# Report of 2015 Pole-Dipole Induced Potential and Magnetic Survey on the Hiawatha Property

Sault Ste. Marie Mining District

Central Ontario

UTM: 684600 E, 5415000 N [NAD83] ZONE 16

NTS: 42C/16 SW

Claims: Patents P500692, P500695, P500696, & P500698

**PREPARED ON BEHALF OF TRELAWNEY MINING & EXPLORATION**

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*May 15, 2015*

## Summary Page

Geographic Location: Kabinakagami Lake, Lizar Twp

Claims Worked On: Patents P500692, P500695, P500696, & P500698
Target Commodity: Gold

Map Scale 1:5000

Area (square kilometers): ~0.35

Gridding and Magnetic Survey (total line kilometers): 6.3 km

Pole-Dipole Induced Potential Survey (A=50 m & N=6): 5.9 km

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## Appendix

## 1.0) Introduction

### 1.1 General

The Hiawatha Property is located 65.5 kilometers northeast of White River and 16 km south of Hornpayne, in central Ontario (Figure 1). The line-cutting/GPS gridding, and follow-up ground geophysical surveys, which included induced potential (IP) and magnetic suveys, were carried out between March 29 and April 4, 2015. The geophysical surveys cover four mining patents numbered P500692, P500695, P500696, and P500698. In order not to comprise the integrity of the survey, some of the grid lines and subsequently the survey area crossed over onto unpatented claims numbered 4201058, 4201059 and 4201060.

The purpose of the 2015 geophysical program is to distinguish whether the gold-bearing structures in the Hiawatha Mine area have any distinguishable chargeable/resistive and/or magnetic responses. A second objective of the survey is to provide data on additional chargeable and magnetic targets in the vicinity of the mine area and across the Bear Creek Fault. This report describes and interprets the IP and magnetic results from the 2015 program.

## 2.0) Property Description and Location

### 2.1) Location, Access, and Accomodation

The Hiawatha Property is located 65.5 kilometers northeast of White River and 16 kilometers south of Hornpayne, in central Ontario (Figure 1). It is located in Lizar Township, Sault Ste. Marie Mining District (NTS 42C16/SW).

The Hiawatha Property can be best accessed north from White River via Route 631, using the Breckenridge Road turn-off. Both the Breckenridge (20 km) and Haken (10.5 km) logging roads can be used by vehicle during the summer/fall months and snowmobile in the winter months. Access by way of ATV must be used in the final 12 kilometers to the property, due to overgrowth in the latter part Haken logging road.

A nearby outfitter (Watson's Kaby Lodge) on Kabinakagami Lake can provide your lodging accommodations and is accessed by floatplane from White River or Hornpayne. Helicopter support from Wawa or Marathon can also be used for direct landing access to the property.

### 2.2) Description of Mining Claims

The Hiawatha Property consists of 48 units in four (4) unpatented mining claims and seven (7) patent claims under one lease (Figure 2). The unpatented and patented claims cover an area 666 hectares and 96.55 hectares, respectively. The unpatented mining claims are 100% owned by Trelawney Mining and Exploration (3 Mesomikenda Road, PO Box 100, Gogama, Ontario POM 1WO). Trelawney Mining and Exploration Inc. has entered into a

70%  purchase agreement with the lease holders, David Carter, Dan Patrie, Lorne McCarthy, and Dan MacDougall.  The claim distribution is summarized in Table 1.

Figure 1 – Location Map of Hiawatha Property

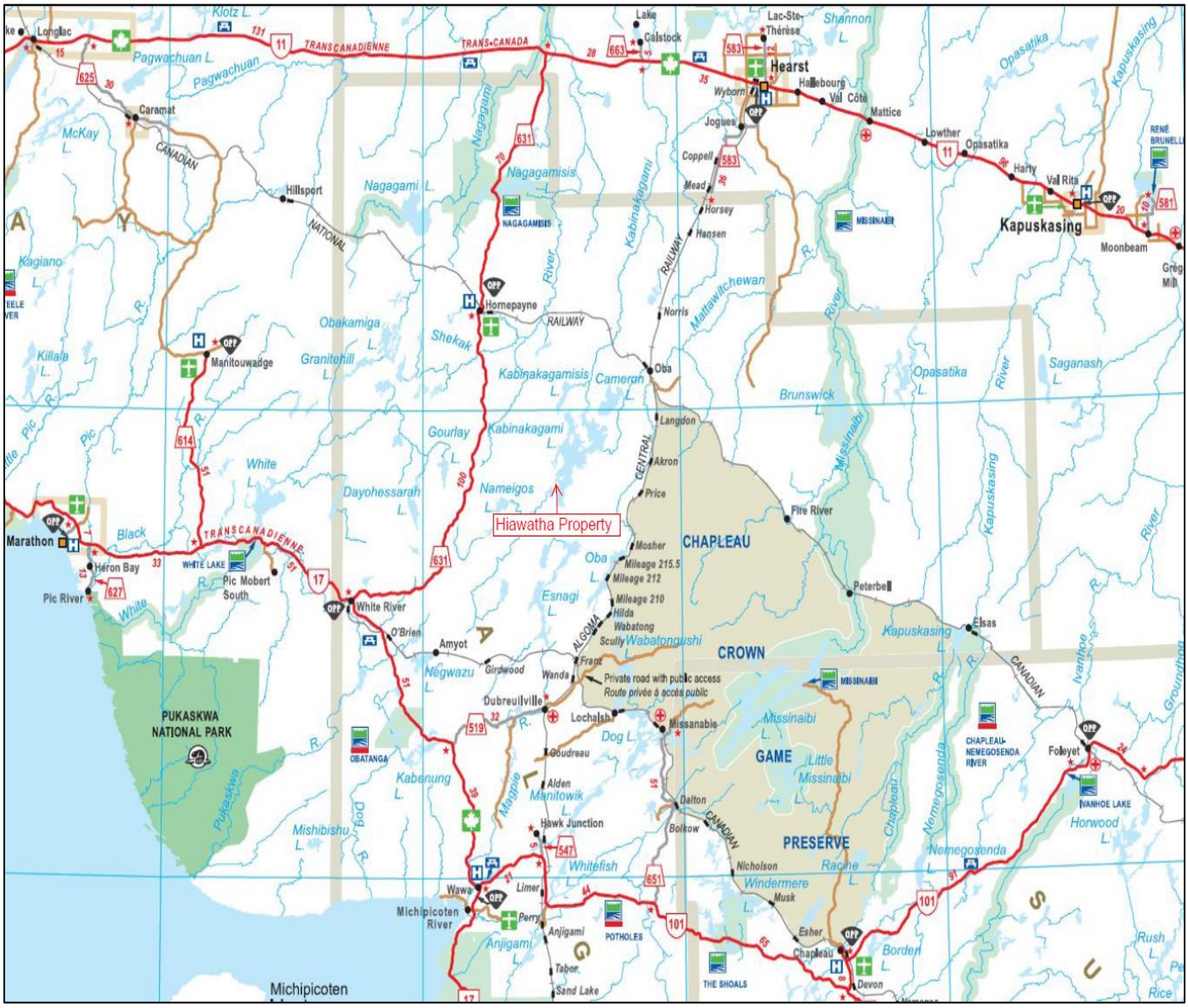


Figure 2 – Hiawatha Property Claim Map

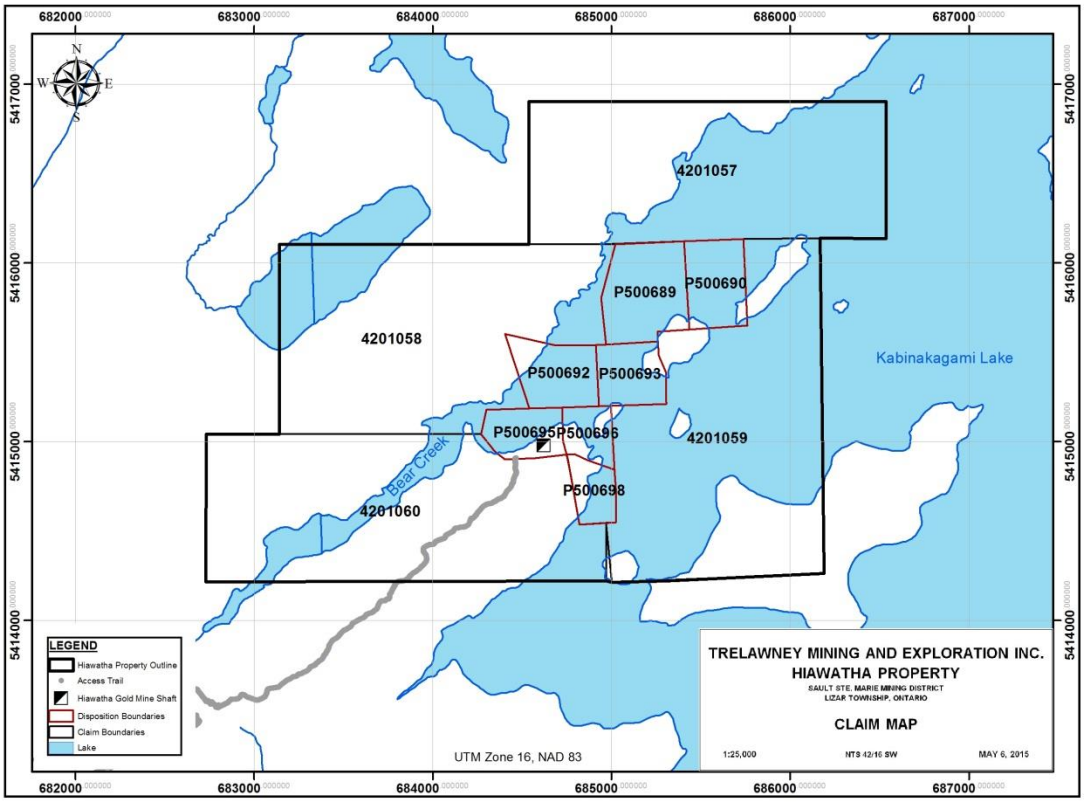



Table 2 – Claim Distribution

| Township | Claim Number. | Units | Recording Date | Claim Due Date | Work Required | Total Reserve |
|---|---|---|---|---|---|---|
| Lizar | 4201057 | 12 | 2006-May-26 | 2015-May-26 | 4,800 | 0 |
| Lizar | 4201058 | 13 | 2006-May-26 | 2015-May-26 | 5,200 | 0 |
| Lizar | 4201059 | 12 | 2006-May-26 | 2015-May-26 | 4,800 | 0 |
| Lizar | 4201060 | 11 | 2006-May-26 | 2015-May-26 | 4,400 | 9,734 |

| Township | Lease | Start Date | Lease Expiry | Survey Plan | Parcel No. | PIN No. |
|---|---|---|---|---|---|---|
| Lizar | 108432 | 2009-Dec-01 | 2030-Nov-30 | 1R7232 | 1803AL | 31056-0001LT |
| Patent Claims P500689, P500690, P500692, P500693, P500695, P500696, P500698 under Lease 108432 | | | | | | |

## 3.0) Physiography and Vegetation

The Hiawatha Property covers a small area (762.55 ha) and is located along the western shoreline in the central part of Kabinakagami Lake. The eastern part of the property underlies Kabinakagami Lake, as well as, encompassing all and parts of four (4) islands. The height of land ranges from 317 m and 391 meters above sea level. For the most part, the relief on the property is undulating and gentle, with a steep rise in topography on the northwest side of the property. The lower relief area is reflected in the area of Bear Creek, and is occupied by extensive clay-rich swamp and muskeg. Outcrop cover ranges from 5% to 60% with very little outcrop cover along Bear Creek. Bear Creek flows northeastward into Kabinakagami Lake, with the mouth of the creek west of the Hiawatha Gold Mine, forming a peninsula-shaped landmass located on claim 4201060 and three of the patent claims. The overburden cover consists of unconsolidated, fine to medium glacial silty sand to sandy loam, with thicker organic matter and clay in poorly drained lower relief areas. In the higher relief areas the A and B horizon is well developed, whereas the lower relief, swampy areas are characterized by thick moss and organic-rich humus.

Vegetation consists of mainly of black spruce balsam with local birch, cedar, and jack pine, along with secondary growth of alders and moose maple. Swampy, recessive areas are characterized by alders and locally by cedar, with open grassy and low-lying brush surrounding both lakes. The bush is more open along the low-lying and swampy shorelines of Bear Creek.

## 4.0) Historical Exploration

Gold was first discovered in 1926, which further led to discovery of three gold zones on surface, as per North, South (Hiawatha Mine workings), and West Zone (Table 1). This led to intense surface and underground exploration and mining from 1936 to 1939, culminating in limited production in 1937 (bulk sample) and in 1939 of the South Zone, which combined, returned an overall average mill grade of 0.083 opt Au and producing 159.8 oz Au from 1931 tons (Table 1). The shaft is 99.0 meters (325 ft) deep, with a drift level at 45.7 meters (150 ft level) and at 83.8 meters (275 ft level). A total of 3.97 kilometers and 0.90 km of surface and underground diamond drilling were reported, respectively. Underground work consisted of 1034 meters of drifting, 828 meters of cross-cutting, and 76 meters of underground raising. No reported and documented exploration work was carried out from 1940 to 1965, and subsequently the Hiawatha Mines charter was cancelled in 1961, reverting to the Crown, then re-staked in 1965.

Surface and underground exploration on the Hiawatha Mine was rejuvenated from 1969 to 1983, with de-watering of the underground workings and underground sampling. Both surface and underground exploration work were carried out by Primrock Mining and Exploration (1969) and Keltic Mining Corporation (1974). Tanglewood Resources (1983) compiled the 1969 and 1974 underground sampling results, and conducted extensive surface mapping and chip sampling in the immediate area of the Hiawatha Mine area, covering the North, South, and West Zones.

Overall, exploration work on the Hiawatha Property consisted of geological mapping, prospecting and sampling, trenching & power washing, channel sampling, trench mapping, and more recently rock sampling and soil sampling by Trelawney Mining and Exploration in 2012 and 2014, respectively. Ground geophysical surveys include Crone EM, VLF-EM, and magnetic surveys, and a pole-dipole IP (24 km) and magnetic (48.3 km) survey carried out by Ginguro Exploration Inc. in 2007. This latest IP survey appears to have extended the mineralized shears of the North and South Zone as chargeable zones for approximately 500 meters to the east-northeast as a series of discontinuous, chargeable zones in excess of 3 kilometers along strike. A review of historical data in the assessment files confirm a total of 3.57 kilometers of shallow drilling in 36 drill holes were carried out by a number of companies, with last drill campaign in 1983. Only anomalous values and moderate gold intercepts over thin widths were intersected (Table 1).

Three major airborne surveys were conducted in the region. Aerodat in 1983 covered the entire area between southern end of Kabinakagami Lake and Nameigos Lake, encompassing parts of five (5) townships. EM-magnetic airborne surveys were conducted for a variety of clients. In more recent times, Geotech flew a VTEM/magnetic survey (831 line km) on behalf of Rencore Resources in 2011 and Furgo Airborne Systems flew an airborne EM/magnetic (1503 line km) survey for Freewest Resources Canada/Teck Cominco in 2003. Both these survey areas are located southwest of the Hiawatha Property. A total of 18 weak to moderate conductive trends were outlined from the VTEM survey, some with coinciding strong magnetic features. There has been no historical government airborne EM/magnetic surveys conducted over the Kabinakagami Lake area. However, a VTEM / magnetic survey has been released in April, 2015.

As well, in 2000, a regional lake sediment and water geochemical survey was completed in the Kabinakagami Lake area. Lake sediment samples were collected at 950 sites and lake water samples were collected at 1035 sample sites, and were analyzed for a suite more than 50 elements. The anomalous elements include Au, Ni, Cu, Co, Cr, Zn, Cd, Ag, and Mo (Jackson - 2002).

Table 1 – Historical Work on Hiawatha Property

| Company/Individual | Year | Area | File No | Description of Work |
|---|---|---|---|---|
| Trelawney Mining & Exploration | 2014 | Hiawatha Mine | | Soil Sampling – 139 samples – anomalous values up to 366 ppb Au in 4 anomaly trends |
| Trelawney Mining & Exploration | 2012 | Hiawatha Mine | 20010312 | Sampling of trench (6 samples) – no significant Au assays |
| Ginguro Explorations Inc./Dan Patrie Exploration Ltd. | 2010 | Hiawatha Property – Hiawatha Mine | 20000957-958 | Trenching, power stripping/washing, mapping, and channel sampling – highlighted by 38.0 g/t Au/1.0 m. in North Zone and 24.0 g/t Au /0.6 m. in South Zone |
| Ginguro Explorations Inc. | 2007 | Hiawatha Property – Hiawatha Mine | 20004512 | 48.3 km of line cutting, 24 km of pole-dipole IP and 48.3 km of magnetic surveys – at least 4 chargeability IP zone outlined with extension of North and South Zones & shears |
| Noranda Exploration Ltd | 1990 | Hiawatha Mine area & SW of Hiawatha – Lizar Twp. | 42C16SW0001 | Lithogeochemical sampling with WRA – highlights includes grab values up to 1.30 g/t Au, 16 g/t Ag, and >1.00% Cu |
| Noranda Exploration Ltd | 1989 | SW of Hiawatha Mine – Lizar Twp | 42C16SW0004 | Prospecting and sampling (including WRA) highlighted by grab which returned 2.23 g/t Au |
| Noranda Exploration Ltd | 1989 | Hiawatha Mine area & SW of Hiawatha – Lizar Twp | 42C16SW0003 | Geological mapping, prospecting, lithogeochemical sampling (WRA included) and soil sampling (466 samples) |
| Noranda Exploration Ltd | 1988 | SW of Hiawatha Mine – Lizar Twp | 42C15SE0002 | Soil sampling (991 samples) – no significant values |
| Noranda Exploration Ltd | 1987 | West of Hiawatha Mine on Bear Creek | 42C16SW0007 | Soil sampling (123 samples) – no significant values |
| Tanglewood Consolidated Resources Inc. | 1983 | Hiawatha Mine Area | 42C16SW0009 | 37.8 km of line-cutting, geological mapping, prospecting and sampling, trenching (10 trenches), and channel sampling. Described 3 zones…<br>North Zone - grabs up to 167.81 g/t Au<br>West Zone - 15.73 g/t Au / 2.03 m and grabs up to 382.53 g/t Au<br>South Zone – 46.23 g/t Au / 0.91 m. and grabs up to 103.77 g/t Au<br>Lester Showing – grab sample returned 5.14 g/t Au (parallels North/South Zone)<br>1370.6 meters of drilling in 12 drill holes with the most significant drill intercept returned 5.48 g/t Au / 0.91 m. in drill hole T-80-12 |
| Sveinson Way Mineral Services | 1980 | Hiawatha Mine area | 42C16NW0010 & 42C16SW0012 | 1299.9 meters of diamond drilling in 18 drill holes, 19 km of line-cutting, and soil sampling - most significant drill hole assay returned 6.51 g/t Au / 0.8 m., highlight chip from trench returned 618.49 g/t Au / 0.22 m, soil sampling up to 85 ppb Au near Hiawatha Mine shaft |
| Nickel Rim Mines Ltd | 1978 | Hiawatha Mine Area | 42C16SW0013 | 823.5 meters of diamond drilling in 4 drill holes – most significant intercept from drill hole NR-L-78-4 which returned 14.38 g/t Au / 1.83 m. including 41.44 g/t Au / 0.64 m. |
| Nickel Rim Mines Ltd | 1978 | Hiawatha Mine Area | 42C16SW0011 | 9.0 km line-cutting, geological mapping, prospecting & sampling, and 9.0 km magnetic survey highlighted by panned tail from mill |

| | | | | concentrate returning 832.87 g/t Au and 143.15 g/t Ag |
|---|---|---|---|---|
| **Company/Individual** | **Year** | **Area** | **File No** | Description of Work |
| Keltic Mining Corporation | 1974 | Hiawatha Mine - ug | 42C16SW0014 / 4242C16SW0016 | 22.8 km of line-cutting, 19.75 km OF Crone 'Radem' EM and magnetic surveys on northeast extension of Hiawatha Mine on Kabinakagami Lake<br>Mapping & underground (ug) sampling using air compressed chipper highlighted……<br>Level 150' - 25.34 g/t / 0.91m<br>Level 275' – 47.95 g/t Au / 0.79m, and 9.59 g/t Au / 1.22m. and 1.36 g/t Au / 5.49 m. open to the east |
| Bear Creek Gold Mines/Primrock Mining & Exploration | 1971 | Hiawatha Mine - surface | NA | Reported geological and sampling, EM, and magnetic surveys – work not reported |
| Primrock Mining & Exploration | 1969 | Hiawatha Mine - ug | 42C16SW0015 / 42C16SW0017 | UG manual chip sampling highlighted by 319.52 g/t Au / 1.07m, 92.12 g/t Au / 1.22m, 65.06 g/t Au / 1.52 m, & 95.20 g/t Au / 0.91m<br>76.2 meters in two drill holes on West Zone returning 9.24 g/t Au / 0.69 & 13.70 g/t Au / 0.67 m in drill hole 1A and 2A, respectively |
| Hiawatha Gold Mines Ltd | 1965 | Hiawatha Mine | | Charter cancellation and revert to the Ontario Crown |
| Hiawatha Gold Mines Ltd | 1939 | Hiawatha Mine | | Operations suspended due to theft and poor mill procedures, & outbreak of World War 11 |
| Hiawatha Gold Mines Ltd | 1937-39 | Hiawatha Mine | | 1937-39 – Produced 159.8 oz in 1931 tons @ 0.083 opt Au<br>1939 – test mill treated and returned 142 oz Au in 1928 tons @ 0.074 opt Au<br>1937 - bulk sample returned 17.8 oz Au in 3 tons @ 5.93 opt Au |
| Hiawatha Gold Mines Ltd | 1937-39 | Hiawatha Mine | | Three compartment shaft sunk to 325 ft level (99 meters) and established levels at 150 ft (46 meters), and at 275ft (84 meters); completed 1938 meters of drifting, cross-cutting drift, and limited raising (76 meters)<br>1059 meters of ug drilling on South Zone over 457 meters varying in width 0.05 to 0.36 meters wide |
| Hiawatha Gold Mines Ltd | 1936-37 | Hiawatha Mine | | Prospecting, trenching, and drilled 3973 meters in 32 drill holes with discovery of North and West Zones + additional 16 drill holes – no logs/location/results available |
| Numerous Prospectors | 1926 to 1931 | Hiawatha Mine | | Prospecting and sampling, trenching |
| Pierre Louttit (Hiawatha 1st Nations) | 1926 | Hiawatha Mine | | First discovery of gold mineralization close to Picard's Point near Kabinakagami Lake |

## 5.0) Geological Settings

### 5.1) Regional Geology

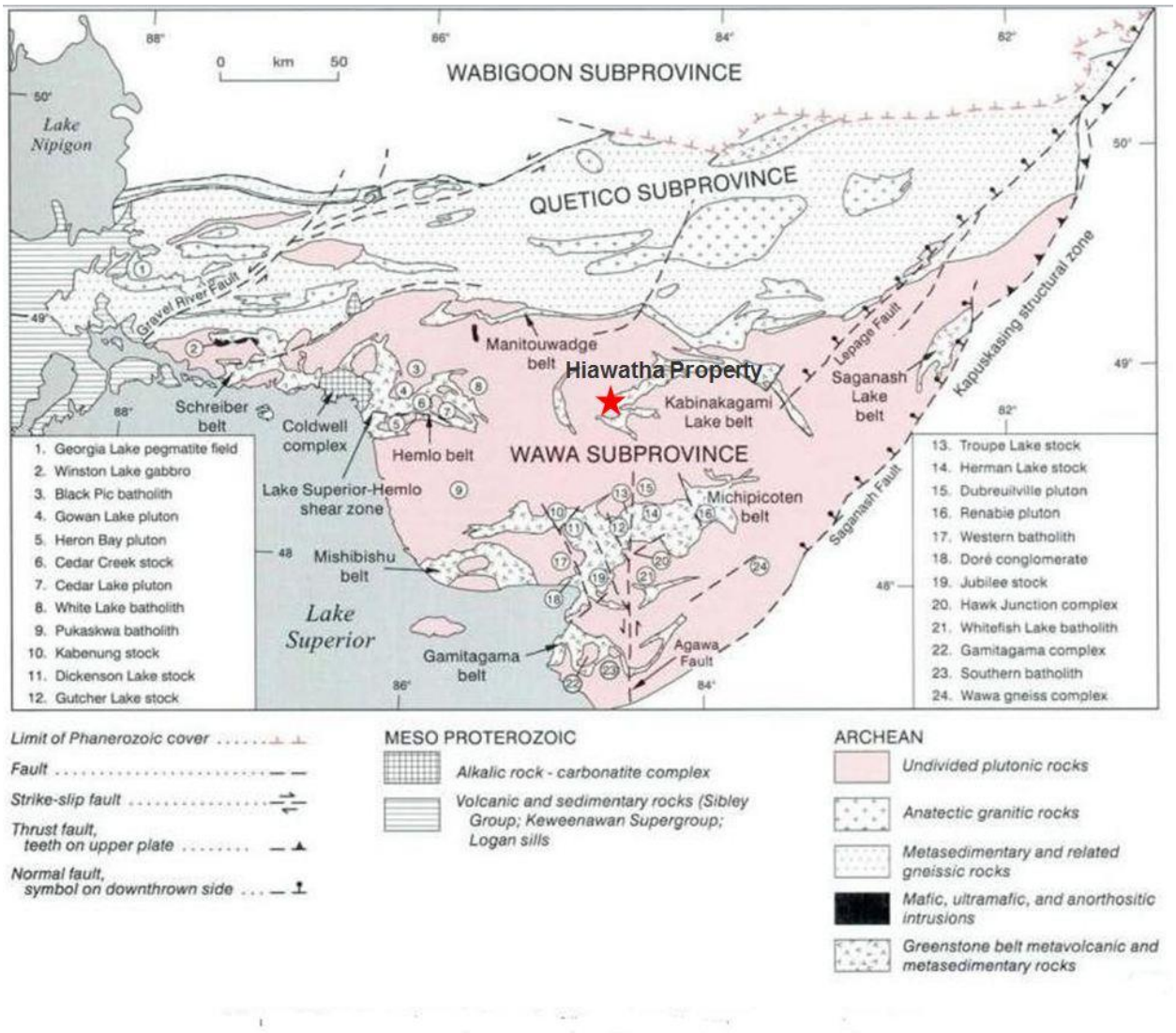
The supracrustal rocks underlying the general area are located in the Kabinakagami Lake Greenstone Belt (ca 2.7 Ga) in the Wawa Subprovince of the Superior Province in the Precambrian Shield (Figure 3). The northeastern trending greenstone belt is arcuate in shape, extending for approximately 100 km and is between 1 and 8 kilometers wide. The supracrustal rocks underlying the belt consist primarily of metavolcanics with clastic metasediments, bounded and intruded by both younger and older, metamorphosed felsic to intermediate intrusives.

The rocks of the Kabinakagami Lake Greenstone Belt are characterized by an extensive, metavolcanic assemblage, which accounts for 60% of the underlying supracrustal rock types. The mafic metavolcanics have been outlined for approximately 100 kilometers, with thicknesses of up to 8 kilometers. The mafic metavolcanics are characterized by older, magnesium-(iron)-rich tholeiitic basalts, and the felsic metavolcanics are classified as calc-alkaline dacite to rhyodacite. Ultramafic to mafic bodies have been identified on the Hiawatha Property and to the southwest, however, the extent is not truly known. Clastic metasediments account for 15% of the supracrustal rocks and are located on the east side of Kabinakagami Lake. They consist of well bedded arenaceous/siltstones, greywacke, and epiclastic/volcaniclastic tuffs. The supracrustal rocks are bounded and intruded by felsic to intermediate intrusives, which range from granodiorite-tonalite-(trondhjemite) (GTT) in composition. These intrusives have in part been metamorphosed and may be in part syn-volcanic and occur as pre to syn-deformational intrusives. There are at least two separate diabase dike swarms, ranging in age from late Archean to late Proterozoic, present in the Kabinakagami Lake area: (1) the northwest striking Matachewan dike swarm (2.47-2.45 Ga), and (2) the northeast trending Kapuskasing/Marathon dike swarm (2.2-2.0 Ga).

The principal regional structure is the Bear Creek Fault, which trends northeast-southwest for approximately 8 kilometers. Although not fully understood, this linear structure underlies a recessive area within the Bear Creek watershed. Siragusa (1977) has described this as a strain zone, characterized by numerous thin shears over a 50 to 100 meter width from the margins of Bear Creek. The supracrustal rocks have undergone lower to mid greenschist metamorphism, with upper greenschist and lower amphibolite near the younger felsic to intermediate intrusives.

The Hiawatha Gold Mine is the only historical producer in the region and operated from 1937-39. It produced and returned an average mill grade of 0.083 opt Au, producing 159.8 oz Au from 1931 tons. It consists of two gold-bearing structures; 1) North Zone is described in a fractured quartz-feldspar body and 2) the South Zone is characterized by a silicified/sericitic quartz stockwork in a sheared granodiorite/tonalite intrusive. There are numerous precious and base metal showings and zones southwest of Kabinakagami Lake.

Figure 3 – Wawa Sub-province - Kabinakagami Lake Greenstone Belt

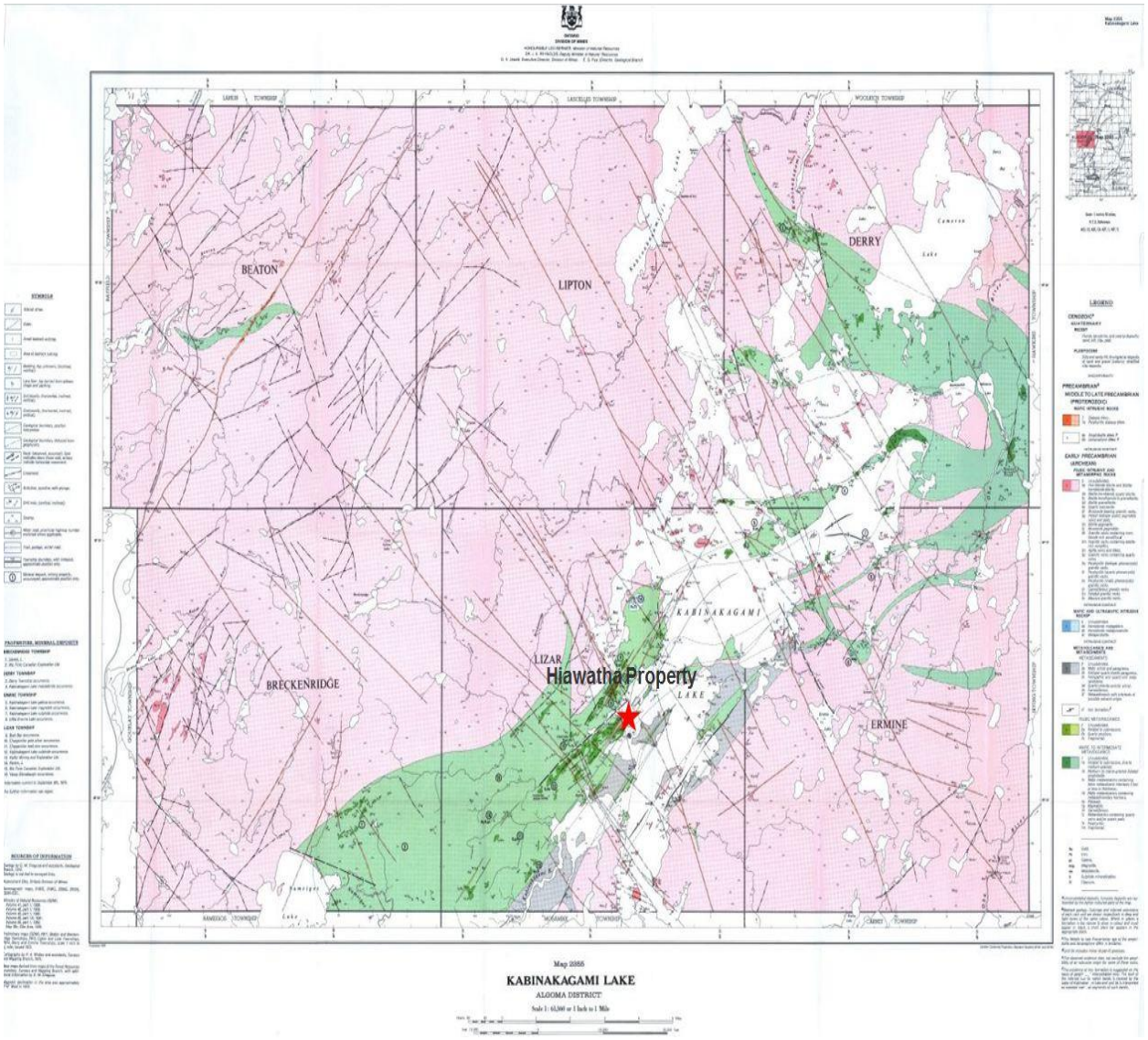



## 5.2) Property Geology

The supracrustal rocks underlying the Hiawatha Property are characteristic of the mafic to ultramafic metavolcanics with semi-conformable to conformable granodiorite-tonalite-(trondhjemite) sill like bodies (Figure 4). The property geology is consistent with the lithologically rock type characteristics compiled by Siragusa (1972 & 1977).

The mafic metavolcanics are the predominant rock type and constitute 60% of the rocks underlying the property. The thickest part of the mafic rocks is up to 7 km wide in the western part of the property. The metavolcanics are primarily magnesium-rich tholeiitic basalts, with localized iron-rich varieties. Basaltic rocks range from massive to pillow flows with minor inter-flow mafic volcaniclastics. At least three ultramafic sills have been recognized on the property, with two located southeast of the Hiawatha Mine shaft and one

Figure 4 – Property Geology (after Siragusa – 1972)




located along Bear Creek. The two closest to the Hiawatha Mine shaft trend northeast and are between 45 and 90 meters thick. Brewster and Leonard (1983) have described both these sill-like bodies as fine to coarse-grained amphibolites (termed pyroxenite) and comprised of 80% to 90% amphibole-(pyroxene?) + calcic-plagioclase + titanite + ilmenite + magnetite. There appears to be a magnetite cumulate at the base of the most westerly ultramafic sill. Ultramafics along Bear Creek (Bear Creek Fault) have been recognized by Siragusa (1977) and Noranda sampling (in 1989-90) returned MgO compositions up to 26.11% MgO. The extent of the ultramafics on the Hiawatha Property is not truly known. Clastic metasediments (10%) are located on the eastern side of the property, extending into Kabinakagami Lake and the lake's islands. They consist of well bedded arenaceous metasediments, which include sandstone, siltstone, and quartzite.

Granodiorite-tonalite- (trondhjemite) (GTT) series of intrusives account for the remaining 30% of the rocks underlying the property. These felsic rocks trend in a northeast direction and is part of a more prolific intrusive body that extends to the southwest for approximately 14 kilometers. GTT is up to 120 meters thick on the Hiawatha Property. The remaining ≤1% part of the property is underlain by northwest (Matachewan) and northeast (Kapuskasing-Marathon) diabase dykes. The sub-vertical to vertical dipping diabase is up to 4 meters thick. The supracrustal rocks underlying the property have undergone low to mid greenschist metamorphism, with increase metamorphism near younger felsic to intermediate intrusives.

The northeast trending Bear Creek Fault is part of a regional strain zone (~ 8 km long) underlying the west part of the Hiawatha Property. It has been described as a sub-vertical structure. Ultramafics are spatially associated with the fault zone, which may indicate a deep-seated structure. Shears and gold-bearing structures parallel this northeast, although kinematics is largely unknown.

The Hiawatha Mine has been the only historical producer in the Kabinakagami Lake Greenstone Belt. The mine produced 159.8 oz Au with an average mill grade of 0.083 opt Au from 1931 tons, including a 3 ton bulk sample which returned 17.8 oz Au @ 5.93 opt Au.

## 6.0) Deposit Types

The Kabinakagami Lake Greenstone Belt area is part of the Wawa sub-province, and hosts a diverse array of precious and base metal deposits. Major breaks such as the Mishibishu Lake Deformation Zone and Goudreau Lake Deformation Zone host a number of gold deposits in the Wawa Sub-province. There are two distinct styles of gold mineralization; 1) orogenic lode-gold greenstone hosted mesothermal gold, and 2) intrusive-related 'porphyry' disseminated style. Examples of orogenic gold structures are Wesdome's Eagle River Mine (Eagle River Deformation Zone) and Harte Gold's Sugar Zone in the Dayohesarrah (Sugar Deformation Zone). Intrusive-related hosts are similar to the Moose Lake Porphyry Complex at Hemlo and Webb Lake Intrusive at Magino.

The potential of gold mineralization Hiawatha Property fits the orogenic style of mineralization with the host GTT and the presence of a regional strain zone in the Bear Creek Fault.

## 7.0) Summary of 2015 Gridding and Ground Geophysical Program

Between March 30 and April 4, 2015, Trelawney Mining and Exploration Inc. (*3 Mesomikenda Lake Road, Box 100, Gogama, Ontario P0M 1W0*) commissioned Dan Patrie Exploration Services Ltd. (*P.O Box 45, Massey, Ontario P0P 1P0*) to conduct a line-cutting/GPS gridding and follow-up ground pole-dipole induced potential (IP) and magnetic surveys in the Hiawatha Mine area. Both surveys are a southwest continuation and partial overlap from the IP/magnetic survey Patrie conducted on behalf of Ginguro Exploration over Kabinakagami Lake.

The 2015 ground geophysical was initiated to identify any chargeable/resistive responses which may coincide with underlying gold-bearing structures in the Hiawatha Mine and continuation from some of the interpreted chargeable zones from the Ginguro survey in 2007. A table of all personnel is summarized in Table 3.

Table 3 – Gridding and Geophysical Personnel

| **Personnel** | **Title** | **Domicile** |
|---|---|---|
| Brent Patrie | Survey Leader - IP Transmitter Operator/Gridding | Val Therese, Ontario |
| Gab Roy | IP Receiver/Mag Operator/Gridding | Elliot Lake, Ontario |
| Tyler Gagan | Geotechnician/Reel Electrodes/Gridding | Espanola, Ontario |
| Mario Pilon | Geotechnician/Reel Electrodes/Gridding | Timmins, Ontario |
| Gilles Robert | Geotechnician/Reel-Electrodes/Gridding | Thunder Bay, Ontario |
| Cameron Landriault | Geotechnician/Reel Electrodes/Gridding | Walford, Ontario |
| Riley Vanier | Geotechnician/Reel Electrodes/Gridding | Massey, Ontario |
| Trevor Schuurman | Geotechnician/Reel Electrodes/Gridding | Massey, Ontario |
| Beau Neville | Geotechnician/Reel ElectrodesGridding | Espanola, Ontario |
| Addison Duhaime | Gridding | Elliot Lake, Ontario |

A total of 6.325 line kilometers of line-cutting and lake-gridding was completed. The grid consisted of a main base line for 300 meters and 6 parallel cross-lines (from Line 5+00 N to 2+00 N) perpendicular to the base line, with line spacing between 50 and 100 meters from a base line trending at 234°. Picket spacing were established every 25 meters. A GPS survey (Garmin GPSMAP 62) was carried out over the grid, and measurements were collected every 12.5 meters for the grid. Nad 83 in Zone 16N was the spatial reference projection used in the GPS survey. Accuracy of the GPS unit is approximately 3 to 6 meters. A GPS measurement of the Hiawatha Mine shaft was also taken at…

1) Northwest edge of shaft – 5414985 N / 684618 E
2) Southeast edge of shaft – 5414973 N / 684625 E

The IP instrument is a Walcer tx 10 transmitter in combination with a Walcer mg 12A motor generator and a Scintrex IPR-12 receiver. IP readings were collected with an "A" spacing of 50 meters with N=6 levels, being read. The motor generator and transmitter were stationary on the end of the line being read with the current being transmitted through a wire with an electrode

into the ground for contact. A second wire and electrode (the live electrode) was moved along the line being surveyed as per survey protocol. At all times, the transmitter man, live electrode man and receiver personnel are in radio contact. Ahead of the live current electrode was a crew of men with electrodes at 50 m intervals. These electrodes are connected to the receiver where the receiver operator obtains and records the readings. The data is downloaded from the receiver at the end of the day to a computer where the resistivity and chargeability are calculated and plotted using pseudo-sections and/or maps using Geosoft software. The description of the instrumentation and technical specifications is located in Appendix 1.

The magnetometer is a Scintrex Envi with accompanied base station. The base station was located at 5415690 N / 685357 E (Nad 83 Zone 16). Magnetic readings were continuously read and recorded every 12.5 meters along both the base and cross lines. This proton precession magnetometer measures the local magnetic field, and the use of the base station allows the data to be corrected for diurnal variations. The magnetometer is mounted in a back-pack mode permitting a WALKMAG mode, where the collected data is continuously read at a steady pace along the survey line. The description of the instrumentation and technical specifications are located in Appendix 1.

The following is presented in the appendices at the back of the report…….

Appendix 1 – Induced Polarization and Magnetometer Survey Equipment Technical Specifications

Appendix 2 – Total Magnetic Intensity Contours (TMI): Scale: 1:5000

Appendix 3 – IP Chargeability and Resistivity Pseudo-sections

Appendix 4 – Geophysical Interpretation on 1VD Magnetic: Scale: 1:500

## 8.0) Discussion of Results from 2015 Geophysical Program

### 8.1) Induced Potential Chargeability and Resisitivity Results

The IP survey was successful in illustrating weak to moderate thin chargeability zones within the survey area. Background chargeability values range from -5 mV/V to 2 mV/V with anomalous zones greater than 5.74 mV/V to >30 mV/V (Table 1). The higher chargeability values are generally associated with moderate to high resistivity's, with local variations.

There are four chargeable anomalies/zone (HI-01 to HI-04) and are summarized in Table 4 with their chargeable/resistivity and magnetic characteristics.

Table 4 – IP and Magnetic Summary

| Anomaly | Anomaly Length (m) | Line | Station | Chargeability (observed high – mV/V) | Resistivity | Magnetic Attraction |
|---|---|---|---|---|---|---|
| HI-01 | 300 (open) | 5+00N | 1+50 E | Weak - 4.54 | Marginal low to moderate | Magnetic low break |
| | | 4+00 N | 1+50 E | Strong - 13.59 | Direct moderate-strong | Magnetic low break |
| | | 3+50 N | 1+50 E | Strong - 11.33 | Direct strong | Magnetic low break |
| | | 3+00 N | 1+50 E | Moderate – 8.66 | Direct moderate-strong | Magnetic low break |
| | | 2+50 N | 1+62.5 E | Moderate – 8.77 | Direct moderate-strong | Magnetic high/low margin |
| | | 2+00 N | 1+75 E | Moderate – 8.24 | Direct-marginal moderate | Magnetic high/low margin |
| HI-02 | 50 (open SW) | 2+50 N | 0+50 W | Weak – 5.74 | Weak | Margin of magnetic high on magnetic low break |
| | | 2+00 N | 0+75 W | Moderate – 8.95 | Margin of high | Weak magnetic low break |
| HI-03 | 100 | 2+00 N | 3+00 E | Moderate – 8.24 | Direct low | Direct magnetic high |
| HI-04 | 100 | 4+00 N | 5+00 W | Strong - >30 | Direct high | Magnetic break on magnetic high |
| | | 5+00 N | 5+00 W | Weak-moderate – 8.79 | Margin of moderate-high | Direct on magnetic high & margin of strong magnetic low break |

Chargeable zone HI-01 is the most prolific chargeability zone, which trends in a northeast direction for 300 meters, and open in both directions. The chargeability is strongest on Line 3+50 N and L 4+00 N, becoming weakest to the northeast on Line 5+00 N. There is an overall direct correlation between the chargeability of this zone and moderate to strong resistivity. HI-01 directly correlates well with a strong linear magnetic low break, with the chargeable zones correlating at a margin between a magnetic high and low on Line 4+00 N and Line 5+00 N. This chargeable zone is located within the GTT sill-like body (up to 91 meters wide). Although no sulphide showings/zones or gold-bearing quartz vein/stockwork structures have been documented or outlined along this chargeable zone, Tanglewood documented a gold showing 25 meters along strike southwest from Line 2+00 N / 1+75 E. The gold showing returned 5.14 g/t Au from a grab sample and was never followed up.

Chargeable Zone HI-02 is a weak to moderate chargeable zone that trends northeast for approximately 100 meters. The chargeability results from Line 2+00 N / 0+75 W (close to mine shaft) is the most significant response from this zone and is on the margin of a high resistivity. The zone is on the margin of a weak to moderate linear magnetic break. This zone correlates directly with the North Zone of the Hiawatha Mine, which hosts 5-35 cm wide quartz veins/veinlets in 2 to 3 meter wide quartz porphyry within the mafic metavolcanics. Grabs values up to 167.81 g/t Au have been returned 150 meters along

strike to the southwest/west along the North Zone. Underground development of the North Zone is limited.

The only significant response of chargeable zone HI-03 is located only on one line, Line 2+00 N / 3+00 E. HI-03 shows moderate chargeability with a coincidental low resistivity. It coincides with a strong magnetic feature related to northeast trending ultramafic body (amphibolite / pyroxenite) which strikes the length of the survey area of 300 meters. Brewster and Leonard (1983) describe a magnetic 'lean iron formation' within the ultramafic, which may be equivalent to a magnetite cumulate and/or disseminated magnetite.

The last chargeable zone to be described is HI-04, which shows variable chargeable responses from weak to strong. There is both a direct to marginal moderate to high resistivity associated with this zone. The magnetics are variable, but does show a magnetic break, with a strong discrete magnetic break on Line 5+00 N / 4+75 W to 5+00 W. The zone is located with the mafic metavolcanics, close to the Bear Creek Fault.

### 8.2) Magnetic Results

The magnetic results were successful in confirming the magnetic susceptibilities of certain lithologies and possibly verifying the nature of gold-bearing structures. The following is a brief synopsis of the magnetic responses from the survey:

1) Overall moderate to strong linear magnetic breaks associated with the North and South Zone of the Hiawatha Mine and coincide with a potentially, new parallel gold-bearing structure to the southeast of the survey area
2) A series of weak to moderate linear magnetic low breaks along the Bear Creek Fault over a 200 meter width
3) Presence of a strong magnetic feature within one of the ultramafic bodies, equivalent to a magnetite cumulate or disseminated magnetite in the host
4) Both younger northeast Kapuskasing/Marathon and older Matachewan diabase dykes. The younger dyke trends northeast for 300 meters from Line 5+00 N / 0+50 E to Line 2+00 N / 1+00 E

## 9.0) Conclusions

The ground geophysical program was successful in identifying a number of IP chargeability responses and magnetic low linear breaks proximal to the Hiawatha Mine area. The most favorable response is located approximately 150 meters southeast of the South Zone, where most of the underground workings are concentrated on both levels. This chargeable zone is parallel to the North and South Zones of the mine and surface workings, and possibly represents a new gold-bearing structure, as it is on strike with a sample which returned 5.14 g/t Au. The chargeable zone and showing is located within the GTT intrusive sill, similar to the host of the South Zone. Although the IP survey did not respond to the South Zone of the Hiawatha Mine, there is a chargeable response to the North Zone, located near the Hiawatha Mine shaft in the

western part of the survey area. The magnetics provided the most consistent pattern related to the historical surface geology. The gold-bearing structures of the North and South Zones of the Hiawatha Mine are reflected by linear magnetic low breaks, as per chargeable Zone HI-01 and along the Bear Creek Fault.

**10.0) Recommendations**

Additional exploration work is recommended at this time on the Hiawatha Property. Semi-detailed and detailed litho and structural mapping and sampling with follow-up prospecting on IP chargeability anomalies and magnetic linear low breaks should be serious considered. This program should additionally encompass and evaluate;

1) North and South Zone extensions and plunge indicators. Results from historical underground sampling suggest a 60° southwest plunge of the South Zone.
2) West Zone which returned historical (1980) grab values up to 618.49 g/t Au and drilling results (1969) returned 13.7 g/t Au / 0.67 in Hole 2A
3) Bear Creek Fault area

A total cost of approximately $30,000 is recommended to support a three-week surface mapping and prospecting program.

## 11.0) References


Clement, Y.P. and Lo, B. (2008)

Report on Induced Polarization and Resistivity and Magnetic Surveys, Hiawatha Property for Ginguro Explorations Inc. Assessment report file number 20004513. Report in two parts, 21 pp. and 24 pp

.

Cloutier, J.F. (2003)

43-101F Technical Report for Beaufield Consolidated Resources Inc., Lizar Property, Lizar Township, Ontario. Assessment report file number 42C/16NW2002. 57 pp.

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Kabinakagami Lake Area High Density Regional Lake and Water Geochemical Survey; Ontario Geological Survey Open File Report 6098. 90 pp.

Wilson, A.C. (1993)

Geology of the Kabinakagami Lake Greenstone Belt; Ontario Geological Survey Open File Report 5787. 80 pp.

Felix, R. (1990)

Noranda Exploration Ltd Assessment File Number 42C/16SW0001; Includes whole rock analyses and other geochemical analyses. 13 pp.

Brewster, N.E. and Leonard, M.A.(1983)

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Siragusa, G.M. (1977)

Geology of the Kabinakagami Lake Area, District of Algoma; Ontario Geoscience Report 159 accompanied by Map 2355. 39 pp.

Siragusa, G.M. (1972)

Preliminary Map P.812 Geological Series, Kabinakagami Lake Area, Lipton and Lizar Townships, District of Algoma. Cover NTS 42C/15E, 42C/16W, 42F/1W, and 42F/2E. 1 inch = ¼ Mile

## STATEMENT OF QUALIFICATIONS – STEPHEN ROACH

I, Stephen Roach, of 47 Crantham Crescent, Stittsville, Ontario K2S 1R2, certify that;

1. I obtained a Bachelor degree in Geology from Concordia University in 1977. In addition, I attended Carleton University from 1981-83 in a Graduate Program.
2. I have worked as a geologist for more than 30 years since my graduation from university been in the practice of my profession as Exploration Geologist since 1977.
3. I am responsible for this report entitled Report of 2015 Pole-Dipole Induced Potential and Magnetic Survey on the Hiawatha Property, Sault Ste. Marie Mining Division, in Central Ontario.
4. I have no beneficial interest, direct or indirect in the Hiawatha Property that is the subject of this report.

Dated May 15, 2015 – Stephen Roach 

## STATEMENT OF QUALIFICATIONS – ALAN SMITH

I, Alan Smith, do hereby certify that:

1. I have been the District Manager – Exploration for Trelawney Mining and Exploration Inc., a wholly-owned subsidiary of IAMGOLD, since February, 2013.

2. I graduated with an Honors Bachelor of Science Degree in Geology from the University of Western Ontario in 1984. I completed a M.Sc. Degree in Geology at the University of Western Ontario in 1987.

3. I am a practicing member in good standing with the Association of Professional Geoscientists of Ontario (Membership Number 0201). I am also a Member of the PDAC, CIM, and OPA.

4. I have worked as a Geologist for more than 25 years since graduation from University.

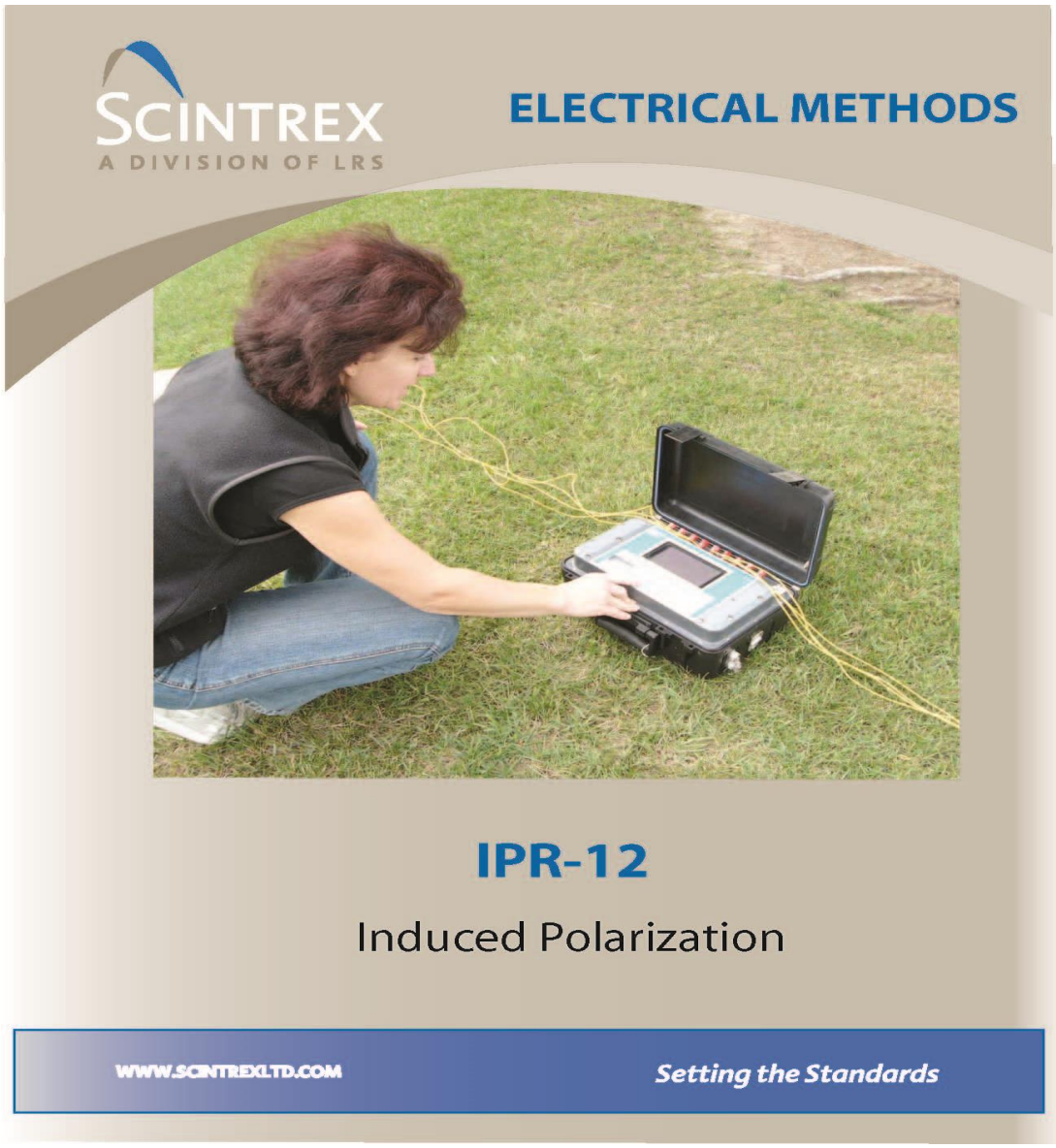
5. I am responsible for the reporting of the 2015 Surface Exploration Program on the Hiawatha Property, and have reviewed the contents of this assessment report.

6. I have been involved in the Trelawney Mining and Exploration Inc. Côté Gold / Swayze Exploration program since February of 2013.

Dated May 15, 2015 

# APPENDIX 1

## INDUCED POLARIZATION SURVEY AND MAGNETOMTER/BASE STATION EQUIPMENT TECHNICAL SPECIFICATIONS



# IPR-12 SPECIFICATIONS

The IPR-12 IP receiver has been successfully used for many years as a mineral exploration tool, specifically for gold exploration.

Induced polarization can also be used as a method for mapping hydrocarbon plumes and geotechnical applications.

| | |
|---|---|
| Inputs: | 1 to 8 dipoles are measured simultaneously. |
| Input Impedance: | 16 MΩ |
| SP Bucking: | ±10 volt range. Automatic linear correction operating on a cycle by cycle basis. |
| Input Voltage (Vp) Range: | 50 µV to 14 V |
| Chargeability (M) Range: | 0 to 300 mV/V |
| Tau Range: | 60 microseconds to 2000 seconds. |
| Reading Resolution of Vp, SP and M: | Vp - 10 µV; SP - 1 mV; M - 0.01 mV/V |
| Absolute Accuracy of Vp, Sp and M: | Better than 1% |
| Common Mode Rejection: | At input more than 100dB. |
| Vp Integration Time: | 10% to 80% of the current on time. |
| IP Transient Program: | Pulse selectable at 1,2,4,8,16 or 32 seconds. Programmable windows also available. 50% duty cycle. |
| Transmitter Timing: | On/off times of 1,2,4,8,16 or 32 seconds. |
| External Circuit Test: | All dipoles measured individually in sequence. Range 0 to 2 MΩ with 0.1 kΩ resolution. Circuit resistances displayed and recorded. |
| Filtering: | RF filter, 10 Hz 6 pole low pass filter, statistical noise spike removal. |
| Internal Test Generator: | 1200 mV of SP; 807 mV of Vp and 30.28 mV/V of M. |
| Analog Meter: | For monitoring input signals; switchable to any dipole via keyboard. |
| Memory Capacity: | Stores approximately 400 dipoles of information when 8 dipoles are measured simultaneously. |
| Power Supply: | Rechargeable Ni-Cad D cells. More than 20 hours service at +25°C. (77°F), more than 8 hours at -30°C (-22°F) |
| Operating Temperature: | -30°C to +50°C (-22°F to 122°F) |
| Dimensions and Weights: | Console: 355 x 270 x 165 mm (14" x 10.6" x 6.5")<br>Charger: 120 x 95 x 55 mm (4.7" x 3.7" x 2")<br>Console: 5.8 kg (12.8 lbs.)<br>Batteries: 1.3 kg (2.8 lbs.)<br>Charger: 1.1 kg (2.4 lbs.) |

# OPTIONS

Transmitters
Software Packages
Training Program

ISO 9001:2000 registered company. All specifications are subject to change without notice.

Specification Sheet Part Number 745711 Revision 0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222 Snidercroft Road
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Fax: +1 905 669 6403
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Website: www.scintrex.com

**USA**
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Telephone: +1 303 828 3499
Fax: +1 303 828 3288
e-mail: info@microglacoste.com
Website: www.microglacoste.com

SCINTREX
A DIVISION OF LRS

# MAGNETIC METHODS

# ENVI PRO

## Proton Magnetometer with Integrated GPS

WWW.SCINTREXLTD.COM

*Setting the Standards*

# ENVI PRO PROTON MAGNETOMETER WITH INTEGRATED GPS SPECIFICATIONS

The ENVI magnetometer has been successfully used for many years as a mineral and oil & gas exploration tool.

Magnetometry is commonly used for iron ore exploration, geological mapping, archaeological exploration and geotechnical applications.

| | | |
|---|---|---|
| Total Field Operating Range: | 23,000 to 100,000 nT (gamma) | |
| Total Field Absolute Accuracy: | ±1 nT (gamma) | |
| Sensitivity: | 0.1 nT at 2 second sampling rate. | |
| Supplied GPS Accuracy: | ± 1m (Autonomous), <1m (WAAS)<br>Connects to most external GPS receivers with NMEA & PPS output. | |
| Cycling (Reading) Rates: | 0.5, 1 or 2 seconds | |
| Gradiometer Option: | Includes a second sensor, 0.5m (20") staff extender and processor module. | |
| Gradient Tolerance: | >7000 nT (gamma)/m | |
| "WALKMAG" Mode: | Continuous reading, cycling as fast as 0.5 seconds. | |
| Memory: | Total Field Measurements: 84,000 readings<br>Gradiometer Measurements: 67,000 readings<br>Base Station Measurements: 500,000 readings | |
| Real-Time Clock: | 1 second resolution, ± 1 second stability over 12 hours or GPS time | |
| Power Supply: | Rechargeable 2.9 Ah lead-acid dry cell battery. 12 Volt input for base station operations. | |
| Standard Software: | QCTool for QC and simple contour plotting. | |
| Operating Temperature: | -40°C to 60°C (-40°F to 140°F) | |
| Dimensions & Weights: | Console: | 250mm x 152mm x 55mm (10" x 6" x 2.25")<br>2.8 kg (6.2 lbs) with rechargeable battery |
| | Magnetic Sensor: | 70mm x 175mm (2.75"d x 7")<br>1 kg (2.2 lbs) |
| | Gradiometer Sensor: | 70mm x 175mm (2.75"d x 7") |
| | With Staff Extender: | 1.15 kg (2.5 lbs) |
| | Sensor Staff: | 25mm x 2m (1"d x 76")<br>.8 kg (1.75 lbs) |

## OPTIONS

Base Station Accessories Kit
Software Packages
Training Program
External GPS

ISO 9001:2000 registered company. All specifications are subject to change without notice.

Specification Sheet Part Number 788712 Revision 0


**CANADA**
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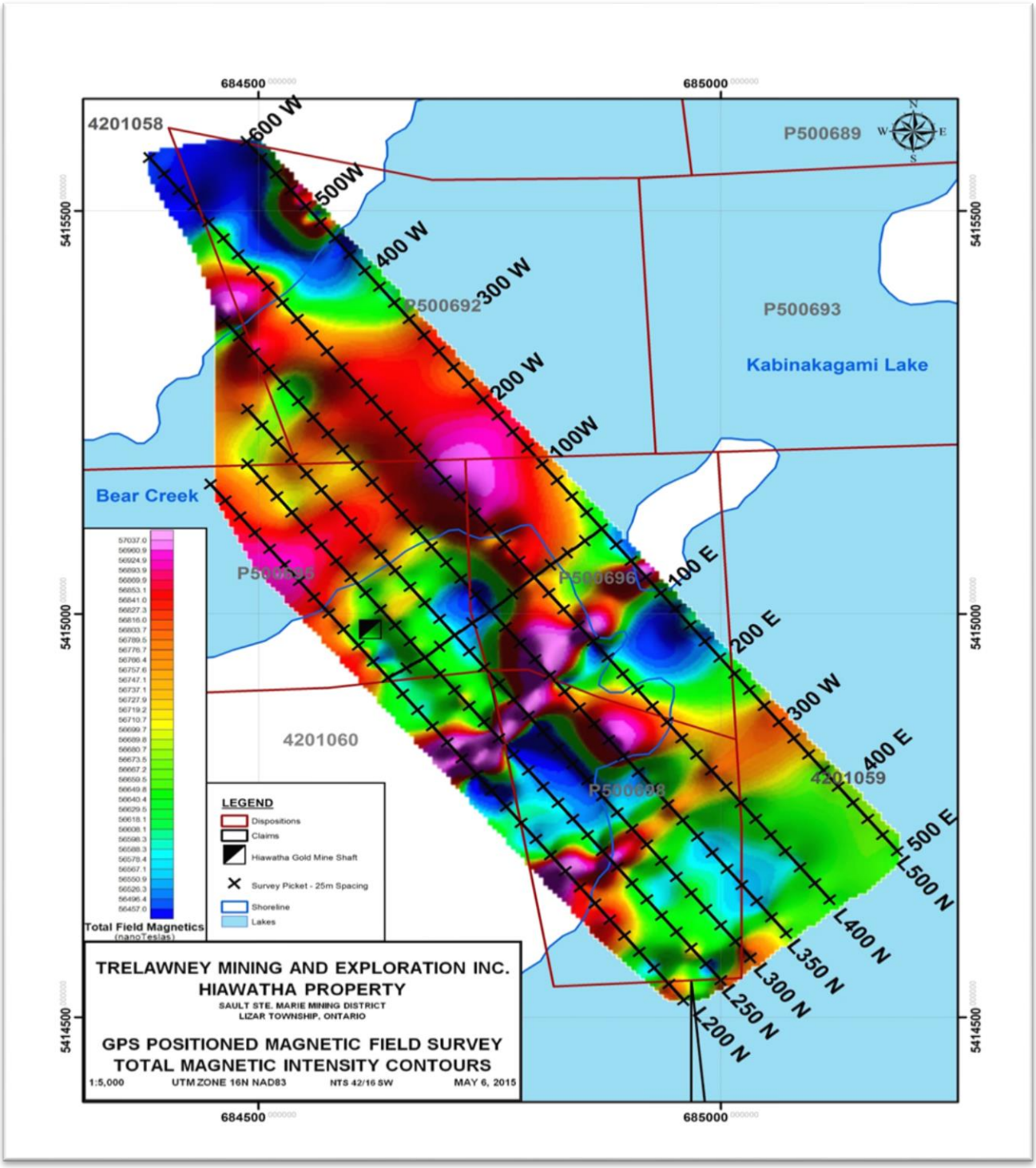
Fax: +1 303 828 3288
e-mail: info@microglacoste.com
Website: www.microglacoste.com

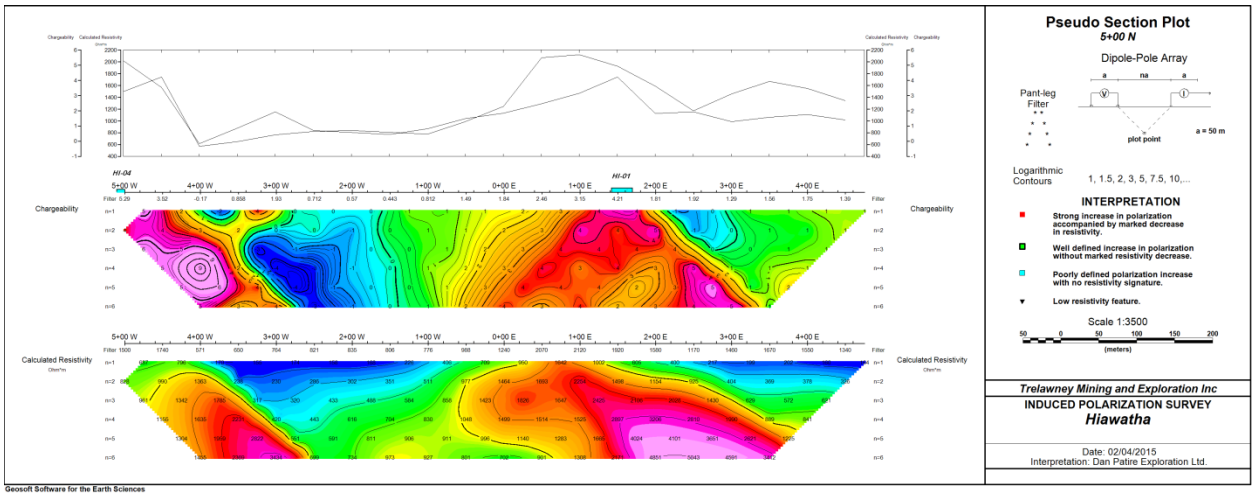
# APPENDIX 2

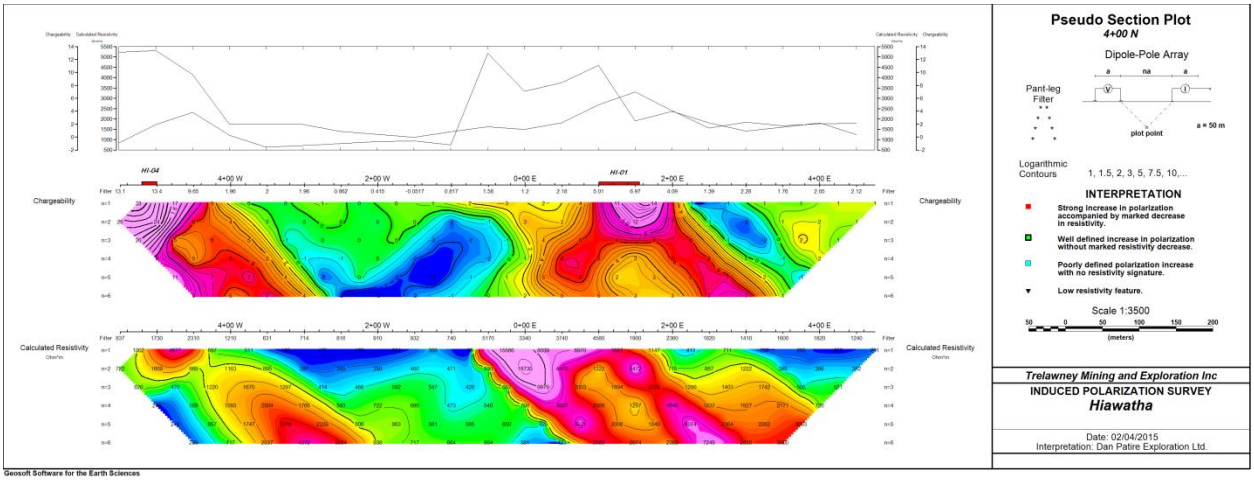
## TOTAL MAGNETIC INTENSITY CONTOURS (TMI)

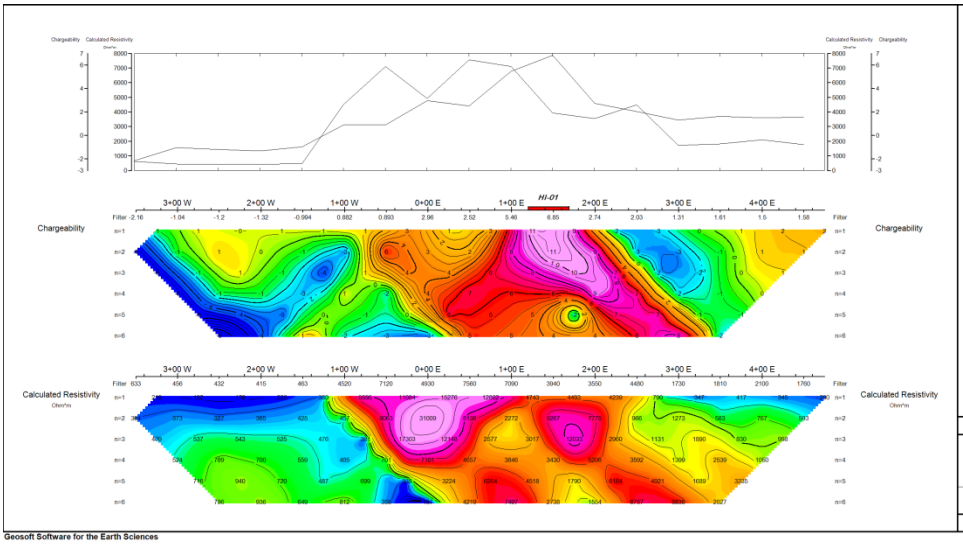


# APPENDIX 3

## IP CHARGEABILITY AND RESISTIVITY PSEUDO-SECTIONS



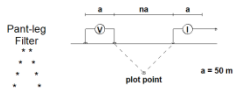






## Pseudo Section Plot

***3+50 N***

Dipole-Pole Array




Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10,...

**INTERPRETATION**

- **Strong increase in polarization accompanied by marked decrease in resistivity.**
- **Well defined increase in polarization without marked resistivity decrease.**
- **Poorly defined polarization increase with no resistivity signature.**
- **Low resistivity feature.**

Scale 1:3500

50 0 50 100 150 200

(meters)

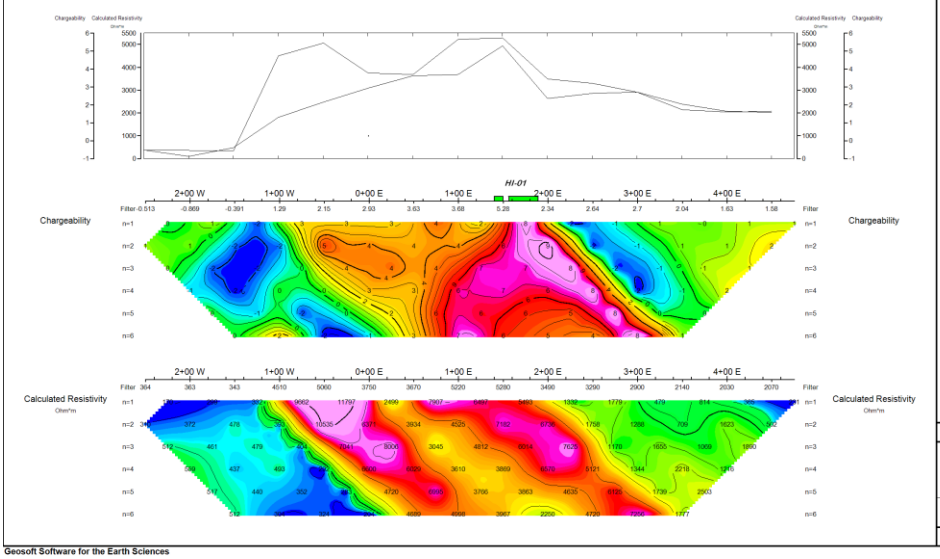
***Trelawney Mining and Exploration Inc***

**INDUCED POLARIZATION SURVEY**

***Hiawatha***

Date: 03/04/2015
Interpretation: Dan Patire Exploration Ltd.

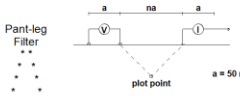
**Geosoft Software for the Earth Sciences**




## Pseudo Section Plot

***3+00 N***

Dipole-Pole Array




Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10,...

**INTERPRETATION**

- **Strong increase in polarization accompanied by marked decrease in resistivity.**
- **Well defined increase in polarization without marked resistivity decrease.**
- **Poorly defined polarization increase with no resistivity signature.**
- **Low resistivity feature.**

Scale 1:3500

50 0 50 100 150 200

(meters)

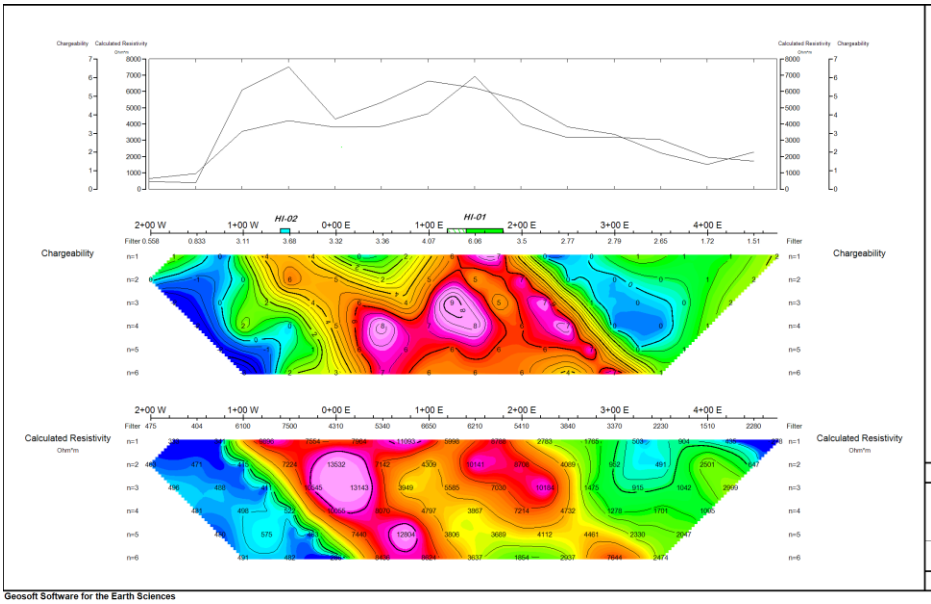
***Trelawney Mining and Exploration Inc***

**INDUCED POLARIZATION SURVEY**

***Hiawatha***

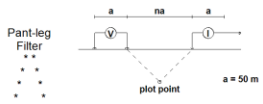
Date: 03/04/2015
Interpretation: Dan Patire Exploration Ltd.

**Geosoft Software for the Earth Sciences**




**Pseudo Section Plot**
***2+50 N***

Dipole-Pole Array




Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10,...

**INTERPRETATION**

- **Strong increase in polarization accompanied by marked decrease in resistivity.**
- **Well defined increase in polarization without marked resistivity decrease.**
- **Poorly defined polarization increase with no resistivity signature.**
- **Low resistivity feature.**

Scale 1:3500

50 0 50 100 150 200
(meters)

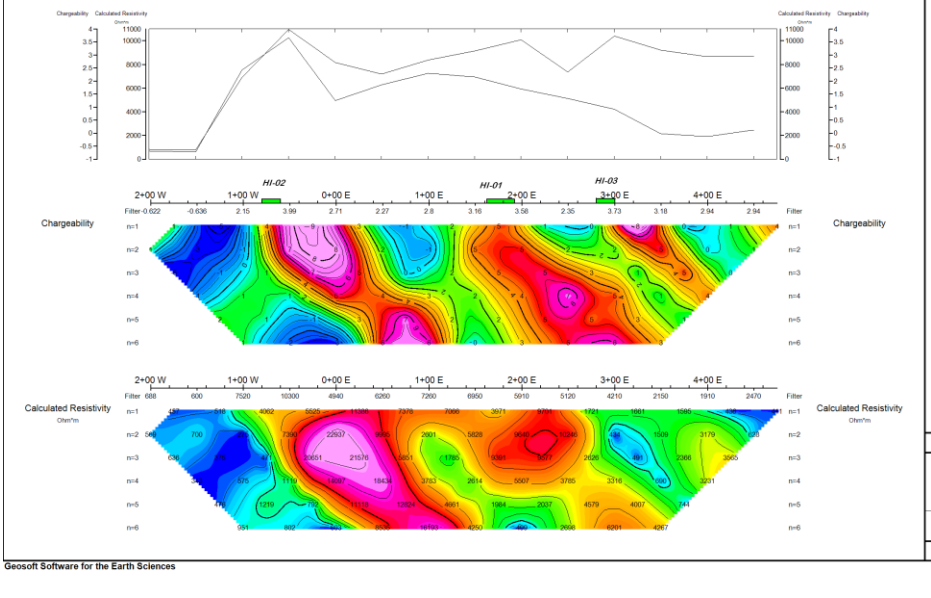
***Trelawney Mining and Exploration Inc***

**INDUCED POLARIZATION SURVEY**

***Hiawatha***

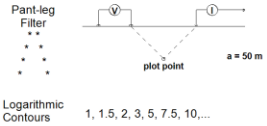
Date: 03/04/2015
Interpretation: Dan Patire Exploration Ltd.

Geosoft Software for the Earth Sciences




**Pseudo Section Plot**
***2+00 N***

Dipole-Pole Array




Logarithmic Contours 1, 1.5, 2, 3, 5, 7.5, 10,...

**INTERPRETATION**

- **Strong increase in polarization accompanied by marked decrease in resistivity.**
- **Well defined increase in polarization without marked resistivity decrease.**
- **Poorly defined polarization increase with no resistivity signature.**
- **Low resistivity feature.**

Scale 1:3500

50 0 50 100 150 200
(meters)

***Trelawney Mining and Exploration Inc***

**INDUCED POLARIZATION SURVEY**

***Hiawatha***

Date: 03/04/2015
Interpretation: Dan Patire Exploration Ltd.

Geosoft Software for the Earth Sciences

# APPENDIX 4

## GEOPHYSICAL INTERPRETATION ON IVD MAGNETICS