

# **Memorandum Report of 2012 Drilling**

**on the**

## **Ballarat Property**

|             |                  |
|-------------|------------------|
| KIT 3 to 14 | YC07107-YC07118  |
| TIK 1 to 52 | YC95394-YC95303  |
| TIK 53-68   | YC95304-YC95333  |
| TIK 69-82   | YC95320-YC95333  |
| BA 1-104    | YD72511- YD72614 |
| BA 110-111  | YD72802- YD72801 |
| BA 189-226  | YD72699-YD72736  |

**Dawson Mining District, Yukon  
NTS Sheets 115J14&15 and 115O02&03  
63°00' N. Lat., 139°01' W. Long.**

**Operated by and Recorded to**



**By**

**Mark Fekete, P.Geo.**

**and**

**Drew MacPhail, B.Sc., G.I.T**

**October 29, 2012**

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## **Certificate of Qualifications**

I, Mark Fekete, having my place of residence at 178 Dennison Boulevard in Val d'Or in the Province of Quebec do hereby certify that:

1. I obtained a Bachelor of Science Degree in Geology from the University of British Columbia in 1986, I have been engaged as a Geologist continuously since 1986 and I am a Member in good standing of the Order of Geologists of Quebec (OGQ #553) and the Association of Professional Engineers and Geoscientists of British Columbia (APEGBC #31440), and I am a "qualified person" as defined in Section 1.2 in and for the purposes of National Instrument 43-101;
2. I have visited the Ballarat property on numerous occasions including most recently in August 2012;
3. I co-wrote and I am, as the senior author and qualified person, responsible for the contents of this technical report entitled "Memorandum Report of 2012 Drilling on the Ballarat Property, Dawson Mining District, Yukon, NTS Sheets 115J14&15 and 115O02&03, 63°00' N. Lat., 139°01' W. Long.," based on my professional experience, a review of relevant reports and maps made available to me from government and corporate sources and my participation in the work programs described in the report;
4. I am not aware of any material fact or material change with respect to the subject matter of the report that is not disclosed in the report which, by its omission, makes the report misleading;
5. I am an Officer and Director, and I beneficially hold a number of shares in Stakeholder Gold Corp.;
6. I hold no direct interest in the Ballarat property as a result of my prior involvement with the property; and
7. I have read, and this report has not been prepared for the purposes, nor in full compliance with, National Instrument 43-101 and according to Form 43-101F1.

Respectfully submitted this 29<sup>th</sup> day of October 2012,

**(s) "Mark Fekete"**

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Mark Fekete, P.Geo.

## **Certificate of Qualifications**

I, Drew MacPhail, having my place of residence at 610 Church St. in Port Williams in the Province of Nova Scotia do hereby certify that:

1. I obtained a Bachelor of Science Degree in Geology from Acadia University in May 2012, I have been engaged as a Geologist in Training (“GIT”) continuously since May 2012 and I am not a “qualified person” as defined in Section 1.2 in and for the purposes of National Instrument 43-101;
2. I have visited the Ballarat property on numerous occasions including most recently in August 2012;
3. I co-wrote this technical report entitled “Memorandum Report of 2012 Drilling on the Ballarat Property, Dawson Mining District, Yukon, NTS Sheets 115J14&15 and 115O02&03, 63°00' N. Lat., 139°01' W. Long.,” under the supervision of Mark Fekete, P.Geo.;
4. I am not aware of any material fact or material change with respect to the subject matter of the report that is not disclosed in the report which, by its omission, makes the report misleading;
5. I do not beneficially hold a number of shares in Stakeholder Gold Corp.;
6. I hold no direct interest in the Ballarat property as a result of any prior involvement with the property; and
7. I have read, and this report has not been prepared for the purposes, nor in full compliance with, National Instrument 43-101 and according to Form 43-101F1.

Respectfully submitted this 29<sup>th</sup> day of October 2012,

**(s) “Drew MacPhail”**

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Drew MacPhail, GIT.

## Introduction and Terms of Reference

Breakaway Exploration Management Inc. (“Breakaway”) was engaged by Stakeholder Gold Corp. (“Stakeholder”) to manage and report on a drill program done on the Ballarat property (“Ballarat” or the “Property”) in Yukon in 2012. The goal of the program was to test the subsurface extension of two parallel, east-trending, anomalous gold-in-soil zones identified in 2010. The southern anomaly was the best defined with maximum values up to 796ppb Au. The northern anomaly has numerous high values up to 188ppb Au. This memorandum report was prepared to complete statutory assessment work filings required under the Yukon Quartz Mining Act. It is not intended to and does not fully comply with National Instrument 43-101.

## Location, Property Information and Access

The Ballarat property is located approximately 120km south of Dawson City in the Klondike gold region of the Yukon (Figure 1). It is located at the headwaters of Ballarat Creek, a tributary of the Yukon River. The property covers an approximate area of 4,050 hectares within the Dawson Mining Division, and includes 200 contiguous, un-surveyed mineral titles (Figure 2). The approximate centre of the Property is described by 63°00' North Latitude and 139°01' West Longitude on N.T.S. Sheets 115J14&15 and 115O02&03. The claims are listed as follows:

Table 1 - List of Claims

| Claim Name No. | Tag No.          | Expiry Date | #   |
|----------------|------------------|-------------|-----|
| KIT 3 to 14    | YC07107-YC07118  | 15-May-15   | 12  |
| TIK 1 to 52    | YC95394-YC95303  | 04-June-15  | 52  |
| TIK 53-68      | YC95304-YC95333  | 04-June-15  | 16  |
| TIK 69-82      | YC95320-YC95333  | 02-July-15  | 14  |
| BA 1-96        | YD72511-YD72606  | 15-Sept-11  | 96  |
| BA 97-104      | YD72607-YD72614  | 11-Sept-11  | 8   |
| BA 110-111     | YD72802- YD72801 | 15-Sept-11  | 2   |
| Total          |                  |             | 200 |

In 2009, Stakeholder entered into an option agreement to acquire a 100% interest in Ballarat. In June 2012 the terms and conditions of this agreement were fully met and Stakeholder now holds the Property 100% subject only to a 2% royalty on mineral production. The Company has the option to purchase 1% of the royalty for \$1 million and has the right of first refusal on the remaining 1%. In addition, the Company has agreed to pay the Vendor an advance royalty of \$110,000 upon the completion of a 43-101 compliant report that defines measured or indicated gold resources of 110,000 ounces or more on the Property.

The Property is located in an isolated part of Yukon with fairly few local resources or infrastructure. Although the Property is not reachable by road, it is relatively accessible compared to other parts of the White Gold area. Fuel, supplies and equipment can be barged to a landing on the Yukon River located at the mouth of Kirkman Creek. A gravel road built by local placer miners leads from the barge landing directly to the Property. An exploration camp has been set up on Kirkman Creek approximately 5km west of the Property by road. The camp can be supported from Dawson City, where services are limited, or from Whitehorse where a full range of services are available.

## Geology

The Property lies within the Yukon-Tanana Terrane which, due to large areas with little or no bedrock exposure and limited modern regional or detailed mapping, remains very poorly understood. Generally it consists of several successions of layered sedimentary and volcanic rocks ranging from Late Proterozoic to Late Permian age that overlay the older Nisling Terrane. These complexly deformed layered rocks have been episodically intruded by various crystalline rocks in the Permian, Jurassic, Cretaceous and Tertiary periods. The intrusive events have been accompanied by volcanic activity especially in the Upper Jurassic to Lower Cretaceous. The Yukon-Tanana has been subjected to numerous prolonged deformational events

including subduction and accretion that has led to significant structural thickening. Imbricated allochthonous terranes such as Slide Mountain Terrane are evidenced by altered ultramafic fragments.

The Property lies within the White Gold district which, according to the latest compilation (Gordey and Makepeace, 1999), is underlain primarily by Devonian to Mississippian quartzites and quartz-biotite schists (DMN) and Late Devonian to Mississippian intermediate to mafic orthogneiss (DMPW) (Figure 3). The area is cut by numerous intrusions that for the most part are classified as Cretaceous. Limited mapping on the Property indicates that it is underlain by quartzites and quartz-biotite schists to the north and orthogneiss to the south (Figure 4).

## 2012 Drilling

The drilling was completed from July 23 to August 3, 2012 by Earth Tek Drilling. A total of 753m of NQ diameter drilling was done in five holes. The field work and core logging (Appendix B) was completed by Geologist in Training Drew MacPhail under the supervision of Professional Geologist Mark Fekete. The core was logged at Stakeholder's core shack at the Kirkman Creek Camp and the core is presently stored there. The location (Figure 5), azimuth, dip and depth of each hole are summarized as follows:

**Table 2 - 2012 Drill Hole Summary**

| <b>Hole</b> | <b>UTM mE</b> | <b>UTM mN</b> | <b>Azimuth</b> | <b>Dip</b> | <b>Length (m)</b> |
|-------------|---------------|---------------|----------------|------------|-------------------|
| BA12-01     | 595,554       | 6,986,918     | 145°           | -50°       | 153.0             |
| BA12-02     | 595,673       | 6,986,975     | 145°           | -50°       | 153.0             |
| BA12-03     | 595,923       | 6,986,947     | 145°           | -50°       | 150.0             |
| BA12-04     | 596,266       | 6,987,605     | 145°           | -50°       | 147.0             |
| BA12-05     | 596,619       | 6,987,788     | 145°           | -50°       | 150.0             |

The drilling encountered primarily quartz biotite gneiss and gneiss derived from a granite protolith. Both lithologies generally showed fine- to coarse-grained disseminated pyrite mineralization. All holes encountered several intervals of brecciated material typically associated with gouge. A number of narrow quartz veins and quartz stockwork zones were also noted.

Core samples were assayed by Acme Analytical Laboratories Ltd. ("Acme") in Vancouver, B.C. by fire assay fusion, emission spectroscopy technique for gold (Appendix C). Acme is accredited under ISO 9001. A total of 382 samples were collected including core, and blanks, standards (Appendix D) and core duplicates. Significant intersections are as follows:

**Table 3 - 2012 Significant Intersections**

| <b>Hole</b> | <b>Zone</b> | <b>From (m)</b> | <b>Length (m)</b> | <b>Wt.Avg. (gpt Au)</b> |
|-------------|-------------|-----------------|-------------------|-------------------------|
| BA 12-01    | Z1          | 55.6            | 3.0               | 0.945                   |
| BA 12-01    | Z1          | 117.8           | 2.2               | 0.720                   |
| BA 12-03    | Z1          | 44.9            | 1.0               | 1.708                   |

## Interpretations and Conclusions

Although the drilling intersected some gold-bearing intervals, these intersections appear to be related to narrow quartz veins or quartz stockwork zones within the core. The dimension and grade of these quartz veins and stockworks are unlikely to lead to an economic gold deposit. Due to the small budget and steep terrain in the area of the two gold-in-soil zones identified in 2010, it is not certain that the gold trends were adequately tested by the drilling.

## Recommendations

This report does not recommend a specific work program or budget.

It does not appear from the 2012 drilling results that the gold-in-soil trends identified on Ballarat in 2010 mark significant gold-bearing structures. However, the Authors caution that the drill program was done on a limited budget and that, due to the steep terrain, the drill holes were not necessarily spotted in the best possible location to test the geochemical trends. Therefore it is recommended that this part of the Ballarat property not be written off completely and that more drilling be considered if and when there is more money available.

Fekete and Dubois (2012) recommended detailed soil geochemical work to test a gold-in-soil anomaly identified in 2011 at the headwaters of the creek draining the eastern part of the Property. Perhaps if further work at this site leads to drilling, some more drilling could be allocated to the area drilled in 2012.

## **References**

Fekete, M. 2010

Surface Work Performed from July 3, 2009 to April 27, 2010 on the Ballarat Property KIT 3 to 14 (YC07107 to YC07118) TIK 1 to TIK (YC95394 to YC95333) Dawson Mining District, Yukon NTS Sheets 115J14 & 115O3 62°59'N. Lat., 139°04'W. Long.

Fekete, M. and Dubois, B, 2012

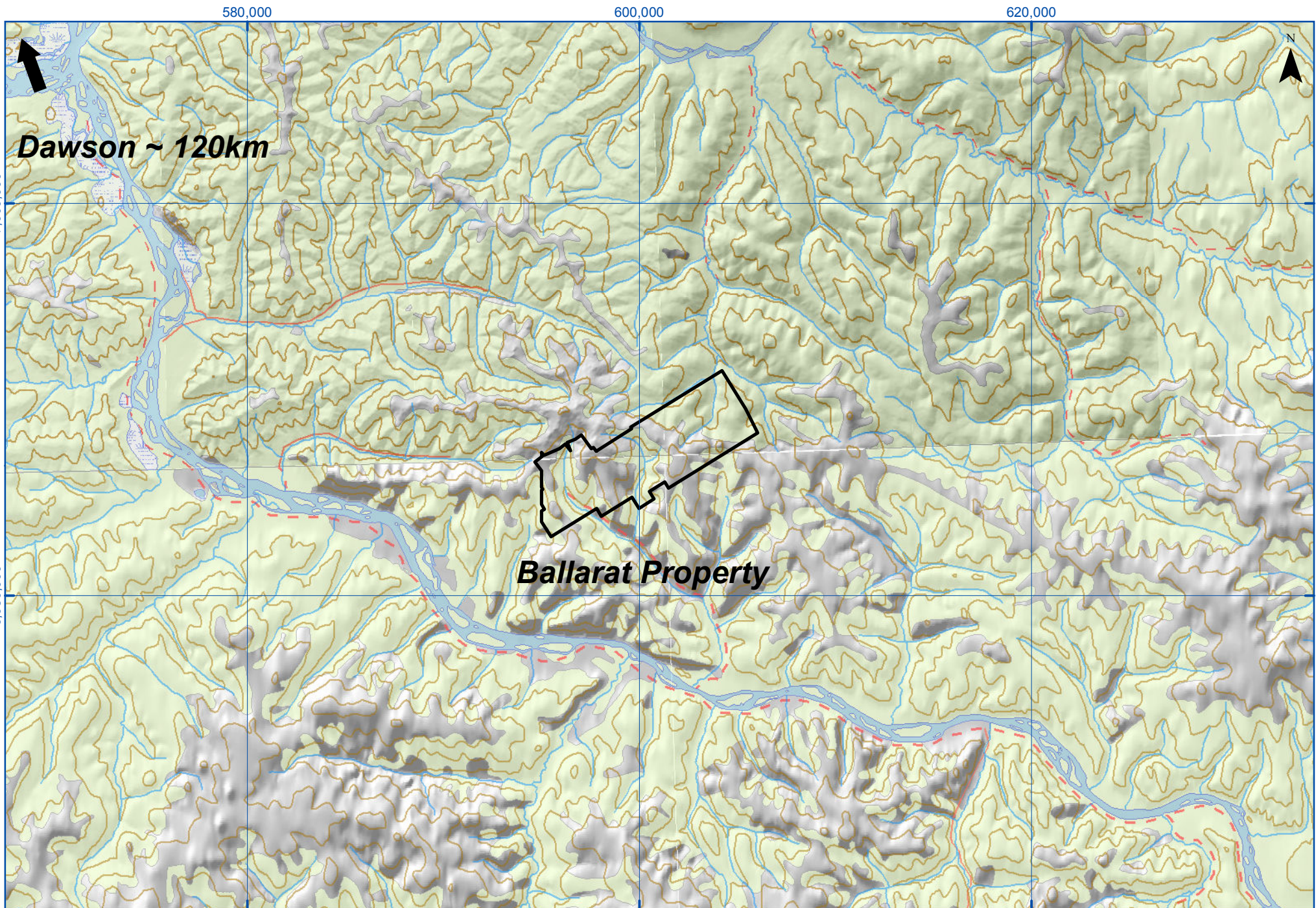
Surface Work Performed from June 1, 2011 to September 14, 2011 on the Ballarat Property, Dawson Mining District, Yukon, NTS Sheets 115J14, J15, O02 and O03, 63° 00' N. Lat., 139° 01' W. Long.

Gordey, S.P. and Makepeace, A.J. (comp.) 1999

Yukon bedrock geology in Yukon digital geology, S.P. Gordey and A.J. Makepeace (comp.); Geological Survey of Canada Open File D3826 and Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, Open File 1999-1(D)

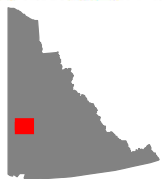
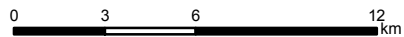
Hart, Craig J. R. 2007

Reduced Intrusion-Related Gold Systems. Geological Association of Canada, Mineral Deposits Division, Special Publication No. 5, p. 95-112.

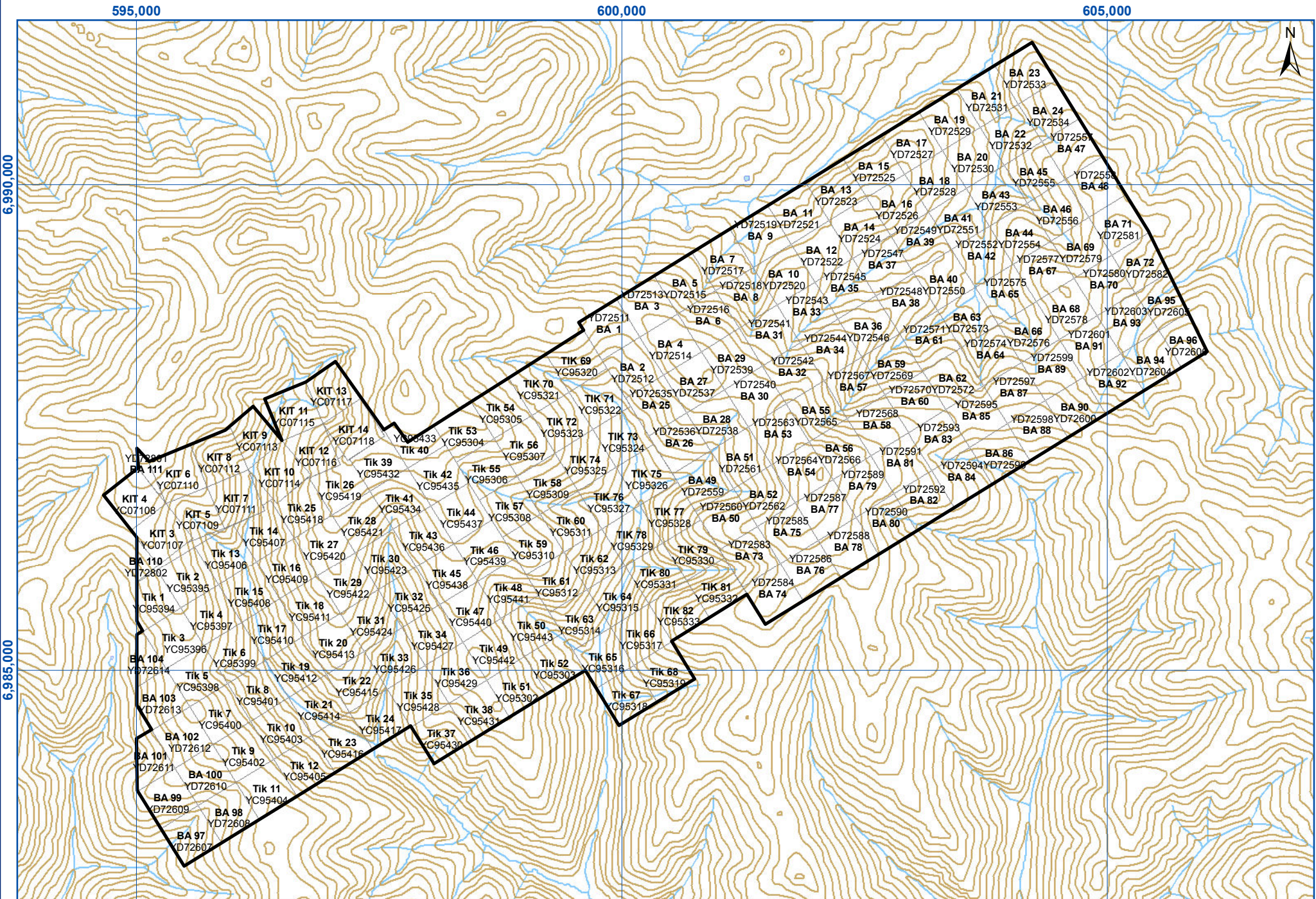


**BALLARAT PROPERTY**  
**Figure 1. GENERAL LOCATION**

Universal Transverse Mercator Zone 7  
 World Geodetic System 1984  
 Scale 1:250 000

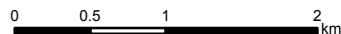


Ballarat Property  
 Figure 3. General Location  
 Stakeholder Gold Corp.  
 NTS Sheet: 115J & 115O  
 Date: November 26, 2011



**BALLARAT PROPERTY**  
**Figure 2. CLAIM MAP**

Universal Transverse Mercator Zone 7  
World Geodetic System 1984  
Scale 1:50 000



Ballarat Property  
Figure 2. Claim Map  
Stakeholder Gold Corp.  
NTS Sheet: 115J/14&15 & 115O/02&03  
Date: November 15, 2011

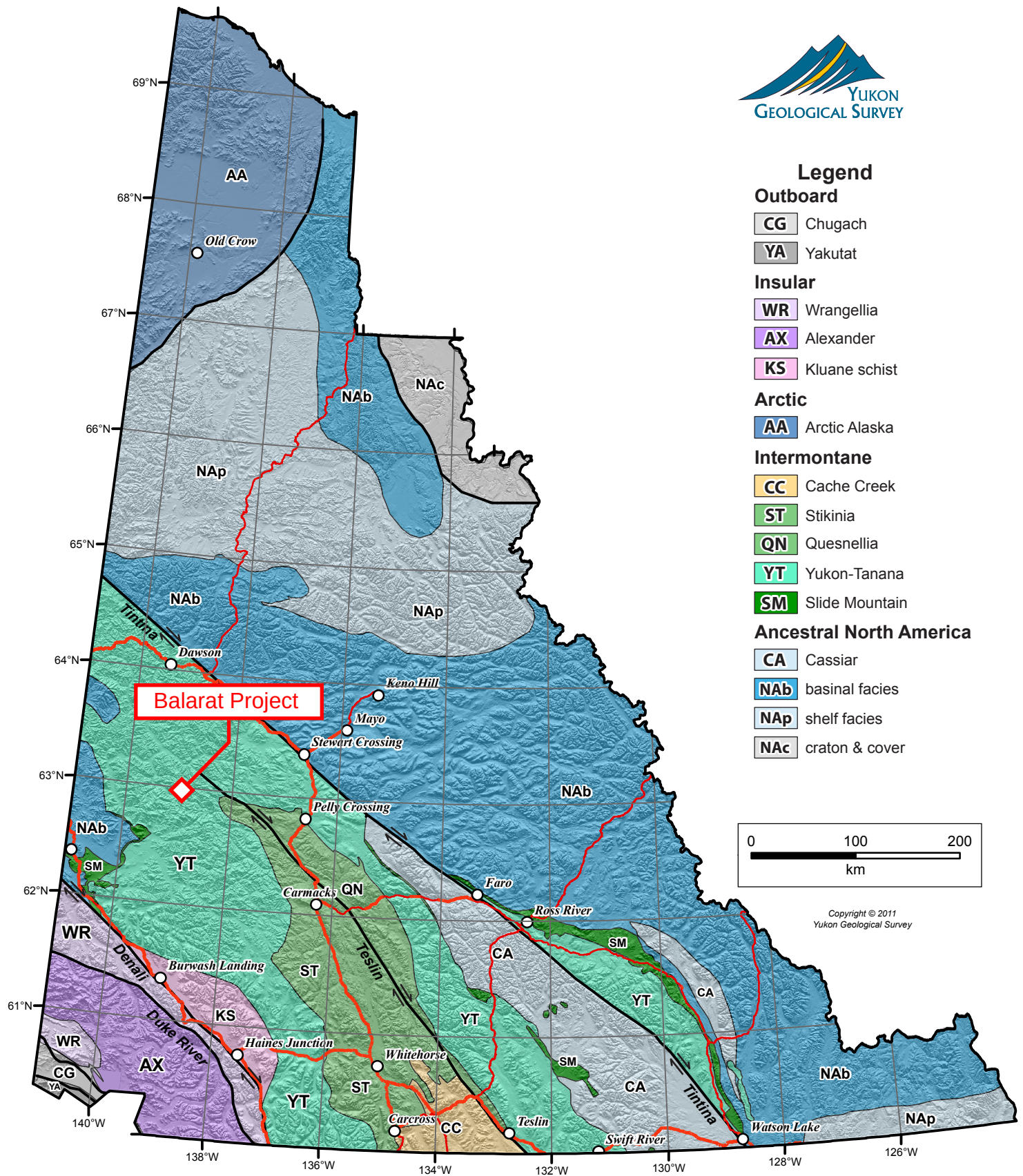
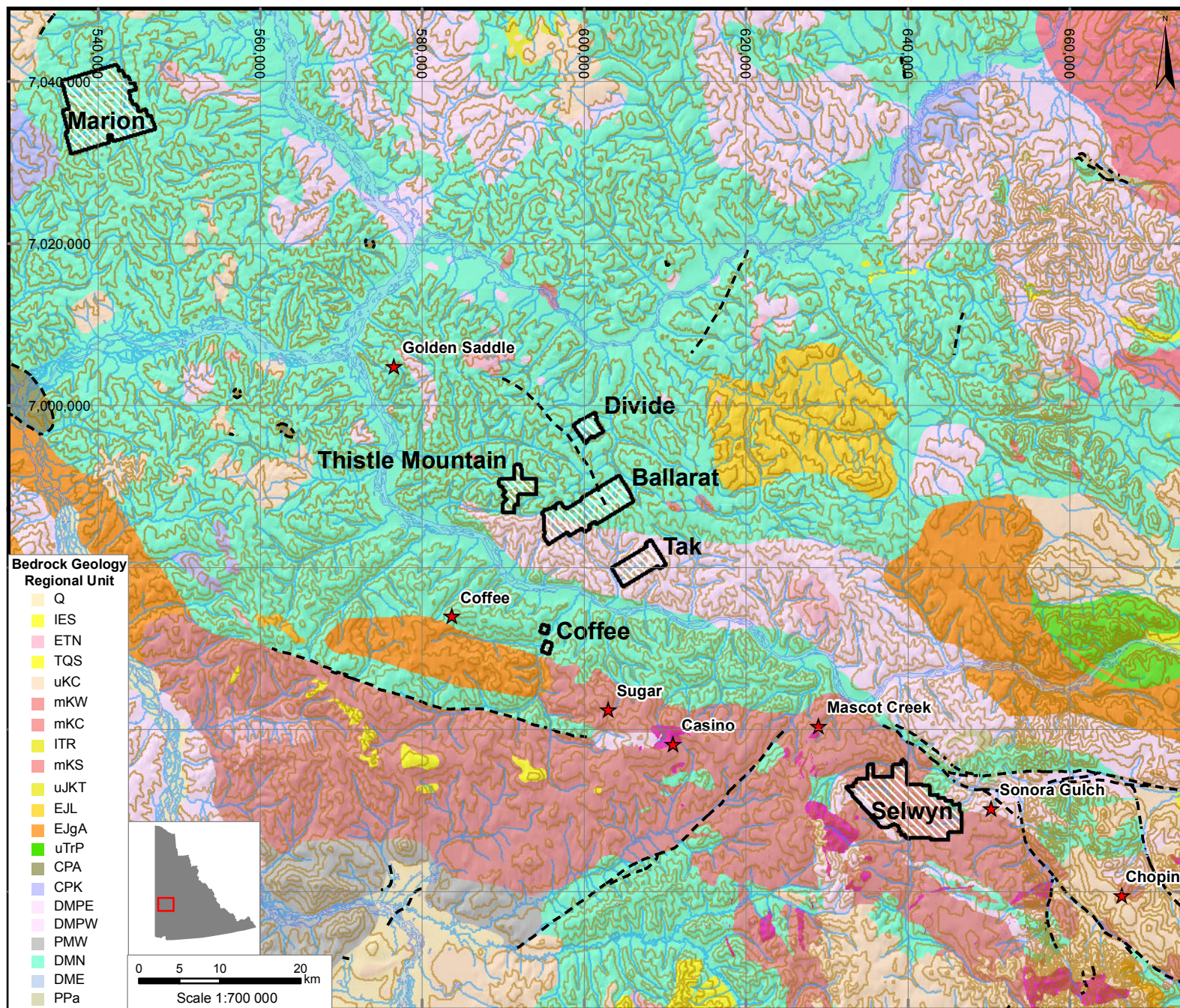


Figure 3 - Yukon Tectonic Map



## LOWER EOCENE



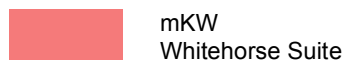
IES  
Skukum

## EARLY TERTIARY



ETN  
Nisling Range Suite

## MID-CRETACEOUS

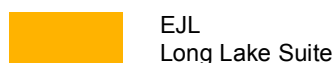


mKW  
Whitehorse Suite

## EARLY JURASSIC



EJgA  
Aishihik Suite



EJJ  
Long Lake Suite

## DEVONIAN TO CRETACEOUS?



PMW  
Windy

## LATE DEVONIAN TO MISSISSIPPIAN



DMPW  
Pelly Gneiss Suite - Southwest

## DEVONIAN, MISSISSIPPIAN AND(?) OLDER

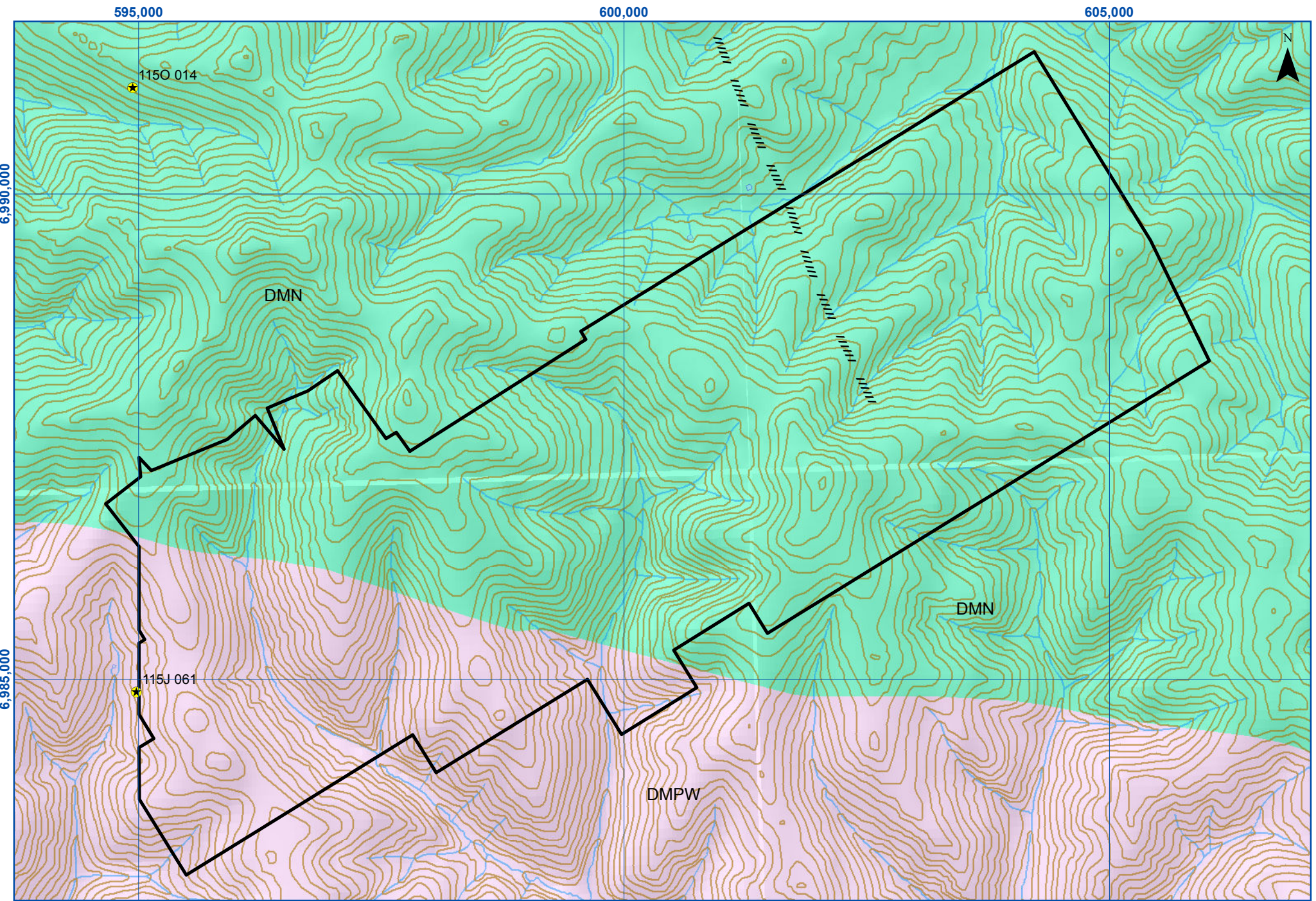


DMN  
Nasina

## SYMBOLS

|  |                                                                                     |
|--|-------------------------------------------------------------------------------------|
|  | Fault, sense of movement uncertain<br>(defined, approximate, assumed, extrapolated) |
|  | Fault, dextral<br>(defined, approximate, assumed, extrapolated)                     |
|  | Fault, sinistral<br>(defined, extrapolated)                                         |
|  | Fault, thrust, upright<br>(defined, approximate, assumed, extrapolated)             |
|  | Fault, thrust, overturned<br>(defined, approximate, assumed, extrapolated)          |
|  | Fault, normal/reverse<br>(defined, approximate, assumed, extrapolated)              |

Figure 3 continued. Legend for Regional Geology



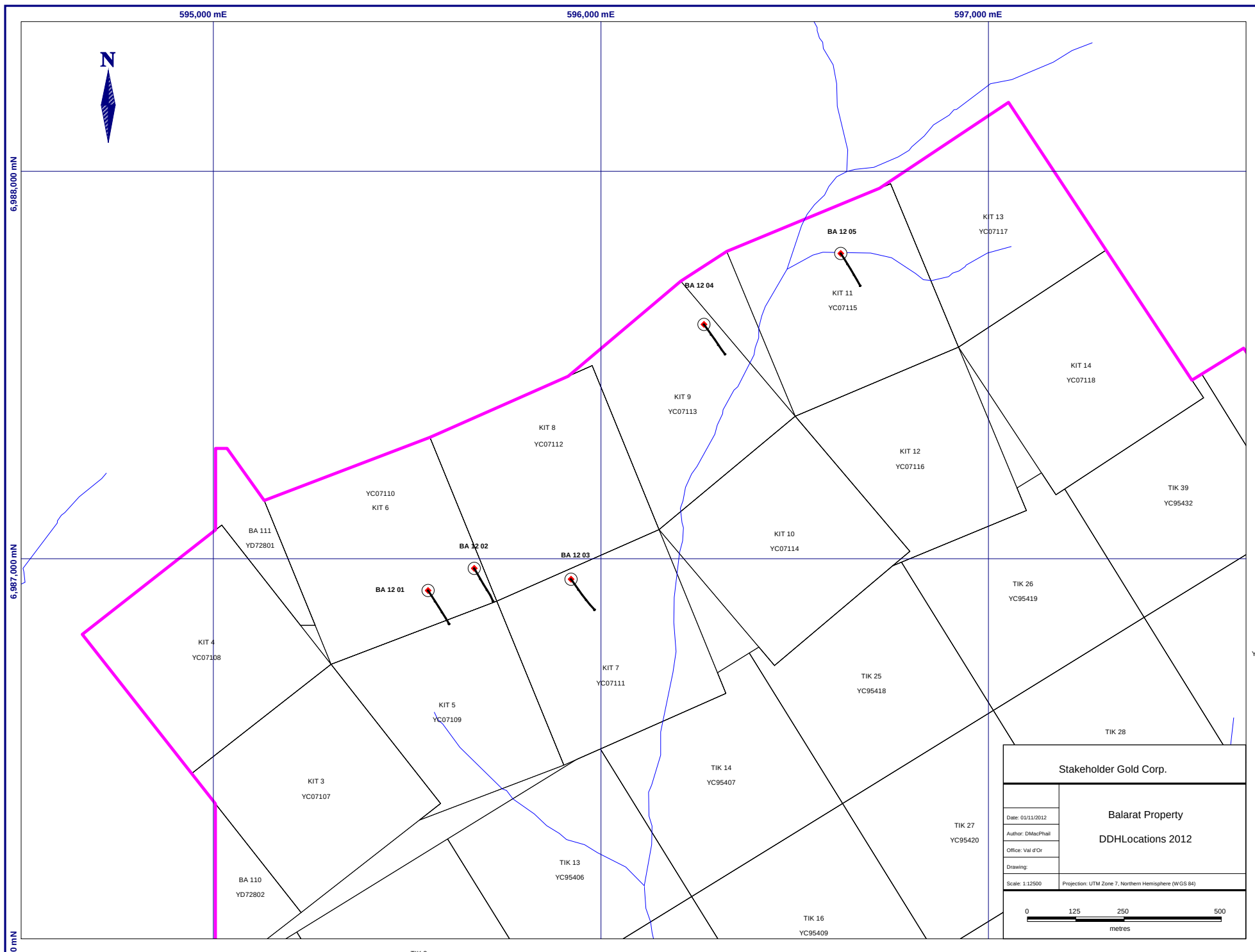
★ Mineral Occurrence

### BALLARAT PROPERTY Figure 4. PROPERTY GEOLOGY

Universal Transverse Mercator Zone 7  
World Geodetic System 1984  
Scale 1:50 000



Ballarat Property  
Figure 4. Property Geology  
Stakeholder Gold Corp.  
NTS Sheet: 115J/14&15 & 115O/02&03  
Date: November 26, 2011



## **Appendix A - Statement of Work Expenditures**

I, Darrel Kraemer,  
  
  
of Dawson City, Yukon  
Phone (867) 993-2511  
make oath and say that:

Office Date Stamp

1. I am the owner, or agent of the owner, of the mineral claim(s) to which reference is made herein.
2. I have done, or caused to be done, work, on the following mineral claim(s): (Here list claims on which work was actually done by number and name)

SEE ATTACHED SCHEDULE

situated at HEADWATERS BALLARAT CREEK Claim sheet No. 115J/14&15, 115O/02&03

in the DAWSON Mining District, to the value of at least 242,112.50 dollars,

since the 3RD day of JULY 20 12,

to represent the following mineral claims under the authority of Grouping Certificate No. HD03243.  
(Here list claims to be renewed in numerical order, by grant number and claim name, showing renewal period requested).

SEE ATTACHED SCHEDULE

PLEASE RENEW ALL CLAIMS TO MARCH 1ST, 2019

3. The following is a detailed statement of such work: (Set out full particulars of the work done indicating dates work commenced and ended in the twelve months in which such work is required to be done as shown by Section 56).

THE WORK INCLUDED A 5 HOLE DRILL PROGRAM OF 750M. WORK BEGAN JULY 3RD, 2012 AND

CONTINUED UNTIL OCTOBER 26TH, 2012.

Sworn before me at \_\_\_\_\_ this \_\_\_\_\_ day of \_\_\_\_\_ 20 \_\_\_\_.

\_\_\_\_\_  
Notary Public  
*Access to Information and Protection of Privacy Act*

\_\_\_\_\_  
Owner or Authorized Agent

## Claim List for Cert of Work 2012 Ballarat

| Claim Information |           |            |           |             | Work Done |  | Renewal |            |          |
|-------------------|-----------|------------|-----------|-------------|-----------|--|---------|------------|----------|
| Type              | Grant No. | Claim Name | Claim No. | Expiry Date | Drilling  |  | Years   | Annual Fee | Total    |
| Quartz            | YD72511   | BA         | 1         | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72512   | BA         | 2         | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72513   | BA         | 3         | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72514   | BA         | 4         | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72515   | BA         | 5         | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72516   | BA         | 6         | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72517   | BA         | 7         | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72518   | BA         | 8         | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72519   | BA         | 9         | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72520   | BA         | 10        | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72521   | BA         | 11        | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72522   | BA         | 12        | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72523   | BA         | 13        | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72524   | BA         | 14        | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72525   | BA         | 15        | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72526   | BA         | 16        | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72527   | BA         | 17        | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72528   | BA         | 18        | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72529   | BA         | 19        | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72530   | BA         | 20        | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72531   | BA         | 21        | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72532   | BA         | 22        | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72533   | BA         | 23        | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72534   | BA         | 24        | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72535   | BA         | 25        | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72536   | BA         | 26        | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72537   | BA         | 27        | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72538   | BA         | 28        | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72539   | BA         | 29        | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72540   | BA         | 30        | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72541   | BA         | 31        | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72542   | BA         | 32        | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72543   | BA         | 33        | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72544   | BA         | 34        | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72545   | BA         | 35        | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72546   | BA         | 36        | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72547   | BA         | 37        | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72548   | BA         | 38        | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72549   | BA         | 39        | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72550   | BA         | 40        | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72551   | BA         | 41        | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72552   | BA         | 42        | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72553   | BA         | 43        | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72554   | BA         | 44        | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72555   | BA         | 45        | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72556   | BA         | 46        | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72557   | BA         | 47        | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72558   | BA         | 48        | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72559   | BA         | 49        | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72560   | BA         | 50        | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72561   | BA         | 51        | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72562   | BA         | 52        | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72563   | BA         | 53        | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72564   | BA         | 54        | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72565   | BA         | 55        | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72566   | BA         | 56        | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72567   | BA         | 57        | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72568   | BA         | 58        | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72569   | BA         | 59        | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72570   | BA         | 60        | 1-Mar-15    |           |  | 4.00    | \$ 5.00    | \$ 20.00 |

## Claim List for Cert of Work 2012 Ballarat

| Claim Information |           |            |           |             | Work Done |           | Renewal |            |          |
|-------------------|-----------|------------|-----------|-------------|-----------|-----------|---------|------------|----------|
| Type              | Grant No. | Claim Name | Claim No. | Expiry Date | Drilling  |           | Years   | Annual Fee | Total    |
| Quartz            | YD72571   | BA         | 61        | 1-Mar-15    |           |           | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72572   | BA         | 62        | 1-Mar-15    |           |           | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72573   | BA         | 63        | 1-Mar-15    |           |           | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72574   | BA         | 64        | 1-Mar-15    |           |           | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72575   | BA         | 65        | 1-Mar-15    |           |           | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72576   | BA         | 66        | 1-Mar-15    |           |           | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72577   | BA         | 67        | 1-Mar-15    |           |           | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72578   | BA         | 68        | 1-Mar-15    |           |           | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72579   | BA         | 69        | 1-Mar-15    |           |           | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72580   | BA         | 70        | 1-Mar-15    |           |           | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72581   | BA         | 71        | 1-Mar-15    |           |           | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72582   | BA         | 72        | 1-Mar-15    |           |           | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72583   | BA         | 73        | 1-Mar-15    |           |           | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72584   | BA         | 74        | 1-Mar-15    |           |           | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72585   | BA         | 75        | 1-Mar-15    |           |           | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72586   | BA         | 76        | 1-Mar-15    |           |           | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72587   | BA         | 77        | 1-Mar-15    |           |           | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72588   | BA         | 78        | 1-Mar-15    |           |           | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72589   | BA         | 79        | 1-Mar-15    |           |           | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72590   | BA         | 80        | 1-Mar-15    |           |           | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72591   | BA         | 81        | 1-Mar-15    |           |           | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72592   | BA         | 82        | 1-Mar-15    |           |           | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72593   | BA         | 83        | 1-Mar-15    |           |           | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72594   | BA         | 84        | 1-Mar-15    |           |           | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72595   | BA         | 85        | 1-Mar-15    |           |           | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72596   | BA         | 86        | 1-Mar-15    |           |           | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72597   | BA         | 87        | 1-Mar-15    |           |           | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72598   | BA         | 88        | 1-Mar-15    |           |           | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72599   | BA         | 89        | 1-Mar-15    |           |           | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72600   | BA         | 90        | 1-Mar-15    |           |           | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72601   | BA         | 91        | 1-Mar-15    |           |           | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72602   | BA         | 92        | 1-Mar-15    |           |           | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72603   | BA         | 93        | 1-Mar-15    |           |           | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72604   | BA         | 94        | 1-Mar-15    |           |           | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72605   | BA         | 95        | 1-Mar-15    |           |           | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72606   | BA         | 96        | 1-Mar-15    |           |           | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72607   | BA         | 97        | 1-Mar-15    |           |           | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72608   | BA         | 98        | 1-Mar-15    |           |           | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72609   | BA         | 99        | 1-Mar-15    |           |           | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72610   | BA         | 100       | 1-Mar-15    |           |           | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72611   | BA         | 101       | 1-Mar-15    |           |           | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72612   | BA         | 102       | 1-Mar-15    |           |           | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72613   | BA         | 103       | 1-Mar-15    |           |           | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72614   | BA         | 104       | 1-Mar-15    |           |           | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72802   | BA         | 110       | 1-Mar-15    |           |           | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YD72801   | BA         | 111       | 1-Mar-15    |           |           | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YC07107   | KIT        | 3         | 1-May-15    |           |           | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YC07108   | KIT        | 4         | 1-May-15    |           |           | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YC07109   | KIT        | 5         | 1-May-15    |           |           | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YC07110   | KIT        | 6         | 1-May-15    | \$        | 60,528.13 | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YC07111   | KIT        | 7         | 1-May-15    | \$        | 60,528.13 | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YC07112   | KIT        | 8         | 1-May-15    |           |           | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YC07113   | KIT        | 9         | 1-May-15    | \$        | 60,528.13 | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YC07114   | KIT        | 10        | 1-May-15    |           |           | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YC07115   | KIT        | 11        | 1-May-15    | \$        | 60,528.13 | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YC07116   | KIT        | 12        | 1-May-15    |           |           | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YC07117   | KIT        | 13        | 1-May-15    |           |           | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YC07118   | KIT        | 14        | 1-May-15    |           |           | 4.00    | \$ 5.00    | \$ 20.00 |
| Quartz            | YC95394   | Tik        | 1         | 4-Jun-15    |           |           | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95395   | Tik        | 2         | 4-Jun-15    |           |           | 3.75    | \$ 5.00    | \$ 18.75 |

## Claim List for Cert of Work 2012 Ballarat

| Claim Information |           |            |           |             | Work Done |  | Renewal |            |          |
|-------------------|-----------|------------|-----------|-------------|-----------|--|---------|------------|----------|
| Type              | Grant No. | Claim Name | Claim No. | Expiry Date | Drilling  |  | Years   | Annual Fee | Total    |
| Quartz            | YC95396   | Tik        | 3         | 4-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95397   | Tik        | 4         | 4-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95398   | Tik        | 5         | 4-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95399   | Tik        | 6         | 4-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95400   | Tik        | 7         | 4-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95401   | Tik        | 8         | 4-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95402   | Tik        | 9         | 4-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95403   | Tik        | 10        | 4-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95404   | Tik        | 11        | 4-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95405   | Tik        | 12        | 4-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95406   | Tik        | 13        | 4-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95407   | Tik        | 14        | 4-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95408   | Tik        | 15        | 4-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95409   | Tik        | 16        | 4-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95410   | Tik        | 17        | 4-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95411   | Tik        | 18        | 4-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95412   | Tik        | 19        | 4-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95413   | Tik        | 20        | 4-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95414   | Tik        | 21        | 4-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95415   | Tik        | 22        | 4-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95416   | Tik        | 23        | 4-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95417   | Tik        | 24        | 4-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95418   | Tik        | 25        | 4-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95419   | Tik        | 26        | 4-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95420   | Tik        | 27        | 4-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95421   | Tik        | 28        | 4-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95422   | Tik        | 29        | 5-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95423   | Tik        | 30        | 5-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95424   | Tik        | 31        | 5-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95425   | Tik        | 32        | 5-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95426   | Tik        | 33        | 5-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95427   | Tik        | 34        | 5-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95428   | Tik        | 35        | 5-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95429   | Tik        | 36        | 5-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95430   | Tik        | 37        | 5-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95431   | Tik        | 38        | 5-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95432   | Tik        | 39        | 5-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95433   | Tik        | 40        | 5-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95434   | Tik        | 41        | 5-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95435   | Tik        | 42        | 5-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95436   | Tik        | 43        | 5-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95437   | Tik        | 44        | 5-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95438   | Tik        | 45        | 5-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95439   | Tik        | 46        | 5-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95440   | Tik        | 47        | 5-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95441   | Tik        | 48        | 5-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95442   | Tik        | 49        | 5-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95443   | Tik        | 50        | 5-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95302   | Tik        | 51        | 5-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95303   | Tik        | 52        | 5-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95304   | Tik        | 53        | 5-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95305   | Tik        | 54        | 5-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95306   | Tik        | 55        | 5-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95307   | Tik        | 56        | 5-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95308   | Tik        | 57        | 5-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95309   | Tik        | 58        | 5-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95310   | Tik        | 59        | 5-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95311   | Tik        | 60        | 5-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95312   | Tik        | 61        | 5-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |
| Quartz            | YC95313   | Tik        | 62        | 5-Jun-15    |           |  | 3.75    | \$ 5.00    | \$ 18.75 |

Claim List for Cert of Work 2012 Ballarat

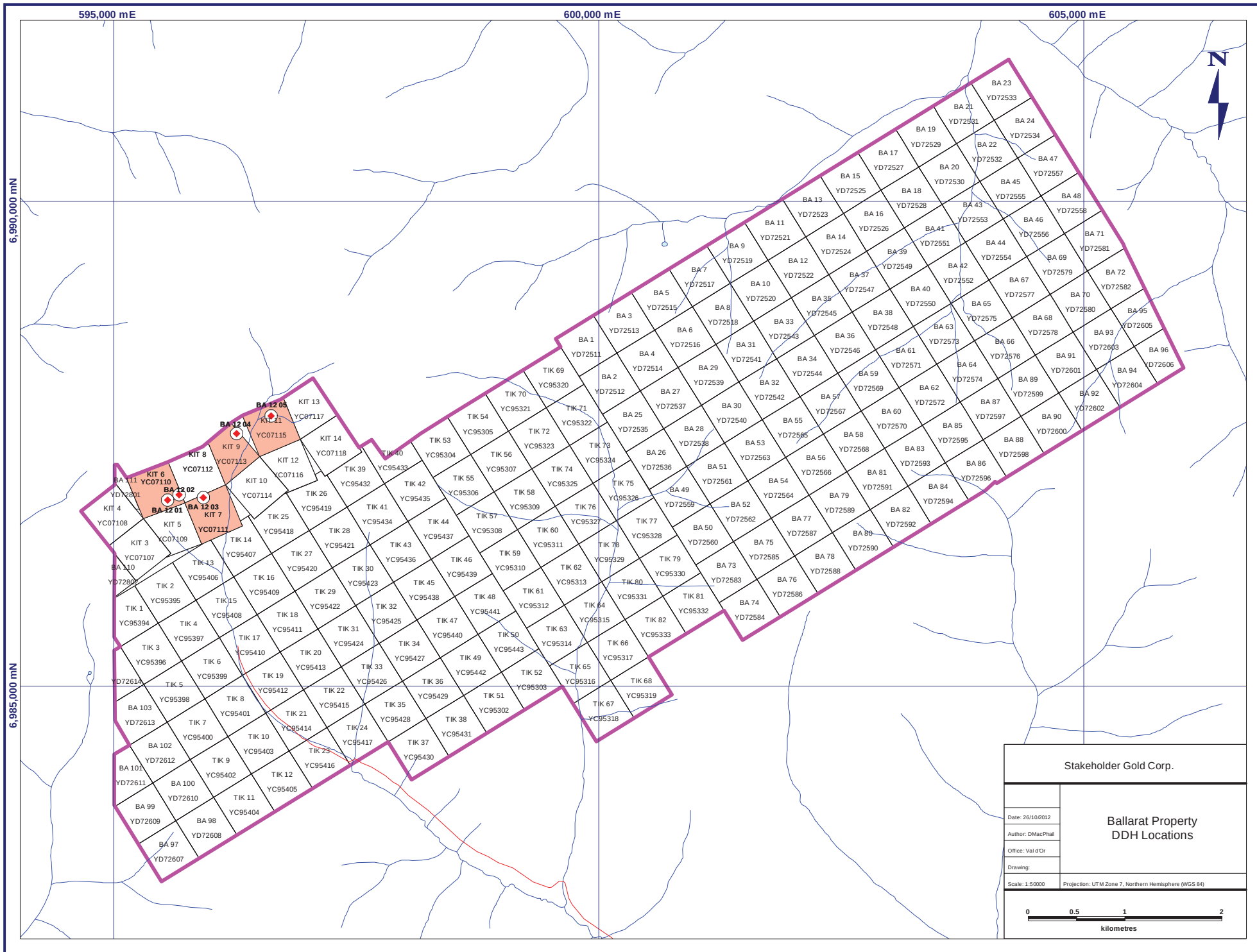
| Claim Information |           |            |           |                                                                 | Work Done |            | Renewal |            |             |
|-------------------|-----------|------------|-----------|-----------------------------------------------------------------|-----------|------------|---------|------------|-------------|
| Type              | Grant No. | Claim Name | Claim No. | Expiry Date                                                     | Drilling  |            | Years   | Annual Fee | Total       |
| Quartz            | YC95314   | Tik        | 63        | 5-Jun-15                                                        |           |            | 3.75    | \$ 5.00    | \$ 18.75    |
| Quartz            | YC95315   | Tik        | 64        | 5-Jun-15                                                        |           |            | 3.75    | \$ 5.00    | \$ 18.75    |
| Quartz            | YC95316   | Tik        | 65        | 5-Jun-15                                                        |           |            | 3.75    | \$ 5.00    | \$ 18.75    |
| Quartz            | YC95317   | Tik        | 66        | 5-Jun-15                                                        |           |            | 3.75    | \$ 5.00    | \$ 18.75    |
| Quartz            | YC95318   | Tik        | 67        | 5-Jun-15                                                        |           |            | 3.75    | \$ 5.00    | \$ 18.75    |
| Quartz            | YC95319   | Tik        | 68        | 5-Jun-15                                                        |           |            | 3.75    | \$ 5.00    | \$ 18.75    |
| Quartz            | YC95320   | TIK        | 69        | 2-Jul-15                                                        |           |            | 3.75    | \$ 5.00    | \$ 18.75    |
| Quartz            | YC95321   | TIK        | 70        | 2-Jul-15                                                        |           |            | 3.75    | \$ 5.00    | \$ 18.75    |
| Quartz            | YC95322   | TIK        | 71        | 2-Jul-15                                                        |           |            | 3.75    | \$ 5.00    | \$ 18.75    |
| Quartz            | YC95323   | TIK        | 72        | 2-Jul-15                                                        |           |            | 3.75    | \$ 5.00    | \$ 18.75    |
| Quartz            | YC95324   | TIK        | 73        | 2-Jul-15                                                        |           |            | 3.75    | \$ 5.00    | \$ 18.75    |
| Quartz            | YC95325   | TIK        | 74        | 2-Jul-15                                                        |           |            | 3.75    | \$ 5.00    | \$ 18.75    |
| Quartz            | YC95326   | TIK        | 75        | 2-Jul-15                                                        |           |            | 3.75    | \$ 5.00    | \$ 18.75    |
| Quartz            | YC95327   | TIK        | 76        | 2-Jul-15                                                        |           |            | 3.75    | \$ 5.00    | \$ 18.75    |
| Quartz            | YC95328   | TIK        | 77        | 2-Jul-15                                                        |           |            | 3.75    | \$ 5.00    | \$ 18.75    |
| Quartz            | YC95329   | TIK        | 78        | 2-Jul-15                                                        |           |            | 3.75    | \$ 5.00    | \$ 18.75    |
| Quartz            | YC95330   | TIK        | 79        | 2-Jul-15                                                        |           |            | 3.75    | \$ 5.00    | \$ 18.75    |
| Quartz            | YC95331   | TIK        | 80        | 2-Jul-15                                                        |           |            | 3.75    | \$ 5.00    | \$ 18.75    |
| Quartz            | YC95332   | TIK        | 81        | 2-Jul-15                                                        |           |            | 3.75    | \$ 5.00    | \$ 18.75    |
| Quartz            | YC95333   | TIK        | 82        | 2-Jul-15                                                        |           |            | 3.75    | \$ 5.00    | \$ 18.75    |
|                   |           |            |           | Column Total                                                    | \$        | 242,112.50 | 779.50  |            | \$ 3,897.50 |
|                   |           |            |           |                                                                 |           |            |         |            |             |
|                   |           |            |           | Check Column total less Expenses                                | \$        | -          |         |            |             |
|                   |           |            |           | Number of Claims Where work was done                            |           | 4          |         |            |             |
|                   |           |            |           |                                                                 |           |            |         |            |             |
|                   |           |            |           | Expenses (from Project Management Sheet)                        | \$        | 242,112.50 |         |            |             |
|                   |           |            |           | Work Required for requested renewal                             | \$        | 77,950.00  |         |            |             |
|                   |           |            |           | Surplus (Deficit)                                               | \$        | 164,162.50 |         |            |             |
|                   |           |            |           |                                                                 |           |            |         |            |             |
|                   |           |            |           | Years to renew 118 claims x 4.00 years + 82 claims x 3.75 years |           | 779.50     |         |            |             |
|                   |           |            |           | Renwal Fees = 779.5 years x \$5.00                              | \$        | 3,897.50   |         |            |             |

Ballarat\_-\_Statement\_of\_Costs\_-\_Drilling\_2012

| Type                               | Date       | Supplier                        | Invoice       | Cost         | Totals        |
|------------------------------------|------------|---------------------------------|---------------|--------------|---------------|
| 5450 Drilling - Wages and Contract |            |                                 |               |              |               |
|                                    | 07-31-2012 | TAKU#8, well Done Cook Agency   | Cash          | \$ 8,080.00  |               |
|                                    | 07-31-2012 | BXM                             | 869           | \$ 18,900.00 |               |
|                                    | 08-02-2012 | 1043, Earth Tek Drilling Ltd    | Cash          | \$ 71,819.38 |               |
|                                    | 08-06-2012 | 110070, All-In Exploration INC. | Cash          | \$ 13,516.40 |               |
|                                    | 08-17-2012 | Schmidt Mining Corp.            | 120817        | \$ 44,000.00 |               |
|                                    | 08-15-2012 | Well Done Cook Agency           | Gold Stake #1 | \$ 3,030.00  |               |
|                                    | 07-31-2012 | Small's Expediting              | K9934         | \$ 90.00     |               |
|                                    | 07-31-2012 | Small's Expediting              | K9949         | \$ 690.00    |               |
|                                    |            |                                 |               |              | \$ 160,125.78 |
| 5451 Drilling - F&L                |            |                                 |               |              |               |
|                                    | 07-31-2012 | BXM                             | 869           | \$ 591.21    |               |
|                                    | 08-31-2012 | Taku Gold                       | 1201          | \$ 1,500.00  |               |
|                                    |            |                                 |               |              | \$ 2,091.21   |
| 5452 Drilling - Supplies           |            |                                 |               |              |               |
|                                    | 07-31-2012 | BXM                             | 869           | \$ 193.97    |               |
|                                    | 07-19-2012 | ERS                             | 09-95177      | \$ 8,790.27  |               |
|                                    | 07-31-2012 | NIS                             | STMT 31 07 12 | \$ 54.61     |               |
|                                    | 07-31-2012 | Small's Expediting              | K9886         | \$ 298.59    |               |
|                                    | 08-08-2012 | Acmelabs                        | 42947         | \$ 135.00    |               |
|                                    |            |                                 |               |              | \$ 9,472.44   |
| 5453 Drilling - Transport          |            |                                 |               |              |               |
|                                    | 07-21-2012 | Tintina Air                     | 733           | \$ 2,160.00  |               |
|                                    | 07-22-2012 | Heli Dynamics                   | 12345         | \$ 3,366.40  |               |
|                                    | 07-23-2012 | Heli Dynamics                   | 12346         | \$ 5,260.00  |               |
|                                    | 07-24-2012 | Heli Dynamics                   | 12347         | \$ 4,320.00  |               |
|                                    | 07-24-2012 | Heli Dynamics                   | 12348         | \$ 1,800.00  |               |
|                                    | 07-26-2012 | Heli Dynamics                   | 12349         | \$ 4,500.00  |               |
|                                    | 07-27-2012 | Heli Dynamics                   | 12350         | \$ 5,220.00  |               |
|                                    | 07-28-2012 | Heli Dynamics                   | 12351         | \$ 1,980.00  |               |
|                                    | 07-28-2012 | Heli Dynamics                   | 12352         | \$ 1,340.00  |               |
|                                    | 07-30-2012 | Heli Dynamics                   | 12353         | \$ 4,140.00  |               |
|                                    | 07-31-2012 | Heli Dynamics                   | 12354         | \$ 1,260.00  |               |
|                                    | 07-31-2012 | BXM                             | 869           | \$ 4,531.60  |               |
|                                    | 08-04-2012 | Heli Dynamics                   | 12085         | \$ 720.00    |               |
|                                    | 08-03-2012 | Heli Dynamics                   | 12084         | \$ 4,680.00  |               |
|                                    | 08-02-2012 | Heli Dynamics                   | 12083         | \$ 1,080.00  |               |
|                                    | 08-01-2012 | Heli Dynamics                   | 12082         | \$ 1,080.00  |               |
|                                    | 07-31-2012 | Heli Dynamics                   | 12081         | \$ 2,880.00  |               |
|                                    | 08-01-2012 | Tintina Air                     | 0804          | \$ 2,160.00  |               |
|                                    | 08-01-2012 | Tintina Air                     | 0805          | \$ 1,080.00  |               |
|                                    | 08-04-2012 | Tintina Air                     | 0808          | \$ 540.00    |               |
|                                    | 08-05-2012 | Tintina Air                     | 0809          | \$ 3,240.00  |               |
|                                    | 07-31-2012 | Small's Expediting              | K9918         | \$ 50.00     |               |
|                                    | 08-03-2012 | Fireweed Helicopters            | 3546          | \$ 2,287.80  |               |
|                                    | 08-31-2012 | Taku Gold                       | 1201          | \$ 765.59    |               |
|                                    |            |                                 |               |              | \$ 60,441.39  |
| 5454 Drilling - Rentals            |            |                                 |               |              |               |
|                                    | 07-31-2012 | BXM                             | 869           | \$ 2,525.00  |               |
|                                    |            |                                 |               |              | \$ 2,525.00   |
| 5456 Drilling - Assays             |            |                                 |               |              |               |
|                                    | 08-14-2012 | Acmelabs                        | VANI139389    | \$ 2,725.32  |               |
|                                    | 08-23-2012 | Acmelabs                        | VANI140953    | \$ 1,586.56  |               |

Ballarat\_-\_Statement\_of\_Costs\_-\_Drilling\_2012

| Type                     | Date       | Supplier | Invoice     | Cost | Totals        |
|--------------------------|------------|----------|-------------|------|---------------|
|                          | 08-23-2012 | Acmelabs | VANI140943  | \$   | 2,731.38      |
|                          | 08-23-2012 | Acmelabs | VANI140942  | \$   | 413.42        |
|                          |            |          |             |      | <hr/>         |
|                          |            |          |             |      | \$ 7,456.68   |
| <hr/>                    |            |          | Grand Total |      | <hr/>         |
| Generated On: 29/10/2012 |            |          |             |      | \$ 242,112.50 |



## **Appendix B - Drill Logs**

# Breakaway Exploration Management inc.

DDH: BA-12-01

Claims title:

Section:

Township:

Level:

Range:

Work place:

Drilled by: Earthtek Drilling

Lot:

Described by: Drew MacPhail

From: 25/07/2012

Description date:

To:

Collar

Azimuth: 145.00°

Dip: -50.00°

Length: 153.00 m

LL\_WGS84

UTM\_WGS84

East

62.9993

595,554.0

North

-139.1134

6,986,918.0

Elevation

1,000.0000

1,000.0

Weighted averages

| Zone | From   | To     | Length | Hor. th.    | Ver. th. | True th. | Au<br>(ppb) |
|------|--------|--------|--------|-------------|----------|----------|-------------|
| Z1   | 55.60  | 58.60  | 3.00   | 999,999,999 | 2.24     | 2.24     | 945         |
| Z2   | 117.80 | 120.00 | 2.20   | 999,999,999 | 1.61     | 1.61     | 373         |
| Z3   | 137.50 | 139.50 | 2.00   | 999,999,999 | 1.47     | 1.47     | 720         |

Description

Core size:

NQ

Cemented: No

Stored: No

| Type   | Depth  | Azimuth | Dip     | Invalid | Description |
|--------|--------|---------|---------|---------|-------------|
| Reflex | 50.00  | 147.30° | -48.60° | No      |             |
| Reflex | 100.00 | 148.10° | -46.70° | No      |             |
| Reflex | 153.00 | 149.60° | -47.40° | No      |             |

# Breakaway Exploration Management inc.

| Description |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Assay |       |         |        |          |
|-------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------|---------|--------|----------|
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | From  | To    | Number  | Length | Au (ppb) |
| 0.00        | 4.50   | CAS<br>Casing<br>Casing.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |       |       |         |        |          |
| 4.50        | 153.00 | PM3; RUB<br><b>Paragneiss; Banded</b><br>Dark grey to black alternates light and dark layers.<br>Fine to medium grain.<br>Banded between .5 cm to 1cm, occasional banding can be up to 2m in core length.<br>Some sections of crenulated cleavage near the end of the section oxydization is sporaticly located throughout section.<br>Quartz vein makup about 1-2 % of core between 5-10 cm veins.<br>2 alkilfeldspar granitoid intrutions are present aproximatly 1.5m in core length.<br>Banding angle is 50deg to core angle. | 5.00  | 6.00  | 1575501 | 1.00   | <2       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 6.00  | 7.00  | 1575505 | 1.00   | <2       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 7.00  | 8.00  | 1575506 | 1.00   | <2       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 8.00  | 9.00  | 1575507 | 1.00   | <2       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 9.00  | 10.00 | 1575509 | 1.00   | <2       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 10.00 | 11.00 | 1575510 | 1.00   | <2       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 11.00 | 12.00 | 1575511 | 1.00   | <2       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 12.00 | 13.00 | 1575512 | 1.00   | <2       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 13.00 | 14.00 | 1575513 | 1.00   | <2       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 14.00 | 15.00 | 1575502 | 1.00   | <2       |
| 4.50        | 70.00  | Py2-5<br><b>Pyrite 2-5</b><br>Diseminated sulphides throughout section.                                                                                                                                                                                                                                                                                                                                                                                                                                                           |       |       |         |        |          |
| 14.50       | 15.50  | I1A<br><b>Alkali-Feldspar Granite</b><br>White and pink<br>Massive<br>Intrution                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 15.00 | 15.60 | 1575503 | 0.60   | <2       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 15.60 | 16.60 | 1575504 | 1.00   | <2       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 16.60 | 17.60 | 1575514 | 1.00   | <2       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 17.60 | 18.60 | 1575515 | 1.00   | <2       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 18.60 | 19.60 | 1575517 | 1.00   | <2       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 19.60 | 20.60 | 1575518 | 1.00   | <2       |
| 19.70       | 22.00  | BRE; FAI<br><b>Breccia; Fault</b><br>Small fault movement(<5cm) and breccia in section.                                                                                                                                                                                                                                                                                                                                                                                                                                           | 20.60 | 21.60 | 1575519 | 1.00   | <2       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 21.60 | 22.60 | 1575520 | 1.00   | <2       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 22.60 | 23.60 | 1575521 | 1.00   | <2       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 26.50 | 27.50 | 1575522 | 1.00   | <2       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 27.50 | 28.50 | 1575530 | 1.00   | 13       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 28.50 | 28.90 | 1575523 | 0.40   | <2       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 28.90 | 30.00 | 1575524 | 1.10   | <2       |
| 30.00       | 36.00  | OX; m<br><b>oxidized; Moderate</b><br>Oxidized.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 30.00 | 30.50 | 1575526 | 0.50   | <2       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 30.50 | 31.50 | 1575527 | 1.00   | <2       |
| 30.70       | 32.00  | I1A<br><b>Alkali-Feldspar Granite</b><br>White and pink.                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 31.50 | 32.50 | 1575528 | 1.00   | <2       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 32.50 | 33.50 | 1575529 | 1.00   | 8        |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 33.50 | 34.50 | 1575531 | 1.00   | <2       |

# Breakaway Exploration Management inc.

| Description |       |                                 | Assay |       |         |        |          |
|-------------|-------|---------------------------------|-------|-------|---------|--------|----------|
|             |       |                                 | From  | To    | Number  | Length | Au (ppb) |
| 40.20       | 48.50 | Disconformant boundaries.       | 34.50 | 35.60 | 1575532 | 1.10   | <2       |
|             |       | Massive.                        | 39.60 | 40.60 | 1575533 | 1.00   | <2       |
|             |       | Intrusion.                      |       |       |         |        |          |
|             |       | CRN                             | 40.60 | 41.60 | 1575534 | 1.00   | <2       |
|             |       | Crenulation                     | 41.60 | 42.60 | 1575535 | 1.00   | <2       |
|             |       | Zone of on and off crenulation. | 42.60 | 43.60 | 1575536 | 1.00   | <2       |
|             |       | Very tight folds.               | 43.60 | 44.60 | 1575537 | 1.00   | <2       |
|             |       |                                 | 44.60 | 45.60 | 1575538 | 1.00   | <2       |
|             |       |                                 | 45.60 | 46.60 | 1575539 | 1.00   | <2       |
|             |       |                                 | 46.60 | 47.60 | 1575540 | 1.00   | 35       |
|             |       |                                 | 47.60 | 48.60 | 1575541 | 1.00   | 10       |
|             |       |                                 | 48.60 | 49.60 | 1575543 | 1.00   | 3        |
|             |       |                                 | 49.60 | 50.60 | 1575544 | 1.00   | 4        |
|             |       |                                 | 50.60 | 51.60 | 1575545 | 1.00   | <2       |
| 55.50       | 56.50 | ; OX                            | 55.60 | 56.60 | 1575546 | 1.00   | 1,970    |
|             |       | Pervasive; oxidized             | 56.60 | 57.60 | 1575547 | 1.00   | 168      |
|             |       | Oxidized.                       | 57.60 | 58.60 | 1575548 | 1.00   | 696      |
|             |       |                                 | 58.60 | 59.60 | 1575549 | 1.00   | 2        |
| 59.00       | 61.70 | ; OX                            | 59.60 | 60.60 | 1575551 | 1.00   | 3        |
|             |       | Pervasive; oxidized             | 60.60 | 61.60 | 1575552 | 1.00   | 2        |
|             |       | Oxidized.                       | 61.60 | 62.60 | 1575553 | 1.00   | 3        |
|             |       |                                 | 68.00 | 68.30 | 1575554 | 0.30   | <2       |
| 68.30       | 68.40 | VEI;10;;;50°;Qz;                | 73.20 | 74.20 | 1575555 | 1.00   | <2       |
|             |       | Vein 10 50° Quartz              | 74.20 | 75.20 | 1575556 | 1.00   | 4        |
|             |       | Quartz vein.                    | 75.20 | 76.20 | 1575557 | 1.00   | <2       |
| 76.00       | 82.20 | Sil                             | 76.20 | 77.20 | 1575558 | 1.00   | 2        |
|             |       | Silica                          | 77.20 | 78.20 | 1575559 | 1.00   | <2       |
|             |       | Strong silica alteration.       | 78.20 | 79.20 | 1575561 | 1.00   | 10       |
| 78.80       | 80.00 | Py                              | 79.20 | 80.20 | 1575562 | 1.00   | 317      |
|             |       | Pyrite                          | 80.20 | 81.20 | 1575563 | 1.00   | <2       |
|             |       | 2-5 % pyrite.                   | 81.20 | 82.20 | 1575564 | 1.00   | <2       |
|             |       |                                 | 82.20 | 83.00 | 1575565 | 0.80   | <2       |
| 82.80       | 87.00 | Su<1-5                          | 83.00 | 84.00 | 1575566 | 1.00   | 19       |
|             |       | Sulfides <1-5                   |       |       |         |        |          |

# Breakaway Exploration Management inc.

| Description |        |                                                          | Assay  |        |         |        |          |
|-------------|--------|----------------------------------------------------------|--------|--------|---------|--------|----------|
|             |        |                                                          | From   | To     | Number  | Length | Au (ppb) |
|             |        | Bronze to gold colour fine sulphides.                    | 84.00  | 85.00  | 1575567 | 1.00   | <2       |
|             |        |                                                          | 85.00  | 86.00  | 1575568 | 1.00   | <2       |
|             |        |                                                          | 86.00  | 87.00  | 1575569 | 1.00   | <2       |
| 87.00       | 96.60  | Py02<br>Pyrite 2%<br>Localized chunks of pyrite.         |        |        |         |        |          |
| 87.00       | 97.50  | VEI;10;;;Qz;<br>Vein 10 Quartz<br>Large quartz vein.     | 87.00  | 87.50  | 1575570 | 0.50   | <2       |
|             |        |                                                          | 87.50  | 88.20  | 1575571 | 0.70   | <2       |
|             |        |                                                          | 88.20  | 89.30  | 1575572 | 1.10   | <2       |
|             |        |                                                          | 89.30  | 90.40  | 1575573 | 1.10   | <2       |
|             |        |                                                          | 90.40  | 91.50  | 1575574 | 1.10   | <2       |
|             |        |                                                          | 91.50  | 92.50  | 1575575 | 1.00   | <2       |
|             |        |                                                          | 92.50  | 93.50  | 1575576 | 1.00   | <2       |
|             |        |                                                          | 93.50  | 94.60  | 1575578 | 1.10   | <2       |
|             |        |                                                          | 94.60  | 95.70  | 1575579 | 1.10   | <2       |
|             |        |                                                          | 95.70  | 96.00  | 1575580 | 0.30   | 21       |
|             |        |                                                          | 96.00  | 96.50  | 1575581 | 0.50   | <2       |
|             |        |                                                          | 96.50  | 97.50  | 1575582 | 1.00   | <2       |
| 96.60       | 97.00  | Py20<br>Pyrite 20%<br>Large chunks of pyrite.            |        |        |         |        |          |
| 97.00       | 97.50  | Py2-5<br>Pyrite 2-5<br>Localized pyrite chunks.          | 97.50  | 98.20  | 1575583 | 0.70   | 3        |
|             |        |                                                          | 98.20  | 98.90  | 1575584 | 0.70   | <2       |
| 99.00       | 103.80 | BRE<br>Breccia<br>brecciated section with mineralization |        |        |         |        |          |
| 99.00       | 103.80 | Py02<br>Pyrite 2%<br>Pyrite.                             | 100.00 | 101.00 | 1575586 | 1.00   | <2       |
|             |        |                                                          | 101.00 | 102.00 | 1575587 | 1.00   | <2       |
|             |        |                                                          | 102.00 | 103.00 | 1575588 | 1.00   | <2       |
|             |        |                                                          | 103.00 | 103.80 | 1575589 | 0.80   | <2       |
| 103.80      | 153.00 | Py1-5<br>Pyrite 1-5<br>Sulphides to EOH.                 | 103.80 | 105.00 | 1575590 | 1.20   | <2       |
|             |        |                                                          | 107.50 | 108.50 | 1575591 | 1.00   | 76       |
|             |        |                                                          | 108.50 | 109.50 | 1575592 | 1.00   | <2       |
|             |        |                                                          | 109.50 | 110.50 | 1575593 | 1.00   | <2       |

# Breakaway Exploration Management inc.

| Description |                                                                                                    |                                                                                  | Assay  |        |         |        |          |
|-------------|----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|--------|--------|---------|--------|----------|
|             |                                                                                                    |                                                                                  | From   | To     | Number  | Length | Au (ppb) |
| 117.80      | 119.00                                                                                             | OX50<br>oxidized 50<br>Oxidized.                                                 | 116.80 | 117.80 | 1575594 | 1.00   | <2       |
|             |                                                                                                    |                                                                                  | 117.80 | 119.00 | 1575596 | 1.20   | 244      |
|             |                                                                                                    |                                                                                  | 119.00 | 120.00 | 1575597 | 1.00   | 527      |
|             |                                                                                                    |                                                                                  | 121.00 | 122.00 | 1575598 | 1.00   | <2       |
|             |                                                                                                    |                                                                                  | 122.00 | 123.00 | 1575599 | 1.00   | <2       |
|             |                                                                                                    |                                                                                  | 123.00 | 124.00 | 1575600 | 1.00   | <2       |
|             |                                                                                                    |                                                                                  | 124.00 | 125.00 | 1575601 | 1.00   | <2       |
|             |                                                                                                    |                                                                                  | 126.00 | 127.00 | 1575602 | 1.00   | <2       |
|             |                                                                                                    |                                                                                  | 127.00 | 128.00 | 1575603 | 1.00   | <2       |
|             |                                                                                                    |                                                                                  | 128.00 | 129.00 | 1575604 | 1.00   | <2       |
|             |                                                                                                    |                                                                                  | 129.00 | 129.70 | 1575606 | 0.70   | <2       |
|             |                                                                                                    |                                                                                  | 129.70 | 130.00 | 1575607 | 0.30   | <2       |
|             |                                                                                                    |                                                                                  | 130.00 | 131.00 | 1575608 | 1.00   | <2       |
|             |                                                                                                    |                                                                                  | 131.00 | 132.00 | 1575609 | 1.00   | <2       |
|             |                                                                                                    |                                                                                  | 136.60 | 137.60 | 1575610 | 1.00   | <2       |
| 137.60      | 138.50                                                                                             | VEI;;;;Qz;<br>Vein Quartz<br>Vugy quartz veining with recent water movement.     | 137.60 | 138.50 | 1575611 | 0.90   | 1,316    |
|             |                                                                                                    |                                                                                  | 138.50 | 139.50 | 1575612 | 1.00   | 255      |
|             |                                                                                                    |                                                                                  | 145.50 | 146.50 | 1575613 | 1.00   | <2       |
|             |                                                                                                    |                                                                                  | 146.50 | 149.50 | 1575614 | 1.00   | <2       |
| 146.50      | 149.50                                                                                             | VEI;;;;Qz;<br>Vein Quartz<br>Quartz vein with vugs indicating recent water flow. | 147.50 | 148.50 | 1575615 | 1.00   | <2       |
|             |                                                                                                    |                                                                                  | 148.50 | 149.50 | 1575616 | 1.00   | <2       |
|             |                                                                                                    |                                                                                  | 149.50 | 150.50 | 1575617 | 1.00   | 4        |
|             |                                                                                                    |                                                                                  |        |        |         |        |          |
| 153.00      | End of DDH<br>Number of samples: 107<br>Number of QAQC samples: 11<br>Total sampled length: 101.80 |                                                                                  |        |        |         |        |          |

# Breakaway Exploration Management inc.

## QAQC

| From   | To     | Number  | Reference | Length | Au<br>(ppb) |
|--------|--------|---------|-----------|--------|-------------|
| 8.00   | 8.00   | 1575508 | S3        | 0.00   | 701         |
| 17.60  | 18.60  | 1575516 | 1575515   | 1.00   | <2          |
| 28.90  | 28.90  | 1575525 | S4        | 0.00   | 1,230       |
| 47.60  | 47.60  | 1575542 | S3        | 0.00   | 682         |
| 58.60  | 58.60  | 1575550 | RR        | 0.00   | 5           |
| 77.20  | 77.20  | 1575560 | S4        | 0.00   | 1,265       |
| 92.50  | 92.50  | 1575577 | S3        | 0.00   | 667         |
| 98.20  | 98.20  | 1575585 | RR        | 0.00   | <2          |
| 116.80 | 116.80 | 1575595 | S4        | 0.00   | 1,237       |
| 128.00 | 129.00 | 1575605 | 1575604   | 1.00   | <2          |
| 149.50 | 150.50 | 1575618 | 1575617   | 1.00   | <2          |

# Breakaway Exploration Management inc.

## RQD

| From  | To    | Length | Recover<br>ed (%) | RQD<br>(%) | Joints |      |       | Weathering | Strength | Description |
|-------|-------|--------|-------------------|------------|--------|------|-------|------------|----------|-------------|
|       |       |        |                   |            | Number | Type | Angle |            |          |             |
| 4.50  | 6.00  | 1.50   | 100.00            | 100.00     |        |      |       |            |          |             |
| 6.00  | 9.00  | 3.00   | 92.67             | 92.67      |        |      |       |            |          |             |
| 9.00  | 12.00 | 3.00   | 95.33             | 95.33      |        |      |       |            |          |             |
| 12.00 | 15.00 | 3.00   | 94.33             | 94.33      |        |      |       |            |          |             |
| 15.00 | 18.00 | 3.00   | 90.67             | 90.67      |        |      |       |            |          |             |
| 18.00 | 21.00 | 3.00   | 88.67             | 88.67      |        |      |       |            |          |             |
| 21.00 | 24.00 | 3.00   | 98.00             | 98.00      |        |      |       |            |          |             |
| 24.00 | 27.00 | 3.00   | 81.00             | 81.00      |        |      |       |            |          |             |
| 27.00 | 30.00 | 3.00   | 95.33             | 95.33      |        |      |       |            |          |             |
| 30.00 | 33.00 | 3.00   | 93.33             | 93.33      |        |      |       |            |          |             |
| 33.00 | 36.00 | 3.00   | 94.67             | 94.67      |        |      |       |            |          |             |
| 36.00 | 39.00 | 3.00   | 103.33            | 103.33     |        |      |       |            |          |             |
| 39.00 | 42.00 | 3.00   | 84.67             | 84.67      |        |      |       |            |          |             |
| 42.00 | 45.00 | 3.00   | 100.00            | 100.00     |        |      |       |            |          |             |
| 45.00 | 48.00 | 3.00   | 94.00             | 94.00      |        |      |       |            |          |             |
| 48.00 | 51.00 | 3.00   | 99.00             | 99.00      |        |      |       |            |          |             |
| 51.00 | 54.00 | 3.00   | 104.33            | 104.33     |        |      |       |            |          |             |
| 54.00 | 57.00 | 3.00   | 95.00             | 95.00      |        |      |       |            |          |             |
| 57.00 | 60.00 | 3.00   | 104.00            | 104.00     |        |      |       |            |          |             |
| 60.00 | 63.00 | 3.00   | 98.33             | 98.33      |        |      |       |            |          |             |
| 63.00 | 66.00 | 3.00   | 100.67            | 100.67     |        |      |       |            |          |             |
| 66.00 | 69.00 | 3.00   | 76.00             | 76.00      |        |      |       |            |          |             |
| 69.00 | 72.00 | 3.00   | 102.33            | 102.33     |        |      |       |            |          |             |
| 72.00 | 75.00 | 3.00   | 102.00            | 102.00     |        |      |       |            |          |             |
| 75.00 | 78.00 | 3.00   | 102.00            | 102.00     |        |      |       |            |          |             |
| 78.00 | 81.00 | 3.00   | 99.00             | 99.00      |        |      |       |            |          |             |
| 81.00 | 84.00 | 3.00   | 96.00             | 96.00      |        |      |       |            |          |             |
| 84.00 | 87.00 | 3.00   | 102.33            | 102.33     |        |      |       |            |          |             |
| 87.00 | 90.00 | 3.00   | 101.33            | 101.33     |        |      |       |            |          |             |
| 90.00 | 93.00 | 3.00   | 100.00            | 100.00     |        |      |       |            |          |             |
| 93.00 | 96.00 | 3.00   | 89.00             | 89.00      |        |      |       |            |          |             |
| 96.00 | 99.00 | 3.00   | 97.33             | 97.33      |        |      |       |            |          |             |

# Breakaway Exploration Management inc.

## RQD

| From   | To     | Length | Recover<br>ed (%) | RQD<br>(%) | Joints |      |       | Weathering | Strength | Description |
|--------|--------|--------|-------------------|------------|--------|------|-------|------------|----------|-------------|
|        |        |        |                   |            | Number | Type | Angle |            |          |             |
| 99.00  | 102.00 | 3.00   | 83.33             | 83.33      |        |      |       |            |          |             |
| 102.00 | 105.00 | 3.00   | 100.00            | 100.00     |        |      |       |            |          |             |
| 105.00 | 108.00 | 3.00   | 91.67             | 91.67      |        |      |       |            |          |             |
| 108.00 | 111.00 | 3.00   | 94.67             | 94.67      |        |      |       |            |          |             |
| 111.00 | 114.00 | 3.00   | 98.00             | 98.00      |        |      |       |            |          |             |
| 114.00 | 117.00 | 3.00   | 100.67            | 100.67     |        |      |       |            |          |             |
| 117.00 | 120.00 | 3.00   | 98.00             | 98.00      |        |      |       |            |          |             |
| 120.00 | 123.00 | 3.00   | 97.00             | 97.00      |        |      |       |            |          |             |
| 123.00 | 126.00 | 3.00   | 104.67            | 104.67     |        |      |       |            |          |             |
| 126.00 | 129.00 | 3.00   | 96.33             | 96.33      |        |      |       |            |          |             |
| 129.00 | 132.00 | 3.00   | 96.67             | 96.67      |        |      |       |            |          |             |
| 132.00 | 135.00 | 3.00   | 99.00             | 99.00      |        |      |       |            |          |             |
| 135.00 | 138.00 | 3.00   | 96.00             | 96.00      |        |      |       |            |          |             |
| 138.00 | 141.00 | 3.00   | 95.33             | 95.33      |        |      |       |            |          |             |
| 141.00 | 144.00 | 3.00   | 96.67             | 96.67      |        |      |       |            |          |             |
| 144.00 | 147.00 | 3.00   | 100.00            | 100.00     |        |      |       |            |          |             |
| 147.00 | 150.00 | 3.00   | 99.00             | 99.00      |        |      |       |            |          |             |
| 150.00 | 153.00 | 3.00   | 97.33             | 97.33      |        |      |       |            |          |             |

# Breakaway Exploration Management inc.

DDH: BA-12-02

Claims title:

Section:

Township: None

Level:

Range:

Work place: Balarat Core shack

Drilled by: Earthtek Drilling

Lot:

Described by: Drew MacPhail

From: 27/07/2012

Description date:

To:

Collar

LL\_WGS84

UTM\_WGS84

Azimuth: 145.00°

East

63.0023

595,673.0

Dip: -50.00°

North

-139.3083

6,986,975.0

Length: 153.00 m

Elevation

1,000.0000

1,000.0

Weighted averages

| Zone | From | To | Length | Hor. th. | Ver. th. | True th. | Au<br>(ppb) |
|------|------|----|--------|----------|----------|----------|-------------|
|      |      |    |        |          |          |          |             |

Description

Core size:

NQ

Cemented: No

Stored: No

[illegible]

# Breakaway Exploration Management inc.

| Description |        |                                                                                                                                                                                                                                                                                                                                                                                                                                           | Assay |       |         |        |          |
|-------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------|---------|--------|----------|
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                           | From  | To    | Number  | Length | Au (ppb) |
| 0.00        | 3.00   | CAS<br>Casing<br>Overburden.                                                                                                                                                                                                                                                                                                                                                                                                              |       |       |         |        |          |
| 3.00        | 153.00 | M1; RUB; GF; GM<br>Gneiss; Banded; Grain Fine; Grain Medium<br>Dark grey to black alternates light and dark layers.<br>Quartz Biotite Gneiss.<br>Fine to medium grain<br>Layering between 2 cm to 5cm.<br>Some sections of crenulated cleavage near the end of the section oxydization is sporaticly located throughout section.<br>Quartz vein makup about 1-2 % of core between 5-10 cm veins.<br>Banding angle is 50deg to core angle. | 3.00  | 6.00  | 1575621 | 3.00   | <2       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                           | 6.00  | 7.00  | 1575622 | 1.00   | 735      |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                           | 7.00  | 8.00  | 1575623 | 1.00   | <2       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                           | 8.00  | 9.00  | 1575624 | 1.00   | <2       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                           | 9.00  | 10.00 | 1575625 | 1.00   | <2       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                           | 10.00 | 11.00 | 1575626 | 1.00   | <2       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                           | 11.00 | 12.00 | 1575627 | 1.00   | <2       |
| 3.00        | 51.50  | Py1-5<br>Pyrite 1-5<br>Pyrite.                                                                                                                                                                                                                                                                                                                                                                                                            |       |       |         |        |          |
| 11.20       | 14.50  | OX45<br>oxidized 45<br>Local pervasive oxydation.                                                                                                                                                                                                                                                                                                                                                                                         | 12.00 | 13.00 | 1575628 | 1.00   | 5        |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                           | 13.00 | 14.00 | 1575629 | 1.00   | <2       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                           | 14.00 | 15.00 | 1575631 | 1.00   | <2       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                           | 23.70 | 24.70 | 1575632 | 1.00   | <2       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                           | 24.70 | 25.70 | 1575633 | 1.00   | <2       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                           | 25.70 | 26.70 | 1575634 | 1.00   | <2       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                           | 26.70 | 27.70 | 1575635 | 1.00   | <2       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                           | 27.70 | 28.70 | 1575636 | 1.00   | <2       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                           | 28.70 | 29.70 | 1575637 | 1.00   | 18       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                           | 35.60 | 36.60 | 1575638 | 1.00   | <2       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                           | 36.60 | 37.60 | 1575639 | 1.00   | <2       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                           | 37.60 | 38.60 | 1575641 | 1.00   | <2       |
| 38.40       | 38.80  | FLD<br>Folded<br>Micro fold.                                                                                                                                                                                                                                                                                                                                                                                                              | 38.60 | 39.60 | 1575642 | 1.00   | <2       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                           | 39.60 | 40.60 | 1576543 | 1.00   |          |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                           | 45.50 | 45.90 | 1575644 | 0.40   | <2       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                           | 45.90 | 46.90 | 1575645 | 1.00   | <2       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                           | 46.90 | 47.90 | 1575646 | 1.00   | <2       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                           | 47.90 | 48.90 | 1575648 | 1.00   | <2       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                           | 48.90 | 49.90 | 1575649 | 1.00   | 3        |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                           | 49.90 | 50.90 | 1575650 | 1.00   | <2       |

# Breakaway Exploration Management inc.

| Description |        |                                                                                               | Assay  |        |         |        |          |
|-------------|--------|-----------------------------------------------------------------------------------------------|--------|--------|---------|--------|----------|
|             |        |                                                                                               | From   | To     | Number  | Length | Au (ppb) |
| 51.50       | 52.40  | Py5-10<br>Pyrite 5-10<br>Chunky pyrite.                                                       | 50.90  | 51.50  | 1575651 | 0.60   | <2       |
|             |        |                                                                                               | 51.50  | 52.40  | 1575652 | 0.90   | <2       |
|             |        |                                                                                               | 52.40  | 53.40  | 1575653 | 1.00   | <2       |
|             |        |                                                                                               | 53.40  | 54.40  | 1575654 | 1.00   | <2       |
|             |        |                                                                                               | 54.40  | 55.40  | 1575656 | 1.00   | <2       |
|             |        |                                                                                               | 55.40  | 56.40  | 1575657 | 1.00   | <2       |
|             |        |                                                                                               | 56.40  | 57.40  | 1575658 | 1.00   | <2       |
|             |        |                                                                                               | 69.00  | 70.00  | 1575659 | 1.00   | <2       |
|             |        |                                                                                               | 70.00  | 71.00  | 1575660 | 1.00   | <2       |
| 71.00       | 73.00  | BRE<br>Breccia<br>Broken and resolidified.                                                    | 71.00  | 72.00  | 1575661 | 1.00   | <2       |
|             |        |                                                                                               | 72.00  | 73.00  | 1575662 | 1.00   | <2       |
|             |        |                                                                                               |        |        |         |        |          |
| 79.50       | 80.00  | BRE<br>Breccia<br>Broken and resolidified.                                                    | 79.50  | 80.00  | 1575663 | 0.50   | 5        |
|             |        |                                                                                               | 88.20  | 89.20  | 1575664 | 1.00   | <2       |
|             |        |                                                                                               | 89.20  | 90.20  | 1575666 | 1.00   | <2       |
|             |        |                                                                                               | 90.20  | 91.20  | 1575667 | 1.00   | 7        |
|             |        |                                                                                               | 91.20  | 92.20  | 1575668 | 1.00   | <2       |
|             |        |                                                                                               | 92.20  | 93.20  | 1575669 | 1.00   | 56       |
|             |        |                                                                                               | 93.20  | 94.20  | 1575670 | 1.00   | <2       |
| 94.60       | 96.40  | VEI;;;;Qz;<br>Vein Quartz<br>Quartz vein.<br>Multiple generations of alteration and shearing. | 94.60  | 95.50  | 1575671 | 0.90   | <2       |
|             |        |                                                                                               | 95.50  | 96.40  | 1575672 | 0.90   | 62       |
|             |        |                                                                                               |        |        |         |        |          |
| 104.00      | 104.30 | VEI;;;;Qz;<br>Vein Quartz<br>Quartz vein.                                                     | 104.00 | 105.00 | 1575673 | 1.00   | 9        |
| 104.60      | 106.00 | VEI;;;;Qz;<br>Vein Quartz<br>Quartz vein.                                                     | 105.00 | 106.00 | 1575674 | 1.00   | <2       |
|             |        |                                                                                               | 106.00 | 107.00 | 1575676 | 1.00   | <2       |
|             |        |                                                                                               | 107.00 | 107.20 | 1575677 | 0.20   | <2       |
| 111.30      | 118.10 | Py1-15<br>Pyrite 1-15<br>Sulphides within layers of the gneiss.                               | 111.30 | 112.30 | 1575678 | 1.00   | 7        |
|             |        |                                                                                               | 113.80 | 114.80 | 1575679 | 1.00   | 4        |
|             |        |                                                                                               | 117.40 | 118.10 | 1575680 | 0.70   | <2       |
| 119.10      | 120.10 | QFP<br>Quartz Feldspar Porphyry                                                               | 119.10 | 120.10 | 1575681 | 1.00   | <2       |

# Breakaway Exploration Management inc.

| Description |                                                                                                 |                                                                                                                                                                                 | Assay  |        |         |        |          |
|-------------|-------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------|---------|--------|----------|
|             |                                                                                                 |                                                                                                                                                                                 | From   | To     | Number  | Length | Au (ppb) |
|             |                                                                                                 | Grey and white.<br>Coarse grained porphyry with a fine grained matrix.<br>Heavily sericite altered at the end of section.<br>1-2% sulphides.                                    |        |        |         |        |          |
| 120.70      | 125.00                                                                                          | BRE; GOU; FRC<br>Breccia; Gouge; Fractured<br>Frctured zone containing gouge and breccia.                                                                                       | 120.70 | 121.70 | 1575683 | 1.00   | <2       |
|             |                                                                                                 |                                                                                                                                                                                 | 121.70 | 122.70 | 1575684 | 1.00   | <2       |
|             |                                                                                                 |                                                                                                                                                                                 | 122.70 | 123.70 | 1575685 | 1.00   | <2       |
|             |                                                                                                 |                                                                                                                                                                                 | 123.70 | 124.70 | 1575686 | 1.00   | <2       |
|             |                                                                                                 |                                                                                                                                                                                 | 124.70 | 125.00 | 1575687 | 0.30   | <2       |
| 127.70      | 127.90                                                                                          | VEI;,,,Qz;<br>Vein Quartz<br>Quartz vein.                                                                                                                                       |        |        |         |        |          |
| 128.30      | 128.50                                                                                          | VEI;,,,Qz;<br>Vein Quartz<br>Quartz vein.                                                                                                                                       |        |        |         |        |          |
| 134.00      | 137.40                                                                                          | OX; Se<br>oxidized; Sericite<br>Fracturing present.                                                                                                                             |        |        |         |        |          |
| 138.40      | 141.80                                                                                          | QFP<br>Quartz Feldspar Porphyry<br>Grey and white.<br>Coarse grained porphyry with a fine grained matrix.<br>Heavily sericite altered at the end of section.<br>1-2% sulphides. | 138.50 | 139.60 | 1575688 | 1.10   | <2       |
|             |                                                                                                 |                                                                                                                                                                                 | 139.60 | 140.70 | 1575689 | 1.10   | <2       |
|             |                                                                                                 |                                                                                                                                                                                 | 140.70 | 141.80 | 1575691 | 1.10   | <2       |
|             |                                                                                                 |                                                                                                                                                                                 | 141.80 | 142.90 | 1575692 | 1.10   | 22       |
| 142.90      | 145.00                                                                                          | FRC; GOU<br>Fractured; Gouge<br>Fractured zone containing gouge.<br>Loss of core makes it hard to see how much gouge was there.                                                 | 142.90 | 144.00 | 1575693 | 1.10   | 15       |
|             |                                                                                                 |                                                                                                                                                                                 | 144.00 | 145.00 | 1575694 | 1.00   | <2       |
| 148.00      | 149.00                                                                                          | CIS<br>Sheared<br>Shearing.                                                                                                                                                     |        |        |         |        |          |
| 153.00      | End of DDH<br>Number of samples: 66<br>Number of QAQC samples: 9<br>Total sampled length: 64.90 |                                                                                                                                                                                 |        |        |         |        |          |

# Breakaway Exploration Management inc.

## QAQC

| From   | To     | Number  | Reference | Length | Au<br>(ppb) |
|--------|--------|---------|-----------|--------|-------------|
| 3.00   | 3.00   | 1575620 | RR        | 0.00   | <2          |
| 13.00  | 13.00  | 1575630 | S4        | 0.00   | 1,306       |
| 36.60  | 37.60  | 1575640 | 157639    | 1.00   | <2          |
| 46.90  | 46.90  | 1575647 | S3        | 0.00   | 703         |
| 53.40  | 53.40  | 1575655 | RR        | 0.00   | <2          |
| 88.20  | 88.20  | 1575665 | S4        | 0.00   | 1,294       |
| 105.00 | 106.00 | 1575675 | 157674    | 1.00   | <2          |
| 119.10 | 119.10 | 1575682 | S3        | 0.00   | 672         |
| 139.60 | 139.60 | 1575690 | RR        | 0.00   | <2          |

# Breakaway Exploration Management inc.

## RQD

| From  | To    | Length | Recover<br>ed (%) | RQD<br>(%) | Joints |      |       | Weathering | Strength | Description |
|-------|-------|--------|-------------------|------------|--------|------|-------|------------|----------|-------------|
|       |       |        |                   |            | Number | Type | Angle |            |          |             |
| 3.00  | 6.00  | 3.00   | 50.00             | 50.00      |        |      |       |            |          |             |
| 6.00  | 9.00  | 3.00   | 83.67             | 83.67      |        |      |       |            |          |             |
| 9.00  | 12.00 | 3.00   | 90.67             | 90.67      |        |      |       |            |          |             |
| 12.00 | 15.00 | 3.00   | 92.00             | 92.00      |        |      |       |            |          |             |
| 15.00 | 18.00 | 3.00   | 98.00             | 98.00      |        |      |       |            |          |             |
| 18.00 | 21.00 | 3.00   | 90.00             | 90.00      |        |      |       |            |          |             |
| 21.00 | 24.00 | 3.00   | 89.00             | 89.00      |        |      |       |            |          |             |
| 24.00 | 27.00 | 3.00   | 98.00             | 98.00      |        |      |       |            |          |             |
| 27.00 | 30.00 | 3.00   | 100.33            | 100.33     |        |      |       |            |          |             |
| 30.00 | 33.00 | 3.00   | 99.67             | 99.67      |        |      |       |            |          |             |
| 33.00 | 36.00 | 3.00   | 95.67             | 95.67      |        |      |       |            |          |             |
| 36.00 | 39.00 | 3.00   | 95.33             | 95.33      |        |      |       |            |          |             |
| 39.00 | 42.00 | 3.00   | 100.00            | 100.00     |        |      |       |            |          |             |
| 42.00 | 45.00 | 3.00   | 87.67             | 87.67      |        |      |       |            |          |             |
| 45.00 | 48.00 | 3.00   | 104.00            | 104.00     |        |      |       |            |          |             |
| 48.00 | 51.00 | 3.00   | 105.67            | 105.67     |        |      |       |            |          |             |
| 51.00 | 54.00 | 3.00   | 98.00             | 98.00      |        |      |       |            |          |             |
| 54.00 | 57.00 | 3.00   | 93.33             | 93.33      |        |      |       |            |          |             |
| 57.00 | 60.00 | 3.00   | 102.33            | 102.33     |        |      |       |            |          |             |
| 60.00 | 63.00 | 3.00   | 94.33             | 94.33      |        |      |       |            |          |             |
| 63.00 | 66.00 | 3.00   | 100.67            | 100.67     |        |      |       |            |          |             |
| 66.00 | 69.00 | 3.00   | 99.33             | 99.33      |        |      |       |            |          |             |
| 69.00 | 72.00 | 3.00   | 88.00             | 88.00      |        |      |       |            |          |             |
| 72.00 | 75.00 | 3.00   | 100.00            | 100.00     |        |      |       |            |          |             |
| 75.00 | 78.00 | 3.00   | 102.33            | 102.33     |        |      |       |            |          |             |
| 78.00 | 81.00 | 3.00   | 98.33             | 98.33      |        |      |       |            |          |             |
| 81.00 | 84.00 | 3.00   | 93.33             | 93.33      |        |      |       |            |          |             |
| 84.00 | 87.00 | 3.00   | 100.00            | 100.00     |        |      |       |            |          |             |
| 87.00 | 90.00 | 3.00   | 99.33             | 99.33      |        |      |       |            |          |             |
| 90.00 | 93.00 | 3.00   | 94.33             | 94.33      |        |      |       |            |          |             |
| 93.00 | 96.00 | 3.00   | 103.33            | 103.33     |        |      |       |            |          |             |
| 96.00 | 99.00 | 3.00   | 91.67             | 91.67      |        |      |       |            |          |             |

# Breakaway Exploration Management inc.

## RQD

| From   | To     | Length | Recover<br>ed (%) | RQD<br>(%) | Joints |      |       | Weathering | Strength | Description |
|--------|--------|--------|-------------------|------------|--------|------|-------|------------|----------|-------------|
|        |        |        |                   |            | Number | Type | Angle |            |          |             |
| 99.00  | 102.00 | 3.00   | 87.33             | 87.33      |        |      |       |            |          |             |
| 102.00 | 105.00 | 3.00   | 111.33            | 111.33     |        |      |       |            |          |             |
| 105.00 | 108.00 | 3.00   | 100.67            | 100.67     |        |      |       |            |          |             |
| 108.00 | 111.00 | 3.00   | 97.33             | 97.33      |        |      |       |            |          |             |
| 111.00 | 114.00 | 3.00   | 103.33            | 103.33     |        |      |       |            |          |             |
| 114.00 | 117.00 | 3.00   | 101.33            | 101.33     |        |      |       |            |          |             |
| 117.00 | 120.00 | 3.00   | 100.00            | 100.00     |        |      |       |            |          |             |
| 120.00 | 123.00 | 3.00   | 99.67             | 99.67      |        |      |       |            |          |             |
| 123.00 | 126.00 | 3.00   | 98.67             | 98.67      |        |      |       |            |          |             |
| 126.00 | 129.00 | 3.00   | 105.33            | 105.33     |        |      |       |            |          |             |
| 129.00 | 132.00 | 3.00   | 98.33             | 98.33      |        |      |       |            |          |             |
| 132.00 | 135.00 | 3.00   | 99.00             | 99.00      |        |      |       |            |          |             |
| 135.00 | 138.00 | 3.00   | 96.67             | 96.67      |        |      |       |            |          |             |
| 138.00 | 141.00 | 3.00   | 101.67            | 101.67     |        |      |       |            |          |             |
| 141.00 | 144.00 | 3.00   | 97.67             | 97.67      |        |      |       |            |          |             |
| 144.00 | 147.00 | 3.00   | 65.00             | 65.00      |        |      |       |            |          |             |
| 147.00 | 150.00 | 3.00   | 98.33             | 98.33      |        |      |       |            |          |             |
| 150.00 | 153.00 | 3.00   | 91.00             | 91.00      |        |      |       |            |          |             |

# Breakaway Exploration Management inc.

DDH: BA-12-03

Claims title:

Section:

Township:

Level:

Range:

Work place:

Drilled by: Earth Tek Drilling

Lot:

Described by: Drew MacPhail

From: 29/07/2012

Description date:

To:

Collar

Azimuth: 145.00°

Dip: -50.00°

Length: 150.00 m

LL\_WGS84

UTM\_WGS84

East

62.9992

595,923.0

North

-139.1061

6,986,947.0

Elevation

1,000.0000

1,000.0

Weighted averages

| Zone | From   | To     | Length | Hor. th.   | Ver. th. | True th. | Au<br>(ppb) |
|------|--------|--------|--------|------------|----------|----------|-------------|
| Z1   | 44.90  | 45.90  | 1.00   | 999,999,95 | 0.76     | 0.76     | 1,708       |
| Z2   | 120.70 | 122.60 | 1.90   | 999,999,95 | 1.40     | 1.40     | 321         |

Description

Core size:

NQ

Cemented: No

Stored: No

# Breakaway Exploration Management inc.

## Down hole survey

| Type   | Depth  | Azimuth | Dip     | Invalid | Description |
|--------|--------|---------|---------|---------|-------------|
| Reflex | 50.00  | 144.90° | -49.10° | No      |             |
| Reflex | 100.00 | 141.10° | -47.50° | No      |             |
| Reflex | 147.00 | 137.80° | -47.50° | No      |             |

# Breakaway Exploration Management inc.

| Description |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Assay |       |         |        |          |
|-------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------|---------|--------|----------|
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                     | From  | To    | Number  | Length | Au (ppb) |
| 0.00        | 9.00   | CAS<br>Casing<br>Overburden.                                                                                                                                                                                                                                                                                                                                                                                                                        |       |       |         |        |          |
| 9.00        | 150.00 | M1; RUB<br>Gneiss; Banded<br>Dark grey to black alternates light and dark layers.<br>Quartz biotite gneiss.<br>Fine to medium grain.<br>Bands between 2 cm to 5cm.<br>Some sections of crenulated cleavage near the end of the section oxydization is sporaticly located throughout section.<br>Quartz vein make up about 1-2 % of core.<br>Banding angle is 50deg to core angle.<br>Multiple zones of allteration present all through the section. |       |       |         |        |          |
| 13.00       | 23.50  | OX<br>oxidized<br>Oxydized host rock with few smalll quartz veins.                                                                                                                                                                                                                                                                                                                                                                                  | 26.40 | 27.40 | 1575695 | 1.00   | <2       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 27.40 | 28.40 | 1575696 | 1.00   | <2       |
| 27.80       | 32.70  | CIS; FAI<br>Sheared; Fault<br>Graphitic fault zone.<br>With hemitie alteration.                                                                                                                                                                                                                                                                                                                                                                     | 28.40 | 29.40 | 1575697 | 1.00   | <2       |
| 28.50       | 30.30  | Hm<br>Hematite<br>Primary hemitite alteration.                                                                                                                                                                                                                                                                                                                                                                                                      | 29.40 | 30.30 | 1575698 | 0.90   | <2       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 33.60 | 34.60 | 1575699 | 1.00   | <2       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 34.60 | 35.60 | 1575701 | 1.00   | 26       |
| 35.50       | 38.60  | Hm25; OX25<br>Hematite 25; oxidized 25<br>Cyclical hemitite alteration with oxydization.                                                                                                                                                                                                                                                                                                                                                            | 35.60 | 36.60 | 1575702 | 1.00   | 3        |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 43.90 | 44.90 | 1575703 | 1.00   | 7        |
| 44.90       | 46.50  | Hm25<br>Hematite 25<br>Primary hemitite alteration.                                                                                                                                                                                                                                                                                                                                                                                                 | 44.90 | 45.90 | 1575704 | 1.00   | 1,708    |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 45.90 | 46.90 | 1575705 | 1.00   | 4        |
| 46.50       | 59.50  | OX50<br>oxidized 50<br>Secondary oxydization.                                                                                                                                                                                                                                                                                                                                                                                                       | 46.90 | 47.90 | 1575706 | 1.00   | 5        |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 47.90 | 49.00 | 1575707 | 1.10   | 11       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 49.00 | 50.00 | 1575708 | 1.00   | 8        |
| 49.70       | 50.20  | VEI;,,,;Qz;<br>Vein Quartz<br>Oxydized quartz vein.                                                                                                                                                                                                                                                                                                                                                                                                 |       |       |         |        |          |
| 50.80       | 51.50  | VEI;,,,;Qz;<br>Vein Quartz<br>Oxydized quartz vein.                                                                                                                                                                                                                                                                                                                                                                                                 |       |       |         |        |          |

# Breakaway Exploration Management inc.

| Description |        |                                                            | Assay |       |         |        |          |
|-------------|--------|------------------------------------------------------------|-------|-------|---------|--------|----------|
|             |        |                                                            | From  | To    | Number  | Length | Au (ppb) |
| 55.50       | 56.20  | VEI;,,,;Qz;<br><b>Vein Quartz</b><br>Oxydized quartz vein. |       |       |         |        |          |
| 59.10       | 59.50  | VEI;,,,;Qz;<br><b>Vein Quartz</b><br>Oxydized quartz vein. |       |       |         |        |          |
| 59.50       | 64.50  | Lm25                                                       | 62.60 | 63.50 | 1575709 | 0.90   | 50       |
|             |        | <b>Limonite 25</b>                                         | 63.50 | 64.50 | 1575711 | 1.00   | <2       |
|             |        | Limonite alteration.                                       |       |       |         |        |          |
| 64.70       | 65.50  | VEI;,,,;Qz;<br><b>Vein Quartz</b><br>Oxydized.             |       |       |         |        |          |
| 74.00       | 79.00  | OX25<br><b>oxidized 25</b><br>Oxydized host rock.          | 80.00 | 81.00 | 1575712 | 1.00   | 169      |
| 81.00       | 88.30  | FAI; GOU; BRE                                              | 81.00 | 82.00 | 1575713 | 1.00   | 18       |
|             |        | <b>Fault; Gouge; Breccia</b>                               | 82.00 | 83.00 | 1575714 | 1.00   | 38       |
|             |        | Fault zone of breccia bounded by gouge.                    | 83.00 | 84.00 | 1575715 | 1.00   | 79       |
|             |        |                                                            | 84.00 | 85.00 | 1575716 | 1.00   | 18       |
|             |        |                                                            | 85.00 | 86.00 | 1575718 | 1.00   | <2       |
|             |        |                                                            | 86.00 | 87.00 | 1575719 | 1.00   | <2       |
|             |        |                                                            | 87.00 | 88.00 | 1575720 | 1.00   | <2       |
|             |        |                                                            | 88.00 | 89.00 | 1575721 | 1.00   | 19       |
| 88.30       | 89.50  | BRE                                                        | 89.00 | 90.00 | 1575722 | 1.00   | <2       |
|             |        | <b>Breccia</b>                                             |       |       |         |        |          |
|             |        | Zone of breccia between 2 fault zones.                     |       |       |         |        |          |
| 89.50       | 94.80  | BRE; GOU; FAI                                              | 90.00 | 91.00 | 1575723 | 1.00   | 3        |
|             |        | <b>Breccia; Gouge; Fault</b>                               |       |       |         |        |          |
|             |        | Brecciated falt zone bounded by gouge.                     |       |       |         |        |          |
| 98.00       | 99.00  | QFP                                                        | 98.00 | 99.00 | 1575724 | 1.00   | <2       |
|             |        | <b>Quartz Feldspar Porphyry</b>                            |       |       |         |        |          |
|             |        | White and grey.                                            |       |       |         |        |          |
|             |        | Course grain porphery with fine grain matrix.              |       |       |         |        |          |
| 99.70       | 102.50 | OX<br><b>oxidized</b><br>Mottled oxydized and reduced.     |       |       |         |        |          |
| 104.20      | 104.70 | M1<br><b>Gneiss</b><br>Augen gneiss.                       |       |       |         |        |          |

# Breakaway Exploration Management inc.

| Description |                                                                                                 |                                                                                                       | Assay  |        |         |        |          |
|-------------|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|--------|--------|---------|--------|----------|
|             |                                                                                                 |                                                                                                       | From   | To     | Number  | Length | Au (ppb) |
| 104.70      | 114.80                                                                                          | Garnet augens.<br>Sulphides interbedded.<br>M1<br>Gneiss<br>Host rock with a large content of quartz. | 104.70 | 105.70 | 1575726 | 1.00   | 8        |
|             |                                                                                                 |                                                                                                       | 105.70 | 106.70 | 1575727 | 1.00   | <2       |
|             |                                                                                                 |                                                                                                       | 106.70 | 107.70 | 1575728 | 1.00   | <2       |
| 117.40      | 122.00                                                                                          | OX<br>oxidized<br>Mottled oxydized and reduced alteration.                                            | 117.40 | 118.50 | 1575729 | 1.10   | 287      |
|             |                                                                                                 |                                                                                                       | 118.50 | 119.60 | 1575730 | 1.10   | <2       |
|             |                                                                                                 |                                                                                                       | 119.60 | 120.70 | 1575731 | 1.10   | 59       |
|             |                                                                                                 |                                                                                                       | 120.70 | 121.80 | 1575732 | 1.10   | 194      |
| 121.80      | 122.60                                                                                          | Py05<br>Pyrite 5%<br>Pyrite in salvages.                                                              | 121.80 | 122.60 | 1575733 | 0.80   | 496      |
|             |                                                                                                 |                                                                                                       | 122.60 | 123.40 | 1575734 | 0.80   | 19       |
|             |                                                                                                 |                                                                                                       | 123.40 | 124.00 | 1575736 | 0.60   | <2       |
| 124.00      | 125.00                                                                                          | VEI;,,,;Qz;<br>Vein Quartz<br>Multiple fractures and refilling.                                       | 124.00 | 125.00 | 1575737 | 1.00   | 45       |
| 126.40      | 137.30                                                                                          | M1<br>Gneiss<br>Augen gniess with garnet augens.                                                      | 139.00 | 140.00 | 1575738 | 1.00   | 10       |
| 140.00      | 147.00                                                                                          | FAI; GOU; BRE<br>Fault; Gouge; Breccia<br>Large graphite fault zone.<br>Possible mineralization.      | 140.00 | 141.00 | 1575739 | 1.00   | 18       |
|             |                                                                                                 |                                                                                                       | 141.00 | 142.00 | 1575740 | 1.00   | 4        |
|             |                                                                                                 |                                                                                                       | 142.00 | 144.00 | 1575741 | 2.00   | 3        |
|             |                                                                                                 |                                                                                                       | 144.00 | 145.00 | 1575742 | 1.00   | 118      |
|             |                                                                                                 |                                                                                                       | 145.00 | 146.00 | 1575743 | 1.00   | 27       |
|             |                                                                                                 |                                                                                                       | 146.00 | 147.00 | 1575744 | 1.00   | 4        |
|             |                                                                                                 |                                                                                                       | 147.00 | 148.00 | 1575746 | 1.00   | 14       |
|             |                                                                                                 |                                                                                                       | 148.00 | 149.00 | 1575747 | 1.00   | <2       |
|             |                                                                                                 |                                                                                                       | 149.00 | 150.00 | 1575748 | 1.00   | <2       |
| 149.50      | 150.00                                                                                          | Cl<br>Chlorite<br>Chlorite alteration.                                                                |        |        |         |        |          |
| 150.00      | End of DDH<br>Number of samples: 48<br>Number of QAQC samples: 6<br>Total sampled length: 48.50 |                                                                                                       |        |        |         |        |          |

# Breakaway Exploration Management inc.

## QAQC

| From   | To     | Number  | Reference | Length | Au<br>(ppb) |
|--------|--------|---------|-----------|--------|-------------|
| 33.60  | 33.60  | 1575700 | S4        | 0.00   | 1,204       |
| 62.60  | 63.50  | 1575710 | 1575709   | 0.90   | 48          |
| 84.00  | 84.00  | 1575717 | S3        | 0.00   | 1,260       |
| 98.00  | 98.00  | 1575725 | RR        | 0.00   | <2          |
| 122.60 | 122.60 | 1575735 | S4        | 0.00   | 1,252       |
| 146.00 | 147.00 | 1575745 | 1575744   | 1.00   | 4           |

# Breakaway Exploration Management inc.

## RQD

| From   | To     | Length | Recover<br>ed (%) | RQD<br>(%) | Joints |      |       | Weathering | Strength | Description |
|--------|--------|--------|-------------------|------------|--------|------|-------|------------|----------|-------------|
|        |        |        |                   |            | Number | Type | Angle |            |          |             |
| 9.00   | 12.00  | 3.00   | 57.00             | 57.00      |        |      |       |            |          |             |
| 12.00  | 15.00  | 3.00   | 74.00             | 74.00      |        |      |       |            |          |             |
| 15.00  | 18.00  | 3.00   | 85.00             | 85.00      |        |      |       |            |          |             |
| 18.00  | 21.00  | 3.00   | 102.33            | 102.33     |        |      |       |            |          |             |
| 21.00  | 24.00  | 3.00   | 96.67             | 96.67      |        |      |       |            |          |             |
| 24.00  | 27.00  | 3.00   | 94.33             | 94.33      |        |      |       |            |          |             |
| 27.00  | 30.00  | 3.00   | 95.67             | 95.67      |        |      |       |            |          |             |
| 30.00  | 33.00  | 3.00   | 104.67            | 104.67     |        |      |       |            |          |             |
| 33.00  | 36.00  | 3.00   | 98.67             | 98.67      |        |      |       |            |          |             |
| 36.00  | 39.00  | 3.00   | 93.67             | 93.67      |        |      |       |            |          |             |
| 39.00  | 42.00  | 3.00   | 90.00             | 90.00      |        |      |       |            |          |             |
| 42.00  | 45.00  | 3.00   | 86.00             | 86.00      |        |      |       |            |          |             |
| 45.00  | 48.00  | 3.00   | 95.33             | 95.33      |        |      |       |            |          |             |
| 48.00  | 51.00  | 3.00   | 90.00             | 90.00      |        |      |       |            |          |             |
| 51.00  | 54.00  | 3.00   | 99.67             | 99.67      |        |      |       |            |          |             |
| 54.00  | 57.00  | 3.00   | 91.33             | 91.33      |        |      |       |            |          |             |
| 57.00  | 60.00  | 3.00   | 98.33             | 98.33      |        |      |       |            |          |             |
| 60.00  | 63.00  | 3.00   | 90.00             | 90.00      |        |      |       |            |          |             |
| 63.00  | 66.00  | 3.00   | 103.33            | 103.33     |        |      |       |            |          |             |
| 66.00  | 69.00  | 3.00   | 100.33            | 100.33     |        |      |       |            |          |             |
| 69.00  | 72.00  | 3.00   | 108.33            | 108.33     |        |      |       |            |          |             |
| 72.00  | 75.00  | 3.00   | 84.33             | 84.33      |        |      |       |            |          |             |
| 75.00  | 78.00  | 3.00   | 94.33             | 94.33      |        |      |       |            |          |             |
| 78.00  | 81.00  | 3.00   | 94.67             | 94.67      |        |      |       |            |          |             |
| 81.00  | 84.00  | 3.00   | 75.33             | 75.33      |        |      |       |            |          |             |
| 84.00  | 87.00  | 3.00   | 100.67            | 100.67     |        |      |       |            |          |             |
| 87.00  | 90.00  | 3.00   | 100.67            | 100.67     |        |      |       |            |          |             |
| 90.00  | 93.00  | 3.00   | 89.67             | 89.67      |        |      |       |            |          |             |
| 93.00  | 96.00  | 3.00   | 101.33            | 101.33     |        |      |       |            |          |             |
| 96.00  | 99.00  | 3.00   | 104.00            | 104.00     |        |      |       |            |          |             |
| 99.00  | 102.00 | 3.00   | 95.67             | 95.67      |        |      |       |            |          |             |
| 102.00 | 105.00 | 3.00   | 104.33            | 104.33     |        |      |       |            |          |             |

# Breakaway Exploration Management inc.

## RQD

| From   | To     | Length | Recover<br>ed (%) | RQD<br>(%) | Joints |      |       | Weathering | Strength | Description |
|--------|--------|--------|-------------------|------------|--------|------|-------|------------|----------|-------------|
|        |        |        |                   |            | Number | Type | Angle |            |          |             |
| 105.00 | 108.00 | 3.00   | 100.33            | 100.33     |        |      |       |            |          |             |
| 108.00 | 111.00 | 3.00   | 93.67             | 93.67      |        |      |       |            |          |             |
| 111.00 | 114.00 | 3.00   | 102.00            | 102.00     |        |      |       |            |          |             |
| 114.00 | 117.00 | 3.00   | 98.67             | 98.67      |        |      |       |            |          |             |
| 117.00 | 120.00 | 3.00   | 100.67            | 100.67     |        |      |       |            |          |             |
| 120.00 | 123.00 | 3.00   | 95.00             | 95.00      |        |      |       |            |          |             |
| 123.00 | 126.00 | 3.00   | 106.67            | 106.67     |        |      |       |            |          |             |
| 126.00 | 129.00 | 3.00   | 97.67             | 97.67      |        |      |       |            |          |             |
| 129.00 | 132.00 | 3.00   | 101.00            | 101.00     |        |      |       |            |          |             |
| 132.00 | 135.00 | 3.00   | 98.67             | 98.67      |        |      |       |            |          |             |
| 135.00 | 138.00 | 3.00   | 100.00            | 100.00     |        |      |       |            |          |             |
| 138.00 | 141.00 | 3.00   | 86.00             | 86.00      |        |      |       |            |          |             |
| 141.00 | 144.00 | 3.00   | 68.33             | 68.33      |        |      |       |            |          |             |
| 144.00 | 147.00 | 3.00   | 93.67             | 93.67      |        |      |       |            |          |             |
| 147.00 | 150.00 | 3.00   | 100.67            | 100.67     |        |      |       |            |          |             |

# Breakaway Exploration Management inc.

DDH: BA-12-04

Claims title:

Section:

Township:

Level:

Range:

Work place: Ballarat Core Shack

Drilled by: Earth Tek Drilling

Lot:

Described by: Drew MacPhail

From: 30/07/2012

Description date: 31/07/2012

To:

Collar

Azimuth: 145.00°

Dip: -50.00°

Length: 147.00 m

LL\_WGS84

UTM\_WGS84

East

63.0053

596,266.0

North

-139.0989

6,987,605.0

Elevation

1,000.0000

1,000.0

Weighted averages

| Zone | From | To | Length | Hor. th. | Ver. th. | True th. | Au<br>(ppb) |
|------|------|----|--------|----------|----------|----------|-------------|
|      |      |    |        |          |          |          |             |

Description

Core size:

NQ

Cemented: No

Stored: No

| Down hole survey |        |         |        |         |             |
|------------------|--------|---------|--------|---------|-------------|
| Type             | Depth  | Azimuth | Dip    | Invalid | Description |
| Reflex           | 147.00 | 145.00° | 50.00° | No      |             |

# Breakaway Exploration Management inc.

| Description |       |                                                                                                                                                                                                                                                                                                                                                                                                         | Assay |       |         |        |          |
|-------------|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------|---------|--------|----------|
|             |       |                                                                                                                                                                                                                                                                                                                                                                                                         | From  | To    | Number  | Length | Au (ppb) |
| 0.00        | 6.00  | CAS<br>Casing<br>Overburden.                                                                                                                                                                                                                                                                                                                                                                            |       |       |         |        |          |
| 6.00        | 70.00 | M1; RUB<br>Gneiss; Banded<br>Dark grey to black alternates light and dark layers.<br>Quartz biotite gneiss.<br>Fine to medium grain.<br>Bands between 2 cm to 5cm.<br>Some sections of crenulated cleavage near the end of the section oxydization is sporaticly located throughout section.<br>Banding angle is 50deg to core angle.<br>multiple zones of allteration present all through the section. |       |       |         |        |          |
| 9.60        | 12.50 | OX<br>oxidized<br>Broken and surface oxydization in host rock.                                                                                                                                                                                                                                                                                                                                          |       |       |         |        |          |
| 13.80       | 18.00 | OX<br>oxidized<br>Broken and oxydized host rock.                                                                                                                                                                                                                                                                                                                                                        |       |       |         |        |          |
| 17.70       | 29.50 | FLD; CRN<br>Folded; Crenulation<br>Highly folded.<br>Tight folds to crenulations.                                                                                                                                                                                                                                                                                                                       | 24.20 | 25.10 | 1575749 | 0.90   | <2       |
| 45.00       | 45.90 | M1; AUG<br>Gneiss; Augen<br>Augen gneiss.<br>Highly altered green mineral augens.                                                                                                                                                                                                                                                                                                                       |       |       |         |        |          |
| 51.30       | 53.60 | OX; Hm<br>oxidized; Hematite<br>Beginning of section is hemitite altered and the end is oxydized.                                                                                                                                                                                                                                                                                                       | 51.30 | 52.30 | 1575750 | 1.00   | 9        |
|             |       |                                                                                                                                                                                                                                                                                                                                                                                                         | 52.30 | 53.30 | 1575751 | 1.00   | <2       |
|             |       |                                                                                                                                                                                                                                                                                                                                                                                                         | 53.30 | 54.30 | 1575753 | 1.00   | <2       |
| 60.70       | 60.80 | VEI;,,,;Qz50 Cc50;<br>Vein Quartz 50% Calcite 50%<br>Cloudy quartz and pink calcite.                                                                                                                                                                                                                                                                                                                    |       |       |         |        |          |
| 62.30       | 62.60 | Py5-10<br>Pyrite 5-10<br>Pyrite.                                                                                                                                                                                                                                                                                                                                                                        |       |       |         |        |          |
| 64.00       | 65.60 | OX<br>oxidized<br>Oxydized host rock.                                                                                                                                                                                                                                                                                                                                                                   | 67.00 | 68.00 | 1575754 | 1.00   | 5        |
| 68.00       | 78.90 | FAI; GOU                                                                                                                                                                                                                                                                                                                                                                                                |       |       |         |        |          |

# Breakaway Exploration Management inc.

| Description |        |                                                                                                                                                                                                                                                                                                                                                                                                                                             | Assay  |        |         |        |          |
|-------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------|---------|--------|----------|
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                             | From   | To     | Number  | Length | Au (ppb) |
| 68.00       | 78.90  | <b>Fault; Gouge</b><br>Rusty fault zone bounded by gouge.<br><b>Py&lt;1-2</b><br><b>Pyrite &lt;1-2</b><br>Pyrite.                                                                                                                                                                                                                                                                                                                           | 68.00  | 69.00  | 1575755 | 1.00   | 20       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                             | 69.00  | 70.00  | 1575756 | 1.00   | 11       |
| 70.00       | 147.00 | <b>M1; RUB</b><br><b>Gneiss; Banded</b><br>Grey to light grey alternates light and dark layers.<br>Quartz muscovite gneiss.<br>High silica content.<br>Fine to medium grain.<br>Bands between 2 cm to 5cm.<br>oxydization is sporaticly located throughout section.<br>Banding angle is 50deg to core angle.<br>multiple zones of allteration present all through the section.<br>Sulphides are found in the salaves up to 10%/grab sample. | 70.00  | 71.00  | 1575757 | 1.00   | 97       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                             | 71.00  | 72.00  | 1575758 | 1.00   | 56       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                             | 72.00  | 73.00  | 1575759 | 1.00   | 5        |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                             | 73.00  | 74.00  | 1575761 | 1.00   | <2       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                             | 74.00  | 75.00  | 1575762 | 1.00   | 9        |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                             | 75.00  | 76.00  | 1575763 | 1.00   | 4        |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                             | 76.00  | 77.00  | 1575764 | 1.00   | <2       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                             | 77.00  | 78.00  | 1575765 | 1.00   | 18       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                             | 78.00  | 79.00  | 1575766 | 1.00   | 26       |
| 78.90       | 105.00 | <b>Py&lt;1-5</b><br><b>Pyrite &lt;1-5</b><br>Very finely disseminated pyrite.                                                                                                                                                                                                                                                                                                                                                               | 79.00  | 80.00  | 1575767 | 1.00   | 46       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                             | 80.00  | 81.00  | 1575768 | 1.00   | 4        |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                             | 81.00  | 82.00  | 1575769 | 1.00   | 9        |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                             | 82.00  | 83.00  | 1575771 | 1.00   | 29       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                             | 83.00  | 84.00  | 1575772 | 1.00   | 33       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                             | 84.00  | 85.00  | 1575773 | 1.00   | 34       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                             | 85.00  | 86.00  | 1575774 | 1.00   | 4        |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                             | 86.00  | 87.00  | 1575775 | 1.00   | 14       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                             | 91.00  | 92.00  | 1575776 | 1.00   | 89       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                             | 92.00  | 93.00  | 1575777 | 1.00   | 46       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                             | 93.00  | 94.00  | 1575778 | 1.00   | 32       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                             | 94.00  | 95.00  | 1575779 | 1.00   | 17       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                             | 95.00  | 96.00  | 1575781 | 1.00   | 19       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                             | 96.00  | 97.00  | 1575782 | 1.00   | 17       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                             | 102.00 | 103.00 | 1575783 | 1.00   | 30       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                             | 103.00 | 104.00 | 1575784 | 1.00   | <2       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                             | 104.00 | 105.00 | 1575785 | 1.00   | 6        |
| 106.00      | 107.40 | <b>FAI; BRE</b><br><b>Fault; Breccia</b><br>Rusty fault zone.                                                                                                                                                                                                                                                                                                                                                                               | 106.00 | 107.00 | 1575786 | 1.00   | 6        |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                             | 107.00 | 108.00 | 1575788 | 1.00   | 77       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                                                             | 108.00 | 109.00 | 1575789 | 1.00   | 41       |

# Breakaway Exploration Management inc.

| Description |                                                                                                 |                                                        | Assay  |        |         |        |          |
|-------------|-------------------------------------------------------------------------------------------------|--------------------------------------------------------|--------|--------|---------|--------|----------|
|             |                                                                                                 |                                                        | From   | To     | Number  | Length | Au (ppb) |
|             |                                                                                                 |                                                        | 109.00 | 110.00 | 1575790 | 1.00   | 4        |
|             |                                                                                                 |                                                        | 110.00 | 111.00 | 1575791 | 1.00   | <2       |
|             |                                                                                                 |                                                        | 111.00 | 112.00 | 1575792 | 1.00   | 4        |
|             |                                                                                                 |                                                        | 112.00 | 113.00 | 1575793 | 1.00   | 3        |
|             |                                                                                                 |                                                        | 113.00 | 114.00 | 1575794 | 1.00   | 253      |
|             |                                                                                                 |                                                        | 114.00 | 115.00 | 1575796 | 1.00   | <2       |
|             |                                                                                                 |                                                        | 115.00 | 116.00 | 1575797 | 1.00   | 24       |
|             |                                                                                                 |                                                        | 116.00 | 117.00 | 1575798 | 1.00   | <2       |
|             |                                                                                                 |                                                        | 122.20 | 122.50 | 1575799 | 0.30   | <2       |
|             |                                                                                                 |                                                        | 134.30 | 134.70 | 1575800 | 0.40   | <2       |
| 134.40      | 134.80                                                                                          | VEI;;;;;Qz;<br>Vein Quartz<br>Mineralized quartz vein. | 134.70 | 135.70 | 1575801 | 1.00   | <2       |
|             |                                                                                                 |                                                        | 135.70 | 136.70 | 1575802 | 1.00   | <2       |
|             |                                                                                                 |                                                        | 136.70 | 137.50 | 1575803 | 0.80   | <2       |
| 137.40      | 137.60                                                                                          | GOU<br>Gouge<br>Fault gouge.                           | 137.50 | 138.50 | 1575804 | 1.00   | <2       |
|             |                                                                                                 |                                                        | 139.50 | 140.50 | 1575806 | 1.00   | <2       |
|             |                                                                                                 |                                                        | 140.50 | 141.50 | 1575807 | 1.00   | <2       |
|             |                                                                                                 |                                                        | 141.50 | 142.50 | 1575808 | 1.00   | <2       |
|             |                                                                                                 |                                                        | 142.50 | 143.50 | 1575809 | 1.00   | <2       |
|             |                                                                                                 |                                                        | 143.50 | 144.50 | 1575810 | 1.00   | <2       |
|             |                                                                                                 |                                                        | 144.50 | 145.50 | 1575811 | 1.00   | <2       |
| 147.00      | End of DDH<br>Number of samples: 56<br>Number of QAQC samples: 7<br>Total sampled length: 54.40 |                                                        |        |        |         |        |          |

# Breakaway Exploration Management inc.

## QAQC

| From   | To     | Number  | Reference | Length | Au<br>(ppb) |
|--------|--------|---------|-----------|--------|-------------|
| 52.30  | 52.30  | 1575752 | S3        | 0.00   | 703         |
| 72.00  | 72.00  | 1575760 | RR        | 0.00   | <2          |
| 81.00  | 81.00  | 1575770 | S4        | 0.00   | 1,331       |
| 94.00  | 95.00  | 1575780 | 1575779   | 1.00   | 16          |
| 106.00 | 106.00 | 1575787 | S3        | 0.00   | 634         |
| 113.00 | 113.00 | 1575795 | RR        | 0.00   | <2          |
| 137.50 | 137.50 | 1575805 | S4        | 0.00   | 1,358       |

# Breakaway Exploration Management inc.

## RQD

| From  | To     | Length | Recover<br>ed (%) | RQD<br>(%) | Joints |      |       | Weathering | Strength | Description |
|-------|--------|--------|-------------------|------------|--------|------|-------|------------|----------|-------------|
|       |        |        |                   |            | Number | Type | Angle |            |          |             |
| 6.00  | 9.00   | 3.00   | 84.00             | 84.00      |        |      |       |            |          |             |
| 9.00  | 12.00  | 3.00   | 85.67             | 85.67      |        |      |       |            |          |             |
| 12.00 | 15.00  | 3.00   | 98.33             | 98.33      |        |      |       |            |          |             |
| 15.00 | 18.00  | 3.00   | 96.00             | 96.00      |        |      |       |            |          |             |
| 18.00 | 21.00  | 3.00   | 99.00             | 99.00      |        |      |       |            |          |             |
| 21.00 | 24.00  | 3.00   | 99.00             | 99.00      |        |      |       |            |          |             |
| 24.00 | 27.00  | 3.00   | 101.67            | 101.67     |        |      |       |            |          |             |
| 27.00 | 30.00  | 3.00   | 99.33             | 99.33      |        |      |       |            |          |             |
| 30.00 | 33.00  | 3.00   | 89.00             | 89.00      |        |      |       |            |          |             |
| 33.00 | 36.00  | 3.00   | 100.67            | 100.67     |        |      |       |            |          |             |
| 36.00 | 39.00  | 3.00   | 89.33             | 89.33      |        |      |       |            |          |             |
| 39.00 | 42.00  | 3.00   | 94.67             | 94.67      |        |      |       |            |          |             |
| 42.00 | 45.00  | 3.00   | 99.67             | 99.67      |        |      |       |            |          |             |
| 45.00 | 48.00  | 3.00   | 100.67            | 100.67     |        |      |       |            |          |             |
| 48.00 | 51.00  | 3.00   | 100.00            | 100.00     |        |      |       |            |          |             |
| 51.00 | 54.00  | 3.00   | 101.33            | 101.33     |        |      |       |            |          |             |
| 54.00 | 57.00  | 3.00   | 100.00            | 100.00     |        |      |       |            |          |             |
| 57.00 | 60.00  | 3.00   | 101.33            | 101.33     |        |      |       |            |          |             |
| 60.00 | 63.00  | 3.00   | 99.67             | 99.67      |        |      |       |            |          |             |
| 63.00 | 66.00  | 3.00   | 101.00            | 101.00     |        |      |       |            |          |             |
| 66.00 | 69.00  | 3.00   | 82.33             | 82.33      |        |      |       |            |          |             |
| 69.00 | 72.00  | 3.00   | 97.00             | 97.00      |        |      |       |            |          |             |
| 72.00 | 75.00  | 3.00   | 84.00             | 84.00      |        |      |       |            |          |             |
| 75.00 | 78.00  | 3.00   | 85.67             | 85.67      |        |      |       |            |          |             |
| 78.00 | 81.00  | 3.00   | 97.00             | 97.00      |        |      |       |            |          |             |
| 81.00 | 84.00  | 3.00   | 97.00             | 97.00      |        |      |       |            |          |             |
| 84.00 | 87.00  | 3.00   | 96.33             | 96.33      |        |      |       |            |          |             |
| 87.00 | 90.00  | 3.00   | 98.00             | 98.00      |        |      |       |            |          |             |
| 90.00 | 93.00  | 3.00   | 98.33             | 98.33      |        |      |       |            |          |             |
| 93.00 | 96.00  | 3.00   | 101.00            | 101.00     |        |      |       |            |          |             |
| 96.00 | 99.00  | 3.00   | 82.00             | 82.00      |        |      |       |            |          |             |
| 99.00 | 102.00 | 3.00   | 95.67             | 95.67      |        |      |       |            |          |             |

# Breakaway Exploration Management inc.

## RQD

| From   | To     | Length | Recover<br>ed (%) | RQD<br>(%) | Joints |      |       | Weathering | Strength | Description |
|--------|--------|--------|-------------------|------------|--------|------|-------|------------|----------|-------------|
|        |        |        |                   |            | Number | Type | Angle |            |          |             |
| 102.00 | 105.00 | 3.00   | 100.33            | 100.33     |        |      |       |            |          |             |
| 105.00 | 108.00 | 3.00   | 103.00            | 103.00     |        |      |       |            |          |             |
| 108.00 | 111.00 | 3.00   | 98.33             | 98.33      |        |      |       |            |          |             |
| 111.00 | 114.00 | 3.00   | 98.67             | 98.67      |        |      |       |            |          |             |
| 114.00 | 117.00 | 3.00   | 104.33            | 104.33     |        |      |       |            |          |             |
| 117.00 | 120.00 | 3.00   | 98.00             | 98.00      |        |      |       |            |          |             |
| 120.00 | 123.00 | 3.00   | 96.67             | 96.67      |        |      |       |            |          |             |
| 123.00 | 126.00 | 3.00   | 100.67            | 100.67     |        |      |       |            |          |             |
| 126.00 | 129.00 | 3.00   | 101.33            | 101.33     |        |      |       |            |          |             |
| 129.00 | 132.00 | 3.00   | 96.33             | 96.33      |        |      |       |            |          |             |
| 132.00 | 135.00 | 3.00   | 102.67            | 102.67     |        |      |       |            |          |             |
| 135.00 | 138.00 | 3.00   | 96.67             | 96.67      |        |      |       |            |          |             |
| 138.00 | 141.00 | 3.00   | 101.33            | 101.33     |        |      |       |            |          |             |
| 141.00 | 144.00 | 3.00   | 104.00            | 104.00     |        |      |       |            |          |             |
| 144.00 | 147.00 | 3.00   | 99.33             | 99.33      |        |      |       |            |          |             |

# Breakaway Exploration Management inc.

DDH: BA-12-05

Claims title:

Section:

Township:

Level:

Range:

Work place: Ballarat Core Shack

Drilled by: Earth Tek Driling

Lot:

Described by: Drew MacPhail

From: 01/08/2012

Description date: 02/08/2012

To: 02/08/2012

Collar

Azimuth: 145.00°  
Dip: -50.00°  
Length: 150.00 m

LL\_WGS84

UTM\_WGS84

|           |            |             |
|-----------|------------|-------------|
| East      | 63.0069    | 596,619.0   |
| North     | -139.0919  | 6,987,788.0 |
| Elevation | 1,000.0000 | 1,000.0     |

Weighted averages

| Zone | From | To | Length | Hor. th. | Ver. th. | True th. | Au<br>(ppb) |
|------|------|----|--------|----------|----------|----------|-------------|
|      |      |    |        |          |          |          |             |

Description

Core size: NQ

Cemented: No

Stored: No

| Down hole survey |        |         |         |         |             |
|------------------|--------|---------|---------|---------|-------------|
| Type             | Depth  | Azimuth | Dip     | Invalid | Description |
| Reflex           | 50.00  | 148.00° | -49.70° | No      |             |
| Reflex           | 100.00 | 149.70° | -49.30° | No      |             |
| Reflex           | 150.00 | 150.90° | -49.00° | No      |             |

# Breakaway Exploration Management inc.

| Description |       |                                                                                                                                                                                                                                                                                                                                                                             | Assay |       |         |        |          |
|-------------|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------|---------|--------|----------|
|             |       |                                                                                                                                                                                                                                                                                                                                                                             | From  | To    | Number  | Length | Au (ppb) |
| 0.00        | 12.00 | CAS<br>Casing<br>Casing.                                                                                                                                                                                                                                                                                                                                                    |       |       |         |        |          |
| 12.00       | 21.40 | M1; RUB<br>Gneiss; Banded<br>Grey to light grey alternates light and dark layers.<br>Quartz muscovite gneiss.<br>High silica content.<br>Fine to medium grain.<br>Bands between 2 cm to 5cm.<br>Oxydization is sporaticly located throughout section.<br>Banding angle is 50deg to core angle.<br>Multiple zones of allteration present all through the section.            | 12.00 | 13.00 | 1575812 | 1.00   | <2       |
|             |       |                                                                                                                                                                                                                                                                                                                                                                             | 13.00 | 14.00 | 1575813 | 1.00   | <2       |
|             |       |                                                                                                                                                                                                                                                                                                                                                                             | 14.00 | 15.00 | 1575814 | 1.00   | <2       |
|             |       |                                                                                                                                                                                                                                                                                                                                                                             | 18.60 | 19.40 | 1575816 | 0.80   | <2       |
| 19.00       | 19.10 | VEI;;;;Fp;<br>Vein Feldspar<br>K-spar vein.                                                                                                                                                                                                                                                                                                                                 | 19.40 | 20.40 | 1575817 | 1.00   | <2       |
| 20.40       | 21.40 | VEI;;;;Qz;<br>Vein Quartz<br>Quartz vein.                                                                                                                                                                                                                                                                                                                                   | 20.40 | 21.40 | 1575818 | 1.00   | <2       |
| 21.40       | 41.50 | M1; RUB<br>Gneiss; Banded<br>Grey to light grey with pink layers.<br>Quartz biotite K-spar gneiss.<br>High silica content.<br>Fine to medium grain.<br>Bands between 2 cm to 5cm.<br>Oxydization is sporaticly located throughout section.<br>Banding angle is 50deg to core angle.<br>Multiple zones of allteration present all through the section.<br>Granite protolith. | 21.40 | 22.40 | 1575819 | 1.00   | <2       |
| 21.40       | 22.70 | FRC; GOU<br>Fractured; Gouge<br>Very broken up core some gouge sections.                                                                                                                                                                                                                                                                                                    |       |       |         |        |          |
| 37.80       | 38.60 | FRC; GOU<br>Fractured; Gouge<br>Broken with some gouge sections.                                                                                                                                                                                                                                                                                                            | 38.50 | 39.50 | 1575820 | 1.00   | <2       |
|             |       |                                                                                                                                                                                                                                                                                                                                                                             | 39.50 | 40.50 | 1575821 | 1.00   | <2       |
|             |       |                                                                                                                                                                                                                                                                                                                                                                             | 40.50 | 41.50 | 1575823 | 1.00   | <2       |
| 41.50       | 53.20 | M1; RUB<br>Gneiss; Banded<br>Dark grey to black alternates light and dark layers.<br>Quartz biotite gneiss.<br>Fine to medium grain.                                                                                                                                                                                                                                        | 41.50 | 42.50 | 1575824 | 1.00   | <2       |
|             |       |                                                                                                                                                                                                                                                                                                                                                                             | 42.50 | 43.50 | 1575825 | 1.00   | <2       |
|             |       |                                                                                                                                                                                                                                                                                                                                                                             | 43.50 | 44.50 | 1575826 | 1.00   | <2       |

# Breakaway Exploration Management inc.

| Description |        |                                                                                                                                                                                                                                                                                                                                                                                                          | Assay |       |         |        |          |
|-------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------|---------|--------|----------|
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                          | From  | To    | Number  | Length | Au (ppb) |
|             |        | Lamina between 2 cm to 5cm.<br>Some sections of crenulated cleavage near the end of the section oxydization is sporaticly located throughout section.<br>Quartz vein makup about 1-2 % of core between 5-10 cm veins.<br>Banding angle is 50deg to core angle.                                                                                                                                           |       |       |         |        |          |
| 46.40       | 54.40  | FRC; GOU<br>Fractured; Gouge<br>Broken with small amount of gouge.                                                                                                                                                                                                                                                                                                                                       |       |       |         |        |          |
| 47.00       | 51.40  | OX25<br>oxidized 25<br>Oxydized host rock.                                                                                                                                                                                                                                                                                                                                                               | 50.40 | 51.40 | 1575827 | 1.00   | <2       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                          | 51.40 | 52.40 | 1575828 | 1.00   | <2       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                          | 52.40 | 53.40 | 1575829 | 1.00   | 6        |
| 53.20       | 60.00  | M1; RUB<br>Gneiss; Banded<br>Grey to light grey with pink layers.<br>Quartz biotite K-spar gneiss.<br>High silica content.<br>Fine to medium grain.<br>Bands between 2 cm to 5cm.<br>Oxydization is sporaticly located throughout section.<br>Banding angle is 50deg to core angle.<br>Multiple zones of allteration present all through the section.<br>Granite protolith.                              | 53.40 | 54.40 | 1575831 | 1.00   | <2       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                          | 54.40 | 55.40 | 1575832 | 1.00   | <2       |
| 60.00       | 150.00 | M1; RUB<br>Gneiss; Banded<br>Dark grey to black alternates light and dark layers.<br>Quartz Biotite Gneiss.<br>Fine to medium grain.<br>Layering between 2 cm to 5cm.<br>Some sections of crenulated cleavage near the end of the section oxydization is sporaticly located throughout section.<br>Quartz vein makup about 1-2 % of core between 5-10 cm veins.<br>Banding angle is 50deg to core angle. | 70.40 | 71.40 | 1575833 | 1.00   | 10       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                          | 71.40 | 72.10 | 1575834 | 0.70   | 6        |
| 72.00       | 72.70  | VEI;,,,;Qz;<br>Vein Quartz<br>Mineralized quartz vein.                                                                                                                                                                                                                                                                                                                                                   | 72.10 | 73.10 | 1575835 | 1.00   | <2       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                          | 73.10 | 74.10 | 1575836 | 1.00   | <2       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                          | 77.50 | 78.50 | 1575837 | 1.00   | <2       |
| 78.00       | 82.00  | FAI; GOU<br>Fault; Gouge<br>Mineralized fault zone.                                                                                                                                                                                                                                                                                                                                                      | 78.50 | 79.50 | 1575838 | 1.00   | <2       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                          | 79.50 | 80.50 | 1575839 | 1.00   | <2       |
|             |        |                                                                                                                                                                                                                                                                                                                                                                                                          | 80.50 | 81.50 | 1575841 | 1.00   | 35       |
| 81.00       | 82.00  | VEI;,,,;Qz;                                                                                                                                                                                                                                                                                                                                                                                              | 81.50 | 82.50 | 1575842 | 1.00   | 8        |

# Breakaway Exploration Management inc.

| Description |        |                                                                                                                        | Assay  |        |         |        |          |
|-------------|--------|------------------------------------------------------------------------------------------------------------------------|--------|--------|---------|--------|----------|
|             |        |                                                                                                                        | From   | To     | Number  | Length | Au (ppb) |
| 86.40       | 90.50  | Vein Quartz                                                                                                            | 85.40  | 86.40  | 1575843 | 1.00   | 4        |
|             |        | Mineralized quartz vein.                                                                                               |        |        |         |        |          |
|             |        | BRE                                                                                                                    | 86.40  | 87.40  | 1575844 | 1.00   | <2       |
|             |        | Breccia                                                                                                                | 87.40  | 88.40  | 1575845 | 1.00   | <2       |
|             |        | Mineralized brecciated zone.                                                                                           | 88.40  | 89.40  | 1575846 | 1.00   | <2       |
|             |        |                                                                                                                        | 89.40  | 90.40  | 1575847 | 1.00   | <2       |
| 94.70       | 100.30 |                                                                                                                        | 90.40  | 91.40  | 1575848 | 1.00   | <2       |
|             |        | M1; AUG                                                                                                                | 99.80  | 100.60 | 1575849 | 0.80   | <2       |
|             |        | Gneiss; Augen                                                                                                          | 100.60 | 101.20 | 1575851 | 0.60   | <2       |
|             |        | Dark grey to black alternates light and dark layers.                                                                   |        |        |         |        |          |
| 101.20      | 101.60 | Quartz biotite gneiss.                                                                                                 |        |        |         |        |          |
|             |        | Fine to medium grain.                                                                                                  |        |        |         |        |          |
|             |        | Layering between 2 cm to 5cm.                                                                                          |        |        |         |        |          |
|             |        | Some sections of crenulated cleavage near the end of the section oxydization is sporaticly located throughout section. |        |        |         |        |          |
| 101.20      | 104.50 | Quartz vein makup about 1-2 % of core between 5-10 cm veins.                                                           |        |        |         |        |          |
|             |        | Banding angle is 50deg to core angle.                                                                                  |        |        |         |        |          |
|             |        | Garnet augens.                                                                                                         |        |        |         |        |          |
|             |        | CI                                                                                                                     |        |        |         |        |          |
| 101.20      | 104.50 | Chlorite                                                                                                               | 101.20 | 102.20 | 1575852 | 1.00   | <2       |
|             |        | Chlorite altered breccia zone.                                                                                         | 102.20 | 103.00 | 1575853 | 0.80   | 10       |
|             |        | BRE                                                                                                                    | 103.00 | 103.90 | 1575854 | 0.90   | <2       |
|             |        | Breccia                                                                                                                | 103.90 | 104.50 | 1575855 | 0.60   | <2       |
| 104.50      | 107.00 | Mineralized breccia zone.                                                                                              | 104.50 | 105.50 | 1575856 | 1.00   | <2       |
|             |        | Py1-5                                                                                                                  | 105.50 | 106.50 | 1575858 | 1.00   | <2       |
|             |        | Pyrite 1-5                                                                                                             | 106.50 | 107.50 | 1575859 | 1.00   | <2       |
|             |        | Pyrite present in salvages.                                                                                            | 107.50 | 108.50 | 1575860 | 1.00   | <2       |
| 107.00      | 148.30 |                                                                                                                        | 108.50 | 109.50 | 1575861 | 1.00   | <2       |
|             |        | Py1-5                                                                                                                  | 109.50 | 110.50 | 1575862 | 1.00   | <2       |
|             |        | Pyrite 1-5                                                                                                             | 110.50 | 111.50 | 1575863 | 1.00   | <2       |
|             |        | Pyrite is disseminated throughout.                                                                                     | 111.50 | 112.50 | 1575864 | 1.00   | <2       |
|             |        |                                                                                                                        | 112.50 | 113.50 | 1575866 | 1.00   | 10       |
|             |        |                                                                                                                        | 113.50 | 114.50 | 1575867 | 1.00   | <2       |
|             |        |                                                                                                                        | 114.50 | 115.40 | 1575868 | 0.90   | <2       |
|             |        |                                                                                                                        |        |        |         |        |          |

# Breakaway Exploration Management inc.

| Description |        |                                                       |        | Assay  |                                           |        |        |                                                                             |        |        |                                      |                                                                                                           |        |         |      |    |  |  |
|-------------|--------|-------------------------------------------------------|--------|--------|-------------------------------------------|--------|--------|-----------------------------------------------------------------------------|--------|--------|--------------------------------------|-----------------------------------------------------------------------------------------------------------|--------|---------|------|----|--|--|
|             |        |                                                       |        | From   | To                                        | Number | Length | Au (ppb)                                                                    |        |        |                                      |                                                                                                           |        |         |      |    |  |  |
| 117.40      | 118.40 | Se70<br>Sericite 70<br>Pervasive sericite alteration. | 115.40 | 116.40 | 1575869                                   | 1.00   | <2     |                                                                             |        |        |                                      |                                                                                                           |        |         |      |    |  |  |
|             |        |                                                       | 116.40 | 117.40 | 1575870                                   | 1.00   | <2     |                                                                             |        |        |                                      |                                                                                                           |        |         |      |    |  |  |
|             |        |                                                       | 117.40 | 118.40 | 1575871                                   | 1.00   | <2     |                                                                             |        |        |                                      |                                                                                                           |        |         |      |    |  |  |
|             |        |                                                       | 123.60 | 123.80 | FLD; FAI<br>Folded; Fault<br>Failed fold. |        |        |                                                                             |        |        |                                      |                                                                                                           |        |         |      |    |  |  |
|             |        |                                                       |        |        |                                           |        |        |                                                                             |        |        |                                      |                                                                                                           |        |         |      |    |  |  |
|             |        |                                                       |        |        |                                           | 125.40 | 126.90 | VLT;;;;;Qz Fp;<br>Veinlets Quartz Feldspar<br>Quartz and feldspar veinlets. | 125.40 | 126.40 | 1575872                              | 1.00                                                                                                      | <2     |         |      |    |  |  |
|             |        |                                                       |        |        |                                           |        |        |                                                                             | 126.40 | 127.40 | 1575873                              | 1.00                                                                                                      | <2     |         |      |    |  |  |
|             |        |                                                       |        |        |                                           |        |        |                                                                             | 132.00 | 133.00 | 1575874                              | 1.00                                                                                                      | <2     |         |      |    |  |  |
|             |        |                                                       |        |        |                                           |        |        |                                                                             | 133.00 | 134.00 | 1575876                              | 1.00                                                                                                      | <2     |         |      |    |  |  |
|             |        |                                                       |        |        |                                           |        |        |                                                                             | 134.00 | 135.00 | 1575877                              | 1.00                                                                                                      | <2     |         |      |    |  |  |
|             |        |                                                       |        |        |                                           |        |        |                                                                             | 143.90 | 144.90 | 1575878                              | 1.00                                                                                                      | <2     |         |      |    |  |  |
|             |        |                                                       |        |        |                                           |        |        |                                                                             | 144.90 | 149.60 | BRE<br>Breccia<br>Competent breccia. | 144.90                                                                                                    | 145.90 | 1575879 | 1.00 | <2 |  |  |
|             |        |                                                       |        |        |                                           |        |        |                                                                             |        |        |                                      | 145.90                                                                                                    | 146.90 | 1575880 | 1.00 | <2 |  |  |
|             |        |                                                       |        |        |                                           |        |        |                                                                             |        |        |                                      | 146.90                                                                                                    | 147.90 | 1575881 | 1.00 | <2 |  |  |
|             |        |                                                       |        |        |                                           |        |        |                                                                             |        |        |                                      | 147.90                                                                                                    | 148.90 | 1575882 | 1.00 | <2 |  |  |
|             |        |                                                       |        |        |                                           |        |        |                                                                             |        |        |                                      |                                                                                                           |        |         |      |    |  |  |
|             |        |                                                       |        |        |                                           |        |        |                                                                             |        |        |                                      | 150.00    End of DDH<br>Number of samples: 63<br>Number of QAQC samples: 8<br>Total sampled length: 61.10 |        |         |      |    |  |  |

# Breakaway Exploration Management inc.

## QAQC

| From   | To     | Number  | Reference | Length | Au<br>(ppb) |
|--------|--------|---------|-----------|--------|-------------|
| 14.00  | 15.00  | 1575815 | 157814    | 1.00   | <2          |
| 39.50  | 39.50  | 1575822 | S3        | 0.00   | 748         |
| 52.40  | 52.40  | 1575830 | RR        | 0.00   | <2          |
| 79.50  | 79.50  | 1575840 | S4        | 0.00   | 1,306       |
| 99.80  | 100.60 | 1575850 | 157849    | 0.80   | <2          |
| 104.50 | 104.50 | 1575857 | S3        | 0.00   | 702         |
| 111.50 | 111.50 | 1575865 | RR        | 0.00   | <2          |
| 132.00 | 132.00 | 1575875 | S4        | 0.00   | 1,255       |

# Breakaway Exploration Management inc.

## RQD

| From   | To     | Length | Recover<br>ed (%) | RQD<br>(%) | Joints |      |       | Weathering | Strength | Description |
|--------|--------|--------|-------------------|------------|--------|------|-------|------------|----------|-------------|
|        |        |        |                   |            | Number | Type | Angle |            |          |             |
| 12.00  | 15.00  | 3.00   | 101.67            | 101.67     |        |      |       |            |          |             |
| 15.00  | 18.00  | 3.00   | 85.67             | 85.67      |        |      |       |            |          |             |
| 18.00  | 21.00  | 3.00   | 97.33             | 97.33      |        |      |       |            |          |             |
| 21.00  | 24.00  | 3.00   | 93.00             | 93.00      |        |      |       |            |          |             |
| 24.00  | 27.00  | 3.00   | 88.67             | 88.67      |        |      |       |            |          |             |
| 27.00  | 30.00  | 3.00   | 86.33             | 86.33      |        |      |       |            |          |             |
| 30.00  | 33.00  | 3.00   | 96.33             | 96.33      |        |      |       |            |          |             |
| 33.00  | 36.00  | 3.00   | 93.00             | 93.00      |        |      |       |            |          |             |
| 36.00  | 39.00  | 3.00   | 91.33             | 91.33      |        |      |       |            |          |             |
| 39.00  | 42.00  | 3.00   | 98.00             | 98.00      |        |      |       |            |          |             |
| 42.00  | 45.00  | 3.00   | 95.67             | 95.67      |        |      |       |            |          |             |
| 45.00  | 48.00  | 3.00   | 98.67             | 98.67      |        |      |       |            |          |             |
| 48.00  | 51.00  | 3.00   | 91.33             | 91.33      |        |      |       |            |          |             |
| 51.00  | 54.00  | 3.00   | 97.67             | 97.67      |        |      |       |            |          |             |
| 54.00  | 57.00  | 3.00   | 95.67             | 95.67      |        |      |       |            |          |             |
| 57.00  | 60.00  | 3.00   | 92.67             | 92.67      |        |      |       |            |          |             |
| 60.00  | 63.00  | 3.00   | 102.00            | 102.00     |        |      |       |            |          |             |
| 63.00  | 66.00  | 3.00   | 100.00            | 100.00     |        |      |       |            |          |             |
| 66.00  | 69.00  | 3.00   | 101.67            | 101.67     |        |      |       |            |          |             |
| 69.00  | 72.00  | 3.00   | 101.67            | 101.67     |        |      |       |            |          |             |
| 72.00  | 75.00  | 3.00   | 99.67             | 99.67      |        |      |       |            |          |             |
| 75.00  | 78.00  | 3.00   | 100.67            | 100.67     |        |      |       |            |          |             |
| 78.00  | 81.00  | 3.00   | 90.67             | 90.67      |        |      |       |            |          |             |
| 81.00  | 84.00  | 3.00   | 97.67             | 97.67      |        |      |       |            |          |             |
| 84.00  | 87.00  | 3.00   | 100.00            | 100.00     |        |      |       |            |          |             |
| 87.00  | 90.00  | 3.00   | 98.33             | 98.33      |        |      |       |            |          |             |
| 90.00  | 93.00  | 3.00   | 100.67            | 100.67     |        |      |       |            |          |             |
| 93.00  | 96.00  | 3.00   | 100.00            | 100.00     |        |      |       |            |          |             |
| 96.00  | 99.00  | 3.00   | 99.67             | 99.67      |        |      |       |            |          |             |
| 99.00  | 102.00 | 3.00   | 97.67             | 97.67      |        |      |       |            |          |             |
| 102.00 | 105.00 | 3.00   | 100.00            | 100.00     |        |      |       |            |          |             |
| 105.00 | 108.00 | 3.00   | 101.00            | 101.00     |        |      |       |            |          |             |

# Breakaway Exploration Management inc.

## RQD

| From   | To     | Length | Recover<br>ed (%) | RQD<br>(%) | Joints |      |       | Weathering | Strength | Description |
|--------|--------|--------|-------------------|------------|--------|------|-------|------------|----------|-------------|
|        |        |        |                   |            | Number | Type | Angle |            |          |             |
| 108.00 | 111.00 | 3.00   | 99.67             | 99.67      |        |      |       |            |          |             |
| 111.00 | 114.00 | 3.00   | 100.67            | 100.67     |        |      |       |            |          |             |
| 114.00 | 117.00 | 3.00   | 100.00            | 100.00     |        |      |       |            |          |             |
| 117.00 | 120.00 | 3.00   | 98.67             | 98.67      |        |      |       |            |          |             |
| 120.00 | 123.00 | 3.00   | 102.00            | 102.00     |        |      |       |            |          |             |
| 123.00 | 126.00 | 3.00   | 99.00             | 99.00      |        |      |       |            |          |             |
| 126.00 | 129.00 | 3.00   | 102.33            | 102.33     |        |      |       |            |          |             |
| 129.00 | 132.00 | 3.00   | 99.00             | 99.00      |        |      |       |            |          |             |
| 132.00 | 135.00 | 3.00   | 98.67             | 98.67      |        |      |       |            |          |             |
| 135.00 | 138.00 | 3.00   | 99.33             | 99.33      |        |      |       |            |          |             |
| 138.00 | 141.00 | 3.00   | 102.00            | 102.00     |        |      |       |            |          |             |
| 141.00 | 144.00 | 3.00   | 97.00             | 97.00      |        |      |       |            |          |             |
| 144.00 | 147.00 | 3.00   | 100.00            | 100.00     |        |      |       |            |          |             |
| 147.00 | 150.00 | 3.00   | 90.00             | 90.00      |        |      |       |            |          |             |

## **Appendix C - Assay Certificates**



1020 Cordova St. East Vancouver BC V6A 4A3 Canada

Acme Analytical Laboratories (Vancouver) Ltd.

[www.acmelab.com](http://www.acmelab.com)

Client:

**Stakeholder Gold Corp.**

203 - 680 Third Ave.

Val D'Or QC J9P 1S5 Canada

Submitted By: Mark Fekete

Receiving Lab: Canada-Whitehorse

Received: August 03, 2012

Report Date: August 17, 2012

Page: 1 of 2

## CERTIFICATE OF ANALYSIS

WHI12000539.1

### CLIENT JOB INFORMATION

Project: BALLARAT  
Shipment ID: 20120801107  
P.O. Number  
Number of Samples: 21

### SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

| Method Code | Number of Samples | Code Description                                  | Test Wgt (g) | Report Status | Lab |
|-------------|-------------------|---------------------------------------------------|--------------|---------------|-----|
| R200-250    | 20                | Crush, split and pulverize 250 g rock to 200 mesh |              |               | WHI |
| 3B01        | 21                | Fire assay fusion Au by ICP-ES                    | 30           | Completed     | VAN |

### SAMPLE DISPOSAL

DISP-PLP Dispose of Pulp After 90 days  
DISP-RJT Dispose of Reject After 90 days

### ADDITIONAL COMMENTS

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

Invoice To: Stakeholder Gold Corp.  
203 - 680 Third Ave.  
Val D'Or QC J9P 1S5  
Canada

CC: Drew Macphail  
Marty Huber



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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Phone (604) 253-3158 Fax (604) 253-1716

Acme Analytical Laboratories (Vancouver) Ltd.

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**Client:** **Stakeholder Gold Corp.**

203 - 680 Third Ave.  
Val D'Or QC J9P 1S5 Canada

**Project:** BALLARAT

**Report Date:** August 17, 2012

**Page:** 2 of 2

**Part:** 1 of 1

## CERTIFICATE OF ANALYSIS

WHI12000539.1

| Method  | WGHT       | 3B  |
|---------|------------|-----|
| Analyte | Wgt        | Au  |
| Unit    | kg         | ppb |
| MDL     | 0.01       | 2   |
| 1575781 | Drill Core | 19  |
| 1575782 | Drill Core | 17  |
| 1575783 | Drill Core | 30  |
| 1575784 | Drill Core | <2  |
| 1575785 | Drill Core | 6   |
| 1575786 | Drill Core | 6   |
| 1575787 | Rock Pulp  | 634 |
| 1575788 | Drill Core | 77  |
| 1575789 | Drill Core | 41  |
| 1575790 | Drill Core | 4   |
| 1575791 | Drill Core | <2  |
| 1575792 | Drill Core | 4   |
| 1575793 | Drill Core | 3   |
| 1575794 | Drill Core | 253 |
| 1575795 | Rock       | <2  |
| 1575796 | Drill Core | <2  |
| 1575797 | Drill Core | 24  |
| 1575798 | Drill Core | <2  |
| 1575799 | Drill Core | <2  |
| 1575800 | Drill Core | <2  |
| 1575801 | Drill Core | <2  |



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**Client:** **Stakeholder Gold Corp.**

203 - 680 Third Ave.  
Val D'Or QC J9P 1S5 Canada

**Project:** BALLARAT

**Report Date:** August 17, 2012

**Page:** 1 of 1

**Part:** 1 of 1

## QUALITY CONTROL REPORT

WHI12000539.1

|                     |            | Method  | WGHT | 3B  |
|---------------------|------------|---------|------|-----|
|                     |            | Analyte | Wgt  | Au  |
|                     |            | Unit    | kg   | ppb |
|                     |            | MDL     | 0.01 | 2   |
| Reference Materials |            |         |      |     |
| STD OXD87           | Standard   |         |      | 398 |
| STD OXG99           | Standard   |         |      | 913 |
| STD OXD87 Expected  |            |         |      | 417 |
| STD OXG99 Expected  |            |         |      | 932 |
| BLK                 | Blank      |         |      | <2  |
| BLK                 | Blank      |         |      | <2  |
| Prep Wash           |            |         |      |     |
| G1-WHI              | Prep Blank |         |      | <2  |
| G1-WHI              | Prep Blank |         |      | <2  |



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Client:

**Stakeholder Gold Corp.**

203 - 680 Third Ave.

Val D'Or QC J9P 1S5 Canada

Submitted By: Mark Fekete

Receiving Lab: Canada-Whitehorse

Received: August 03, 2012

Report Date: August 13, 2012

Page: 1 of 6

## CERTIFICATE OF ANALYSIS

WHI12000540.1

### CLIENT JOB INFORMATION

Project: BALLARAT  
Shipment ID: 20120801103  
P.O. Number  
Number of Samples: 140

### SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

| Method Code | Number of Samples | Code Description                                  | Test Wgt (g) | Report Status | Lab |
|-------------|-------------------|---------------------------------------------------|--------------|---------------|-----|
| R200-250    | 132               | Crush, split and pulverize 250 g rock to 200 mesh |              |               | WHI |
| 3B01        | 140               | Fire assay fusion Au by ICP-ES                    | 30           | Completed     | VAN |

### SAMPLE DISPOSAL

DISP-PLP Dispose of Pulp After 90 days  
DISP-RJT Dispose of Reject After 90 days

### ADDITIONAL COMMENTS

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

Invoice To: Stakeholder Gold Corp.  
203 - 680 Third Ave.  
Val D'Or QC J9P 1S5  
Canada

CC: Marty Huber  
Drew Macphail



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:** **Stakeholder Gold Corp.**

203 - 680 Third Ave.  
Val D'Or QC J9P 1S5 Canada

**Project:** BALLARAT

**Report Date:** August 13, 2012

**Page:** 2 of 6

**Part:** 1 of 1

## CERTIFICATE OF ANALYSIS

WHI12000540.1

| Method  | WGHT       | 3B        |
|---------|------------|-----------|
| Analyte | Wgt        | Au        |
| Unit    | kg         | ppb       |
| MDL     | 0.01       | 2         |
| 1575501 | Drill Core | 1.45 <2   |
| 1575502 | Drill Core | 1.62 <2   |
| 1575503 | Drill Core | 1.25 <2   |
| 1575504 | Drill Core | 2.88 <2   |
| 1575505 | Drill Core | 2.44 <2   |
| 1575506 | Drill Core | 2.60 <2   |
| 1575507 | Drill Core | 2.58 <2   |
| 1575508 | Rock Pulp  | 0.08 701  |
| 1575509 | Drill Core | 2.13 <2   |
| 1575510 | Drill Core | 2.67 <2   |
| 1575511 | Drill Core | 2.80 <2   |
| 1575512 | Drill Core | 3.29 <2   |
| 1575513 | Drill Core | 3.21 <2   |
| 1575514 | Drill Core | 1.99 <2   |
| 1575515 | Drill Core | 2.81 <2   |
| 1575516 | Drill Core | 1.38 <2   |
| 1575517 | Drill Core | 2.14 <2   |
| 1575518 | Drill Core | 2.31 <2   |
| 1575519 | Drill Core | 2.96 <2   |
| 1575520 | Drill Core | 2.48 <2   |
| 1575521 | Drill Core | 3.39 <2   |
| 1575522 | Drill Core | 3.22 <2   |
| 1575523 | Drill Core | 1.18 <2   |
| 1575524 | Drill Core | 2.35 <2   |
| 1575525 | Rock Pulp  | 0.08 1230 |
| 1575526 | Drill Core | 1.98 <2   |
| 1575527 | Drill Core | 3.57 <2   |
| 1575528 | Drill Core | 1.07 <2   |
| 1575529 | Drill Core | 2.55 8    |
| 1575530 | Drill Core | 3.10 13   |



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**Client:** **Stakeholder Gold Corp.**

203 - 680 Third Ave.  
Val D'Or QC J9P 1S5 Canada

**Project:** BALLARAT

**Report Date:** August 13, 2012

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## CERTIFICATE OF ANALYSIS

WHI12000540.1

| Method  | WGHT       | 3B        |
|---------|------------|-----------|
| Analyte | Wgt        | Au        |
| Unit    | kg         | ppb       |
| MDL     | 0.01       | 2         |
| 1575531 | Drill Core | 1.94 <2   |
| 1575532 | Drill Core | 2.22 <2   |
| 1575533 | Drill Core | 1.81 <2   |
| 1575534 | Drill Core | 1.71 <2   |
| 1575535 | Drill Core | 2.47 <2   |
| 1575536 | Drill Core | 2.63 <2   |
| 1575537 | Drill Core | 2.69 <2   |
| 1575538 | Drill Core | 3.54 <2   |
| 1575539 | Drill Core | 2.81 <2   |
| 1575540 | Drill Core | 2.84 35   |
| 1575541 | Drill Core | 2.10 10   |
| 1575542 | Rock Pulp  | 0.08 682  |
| 1575543 | Drill Core | 2.91 3    |
| 1575544 | Drill Core | 2.68 4    |
| 1575545 | Drill Core | 2.52 <2   |
| 1575546 | Drill Core | 2.00 1970 |
| 1575547 | Drill Core | 2.14 168  |
| 1575548 | Drill Core | 3.12 696  |
| 1575549 | Drill Core | 2.70 2    |
| 1575550 | Rock       | 0.90 5    |
| 1575551 | Drill Core | 2.52 3    |
| 1575552 | Drill Core | 2.40 2    |
| 1575553 | Drill Core | 3.18 3    |
| 1575554 | Drill Core | 0.78 <2   |
| 1575555 | Drill Core | 3.20 <2   |
| 1575556 | Drill Core | 2.79 4    |
| 1575557 | Drill Core | 2.87 <2   |
| 1575558 | Drill Core | 2.72 2    |
| 1575559 | Drill Core | 1.85 <2   |
| 1575560 | Rock Pulp  | 0.08 1265 |



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**Project:** BALLARAT

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## CERTIFICATE OF ANALYSIS

WHI12000540.1

| Method  | WGHT       | 3B       |
|---------|------------|----------|
| Analyte | Wgt        | Au       |
| Unit    | kg         | ppb      |
| MDL     | 0.01       | 2        |
| 1575561 | Drill Core | 2.06 10  |
| 1575562 | Drill Core | 2.87 317 |
| 1575563 | Drill Core | 3.49 <2  |
| 1575564 | Drill Core | 3.20 <2  |
| 1575565 | Drill Core | 2.69 <2  |
| 1575566 | Drill Core | 2.15 19  |
| 1575567 | Drill Core | 2.97 <2  |
| 1575568 | Drill Core | 3.37 <2  |
| 1575569 | Drill Core | 2.58 <2  |
| 1575570 | Drill Core | 0.69 <2  |
| 1575571 | Drill Core | 2.14 <2  |
| 1575572 | Drill Core | 3.07 <2  |
| 1575573 | Drill Core | 2.77 <2  |
| 1575574 | Drill Core | 3.18 <2  |
| 1575575 | Drill Core | 3.19 <2  |
| 1575576 | Drill Core | 3.01 <2  |
| 1575577 | Rock Pulp  | 0.08 667 |
| 1575578 | Drill Core | 2.85 <2  |
| 1575579 | Drill Core | 2.63 <2  |
| 1575580 | Drill Core | 2.34 21  |
| 1575581 | Drill Core | 2.68 <2  |
| 1575582 | Drill Core | 1.78 <2  |
| 1575583 | Drill Core | 1.63 3   |
| 1575584 | Drill Core | 2.55 <2  |
| 1575585 | Rock       | 0.62 <2  |
| 1575586 | Drill Core | 1.77 <2  |
| 1575587 | Drill Core | 1.83 <2  |
| 1575588 | Drill Core | 2.86 <2  |
| 1575589 | Drill Core | 2.42 <2  |
| 1575590 | Drill Core | 4.06 <2  |



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## CERTIFICATE OF ANALYSIS

WHI12000540.1

| Method  | WGHT       | 3B        |
|---------|------------|-----------|
| Analyte | Wgt        | Au        |
| Unit    | kg         | ppb       |
| MDL     | 0.01       | 2         |
| 1575591 | Drill Core | 3.12 76   |
| 1575592 | Drill Core | 2.75 <2   |
| 1575593 | Drill Core | 2.93 <2   |
| 1575594 | Drill Core | 2.89 <2   |
| 1575595 | Rock Pulp  | 0.08 1237 |
| 1575596 | Drill Core | 3.20 244  |
| 1575597 | Drill Core | 3.22 527  |
| 1575598 | Drill Core | 2.99 <2   |
| 1575599 | Drill Core | 2.86 <2   |
| 1575600 | Drill Core | 3.46 <2   |
| 1575601 | Drill Core | 2.76 <2   |
| 1575602 | Drill Core | 2.72 <2   |
| 1575603 | Drill Core | 3.54 <2   |
| 1575604 | Drill Core | 1.31 <2   |
| 1575605 | Drill Core | 1.48 <2   |
| 1575606 | Drill Core | 2.11 <2   |
| 1575607 | Drill Core | 1.19 <2   |
| 1575608 | Drill Core | 3.32 <2   |
| 1575609 | Drill Core | 2.60 <2   |
| 1575610 | Drill Core | 2.42 <2   |
| 1575611 | Drill Core | 1.57 1316 |
| 1575612 | Drill Core | 2.93 255  |
| 1575613 | Drill Core | 3.31 <2   |
| 1575614 | Drill Core | 2.80 <2   |
| 1575615 | Drill Core | 3.05 <2   |
| 1575616 | Drill Core | 3.03 <2   |
| 1575617 | Drill Core | 3.34 4    |
| 1575618 | Drill Core | 0.56 <2   |
| 1575619 | Rock Pulp  | 0.08 678  |
| 1575620 | Rock       | 0.58 <2   |



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## CERTIFICATE OF ANALYSIS

WHI12000540.1

| Method  | WGHT       | 3B        |
|---------|------------|-----------|
| Analyte | Wgt        | Au        |
| Unit    | kg         | ppb       |
| MDL     | 0.01       | 2         |
| 1575621 | Drill Core | <2        |
| 1575622 | Drill Core | 2.43 735  |
| 1575623 | Drill Core | 2.48 <2   |
| 1575624 | Drill Core | 2.71 <2   |
| 1575625 | Drill Core | 2.88 <2   |
| 1575626 | Drill Core | 2.82 <2   |
| 1575627 | Drill Core | 2.68 <2   |
| 1575628 | Drill Core | 2.84 5    |
| 1575629 | Drill Core | 2.56 <2   |
| 1575630 | Rock Pulp  | 0.08 1306 |
| 1575631 | Drill Core | 2.70 <2   |
| 1575632 | Drill Core | 3.28 <2   |
| 1575633 | Drill Core | 3.18 <2   |
| 1575634 | Drill Core | 3.14 <2   |
| 1575635 | Drill Core | 3.37 <2   |
| 1575636 | Drill Core | 3.40 <2   |
| 1575637 | Drill Core | 3.39 18   |
| 1575638 | Drill Core | 2.92 <2   |
| 1575639 | Drill Core | 1.71 <2   |
| 1575640 | Drill Core | 1.66 <2   |



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**Project:** BALLARAT

**Report Date:** August 13, 2012

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## QUALITY CONTROL REPORT

WHI12000540.1

|                        | Method     | WGHT | 3B  |
|------------------------|------------|------|-----|
| Analyte                |            | Wgt  | Au  |
| Unit                   |            | kg   | ppb |
| MDL                    |            | 0.01 | 2   |
| Pulp Duplicates        |            |      |     |
| 1575506                | Drill Core | 2.60 | <2  |
| REP 1575506            | QC         |      | <2  |
| 1575540                | Drill Core | 2.84 | 35  |
| REP 1575540            | QC         |      | 34  |
| 1575574                | Drill Core | 3.18 | <2  |
| REP 1575574            | QC         |      | <2  |
| 1575620                | Rock       | 0.58 | <2  |
| REP 1575620            | QC         |      | <2  |
| Core Reject Duplicates |            |      |     |
| 1575530                | Drill Core | 3.10 | 13  |
| DUP 1575530            | QC         |      | <2  |
| 1575565                | Drill Core | 2.69 | <2  |
| DUP 1575565            | QC         |      | <2  |
| 1575600                | Drill Core | 3.46 | <2  |
| DUP 1575600            | QC         |      | <2  |
| 1575635                | Drill Core | 3.37 | <2  |
| DUP 1575635            | QC         |      | <2  |
| Reference Materials    |            |      |     |
| STD OXD87              | Standard   |      | 395 |
| STD OXD87              | Standard   |      | 404 |
| STD OXD87              | Standard   |      | 410 |
| STD OXD87              | Standard   |      | 416 |
| STD OXD87              | Standard   |      | 408 |
| STD OXG99              | Standard   |      | 857 |
| STD OXG99              | Standard   |      | 995 |
| STD OXG99              | Standard   |      | 926 |
| STD OXG99              | Standard   |      | 918 |
| STD OXG99              | Standard   |      | 948 |



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## QUALITY CONTROL REPORT

WHI12000540.1

|                    |            | WGHT | 3B  |
|--------------------|------------|------|-----|
|                    |            | Wgt  | Au  |
|                    |            | kg   | ppb |
|                    |            | 0.01 | 2   |
| STD OXG99 Expected |            |      | 932 |
| STD OXD87 Expected |            |      | 417 |
| BLK                | Blank      |      | <2  |
| BLK                | Blank      |      | <2  |
| BLK                | Blank      |      | <2  |
| BLK                | Blank      |      | <2  |
| BLK                | Blank      |      | <2  |
| BLK                | Blank      |      | <2  |
| BLK                | Blank      |      | <2  |
| BLK                | Blank      |      | <2  |
| BLK                | Blank      |      | <2  |
| BLK                | Blank      |      | <2  |
| Prep Wash          |            |      |     |
| G1                 | Prep Blank |      | <2  |
| G1                 | Prep Blank |      | <2  |



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Client:

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Val D'Or QC J9P 1S5 Canada

Submitted By: Mark Fekete

Receiving Lab: Canada-Whitehorse

Received: August 03, 2012

Report Date: August 14, 2012

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## CERTIFICATE OF ANALYSIS

WHI12000541.1

### CLIENT JOB INFORMATION

Project: BALLARAT  
Shipment ID: 20120801105  
P.O. Number  
Number of Samples: 140

### SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

| Method Code | Number of Samples | Code Description                                  | Test Wgt (g) | Report Status | Lab |
|-------------|-------------------|---------------------------------------------------|--------------|---------------|-----|
| R200-250    | 132               | Crush, split and pulverize 250 g rock to 200 mesh |              |               | WHI |
| 3B01        | 140               | Fire assay fusion Au by ICP-ES                    | 30           | Completed     | VAN |

### SAMPLE DISPOSAL

DISP-PLP Dispose of Pulp After 90 days  
DISP-RJT Dispose of Reject After 90 days

### ADDITIONAL COMMENTS

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

Invoice To: Stakeholder Gold Corp.  
203 - 680 Third Ave.  
Val D'Or QC J9P 1S5  
Canada

CC: Drew Macphail  
Marty Huber



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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## CERTIFICATE OF ANALYSIS

WHI12000541.1

| Method  | WGHT       | 3B        |
|---------|------------|-----------|
| Analyte | Wgt        | Au        |
| Unit    | kg         | ppb       |
| MDL     | 0.01       | 2         |
| 1575641 | Drill Core | <2        |
| 1575642 | Drill Core | <2        |
| 1575643 | Drill Core | <2        |
| 1575644 | Drill Core | <2        |
| 1575645 | Drill Core | <2        |
| 1575646 | Drill Core | <2        |
| 1575647 | Rock Pulp  | 0.08 703  |
| 1575648 | Drill Core | <2        |
| 1575649 | Drill Core | 3.54 3    |
| 1575650 | Drill Core | <2        |
| 1575651 | Drill Core | <2        |
| 1575652 | Drill Core | <2        |
| 1575653 | Drill Core | <2        |
| 1575654 | Drill Core | <2        |
| 1575655 | Rock       | 0.67 <2   |
| 1575656 | Drill Core | 2.26 <2   |
| 1575657 | Drill Core | 2.40 <2   |
| 1575658 | Drill Core | 2.82 <2   |
| 1575659 | Drill Core | 2.84 <2   |
| 1575660 | Drill Core | 2.87 <2   |
| 1575661 | Drill Core | 1.97 <2   |
| 1575662 | Drill Core | 3.28 <2   |
| 1575663 | Drill Core | 1.87 5    |
| 1575664 | Drill Core | 3.07 <2   |
| 1575665 | Rock Pulp  | 0.08 1294 |
| 1575666 | Drill Core | 2.83 <2   |
| 1575667 | Drill Core | 3.05 7    |
| 1575668 | Drill Core | 2.72 <2   |
| 1575669 | Drill Core | 2.74 56   |
| 1575670 | Drill Core | 3.32 <2   |



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## CERTIFICATE OF ANALYSIS

WHI12000541.1

| Method  | WGHT       | 3B        |
|---------|------------|-----------|
| Analyte | Wgt        | Au        |
| Unit    | kg         | ppb       |
| MDL     | 0.01       | 2         |
| 1575671 | Drill Core | 1.98 <2   |
| 1575672 | Drill Core | 3.01 62   |
| 1575673 | Drill Core | 3.60 9    |
| 1575674 | Drill Core | 1.72 <2   |
| 1575675 | Drill Core | 1.76 <2   |
| 1575676 | Drill Core | 2.76 <2   |
| 1575677 | Drill Core | 0.76 <2   |
| 1575678 | Drill Core | 2.93 7    |
| 1575679 | Drill Core | 3.00 4    |
| 1575680 | Drill Core | 2.30 <2   |
| 1575681 | Drill Core | 3.65 <2   |
| 1575682 | Rock Pulp  | 0.09 672  |
| 1575683 | Drill Core | 3.17 <2   |
| 1575684 | Drill Core | 3.30 <2   |
| 1575685 | Drill Core | 2.53 <2   |
| 1575686 | Drill Core | 2.22 <2   |
| 1575687 | Drill Core | 0.74 <2   |
| 1575688 | Drill Core | 2.95 <2   |
| 1575689 | Drill Core | 3.78 <2   |
| 1575690 | Rock       | 0.96 <2   |
| 1575691 | Drill Core | 3.73 <2   |
| 1575692 | Drill Core | 3.27 22   |
| 1575693 | Drill Core | 2.66 15   |
| 1575694 | Drill Core | 1.19 <2   |
| 1575695 | Drill Core | 2.65 <2   |
| 1575696 | Drill Core | 2.33 <2   |
| 1575697 | Drill Core | 2.75 <2   |
| 1575698 | Drill Core | 2.46 <2   |
| 1575699 | Drill Core | 2.89 <2   |
| 1575700 | Rock Pulp  | 0.07 1204 |



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## CERTIFICATE OF ANALYSIS

WHI12000541.1

| Method  | WGHT       | 3B        |
|---------|------------|-----------|
| Analyte | Wgt        | Au        |
| Unit    | kg         | ppb       |
| MDL     | 0.01       | 2         |
| 1575701 | Drill Core | 3.38 26   |
| 1575702 | Drill Core | 2.45 3    |
| 1575703 | Drill Core | 2.41 7    |
| 1575704 | Drill Core | 2.44 1708 |
| 1575705 | Drill Core | 2.97 4    |
| 1575706 | Drill Core | 3.20 5    |
| 1575707 | Drill Core | 3.11 11   |
| 1575708 | Drill Core | 3.05 8    |
| 1575709 | Drill Core | 1.34 50   |
| 1575710 | Drill Core | 1.38 48   |
| 1575711 | Drill Core | 3.29 <2   |
| 1575712 | Drill Core | 2.41 169  |
| 1575713 | Drill Core | 2.02 18   |
| 1575714 | Drill Core | 1.70 38   |
| 1575715 | Drill Core | 2.13 79   |
| 1575716 | Drill Core | 2.14 18   |
| 1575717 | Rock Pulp  | 0.08 1260 |
| 1575718 | Drill Core | 2.93 <2   |
| 1575719 | Drill Core | 2.58 <2   |
| 1575720 | Drill Core | 2.33 <2   |
| 1575721 | Drill Core | 3.71 19   |
| 1575722 | Drill Core | 2.32 <2   |
| 1575723 | Drill Core | 3.32 3    |
| 1575724 | Drill Core | 3.25 <2   |
| 1575725 | Rock       | 0.65 <2   |
| 1575726 | Drill Core | 3.34 8    |
| 1575727 | Drill Core | 2.72 <2   |
| 1575728 | Drill Core | 3.06 <2   |
| 1575729 | Drill Core | 2.51 287  |
| 1575730 | Drill Core | 3.87 <2   |



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## CERTIFICATE OF ANALYSIS

WHI12000541.1

| Method  | WGHT       | 3B        |
|---------|------------|-----------|
| Analyte | Wgt        | Au        |
| Unit    | kg         | ppb       |
| MDL     | 0.01       | 2         |
| 1575731 | Drill Core | 2.78 59   |
| 1575732 | Drill Core | 3.49 194  |
| 1575733 | Drill Core | 2.32 496  |
| 1575734 | Drill Core | 2.40 19   |
| 1575735 | Rock Pulp  | 0.08 1252 |
| 1575736 | Drill Core | 2.12 <2   |
| 1575737 | Drill Core | 2.86 45   |
| 1575738 | Drill Core | 3.27 10   |
| 1575739 | Drill Core | 1.53 18   |
| 1575740 | Drill Core | 2.71 4    |
| 1575741 | Drill Core | 3.10 3    |
| 1575742 | Drill Core | 2.64 118  |
| 1575743 | Drill Core | 2.58 27   |
| 1575744 | Drill Core | 1.43 4    |
| 1575745 | Drill Core | 1.27 4    |
| 1575746 | Drill Core | 3.16 14   |
| 1575747 | Drill Core | 3.26 <2   |
| 1575748 | Drill Core | 3.00 <2   |
| 1575749 | Drill Core | 3.47 <2   |
| 1575750 | Drill Core | 3.48 9    |
| 1575751 | Drill Core | 2.95 <2   |
| 1575752 | Rock Pulp  | 0.08 703  |
| 1575753 | Drill Core | 2.73 <2   |
| 1575754 | Drill Core | 1.66 5    |
| 1575755 | Drill Core | 2.17 20   |
| 1575756 | Drill Core | 2.27 11   |
| 1575757 | Drill Core | 2.49 97   |
| 1575758 | Drill Core | 3.22 56   |
| 1575759 | Drill Core | 2.38 5    |
| 1575760 | Rock       | 0.72 <2   |



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## CERTIFICATE OF ANALYSIS

WHI12000541.1

| Method  | WGHT       | 3B   |
|---------|------------|------|
| Analyte | Wgt        | Au   |
| Unit    | kg         | ppb  |
| MDL     | 0.01       | 2    |
| 1575761 | Drill Core | <2   |
| 1575762 | Drill Core | 9    |
| 1575763 | Drill Core | 4    |
| 1575764 | Drill Core | <2   |
| 1575765 | Drill Core | 18   |
| 1575766 | Drill Core | 26   |
| 1575767 | Drill Core | 46   |
| 1575768 | Drill Core | 4    |
| 1575769 | Drill Core | 9    |
| 1575770 | Rock Pulp  | 1331 |
| 1575771 | Drill Core | 29   |
| 1575772 | Drill Core | 33   |
| 1575773 | Drill Core | 34   |
| 1575774 | Drill Core | 4    |
| 1575775 | Drill Core | 14   |
| 1575776 | Drill Core | 89   |
| 1575777 | Drill Core | 46   |
| 1575778 | Drill Core | 32   |
| 1575779 | Drill Core | 17   |
| 1575780 | Drill Core | 16   |



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**Client:** **Stakeholder Gold Corp.**

203 - 680 Third Ave.  
Val D'Or QC J9P 1S5 Canada

**Project:** BALLARAT

**Report Date:** August 14, 2012

**Page:** 1 of 2

**Part:** 1 of 1

## QUALITY CONTROL REPORT

WHI12000541.1

|                        | Method     | WGHT | 3B  |
|------------------------|------------|------|-----|
| Analyte                |            | Wgt  | Au  |
| Unit                   |            | kg   | ppb |
| MDL                    |            | 0.01 | 2   |
| Pulp Duplicates        |            |      |     |
| 1575652                | Drill Core | 2.60 | <2  |
| REP 1575652            | QC         |      | <2  |
| 1575686                | Drill Core | 2.22 | <2  |
| REP 1575686            | QC         |      | <2  |
| 1575740                | Drill Core | 2.71 | 4   |
| REP 1575740            | QC         |      | 5   |
| 1575755                | Drill Core | 2.17 | 20  |
| REP 1575755            | QC         |      | 26  |
| Core Reject Duplicates |            |      |     |
| 1575666                | Drill Core | 2.83 | <2  |
| DUP 1575666            | QC         |      | <2  |
| 1575701                | Drill Core | 3.38 | 26  |
| DUP 1575701            | QC         |      | 27  |
| 1575736                | Drill Core | 2.12 | <2  |
| DUP 1575736            | QC         |      | 3   |
| 1575771                | Drill Core | 2.92 | 29  |
| DUP 1575771            | QC         |      | 31  |
| Reference Materials    |            |      |     |
| STD OXD87              | Standard   |      | 404 |
| STD OXD87              | Standard   |      | 403 |
| STD OXD87              | Standard   |      | 415 |
| STD OXD87              | Standard   |      | 443 |
| STD OXD87              | Standard   |      | 395 |
| STD OXG99              | Standard   |      | 995 |
| STD OXG99              | Standard   |      | 928 |
| STD OXG99              | Standard   |      | 918 |
| STD OXG99              | Standard   |      | 959 |
| STD OXG99              | Standard   |      | 983 |



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## QUALITY CONTROL REPORT

WHI12000541.1

|                    |            | WGHT | 3B  |
|--------------------|------------|------|-----|
|                    |            | Wgt  | Au  |
|                    |            | kg   | ppb |
|                    |            | 0.01 | 2   |
| STD OXD87 Expected |            |      | 417 |
| STD OXG99 Expected |            |      | 932 |
| BLK                | Blank      |      | <2  |
| BLK                | Blank      |      | <2  |
| BLK                | Blank      |      | <2  |
| BLK                | Blank      |      | <2  |
| BLK                | Blank      |      | <2  |
| BLK                | Blank      |      | <2  |
| BLK                | Blank      |      | <2  |
| BLK                | Blank      |      | <2  |
| BLK                | Blank      |      | <2  |
| BLK                | Blank      |      | <2  |
| Prep Wash          |            |      |     |
| G1                 | Prep Blank |      | <2  |
| G1                 | Prep Blank |      | <2  |



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Submitted By: Mark Fekete

Receiving Lab: Canada-Whitehorse

Received: August 07, 2012

Report Date: August 20, 2012

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## CERTIFICATE OF ANALYSIS

WHI12000591.1

### CLIENT JOB INFORMATION

Project: BALLARAT  
Shipment ID: 201208041148  
P.O. Number  
Number of Samples: 81

### SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

| Method Code | Number of Samples | Code Description                                  | Test Wgt (g) | Report Status | Lab |
|-------------|-------------------|---------------------------------------------------|--------------|---------------|-----|
| R200-250    | 76                | Crush, split and pulverize 250 g rock to 200 mesh |              |               | WHI |
| 3B01        | 81                | Fire assay fusion Au by ICP-ES                    | 30           | Completed     | VAN |

### SAMPLE DISPOSAL

DISP-PLP Dispose of Pulp After 90 days  
DISP-RJT Dispose of Reject After 90 days

### ADDITIONAL COMMENTS

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

Invoice To: Stakeholder Gold Corp.  
203 - 680 Third Ave.  
Val D'Or QC J9P 1S5  
Canada

CC: Drew Macphail  
Marty Huber



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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**Project:** BALLARAT

**Report Date:** August 20, 2012

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## CERTIFICATE OF ANALYSIS

WHI12000591.1

|         | Method    | WGHT | 3B   |
|---------|-----------|------|------|
| Analyte | Wgt       | Au   |      |
| Unit    | kg        | ppb  |      |
| MDL     | 0.01      | 2    |      |
| 1575812 | Rock      | 3.46 | <2   |
| 1575813 | Rock      | 2.97 | <2   |
| 1575814 | Rock      | 2.00 | <2   |
| 1575815 | Rock      | 1.86 | <2   |
| 1575816 | Rock      | 2.64 | <2   |
| 1575817 | Rock      | 2.70 | <2   |
| 1575818 | Rock      | 1.80 | <2   |
| 1575819 | Rock      | 2.77 | <2   |
| 1575820 | Rock      | 2.67 | <2   |
| 1575821 | Rock      | 2.78 | <2   |
| 1575822 | Rock Pulp | 0.08 | 748  |
| 1575823 | Rock      | 3.20 | <2   |
| 1575824 | Rock      | 3.07 | <2   |
| 1575825 | Rock      | 3.19 | <2   |
| 1575826 | Rock      | 2.96 | <2   |
| 1575827 | Rock      | 3.58 | <2   |
| 1575828 | Rock      | 2.70 | <2   |
| 1575829 | Rock      | 3.00 | 6    |
| 1575830 | Rock      | 0.93 | <2   |
| 1575831 | Rock      | 2.59 | <2   |
| 1575832 | Rock      | 2.54 | <2   |
| 1575833 | Rock      | 3.21 | 10   |
| 1575834 | Rock      | 2.55 | 6    |
| 1575835 | Rock      | 2.37 | <2   |
| 1575836 | Rock      | 2.81 | <2   |
| 1575837 | Rock      | 3.11 | <2   |
| 1575838 | Rock      | 3.12 | <2   |
| 1575839 | Rock      | 2.21 | <2   |
| 1575840 | Rock Pulp | 0.07 | 1306 |
| 1575841 | Rock      | 2.04 | 35   |



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**Project:** BALLARAT  
**Report Date:** August 20, 2012

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## CERTIFICATE OF ANALYSIS

WHI12000591.1

|         | Method    | WGHT | 3B  |
|---------|-----------|------|-----|
|         | Analyte   | Wgt  | Au  |
|         | Unit      | kg   | ppb |
|         | MDL       | 0.01 | 2   |
| 1575842 | Rock      | 2.58 | 8   |
| 1575843 | Rock      | 2.78 | 4   |
| 1575844 | Rock      | 3.16 | <2  |
| 1575845 | Rock      | 2.85 | <2  |
| 1575846 | Rock      | 2.79 | <2  |
| 1575847 | Rock      | 3.24 | <2  |
| 1575848 | Rock      | 3.39 | <2  |
| 1575849 | Rock      | 1.45 | <2  |
| 1575850 | Rock      | 1.53 | <2  |
| 1575851 | Rock      | 1.95 | <2  |
| 1575852 | Rock      | 2.86 | <2  |
| 1575853 | Rock      | 2.96 | 10  |
| 1575854 | Rock      | 2.50 | <2  |
| 1575855 | Rock      | 1.86 | <2  |
| 1575856 | Rock      | 2.99 | <2  |
| 1575857 | Rock Pulp | 0.10 | 702 |
| 1575858 | Rock      | 3.26 | <2  |
| 1575859 | Rock      | 3.39 | <2  |
| 1575860 | Rock      | 3.08 | <2  |
| 1575861 | Rock      | 3.48 | <2  |
| 1575862 | Rock      | 3.27 | <2  |
| 1575863 | Rock      | 3.19 | <2  |
| 1575864 | Rock      | 3.00 | <2  |
| 1575865 | Rock      | 0.93 | <2  |
| 1575866 | Rock      | 2.85 | 10  |
| 1575867 | Rock      | 3.71 | <2  |
| 1575868 | Rock      | 2.95 | <2  |
| 1575869 | Rock      | 3.07 | <2  |
| 1575870 | Rock      | 2.46 | <2  |
| 1575871 | Rock      | 2.54 | <2  |



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## CERTIFICATE OF ANALYSIS

WHI12000591.1

|         | Method    | WGHT | 3B   |
|---------|-----------|------|------|
|         | Analyte   | Wgt  | Au   |
|         | Unit      | kg   | ppb  |
|         | MDL       | 0.01 | 2    |
| 1575872 | Rock      | 3.27 | <2   |
| 1575873 | Rock      | 2.80 | <2   |
| 1575874 | Rock      | 3.20 | <2   |
| 1575875 | Rock Pulp | 0.08 | 1255 |
| 1575876 | Rock      | 2.55 | <2   |
| 1575877 | Rock      | 3.25 | <2   |
| 1575878 | Rock      | 2.84 | <2   |
| 1575879 | Rock      | 3.22 | <2   |
| 1575880 | Rock      | 3.41 | <2   |
| 1575881 | Rock      | 2.62 | <2   |
| 1575882 | Rock      | 3.30 | <2   |
| 1575802 | Rock      | 3.32 | <2   |
| 1575803 | Rock      | 2.74 | <2   |
| 1575804 | Rock      | 3.47 | <2   |
| 1575805 | Rock Pulp | 0.08 | 1358 |
| 1575806 | Rock      | 3.18 | <2   |
| 1575807 | Rock      | 1.82 | <2   |
| 1575808 | Rock      | 4.05 | <2   |
| 1575809 | Rock      | 3.45 | <2   |
| 1575810 | Rock      | 3.75 | <2   |
| 1575811 | Rock      | 3.38 | <2   |



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## QUALITY CONTROL REPORT

WHI12000591.1

| Method                 | WGHT     | 3B      |
|------------------------|----------|---------|
| Analyte                | Wgt      | Au      |
| Unit                   | kg       | ppb     |
| MDL                    | 0.01     | 2       |
| Pulp Duplicates        |          |         |
| 1575816                | Rock     | 2.64 <2 |
| REP 1575816            | QC       | <2      |
| 1575850                | Rock     | 1.53 <2 |
| REP 1575850            | QC       | <2      |
| 1575882                | Rock     | 3.30 <2 |
| REP 1575882            | QC       | <2      |
| Core Reject Duplicates |          |         |
| 1575833                | Rock     | 3.21 10 |
| DUP 1575833            | QC       | 11      |
| 1575868                | Rock     | 2.95 <2 |
| DUP 1575868            | QC       | <2      |
| Reference Materials    |          |         |
| STD OXD87              | Standard | 415     |
| STD OXD87              | Standard | 411     |
| STD OXD87              | Standard | 397     |
| STD OXD87              | Standard | 419     |
| STD OXG99              | Standard | 970     |
| STD OXG99              | Standard | 920     |
| STD OXG99              | Standard | 866     |
| STD OXG99              | Standard | 971     |
| STD OXD87 Expected     |          | 417     |
| STD OXG99 Expected     |          | 932     |
| BLK                    | Blank    | <2      |
| BLK                    | Blank    | <2      |
| BLK                    | Blank    | <2      |
| BLK                    | Blank    | <2      |
| BLK                    | Blank    | <2      |
| BLK                    | Blank    | <2      |



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## QUALITY CONTROL REPORT

WHI12000591.1

|           |            | WGHT | 3B  |
|-----------|------------|------|-----|
|           |            | Wgt  | Au  |
|           |            | kg   | ppb |
|           |            | 0.01 | 2   |
| BLK       | Blank      |      | <2  |
| BLK       | Blank      |      | <2  |
| Prep Wash |            |      |     |
| G1-WHI    | Prep Blank |      | <2  |
| G1-WHI    | Prep Blank |      | <2  |

## **Appendix D - Sample Standards**



**ORE RESEARCH & EXPLORATION PTY LTD**

6-8 Gatwick Drive, Bayswater North, Vic 3153 AUSTRALIA

Telephone: 61-3-9729 0333 Facsimile: 61-3-9729 4777

---

**CERTIFICATE OF ANALYSIS FOR**

**Au-Ag-Cu ORE REFERENCE MATERIAL**

**OREAS 66a**

**SUMMARY STATISTICS**

| Constituent<br>(ppm) | Certified<br>Value | 1SD   | 95% Confidence Interval |       |
|----------------------|--------------------|-------|-------------------------|-------|
|                      |                    |       | Low                     | High  |
| Gold, Au             | 1.237              | 0.054 | 1.211                   | 1.263 |
| Silver, Ag           | 18.9               | 1.2   | 18.4                    | 19.4  |
| Copper, Cu           | 121                | 7     | 117                     | 124   |

Prepared by:

*ORE Research & Exploration Pty Ltd*

*August 2009*

## INTRODUCTION

OREAS reference materials (RM) are intended to provide a low cost method of evaluating and improving the quality of precious and base metal analysis of geological samples. To the explorationist, they provide an important control in analytical data sets related to exploration from the grass roots level through to resource definition. To the mine geologist, they provide a tool for grade control in routine mining operations. To the analyst, they provide an effective means of calibrating analytical equipment, assessing new techniques and routinely monitoring in-house procedures.

## SOURCE MATERIALS

OREAS 66a was prepared from gold-silver ore from Martabe, North Sumatra, Indonesia blended with fresh alkali olivine basalt from the Newer Volcanics Province, Victoria, Australia. Martabe is an epithermal high sulphidation gold deposit hosted by a sequence of tertiary volcanic and sedimentary rocks near a fault splay of the Great Sumatran Fault complex. The approximate major and trace element composition of OREAS 66a is given in Table 1. The constituents SiO<sub>2</sub> to Total are the means of duplicate XRF analyses determined using a borate fusion method, S and C are means of duplicate IR combustion furnace analyses, while the remaining constituents, Ag to Zr, are means of duplicate 4-acid digestion ICP-MS analyses (except for Pb where ICP-OES was used).

Gold homogeneity has been evaluated and confirmed by instrumental neutron activation analysis (INAA) on twenty 0.5 gram sample portions and by a nested ANOVA program on the fire assay data. The tolerance interval for Au is determined from the INAA data while the certified value and confidence interval are based on the fire assay results of a round robin program incorporating a total of 134 analyses at 19 laboratories.

## COMMUNUTION AND HOMOGENISATION PROCEDURES

OREAS 66a was prepared in the following manner:

- a) *jaw crushing to minus 3mm;*
- b) *drying to constant mass at 105°C;*
- c) *multi-stage milling of the ore component to 100% minus 30 microns;*
- d) *multi-stage milling of the basalt component to 100% minus 75 microns;*
- e) *blending and bagging into 25kg sublots;*
- f) *packaging into 60g units in laminated foil pouches and 1kg units in plastic jars*

## ANALYSIS OF OREAS 66a

Nineteen laboratories participated in the analytical program to characterise gold and seventeen for silver and copper. They are listed in the section headed 'Participating Laboratories'. To maintain anonymity these laboratories have been randomly designated the letter codes A through T. With the exception of Laboratory T each laboratory received two scoop-split 100 gram subsamples from each of three 1kg test units (6 samples total) taken at regular intervals during the bagging stage (20 test units in total). For each sample labs were requested to carry out one 30-50 gram fire assay determination for gold (with new pots) and one 4-acid digest determination for silver and copper using their preferred finish. The nested design of the interlaboratory programme is amenable to analysis of variance (ANOVA) and enables a comparative assessment of within- and between-unit homogeneity (see 'ANOVA study' section).

Table 1. Approximate major and trace element composition of gold-bearing reference material OREAS 66a; wt.% - weight percent; ppm - parts per million.

| Constituent                    | wt. %  | Constituent | ppm   | Constituent | ppm  | Constituent | ppm  |
|--------------------------------|--------|-------------|-------|-------------|------|-------------|------|
| SiO <sub>2</sub>               | 73.6   | Ag          | 18.8  | Gd          | 2.9  | Sb          | 64   |
| TiO <sub>2</sub>               | 0.83   | As          | 282   | Hf          | 1.9  | Sc          | 9    |
| Al <sub>2</sub> O <sub>3</sub> | 8.49   | Ba          | 808.5 | Ho          | 0.4  | Sm          | 3.35 |
| Fe <sub>2</sub> O <sub>3</sub> | 6.745  | Be          | 0.6   | In          | 0.48 | Sn          | 3.50 |
| MnO                            | 0.04   | Bi          | 10.2  | La          | 17.6 | Sr          | 488  |
| MgO                            | 1.82   | Cd          | 1     | Li          | 14.8 | Ta          | 0.4  |
| CaO                            | 2.32   | Ce          | 33.6  | Lu          | 0.21 | Tb          | 0.40 |
| Na <sub>2</sub> O              | 0.85   | Co          | 18    | Mo          | 5.5  | Te          | 9.6  |
| K <sub>2</sub> O               | 0.355  | Cs          | 0.5   | Nb          | 6.8  | Th          | 4.1  |
| P <sub>2</sub> O <sub>5</sub>  | 0.1635 | Cu          | 119   | Nd          | 16.0 | U           | 1.4  |
| LOI                            | 4.16   | Dy          | 2.15  | Ni          | 59   | W           | 10.5 |
| Total                          | 102.25 | Er          | 1.23  | Pb          | 260  | Y           | 10.3 |
| C                              | 0.03   | Eu          | 0.98  | Pr          | 4    | Yb          | 1.3  |
| S                              | 1.075  | Ga          | 17.4  | Rb          | 8    | Zn          | 91   |
|                                |        |             |       |             |      | Zr          | 75   |

For the determination of a statistical tolerance interval, a 10 gram scoop split was taken from each of the twenty test units and submitted to 'Lab T' for gold assay via instrumental neutron activation analysis on a reduced analytical subsample weight of 0.5 gram.

Individual assay results for gold via fire assay and INAA are presented in Tables 2 and 3, respectively, and results for silver and copper are presented in Table 4 and 5, respectively. These results are shown together with the mean, median, standard deviations (absolute and relative) and percent deviation of the lab mean from the corrected mean of means for each data set (PDM<sup>3</sup>). The analytical methods employed by each laboratory are given in the table captions. For gold, interlaboratory agreement of the fire assay means is good with all labs lying within 8.6% relative of the corrected mean of means (certified value) of 1.237 ppm Au. For silver, interlaboratory agreement of the lab means is good with all labs lying within 9.4% relative of the certified value of 18.9 ppm Ag. For copper interlaboratory agreement of the lab means is good with 14 labs within 7.8% relative of the certified value of 121 ppm Cu and 3 labs at +12.09%, +12.78% and -16.66% relative of the certified value.

Table 2. Analytical results for gold in OREAS 66a (FA - fire assay; AAS - flame atomic absorption spectrometry; OES - inductively coupled plasma optical emission spectrometry; GRAV - gravimetry; Std.Dev. - one sigma standard deviation; Rel.Std.Dev. - one sigma relative standard deviation; PDM<sup>3</sup> - percent deviation of lab mean from corrected mean of means; outliers in bold and left justified; sample charge weights shown in row 3; values in ppm).

| Replicate No.    | Lab A<br>FA*AAS<br>30g | Lab B<br>FA*AAS<br>30g | Lab C<br>FA*AAS<br>30g | Lab D<br>FA*AAS<br>25g | Lab E<br>FA*AAS<br>50g | Lab F<br>FA*AAS<br>30g | Lab G<br>FA*OES<br>30g | Lab H<br>FA*AAS<br>50g | Lab I<br>FA*OES<br>40g |
|------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| 1                | 1.18                   | 1.18                   | 1.25                   | 1.27                   | 1.25                   | 1.28                   | 1.19                   | 1.17                   | 1.25                   |
| 2                | 1.21                   | 1.19                   | 1.31                   | 1.23                   | 1.24                   | 1.31                   | 1.19                   | 1.20                   | 1.24                   |
| 3                | 1.17                   | 1.20                   | 1.31                   | 1.27                   | 1.27                   | 1.31                   | 1.24                   | 1.18                   | 1.28                   |
| 4                | 1.16                   | 1.19                   | 1.31                   | 1.27                   | 1.24                   | 1.32                   | 1.23                   | 1.23                   | 1.26                   |
| 5                | 1.16                   | 1.18                   | 1.32                   | 1.26                   | 1.24                   | 1.29                   | 1.19                   | 1.20                   | 1.25                   |
| 6                | 1.20                   | 1.18                   | 1.36                   | 1.24                   | 1.26                   | 1.29                   | 1.19                   | 1.18                   | 1.28                   |
| Mean             | 1.18                   | 1.19                   | 1.31                   | 1.26                   | 1.25                   | 1.30                   | 1.21                   | 1.19                   | 1.26                   |
| Median           | 1.18                   | 1.19                   | 1.31                   | 1.27                   | 1.25                   | 1.30                   | 1.19                   | 1.19                   | 1.26                   |
| Std.Dev.         | 0.02                   | 0.01                   | 0.04                   | 0.02                   | 0.01                   | 0.02                   | 0.02                   | 0.02                   | 0.02                   |
| Rel.Std.Dev.     | 1.78%                  | 0.85%                  | 2.83%                  | 1.39%                  | 1.01%                  | 1.19%                  | 1.95%                  | 1.81%                  | 1.33%                  |
| PDM <sup>3</sup> | -4.62%                 | -4.04%                 | 5.76%                  | 1.58%                  | 1.04%                  | 5.08%                  | -2.60%                 | -3.54%                 | 1.85%                  |

Table 2. Continued

| Replicate No.    | Lab J<br>FA*AAS<br>30g | Lab K<br>FA*AAS<br>30g | Lab L<br>FA*AAS<br>30g | Lab M<br>FA*AAS<br>30g | Lab N<br>FA*AAS<br>30g | Lab O<br>FA*AAS<br>30g | Lab P<br>FA*AAS<br>40g | Lab Q<br>FA*AAS<br>30g | Lab R<br>FA*OES<br>25g | Lab S<br>FA*AAS<br>30g |
|------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| 1                | 1.19                   | 1.27                   | 1.25                   | 1.26                   | 1.21                   | 1.38                   | 1.26                   | 1.29                   | 1.19                   | 1.11                   |
| 2                | 1.17                   | 1.27                   | 1.27                   | 1.26                   | 1.22                   | 1.20                   | 1.27                   | 1.29                   | 1.21                   | 1.21                   |
| 3                | 1.13                   | 1.24                   | 1.28                   | 1.25                   | 1.22                   | 1.30                   | 1.24                   | 1.27                   | 1.19                   | 1.18                   |
| 4                | 1.12                   | 1.26                   | 1.26                   | 1.28                   | 1.24                   | 1.24                   | 1.23                   | 1.25                   | 1.22                   | 1.09                   |
| 5                | 1.13                   | 1.24                   | 1.24                   | 1.27                   | 1.22                   | 1.34                   | 1.22                   | 1.19                   | 1.23                   | 1.11                   |
| 6                | 1.13                   | 1.23                   | 1.25                   | 1.27                   | 1.21                   | 1.24                   | 1.23                   | 1.21                   | 1.21                   | 1.09                   |
| Mean             | 1.15                   | 1.25                   | 1.25                   | 1.26                   | 1.22                   | 1.28                   | 1.24                   | 1.25                   | 1.21                   | 1.13                   |
| Median           | 1.13                   | 1.25                   | 1.25                   | 1.26                   | 1.22                   | 1.27                   | 1.24                   | 1.26                   | 1.21                   | 1.11                   |
| Std.Dev.         | 0.03                   | 0.02                   | 0.01                   | 0.01                   | 0.01                   | 0.07                   | 0.02                   | 0.04                   | 0.02                   | 0.05                   |
| Rel.Std.Dev      | 2.45%                  | 1.46%                  | 1.19%                  | 0.89%                  | 0.90%                  | 5.35%                  | 1.56%                  | 3.36%                  | 1.33%                  | 4.50%                  |
| PDM <sup>3</sup> | -7.45%                 | 0.97%                  | 1.38%                  | 2.05%                  | -1.38%                 | 3.74%                  | 0.37%                  | 1.04%                  | -2.33%                 | -8.60%                 |

Table 3. Analytical results for gold in OREAS 66a by INAA (instrumental neutron activation analysis on 0.5 gram analytical subsample weights; other abbreviations as for Table 2).

| Replicate No.    | Lab T<br>INAA<br>0.5g |
|------------------|-----------------------|
| 1                | 1.36                  |
| 2                | 1.32                  |
| 3                | 1.32                  |
| 4                | 1.36                  |
| 5                | 1.39                  |
| 6                | 1.36                  |
| 7                | 1.38                  |
| 8                | 1.38                  |
| 9                | 1.35                  |
| 10               | 1.35                  |
| 11               | 1.36                  |
| 12               | 1.37                  |
| 13               | 1.39                  |
| 14               | 1.37                  |
| 15               | 1.35                  |
| 16               | 1.35                  |
| 17               | 1.35                  |
| 18               | 1.34                  |
| 19               | 1.34                  |
| 20               | 1.35                  |
| Mean             | 1.36                  |
| Median           | 1.36                  |
| Std.Dev.         | 0.02                  |
| Rel.Std.Dev.     | 1.44%                 |
| PDM <sup>3</sup> | 9.69%                 |

Table 4. Analytical results for silver in OREAS 66a (4A - four acid digest (HNO<sub>3</sub>-HClO<sub>4</sub>-HCl-HF); AAS - flame atomic absorption spectrometry; OES - inductively coupled plasma optical emission spectrometry; MS - inductively coupled plasma mass spectrometry; other abbreviations as for Table 2; values in ppm).

| Replicate No.    | Lab A<br>4A*OES | Lab B<br>4A*OES | Lab C<br>4A*MS | Lab D<br>4A*AAS | Lab E<br>4A*OES | Lab F<br>4A*OES | Lab G<br>4A*OES | Lab H<br>4A*OES | Lab I<br>4A*MS |
|------------------|-----------------|-----------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------|
| 1                | 20.5            | 19.0            | 19.2           | 17.0            | 20.5            | 17.4            | 19.0            | 18.8            | 18.5           |
| 2                | 20.2            | 21.0            | <b>19.8</b>    | 18.0            | 20.0            | 18.1            | 20.0            | 19.0            | 19.0           |
| 3                | <b>19.5</b>     | <b>22.0</b>     | 19.4           | 18.0            | 20.3            | 17.2            | 18.0            | 19.0            | 18.0           |
| 4                | 20.3            | 20.0            | 19.3           | 18.0            | 20.6            | 17.3            | 17.0            | 18.9            | 18.0           |
| 5                | 20.6            | 19.0            | 19.1           | 18.0            | 20.4            | 17.5            | 19.0            | 18.8            | 18.0           |
| 6                | 20.4            | 19.0            | 19.1           | 18.0            | 20.0            | 17.8            | 18.0            | 19.2            | 19.0           |
| Mean             | 20.3            | 20.0            | 19.3           | 17.8            | 20.3            | 17.6            | 18.5            | 19.0            | 18.4           |
| Median           | 20.4            | 19.5            | 19.2           | 18.0            | 20.4            | 17.5            | 18.5            | 19.0            | 18.3           |
| Std.Dev.         | 0.4             | 1.3             | 0.3            | 0.4             | 0.3             | 0.3             | 1.0             | 0.2             | 0.5            |
| Rel.Std.Dev.     | 1.94%           | 6.32%           | 1.40%          | 2.29%           | 1.25%           | 1.93%           | 5.67%           | 0.80%           | 2.67%          |
| PDM <sup>3</sup> | 7.20%           | 5.87%           | 2.12%          | -5.60%          | 7.46%           | -7.10%          | -2.07%          | 0.32%           | -2.51%         |

Table 4. Continued

| Replicate No.    | Lab J<br>4A*OES | Lab L<br>4A*AAS | Lab N<br>4A*AAS | Lab O<br>4A*OES | Lab P<br>4A*OES | Lab Q<br>4A*OES | Lab R<br>4A*OES | Lab S<br>4A*AAS |
|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| 1                | 18.1            | 18.2            | 16.3            | 18.7            | 21.0            | 18.1            | 20.6            | 19.6            |
| 2                | <b>22.9</b>     | 17.9            | 16.7            | 18.6            | 21.0            | 18.4            | 20.2            | 20.5            |
| 3                | 18.6            | 19.1            | 16.4            | 18.8            | 21.0            | 18.8            | 20.3            | 19.5            |
| 4                | 17.6            | 18.7            | 16.8            | 19.3            | 20.0            | 19.4            | 20.6            | 15.6            |
| 5                | 17.6            | 18.7            | 18.5            | 18.3            | 21.0            | 19.2            | 20.3            | 16.7            |
| 6                | 18.4            | 18.5            | 19.0            | 18.9            | 20.0            | 18.9            | 20.0            | 16.0            |
| Mean             | 18.9            | 18.5            | 17.3            | 18.8            | 20.7            | 18.8            | 20.3            | 18.0            |
| Median           | 18.3            | 18.6            | 16.8            | 18.8            | 21.0            | 18.9            | 20.3            | 18.1            |
| Std.Dev.         | 2.0             | 0.4             | 1.2             | 0.3             | 0.5             | 0.5             | 0.2             | 2.1             |
| Rel.Std.Dev.     | 10.69%          | 2.28%           | 6.72%           | 1.77%           | 2.50%           | 2.58%           | 1.15%           | 11.79%          |
| PDM <sup>3</sup> | -0.13%          | -1.98%          | -8.51%          | -0.66%          | 9.40%           | -0.48%          | 7.64%           | -4.86%          |

Table 5. Analytical results for copper in OREAS 66a (4A - four acid digest (HNO<sub>3</sub>-HClO<sub>4</sub>-HCl-HF); AAS - flame atomic absorption spectrometry; OES - inductively coupled plasma optical emission spectrometry; MS - inductively coupled plasma mass spectrometry; other abbreviations as for Table 2; values in ppm).

| Replicate No.    | Lab A<br>4A*OES | Lab B<br>4A*OES | Lab C<br>4A*MS | Lab D<br>4A*AAS | Lab E<br>4A*OES | Lab F<br>4A*OES | Lab G<br>4A*OES | Lab H<br>4A*OES | Lab I<br>4A*OES |
|------------------|-----------------|-----------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| 1                | 139             | 113             | 115            | <b>111</b>      | 124             | 118             | 110             | 121             | 122             |
| 2                | 135             | 110             | 115            | 114             | 125             | 116             | 110             | 122             | 126             |
| 3                | <b>129</b>      | 111             | 116            | 115             | 126             | 116             | 110             | 123             | 126             |
| 4                | 136             | 110             | 114            | 116             | 128             | 115             | 120             | 122             | 124             |
| 5                | 137             | 112             | 113            | 115             | 126             | 115             | 110             | 122             | 124             |
| 6                | 135             | 111             | 114            | 116             | 124             | 119             | 110             | 123             | 120             |
| Mean             | 135             | 111             | 114            | 115             | 126             | 117             | 112             | 122             | 124             |
| Median           | 136             | 111             | 114            | 115             | 126             | 116             | 110             | 122             | 124             |
| Std.Dev.         | 3               | 1               | 1              | 2               | 2               | 2               | 4               | 1               | 2               |
| Rel.Std.Dev.     | 2.49%           | 1.05%           | 1.02%          | 1.63%           | 1.21%           | 1.41%           | 3.66%           | 0.62%           | 1.89%           |
| PDM <sup>3</sup> | 12.09%          | -7.82%          | -5.33%         | -5.05%          | 4.07%           | -3.39%          | -7.40%          | 1.31%           | 2.55%           |

Table 5. Continued

| Replicate No.    | Lab J<br>4A*OES | Lab L<br>4A*AAS | Lab N<br>4A*AAS | Lab O<br>4A*OES | Lab P<br>4A*OES | Lab Q<br>4A*OES | Lab R<br>4A*OES | Lab S<br>4A*AAS |
|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| 1                | 130             | NR              | 121             | NR              | 120             | 122             | 121             | 128             |
| 2                | 157             | NR              | 120             | NR              | 120             | 121             | 120             | 127             |
| 3                | 133             | NR              | 123             | NR              | 120             | 123             | 122             | 127             |
| 4                | 127             | NR              | 125             | NR              | 120             | 122             | 118             | 127             |
| 5                | 135             | NR              | 123             | NR              | 120             | 121             | 119             | 127             |
| 6                | 134             | NR              | 122             | NR              | 120             | 121             | 120             | 126             |
| Mean             | 136             |                 | 122             |                 | 120             | 122             | 120             | 127             |
| Median           | 134             |                 | 123             |                 | 120             | 122             | 120             | 127             |
| Std.Dev.         | 11              |                 | 2               |                 | 0               | 1               | 1               | 1               |
| Rel.Std.Dev.     | 7.86%           |                 | 1.43%           |                 | 0.00%           | 0.67%           | 1.18%           | 0.50%           |
| PDM <sup>3</sup> | 12.78%          |                 | 1.44%           |                 | -0.49%          | 0.89%           | -0.49%          | 5.31%           |

## STATISTICAL EVALUATION OF ANALYTICAL DATA FOR OREAS 66a

### Certified Value and Confidence Limits

The certified value was determined from the mean of means of accepted replicate values of accepted laboratory data sets A to T according to the formulae

$$\bar{x}_i = \frac{1}{n_i} \sum_{j=1}^{n_i} x_{ij}$$

$$\bar{\dot{x}} = \frac{1}{p} \sum_{i=1}^p \bar{x}_i$$

where

$x_{ij}$  is the  $j$ th result reported by laboratory  $i$ ;

$p$  is the number of participating laboratories;

$n_i$  is the number of results reported by laboratory  $i$ ;

$\bar{x}_i$  is the mean for laboratory  $i$ ;

$\bar{\dot{x}}$  is the mean of means.

The confidence limits were obtained by calculation of the variance of the consensus value (mean of means) and reference to Student's- $t$  distribution with degrees of freedom  $(p-1)$ :

$$\hat{V}(\ddot{x}) = \frac{1}{p(p-1)} \sum_{i=1}^p (\bar{x}_i - \bar{\dot{x}})^2$$

$$\text{Confidence limits} = \bar{\dot{x}} \pm t_{1-x/2}(p-1) \left( \hat{V}(\ddot{x}) \right)^{1/2}$$

where  $t_{1-x/2}(p-1)$  is the  $1-x/2$  fractile of the  $t$ -distribution with  $(p-1)$  degrees of freedom.

The distribution of the values is assumed to be symmetrical about the mean in the calculation of the confidence limits.

The test for rejection of individual outliers from each laboratory data set was based on  $z$  scores (rejected if  $|z_i| > 2.5$ ) computed from the robust estimators of location and scale,  $T$  and  $S$ , respectively, according to the formulae

$$S = 1.483 \text{ median}_{j=1 \dots n} / x_j - \text{median}_{i=1 \dots n} (x_i) /$$

$$z_i = \frac{x_i - T}{S}$$

where

*T is the median value in a data set;*

*S is the median of all absolute deviations from the sample median multiplied by 1.483, a correction factor to make the estimator consistent with the usual parameter of a normal distribution.*

The z-score test is used in combination with a second method of individual outlier detection that determines the percent deviation of the individual value from the median. Outliers in general are selected on the basis of z-scores > 2.5 and with percent deviations > 1.5%. In certain instances statistician's prerogative has been employed in discriminating outliers.

Each laboratory data set is tested for outlying status based on z-score discrimination and rejected if  $|z_i| > 2.5$ . After individual and entire lab data set outliers have been eliminated a non-iterative 3 standard deviation filter is applied, with those values lying outside this window also relegated to outlying status.

Individual outliers and, more rarely, laboratory means deemed to be outlying are shown left justified and in bold in the tabulated results (Tables 2 to 5) and have been omitted in the determination of certified values.

The magnitude of the confidence interval is inversely proportional to the number of participating laboratories and interlaboratory agreement. It is a measure of the reliability of the certified value, i.e. the narrower the confidence interval the greater the certainty in the certified value (Table 6).

Table 6. Certified Value and 95% Confidence Interval

| Constituent      | Certified Value | 95% Confidence Interval |       |
|------------------|-----------------|-------------------------|-------|
|                  |                 | Low                     | High  |
| Gold, Au (ppm)   | 1.237           | 1.211                   | 1.263 |
| Silver, Ag (ppm) | 18.9            | 18.4                    | 19.4  |
| Copper, Cu (ppm) | 121             | 117                     | 124   |

Note: intervals may appear asymmetric due to rounding

### Statement of Homogeneity

The variability of replicate assays from each laboratory is a result of both measurement and subsampling errors. In the determination of a statistical tolerance interval it is therefore necessary to eliminate, or at least substantially minimise, those errors attributable to measurement. One way of achieving this is by substantially reducing the analytical subsample weight to a point where most of the variability in replicate assays is due to inhomogeneity of the reference material and measurement error becomes negligible. This approach was adopted in the INAA gold data set (Table 3) where a 0.5 gram subsample weight was employed.

The homogeneity was determined from tables of factors for two-sided tolerance limits for normal distributions (ISO Guide 3207) in which

Lower limit is  $\bar{x} - k'_2(n, p, 1 - \alpha)s$

Upper limit is  $\bar{x} + k'_2(n, p, 1 - \alpha)s$

where

$n$  is the number of results reported by laboratory  $Q$ ;

$1 - \alpha$  is the confidence level;

$p$  is the proportion of results expected within the tolerance limits;

$k'_2$  is the factor for two-sided tolerance limits ( $m, \sigma$  unknown);

and  $s$  is computed according to the formula

$$s = \left[ \frac{\sum_{j=1}^n (x_j - \bar{x})^2}{n - 1} \right]^{1/2}$$

No individual outliers were removed from the results prior to the calculation of tolerance intervals.

Table 7. Certified Value and Tolerance Interval.

| Constituent      | Certified Value | Tolerance Interval<br>1- $\alpha$ =0.99, $p$ =0.95 |       |
|------------------|-----------------|----------------------------------------------------|-------|
|                  |                 | Low                                                | High  |
| Gold, Au (ppm)   | 1.237           | 1.230                                              | 1.244 |
| Silver, Ag (ppm) | 18.9            | 18.2                                               | 19.6  |
| Copper, Cu (ppm) | 121             | 118                                                | 124   |

Note: intervals may appear asymmetric due to rounding

From the INAA data set an estimated tolerance interval of  $\pm 0.007$  ppm at an analytical subsample weight of 30 gram was obtained (using the sampling constant relationship of Ingamells and Switzer, 1973) and is considered to reflect the actual homogeneity of the material under test. The meaning of this tolerance interval may be illustrated for gold (refer Table 7), where 99% of the time at least 95% of 30g-sized subsamples will have concentrations lying between 1.230 and 1.244 ppm. Put more precisely, this means that if the same number of subsamples were taken and analysed in the same manner repeatedly, 99% of the tolerance intervals so constructed would cover at least 95% of the total population, and 1% of the tolerance intervals would cover less than 95% of the total population (ISO Guide 35).

A different approach was used in estimating tolerance for silver and copper. The standard deviation of the pooled individual analyses of all participating laboratories includes error due to the imprecision of each analytical method, to possible inhomogeneity of the material under test and, in particular, to deficiencies in accuracy of each analytical method. In determining tolerance intervals for silver and copper that component of error attributable to measurement inaccuracy was eliminated by transformation of the individual results of each data set to a common mean (the uncorrected grand mean) according to the formula

$$x'_{ij} = x_{ij} - \bar{x}_i + \frac{\sum_{i=1}^p \sum_{j=1}^{n_i} x_{ij}}{\sum_{i=1}^p n_i}$$

where

$x_{ij}$  is the  $j$ th raw result reported by laboratory  $i$ ;  
 $x'_{ij}$  is the  $j$ th transformed result reported by laboratory  $i$ ;  
 $n_i$  is the number of results reported by laboratory  $i$ ;  
 $p$  is the number of participating laboratories;  
 $\bar{x}_i$  is the raw mean for laboratory  $i$ .

The homogeneity of each constituent was determined from tables of factors for two-sided tolerance limits for normal distributions (ISO 3207) in which

Lower limit is  $\ddot{x} - k'_2(n, p, 1 - \alpha) s''_g$

Upper limit is  $\ddot{x} + k'_2(n, p, 1 - \alpha) s''_g$

where

$n$  the number of results  
 $1 - \alpha$  is the confidence level;  
 $p$  is the proportion of results expected within tolerance limits;  
 $k'_2$  is the factor for two-sided tolerance limits ( $m, \alpha$  unknown);  
 $s''_g$  is the corrected grand standard deviation.

The corrected grand standard deviation,  $s''_g$ , used to compute the tolerance intervals is the weighted means of standard deviations of all data sets for a particular constituent according to the formula

$$s''_g = \frac{\sum_{i=1}^p (s_i (1 - \frac{s_i}{s'_g}))}{\sum_{i=1}^p (1 - \frac{s_i}{s'_g})}$$

where

$1 - (\frac{s_i}{2s'_g})$  is the weighting factor for laboratory  $i$ ;

$s'_g$  is the grand standard deviation computed from the transformed (i.e. means-adjusted) results.

according to the formula

$$s'_g = \left[ \frac{\sum_{i=1}^p \sum_{j=1}^{n_i} (x'_{ij} - \bar{x}'_i)^2}{\sum_{i=1}^p n_i - 1} \right]^{1/2}$$

where  $\bar{x}'_i$  is the transformed mean for laboratory  $i$

The weighting factors were applied to compensate for the considerable variation in analytical precision amongst participating laboratories. Hence, weighting factors for each data set have been constructed so as to be inversely proportional to the standard deviation of that data set. Outliers (shown in bold in Tables 4 and 5) were removed prior to the calculation of tolerance intervals and a weighting factor of zero was applied to those data sets where  $s_l / 2s_g' > 1$  (i.e. where the weighting factor  $1 - s_l / 2s_g' < 0$ ). It should be noted that estimates of tolerance by this method are considered conservative as a significant proportion of the observed variance, even in those laboratories exhibiting the best analytical precision, can presumably be attributed to measurement error.

### **ANOVA Study**

The sampling format for OREAS 66a was structured to enable nested ANOVA treatment of the round robin results. During the bagging stage, immediately following final homogenization, twenty 1kg samples were taken at regular intervals representative of the entire batch of OREAS 66a. Each laboratory received paired samples from three different, non-adjacent 1kg samples. For example, the six samples that any one of the nineteen participating labs could have received are:

- Sample 1 (from sampling interval 4)
- Sample 2 (from sampling interval 11)
- Sample 3 (from sampling interval 17)
- Sample 4 (from sampling interval 4)
- Sample 5 (from sampling interval 11)
- Sample 6 (from sampling interval 17)

The purpose of the ANOVA investigation was to compare the within-unit variance with that of the between-unit variance. This approach permitted an assessment of homogeneity across the entire batch of OREAS 66a. The test was performed using the following parameters:

- Significance Level  $\alpha = P$  (type I error) = 0.05
- Null Hypothesis,  $H_0$ : Between-unit variance is no greater than within-unit variance (reject  $H_0$  if p-value < 0.05)
- Alternative Hypothesis,  $H_1$ : Between-unit variance is greater than within-unit variance

P-values are a measure of probability whereby values less than 0.05 indicate a greater than 95% probability that the observed differences in within-unit and between-unit variances are real. The dataset was filtered for both individual and laboratory outliers prior to the calculation of the p-value. This process derived p-values of 1.00 for gold, 0.99 for silver and 0.95 for copper and indicates no evidence that between-unit variance is greater than within-unit variance. Conclusion: do not reject  $H_0$ . Note that ANOVA is not an absolute measure of homogeneity. Rather, it establishes that the metals are distributed in a similar manner throughout OREAS 66a and that the variance between two subsamples from the same unit is statistically indistinguishable to the variance from two subsamples taken from any two separate units.

### **Performance Gates**

Performance gates provide an indication of a level of performance that might reasonably be expected from a laboratory being monitored by this CRM in a QA/QC program. They take into account errors attributable to measurement and CRM variability. For an effective CRM the contribution of the latter should be negligible in comparison to measurement errors. Sources of measurement error include inter-lab bias and analytical precision (repeatability). Two methods have been employed to calculate performance gates. The first method uses the same filtered data set used to determine the certified value, i.e. after removal of all individual,

lab dataset (batch) and 3SD outliers. These outliers can only be removed after the absolute homogeneity of the CRM has been independently established, i.e. the outliers must be confidently deemed to be analytical rather than arising from inhomogeneity of the CRM. The standard deviation is then calculated for each analyte from the pooled individual analyses generated from the certification program. Table 8 shows performance gates calculated for two and three standard deviations. As a guide these intervals may be regarded as warning or rejection for multiple 2SD outliers, or rejection for individual 3SD outliers in QC monitoring, although their precise application should be at the discretion of the QC manager concerned. A second method utilises a 5% window calculated directly from the certified value. Standard deviation is also shown in relative percent for one, two and three relative standard deviations (1RSD, 2RSD and 3RSD) to facilitate an appreciation of the magnitude of these numbers and a comparison with the 5% window. Caution should be exercised when concentration levels approach lower limits of detection of the analytical methods employed as performance gates calculated from standard deviations tend to be excessively wide whereas those determined by the 5% method are too narrow.

Table 8. Performance Gates for OREAS 66a

| Constituent | Certified Value | Absolute Standard Deviations |         |          |         |          | Relative Standard Deviations |        |        | 5% window |       |
|-------------|-----------------|------------------------------|---------|----------|---------|----------|------------------------------|--------|--------|-----------|-------|
|             |                 | 1SD                          | 2SD Low | 2SD High | 3SD Low | 3SD High | 1RSD                         | 2RSD   | 3RSD   | Low       | High  |
| Au (ppm)    | 1.237           | 0.054                        | 1.129   | 1.345    | 1.075   | 1.399    | 4.37%                        | 8.74%  | 13.11% | 1.175     | 1.299 |
| Ag (ppm)    | 18.9            | 1.2                          | 16.4    | 21.4     | 15.2    | 22.6     | 6.55%                        | 13.10% | 19.65% | 17.9      | 19.8  |
| Cu (ppm)    | 121             | 7                            | 107     | 134      | 100     | 141      | 5.68%                        | 11.36% | 17.05% | 115       | 127   |

Note: intervals may appear asymmetric due to rounding

## PARTICIPATING LABORATORIES

Accurassay Laboratories, Thunder Bay, ON, Canada  
 Acme Analytical Laboratories, Vancouver, BC, Canada  
 Activation Laboratories, Ancaster, ON, Canada  
 Amdel Laboratories, Adelaide, SA, Australia  
 Alaska Assay Laboratories, Fairbanks, AK, United States of America  
 ALS Chemex, Perth, WA, Australia  
 ALS Chemex, Townsville, QLD, Australia  
 ALS Chemex, La Serena, Chile, South America  
 ALS Chemex, Sparks, Nevada, USA  
 ALS Chemex, Val-d'or, Quebec, Canada  
 ALS Chemex, Vancouver, BC, Canada  
 Genalysis Laboratory Services, Perth, WA, Australia  
 Intertek Testing Services, Jakarta, Indonesia  
 OMAC Laboratories, Loughrea, County Galway, Ireland  
 SGS Lakefield Research, Lakefield, ON, Canada  
 SGS, Townsville, QLD, Australia  
 SGS Australia, Perth, WA, Australia  
 Ultra Trace, Perth, WA, Australia  
 Zarazma Mineral Studies Company, Tehran, Iran

## **PREPARER AND SUPPLIER OF THE REFERENCE MATERIAL**

Gold-silver-copper ore reference material OREAS 66a has been prepared and certified, and is supplied by:

Ore Research & Exploration Pty Ltd  
6-8 Gatwick Road  
Bayswater North, VIC 3153  
AUSTRALIA

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It is available in unit sizes of 60g foil packets and 1kg plastic jars.

## **INTENDED USE**

OREAS 66a is a reference material intended for the following:

- i) for the monitoring of laboratory performance in the analysis of gold, silver and copper in geological samples;
- ii) for the calibration of instruments used in the determination of the concentration of gold, silver and copper;
- iii) for the verification of analytical methods for gold, silver and copper;
- iv) for the preparation of secondary reference materials of similar composition.

## **STABILITY AND STORAGE INSTRUCTIONS**

OREAS 66a has been prepared from epithermal high sulphidation Au-Ag-Cu ore blended with barren basalt. The robust foil laminate film used in the 60g unit packaging is an effective barrier to oxygen and moisture and the sealed CRM is considered to have long-term stability under normal storage conditions.

## **INSTRUCTIONS FOR THE CORRECT USE OF THE REFERENCE MATERIAL**

The certified values for OREAS 66a refer to the concentration level of gold, silver and copper in their packaged state. Therefore it should not be dried prior to weighing and analysis.

## **LEGAL NOTICE**

Ore Research & Exploration Pty Ltd has prepared and statistically evaluated the property values of this reference material to the best of its ability. The Purchaser by receipt hereof releases and indemnifies Ore Research & Exploration Pty Ltd from and against all liability and costs arising from the use of this material and information.

## **CERTIFYING OFFICER**

Craig Hamlyn (B.Sc. Hons.), Geology

## **REFERENCES**

Ingamells, C. O. and Switzer, P. (1973), *Talanta* 20, 547-568.

ISO Guide 3207 (1975), Statistical interpretation of data - Determination of a statistical tolerance interval.

ISO Guide 35 (1985), Certification of reference materials - General and statistical principals.

ISO Guide 35 (2006), Reference materials- General and statistical principals for certification.

**CERTIFICATE OF ANALYSIS FOR**

**Au-Cu-Mo-Ag-S ORE REFERENCE MATERIAL**

**OREAS 503**

**Table 1. Certified Values, SDs, 95% Confidence and Tolerance Limits for OREAS 503**

| Method / Constituent | Certified Value | 1SD   | 95% Confidence Limits |       | 95% Tolerance Limits |        |
|----------------------|-----------------|-------|-----------------------|-------|----------------------|--------|
|                      |                 |       | Low                   | High  | Low                  | High   |
| Fire Assay           |                 |       |                       |       |                      |        |
| Gold, Au (ppm)       | 0.687           | 0.024 | 0.676                 | 0.697 | 0.683*               | 0.690* |
| 4-Acid Digestion     |                 |       |                       |       |                      |        |
| Copper, Cu (wt.%)    | 0.566           | 0.015 | 0.558                 | 0.573 | 0.554                | 0.577  |
| Molybdenum, Mo (ppm) | 390             | 18.9  | 381                   | 399   | 379                  | 400    |
| Silver, Ag (ppm)     | 1.63            | 0.12  | 1.56                  | 1.70  | 1.54                 | 1.73   |
| Sulphur, S (wt.%)    | 0.724           | 0.018 | 0.714                 | 0.734 | 0.703                | 0.746  |
| Aqua Regia Digestion |                 |       |                       |       |                      |        |
| Copper, Cu (wt.%)    | 0.563           | 0.013 | 0.557                 | 0.570 | 0.552                | 0.575  |
| Gold, Au (ppm)       | 0.658           | 0.046 | 0.624                 | 0.692 | 0.629                | 0.687  |
| Molybdenum, Mo (ppm) | 382             | 19.2  | 373                   | 391   | 375                  | 388    |
| Sulphur, S (wt.%)    | 0.716           | 0.035 | 0.698                 | 0.735 | 0.703                | 0.730  |

\*Tolerance Limits calculated from 20 x INAA analyses on 0.5g subsamples; Note: intervals may appear asymmetric due to rounding.

**Table 2. Indicative values for major and trace elements in OREAS 503**

| Method / Constituent                   | Unit | Value | Method / Constituent          | Unit | Value | Method / Constituent | Unit | Value |
|----------------------------------------|------|-------|-------------------------------|------|-------|----------------------|------|-------|
| <b>Borate Fusion XRF</b>               |      |       |                               |      |       |                      |      |       |
| Al <sub>2</sub> O <sub>3</sub>         | wt.% | 14.4  | MgO                           | wt.% | 2.8   | SiO <sub>2</sub>     | wt.% | 60.0  |
| CaO                                    | wt.% | 3.9   | MnO                           | wt.% | 0.08  | TiO <sub>2</sub>     | wt.% | 0.74  |
| Fe <sub>2</sub> O <sub>3</sub>         | wt.% | 8.4   | Na <sub>2</sub> O             | wt.% | 2.9   |                      |      |       |
| K <sub>2</sub> O                       | wt.% | 3.7   | P <sub>2</sub> O <sub>5</sub> | wt.% | 0.24  |                      |      |       |
| LOI                                    | wt.% | 1.8   | S                             | wt.% | 0.71  |                      |      |       |
| <b>Four Acid Digestion ICP-OES/MS</b>  |      |       |                               |      |       |                      |      |       |
| Al                                     | wt.% | 8.0   | Ho                            | ppm  | 0.8   | Sm                   | ppm  | 5.0   |
| As                                     | ppm  | 22    | In                            | ppm  | 0.4   | Sn                   | ppm  | 7.2   |
| Ba                                     | ppm  | 896   | K                             | wt.% | 2.8   | Sr                   | ppm  | 392   |
| Be                                     | ppm  | 2.7   | La                            | ppm  | 25    | Ta                   | ppm  | 0.9   |
| Bi                                     | ppm  | 2.6   | Li                            | ppm  | 31    | Tb                   | ppm  | 0.7   |
| Ca                                     | wt.% | 2.9   | Lu                            | ppm  | 0.3   | Te                   | ppm  | < 0.3 |
| Cd                                     | ppm  | 1.1   | Mg                            | wt.% | 1.8   | Th                   | ppm  | 12    |
| Ce                                     | ppm  | 50    | Mn                            | wt.% | 0.06  | Ti                   | wt.% | 0.47  |
| Co                                     | ppm  | 14    | Nb                            | ppm  | 15    | Tl                   | ppm  | 0.7   |
| Cr                                     | ppm  | 87    | Nd                            | ppm  | 25    | Tm                   | ppm  | 0.4   |
| Cs                                     | ppm  | 8.6   | Ni                            | ppm  | 53    | U                    | ppm  | 3.4   |
| Dy                                     | ppm  | 4.1   | P                             | wt.% | 0.10  | V                    | ppm  | 147   |
| Er                                     | ppm  | 2.4   | Pb                            | ppm  | 20    | W                    | ppm  | 3.1   |
| Eu                                     | ppm  | 1.3   | Pr                            | ppm  | 6.7   | Y                    | ppm  | 21    |
| Fe                                     | wt.% | 6.1   | Rb                            | ppm  | 120   | Yb                   | ppm  | 2.2   |
| Ga                                     | ppm  | 22    | Re                            | ppm  | <0.1  | Zn                   | ppm  | 97    |
| Gd                                     | ppm  | 5.4   | Sb                            | ppm  | 0.7   | Zr                   | ppm  | 79    |
| Hf                                     | ppm  | 2.2   | Sc                            | ppm  | 15    |                      |      |       |
| Hg                                     | ppm  | < 0.1 | Se                            | ppm  | 4.7   |                      |      |       |
| <b>Aqua Regia Digestion ICP-OES/MS</b> |      |       |                               |      |       |                      |      |       |
| Ag                                     | ppm  | 1.3   | Hg                            | ppm  | < 0.1 | Se                   | ppm  | 5.0   |
| Al                                     | wt.% | 2.0   | K                             | wt.% | 0.78  | Sn                   | ppm  | 6.0   |
| As                                     | ppm  | 18    | La                            | ppm  | 21    | Sr                   | ppm  | 67    |
| Ba                                     | ppm  | 246   | Li                            | ppm  | 27    | Ta                   | ppm  | < 0.4 |
| Be                                     | ppm  | < 1   | Mg                            | wt.% | 1.3   | Te                   | ppm  | < 0.3 |
| Bi                                     | ppm  | 2.5   | Mn                            | wt.% | 0.04  | Th                   | ppm  | 12    |
| Ca                                     | wt.% | 1.3   | Na                            | wt.% | 0.17  | Ti                   | wt.% | 0.27  |
| Cd                                     | ppm  | 0.4   | Nb                            | ppm  | 1.4   | U                    | ppm  | 3.1   |
| Ce                                     | ppm  | 43    | Ni                            | ppm  | 54    | V                    | ppm  | 111   |
| Co                                     | ppm  | 15    | P                             | wt.% | 0.09  | W                    | ppm  | 1.8   |
| Cr                                     | ppm  | 73    | Pb                            | ppm  | 12    | Y                    | ppm  | 13    |
| Fe                                     | wt.% | 5.3   | Rb                            | ppm  | 83    | Zn                   | ppm  | 84    |
| Ga                                     | ppm  | 11    | Sb                            | ppm  | 0.4   | Zr                   | ppm  | 11    |
| Hf                                     | ppm  | 0.6   | Sc                            | ppm  | 7.4   |                      |      |       |
| <b>Infra-red combustion furnace</b>    |      |       |                               |      |       |                      |      |       |
| C                                      | wt.% | 0.24  | S                             | wt.% | 0.73  |                      |      |       |
| <b>Fire Assay</b>                      |      |       |                               |      |       |                      |      |       |
| Pd                                     | ppb  | 5     | Pt                            | ppb  | 4     |                      |      |       |

## INTRODUCTION

OREAS reference materials are intended to provide a low cost method of evaluating and improving the quality of analysis of geological samples. To the geologist they provide a means of implementing quality control in analytical data sets generated in exploration from the grass roots level through to prospect evaluation, and in grade control at mining operations. To the analyst they provide an effective means of calibrating analytical equipment, assessing new techniques and routinely monitoring in-house procedures.

## SOURCE MATERIALS

OREAS 503 is a porphyry Au-Cu-Mo-Ag-S CRM prepared from Au-Cu ore and waste rock samples from a porphyry copper-gold deposit located in central western New South Wales, Australia with the addition of a minor quantity of Mo concentrate.

Mineralisation in the region is hosted by a sequence of late Ordovician to Early Silurian volcanics, intrusives and sediments that occur within the Bogan Gate Synclinal Zone of the Lachlan Fold Belt. The western portion of this zone is dominated by volcanics and host to the Late Ordovician Goonumbra porphyry copper-gold deposits. These volcanics are interpreted to have erupted from shallow water to partly emergent volcanic centres and show a broad range in composition from shoshonite through to latite to trachyte. Coeval sub-volcanic quartz monzonite porphyries (and attendant mineralisation) have intruded the volcanics. They are generally small, sub-vertical, pipe-like intrusives. Typically the mineralised porphyries contain plagioclase and quartz phenocrysts in a matrix of fine-grained potassium feldspar and quartz with minor biotite and hornblende.

Copper-gold mineralisation occurs as stockwork quartz veins and disseminations associated with potassic alteration. This alteration is intimately associated spatially and temporally with the small finger-like quartz monzonite porphyries that intrude the Goonumbra Volcanics. Sulphides are zoned laterally from the centres of mineralisation. The central portions are bornite-rich with minor chalcopyrite, zoning outward through equal concentrations of bornite and chalcopyrite, to an outermost chalcopyrite-rich zone. Pyrite increases outward at the expense of bornite.

The approximate major and trace element composition of OREAS 503 is given in Table 2. These constituents are the means of data from one or two laboratories.

## COMMINUTION AND HOMOGENISATION PROCEDURES

The material constituting OREAS 503 was prepared in the following manner:

- jaw crushing to minus 3mm;
- drying to constant mass at 105°C;
- multi-stage milling of ore and waste components to 100% minus 30 microns;
- combining in appropriate proportions to achieve target grades;
- homogenisation and bagging into 25kg sublots;
- packaging into 60g units in laminated foil pouches and 1kg units in plastic jars

## ANALYTICAL PROGRAM

Twenty commercial analytical laboratories participated in the program to characterise the elements reported in Table 1. The following methods were employed:

- Fire assay with ICP-OES, AAS or solvent extraction AAS finish (19 laboratories)
- Four acid digestion with ICP-OES, ICP-MS or AAS finish (19 labs; 10 for Ag)
- Aqua regia digestion with ICP-OES, ICP-MS or AAS finish (19 laboratories)

For the round robin program twenty 1kg test units were taken at predetermined intervals during the bagging stage and are considered representative of the entire batch. The six samples received by each laboratory were obtained by taking two 110g scoop splits from each of three separate 1kg test units. This format enabled nested ANOVA treatment of the results to evaluate homogeneity.

Results, together with uncorrected means, medians, standard deviations, relative standard deviations and percent deviation of lab means from the corrected mean of means (PDM<sup>3</sup>) are presented in the detailed certification report for this CRM (Hamlyn, 2011).

## STATISTICAL ANALYSIS

**Certified Values, Standard Deviations, Confidence and Tolerance Limits** have been determined for each analytical method following removal of individual and laboratory outliers (see Table 1). Certified Values are the mean of means after outlier filtering. The 95% Confidence Limit is a measure of the reliability of the certified value, i.e. the narrower the Confidence Interval the greater the certainty in the Certified Value. It should not be used as a control limit for laboratory performance. Indicative values (Table 2) are the means of data from one or two laboratories.

**Standard Deviation** values (1SDs) are reported in Table 1 and provide an indication of a level of performance that might reasonably be expected from a laboratory being monitored by this CRM in a QA/QC program. They take into account errors attributable to measurement uncertainty and CRM variability. For an effective CRM the contribution of the latter should be negligible in comparison to measurement errors. The Standard Deviation values include all sources of measurement uncertainty: between-lab variance, within-run variance (precision errors) and CRM variability. The SD for each analyte's certified value is calculated from the same filtered data set used to determine the certified value, i.e. after removal of all individual, lab dataset (batch) and 3SD outliers (single iteration). These outliers can only be removed after the absolute homogeneity of the CRM has been independently established, i.e. the outliers must be confidently deemed to be analytical rather than arising from inhomogeneity of the CRM. The standard deviation is then calculated for each analyte from the pooled accepted analyses generated from the certification program.

**Performance Gates** (Table 3) are calculated for two and three standard deviations. As a guide these intervals may be regarded as warning or rejection for multiple 2SD outliers, or rejection for individual 3SD outliers in QC monitoring, although their precise application should be at the discretion of the QC manager concerned. A second method utilises a 5% window calculated directly from the certified value. Standard deviation is also shown in relative percent for one, two and three relative standard deviations (1RSD, 2RSD and

3RSD) to facilitate an appreciation of the magnitude of these numbers and a comparison with the 5% window. Caution should be exercised when concentration levels approach lower limits of detection of the analytical methods employed as performance gates calculated from standard deviations tend to be excessively wide whereas those determined by the 5% method are too narrow.

**Table 3. Performance Gates for OREAS 503**

| Constituent          | Certified Value | Absolute Standard Deviations |         |          |         |          | Relative Standard Deviations |        |        | 5% window |       |
|----------------------|-----------------|------------------------------|---------|----------|---------|----------|------------------------------|--------|--------|-----------|-------|
|                      |                 | 1SD                          | 2SD Low | 2SD High | 3SD Low | 3SD High | 1RSD                         | 2RSD   | 3RSD   | Low       | High  |
| Fire Assay           |                 |                              |         |          |         |          |                              |        |        |           |       |
| Au, ppm              | 0.687           | 0.024                        | 0.638   | 0.735    | 0.614   | 0.760    | 3.54%                        | 7.09%  | 10.63% | 0.652     | 0.721 |
| Four Acid Digestion  |                 |                              |         |          |         |          |                              |        |        |           |       |
| Cu, wt.%             | 0.566           | 0.015                        | 0.536   | 0.596    | 0.521   | 0.611    | 2.65%                        | 5.30%  | 7.95%  | 0.537     | 0.594 |
| Mo, ppm              | 390             | 18.9                         | 352     | 427      | 333     | 446      | 4.84%                        | 9.69%  | 14.53% | 370       | 409   |
| Ag, ppm              | 1.63            | 0.12                         | 1.38    | 1.88     | 1.26    | 2.01     | 7.62%                        | 15.25% | 22.87% | 1.55      | 1.71  |
| S, wt.%              | 0.724           | 0.018                        | 0.687   | 0.761    | 0.669   | 0.779    | 2.54%                        | 5.08%  | 7.62%  | 0.688     | 0.760 |
| Aqua Regia Digestion |                 |                              |         |          |         |          |                              |        |        |           |       |
| Cu, wt.%             | 0.563           | 0.013                        | 0.537   | 0.590    | 0.523   | 0.604    | 2.38%                        | 4.76%  | 7.15%  | 0.535     | 0.592 |
| Au, ppm              | 0.658           | 0.046                        | 0.565   | 0.751    | 0.519   | 0.797    | 7.06%                        | 14.11% | 21.17% | 0.625     | 0.691 |
| Mo, ppm              | 382             | 19.2                         | 343     | 420      | 324     | 439      | 5.02%                        | 10.05% | 15.07% | 363       | 401   |
| S, wt.%              | 0.716           | 0.035                        | 0.645   | 0.787    | 0.610   | 0.822    | 4.94%                        | 9.88%  | 14.82% | 0.680     | 0.752 |

Note: intervals may appear asymmetric due to rounding

**Tolerance Limits** (ISO Guide 3207) for copper, molybdenum, silver and sulphur were determined using an analysis of precision errors method and are considered a conservative estimate of true homogeneity. For gold the tolerance has been determined by INAA using the reduced analytical subsample method which utilises the known relationship between standard deviation and analytical subsample weight (Ingamells and Switzer, 1973). In this approach the latter parameter is substantially reduced to a point where most of the variability in replicate assays is due to inhomogeneity of the reference material and measurement error becomes negligible. In this instance a subsample weight of 0.5 grams was employed and the 1RSD of 1.22% (or 0.502% at a 30g charge weight) confirms the high level of gold homogeneity in OREAS 501.

The meaning of tolerance limits may be illustrated for copper by four acid digest, where 99% of the time ( $1-\alpha=0.99$ ) at least 95% of subsamples ( $p=0.95$ ) will have concentrations lying between 0.554 and 0.577 wt.%. Put more precisely, this means that if the same number of subsamples were taken and analysed in the same manner repeatedly, 99% of the tolerance intervals so constructed would cover at least 95% of the total population, and 1% of the tolerance intervals would cover less than 95% of the total population (ISO Guide 35).

The homogeneity of OREAS 503 has also been evaluated in an ANOVA study for all certified analytes. This study indicates no evidence that between-unit variance is greater than within-unit variance. Based on the statistical analysis of the results of the interlaboratory certification program it can be concluded that OREAS 503 is fit-for-purpose as a certified reference material (see 'Intended Use' below).

Tabulated results of all elements (including Au INAA analyses) together with analytical method codes, uncorrected means, medians, standard deviations, relative standard deviations and percent deviation of lab means from the corrected mean of means (PDM<sup>3</sup>) are presented in the detailed certification data for this CRM (**Datapack for OREAS 503.xlsx**).

## **PARTICIPATING LABORATORIES**

Acme Analytical Laboratories SA, Santiago, Chile  
Acme Analytical Laboratories, Vancouver, BC, Canada  
Accurassay, Thunder Bay, Ontario, Canada  
Activation Laboratories, Ancaster, Ontario, Canada  
Alaska Assay Laboratories, Fairbanks, Alaska  
ALS, Brisbane, QLD, Australia  
ALS, La Serena, Coquimbo, Chile  
ALS, Perth, WA, Australia  
ALS, Val-d'Or, Quebec, Canada  
ALS, Vancouver, BC, Canada  
BV Amdel, Adelaide, SA, Australia  
BV Ultra Trace, Perth, WA, Australia  
Intertek Genalysis, Perth, WA, Australia  
Intertek Testing Services, Jakarta, Indonesia  
McPhar Geoservices (Phil) Inc., Manila, Philippines  
OMAC Laboratories, Loughrea, County Galway, Ireland  
SGS Mineral Services, Lakefield, Ontario, Canada  
SGS Mineral Services, Perth, WA, Australia  
SGS Mineral Services, Santiago, Chile  
SGS Mineral Services, Toronto, Ontario, Canada

## **PREPARER AND SUPPLIER OF THE REFERENCE MATERIAL**

Porphyry Au-Cu-Mo-Ag-S reference material OREAS 503 has been prepared, certified and is supplied by:

ORE Research & Exploration Pty Ltd  
6-8 Gatwick Road  
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AUSTRALIA

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Web: [www.ore.com.au](http://www.ore.com.au)  
Email: [info@ore.com.au](mailto:info@ore.com.au)

OREAS 503 has been packaged in unit sizes of 60g (single-use laminated foil pouches) and is available in 1kg units in plastic jars upon request.

## **INTENDED USE**

OREAS 503 is intended for the following uses:

- for the monitoring of laboratory performance in the analysis of gold, copper, molybdenum, silver and sulphur in geological samples
- for the verification of analytical methods for gold, copper, molybdenum, silver and sulphur
- for the calibration of instruments used in the determination of the concentration of gold, copper, molybdenum, silver and sulphur

## **STABILITY AND STORAGE INSTRUCTIONS**

OREAS 503 has been sourced from samples of Au-Cu ore and waste rock samples from a porphyry copper-gold deposit. In its unopened state and under normal conditions of storage it has a shelf life beyond ten years. Its stability will be monitored at regular intervals and purchasers notified if any changes are observed.

## **INSTRUCTIONS FOR THE CORRECT USE OF THE REFERENCE MATERIAL**

The certified values refer to the concentration level of analytes in their packaged state. The CRM should therefore not be dried prior to weighing and analysis.

## **HANDLING INSTRUCTIONS**

Fine powders pose a risk to eyes and lungs and therefore standard precautions such as the use of safety glasses and dust masks are advised.

## **LEGAL NOTICE**

Ore Research & Exploration Pty Ltd has prepared and statistically evaluated the property values of this reference material to the best of its ability. The Purchaser by receipt hereof releases and indemnifies Ore Research & Exploration Pty Ltd from and against all liability and costs arising from the use of this material and information.

## **CERTIFYING OFFICER**

Craig Hamlyn (B.Sc. Hons - Geology), Technical Manager - **ORE**

## **REFERENCES**

Ingamells, C. O. and Switzer, P. (1973), Talanta 20, 547-568.

ISO Guide 35 (2006), Certification of reference materials - General and statistical principals.

ISO Guide 3207 (1975), Statistical interpretation of data - Determination of a statistical tolerance interval.