# GEOLOGICAL AND GEOCHEMICAL REPORT ON THE DANI PROPERTY,

Skeena Mining Division
Tenure number 515069

NTS Mapsheets 103H/10, 11
UTM Zone 09 (NAD 83)
Easting 499500
Northing 5938500

work performed
August 06, 2011-October 30, 2012

prepared for

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## Item 1: Summary

The Dani property is located on Hawkesbury Island in northwestern B.C. The claims cover an area of 249.47ha, 60 km southwest of Kitimat in the Douglas Channel. The property is located at the southern end of the Ecstall Belt which is host to several volcanogenic massive sulphide deposits (Alldrick, 2001) including the Ecstall, the Packsack and the Scotia deposits. The Ecstall Belt is considered an under explored terrane for this style of deposit.

The property covers the Dani Showing (Minfile 103H 078), a polymetallic Zn-Pb-Ag massive sulphide occurrence hosted in schistose rocks. The showing is situated within a 200-250m wide band of quartz-muscovite-pyrite and quartz biotite-muscovite-pyrite schist that strikes at approximately 060° across the property. Garnet, chlorite and diopside are variably found in the schist unit. The Dani Showing consists of semi-massive to massive pyrite-magnetite-sphalerite-galena bands, as observed in numerous pieces of blasted outcrop as well as zones of 5-20% disseminated pyrite-chalcopyrite mineralization in the surrounding rocks including well mineralized bedrock in a borrow pit at the end of a 5km long all weather logging road. The road which terminates at a deep water barge landing is at present overgrown with 3-4m high alder and willow bushes but helicopter access to the immediate showing area is still possible.

The present exploration program consisted of a one day property visit to the Dani showing using a helicopter stationed at Coles Creek approximately 75km to the east. Rock chip and grab samples were collected in the immediate vicinity of the Dani showing of float and bedrock material to verify historic results. Sampling returned results of 96ppm to 13.04% zinc, 12.7ppm to 9674ppm lead, 8.4ppm to 8693ppm copper, 0.4ppm to >100ppm silver and 41.8ppb to 1517ppb gold from well mineralized blasted fragments of bedrock (float) and up to 0.4027% copper and 0.12g/t gold from a 3.0m chip sample of bedrock from the borrow pit wall. This mineralization remains open in all directions.

Previous exploration traced the schist unit both northeast and southwest from the original showing. Strongly altered samples of quartz-muscovite-pyrite schist, similar to the host rocks at the Dani Showing, were found in creek float up to 1000 metres to the southwest of the showing. Several creeks in this direction have moderately anomalous results for lead, zinc, copper and gold. Outcrops of quartz-muscovite-biotite-pyrite-garnet schist also occur on the east side of Cheenis Creek, 400 metres along strike from the Dani Showing. Rock and silt samples indicate some potential for mineralization on this side of the creek, particularly an anomalous silt sample from a creek draining the northeast extension of the Dani schist unit. (Jones, 2003)

The 2002 exploration program has shown that the schist unit that hosts the Dani Showing has a probable strike length of at least 2000 metres across the property. This large strike extent of alteration and mineralization in the favourable schist unit does not suggest poddy, skarn-style mineralization. Also, all of the massive sulphide deposits and showings in the Ecstall Belt are associated with pyritic quartz-mica schist, similar in description to the schist at the Dani Showing. One intriguing characteristic of the Dani

Showing is the presence of abundant chromian muscovite in the schist unit, both at the showing and along strike in the schist. Chromian muscovite is also present at several other massive sulphide prospects in the Ecstall Belt. (Jones, 2003)

The claims are 100% owned by the Shawn Turford, in partnership with the author and Ralph Keefe of Francois Lake.

It is the author's belief that previous exploration programs on the Dani property demonstrate the potential for significant Volcanic Massive Sulphide (VMS) style mineralization. Additional exploration in the form of geophysical airborne surveys, geological and geochemical surveys, prospecting for other surface showings of polymetallic sulphide mineralization and drilling is warranted to determine if one or more economic mineralized bodies are present within the existing property boundaries. Whole rock analysis and thin section work on some of the metamorphic units should help determine the parent lithologies on the Dani property, which will be key to evaluating the potential for, and style of the massive sulphide mineralization.

## Item 2: Introduction

This report is being prepared for the owners for the purposes of filing assessment on the claims comprising the Dani property.

### 2.1 Qualified Person and Participating Personnel

Mr. Kenneth D. Galambos P.Eng. supervised and conducted the current exploration program and evaluation and interpretation of data to focus further exploration, and to make recommendations to test the economic potential of the area.

This report describes the property in accordance with the guidelines specified in National Instrument 43-101 and is based on historical information and an examination and interpretation of technical data covering the property. This evaluation was completed by the author over a time period from August 06, 2011-October 30, 2012 and included a site visit to the property on August 06, 2011.

### 2.2 Terms, Definitions and Units

- All costs contained in this report are denominated in Canadian dollars.
- Distances are primarily reported in metres (m) and kilometers (km) and in feet (ft) when reporting historical data.
- GPS refers to global positioning system.
- Minfile showing refers to documented mineral occurrences on file with the British Columbia Geological Survey.
- The term ppm refers to parts per million, equivalent to grams per metric tonne (gm/t).
- ppb refers to parts per billion.
- The abbreviation oz/t refers to troy ounces per imperial short ton.
- The symbol % refers to weight percent unless otherwise stated. 1% is equivalent to 10,000ppm.

- Elemental and mineral abbreviations used in this report include: arsenic (As), copper (Cu), gold (Au), iron (Fe), lead (Pb), molybdenum (Mo), silver (Ag), zinc (Zn), chalcopyrite (Cpy), molybdenite (MoS2) and pyrite (Py).

### 2.3 Source Documents

Sources of information are detailed below and include the available public domain information and private company data.

- Research of the Minfile data available for the area at http://www.empr.gov.bc.ca/Mining/Geoscience/MINFILE/Pages/default.aspx
- Research of mineral titles at https://www.mtonline.gov.bc.ca/mtov/home.do
- Review of company reports and annual assessment reports filed with the government at http://www.empr.gov.bc.ca/Mining/Geoscience/ARIS/Pages/default.aspx
- Review of geological maps and reports completed by the British Columbia Geological Survey at http://www.empr.gov.bc.ca/Mining/Geoscience/MapPlace/MainMaps/Pages/default.aspx .
- Published scientific papers on the geology and mineral deposits of the region and on mineral deposit types.

### 2.4 Limitations, Restrictions and Assumptions

The author has assumed that the previous documented work in the area of the property is valid and has not encountered any information to discredit such work.

### 2.5 Scope

This report describes the geology, previous exploration history, interpretation of regional geochemical surveys, and the mineral potential of the Dani project. Research included a review of the historical work that related to the immediate and surrounding areas. Regional geological data and current exploration information have been reviewed to determine the geological setting of the mineralization and to obtain an indication of the level of industry activity in the area.

## Item 3: Reliance on Other Experts

Some data referenced in the preparation of this report was compiled by geologists employed by various companies in the mineral exploration field. These individuals would be classified as “qualified persons” today, although that designation did not exist when some of the historic work was done. The author believes the work completed and results reported historically to be accurate but assumes no responsibility for the interpretations and inferences made by these individuals prior to the inception of the “qualified person” designation.

## Item 4: Property Description and Location

The Dani property consists of 1 claim (13 cells) covering an area of 249.47ha located on Hawkesbury Island, in the Douglas Channel, in west-central B.C. The claims straddle the boundary between the 103H/10 and 103H/11, 1:50,000 mapsheets in the Skeena Mining District near the southern extreme of the Ecstall Belt and covers a polymetallic Zn-Pb-Ag-Cu-Au massive sulphide showing hosted in schistose rocks. The property is centred at UTM Zone 9 (NAD 83) 499500E, 5938500N.

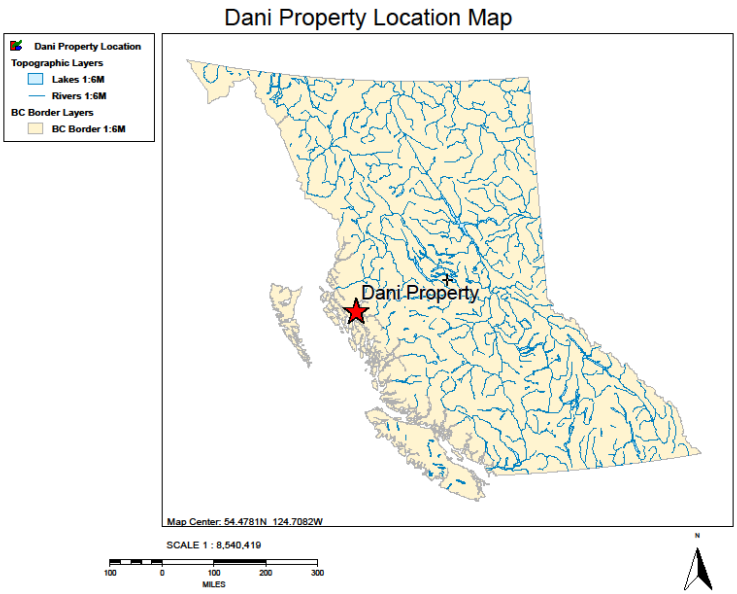



Figure 1: Property Location Map

The Ecstall Belt is host to several volcanogenic massive sulphide deposits (Alldrick, 2001) including the Ecstall (6.88 Mt grading 2.45% Zn, 0.65% Cu, 17.0 g/t Ag, and 0.5 g/t Au), the Packsack (2.70 Mt grading 0.20% Zn, 0.01% Pb, 0.5% Cu, 34 g/t Ag, and 0.3 g/t Au) and the Scotia (1.24 Mt grading 3.8% Zn, 0.40% Pb, 0.10% Cu, 13 g/t Ag, and 0.25 g/t Au).

The Dani property was re-staked on June 23, 2005 to cover gossanous outcrops and sulphide mineralization exposed in a borrow pit and in road cuts on a new logging road. With the acceptance of this report the claims will have its expiry date moved to March 24, 2019 as indicated below.

Table 1: Claim Data

| Tenure # | Claim name | Issue date | Expiry date | # of cells | # hectares | Registered Owner |
|---|---|---|---|---|---|---|
| **515069** | | 2005/jun/23 | **2019/mar/24** | 13 | 249.47 | Turford, Shawn Albert |

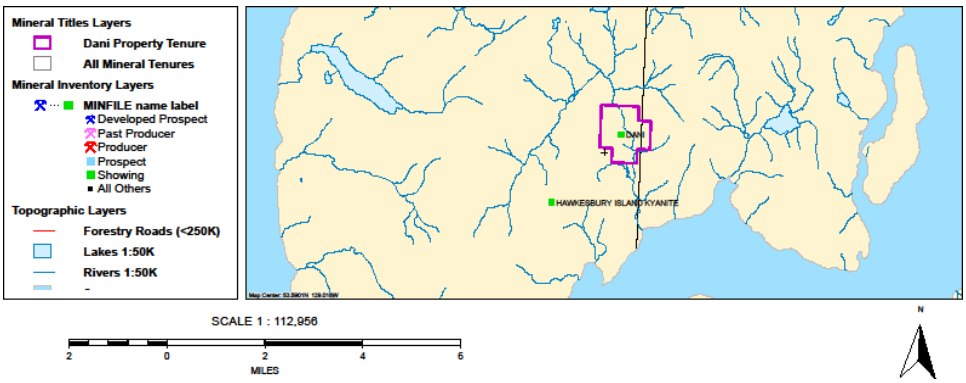



Figure 2: Claim Map

The claims comprising the Dani property are being held as an exploration target for possible hardrock mining activities which may or may not be profitable. Any exploration completed will be subject to the application and receipt of necessary Mining Land Use Permits for the activities recommended in this report. There is no guarantee that this application process will be successful.

The Claims lie in the Traditional territories of a number of local First Nations and to date no dialog has been initiated with these First Nations regarding the property. There is no guarantee that approval for the proposed exploration will be received.

**Item 5: Accessibility, Climate, Local Resources, Infrastructure and Physiography**

The Dani property is located on Hawkesbury Island, 60km southwest of Kitimat along the Douglas Channel in west-central B.C. The claims are about 5km from tidewater and are roughly bisected by the south-flowing Cheenis Creek. The property may be accessed by helicopter from Terrace, located roughly 100km to the north. Alternate access to the property is via barge from Kitimat to the logging company dock at the mouth of Cheenis Creek and then north along the logging roads on the east and west sides of the creek.


Plate 1: Satellite image showing the claims and all weather road access to tidewater

The Dani property lies within the Cheenis Creek valley, which is a typical U-shaped glacial valley, characterized by steep valley walls and relatively flat valley bottoms. Cliffs are common along the valley slopes making traversing difficult. The flood plain of Cheenis Creek is swampy, with large marshes. Elevations on the property range from 75 metres above sea level along Cheenis Creek to a maximum elevation of over 580 metres on the ridge west of the creek. Bedrock exposure on the property is variable with almost none along Cheenis Creek and large outcrop areas along the valley walls. The property is completely forested except for two clear-cut areas and the marshy areas along Cheenis Creek. The climate is typical of the temperate west coast of B.C. with high annual rainfall and temperatures moderated by the proximity of the ocean. Snowfall can be extreme at higher elevations in the winter but is usually gone by late spring and does not return until late November (Jones, 2003).

The property is located near the communities of Kitimat and Terrace, both of which have lodging, groceries and building supply stores. With the downturn in the forest industry, an adequate workforce can probably be locally sourced. Alternatively the regional airport located between the two communities would enable a Fly-in, Fly-out

operation. There exists adequate space and fresh water on Hawkesbury Island to allow for the construction and operation of the infrastructure needed for either an open pit or underground mining operation.

## Item 6: History

The assessment records of the British Columbia Ministry of Energy and Mines do not show any record of previous exploration work on the property. Money (1959) did a Master's thesis on the geology of Hawkesbury Island. This work was funded by Texas Gulf who was actively exploring the Ecstall Belt for massive sulphides at the time. Money (1959) mapped sericite-epidote schist coincident with the schist unit on the Dani property. His thesis makes no mention of any massive sulphide mineralization.

### 2001 Turford and Keefe BC Prospectors Assistance Program.

Shawn Turford and his partner Ralph Keefe originally staked the Dani claims in 2001. During prospecting they found a gossan and sulphide mineralization along a recently constructed logging road on the west side of Cheenis Creek. Subsequently, the partners optioned the claims to Southern Rio Resources Ltd. of Vancouver, B.C. in the summer of 2002. (Jones, 2003)

### 2002 Alldrick-BCGS Regional mapping program

Mapping of the Ecstall Belt by the B.C. Ministry of Energy and Mines has produced a geological map of Hawkesbury Island based on circumnavigation of the island by boat (Alldrick, 2002). Alldrick also visited the Dani Showing (Alldrick and Jackaman, 2002) and sampled the massive sulphide mineralization and some disseminated sulphide mineralization. The average of five mineralized samples collected is 6.86% Zn, 2.15% Pb, 1.77% Cu, 99.8 g/t Ag, 0.6 g/t Au. Based on the interpretation of the host rocks as metasediments, the presence of diopside and magnetite with the mineralization, the variable sulphide textures and grades, and the relative proximity of stocks and dykes of the Ecstall Pluton, Alldrick and Jackaman (2002) concluded that the mineralization is skarn-style rather than volcanogenic massive sulphide style.

### 2002 Southern Rio Resources Ltd.

Southern Rio optioned the Dani property in the summer of 2002 and conducted four days of preliminary geological mapping, prospecting and silt and rock sampling. The focus of this program was to trace the mineralized horizon on strike beyond the known occurrence. Twenty rock samples and 21 standard silt samples were collected by Southern Rio and Equity Engineering personnel. In the opinion of the Equity Engineering geologists, the Dani Showing is not easily written off as a skarn pod. The 2002 exploration program has shown that the schist unit that hosts the Dani Showing has a probable strike length of at least 2000 metres across the property. This large strike extent of alteration and mineralization in the favourable schist unit does not suggest poddy, skarn-style mineralization. Also, all of the massive sulphide deposits and showings in the Ecstall Belt are associated with pyritic quartz-mica schist, similar in description to the schist at the Dani Showing. One intriguing characteristic of the Dani Showing is the presence of abundant chromian muscovite in the schist unit, both at the

showing and along strike in the schist. Chromian muscovite is also present at several other massive sulphide prospects in the Ecstall Belt.

Several samples from the Dani Showing were submitted for analysis. The best result came from sample CHNS 102 which returned 10.17% Zn, 5.68% Pb, 202.9 g/t Ag, and 1.26 g/t Au. Weaker mineralization was found in other samples in the area of the Dani Showing. One hundred metres north, a sample of biotite-muscovite schist with disseminated pyrite and chalcopyrite mineralization returned 0.66% Cu and 95 ppb Au. Along strike to the southwest, sample 209279 from sericitized muscovite schist with small pods of pyrite returned 577 ppm Cu, 11.8 g/t Ag and 33 ppb Au.

Mineralization is also found to the southwest of the Dani Showing. A locally derived float boulder of biotite-muscovite-pyrite schist was sampled about 400 metres on strike southwest of the Dani Showing. This sample is anomalous in zinc, copper and silver with respect to the country rock. Another float sample of well crenulated, muscovite-pyrite schist was taken 1000 metres southwest of the Dani Showing, downslope from the projection of the schist unit. This sample is anomalous in copper and gold and the alteration style in this rock is very reminiscent of the Dani Showing.

A zone of pyritic biotite gneiss was observed on the road just east of the Dani 3 claim, south of the schist unit. This zone contains up to 3% pyrite, along with epidote and chlorite in fractures, and has the appearance of a hornfels unit. Analysis of this sample did not show elevated base or precious metals. Significant results from the program are summarized below.

Table 2: Significant Results from the 2002 program, Dani Property.

| Sample | Type | Width (m) | Zn (ppm) | Pb (ppb) | Ag (ppm) | Cu (ppm) | Au (ppb) | Ni (ppm) |
|---|---|---|---|---|---|---|---|---|
| **Dani Showing** | | | | | | | | |
| CHNS102 | select | | 10.17% | 5.68% | 202.9 | 130 | 1260 | 210 |
| CHNS101 | select | | 6.08% | 1.92% | 70.6 | 100 | 1260 | 120 |
| CHN 103 | select | | <0.01% | <0.01% | <0.3 | 0.085% | 102 | 50 |
| CHN 113 | select | | <0.01% | <0.01% | 3.7 | 0.774% | 274 | 20 |
| | | | | | | | | |
| **Dani North Contact Area** | | | | | | | | |
| 209174 | select | 0.20 | 119 | 8 | 2.6 | 6594 | 95 | 24 |
| | | | | | | | | |
| **Southwest on Strike** | | | | | | | | |
| 209279 | grab | 0.30 | 93 | 122 | 11.8 | 577 | 33 | 15 |
| 209168 | float | | 390 | 34 | 1.5 | 242 | 5 | 6 |
| 209173 | float | | 4 | <3 | 0.3 | 337 | 37 | 7 |

The 2002 silt sampling program returned a number of significant results as summarized from Jones, (2003). The anomalous levels (>70$^{th}$ percentile) for all the elements except zinc are significantly higher on the Dani Property than on a regional basis. The higher thresholds for copper, gold and lead may not be surprising given the mineralization present on the property and the small size of the drainages sampled compared to the regional survey. Nonetheless, the lead, copper and gold results on the Dani property are anomalous within the Ecstall Belt. The reasons for the relatively low zinc values on

the Dani property are less obvious considering the presence of significant zinc mineralization at the Dani Showing.

For the purposes of the following discussion of the results for zinc, lead, copper and gold the thresholds pertaining to the Dani property are used. Results greater than the 70$^{th}$ percentile for any particular element are considered weakly anomalous, greater than the 85$^{th}$ percentile are moderately anomalous, greater than the 95$^{th}$ percentile are highly anomalous, and greater than the 98$^{th}$ percentile are very highly anomalous.

Very highly anomalous results for lead, silver, gold and copper occur in a series of three silt samples within 400 metres along strike to the southwest of the Dani Showing. Interestingly, zinc is not particularly anomalous in these samples. However, continuing to the southwest for another 600 metres, a series of silt samples downslope from the projection of the Dani Showing schist unit have consistent, weakly to highly anomalous results for zinc and lead plus spotty anomalous results for copper, gold and silver. Only the last sample to the southwest, 02MJST-009 is not anomalous for any of these elements. However, at this point the schist unit is approaching the ridge top west of the Dani property and may be beyond the catchment for the creek.

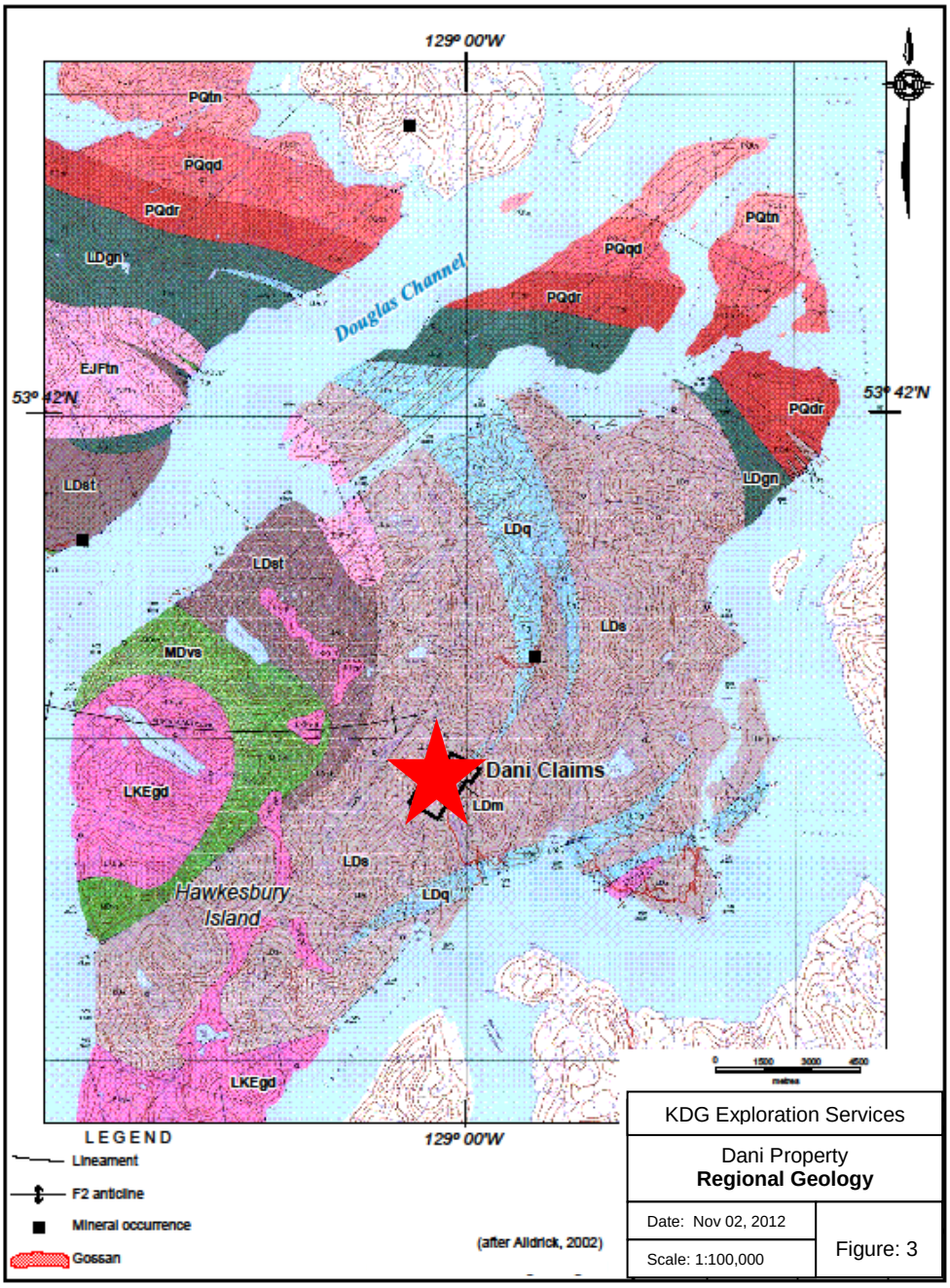
East of Cheenis Creek, streams draining the schist horizon are moderately anomalous in zinc and nickel. Overall, these results are not indicative of mineralization similar to the Dani Showing. North of the property, a silt sample from a large creek has very highly anomalous zinc and nickel, and moderately anomalous copper. This anomaly is further enhanced by the large size of the drainage involved. This creek may drain the extension of the Dani schist unit, northeast of the Cheenis Creek valley and suggests some potential for mineralization in that area.

## Item 7: Geological Setting and Mineralization

### 7.1 Regional Geology

Excerpt from Jones (2003). The Dani property is located at the southeastern limit of the 80 kilometre long by 3 to 20 kilometre wide, Ecstall Metasedimentary and Metavolcanic Belt, which is part of the 2000 kilometre long Central Geniss Complex of the Coast Crystalline Belt of British Columbia (Alldrick, 2001). The geological units present in the southwest part of the Ecstall Belt are outlined in Table 3.

The Ecstall Belt is a north-northwest trending high grade metamorphic belt, ranging from lower amphibolite facies in the southwest to granulite facies in the northwest. The oldest rocks are a mid-Devonian metavolcanic package which is primarily mafic to intermediate in composition, with lesser felsic metavolcanic and clastic metasedimentsary rocks, and rare limestone and chert. Three large, elongate, mid-Devonian plutons, possibly part of a single body called the Big Falls tonalite, intrude the metavolcanic sequence and represent a subvolcanic batholith coeval with the volcanic rocks. Together, these supra-crustal and plutonic rocks form the Big Falls Igneous Complex.




The Big Falls Igneous Complex is unconformably overlain by a regionally extensive package of late Devonian metasedimentary rocks known as the Prospect Hill metasediments. This package consists of a lower pelitic-derived gneiss-schist unit and an upper quartzite unit (Gareau, 1991). These metasediments are in turn unconformably overlain by the late Devonian, layered, Davis Lake gneiss, which is primarily of mafic derivation, and lies along the eastern edge of the Ecstall Belt (Alldrick, 2001).

The Ecstall Belt has been affected by at least four plutonic events post-dating the Devonian (Aldrick and Jackaman, 2002). In the early Mississippian, numerous small bodies of weakly deformed diorite intruded the belt. In the early Jurassic, two elongate tonalite intrusions, the Johnson lake and Foch Lake plutons, intruded the eastern part of the belt. The Ecstall Belt is bounded by two long narrow plutons, the mid-Cretaceous Ecstall pluton to the west and the Paleocene-aged Quottoon Pluton to the east. All the intrusions listed above show signs of deformation and have extensive dyke swarms associated with them.

The stratigraphy of the Ecstall Belt has been isoclinally folded into a regional anticline and the geological section is roughly mirrored on both sides of the belt (Gareau, 1991). At the centre of the belt, the rocks are characterized by steeply dipping, northerly striking foliation defined by near-parallel compositional layering and cleavage (Alldrick and Jackaman, 2002). Three stages of deformation have been identified including open folding of the Devonian sequences in the early Carboniferous, isoclinal folding in the late Jurassic, and a crenulation or kink fold event in the earliest Cretaceous. The cause of deformation (foliation, shearing) in the later plutonic rocks, the Ecstall and Quottoon plutons, is not apparent, but may be related to large, lineaments that extend over great lengths along the Coast Crystalline Belt.

**Table 3: Regional Geology - Table of Formations**
**(after Alldrick, 2002)**

**CENOZOIC**

**Paleocene**

***PQ*:** Quottoon Pluton (56.8±0.1 Ma), medium to coarse grained, massive to locally strongly foliated, associated dyke swarms: PQtn, Hornblende±biotite tonalite; PQqd, Quartz diorite; PQdr, Diorite

**MESOZOIC**

**Late Cretaceous**

***LKE:*** Ecstall Pluton (93.5±1.0 Ma), screens of mafic country rock are common, associated dyke swarms: LKEgd, Epidote-biotite-hornblende granodiorite, medium to coarse grained, massive to foliated.

**Early Jurassic**

***EJFtn:*** Foch Lake Pluton (191.7±0.6 Ma), titanite-epidote-biotite tonalite to granodiorite, medium grained, weakly to strongly foliated, typically contains plagioclase phenocrysts, dyke swarms.

## PALEOZOIC

### Late Devonian

***LDgn:*** Davis Lake Gneiss (370.3±2.8 Ma), layered amphibolite-quartz diorite-granodiorite gneiss, medium grained, well defined compositional layering.

***LD*:** Prospect Hill Metasediments (<386+67/-70 Ma): LDs, undifferentiated or mixed metasedimentary units; LDq, quartzite; LDst, metasiltstone; LDm, marble

### Middle Devonian

***MDvs:*** Big Falls Metavolcanics (393.0±12 Ma), undifferentiated metavolcanic and metasedimentary units.

The Coast Crystalline Belt hosts the greatest number of volcanogenic massive sulphide deposits (18) of any of the Cordilleran physiographic belts (Alldrick and Jackaman, 2002), presenting an attractive exploration target for these deposits. The metavolcanic rocks of the Ecstall Belt represent a mid-Devonian volcanic arc, similar in composition, timing and setting to other similarly aged, productive terranes in the Cordillera, such as the Sicker Group on Vancouver Island, and the Yukon-Tanana Terrane in the Yukon. In fact, the mid-Devonian metavolcanic package hosts 36 of 40 known sulphide occurrences in the Ecstall Belt. Of these, the Ecstall, Packsack and Scotia deposits are the largest (see Section 1.0). Sulphide mineralization in the metavolcanic rocks is hosted by felsic metavolcanic rocks for the most part, which generally consist of pyritic schists, and contains units favourable for exploration with extensive exhalative chert horizons and mineralized stockwork zones (Alldrick and Jackaman, 2002). Besides the metavolcanic rocks, the quartzite unit of the Prospect Hill metasediments hosts at least three sulphide occurrences where interbedded limestone units are present in the section (Alldrick and Jackaman, 2002).

## 7.2 Property Geology

### 7.2.1 Lithology

Excerpt from Jones (2003). The Dani property is underlain by complexly folded and faulted, distinctly compositionally layered, gneissic and schistose rocks, assigned to the Prospect Hill metasediments (Alldrick, 2002). Gneissic rocks extend well to the north and south of the claim group. No large

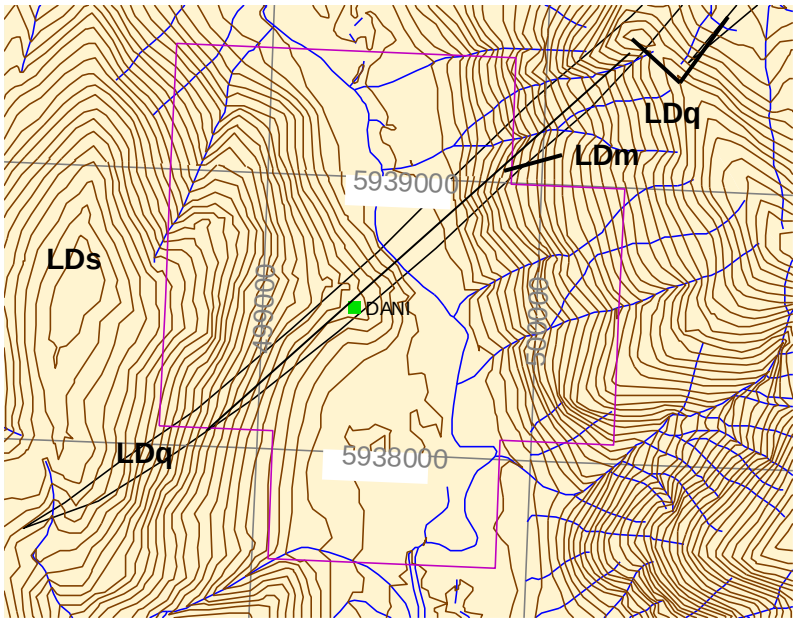



Figure 4: Property Geology

intrusive bodies, such as the exposures of the Ecstall Batholith west of the property, were seen in the areas mapped. The property lithologies are outlined in Table 4.

**Table 4: Property Lithologies**

**Intrusive Rocks**

| | |
|---|---|
| **DIAB** | **Diabase:** relatively fresh, undeformed, parallels foliation, glassy chilled margin |
| **GRNT** | **Granite:** small dykes, generally foliated |
| **GRDR** | **Granodiorite:** minor dykes, similar to granite |
| **PEGM** | **Pegmatite:** coarse grained, weakly foliated, locally folded, |
| **FELS** | **Felsic dyke:** light colour, small dykelets, commonly feldspar porphyritic |

**Metamorphic Rocks**

| | |
|---|---|
| **GNSS** | **Gneiss:** quite variable, discriminated by dominant mineralogy, biotite (BI) to mafic (BI-HB) gneiss, minor quartz-feldspar-muscovite gneiss (QZ-FP-MU), distinct compositional layering, biotite schist layers common, layering is folded locally but overall foliation is consistent |
| **SCHS** | **Schist:** primarily biotite-muscovite (BI-MU) and muscovite (MU) schist, but also contains garnet, feldspar, pyrite and disseminated magnetite, single continuous unit crosses the property, generally light colour, alteration common, including sericite, silica, fuchsite |
| **MRBL** | **Marble:** highly contorted, with siliceous layers, weathers grey |
| **SKRN** | **Skarn:** buff colour, calc-silicate(?)-rich, minor garnet, quartz and feldspar, grey weathering |

The Dani property is centred on a distinctive, 200-250m wide band of schistose rocks that crosses the property in a northeast-southwest direction and which hosts the Dani Showing. This light grey to creamy-white coloured band of rock includes biotite schist (**BI SCHS**), biotite-muscovite schist (**BI-MU SCHS**), and muscovite schist (**MU SCHS**). Quartz is ubiquitous within the schist package and locally forms quartz-rich bands with little micaceous content. On the west side of Cheenis Creek, the schist tends to be more altered, with strong white mica-green mica content giving a bleached appearance, and includes minerals such as fuchsite (chromian muscovite) and sericite in layers and lenses. Pyrite is also very common in the schist. At the north contact of the schist unit, carbonate forms small lenses in several localities. East of Cheenis Creek the schist is greyer with a less altered appearance, biotite is more prominent, and the schist contains garnet and magnetite very commonly. The magnetite content may be as much as 10% and it forms small lenses locally. Garnet shows up most commonly on the south side of the schist, both east and west of Cheenis Creek. Also on the south side, calc-silicate minerals may be present and there is a distinct “skarn” look with a rough weathered surface (**SKRN**). Biotite is distinctly reddish within the schist unit, particularly around the Dani Showing, and locally in the micaceous layers in the immediately surrounding gneiss. The red colour suggests that it may be phlogopitic biotite.

Biotite gneiss (**BI GNSS**) and biotite-hornblende gneiss (**BI-HB GNSS**), typical of the metapelite unit of the Prospect Hill metasediments (Gareau, 1991), dominate the geology south of the Dani Showing. These rocks commonly have a striped appearance due to strong compositional banding caused by variable mafic mineral content. Quartz-feldspar segregations (**BI-QZ-FP GNSS**) also contribute to the striped appearance. Narrow, massive biotite schist layers occur throughout the mapped exposures. The rock is generally non-magnetic although pyrrhotite is a common accessory component. Garnetiferous layers are present but they are more common in the vicinity of the schist horizon. Sericite and epidote alteration occurs where dykes and quartz veins cut through the gneiss.

To the north of the schist horizon, the gneissic rocks are more mafic in composition and this is reflected by the dominance of hornblende over biotite (**HB-BI GNSS**). The rocks are melanocratic, medium grained, and have prominent compositional layering. This unit is generally non-magnetic and contains narrow gossanous layers that appear to be related to cross-cutting felsic dykes. Pyrrhotite is a common accessory mineral. Very minor layers of quartz-feldspar-muscovite gneiss (**QZ-FP-MU GNSS**) were noted in the section and biotite gneiss occurs at the north end of the mapped area.

The gneiss and schist rocks have been intruded by small felsic dykes of variable ages. These dykes range from quartz-feldspar-muscovite pegmatite (**PEGM**) to granite (**GRNT**) and granodiorite (**GRDR**) in composition. Felsic and feldspar porphyritic dykes (**FELS, FPPO**) are also seen. Quartz veins of various ages also cut these rocks. Most of the cross cutting dykes and veins are strongly deformed. Although the pegmatites are folded they do not generally show strong mineral alignment or foliation. This may be due to the coarse grained nature of the rocks. The other dykes, such as the felsic dykes (quartz-feldspar-biotite composition), are always foliated.

A diabase dyke (**DIAB**) was mapped in one locality east of Cheenis Creek. The dyke is fine grained and intrudes parallel to foliation. However, it post-dates deformation as it is unfoliated and its margins are glassy (i.e. cool host rocks).

### 7.2.2: Structure

Despite intense deformation, obvious in the distinct black and white banding in the gneissic rocks, the overall trend of the “gneiss units” is fairly consistent. In the area of the Dani Showing, the rocks trend northeast to east-northeast, and have a steep northerly to steep southerly dip. Isoclinal folds are visible, sheathed within the overall foliation trend. The compositional layering is commonly crenulated along a steeply plunging axis, with a crenulation cleavage forming a secondary foliation in some rocks that trends roughly east-west, dipping north. This crenulation appears to be quite late as it affects the cross cutting quartz veins and some dykes ($F_3$?, Alldrick, 2001).

A few outcrops in the south-western part of the property have a more northerly trending foliation orientation. As well, an outcrop of gneiss near the north limit of mapping on the east side of Cheenis Creek has a north-northwest orientation. This may indicate a swing in the compositional layering away from the schist unit.

Faults are not obvious on the property although several northeast oriented shears and faults were mapped at the outcrop scale. Several lineaments cross the area; including a large, north-trending linear that trends up the Cheenis Creek valley (Alldrick, 2002).

### 7.2.3: Mineralization

The only significant, polymetallic mineralization observed to date has been in float at the Dani Showing. The Showing occurs in strongly altered and deformed, quartz-sericite-biotite-fuchsite schist with 1-20% pyrite as disseminations and lenses. The mineralization consists of foliation parallel lenses of zinc-lead-silver-gold massive sulphide mineralization in pyroxene-magnetite-rich rock. Unfortunately, this style of mineralization was only seen in blast-rock float turned up by roadwork. Consequently, the exact position of the massive sulphide mineralization within the schist unit is unclear. A borrow pit at the end of the road exposes a 3-4 metre wide zone of disseminated pyrite-chalcopyrite in biotite-muscovite schist. Fuchsite alteration envelops the Dani Showing, stretching from west of Cheenis Creek at least 300 metres to the southwest. Disseminated pyrite and strong sericite alteration is even more widespread, showing up in float from the schist unit 1000 metres southwest of the Dani Showing. Chlorite is common in the structural footwall rocks to the Dani Showing, along with garnet and reddish-brown biotite.

Plate 2: Semi-Massive sulphides

Plate 3: Massive sulphides

Outside of the immediate showing area, the schist is still strongly pyritic and sericitic for about a kilometre to the southwest. A locally derived float boulder of biotite-muscovite-pyrite schist, about 400m on strike southwest of the Dani Showing, is anomalous in zinc, copper and silver with respect to the country rock. Another float sample of well crenulated, muscovite-pyrite schist taken 1000 metres southwest of the Dani Showing, downslope from the projection of the schist unit, was found to be anomalous in copper and gold. The alteration style at this location is very reminiscent of the Dani Showing. To the east, across Cheenis Creek, the pyritic schist unit continues, with up to 10% pyrite locally, but the intensity of alteration seems less here. In this area, the schist

hosts disseminations and small lenses of magnetite commonly. There are minor occurrences of chalcopyrite with pyrite and minor pyrrhotite elsewhere in the gneiss rocks.

## Item 8: Deposit Types

The main deposit model that is relevant for the general area is that of Marine Volcanic Associated - massive sulphide (VMS) deposits, in particular Noranda/Kuroko massive sulphide Cu-Pb-Zn deposits. The known developed prospects located within the Ecstal Volcanic Belt are the Scotia (Minfile 103I 007), Ecstal (Minfile 103H 011) and the Packsack (Minfile 103H 013). Others examples include: Homestake (082M 025), Lara (092B 001), Lynx (092B 129), Myra (092F 072), Price (092F 073), H-W (092F 330), Tulsequah Chief (104K 011), Big Bull (104K 008), Kutcho Creek (104J 060), Britannia (092G 003); *Kidd Creek (Ontario, Canada), Buchans (Newfoundland, Canada), Bathurst-Newcastle district (New Brunswick, Canada), Horne-Quemont (Québec, Canada), Kuroko district (Japan), Mount Lyell (Australia), Rio Tinto (Spain), Shasta King (California, USA), Lockwood (Washington, USA).*

### 8.1 Noranda/Kuroko Massive sulphide Cu-Pb-Zn Deposits

According to Trygve Hoy (1995), the Noranda/Kuroko massive sulphide deposits are characterized by one or more lenses of massive pyrite, sphalerite, galena and chalcopyrite commonly within felsic volcanic rocks in a calcalkaline bimodal arc succession. Concordant massive to banded sulphide lens are typically metres to tens of metres thick and tens to hundreds of metres in horizontal dimension. Sometimes there is a peripheral apron of "clastic" massive sulphides. The lenses may be zoned, with a Cu-rich base and a Pb-Zn-rich top and underlying crosscutting “stringer” zone of intense alteration and stockwork veining.

The massive sulphide lenses are typically contained within submarine volcanic arc rocks: rhyolite, dacite associated with andesite or basalt and less commonly in mafic alkaline arc successions. The deposits have associated epiclastic deposits and minor shale or sandstone; commonly in close proximity to felsic intrusive rocks. Ore horizon grades laterally and vertically into thin chert or sediment layers called informally “exhalites”. Mineralization is also associated with faults or prominent fractures. The deposits are typically Devonian in British Columbia but can be any age.

Geochemical signatures associated with the deposit type include Zn, Hg and Mg halos, K addition and Na and Ca depletion of footwall rocks.; More proximal to the deposit, - Cu, Ag, As, Pb and within the deposit - Cu, Zn, Pb, Ba, As, Ag, Au, Se, Sn, Bi, As.

Sulphide lenses usually show either an electromagnetic or induced polarization signature depending on the style of mineralization and presence of conductive sulphides. In recent years borehole electromagnetic methods have proven successful.

Average deposit size is 1.5 Mt containing 1.3% Cu, 1.9 % Pb, 2.0 % Zn, 0.16 g/t Au and 13 g/T Ag (Cox and Singer, 1986). British Columbia deposits range from less than 1 to 2 Mt to more than 10 Mt. The largest are the H-W (10.1 Mt with 2.0 % Cu, 3.5 % Zn, 0.3

% Pb, 30.4 g/t Ag and 2.1 g/t Au) and Kutcho (combined tonnage of 17 Mt, 1.6 % Cu, 2.3 % Zn, 0.06 % Pb, 29 g/t Ag and 0.3 g/t Au).

## Item 9: Exploration


Plate 4: Ralph Keefe

The current exploration program involved a one day visit to the property by Ralph Keefe and Ken Galambos (partners in the property) and Vic Sidic, a consultant to Callinex Mines Inc., who was considering an option on the property. Thirteen samples were collected during the visit, 2 representative chip samples and one select grab of bedrock by the author with the balance being select samples of mineralized float collected by Mr. Sidic from the immediate Dani showing area. Sampling confirmed historical results of both the massive sulphide and disseminated mineralization. Highlights of the sampling program are tabulated below.

Plate 5: Vic Sidic and Ralph Keefe at the Dani showing

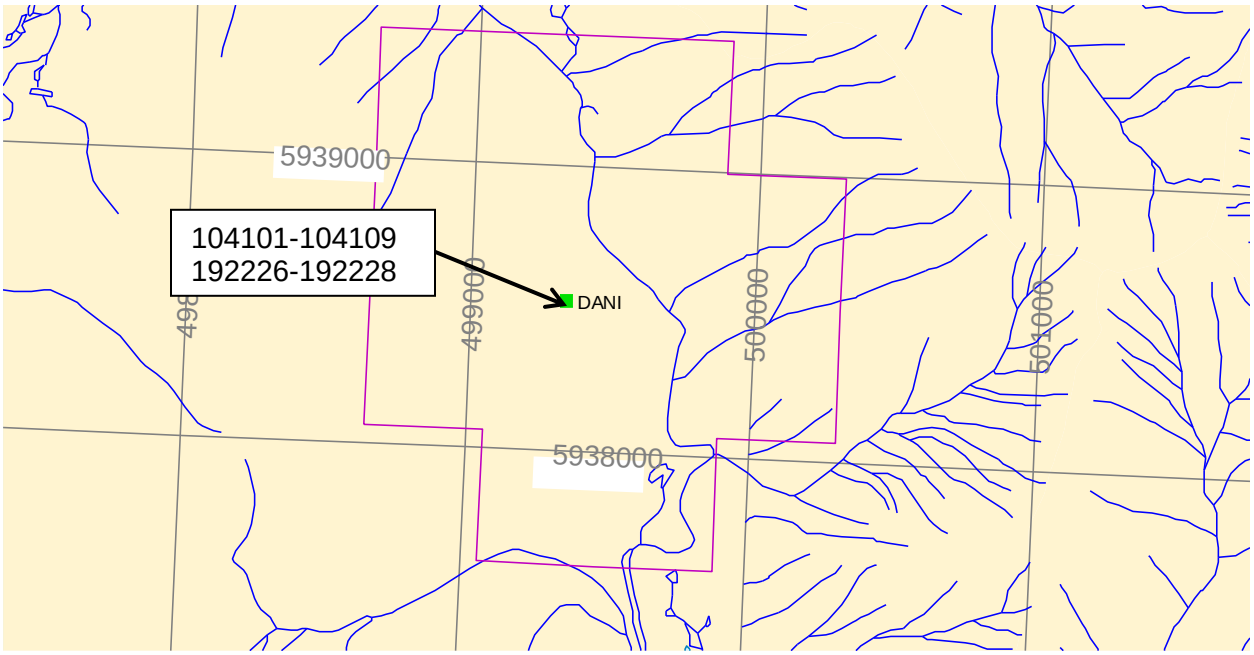



Figure 5: Sample Location Map

Values outlined below are in ppm or ppb except as where noted by being **bolded**.

Table 5: Results from the 2012 program - Dani Property.

| Sample | Type | Width (m) | Zn (ppm) | Pb (ppb) | Ag (ppm) | Cu (ppm) | Au (ppb) |
|---|---|---|---|---|---|---|---|
| 104101 | float | | 96 | 12.7 | 0.7 | 597.1 | 41.8 |
| 104102 | float | | **2.46%** | 7635 | 48.0 | 2755 | 1287 |
| 104103 | float | | **13.04%** | 9674 | >100 | 140.0 | 1517 |
| 104104 | float | | **2.32%** | 3638 | 18.8 | 1613 | 312.6 |
| 104105 | float | | 645 | 232.5 | 2.8 | 237.2 | 105.4 |
| 104106 | float | | **1.12%** | 3050 | 85.6 | 8693 | 266.2 |
| 104107 | float | | 2482 | 6959 | 49.8 | 80.2 | 218.6 |
| 104108 | float | | 3408 | 1337 | 6.9 | 605.9 | 196.1 |
| 104109 | float | | 129 | 44.8 | 0.4 | 8.4 | 11.6 |
| 192226 | chip | 0.80 | **0.0151%** | **0.0022%** | 0.875 | **0.0275%** | **0.011g/t** |
| 192227 | chip | 3.00 | **0.0070%** | **0.0008%** | 2.248 | **0.4027%** | **0.120g/t** |
| 192228 | select | | **0.0085%** | **0.0072%** | 0.787 | **0.0528%** | **0.067g/t** |

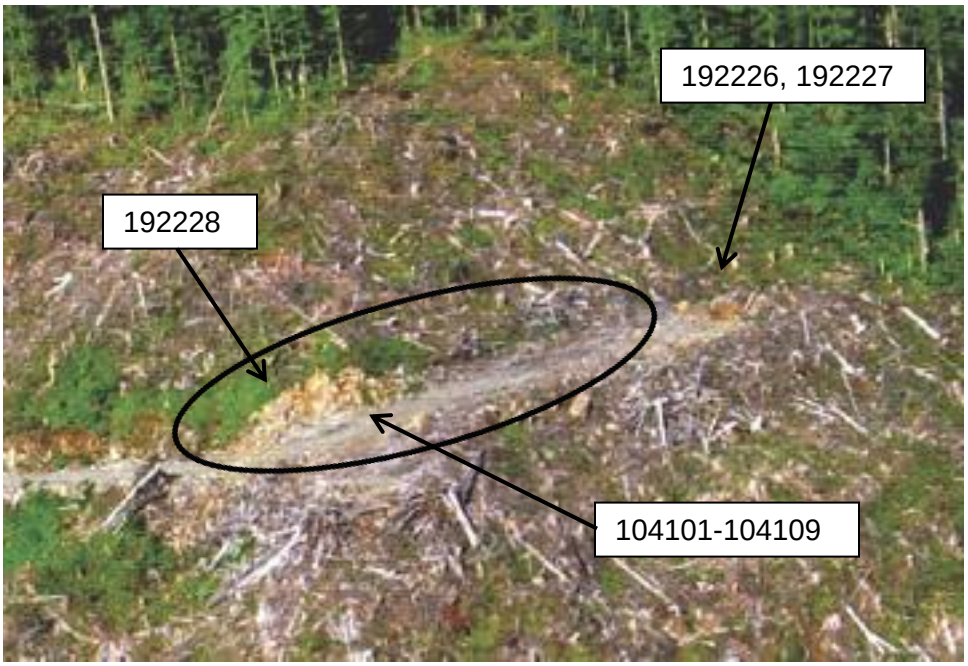



Plate 6: View of the Dani showing circa 2002.

Samples 104101-104109 collected by Vic Sidic were collected within the area outlined by the oval in the historical photo of the Dani showing. Samples 192226-192228, were collected as shown. For reference, the distance from the pit to the outcrop at sample 192228 is approximately 60m.

Plate 7: View of the Dani borrow pit with 3m chip sample 192227

**Item 10: Drilling**

No drilling was completed as part of the exploration program.

## Item 11: Sample Preparation, Analyses and Security

All samples were placed in clean 12x20 poly bags with a sample tag and tied closed with flagging tape. The samples were transported to the Callinex exploration camp at Coles Creek where they were placed into a woven rice bag and sealed with a zip tie. Samples were then delivered directly to the ACME prep lab in Smithers, BC. Rocks were prepared using R200-250 methods where the sample was crushed to 80% passing 10 mesh. A 250g sub-sample was split and pulverized to 85% passing 200 mesh. Samples were analyzed for 32 elements plus gold. 0.5g splits were leached in hot (95˚C) Aqua Regia prior to elemental determination using ICP-ES (1D01). Gold determinations were completed using a Fire Assay of a 30g split (G601).

## Item 12: Data Verification

No data verification was completed as part of the exploration program.

## Item 13: Mineral Processing and Metallurgical Testing

No mineral processing or metallurgical testing was completed as part of the exploration program.

## Item 14: Mineral Resource Estimates

No mineral resource estimates were completed as part of the exploration program

## Item 15: Adjacent Properties

### 15.1 Scotia (Minfile 103I 007, rev. Mandy N. Desautels, 2008)

The Scotia property is situated on the east side of the Ecstall pluton and is underlain by an assemblage of gneissic rocks which are part of the Paleozoic(?) Central Gneiss Complex. The gneissic rocks include felsic gneiss, mafic gneiss and amphibolite. Severely deformed volcanogenic massive sulphide mineralization occurs mainly within the felsic gneiss.

Zinc, silver, lead and gold mineralization occur within an Upper-Middle-Lower zone striking 160 degrees for 228 metres, dipping 40 degrees southwest and plunging 9 degrees south. The ore zones are interpreted to lie within an overturned fold with related drag folding caused by shearing (Assessment Report 13794). Sulphide minerals include sphalerite, galena, pyrite, pyrrhotite, bornite and chalcopyrite. Massive sulphide widths range up to 11 metres as indicated by diamond drilling. A 9.02 metre intersection assayed 20.55 per cent zinc, 2.70 per cent lead, 41.5 grams per tonne silver and 0.58 grams per tonne gold (Assessment Report 13794).

Indicated potential reserves for the Scotia volcanogenic massive sulphide deposit are 150,000 tonnes grading 13.3 per cent zinc, 1.4 per cent lead and 25.0 grams per tonne silver (Statement of Material Facts, Andaurex Resources Inc., August 29, 1984).

Bishop Resources Inc. conducted a 10-hole drilling program in 1997. The drilling was conducted within a north-south strike length of 310 metres. A global resource is contained within an east-west dimension of about 100 metres while a drill indicated resource is within a 50-metre width. Resource calculations are for the Albere Zone. The

measured drill indicated and probable resource was 224,000 tonnes grading 12.2 per cent zinc, 1.2 per cent lead, 0.2 per cent copper, 23 grams per tonne silver and 0.55 grams per tonne gold. This resource was calculated using a cut-off of 4 to 5 per cent zinc over a 1.8-metre width (GCNL #7(January 12), 1998).

The global resource was calculated using 1 per cent zinc over a 0.5-metre width. This global drill indicated resource is calculated to be 1,240,000 tonnes grading 3.8 per cent zinc, 0.4 per cent lead, 0.1 per cent copper, 13 grams per tonne silver and 0.25 grams per tonne gold. The alteration zone hosting sulphide mineralization is considered to be open down-dip to the west and along strike to the north.

**15.2 Ecstall (Minfile 103H 011, rev. Mandy N. Desautels, 2008)**

The property is located on the Ecstall River some 70 kilometres southeast of Prince Rupert. Red Gulch Creek, a southerly flowing tributary, exposed the mineralization for a distance of about 610 metres between elevations of about 60 to 200 metres.

The showings were apparently discovered by Indian residents of the area, and staked in the 1890's by Charles Todd, Indian Agent for northern B.C. for himself and J.N. MacKay, H.B. Co. Chief Factor at Fort Simpson. Four claims, the Bluestone, Bell Helen, Red Gulch, and Red Bluff were staked on the showings. John Bryden and associates of Victoria purchased the property in 1900 and in March 1901 incorporated The British Columbia Pyrites Company, Limited. The above 4 claims and the Queen claim (Lots 111-115 respectively) were Crown-granted to the company in 1902. Underground work was begun in 1901. A crosscut adit was driven 20 metres to the mineralized zone and drifts totalling about 12 metres were run to the north and south. Diamond drilling totalled 21 metres. A tramline was built 720 metres to the river in 1902. A bulk sample of about 90 tonnes from the mineralized zone was shipped to the Victoria Chemical Works, probably in 1903.

No further activity was reported until late in 1916 when the property was optioned to New York agents for The Granby Consolidated Mining, Smelting and Power Company, Limited. Diamond drilling by the company during the period 1917-1920 totalled about 3350 metres. The option was given up in the summer of 1920. Granby optioned the property again in 1923. Further diamond drilling and metallurgical studies were reported. The option was given up later in the year and the property reverted to British Columbia Pyrites. Based on diamond drilling to that date the two main mineralized lenses were indicated to contain about 4,536,000 tonnes averaging 49.35 per cent sulphur, 42.75 per cent iron, 0.2 per cent lead, 2.30 per cent zinc, 0.80 per cent copper, 0.69 gram per tonne gold and 24.3 grams per tonne silver. Included in the above is a section in the west part of the north lens containing an indicated 589,670 tonnes averaging 1.91 per cent copper, 2.30 per cent zinc, 1.0 gram per tonne gold and 34 grams per tonne silver (W.B. Maxwell 16/04/1942 - for Metals Controller - British Columbia Pyrites Company, Limited).

The Sulphide group of 16 claims (Lots 2661-2676) were staked surrounding the original group and extending south across the Ecstall River; the dates of staking and Crown-granting are not available.

Texas Gulf Sulphur Company purchased the property from British Columbia Pyrites in 1937. A geophysical survey was carried out and some diamond drilling was done to check prior work. An operating company Northern Pyrites, Limited was incorporated in December 1937. A new crosscut adit was begun on the west side of Red Gulch creek at about the 30-metre elevation in 1938. The adit was extended to a length of 847 metres in 1940. Seven crosscuts totalling 263 metres were driven across the mineralized zone from the adit and a 60 degree raise was driven about 180 metres to the surface.

The property was transferred to another Texas Gulf subsidiary, Sulgas Properties Ltd., which was incorporated in 1951; Northern Pyrites, Limited was wound up voluntarily in 1952. During 1952 Sulgas carried out 420 metres of surface diamond drilling, 2707 metres of underground diamond drilling, and a low frequency electromagnetic survey. Reserves were reported to be at least 8,000,000 tons, no grade stated (EMPR Bull 39, page 41, 1957).

The assets of Ecstall Mining Company Ltd. were transferred to the parent company, Texas Gulf Sulphur Company, in 1960 and Ecstall was placed in voluntarily liquidation in August of that year. In 1966 a ten ton bulk sample was shipped for metallurgical testing.

The company name (Texas Gulf) was changed in 1972 to Texas Gulf, Inc., and in 1973 to Texasgulf Inc. A horizontal loop electromagnetic survey was carried out over 8.7 line kilometres covering Jungle 101 claim (units 1-3, 14-19) in 1975. Texas Gulf back in 1965 incorporated a new subsidiary Ecstall Mining Limited to hold the property; the latter name was changed in 1975 to Texasgulf Canada Ltd. This company was acquired in 1981 by Canada Development Corporation, at that time 87.7 per cent owned by the Government of Canada. The name (Texasgulf Canada) was changed in 1981 to Kidd Creek Mines Ltd. They dropped the claims and they were re-staked by Mr. C.W. Graf. In 1981, the property was optioned by a joint venture of E & B Explorations Inc. and Welcome North Mines Ltd. who did airborne geophysics, geology and geochemistry. After the property was dropped, Noranda Exploration Company Limited optioned the property in 1985. They staked more claims and carried out airborne EM surveys, ground geophysics, geology and rock geochemistry. Noranda dropped the property in 1987 and the claims were transferred to Mr. Graf. In 1988, Ecstall Mining Corporation purchased the property consisting of 15 claims including Ecstall 8, 9, 10, 15; Tall 1, 3, 6, 13; Fall 10-11 and Fall 12-13 Fr. In 1989, Cominco Ltd. optioned the deposit.

The Ecstall deposit, and a cluster of three spatially associated showings; the Third Outcrop (103H 012), the East Plateau (103H 050) and the Trench (103H 051), lie within the Scotia-Quaal metamorphic belt, which extends from Hawkesbury Island north to Work Channel. The belt consists of a ?Proterozoic-Paleozoic metasedimentary and metavolcanic sequence that includes the Middle Devonian Big Falls orthogneiss, Early

Jurassic orthogneiss, and Jurassic or Cretaceous mafic and ultramafic intrusive rocks. The assemblage may be correlative with the Nisling terrane. The metamorphic belt is intruded by the Late Cretaceous Ecstall pluton on the west, and the Paleogene Quottoon plutons to the east.

The rocks dip about 80 degrees east and consist of quartz-biotite-chlorite schists, quartz-hornblende-chlorite schist, quartzite grading to quartz-mica schist, minor black argillite and granitic gneiss. The VMS in the Ecstall Belt are part of a mid Devonian volcanic and intrusive event (Fieldwork 2000, p. 269-278). The quartz diorite gives a minimum age to the VMS. A felsic metavolcanic associated with the deposit gives 393 Ma and the Big Falls tonalite gives 385 Ma. These are indistinguishable in age at stated accuracies. Of interest are local quartzites with detrital zircons of Precambrian age (Fieldwork 2000, pages 269-278).

The Ecstall deposit occurs in a hydrothermally altered sequence of volcanic/volcaniclastic rocks, close to a felsic volcanic centre. Two tabular concordant bodies, known as the North Lens and South Lens, have an en echelon relationship. Mineralization consists largely of pyrite with minor chalcopyrite and sphalerite and lesser pyrrhotite, marcasite and galena.

The North Lens measures about 300 by 150 by 30 metres and the South Lens measures about 400 by 360 by 7 metres. A 6.1-metre sample of the South Lens assayed 3.02 per cent zinc, 0.18 per cent copper, 20.6 grams per tonne silver and 0.69 gram per tonne gold (Minister of Mines Annual Report 1952).

The two lenticular bodies of massive pyrite strike north, dip steeply east and plunge steeply south. The North Lens contains 3.1 million tonnes grading 0.80 per cent copper, 2.0 per cent zinc, 43.5 per cent iron, 49.5 per cent sulphur, 17.1 grams per tonne silver and 0.5 grams per tonne gold. The South Lens contains 3.8 million tonnes grading 0.5 per cent copper, 3.0 per cent zinc, 41.3 per cent iron and 47.6 per cent sulphur. The upper 1.3 million tonnes grades 20.2 grams per tonne silver and 0.5 grams per tonne gold (Assessment Report 15488). Unclassified reserves in 1993 for the Ecstall deposit (North and South lenses) are 6,349,700 tonnes grading 0.6 per cent copper, 2.5 per cent zinc, 0.5 gram per tonne gold and 20.0 grams per tonne silver (George Cross News Letter No.26 (February 8), 1994).

A smaller deposit occurs 760 metres north of the North Lens, where 30 by 2.4 metres of massive pyrite is exposed.

Results of property-scale exploration by Falconbridge in 1986/87 indicated the presence of significant stockwork copper mineralization in felsic rocks, occurring south of the Ecstall River in Thirteen Creek area. The stockwork mineralization was interpreted as a possible feeder zone to a volcanogenic massive sulphide deposit. This area was explored by Atna Resources Ltd. in 1994, confirming stockwork copper mineralization and outlining disseminated copper mineralization over a large area, including a previously unexplored area at the north end of the grid. The work by Atna outlined

disseminated and vein copper mineralization over a 2000 by 150 metre area on Thirteen Creek grid. Results of a systematic chip sampling program across the zone yielded values of 0.198 per cent copper over 124 metres across one of the better exposures (Assessment Report 24605).

### 15.3 Packsack (Minfile 103H 013, rev. Mandy N. Desautels, 2008)

The Packsack deposit is located 12 kilometres from tidewater on Douglas Channel about halfway between Prince Rupert and Kitimat. The claims lie on the east side of the ridge at the bend of the Ecstall River, 10 kilometres south of Johnston Lake. The Steelhead (103H 036) and Horsefly (103H 014) showings occur on the same property.

Ecstall Mining Company Ltd. carried out a reconnaissance geological survey in this vicinity in 1957 under the direction of W.R. Bacon. Sulphide showings were discovered at an elevation of about 800 feet in the beds of two intermittent streams on the east slope of what came to be know locally as Prospect Hill. Sixteen claims in two rows of eight (Packsack 1-8 and Gunnysack 1-8) were staked in a north-south direction. An electromagnetic survey was carried out over the showings in 1958.

The assets of Ecstall were transferred to the parent company, Texas Gulf Sulphur Company, in 1960 and Ecstall was placed in voluntary liquidation in August of that year. Work during 1960 included 881 metres of diamond drilling in 11 holes. All the holes are reported to have cut pyrite mineralization, much of which is massive.

The company name (Texas Gulf) was changed in 1972 to Texas Gulf, Inc. and in 1973 to Texasgulf Inc. During 1973 geological mapping, and a geochemical soil survey (119 samples) over 2 line-miles were carried out over Packsack 1-4 and Gunnysack 1-8. In 1975 a shootback electromagnetic survey was carried out over 9.75 line-kilometres on Packsack 1 and 2 and Gunnysack 1-6. Texasgulf Inc. dropped the claims and they were restaked by Mr. C.W. Graf. In 1981, the property was optioned by a joint venture of E & B Explorations Inc. and Welcome North Mines Ltd. who did airborne geophysics, geology and geochemistry. After the property was dropped, Noranda Exploration Company Limited optioned the property in 1985. They staked more claims and carried out airborne EM surveys, ground geophysics, geology and rock geochemistry. Noranda dropped the property in 1987 and the claims were transferred to Mr. Graf. In 1988, Ecstall Mining Corporation purchased the property consisting of 15 claims including Ecstall 8, 9, 10, 15; Tall 1, 3, 6, 13; Fall 10, 11; Fall 12-13 Fr. In 1989, Cominco Ltd. optioned the deposit. In 1990, they drilled 3 holes totalling 934 metres.

A north trending, steep easterly dipping belt of metavolcanics and metasediments consisting of chlorite-sericite schist, quartz- sericite schist, mixed dacitic to rhyolitic rocks, phyllite, and meta-siltstone are bounded by altered hornblende diorite of the Coast Plutonic Complex. All rocks are cut by hornblende lamprophyre dikes.

Two massive sulphide bodies, 170 metres apart, occur within the quartz-sericite schist and are associated with a 600-metre long, 34 metre wide shear zone. The deposit averages 3.8 metres in thickness and has been traced continuously for 600 metres.

The mineralization is similar to that at the Ecstall deposit (103H 011), about 13 kilometres to the north-northeast.

The southern body, up to 6 metres wide and traced for 365 metres, consists of massive pyrite with minor chalcopyrite, chalcocite and sphalerite. The mineralized body is open at depth and along strike in both directions and appears to be thickening and becoming more zinc rich (relative to copper) with depth. The northern body is up to 0.6 metres wide. Disseminated pyrite is common in the quartz-sericite schist. In 1986, unclassified reserves were 2.7 million tonnes grading 0.5 per cent copper, 0.2 per cent zinc, 0.01 per cent lead, 34 grams per tonne silver and 0.3 grams per tonne gold (Assessment Report 15756).

## Item 16: Other Relevant Data and Information

There is no other relevant data or information other than that included in this report.

## Item 17: Interpretation and Conclusions

The 2012 sampling program, in addition to previous programs, has identified significant massive, semi-massive and disseminated sulphide mineralization containing enhanced precious metal values. Float samples returned values as high as 13.04% zinc, 9674ppm lead, >100ppm silver and 1517ppb gold. A chip sample from the borrow pit at the end of the road, returned values of 0.4027% copper, 2.248gm/t silver and 0.120gm/t gold across 3.0m. This mineralization remains open in all directions. The noted mineralization at the Dani showing was emplaced prior to deformation and exists as foliation parallel bands up to several tens of cm in samples of massive sulphide. In the authors opinion the mineralization is primary, Volcanic associated VMS of the Noranda/Kuroko type and not skarn mineralization as proposed by Alldrick (2002).

Previous mapping and sampling have identified a 200-250m wide band of schistose rocks that crosses the property in a northeast-southwest direction and which hosts the Dani Showing. Outside of the immediate showing area, the schist is still strongly pyritic and sericitic for about a kilometre to the southwest. To the east, across Cheenis Creek, the pyritic schist unit continues, with up to 10% pyrite locally, but in general the intensity of alteration appears less. There are minor occurrences of chalcopyrite with pyrite and minor pyrrhotite elsewhere in the gneiss rocks. Select samples from the Dani Showing returned high grade base metal values, up to 10.2% Zn and 5.7% Pb, and also have significant precious metal content, with values of up to 203 g/t Ag and 1.26 g/t Au. (Jones, 2003).

Regional mapping by Alldrick (2002) has identified similar schistose rocks over a wide area along strike to the northeast. Significant gossanous areas exist in the same areas indicating possible metal enrichment. Silt anomalies identified off the present property also indicate the potential for additional base and precious metal mineralization.

It is the author’s belief that the Dani property is a property of merit and has the potential to host one or more significant mineral deposits.

## Item 18: Recommendations

The Dani property has seen only minimal preliminary exploration in past programs. A systematic two phase program of exploration is proposed. Phase 1 exploration should include a detailed magnetic and electromagnetic (EM) airborne survey over an area covering the Dani property and strike extensions to schistose rocks hosting the massive sulphide mineralization. This survey should include most of Hawkesbury Island and all of the prospective ground that is presently not staked between the Dani and the Packsack properties. Concurrent with the geophysical survey, detailed prospecting, mapping and sampling in the immediate Dani showing area should be completed. Systematic geochemical sampling and prospecting should be completed along strike to the northeast and southwest in an effort to locate additional surface showings. Areas identified in the 2002 program should be further investigated to try and locate the source for the anomalous zinc and copper in silt located north of the property. Whole rock analysis and thin section work on a number of units should be completed to determine the parent lithologies. Phase 2 of the exploration program would be the staking of additional claims to cover anomalies generated from the airborne survey and follow-up prospecting and sampling of these newly staked areas.

**Proposed budget for 2012**

| | | |
|---|---|---|
| Phase 1 | | |
| Project Geologist (10 days @ $600/day) | | 6,000 |
| Prospector/sampler x 3 (10 days @ $300/day) | | 9,000 |
| Assaying (200 rock samples @ $55/sample) | | 11,000 |
| Room and Board (40 person days @ $200/day) | | 8,000 |
| Mob/demob | | 10,000 |
| Geophysical airborne surveys mag-EM (km) | | 250,000 |
| Reporting | | 10,000 |
| Contingency (15%) | | 45,600 |
| | **Phase 1 Total** | **$349,600** |
| Phase 2 | | |
| Claim staking (10,000ha @ $1.70/ha) | | 17,000 |
| Project Geologist (20 days @ $600/day) | | 12,000 |
| Prospector/sampler x 3 (20 days @ $300/day) | | 18,000 |
| Assaying (400 samples @ $55/sample) | | 22,000 |
| Room and Board (100 person days @$200/day) | | 20,000 |
| Helicopter (80 hrs @ $1600/hr. wet) | | 128,000 |
| Mob/demob | | 15,000 |
| Reporting | | 10,000 |
| Contingency (15%) | | 36,300 |
| | **Phase 2 Total** | **$278,300** |

Respectfully submitted
this 2nd day of November, 2012

Ken Galambos P.Eng.

## Item 19: References

Alldrick, D.J., 2002. Geology of the Ecstall Greenstone Belt, British Columbia: B.C. Ministry of Energy and Mines, Open File 2002-3, Map Sheet 3, scale 1:50,000.

Alldrick, D.J., 2001. Geology and mineral deposits of the Ecstall Greenstone Belt, northwest British Columbia, (NTS 103H/103I): B.C. Ministry of Energy and Mines, Geological Fieldwork 2000, Paper 2001-1, pp. 279-305.

Alldrick, D.J. and Jackaman, W., 2002. Metal zoning in the Ecstall VMS belt, northwest British Columbia (NTS 103H/103I): B.C. Ministry of Energy and Mines, Geological Fieldwork 2001, Paper 2002-1, pp. 151-170.

Gareau, S.A., 1991. Geology of the Scotia-Quaal metamorphic belt, Coast Plutonic Complex, British Columbia: unpublished Ph.D. thesis, Carleton University, 390 p.

Jones, M., 2003. 2002 Geological and Geochemical Report on the Dani Property, British Columbia, Skeena Mining Division, MEMPR Assessment Report# 27128

Money, P.L., 1959. Geology of Hawkesbury Island, Skeena Mining Division, British Columbia: unpublished M.Sc. thesis, University of British Columbia, 159 p.

## Item 20: Date and Signature Page

1) I, Kenneth Daryl Galambos of 1535 Westall Avenue, Victoria, British Columbia, am self-employed as a consultant geological engineer, authored and am responsible for this report entitled “Geological and Geochemical Report on the Dani Property”, dated November 02, 2012.

2) I am a graduate of the University of Saskatchewan in Saskatoon, Saskatchewan with a Bachelor’s Degree in Geological Engineering (1982). I began working in the mining field in 1974 and have more than 27 years mineral exploration and production experience, primarily in the North American Cordillera. Highlights of this experience include the discovery and delineation of the Brewery Creek gold deposit, near Dawson City, Yukon for Noranda Exploration Ltd.

3) I am a registered member of the Association of Professional Engineers of Yukon, registration number 0916 and have been a member in good standing since 1988. I am a registered Professional Engineer with APEGBC, license 35364, since 2010.

4) This report is based upon the author’s personal knowledge of the region and a review of additional pertinent data.

5) As stated in this report, in my professional opinion the Dani property is of potential merit and further exploration work is justified.

6) To the best of my knowledge this report contains all scientific and technical information required to be disclosed so as not to be misleading.

7) I am partners with Ralph Keefe and Shawn Turford on the Dani property and a number of other properties in British Columbia. My professional relationship is as a non-arm’s length consultant, and I have no expectation that this relationship will change.

8) I consent to the use of this report by Ralph Keefe and Shawn Turford for such assessment and/or regulatory and financing purposes deemed necessary, but if any part shall be taken as an excerpt, it shall be done only with my approval.

Dated at Victoria, British Columbia this 2nd day of November, 2012.
“Signed and Sealed”

Ken Galambos, P.Eng. (APEY Reg. No. 0916, APEGBC license 35364)
KDG Exploration Services
1535 Westall Ave.
Victoria, British Columbia V8T 2G6

## Item 21: Statement of Expenditures

| | |
|---|---|
| **August 06, 2011** | |
| Ralph Keefe (1 day @ $350/day) | 350.00 |
| Vic Sidic (1 day @$550/day) | 550.00 |
| Ken Galambos (1 day @ $550/day) | 550.00 |
| **Transportation** | |
| Helicopter (3.5hr @ $1600/hr wet) | $5600.00 |
| **Assaying** | |
| rock (13 rocks @ $61.60/each) | 800.80 |
| **Report** | |
| Report (3.3 days @ $600/day) | 2000.00 |
| | $9850.80 |

## Item 22: Software used in the Program

Adobe Acrobat 9
Adobe Photoshop Elements 8.0
Adobe Reader 8.1.3
Google Earth
Internet Explorer
Microsoft Windows 7
Microsoft Office 2010

# Appendices

# Appendix A

## Assay Certificates
## Rocks

Acme Analytical Laboratories (Vancouver) Ltd.
1020 Cordova St. East Vancouver BC V6A 4A3 Canada

www.acmelab.com

**Client:** **Callinex Mines Inc.**
Suite 1110 - 555 W. Hastings St.
Vancouver BC V6B 4N4 Canada

Submitted By: Email Distribution List
Receiving Lab: Canada-Smithers
Received: August 30, 2011
Report Date: March 05, 2012
Page: 1 of 2

# CERTIFICATE OF ANALYSIS SMI11000380.2

## CLIENT JOB INFORMATION

Project: Dany showing
Shipment ID:
P.O. Number
Number of Samples: 10

## SAMPLE DISPOSAL

STOR-PLP Store After 90 days Invoice for Storage
STOR-RJT Store After 90 days Invoice for Storage

Acme does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

## SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

| Method Code | Number of Samples | Code Description | Test Wgt (g) | Report Status | Lab |
|---|---|---|---|---|---|
| R200-250 | 9 | Crush, split and pulverize 250 g rock to 200 mesh | | | SMI |
| 1DX2 | 10 | 1:1:1 Aqua Regia digestion ICP-MS analysis | 15 | Completed | VAN |
| 7AR | 4 | 1:1:1 Aqua Regia digestion ICP-ES analysis | 0.4 | Completed | VAN |

## ADDITIONAL COMMENTS

Version 2; 7AR analysis included

Invoice To: Callinex Mines Inc.
Suite 1110 - 555 W. Hastings St.
Vancouver BC V6B 4N4
Canada

CC: Angie D'Amato

BRITISH COLUMBIA CERTIFIED ASSAYER
CLARENCE LEONG
GENERAL MANAGER

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.
All results are considered the confidential property of the client. Acme assumes the liabilities for actual cost of analysis only. Results apply to samples as submitted.
"*" asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.

Acme Analytical Laboratories (Vancouver) Ltd.
1020 Cordova St. East Vancouver BC V6A 4A3 Canada
Phone (604) 253-3158 Fax (604) 253-1716
www.acmelab.com

**Client:** **Callinex Mines Inc.**
Suite 1110 - 555 W. Hastings St.
Vancouver BC V6B 4N4 Canada

Project: Dany showing
Report Date: March 05, 2012



# CERTIFICATE OF ANALYSIS SMI11000380.2

| Method | | WGHT | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 1DX15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analyte | | Wgt | Mo | Cu | Pb | Zn | Ag | Ni | Co | Mn | Fe | As | Au | Th | Sr | Cd | Sb | Bi | V | Ca | P |
| Unit | | kg | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | % | ppm | ppb | ppm | ppm | ppm | ppm | ppm | ppm | % | % |
| MDL | | 0.01 | 0.1 | 0.1 | 0.1 | 1 | 0.1 | 0.1 | 0.1 | 1 | 0.01 | 0.5 | 0.5 | 0.1 | 1 | 0.1 | 0.1 | 0.1 | 2 | 0.01 | 0.001 |
| 104101 | Rock | 0.65 | 2.5 | 597.1 | 12.7 | 96 | 0.7 | 7.6 | 35.3 | 418 | 6.40 | <0.5 | 41.8 | 0.2 | 29 | 0.2 | 0.2 | 0.1 | 123 | 1.08 | 0.190 |
| 104102 | Rock | 0.64 | 3.2 | 2755 | 7635 | >10000 | 48.0 | 60.8 | 73.7 | 913 | 20.63 | 5.0 | 1287 | <0.1 | 8 | 132.9 | 13.1 | 13.3 | 14 | 0.66 | 0.021 |
| 104103 | Rock | 0.45 | 2.5 | 140.0 | 9674 | >10000 | >100 | 136.1 | 74.8 | 1136 | 18.84 | 1.6 | 1517 | <0.1 | 9 | 737.5 | 52.3 | 147.4 | 12 | 0.43 | 0.021 |
| 104104 | Rock | 0.76 | 1.7 | 1613 | 3638 | >10000 | 18.8 | 90.5 | 9.9 | 2091 | 7.81 | 1.1 | 312.6 | 0.2 | 24 | 96.6 | 2.7 | 10.0 | 38 | 0.94 | 0.111 |
| 104105 | Rock | 0.70 | 41.1 | 237.2 | 232.5 | 645 | 2.8 | 42.3 | 17.2 | 2960 | 2.95 | 2.3 | 105.4 | 0.6 | 38 | 3.3 | 0.5 | 0.8 | 19 | 0.84 | 0.048 |
| 104106 | Rock | 0.67 | 3.8 | 8693 | 3050 | >10000 | 85.6 | 120.9 | 41.4 | 431 | 18.48 | 6.8 | 266.2 | 0.4 | 36 | 66.2 | 6.2 | 6.1 | 14 | 1.00 | 0.109 |
| 104107 | Rock | 1.01 | 2.0 | 80.2 | 6959 | 2482 | 49.8 | 17.8 | 9.1 | 154 | 4.85 | <0.5 | 218.6 | 0.5 | 3 | 19.1 | 2.1 | 99.6 | 9 | 0.19 | 0.062 |
| 104108 | Rock | 0.69 | 2.4 | 605.9 | 1337 | 3408 | 6.9 | 22.8 | 11.9 | 681 | 8.50 | <0.5 | 196.1 | 0.3 | 18 | 20.1 | 5.2 | 1.6 | 55 | 0.75 | 0.131 |
| 104109 | Rock | 0.36 | 0.5 | 8.4 | 44.8 | 129 | 0.4 | 2.5 | 2.7 | 213 | 1.53 | 3.7 | 11.6 | 4.6 | 9 | 0.6 | 0.3 | 0.8 | 11 | 0.22 | 0.013 |
| 104110 | Rock Pulp | 0.02 | 1352 | 9853 | 84.9 | 153 | 96.0 | 11.5 | 10.8 | 561 | 3.03 | 191.9 | 4076 | 2.0 | 16 | 8.6 | 105.0 | 3.7 | 32 | 0.56 | 0.060 |

Acme Analytical Laboratories (Vancouver) Ltd.
1020 Cordova St. East Vancouver BC V6A 4A3 Canada
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**Client:** **Callinex Mines Inc.**
Suite 1110 - 555 W. Hastings St.
Vancouver BC V6B 4N4 Canada

Project: Dany showing
Report Date: March 05, 2012



# CERTIFICATE OF ANALYSIS SMI11000380.2

| | Method | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 7AR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Analyte | La | Cr | Mg | Ba | Ti | B | Al | Na | K | W | Hg | Sc | Tl | S | Ga | Se | Te | Zn |
| | Unit | ppm | ppm | % | ppm | % | ppm | % | % | % | ppm | ppm | ppm | ppm | % | ppm | ppm | ppm | % |
| | MDL | 1 | 1 | 0.01 | 1 | 0.001 | 1 | 0.01 | 0.001 | 0.01 | 0.1 | 0.01 | 0.1 | 0.1 | 0.05 | 1 | 0.5 | 0.2 | 0.01 |
| 104101 | Rock | 1 | 6 | 1.54 | 17 | 0.195 | 1 | 2.42 | 0.025 | 1.23 | 0.2 | <0.01 | 3.1 | 0.8 | 5.21 | 4 | 14.5 | 0.4 | N.A. |
| 104102 | Rock | <1 | 12 | 0.22 | 5 | 0.021 | <1 | 0.36 | 0.003 | 0.03 | 0.8 | 3.75 | 0.4 | 0.2 | >10 | 2 | 12.3 | 3.1 | 2.46 |
| 104103 | Rock | 1 | 4 | 0.28 | 2 | 0.014 | <1 | 0.32 | 0.002 | <0.01 | 0.3 | 25.84 | 0.4 | 0.6 | >10 | 1 | 31.8 | 27.4 | 13.04 |
| 104104 | Rock | 1 | 127 | 0.44 | 16 | 0.100 | <1 | 0.85 | 0.006 | 0.15 | 0.4 | 3.75 | 2.3 | 0.2 | 8.34 | 2 | 10.4 | 3.2 | 2.32 |
| 104105 | Rock | 1 | 64 | 0.30 | 40 | 0.052 | 2 | 1.35 | 0.054 | 0.30 | 2.4 | 0.45 | 2.0 | 0.2 | 2.52 | 4 | 3.3 | 0.8 | N.A. |
| 104106 | Rock | 2 | 7 | 0.12 | 14 | 0.090 | 1 | 0.72 | 0.003 | 0.04 | 0.3 | 2.69 | 0.6 | 0.1 | >10 | 2 | 11.9 | 2.5 | 1.12 |
| 104107 | Rock | 2 | 26 | 0.18 | 28 | 0.016 | 1 | 0.41 | 0.005 | 0.17 | 0.2 | 0.78 | 0.7 | 1.1 | 5.08 | 1 | 33.8 | 3.5 | N.A. |
| 104108 | Rock | 1 | 21 | 0.59 | 44 | 0.101 | 1 | 0.81 | 0.008 | 0.15 | 0.4 | 0.88 | 1.7 | 0.1 | 4.26 | 3 | 15.9 | 1.4 | N.A. |
| 104109 | Rock | 16 | 14 | 0.30 | 99 | 0.075 | 21 | 0.80 | 0.086 | 0.46 | 0.2 | 0.13 | 2.5 | 0.1 | <0.05 | 4 | <0.5 | <0.2 | N.A. |
| 104110 | Rock Pulp | 7 | 13 | 0.41 | 114 | 0.008 | 6 | 1.00 | 0.051 | 0.24 | 9.6 | 0.67 | 3.6 | <0.1 | 0.97 | 3 | 3.9 | 0.8 | N.A. |

Acme Analytical Laboratories (Vancouver) Ltd.
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**Client:** **Callinex Mines Inc.**
Suite 1110 - 555 W. Hastings St.
Vancouver BC V6B 4N4 Canada

Project: Dany showing
Report Date: March 05, 2012



# QUALITY CONTROL REPORT SMI11000380.2

| | Method | WGHT | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 1DX15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Analyte | Wgt | Mo | Cu | Pb | Zn | Ag | Ni | Co | Mn | Fe | As | Au | Th | Sr | Cd | Sb | Bi | V | Ca | P |
| | Unit | kg | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | % | ppm | ppb | ppm | ppm | ppm | ppm | ppm | ppm | % | % |
| | MDL | 0.01 | 0.1 | 0.1 | 0.1 | 1 | 0.1 | 0.1 | 0.1 | 1 | 0.01 | 0.5 | 0.5 | 0.1 | 1 | 0.1 | 0.1 | 0.1 | 2 | 0.01 | 0.001 |
| Pulp Duplicates | | | | | | | | | | | | | | | | | | | | | |
| 104103 | Rock | 0.45 | 2.5 | 140.0 | 9674 | >10000 | >100 | 136.1 | 74.8 | 1136 | 18.84 | 1.6 | 1517 | <0.1 | 9 | 737.5 | 52.3 | 147.4 | 12 | 0.43 | 0.021 |
| REP 104103 | QC | | 2.5 | 139.8 | >10000 | >10000 | >100 | 134.8 | 74.8 | 1126 | 18.71 | 1.9 | 1497 | <0.1 | 10 | 737.0 | 50.0 | 144.4 | 11 | 0.46 | 0.021 |
| 104104 | Rock | 0.76 | 1.7 | 1613 | 3638 | >10000 | 18.8 | 90.5 | 9.9 | 2091 | 7.81 | 1.1 | 312.6 | 0.2 | 24 | 96.6 | 2.7 | 10.0 | 38 | 0.94 | 0.111 |
| REP 104104 | QC | | | | | | | | | | | | | | | | | | | | |
| Reference Materials | | | | | | | | | | | | | | | | | | | | | |
| STD DS8 | Standard | | 13.9 | 104.7 | 122.0 | 306 | 1.7 | 37.3 | 7.3 | 612 | 2.44 | 24.6 | 115.3 | 7.4 | 73 | 2.4 | 5.4 | 6.5 | 40 | 0.75 | 0.077 |
| STD DS8 | Standard | | 13.9 | 104.7 | 122.0 | 306 | 1.7 | 37.3 | 7.3 | 612 | 2.44 | 24.6 | 115.3 | 7.4 | 73 | 2.4 | 5.4 | 6.5 | 40 | 0.75 | 0.077 |
| STD GC-7 | Standard | | | | | | | | | | | | | | | | | | | | |
| STD GC-7 | Standard | | | | | | | | | | | | | | | | | | | | |
| STD DS8 Expected | | | 13.44 | 110 | 123 | 312 | 1.69 | 38.1 | 7.5 | 615 | 2.46 | 26 | 107 | 6.89 | 67.7 | 2.38 | 5.7 | 6.67 | 41.1 | 0.7 | 0.08 |
| STD GC-7 Expected | | | | | | | | | | | | | | | | | | | | | |
| BLK | Blank | | <0.1 | <0.1 | <0.1 | <1 | <0.1 | <0.1 | <0.1 | <1 | <0.01 | <0.5 | <0.5 | <0.1 | <1 | <0.1 | <0.1 | <0.1 | <2 | <0.01 | <0.001 |
| BLK | Blank | | <0.1 | <0.1 | <0.1 | <1 | <0.1 | <0.1 | <0.1 | <1 | <0.01 | <0.5 | <0.5 | <0.1 | <1 | <0.1 | <0.1 | <0.1 | <2 | <0.01 | <0.001 |
| BLK | Blank | | | | | | | | | | | | | | | | | | | | |
| Prep Wash | | | | | | | | | | | | | | | | | | | | | |
| G1 | Prep Blank | | 0.2 | 3.0 | 2.7 | 46 | <0.1 | 3.1 | 3.9 | 522 | 1.85 | <0.5 | 0.6 | 5.1 | 62 | <0.1 | <0.1 | 0.1 | 34 | 0.50 | 0.076 |
| G1 | Prep Blank | | 0.3 | 3.5 | 3.0 | 45 | <0.1 | 3.7 | 4.1 | 554 | 1.98 | <0.5 | <0.5 | 5.7 | 66 | <0.1 | <0.1 | 0.1 | 36 | 0.53 | 0.075 |

Acme Analytical Laboratories (Vancouver) Ltd.
1020 Cordova St. East Vancouver BC V6A 4A3 Canada
Phone (604) 253-3158 Fax (604) 253-1716
www.acmelab.com

**Client:** **Callinex Mines Inc.**
Suite 1110 - 555 W. Hastings St.
Vancouver BC V6B 4N4 Canada

Project: Dany showing
Report Date: March 05, 2012



# QUALITY CONTROL REPORT SMI11000380.2

| | Method | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 1DX15 | 7AR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Analyte | La | Cr | Mg | Ba | Ti | B | Al | Na | K | W | Hg | Sc | Tl | S | Ga | Se | Te | Zn |
| | Unit | ppm | ppm | % | ppm | % | ppm | % | % | % | ppm | ppm | ppm | ppm | % | ppm | ppm | ppm | % |
| | MDL | 1 | 1 | 0.01 | 1 | 0.001 | 1 | 0.01 | 0.001 | 0.01 | 0.1 | 0.01 | 0.1 | 0.1 | 0.05 | 1 | 0.5 | 0.2 | 0.01 |
| Pulp Duplicates | | | | | | | | | | | | | | | | | | | |
| 104103 | Rock | 1 | 4 | 0.28 | 2 | 0.014 | <1 | 0.32 | 0.002 | <0.01 | 0.3 | 25.84 | 0.4 | 0.6 | >10 | 1 | 31.8 | 27.4 | 13.04 |
| REP 104103 | QC | 1 | 4 | 0.27 | 2 | 0.014 | <1 | 0.34 | 0.002 | <0.01 | 0.3 | 19.90 | 0.5 | 0.6 | >10 | 2 | 31.7 | 27.3 | |
| 104104 | Rock | 1 | 127 | 0.44 | 16 | 0.100 | <1 | 0.85 | 0.006 | 0.15 | 0.4 | 3.75 | 2.3 | 0.2 | 8.34 | 2 | 10.4 | 3.2 | 2.32 |
| REP 104104 | QC | | | | | | | | | | | | | | | | | | 2.24 |
| Reference Materials | | | | | | | | | | | | | | | | | | | |
| STD DS8 | Standard | 19 | 117 | 0.61 | 289 | 0.134 | 4 | 0.96 | 0.093 | 0.41 | 2.8 | 0.20 | 2.3 | 5.2 | 0.15 | 5 | 5.5 | 4.7 | |
| STD DS8 | Standard | 19 | 117 | 0.61 | 289 | 0.134 | 4 | 0.96 | 0.093 | 0.41 | 2.8 | 0.20 | 2.3 | 5.2 | 0.15 | 5 | 5.5 | 4.7 | |
| STD GC-7 | Standard | | | | | | | | | | | | | | | | | | 21.55 |
| STD GC-7 | Standard | | | | | | | | | | | | | | | | | | 21.92 |
| STD DS8 Expected | | 14.6 | 115 | 0.6045 | 279 | 0.113 | 2.6 | 0.93 | 0.0883 | 0.41 | 3 | 0.192 | 2.3 | 5.4 | 0.1679 | 4.7 | 5.23 | 5 | |
| STD GC-7 Expected | | | | | | | | | | | | | | | | | | | 22.06 |
| BLK | Blank | <1 | <1 | <0.01 | <1 | <0.001 | <1 | <0.01 | <0.001 | <0.01 | <0.1 | <0.01 | <0.1 | <0.1 | <0.05 | <1 | <0.5 | <0.2 | |
| BLK | Blank | <1 | <1 | <0.01 | <1 | <0.001 | <1 | <0.01 | <0.001 | <0.01 | <0.1 | <0.01 | <0.1 | <0.1 | <0.05 | <1 | <0.5 | <0.2 | |
| BLK | Blank | | | | | | | | | | | | | | | | | | <0.01 |
| Prep Wash | | | | | | | | | | | | | | | | | | | |
| G1 | Prep Blank | 11 | 9 | 0.53 | 193 | 0.125 | 2 | 0.93 | 0.070 | 0.43 | <0.1 | <0.01 | 1.9 | 0.3 | <0.05 | 5 | <0.5 | <0.2 | N.A. |
| G1 | Prep Blank | 12 | 9 | 0.56 | 203 | 0.127 | 1 | 0.99 | 0.074 | 0.45 | <0.1 | <0.01 | 1.9 | 0.3 | <0.05 | 5 | <0.5 | <0.2 | N.A. |

Acme Analytical Laboratories (Vancouver) Ltd.
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www.acmelab.com

**Client:** **Callinex Mines Inc.**
Suite 110 - 736 Granville Street
Vancouver BC V6Z 1G3 Canada

Submitted By: Email Distribution List
Receiving Lab: Canada-Smithers
Received: August 20, 2011
Report Date: October 04, 2011
Page: 1 of 2

# CERTIFICATE OF ANALYSIS SMI11000313.1

## CLIENT JOB INFORMATION

Project: Pam/Dani
Shipment ID:
P.O. Number
Number of Samples: 15

## SAMPLE DISPOSAL

STOR-PLP Store After 90 days Invoice for Storage
DISP-RJT Dispose of Reject After 90 days

Acme does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

## SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

| Method Code | Number of Samples | Code Description | Test Wgt (g) | Report Status | Lab |
|---|---|---|---|---|---|
| R200-250 | 15 | Crush, split and pulverize 250 g rock to 200 mesh | | | SMI |
| G601 | 15 | Fire Assay fusion Au by ICP-ES | 30 | Completed | VAN |
| 1F05 | 15 | 1:1:1 Aqua Regia digestion Ultratrace ICP-MS analysis | 15 | Completed | VAN |
| 7AR | 1 | 1:1:1 Aqua Regia Digestion ICP-ES Finish | 0.4 | Completed | VAN |

## ADDITIONAL COMMENTS

Invoice To: Callinex Mines Inc.
Suite 110 - 736 Granville Street
Vancouver BC V6Z 1G3
Canada

CC: Ken Galambos

BRITISH COLUMBIA CERTIFIED ASSAYER
CLARENCE LEONG
GENERAL MANAGER

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.
All results are considered the confidential property of the client. Acme assumes the liabilities for actual cost of analysis only. Results apply to samples as submitted.
"*" asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.

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**Client:** **Callinex Mines Inc.**
Suite 110 - 736 Granville Street
Vancouver BC V6Z 1G3 Canada

Project: Pam/Dani
Report Date: October 04, 2011



# CERTIFICATE OF ANALYSIS SMI11000313.1

| | Method | WGHT | G6 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Analyte | Wgt | Au | Mo | Cu | Pb | Zn | Ag | Ni | Co | Mn | Fe | As | U | Au | Th | Sr | Cd | Sb | Bi | V |
| | Unit | kg | gm/t | ppm | % | % | % | gm/t | ppm | ppm | % | % | ppm | ppm | gm/t | ppm | ppm | ppm | ppm | ppm | ppm |
| | MDL | 0.01 | 0.005 | 0.01 | 1e-006 | 1e-006 | 1e-005 | 0.002 | 0.1 | 0.1 | 0.0001 | 0.01 | 0.1 | 0.1 | 0.0002 | 0.1 | 0.5 | 0.01 | 0.02 | 0.02 | 2 |
| 192214 | Rock | 1.40 | 2.235 | 0.13 | 0.1156 | 0.0001 | 0.0067 | 1.269 | 38.2 | 38.1 | 0.1038 | 7.47 | 22.0 | 0.2 | 2.484 | 0.5 | 19.1 | 0.19 | 0.32 | 7.40 | 164 |
| 192215 | Rock | 7.89 | 0.038 | 42.34 | 0.0592 | 0.0005 | 0.0044 | 0.622 | 8.2 | 13.5 | 0.0282 | 3.46 | 82.3 | 0.7 | 0.0413 | 2.6 | 12.4 | 0.24 | 1.67 | 0.22 | 35 |
| 192216 | Rock | 5.11 | 0.049 | 31.21 | 0.0573 | 0.0008 | 0.0058 | 0.428 | 5.6 | 12.7 | 0.0304 | 2.89 | 153.6 | 0.7 | 0.0415 | 2.6 | 14.7 | 0.38 | 3.32 | 0.14 | 37 |
| 192217 | Rock | 4.46 | 0.036 | 22.05 | 0.0485 | 0.0006 | 0.0056 | 0.330 | 6.4 | 12.5 | 0.0305 | 3.46 | 102.1 | 0.8 | 0.0320 | 3.5 | 17.1 | 0.27 | 2.79 | 0.15 | 48 |
| 192218 | Rock | 3.36 | 0.042 | 34.10 | 0.0543 | 0.0007 | 0.0056 | 0.446 | 6.7 | 12.3 | 0.0320 | 3.41 | 58.2 | 0.7 | 0.0335 | 3.3 | 14.8 | 0.33 | 1.56 | 0.13 | 44 |
| 192219 | Rock | 3.94 | 0.052 | 49.56 | 0.1474 | 0.0004 | 0.0047 | 0.667 | 13.9 | 22.3 | 0.0213 | 4.87 | 45.7 | 0.3 | 0.0844 | 2.1 | 10.9 | 0.24 | 0.27 | 0.26 | 37 |
| 192220 | Rock | 0.80 | 0.015 | 3.03 | 0.0626 | 0.0002 | 0.0058 | 0.395 | 7.4 | 7.6 | 0.0309 | 6.50 | 1.0 | 0.3 | 0.0340 | 3.7 | 10.3 | 0.27 | 0.07 | 0.05 | 79 |
| 192221 | Rock | 1.43 | 0.046 | 0.62 | 0.0062 | 0.0017 | 0.0126 | 0.336 | 112.2 | 29.3 | 0.1047 | 4.19 | 14.3 | 0.3 | 0.0593 | 1.1 | 83.2 | 0.56 | 1.00 | 1.52 | 134 |
| 192222 | Rock | 0.71 | 0.017 | 0.36 | 0.0012 | 0.0005 | 0.0111 | 0.104 | 67.6 | 8.0 | 0.1250 | 4.00 | 6.6 | 0.2 | 0.0124 | 1.0 | 40.9 | 0.13 | 1.42 | 1.31 | 117 |
| 192223 | Rock | 1.77 | 4.506 | 0.57 | 0.0346 | 0.0009 | >1 | 1.053 | 10.0 | 16.1 | 0.0531 | 8.26 | 321.0 | <0.1 | 2.512 | 0.4 | 3.9 | 54.57 | 3.74 | 3.59 | 33 |
| 192224 | Rock | 0.46 | <0.005 | 0.31 | 0.0057 | 0.0005 | 0.0065 | 0.147 | 32.1 | 35.9 | 0.0257 | 6.75 | 15.1 | <0.1 | 0.0475 | 0.2 | 16.4 | 0.55 | 0.15 | 0.86 | 29 |
| 192225 | Rock | 1.85 | 2.483 | 2.01 | 0.0033 | 0.0004 | 0.0076 | 1.313 | 21.3 | 60.6 | 0.0623 | 18.39 | 48.9 | 0.1 | 2.638 | 0.6 | 7.7 | 0.15 | 0.35 | 76.39 | 120 |
| 192226 | Rock | 1.99 | 0.011 | 2.25 | 0.0275 | 0.0022 | 0.0151 | 0.875 | 16.7 | 23.2 | 0.0748 | 5.90 | <0.1 | 0.5 | 0.0462 | 0.4 | 38.9 | 0.24 | 0.13 | 0.42 | 93 |
| 192227 | Rock | 3.38 | 0.120 | 2.21 | 0.4027 | 0.0008 | 0.0070 | 2.248 | 13.8 | 15.1 | 0.0408 | 4.64 | 0.6 | 0.7 | 0.0989 | 0.9 | 20.7 | 0.47 | 0.06 | 0.93 | 77 |
| 192228 | Rock | 1.57 | 0.067 | 7.01 | 0.0528 | 0.0072 | 0.0085 | 0.787 | 30.9 | 29.9 | 0.0629 | 4.89 | 1.3 | 0.4 | 0.0579 | 0.3 | 23.2 | 0.23 | 0.22 | 0.23 | 73 |

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Report Date: October 04, 2011



# CERTIFICATE OF ANALYSIS SMI11000313.1

| | Method | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Analyte | Ca | P | La | Cr | Mg | Ba | Ti | B | Al | Na | K | W | Sc | Tl | S | Hg | Se | Te | Ga | Cs |
| | Unit | % | % | ppm | ppm | % | ppm | % | ppm | % | % | % | ppm | ppm | ppm | % | ppb | ppm | ppm | ppm | ppm |
| | MDL | 0.01 | 0.001 | 0.5 | 0.5 | 0.01 | 0.5 | 0.001 | 1 | 0.01 | 0.001 | 0.01 | 0.1 | 0.1 | 0.02 | 0.02 | 5 | 0.1 | 0.02 | 0.1 | 0.02 |
| 192214 | Rock | 1.68 | 0.053 | 8.7 | 51.7 | 2.20 | 16.3 | 0.077 | 1 | 2.16 | 0.128 | 0.05 | <0.1 | 16.7 | <0.02 | 3.48 | <5 | 0.6 | 3.73 | 9.7 | 0.09 |
| 192215 | Rock | 0.21 | 0.065 | 7.9 | 8.8 | 0.15 | 79.4 | 0.003 | 6 | 0.71 | 0.013 | 0.19 | 0.1 | 4.4 | 0.20 | 0.18 | 581 | 0.9 | 0.07 | 2.1 | 4.50 |
| 192216 | Rock | 0.24 | 0.068 | 6.9 | 8.9 | 0.11 | 90.8 | 0.001 | 9 | 0.75 | 0.007 | 0.20 | 0.2 | 4.5 | 0.33 | 0.04 | 880 | 0.5 | 0.10 | 2.1 | 6.71 |
| 192217 | Rock | 0.38 | 0.073 | 7.3 | 9.1 | 0.26 | 152.1 | 0.009 | 7 | 0.83 | 0.026 | 0.24 | 0.1 | 4.8 | 0.41 | 0.14 | 512 | 0.6 | 0.09 | 2.9 | 6.78 |
| 192218 | Rock | 0.24 | 0.069 | 8.1 | 7.1 | 0.22 | 135.7 | 0.016 | 6 | 0.89 | 0.027 | 0.22 | <0.1 | 4.7 | 0.25 | 0.05 | 233 | 0.5 | 0.07 | 3.1 | 5.57 |
| 192219 | Rock | 1.37 | 0.041 | 5.0 | 8.8 | 0.49 | 33.0 | 0.006 | 6 | 0.71 | 0.026 | 0.30 | <0.1 | 6.1 | 0.16 | 2.61 | 21 | 2.5 | 0.15 | 2.3 | 4.45 |
| 192220 | Rock | 0.65 | 0.151 | 7.3 | 11.3 | 0.63 | 187.7 | 0.062 | 1 | 0.90 | 0.033 | 0.31 | <0.1 | 3.9 | 0.07 | 0.06 | <5 | 0.3 | 0.03 | 8.8 | 1.19 |
| 192221 | Rock | 1.42 | 0.082 | 7.1 | 381.7 | 3.56 | 171.2 | 0.211 | 4 | 4.12 | 0.537 | 0.99 | 0.2 | 6.0 | 0.77 | 0.47 | <5 | 0.2 | 0.53 | 8.3 | 32.30 |
| 192222 | Rock | 1.50 | 0.069 | 5.8 | 281.9 | 2.27 | 328.7 | 0.175 | 2 | 2.18 | 0.039 | 0.22 | 0.2 | 5.3 | 0.11 | 0.29 | <5 | <0.1 | 0.39 | 5.7 | 0.53 |
| 192223 | Rock | 0.17 | 0.032 | 4.1 | 21.3 | 0.25 | 10.7 | 0.003 | 2 | 0.56 | 0.037 | 0.10 | <0.1 | 6.7 | 0.41 | 4.43 | 64 | 1.4 | 0.74 | 3.5 | 1.02 |
| 192224 | Rock | 0.60 | 0.039 | 1.1 | 56.5 | 1.66 | 19.2 | 0.047 | 1 | 2.91 | 0.197 | 0.44 | <0.1 | 9.0 | 0.34 | 4.32 | <5 | 0.6 | 0.64 | 7.9 | 2.48 |
| 192225 | Rock | 0.31 | 0.070 | 2.4 | 26.3 | 1.12 | 4.1 | 0.066 | 1 | 1.73 | 0.033 | 0.09 | 0.1 | 10.8 | 0.03 | >10 | <5 | 3.4 | 53.55 | 10.0 | 0.26 |
| 192226 | Rock | 1.35 | 0.134 | 1.4 | 24.2 | 1.27 | 40.5 | 0.144 | 1 | 3.06 | 0.197 | 1.01 | 0.2 | 4.1 | 0.71 | 4.75 | <5 | 8.8 | 0.62 | 5.8 | 1.92 |
| 192227 | Rock | 0.73 | 0.118 | 2.4 | 3.6 | 0.88 | 38.8 | 0.088 | <1 | 1.66 | 0.011 | 0.80 | 0.2 | 4.2 | 0.48 | 3.25 | <5 | 4.6 | 0.60 | 3.4 | 1.55 |
| 192228 | Rock | 1.30 | 0.159 | 1.6 | 7.6 | 1.50 | 39.3 | 0.149 | <1 | 1.74 | 0.014 | 0.88 | 0.3 | 3.2 | 0.56 | 4.29 | <5 | 5.9 | 0.45 | 2.6 | 2.03 |

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# CERTIFICATE OF ANALYSIS SMI11000313.1

| | Method | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 7AR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Analyte | Ge | Hf | Nb | Rb | Sn | Ta | Zr | Y | Ce | In | Re | Be | Li | Pd | Pt | Zn |
| | Unit | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppb | ppm | ppm | ppb | ppb | % |
| | MDL | 0.1 | 0.02 | 0.02 | 0.1 | 0.1 | 0.05 | 0.1 | 0.01 | 0.1 | 0.02 | 1 | 0.1 | 0.1 | 10 | 2 | 0.01 |
| 192214 | Rock | 0.4 | 0.17 | 0.03 | 1.4 | 1.2 | <0.05 | 4.5 | 8.43 | 15.5 | 1.22 | <1 | 0.2 | 8.5 | <10 | <2 | |
| 192215 | Rock | <0.1 | 0.05 | 0.05 | 8.4 | 0.3 | <0.05 | 2.1 | 8.11 | 15.5 | 0.05 | 15 | 0.3 | 11.0 | <10 | <2 | |
| 192216 | Rock | <0.1 | 0.02 | 0.03 | 9.1 | 0.1 | <0.05 | 2.0 | 7.89 | 14.2 | 0.04 | 1 | 0.2 | 15.4 | <10 | <2 | |
| 192217 | Rock | <0.1 | 0.04 | 0.10 | 11.4 | 0.2 | <0.05 | 2.3 | 8.37 | 16.9 | 0.04 | 3 | 0.3 | 16.9 | <10 | <2 | |
| 192218 | Rock | <0.1 | 0.04 | 0.14 | 10.8 | 0.2 | <0.05 | 1.7 | 8.31 | 17.7 | 0.03 | 8 | 0.3 | 10.8 | <10 | <2 | |
| 192219 | Rock | 0.1 | 0.03 | 0.02 | 14.7 | 0.2 | <0.05 | 1.3 | 7.99 | 10.2 | 0.04 | 48 | 0.3 | 4.4 | <10 | <2 | |
| 192220 | Rock | 0.2 | 0.11 | 0.18 | 13.6 | 0.2 | <0.05 | 3.4 | 12.83 | 17.6 | 0.02 | 2 | 0.2 | 5.0 | <10 | <2 | |
| 192221 | Rock | 0.2 | 0.20 | 0.06 | 45.4 | 0.6 | <0.05 | 7.8 | 6.83 | 14.3 | 0.24 | 1 | 0.4 | 18.8 | <10 | 4 | |
| 192222 | Rock | 0.2 | 0.17 | 0.06 | 10.3 | 0.6 | <0.05 | 6.0 | 7.32 | 11.7 | 0.78 | 1 | 0.2 | 4.9 | <10 | 4 | |
| 192223 | Rock | 0.1 | 0.05 | 0.02 | 4.6 | 1.0 | <0.05 | 1.2 | 5.84 | 9.3 | 5.88 | 2 | 0.3 | 4.2 | <10 | <2 | 1.21 |
| 192224 | Rock | 0.1 | 0.04 | 0.02 | 16.8 | 0.7 | <0.05 | 0.5 | 5.54 | 2.3 | 0.04 | 2 | 0.2 | 8.6 | <10 | <2 | |
| 192225 | Rock | 0.4 | 0.14 | 0.07 | 5.5 | 3.2 | <0.05 | 3.4 | 4.40 | 4.3 | 1.03 | <1 | 0.2 | 8.7 | <10 | <2 | |
| 192226 | Rock | 0.1 | <0.02 | 0.17 | 58.6 | 0.4 | <0.05 | <0.1 | 3.81 | 2.6 | 0.04 | 2 | 0.8 | 8.1 | <10 | <2 | |
| 192227 | Rock | <0.1 | <0.02 | 0.24 | 40.8 | 0.4 | <0.05 | 0.2 | 4.29 | 4.2 | 0.14 | 20 | 0.4 | 3.2 | <10 | <2 | |
| 192228 | Rock | 0.1 | 0.05 | 0.19 | 48.1 | 0.7 | <0.05 | 0.9 | 3.95 | 3.2 | <0.02 | 53 | 0.4 | 8.3 | <10 | 4 | |

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# QUALITY CONTROL REPORT SMI11000313.1

| | Method | WGHT | G6 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Analyte | Wgt | Au | Mo | Cu | Pb | Zn | Ag | Ni | Co | Mn | Fe | As | U | Au | Th | Sr | Cd | Sb | Bi | V |
| | Unit | kg | gm/t | ppm | % | % | % | gm/t | ppm | ppm | % | % | ppm | ppm | gm/t | ppm | ppm | ppm | ppm | ppm | ppm |
| | MDL | 0.01 | 0.005 | 0.01 | 1e-006 | 1e-006 | 1e-005 | 0.002 | 0.1 | 0.1 | 0.0001 | 0.01 | 0.1 | 0.1 | 0.0002 | 0.1 | 0.5 | 0.01 | 0.02 | 0.02 | 2 |
| Reference Materials | | | | | | | | | | | | | | | | | | | | | |
| STD DS8 | Standard | | | 11.54 | 0.0097 | 0.0105 | 0.0282 | 1.510 | 33.3 | 6.8 | 0.0540 | 2.17 | 21.1 | 2.3 | 0.1020 | 6.1 | 57.5 | 2.05 | 4.53 | 5.58 | 36 |
| STD GC-7 | Standard | | | | | | | | | | | | | | | | | | | | |
| STD GC-7 | Standard | | | | | | | | | | | | | | | | | | | | |
| STD OXH82 | Standard | | 1.341 | | | | | | | | | | | | | | | | | | |
| STD OXK79 | Standard | | 3.721 | | | | | | | | | | | | | | | | | | |
| STD OXK79 | Standard | | 3.623 | | | | | | | | | | | | | | | | | | |
| STD OXH82 Expected | | | 1.278 | | | | | | | | | | | | | | | | | | |
| STD OXK79 Expected | | | 3.532 | | | | | | | | | | | | | | | | | | |
| STD DS8 Expected | | | | 13.44 | 0.011 | 0.0123 | 0.0312 | 1.69 | 38.1 | 7.5 | 0.0615 | 2.46 | 26 | 2.8 | 0.107 | 6.89 | 67.7 | 2.38 | 5.7 | 6.67 | 41.1 |
| STD GC-7 Expected | | | | | | | | | | | | | | | | | | | | | |
| BLK | Blank | | <0.005 | | | | | | | | | | | | | | | | | | |
| BLK | Blank | | <0.005 | | | | | | | | | | | | | | | | | | |
| BLK | Blank | | <0.005 | | | | | | | | | | | | | | | | | | |
| BLK | Blank | | <0.005 | | | | | | | | | | | | | | | | | | |
| BLK | Blank | | | <0.01 | <1e-006 | <1e-006 | <1e-005 | <0.002 | <0.1 | <0.1 | <0.0001 | <0.01 | <0.1 | <0.1 | <0.0002 | <0.1 | <0.5 | <0.01 | <0.02 | <0.02 | <2 |
| BLK | Blank | | | | | | | | | | | | | | | | | | | | |
| Prep Wash | | | | | | | | | | | | | | | | | | | | | |
| G1 | Prep Blank | | <0.005 | 0.11 | 0.0002 | 0.0003 | 0.0042 | 0.010 | 10.5 | 4.4 | 0.0521 | 1.85 | 0.5 | 1.4 | 0.0002 | 5.1 | 53.0 | 0.01 | <0.02 | 0.04 | 35 |
| G1 | Prep Blank | | <0.005 | 0.16 | 0.0002 | 0.0003 | 0.0046 | 0.011 | 12.5 | 4.9 | 0.0553 | 1.93 | 0.1 | 1.7 | <0.0002 | 5.6 | 68.0 | 0.02 | <0.02 | 0.04 | 37 |

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# QUALITY CONTROL REPORT SMI11000313.1

| | Method | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Analyte | Ca | P | La | Cr | Mg | Ba | Ti | B | Al | Na | K | W | Sc | Tl | S | Hg | Se | Te | Ga | Cs |
| | Unit | % | % | ppm | ppm | % | ppm | % | ppm | % | % | % | ppm | ppm | ppm | % | ppb | ppm | ppm | ppm | ppm |
| | MDL | 0.01 | 0.001 | 0.5 | 0.5 | 0.01 | 0.5 | 0.001 | 1 | 0.01 | 0.001 | 0.01 | 0.1 | 0.1 | 0.02 | 0.02 | 5 | 0.1 | 0.02 | 0.1 | 0.02 |
| Reference Materials | | | | | | | | | | | | | | | | | | | | | |
| STD DS8 | Standard | 0.63 | 0.068 | 13.8 | 106.1 | 0.51 | 243.3 | 0.103 | 2 | 0.81 | 0.084 | 0.36 | 2.6 | 2.0 | 4.59 | 0.14 | 155 | 4.4 | 4.29 | 4.2 | 2.11 |
| STD GC-7 | Standard | | | | | | | | | | | | | | | | | | | | |
| STD GC-7 | Standard | | | | | | | | | | | | | | | | | | | | |
| STD OXH82 | Standard | | | | | | | | | | | | | | | | | | | | |
| STD OXK79 | Standard | | | | | | | | | | | | | | | | | | | | |
| STD OXK79 | Standard | | | | | | | | | | | | | | | | | | | | |
| STD OXH82 Expected | | | | | | | | | | | | | | | | | | | | | |
| STD OXK79 Expected | | | | | | | | | | | | | | | | | | | | | |
| STD DS8 Expected | | 0.7 | 0.08 | 14.6 | 115 | 0.6045 | 279 | 0.113 | 2.6 | 0.93 | 0.0883 | 0.41 | 3 | 2.3 | 5.4 | 0.1679 | 192 | 5.23 | 5 | 4.7 | 2.48 |
| STD GC-7 Expected | | | | | | | | | | | | | | | | | | | | | |
| BLK | Blank | | | | | | | | | | | | | | | | | | | | |
| BLK | Blank | | | | | | | | | | | | | | | | | | | | |
| BLK | Blank | | | | | | | | | | | | | | | | | | | | |
| BLK | Blank | | | | | | | | | | | | | | | | | | | | |
| BLK | Blank | <0.01 | <0.001 | <0.5 | <0.5 | <0.01 | <0.5 | <0.001 | <1 | <0.01 | <0.001 | <0.01 | <0.1 | <0.1 | <0.02 | <0.02 | <5 | <0.1 | <0.02 | <0.1 | <0.02 |
| BLK | Blank | | | | | | | | | | | | | | | | | | | | |
| Prep Wash | | | | | | | | | | | | | | | | | | | | | |
| G1 | Prep Blank | 0.44 | 0.068 | 9.4 | 15.4 | 0.61 | 183.0 | 0.109 | 1 | 0.94 | 0.099 | 0.46 | <0.1 | 1.9 | 0.29 | <0.02 | <5 | <0.1 | <0.02 | 4.4 | 2.34 |
| G1 | Prep Blank | 0.57 | 0.074 | 10.0 | 11.8 | 0.68 | 204.6 | 0.123 | <1 | 0.99 | 0.099 | 0.50 | <0.1 | 2.1 | 0.32 | <0.02 | <5 | <0.1 | <0.02 | 4.9 | 2.66 |

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| | Method | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 1F15 | 7AR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Analyte | Ge | Hf | Nb | Rb | Sn | Ta | Zr | Y | Ce | In | Re | Be | Li | Pd | Pt | Zn |
| | Unit | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppb | ppm | ppm | ppb | ppb | % |
| | MDL | 0.1 | 0.02 | 0.02 | 0.1 | 0.1 | 0.05 | 0.1 | 0.01 | 0.1 | 0.02 | 1 | 0.1 | 0.1 | 10 | 2 | 0.01 |
| Reference Materials | | | | | | | | | | | | | | | | | |
| STD DS8 | Standard | <0.1 | 0.09 | 1.23 | 33.8 | 5.9 | <0.05 | 1.9 | 5.44 | 26.0 | 1.87 | 48 | 4.4 | 23.2 | 91 | 307 | |
| STD GC-7 | Standard | | | | | | | | | | | | | | | | 22.43 |
| STD GC-7 | Standard | | | | | | | | | | | | | | | | 22.52 |
| STD OXH82 | Standard | | | | | | | | | | | | | | | | |
| STD OXK79 | Standard | | | | | | | | | | | | | | | | |
| STD OXK79 | Standard | | | | | | | | | | | | | | | | |
| STD OXH82 Expected | | | | | | | | | | | | | | | | | |
| STD OXK79 Expected | | | | | | | | | | | | | | | | | |
| STD DS8 Expected | | 0.13 | 0.08 | 1.65 | 39 | 6.7 | 0.003 | 2.3 | 6.1 | 29.8 | 2.19 | 55 | 5.2 | 26.34 | 110 | 339 | |
| STD GC-7 Expected | | | | | | | | | | | | | | | | | 22.06 |
| BLK | Blank | | | | | | | | | | | | | | | | |
| BLK | Blank | | | | | | | | | | | | | | | | |
| BLK | Blank | | | | | | | | | | | | | | | | |
| BLK | Blank | | | | | | | | | | | | | | | | |
| BLK | Blank | <0.1 | <0.02 | <0.02 | <0.1 | <0.1 | <0.05 | <0.1 | <0.01 | <0.1 | <0.02 | <1 | <0.1 | <0.1 | <10 | <2 | |
| BLK | Blank | | | | | | | | | | | | | | | | <0.01 |
| Prep Wash | | | | | | | | | | | | | | | | | |
| G1 | Prep Blank | <0.1 | 0.09 | 0.38 | 36.8 | 0.4 | <0.05 | 1.2 | 4.77 | 18.6 | <0.02 | <1 | 0.3 | 27.5 | <10 | <2 | |
| G1 | Prep Blank | 0.1 | 0.11 | 0.43 | 40.3 | 0.6 | <0.05 | 1.3 | 5.67 | 20.6 | <0.02 | 1 | 0.3 | 29.3 | <10 | <2 | |

# Appendix B

# Analytical Procedures and Detection Limits

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# METHOD SPECIFICATIONS
# GROUP 4A & 4B – LITHOGEOCHEMICAL WHOLE ROCK FUSION

**Package Codes:** 4A, 4B
**Sample Digestion:** Lithium metaborate/tetraborate fusion
**Instrumentation Method:** ICP-ES (4A, 4B), ICP-MS (4B)
**Applicability:** Sediment, Soil, Vegetation, Moss-mat, Non-mineralized Rock and Drill Core

## Method Description:

Prepared sample is mixed with $LiBO_2/Li_2B_4O_7$ flux. Crucibles are fused in a furnace. The cooled bead is dissolved in ACS grade nitric acid. Loss on ignition (LOI) is determined by igniting a sample split then measuring the weight loss. Total Carbon and Sulphur are determined by the Leco method (Group 2A).

| Element | Group 4A Detection | Upper Limit |
|---|---|---|
| $SiO_2$ | 0.01 % | 100 % |
| $Al_2O_3$ | 0.01 % | 100 % |
| $Fe_2O_3$ | 0.04 % | 100 % |
| CaO | 0.01 % | 100 % |
| MgO | 0.01 % | 100 % |
| $Na_2O$ | 0.01 % | 100 % |
| $K_2O$ | 0.04 % | 100 % |
| MnO | 0.01 % | 100 % |
| $TiO_2$ | 0.01 % | 100 % |
| $P_2O_5$ | 0.01 % | 100 % |
| $Cr_2O_3$ | 0.002% | 100 % |
| LOI | 0.1 % | 100 % |
| C | 0.01 % | 100 % |
| S | 0.01 % | 100 % |

| Element | Group 4A Detection | Group 4B Detection | Upper Limit |
|---|---|---|---|
| Au | - | 0.5 ppb | 100 ppm |
| Ag | - | 0.1ppm | 100 ppm |
| As | - | 1 ppm | 10000 ppm |
| Ba | 5 ppm | 1 ppm | 50000 ppm |
| Be | - | 1 ppm | 10000 ppm |
| Bi | - | 0.1 ppm | 2000 ppm |
| Cd | - | 0.2 ppm | 2000 ppm |
| Co | 20 ppm | 0.2 ppm | 10000 ppm |
| Cs | - | 0.1 ppm | 10000 ppm |
| Cu | 5 ppm | 0.1 ppm | 10000 ppm |
| Ga | - | 0.5 ppm | 10000 ppm |
| Hf | | 0.1 ppm | 10000 ppm |
| Hg | | 0.1 ppm | 100 ppm |
| Mo | | 0.1 ppm | 2000 ppm |
| Nb | 5 ppm | 0.1 ppm | 50000 ppm |
| Ni | 20 ppm | 0.1 ppm | 10000 ppm |
| Pb | | 0.1 ppm | 10000 ppm |
| Rb | | 0.1 ppm | 10000 ppm |
| Sb | | 0.1 ppm | 2000 ppm |
| Sc | 1 ppm | - | 10000 ppm |
| Se | | 0.5 ppm | 100 ppm |

| Element | Group 4A Detection | Group 4B Detection | Upper Limit |
|---|---|---|---|
| **Sn** | - | 1 ppm | 10000 ppm |
| **Sr** | 2 ppm | 0.5 ppm | 50000 ppm |
| **Ta** | - | 0.1 ppm | 50000 ppm |
| **Th** | - | 0.2 ppm | 10000 ppm |
| **Tl** | - | 0.1 ppm | 1000 ppm |
| **U** | - | 0.1 ppm | 10000 ppm |
| **V** | - | 8 ppm | 10000 ppm |
| **W** | - | 0.5 ppm | 10000 ppm |
| **Y** | 3 ppm | 0.1 ppm | 50000 ppm |
| **Zn** | 5 ppm | 1 ppm | 10000 ppm |
| **Zr** | 5 ppm | 0.1 ppm | 50000 ppm |
| **La** | - | 0.1 ppm | 50000 ppm |
| **Ce** | 30 ppm | 0.1 ppm | 50000 ppm |
| **Pr** | - | 0.02 ppm | 10000 ppm |
| **Nd** | - | 0.3 ppm | 10000 ppm |
| **Sm** | - | 0.05 ppm | 10000 ppm |
| **Eu** | - | 0.02 ppm | 10000 ppm |
| **Gd** | - | 0.05 ppm | 10000 ppm |
| **Tb** | - | 0.01 ppm | 10000 ppm |
| **Dy** | - | 0.05 ppm | 10000 ppm |
| **Ho** | - | 0.02 ppm | 10000 ppm |
| **Er** | - | 0.03 ppm | 10000 ppm |
| **Tm** | - | 0.01 ppm | 10000 ppm |
| **Yb** | - | 0.05 ppm | 10000 ppm |
| **Lu** | - | 0.01 ppm | 10000 ppm |

Note: Highlighted elements by 1DX Aqua Regia – ICP-MS analysis

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# METHOD SPECIFICATIONS
# GROUP 3B AND G6 – PRECIOUS METALS BY FIRE ASSAY FUSION

**Package Codes:** 3B01 to 3B04, G601 to G614
**Sample Digestion:** Lead-collection fire assay fusion
**Instrumentation Method:** ICP-ES (3B, G6), ICP-MS (3B-MS), AA (3B, G6), Gravimetric (G6)
**Applicability:** Rock, Drill Core

## Method Description:

Prepared sample is custom-blended with fire-assay fluxes, PbO litharge and a Ag inquart. Firing the charge at 1050 $^{o}$C liberates Ag ± Au ± PGEs that report to the molten Pb-metal phase. After cooling the Pb button is recovered, placed in a cupel and fired at 950 $^{o}$C to render a Ag ± Au ± PGEs dore bead. The bead is digested for ICP analysis or weighed and parted in ACS grade $HNO_3$ to dissolve Ag leaving a Au sponge. Au is weighed for Gravimetric determination; ACS grade HCl is added dissolving the Au ± PGE sponge for Instrument determination.

| Element | 3B Detection | 3B Upper Limit | 3B-MS Detection | 3B-MS Upper Limit |
|---|---|---|---|---|
| **Au** | 2 ppb | 10 ppm | 1 ppb | 10 ppm |
| **Pt** | 3 ppb | 10 ppm | 0.1 ppb | 10 ppm |
| **Pd** | 2 ppb | 10 ppm | 0.5 ppb | 10 ppm |

| Element | G6 (Inst) Detection | G6 (Inst) Upper Limit | G6 (Grav) Detection | G6 (Grav) Upper Limit |
|---|---|---|---|---|
| **Ag** | -- | -- | 5 g/t | 1 ton |
| **Au** | 0.005 g/t | 10 ppm | 0.17 g/t | 1 ton |
| **Pt** | 0.01 g/t | 100 ppm | -- | -- |
| **Pd** | 0.01 g/t | 100 ppm | -- | -- |

**Note:**
*Sulphide-rich samples require a 15g or smaller sample for proper fusion.