

Ministry of Energy & Mines Energy & Minerals Division Geological Survey Branch

| | ASSESSMENT RE | PORTI | TLE I | PAGE AND | SUMMARY | |
|---|--|--|--------------------------------|---|--|---|
| TYPE OF REPORT (type of survey(s)) Geophysical, ground 3DIP and ground mag | | | | TOTAL COST \$ | | |
| | | | | | 193, | 703.89 |
| AUTHOR(S) | | | SIGNATURE(S) | | 'SIGNED AND SEALED" | |
| Dr. Math | nias Westphal, PGeo | | | Wil | | |
| NOTICE OF WORK N | JMBER(S) / DATE(S) | _ | <u>MX</u> 1 | 3-232 | _YEAR OF WORK | 2012 |
| STATEMENT OF WOR | RK - CASH PAYMENT E | VENT NUME | BERS / I 32524, I | DATE(S) February 19, 20 | 013 | |
| PROPERTY NAME | | | | Tas | | |
| CLAIM NAME(S) (on which work was done) 531596, 5 | | | 531598 | , 531603 | | |
| COMMODITIES SOUG | GHT <u>Copper, Gold</u> Y MINFILE NUMBERS, II | F KNOWN | 093K | 091, 093K080, | 093K110 | |
| MINING DIVISION | Omineca | | NTS | 093K16W | TRIM (BCGS) | 093K099 |
| LATITUDE NORTHING 6084975 OWNER 1 | 54°54'17"N EASTING 415970 | LONGIT UTM ZO | | <u>124°18'38''M</u> 10 IER 2 | MAP DATUM | (at centre of work) NAD 83 |
| Inz | zana Metals Ltd | | | | | |
| MAILING ADDRESS 413-595 Burr | ard Street, PO Box 4909 | 6 | _ | | | |
| Vanco | uver, BC, V/X 1G4 | | | | | |
| OPERATORS (who pa | id for work) zana Metals Itd. | | | | | |
| MAILING ADDRESS | | | | | | |
| PROPERTY GEOLOG Inzana Lake Forr Gold-C | Y KEYWORDS (lithology nation – cherty tuff and a opper bearing zones <30 | v, age, stratig rgillite; Tas F m thick. N-S | liraphy, Pluton – and E- | structure, altera granodiorite, N W striking; pot | ation, mineralization, si Monzonite intrusives ar assic alteration on Ridg | ize, attitude) nd breccia bodies; ge Zone |

REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS 13979, 15687, 16657, 16718, 16763, 17234, 19918, 19977, 19980, 19981, 19993, 20782, 23353, 24873, 25839, 26185, 27152 31681, 32950

| TYPE OF WORK IN | EXTENT OF WORK | | Project Costs |
|--|-------------------|------------------------|---------------|
| | (In Metric Units) | JOn Which Claims | |
| GEOLOGICAL (scale, area) Ground, mapping Photo Interpretation GEOPHYSICAL (line kilometres) | | | |
| Ground | <i>E E</i> | E21500 E21500 E21002 | 10 005 10 |
| Electromagnetic | 00 | 531590, 531598, 531603 | 12,335.10 |
| Induced Polarization | 20 | 531506 531508 531603 | 127 753 60 |
| Radiometric | 20 | 031030, 031030, 031003 | 121,100.00 |
| Siesmic | | | |
| Other | | | |
| Airborne | | | |
| GEOCHEMICAL | | | |
| (number of samples analyzed for) | | | |
| Soit | | | |
| Silt | | | |
| Rock | | | |
| Other | | | |
| DRILLING | | | |
| (total metres, number of holes, size) | | | |
| Core | | | |
| Non-core | | | |
| RELATED TECHNICAL | | | |
| Sampling / assaying | | | |
| Petrographic | | | |
| Mineralogical | | | |
| RECEIVE (scale, area) | | | |
| | | | |
| Line/grid (kilometres) | 24 | | 36 400 |
| Topographic / Photogrammatic | 2., | | |
| (scale, area) | | | |
| Legal Surveys (scale, area) | | | |
| Road, local access (kilometres) | | | |
| Trench (metres) | | | |
| Underground dev. (metres) | | | |
| Other: consulting, construction, | | | 17,216.23 |
| Travel & accommodation, report | | TOTAL COS | T 193,704.89 |
| | | | |

BC Geological Survey Assessment Report 33745

ASSESSMENT REPORT

GEOPHYSICAL REPORT ON THE "TAS" GOLD COPPER MINERAL PROPERTY INZANA LAKE, FORT ST. JAMES, BC, CANADA

Claim Tenures: 531596, 531598, 531600, 531603, 531606, 583517, 583518, 583519, 594222, 596971, 596972, 596973, 598042, 598043, 598044, 601410, 601737

Omineca Mining Division 54° 54' 15" N, 124° 19' 2" W 6084914 Northing 415542 Easting UTM Zone 10 (NAD 83)

RECORDED OWNER: OPERATOR: AUTHOR: DATE: INZANA METALS INC. INZANA METALS INC. DR. MATHIAS W. WESTPHAL, P.GEO. FEBRUARY 20, 2013

Inzana Metals Inc.

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2 Summary

The "TAS" property (the "Property") is a 6,136.5 hectare mineral tenure located 55 km north of Fort St. James, British Columbia. The registered owner of the Property is Inzana Metals Inc. ("Property Owner"). The Property is located in prospective ground, based upon metal content and alteration, with partially defined copper-gold porphyry deposits. Exploration programs in the past have identified three exploration targets, including copper and gold values in rock samples from trenching and copper-gold soil anomalies.

The Property has three recorded showings: Freegold, Tas [MINFILE 093K 091], Ridge, Taslinchenko Creek, Tas [MINFILE 093K 080], and West, Tas [MINFILE 093K 110].

The "TAS" prospect is considered to be an LO3 Alkalic porphyry Cu-Au -type deposit as defined by the BC Geological Survey's Mineral Deposit Profiles. In addition, the West shows also mineralization defined as I05 Polymetallic veins Ag-Pb-Zn+/-Au type. The Ridge was originally defined as consisting of the East, Mid, 21, 19, and West Zones, where the West has been given a separate Minfile number due to the spatial distance to the other zones and the additional polymetallic vein occurrences. These have been the primary deposits being targeted on the Property so far. In addition, the results of recent geophysical work suggest an additional target SSE of the Ridge.

The property was first staked by A. Leggate, but was allowed to lapse. Arthur Halleran then staked the TAS claims after obtaining anomalous gold values from rocks collected from the Freegold Zone. Noranda discovered coarse gold in quartz-carbonate veins from the Freegold Zone during a property examination in 1985. Noranda then optioned the property and completed a program of soil sampling, magnetometer surveys, IP surveys and geological mapping. In 1987 and 1988 Noranda continued a program of diamond drilling, percussion drilling, chip sampling, IP surveys and ground magnetometer surveys. From 1988 to 1989 Goldcap Inc. and Black Swan Gold Mines Ltd continued with drilling, soil sampling, magnetometer surveys, IP surveys and a mise-a-la-masse survey.

Most of this work was concentrated on the Ridge Zone. The option was allowed to lapse in 1992. In 1996, Birch Mountain Resources Ltd carried out a field program of prospecting and geochemical sampling.

A.D. Halleran collected two bulk samples in 1993 from the east end of the Ridge Zone averaging 35.5 gpt gold. Omni Resources optioned the property in 1999 and drilled seven holes and Navasota Resources drilled a further seven holes in. Eagle Peak Resources Inc. ("Eagle Peak") optioned the property in 2008 and completed 20 km of new grid work and commenced a compilation of all prior data. Rich Rock Resources Inc. ("Rich Rock") completed 102 km of airborne geophysics in 2010 (Fox and Scrivens, 2010). Various reports are listed in the Bibliography.

The original claims were optioned from prospector A.D. Halleran of Fort St. James by Eagle Peak on February 29, 2008, as covered by a formal agreement amended February

17, 2009. Eagle Peak has earned a 100% interest in five (5) mineral tenures from Halleran by a series of cash payments and work obligations. The purchase agreement between Eagle Peak and Rich Rock allowed Eagle Peak to transfer its rights and obligations under the option agreement and a further agreement dated February 28, 2012 transferred Rich Rock's rights and obligations to Inzana Metals Inc. ("Inzana Metals"), a wholly owned subsidiary of Rich Rock. Inzana Metals has exercised its option to purchase. In addition to the Halleran tenures, a 100% interest in 12 mineral tenures was also transferred in the various purchase agreements.

Work in 2012 consisted of line cutting, 20 km of 3DIP survey conducted by SJ Geophysics, and 55 km of ground magnetic survey conducted by Meridian Mapping Ltd., which is a follow up program from the 2011 work. The combination of geophysical anomalies suggests abundant disseminated sulfides (causing high chargeability) coupled with a zone of hydrothermally altered rocks (creating low resistivity), possibly a representing a deep porphyry target. The total cost of the 2012 field program is \$193,704.89.

More detailed information on the 2012 work program is available in the NI 43-101 Technical Report Updated dated November 15, 2012 and can be viewed at <u>www.richrockresources.com</u>.

According to the recent geophysical information together with the results of the bulk sampling from 1993, current work and permitting is focused on gold-copper bulk tonnage targets on surface in an area approximately 2000 x 1000 meter in size at the Ridge and West Zones. Black Swan Resource completed preliminary resource estimations based on 1988/89 drilling on the Ridge and West Zones. Drill inferred tonnage indicated to be in total 86,700 tonnes@ 6.86 grams/tones (0.2 opt) gold. This historical resource estimate predates the implementation of NI 43-101 guidelines, and, therefore, should not be relied upon. In 1993, two bulk samples mined from the East Zone, which is part of the Ridge Zone, were processed, and totaled 32.3 tonnes of 35 g/t Au, yielding close to 1100 g Gold.

It can be concluded that, geophysically and geologically, the TAS prospect has strong similarities to the Mt Milligan and other alkalic porphyries in British Columbia (Price, 2010 and others). The magnetometer survey defined the north contact of the Tas pluton and identified magnetic zones associated with the Ridge Zone prospects. Previous radiometric surveys (2010) provided a number of potassic radiometric targets, similar to those from other porphyry targets in Omineca, NE British Columbia.

Rich Rock has a permit for exploration valid until 2017, which includes up to 50 drill hole locations on the Property. The Company intends to proceed with the Phase I work program as outlined in the NI 43-101 Technical Report Update prepared by B.J. Price Geological Consultants Inc. dated November 15, 2012. The exploration program identifies seven targets that warranted drilling, the West, West II, Mid, East, 61, Camp and Southeast Zones. A total of 3700m of Phase I drilling of 6 holes, and with the new 3D-IP data, a program of Phase II 10 drillholes from 350 to 550 meters in depth totaling 7,100 meters has been proposed.

In addition, current work and permitting should be focused on gold-copper bulk tonnage targets on surface in an area approximately 2000 x 1000 meter in size at the Ridge and West Zones. This recommendation is related to the recent geophysical information together with the results of the bulk sampling from 1993 from the East Zone, which is part of the Ridge Zone. The samples were processed, and totaled 32.3 tonnes of 35 g/t Au, yielding close to 1100 g Gold.

3 Introduction

3.1 Terms of Reference

This report was commissioned by Inzana Metals. This Assessment Report describes the result of the exploration program 2012 and makes recommendations for an ongoing exploration program.

3.2 Exploration Program 2012

Core examination

Examination of stored core from previous drilling program showed intact and un-split core from the 90's and 2002 programs. A detailed examination and core sampling with assaying/re-assaying is recommended.

Line cutting 2012

30 km of infill and connecting lines were cut from June 1 to 15, 2012.

3DIP survey

The 2012 3DIP survey, provided by SJ Geophysics and S.J.V. Consultants Ltd., designed to infill the eastern half of the 2011 grid, allowed to map (or re-map) several geological breaks and faults that appear to control some structures of interest, including the Ridge Zone.

The smaller line spacing and dipole length also allowed a better definition of the geophysical signature associated with known showings. In particular it helped refine the outlines of extended chargeablility highs (> 45ms) likely related to pyritic systems with outer envelopes (between 30 and 35 ms) that could coincide with chalcopyrite.

The 2012 grid consisted of 27 northeast trending survey lines, totaling 24 km, covering an irregular-shaped area approximately 3 km x 1.5 km in size. The present interpretation memorandum is based on resistivity and chargeability models obtained by simultaneous inversion of the data collected in 2011 and 2012.

Ground Magnetic Survey

The 2012 survey, provided by Meridian Mapping Ltd., covered five new lines up to 2400m long at 100m spacing that had been added to the NW side of the grid and both cut and uncut infill lines extending NE from the L111+00N baseline with an average length of 1300m. After combining with the 2011 survey data, the average line spacing on the NE side of the grid was approximately 50m. Lines run on an average azimuth of 45 degrees.

A total of 55.1 kilometers were surveyed over four field days.

The total cost of the 2012 field program including core shack construction for core examination of previous drilling programs (core is stored on site), linecutting, ground 3DIP and ground magnetic surveys with related accommodation, travel, and labour, core examination and report writing is \$193,704.89.

3.3 Site Visit

The author, Mathias Westphal, P.Geo., visited the property for six full days, May 8&9, 2012, June 5&6, and 14&15, 2012. The purpose of this work was to supervise both, linecutting and start of geophysical survey, and examine old core from previous drilling programs stored on site.

4 **Property Description and Location**

4.1 Location

The Property is located 50 kilometers North of Fort St. James, British Columbia as shown in Figure 1.

The "TAS" property lies within the First Nation claims of the Nikauzli National Government. Exploration permits must be obtained from the British Columbia Ministry of Energy, Mines, and Natural Gas prior to carrying out further mechanized exploration on the Property.

The Property is in the Omineca Mining Division, within map sheet 093K16W. The coordinates of the center of the claim block are approximately 415,542 mE and 6,084,914 (UTM 10N, NAD83) or 54° 54' 15" N latitude and 124° 19' 2" W longitude.

4.2 Claims

The "TAS" property is comprised of seventeen Mineral Titles Online (MTO) mineral claim blocks, which total 6,136.5 hectares. Inzana Metal Inc. owns the claims. The claim statistics are listed in Table 1 and located in Figure 2.

| Tenure Number | Claim Name | Expiry Date | Area in Hectares |
|---------------|------------|---------------|------------------|
| 531596 | | Dec. 20, 2015 | 446.3 |
| 531598 | | Dec. 20, 2015 | 372 |
| 531600 | | Dec. 20, 2015 | 428 |
| 531603 | | Dec. 20, 2015 | 223.2 |
| 531606 | | Dec. 20, 2015 | 427.6 |
| 583517 | TAS 4 | Dec. 20, 2015 | 446.5 |

| Table I. "TAS' | ' property claims. |
|----------------|--------------------|
|----------------|--------------------|

| 583518 | TAS 5 | Dec. 20, 2015 | 428 |
|--------|----------|---------------|---------|
| 583519 | TAS 6 | Dec. 20, 2015 | 409.3 |
| 598042 | Taslin-3 | Dec. 20, 2015 | 223.1 |
| 598043 | Taslin-4 | Dec. 20, 2015 | 464.6 |
| 598044 | Taslin-5 | Dec. 20, 2015 | 334.5 |
| 594222 | Taslin | Dec. 20, 2015 | 260.3 |
| 596971 | Taslin | Dec. 20, 2015 | 464.7 |
| 596972 | Taslin-2 | Dec. 20, 2015 | 185.8 |
| 596973 | Taslin N | Dec. 20, 2015 | 464.6 |
| 601410 | Taz NE | Dec. 20, 2015 | 278.8 |
| 601737 | Tas E 2 | Dec. 20, 2015 | 279 |
| | | Total | 6,136.5 |

4.3 Nature of the Property Owner's Interest

The obligations to the local Government are:

The mineral title acquires and subsequently holds the available mineral or placer mineral rights as defined in section 1 of the Mineral Tenure Act.

In addition to mineral or placer mineral rights, a mineral title conveys the right to use, enter and occupy the surface of the claim or lease for the exploration and development or production of minerals or placer minerals, including the treatment of ore and concentrates, and all operations related to the business of mining

Section 8.4 of the British Columbia Mineral Tenure Act Regulation states:

The value of exploration and development required to maintain a mineral claim for one year is at least

- \$5.00 per hectare for anniversary years 1 and 2;
- \$10.00 per hectare for anniversary years 3 and 4;
- \$15.00 per hectare for anniversary years 5 and 6; and
- \$20.00 per hectare for subsequent anniversary years.

A permit application called a Notice of Work must be filed with the Ministry of Energy and Mines and physical work such as drilling, trenching, bulk sampling, camp construction, access upgrading or construction and geophysical surveys using live electrodes (IP) may not commence until as permit is issued. The filing of the notice of work initiates engagement and consultation with all other stakeholders including First Nations.

The author is not aware of any environmental liabilities related to the Property.

5 Accessibility, Climate, Physiography, Local Resources and Infrastructure

5.1 Accessibility

Road access to the property is obtained by traveling 50 kilometers north of the town of Fort St. James on unpaved provincial highway 27, also known as Germansen North Road. A 10 kilometer gravel road, Inzana Lake Forest Service Road, to Inzana Lake leads to the Property, which is located on map sheet 93-K-16W at coordinates UTM 10N: 415542 East and 6084914 North., or in Latitude and Longitude: 54° 54' 15" N,124° 19' 2" W, within the Omineca Mining Division, approximately 7 kilometers southeast of the eastern end of Inzana Lake on Tasincheko Creek, in an area informally known at Butchers Flat. Distance (straight line) to Prince George (SE) is about 150 kilometers and to Mackenzie (NE) about 90 kilometers. Location is shown in Figure 1.





5.2 Physiography, Vegetation and Climate

The main physiographic feature is the east-west trending forested ridge on the central claims, on which iron-stained rocks rise up to 125 meters higher than the valley elevation of 1100 meters.

The northwestern end of the large Butchers Flat outwash plain is covered and outcrop is scarce except on the Ridge Zone itself. The area between and peripheral to outcrop is mantled by glacial and glaciofluvial deposits. Relief on the property is subdued and in the southern part are areas of swamp.

Vegetation consists of Jack Pine, White Spruce, Poplar, Soapberry, and various grasses. Climate of the area is typical of north-central BC with long winters and warm summers. Practically, work should be done between May and October, although drilling could be done earlier and later, dependent on snow conditions.

5.3 Local Resources and Infrastructure

Access to the property is via the Germansen North Road (Highway 27) for 53 km north from Fort St. James, and then 10 km west on the Inzana Lake Forestry Road. A network of logging roads and access trails to former drill sites covers the area. Four wheel drive vehicles are recommended. Fort St. James can be reached by one long day driving time from Vancouver, or in 3 to 4 hours from Prince George. A fishing and hunting lodge on the southern tip of Inzana Lake offers comfortable accommodation, including reliable communication.

Trained personnel for line cutting, access trail construction, driller helpers, core technicians, and other related workforce are available around Fort St. James.

Supplies and services are available in Fort St. James, Mackenzie, or Prince George. Vehicles can be rented in Prince George, and there are several flights a day into Prince George. Several drilling companies operate out of Smithers BC.

6 History

Disseminated copper mineralization was discovered near the present Freegold Zone during construction of the Inzana Lake Forestry Road in 1982. The showing was originally staked by A. Leggate, but was allowed to lapse. Arthur Halleran then staked the TAS claims after obtaining anomalous gold values from rocks collected from the Freegold Zone. Noranda discovered coarse gold in quartz-carbonate veins from the Freegold Zone during a property examination in 1985. Noranda then optioned the property and completed a program of soil sampling, magnetometer surveys, IP surveys and geological mapping. The IP survey covered part of a low ridge (Ridge Zone) one km north of the Freegold Zone and obtained a strong chargeability response. In 1986,

followup soil sampling over the Ridge Zone outlined a strong gold soil anomaly over 1.8km long, coincident with the chargeability anomaly. Hand and bulldozer trenching revealed several gold-rich sulphide zones and widely disseminated gold-copper mineralization. In 1987 and 1988 Noranda continued a program of diamond drilling, percussion drilling, chip sampling, IP surveys and ground magnetometer surveys. From 1988 to 1989 Goldcap Inc. (holes 88-18 to 22) and Black Swan Gold Mines Ltd (holes 88-23 to 43, 89-44 to 61) continued with drilling, soil sampling, magnetometer surveys, IP surveys and a mise-a-la-masse survey.

Most of this work was concentrated on the Ridge Zone. The option was allowed to lapse in 1992. In 1996, Birch Mountain Resources Ltd carried out a field program of prospecting and geochemical sampling.

A.D. Halleran collected two bulk samples in 1993 from the east end of the Ridge Zone averaging 35.5 gpt gold. Omni Resources optioned the property in 1999 and drilled 690 metres in seven holes and Navasota Resources drilled a further seven holes in 2002 comprising some 1270 meters. Eagle Peak optioned the property in 2008 and completed 20 km of new grid work and commenced a compilation of all prior data. Rich Rock completed 102 km of airborne geophysics in 2010 (Fox and Scrivens, 2010). Various reports are listed in the Bibliography.

The original claims comprising of five mineral tenures were optioned from prospector A.D. Halleran of Fort St. James by Eagle Peak on February 29, 2008, as covered by a formal agreement amended February 17, 2009. Eagle Peak has earned a 100% interest from Halleran by a series of cash payments and work obligations. The claims are subject to a 3% NSR to A.D. Halleran or his family, or payments of \$50,000 per year with all or a portion of a 2% of the NSR purchasable for \$500,000 for each one half of 1%. The purchase agreement between Eagle Peak and Rich Rock allowed Eagle Peak to transfer its rights and obligations under the option agreement and a further agreement dated February 28, 2012 transferred Rich Rock's rights and obligations to Inzana Metals. Inzana Metals has exercised its option to purchase. In addition to the Halleran tenures, a 100% interest in 12 mineral tenures was also transferred in the various purchase agreements.

7 Geological Setting

7.1 Regional Geology

The TAS property is located within a northwesterly belt of volcanic strata comprising Upper Triassic to Lower Jurassic Takla Group volcanics and sediments that have been intruded by a series of felsic to ultramafic stocks and intrusives of alkalic affinity. These intrusions, which are associated with a number of copper-gold deposits, generally lie in a northwest belt from the Captain property west of Carp Lake north to Chuchi Lake. Rocks at the TAS property include conglomerate, greywacke, shale, argillite and limestone of the Inzana Lake Formation. These sediments lie west of a central belt of basaltic rocks comprising the Witch Lake Formation. A regional geological map is given in Figure 3. Numerous copper-gold prospects occur throughout the district. The most advanced is the Mt Milligan deposit 20 km northeast of the TAS prospect, which is advancing to production by Thompson Creek Mining.

7.2 Property Geology

A geological map of the property based on detailed mapping by Maxwell et al (1988) is given in Figure 3. The property is underlain by grey to green cherty tuff and argillite of the Inzana Lake Formation (Unit 1 Figure 3), an oval shaped body of diorite (Tas pluton, Unit 2. Nelson et al 1996) that lies south of the Inzana Lake road along the southern boundary of the property and a poorly exposed body of monzonite (Unit 3) together with a number of small, undefined breccia bodies (Unit 4). Rocks of the Inzana Lake Formation comprise east dipping tuffs and siltstones locally altered to chlorite and epidote. It is the host rock of the various gold-copper prospects discovered to date. They are highly fractured and cut by swarms of dikes. The Tas pluton comprises medium grained augite diorite composed of plagioclase, augite and accessory amounts of hornblende, biotite and magnetite. The latter gives the pluton a prominent regional magnetic signature. Monzonite of Unit 3 is pyritic, altered to fine grained sericite and comprised of plagioclase and minor biotite. The unit 4 breccia is a dark grey to black biotite-magnetite mafic rock consisting of bleached fragments in a pale yellow-green monzonite matrix. Black fragments are commonly magnetic (Mowatt 1999). Other varieties comprise monzodiorite, tuff and porphyry fragments in a fine-grained matrix (Nelson, 1996).

The Ridge Zone consists of Inzana Lake siltstones cut by a swarm of northeast trending porphyry dikes exposed on a low ridge one km north of the Inzana Lake FSR. Most of the exploration work has been done in this area comprising of IP, extensive soil and rock sampling, trenching and drilling of 67 diamond drill holes between 1986 and 2002. The host rocks are grey, green welded tuffs and often intensely altered to chlorite, epidote, carbonate and local areas of secondary biotite. Staining of a number of Ridge Zone rocks suggests extensive potassic (K feldspar) alteration (Boronowski, 1989). Numerous dikes of porphyritic diorite, augite- and hornblende-bearing porphyry, and a variety of leucocratic feldspar porphyry dikes cut these rocks. Many dikes are composite bodies and vary from barren to sulphide-rich. Most dikes trend northeast in narrow-spaced swarms cutting welded tuffs and siltstones. Interspersed are irregular intrusive breccia bodies, generally seen only in drill core, consisting of sub-rounded siltstone and dioritic fragments set in a grey-green plagioclase-rich matrix. Nelson et al (1996) obtained a U-Pb zircon age of 204 Ma from a monzodiorite dike on the Ridge Zone.

Northwest and Northeast faults are common. Northwest faults hosting many of the Ridge Zone prospects. Northeast faults, commonly of regional extent, form the 61 and Freegold faults (Figure 3). Recent interpretation of geophysical data obtained in the 2012 exploration program indicates an E-W fault connecting the West and the Ridge Zone faults described above.



8 Deposit Type

The Property has three recorded showings: Freegold, Tas [MINFILE 093K 091], Ridge, Taslinchenko Creek, Tas [MINFILE 093K 080], and West, Tas [MINFILE 093K 110].

The "TAS" prospect is considered to be an LO3 Alkalic porphyry Cu-Au -type deposit as defined by the BC Geological Survey's Mineral Deposit Profiles. In addition, the West shows also mineralization defined as I05 Polymetallic veins Ag-Pb-Zn+/-Au type. The Ridge was originally defined as consisting of the East, Mid, 21, 19, and West Zones, where the West has been given a separate Minfile number due to the spatial distance to the other zones and the additional polymetallic vein occurrences.

9 Alteration and Mineralization

A number of gold-bearing zones have been found on the TAS property referred to as the West, 21, 19, Mid and the East Zones collectively comprising the Ridge Zone, and the Freegold, Southeast and 61 Zones farther south near the Inzana Lake road (Figure 3). All of the drilling programs have focused on delineating these mineralized structures. The gold-bearing zones comprise stringers and pods of massive sulphide up to one metre thick, and commonly have fringing disseminated zones 3.5 m wide hosted in shears and intensely fractured siltstone/tuff, breccia and hornblende-augite porphyry. The sulphide content ranges from 5 to 80% and consists of pyrite, pyrrhotite, chalcopyrite, magnetite and trace amounts of arsenopyrite.

The West Zone prospect is a strong shear trending 3500 that can be traced for approximately 100 meters. The sulphide mineralization is in siltstone, dikes and breccia and occurs as bands of massive to stringer pyrite, pyrrhotite and chalcopyrite. Sixteen holes have been drilled here to date, the most recent in 2002 (Warner, 2003). Warner noted that various breccia units are an unrecognized host to the gold mineralization. Hole 66 drilled in 2002 returned 122 m of 0.5 gpt gold (including 19m of 1.49 gpt gold), and hole 67, drilled from the same collar, returned 156m of 0.35 gpt gold (Price 2010) confirming the porphyry potential of the West Zone. The 21 Zone to the east consists of 5 to 20% disseminated pyrite to massive pyrite in a shear zone in siltstone. The 19 Zone, which can be traced in drill holes for approximately 50 metres, consists of semi-massive pyrite, pyrrhotite and chalcopyrite in siltstone. The Mid Zone consists of a series of narrow sulphide-filled shears in hornblende-augite porphyry. The zone trends 030°. Ten drill holes were drilled here in 1987-89. The East Zone consists of gold-bearing sulphide mineralization about 0.6 m thick that occurs as anastomosing massive zones and stringers in a shear zone trending 350°. Eleven drill holes tested the East Zone mineralization, which includes pyrite, pyrrhotite, chalcopyrite and magnetite and is exposed in trenches for 70 metres. A.D. Halleran collected 32.5 tonnes of material from this zone in 1993 that returned an average tenor of 35.46 gpt gold. The West, 19, 21 and East structures strike northwest. The Mid Zone trends to the northeast parallel to the predominant dike trend. The 61 Zone south of the Ridge Zone consists of disseminated and massive sulphide in shear zones exposed in trenches, road cuts and two drill holes. The sulphide mineralization here includes pyrite, pyrrhotite and minor chalcopyrite. The host rock for

the mineralization is siltstone and altered hornblende-augite porphyry exposed for approximately 50 meters.

The Freegold Zone hosts (visible) gold in a quartz-carbonate altered zone discovered by Noranda Exploration in 1985. The zone lies within the TAS pluton exposed along the Inzana Lake road. Noranda and others drilled five diamond drill holes and four percussion holes here in 1987-89. The Southeast Zone comprises poorly exposed breccia bodies and mineralized monzonitic rubble associated with a strong northeast-trending copper soil anomaly near the Tas pluton. A sample of monzonitic float here returned 0.31% copper and 1.1 gpt gold (Mowat 1999).

Previous workers have noted the similarity of the TAS prospect with the nearby alkalic Mt Milligan copper-gold deposit (Boronowski et al 1989, Elliott 1999, Price 2010). It is thought that pyritic gold mineralization on the Ridge Zone associated with intense propylitic alteration, weakly developed potassic alteration and the presence of a strong K radiometric anomaly (Fox and Scrivens 2010) suggest that the Ridge Zone may be a gold-rich porphyry cap associated with dike emplacement overlying disseminated copper-gold mineralization at depth and/or a gold-rich zone distal to an alkalic porphyry copper deposit proximal to the Tas pluton (Peatfield 2009, pers comm).

10 Exploration

The "TAS" property has been explored periodically for three decades. The following is a summary of the exploration results from the TAS 2012 exploration programs Geophysical Surveys, mainly of Charlotte Thibaud from SJG. See Appendix for complete reports.

10.1 3DIP Survey from SJ Geophysics 2012

The 2011 3DIP survey succeeded at resolving interesting resistivity and chargeability anomalies in the subsurface at depth down to 350m. The 2012 3DIP survey was designed to generate a proper definition of the geophysical features at depths <100 m below the surface. The new survey configuration consisted of infill lines in the eastern half of the 2011 grid with a set of 5 new lines towards the NW. Utilizing the high resolution resistivity information resulted in mapping and re-mapping several geological breaks and faults that appear to control some structures of interest, including the Ridge and West Zone. The narrower line spacing of 100 m and shorter dipole length also allowed a more accurate definition of the geophysical signature associated with known showings as to refine the outlines of extended chargeability highs (> 45ms) with outer envelopes with slightly lower chargebility between 30 and 35 ms.

The resistivity model exhibits a complex pattern near surface outlining dense faulting. Some of the previously mapped faults from the Ridge Zone and the Freegold fault (solid black lines on Figure 4) clearly stand out in the resistivity model. In addition, they appear to extend farther north and south (pink extension lines on Figure 4), than what is represented on the geological map, which is based on surface outcrops and drill hole information. The resistivity model also outlines a multitude of un-mapped breaks (pink lines on Figure 4). The most important one is the E-W striking fault throughout the West and Ridge Zone (yellow line on Figure 4) as it might be one of the controlling factors in the formation of the West and Ridge Zone deposits. The West Zone fault itself appears to be shifted to the southeast in comparison to the geological map, and the 61 fault does not appear at all.

The remainder of the SJG model consists of deep extended chargeability highs and appearing as isolated features at the surface (Figure 5). Given their relatively high chargeability intensity at depth and their general alignment along the faults outlined by the resistivity model, those features are likely related to a fault-controlled pyritic system. Of high interest are the outer, lower chargeability envelopes, as the near surface ones in the vicinity of the Freegold fault and along the Ridge Zone faults are related to pyrite with chalcopyrite carrying the reported gold values. In addition, the South East Zone appears to be of interest, since it shows similar features.

See whole report and data in the Appendix.

10.2 Results from the ground magnetic Survey 2012

The structural information yielded from the resistivity model has been applied to the total magnetic intensity map from the ground magnetic survey in Figure 6. The newly defined W-E striking Ridge Zone fault and the extended generally N-S trending faults fit to the intrusives indicated by magnetic highs sitting underneath the West, the Ridge, and the South East Zones. Apparently, both features seem to relate to the mineralization of the area.

See whole report and data in the Appendix.







11 Interpretation and Conclusions

Work in 2012 consisted of 30 km line cutting, 24 km of 3DIP survey conducted by SJ Geophysics, and 55 km of ground magnetic survey conducted by Meridian Mapping Ltd., which is a follow up program from the 2011 work, that indicated a deep seated porphyry target. In addition, shallow mineralized targets have been identified by the geophysical survey 2012, especially in the Ridge, the West, and in the South-East Zones. All targets also show evidence of structural related mineralization zones.

The resistivity model exhibits a complex pattern near surface outlining dense faulting. Some of the previously mapped faults from the Ridge Zone and the Freegold clearly stand out in the resistivity model. In addition, they appear to extend farther north and south than what is represented on the geological map and also outlines a multitude of unmapped breaks. The most important one is the E-W striking fault throughout the West and Ridge Zone, as it might be one of the controlling factors in the formation of the West and Ridge Zone deposits. The West Zone fault itself appears to be shifted to the southeast in comparison to the geological map, and the 61 fault does not appear at all.

The chargeability model consists of isolated chargeability highs at the surface, which extend to large bodies with relatively high chargeability intensity at depth. Their general alignment along the faults outlined by the resistivity model indicated, that those features are likely related to a fault-controlled pyritic system. Of high interest are the outer, lower chargeability envelopes, as the near surface ones in the vicinity of the Freegold fault and along the Ridge Zone faults are related to the reported gold values within the pyrite-chalcopyrite mineralization. In addition, the South East Zone appears to be of interest, since it shows similar features.

The newly defined W-E striking Ridge Zone fault and the extended generally N-S trending faults fit to the intrusives indicated by magnetic highs sitting underneath the West, the Ridge, and the South East Zones. Both features appear to relate to the mineralization of the area.

12 Recommendations

Rich Rock has a permit for exploration valid until 2017, which includes up to 50 drill hole locations on the Property. It is recommended to proceed with the Phase I work program as outlined in the NI 43-101 Technical Report Update prepared by B.J. Price Geological Consultants Inc. dated November 15, 2012. The exploration program identifies seven targets that warranted drilling, the West, West II, Mid, East, 61, Camp and Southeast Zones. A total of 3700m of Phase I drilling of 6 holes, and with the new 3D-IP data, a program of Phase II 10 drillholes from 350 to 550 meters in depth totaling 7,100 meters has been proposed.

In addition, current work and permitting should be focused on gold-copper bulk tonnage targets on surface in an area approximately 2000 x 1000 meter in size at the Ridge and West Zones. This recommendation is related to the recent geophysical information

together with the results of the bulk sampling from 1993 from the East Zone, which is part of the Ridge Zone. The samples were processed, and totalled 32.3 tonnes of 35 g/t Au, yielding close to 1100 g Gold.

Due to the examination of the stored core from previous drilling programs it is recommended, that a sampling/re-sampling program of this core should be initiated in order to generate a more complete and valuable analytical data set of the existing drill hole information.

13 Statement of Costs

The total cost of the 2012 field program including core shack construction for core examination of previous drilling programs (core is stored on site), linecutting, ground 3DIP and ground magnetic surveys with related accommodation, travel, and labor, core examination and report writing is **\$193,704.89**. See Table 2 for the breakdown of costs.

| Expences | Name | Memo | Amount CAD |
|----------------------|---------------------|--------------------|------------|
| Geological Wages | Mathias Westphal, | May to Sept 2012 | 6,431.25 |
| | White North West | | |
| | Consulting | | |
| | Kevin Tattersall | May to Sept 2012 | 5,000.00 |
| Line Cutting | Inzana Lake Lodge | June 1 to 15, 2012 | 36,400.00 |
| Ground IP | SJ Geophysics Ltd | July 3 to 21, 2012 | 116,636.71 |
| 3DIP set up and | S.J.V. Consultant | May 7 to Aug 23, | 7,295.00 |
| inversion | Ltd | 2012 | |
| Geophysical works | S.J.V. Consultant | Aug 24 to Sept 5, | 3,822.50 |
| 3DIP | Ltd | 2012 | |
| Ground Mag Survey | Meridian Mapping | Sept 5 to 10, 2012 | 12,335.16 |
| | Ltd. | | |
| Core shack | Cariboo Ecoservices | May 15 to 31, 2012 | 3,397.60 |
| construction, | Ltd | | |
| vehicle and supplies | | | |
| Travel and | Meal | | 87.53 |
| Accomodation | | | |
| | Vehicle expenses | | 419.24 |
| | other | | 79.90 |
| Report writing | Mathias Westphal, | | 1,800.00 |
| | White North West | | |
| | Consulting | | |
| | | Total | 193,704.89 |

| Table | II. | 2012 | Expenditures |
|-------|-----|------|--------------|
| Table | II. | 4014 | Expenditures |

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15 Certificate of Author

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1, Dr. Mathias W. Westphal, P.Geo., do hereby certify that:

- I am principal of: White North West Consulting 3712 1st Avenue Po Box 2575 Smithers, B.C., Canada V0J 2N0
- 2. I graduated with a Masters of Science degree in Mineralogy from Albert-Ludwigs-University at Freiburg, Germany in 1994. In addition, I have obtained a Masters of Arts degree in Geography from Albert-Ludwigs-University at Freiburg, Germany in 1992.

Since 1998 I hold a Ph.D. in Mineralogy from Albert-Ludwigs-University at Freiburg, Germany.

- 3. I am a member of the:
 - APEGBC Association of Professional Engineers and Geoscientists
 - AME BC Association of Mineral Exploration, British Columbia
 - DMG German Mineralogical Society (Deutsche Mineralogische Gerselischaft).
- 4. I have worked as a Mineralogist/Geologist for a total of 18 years since my Masters of Science graduation from university.
- 5. J am the author of this report titled "ASSESSMENT REPORT, GEOPHYSICAL REPORT ON THE "TAS" GOLD COPPER MINERAL PROPERTY, INZANA LAKE, FORT ST. JAMES, BC, CANADA" and dated February 20, 2013, and take responsibility for the entire report.

Dated at 20th Day of February 2013.

Dr. M. W. WESTPHA # 53133 TIFI

Dr. Mathias Westphal, P.Geo. White North West Consulting 3712 1st Avenue, Smithers, B.C., Canada Po Box 2575 V0J 2N0 phone: (250) 469 – 9024 e-mail: mathiasw.geo@gmail.com APPENDIX







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MEMORANDUM

Date: August 31, 2012

From: Charlotte Thibaud

To: Peter Fox, Inzana Metals Inc.

SUBJECT: Interpretation Memorandum on the 3DIP Survey for the Tas Project

The purpose of this memo is to present the results and preliminary interpretation of a threedimensional induced polarization (3DIP) geophysical surveys conducted in 2011 and 2012 on Inzana Metals Inc.'s Tas project and extend the interpretation written about the 2011 results (see December 16, 2011 memorandum).

The primary rock types in the survey area are volcanic cherty tuff and argillite units of the Inzana Lake Formation. The grid also encompasses an area of identified porphyry Au-Cu mineralization, known as the Ridge Zone, as well as a large diorite pluton (the Tas Pluton) and other assorted intrusions.

In summary, the 2011 3DIP survey succeeded at resolving interesting resistivity and chargeability anomalies in the subsurface that appear consistent with mapped geological trends. However this survey configuration was too coarse to offer a proper definition of the geophysical features at shallow depths (< 100 m below the surface).

The 2012 3DIP survey, designed to infill the eastern half of the 2011 grid, allowed to map (or re-map) several geological breaks and faults that appear to control some structures of interest, including the Ridge Zone.

The smaller line spacing and dipole length also allowed a better definition of the geophysical signature associated with known showings. In particular it helped refine the outlines of extended chargeablility highs (> 45ms) likely related to pyritic systems with outer envelopes (between 30 and 35 ms) that could coincide with chalcopyrite.

The 2012 grid consisted of 27 northeast trending survey lines covering an irregular-shaped area approximately 3 km x 1.5 km in size. The present interpretation memorandum is based on resistivity and chargeability models obtained by simultaneous inversion of the data collected in 2011 and 2012 (Illustration 1 for survey grids).

The resistivity model exhibits a complex pattern near surface (0 down to approximately 100 m below topography) resistivity highs (>600 Ohm-m) outlining dense faulting (Illustration 2.). The placement of those faults is challenging to determine given the complexity of the model. At lower depths (<100 m below topography, Illustration 3.), the features are smoother and the patterns simpler, in part due to the reduced resolution.

The Tas Pluton appears in the southwest corner of the grid as a deep-seated feature. Its northeastern end branches up to the surface where it partially coincides with one of the brecciated intrusions and flanks the monzonoite intrusion to the north (Illustration 4).

Some of the previously mapped faults such as the Freegold, the Mid and East Zone faults (solid black line on Illustration 5) clearly stand out in the resistivity model. They also appear more extended than what is represented on the geological map.

The resistivity model also outlines a multitude of un-mapped breaks and attention will be paid to the one running through the Ridge Zone showings (thin dashed black line on Illustration 5) as it could be an important controlling factor in their formation.

Some other mapped faults, in particular the West Zone faults, seem to be shifted to the southeast in comparison to the geological map (thick dashed line on Illustration 5), while the 61 fault does not appear at all. Consequently a thorough field investigation of those faults is recommended.

The faults outlined above do not appear as clearly at lower depths (< 100 m) as the sharp breaks in relatively high resistivity are replaced by low resistivity features (< 75 Ohm-m, see Illustration 6). Those features extend directly below some mapped faults and most of the showings to the exception of the Mid zone, Southeast zone and Monzonite zone prospects. This coincidence suggests that those deep resistivity lows could be of interest.

Comparison of the observations made on the resistivity data and the magnetometer survey (Illustration 7, surfaced map provided by the client) shows a good correlation between isolated magnetic highs in the Ridge Zone and breaks in the resistivity, in particular along the new West Ridge Zone faults and the Ridge Zone Showings fault. A more detailed magnetometer survey (50

m line spacing for example) may allow to better define those features. Once the survey is completed, a three dimensional inversion of the magnetometer data is recommended in order to get a better definition of the features' relative depth.

Contrary to the resistivity model, the chargeability exhibits relatively smooth features from the near surface down to depth (Illustrations 8 and 9).

The Tas Pluton sharply stands out at any given depth with a lower background (approximately 5 ms) although the edges outlined by the chargeability model slightly differ from those shown by the geological map and the resistivity model.

The remainder of the model exhibits a higher chargeability background (approximately 15 ms) consisting of deep extended chargeability highs (> 35 ms, Illustration 9) loosing intensity and appearing as isolated features at the surface (<45 ms, Illustration 8). Given their relatively high chargeability intensity at depth and their general alignment along the faults outlined by the resistivity model (Illustration 10), those features are likely related to a fault-controlled pyritic system. Consequently attention should be focused on their outer, lower chargeability envelopes, in particular the more isolated, near surface ones (Illustration 11), as they might be related to chalcopyrite, along the Ridge Zone faults (as delineated by the resistivity model) and in the vicinity of the Freegold fault.

To better visualize the spatial relationships of the various anomalies, we have mapped the high resistivity (red) and low resistivity (blue) bodies as well as the high chargeability (green) bodies in three dimensions. The lowest chargeability area associated with the Tas pluton is not shown.



Illustration 1: Grid map of the 2011 and 2012 surveys with geological mapping overlay.

The 2011 survey station are represented as red dots while the 2012 survey stations are represented in black.

The extent of the geological map being shorter than the geophysical survey, the mapped extent of the Tas Pluton was inferred so to cover the grid (dashed area).

The mapped faults are represented as solid lines (named when the information is available) while the white stars locate the mapped prospects.



Illustration 2: Plan View at 25 m below the topography of the resistivity model. The near surface exhibits complex patterns of scattered resistivity highs.



Illustration 3: Plan View at 300 m below the topography of the resistivity model. At depth the resistivity features are smoother, in part due to the lack of resolution.


Illustration 4: South view at 45 of the resistivity highs (>1400 Ohm-m) highliting the Tas Pluton.

The Pluton appears as a relatively deep feature whose northeast end branches up to the surface where it partially coincides with one of the brecciated intrusions and flanks the monzonoite intrusion to the northwest.



Illustration 5: Top view of the resistivity model as relatively highs resistivity iso-contours outlining the faults.

To the exception of the 61 and West Ridge faults, most the faults extracted from the geology map (solid black lines) appear clearly on the resistivity model. Many of them seem to even extend further than their mapped extent (thick black dashed line).

The West Ridge faults could be detected south-east of their mapped location.

An interesting break (un-mapped previously) appears along the Ridge Zone showings (thin dashed line).



Illustration 6: Side view from the east of the resistivity model as highs (>1400 Ohm-m) and lows (<75 Ohm-m). Several mapped faults and showings align with deep, extended low resistivity features. Those lows thus represent features of interest.



Illustration 7: Plan View of the surfaced magnetic map with faults overlay.

Similarly to the resistivity model, the magnetic intensity map suggests an outline of the Tas Pluton (appearing as magnetic high) that slightly differs from the one outlined on the geology map.

The newly mapped breaks coincide relatively well with isolated magnetic highs although the line spacing is too coarse to locate them precisely and the surfaced map does not allow to estimate their relative depths.

A finer magnetic survey and a three-dimensional inversion of the magnetometer data are recommended.



Illustration 8: Plan View at 25 m below the topography of the chargeability model.



Illustration 9: Plan View at 300 m below the topography of the chargeability model.



Illustration 10: Top View of the resistivity and chargeability model as iso-contours.



Illustration 11: Side view from the south of the chargeability model as thresholds of relatively high chargeability. The enveloppe of lower chargeability reaching the near surface and aligned with fault should be further investigated.

LOGISTICS REPORT PREPARED FOR INZANA METALS INC.

THREE DIMENSIONAL INDUCED POLARIZATION ON THE TAS PROJECT

Fort St. James, British Columbia, Canada Latitude: N54° 54' Longitude: W124° 19' BCGS SHEET: 093K089, 099 NTS SHEET: 093K16 MINING DIVISION: Omineca

Survey conducted by SJ Geophysics Ltd. July, 2012

Report prepared by Alex Tryon August, 2012

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1. SURVEY SUMMARY

| Client | Inzana Metals Inc | |
|---|---|--|
| Project Name | Tas | |
| Location (approx. centre of grid) | Latitude: 54° 54' N Longitude: 124° 19' W | |
| | 6084000N 415000E; UTM NAD83 Zone 10 | |
| Survey Type | 3D Induced Polarization (3DIP) | |
| Total Line Kilometres3DIP: 34.05 km | | |
| Production Dates | July 4th – July 20, 2012 | |
| Objective | The 2012 Tas grid acts as an infill to a larger and coarser | |
| | grid surveyed by SJ Geophysics in 2011. The purpose of | |
| | the 2011 survey was to help in delineating potential | |
| | features of interest related to a copper-gold porphyry | |
| | system. The purpose of the smaller dipole and line | |
| | spacing of the 2012 survey was to provide better near | |
| | surface resolution of the features of interest | |

SJ Geophysics Ltd. was contracted by Inzana Metals Inc to acquire geophysical data on their Tas property. The following table provides a brief summary of the project.

Table 1: Survey Summary

This logistics report summarizes the operational aspects and methodologies of the geophysical survey. This report does not discuss or interpret the survey results.

2. LOCATION AND ACCESS

The Tas project is located 50 km north of the town Fort St. James in British Columbia, Canada (Figure 1).



Figure 1: Overview map of the Tas project in B.C., Canada.

The project area can be accessed from Fort St. James by the following directions (Figure 2):

- Drive through town past the railroad tracks to the Germansen Landing North road.
- Take the North Road for approximately 57 km

• Turn left onto the Inzana Main Road.

The property is located at the 66 km marker along Inzana Main Road.



Figure 2: Location map for the Tas project showing road access.

The Tas project is located in a mixed pine, spruce, birch and willow forest with a ground cover consisting of alder, devils club and grasses. The region is home to rabbits, squirrels, moose and bears.

3. Grid Information

The Tas grid consisted of 27 survey lines (13 receiver and 14 current lines), spaced at 100 m with stations flagged and marked every 50 m (Figure 3).

| Grid | Tas |
|------------------------|--------------|
| Number of Survey Lines | 27 |
| Survey Line Azimuth | 45° |
| Line Spacing | 200 m |
| Station Spacing | 50 m |
| Elevation range | 880 – 1080 m |

Table 2: Grid parameters

Line and station labels for the grid were consistent with last year's survey and were based on a local coordinate system using the 2011 survey northwest corner of the grid (line 10000E, station 10000N) as reference. From that corner, line labels increased at 100 m intervals towards the south and station labels increased at 50 m intervals towards the east. Note that although many stations overlapping between the two years had similar labels, their UTM coordinates were different. On some of the lines, the stations were erratically labelled and the crew had to attempt to relabel them. Please refer to Appendix A for a detailed breakdown of the survey lines and map of the re-labelled stations.

All of the survey location information was recorded by the SJ Geophysics crew, including GPS control points and slope/clinometric data. Control points were recorded with a Garmin GPSMAP 60CSx handheld GPS in the UTM projection NAD83, Zone 10. Slope data were recorded with a SUUNTO clinometer.

The terrain in the survey area was flat on the southern end and turned into rolling hills on the northern end. The ground surface of the grid was predominantly packed soil, but a few swampy sections dotted the south.

Temperature at the Tas project ranged from around 10 °C at night up to 30 °C during the day.

Precipitation was minimal at this time of year so the conditions were dry for the most of the survey. However the water level in swamps was high due to flooding in the region prior to the beginning of the geophysical program.



Figure 3: Inzana 2011 and 2012, 3DIP grid survey map.

4. FIELD WORK AND INSTRUMENTATION

4.1. Field Logistics

An SJ Geophysics field crew typically consists of at least two field geophysicists or technicians and at least four helpers to assist in the day-to-day operation of the survey. The field geophysicists and technicians oversee all operational aspects including field logistics, data acquisition and initial field data quality control. Table 3 lists the SJ Geophysics crew members on this project.

The SJ Geophysics crew arrived on the Inzana property on July 4th and they remained on site until they demobilized in the afternoon of July 20th

| Crew Member Name | Role | Dates on Site |
|------------------|--------------------|---|
| Matvei Kootchin | Field Geophysicist | July 4 th to July 20 th |
| Alex Tryon | Field Geophysicist | July 4 th to July 20 th |
| Victor Kulla | Field Technician | July 4 th to July 20 th |
| Max Tims | Field Technician | July 4 th to July 20 th |
| Brandon Raw | Helper | July 4 th to July 20 th |
| Grant O'neill | Helper | July 4 th to July 20 th |

Table 3: Details of the SJ Geophysics crew on site

The SJ Geophysics crews were accommodated by the client in a fishing lodge near Inzana Lake. The lodge was powered by a diesel generator and provided hot water to the crew. Communication with the office was limited to Satellite Internet, which was provided by the lodge.

After some initial layout of the equipment on the 4th, data collection started on the 5th with the southern-most receiver set and progressed north. The initial plan was to acquire an array of 16, 50 m dipoles. However, due to miscommunication between the geologists on site who thought the purpose of the survey was to image the feature of interest at depth, and Peter Fox, the project geophysicist who designed the survey to detail the near-surface, the crew was asked to use an extended array of 26 dipoles, thus covering the entire line length on their first survey day. After discussions with Peter Fox, the crew went back to using a single receiver. Consequently the first

survey line was surveyed with two receivers and the remainder of the lines with a single receiver.

The survey lines were accessed through lines cut on either end of the grid as well as by a road that crossed half of the grid. This greatly facilitated the equipment transportation. However the progression along the lines was difficult at times, in particular along the sections that were cut for the 2011 survey that had not been refreshed for the new survey. In addition some of the new survey lines, especially to the southeast of the grid had not been cut in alignment with the corresponding 2011 lines and the crew had to bush walk to try to find the other segment of line which slowed down the survey and was not always a successful process.

On July 7th Alex Tryon's right hand and wrist developed an infection as a result of intense bug bite. He had to seek treatment at a nearby hospital the next day accompanied by Grant. As Alex was unable to be seen by a doctor at the Fort St James hospital, they drove all the way to Vanderhoof and lost a day worth of work.

The survey was conducted in a forested region that was home to both small rodents and large game. The small rodents chew the wire, while the bigger game ran through them, causing extensive damage, especially at night. Consequently the beginning of most of the production days were spent fixing the breaks. When the receiver cables were chewed, thus causing power leakage, the crew either lengthened the dipoles to skip the damaged section or replaced the cables. In order to attempt to solve these problems, the crew started to hang the wires and cables in the tree. This helped with the rodent problem, but increased the chance of larger game running through. As the large game was less prevalent, this was considered the best alternative.

The survey was also challenged by a geomagnetic storm on July 15th. The storm, although of low magnitude, added to the natural telluric currents and generated some noise in the data. To counteract this, an interlaced array with 100m dipoles (still giving effective 50 m dipoles) was used. This technique allowed to increase the strength of the recorded signal and thus decreased the noise/signal ratio. The background chargeability was on the other hand high enough to not be severely affected by the storm (high signal/noise ratio). The data recorded on that day were thoroughly analyzed and it was determined that they were of good enough quality to make resurveying unnecessary.

4.2. Survey Parameters and Instrumentation

The geophysical instrumentation used to acquire the 3DIP data consisted of a SJ-24 full waveform receiver and a GDD Tx II transmitter. The specifications of these instruments are listed in Appendix B and the equipment parameters are summarized in Table 4.

| Array Type | 3DIP – Offset Pole-Dipole |
|--------------------------|---|
| Number of Dipoles | 16 to 22 |
| Dipole Length | 50 to 100 m |
| Array Length | Up to 1300 m |
| Current Interval | 50 m |
| IP Transmitter | GDD TxII (Serial #302, 303) |
| Duty Cycle | 50% |
| Waveform | Square |
| Cycle and Period | 2 sec on / 2 sec off; 8 second |
| IP Receiver | SJ-24 Full Waveform Digital Receiver |
| Reading Length | Minimum 60 seconds |
| Vp Delay, Vp Integration | 1200 ms, 600 ms |
| Mx Delay, # of Windows | 200 ms, 20 |
| Width (Mx Intergration) | 36, 39, 42, 45, 48, 52, 56, 60, 65, 70, 75, 81, 87, |
| | 94, 101, 109,118, 128, 140, 154 |
| | (200 ms – 1800 ms) |
| Properties Calculated | Vp, Mx, Sp, Apparent Res |
| GPS | Garmin GPSMAP 60CSx |
| Average Accuracy | 5 m |
| Projection / Datum | Projection UTM /DATUM Nad 83 Zone 10 |

Table 4: Instrument parameters

For the survey carried out during the magnetic storm, 100 m dipoles were laid out overlapping one another to create an "interlaced array" (Figure 4) that had an effective dipole size of 50 m. This approach improves data quality and provides data redundancy in the event that data from one dipole is lost.



The IP arrays for this survey were connected using special 8-conductor cables with 50 m takeouts for the receiver electrodes. For the potential line, the electrodes consisted of stainless steel pins, 50 cm long and 10 mm in diameter, which were hammered into the ground. At each current station (50 m intervals), current was injected using two long (75 cm) stainless steel electrodes hammered into the ground. The remote current locations consisted of four 1 m stainless steel rods, 15 mm in diameter. At both current and remote sites the ground was soaked with a saline water solution to improve contact. Table 5 shows the UTM locations of the remote sites.

| Name | Label | UTM Northing / Datum | UTM Easting / Datum |
|----------------|---------------|----------------------|---------------------|
| South Remote 1 | L11601E 9900N | 6082962 | 414696 |
| South Remote 2 | L10401E 9850N | 6083775 | 413831 |
| South Remote 3 | L9900E 9600N | 6084013 | 413201 |
| North Remote 1 | L9900E 12350N | 6085906 | 415246 |

Table 5: Locations of 3DIP remote sites

5. Geophysical Techniques

5.1 IP Method

The time domain IP technique energizes the ground by injecting square wave current pulses via a pair of current electrodes. During current injection, the apparent (bulk) resistivity of the ground is calculated from the measured primary voltage and the input current. Following current injection, a time decaying voltage is also measured at the receiver electrodes. This IP effect measures the amount of polarizable (or "chargeable") particles in the subsurface rock.

Under ideal circumstances, high chargeability corresponds to disseminated metallic sulfides. Unfortunately, IP responses are rarely uniquely interpretable as other rock materials are also chargeable, such as some graphitic rocks, clays and some metamorphic rocks (e.g., serpentinite). Therefore, it is prudent from a geological perspective to incorporate other data sets to assist in interpretation.

IP and resistivity measurements are generally considered repeatable to within about five percent. However, changing field conditions, such as variable water content or electrode contact, reduce the overall repeatability. These measurements are influenced to a large degree by the rock materials near the surface or, more precisely, near the measurement electrodes. In the past, interpretation of a traditional IP pseudosection was often uncertain because strong responses located near the surface could mask a weaker one at depth. We attempt to overcome this uncertainty by employing geophysical inversion to better interpret the data.

5.2 3DIP Method

Three dimensional IP surveys have been designed to take advantage of recent advances in 3D inversion techniques. Unlike conventional 2DIP, the electrode arrays are not restricted to an inline geometry. In the standard 3DIP configuration, a receiver array is established along one survey line while current lines are located on two adjacent lines lying on either side of the receiver line. Current injections are performed sequentially at fixed increments (25, 50, 100 or 200 m) along the current lines. Meanwhile, geophysical data are collected along a receiver array which consists of 12 to 16 dipoles laid out along the receiver line. Spacing between current and receiver lines is often the same; however, line spacing is sometimes modified to compensate for

local conditions, such as inaccessible sites and water bodies, or the overall conductivity of the ground. Whenever possible, two receivers are used to speed up production and increase depth penetration. In most cases, one receiver records a full 16 dipole array while the second receiver records additional dipoles. By injecting current at multiple locations along current lines adjacent to receiver arrays, data acquisition rates are significantly improved over conventional surveys.

6. QUALITY ASSURANCE

6.1. Locations

Good quality survey location data is crucial to successful analysis and interpretation of the collected geophysical data.

The quality of the location data for this survey is generally good but degrades in some location due to dense canopy cover. GPS measurements (control points) were obtained every 50 m. The locations were then checked, the outliers points were removed and the missing locations interpolated based on measured slopes between stations and idealized ground distances. All GPS elevations typically have lower accuracy in the vertical direction and were replaced by elevations extracted from an ASTER DEM.

6.2. IP Data

The IP geophysical data go through a series of quality assurance processes. Prior to acquisition, it is SJ Geophysics' best practice to acquire a noise reading to determine the background noise levels and to detect possible bad channels (i.e. poor ground contacts). This allows the operator to troubleshoot problem areas in the array prior to acquisition, then once the operator is satisfied surveying can begin. Immediately after each full waveform reading is completed the data are analyzed in the field to provide the operator a set of electric potential and chargeability values (Vp, Sp, Mx) as well as a chart of the chargeability decay curves for each dipole in the array. This gives the operator valuable information to verify the quality of data in real time. Also available to the operator are visualization tools for full waveform signals and a spectral analysis program to assist in troubleshooting possible bad stations and unwanted noise.

Each evening, the analyzed data are imported into JavIP: a proprietary IP database management system developed by S.J.V. Consultants Ltd. (SJV). This package integrates the

locational information with each reading, thus allowing the calculation of the apparent resistivity and apparent chargeability. The package's interactive quality control tools include: plots of decay curves, tables of calculated parameters and a dot plot (a graphical display of data of the various parameters). These enable the field geophysicist to validate each data point. After the field geophysicist removes known bad points from field observations and other obvious outliers, the database is delivered to SJV for a more stringent second review. In this second review, the data are scrutinized to ensure erroneous data points are not passed along to the final stage of processing: the inversion.

The data collected on the Tas project was of good quality. The voltage potentials (Vp) were, for the most part, strong and the signals and resulting decay curves were mostly clean (see example on Figure 5).



Figure 5: Example of clean decay curves.

The only exception occurred on line 9500 where a couple stations were setup on a compacted forestry road where getting current was more challenging. The contact was however still sufficient in these regions to get clean data.

Most of the data flagged for removal were due to non-coupling. This phenomena is typical in IP surveys and is related to the survey configuration. Non-coupling occurs when the receiver dipole is sub-parallel to the equipotential lines which can result in a significant decrease in signal

strength and lead to untrustworthy data.

Some poor quality data were flagged for removal either due to low quality signals, or to signal contamination originating from the receiver cables (affected by animal chewing or water saturation). As mentioned earlier, the geomagnetic storm that occurred on July 15th caused some turbulences in the data but did not jeopardize them.

Figure 6 shows an example of raw data from July 16th when the mag storm occurred and Figure 7 shows the corresponding decay curves.



Figure 6: Example of raw signal affected by the geomagnetic storm. (reading later discarded and repeated with interlaced array)



Figure 7: Example of decay curves affected by the geomagnetic storm (reading later discarded and repeated with interlaced array)

Respectfully submitted, per SJ Geophysics Ltd.

Alex Tryon

| SJ Line Label (client's label) | Series | Туре | Start Station | End Station | Survey Length (m) |
|-----------------------------------|------------|-----------------------------|---------------|--------------|-------------------|
| 12400 (7) | Е | Tx | 11100 | 12400 | 1300 |
| 12200 (6a) | Е | Rxc | 11150 | 12350 | 1200 |
| 12000 (12) | Е | Tx | 11175 | 12400 | 1225 |
| 11900 (13) | Е | Rx | 11100 | 12400 | 1300 |
| 11800 (5a) | Е | Tx | 11100 | 12500 | 1400 |
| 11700 (14) | Е | Rx | 11275 | 12400 | 1125 |
| 11600 (5) | Е | Tx | 11100 | 12500 | 1400 |
| 11400(4a) | Е | Rx | 11250 | 12450 | 1200 |
| 11330(15) | Е | Tx | 11100 | 12350 | 1250 |
| 11265(16) | Е | Rx | 11150 | 12350 | 1200 |
| 11200(4) | Е | Tx | 11100 | 12500 | 1400 |
| 11130(17) | Е | Rx | 11150 | 12350 | 1200 |
| 11065(18) | Е | Tx | 11100 | 12400 | 1300 |
| 11000(3a) | Е | Rx | 11200 | 12400 | 1200 |
| 10800(3) | Е | Tx | 11100 | 12500 | 1400 |
| 10600(2a) | Е | Rx | 11200 | 12400 | 1200 |
| 10400(2) | Е | Tx | 11100 | 12500 | 1400 |
| 10300(19) | Е | Rx | 11150 | 11950 | 800 |
| 10200(1a) | Е | Tx | 11100 | 12100 | 1000 |
| 10130(20) | Е | Rx | 11150 | 11950 | 800 |
| 10065(21) | Е | Tx | 11100 | 12000 | 900 |
| 10000(1) | Е | Rx | 11150 | 11950 | 800 |
| 9900(22) | Е | Tx | 10000 | 12150 | 2150 |
| 9800(23) | Е | Rx | 10050 | 12075 | 2025 |
| 9700(25) | Е | Tx | 10600 | 11650 | 1050 |
| 9600(26) | Е | Rx | 10025 | 11475 | 1450 |
| 9500(24) | Е | Tx | 11075 | 12450 | 1375 |
| $R_{C} = R_{PCPI}$ | ver Line T | $T_{\mathbf{x}} = Transmit$ | tter Line | Total Linear | Metres = 34050 m |

APPENDIX A: SURVEY DETAILS

Rc = *Receiver Line*, *Tx* = *Transmitter Line*

Total Linear Metres = 34050 m

SJ Geophysics Ltd. / S.J.V. Consultants Ltd. 11966-95A Avenue, Delta, BC, V4C 3W2, Canada Tel: (604) 582-1100 <u>www.sjgeophysics.com</u>



Figure 8: Re-labelled station map.

Appendix B: Instrument Specifications

SJ-24 Full Waveform Digital IP Receiver

| Technical: | |
|-------------------------------|--|
| Input impedance: | 10Ω |
| Input overvoltage protection: | up to 1000V |
| External memory: | Unlimited readings |
| Number of dipoles: | 4 to 16 +, expandable |
| Synchronization: | Software signal post-processing user selectable |
| Common mode rejection: | More than 100 dB (for Rs=0) |
| Self potential (Sp): | Range: -5V to +5V |
| | Resolution: 0.1mV |
| | Proprietary intelligent stacking process rejecting strong non- |
| | linear SP drifts |
| Primary voltage: | Range: $1\mu V - 10V$ (24bit) |
| | Resolution: $1\mu V$ |
| | Accuracy: typ. <1.0% |
| Chargeability: | Resolution: $1\mu V/V$ |
| | Accuracy: typ. <1.0% |
| General (4 dipole unit): | |
| Dimensions: | 18 x 16 x 9 cm |
| Weight: | 1.1kg |
| Battery: | 12V external |
| Operating temperature range: | -20 °C to 40 °C |

GDD Tx II IP Transmitter

| Input voltage: | 120V / 60 Hz or 240V / 50Hz (optional) |
|------------------------|--|
| Output power: | 3.6 kW maximum |
| Output voltage: | 150 to 2200 V |
| Output current: | 5 mA to 10 A |
| Time domain: | 1, 2, 4, 8 second on/off cycle |
| Operating temp. range: | -40 °C to +65 °C |
| Display: | Digital LCD read to 0.001 A |
| Dimensions: | 34 x 21 x 39 cm |
| Weight: | 20 kg |
| | |







11966 - 95A Avenue, Delta, BC V4C 3W2 CANADA Bus: (604) 582-1100 www.sjgeophysics.com

MEMORANDUM

Date: August 31, 2012

From: Charlotte Thibaud

To: Peter Fox, Inzana Metals Inc.

SUBJECT: Interpretation Memorandum on the 3DIP Survey for the Tas Project

The purpose of this memo is to present the results and preliminary interpretation of a threedimensional induced polarization (3DIP) geophysical surveys conducted in 2011 and 2012 on Inzana Metals Inc.'s Tas project and extend the interpretation written about the 2011 results (see December 16, 2011 memorandum).

The primary rock types in the survey area are volcanic cherty tuff and argillite units of the Inzana Lake Formation. The grid also encompasses an area of identified porphyry Au-Cu mineralization, known as the Ridge Zone, as well as a large diorite pluton (the Tas Pluton) and other assorted intrusions.

In summary, the 2011 3DIP survey succeeded at resolving interesting resistivity and chargeability anomalies in the subsurface that appear consistent with mapped geological trends. However this survey configuration was too coarse to offer a proper definition of the geophysical features at shallow depths (< 100 m below the surface).

The 2012 3DIP survey, designed to infill the eastern half of the 2011 grid, allowed to map (or re-map) several geological breaks and faults that appear to control some structures of interest, including the Ridge Zone.

The smaller line spacing and dipole length also allowed a better definition of the geophysical signature associated with known showings. In particular it helped refine the outlines of extended chargeablility highs (> 45ms) likely related to pyritic systems with outer envelopes (between 30 and 35 ms) that could coincide with chalcopyrite.

The 2012 grid consisted of 27 northeast trending survey lines covering an irregular-shaped area approximately 3 km x 1.5 km in size. The present interpretation memorandum is based on resistivity and chargeability models obtained by simultaneous inversion of the data collected in 2011 and 2012 (Illustration 1 for survey grids).

The resistivity model exhibits a complex pattern near surface (0 down to approximately 100 m below topography) resistivity highs (>600 Ohm-m) outlining dense faulting (Illustration 2.). The placement of those faults is challenging to determine given the complexity of the model. At lower depths (<100 m below topography, Illustration 3.), the features are smoother and the patterns simpler, in part due to the reduced resolution.

The Tas Pluton appears in the southwest corner of the grid as a deep-seated feature. Its northeastern end branches up to the surface where it partially coincides with one of the brecciated intrusions and flanks the monzonoite intrusion to the north (Illustration 4).

Some of the previously mapped faults such as the Freegold, the Mid and East Zone faults (solid black line on Illustration 5) clearly stand out in the resistivity model. They also appear more extended than what is represented on the geological map.

The resistivity model also outlines a multitude of un-mapped breaks and attention will be paid to the one running through the Ridge Zone showings (thin dashed black line on Illustration 5) as it could be an important controlling factor in their formation.

Some other mapped faults, in particular the West Zone faults, seem to be shifted to the southeast in comparison to the geological map (thick dashed line on Illustration 5), while the 61 fault does not appear at all. Consequently a thorough field investigation of those faults is recommended.

The faults outlined above do not appear as clearly at lower depths (< 100 m) as the sharp breaks in relatively high resistivity are replaced by low resistivity features (< 75 Ohm-m, see Illustration 6). Those features extend directly below some mapped faults and most of the showings to the exception of the Mid zone, Southeast zone and Monzonite zone prospects. This coincidence suggests that those deep resistivity lows could be of interest.

Comparison of the observations made on the resistivity data and the magnetometer survey (Illustration 7, surfaced map provided by the client) shows a good correlation between isolated magnetic highs in the Ridge Zone and breaks in the resistivity, in particular along the new West Ridge Zone faults and the Ridge Zone Showings fault. A more detailed magnetometer survey (50

m line spacing for example) may allow to better define those features. Once the survey is completed, a three dimensional inversion of the magnetometer data is recommended in order to get a better definition of the features' relative depth.

Contrary to the resistivity model, the chargeability exhibits relatively smooth features from the near surface down to depth (Illustrations 8 and 9).

The Tas Pluton sharply stands out at any given depth with a lower background (approximately 5 ms) although the edges outlined by the chargeability model slightly differ from those shown by the geological map and the resistivity model.

The remainder of the model exhibits a higher chargeability background (approximately 15 ms) consisting of deep extended chargeability highs (> 35 ms, Illustration 9) loosing intensity and appearing as isolated features at the surface (<45 ms, Illustration 8). Given their relatively high chargeability intensity at depth and their general alignment along the faults outlined by the resistivity model (Illustration 10), those features are likely related to a fault-controlled pyritic system. Consequently attention should be focused on their outer, lower chargeability envelopes, in particular the more isolated, near surface ones (Illustration 11), as they might be related to chalcopyrite, along the Ridge Zone faults (as delineated by the resistivity model) and in the vicinity of the Freegold fault.

To better visualize the spatial relationships of the various anomalies, we have mapped the high resistivity (red) and low resistivity (blue) bodies as well as the high chargeability (green) bodies in three dimensions. The lowest chargeability area associated with the Tas pluton is not shown.



Illustration 1: Grid map of the 2011 and 2012 surveys with geological mapping overlay.

The 2011 survey station are represented as red dots while the 2012 survey stations are represented in black.

The extent of the geological map being shorter than the geophysical survey, the mapped extent of the Tas Pluton was inferred so to cover the grid (dashed area).

The mapped faults are represented as solid lines (named when the information is available) while the white stars locate the mapped prospects.



Illustration 2: Plan View at 25 m below the topography of the resistivity model. The near surface exhibits complex patterns of scattered resistivity highs.



Illustration 3: Plan View at 300 m below the topography of the resistivity model. At depth the resistivity features are smoother, in part due to the lack of resolution.



Illustration 4: South view at 45 of the resistivity highs (>1400 Ohm-m) highliting the Tas Pluton.

The Pluton appears as a relatively deep feature whose northeast end branches up to the surface where it partially coincides with one of the brecciated intrusions and flanks the monzonoite intrusion to the northwest.



Illustration 5: Top view of the resistivity model as relatively highs resistivity iso-contours outlining the faults.

To the exception of the 61 and West Ridge faults, most the faults extracted from the geology map (solid black lines) appear clearly on the resistivity model. Many of them seem to even extend further than their mapped extent (thick black dashed line).

The West Ridge faults could be detected south-east of their mapped location.

An interesting break (un-mapped previously) appears along the Ridge Zone showings (thin dashed line).



Illustration 6: Side view from the east of the resistivity model as highs (>1400 Ohm-m) and lows (<75 Ohm-m). Several mapped faults and showings align with deep, extended low resistivity features. Those lows thus represent features of interest.



Illustration 7: Plan View of the surfaced magnetic map with faults overlay.

Similarly to the resistivity model, the magnetic intensity map suggests an outline of the Tas Pluton (appearing as magnetic high) that slightly differs from the one outlined on the geology map.

The newly mapped breaks coincide relatively well with isolated magnetic highs although the line spacing is too coarse to locate them precisely and the surfaced map does not allow to estimate their relative depths.

A finer magnetic survey and a three-dimensional inversion of the magnetometer data are recommended.



Illustration 8: Plan View at 25 m below the topography of the chargeability model.



Illustration 9: Plan View at 300 m below the topography of the chargeability model.


Illustration 10: Top View of the resistivity and chargeability model as iso-contours.



Illustration 11: Side view from the south of the chargeability model as thresholds of relatively high chargeability. The enveloppe of lower chargeability reaching the near surface and aligned with fault should be further investigated.



Interpreted Resistivity (ohm–m)

Interpreted Resistivity (ohm–m)

S Geophysics Ltd.

Interpreted Resistivity (ohm–m)

Interpreted Resistivity (ohm-m)

Interpreted Resistivity (ohm–m)

Interpreted Resistivity (ohm–m)

Interpreted Resistivity (ohm–m)















Interpreted Resistivity (ohm–m)

































Interpreted Resistivity (ohm–m)









Interpreted Resistivity (ohm–m)









Interpreted Resistivity (ohm–m)

















Interpreted Resistivity (ohm–m)









Interpreted Resistivity (ohm–m)









Interpreted Resistivity (ohm–m)



Interpreted Chargeability (ms)





LOGISTICS REPORT

On

GROUND MAGNETIC SURVEY

TAS PROPERTY OMENICA MINING DISTRICT, BC 54° 53' 50" N Lat, 124° 19' 13' W Long NAD 83 UTM Zone 10 415350E, 6084200N NTS Mapsheet(s): 93K/16 BCGS Mapsheet(s): 093K.089 & 99

September 6th to 9th 2012

For

INZANA METALS INC. 3431 Nineteenth Ave. Smithers, British Columbia V0J 2N0

By

Meridian Mapping Ltd.

Coldstream, British Columbia

November 2012

INTRODUCTION:

Between September 6th and 9th 2012, Meridian Mapping Ltd. completed a ground magnetometer survey over a portion of the TAS Property near Inzana Lake, British Columbia for Inzana Metals Inc. This 2012 survey both expanded and infilled a similar survey conducted on the property by Meridian in 2011.

PROPERTY LOCATION & ACCESS:

The TAS Property is located 50 kilometers north of the town of Fort St James in North-Central British Columbia. The center of the survey grid is located 6 kilometers southeast of the eastern end of Inzana Lake in the Omineca Mining Division.

Access was gained by travelling north from Fort St. James on the Germansen North Road, then travelling west approximately 10 kilometers on the Inzana Lake Forestry Road which transects the south end of the grid. Old mining and forestry roads also transect the grid but most are heavily overgrown.

SURVEY SPECIFICATIONS:

Survey Grid:

The 2012 survey covered five new lines up to 2400m long at 100m spacing that had been added to the NW side of the grid and both cut and uncut infill lines extending NE from the L111+00N baseline with an average length of 1300m. After combining with the 2011 survey data, the average line spacing on the NE side of the grid was approximately 50m. Lines run on an average azimuth of 45 degrees

A total of 55.1 kilometers were surveyed over four field days.

Magnetic Survey:

The magnetic survey was conducted by two operators using two GPS equipped GSM Ver 7.0 19W Overhauser walking magnetometers manufactured by GEM Systems of Richmond Hill, Ontario. This instrument measures variations in the total intensity of the earth's magnetic field to an absolute accuracy of +/- 0.1 nT. They were used in 'walking mode' and set to record a reading every 2 seconds. A third GSM 19 magnetometer was employed as a stationary base to measure the diurnal variations in the earth's magnetic field. Data was recorded at a 3 second interval at the base. This base data was used to apply diurnal correction to the rover data. A 200 meter length of overlap line was walked each morning by both units. Data from this overlap line was used to level the data between the two instruments as well as between survey days. The same overlap line was used for the 2012 survey as the 2011 survey, allowing leveling and combining of the two surveys.

Positional Control:

The GSM 19W magnetometers are equipped with Novatel SuperStar II DGPS boards. The GPS attaches 3dimensional coordinates, differentially corrected in real-time using the WAAS service, to each magnetometer reading. Accuracies of +/- 1.5m can be achieved in ideal conditions, however ~5m is more typical under tree canopy. Garmin GPSMap 60CSx units, which provide a similar accuracy, were also used for navigation and backup and recorded track data at a 2 second interval.

DATA PROCESSING:

Preliminary Processing:

Preliminary processing of the field data included:

- Diurnal correction of the rover data using data from the stationary base.
- Leveling of data from the individual units and multiple survey days using data from the overlap line.
- Cleaning GPS 'spikes' and extrapolating positions to fill GPS gaps.
- Trimming of unnecessary data.

• Preliminary QA/QC of both magnetic and positional data to ensure quality and completeness of field data prior to the field crew leaving the project.

Final Processing:

Final processing of the total field magnetometer data was performed in Geosoft Oasis Montaj, and followed conventional processing techniques. Processing steps were as follows:

- Diurnally corrected total magnetic profile data was despiked either manually, or by a non-linear filter, as required. This step removes one-station spikes that are caused by instrument dropouts or sensor "knocks".
- The despiked data was then lightly smoothed using a 7 fiducial-long low pass filter. This step removed the 10 to 15nT saw-tooth noise which is inherent in walking magnetometer data.
- A total magnetic intensity (TMI) grid was generated by gridding the final filtered data using the minimum curvature algorithm, with a grid cell size typically 1/5 of the line separation.
- A calculated 1st vertical derivative (1VD) grid was generated from the TMI grid using a convolution grid filter.
- An analytic signal (AS) grid was generated from the TMI grid using a fast Fourier transform algorithm.
- Geotiff maps of TMI profiles, TMI colour grid, TMI B&W contours, 1VD colour grid, 1VD B&W contours, AS colour grid, AS B&W contours, and line path maps were exported.

DATA DELIVERABLES:

Deliverable data includes:

- 1. Total Magnetic Intensity
- 2. Calculated 1st Vertical Derivative
- 3. Analytic Signal
- 4. B&W Contour Plots of above three.
- 5. Profiles of Total Magnetic Intensity
- 6. Survey Track Plot

Respectfully Submitted, Meridian Mapping Ltd.

Juffer Ourly

Dugald Dunlop B.Sc. (Geology)

APPENDIX I – EQUIPMENT SPECIFICATIONS



GSM-19 v7.0 Overhauser Magnetometer / Gradiometer / VLF

The unique Overhauser unit blends physics, data quality, operational efficiency, system design and options into an instrumentation package that ... exceeds proton precession and matches costlier optically pumped cesium capabilities.

And the latest v7.0 technology upgrades provide even more value, including:

- Data export in standard XYZ (i.e. line-oriented) format for easy use in standard commercial software programs
- Programmable export format for full control over output
- GPS elevation values provide input for geophysical modeling
- <1.5m standard GPS for highresolution surveying
- <1.0 OmniStar GPS
- <0.7m for Newly introduced CDGPS
- Multi-sensor capability for advanced surveys to resolve target geometry
- Picket marketing / annotation for capturing related surveying information on the go.

And all of these technologies come complete with the most attractive prices and warranty in the business!

Introduction

The GSM-19 v7.0 Overhauser instrument is the total field magnetometer / gradiometer of choice in today's earth science environment representing a unique blend of physics, data quality, operational efficiency, system design and options that clearly differentiate it from other quantum magnetometers.

Terraplus

With data quality exceeding standard proton precession and comparable to costlier optically pumped cesium units, the GSM-19 is a standard (or emerging standard) in many fields, including:

- * Mineral exploration (ground and airborne base station)
- * Environmental and engineering
- * Pipeline mapping
- * Unexploded Ordenance Detencion
- * Archeology
- * Magnetic observatory measurements
- * Volcanology and earthquake prediction

Taking Advantage of the Overhauser Effect

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Overhauser effect magnetometers are

essentially proton precession devices

except that they produce an order-of

magnitude greater sensitivity. These

absolute accuracy, rapid cycling (up to 5

readings / second), and exceptionally

The Overhauser effect occurs when a

radio frequency (RF) magnetic field.

The unpaired electrons transfer their

special liquid (with unpaired electrons) is

combined with hydrogen atoms and then

exposed to secondary polarization from a

stronger polarization to hydrogen atoms,

signal-- that is ideal for very high-sensitivity

power consumption to an absolute minimum

thereby generating a strong precession

In comparison with proton precession methods, RF signal generation also keeps

In addition, polarization and signal

which enables faster, sequential

rates (i.e. sampling speeds).

measurement can occur simultaneously -

measurements. This, in turn, facilitates advanced statistical averaging over the

sampling period and/or increased cycling

magnetometers also deliver high

"supercharged" quantum

low power consumption.

total field measurement.

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and reduces noise (i.e. generating RF frequencies are well out of the bandwidth of the precession signal).

Maximizing Your Data Quality with the GSM-19

Data quality is a function of five key parameters that have been taken into consideration carefully in the design of the GSM-19. These include sensitivity, resolution, absolute accuracy, sampling rates and gradient tolerance.

Sensitivity is a measure of the signalto noise ratio of the measuring device and reflects both the underlying physics and electronic design. The physics of the Overhauser effect improves sensitivity by an order of magnitude over conventional proton precession devices. Electronic enhancements, such as high-precision precession frequency counters enhance sensitivity by 25% over previous versions.

The result is high quality data with sensitivities of 0.022 nT / vHz. This sensitivity is also the same order-of magnitude as costier optically pumped cesium systems.

Resolution is a measure of the smallest number that can be displayed on the instrument (or transmitted via the download process). The GSM-19 has unmatched resolution (0.01mT)

This level of resolution translates into welldefined, characteristic anomalies; improved visual display; and enhanced numerical data for processing and modeling.

Absolute accuracy reflects the closeness to the "real value" of the magnetic field -- represented by repeatability of readings either at stations or between different sensors. With an absolute accuracy of +/- 0.1 nT, the GSM-19 delivers repeatable station-to-station results that are reflected in high quality total field results.

Similarly, the system is ideal for gradient installations (readings between different sensors do not differ by more than +/- 0.1 nT) -- maintaining the same high standard of repeatability.



Data from Kalahari Desert kimberlites. Courtesy of MPH Consulting (project managers), IGS c. c. (geophysical contractor) and Aegis Instruments (Pty) Ltd.,

Botswana.

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The GSM-19 gradiometer data are consistently low in noise and representative of the geologic environment under investigation.

Sampling rates are defined as the fastest speed at which the system can acquire data. This is a particularly important parameter because high sampling rates ensure accurate spatial resolution of anomalies and increase survey efficiency.

The GSM-19 Overhauser system is configured for two "measurement modes" or maximum sampling rates --"Standard" (3 seconds / reading), and "Walking" (0.2 seconds / reading) These sampling rates make the GSM-19 a truly versatile system for all ground applications (including vehicle-borne applications).

Gradient tolerance represents

the ability to obtain reliable measurements in the presence of extreme magnetic field variations. GSM-19 gradient tolerance is maintained through internal signal counting algorithms, sensor design and Overhauser physics. For example, the Overhauser effect produces high amplitude, long-duration signals that facilitate measurement in high gradients.

The system's tolerance (10,000 nT / meter) makes it ideal for many challenging environments -- such as highly magnetic rocks in mineral exploration applications, or near cultural objects in environmental, UXO or archeological applications.

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Total Field and Stationary Vertical Gradient showing the gradient largely unaffected by diurnal variation. Absolute accuracy is also shown to be very high (0.2 nT/meter).



Much like an airborne acquisition system, the GSM-19 "Walking" magnetometer option delivers very highly-sampled, high sensitivity results that enable very accurate target location and / or earth science

decision-making.

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Increasing Your Operational Efficiency

Many organizations have standardized their magnetic geophysical acquisition on the GSM-19 based on high performance and operator preference. This preference reflects performance enhancements such as memory capacity; portability characteristics; GPS and navigation; and dumping and processing.

Memory capacity controls the efficient daily acquisition of data, acquisition of positioning results from GPS, and the ability to acquire high resolution results (particularly in GSM-19's "Walking" mode).

V7.0 upgrades have established the GSM-19 as the commercial standard for memory with over 1,465,623 readings (based on a basic configuration of 32 Mbytes of memory and a survey with time, coordinate, and field values).

Portability characteristics (ruggedness, light weight and power consumption) are essential for operator productivity in both normal and extreme field conditions.

GSM-19 Overhauser magnetometer is established globally as a robust scientific instrument capable of withstanding temperature, humidity and terrain extremes. It also has the reputation as the lightest and lowest power system available -- reflecting Overhauser effect and RF polarization advantages.



In comparison with proton precession and optically pumped cesium systems, the GSM-19 system is the choice of operators as an easy-to-use and robust system.

GPS and navigation options are

increasingly critical considerations for earth science professionals.

GPS technologies are revolutionizing data acquisition -- enhancing productivity, increasing spatial resolution, and providing a new level of data quality for informed decision-making.

The GSM-19 is now available with realtime GPS and DGPS options in different survey resolutions. For more details, see the GPS and DGPS section.

The GSM-19 can also be used in a GPS Navigation option with real-time coordinate transformation to UTM, local X-Y coordinate rotations, automatic end of line flag, guidance to the next line, and survey "lane" guidance with cross-track display and audio indicator.

Other enhancements include way point pre-programming of up to 1000 points. Professionals can now define a complete survey before leaving for the field on their PC and download points to the magnetometer via RS-232 connection.

The operator then simply performs the survey using the way points as their survey guide. This capability decreases survey errors, improves efficiency, and ensures more rapid survey completion.

Dumping and processing effectiveness is also a critical consideration today. Historically, up to 60% of an operator's "free" time can be spent on low-return tasks, such as data dumping.

Data dumping times are now significantly reduced through GEM's implementation of high-speed, digital data links (up to 115 kBaud).

MAGNETOMETERS

This functionality is faciliated through a new RISC processor as well as the new GSM-19 data acquisition / display software. This software serves as a bi-directional RS-232 terminal. It also has integrated processing functionality to streamline key processing steps, including diurnal data reduction. This software is provided free to all GSM-19 customers and regular updates are available.



Navigation and Lane Guidance

The figure above shows the Automatic Grid (UTM, Local Grid, and Rotated Grid). With the Rotated Grid, you can apply an arbitrary origin of your own definition. Then, the coordinates are always in reference to axes parallel to the grid. In short, your grid determines the map, and not the NS direction.

The Local Grid is a scaled down, local version of the UTM system, and is based on your own defined origin. It allows you to use smaller numbers or ones that are most relevant to your survey.

The figure below shows how programmable-waypoints can be used to plan surveys on a point-by-point basis. Initially, you define waypoints and enter them via PC or the keyboard. In the field, the unit guides you to each point.



While walking between waypoints, lane guidance keeps you within a lane of predefined width using arrows (< $\circ or - >$) to indicate left or right. Within the lane, the display uses horizontal bars (--) to show your relative position in the lane. The display lass shows the distance (in meters) to the next waypoint.

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Adding Value through Options

When evaluating the GSM-19 as a solution for your geophysical application, we recommend considering the complete range of options described below. These options can be added at time of original purchase or later to expand capabilities as your needs change or grow.

Our approach with options is to provide you with an expandable set of building blocks:

- Gradiometer
- Walking- Fast Magnetometer /
- Gradiometer
- VLF (3 channel)
- GPS (built-in and external)

GSM-19G Gradiometer Option

The GSM-19 gradiometer is a versatile, entry level system that can be upgraded to a full-featured "Walking" unit (model GSM-19WG) in future.

The GSM-19G configuration comprises two sensors and a "Standard" console that reads data to a maximum of 1 reading every three seconds.



An important GSM-19 design feature is that its gradiometer sensors measure the two magnetic fields concurrently to avoid any temporal variations that could distort gradiometer readings. Other features, such as single-button data recording, are included for operator ease-of-use.

GSM-19W / WG "Walking" Magnetometer / Gradiometer Option

The GSM-19 was the first magnetometer to incorporate the innovative "Walking" option which enables the acquisition of nearly continuous data on survey lines. Since its introduction, the GSM-19W / GSM-19WG have become one of the most popular magnetic instruments in the world.

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Similar to an airborne survey in principle, the system records data at discrete time intervals (up to 5 readings per second) as the instrument is carried along the line.

At each survey picket (fiducial), the operator touches a designated key. The system automatically assigns a picket coordinate to the reading and linearly interpolates the coordinates of all intervening readings (following survey completion during post-processing).

A main benefit is that the high sample density improves definition of geologic structures and other targets (UXO, archeological relics, drums, etc.).

It also increases survey efficiency because the operator can record data almost continuously. Another productivity feature is the instantaneous recording of data at pickets. This is a basic difference between the "Walking" version and the GSM-19 / GSM-19G (the "Standard" mode version which requires 3 seconds to obtain a reading each time the measurement key is pressed).

GSM-19 "Hands-Free" **Backpack Option**

The "Walking" Magnetometer and Gradiometer can be configured with an optional backpack-supported sensor. The backpack is uniquely constructed permitting measurement of total field or gradient with both hands free.

This option provides greater versatility and flexibility, which is particularly valuable for high-productivity surveys or in rough terrain.

MAGNETOMETERS

GSM-19GV "VLF" Option

With its omnidirectional VLF option, up to 3 stations of VLF data can be acquired without orienting. Moreover, the operator is able to record both magnetic and VLF data with a single stroke on the keypad.

3rd Party Software - A One-**Stop Solution for Your Po**tential Field Needs

As part of its complete solution approach, Terraplus offers a selection of proven software packages. These packages let you take data from the field and quality control stage right through to final map preparation and modeling.

Choose from the following packages:

- Contouring and 3D
- Surface Mapping
- Geophysical Data
- **Processing & Analysis**
- Semi-Automated **Magnetic Modeling** Visualization and
 - Modeling / Inversion



Geophysical Data Processing and Analysis from Geosoft Inc.



GSM-19 with internal GPS board. Small receiver attaches above sensor

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MAGNETOMETERS

Version 7 -- New Milestones in Magnetometer Technology

The recent release of v7.0 of the GSM-19 system provides many examples of the ways in which we continue to advance magnetics technologies for our customers.

Enhanced data quality:

- * 25% improvement in sensitivity (new frequency counting algorithm)
- new intelligent spike-free algo rithms (in comparison with other manufacturers, the GSM-19 does not apply smoothing or filtering to achieve high data quality)

Improved operational efficiency:

- * Enhanced positioning (GPS engine with optional integrated / external GPS and real-time navigationl)
- * 16 times increase in memory to 32 Mbytes
- * 1000 times improvement in processing and display speed (RISC microprocessor with 32-bit data bus) 2 times faster digital data link (115 kBaud through RS-232)

Innovative technologies:

- Battery conservation and survey flexibility (base station scheduling option with 3 modes - daily, flexible and immediate start)
- * Survey pre-planning (up to 1000 programmable waypoints that can be entered directly or downloaded from PC for greater efficiency)
- * Efficient GPS synchronization of field and base units to Universal Time (UTC)
- * Cost saving with firmware up grades that deliver new capabilities via Internet

More About the Overhauser System

In a **standard Proton magnetometer**, current is passed through a coil wound around a sensor containing a hydrogenrich fluid. The auxiliary field created by the coil (>100 Gauss) polarizes the protons in the liquid to a higher thermal equilibrium.

When the current, and hence the field, is terminated, polarized protons precess in the Earth's field and decay exponentially until they return to steady state. This process generates precession signals that can be measured as described below.

Overhauser magnetometers use a more efficient method that combines electronproton coupling and an electron-rich liquid (containing unbound electrons in a solvent containing a free radical). An RF magnetic field -- that corresponds to a specific energy level transition -- stimulates the unbound electrons.

Instead of releasing this energy as emitted radiation, the unbound electrons transfer it to the protons in the solvent. The resulting polarization is much larger, leading to stronger precession signals.

Both Overhauser and proton precession, measure the scalar value of the magnetic field based on the proportionality of precession frequency and magnetic flux density (which is linear and known to a high degree of accuracy). Measurement quality is also calculated using signal amplitude and its decay characteristics. Values are averaged over the sampling period and recorded.

With minor modifications (i.e. addition of a small auxiliary magnetic flux density while polarizing), it can also be adapted for high sensitivity readings in low magnetic fields. (ex. for equatorial work)

GPS - Positioning You for Effective Decision Making



The use of Global Positioning Satellite (GPS) technology is increasing in earth science disciplines due to the ability to make better decisions in locating and following up on anomalies, and in improving survey cost effectiveness and time management.

Examples of applications include: Surveying in remote locations with no grid system (for example, in the high Arctic for diamond exploration)

- * High resolution exploration mapping
- High productivity ferrous ordnance (UXO) detection
- * Ground portable magnetic and gradient surveying for environmental and engineering applications
- Base station monitoring for observing diurnal magnetic activity and disturbances with integrated GPS time

The GSM-19 addresses customer requests for GPS and high-resolution Differential GPS (DGPS) through both the industry's only built-in GPS (as well as external GPS).

Built-in GPS offers many advantages such as minimizing weight and removing bulky components that can be damaged through normal surveying. The following table summarizes GPS options.

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GPS Options:

| Description | Range | Services |
|--------------------------------------|-------|----------------|
| | | Time |
| GPS Option A | | Reception |
| | | only |
| GPS Option B | <1.5m | DGPS* |
| GPS Option C | <1.0m | Ag 114 DGPS*, |
| | | OmniStar |
| | <0.7m | |
| GPS Option D | <1.2m | CDGPS, DGPS *, |
| | <1.0M | OmniStar. |
| Output | | |
| Time, Lat / Long, UTM, Elevation and | | |
| number of Satellites | | |
| *DGPS with SBAS (WASS/EGNOS/MSAS) | | |

Key System Components

Key components that differentiate the GSM-19 from other systems on the market include the sensor and data acquisition console. Specifications for components are provided on the right side of this page.

Sensor Technology

Overhauser sensors represent a proprietary innovation that combines advances in electronics design and quantum magnetometer chemistry.

Electronically, the detection assembly includes dual pick-up coils connected in series opposition to suppress far-source electrical interference, such as atmospheric noise. Chemically, the sensor head houses a proprietary hydrogen-rich liquid solvent with free electrons (free radicals) added to increase the signal intensity under RF polarization.

From a physical perspective, the sensor is a small size, light-weight assembly that houses the Overhauser detection system and fluid. A rugged plastic housing protects the internal components during operation and transport.

All sensor components are designed from carefully screened non-magnetic materials to assist in maximization of signal-to-noise. Heading errors are also minimized by ensuring that there are no magnetic inclusions or other defects that could result in variable readings for different orientations of the sensor.

Optional omni-directional sensors are available for operating in regions where the magnetic field is near-horizontal (i.e. equatorial regions). These sensors maximize signal strength regardless of field direction.

Data Acquisition Console Technology

Console technology comprises an external keypad / display interface with internal firmware for frequency counting, system control and data storage / retrieval. For operator convenience, the display provides both monochrome text as well as real-time profile data with an easy to use interactive menu for performing all survey functions.

The firmware provides the convenience of upgrades over the Internet via its software. The benefit is that instrumentation can be enhanced with the latest technology without returning the system to us -- resulting in both timely implementation of updates and reduced shipping / servicing costs.

MAGNETOMETERS

Performance

| Sensitivity: | 0.022 nT / vHz@1Hz |
|--------------------|--------------------|
| Resolution: | 0.01 nT |
| Absolute Accuracy | : +/- 0.1 nT |
| Dynamic Range: | 15,000 |
| | to 120,000 nT |
| Gradient Tolerance | e: > 10,000 nT/m |
| Sampling Rate: | 60+, 3, 2, 1, |
| | 0.5, 0.2 sec |
| Operating Temp: | -40C to +55C |

Operating Modes

Manual:

Coordinates, time, date and reading stored automatically at minimum 3 second interval.

Base Station:

Time, date and reading stored at 3 to 60 second intervals.

Remote Control:

Optional remote control using RS-232 interface.

Input / Output:

RS-232 or analog (optional) output using 6-pin weatherproof connector

| Storage - 32Mbytes | (# of Readings) |
|--------------------|-----------------|
| Mobile: | 1.465.623 |

| Mobile: | 1,465,623 |
|-----------------------|-----------|
| Base Station: | 5,373,951 |
| Gradiometer: | 1,240,142 |
| Walking Magnetometer: | 2,686,975 |
| | |

Dimensions

Console: Sensor:

Weights

Console: 2.1 kg Sensor and Staff Assembly: 1.0 kg

Standard Components

GSM-19 console, GEMLinkW software, batteries, harness, charger, sensor with cable, RS-232/USB cable, staff, instruction manual and shipping case.

Optional VLF

| Frequency Range: | Up to 3 stations between 15 to 30.0 kHz |
|------------------|---|
| Parameters: | Vertical in-phase and out-of phase |
| | components as % of total field. 2 components |
| | of the horizontal field amplitude and total field |
| | strenght in pT |
| Resolution: | 0.1% of total field |
| Resolution. | |

223 x 69 x 240 mm

175 x 75mm diameter cylinder

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