

GROUND GEOPHYSICAL SURVEYS Magnetometer, VLF-EM and Horizontal Loop EM

KoKoKo Project - Archie Lake Grid Chambers Twp.

PANTHEON VENTURES LTD.

May 2012

2.52037

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1.0 SUMMARY:

From April 25 to May 17, 2012, a program of line-cutting and geophysical surveying was carried out on the Archie Lake Grid (KoKoKo Property) located in central west Chambers Twp. The work was done on behalf of Pantheon Ventures Ltd. Suite 1210 – 777 Hornby St. Vancouver, B.C. V6Z 1S4. The objective of the work was to map the magnetic and electrical characteristics of the ground using magnetic and electromagnetic methods. The goal was to identify potential exploration drill targets for precious and base metals. The final results met expectations identifying anomalies proposed for follow-up work. David Laronde and Dylan Ryan performed the geophysical surveying on behalf of the contractor Meegwich Consultants Inc. P.O. Box 482, Temagami, Ontario POH 2HO. David Laronde was the field supervisor and reported on the work. A total of 23 km of line was cut and surveyed. Glen McBride Exploration Service was the line-cutting contractor providing good quality work.

Summary of work done

Linecutting	23.00 km
Magnetometer survey	23.00 km
VLF-EM Survey	23.42 km
HLEM Survey	19.60 km

2.0 PROPERTY:

The work was done on 5 mining claims as follows:

Claim No.	Units	Due Date
4209810	4	Oct. 1, 2012
4210496	4	Aug 23, 2012

4210497	2	Feb 23, 2013
4261946	12	April 19, 2014
4261947	2	April 19, 2014

Topography on the claim group is gently rolling hills with mixed boreal forest components. The area had been select logged some forty to sixty years prior. In the central area of the grid is a low-lying area containing Archie Lake with the edges blending into cedar swamp along the southern and west and east sides of the lake.

3.0 LOCATION AND ACCESS:

As the crow flies the property is located 15 km northwest of the town of Temagami. ATV access is gained by travelling 5 km west from Temagami through the old Sherman Mine property and then 5 km north and then 10 km west along an old logging road. The ATV travel may commence at the gate of Sherman Mine as well shortening ATV travel to 15 km.

Sudbury Mining Division

NTS: 31 M/4

Chambers Tp.

4.0 MAGNETOMETER SURVEY:

4.1 Instrumentation: A Gem Systems GSM-19 overhauser magnetometer serial no. 58479 was used for the survey. These units have an accuracy of +/- 1/100th of a gamma. 23 km was surveyed taking 4600 readings at 5 meter intervals. An EDA Omni IV base station was used to monitor and correct for the diumal variation during the course of the survey.

This instrument reads to 1/10th of a gamma resolution. The base station cycled at 15 second intervals.

4.2 Survey Results and Interpretation: The results are presented in contour format on plans at 1:2500 scale. Quality control was monitored by surveying the baseline and then comparing the readings at the same station when the cross lines were surveyed. This cross-referencing technique confirms good data and checked out well on these surveys.

In general the survey shows mafic intrusives occurring along various structural trends within a volcanic hostrock.

The magnetic survey shows two main linear responses trending northwest which correspond to the local diabase swarm trend. The typical width of the dikes are 20-30 meters while the intensity is 300-900 nT above background.

There are a half dozen or so isolated responses that are moderately intense ranging up to a few thousand nT units. There is no apparent pattern other than being along trend with a possible dike in some cases. Some of these may be referred to as "blows" since they occur along a dike trend but are more massive.

The background is fairly quiet with most values falling in a 300-450 nT range. This is a typical quiet response of volcanic sequences.

5.0 HLEM Survey:

The coil spacing was 150 meters throughout the survey and stations were read at 25 meters intervals. The optimum coil spacing and attitude or tilt was

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achieved using a maxmin computer that calculates these parameters. A total of 19.6 km was surveyed making a total of 784 readings for each of the three frequencies read. A depth penetration of 75-100 meters is expected.

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- **5.1** Instrumentation: An Apex Maxmin I unit (ser. no. 5309) was used for the horizontal loop EM (HLEM) survey. Three frequencies were read, 440, 1760, and 3520 Hz measuring the in-phase and quadrature components of the secondary field.
- <u>5.2 Survey Results and Interpretation</u>: The results of the survey are presented in profile format on plans at 1:2500 scale. There are a total of three maps, one for each frequency.

The survey yielded a marginal quadrature response over two east west trends, **Conductor A and B.**

Conductor D is also a marginal response occurring on only one line. This suggests that it is possibly deep and at or near detection limits of 75-100 meters.

6.0 VLF Electromagnetic Survey:

A total of 23 km was surveyed for a total of 1840 readings taken at 12.5 meter stations on lines spaced at 100 meters. All readings were taken while facing north.

6.1 Instrumentation: A Gem Systems VLF-EM receiver (Ser. No. 7052358) was used for the survey. The in-phase and quadrature components were recorded using VLF transmitting station. Cutler, Maine NAA

transmitting at 24.0 kHz. The measured quantities are the in-phase and quadrature components of the vertical magnetic field measured as a percentage of horizontal primary field (read to a resolution of +/- 1%).

6.2 Survey Results: The results of the survey are presented in profile form on plans at 1:2500 scale.

Note: Because of the high frequencies used, VLF-EM surveys tend to pick up topographic and geological noise (overburden filled depressions) as well as prospective bedrock anomalies.

The VLF-EM yielded a series of seemingly stratabound conductive zones that trend east west. A few possible extensions are noted off to the west. Conductor A is a strong response that intensifies to the east and peters out to the west. The conductor is coincident with Archie Lake, a low lying cedar swamp to the west and an outflowing creek heading east. The anomaly appears to be electrolytic in nature caused by water and salts along a fault however a metallic source cannot be ruled out. This has the appearance of a major structure in terms of VLF response and coincident topographic features. Conductor B is a relatively weak response found on elevated ground where a coincident lineament is a prominent landscape feature. The source may be metallic since sulphide mineral is noted on trend on L 600 E. Conductor C is a weak response found on the edge of a low lying lineament

and is therefore likely an overburden response.

7.0 CONCLUSIONS AND RECOMMENDATIONS:

The magnetic survey revealed lineaments in a northwest trend coincident with the local diabase swarm and thus these are likely diabase. There are however trends in east west, north south and northeast trends that may be interpreted as well. If this is the case then the area may be quite porous due to prevailing structural components. This may partially explain the presence of quartz veins and accompanying mineralization indicated in geologic report 163 pp 73,74 (G. Bennett). The intense magnetic highs that occur as "blows" should be followed up for Ni-Cu mineralization as well.

Conductors A and B indicated by the VLF-EM survey should be followed up to ground truthed for a metallic source. The HLEM conductors A, B, and D should be followed up as well for the same reason. In addition the mineralization may be disseminated which would explain the marginal quadrature response over the conductors. The HLEM picked up a slightly different axis location than the VLF for conductor B which may mean the HLEM was detecting a source deeper than the VLF penetration level.

Further work:

An I.P. survey is recommended to detect disseminated mineral associated with precious and base metal deposits.

A geologic program is also recommended to gain more understanding of the geology and resurrect the old trenches covered by 50 years of natural cover. This may include power stripping, mapping and prospecting, geochemistry and trenching.

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References

1975 Geological Map #2361 - OGS Geological Compilation Series 1in to 4 miles Sudbury-Cobalt Sheet

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1978 G. Bennett Geologic Report 163 Geology of the Northeast Temagami Area

CERTIFICATE OF AUTHOR

- I, David Laronde of the town of Temagami, Ontario hereby certify:
 - That I am a geology technologist and have been engaged in mineral exploration for the past 32 years.
 - That I am a graduate of Cambrian College in Sudbury with a diploma in Geology Engineering Technology 1979.
 - That my knowledge of the property described herein was acquired by field work and documentation.

Dated at Temagami this 30th day of May 2012.

K see ne

David Laronde











