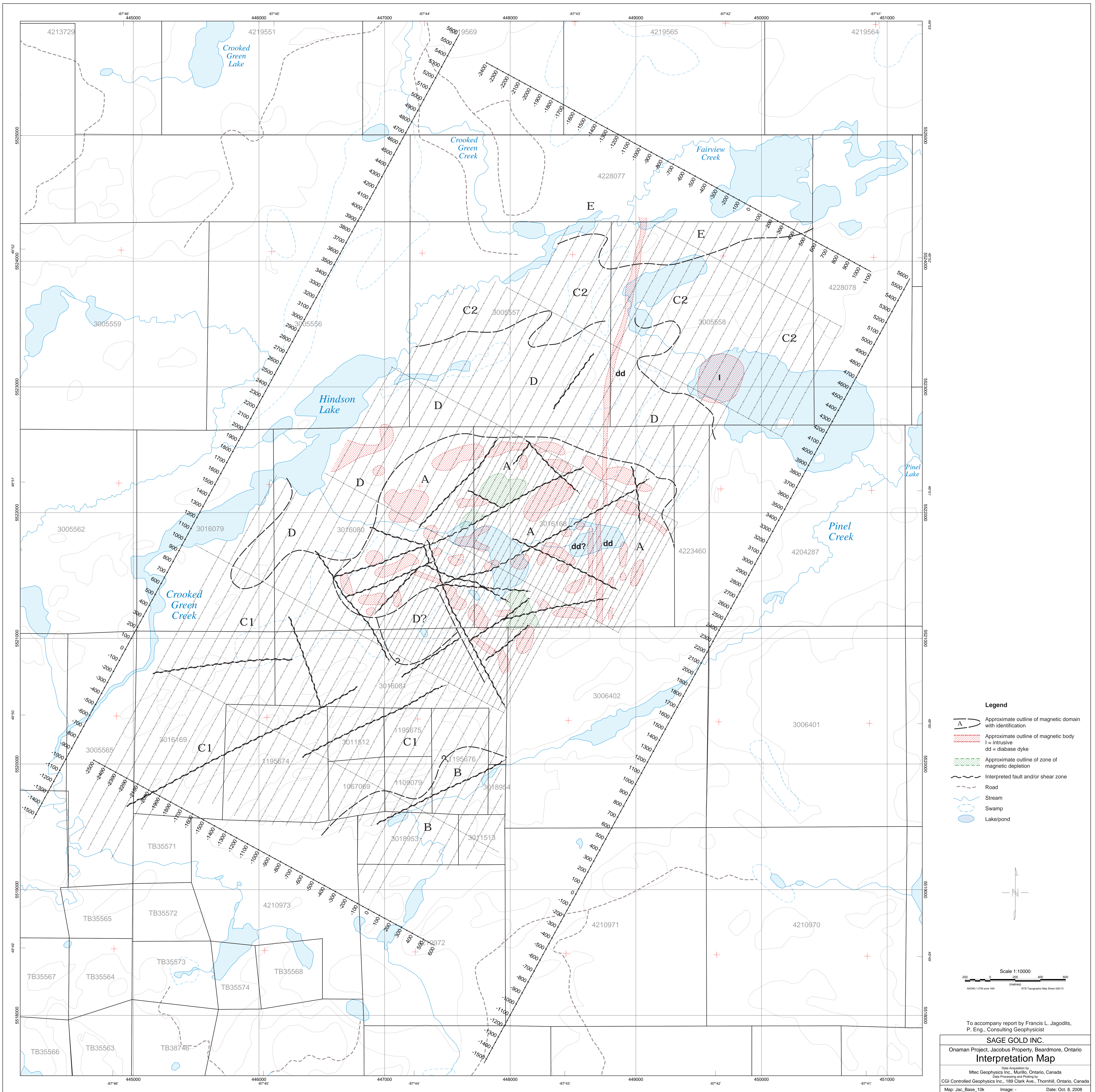
Francis L. Jagodits, Dipl. Eng., P.Eng.



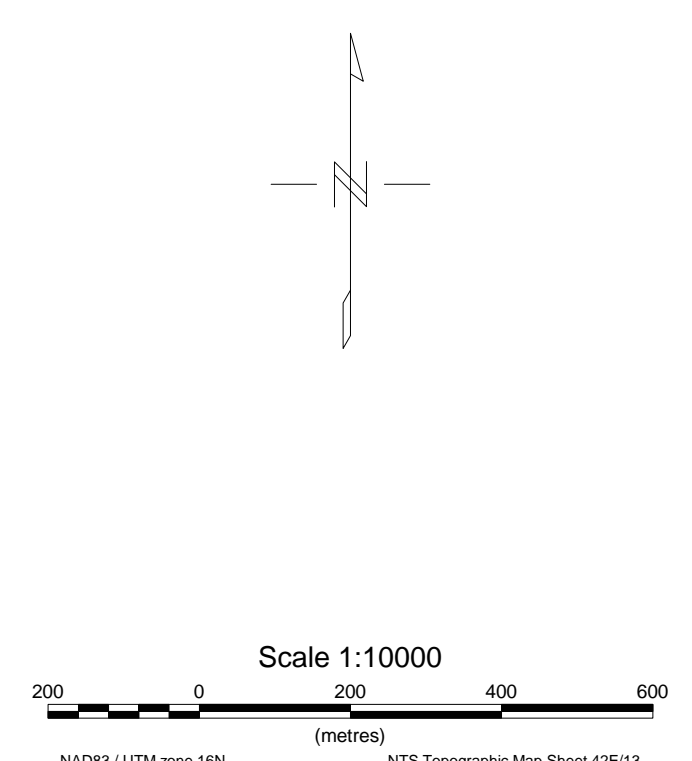
A handwritten signature in cursive script that reads 'Francis L. Jagodits'.

TABLE III
LIST OF PERSONNEL

Name	Address	Activity
D. Roberts	Box 1255, Lac la Ronge, SK	Line cutting.
Mtech Geophysics Inc.	P.O. Box 88, Murillo, ON P0T 2G0	Geophysical Surveys
M. Milani S. McCrindle D. Chambers		
CGI Controlled Geophysics Inc.	189 Clarke Av. East Thornhill, ON. L3T 1T3	Data preparation, map preparation
C. Vaughn, P. Geo., President, Chief Geophysicist		
Checkmate Photographic	26 Six Points Road Etobicoke, ON. M8Z 2W9	Map services
R. Jessup		
Jeff Meek & Associates	2c Alcina Ave Toronto,, ON. M6G 2E8	Drafting
J. Meek		
Francis L. Jagodits, P. Eng..	353 Berkeley Street, Toronto, ON. M5A 2X6	Interpretation and reporting.



- Legend**
- Approximate outline of magnetic domain with identification
 - Approximate outline of magnetic body
I = intrusive
dd = diabase dyke
 - Approximate outline of zone of magnetic depletion
 - Interpreted fault and/or shear zone
 - Road
 - Stream
 - Swamp
 - Lake/pond

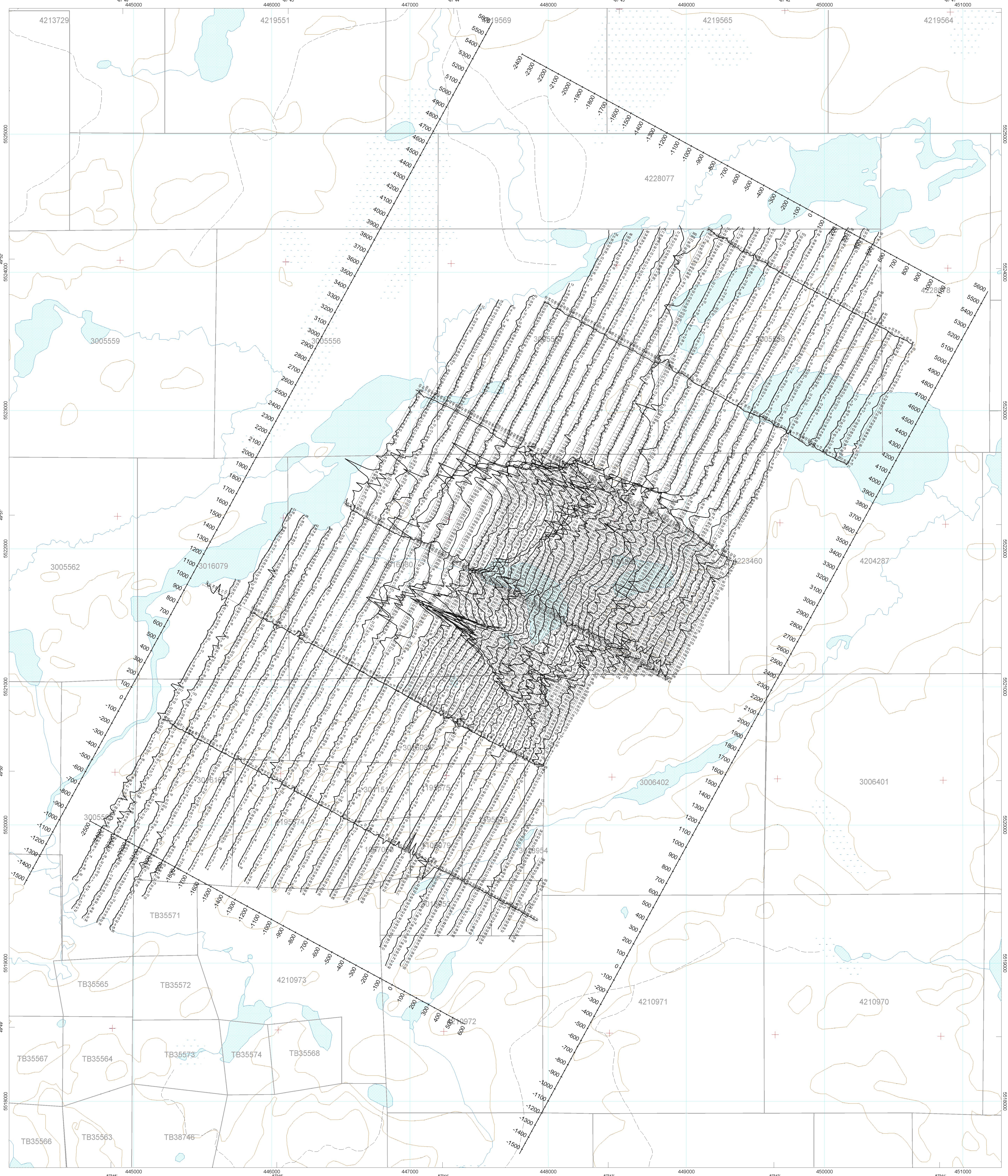


To accompany report by Francis L. Jagoditis,
P. Eng., Consulting Geophysicist

SAGE GOLD INC.
Onaman Project, Jacobus Property, Beardmore, Ontario

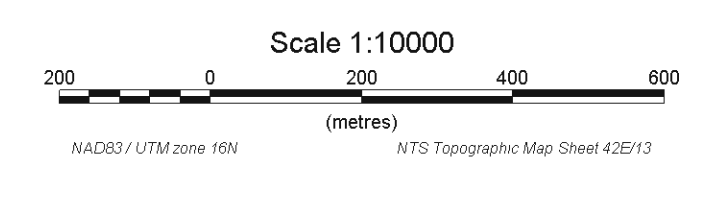
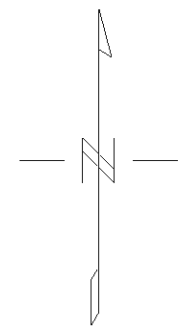
Interpretation Map

Map: Jac_Base_10k Image: - Date: Oct. 8, 2008

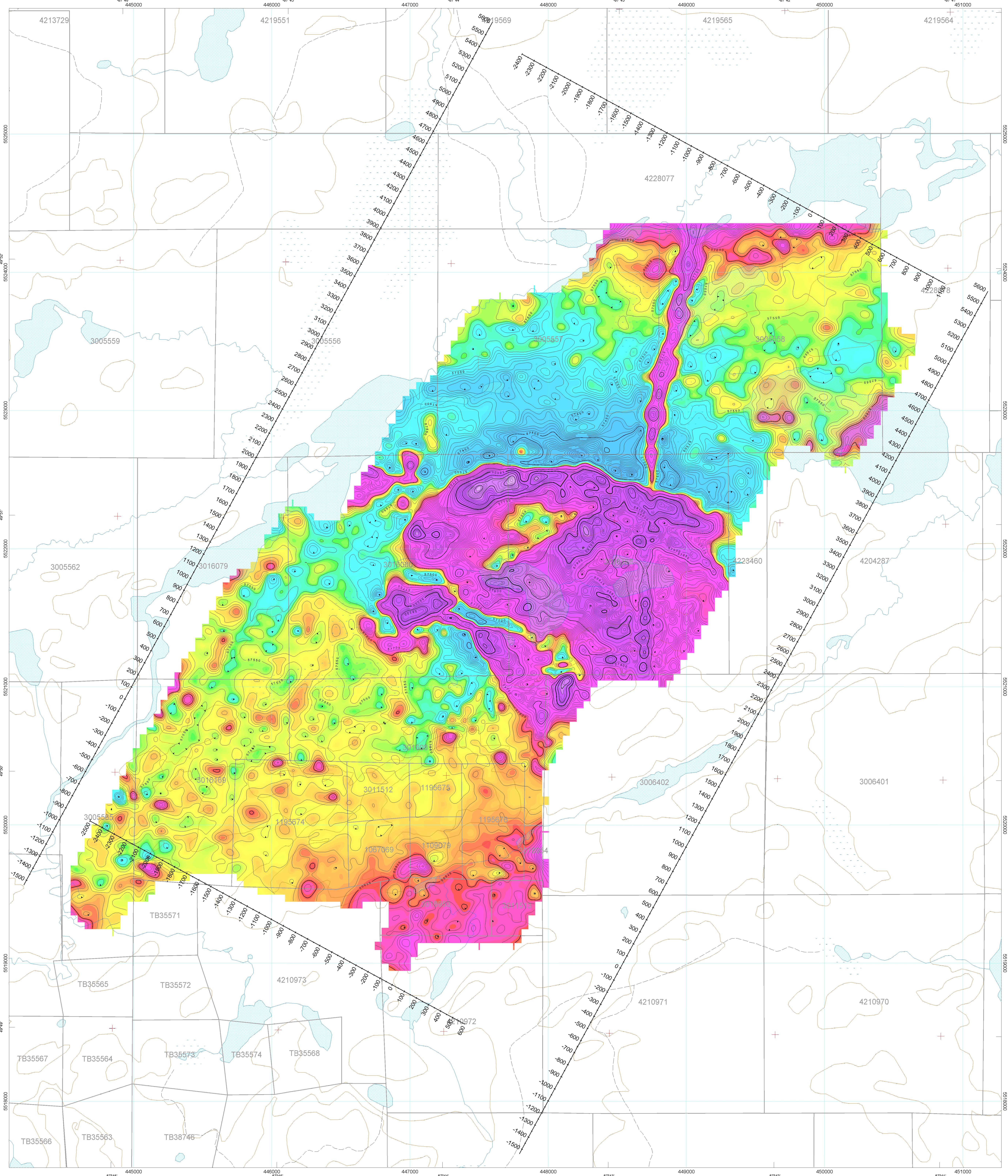


Specifications:
 SURVEY TYPE: Total Magnetic Intensity (TM)
 MAGNETOMETER EQUIPMENT: Gem Systems GSM-19
 v.5.0 7.1k 99 1071033 ID 0
 NOMINAL STATION SPACING: 12.5 METRES

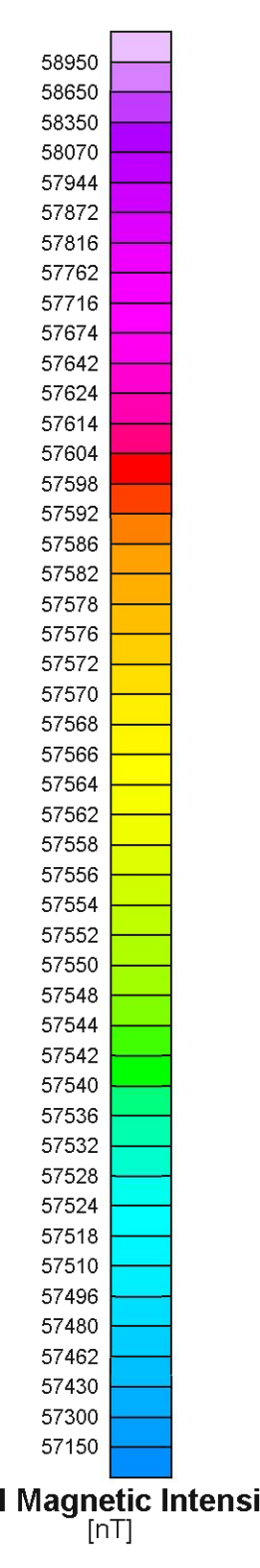
Magnetic Profiles - Scale: 400 nT/cm Base Level: 57560 nT
 Profiles: solid lines; Positive to NE and NW
 Postings every 25 m. Postings Background Subtracted = 57560 nT



SAGE GOLD INC.
 Onaman Project, Jacobus Property, Beardmore, Ontario
 Total Magnetic Intensity
 Profiles and Postings and Grid Location on Topo Base
 Data Acquisition by Mtec Geophysics Inc., Murilo, Ontario, Canada
 Data Processing and Plotting by CGI Controlled Geophysics Inc., 189 Clark Ave., Thornhill, Ontario, Canada
 Map: Jac_TMI_Prof_10k Image: - Date: Sept 24, 2008



Specifications:
 SURVEY TYPE: Total Magnetic Intensity (TM)
 MAGNETOMETER EQUIPMENT: Gem Systems GSM-19
 v5.0 7.1K 99 1071033 ID 0
 NOMINAL STATION SPACING: 12.5 METRES

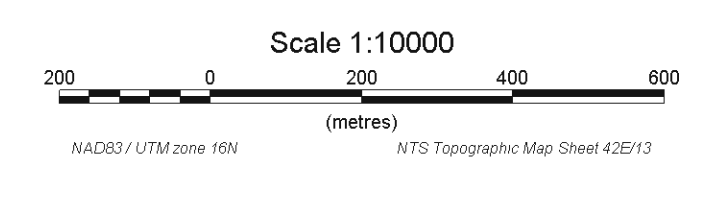
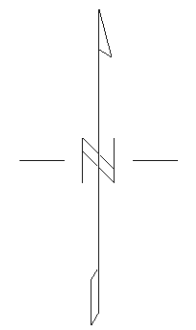


Minimum Curvature Gridding / Cell Size: 50 m re-gridded to 10 m

Contour Intervals [nT]

- 10
- 50
- 200
- 1000

Magnetic IGRF at 49°55'N, 87°45'W,
 and 335 m A.S.L. on March 1, 2008
 Intensity: 57829.86 nT
 Inclination: 75.60°
 Declination: -5.38°



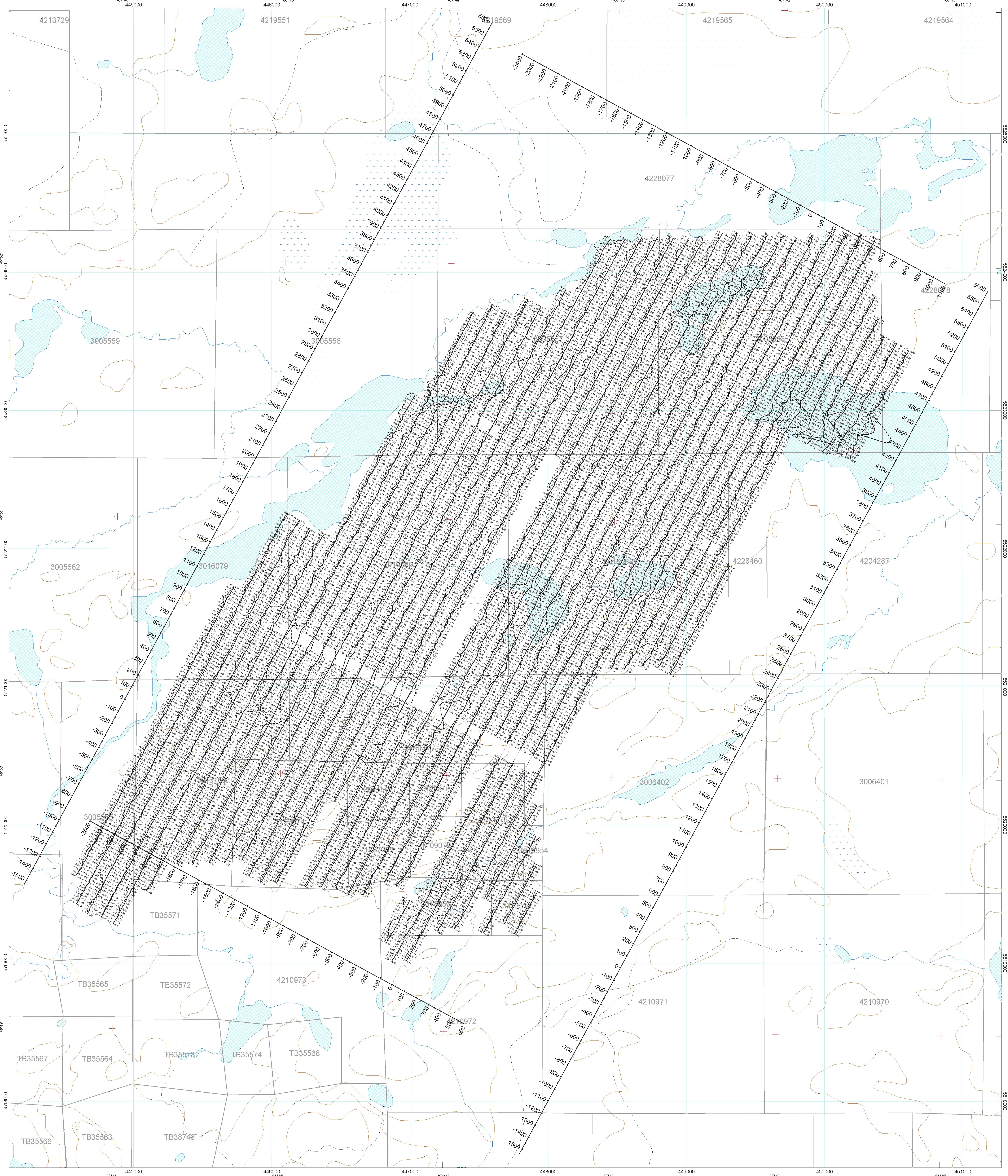
SAGE GOLD INC.

Onaman Project, Jacobus Property, Beardmore, Ontario
Total Magnetic Intensity
Contoured Colour Image on Topo Base

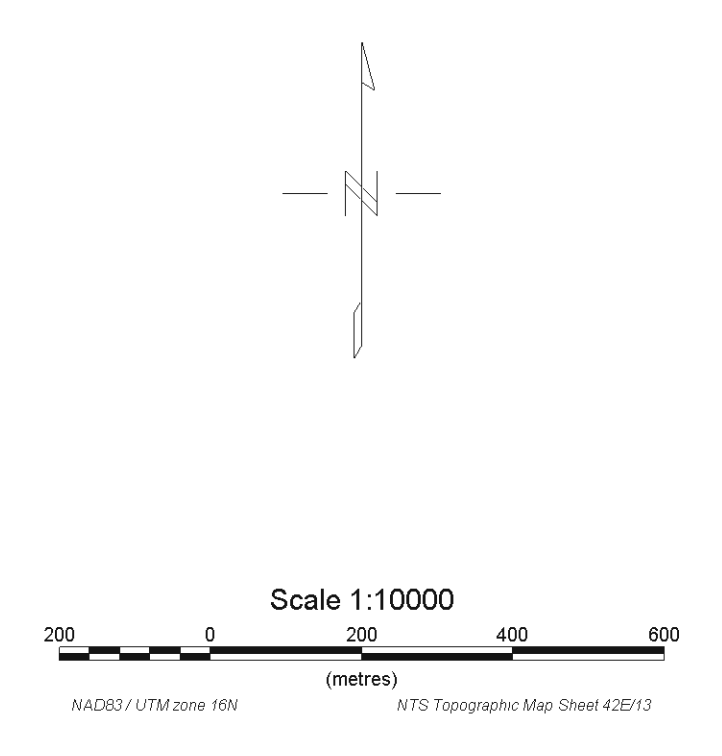
Data Acquisition by
 Mtec Geophysics Inc., Murilo, Ontario, Canada
 Data Processing and Plotting by
 CGI Controlled Geophysics Inc., 189 Clark Ave., Thornhill, Ontario, Canada

Map: Jac_TMI_10k Image: Jac_TMI_10 Date: Sept 24, 2008

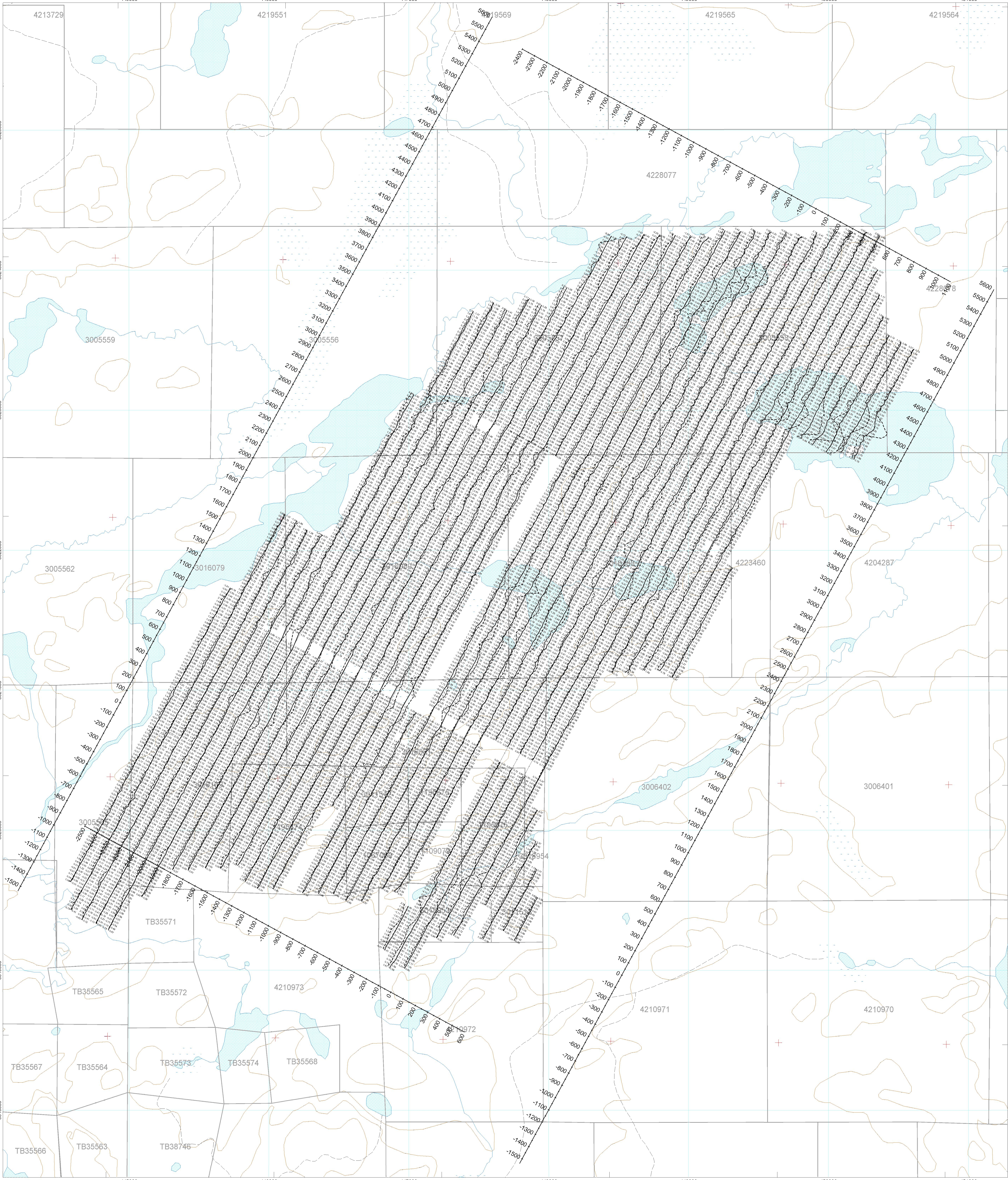
Specifications:
SURVEY TYPE: MAXIM ELECTROMAGNETIC (HLEM)
MAXIM EQUIPMENT: MM-B S/N 8414
SLOPE METHOD: NO SLOPES
COL SEPARATION: 100.0 METRES
NOMINAL STATION SPACING: 25.0 METRES
MODE: MAX1 (Horizontal Coplanar)
FREQUENCIES: 440, 1760, 3520 Hz



HLEM Profiles - Scale: 15 ppm/cm Base Level: 0.0 ppm
IP Profiles: solid lines. QU Profiles: dashed lines. Positive to NW
Postings every 25 m. IP values: below line. QU values: above line.

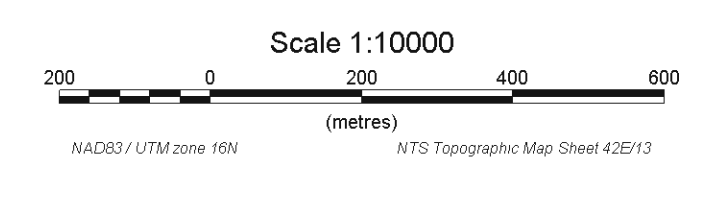
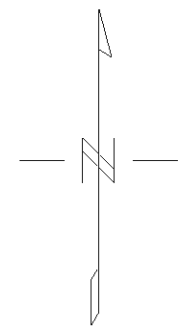


SAGE GOLD INC.
Onaman Project, Jacobus Property, Beardmore, Ontario
3520 Hz HLEM Profiles and Postings
and Grid Location and Claims on Topo Base
Data Acquisition by Mtec Geophysics Inc., Murilo, Ontario, Canada
Data Processing and Plotting by CGI Controlled Geophysics Inc., 189 Clark Ave., Thornhill, Ontario, Canada
Map: Jac_EM3520_10k Image: - Date: Sept 24, 2008

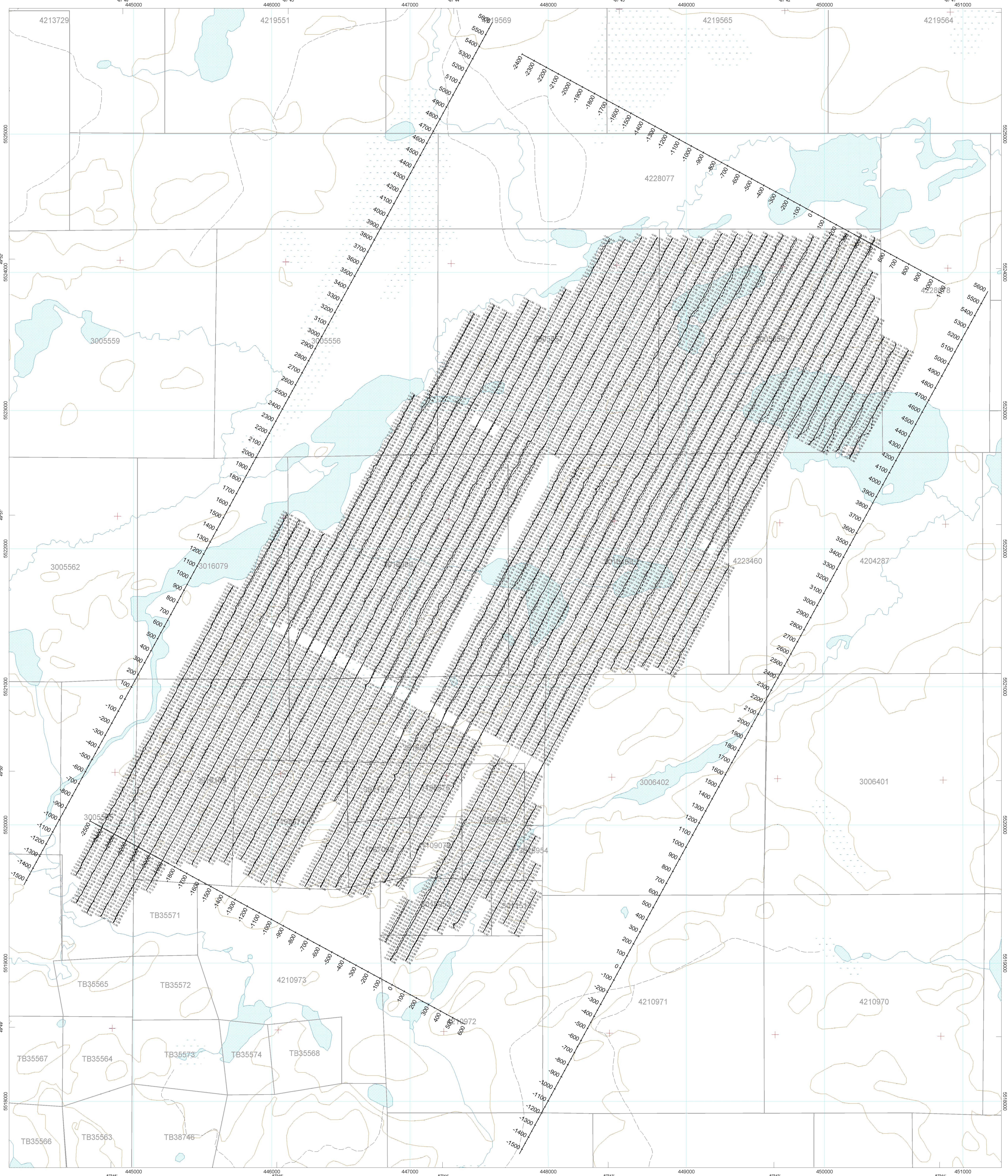


Specifications:
 SURVEY TYPE: MAXMIN ELECTROMAGNETIC (HLEM)
 MAXMIN EQUIPMENT: MM-8 S/N 8414
 SLOPE METHOD: NO SLOPES
 COIL SEPARATION: 100.0 METRES
 NOMINAL STATION SPACING: 25.0 METRES
 MODE: MAX1 (Horizontal Coplanar)
 FREQUENCIES: 440, 1760, 3520 Hz

HLEM Profiles - Scale: 15 ppm/cm Base Level: 0.0 ppm
 IP Profiles: solid lines, QU Profiles: dashed lines. Positive to NW
 Postings every 25 m. IP values: below line. QU values: above line.

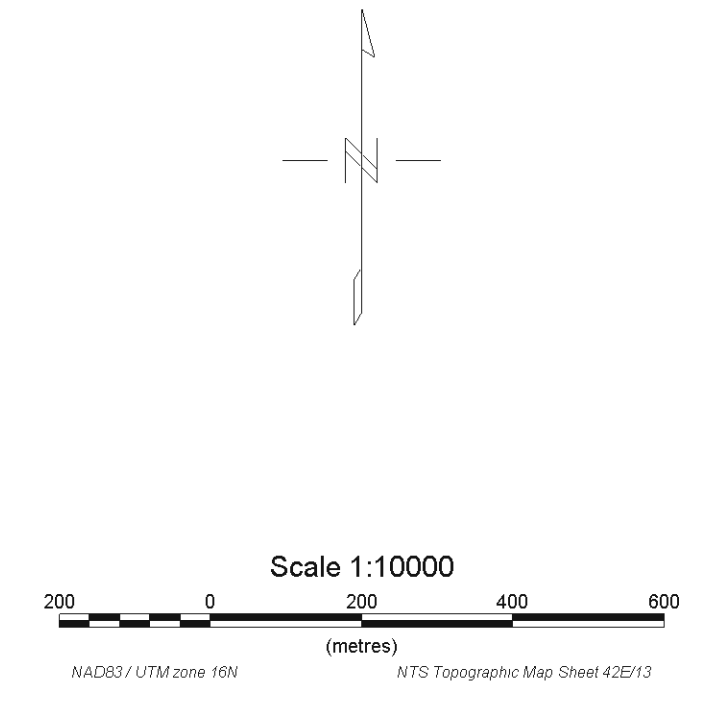


SAGE GOLD INC.
 Onaman Project, Jacobus Property, Beardmore, Ontario
 1760 Hz HLEM Profiles and Postings
 and Grid Location and Claims on Topo Base
 Data Acquisition by Mtec Geophysics Inc., Muriilo, Ontario, Canada
 Data Processing and Plotting by CGI Controlled Geophysics Inc., 169 Clark Ave., Thornhill, Ontario, Canada
 Map: Jac_EM1760_10k Image: - Date: Sept 24, 2008



Specifications:
 SURVEY TYPE: MAXMIN ELECTROMAGNETIC (HLEM)
 MAXMIN EQUIPMENT: MM-8 S/N 8414
 SLOPE METHOD: NO SLOPES
 COIL SEPARATION: 100.0 METRES
 NOMINAL STATION SPACING: 25.0 METRES
 MODE: MAX1 (Horizontal Coplanar)
 FREQUENCIES: 440, 1760, 3520 Hz

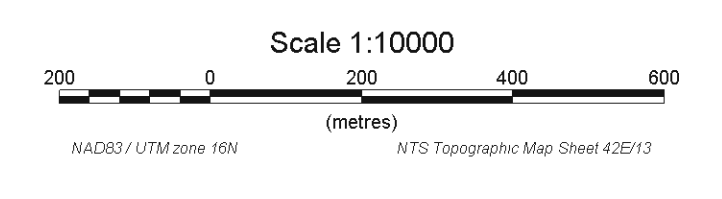
HLEM Profiles - Scale: 15 ppm/cm Base Level: 0.0 ppm
 IP Profiles: solid lines; QU Profiles: dashed lines. Positive to NW
 Postings every 25 m. IP values: below line. QU values: above line.



SAGE GOLD INC.
 Onaman Project, Jacobus Property, Beardmore, Ontario
 440 Hz HLEM Profiles and Postings
 and Grid Location and Claims on Topo Base

Data Acquisition by
 Mtec Geophysics Inc., Murilo, Ontario, Canada
 Data Processing and Plotting by
 CGI Controlled Geophysics Inc., 189 Clark Ave., Thornhill, Ontario, Canada

Map: Jac_EM0440_10k Image: - Date: Sept 24, 2008



SAGE GOLD INC.
Onaman Project, Jacobus Property, Beardmore, Ontario
Base Map
on Topo Base

Data Acquisition by
Mtec Geophysics Inc., Murilo, Ontario, Canada
Data Processing and Plotting by
CGI Controlled Geophysics Inc., 189 Clark Ave., Thornhill, Ontario, Canada

Map: Jac_Base_10k Image: - Date: Sept 24, 2008