REPORT

ON

MAGNETIC GRADIENT SURVEY
(January 2000)

Grenfell North (McCombe) Grid
&
Grenfell North (Robinson) Grid

Grenfell Township
Larder Lake Mining Division
North-eastern Ontario

NTS
42A/1

2.20267

UTM
Grid Zone 17, NAD. 27

For
Barry McCombe
&
Doug Robinson

Graham Robinson
David Robinson
Douglas Robinson P. Eng.
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Line 200E Vertical Gradient of Total Magnetic Field Strength
Line 300E Vertical Gradient of Total Magnetic Field Strength
Line 400E Vertical Gradient of Total Magnetic Field Strength
Line 500E Vertical Gradient of Total Magnetic Field Strength
Line 600E Vertical Gradient of Total Magnetic Field Strength
Line 700E Vertical Gradient of Total Magnetic Field Strength
Line 800E Vertical Gradient of Total Magnetic Field Strength
Line 900E Vertical Gradient of Total Magnetic Field Strength
Line 1000E Vertical Gradient of Total Magnetic Field Strength
Line 1100E Vertical Gradient of Total Magnetic Field Strength
Line 1200E Vertical Gradient of Total Magnetic Field Strength
Line 1300E Vertical Gradient of Total Magnetic Field Strength

Line 300S Vertical Gradient of Total Magnetic Field Strength
Line 200S Vertical Gradient of Total Magnetic Field Strength
Line 100S Vertical Gradient of Total Magnetic Field Strength
Line 000N Vertical Gradient of Total Magnetic Field Strength
Line 100N Vertical Gradient of Total Magnetic Field Strength
Line 200N Vertical Gradient of Total Magnetic Field Strength
Line 300N Vertical Gradient of Total Magnetic Field Strength
Line 400N Vertical Gradient of Total Magnetic Field Strength
Line 500N Vertical Gradient of Total Magnetic Field Strength
Line 600N Vertical Gradient of Total Magnetic Field Strength
Line 700N Vertical Gradient of Total Magnetic Field Strength
Line 800N Vertical Gradient of Total Magnetic Field Strength
Line 900N Vertical Gradient of Total Magnetic Field Strength

Envimag Specifications
A. PROJECT LOCATION

Grenfell North Grid McCombe Property & Robinson Property
This exploration property is located 14 km west of Kirkland Lake in the south central part of Grenfell Township (Plan # G-3212) of the Larder Lake Mining Division. The grid is located at Latitude 48°08'00"N and Longitude 80°13'00"W (UTM Zone: 5331200mN, 0558300mE).

The reader is referenced to NTS Map Sheets 42A/1 for the general location of the property. Ontario Base Map 20 17 5600 53300 gives detailed topographic features of the property.

B. ACCESS

The property is accessed via Highway 66 leading 14 km west from Kirkland Lake. From this location proceed north 6 km on Highway 11. Turn right onto the dirt road leading 0.3 km. east to the natural gas pipeline. Turn right and proceed 1.2 km south to line 200N which cross the pipeline (ruff but passable pipeline road).

C. CLAIM LIST AND CLAIM MAP

Grenfell North Grid: McCombe Property
The McCombe property comprises a large block of claims in Grenfell Township. Work was done on the following claims.

1206101 7 units
1217683 2 units
1225785 3 units
1227248 6 units

Grenfell North Grid: Robinson Property
The Robinson property comprises the following claims in Grenfell Township.

1225784 3 units
1225988 1 units (8 Ha)
1226007 2 units
1227294 1 unit (8 Ha)
1227295 2 units
D. PHYSIOGRAPHY AND VEGETATION

The gridded portion of the property consists of approximately:
- 40% spruce covered outcrop
- 40% spruce tamarack covered swamp
- 10% aspen cover clay flatlands
- 10% aspen, birch and jack pine covered deep sandy soils.

E. DEPOSIT TYPE AND GEOLOGY

The property lies within Fe and Mg tholeiitic basalts of the Kenojevis Group. Green-grey magnesium tholeiitic basalts with lesser dark green magnetic iron tholeiitic basalts. The stratigraphy strikes north west and dips steeply. This stratigraphy is interrupted by altered auriferous structures including faults, wide pyritic Fe-carbonate-sericite alteration zones and pyritic quartz veining. Pyritic quartz veins occur both within and outside the wide alteration zones. These structural trends are both easterly and north westerly. The east trending structures are parallel to and part of the structural domain controlled by the Larder Lake Break-Cadillac Break. This structural domain hosts the gold deposits located between Matachewan, Ontario and Val d'Or, Quebec including the Kirkland Lake gold camp and the Kerr Addison Mine.

F. EXPLORATION TARGETS

Disseminated auriferous sulphides and gold veins are the exploration target. These auriferous sulphides are expected to be hosted within larger alteration zones including Fe-carbonate alteration, sericitization or silicification. Gold veins within structural breaks are also targeted.

Disseminated auriferous sulphides are expected to be hosted within alteration including extensive Fe-carbonate alteration, sericitization or silicification. The associated alteration is expected to have a magnetic signature indicating the destruction of the primary magnetic fabric of the host rocks.

Gold veins within (geological) structural breaks are also targeted. The veins are expected to be marked by very weak geophysical signatures. The magnetic surveys seek breaks in the magnetic signature that mark interruption in lithologies across the targeted structural breaks. Field mapping, an EM survey, a magnetometer survey and a gradiometer survey target both extensive alteration expected to host auriferous sulphides and narrow alteration zones associated with gold veins.
G. SUMMARY OF PREVIOUS WORK

Comparison of maps and descriptions indicate confusion may exist to the identification of the North and South shafts in various reports examined. Field mapping appears to have confirmed the location of these two shafts. A possible third unrecorded shaft (or deep pit) was also identified during 1999 field work.

1915  North shaft (first shaft) sunk to ~120 foot depth with assays up to 4.84 oz/ton across a 12 inch quartz vein.

1920  North Shaft: Two 3 ton bulk samples taken running 3.11 oz/ton, and 2.96 oz/ton Au. Property acquired by Grenfell-Kirkland Gold Mines Ltd.: development on 100 foot level; shear zone (150 feet wide) seen to displace vein east of shaft.

1928  North shaft extended to 173 foot; drifting 150 foot level

1932  South Shaft (inclined) sunk to 70 feet and 50 feet of drifting on narrow quartz stringers.

1937  Two one ton sorted samples shipped.
     First sample 1 ton containing 10 oz Au.
     Second sample 1 ton containing 17 oz Au.

1941  177 tons shipped with no record of grade.

1985  ground magnetic and VLF surveys, drilling and geological mapping by Perron Inc.

1997  Kinross drilled two holes interesting gold values to 0.071 oz Au/ton over 3.0 feet (0.050/7.0 feet)

Perron Inc. conducted the only recorded geological mapping in the Kirkland Lake Resident Geologist's assessment files. This mapping outlined outcrop areas only. No detail is recorded except the rock type.

H. 1999 EXPLORATION WORK

Grid
A square grid was cut at 100 metre centres with lines at both 000° and 090°. This square grid is the optimum and is necessary because known auriferous structures and alteration in Grenfell Township and on the property trend both northerly and easterly. Grid location 300E-200N is located at GPS co-ordinates 0558300mE-5331200mN. This location was selected to start the grid as it was close to the North Shaft located at 273E-206N. Lines 200N and 900E were established as base lines.

Geology
The property was mapped during the summer-fall season of 1999.
Total Field Magnetic Survey
A magnetic total field was performed in continuous reading mode rendering readings spaced at approximately 2 meter intervals. This survey was performed to give clean total field strength data independent of instrument noise that can be encountered in gradient surveys. Also clean data derived from the total field strength survey was used to validate the data derived from the gradient survey.

Magnetic Gradient Orientation Survey
This vertical magnetic gradient survey was performed independently of the total magnetic field strength survey. Both the vertical gradient and total magnetic field strength profiles were plotted.

Auxiliary Test Data
Magnets were passed (as various configuration) under the gradiometer array to
• To establish the potential existence of reversed polarity of natural rocks and
• establish a possible magnetic signature for rocks having a reversed magnetic polarity.

Topography Survey
Topography measurements were recorded in percent and used to calculate slopes used in the EM survey. The topography was plotted at 1:5000 scale on the EM-Magnetic profile sheets.

MaxMin EM Survey
3555 Hz and 888 Hz MaxMin EM surveys were performed. Topography calculations were used to maintain the transmitting and receiving coils coplanar during the survey.

I. VERTICAL GRADIENT, TOTAL MAGNETIC FIELD SURVEY
Rational
Rational Traditionally magnetic surveys target magnetic lows as possible auriferous alteration. Fe-carbonate and sericitic alteration and silicification destroy the primary magnetic field of the host rocks. Some formations; however, probably have reversed magnetic fields that give magnetic values lower than the magnetically neutral magnetic fields sought.

This magnetic gradient survey was designed to establish if magnetic lows caused by reversed magnetic fields can be discriminated from magnetic lows over magnetically...
neutral rocks including auriferous alteration. It was anticipated that the value of the magnetic gradient will be

- near zero over magnetically neutral rocks
- positive over normally polarised rocks and
- negative over rocks of both reversed polarity.

**Instrumentation**

A Scintrex Envimag was used in gradiometer array using walkmag mode. Total magnetic field strength readings were measured at 2 second intervals which generated readings spaced at approximately two-meter intervals. This interval is ideal to produce the true magnetic signature (magnetic texture).

In the gradiometer array of the Scintrex Envimag, the rod supporting the upper sensor is mounted directly on the lower sensor. This is not a problem in stop and go surveys; however, in continuous reading mode, irregular motion appears to occasionally stress the sensors causing erroneous spiked readings. Also the upper sensor is 0.5 m higher than in the total field array. This exposes the upper sensor to incidental contact with overhanging brush. Contact with this brush also causes spiked data. These erroneous readings may constitute 1-5% of the data making for noisy data that can impact the validity of contouring and make profile interpretation awkward.

A vertical 0.5m distance separates the upper and lower sensors gradiometer sensors. The instrumentation multiplies the measured difference by a factor of 2 to render a vertical gradient reported as nanoTeslas per vertical meter.

A positive gradient of 10 nanoTeslas (nT) indicates the lower sensor is reading 5 nT greater than the upper sensor. Conversely, a negative gradient indicates the lower sensor is reading less than the upper sensor.

**Procedure**

July 2-Aug 7, 1999 David and Graham Robinson conducted the survey. Data was presented on profile by a visual basic program prepared by Graham Robinson. Background information and technical support were provided by Doug Robinson consulting.

Total field strength base stations were measured but the total field strength data was not corrected.
Data Presentation
Noisy readings were manually removed from the database to render quiet useable data. Gaps in the profiles identify the locations of noisy readings (spiked data) removed from the database. The previous total magnetic field strength survey was used as a base line to differentiate noise from true readings.

The data was profiled (1:5000 scale) using programming developed by Graham Robinson. The data was not contoured because the profiles show a very flat gradient.

The total magnetic field strength at the lower sensor and the projected magnetic field strength one meter above were plotted on as follows:
• the lower sensor values are profiled by heavy line
• the projected value one meter above the lower sensor (equal to the reading at lower sensor [nT] minus the vertical gradient [nT per meter]) plotted as a thin line.

Noisy readings caused by instrument motion and incidental contact with overhead objects were manually edited from the database. A notation “pipe line” was added to the profiles where pipeline noise was encountered. Gaps in the profiles mark edited readings.

Profiling was performed using programming developed by Graham Robinson. A 1:5000 compilation of magnetic total field strength magnetic interpretation plan is provided to supplement the profiles.

Observations
The instrument appears to have a minus 20 nT shift in the upper sensor relative to the lower sensor. Reported gradients of negative 20 nT appear to be true neutral.

All total field strength profiles were plotted with the vertical gradient data subtracted from the lower sensor data giving theoretical total field values one meter above the lower sensor.
• This is a projected value, not a true value
• the data accentuated instrument noise creating needless confusion.

It is recommended this process was abandoned in favour of plotting the actual reading at the lower and upper sensors. The upper sensor value (nT) = lower sensor value (nT) minus 0.5 times gradient value (nT/m).

If the total field strength at both the upper and lower sensors are plotted the profiles will tend to converge (-20 nT when instrument shift is accounted for) over magnetically neutral
formations. This in conjunction with the stacked profile gradient data appears to be the optimum data presentation procedure.

Caution is required as in areas of deep overburden where:
• the upper and lower sensor readings will also converge to neutral
• the gradient values will approach neutral.
• The apparent wavelength of the total field response will broaden

The general absences of true negative responses, the general simplicity of the magnetic signature and common deep overburden rendered this survey less informative than in areas having strong and complex magnetic signatures.

A possible magnetic unit with reversed polarity may exist at 900N-850E. Other less distinct negative signatures appear to exist at 600E-390S (caution profile not complete) and 1300E-500N.

Gradient data has a more complex and shorter wavelength than total field data. This gives the gradient profile a spiky appearance. This is in contrast to total field data that tends to have a broader smoother signature.

Magnetic gradients are extremely sensitive to near surface sources. This is in contrast to total field strength that responds well to sources at much greater depth. The amplitude of the total field response relative to the gradient response is useful to estimate the source depth or distance to the bedrock.

At Line 000N-325E the pipeline demonstrates a typical high amplitude gradient and total field response combined with a short wavelength gradient response. This combination is typical of very strongly magnetic near surface sources. This type of response is also expected with iron formation or magnetite rich intrusives or flows. At line 100N-575E a similar weaker but sharply defined responses of both total field and gradient indicate the source is probably in outcrop or under very shallow overburden. At line 000N-925E a strong broad total field response with no gradient response indicates the source is deep, possibly deep overburden. This information can be useful in planning stripping programs sites and defining limits of targets.
Strong total field responses with associated weak, pronounced gradient responses (similar to the responses at 635E and 830E on line 400N) appear to be under shallow or moderate overburden, probably within stripping range.

J. AUXILARY TEST DATA

Magnets were passed (as various configurations) under the gradiometer arrays (some reported below. The process was somewhat crude as the magnet was moved by hand in approximate location as reported. The resultant curves are somewhat ruff due to slightly irregular hand motion. An apparent shift from the zero position of the sensors may be a real expression due to the inclination of the earth's primary magnetic field.

The magnet was passed 1.0 meters under the array passing from three meters north to 3 meters south of the array. With the south seeking pole up (normal polarity) normal positive responses occurred in both sensors with a positive vertical gradient (reported as traverse 33b on profile).

This was repeated with the south-seeking pole down (reversed polarity). As expected, negative responses occurred in both sensors with a negative vertical gradient (reported as traverse 32 on profile).

At a position 1.0 m below the array the magnet was rotated end for end, three complete 360 degree cycles (1800 degrees). At 000, 360, 720 and 1800 degrees the north seeking pole was vertically up (reversed polarity) (reported as traverse 11 on profile).

K. RECOMMENDATIONS

- The gradient survey data should be integrated with the geological mapping.
- Gradient surveys can be useful surveys for site specific exploration tasks.

L. LIST OF CO-HOLDERS

Grenfell North McCombe Property
Barry McCombe is the sole owner of the McCombe property

Grenfell North Robinson Property
Douglas Robinson and Betty Robinson are the sole owners (joint tenants) of the Grenfell North Robinson Property.
M. LIST OF REFERENCES

Grenfell Township

Grant, J.A.
1964 Geological Report No. 30. Bompass and Grenfell Townships & accompanying Map No 2060: Bompass and Grenfell Townships Scale 1 inch to 0.5 mile (1:31680).

Savage, W.S.

Thomson, J. E.

CERTIFICATE OF QUALIFICATIONS

I, Douglas Robinson, of 24 Victoria Avenue, Swastika, Ontario hereby certify that:

1. I am a registered professional Engineer of the province of Ontario, No. 39322011.

2. I am a graduate of Queen's University in Kingston Ontario with an Honours Bachelor of Science, Geological Engineering 1975, and Northern College, School of Mines in Haileybury, Ontario, 1970.

3. I have been practising my profession since graduation.

4. The information contained in this report is the result of work done by myself and the references cited.

5. I own no direct or indirect interests in the Grenfell North Property (McCombe).

6. Betty Robinson and I own 100% interest in the Grenfell North Robinson Property as joint Tenants.

Respectfully submitted

Douglas Robinson, P. Eng.
January 24, 2000
CERTIFICATE OF QUALIFICATIONS

I, David Robinson, North Bay, Ontario hereby certify that:

1. I am a registered Prospector in Ontario: Licence # K22681 and Client No. 300792.

2. I have been practicing mineral exploration since 1994.

3. The information contained in this report is the result of work done by myself and the references cited.

4. I own no direct or indirect interests in Grenfell North

Respectfully submitted

[Signature]

David Robinson
January 24, 2000
CERTIFICATE OF QUALIFICATIONS

I, Graham Robinson, of North Bay, Ontario hereby certify that:

1. I am a registered Prospector in Ontario: Licence # K23005 and Client No. 302666.

2. I have been practising mineral exploration since 1994.

3. The information contained in this report is the result of work done by myself and the references cited.

4. I own no direct or indirect interests in Grenfell North Property.

Respectfully submitted

[Signature]

Graham Robinson
January 24, 2000
SYMBOLS

- Glacial strike.
- Esker.
- Small rock outcrop.
- Boundary of rock outcrop.
- Geological boundary, defined.
- Geological boundary, approximate.
- Geological boundary, assumed.
- Horizontal bedding.
- Strike and dip; direction of top unknown.
- Strike and vertical dip; direction of top unknown.
- Direction (arrow) in which inclined beds face as indicated by cross bedding.
- Direction in which lava flows face as indicated by shape of pillows.
- Synclinal axis.
- Anticlinal axis.
- Strike and dip of schistosity.
- Strike of vertical schistosity.
- Strike of schistosity, dip unknown.
- Strike of vertical gneissosity.
- Lineation (plunge known).
- Jointing, inclined.
- Jointing, vertical.
- Fault indicated, or assumed.
- Railway.
- Motor road, Provincial highway number encircled where applicable.
- Other road.
- Trail, portage, winter road.
- Building.
- Shaft.
- Township boundary. Approximate location only.
- Approximate position of mining property. See list of properties.

LEGEND

CENOZOIC*

PLEISTOCENE AND RECENT
Clay, sand, gravel.

UNCONFORMITY

PRECAMBRIAN**

PROTEROZOIC

HURONIAN

COBALT GROUP***

Gowganda Formation

5a Argillite.
5b Arkose, greywacke.
5c Conglomerate, conglomeratic arkose, greywacke.

UNCONFORMITY

ARCHEAN

BASIC INTRUSIVE ROCKS****

4 Undifferentiated diabase.
4a Matachewan diabase.

INTRUSIVE CONTACT

ACID INTRUSIVE ROCKS

3a Granite (hornblende-quartz monzonite).
3b Syenite, syenite porphyry, quartzfeldspar porphyry, alaskite.
3c Basic syenite, lamprophyre.

INTRUSIVE CONTACT

SEDIMENTARY ROCKS

2a Basal grit, greywacke.
2b Conglomerate, greywacke.
2c Tuff and agglomerate, trachyte and trachytic agglomerate and breccia.

UNCONFORMITY

BASIC VOLCANIC ROCKS

1 Undifferentiated intermediate and basic volcanic rocks,
1a Basalt, andesite, dacite.
1b Gabbro, diabase, diorite.
1f Fragmental lavas.
1p Pillow lavas.
1s Sheared lavas.
1r Porphyritic lavas.
1v Amygdaloidal lavas.
1u Spherulitic lavas.
1m Amphibolite schist and gneiss.

Au Gold
Cu Copper
S Sulphide mineralization (pyrite).
W Tungsten

LIST OF PROPERTIES
2. Elliott, George G. (1962, Grubstake)
3. Magni Mining Corporation Ltd.
4. Myeke Mines Ltd.
5. Prospectors Associates.

Figure 3b: Legend to General Geology Grenfell Tp.
Total Magnetic Field Strength in nT at Bottom Sensor Heavy (Minus Vertical Gradient Thin)

Vertical Gradient of Total Magnetic Field Strength (100nT/cm)

Grenfell N: 3+00 E
1:5000 Scale
Total Magnetic Field Strength in nT at Bottom Sensor Heavy (Minus Vertical Gradient Thin)

Vertical Gradient of Total Magnetic Field Strength (100nT/cm)
Grenfell N: 7+00 E
1:5000 Scale
Total Magnetic Field Strength in nT at Bottom Sensor Heavy (Minus Vertical Gradient Thin)

Vertical Gradient of Total Magnetic Field Strength (100nT/cm)

Grenfell N: 8+00 E
1:5000 Scale
Total Magnetic Field Strength in nT at Bottom Sensor Heavy (Minus Vertical Gradient Thin)

Vertical Gradient of Total Magnetic Field Strength (100nT/cm)

Grenfell N: 9+00 E
1:5000 Scale
Total Magnetic Field Strength in nT at Bottom Sensor Heavy (Minus Vertical Gradient Thin)

Vertical Gradient of Total Magnetic Field Strength (100nT/cm)
Grenfell N: 11+00 E
1:5000 Scale
Total Magnetic Field Strength in nT at Bottom Sensor Heavy (Minus Vertical Gradient Thin)

Vertical Gradient of Total Magnetic Field Strength (100nT/cm)

Grenfell N: 13+00 E
1:5000 Scale
Total Magnetic Field Strength in nT at Bottom Sensor Heavy (Minus Vertical Gradient Thin)

Vertical Gradient of Total Magnetic Field Strength (100nT/cm)

Grenfell N: 2+00 S
1:5000 Scale
Total Magnetic Field Strength in nT at Bottom Sensor Heavy (Minus Vertical Gradient Thin)

Vertical Gradient of Total Magnetic Field Strength (100nT/cm)

Grenfell N: 0+00 N
1:5000 Scale
Total Magnetic Field Strength in nT at Bottom Sensor Heavy (Minus Vertical Gradient Thin)

Vertical Gradient of Total Magnetic Field Strength (100nT/cm)

Grenfell N: 3+00 N
1:5000 Scale
Total Magnetic Field Strength in nT at Bottom Sensor Heavy (Minus Vertical Gradient Tbin):

Vertical Gradient of Total Magnetic Field Strength (100nT/cm)

Grenfell N: 5+00 N
1:5000 Scale
Total Magnetic Field Strength in nT at Bottom Sensor Heavy (Minus Vertical Gradient Thin)

Vertical Gradient of Total Magnetic Field Strength (100nT/cm)

Grenfell N: 8+00 N
1:5000 Scale
Total Magnetic Field Strength in nT at Bottom Sensor Heavy (Minus Vertical Gradient Thin)

Vertical Gradient of Total Magnetic Field Strength (100nT/cm)

Grenfell N: 9+00 N
1:5000 Scale
Locating Buried Drums and Tanks?
The NEW ENVI-MAG is the solution to this environmental problem. ENVI-MAG is an inexpensive, lightweight, portable "WALKMAG" which enables you to survey large areas quickly and accurately. ENVI-MAG is a portable, proton precession magnetometer and/or gradiometer, for geotechnical, archaeological and environmental applications where high production, fast count rate and high sensitivity are required. It may also be used for other applications, such as mineral exploration, and may be configured as a total-field magnetometer, a vertical gradiometer or as a base station.

The ENVI-MAG
• easily detects buried drums to depths of 10 feet or more
• more sensitive to the steel of a buried drum than EM or radar
• much less expensive than EM or radar
• survey productivity much higher than with EM or radar

Main features include:
• select sampling rates as fast as 2 times per second
• "WALKMAG" mode for rapid acquisition of data
• large internal memory, expandable to 200,000 readings
• easy to read, large LCD screen displays data both numerically and graphically
• ENVIMAP software for processing and mapping data

ENVI-MAG comprises several basic modules; a lightweight console with a large screen alphanumeric display and high capacity memory, a staff mounted sensor and sensor cable, rechargeable battery and battery charger, RS-232 cable and ENVIMAP processing and mapping software.

For gradiometry applications an upgrade kit is available, comprising an additional processor module for installation in the console, and a second sensor with a staff extender.

Features and Benefits
"WALKMAG" Magnetometer/Gradiometer
The "WALKMAG" mode of operation (sometimes known as "Walking Mag") is user-selectable from the keyboard. In this mode, data is acquired and recorded at the rate of 2 readings per second as the operator walks at a steady pace along a line. At desired intervals, the operator "triggers" an event marker by a single key stroke, assigning coordinates to the recorded data.

True Simultaneous Gradiometer
An optional upgrade kit is available to configure ENVI-MAG as a gradiometer to make true, simultaneous gradiometer measurements. Gradiometry is useful for geotechnical and archaeological surveys where small near surface magnetic targets are the object of the survey.

Selectable Sampling Rates
0.5 second, 1 second and 2 second reading rates user selectable from the keyboard.

Large-Key Keypad
The large-key keypad allows easy access for gloved-hands in cold-weather operations. Each key has a multi-purpose function.

Easy Review of Data
For quality of data and for a rapid analysis of the magnetic characteristics of the survey line, several modes of review are possible. These include the measurements at the last three stations, the ability to scroll through any or all previous readings in memory, and a graphic display of the previous data as profiles, line by line. This feature is very useful for environmental and archaeological surveys.

Highly Productive
The "WALKMAG" mode of operation acquires data rapidly at close station intervals, ensuring high-definition results. This increases survey productivity by a factor of 5 when compared to a conventional magnetometer survey.

"Datacheck" Quality Control of Data
"Datacheck" provides a feature wherein at the end of each survey line, data may be reviewed as a profile on ENVI-MAG's screen. Datacheck confirms that the
Instrument is functioning correctly and allows the user to note the magnetic relief (anomaly) on the line.

Large Screen Display

“Super-Twist” 64 x 240 dot (8 lines x 40 characters), LCD graphic screen provides good visibility in all light conditions. A display heater is optionally available for low-temperature operations below 0°C.

Interactive Menus

The set-up of ENVI-MAG is menu-driven, and minimizes the operator’s learning time, and ongoing tasks.

Specifications

| Total Field Operating Range | 20,000 to 100,000 nT (gammas) |
| Total Field Absolute Accuracy | +/- 1 nT |
| Tuning | Fully solid state, Manual or automatic, keyboard selectable |
| Cycling (Reading) Rates | 0.5, 1 or 2 seconds, up to 9999 seconds for base station applications, keyboard selectable |
| Sensitivity | 0.1 nT at 2 second sampling rate |
| Gradiometer Option | Includes a second sensor, 20 inch (Vm) staff extender and processor module |
| “WALKMAG” Mode | 0.5 second for walking surveys, variable rates for hilly terrain |
| Digital Display | LCD “Super Twisted”, 240 x 64 dots graphics, 8 line x 40 characters alphanumeric |
| Display Heater | Thermostatically controlled, for cold weather operations |
| Keyboard Input | 17 keys, dual function, membrane type |
| Notebook Function | 32 characters, 5 user-defined MACRO’s for quick entry |

Rechargeable Battery and Battery Charger

An “off-the-shelf” lead-acid battery and charger are provided as standard. The low-cost “Camcorder” type battery is available from electronic parts distributors everywhere.

HELP-Line Available

Purchasers of ENVIMAG are provided with a HELP-Line telephone number to call in the event assistance is needed with an application or instrumentation problem. ENVIMAP Processing and Mapping Software

Supplied with ENVI-MAG, and custom designed for this purpose, is easy-to-use, very user-friendly, menu driven data processing and mapping software called ENVIMAP. This unique software appears to the user to be a single program, but is in fact a sequence of separate programs, each performing a specific task. Under the menu system, there are separate programs to do the following:

a) read the ENV-MAG data and reformat it into a standard compatible with the ENVIMAP software
b) grid the data into a standard grid format
c) create a vector file of posted values

with line and baseline identification that allows the user to add some field information and build a suitable surround
d) contour the gridded data
e) autoscale the combined results of the posting/surround step and the contouring step to fit on a standard 8.5 ins. wide dot-matrix printer
f) rasterize and output the results of step e) to the printer

ENVIMAP is designed to be as simple as possible. The user is required to answer a few basic questions asked by ENVIMAP, and then simply toggles “GO” to let ENVIMAP provide default parameters for the making of the contour map. The user can modify certain characteristics of the output plot. ENVIMAP’s menu system is both keyboard and mouse operable.

HELP screens are integrated with the menu system so that HELP is displayed whenever the user requests it.

Options Available

- True simultaneous gradiometer upgrade
- Base station upgrade
- Display heater for low temperature operations
- External battery pouch

Operating Temperature Range

Standard 0°C to 60°C
Optional -40°C to 80°C

Dimensions

| Console | 10 x 6 x 2.25 inches (250 mm x 152 mm x 55 mm) |
| Grad. sensor and staff extender | 2.75 inches dia. x 7 inches (70 mm x 175 mm) |
| T.F. sensor | 2.75 inches dia. x 26.5 inches (70 mm x 675 mm) |
| T.F. staff | 1 inch dia. x 76 inches (25 mm x 2 m) |

Weight

| Console | 5.4 lbs (2.45 kg) |
| T.F. sensor | 2.2 lbs (1.15 kg) |
| Grad. sensor | 2.5 lbs (1.15 kg) |
| Staff | 1.75 lbs (0.8 kg) |

Standard Memory

Total Field Measurements: 28,000 readings
Gradioimeter Measurements: 21,000 readings
Base Station Measurements: 151,000 readings

Expanded Memory

Total Field Measurements: 140,000 readings
Gradioimeter Measurements: 105,000 readings
Base Station Measurements: 750,000 readings

Real-Time Clock

Records full date, hours, minutes and seconds with 1 second resolution, +/- 1 second stability over 12 hours

Digital Data Output

RS-232C Interface, 600 to 57,600 Baud, 7 or 8 data bits, 1 start, 1 stop bit, no parity format.

Selectable carriage return delay (0-999 ms) to accommodate stow peripherals. Handshaking is done by X-on/X-off

Analog Output

0 - 999 mV full scale output voltage with keyboard selectable range of 1, 10, 100, 1,000 or 10,000 nT full scale

Power Supply

Rechargeable “Camcorder” type, 2.3 Ah, Lead-acid battery.

12 Volts at 0.65 Amp for magnetometer, 1.2 Amp for gradiometer.

External 12 Volt input for base station operations

Optional external battery pouch for cold weather operations

Battery Charger

110 Volt - 230 Volt, 50/60 Hz

Bieber E
Steambc

Environ:
Exton, I

Univers
U.S.A.

J.D. Fei
Austin,

Naval
China I

Colomn
G

Uraner
Saskato

White Vanco

T. Has
Vanco

Budes.
und R
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Gmb
Hamb
REPORT

ON

MAGNETIC GRADIENT SURVEY
(January 2000)

Grenfell South Grid
Grenfell Township
Larder Lake Mining Division
North-eastern Ontario

NTS
42A/1

UTM
Grid Zone 17, NAD. 27

For
Barry McCombe

Douglas Robinson P. Eng.
Doug Robinson Consulting
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Figure 5: Compilation Grenfell South Grid: Scale 1:2500

Grenfell South Magnetic Gradient Survey, 1999-2000
Profiles
Line 400E Vertical Gradient Total Magnetic Field Strength
Line 500E Vertical Gradient Total Magnetic Field Strength
Line 600E Vertical Gradient Total Magnetic Field Strength
Line 650E Vertical Gradient Total Magnetic Field Strength
Line 700E Vertical Gradient Total Magnetic Field Strength
Line 750E Vertical Gradient Total Magnetic Field Strength
Line 800E Vertical Gradient Total Magnetic Field Strength
Line 900E Vertical Gradient Total Magnetic Field Strength
Line 1000E Vertical Gradient Total Magnetic Field Strength
Line 700N Vertical Gradient Total Magnetic Field Strength
Line 800N Vertical Gradient Total Magnetic Field Strength
Line 900N Vertical Gradient Total Magnetic Field Strength
Line 1000N Vertical Gradient Total Magnetic Field Strength
Line 1100N Vertical Gradient Total Magnetic Field Strength
Test: Normal Polarity
Test: Reversed Polarity
Test: Rotated Polarity
Envimag Specifications
A. PROJECT LOCATION

Claim 1205807 and 1206152
This exploration property is located 12 km west of Kirkland Lake in the south central part of Grenfell Township (Plan # G-3212) of the Larder Lake Mining Division. Claims 1205807 and 1206152 are centred at Latitude 48°00'00"N and Longitude 80°12'00"W (UTM Zone: 5328850mN, 0559670mE).

The reader is referenced to NTS Map Sheets 42A/1 for the general location of the property. Ontario Base Map 20 17 5600 53300 gives detailed topographic features of the property.

B. ACCESS

The property is accessed via Highway 66 leading 14 km west from Kirkland Lake. From this location proceed north 3 km on Highway 11 (0.1 km past the Blanche River). Turn right onto the dirt road leading 0.7 km east to the natural gas pipeline. Turn left and proceed 0.5 km north to line 700N which cross the pipeline (ruff but passable pipeline road).

C. CLAIM LIST AND CLAIM MAP

The McCombe property comprises a large block of claims in Grenfell Township. Work was done on the following claims.

1205807  4 units (south part)
1206152  2 units  

D. DEPOSIT TYPE AND GEOLOGY

The property lies within iron and magnesium rich tholeiitic basalts of the Kenojevis Group. Dark green magnetic iron tholeiitic basalts dominate with lessor green-grey magnesium tholeiitic basalts. The stratigraphy strikes north-west and dips steeply towards the north-east. This stratigraphy is interrupted by altered auriferous structures including faults, wide pyritic Fe-carbonate-sericite alteration zones and pyritic quartz veining. Pyritic quartz veins occur both within and outside the major alteration zones. These structural trends are both east-northeast and northerly trends. The east-northeast trending structures are parallel to and part of the structural domain controlled by the Larder Lake Break-Cadillac Break. This structural domain hosts the gold deposits located between Matachewan, Ontario and Val d'Or, Quebec including the Kirkland Lake gold camp and the Kerr Addison Mine.
E. EXPLORATION TARGETS
Disseminated auriferous sulphides and gold veins are the exploration target. These auriferous sulphides are expected to be hosted within larger alteration zones including Fe-carbonate alteration, sericitization or silicification.

Gold veins within structural breaks are also targeted.

Disseminated auriferous sulphides are expected to be hosted within alteration including extensive Fe-carbonate alteration, sericitization or silicification. The associated alteration is expected to have a magnetic signature indicating the destruction of the primary magnetic fabric of the host rocks.

Gold veins within (geological) structural breaks are also targeted. The veins are expected to be marked by very weak geophysical signatures. The magnetic surveys seek breaks in the magnetic signature that mark interruption in lithologies across the targeted structural breaks. Field mapping, a magnetometer survey and a gradiometer survey target both extensive alteration expected to host auriferous sulphides and narrow alteration zones associated with gold veins.

F. SUMMARY OF PREVIOUS WORK
Claim 1205807 and 1206152
- 1981-83 D. Grant Sirola conducted stripping and overburden drilling defining a system of auriferous quartz veins.
- Kinross Gold conducted prospecting and stripping and defined a major new mineralized altered deformation zone approximately 40 m south of an old shaft sunk on narrow auriferous quartz vein.

Little other exploration is recorded. The Kirkland Lake Resident geologist's files record no significant geological mapping of the property.

G. 1999 EXPLORATION WORK
Grid
A square grid was cut at 100 metre centres with lines at both 000° and 090°. This square grid is the optimum and is necessary because known auriferous structures and alteration in Grenfell Township and on the property trend both northerly and easterly. Grid location 600E-800N is located at GPS co-ordinates 0559600mE-5328800mN.

Grenfell South Magnetic Gradient Survey, 1999-2000
Geology
The property was mapped by Frank Ploeger during the summer of 1999.

Total Field Magnetic Survey
A magnetic total field was performed in continuous reading mode rendering readings spaced at approximately 2 meter intervals. This survey was performed to give clean total field strength data independent of instrument noise that can be encountered in gradient surveys. Also clean data derived from the total field strength survey was used to validate the data derived from the gradient survey.

Magnetic Gradient Orientation Survey
This vertical magnetic gradient survey was performed independently of the total magnetic field strength survey. Both the vertical gradient and total magnetic field strength profiles were plotted. For the convenience of the reader gradient data was also plotted as a filter commonly known as contouring.

Auxiliary Test Data
Magnets were passed (as various configuration) under the gradiometer array to
• To establish the potential existence of reversed polarity of natural rocks and
• establish a possible magnetic signature for rocks having a reversed magnetic polarity.

H. VERTICAL GRADIENT, TOTAL MAGNETIC FIELD SURVEY
Rational
Traditionally magnetic surveys target magnetic lows as possible auriferous alteration. Fe-carbonate and sericitic alteration and silicification destroy the primary magnetic field of the host rocks. Some formations, however, probably have reversed magnetic fields that give magnetic values lower than the magnetically neutral magnetic fields sought.

This magnetic gradient survey was designed to establish if magnetic lows caused by reversed magnetic fields can be discriminated from magnetic lows over magnetically neutral rocks including auriferous alteration. It was anticipated that the value of the magnetic gradient will be
• near zero over magnetically neutral rocks
• positive over normally polarised rocks and
• negative over rocks of both reversed polarity.

**Instrumentation**

In the gradiometer array of the Scintrex Envimag, the rod supporting the upper sensor is mounted directly on the lower sensor. This is not a problem in stop and go surveys; however, in continuous reading mode, irregular motion appears to occasionally stress the sensor causing erroneous spiked readings. Also the upper sensor is 0.5 m higher than in the total field array, exposing the sensor to incidental contact with overhanging brush. Contact with this brush also causes spiked data. These erroneous readings may constitute 1-5% of the data making for noisy data that can impact the validity of contouring and make profile interpretation awkward.

A vertical 0.5m distance separates the upper and lower sensors gradiometer sensors. The instrumentation multiplies the measured difference by a factor of 2 to render a vertical gradient reported as nanoTeslas per vertical meter.

A positive gradient of 10 nanoTeslas (nT) indicates the lower sensor is reading 5 nT more than the upper sensor. Conversely, a negative gradient indicates the lower sensor is reading less than the upper sensor.

**Procedure**

October 25 and 26, 1999 the author conducted the survey. A Scintrex Envimag in walkmag mode was used in walkmag mode. Total magnetic field strength readings and the vertical gradient of the total magnetic field strength were measured at 2 second intervals which generated readings spaced at approximately two-meter intervals which is ideal to produce the true magnetic signature (magnetic texture).

Total field strength base stations were measured but the total field strength data was not corrected.

**Data Presentation**

Noisy readings were manually removed from the database to render quiet useable data. Gaps in the profiles identify the locations of noisy readings (spike data) removed from the database. The previous total magnetic field strength survey was used as a base line to differentiate noise from true readings.
The data was profiling (1:2500 scale) using programming developed by Graham Robinson and contoured using the Scintrex Envimap program. The gradient data is also presented in filtered format commonly known as contouring.

The total magnetic field strength at both the upper and lower sensor were profiled as follows:
- the lower sensor is profiled by heavy line
- the upper sensor data is profiled by a thin line.

Initially the data was profiled as if the sensors were separated 1 meter.

**Observations**
The instrument appears to have a minus 20 nT shift in the upper sensor relative to the lower sensor. Reported gradients of negative 20 nT appear to be true neutral.

Initially all profiles were plotted with the vertical gradient data subtracted from the lower sensor data giving theoretical total field values one meter above the lower sensor. This process was abandoned because:
- in the opinion of the author this is not a true value
- the data accentuated instrument noise creating needless confusion.

Plotting the total field strength at both the upper and lower sensors as done in this report appears to aid identification of magnetically neutral formations over which the profiles tend to converge (-20 nT when instrument shift is accounted for). This in conjunction with the stacked profile gradient data appears to be the optimum data presentation procedure.

Caution is required as in areas of deep overburden where:
- the upper and lower sensor readings will also converge to neutral
- the gradient values will approach neutral.
- The apparent wavelength of the total field response will broaden

Combined total field strength and gradient surveys appear to have validity in gold exploration if used with follow up verification by detailed field mapping.

Contour filters characterise areas as:
- strong positive gradients (normal polarity)
- strong negative gradients (including magnetic shadows north of strong magnetic highs)
- near neutral rocks
however, narrow alteration can be masked by the contouring filter. Final determination of exploration targets should be performed by field mapping with profiles in hand.

A trend line from 650E-1100N--850E-700N appears to divide rocks of positive gradients to the south-west from near neutral rocks to the north-east. This could represent a fault contact or a hiatus in volcanism that could host mineralization and alteration. It appears the pipeline has been placed within a topographical break along a structural break within bedrock.

I. AUXILIARY TEST DATA

Magnets were passed (as various configurations) under the gradiometer arrays (some reported below. The process was somewhat crude as the magnet was moved by hand in approximate location as reported. The resultant curves are somewhat ruff due to slightly irregular hand motion. An apparent shift from the zero position of the sensors may be a real expression due to the inclination of the earth’s primary magnetic field.

The magnet was passed 1.0 meters under the array passing from three meters north to 3 meters south of the array. With the south seeking pole up (normal polarity) normal positive responses occurred in both sensors with a positive vertical gradient (reported as traverse 33b on profile).

This was repeated with the south-seeking pole down (reversed polarity). As expected, negative responses occurred in both sensors with a negative vertical gradient (reported as traverse 32 on profile).

At a position 1.0 m below the array the magnet was rotated end for end, three complete 360 degree cycles (1800 degrees). At 000, 360, 720 and 1800 degrees the north seeking pole was vertically up (reversed polarity) (reported as traverse 11 on profile).

J. RECOMMENDATIONS

- The gradient survey data should be integrated with the geological mapping.
- At 600E 824-834N examine an unusually flat near neutral signature at or near the projection of an altered zone exposed by Kinross stripping. Also examine similar signature at line 700E 840-850N. The author has not verified the signature’s source with field measurements. If this signature is a valid expression of neutral carbonate-
sericite alteration it could be an exploration tool exceeding the value of a single magnetic total field strength magnetic survey.

- The trend line from 650E-1100N→850E-700 should be examined, particularly if mineralization or alteration is observed in the vicinity of this line.
- Reexamine the property with profiles and contour filter in hand.

J. LIST OF CO-HOLDERS
Barry McCombe is the sole holder of the property.

K. LIST OF REFERENCES

Grenfell Township

Grant, J.A.
1964 Geological Report No. 30. Bompass and Grenfell Townships & accompanying Map No 2060: Bompass and Grenfell Townships Scale 1 inch to 0.5 mile (1:31680).

Savage, W.S.

Thomson, J. E.


Grenfell South Magnetic Gradient Survey, 1999-2000
CERTIFICATE OF QUALIFICATIONS

I, Douglas Robinson, of 24 Victoria Avenue, Swastika, Ontario hereby certify that:

1. I am a registered professional Engineer of the province of Ontario, No. 39322011.

2. I am a graduate of Queen's University in Kingston Ontario with an Honours Bachelor of Science, Geological Engineering 1975, and Northern College, School of Mines in Haileybury, Ontario, 1970.

3. I have been practising my profession since graduation.

4. The information contained in this report is the result of work done by myself and the references cited.

5. I own no direct or indirect interests in Grenfell South.

Respectfully submitted,

Douglas Robinson, P.Eng.
January 18, 2000
Figure 1: General Location Map
Scale 1 = 100,000
### SYMBOLS

- Glacial striae.
- Esker.
- Small rock outcrop.
- Boundary of rock outcrop.
- Geological boundary, defined.
- Geological boundary, approximate.
- Geological boundary, assumed.
- Horizontal bedding.
- Strike and dip, direction of top unknown.
- Strike and vertical dip, direction of top unknown.
- Direction (arrow) in which inclined beds face as indicated by cross bedding.
- Direction in which lava flows face as indicated by shape of pillows.
- Synclinal axis.
- Anticlinal axis.
- Strike and dip of schistosity.
- Strike of vertical schistosity.
- Strike of schistosity, dip unknown.
- Strike of vertical gneissosity.
- Lineation (plunge known).
- Jointing, inclined.
- Jointing, vertical.
- Fault indicated, or assumed.
- Railway.
- Motor road, Provincial highway number enclosed where applicable.
- Other road.
- Trail, piste, winter road.
- Building.
- Shaft.
- Township boundary. Approximate location only.
- Approximate position of mining property. See list of properties.

### LEGEND

#### CENOZOIC*

**PLEISTOCENE AND RECENT**

- Clay, sand, gravel.
- **UNCONFORMITY**

#### PRECAMBRIAN**

**PROTEROZOIC**

**HURONIAN**

- Cobalt Group***
  - Gowanda Formation
    - 5a Argillite.
    - 5b Arkose, greywacke.
    - 5c Conglomerate, conglomeratic arkose, greywacke.
- **UNCONFORMITY**

#### ARCHEAN

**BASIC INTRUSIVE ROCKS****

- 4 Undifferentiated diabase.
- 4a Matachewan diabase.
- **INTRUSIVE CONTACT**

**ACID INTRUSIVE ROCKS**

- 3a Granite (hornblende-quartz monzonite).
- 3b Syenite, syenite porphyry, quartzfeldspar porphyry, alaskite.
- 3c Basic syenite, lamprophyre.
- **INTRUSIVE CONTACT**

**SEDIMENTARY ROCKS**

- 2a Basal grit, greywacke.
- 2b Conglomerate, greywacke.
- 2c Tuff and agglomerate, trachyte and trachytic agglomerate and breccia.
- **UNCONFORMITY**

**BASIC VOLCANIC ROCKS**

- 1 Undifferentiated intermediate and basic volcanic rocks.
- 1a Basalt, andesite, dacite.
- 1b Gabbro, diabase, diorite.*****
- 1f Fragmental lavas.
- 1p Pillow lavas.
- 1s Sheared lavas.
- 1r Porphyritic lavas.
- 1v Amygdaloidal lavas.
- 1u Spherulitic lavas.
- 1m Amphibolite schist and gneiss.

- Au Gold
- Cu Copper
- S Sulphide mineralization (pyrite).
- W Tungsten

*Figure 3b: Legend to General Geology Grenfell Tp.*
Grenfell South Grid: Grenfell Tp.
Magnetic Field Strength
nanoTeslas

Contour Interval: 200 nT

DRAWN BY: Douglas Robinson, Doug Robinson Consulting

NORTHINGS Midpoint: 1.5 Degrees East

400E 500E 600E 700E 800E 900E 1000E
400E 500E 600E 700E 800E 900E 1000E

Contour Interval: 200 nT
Contour Interval: 50 nT

Grenfell South Grid: Grenfell Tp.
Gradient: Magnetic Total Field Strength
nanoTeslas per meter

SCINTREX &MUAP plot by Douglas Robinson, Doug Robinson Consulting
LEGEND

Magnetic High

Magnetic Low

Magnetic Break

Grenfell South Grid: Grenfell Tp.
Magnetic Field Strength
Contour Interval: 200 nT

Copyright: 12 Degree East
Greenfell South Grid: Grenfell Tp: Line 4+00E

Total Magnetic Field Strength at Lower Sensor Thick & Upper Sensor (=TF-0.5X Vert. Grad Thin)

Vertical gradient of Total Magnetic Field Strength (300nT/cm)
Total Magnetic Field Strength at Bottom Sensor Thick & Upper Sensor (≡TF -0.5X Vert. Grad. Thin)
Greenfell South Grid: Grenfell Tp: Line 5+00E

Vertical gradient of Total Magnetic Field Strength (300nT/cm)
Total Magnetic Field Strength at Lower Sensor Thick \((=TF -0.5X\text{ Vert. Grad. Thin})\)
Greenfell South Grid: Grenfell Tp: Line 6+00E

Vertical gradient of Total Magnetic Field Strength \((300\text{nT/cm})\)
Total Magnetic Field Strength at Bottom Sensor Thick & Upper Sensor (=TF -0.5X Vert. Grad. Thin)

Greenfell South Grid: Grenfell Tp: Line 6+50E

Vertical gradient of Total Magnetic Field Strength (300nT/cm)
Total Magnetic Field Strength at Bottom Sensor Thick & Upper Sensor (=TF -0.5X Vert. Grad. Thin)
Greenfell South Grid: Grenfell Tp: Line 7+00E

Vertical gradient of Total Magnetic Field Strength (300nT/cm)
Total Magnetic Field Strength at Bottom Sensor Thick (=TF -0.5X Vert. Grad. Thin)
Greenfell South Grid: Grenfell Tp: Line 7+50E

Vertical gradient of Total Magnetic Field Strength (300nT/cm)
Total Magnetic Field Strength at Bottom Sensor Thick & Upper Sensor (= -0.5X Vert. Grad. Thin)

Greenfell South Grid: Greenfell Tp: Line 8+00E

Pipe Line

Vertical gradient of Total Magnetic Field Strength (300nT/cm)
Total Magnetic Field Strength at Bottom Sensor Thick (=TF -0.5X Vert. Grad. Thin)
Greenfell South Grid: Grenfell Tp: Line 9+00E

Vertical gradient of Total Magnetic Field Strength (300nT/cm)
Total Magnetic Field Strength at Bottom Sensor Thick & Upper Sensor (=TF -0.5X Vert. Grad. Thin)
Greenfell South Grid: Greenfell Tp: Line 10+00E

Vertical gradient of Total Magnetic Field Strength (300nT/cm)
Total Magnetic Field Strength at Bottom Sensor Thick & Upper Sensor (=TF -0.5X Vert. Grad. Thin)

Greenfell South Grid: Grenfell Tp: Line 7+00N

Vertical gradient of Total Magnetic Field Strength (300nT/cm)
Total Magnetic Field Strength Thick & Upper Sensor (=TF -0.5X Vert. Grad. Thin)
Greenfell South Grid: Grenfell Tr: Line 8+00N

Vertical gradient of Total Magnetic Field Strength (300nT/cm)
Total Magnetic Field Strength at Bottom Sensor Thick & Upper Sensor (TF -0.5X Vert. Grad. Thin)

Greenfell South Grid: Grenfell Tp: Line 9+00N

Vertical gradient of Total Magnetic Field Strength (300nT/cm)
Total Magnetic Field Strength at Bottom Sensor Thick & Upper Sensor (=TF -0.5X Vert. Grad. Thin)

Greenfell South Grid: Grenfell Tp: Line 10+00N

Vertical gradient of Total Magnetic Field Strength (300nT/cm)
Total Magnetic Field Strength at Bottom Sensor Thick & Upper Sensor (=TF -0.5X Vert. Grad. Thin)

Greenfell South Grid: Grenfell Tp: Line 11+00N

Vertical gradient of Total Magnetic Field Strength (300nT/cm)
Traverse 33b
SS Pole up

Total Magnetic Field Strength at Bottom Sensor Heavy
Total Mag. Field at Top Sensor (Minus 0.5' Vert. Grad. Thin)
N-S Line centred on Magnetometer
South Seeking Pole Up at -1.0m (Normal polarity)

Vertical gradient of Total Magnetic Field Strength
Traverse 32
NS Pole up

Rows 849-893

Total Magnetic Field Strength at Bottom Sensor Heavy
Total Mag. Field at Top Sensor (Minus 0.6°Grad. Thin)
N-S Line centred on Magnetometer
North Seeking Pole Up at -1.0m (Reversed Polarity)

Vertical gradient of Total Magnetic Field Strength

-16
-136
(X0.5 = 68)
Traverse 11  Row 005-149

1.0 Rot

Total Magnetic Field Strength at Bottom Sensor (Heavy)
Total Mag. Field at Top Sensor (Minus 0.5° Vertical Gradient Thin)
Magnet at 1.0 m with North Seeking Pole Starting vertically up and rotated clockwise three 360 Degree cycles while facing west.

Vertical gradient of Total Magnetic Field Strength

(X0.5 = 80) 159
-181
(X0.5 = 90)
Locating Buried Drums and Tanks?
The NEW ENVI-MAG is the solution to this environmental problem. ENVI-MAG is an inexpensive, lightweight, portable "WALKMAG" which enables you to survey large areas quickly and accurately. ENVI-MAG is a portable, proton precession magnetometer and/or gradiometer, for geotechnical, archaeological and environmental applications where high production, fast count rate and high sensitivity are required. It may also be used for other applications, such as mineral exploration, and may be configured as a total-field magnetometer, a vertical gradiometer or as a base station.

The ENVI-MAG
- easily detects buried drums to depths of 10 feet or more
- more sensitive to the steel of a buried drum than EM or radar
- much less expensive than EM or radar
- survey productivity much higher than with EM or radar

Main features include:
- select sampling rates as fast as 2 times per second
- "WALKMAG" mode for rapid acquisition of data
- large internal memory, expandable to 200,000 readings
- easy to read, large LCD screen displays data both numerically and graphically
- ENVIMAP software for processing and mapping data

ENVI-MAG comprises several basic modules: a lightweight console with a large screen alphanumeric display and high capacity memory, a staff mounted sensor and sensor cable, rechargeable battery and battery charger, RS-232 cable and ENVIMAP processing and mapping software.

For gradiometry applications an upgrade kit is available, comprising an additional processor module for installation in the console, and a second sensor with a staff extender.

Features and Benefits

"WALKMAG"
Magnetometer/Gradiometer
The "WALKMAG" mode of operation (sometimes known as "Walking Mag") is user-selectable from the keyboard. In this mode, data is acquired and recorded at the rate of 2 readings per second as the operator walks at a steady pace along a line. At desired intervals, the operator "triggers" an event marker by a single key stroke, assigning coordinates to the recorded data.

True Simultaneous Gradiometer
An optional upgrade kit is available to configure ENVI-MAG as a gradiometer to make true, simultaneous gradiometer measurements. Gradiometry is useful for geotechnical and archaeological surveys where small near surface magnetic targets are the object of the survey.

Selectable Sampling Rates
0.5 second, 1 second and 2 second reading rates user selectable from the keyboard.

Large-Key Keypad
The large-key keypad allows easy access for gloved-hands in cold-weather operations. Each key has a multi-purpose function.

Easy Review of Data
For quality of data and for a rapid analysis of the magnetic characteristics of the survey line, several modes of review are possible. These include the measurements at the last three stations, the ability to scroll through any or all previous readings in memory, and a graphic display of the previous data as profiles, line by line. This feature is very useful for environmental and archaeological surveys.

Highly Productive
The "WALKMAG" mode of operation acquires data rapidly at close station intervals, ensuring high-definition results. This increases survey productivity by a factor of 5 when compared to a conventional magnetometer survey.

"Datacheck" Quality Control of Data
"Datacheck" provides a feature wherein at the end of each survey line, data may be reviewed as a profile on ENVI-MAG's screen. Datacheck confirms that the
Instrument is functioning correctly and allows the user to note the magnetic relief (anomaly) on the line.

Large Screen Display

"Super-Twist" 64 x 240 dot (8 lines x 40 characters), LCD graphic screen provides good visibility in all light conditions. A display heater is optionally available for low-temperature operations below 0°C.

Interactive Menus

The set-up of ENVI-MAG is menu-driven, and minimizes the operator's learning time, and ongoing tasks.

Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Field Operating Range</td>
<td>20,000 to 100,000 nT (gammas)</td>
</tr>
<tr>
<td>Total Field Absolute Accuracy</td>
<td>+/- 1 nT</td>
</tr>
<tr>
<td>Tuning</td>
<td>Fully solid state, Manual or automatic, keyboard selectable</td>
</tr>
<tr>
<td>Cycling (Reading) Rate</td>
<td>0.5, 1 or 2 seconds, up to 9999 seconds for base station applications, keyboard selectable</td>
</tr>
<tr>
<td>Sensitivity</td>
<td>0.1 nT at 2 second sampling rate</td>
</tr>
<tr>
<td>Gradiometer Option</td>
<td>Includes a second sensor, 20 inch (15m) staff extender and processor module</td>
</tr>
<tr>
<td>&quot;WALKMAG&quot; Mode</td>
<td>0.5 second for walking surveys, variable rates for hilly terrain</td>
</tr>
<tr>
<td>Digital Display</td>
<td>LCD &quot;Super Twist&quot;, 240 x 64 dot graphics, 8 line x 40 characters alphanumerics</td>
</tr>
<tr>
<td>Display Heater</td>
<td>Thermocastically controlled, for cold weather operations</td>
</tr>
<tr>
<td>Keyboard Input</td>
<td>17 keys, dual function, membrane type</td>
</tr>
<tr>
<td>Notebook Function</td>
<td>32 characters, 5 user-defined MACRO's for quick entry</td>
</tr>
</tbody>
</table>

Rechargeable Battery and Battery Charger

An "off-the-shelf" lead-acid battery and charger are provided as standard. The low-cost "Camcorder" type battery is available from electronic parts distributors everywhere.

HELP-Line Available

Purchasers of ENVI-MAG are provided with a HELP-Line telephone number to call in the event assistance is needed with an application or instrumentation problem.

ENVIMAP Processing and Mapping Software

Supplied with ENVI-MAG, and custom designed for this purpose, is easy-to-use, very user-friendly, menu driven data processing and mapping software called ENVIMAP. This unique software appears to the user to be a single program, but is in fact a sequence of separate programs, each performing a specific task. Under the menu system, there are separate programs to do the following:

a) read the ENVI-MAG data and reformat it into a standard compatible with the ENVIMAP software
b) grid the data into a standard grid format
c) create a vector file of posted values

with line and baseline identification that allows the user to add some title information and build a suitable surround
d) contour the grid data
e) autoscato the combined results of the posting/surround step and the contouring step to fit on a standard 8.5 ins. wide dot-matrix printer
f) rasterize and output the results of step e) to the printer

ENVIMAP is designed to be as simple as possible. The user is required to answer a few basic questions asked by ENVIMAP, and then simply toggles "GO" to let ENVIMAP provide default parameters for the making of the contour map. The user can modify certain characteristics of the output plot. ENVIMAP's menu system is both keyboard and mouse operable. HELP screens are integrated with the menu system so that HELP is displayed whenever the user requests it.

Options Available

- True simultaneous gradiometer upgrade
- Base station upgrade
- Display heater for low temperature operations
- External battery pouch
- Low-temperature operations below 0°C.
- Display heater is optionally available for good visibility in all light conditions.

Copyright

Environmental Instruments Corporation

Head Office
222 Sideroad Road
Concord, Ontario, Canada L4K 1B6
Telephone: (905) 669-2280
Fax: (905) 669-6403 or 669-5132
Telx: 06-964576

In the USA:
Scintrex Inc.
85 River Rock Drive
Unit 202
Buffalo, New York 14207
Telephone: (716) 286-1211
Fax: (716) 286-1317

Bieber
Steam
Environ
Exton.
Univer
U.S.A.
J.D. Fe
Austin
Navai
China
C.1-m
G
Urana
Saskat
White
Vanco
T. Ha
Vanco
Budes
und R
Hann
Terrae
GmbI
Hamn
Declaration of Assessment Work Performed on Mining Land

Mining Act, Subsection 65(2) and 66(3), R.S.O. 1990

For work performed on Crown Lands before recording a claim, use form 0240.
- Please type or print in ink.

Recorded holder(s) (Attach a list if necessary)

<table>
<thead>
<tr>
<th>Name</th>
<th>Client Number</th>
<th>Telephone Number</th>
<th>Fax Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Douglas Robinson</td>
<td>222886</td>
<td>705-642-9153</td>
<td>705-642-9153</td>
</tr>
<tr>
<td>Betty Robinson</td>
<td>302777</td>
<td>705-642-9153</td>
<td>705-642-9153</td>
</tr>
</tbody>
</table>

Type of work performed: Check (✓) and report on only ONE of the following groups for this declaration.

Geotechnical: prospecting, surveys, assays and work under section 18 (regs)
Physical: drilling stripping, trenching and associated assays
Rehabilitation

<table>
<thead>
<tr>
<th>Work Type</th>
<th>Office Use</th>
<th>Commodity</th>
<th>Total $ Value of Work Claimed</th>
<th>NTS Reference</th>
<th>Resident Geologist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnetic Gradient Profile Survey</td>
<td></td>
<td></td>
<td>1934</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Grenfell</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>G 3212</td>
<td></td>
</tr>
</tbody>
</table>

Please remember to:
- obtain a work permit from the Ministry of Natural Resources as required;
- provide proper notice to surface rights holders before starting work;
- complete and attach a Statement of Costs, form 0212;
- provide a map showing contiguous mining lands that are linked for assigning work;
- include two copies of your technical report.

3. Person or companies who prepared the technical report (Attach a list if necessary)

<table>
<thead>
<tr>
<th>Name</th>
<th>Phone Number</th>
<th>Fax Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>David Robinson</td>
<td>705-494-9145</td>
<td></td>
</tr>
<tr>
<td>Graham Robinson</td>
<td>705-476-4636</td>
<td></td>
</tr>
<tr>
<td>Douglas Robinson</td>
<td>705-642-9153</td>
<td></td>
</tr>
</tbody>
</table>

4. Certification by Recorded Holder or Agent

I, Douglas Robinson, do hereby certify that I have personal knowledge of the facts set forth in this Declaration of Assessment Work having caused the work to be performed or witnessed the same during or after its completion and, to the best of my knowledge, the annexed report is true.

Signature of Recorded Holder or Agent: Douglas Robinson

Agent's Address: Box 218 Swastika, ON P0K-1TO

Date: March 27, 2000

MAR 31 2000

4 11 2000

Ontario Ministry of Northern Development and Mines

Assessment Files Research Imaging

Transaction Number (office use) WOO80 00165

Assessment Files Research Imaging

Transaction Number (office use) WOO80 00165
Work can only be assigned to claims that are contiguous (adjoining) to the mining area work was performed, at the time work was performed. A map showing the contiguous link must accompany this.

<table>
<thead>
<tr>
<th>Claim Number</th>
<th>Number of Claim Units</th>
<th>Value of work performed on this claim or other mining land</th>
<th>Value of work applied to this claim.</th>
<th>Value of work assigned to other mining claims.</th>
<th>Bank. Value of work to be distributed at a future date</th>
</tr>
</thead>
<tbody>
<tr>
<td>TB 7827</td>
<td>16 ha</td>
<td>$26,825</td>
<td>N/A</td>
<td>$24,000</td>
<td>$2,825</td>
</tr>
<tr>
<td>1234567</td>
<td>12</td>
<td>0</td>
<td>$24,000</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1234568</td>
<td>2</td>
<td>$8,982</td>
<td>$4,000</td>
<td>0</td>
<td>$4,892</td>
</tr>
<tr>
<td>1225784</td>
<td>3</td>
<td>800</td>
<td>0</td>
<td>0</td>
<td>800</td>
</tr>
<tr>
<td>1225988</td>
<td>1</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>1226007</td>
<td>2</td>
<td>100</td>
<td>0</td>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td>1227294</td>
<td>1</td>
<td>134</td>
<td>0</td>
<td>0</td>
<td>134</td>
</tr>
<tr>
<td>1227295</td>
<td>2</td>
<td>800</td>
<td>800</td>
<td>0</td>
<td>100</td>
</tr>
</tbody>
</table>

Column Totals: 1934 800 100 1334

1. **Douglas Johnson**, do hereby certify that the above work credits are eligible under subsection 7 (1) of the Assessment Work Regulation 6/96 for assignment to contiguous claims or for application to the claim where the work was done.

Signature of Record Holder or Agent Authorized in Writing

[Signature]

Date: **March 27, 2000**

6. Instruction for cutting back credits that are not approved.

Some of the credits claimed in this declaration may be cut back. Please check (√) in the boxes below to show how you wish to prioritize the deletion of credits:

☐ 1. Credits are to be cut back from the Bank first, followed by option 2 or 3 or 4 as indicated.

☐ 2. Credits are to be cut back starting with the claims listed last, working backwards; or

☐ 3. Credits are to be cut back equally over all claims listed in this declaration; or

☐ 4. Credits are to be cut back as prioritized on the attached appendix or as follows (describe):

Make Bank Balance on 1226007 = 8

Note: If you have not indicated how your credits are to be deleted, credits will be cut back from the Bank first, followed by option number 2 if necessary.

For Office Use Only

Deemed Approved Date

Date Notification Sent

Date Approved

Total Value of Credit Approved

Approved for Recording by Mining Recorder (Signature)
Statement of Costs for Assessment Credit

<table>
<thead>
<tr>
<th>Work Type</th>
<th>Units of work</th>
<th>Cost Per Unit</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnetic Profile</td>
<td>19,825</td>
<td>90</td>
<td>1,784.25</td>
</tr>
<tr>
<td>Gradient Survey</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supervision</td>
<td></td>
<td>$150</td>
<td></td>
</tr>
<tr>
<td>Duplicate Report &amp; Map</td>
<td></td>
<td>67</td>
<td></td>
</tr>
<tr>
<td>Transportation Costs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food and Lodging Costs</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Value of Assessment Work: $19,342.25

Calculations of Filing Discounts:
- Work filed within two years of performance is claimed at 100% of the above Total Value of Assessment Work.
- Work filed after two years and up to five years after performance, it can only be claimed at 50% of the Total Value of Assessment Work. If this situation applies to your claims, use the calculation below:

\[
\text{Total Value of Assessment Work} \times 0.50 = \text{Total $ value of work claimed}
\]

Illicitation verifying costs:

I, Douglas Robinson, hereby certify, that the amounts shown are as accurate as may reasonably determined and the costs were incurred while conducting assessment work on the lands indicated on the accompanying Application for Work form.

Received Larder Lake Mining Division
MAR 31 2000

Signature: [Signature]
Date: [Date]
Declaration of Assessment Work Performed on Mining Land

Ministry of Northern Development and Mines

Mining Act, Subsection 65(2) and 66(3), R.S.O. 1990

Transaction Number (office use) 004800.00228

Assessment Fees Research Imaging

Instructions: - For work performed on Crown Lands before recording a claim, use form 0240.

- Please type or print in ink.

1. Recorded holder(s) (Attach a list if necessary)

<table>
<thead>
<tr>
<th>Name</th>
<th>Client Number</th>
<th>Telephone Number</th>
<th>Fax Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barry McCombe</td>
<td>700-793</td>
<td>705-588-1259</td>
<td></td>
</tr>
<tr>
<td>Mckelvie Aevne</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kirkland Lake</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ON P2N 2K8</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. Type of work performed: Check (✓) and report on only ONE of the following groups for this declaration.

- Geotechnical: prospecting, surveys, assays and work under section 18 (regs)
- Physical: drilling stripping, trenching and associated assays
- Rehabilitation

<table>
<thead>
<tr>
<th>Work Type</th>
<th>Office Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnetic Gradient Profile Survey</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dates Work Performed</th>
<th>From</th>
<th>1997</th>
<th>To</th>
<th>2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day</td>
<td>Month</td>
<td>Year</td>
<td>Day</td>
<td>Month</td>
</tr>
<tr>
<td>09 08</td>
<td>09 01</td>
<td>2000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Global Positioning System Data</th>
<th>Township/Area</th>
<th>M or G-Plan Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>05 59 70</td>
<td>E</td>
<td>Greenfield</td>
</tr>
<tr>
<td>3 2 8 8 9 0</td>
<td>N</td>
<td>G</td>
</tr>
</tbody>
</table>

Please remember to:
- Obtain a work permit from the Ministry of Natural Resources as required;
- Provide proper notice to surface rights holders before starting work;
- Complete and attach a Statement of Costs, form 0212;
- Provide a map showing contiguous mining lands that are linked for assigning work;
- Include two copies of your technical report.

3. Person or companies who prepared the technical report (Attach a list if necessary)

<table>
<thead>
<tr>
<th>Name</th>
<th>Telephone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>David Rehinson 148 Fricker Court</td>
<td>705-494-9145</td>
</tr>
<tr>
<td>North Bay ON P1C-1C3</td>
<td></td>
</tr>
<tr>
<td>Graham Rehinson 29 Bellevue Crescent</td>
<td>705-476-4836</td>
</tr>
<tr>
<td>North Bay ON P1B-8V2</td>
<td></td>
</tr>
<tr>
<td>Douglas Rehinson Box 215</td>
<td>705-642-9153</td>
</tr>
<tr>
<td>Swanston ON P0K-1TO</td>
<td></td>
</tr>
</tbody>
</table>

4. Certification by Recorded Holder or Agent

[Signature] (Print Name)

Barry McCombe

Do hereby certify that I have personal knowledge of the facts set forth in this Declaration of Assessment Work having caused the work to be performed or witnessed the same during or after its completion and, to the best of my knowledge, the annexed report is true.

[Signature]

Barry McCombe

Nature of Recorded Holder or Agent

Agent's Address

RECEIVED

MAR 31 2000

APR 3 23 2000

GEOSCIENCE ASSESSMENT OFFICE
Work can only be assigned to claims that are contiguous (adjoining) to the mining work was performed, at the time work was performed. A map showing the contiguous link must accompany this claim. Or if work on other eligible mining land, show in this column the location number indicated on the claim map.

<table>
<thead>
<tr>
<th>Claim Number</th>
<th>Units. For other mining land, list hectares.</th>
<th>Value of work performed on this claim or other mining land.</th>
<th>Value of work applied to this claim.</th>
<th>Value of work assigned to other mining claims.</th>
<th>Bank. Value of work to be distributed at a future date</th>
</tr>
</thead>
<tbody>
<tr>
<td>TB 7827</td>
<td>16 ha</td>
<td>$26,825</td>
<td>N/A</td>
<td>$24,000</td>
<td>$2,825</td>
</tr>
<tr>
<td>1234567</td>
<td>12</td>
<td>0</td>
<td>$24,000</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1234568</td>
<td>2</td>
<td>$ 8,892</td>
<td>$ 4,000</td>
<td>0</td>
<td>$ 4,892</td>
</tr>
<tr>
<td>120610/1</td>
<td>7</td>
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<td>1</td>
<td>0</td>
<td>39</td>
</tr>
<tr>
<td>1217685</td>
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<td>350</td>
<td>0</td>
<td>0</td>
<td>350</td>
</tr>
<tr>
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<td>238</td>
</tr>
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<td>300</td>
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<td>0</td>
<td>300</td>
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<td></td>
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<td></td>
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<tr>
<td>Column Totals</td>
<td>1228</td>
<td>2</td>
<td></td>
<td>1226</td>
<td></td>
</tr>
</tbody>
</table>

I, hereby certify that the above work credits are eligible under subsection 7 (1) of the Assessment Work Regulation 6/96 for assignment to contiguous claims or for application to the claim where the work was done.

Signature of Recorded Holder or Agent Authorized in Writing

Date

6. Instruction for cutting back credits that are not approved.

Some of the credits claimed in this declaration may be cut back. Please check (✓) in the boxes below to show how you wish to prioritize the deletion of credits:

- 1. Credits are to be cut back from the Bank first, followed by option 2 or 3 or 4 as indicated.
- 2. Credits are to be cut back starting with the claims listed last, working backwards; or
- 3. Credits are to be cut back equally over all claims listed in this declaration; or
- 4. Credits are to be cut back as prioritized on the attached appendix or as follows (describe):

Make Bank 1227248 $0
Assure sufficient work applied to hold claims 120610 1205807 in good standing until 1-1-2002

Note: If you have not indicated how your credits are to be deleted, credits will be cut back from the Bank first, followed by option number 2 if necessary.
Statement of Costs for Assessment Credit

Statement of Costs for Assessment Credit

Transaction Number (-) -

Total Value of Assessment Work

Work Type | Units of work | Cost Per Unit of work | Total Cost
---|---|---|---
Magnetic Gradient | 6.55 km | 90 | 590.00
Profile Survey | 6.625 | 96.2 | 638.00

Includes 58% GST

Transportation Costs

Food and Lodging Costs

Total Value of Assessment Work

Calculations of Filing Discounts:

Work filed within two years of performance is claimed at 100% of the above Total Value of Assessment Work.

Work filed after two years and up to five years after performance, it can only be claimed at 50% of the Total Value of Assessment Work. If this situation applies to your claims, use the calculation below:

Total Value of Assessment Work \* 0.50 = Total $ value of worked claimed

Work older than 5 years is not eligible for credit.

Verified holder may be required to verify expenditures claimed in this statement of costs within 45 days of a request for verification and/or correction/clarification. If verification and/or correction/clarification is not made, the Minister may reject all or part of the assessment work submitted.

I, Barry McCabe, do hereby certify, that the amounts shown are as accurate as may reasonably be determined and the costs were incurred while conducting assessment work on the lands described in the accompanying Taration of Work form as provided holder, agent, or state company position with signing authority.

Barry McCabe

MAR 31 2000

Signature

Date

LARDER LAKE MINING DIVISION
June 7, 2000

DOUGLAS RAYMOND ROBINSON
24 VICTORIA AVENUE
BOX 218
SWASTIKA, ONTARIO
POK-1T0

Dear Sir or Madam:

Subject: Transaction Number(s):

<table>
<thead>
<tr>
<th>Transaction Number(s)</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>W0080.00165</td>
<td>Approval</td>
</tr>
<tr>
<td>W0080.00228</td>
<td>Approval</td>
</tr>
</tbody>
</table>

We have reviewed your Assessment Work submission with the above noted Transaction Number(s). The attached summary page(s) indicate the results of the review. WE RECOMMEND YOU READ THIS SUMMARY FOR THE DETAILS PERTAINING TO YOUR ASSESSMENT WORK.

If the status for a transaction is a 45 Day Notice, the summary will outline the reasons for the notice, and any steps you can take to remedy deficiencies. The 90-day deemed approval provision, subsection 6(7) of the Assessment Work Regulation, will no longer be in effect for assessment work which has received a 45 Day Notice. Allowable changes to your credit distribution can be made by contacting the Geoscience Assessment Office within this 45 Day period, otherwise assessment credit will be cut back and distributed as outlined in Section #6 of the Declaration of Assessment work form.

Please note any revisions must be submitted in DUPLICATE to the Geoscience Assessment Office, by the response date on the summary.

If you have any questions regarding this correspondence, please contact BRUCE GATES by e-mail at bruce.gates@ndm.gov.on.ca or by telephone at (705) 670-5856.

Yours sincerely,

Steve B. Beneteau
Acting Supervisor, Geoscience Assessment Office
Mining Lands Section

Visit our website at:
www.gov.on.ca/MNDM/MINES/LANDS/mismnpge.htm

Submission Number: 2.20267

Ontario
Geoscience Assessment Office
933 Ramsey Lake Road
6th Floor
Sudbury, Ontario
P3E 6B5
Telephone: (888) 415-9845
Fax: (877) 670-1555

Correspondence ID: 14962
Copy for: Assessment Library
**Work Report Assessment Results**

<table>
<thead>
<tr>
<th>Submission Number:</th>
<th>2.20267</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date Correspondence Sent:</td>
<td>June 07, 2000</td>
</tr>
<tr>
<td>Assessor:</td>
<td>BRUCE GATES</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Transaction Number</th>
<th>First Claim Number</th>
<th>Township(s) / Area(s)</th>
<th>Status</th>
<th>Approval Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>W0080.00165</td>
<td>1225784</td>
<td>GRENFELL</td>
<td>Approval</td>
<td>June 07, 2000</td>
</tr>
<tr>
<td><strong>Section:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14 Geophysical MAG</td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Transaction Number</th>
<th>First Claim Number</th>
<th>Township(s) / Area(s)</th>
<th>Status</th>
<th>Approval Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>W0080.00228</td>
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<td>GRENFELL</td>
<td>Approval</td>
<td>June 07, 2000</td>
</tr>
<tr>
<td><strong>Section:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14 Geophysical MAG</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Correspondence to:**
- Resident Geologist
  - Kirkland Lake, ON
- Assessment Files Library
  - Sudbury, ON

**Recorded Holder(s) and/or Agent(s):**
- DOUGLAS RAYMOND ROBINSON
  - SWASTIKA, ONTARIO
- BETTY (ELIZABETH) JOY ROBINSON
  - SWASTIKA, ONTARIO
- BARRY KEN MCCOMBE
  - KIRKLAND LAKE, ONTARIO