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REPORT ON GROUND MAGNETOMETER & VLF ELECTROMAGNETIC (EM) SURVEYS ON A SECTION OF THE SZ PROPERTY BEN NEVIS TOWNSHIP, ONTARIO LARDER LAKE MINING DIVISION

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Summary

This report summarizes the results of a combined ground magnetometer and VLF electromagnetic (EM) survey on SZ Property. The property consists of 40 contiguous claim cells straddling the intersection of Tannahill – Dokis – Pontiac and Ben Nevis Township's. The surveys were completed by property owners: Robert Dillman and James M. Chard on August 24, 2019. The surveys were assisted by property owner Dr. Jim Renaud who provided navigation and recorded surficial geology as surveys progressed.

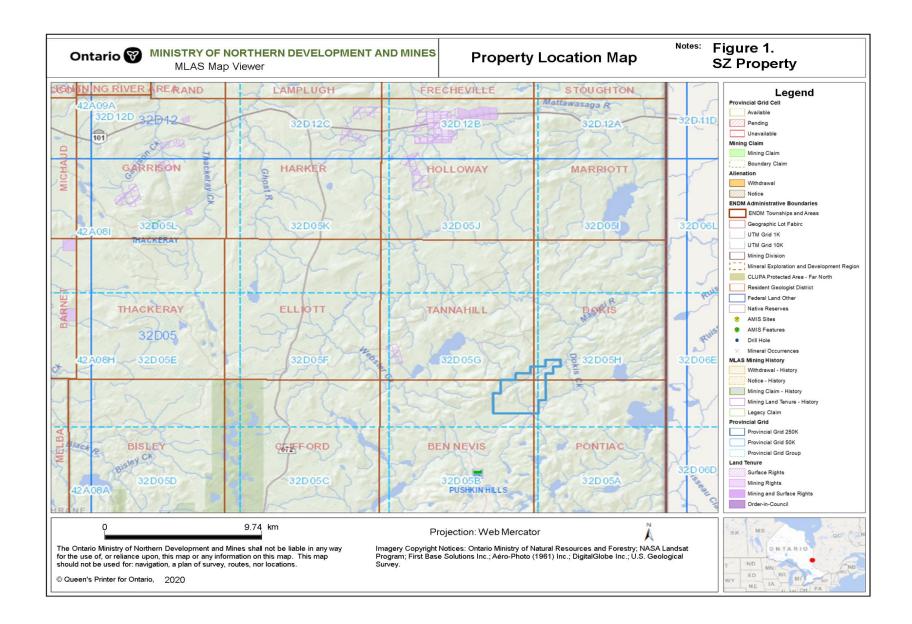
The geophysical surveys focused on locating a prominent aeromagnetic feature dubbed the "SZmag-1 Target". The ground magnetometer survey outlined a sub-circular magnetic high. The VLF survey detected several conductive features potentially representing zones of sulphide mineralization, geological contacts and faulting.

Location and Access

The SZ Property straddles the intersection on Ben Nevis, Pontiac, Dokis and Tannahill township's in the Larder Lake Mining Division, Ontario. The property is located approximately 27 kilometres north of Larder Lake, Ontario, Canada (Figure 1).

The SZ Property is accessible by truck. It can be reached from the town of Larder Lake by travelling east on Highway 66 for approximately 0.83 km to the intersection of Larder Station – Killamey Road. The southeast corner of the property is crossed by the Larder Station – Killamey Road approximately 35 km north of the intersection with Highway 66.

The north section of the property is also accessible by truck and ATV via logging roads intersecting with the Roscoe Road in Tannahill Township.



Claim Logistics and Survey Location

Figure 2 outines the extent of the SZ Property. It consists of 24 mining claims comprised of 40 contiguous cells. The property covers an approximate area of 847 hectares.

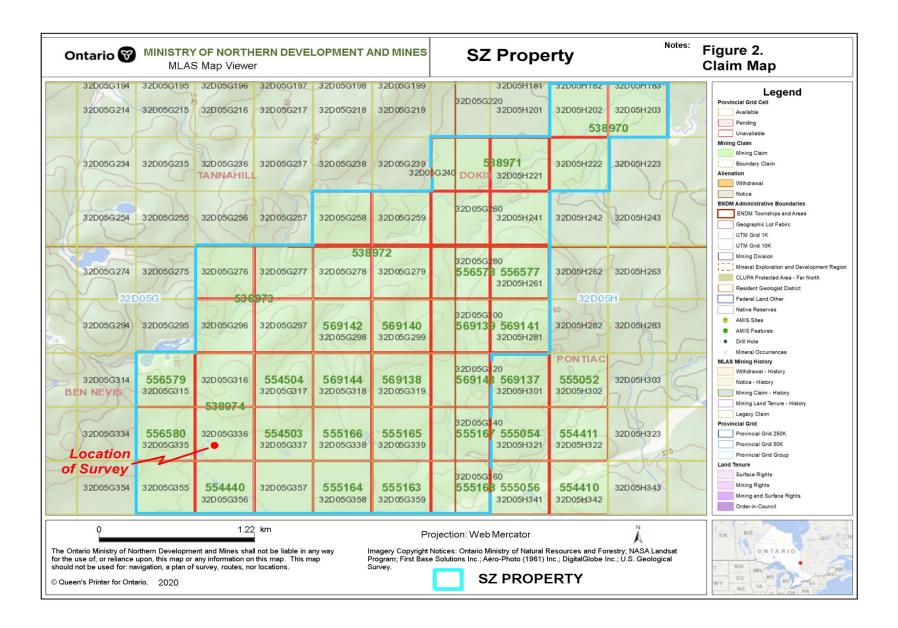
The property is at a mean elevation of 330 metres above sea level. The elevation ranges 310 to 380 metres. Flat areas are mostly sand covered and void of outcrop. Higher elevations have abundant outcrop and pockets of locally derived glacial till.

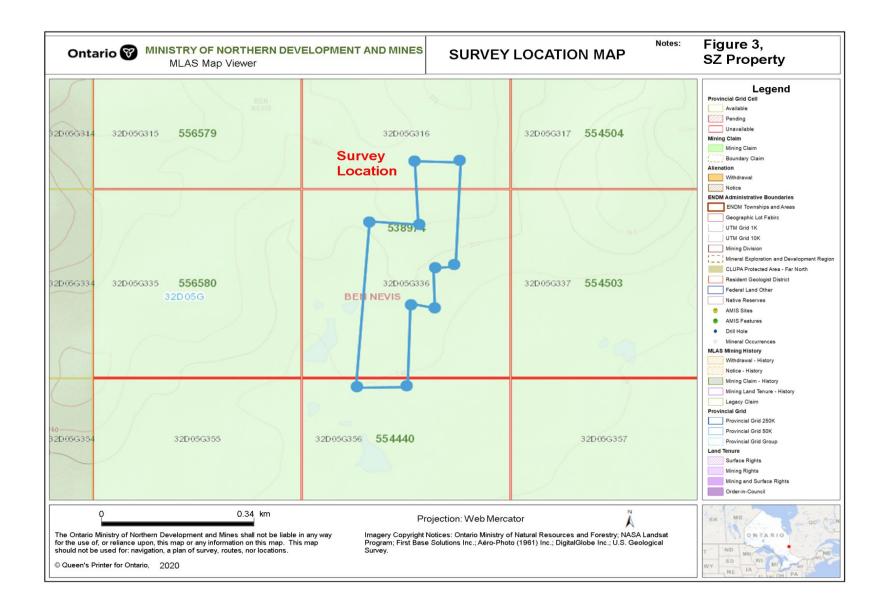
Most of the property is forested by a mixture of spruce, balsum and poplar trees. Some areas have been logged in the last 20 years. Some of these areas have been reforested.

All claims forming the SZ Property are equally owned by:

James M. Chard of Cordova, Ontario
Dr. Jim Renaud of London, Ontario
Robert J. Dillman (author) of Mount Brydges, Ontario

Figure 3. depicts the area covered by the surveys.





History of Exploration

In 1970, Amax Ltd. completed an airborne magnetometer and electromagnetic survey over northern sections of Ben Nevis Twp. (32D05SE0016)

In 1971, the geology of Clifford and Ben Nevis townships were mapped by L.S. Jenson on behalf of the Ontario Department of Mines. (G.R.132)

In 1973, McIntyre Porcupine Mines Limited completed ground magnetometer and electromagnetic surveys over their claim group in Dokis Township. The northeast section of the SZ Property is covered by part of the geophysical surveys. (32D05SE0025)

In 1974, W.J. Wolfe undertook a geochemical survey on rock samples collected in parts of Ben Nevis and Clifford townships with focus on nickel, copper and zinc. The survey was performed on behalf of the Ontario Division of Mines. (P.915, P.916, P.917)

In 1975, the geology of Pontiac and Ossian townships was mapped by L.S. Jenson on behalf of the Ontario Department of Mines. (G.R.125)

In 1979, the Ontario Geological Survey flew electromagnetic and total intensity magnetic surveys over the Kirkland Lake area which included Ben Nevis (P.2254) and Pontiac (P.2255) townships. The surveys were conducted by fixed-wing aircraft on flight lines spaced 150 metres apart and flown at mean terrain clearance of 400 feet.

In 1986, Walker Exploration Ltd. carried out a ground magnetometer survey over a 21 claim group located in the northeast section of Ben Nevis Twp. The survey was performed on east-west orientated grid lines. The survey was completed on behalf of Lac Minerals Ltd. The west section of the SZ Property covers part of this survey. (32D05SE0043)

In 1988, McAdam Resources Inc. completed ground magnetometer, VLF, Induced Polarization and geological surveys along the Killamey Road. The southeast section of the SZ Property covers some of the area surveyed.

In 1990, Joutel Resources Ltd. flew an airborne survey over the north section of Ben Nevis Twp. The airborne survey included: total magnetics, gradient magnetics, apparent resistivity and VLF – electromagnetics. The surveys were completed by helicopter on flight lines spaced 150 metres apart and flown at a mean terrain clearance of 60 metres. The south section of the SZ Property covers part of the area surveyed. (32D05SE0007)

In 1992, geologist Vital Pearson mapped geology in central and northeast areas of Ben Nevis Twp. His work was performed on behalf of Minnova Inc. The southeast section of SZ Property covers part of the geology survey. (32D05SE0071, 32D05SE0023)

In 2003, Fugro Airborne Surveys flew magnetometer and EM surveys over the Kirkland Lake region and donated the data to the Ontario Geological Survey for interpretation and publication. The survey by Fugro included the area covered by the SZ Property. Residual magnetic data generated from the survey was used to guide the location of this survey (Figure 4).

In June of 2019, property owner Jim Chard sampled gravels in a creek located in cell 32D05G360. This work lead to the discovery of Cr-rich green garnets potentially associated with a kimberlite. As a result, additional claims were staked including claim 555168 to cover the sample site.

Regional and Property Geology

The SZ Property is situated in Kirkland Lake section of the Abitibi Greenstone Belt. Regionally, the property is situated on the upper limb and close to the axis of a large east-west orientated synclinal structure. The property is underlain by mafic and intermediate metavolcanic units belonging to the Upper Blake River Formation dated 2704 to 2696 Ma. These units consist of basalt, andesite and dacite. Locally, the property has been intruded by Archean felsic intrusive rocks consisting of granodiorite stocks and Proterozoic aged diabase dikes. Structurally, rock units on the property trend northeast-southwest and dip moderate to steeply southeast. The property is crossed by the Murdoch Creek – Kennedy Lake Fault striking northeast-southwest across the south section of the property.

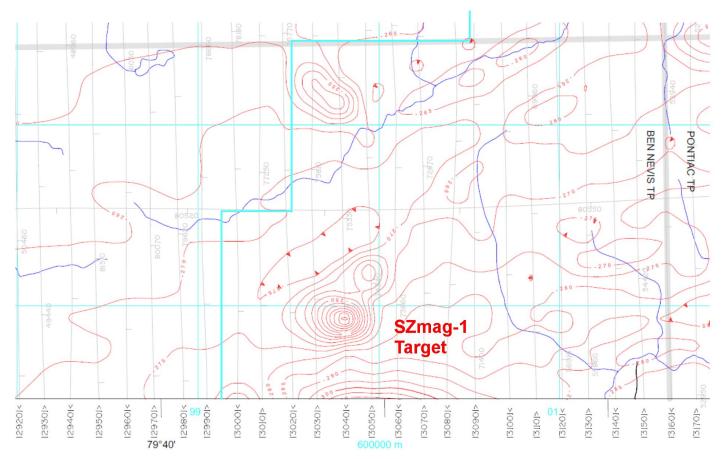


Figure 4. Residual Aeromagnetic Data OGS Map: M81776

Survey Dates and Personnel

The ground magnetometer and VLF-EM surveys were completed in 1 day on August 24, 2019.

The surveys were performed by property owners: James M. Chard of Cordova Mines, Ontario, Robert Dillman of Mount Brydges, Ontario and Dr. Jim Renaud of London, Ontario.

The VLF-EM instrument was operated by James Chard. The magnetometer instrument was operated by Robert Dillman. Jim Renaud assisted with navigation and recording geology.

Survey Logistics

The surveys were completed on a GPS controlled grid. The grid consisted of 5 north-south orientated lines spaced 50 metres apart. The lines ranged 200 to 550 metres in length. GPS waypoints were recorded at the end of each line and at 100 metre intervals along the lines. An east-west orientated tie-line was also established 0+00 for diurnal corrections for the magnetometer survey. The coordinates of the survey lines are appended to this report. A total of 1.8 kilometres was surveyed.

VLF readings were taken at 25 metre intervals along the lines. These stations were marked with flagging tape and given a grid coordinate. Magnetometer readings were taken at 12.5 metre intervals.

A GEONICS Limited VLF-EM-16 unit made by was used to complete the electromagnetic survey. The instrument specifications are appended to this report. The VLF station at Cutler, Maine, USA was used for the survey. The station transmits at 24.0 KHz. VLF-EM readings are plotted and profiled on maps appended to this report. The maps are at a scale of 1:2,500.

Magnetic readings have been corrected for diurnal variations. The magnetic readings have been contoured and profiled on 1: 2,500 scale maps appended to this report. The magnetometer survey was completed using a Gem Systems proton magnetometer/ gradiometer model GMS-19T. The specifications of the instrument are appended to this report.

A compass and GPS unit was used to navigate and calculate distances between readings. A Garmin GPS model RINO-750 was used for the survey. The GPS was set to NAD83, Zone 17.

Survey Results

The magnetic susceptibility of the rocks within the survey area ranges from 55,159 nT to 55,789 nT.

The magnetometer outlined a circular, positive magnetic feature in the center of the survey. This target, dubbed the SZmag-1, measures roughly 125 metres in diameter and ranges 55,300 nT to 55,789 nT in magnetic strength. A second positive magnetic feature was partially outlined in the northeast corner of the survey area. The SZmag-2 feature measures roughly 100 metres in diameter and ranges 55,300 nT to at least 55,460 nT in intensity.

The VLF survey outlined 2 conductive features traced across multiple lines and 2 single station conductors. The best conductor, SZEM-1 strikes southeast-northwest across the central section of the grid and flanks the south side of the SZmag-1 target. The SZEM-2 conductor strikes east-west across the south section of the grid. Single-station conductors occur on line 0+00 at 0+50N and on line 2+00W at 0+75S.

Discussion of Results

The SZmag-1 target has a magnetic expression indicative of a small intrusive body. The circular shape of the anomaly suggests it could be a kimberlite pipe as such intrusions are known to occur in the region. There are abundant outcrops to the north of the magnetic feature however the target is situated in a recessed area covered by till and cedar bog. The extent of the cedar trees appears to directly coincide with the outline of magnetic feature and could be a vegetation anomaly reflecting different rock types and soil conditions.

The SZmag-2 anomaly is situated in an area where abundant outcrops of mafic metavolcanic rocks are exposed. It is possible the cause of the magnetic feature could be determined by prospecting.

Several of the VLF responses occur directly over small creeks and are probably caused by conductive overburden associated with the surface features. The single station conductor on line 0+00 and the southeast section of SZEM-1 appear to occur on the margin of the SZmag-1 feature and could be caused by the contact between different rock types. The SZEM-2

conductor, striking east-west across the south end of the survey could be related to weakly conductive sulphide mineralization.

Conclusions and Recommendations

The ground magnetometer survey has outlined the SZmag-1 target as a circular magnetic feature possibly representing a small volcanic intrusion such as a kimberlite pipe. The VLF survey has detected weak conductors on the margin of the SZmag-1 target. These conductive features possibly reflect contacts of the potential intrusion. The VLF survey also found a weak conductor occurring in the south section of the area surveyed and is possibly caused bedrock sulphide mineralization. Based on these results, additional exploration of the geophysical features is warranted. Prospecting, geological mapping, additional geophysics and heavy mineral sampling are surveys recommended at this stage.

Respectfully submitted,

Robert Dillman B.Sc., P.Geo.

24 S/mer

January 17, 2020.

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CERIFICATE of AUTHOR

- I, Robert J. Dillman, Professional Geologist, do certify that:
 - 1. I am the **President** and the holder of a **Certificate of Authorization** for:

ARJADEE PROSPECTING 8901 Reily Drive Mount Brydges, Ontario, Canada N0L1W0

- 2. I graduated in 1991 with a **Bachelor of Science Degree** in **Geology** at the **University of Western Ontario.**
- 3. I am an active member of:

Association of Professional Geoscientists of Ontario, APGO Prospectors and Developers Association of Canada, PDAC

- 4. I have been a **licensed Prospector in Ontario** since 1985.
- 5. I have worked continuously as a **Professional Geologist** for 29 years.
- 6. Unless stated otherwise, **I am responsible** for the preparation of all sections of the Assessment Report titled:

REPORT ON GROUND MAGNETOMETER & VLF ELECTROMAGNETIC (EM) SURVEYS ON A SECTION OF THE SZ PROPERTY BEN NEVIS TOWNSHIP, ONTARIO LARDER LAKE MINING DIVISION

dated, January 17, 2020

7. I am not aware of any material fact or material change with respect to the subject matter of the Assessment Report that is not contained in the Assessment Report and its omission to disclose makes the Assessment Report misleading.

Dated this 17th day of January, 2020

Robert James Dillman Ariadee Prospecting P.Geo

Appendix 1.

UTM Coordinates for Survey Lines: SZmag-1 Target SZ Property Ben Nevis Township, Ontario NAD 87, Zone 17

Line	3+00S	2+00S	1+00S	0+00	1+00N	2+00N	2+50N
0+00				599898mE	599902mE	599903mE	599905mE
				5355895mN	5356000mN	5356103mN	5356152mN
0+50W			599854mE	599857mE	599856mE		
			5355789mN	5355888mN	5355989mN		
1+00W	599797mE	599798mE	599803mE	599809mE	599818mE	599813mE	599805mE
	5355597mN	5355700mN	5355795mN	5355897mN	5355994mN	5356068mN	5356147mN
1+50W			599745mE	599747mE	599754mE		
			5355792mN	5355893mN	5355992mN		
2+00W	599687mE	599696mE	599687mE	599698mE	599707mE		
	5355591mN	5355697mN	5355791mN	5355894mN	5355996mN		

EM16 SPECIFICATIONS

MEASURED QUANTITY Inphase and quad-phase components

of vertical magnetic field as a percentage of horizontal primary field. (i.e. tangent of the tilt angle and ellipticity).

SENSITIVITY Inphase: ±150%

Quad-phase: ± 40%

RESOLUTION ±1%

OUTPUT Nulling by audio tone. Inphase in-

dication from mechanical inclinometer and quad-phase from a graduated dial.

OPERATING FREQUENCY 15-25 kHz VLF Radio Band. Station selection done by means of plug-in

units.

OPERATOR CONTROLS ON/OFF switch, battery test push

button, station selector switch, audio volume control, quadrature dial,

inclinometer.

POWER SUPPLY 6 disposable 'AA' cells.

DIMENSIONS 42 x 14 x 9cm

WEIGHT Instrument: 1.6 kg

> 5.5 kg Shipping:



VLF-EM Instrument serial number 16869

APPENDIX F: GSM-19T MAG / GRAD SPECIFICATIONS

Sensitivity

0.15 nT @ 1Hz / 0.05 nT @ 4IIz

Resolution:

0.01nT (gamma), magnetic field and gradient.

Accuracy:

+/- 0.2 nT @ 1 Hz

Range:

20,000 to 120,000nT.
Over 7.000nT/m

Gradient Tolerance: Operating Interval:

3 seconds minimum, faster optional. Readings initiated from keyboard,

external trigger, or carriage return via RS-232C.

Input / Output: Power Requirements: 6 pin weatherproof connector, RS-232C, and (optional) analog output. 12V, 200mA peak (during polarization), 30mA standby. 300mA peak in

gradiometer mode.

Power Source:

Internal 12V, 2.6Ah sealed lead-acid battery standard, others optional.

An External 12V power source can also be used.

Battery Charger:

Input: 110 VAC, 60Hz. Optional 110 / 220 VAC, 50 / 60Hz.

Output: dual level charging.

Operating Ranges:

Temperature: - 40°C to +50°C.

Battery Voltage: 10.0V minimum to 15V maximum. Humidity: up to 90% relative, non condensing.

Storage Temperature:

-50°C to +50°C.

Display:

LCD: 240 X 64 pixels, OR 8 X 30 characters. Built in heater for operation

below -20°C.

Dimensions:

Console: 223 x 69 x 240mm. Sensor Staff: 4 x 450mm sections.

Sensor: 170 x 71mm dia.

Weight: console 2.1kg, sensor and staff assembly 2.2 kg.

VLF

Frequency Range:

15 - 30.0 kHz

Parameters Measured:

Vertical in-phase and out-of-phase components as percentage of total field. 2 relative components of horizontal field. Absolute amplitude of total field.

Resolution: (

0.1%.

Number of Stations:

uations: Up to 3 at a time.

Storage:

Automatic with: time, coordinates, magnetic field / gradient, slope, EM field, frequency, in- and out-of-phase vertical, and both horizontal components for

each selected station.

Terrain Slope Range:

0° - 90° (entered manually).

Sensor Dimensions:

140 x 150 x 90 mm. (5.5 x 6 x 3 inches).

Sensor Weight: 1.0 kg (2.2 lb.).

GEM Systems, Inc. Advanced Magnetometers For more technical information, visit www.gemsys.ca





GSM 19T Magnetometer

