

**Evaluation Report  
on the  
Troitsa Project**

**BC Geological Survey  
Assessment Report  
32205**

**Omineca Mining Division  
Tenure Numbers:**

530747, 562810, 591929, 610463, 610466, 626523, 637152,  
818105, 821422, 822483, 829162, 830887-830892

**NTS: 093E11W**

**Latitude 53 31 25 N    Longitude 127 21 03 W**

**UTM Zone: 09 (NAD 83)  
5931752N 0609179E**

Work performed August 1-September 25, 2010  
By Ken Galambos and Callinan Mines Limited personnel

**for  
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April 20, 2011

## 1.0 EXECUTIVE SUMMARY

The Troitsa property consists of seventeen contiguous quartz claims, 247 cells, covering an area of 4746.4 ha. Three Minfile showings are covered by the present property. These are the Troitsa Lake ([093E 003](#)), Troitsa Main ([093E 055](#)) and Troitsa Cirque ([093E 009](#)) showings. Only limited work has occurred on the property since the mid-1980's and all showings date from the late 1960's.

Mineralization on the property fits the classic calc-alkaline deposit model with stockworks of quartz veinlets, quartz veins, closely spaced fractures and breccias containing pyrite and chalcopyrite with lesser molybdenite in granodiorite to quartz monzonite. In British Columbia, twenty-nine calc-alkaline deposits and/or camps have yielded 7.6 billion kilograms of copper, 109.6 million grams (3.5 million ounces) of gold and 2.1 billion grams (67.5 million ounces) of silver. The nearby Huckleberry mine has been in production since October, 1997 and has produced 384.7 million kilograms of copper, 3.5 million kilograms of molybdenum, 4.8 million grams (140,335 ounces) of gold and 86.5 million grams (2.5 million ounces) of silver from 88.5 million tonnes of ore milled to the end of 2010.

Callinan Mines Limited began evaluation traverses to the Main zone area of the Troitsa property in mid-July, 2010. The company subsequently optioned the property from the owners, Shawn Turford, Ralph Keefe and Ken Galambos the following September. Callinan conducted both MMI and traditional B-horizon geochemical surveys across the central plateau area and prospected much of the property over the remainder of the season.

The Troitsa "Main" showing was the only historical Minfile that was visited during the program. Here, significant chalcopyrite and molybdenite mineralization was identified and sampled. A continuous 121m channel sample was collected over the historical showing and over mineralization that was present downstream and apparently not previously sampled. The mineralization averaged 0.282% Cu over the full 121m sampled and included two zones of higher grade mineralization. The western zone averaged 0.445% Cu/28m and included the historic Troitsa Main showing. The eastern zone averaged 0.594% Cu/24m. Copper-in-soil geochemistry suggests that the Main zone mineralization may have a strike extension of at least 300m and possibly 1150m and open to both the NW and SE. A number of parallel soil anomalies have been identified to the west.

The Troitsa "Lake" showing was not explored due to access issues. Very rough terrain, dense bush and the lack of nearby landing spots precluded access via helicopter. Future access will need to be by boat or float plane until adequate landing sites can be established.

The Cirque showing was not located in prospecting traverses in the area however a number of new showings were located in areas that would have been

covered by either ice or snow when the property was first explored. Sampling of these new zones returned values as high as 7.022g/t gold, >2000ppm molybdenum, 6.508% copper and 761g/t silver from select grab samples. Chip sampling outside of the Main showing area returned values as high as 0.28% Cu/6m. Significant glacial melt back has aided the exploration and discovery of new mineralization in 2010 and should continue into the future.

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## **2.0 INTRODUCTION AND TERMS OF REFERENCE**

### **2.1 Qualified Person and Participating Personnel**

Mr. Kenneth D. Galambos, P.Eng. was commissioned by Callinan Mines Limited of British Columbia to evaluate the Troitsa “Lake” Project and to make recommendations for the next phase of exploration work in order to test the economic potential of the area.

This report describes the property in accordance with the guidelines specified in National Instrument 43-101 and is based on historical information and an examination and evaluation of the property by the author from August 20 to September 29, 2010. Previous programs conducted during the summer of 2010 entailed the services of personnel under the employ of Callinan Mines Limited.

### **2.2 Terms, Definitions and Units**

- All costs contained in this report are denominated in Canadian dollars.
- Distances are primarily reported in metres (m) and kilometers (km) and in feet (ft) when reporting historical data.
- GPS refers to global positioning system.
- Minfile showing refers to documented mineral occurrences on file with the British Columbia Geological Survey.
- The term ppm refers to parts per million, equivalent to grams per metric tonne (g/t).
- ppb refers to parts per billion.
- The abbreviation oz/t refers to troy ounces per imperial short ton.
- The symbol % refers to weight percent unless otherwise stated. 1% is equivalent to 10,000ppm.
- Elemental and mineral abbreviations used in this report include: arsenic (As), gold (Au), lead (Pb), molybdenum (Mo), silver (Ag), chalcopyrite (Cpy), galena (PbS), molybdenite (MoS<sub>2</sub>) and pyrite (Py).

### **2.3 Source Documents**

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

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

- Published scientific papers on the geology and mineral deposits of the region and on mineral deposit types.
- Work on the property by the author and personnel from Callinan Mines Ltd. from August 18-September 25, 2010.

## **2.4 Limitations, Restrictions and Assumptions**

The author has assumed that the previous documented work in the area of the property is valid and has not encountered any information to discredit such work. Any work completed during the 2010 exploration that contains errors or omissions has been duly noted where these errors or omissions were noted by the author. Most of these occurred prior to the author joining the project on August 18, 2010. The author directly supervised work on the project from August 20 through September 25, 2010.

## **2.5 Scope**

This report describes the 2010 evaluation program, geology, previous exploration history and mineral potential of the Troitsa Project. Research included a review of the historical work that related to the immediate and surrounding area of the property. Regional geological data and current exploration information have been reviewed to determine the geological setting of the mineralization and to obtain an indication of the level of industry activity in the area. The property was examined and evaluated by the author August 20-September 25, 2010. Work consisted of prospecting, limited geological mapping, geochemical surveys (B-horizon and MMI sampling) litho-geochemical sampling including the chip sampling of newly discovered mineralization and the channel sampling of the Troitsa Main showing and mineralization exposed in the creek bed below the historic showing.

## **3.0 RELIANCE ON OTHER EXPERTS**

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

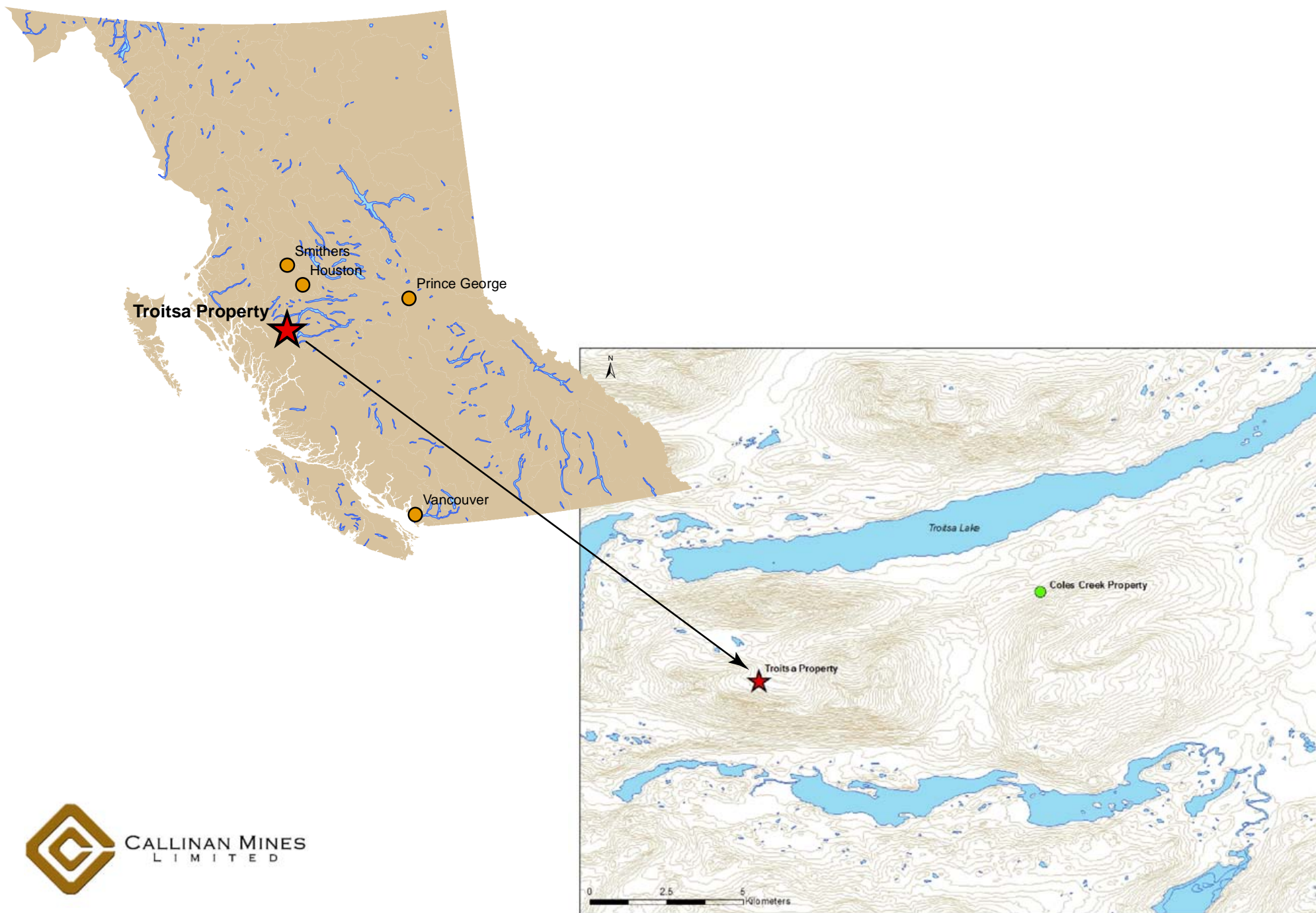
## **4.0 PROPERTY DESCRIPTION AND LOCATION**

### **4.1 Location and Access**

The Troitsa project area lies on the south side of Troitsa Lake in west central British Columbia. The centre of the area lies approximately 18 km SW of the Huckleberry mine site and 140km south of the community of Smithers, BC on mapsheet 93E11W. The property is currently accessed with a floatplane landing on Troitsa Lake or via chartered helicopter bases located in Smithers, Houston or Terrace, BC. The author accessed the Troitsa property using a contract



# Troitsa Property Location Map, British Columbia



helicopter based in the Coles Creek camp approximately 10km to the east of the property. The claims lie within the Omineca Mining Division and are administered out of Smithers, BC.

#### **4.2 Physiography and Vegetation**

The general area of the Troitsa property is located in the Tahtsa Ranges near the north-western edge of the Interior Plateau, on the eastern flank of the Coast Mountains. Rugged peaks and steep serrated ridges rise to more than 2250m. Well developed cirques sculpted by alpine glaciers are common on the higher peaks and associated morainal deposits cover many of the upland valleys and plateaus.



On the property, relief is pronounced. With a base level at Troitsa Lake of 898m there is a mountain ridge which rises steeply to the south to an elevation of 1982m over a horizontal distance of 1200m. The south side of the ridge settles to an upland valley measuring approximately 1500m x 2500m with elevations between 1220m and 1460m.

Plate 1: Steep hillside on the south shore of Troitsa Lake.

Further to the south, glaciers reside in steep cirques below rugged mountain peaks which rise to nearly 2050m in height. Most of the property lies above timber line which is situated at approximately 1370m. Here, scrub alder, willow and dwarf balsam fir grow near creeks while lower in elevation, balsam fir and spruce dominate. Devil's Club is sparse with the exception of shaded hillsides below mature stands of evergreen trees and near creeks at lower elevations near Troitsa and Blanket lakes.

#### **4.3 Land Tenure**

The Troitsa claim group consists of seventeen contiguous quartz claims consisting of 247 cells and covering an area of 4746.4 ha. A listing of the tenures covering the Troitsa project is contained in Table 1 below. Upon acceptance of this report for assessment purposes, the highlighted tenures will have Expiry dates moved to February 8, 2015 and February 8, 2021.

**Table 1: Claim Data**

Tenure #	Claim name	Issue date	Expiry date	Registered Owner
530747	Troitsa	28-Mar-06	8-Feb-2021	Turford, Shawn A
562810	Troitsa 1	10-Jul-07	8-Feb-2021	Turford, Shawn A
591929	TSA105	25-Sep-08	8-Feb-2021	Turford, Shawn A
610463		23-Jul-09	8-Feb-2021	Galambos, Kenneth D
610466	Troitsa	23-Jul-09	8-Feb-2021	Keefe, Ralph R
626523		1-Sep-09	8-Feb-2021	Galambos, Kenneth D
637152	Troitsa	19-Sep-09	8-Feb-2021	Galambos, Kenneth D
818105	TSA 202	14-Jul-10	8-Feb-2021	Turford, Shawn A
821422	TSA WEST	19-Jul-10	8-Feb-2015	Turford, Shawn A
822483	TSA10901	21-Jul-10	8-Feb-2021	Turford, Shawn A
829162	TSA NORTH	27-Jul-10	8-Feb-2015	Turford, Shawn A
830887		30-Jul-10	8-Feb-2015	Galambos, Kenneth D
830888		30-Jul-10	8-Feb-2015	Galambos, Kenneth D
830889		30-Jul-10	8-Feb-2015	Galambos, Kenneth D
830890		30-Jul-10	8-Feb-2015	Galambos, Kenneth D
830891		30-Jul-10	8-Feb-2015	Galambos, Kenneth D
830892		30-Jul-10	8-Feb-2015	Galambos, Kenneth D

## 5.0 HISTORY

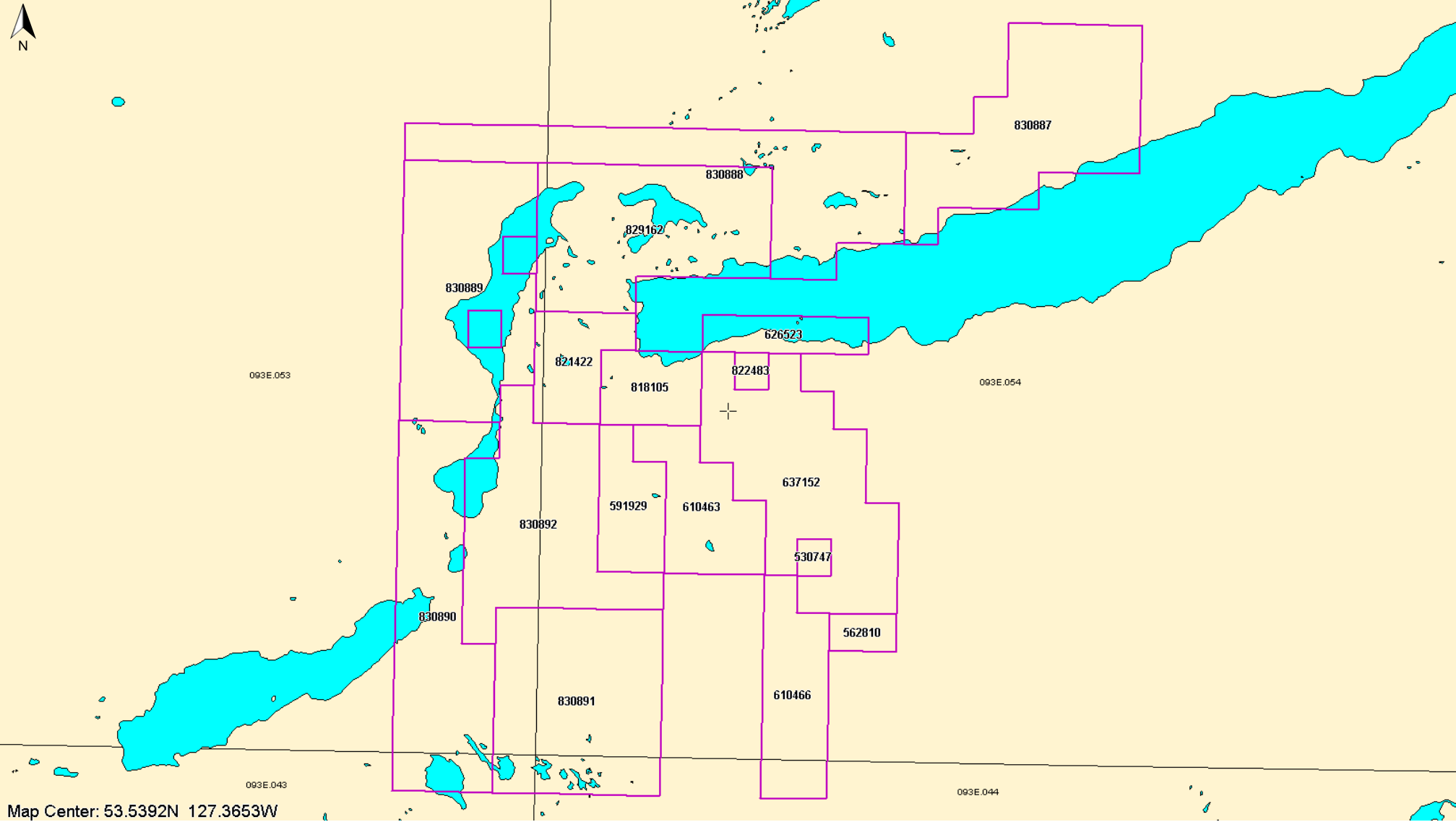
Mineralization was discovered in the Troitsa Lake area in 1966 by G. Bleiler and F. Giaque. The two prospectors staked the OVP 1-76 group of claims in August and September and optioned the property to Silver Standard Mines. The company carried out geological mapping, trenching and sampling programs in 1966 and 1967 and drilled three holes totaling 370.33m. Silver Standard staked an additional 60 claims (MK Group) in 1967 over new mineralization discovered in an upland valley south of Troitsa Lake. A program consisting of geological mapping; trenching of the known showings; and a very limited IP geophysical survey were completed. The company diamond drilled two holes totaling 361.80m of "A" sized core in 1968 prior to returning the property to the vendors.

The following summer, Aston Resources Ltd. entered into an agreement to further explore the area. Aston conducted additional geological mapping, geochemical and ground geophysical surveys and a helicopter based airborne magnetic and electromagnetic surveys.

The property sat dormant during the 1970 season and in 1971 Cerro Mining Company of Canada Limited optioned the property from Aston Resources Limited. Work completed in 1971 included various geochemical surveys including silt, soil, talus and rock chip sampling programs in an effort to focus future exploration. In 1972, Quintana Minerals Corporation completed a single 457m diamond drill hole.

Detailed geologic mapping was carried out by N. G. Cawthorn in 1973 and published as part of his M. Sc. Thesis at the University of British Columbia, titled Geology and Petrology of the Troitsa Lake Property, Whitesail Lake Map Area, B.C.

# Troitsa Claim Map



The claim group lapsed and was restaked in 1983 in part by Payday Resources Inc. as the Nuswat, Core Lode 1 and Core Lode 2 mineral claims. Payday completed extensive geochemical soil surveys over the central and northwestern areas of the property and outlined numerous multi-element anomalies for both base and precious metals. Subsequent geochemical and geophysical magnetic surveys and geological mapping focused on the western and northern areas of the property where precious metals appeared to be concentrated.

Two limited prospecting programs by Shawn Turford under the British Columbia Prospectors Assistance Program in 1999 and 2000. Mr. Turford re-examined the Troitsa Lake showings and prospected the areas covered by the Payday Resources geochemical surveys.

In July 2010, Shawn Turford and Ralph Keefe flew into the west end of Troitsa Lake to check on the snow conditions present at the Troitsa Main showing located approximately 2.8 km south of the lake in preparation for property visits by a number of interested companies. Access was gained by fixed wing aircraft owned and operated by Mr. Turford. While in the area the two men landed and prospected the creeks draining the steep slopes immediately to the south of Troitsa Lake as the heavy snow accumulations and recent thaw had flushed the creek beds exposing new outcroppings that the pair had not seen before. A number of newly uncovered mineralized porphyry dikes were prospected. Five grab samples were collected during the course of the day of the variously mineralized rock that was encountered.

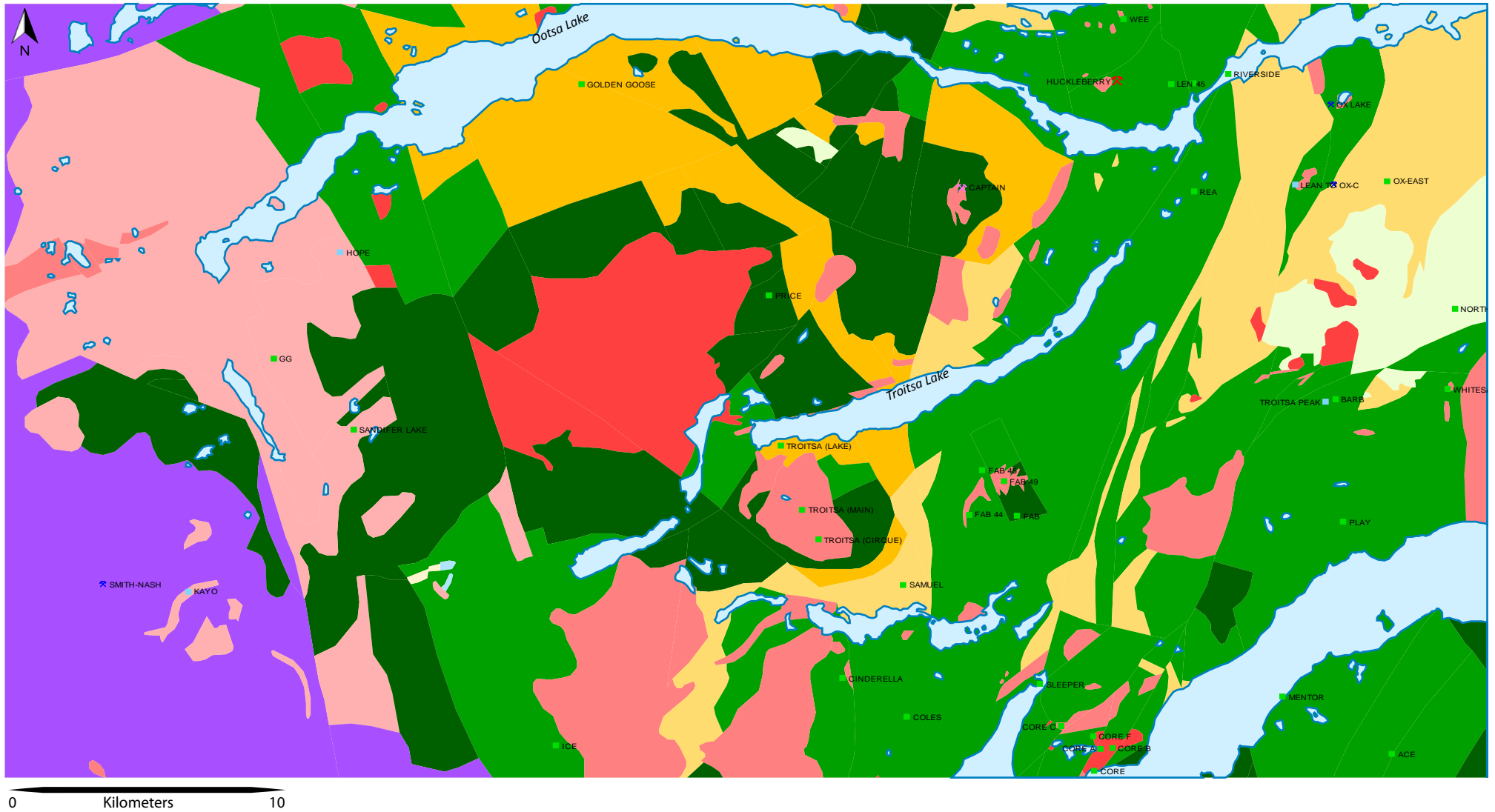
## **6.0 GEOLOGICAL SETTING**

### **6.1 Regional Geology**

Regionally, the Troitsa Lake area lies within the Stikinia Terrane, approximately 15 km east of the main granitic and metamorphic rocks of the Coast Plutonic Complex. Lower Jurassic Hazelton Group-Telkwa Formation calc-alkaline volcanic rocks and middle Jurassic Smithers Formation undivided sedimentary rocks are the oldest rock units in the area. Overlying the Hazelton Group in the claim region and to the north are sediments of the Lower Cretaceous Skeena Group and a thick sequence of subaerial andesitic volcanic rocks of the Kasalka Group. Intimately related to Cretaceous volcanism are various quartz diorite and granodiorite intrusions grouped as Bulkley or Kasalka type.

Block faulting, ring and radial faults, and subsequent intrusion by dykes and/or hydrothermal fluids may have affected a large part of the area between Tahtsa and Troitsa lakes where a large caldera, 22 km in diameter, is believed to have formed during Cretaceous volcanism. The Troitsa property straddles the southern rim of this obscure collapse feature.

# Troitsa Property Regional Geology



CALLINAN MINES  
LIMITED



# Geology Legend

**Bounding Box:** North: 53.717 South: 53.429 West: -127.801 East: -127.001


**NTS Mapsheet:** 093E

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## Eocene

-  **EBo** **Boundary Stock:** granodioritic intrusive rocks
-  **Eqp** high level quartz phyric, felsitic intrusive rocks

### *Coast Plutonic Complex(?)*


-  **Eg** intrusive rocks, undivided

### *Ootsa Lake Group*

-  **EO** rhyolite, felsic volcanic rocks

## Cretaceous






### *Kasalka Group*

-  **uKK** andesitic volcanic rocks

## Late Cretaceous

-  **LKgd** granodioritic intrusive rocks

### *Bulkley Plutonic Suite*



-  **LKBdr** dioritic intrusive rocks
-  **LKBfp** feldspar porphyritic intrusive rocks
-  **LKBgd** granodioritic intrusive rocks
-  **LKBqp** high level quartz phyric, felsitic intrusive rocks
-  **LKBqd** quartz dioritic intrusive rocks

### *Kasalka Plutonic Suite*

-  **LKKP** granodioritic intrusive rocks

## Lower Cretaceous

### *Skeena Group*

-  **IKS** undivided sedimentary rocks
-  **IKSN** **Mt. Ney Volcanics:** undivided volcanic rocks


## Upper Jurassic

### *Bowser Lake Group*

-  **uJBAm** **Ashman Formation:** mudstone, siltstone, shale fine clastic sedimentary rocks

## Middle Jurassic to Late Jurassic

### *Gamsby Complex*

 **MLJG** quartz dioritic intrusive rocks

## Middle Jurassic


 **MJMc** **Mount Choquette Pluton:** dioritic intrusive rocks

### *Hazelton Group*

 **mJHSms** **Smithers Formation:** undivided sedimentary rocks

 **mJHSmvc** **Smithers Formation:** volcaniclastic rocks

### *Trapper Plutonic Suite*

 **MJTqd** quartz dioritic intrusive rocks


## Lower Jurassic

### *Hazelton Group*

 **IJHT** **Telkwa Formation:** calc-alkaline volcanic rocks


## Upper Triassic

### *Stuhini Group*

 **uTrSsv** marine sedimentary and volcanic rocks


## Upper Paleozoic to Middle Jurassic

### *Gamsby Complex*

 **uPzJGgs** greenstone, greenschist metamorphic rocks

## Devonian to Permian

### *Stikine Assemblage*

 **DPSsv** marine sedimentary and volcanic rocks

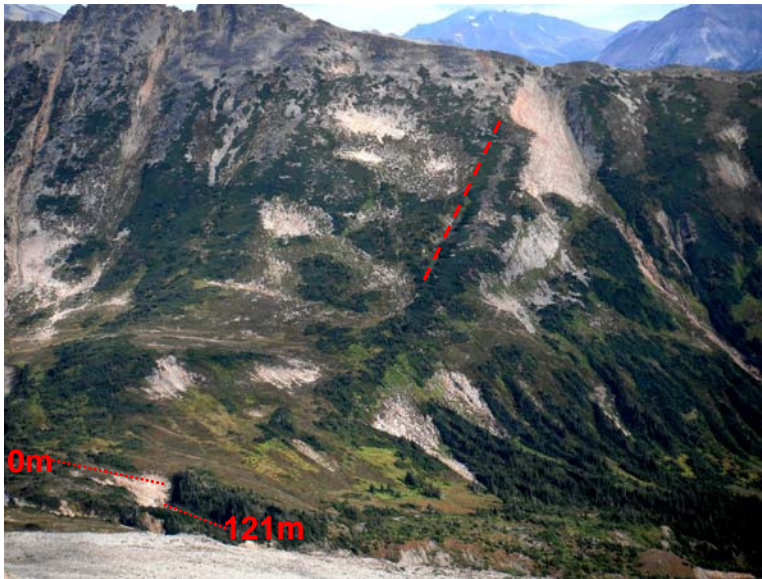
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*[British Columbia Ministry of Energy, Mines and Petroleum Resources](#)  
[Geological Survey Branch](#)*



## 6.2 Property Geology

The Troitsa property is underlain, in large part, by a compositionally zoned stock of granodiorite to quartz monzonite which intrudes Hazelton, Skeena and Kasalka Group rocks. The Troitsa stock measures approximately 4km long and 2.5km wide in plan with its long axis trending roughly northwest-southeast. A thick lensoid-shaped plug of rhyolite intrudes along the stock's western margin and strikes to the north-northeast. There exists a prominent northeast trending fault which separates the rhyolite plug from a thick sequence of Kasalka volcanics to the west. The rhyolite is exposed as multiple sills in the north facing walls of steep cirques to the south of the broad upland plateau. The property is



cut by numerous northwest and northeast trending faults. The northeast fabric appears to be late as it offsets much of the jointing, but is itself cut by some of the northwest faulting. Quartz porphyry, feldspar porphyry, basalt, andesite and lamprophyre dikes cut both the main intrusion and rhyolite plug and often core the northwest and northeast trending shear zones.

Plate 2: Troitsa Main zone with potassically altered northeast trending fault. (Photo looking north.)

## 7.0 Deposit Models

A number of deposit models are relevant for the general area with the porphyry copper/molybdenum model being the main focus of the current program. Other intrusion related models that may be significant are the low sulphidation epithermal model, the subvolcanic copper/gold/silver model, and the polymetallic silver/lead/zinc model.

### 7.1 Porphyry copper/molybdenum

The porphyry Copper/Molybdenum target is the main deposit type thought to be associated with the Troitsa property. Panteleyev, (1995) describes the Porphyry Cu+/-Mo+/-Au model in Selected British Columbia Mineral Deposit Profiles, Volume 1 - Metallics and Coal, Open File 1995-20, pages 87-92 as a Calcalkaline porphyry Cu, Cu-Mo, Cu-Au deposit type. Classic British Columbia examples include: Brenda ([092HNE047](#)), Berg ([093E 046](#)), Huckleberry ([093E 037](#)) and Schaft Creek ([104G 015](#)); while others include Casino (Yukon, Canada), Inspiration, Morenci, Ray, Sierrita-Experanza, Twin Buttes, Kalamazoo

and Santa Rita (Arizona, USA), Bingham (Utah, USA), El Salvador, (Chile), Bajo de la Alumbrera (Argentina).

Host intrusions vary from coarse-grained phaneritic to porphyritic stocks, batholiths and dike swarms, with compositions that range from quartz diorite to granodiorite and quartz monzonite. There are commonly multiple emplacements of intrusive phases and a wide variety of breccias that modify the stock geometry. The deposits usually exhibit a lateral outward zoning of alteration and sulphide minerals from a potassic (K-feldspar and biotite) altered core through phyllic (quartz-sericite-pyrite) alteration to propylitic (chlorite-epidote-calcite). Less commonly argillic and in the uppermost parts of some ore deposits, advanced argillic (kaolinite-pyrophyllite) alteration occur.

Characteristics of this deposit type have large zones, up to 10 km<sup>2</sup> in size, of hydrothermally altered rock containing stockworks of quartz veins and veinlets, closely spaced fractures and breccia zones containing pyrite and chalcopyrite +/- molybdenite, bornite and magnetite. Disseminated sulphide minerals are present but in minor amounts. Deposit boundaries are determined by economic factors that outline ore zones within larger areas of low-grade, concentrically zoned mineralization.

Ore controls include igneous contacts with the surrounding wallrocks and internal contacts between intrusive phases; cupolas and the uppermost, bifurcating parts of stocks, dike swarms, early formed intrusive breccias and hydrothermal breccias. Ore minerals are chalcopyrite; molybdenite, lesser bornite and rare (primary) chalcocite. Subordinate minerals are tetrahedrite/tennantite, enargite and minor gold, electrum and arsenopyrite. In many deposits late veins commonly contain galena and sphalerite in a gangue of quartz, calcite and barite.

Two main periods of deposit formation occurred in the Canadian Cordillera during the Triassic/Jurassic (210-180 Ma) and Cretaceous/Tertiary (85-45 Ma). Elsewhere deposits are mainly Tertiary, but range from Archean to Quaternary.

British Columbia porphyry Cu/Mo ± Au deposits range from <50 to >900 Mt with 0.2 to 0.5% Cu, 0.0 to 0.04% Mo, <0.1 to 0.6 g/t Au, and 1 to 3 g/t Ag. Median values for 40 B.C. deposits with reported reserves are: 115 Mt with 0.37 % Cu, 0.01 % Mo, 0.3g /t Au and 1.3 g/t Ag.

Porphyry deposits contain the largest reserves of Cu, significant Mo resources and close to 50% of Au reserves in British Columbia.

## **7.2 Polymetallic silver/lead/zinc veins**

Numerous examples of this model exist in the immediate Troitsa area. The Coles Creek property immediately to the east hosts numerous examples with the Fab ([093E 041](#)), Fab 44 ([093E 044](#)) and Samuel ([093 104](#)) showings.

Lefebure and Church (1996) describe the deposit type as sulphide-rich veins containing sphalerite, galena, silver and sulphosalt minerals in a quartz and carbonate gangue. The deposit type is analogous to silver/base metal epithermal deposits and can host significant Ag, Pb, Zn (Cu, Au, Mn).

British Columbia examples include: Wellington ([082ESE192](#)) and Highland Lass-Bell ([082ESW030](#), [133](#)), Beaverdell camp; Silver Queen ([093L 002](#)), Duthie ([093L 088](#)), Cronin ([093L 127](#)), Porter-Idaho ([103P 089](#)), Indian ([104B 031](#))

Veins occur in country rock marginal to an intrusive stock. The veins typically crosscut volcanic or meta-sedimentary sequences and follow pre-existing volcano-tectonic structures, such as caldera ring-faults or radial faults. In some cases the veins cut older intrusions. In many districts there is a close association to felsic to intermediate intrusive bodies. Mafic igneous rocks are less common. Many veins are associated with dikes that follow the same structures. Veins are typically narrow, steeply dipping, tabular or splayed and occur as sets of parallel or offset veins. Individual veins can vary from centimetres up to more than 3 m wide and can be traced from a few hundred metres to more than 1000m in length and depth. Veins can widen to tens of metres in stockwork or breccia zones. Mineralization occurs as fine-grained disseminations or coarse-grained sulphides as patches and pods and is generally confined to the veins.

Regional structures are important to ground preparation but, veins are typically associated with smaller, second order structures. In igneous rocks the faults may relate to volcanic centers. Significant deposits are restricted to competent lithologies that are more susceptible to brittle failure. Dikes are often emplaced along the same faults and at some locations are believed to be roughly contemporaneous with mineralization. Some polymetallic veins are found surrounding intrusions with porphyry deposits or prospects. Ore mineralogy is comprised of galena, sphalerite, tetrahedrite-tennantite and other sulphosalts including pyrargyrite, stephanite, bournonite and acanthite, native silver, chalcopyrite, pyrite, arsenopyrite, stibnite. Silver minerals often occur as inclusions in galena. Native gold and electrum occurs in some deposits yet Au grades are normally low for the amount of sulphides present. Vein gangue mineralogy is composed of primarily quartz and carbonate and may contain specular hematite, hematite, barite and fluorite. Alteration is usually limited to a few metres, but in volcanic and intrusive hostrocks the alteration assemblage is argillic, sericitic or chloritic and may be quite extensive.

British Columbian deposits are mainly Cretaceous to Tertiary in age but can date back as old as the Proterozoic. Individual vein systems can range from several hundred to several million tonnes grading from 5 to 1500g/t Ag, 0.5 to 20% Pb and 0.5 to 8% Zn. In British Columbia, for deposits larger than 20,000 tonnes, the average is 161,000 tonnes with grades of 304g/t Ag, 3.47% Pb and 2.66% Zn. Copper and gold are reported in less than half the occurrences, with average grades of 0.09 % Cu and 4g/t Au. Polymetallic veins are the most common

deposit type in British Columbia with over 2,000 occurrences and were a significant source of Ag, Pb and Zn until the 1960s. They have declined in importance as industry focused more on syngenetic massive sulphide deposits. Larger polymetallic vein deposits are still attractive because of their high grades and relatively easy beneficiation.

### **7.3 Subvolcanic copper/gold/silver veins**

A single example of this deposit type is documented at the Price/Kasalka showing ([093E 099](#)) located on the Kate property. Here, mineralization is believed to be associated with a buried mineralized porphyry system. Other significant British Columbia examples are Equity Silver ([093L 001](#)) and the Thorn prospect ([104K031](#), [116](#)).

Panteleyev (1995) describes this transitional or intrusion-related (polymetallic) stockwork and vein model as pyritic veins, stockworks and breccias in subvolcanic intrusive bodies with stratabound to discordant massive pyritic replacements, veins, stockworks, disseminations and related hydrothermal breccias in country rocks. These deposits are located near or above porphyry Cu hydrothermal systems and commonly contain pyritic auriferous polymetallic mineralization with Ag sulphosalt and other As and Sb-bearing minerals. Extensional tectonic regimes allow high-level emplacement of the intrusions. Rhyodacite and dacite flow-dome complexes with fine to coarse-grained quartz-pyritic intrusions are common. Dike swarms and other small subvolcanic intrusions are likely to be present.

These deposits represent a transition from porphyry copper to epithermal conditions with a combination of porphyry and epithermal characteristics. Mineralization is related to hydrothermal systems derived from porphyritic, subvolcanic intrusions and occurs in strongly fractured to crackled zones in cupolas and internal parts of intrusions and flow-dome complexes and along faulted margins of high-level intrusive bodies. Stockworks and closely-spaced to sheeted sets of sulphide-bearing veins occur within intrusions and as structurally controlled and stratabound or bedding plane replacements along permeable units and horizons in surrounding country rock. Veins and stockworks form in transgressive hydrothermal fluid conduits that can pass into pipe-like and planar breccias. Breccia bodies are commonly tens of metres and, rarely, hundreds metres in size. Massive sulphide zones can pass outward into auriferous pyrite-quartz-sericite veins and replacements. Multiple generations of veining and hydrothermal breccias are common. Pyrite is dominant and quartz is minor to absent in veins. The vein and replacement style deposits can be separated from the deeper porphyry Cu mineralization by 200 to 700 m. Ore mineralogy consists of pyrite, commonly as auriferous pyrite, chalcopyrite, tetrahedrite/tennantite; enargite/luzonite, covellite, chalcocite, bornite, sphalerite, galena, arsenopyrite, argentite, sulphosalts, gold, stibnite, molybdenite, wolframite or scheelite, pyrrhotite, marcasite, realgar, hematite, tin and bismuth minerals. Depth zoning is commonly evident with pyrite-rich deposits containing enargite near surface,

passing downwards into tetrahedrite/tennantite + chalcopyrite and then chalcopyrite in porphyry intrusions at depth.

The deposits can be quite large such as those at Equity Silver where the bulk mineable reserves were approximately 30Mt grading 0.25% Cu, 86g/t Ag and 1g/t Au. International examples include the Recsk deposit in Hungary where a shallow breccia-hosted Cu-Au ores overlie a porphyry deposit containing ~1000 Mt with 0.8% Cu. The closely spaced pyritic fracture and vein systems at Kori Kollo, La Joya district, Bolivia contained 10 Mt oxide ore with 1.62 g/t Au and 23.6 g/t Ag and had sulphide ore reserves of 64 Mt at 2.26 g/t Au and 13.8 g/t Ag.

#### **7.4 Epithermal (low Sulphidation)**

In British Columbia, Jurassic deposits are important while world wide Tertiary deposits are most abundant. The Coles ([093E 110](#)) showing in Jurassic volcanics, located 8km to the southeast of the Troitsa property, demonstrates the potential of this deposit type in the immediate area. Significant examples of this deposit type in British Columbia include the Toodoggone district deposits - Lawyers ([094E 066](#)), Baker ([094E 026](#)), Shas ([094E 050](#)); Blackdome ([092O 050](#), [092O 051](#), [092O 052](#), [092O 053](#)); Premier Gold (Silbak Premier), ([104B 054](#)) and Cinola ([103F 034](#)).

Panteleyev (1996) describes low sulphidation epithermal deposits as quartz veins, stockworks and breccias that carry precious metals and variable amounts of base metals in high-level (epizonal) to near surface environments. Mineralization commonly exhibits open-space filling textures and is associated with volcanic-related hydrothermal to geothermal systems. The tectonic settings of the deposits are volcanic island arc, continent-margin magmatic arcs and continental volcanic fields with extensional structures. They are associated with regional-scale fracture systems related to grabens, resurgent calderas, flow-dome complexes and rarely with maar diatremes. Extensional structures are common and graben or caldera-fill clastic rocks may be present in higher level systems. Locally resurgent or domal structures are related to underlying intrusive bodies such as high-level (subvolcanic) stocks and/or dikes and pebble breccia diatremes.

Most deposits occur in calcalkaline volcanic rocks of andesitic composition while some deposits occur in areas with bimodal volcanism and extensive subaerial ashflow deposits. Ore zones are typically localized in extensional structures with high-grade ore shoots commonly found in dilational zones in faults at flexures, splays and in cymoid loops. Significant mineralization can occur where ore forming fluids invade permeable lithologies. Upward-flaring ore zones centered on structurally controlled hydrothermal conduits are typical. Individual veins can range from >1m and hundreds of metres in strike length to mm in scale. The vein systems can be laterally extensive but ore shoots generally have relatively restricted vertical extent of a few hundred metres. Deposits can be strongly

zoned along strike and vertically. Deposits are commonly zoned vertically over 250 to 350 m from a base metal poor, Au-Ag-rich top to a relatively Ag-rich base metal zone and an underlying base metal rich zone grading at depth into a sparse base metal, pyritic zone

As a result of the confined nature of the mineralization, deposits are generally small. The median deposit size of 41 Comstock-type 'bonanza' deposits is 0.77 Mt grading 7.5 g/t Au, 110 g/t Ag with minor Cu, Zn and Pb.

## **8.0 MINERALIZATION**

Mineralization at the Troitsa Lake showing is described as at least five closely spaced sets of quartz-pyrite-chalcopyrite veins and mineralized fractures occurring in granodiorite and altered volcanic rocks over 30m. The host rocks and the stockwork mineralization have been cut by at least three ages of andesitic and dioritic dikes. Previous trenching indicated average grades in the order of 0.60% Cu in the stockwork mineralization and values of 0.30% to 0.40% Cu in one of the late dikes. Minor amounts of molybdenite were noted in some veins and fractures. (D.A. Davidson and R. Wolverton 1969)

The Troitsa Main showing, located 2.8km south, is a wide zone of disseminated and fracture controlled chalcopyrite with minor molybdenite in strongly altered granodiorite. Historical sampling of the zone returned 1.02% Cu over 21.3m including 1.49% Cu over 12.2m. Most of the mineralization was related to a sheeting of veins up to 12.7cm wide and mineralized jointing that trended 150° AZ and dipped steeply to the west. Disseminated chalcopyrite occurred peripheral to the mineralized jointing and veining. Mineralization was noted both east and west of the Main showing but in lower concentrations.

The Troitsa Cirque showing, a further 1.2km south, is described as being similar in character to the Main showing but with weaker alteration and mineralization. Silver Standard chip sampling returned 0.33% Cu over 16.7m from altered granodiorite and 0.13% Cu over 25.8m from fresh granodiorite.



Plate 3: Troitsa Main Showing (inset of 1.5cm clotted chalcopyrite)

A new showing discovered by Shawn Turford on the western edge of the rhyolite body returned >10,000ppm Cu and 1.3gm/t Au from a grab sample of rusty



Plate 4: Turford showing

biotite-feldspar porphyry (BFP). The showing was well mineralized over a 7m width, with another 30m of “blood red rock” (pers. com. S. Turford). Mr. Turford returned to the area in 2000 but was unable to relocate the mineralized outcrop due to slumping of the hillside as a result of heavy snow accumulations the previous winter.

## 9.0 PREVIOUS EXPLORATION

Prospectors Mineralization was discovered in the Troitsa Lake area in 1966 by G. Bleiler and F. Giauque. The two prospectors staked the OVP 1-76 group of claims in August and September and optioned the property to Silver Standard Mines. The company carried out geological mapping, trenching and sampling programs in 1966 and 1967 and drilled three holes totaling 370.33m. Silver Standard staked an additional 60 claims (MK Group) in 1967 over new mineralization discovered in an upland valley south of Troitsa Lake. A program



Plate 5: Drilling sump and collar location  
Main Showing area

consisting of geological mapping, trenching of the known showings and a very limited IP geophysical survey were completed. The company diamond drilled two holes totaling 361.80m of “A” sized core in 1968 prior to returning the property to the vendors.

The following summer, Aston Resources Ltd. entered into an agreement to further explore the area. Aston conducted additional geological mapping, geochemical and ground geophysical surveys and a helicopter based airborne magnetic and electromagnetic surveys.

The property sat dormant during the 1970 season and in 1971 Cerro Mining Company of Canada Limited optioned the property from Aston Resources Limited. Work completed in 1971 included various geochemical surveys including silt, soil, talus and rock chip sampling programs in an effort to focus future exploration. In 1972, Quintana Minerals Corporation completed a single 457m diamond drill hole.

Detailed geologic mapping was carried out by N. G. Cawthorn in 1973 and published as part of his M. Sc. Thesis at the University of British Columbia, titled Geology and Petrology of the Troitsa Lake Property, Whitesail Lake Map Area, B.C.

The claim group lapsed and was restaked by Payday Resources Inc. as the Nuswat, Core Lode 1 and Core Lode 2 mineral claims in 1983. Payday



completed extensive geochemical soil surveys over the central and northwestern areas of the property and outlined numerous multi-element anomalies for both base and precious metals. Subsequent geochemical and geophysical magnetic surveys and geological mapping focused on the western and northern areas of the property where precious metals appeared to be concentrated. Payday allowed their claim group to lapse subsequent to a 1986 program where the company conducted additional geochemical surveys.

No further work was recorded until 1999 when Shawn Turford re-examined the Troitsa Lake showings and prospected the areas covered by the Payday Resources geochemical surveys. Mr. Turford conducted two limited programs under the British Columbia Prospectors Assistance Program in 1999 and 2000.

Mr. Turford and Mr. Keefe returned to the area for a one day visit in July, 2010 to prospect recently uncovered outcrop in the creeks draining into the southwest end of Troitsa Lake. Creeks in the area had been flushed with the melting of substantial snow pack from the previous winter.

### **9.1 Sampling Method and Approach**

There is no record of work filed by Silver Standard in the area other than a report dated October 26, 1967 by Henry Neugebauer on claims to the west near Blanket Lakes.

For the Aston Resources 1969 sampling program, 251 samples weighing approximately 200g were collected of talus fines or chip samples from outcrop over the survey grid.

In 1971, Cerro Mining Company of Canada Ltd. completed geochemical silt, soil, talus and rock chip sampling surveys. Soil samples were collected with a short iron mattock and a wooden spoon from the "B" horizon. Where no soil profile had developed, talus fines were collected from a depth of 15-30cm. Composite samples were collected from four to five sites at each station and placed in high strength Kraft paper sample bags. Material was collected to fill half of the bag at each site. Silt samples were collected from the active stream bed with a wooden spoon of silt sized particles where possible. Rock chip samples of fresh un-weathered material were collected where no other sampling media was available.

Payday Resources geochemical program in 1983 collected 420 B-horizon soil samples. No mention is made as to how the samples were collected. The 1986 Geochemical program collected thirty-five B-horizon soil samples and 1 rock sample. Soil samples were collected with a long, narrow-bladed shovel from a depth of 5-15cm.



Plate 6: Evidence of the Payday Resources camp

No discussion was made in the 1999 or 2000 programs completed by Shawn Turford regarding sampling method and approach.

The 2010 prospecting program completed by Turford and Keefe collected select grab samples of variably mineralized outcrop.

## 9.2 Sample Preparation, Analysis and Security

Aston Resources Limited shipped samples collected during the 1969 program to Smithers, BC for crushing and pulverization to -100 mesh prior to forwarding to Crest Laboratories in Vancouver. 1.0g of each sample was digested in a mixture of perchloric and nitric acid at 218°C for three hours. Subsequent analysis of Cu was completed by Atomic Absorption Spectrophotometer methods. Analysis of Mo was determined by the colorimetric thiocyanate methods.

Cerro Mining Company of Canada shipped samples to Geochemical Laboratories of Vancouver. Here, the samples were dried and sieved to collect the -80 mesh fraction. Rock chips were dried and crushed to -80 mesh. 0.5g of each sample was digested in a hot acid mixture composed of 15% nitric acid and 85% perchloric acid and then diluted with de-mineralized water to obtain a fixed volume. Analysis was completed by Atomic Absorption Spectrophotometer methods.

The Payday Resources 1983 geochemical program report does not include any discussion on sample preparation or analysis methodologies. Samples collected as part of Payday's 1986 soil program were analyzed for Au with a few select rock samples analyzed for Au and Ag. For gold determinations, 10g of sample was fused in litharge, carbonate and siliceous flux with the addition of 10mg of Au-free Ag metal and cupelled. The silver bead is parted with dilute HNO<sub>3</sub> and

then treated with aqua regia. The salts are dissolved in dilute HCl and analyzed for Au using an Atomic Absorption Spectrophotometer. Silver analyses were made with a 1.0g sample digested in perchloric-nitric acid for 2 hours, cooled and diluted with distilled water to make a 25ml sample. Analysis was completed by atomic absorption techniques.

No discussion was made in the 1999 or 2000 programs completed by Shawn Turford regarding sample preparation and analysis.

Samples from the 2010 prospecting program by Turford and Keefe were sent to ACME Analytical in Vancouver where they were crushed to 80% passing 10 mesh and then a 250g split pulverized to 85% passing 200 mesh. A 15g sample of the pulp was digested in hot Aqua Regia solution for one hour then made up to volume with dilute HCL acid prior to elemental determinations by ICP Mass Spectrometer. Precious metal analyses were completed with a 30g sample and standard fire assay techniques.

None of the historical reports discuss any security measures taken to ensure chain of custody from the field to the lab with the exception of the 2010 prospecting report by the author.

### **9.3 Sample Results**

None of the drilling completed to date on the Troitsa property has been reported. A number of historic drill platforms have been located but drill core has been removed from site and is not available for inspection. Historic results include chip sampling at the Troitsa Lake, Main and Cirque showings.

Trenching at the Troitsa Lake showing indicated average grades in the order of 0.60% Cu in the stockworks mineralization and values of 0.30% to 0.40% Cu in one of the late dikes. Mineralization was noted over a 30m area in the creek bed.

Historical sampling of the Troitsa Main showing returned 1.02% Cu over 21.3m including 1.49% Cu over 12.2m. Mineralization was related to a zone of sheeted veins up to 12.7cm wide. Disseminated chalcopyrite occurred peripheral to the mineralized jointing and veining. Mineralization was noted both east and west of the Main showing but in lower concentrations.

The Troitsa Cirque showing is described as being similar in character to the Main showing but with weaker alteration and mineralization. Silver Standard collected forty-four 3.05m chip samples over a 42.5m wide zone of mineralization. The sampling returned 0.33% Cu over 16.7m from altered granodiorite and 0.13% Cu over 25.8m from fresh granodiorite.

Payday Resources reports that rock samples collected from an area 1524m x 1067m in the central part of the Troitsa stock consistently returned values of 0.1% Cu.

A showing of rusty mineralized BFP intrusive rocks containing >10,000ppm Cu and 1.3g/t Au was discovered in 1999 by Shawn Turford. The showing is reported to be roughly 7m wide with an additional 30m of lesser mineralized material.

A number of soil geochemical surveys have been completed over the property and have returned values as high as 5507ppm Cu, 165ppm Mo and 810ppb Au. Surveys have outlined a number of targets on the property from porphyry Cu/Mo anomalies near the Troitsa Main showing to fault related (?) Au targets in the rhyolite dominated area in the NW portion of the intrusive rocks.

### **10.0 DRILLING**

In 1967 Silver Standard drilled a total of 370.33m in three holes, probably in the vicinity of the Lake showing. The Payday Resources' 1986 program located a historic drill collar approximately 125m south of the lake shore near the west end of Troitsa Lake. The following year Silver Standard drilled another two "A" sized core holes totaling 361.80m. Evidence of the 1968 drilling such as historic water line, drums and one possible drill collar was located near the Troitsa Main showing. Collar locations, drilling orientation, angle, final depths and results were not reported.

In 1972, Quintana Minerals Corporation completed a single 457m diamond drill hole. The author believes that a drill platform located at UTM 5932011N 608962E (NAD 83, zone 9) corresponds to this hole and that the target was one of the airborne geophysical anomalies outlined in the 1969 Airborne surveys. Collar location, drilling orientation, angle and results were not reported.



Plate 7: Drill platform circa 1972 near historic campsite above the Troitsa Main showing.

## **11.0 CURRENT EXPLORATION**

The 2010 exploration program consisted of extensive prospecting, soil and rock geochemical sampling and limited structural mapping. Attempts were made to locate and resample each of the three Minfile showings located on the property. Access proved to be an issue with visiting the Troitsa Lake showing. Very steep hillsides made traversing from the west unpractical and the lack of helicopter landing sites to the east of the showing hampered air access into the area. At present, the most practical means of visiting the Troitsa Lake showing is by boat until suitable helicopter landing sites can be cleared closer to the site. The Troitsa Cirque showing was not located during the present program despite a number of traverses into the general area. As a result, it was not re-sampled. The Troitsa Main showing was located and re-sampled over a length of 121m with a continuous channel sample.

The location of the 1999 Shawn Turford showing to the west was not located as it may have been covered by slumping of the hillside in 2000. A small 2m x 2m outcrop of similar material was discovered approximately 250m south of the reported 1999 showing location. Soil cover hampered sampling a larger area of the mineralized intrusive and no estimations of the size of the zone could be made.

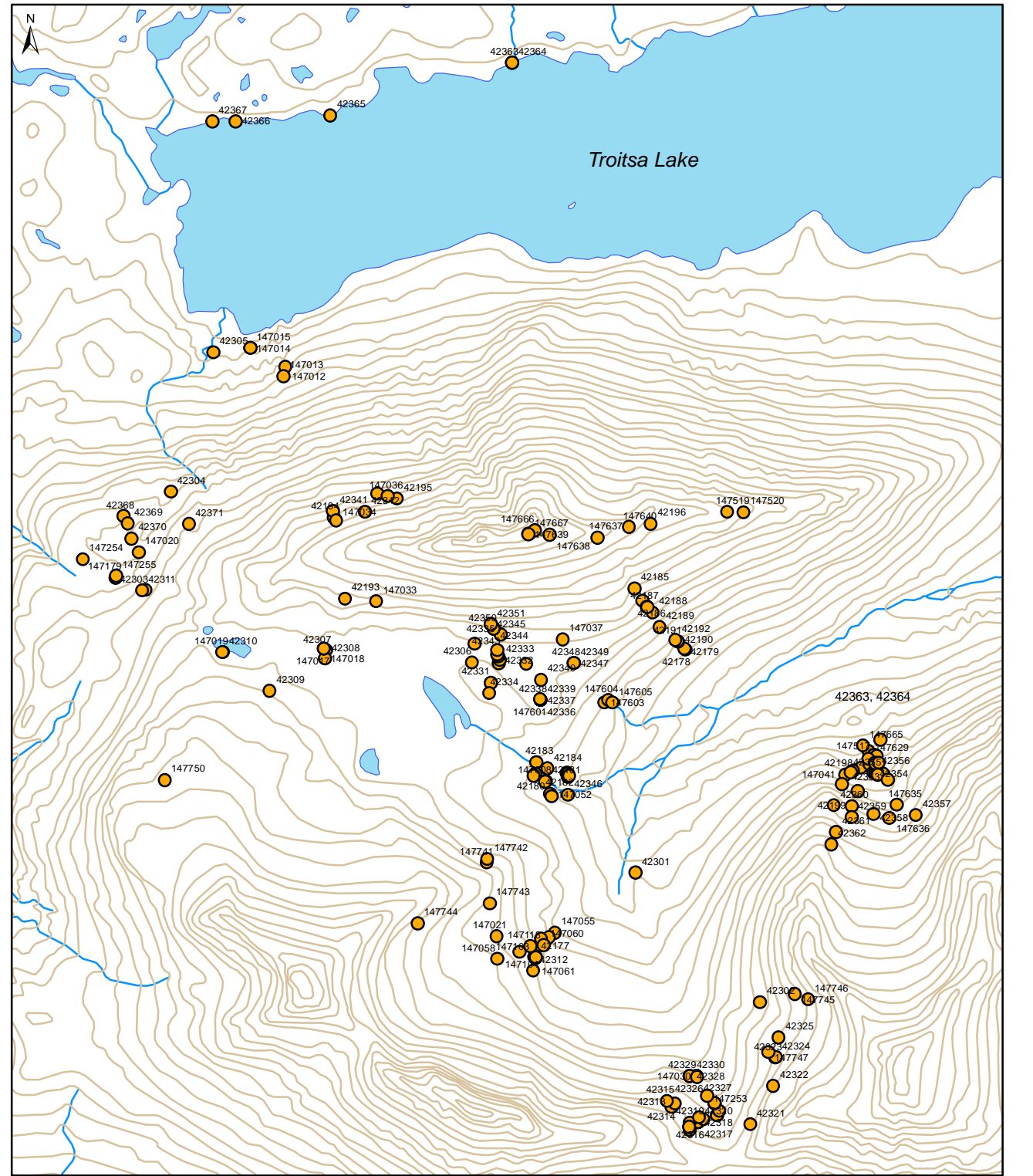
A number of new zones of mineralization were located, some in areas that would have been snow and ice covered when the original evaluations of the property were completed. Chalcopyrite and molybdenite occur both as disseminations and in veinlets and veins in intrusive and volcanic rocks in these areas parallel to the structural fabric (150° AZ). Arsenopyrite, gold and minor base metal mineralization is associated with late shear zones that cross-cut earlier mineralization. Much of the late faulting has a trend of approximately 030° AZ.

Geochemical surveys were completed over a 1050m x 2000m area. Traditional B-horizon soils were collected over the entire grid area. MMI sampling was completed over a 750m x 2000m area on the same grid.

### **11.1 Prospecting Survey Method and Approach**

The current exploration program involved extensive prospecting of the property and surrounding area in an attempt to identify areas of mineralization worthy of follow up programs. A total of 280 samples were collected during the program. Of these, 270 have sufficient information that they can be considered useful. In the early stages of the program, traverses were generally not focused on previous results. In some instances, locations were not recorded for the sample sites and sample descriptions were poor. In the latter half of the program traverses were planned to investigate the more prospective areas of the property where positive results had previously been reported. Select grab samples or chip samples across the width of a feature were collected and appropriately labeled. Samples were collected in the field and placed in new plastic sample bags with a unique sample tag. Each bag was labeled with the

# Troitsa Rock Sample Locations 2010



0 2.5 5 Km  
1:30,000

ID	Au_GMT	Mo_PPM	Cu_Pct		ID	Au_GMT	Mo_PPM	Cu_Pct
42177	0.018	212.03	0.5138	<	42354	0.153	338.48	0.427278
42178	0.703	82.83	0.3201	<	42355	0.008	3.44	0.105582
42179	0.409	437.28	>1.000000	<	42356	0.086	1.21	0.022895
42180	0.008	11.59	0.1731	<	42357	0.386	1.85	0.004369
42181	<0.005	6.13	0.2479	<	42358	<0.005	20.42	0.000842
42182	0.03	>2000.00	0.6789	<	42359	<0.005	2.28	0.015814
42183	<0.005	17.95	0.1411	<	42360	0.046	6.13	0.131901
42184	0.06	1704.41	>1.000000	<	42361	1.956	507.94	0.349135
42185	<0.005	3.96	0.0286	<	42362	0.677	25.6	0.147623
42186	<0.005	2.35	0.0079	<	42363	0.076	63.4	<Null>
42187	0.031	169.5	0.0320	<	42364	0.007	1.3	0.031802
42188	0.071	5.75	0.1776	<	42365	<0.005	0.12	0.000259
42189	0.069	244.46	0.7536	<	42366	0.034	0.1	0.034474
42190	0.089	9.03	>1.000000	<	42367	0.042	0.94	0.016471
42191	0.424	626.23	>1.000000	<	42368	<0.005	0.32	0.000857
42192	0.082	42.77	0.0972	<	42369	0.006	1.69	0.017232
42193	0.01	14.03	0.0090	<	42370	0.052	0.04	0.000805
42194	0.245	1.65	0.0045	<	42371	0.008	1.92	0.007727
42195	0.007	22.66	0.0026	<	147007	0.01	37.71	0.227414
42196	<0.005	0.11	0.0005	<	147008	0.013	1332.12	0.265293
42197	0.034	3.97	0.1031	<	147009	0.01	12.59	0.077662
42198	0.498	0.65	0.0178	<	147012	0.015	15.7	0.00291
42199	0.863	58.27	0.0063	<	147013	0.01	0.38	0.003571
42301	0.055	384.05	0.0010	<	147014	0.021	8.93	0.279878
42302	0.192	21.83	0.0509	<	147015	<0.005	2.06	0.024337
42303	0.006	110.49	0.0048	<	147016	0.025	19.24	0.379835
42304	0.006	1.77	0.0112	<	147017	0.026	37.72	0.246223
42305	<0.005	1.67	0.0016	<	147018	<0.005	1.86	0.014927
42306	0.129	102.58	0.0222	<	147019	<0.005	1.74	0.001093
42307	0.007	67.48	0.0023	<	147020	0.405	6.74	0.814778
42308	0.02	122.5	0.0013	<	147021	0.031	15.07	0.188289
42309	<0.005	6.6	0.0023	<	147022	0.009	116.83	0.392298
42310	<0.005	0.7	0.0003	<	147023	0.012	289.91	0.359712
42311	<0.005	1.61	0.0058	<	147024	0.035	283.98	0.626335
42312	0.164	326.62	0.0070	<	147025	0.241	634.93	0.362796
42313	0.136	637	0.2266	<	147026	0.011	4.16	0.023328
42314	0.01	11.9	0.1152	<	147027	0.034	26.53	0.262221
42315	0.553	721.82	0.2143	<	147028	0.02	128.87	0.297777
42316	0.011	9.71	0.2443	<	147029	0.081	52.85	<Null>
42317	0.012	11.76	0.1509	<	147030	0.022	18.13	0.056617
42318	0.023	370.91	0.5222	<	147031	<0.005	2.83	0.010711
42320	0.149	1116.77	0.5283	<	147033	0.007	1.96	0.036408
42321	0.008	5.28	0.1106	<	147034	0.014	0.67	0.013681
42322	0.012	16.29	0.2038	<	147035	0.009	1.92	0.006813
42323	0.106	7.5	0.0200	<	147036	<0.005	3.61	0.060803
42324	7.022	156.41	0.0171	<	147037	0.02	32.66	0.005153
42325	0.027	126.34	0.0181	<	147038	0.014	4.46	0.141943
42326	0.023	11.16	0.0093	<	147039	0.014	7.36	0.034027
42327	0.016	17.41	0.0030	<	147041	0.146	2.1	0.017628
42328	0.027	32.05	0.0097	<	147052	0.005	22.97	0.283013
42329	0.057	42.34	0.0196	<	147055	<0.005	0.94	0.021104
42330	0.015	136.03	0.1205	<	147056	0.013	23.58	0.119635
42331	<0.005	14.68	0.0146	<	147057	0.431	14.23	0.172188
42332	0.006	4.38	0.0311	<	147058	0.011	300.31	0.10667
42333	0.02	4.58	0.0806	<	147059	<0.005	48.48	0.028428
42334	<0.005	29.49	0.0624	<	147060	<0.005	56.07	0.091371
42335	0.012	0.99	0.1882	<	147061	<0.005	40.42	0.209716
42336	<0.005	3.05	0.0404	<	147101	<0.005	19.21	0.051817
42337	<0.005	2.12	0.0388	<	147102	0.016	32.82	0.01824
42338	0.018	3.63	0.2830	<	147103	0.008	5.08	0.008488
42339	0.011	8.64	0.0419	<	147104	0.005	3.3	0.014608
42340	0.009	34.82	0.0551	<	147118	<0.005	3.41	0.010247
42341	0.011	9.32	0.0017	<	147179	<0.005	0.63	0.01044
42342	0.076	31.7	0.0074	<	147251	0.057	<Null>	<Null>
42343	0.034	6.12	0.0196	<	147252	0.098	542.88	0.428754
42344	0.012	6.61	0.0158	<	147253	<0.005	9.29	0.071342
42345	0.012	3.96	0.0198	<	147254	<0.005	0.67	0.016337
42346	0.383	>2000.00	>1.000000	<	147255	<0.005	0.57	0.005373
42347	0.948	180.43	>1.000000	<	147745	<0.005	1.63	0.027244
42348	0.05	94.32	0.0488	<	147746	<0.005	10.24	0.050618
42349	0.022	126.21	0.0144	<	147747	0.754	453.21	0.004757
42350	0.005	2.24	0.0288	<	147748	0.045	6.64	0.148017
42351	<0.005	18.04	0.0560	<	147749	0.189	208.79	0.037244
42352	<0.005	1.6	0.0045	<	147750	0.168	620.63	<Null>
42353	0.185	1.77	>1.000000	<	<Null>	<Null>	<Null>	<Null>

same identifying number and information regarding the sample such as: UTM coordinates of the location, sample type, (grab, chip, channel etc.) and the sample description were recorded in the sample booklet. Field notes were collected by the author of unique outcrop characteristics and structural features thought to be important in controlling or offsetting mineralization.

Channel sampling of the main zone included a total of fifty-nine continuous 2m samples and one 3m sample across 121m of mineralized intrusive.

Four sample duplicates, one blank and one Oreas 96 standard with a grade of 4% Cu were inserted into the sample batch. Sampling included 20m of less mineralized intrusive to the west of and on the hanging wall to mineralization at the historical Troitsa Main showing.



Plate 8: A portable rock saw used to sample mineralization at Troitsa Main.

This larger zone of mineralization is bisected by a narrow fault with approximately 5m of intense potassic alteration. The fault is located at about the 74m mark from the start of the channel sample to the west. At this point, the creek is offset some 30m to the south along the fault. Sampling was resumed from the fault for an additional 45m to the east and included 12m of less mineralized intrusive on the footwall to the zone. Prospecting identified chalcopyrite and molybdenite mineralization considerable distances to the east and west of the area sampled but in lesser amounts.



Plate 9: Fault zone near Troitsa Main showing.

### **11.2 Prospecting Sample Preparation, Analysis and Security**

Once samples were collected in the field, sample bags were tied with flagging tape to prevent cross contamination. The samples were sorted in camp and either boxed or placed in labeled rice bags which were then sealed with zip ties to discourage tampering. The samples were delivered by helicopter to a staging site north of the Huckleberry minesite and transferred to Ranex Exploration employees for delivery to the ACME prep lab in Smithers, BC. Here the rock samples were crushed to 80% passing 10 mesh and then a 250g split pulverized to 85% passing 200 mesh. The 250g subsample was then delivered to the main ACME Analytical laboratory for subsequent analyses. A 15g sample of the pulp was digested in hot Aqua Regia solution for one hour then made up to volume with dilute HCL acid prior to elemental determinations by ICP Mass Spectrometer. Precious metal analyses were completed with a 30g sample and standard fire assay techniques.

### **11.3 Prospecting Results**

Prospecting identified a number of new mineralized zones on the property. Samples for the most part were select grab samples of the mineralization present. These samples should not be assumed as representative of the in-situ grades, but rather as character samples of the local mineralization exposed. Where there was exposure to allow for or mineralization over a larger area, chip samples were collected over a recorded width. Chip samples represent a more accurate determination of the grade of mineralization at that location. Channel sampling collects a continuous sample with the use of a rock saw to cut a



channel into the rock to obtain a true grade of the mineralization over a specified distance. It is analogous to a surface drill core sample.



Plate 10: Channel sampling included fifty-nine 2m samples and one 3m sample.

Samples collected in the course of the program outside of new zones returned values as high as 5.24% Cu, >2000ppm Mo, 7.022gm/t Au and 408gm/t Ag.

Discussions with the assay lab following the termination of the program noted that the analysis package chosen by the operator was not the best choice for copper and molybdenum determinations in that Aqua Regia is a partial digestion and would generally report lower values for the two elements if the minerals were encapsulated in quartz. To obtain actual Cu and Mo values it was recommended to re-analyze the samples using a total digestion method.



Plate 11: Channel sample showing quartz-sulphide veins leached at surface.

### 11.3.1 Troitsa Main showing

Channel sampling of the main zone averaged 0.282% Cu over the full 121m sampled. Mineralization to the west of the fault averaged 0.335% Cu over 44m including 28m that averaged 0.445% Cu and included the historic Troitsa Main showing. Below the fault to the east, the zone averaged 0.594% Cu over 24m. Molybdenite was noted in a number of places and assayed as high as 177.1ppm Mo over 2m. Chalcopyrite and molybdenite mineralization was noted for some distance east and west of the channel sample but in lesser amounts.



Plate 12: Main zone channel sample

### 11.3.2 Cirque showing area

The Darryl, Cirque 2 and Cirque 3 showings are located in the general vicinity of the historic Cirque showing which was not located in the 2010 program. These showings would have been snow or ice covered when the property was originally explored.

The Darryl showing consists of a 50m x 75m area containing abundant vein and disseminated chalcopryite in both granodiorite and andesite volcanics. A number of select grab samples were collected over the area and returned values as high as 0.6263% Cu, 0.1117% Mo, 0.241g/t Au and 761g/t Ag.



Plate 13: Darryl showing

The Cirque 3 showing may be an extension to mineralization at the Darryl



Plate 14: Cirque 3 showing

showing as it sits roughly 200m to the northwest and along strike of the regional fabric on the property. The showing consists of an area of higher density jointing and mineralization in the host granodiorite. Jointing consists of 1mm-5cm sulphide veins with an average density of 2-3

veins/m over a 20m width. Orientation of the veining is generally at 155° AZ, dipping 60° to the west. Narrow zones returned values of 0.2266% Cu, 637ppm Mo and 0.136g/t Au over 0.35m and 0.2143% Cu, 722ppm Mo and 0.553g/t Au over 0.4m. A 10m random chip sample returned 0.1152% Cu with lower values of Mo and Au.



This sample may overstate the actual grade of the zone as most faces available for sampling contained copper mineralization. Blowouts of malachite occur where oblique structures intersect the northwest trending mineralization.

Plate 15: Intersection of northeast structure with northwest trending mineralization

The Cirque 2 area is situated at the base of a glacier approximately 1000m



further on strike to the northwest from the Darryl and Cirque 3 showings. Alteration and mineralization occur in wide zones both parallel and oblique to regional jointing. Sampling in the area returned values as high as 0.2097% Cu from select grab samples and 0.1% Cu/10m from chip sampling. Abundant molybdenite mineralization identified in the field is not reflected in assay results.

Plate 16: Cirque 2 showing with approximate location of mineralized chip sample.

### 11.3.3 West showing

The West showing located outside of the main Troitsa stock consisted of a small 2m x 2m exposure of potassically altered BFP intrusive rock in an area comprised of mostly Kasalka volcanics. It's location is thought to be approximately 250m south of Shawn Turford's 1999 showing that returned



>10,000ppm Cu and 1.3g/t Au. A small blood red seep from the exposure was the only indication of possible mineralization. Upon examination, the outcrop consisted of roughly 2% disseminated chalcopyrite and returned results of 0.8148% Cu and 0.405g/t Au from a select grab sample.

Plate 17: West showing

### 11.3.4 Lake showing area

The Troitsa Lake showing was not visited during the program due to access issues however significant mineralization was located on the second creek from



the west end of Troitsa Lake. Here an 8m wide northwest trending BFP dike has been offset a number of times to the west by narrow northeast trending faults as it approaches the lake. The dike is offset at least twice over a short distance with displacements of approximately 4m. Narrow aplite and

Plate 18: Chalcopyrite and malachite in BFP intrusive 1000m west of the Troitsa Lake showing.

porphyritic andesite dikes core these faults. Mineralization is present within the BFP dike as veinlets and disseminations of chalcopyrite and minor molybdenite.

Grab samples of the BFP returned values as high as 0.3798% Cu while chip samples assayed as high as 0.2799% Cu/6m. The hanging wall volcanics are well fractured and host numerous quartz sulphide veins. A chip sample across the zone returned 0.2462% Cu/4m.



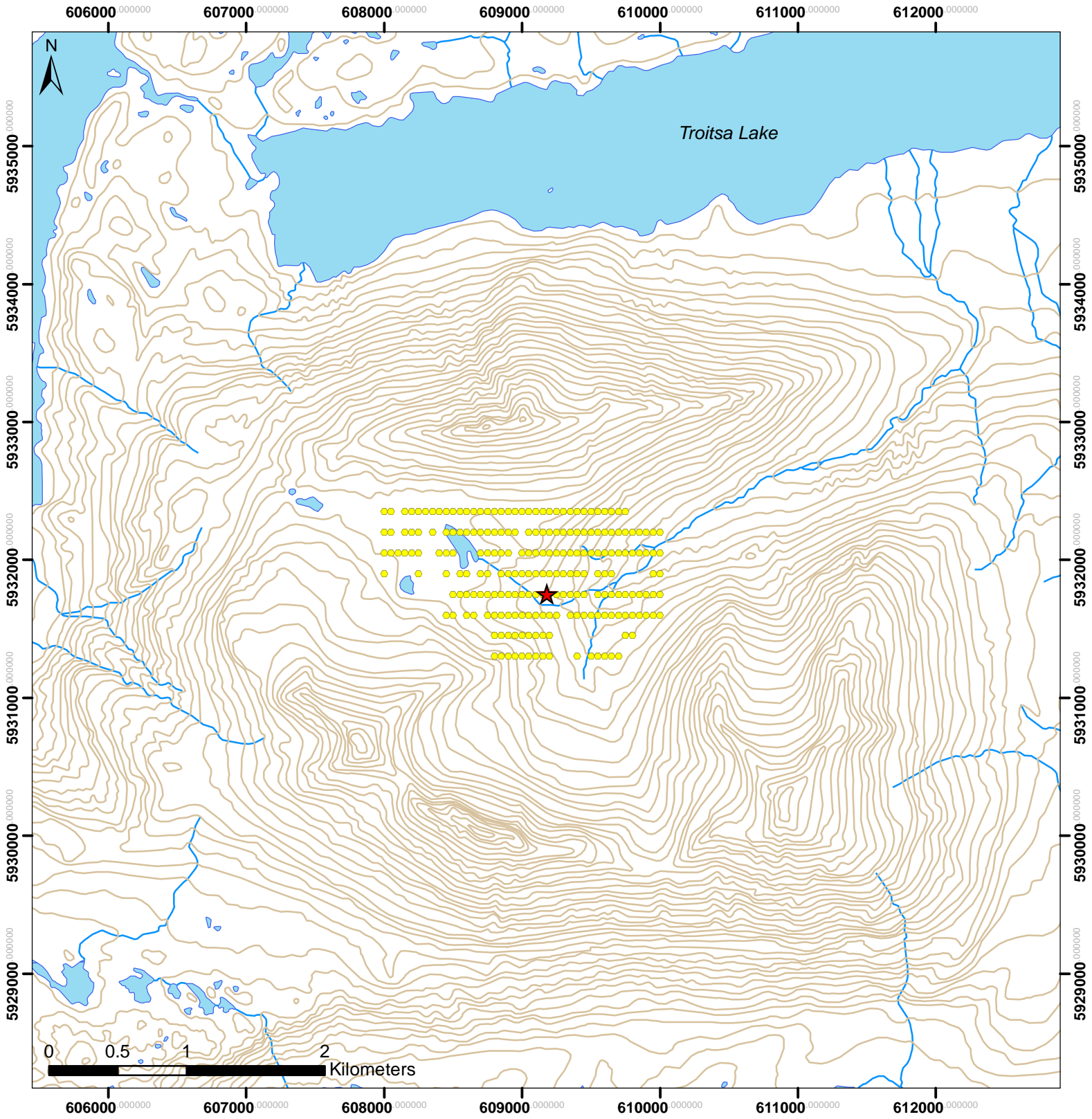
Plate 19: Malachite in rhyolite near Troitsa Lake.

Sampling on the north of Troitsa Lake returned elevated copper values up to 0.0345% in Kasalka volcanics containing 4-5% pyrite and trace chalcopyrite.

#### **11.4 B-Horizon Soil Geochemical Survey Method and Approach**

A grid was placed over the Troitsa Main showing area using UTM coordinates. A north/south baseline using 609000E was run from 5931300N to 5932350N. Cross lines spaced at 150m were run 1000m east and west of the baseline. B-horizon samples were collected using a narrow tree planting shovel where possible. Wide areas of glacial moraine hampered sampling, especially to the SE of the Main showing area where possible extensions to this mineralization would be expected. A total of 217 B-horizon samples were collected during the survey. Samples were placed in high strength Kraft sample bags and labeled with the sample site coordinates.

# B-Horizon Grid Sample Location



★ Troitsa Main Showing

### **11.5 B-Horizon Sample Preparation, Analysis and Security**

The samples were sorted in camp, air dried and either boxed or placed in labeled rice bags which were then sealed with zip ties to discourage tampering. The samples were delivered by helicopter to a staging site north of the Huckleberry mine site and transferred to Ranex Exploration employees for delivery to the ACME prep lab in Smithers, B.C. Soil samples were further dried at 60°C, then sieved to -80 mesh prior to pulverizing to -100 mesh. The subsample was then delivered to the main ACME Analytical laboratory for subsequent analyses. A 15g sample of the pulp was digested in hot Aqua Regia solution for one hour then made up to volume with dilute HCL acid prior to elemental determinations by ICP Mass Spectrometer. Precious metal analyses were completed with a 30g sample and standard fire assay techniques.

### **11.6 B-Horizon Soil Geochemical Survey Results**

With the limited number of samples and the discrepancies noted in the MMI survey below, no attempt will be made to determine elemental threshold and anomalous values for the survey. Historical sampling reported that 1<sup>st</sup> order anomalies for B-horizon soils had values >350ppm Cu and 30ppm Mo over the intrusive stock. Results from the 2010 survey outline a strong >400ppm Cu anomaly over a strike length of 500m with maximum values of 1106ppm Cu and 50.2ppm Mo, located near the Troitsa Main showing. This anomaly trends at 160° AZ through this area and follows the regional structural trend. Several other potential anomalous trends are present 300m to the west (919ppm Cu, 48ppm Mo) and 500m to the west (847ppm Cu, 244ppm Mo). The actual width and length of these anomalies was not determined due to a great number of sample sites that were not sampled. The survey also returned significant molybdenum values up to 616ppm from its northern most line. Results also highlight narrow northeast trending anomalies enriched in copper and molybdenum. These zones are believed to closely follow the previously identified northeast trending lineaments observed in the field. The northern section of the grid returned wide areas anomalous in both copper and molybdenum.

With the lack of sampling media over much of the southern parts of the grid, all anomalies are considered open along strike both to the north and south. Plan maps showing distribution of elements in “B” horizon soils are located in Appendix C. Complete results for the B-horizon soil survey can be found in Appendix D.

### **11.7 MMI Soil Geochemical Survey Method and Approach**

A grid was placed over the Troitsa Main showing area using UTM coordinates. The baseline using 609000E was run from 5931300N to 5932350N. Cross lines were run 1000m both east and west of the baseline. MMI samples were collected over a slightly smaller area from 5931600N to 5932350N. MMI samples were collected from the same sites as the B-horizon samples using a narrow tree planting shovel where possible. A total of 61 MMI samples were collected during the survey. Samples were placed in plastic sample bags and labeled with the

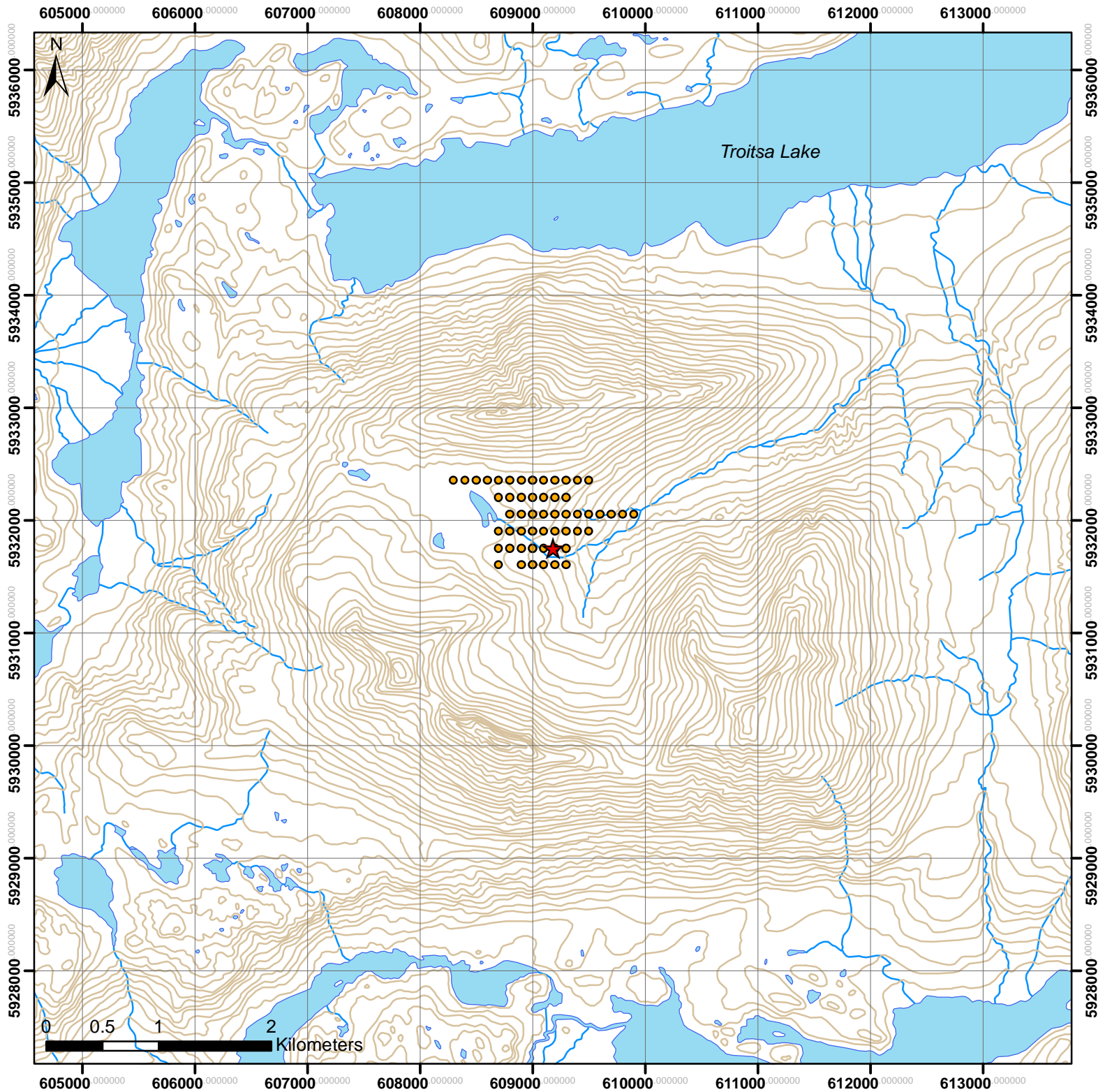


sample site coordinates. Blank ACME sample tags were also placed in the samples for cross reference purposes.

Sample depths were not recorded for the survey with the exception of a five sample sites located on the baseline where material was collected at depths of 0-15cm and 15-60cm. These samples were collected to determine if mobile metal ions were accumulating at these intervals. These sampling intervals cut across the normal sampling interval of 10-25cm depth below the organic/inorganic interface that is suggested for sampling depths in the absence of an orientation survey.

***Note: L1750N was mislabeled as L1600N and as a result, the analyzing laboratory had to report all results according to the ACME tag number submitted with each sample. A number of discrepancies also exist between the spreadsheet accompanying the samples and the actual tag numbers that were placed with the individual MMI samples.***

# Troitsa MMI Sample Location



★ Troitsa Main Showing



### **11.8 MMI Sample Preparation, Analysis and Security**

The samples were sorted in camp, and placed in labeled rice bags which were then sealed with zip ties to discourage tampering. The samples were delivered by helicopter to a staging site north of the Huckleberry minesite and transferred to Ranex Exploration employees for delivery to a transportation company based in Smithers, BC. The samples were delivered to the SGS laboratory in Toronto, Ontario for analysis. Here, a 250g split of the sample was placed in a proprietary solution of organic and inorganic compounds containing strong ligands, which detach and hold the metal ions in solution. Drying, crushing or other treatment is not necessary. Solutions containing mobile metal ions are then measured by conventional ICP-MS and ICP-MS Dynamic Reaction Cell™ (DRC II™) methods.

### **11.9 MMI Soil Geochemical Survey Results**

MMI Response Ratios were calculated to obtain anomalous values for plotting purposes. Values for gold, silver and copper reached 31, 34 and 34 x background respectively while response ratios for molybdenum reached maximums of 197 x background. MMI results often mirrored those obtained with "B" horizon sampling but at times were offset from the traditional soil anomalies. This may be a reflection of the sampling density for the MMI survey as samples were collected at 100m intervals rather than at the 50m intervals that the B-horizon survey was sampled at. Plan maps showing distribution of mobile metal ions in soils are located in Appendix E. Complete MMI sample results are located in Appendix F. Stacked profiles of MMI Response Ratios are located in Appendix G.

A number of sample sites had samples collected at depths of 0-15cm and 15-60cm to determine if metal ions were accumulating at these intervals. These sampling intervals cut across the normal sampling interval of 10-25cm depth below the organic/inorganic interface that is suggested for sampling depths in the absence of an orientation survey. The deeper sample consistently returned higher numbers but without a sample collected in the recommended 10-25cm depth, no determination can be made as to a preferred sampling depth.

***Caution should be used when interpreting some of the MMI results as line L1750N was mislabeled as L1600N and numerous stations did not correspond with the spreadsheet of enclosed ACME sample tags that were placed in each MMI sample. These samples area identified with either \* or \*\* in the MMI Response Ratio stacked profiles.***

### **12.0 GEOPHYSICAL SURVEY METHOD AND APPROACH**

No geophysical surveys were performed on the property during the current program.

### **13.0 DATA VERIFICATION**

No data verification was completed during the program.

## **14.0 ADJACENT PROPERTIES**

### **14.1 Huckleberry**

The Huckleberry mine ([093E 037](#)) has been in production since October, 1997. Published reserves for the deposit in 2010 were Proven and Probable reserves totaling 14.01 million tonnes grading 0.362% Cu, 0.005% Mo, Measured and Indicated reserves of 182.9M tonnes grading 0.321% Cu and Inferred reserves of 45.4M tonnes grading 0.288% Cu. Reserves were calculated with 0.20% Cu cut-off grade.

### **14.2 Berg**

The Berg property ([093 046](#)) hosts a large porphyry deposit recently purchased by Thompson Creek Metals. The deposit has a recently published 43-101 compliant measured & indicated resource of 557.8.5 million tonnes, grading 0.30% Cu and 0.037% Mo and 3.77g/t Ag and an inferred resource of 159.4 million tonnes grading 0.23% Cu, 0.033% Mo and 2.5 g/t Ag using a 0.30% copper equivalent cut-off grade.

### **14.3 Poplar**

The Poplar deposit ([093L 239](#)) contains a non 43-101 compliant Measured resource of 75M tonnes grading 0.35% Cu, 0.06% Mo and 2.8g/t Ag within a global (unclassified) resource of 144.12M tonnes grading 0.368% Cu and 0.011% Mo. The deposit occurs in a Middle-Late Cretaceous Bulkley intrusion intruding into Lower-Middle Hazelton Group volcanics.

### **14.4 Ox Lake**

The Ox Lake deposit ([093E 004](#)) hosts a historical Inferred resource of 17.235M tonnes grading 0.33% Cu and 0.035% Mo in the contact zone between a Cretaceous granodiorite and overlying volcanic tuffs of the Lower-Middle Jurassic Hazelton Group

### **14.5 Equity Silver**

The Equity Silver mine ([093L 001](#)) operated from 1981-1994 and mined 33.8M tonnes with an average grade of 0.4% Cu, 64.9g/t Ag and 0.46g/t Au. The open pit and underground operation mined tabular fracture zones 30-100m thick comprised of primarily veins and with only minor disseminations of sulphides.

### **14.6 Emerald Glacier**

The Emerald Glacier past producer ([093E 001](#)) operated intermittently between 1951 and 1968, contains an estimated 40,800 tonnes grading 355 grams per tonne silver, 8.23 per cent lead, 9.49 per cent zinc and 1.13 grams per tonne gold in unclassified reserves. Mineralization consisting of an echelon quartz veining with galena, sphalerite, chalcopyrite and pyrite extends for at least 1200 metres and is hosted in the transitional zone between Lower-Middle Jurassic Hazelton Group sedimentary and volcanic rocks.

## **15.0 MINERAL PROCESSING AND METALLURGICAL TESTING**

There was no mineral processing or metallurgical testing completed during the present program.

## **16.0 MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES**

There was no mineral resource or mineral reserve estimates completed during the present program.

## **17.0 OTHER RELEVANT DATA AND INFORMATION**

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

## **18.0 INTERPRETATION AND CONCLUSIONS**

Significant porphyry mineralization has been located on the Troitsa property. Channel sampling of the Troitsa Main showing has shown the mineralized zone to be much larger than originally thought. Soil sampling over this area has indicated that anomalies associated with the mineralization extend over widths up to several hundred metres and along strike at least 800m and possibly 1200m. The anomalies are open in both directions along strike. The dominant trend to mineralization is parallel to the regional jointing fabric, 150°-160°AZ, and it is this jointing that hosts the majority of the chalcopyrite mineralization. Molybdenite mineralization is present with the chalcopyrite in the steeply west dipping veins and also in veins that trend the same, but with dips in the 10°-30° range to the west. Very little pyrite was noted in the Main showing area. Field observations have noted that intersections of northeast faulting with the mineralized jointing can produce blowouts of mineralization at the outcrop scale. Initial B-horizon and MMI soil surveys suggest that this may also occur at the property scale as well.

Initial visits to the Troitsa Lake showing were not successful, yet significant mineralization was located west of the showing. Chip sampling of a mineralized dike returned 0.28% Cu over 6m while an additional chip sample of mineralized volcanics on the hanging wall to the dike returned 0.246% Cu/4m. The area between this mineralization and the Lake showing should be explored in detail. Prospecting over a six week period identified a number of new mineral showings. Noteworthy grades of mineralization found over wide areas indicate the need for follow up programs to assess the significance of these areas. Continued prospecting of the property to hopefully locate additional mineralization is also required.

The West showing area near a major northeast trending fault is known to contain significant amounts of gold in comparison to other showings on the property. Hand or mechanized trenching should be attempted to determine dimensions to this mineralization. Further efforts should be made to locate the Turford showing discovered in 1999 and apparently now covered by a slump in the hillside some 250m north of the West showing.

In light of the results obtained in the 2010 field program and the number of new showings located, it is the author's opinion that the Troitsa property is a property of merit and additional expenditures are warranted to further assess its economic potential.

**19.0 RECOMMENDATIONS AND BUDGET**

A systematic program of mapping, prospecting and sampling should be completed on all of the creeks draining the large ridge south of Troitsa Lake. As most of the exposed outcroppings exist only in the creek channels at lower elevations, a flagged grid followed by a geophysical magnetic survey to "map" the buried intrusive dikes followed by a geochemical survey (Ah or MMI) to determine the relative abundance of Cu, Mo and porphyry indicator elements present should be completed.

In the Main Showing area, a cut grid should be established to facilitate an IP survey to measure the abundance of sulphide material present. This grid should be placed over the same area as the existing flagged grid but should be extended to the north by at least 300m and to the south at least an additional 300m, especially to the east of the baseline along strike of the known mineralization. It is imperative to complete this IP survey prior to stepping out from any initial drilling as mineralization may be offset by late faulting. An initial program of 4000m of drilling in 10-12 holes is recommended to follow up any IP chargeability anomalies found in the area. As noted earlier, very little pyrite was noted in the Main Showing mineralization and as such, chargeability anomalies should reflect concentrations of copper mineralization.

Prospecting should be continued on the property to cover areas identified as being anomalous in previous programs. A first pass prospecting program should also be completed on the claims north of Troitsa Lake and to the west, in the Blanket Lakes area, to assess the prospective geology located there.

**Proposed budget for 2011**

Project Geologist (120 days @ 600/day)	72,000
Geologist (100 days @ \$500/day)	50,000
Prospector/sampler x 2 (100 days @ \$400/day)	80,000
Line-cutting (24km @\$1500/km)	33,000
Geophysical surveys mag/IP (30km @ \$2500/km)	75,000
Mob/demob	5,000
Drilling NTW (4000m @ \$120/m)	480,000
Helicopter (200 hrs @ \$1500 wet)	300,000
Assaying (3000 samples @ \$55/ea)	165,000
Camp costs (1100 person days @ \$100/day)	132,000
Reporting	20,000
Contingency (15%)	<u>212,250</u>
Total	\$1,627,250

Contingent on the results of the program, additional diamond drilling should target favorable anomalies.

Respectfully submitted this 30th day of April, 2011.

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APEY #0916  
APEGBC #35364

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**Schroeter, T., Pardy, J and Cathro, M. (2004):** Significant British Columbia Porphyry Cu-Au Resources. Geofile 2004-11, BC Ministry of Energy and Mines. <http://www.empr.gov.bc.ca/Mining/Geoscience/PublicationsCatalogue/GeoFiles/Documents/2004/Geofile2004-11.pdf>

**Turford, S. (1999):** PAP 99-23 British Columbia Prospectors Assistance Program Prospecting Report Form – TSA

**Turford, S. (2000):** PAP 00-8 British Columbia Prospectors Assistance Program Prospecting Report Form – Reach; TSA Target

### 13.0 CERTIFICATION, DATE AND SIGNATURE

1) I, Kenneth Daryl Galambos of 1535 Westall Avenue, Victoria, British Columbia am self-employed as a consultant geological engineer, authored and am responsible for this report entitled "Evaluation Report on the Troitsa Project", dated April 20, 2011.

2) I am a graduate of the University of Saskatchewan in Saskatoon, Saskatchewan with a Bachelors Degree in Geological Engineering (1982). I began working in the mining field in 1974 and have more than 26 years mineral exploration and production experience, primarily in the North American Cordillera. Highlights of this experience include the discovery and delineation of the Brewery Creek gold deposit, near Dawson City, Yukon for Noranda Exploration Ltd.

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

4) I have visited the subject mining property of this report and am a "Qualified Person" in the context of and have read and understand National Instrument 43-101 and the Companion Policy to NI 43-101.

5) This report is based upon a site visit to the property from August 21-September 25, 2010, the author's personal knowledge of the region and a review of additional pertinent data.

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

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

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

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

Dated at Victoria, British Columbia this 20<sup>th</sup> day of Aril, 2011.

"Signed and Sealed"



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

## 22.0 Statement of Expenditures

For the period August 1- September 25, 2010

Ranex Exploration Personnel 48 days @ \$250/day	12,000
<u>Callinan Mines Limited Personnel</u>	
Jocelan Maccke (35 days @ \$300/day)	10,500
Daryl Oulton (35 days @ \$300/day)	10,500
Ryan Periana (20 days @ \$300/day)	5,000
Jordon Golanowski (35 days @ \$250/day)	8,750
Ken Galambos (39 days @ \$550/day)	<u>21,450</u>
	68,200
Helicopter (60.3hrs @ various)	\$83,707.86
<u>Analysis</u>	
Rocks (274 @ \$50.05/ea)	\$13,714.67
Soils (217 @ \$45.70/ea)	\$9,917.84
MMI soils (61 @ \$42.39/ea)	\$2585.91
Camp costs (212 person days @ \$120/day)	\$25,440.00
Report	<u>\$10,000</u>
<b>Total</b>	<b>\$213,566.28</b>

### **23.0 Software used in support of this exploration program**

ArcGIS 10  
Geosoft Target  
Geosoft Geochemistry  
Adobe Illustrator CS5  
Microsoft Windows XP-Pro Version 2002  
Microsoft Office 2004  
Adobe Reader 8.1.3  
Adobe Acrobat 9  
Internet Explorer  
Google Earth

Bootcamp

## **24.0 Appendices**

**Appendix A**  
**Sample Descriptions**

ID	Easting	Northing	Description	Date	Name
42177	609015	5930811	qtz vein w/i felsic intrusive, malachite & py	8/7/2010	J. Maccke
42178	609791	5932393	qtz veining w/i granite w/ ande megalths & zenos w/ py & cpy	8/9/2010	J. Maccke
42179	609786	5932398	sulph vein w/ py & cpy w/i granite w/ local ande	8/9/2010	J. Maccke
42180	609019	5931755	cpy veinlets in granodio, minor mag w/ malachite; next to creek	8/10/2010	J. Maccke
42181	609074	5931717	alt granodio w/ cpy & malachite; near basalt dyke	8/10/2010	J. Maccke
42182	609095	5931651	high-grade vein ~ 5cm wide; qtz, calcite, py, cpy, malachite, mily in granodio host; 1m chip sample	8/10/2010	J. Maccke
42183	609025	5931813	granodio w/ cpy veinlets, minor diss, slightly alt	8/10/2010	J. Maccke
42184	609082	5931782	qtz vein 3 cm wide in granodio, cpy, malachite, moly; grab	8/11/2010	J. Maccke
42185	609530	5932708	magnetic w/ sulphs; py, cpy	8/12/2010	J. Maccke
42186	609571	5932643	granodio w/ diss cpy, py & malachite; unalt to slightly alt	8/12/2010	J. Maccke
42187	609594	5932614	qtz-py-cpy vein ~ 2cm wide; extrm clay-alt around vein	8/12/2010	J. Maccke
42188	609624	5932583	~ 2cm wide massive cpy, py & bornite vein in andesite	8/12/2010	J. Maccke
42189	609659	5932510	gal w/ qtz veining & cpy	8/12/2010	J. Maccke
42190	609755	5932432	malachite, py, cpy & qtz veinlets in clay-alt granodio	8/14/2010	J. Maccke
42191	609752	5932434	py, cpy & qtz veinlets in clay-alt granodio	8/14/2010	J. Maccke
42192	609741	5932444	gal, py, qtz in veinlets	8/14/2010	J. Maccke
42193	608040	5932654	qzt-phyric w. py; float; near mass qtz xtals; float	9/4/2010	J. Maccke
42194	607983	5933073	porphyritic rock w/ plag & mag phenos, py	9/5/2010	J. Maccke
42195	608309	5933170	3m chip across fault, py in aphanitic felsic w. limonite		J. Maccke
42196	609615	5933041	magnetite phyric aphanitic to porphyritic rock w/ white clasts	9/9/2010	J. Maccke
42197	610697	5931784	1-2cm vein w/ gal, sph in qtz; through aphanitic	9/10/2010	J. Maccke
42198	610615	5931750	qtz veinlets & veins in grey aphanitic, gal, py, arseno	9/10/2010	J. Maccke
42199	610649	5931586	qtz vein 5cm wide w/ sulph & anticular grey min	9/11/2010	J. Maccke
42301	609535	5931245	float grab - limonitic altd "frothy" drusy Qz/Py vn 17cm thick	8/21/2010	K. Galambos
42302	610176	5930578	1m chip - silicified shear zone with Tr Asp, Cpy	8/21/2010	K. Galambos
42303	607012	5932699	1.2m chip - Gry/Grn Ft zone w Qz/Py veins to 2mm	8/22/2010	K. Galambos
42304	607144	5933204	40cm chip of shear zone in int. volc. Rusty w Py(Cpy?) as diss and vns	8/22/2010	K. Galambos
42305	607362	5933922	grab - pyritic grn volc w 2cm Py(Cpy?) vn	8/23/2010	K. Galambos
42306	608693	5932326	4m chip - sheared GD w vns of frothy Py(Cpy) up to 3cm	8/26/2010	K. Galambos
42307	607942	5932389	80cm chip - Bx zone in GD porph - limonitic altd w vns of Py(Cpy?)	8/26/2010	K. Galambos
42308	607937	5932345	float grab - 30cm boulder Rhyl w Qz/Mag/ Py/(Cpy)	8/26/2010	K. Galambos
42309	607653	5932180	grab - rusty Rhyl sill w diss and vn Py(Cpy?)	8/27/2010	K. Galambos
42310	607410	5932378	grab - Frothy Qz vn w rusty Py/Cpy over 5m area	8/27/2010	K. Galambos
42311	606996	5932698	rusty ferricrete oc w Py(Cpy?)	8/27/2010	K. Galambos
42312	609008	5930740	grab - 12 cm Qz/carb/Sx vn	8/28/2010	K. Galambos
42313	609722	5930040	35cm chip - rusty zone in GD w py/Cpy/Mal	8/29/2010	K. Galambos
42314	609738	5930056	10m random chip - 20m area of higher joint density w Cu min in GD - avg 2-3 (1mm-5cm) vn/m	8/29/2010	K. Galambos
42315	609699	5930070	40cm chip - 15cm Py(Cpy) vn in 60 cm altd zone	8/29/2010	K. Galambos
42316	609857	5929960	grab - GD w diss Cpy	8/29/2010	K. Galambos
42317	609857	5928860	grab - volc w diss and vn Cpy	8/29/2010	K. Galambos
42318	609857	5929960	grab - volc w diss Cpy	8/29/2010	K. Galambos
42319	609857	5929960	grab - volc w Py(?)	8/29/2010	K. Galambos
42320	609857	5929960	grab - GD w diss Cpy/Mo diss and vn	8/29/2010	K. Galambos
42321	610127	5929949	grab - GD w diss Py/Cpy	8/30/2010	K. Galambos
42322	610245	5930148	grab - GD w rusty jointing ~ 3 hairline joints/m Py (Cpy)	8/30/2010	K. Galambos
42323	610254	5930292	grab - 25cm Qz-Py-Cpy vn in GD	8/30/2010	K. Galambos
42324	610257	5930295	grab - 10cm Qz-Py-Cpy vn in GD	8/30/2010	K. Galambos
42325	610273	5930398	30cm chip - Py vn in altd GD	8/30/2010	K. Galambos
42326	609851	5930199	30cm chip - limonitic sandy gouge zone in 2m fault zone	9/1/2010	K. Galambos
42327	609851	5930199	30cm chip - Fe cemented Qz vn Bx	9/1/2010	K. Galambos
42328	609816	5930199	1m chip - Qz vn silicified Ft zn	9/1/2010	K. Galambos
42329	609816	5930199	1m chip - Qz vn silicified Ft zn	9/1/2010	K. Galambos
42330	609816	5930199	1m chip - Qz vn silicified Ft zn	9/1/2010	K. Galambos
42331	608791	5932222	2m random chip - sericite altd QM w (Cpy) diss and vn	9/2/2010	K. Galambos
42332	608831	5932321	75cm chip - rusty sericite altd QM w Qz-Carb vn	9/2/2010	K. Galambos
42333	608836	5932338	grab - QM w Cpy vn	9/2/2010	K. Galambos
42334	608783	5932168	4m random chip - wkly altd QM w tr Cpy diss and vn	9/2/2010	K. Galambos
42335	608842	5932472	grab - float - Arg altd QM w 5% Py (Cpy)	9/2/2010	K. Galambos
42336	609048	5932132	2m chip - QM/GD w mm Cpy vn native Cu	9/4/2010	K. Galambos
42337	609048	5932132	2m chip - QM/GD w several 3-4mm Sx vn	9/4/2010	K. Galambos
42338	609048	5932132	2m chip - QM/GD w 1cm Cpy vn plus several mm Sx vns	9/4/2010	K. Galambos
42339	609048	5932132	2m chip - QM/GD w 2-3mm low angle Sx vn	9/4/2010	K. Galambos
42340	609049	5932238	2m chip - QM w 5 Sx vn/m	9/4/2010	K. Galambos
42341	607978	5933106	grab - v rusty limonitic zone w drusy Qz and Py	9/5/2010	K. Galambos
42342	608142	5933100	6m random chip - Ft zone in pyritic FG Dacite/Rhy	9/5/2010	K. Galambos
42343	608806	5932500	2m chip - FG siliceous and pyritic (Cpy) dike	9/5/2010	K. Galambos
42344	608806	5932500	2m chip - FG siliceous and pyritic (Cpy) dike	9/5/2010	K. Galambos
42345	608790	5932524	15m random chip - FP dike w >5% Py	9/5/2010	K. Galambos
42346	609186	5931646	13cm chip - Qz-Sx vn w Cpy	9/7/2010	K. Galambos
42347	609218	5932323	grab - hi grade Cu-Mo in Qm	9/8/2010	K. Galambos
42348	609218	5932323	grab - med grade Cu	9/8/2010	K. Galambos
42349	609218	5932323	grab - low grade MoS2	9/8/2010	K. Galambos
42350	608806	5932500	1.7m chip - (A)QM dike w Py	9/8/2010	K. Galambos
42351	608790	5932524	4m chip - potassic altd FP w tr-1% Cpy	9/8/2010	K. Galambos
42352	610760	5931797	1m random chip - rusty siliceous purple volc w 5% Py	9/9/2010	K. Galambos
42353	610740	5931802	grab - float of dk gry-grn volc w 5% Cpy (py) diss and vn	9/9/2010	K. Galambos
42354	610760	5931761	grab - banded (bedded) quartzites - cracked w Cpy-Py-Mo vns and clots	9/9/2010	K. Galambos
42355	610811	5931755	30cm chip - dk gry fg volc w Cpy stringers - includes 2cm wide Cpy-Py vn	9/9/2010	K. Galambos
42356	610769	5931763	10cm grab - includes 3cm Ga-Sph-AsPy + diss into wall rock	9/9/2010	K. Galambos
42357	610979	5931540	40cm chip - rusty w white clay gouge + Qz-Py vns to S of 1m lamp dike	9/10/2010	K. Galambos
42358	610760	5931546	grab - MoS2 clots in low angle Qz vn	9/10/2010	K. Galambos
42359	610647	5931530	1m random chip - weakly jointed QM w Cpy intergrown w 2ndry biotite	9/11/2010	K. Galambos
42360	610556	5931591	2m random chip - QM with stronger jointing and vning	9/11/2010	K. Galambos
42361	610566	5931455	25cm chip - Ft w Qz-Py-Cpy-Ga-AsPy	9/11/2010	K. Galambos
42362	610543	5931390	30cm chip - altn zone in QM w Qz vn core	9/11/2010	K. Galambos
42363	608900	5935413	grab - float - malachite-Cpy vn in QM	9/11/2010	K. Galambos
42364	608900	5935413	grab float - fresh QM w tr Cpy diss	9/11/2010	K. Galambos
42365	607966	5935142	grab - purple and grn volc w 1-2% marcasite?	9/21/2010	K. Galambos

42366	607476	5935110	grab - talus med gry volc w 1-2% Py(Cpy?)	9/21/2010	K. Galambos
42367	607357	5935112	grab - rusty shear in volc	9/21/2010	K. Galambos
42368	606899	5933080	grab - Qz vn in vesicular andesite	9/23/2010	K. Galambos
42369	606923	5933043	grab - FP w Py	9/23/2010	K. Galambos
42370	606941	5932964	grab - med grn volc w Py (Cpy)	9/23/2010	K. Galambos
42371	607237	5933039	grab - v siliceous FP w 4-5% Py	9/23/2010	K. Galambos
147007	609013	5931745	calco, malichite, fracture fill in granodiorite outcrop, grab	8/10/2010	D. Oulton
147008	609071	5931714	bornite, claco, tetrahedrite? vien, calcite, magnetic, granodiorite, grab	8/10/2010	D. Oulton
147009	609596	5932610	andesite dike btw. granodiorite on either side, calco disseminations	8/12/2010	D. Oulton
147012	607734	5933849	rhyolite, disseminated py, arsenopy?	8/25/2010	D. Oulton
147013	607723	5933801	pyrite disseminated into granodiorite, random chip sample of 2.5m outcrop	8/25/2010	D. Oulton
147014	607552	5933944	6m chip, spot sample	8/25/2010	D. Oulton
147015	607552	5933944	malachite, py disseminations in granodiorite dike, 2.3m spot sample	8/25/2010	D. Oulton
147016	607933	5932396	malachite, disseminated claco, in 8m wide granodiorite dike	8/25/2010	D. Oulton
147017	607933	5932396	random spot sample across dike, 4m wide, every foot	8/25/2010	D. Oulton
147018	607933	5932396	malachite and calco disseminations into granodiorite rock	8/26/2010	D. Oulton
147019	607408	5932379	qtz and py in altered rhyolite	8/27/2010	D. Oulton
147020	606978	5932893	calco disseminations in granodiorite	8/27/2010	D. Oulton
147021	608821	5930919	calco, py, gal, lamprophere contact w/granodiorite, grab	8/28/2010	D. Oulton
147022	609814	5929958	calco, 50m by 75m granodiorite rock, grab	8/29/2010	D. Oulton
147023	609814	5929923	calco in granodiorite	8/29/2010	D. Oulton
147024	609814	5929923	calco in granodiorite	8/29/2010	D. Oulton
147025	609811	5929938	calco in granodiorite, grab	8/29/2010	D. Oulton
147026	609811	5929938	calco in granodiorite, exposed and in place, grab	8/29/2010	D. Oulton
147027	609955	5929996	mass sulphides, py, malachite, calco, continuation of main zone	8/30/2010	D. Oulton
147028	609955	5929996	vien fracture fill, calco, py, malachite, in granodiorite; 3m wide chip sample	8/30/2010	D. Oulton
147029	609968	5930019	calco, qtz, py, mal; 1m grab sample	8/30/2010	D. Oulton
147030	609853	5930195	carbonate fault zone; chip sample	9/1/2010	D. Oulton
147031	608706	5932423	calco, py, in granodiorite w/some alteration; 20degrees N+E, 1m chip sample	9/2/2010	D. Oulton
147033	608202	5932640	claco, py in granodiorite	9/4/2010	D. Oulton
147034	607995	5933059	minor calco, py, in granodiorite outcrop	9/5/2010	D. Oulton
147035	608206	5933195	limonite, py, sulph, in altered rhyolite	9/5/2010	D. Oulton
147036	608260	5933182	calco, py, in feldspar porphyry	9/5/2010	D. Oulton
147037	609162	5932446	mass sulph vein, clay-alt zone	9/8/2010	D. Oulton
147038	610655	5931769	grab, carb veins, volcanic ande, gal, sph, py	9/10/2010	D. Oulton
147039	610642	5931761	1m wide chip; ande volcanic; fract & diss cpy	9/10/2010	D. Oulton
147040	610678	5931666	3inch vein in volcanic ande; sph, gal, moly, cpy	9/10/2010	D. Oulton
147041	610597	5931700	qtz-carb vein, gal-py-asy	9/10/2010	D. Oulton
147052	609103	5931638	pyrite/mal vn in creek	8/8/2010	J. Golanowski
147055	609121	5930937	py in altd granite	8/11/2010	J. Golanowski
147056	609090	5930912	cpy/mal/vn in granite 360/-52W	8/11/2010	J. Golanowski
147057	609046	5930872	py/cpy/ga in qz in volc	8/11/2010	J. Golanowski
147058	608823	5930800	mo/py/cpy	8/11/2010	J. Golanowski
147059	609050	5930905	py/cpy/ga/mal in vn in granite	8/12/2010	J. Golanowski
147060	609062	5930873	andesite w py	8/12/2010	J. Golanowski
147061	609019	5930803	mal/py/cpy vn in granite	8/12/2010	J. Golanowski
147062	Troitsa	Main	channel 0-2m	8/26/2010	J. Golanowski
147063	Troitsa	Main	channel 2-4m	8/26/2010	J. Golanowski
147064	Troitsa	Main	channel 4-6m	8/26/2010	J. Golanowski
147065	Troitsa	Main	channel 6-8m	8/22/2010	J. Golanowski
147066	Troitsa	Main	channel 8-10m	8/26/2010	J. Golanowski
147067	Troitsa	Main	channel 10-12m	8/26/2010	J. Golanowski
147068	Troitsa	Main	channel 12-14m	8/27/2010	J. Golanowski
147069	Troitsa	Main	channel 14-16m	8/27/2010	J. Golanowski
147070	Troitsa	Main	channel 16-18m	8/27/2010	J. Golanowski
147071	Troitsa	Main	channel 18-20m	8/27/2010	J. Golanowski
147175	Troitsa	Main	channel 20-22m	9/7/2010	J. Golanowski
147072	Troitsa	Main	channel 22-24m	8/27/2010	J. Golanowski
147073	Troitsa	Main	channel 24-26m	8/27/2010	J. Golanowski
147074	Troitsa	Main	channel 26-28m	8/28/2010	J. Golanowski
147075	Troitsa	Main	channel 28-30m	8/28/2010	J. Golanowski
147076	Troitsa	Main	channel 30-32m	8/28/2010	J. Golanowski
147077	Troitsa	Main	channel 32-34m	8/28/2010	J. Golanowski
147078	Troitsa	Main	channel 34-36m	8/28/2010	J. Golanowski
147079	Troitsa	Main	channel 36-38m	8/28/2010	J. Golanowski
147080	Troitsa	Main	channel 38-40m	8/28/2010	J. Golanowski
147081	Troitsa	Main	channel 40-42m	8/28/2010	J. Golanowski
147082	Troitsa	Main	channel 42-44m	8/28/2010	J. Golanowski
147176	Troitsa	Main	channel 44-46m		
147083	Troitsa	Main	blank	8/28/2010	J. Golanowski
147084	Troitsa	Main	channel 46-48m	8/28/2010	J. Golanowski
147085	Troitsa	Main	channel 48-50m	8/28/2010	S. Gray
147086	Troitsa	Main	channel 50-52m	8/29/2010	S. Gray
147087	Troitsa	Main	channel 52-54m	8/29/2010	S. Gray
147088	Troitsa	Main	channel 54-56m	8/29/2010	S. Gray
147089	Troitsa	Main	channel 56-58m	8/29/2010	J. Golanowski
147090	Troitsa	Main	channel 58-60m	8/29/2010	S. Gray
147091	Troitsa	Main	channel 60-62m	9/1/2010	J. Golanowski
147092	Troitsa	Main	channel 62-64m	9/2/2010	J. Golanowski
147093	Troitsa	Main	channel 64-66m	9/2/2010	J. Golanowski
147094	Troitsa	Main	channel 66-68m	9/2/2010	J. Golanowski
147095	Troitsa	Main	channel 68-70m	9/2/2010	J. Golanowski
147096	Troitsa	Main	channel 70-72m	9/2/2010	J. Golanowski
147097	Troitsa	Main	channel 72-74m	9/2/2010	J. Golanowski
147098	Troitsa	Main	channel 74-76m	9/2/2010	J. Golanowski
147099	Troitsa	Main	channel 76-78m	9/2/2010	J. Golanowski
147100	Troitsa	Main	channel 78-80m	9/2/2010	J. Golanowski
147152	Troitsa	Main	channel 80-82m	9/2/2010	J. Golanowski



147151	Troitsa	Main	channel 82-84m	9/2/2010	J. Golanowski
147153	Troitsa	Main	channel 84-86m	9/2/2010	J. Golanowski
147154	Troitsa	Main	channel 86-88m	9/4/2010	J. Golanowski
147155	Troitsa	Main	channel 88-90m	9/5/2010	J. Golanowski
147156	Troitsa	Main	channel 90-92m	9/5/2010	J. Golanowski
147157	Troitsa	Main	channel 92-94m	9/5/2010	J. Golanowski
147158	Troitsa	Main	channel 94-96m	9/5/2010	J. Golanowski
147159	Troitsa	Main	channel 96-98m	9/5/2010	J. Golanowski
147160	Troitsa	Main	channel 98-100m	9/5/2010	J. Golanowski
147161	Troitsa	Main	channel 100-102m	9/5/2010	J. Golanowski
147162	Troitsa	Main	channel 102-104m	9/5/2010	J. Golanowski
147163	Troitsa	Main	channel 104-106m	9/5/2010	J. Golanowski
147164	Troitsa	Main	channel 106-108m	9/5/2010	J. Golanowski
147165	Troitsa	Main	channel 108-110m	9/5/2010	J. Golanowski
147166	Troitsa	Main	channel 110-112m	9/5/2010	J. Golanowski
147167	Troitsa	Main	channel 112-114m	9/5/2010	J. Golanowski
147168	Troitsa	Main	channel 114-116m	9/5/2010	J. Golanowski
147169	Troitsa	Main	channel 116-118m	9/5/2010	J. Golanowski
147170	Troitsa	Main	channel 118-121m	9/5/2010	J. Golanowski
147171	Troitsa	Main	dup channel 100-102m	9/7/2010	
147172	Troitsa	Main	dup channel 80-82m	9/7/2010	
147173	Troitsa	Main	dup channel 60-62m	9/7/2010	
147174	Troitsa	Main	dup channel 40-42m	9/7/2010	
147177	Troitsa	Main	dup channel 64-66m	9/7/2010	
147101	609023	5930810	chip 1-3m; 10m wide chip; across veinlets & alt zone; py, cpy, granodio	9/13/2010	D. Oulton
147102	609023	5930810	chip 3-6m	9/13/2010	D. Oulton
147103	609023	5930810	chip; 10m long across alt zone, granodio, py, cpy	9/13/2010	D. Oulton
147104	608939	5930836	chip 0-5m	9/13/2010	D. Oulton
147105		Cirque 2 showing	chip 5-10m	9/13/2010	D. Oulton
147106		Cirque 2 showing	chip 10-15m	9/13/2010	D. Oulton
147107		Cirque 2 showing	chip 15-20m	9/13/2010	D. Oulton
147108		Cirque 2 showing	chip 20-25m	9/13/2010	D. Oulton
147109		Cirque 2 showing	chip 25-30m	9/13/2010	D. Oulton
147110		Cirque 2 showing	chip 30-35m	9/13/2010	D. Oulton
147111		Cirque 2 showing	chip 35-40m	9/13/2010	D. Oulton
147112		Cirque 2 showing	chip 40-45m	9/13/2010	D. Oulton
147113		Cirque 2 showing	chip 45-50m	9/13/2010	D. Oulton
147114		Cirque 2 showing	chip 50-55m	9/13/2010	D. Oulton
147115		Cirque 2 showing	chip 55-60m	9/13/2010	D. Oulton
147116		Cirque 2 showing	chip 60-65m	9/13/2010	D. Oulton
147117		Cirque 2 showing	chip 65-70m	9/13/2010	D. Oulton
147118	608995	5930867	chip 70-75m	9/13/2010	D. Oulton
147179	606859	5932764	volcanic melange? Magnetic; aspy? Py	9/23/2010	
147251	609943	5930057	fract-fill, w/ malachite, cpy, py, moly in qtz vein; volc outcrop	8/30/2010	J. Golanowski
147252	609942	5930058	chip; 4m long; volc outcrop w/ multi-fract fills	8/30/2010	J. Golanowski
147253	609903	5930098	chip; 5m long in alt w/ multi-veins	8/30/2010	J. Golanowski
147254	606692	5932857	grab; volc w/ py, malachite?	9/23/2010	
147255	606861	5932772	chip: volc outcrop w/ dyke, py		
147501	609182	5931756	grab - 6" qz vn w cpy/py in altd GD	7/12/2010	D. Ethier
147502	609182	5931758	2m panel chip - carb altd GD w Cu/Mo- some green mud	7/12/2010	D. Ethier
147503	609188	5931753	grab - hi grade 1.5-2" cpy massive in qz vn	7/12/2010	D. Ethier
147504	609186	5931739	1m chip - altd GD w Cpy w/o veinlets	7/12/2010	D. Ethier
147505	609196	5931744	0.3m chip - ft gouge in altd GD - 8m inside zone	7/12/2010	D. Ethier
147512	610795	5931929	float grab - volcanic flow w py hornfels	7/15/2010	D. Ethier
147513	610735	5931871	grab - 2" qz/ga/sph - 150deg strike	7/15/2010	D. Ethier
147514	610762	5931851	grab	7/15/2010	D. Ethier
147515	610762	5931851	grab	7/15/2010	D. Ethier
147517	610777	5931845	grab full 10" - sph/aspy/ga/py/cpy	7/15/2010	D. Ethier
147518	610780	5931762	grab - mag/py/biotite	7/16/2010	D. Ethier
147519	610009	5933101	grab - breccia	7/16/2010	D. Ethier
147520	610093	5933099	grab - 4" chunk of limonite, dense, heavy	7/16/2010	D. Ethier
147601	609046	5932137	stringers, veins, py, cpy, mal; outcrop		E. Ethier
147602	608974	5932319	float; py in grdt		E. Ethier
147603	609375	5932121	outcrop; stringers, veins, chlorite, qtz, calcite		E. Ethier
147604	609395	5932134	float; mal in large float chlorite & cpy in granodio		E. Ethier
147605	609416	5932120	outcrop; qtz vein w/ py, cpy, mal, strike 350°		E. Ethier
147629	610735	5931830	outcrop; carb vein, aspy vein in ande	7/15/2010	E. Ethier
147630	610767	5931809	vein w/ white stain qtz py ande	7/15/2010	E. Ethier
147631	610769	5931805	outcrop; high carb, minor py, fract ande	7/15/2010	E. Ethier
147632	610789	5931809	outcrop; strike; ande w/ py	7/15/2010	E. Ethier
147633	610784	5931750	outcrop; calcite py vein	7/15/2010	E. Ethier
147634	610835	5931723	outcrop; ande w/ diss py; east wall	7/15/2010	E. Ethier
147635	610879	5931594	outcrop; ande py; rusty	7/15/2010	E. Ethier
147636	610842	5931525	outcrop; vein of crystalline min	7/15/2010	E. Ethier
147637	609339	5932969	outcrop; qtzite & granodio	7/16/2010	E. Ethier
147638	609094	5932985	outcrop; vein of carb	7/16/2010	E. Ethier
147639	608983	5932988	fault gouge between basalt granodio	7/16/2010	E. Ethier
147640	609502	5933024	outcrop; grey ande w/ stringer vein & hornblende chlorite; serpentine	7/16/2010	E. Ethier
147651	608830	5932356	py, tr cpy, qtz, granodio	7/12/2010	B. Jacobson
147652	608825	5932366	soil/rock chip sample; silver sulphs; rusty vein in grano dio	7/12/2010	B. Jacobson
147653	608824	5932389	weathered rusty vein py & silver sulphs	7/12/2010	B. Jacobson
147665	610706	5931899	float; py, cpy, as	7/15/2010	B. Jacobson
147666	609018	5933006	volcanic qtz, py, hema alteration	7/16/2010	B. Jacobson
147667	608984	5932987	basalt w/ tr py	7/16/2010	B. Jacobson
147741	608770	5931296	carbonated volcanic; malachite, galena	8/10/2010	E. Ethier
147742	608774	5931314	contact zone	8/10/2010	E. Ethier
147743	608785	5931086	ande w/ green epidote clasts & py	8/10/2010	E. Ethier
147744	608415	5930985	py & qtz in granodio, heavy limonite	8/10/2010	E. Ethier

147745	610356	5930620	ande band	8/11/2010	E. Ethier
147746	610425	5930592	magnetite in granodio	8/11/2010	E. Ethier
147747	610219	5930321	carb limonite veins, py	8/11/2010	E. Ethier
147748	609885	5929976	py, limonite	8/11/2010	E. Ethier
147749	609863	5929986	py, malachite in vein	8/11/2010	E. Ethier
147750	607113	5931722	magnetite in py	8/11/2010	E. Ethier

## **Appendix B**

### **Assay Certificates**



1020 Cordova St. East Vancouver BC V6A 4A3 Canada

Acme Analytical Laboratories (Vancouver) Ltd.

www.acmelab.com

Client: Callinan Mines Limited
Suite 1100 - 736 Granville Street
Vancouver BC V6Z 1G3 Canada

Submitted By: Narissa Saretsky
Receiving Lab: Canada-Smithers
Received: October 04, 2010
Report Date: November 09, 2010
Page: 1 of 7

CERTIFICATE OF ANALYSIS

SMI10000652.1

CLIENT JOB INFORMATION

Project: Troitsa
Shipment ID:
P.O. Number
Number of Samples: 176

SAMPLE DISPOSAL

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

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

Invoice To: Callinan Mines Limited
Suite 1100 - 736 Granville Street
Vancouver BC V6Z 1G3
Canada

CC: Ken Galambos

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Table with 6 columns: Method Code, Number of Samples, Code Description, Test Wgt (g), Report Status, Lab. Rows include 7AR, G6Gr, R200-250, G601, and 1F05.

ADDITIONAL COMMENTS



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. \*\* asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.



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 Vancouver BC V6Z 1G3 Canada

Project: Troitsa  
 Report Date: November 09, 2010

Page: 2 of 7 Part 1

CERTIFICATE OF ANALYSIS

SMI10000652.1

Method	7AR	G6Gr	WGHT	G6	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
Analyte	Cu	Ag	Wgt	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	
Unit	%	gm/t	kg	gm/t	ppm	%	%	%	gm/t	ppm	ppm	%	%	ppm	ppm	gm/t	ppm	ppm	ppm	ppm	
MDL	0.001	50	0.01	0.005	0.01	1e-006	1e-006	1e-005	0.002	0.1	0.1	0.0001	0.01	0.1	0.1	0.0002	0.1	0.5	0.01	0.02	
42165	Rock		1.21	0.030	0.08	0.3829	0.0015	0.0061	20.93	0.8	4.6	0.0483	1.59	15.7	0.5	0.0332	0.7	34.4	0.44	56.83	
42166	Rock		1.62	<0.005	<0.01	0.0405	0.0002	0.0034	0.274	1.5	4.3	0.0333	1.65	0.9	0.1	0.0013	0.5	16.8	0.20	0.53	
42167	Rock		1.93	<0.005	0.04	0.0009	0.0004	0.0147	0.087	1.6	13.4	0.2544	3.73	55.4	0.3	0.0008	0.9	19.4	0.05	1.23	
42168	Rock		1.74	<0.005	<0.01	0.0360	0.0003	0.0099	0.263	2.2	8.8	0.0819	2.78	13.4	0.2	0.0037	0.9	43.1	0.14	35.18	
42169	Rock		1.03	<0.005	0.16	0.0027	0.0006	0.0022	0.081	0.5	2.5	0.0386	1.78	3.9	0.3	<0.0002	0.7	30.4	0.09	1.66	
42170	Rock		3.26	0.013	0.34	0.0173	0.0008	0.0038	0.171	0.8	13.0	0.6054	7.87	65.9	0.4	0.0137	<0.1	205.4	0.14	3.87	
42171	Rock		1.80	0.021	2.29	0.0117	0.0021	0.0102	0.430	2.9	16.3	0.2128	4.78	44.6	<0.1	0.0217	0.3	95.8	1.72	15.37	
42172	Rock		1.11	<0.005	0.09	0.0004	0.0001	0.0147	0.031	3.8	10.0	0.1879	3.81	5.8	0.1	0.0009	0.6	24.9	0.04	0.22	
42173	Rock		1.38	0.018	1.88	0.0272	0.0003	0.4358	0.244	5.5	17.3	0.2053	5.36	4.9	<0.1	0.0128	0.4	26.2	44.64	0.41	
42174	Rock		1.76	2.697	0.17	0.2023	0.0005	>1	0.828	1.1	4.6	0.4052	3.53	56.0	<0.1	2.338	0.2	46.1	309.3	1.56	
42175	Rock		1.66	0.010	0.53	0.0039	0.0003	0.0225	0.141	2.9	14.1	0.1638	4.80	4.0	<0.1	0.0058	0.4	13.3	0.42	0.12	
42176	Rock		1.86	0.005	0.07	0.0006	0.0002	0.0101	0.035	1.7	4.2	0.0605	1.54	37.2	<0.1	0.0028	0.4	2.7	0.62	0.20	
42177	Rock		2.07	0.018	212.0	0.5138	0.0418	0.0507	28.69	25.9	112.7	0.1230	7.22	101.3	17.1	0.0531	4.9	90.4	18.01	162.9	
42178	Rock		1.53	0.703	82.83	0.3201	0.0029	0.0186	21.12	9.0	8.9	0.0191	3.58	289.0	3.5	0.7454	1.1	6.8	3.48	2.87	
42179	Rock	7.535	152	0.81	0.409	437.3	>1	0.0159	0.0397	>100	30.7	32.3	0.0123	12.12	22.8	5.2	0.3903	3.2	3.7	11.60	13.96
42180	Rock		1.15	0.008	11.59	0.1731	0.0007	0.0053	1.653	9.4	5.7	0.0387	2.04	6.7	4.5	0.0067	11.7	15.2	0.27	0.26	
42181	Rock		1.38	<0.005	6.13	0.2479	0.0008	0.0057	2.877	16.7	15.7	0.0472	3.48	7.3	4.1	0.0024	9.3	28.1	0.33	0.49	
42182	Rock		1.17	0.030	>2000	0.6789	0.0239	0.0038	15.21	15.0	20.1	0.0221	3.51	16.3	5.5	0.0162	8.0	4.9	<0.01	1.28	
42183	Rock		1.31	<0.005	17.95	0.1411	0.0004	0.0043	0.868	7.2	6.9	0.0338	2.30	2.2	5.3	0.0042	10.4	31.5	0.12	0.27	
42184	Rock	1.207	1.83	0.060	1704	>1	0.0074	0.0054	20.05	26.8	83.2	0.0159	3.55	34.3	15.0	0.0583	5.3	5.9	0.26	1.00	
42185	Rock		1.39	<0.005	3.96	0.0286	0.0005	0.0056	0.139	14.0	24.6	0.0363	3.82	2.2	0.4	0.0053	0.3	7.9	0.10	0.19	
42186	Rock		1.19	<0.005	2.35	0.0079	0.0002	0.0015	0.080	9.9	8.7	0.0127	2.64	0.1	5.2	0.0049	12.5	30.2	<0.01	<0.02	
42187	Rock		1.55	0.031	169.5	0.0319	0.0377	0.0402	9.302	16.1	155.2	0.0548	12.95	31.0	5.4	0.0278	1.0	37.2	7.05	1.96	
42188	Rock		2.62	0.071	5.75	0.1776	0.0003	0.0100	2.004	29.0	963.6	0.0132	22.03	3.3	0.6	0.0557	1.7	2.1	0.35	0.06	
42189	Rock		230	2.55	0.069	244.5	0.7536	>1	>1	>100	9.5	17.2	0.2217	2.87	926.2	4.3	0.0685	1.3	135.1	703.0	>2000
42190	Rock	2.224	1.30	0.089	9.03	>1	0.0267	0.0282	23.59	9.3	16.4	0.0333	3.97	8.1	3.3	0.0869	9.5	43.0	6.63	8.76	
42191	Rock	5.240	2.32	0.424	626.2	>1	0.0098	0.0134	67.80	48.2	46.6	0.0695	11.56	66.5	4.0	0.4150	2.9	38.6	1.79	7.97	
42192	Rock		1.51	0.082	42.77	0.0972	>1	0.0889	27.93	13.1	22.9	0.1884	3.15	49.2	2.7	0.0860	3.7	46.9	20.78	32.28	
42193	Rock		2.11	0.010	14.03	0.0090	0.0009	0.0010	0.378	0.5	0.8	0.0032	2.90	4.4	0.1	0.0103	2.4	1.1	0.06	0.62	
42194	Rock		1.33	0.245	1.65	0.0045	0.0023	0.0032	0.150	12.7	6.5	0.0177	3.18	5.8	3.2	0.2587	4.8	52.3	0.11	0.54	

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.



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Project: Troitsa  
 Report Date: November 09, 2010

Page: 2 of 7 Part 2

CERTIFICATE OF ANALYSIS

SMI10000652.1

Method	Analyte	Unit	MDL	1F15 Bi	1F15 V	1F15 Ca	1F15 P	1F15 La	1F15 Cr	1F15 Mg	1F15 Ba	1F15 Ti	1F15 B	1F15 Al	1F15 Na	1F15 K	1F15 W	1F15 Sc	1F15 Ti	1F15 S	1F15 Hg	1F15 Se	1F15 Te
				ppm	ppm	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm
				0.02	2	0.01	0.001	0.5	0.5	0.01	0.5	0.001	1	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02
42165	Rock			1.94	17	1.45	0.071	7.6	2.4	0.17	96.9	0.007	1	0.21	0.043	0.15	<0.1	2.0	0.03	0.08	116	5.9	0.06
42166	Rock			0.06	22	1.19	0.063	6.1	1.9	0.26	40.3	0.007	1	0.25	0.041	0.07	<0.1	5.9	<0.02	<0.02	<5	0.2	<0.02
42167	Rock			0.03	36	1.03	0.170	10.9	2.3	0.33	61.0	0.004	1	0.25	0.086	0.05	<0.1	10.1	<0.02	0.30	6	0.6	<0.02
42168	Rock			0.02	27	2.05	0.115	8.0	4.4	0.57	57.6	0.007	2	0.24	0.062	0.04	<0.1	8.7	<0.02	0.12	9	0.6	<0.02
42169	Rock			0.03	22	1.62	0.076	5.5	1.7	0.08	62.4	0.017	2	0.25	0.040	0.16	<0.1	2.0	<0.02	<0.02	<5	0.3	<0.02
42170	Rock			1.13	201	13.90	0.068	2.8	4.6	1.06	63.4	0.004	2	0.19	0.003	0.01	0.8	3.4	0.12	2.21	228	1.4	0.57
42171	Rock			0.70	17	8.77	0.070	4.6	1.8	1.08	47.6	<0.001	3	0.33	0.013	0.12	<0.1	5.7	0.07	2.83	85	0.6	0.24
42172	Rock			0.04	57	1.22	0.051	4.1	7.7	0.95	80.5	0.005	3	0.55	0.037	0.08	<0.1	10.9	<0.02	0.06	<5	0.3	<0.02
42173	Rock			0.03	102	2.46	0.066	3.3	10.4	1.38	47.9	0.006	2	1.54	0.031	0.07	<0.1	11.0	0.34	0.40	1056	0.5	<0.02
42174	Rock			0.03	10	9.38	0.017	3.4	0.7	1.46	40.4	<0.001	2	0.21	0.008	0.19	<0.1	2.6	0.10	1.36	5300	1.9	<0.02
42175	Rock			0.03	79	0.98	0.076	3.3	5.2	0.67	28.0	0.003	2	0.54	0.029	0.06	<0.1	13.4	0.05	0.14	19	0.3	<0.02
42176	Rock			0.03	13	0.05	0.028	6.8	2.9	<0.01	26.1	<0.001	<1	0.27	0.051	<0.01	<0.1	5.5	0.26	<0.02	26	0.1	<0.02
42177	Rock			65.40	9	5.82	0.071	5.5	3.7	1.07	18.1	<0.001	2	0.18	0.005	0.11	0.2	1.1	0.29	5.77	9270	2.8	3.18
42178	Rock			36.37	9	0.19	0.048	3.8	5.7	0.14	16.0	<0.001	1	0.19	0.002	0.18	<0.1	0.8	0.33	2.87	62	1.0	5.22
42179	Rock			65.73	12	0.08	0.030	3.1	3.4	0.66	16.8	<0.001	1	0.87	0.001	0.11	0.2	0.7	0.14	7.18	58	27.2	16.44
42180	Rock			0.52	32	0.38	0.092	19.0	20.5	0.71	82.0	0.003	<1	0.94	0.028	0.13	1.0	2.1	0.06	0.21	6	0.6	0.16
42181	Rock			1.63	38	0.82	0.089	14.5	23.9	1.07	87.0	0.003	<1	1.45	0.016	0.14	0.4	2.1	0.06	1.01	9	1.4	0.43
42182	Rock			34.21	15	0.18	0.091	16.2	12.0	0.51	64.3	0.001	<1	1.05	0.013	0.15	0.6	1.1	0.11	1.49	28	4.9	1.51
42183	Rock			1.03	35	1.12	0.085	21.0	17.3	0.70	66.0	0.003	1	1.09	0.028	0.14	0.1	2.3	0.05	0.14	16	0.6	<0.02
42184	Rock			4.95	9	0.10	0.040	21.3	10.5	0.26	34.8	0.001	<1	0.39	0.010	0.11	1.5	0.7	0.05	3.04	35	11.0	2.30
42185	Rock			0.30	153	0.12	0.056	2.1	32.9	0.74	94.4	0.085	2	1.84	0.027	0.54	<0.1	17.3	0.55	1.41	<5	0.4	0.53
42186	Rock			0.16	55	0.14	0.053	5.3	18.8	0.80	81.2	0.097	<1	0.96	0.041	0.62	<0.1	4.2	0.33	1.60	<5	0.4	0.50
42187	Rock			28.75	4	1.94	0.042	3.7	5.4	0.55	3.5	<0.001	1	0.30	0.004	0.11	0.3	0.8	0.19	>10	16	7.6	10.67
42188	Rock			4.88	40	0.06	0.032	1.9	12.2	0.31	9.4	0.009	<1	1.04	0.014	0.09	0.2	2.3	0.05	>10	<5	17.6	2.53
42189	Rock			2.27	8	1.91	0.050	11.1	6.3	0.56	30.3	<0.001	3	0.39	0.003	0.14	0.2	2.1	0.17	2.08	2490	4.4	0.34
42190	Rock			21.00	9	0.82	0.058	8.5	6.1	0.24	49.8	<0.001	2	0.52	0.005	0.14	>100	3.1	0.10	2.45	*	5.5	1.48
42191	Rock			39.45	17	1.51	0.081	7.4	7.4	0.70	17.6	<0.001	1	0.38	0.003	0.15	11.0	2.3	0.20	7.96	84	18.1	10.43
42192	Rock			3.34	10	3.62	0.067	7.2	6.1	1.26	119.5	<0.001	3	0.24	0.002	0.16	1.4	2.4	0.48	1.36	1122	1.4	0.67
42193	Rock			1.05	<2	<0.01	0.002	3.3	5.2	<0.01	35.0	<0.001	<1	0.17	0.005	0.13	1.2	<0.1	0.05	1.58	<5	0.7	0.44
42194	Rock			0.88	97	0.28	0.110	8.4	49.8	1.81	161.8	0.237	<1	1.48	0.060	1.05	0.5	7.3	0.56	0.20	<5	0.3	0.79

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Project: Troitsa  
 Report Date: November 09, 2010

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CERTIFICATE OF ANALYSIS

SMI10000652.1

Method	Analyte	Unit	MDL	1F15 Ga	1F15 Cs	1F15 Ge	1F15 Hf	1F15 Nb	1F15 Rb	1F15 Sn	1F15 Ta	1F15 Zr	1F15 Y	1F15 Ce	1F15 In	1F15 Re	1F15 Be	1F15 Li	1F15 Pd	1F15 Pt
				ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppb	ppb	ppb
				0.1	0.02	0.1	0.02	0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2
42165	Rock			0.6	1.21	<0.1	0.05	<0.02	4.1	0.2	<0.05	2.5	11.25	15.9	<0.02	5	0.1	0.5	<10	<2
42166	Rock			0.6	0.71	<0.1	0.02	<0.02	2.8	0.3	<0.05	1.0	9.03	11.2	0.02	<1	0.2	2.1	<10	<2
42167	Rock			1.3	1.09	<0.1	0.04	<0.02	1.4	0.3	<0.05	1.5	19.93	25.6	0.04	<1	0.3	1.0	<10	<2
42168	Rock			0.7	0.59	<0.1	0.08	<0.02	1.4	0.6	<0.05	2.6	14.33	17.6	0.04	<1	0.2	3.2	<10	<2
42169	Rock			0.7	1.66	<0.1	0.07	<0.02	4.0	0.2	<0.05	2.6	7.72	10.9	<0.02	<1	0.3	0.2	<10	<2
42170	Rock			1.0	1.48	0.6	0.02	0.02	0.8	2.6	<0.05	1.4	10.50	6.2	2.37	2	0.2	2.0	<10	<2
42171	Rock			0.9	2.91	<0.1	<0.02	<0.02	3.1	<0.1	<0.05	0.6	15.20	11.1	0.17	6	0.2	5.1	<10	<2
42172	Rock			3.5	1.41	<0.1	0.05	<0.02	2.3	0.3	<0.05	1.8	7.89	9.9	0.05	<1	0.2	7.8	<10	<2
42173	Rock			8.3	1.27	0.1	0.03	<0.02	1.7	0.2	<0.05	1.3	10.00	8.1	0.15	<1	0.2	13.2	<10	<2
42174	Rock			1.7	4.86	<0.1	0.03	<0.02	5.6	0.2	<0.05	3.6	10.72	6.6	0.73	<1	0.2	0.5	<10	<2
42175	Rock			2.5	1.44	<0.1	0.03	<0.02	2.0	0.1	<0.05	1.4	9.56	8.5	0.05	<1	0.3	3.7	<10	<2
42176	Rock			0.9	0.46	<0.1	0.05	<0.02	0.5	<0.1	<0.05	2.1	3.61	15.8	0.05	<1	<0.1	1.5	<10	<2
42177	Rock			0.8	1.75	<0.1	0.04	<0.02	7.2	0.2	<0.05	2.0	8.01	10.9	0.36	9	0.3	2.7	<10	<2
42178	Rock			0.8	1.74	<0.1	0.08	<0.02	17.5	<0.1	<0.05	4.0	1.75	8.0	0.13	<1	0.3	1.8	<10	<2
42179	Rock			2.3	1.75	<0.1	<0.02	<0.02	8.1	4.5	<0.05	0.6	1.84	6.2	2.45	40	0.4	14.3	*	<2
42180	Rock			4.8	1.52	<0.1	<0.02	<0.02	9.1	0.1	<0.05	0.4	9.34	35.9	0.07	1	0.3	13.8	<10	<2
42181	Rock			5.9	2.24	<0.1	<0.02	<0.02	8.3	0.3	<0.05	0.5	6.96	27.6	0.13	2	0.5	23.1	<10	<2
42182	Rock			3.4	3.85	<0.1	<0.02	<0.02	9.2	0.3	<0.05	0.7	3.76	30.2	0.12	332	0.4	14.0	*	<2
42183	Rock			5.3	2.37	<0.1	0.02	<0.02	8.9	0.1	<0.05	0.5	9.63	39.3	0.05	2	0.3	13.9	<10	<2
42184	Rock			1.8	1.24	<0.1	0.02	0.06	6.5	0.3	<0.05	0.9	4.03	33.2	0.40	891	0.2	5.0	*	<2
42185	Rock			6.0	7.56	<0.1	<0.02	<0.02	32.2	0.2	<0.05	0.2	5.75	5.8	0.02	<1	0.6	52.0	<10	<2
42186	Rock			6.6	4.18	<0.1	0.03	0.09	50.0	0.3	<0.05	0.6	3.84	11.8	<0.02	<1	0.3	25.1	<10	<2
42187	Rock			0.9	2.19	0.1	0.02	0.03	8.2	<0.1	<0.05	1.0	5.52	7.9	<0.02	10	0.3	3.6	<10	<2
42188	Rock			4.7	0.60	0.2	<0.02	0.08	4.6	0.1	<0.05	0.4	2.50	4.1	0.06	2	<0.1	16.8	<10	<2
42189	Rock			1.1	2.41	<0.1	<0.02	<0.02	9.5	0.4	<0.05	0.6	6.34	26.1	0.20	19	0.2	5.2	<10	<2
42190	Rock			1.4	3.14	<0.1	0.04	<0.02	10.3	1.0	<0.05	1.3	7.76	18.0	0.58	3	0.3	7.7	<10	<2
42191	Rock			1.2	3.25	0.1	0.05	0.02	10.3	2.7	<0.05	1.6	8.67	15.1	1.55	40	0.5	4.8	*	<2
42192	Rock			0.8	2.78	<0.1	<0.02	<0.02	12.0	<0.1	<0.05	0.6	6.30	14.7	0.05	2	0.4	1.2	<10	<2
42193	Rock			0.4	0.32	<0.1	<0.02	0.04	5.0	<0.1	<0.05	0.5	0.49	6.2	<0.02	<1	0.1	0.6	<10	<2
42194	Rock			11.5	9.36	0.2	0.27	0.21	84.2	2.7	<0.05	8.7	8.23	18.4	0.04	<1	0.4	18.9	<10	<2

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Project: Troitsa  
 Report Date: November 09, 2010

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# CERTIFICATE OF ANALYSIS

SMI10000652.1

Method	Analyte	7AR	G6Gr	WGHT	G6	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
		Cu	Ag	Wgt	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb
Unit		%	gm/t	kg	gm/t	ppm	%	%	gm/t	ppm	ppm	%	%	ppm	ppm	gm/t	ppm	ppm	ppm	ppm	
MDL		0.001	50	0.01	0.005	0.01	1e-006	1e-006	1e-005	0.002	0.1	0.1	0.0001	0.01	0.1	0.0002	0.1	0.5	0.01	0.02	
42195	Rock			1.21	0.007	22.66	0.0026	0.0006	0.0026	0.279	19.8	15.9	0.0089	5.19	9.4	2.8	0.0072	2.6	5.4	0.02	0.34
42196	Rock			1.38	<0.005	0.11	0.0005	0.0004	0.0018	0.048	5.6	4.3	0.0145	2.53	0.6	0.2	0.0014	0.9	4.0	0.05	0.36
42197	Rock		689	0.61	0.034	3.97	0.1031	>1	>1	>100	15.6	7.8	0.2020	3.40	9508	0.8	0.0289	0.7	43.6	1212	1017
42198	Rock			1.33	0.498	0.65	0.0178	0.1789	0.7333	21.45	48.9	19.6	0.6471	5.30	>10000	0.6	0.5053	1.6	13.1	90.03	61.84
42199	Rock			1.31	0.863	58.27	0.0062	0.0528	0.0923	15.04	5.1	4.6	0.1927	3.34	1110	1.8	0.8942	0.3	10.5	13.68	50.86
42301	Rock			1.65	0.055	384.0	0.0010	0.0084	0.0042	3.783	38.9	205.5	0.0038	17.81	11.4	0.3	0.0426	0.2	1.2	1.12	1.20
42302	Rock			1.69	0.192	21.83	0.0509	0.0015	0.0033	2.787	7.2	12.5	0.0143	2.90	639.9	2.7	0.1907	5.1	10.4	0.25	16.59
42303	Rock			1.10	0.006	110.5	0.0048	0.0021	0.0097	2.045	56.5	17.3	0.0900	4.39	295.3	0.2	0.0048	2.1	140.0	0.36	8.84
42304	Rock			0.85	0.006	1.77	0.0112	0.0025	0.0039	0.781	17.0	13.2	0.0114	2.71	31.9	0.6	0.0088	3.7	8.9	0.31	1.20
42305	Rock			1.06	<0.005	1.67	0.0016	0.0003	0.0061	0.069	53.5	19.6	0.0558	5.39	6.8	0.1	0.0027	0.3	34.0	0.06	0.25
42306	Rock			1.22	0.129	102.6	0.0222	0.0095	0.0114	3.297	3.5	17.2	0.0232	3.22	3.9	2.3	0.1256	10.5	9.0	1.38	0.72
42307	Rock			1.43	0.007	67.48	0.0023	0.0015	0.0010	0.560	2.3	3.4	0.0058	4.44	3.6	0.9	0.0045	3.1	5.3	0.08	0.24
42308	Rock			2.26	0.020	122.5	0.0013	0.0011	0.0007	2.030	1.5	3.8	0.0038	1.27	95.0	1.2	0.0186	3.2	2.4	0.09	3.69
42309	Rock			1.37	<0.005	6.60	0.0023	0.0015	0.0030	0.236	8.2	8.1	0.0552	4.20	39.1	0.2	0.0005	1.1	10.6	0.12	1.21
42310	Rock			0.92	<0.005	0.70	0.0003	0.0003	0.0006	0.151	0.7	1.3	0.0016	1.96	1.6	<0.1	<0.0002	1.9	60.7	0.05	0.22
42311	Rock			1.27	<0.005	1.61	0.0058	0.0011	0.0108	0.245	68.1	25.5	0.0532	9.85	44.0	0.7	0.0007	2.9	11.2	0.27	1.11
42312	Rock			1.62	0.164	326.6	0.0070	0.0279	0.0040	3.748	8.9	32.9	0.1611	2.50	65.2	4.1	0.1561	1.0	94.1	0.46	24.34
42313	Rock			1.93	0.136	637.0	0.2266	0.0034	0.0036	7.087	10.8	39.8	0.0219	6.06	7.8	5.1	0.1383	8.0	11.0	0.58	0.45
42314	Rock			2.05	0.010	11.90	0.1152	0.0005	0.0028	0.721	13.5	9.1	0.0283	2.72	1.6	4.0	0.0094	9.1	24.9	0.11	0.27
42315	Rock			1.76	0.553	721.8	0.2143	0.0014	0.0031	2.251	19.7	40.8	0.0501	4.56	11.3	14.6	0.5162	5.9	30.8	0.51	0.91
42316	Rock			1.43	0.011	9.71	0.2443	0.0012	0.0144	0.998	36.4	25.2	0.0400	4.07	2.3	2.5	0.0045	6.0	27.3	0.49	0.21
42317	Rock			1.52	0.012	11.76	0.1509	0.0006	0.0124	0.272	127.3	37.6	0.0459	6.34	32.0	6.6	0.0089	1.0	12.4	0.10	3.40
42318	Rock			1.15	0.023	370.9	0.5222	0.0005	0.0137	1.577	39.8	23.2	0.0370	3.82	2.3	2.4	0.0219	4.4	52.4	0.65	0.13
42320	Rock			1.36	0.149	1117	0.5283	0.0004	0.0111	4.000	22.4	18.6	0.0311	3.33	7.6	6.9	0.1292	5.3	28.5	0.81	0.19
42321	Rock			1.38	0.008	5.28	0.1106	0.0009	0.0098	1.226	37.2	14.2	0.0699	3.98	5.6	1.0	0.0074	3.5	42.6	0.23	0.34
42322	Rock			1.00	0.012	16.29	0.2038	0.0033	0.0035	2.270	12.7	8.7	0.0505	2.59	2.3	3.7	0.0111	9.7	86.5	0.16	0.33
42323	Rock			1.87	0.106	7.50	0.0200	0.0060	0.0086	3.993	16.6	89.2	0.2078	9.00	44.6	7.5	0.0902	2.5	183.5	1.62	2.13
42324	Rock			1.33	7.022	156.4	0.0171	0.0092	0.0014	56.15	3.5	6.0	0.0068	3.04	4691	9.2	9.431	2.1	16.9	0.28	238.1
42325	Rock			1.30	0.027	126.3	0.0181	0.0026	0.0038	2.654	12.5	432.8	0.0116	8.73	22.5	2.7	0.0338	5.1	8.0	0.14	1.04
42326	Rock			1.13	0.023	11.16	0.0093	0.0009	0.0038	0.501	8.8	9.1	0.0353	1.99	69.7	3.5	0.0161	10.6	17.0	0.10	3.42

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 Report Date: November 09, 2010

Page: 3 of 7 Part 2

CERTIFICATE OF ANALYSIS

SMI10000652.1

Method	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
Analyte	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	
Unit	ppm	ppm	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	
MDL	0.02	2	0.01	0.001	0.5	0.5	0.01	0.5	0.001	1	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	
42195	Rock	3.74	22	0.06	0.085	4.4	27.0	0.59	32.2	0.001	<1	0.70	0.007	0.17	0.5	1.4	0.09	3.61	<5	3.3	1.58
42196	Rock	0.08	45	0.02	0.007	3.6	10.1	0.43	58.6	0.029	<1	0.90	0.025	0.21	<0.1	2.3	0.07	<0.02	<5	<0.1	<0.02
42197	Rock	0.11	14	1.73	0.077	3.0	7.5	0.76	13.9	<0.001	4	0.77	0.002	0.14	0.3	3.0	0.72	5.53	1372	5.0	0.10
42198	Rock	0.79	9	0.55	0.082	4.9	11.4	0.45	41.5	<0.001	2	0.26	0.002	0.25	0.8	2.2	0.18	2.29	129	0.7	0.10
42199	Rock	0.45	5	1.17	0.013	0.6	6.5	0.42	26.1	<0.001	2	0.20	0.003	0.16	0.3	0.9	0.49	2.32	180	0.4	0.04
42301	Rock	0.88	<2	<0.01	<0.001	2.1	5.1	<0.01	4.0	<0.001	<1	0.02	<0.001	0.02	0.1	<0.1	<0.02	>10	212	18.0	3.37
42302	Rock	0.32	11	0.13	0.037	6.1	9.7	0.56	39.4	<0.001	<1	0.70	0.001	0.13	1.2	0.9	0.11	2.15	36	0.9	0.13
42303	Rock	0.80	60	2.43	0.053	9.6	27.6	1.52	72.5	0.001	<1	2.40	0.004	0.18	<0.1	3.0	0.25	0.87	11	0.5	0.72
42304	Rock	1.25	4	0.05	0.024	9.7	2.3	0.02	37.6	<0.001	<1	0.28	0.007	0.18	0.2	0.7	0.06	2.11	12	1.3	0.94
42305	Rock	1.93	89	0.83	0.104	1.8	85.4	2.62	22.4	0.133	1	2.40	0.061	0.11	0.7	5.6	0.07	3.67	<5	0.7	0.58
42306	Rock	13.62	7	0.08	0.035	11.3	3.5	0.03	49.9	<0.001	1	0.24	0.006	0.20	>100	0.7	0.10	2.30	<5	1.2	1.48
42307	Rock	3.51	10	0.03	0.047	3.8	5.0	0.10	63.4	0.002	<1	0.35	0.008	0.18	1.5	0.5	0.07	0.44	7	3.3	0.68
42308	Rock	0.10	9	<0.01	0.045	3.4	8.2	0.02	12.7	<0.001	<1	0.20	0.002	0.18	0.3	0.4	0.72	0.70	63	0.5	0.63
42309	Rock	0.13	70	0.16	0.106	4.5	21.5	0.80	53.4	0.007	<1	1.51	0.022	0.14	<0.1	6.8	0.17	0.98	16	0.4	0.13
42310	Rock	0.15	<2	0.01	<0.001	<0.5	1.7	<0.01	31.0	<0.001	2	0.31	0.066	0.14	1.0	0.1	0.05	0.45	<5	0.8	0.05
42311	Rock	0.25	104	0.83	0.395	7.2	80.9	1.73	46.7	0.046	1	2.99	0.028	0.25	<0.1	8.3	0.11	3.35	6	1.4	0.25
42312	Rock	15.38	6	7.33	0.008	3.3	5.1	1.07	23.8	<0.001	1	0.12	0.002	0.08	0.3	0.4	0.54	1.21	728	0.7	1.53
42313	Rock	53.18	17	0.38	0.077	11.1	8.2	0.24	33.0	0.001	<1	0.67	0.010	0.21	0.4	1.2	0.12	1.78	11	3.1	3.17
42314	Rock	0.78	61	0.70	0.099	13.9	29.4	0.83	94.9	0.060	<1	0.93	0.037	0.17	0.9	3.0	0.07	0.06	7	0.4	0.07
42315	Rock	21.63	19	1.24	0.086	8.1	11.2	0.55	19.1	0.002	<1	0.96	0.009	0.19	0.6	1.3	0.12	2.84	15	2.3	1.41
42316	Rock	0.37	119	0.62	0.118	8.6	51.3	1.50	194.3	0.302	<1	1.72	0.090	0.67	0.1	9.1	0.33	1.02	<5	1.0	0.42
42317	Rock	0.47	118	0.35	0.141	3.7	50.5	3.02	15.5	0.009	2	2.89	0.011	0.05	0.2	10.1	0.19	3.36	7	5.5	0.28
42318	Rock	0.42	122	0.73	0.103	7.7	79.4	1.48	140.3	0.193	<1	1.95	0.141	0.62	<0.1	8.9	0.25	1.01	<5	0.9	0.36
42320	Rock	0.64	75	0.61	0.102	9.8	36.3	0.94	55.0	0.071	1	1.44	0.067	0.21	0.3	4.9	0.11	0.87	7	1.2	0.40
42321	Rock	9.60	91	0.78	0.100	60.5	67.1	1.37	50.2	0.014	1	2.13	0.033	0.19	2.0	5.5	0.11	0.33	10	0.3	0.43
42322	Rock	39.60	40	1.97	0.082	15.5	26.6	1.19	63.3	0.003	1	1.35	0.020	0.22	0.4	3.0	0.11	0.64	16	0.4	0.58
42323	Rock	15.53	11	6.64	0.026	4.3	16.4	0.63	17.6	0.002	<1	0.74	0.003	0.16	1.2	0.8	0.10	7.91	20	2.2	3.66
42324	Rock	58.66	6	0.04	0.015	28.2	37.3	0.05	62.1	<0.001	2	0.17	0.009	0.10	5.6	0.6	0.11	1.37	76	3.8	1.80
42325	Rock	6.24	17	0.13	0.050	9.8	16.0	0.40	16.9	0.001	1	0.80	0.011	0.22	1.0	1.0	0.13	7.32	28	3.5	0.87
42326	Rock	0.58	19	0.26	0.064	14.8	14.2	0.10	67.0	0.002	<1	0.66	0.005	0.21	0.3	1.8	0.16	0.06	69	<0.1	0.09

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Project: Troitsa  
 Report Date: November 09, 2010

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CERTIFICATE OF ANALYSIS

SMI10000652.1

Method	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
Analyte	Ga	Cs	Ge	Hf	Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pd	Pt	
Unit	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppb	ppb	
MDL	0.1	0.02	0.1	0.02	0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2	
42195	Rock	2.7	1.88	<0.1	0.16	<0.02	8.3	<0.1	<0.05	8.2	1.97	9.5	<0.02	1	0.2	8.8	<10	<2
42196	Rock	2.6	1.95	<0.1	<0.02	<0.02	6.0	0.1	<0.05	0.2	0.88	7.9	<0.02	<1	0.1	15.3	<10	<2
42197	Rock	2.0	2.52	<0.1	0.04	<0.02	12.8	1.1	<0.05	1.8	3.97	8.1	0.07	<1	0.7	11.6	<10	<2
42198	Rock	1.0	1.98	<0.1	<0.02	0.02	21.2	<0.1	<0.05	0.6	4.78	11.0	0.24	1	0.2	0.9	<10	<2
42199	Rock	0.8	1.34	<0.1	<0.02	<0.02	10.9	<0.1	<0.05	0.1	1.25	1.5	<0.02	3	0.1	1.3	<10	<2
42301	Rock	0.2	0.13	0.1	<0.02	0.06	1.0	0.1	<0.05	0.3	0.56	3.9	<0.02	39	<0.1	0.3	*	<2
42302	Rock	2.7	2.34	<0.1	0.03	<0.02	8.0	<0.1	<0.05	0.5	2.37	12.8	0.03	1	0.3	10.1	<10	<2
42303	Rock	6.4	2.08	<0.1	<0.02	<0.02	6.9	0.2	<0.05	0.7	7.59	21.3	0.03	4	0.7	54.4	11	<2
42304	Rock	0.7	1.42	<0.1	0.09	0.03	6.6	0.1	<0.05	3.2	3.29	19.2	<0.02	3	0.2	1.3	<10	<2
42305	Rock	10.0	1.73	0.1	0.05	0.04	5.8	0.6	<0.05	1.3	3.03	4.6	<0.02	2	0.4	36.9	<10	<2
42306	Rock	0.8	1.19	<0.1	0.03	<0.02	12.5	0.1	<0.05	0.9	3.64	19.4	<0.02	10	0.2	1.0	<10	<2
42307	Rock	1.4	1.28	<0.1	<0.02	0.04	9.7	0.1	<0.05	0.6	2.26	7.7	<0.02	<1	0.1	2.4	<10	<2
42308	Rock	0.8	3.72	<0.1	0.04	<0.02	10.7	<0.1	<0.05	1.9	0.72	6.7	<0.02	5	<0.1	1.0	17	<2
42309	Rock	4.7	1.91	<0.1	<0.02	<0.02	7.6	<0.1	<0.05	0.2	6.75	11.1	0.02	<1	0.3	32.3	<10	<2
42310	Rock	1.1	0.46	<0.1	<0.02	0.03	5.3	<0.1	<0.05	0.7	0.09	0.2	<0.02	1	<0.1	1.6	<10	<2
42311	Rock	10.0	2.70	0.1	0.06	0.10	12.9	0.4	<0.05	2.2	14.32	18.8	0.07	5	0.3	56.6	<10	<2
42312	Rock	0.5	1.12	<0.1	<0.02	<0.02	6.1	<0.1	<0.05	0.3	5.12	6.3	<0.02	21	0.3	2.1	*	<2
42313	Rock	2.7	2.50	<0.1	0.04	<0.02	15.3	0.2	<0.05	1.2	5.81	21.3	0.12	27	0.2	5.9	*	<2
42314	Rock	5.4	1.50	<0.1	0.07	0.07	12.7	0.4	<0.05	1.1	6.91	30.5	0.05	<1	0.4	14.1	<10	<2
42315	Rock	3.8	2.90	<0.1	0.06	<0.02	13.4	0.1	<0.05	1.7	6.97	16.2	<0.02	46	0.2	15.3	*	<2
42316	Rock	6.8	3.10	0.2	0.03	0.23	35.8	0.4	<0.05	0.6	11.32	22.6	0.11	8	0.2	24.4	<10	<2
42317	Rock	8.9	2.87	0.1	0.06	<0.02	4.1	<0.1	<0.05	2.7	10.23	9.1	0.02	14	<0.1	77.0	<10	<2
42318	Rock	7.0	3.41	0.1	<0.02	0.11	31.4	0.4	<0.05	0.4	9.41	19.0	0.23	26	0.2	23.7	*	<2
42320	Rock	6.0	2.46	<0.1	0.05	0.09	14.1	0.4	<0.05	1.5	10.91	21.9	0.25	199	0.2	23.1	*	<2
42321	Rock	9.6	2.87	<0.1	<0.02	<0.02	13.7	0.4	<0.05	0.4	13.77	95.0	0.07	<1	0.5	27.2	<10	<2
42322	Rock	5.8	3.65	<0.1	0.05	<0.02	16.7	0.2	<0.05	1.1	9.12	32.8	0.09	<1	0.5	15.3	<10	<2
42323	Rock	2.4	0.92	<0.1	0.05	<0.02	13.6	0.8	<0.05	1.3	5.45	7.7	0.06	<1	0.2	5.1	<10	<2
42324	Rock	0.9	1.00	<0.1	0.03	<0.02	7.2	0.4	<0.05	1.0	6.20	54.2	0.04	12	<0.1	1.4	18	<2
42325	Rock	3.0	3.06	<0.1	0.06	0.02	16.6	0.1	<0.05	1.3	2.96	19.6	<0.02	5	0.2	4.8	18	<2
42326	Rock	2.2	2.42	<0.1	0.03	<0.02	10.9	0.2	<0.05	0.9	6.10	31.2	<0.02	<1	0.7	3.5	<10	<2

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 Report Date: November 09, 2010

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CERTIFICATE OF ANALYSIS

SMI10000652.1

Method	7AR	G6Gr	WGHT	G6	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15
Analyte	Cu	Ag	Wgt	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb
Unit	%	gm/t	kg	gm/t	ppm	%	%	%	gm/t	ppm	ppm	%	%	ppm	ppm	gm/t	ppm	ppm	ppm	ppm
MDL	0.001	50	0.01	0.005	0.01	1e-006	1e-006	1e-005	0.002	0.1	0.1	0.0001	0.01	0.1	0.1	0.0002	0.1	0.5	0.01	0.02
42327	Rock		1.20	0.016	17.41	0.0030	0.0009	0.0028	0.416	7.6	5.4	0.0469	1.51	32.8	1.5	0.0131	2.7	13.3	0.15	1.71
42328	Rock		1.79	0.027	32.05	0.0097	0.0045	0.0035	0.536	6.3	7.0	0.0406	1.33	20.8	8.7	0.0268	2.0	5.8	0.63	1.37
42329	Rock		2.13	0.057	42.34	0.0196	0.0027	0.0023	1.021	7.9	7.4	0.0289	2.17	30.1	7.9	0.0558	3.8	20.3	0.35	1.71
42330	Rock		2.15	0.015	136.0	0.1204	0.0012	0.0054	1.482	14.1	14.6	0.0478	4.34	6.6	8.3	0.0159	6.7	42.2	0.56	1.73
42331	Rock		1.48	<0.005	14.68	0.0146	0.0004	0.0028	0.085	7.2	5.9	0.0188	2.12	1.9	3.7	0.0017	13.5	15.9	0.09	0.29
42332	Rock		1.42	0.006	4.38	0.0311	0.0004	0.0019	0.586	7.5	7.8	0.0441	1.46	10.4	2.2	0.0052	8.2	108.4	0.10	0.50
42333	Rock		0.67	0.020	4.58	0.0806	0.0005	0.0038	0.662	11.5	13.0	0.0233	2.81	1.1	4.6	0.0179	13.1	17.8	0.06	0.13
42334	Rock		1.78	<0.005	29.49	0.0624	0.0003	0.0032	0.381	8.5	8.1	0.0276	2.31	0.8	4.0	0.0014	13.0	14.2	0.09	0.09
42335	Rock		1.51	0.012	0.99	0.1882	0.0002	0.0029	0.517	12.0	6.4	0.0242	3.07	1.1	4.7	0.0104	8.3	30.8	0.06	0.31
42336	Rock		2.14	<0.005	3.05	0.0404	0.0008	0.0026	0.218	6.5	5.5	0.0314	2.01	1.2	1.9	0.0033	12.1	14.6	0.05	0.21
42337	Rock		2.60	<0.005	2.12	0.0388	0.0006	0.0050	0.364	8.0	6.8	0.0421	2.19	1.6	2.5	0.0068	11.1	15.0	0.19	1.62
42338	Rock		2.25	0.018	3.63	0.2830	0.0006	0.0031	2.095	7.2	6.7	0.0245	2.60	1.2	2.3	0.0115	12.2	14.9	0.10	0.59
42339	Rock		2.32	0.011	8.64	0.0419	0.0006	0.0026	1.452	6.6	5.3	0.0230	2.30	1.1	2.2	0.0128	11.3	14.9	0.07	0.49
42340	Rock		2.53	0.009	34.82	0.0551	0.0005	0.0024	0.860	6.3	7.3	0.0179	2.10	1.1	2.2	0.0130	10.9	11.8	0.06	0.14
42341	Rock		1.19	0.011	9.32	0.0017	0.0016	0.0012	0.187	1.6	1.6	0.0081	5.27	3.7	3.1	0.0093	3.9	23.5	0.14	0.17
42342	Rock		1.48	0.076	31.70	0.0074	0.0008	0.0015	0.750	2.3	1.6	0.0127	3.30	103.4	1.7	0.0677	4.1	9.9	0.02	2.51
42343	Rock		1.58	0.034	6.12	0.0196	0.0006	0.0010	0.238	2.2	18.2	0.0085	4.80	56.6	5.4	0.0346	5.1	5.1	0.03	1.62
42344	Rock		1.65	0.012	6.61	0.0158	0.0007	0.0009	0.182	2.1	6.6	0.0061	2.83	54.1	3.9	0.0105	5.5	6.6	0.05	1.53
42345	Rock		2.03	0.012	3.96	0.0198	0.0006	0.0022	0.383	11.2	10.5	0.0171	4.19	13.0	1.8	0.0126	4.2	13.0	0.04	0.22
42346	Rock	1.805	1.55	0.383	>2000	>1	0.0277	0.0182	51.45	13.2	196.8	0.0161	13.89	30.4	13.7	0.3377	2.5	29.6	4.40	2.24
42347	Rock	1.255	0.73	0.948	180.4	>1	0.0129	0.0326	5.858	19.1	47.9	0.0113	2.82	71.1	4.7	0.6144	10.5	12.1	0.98	1.21
42348	Rock		0.67	0.050	94.32	0.0488	0.0007	0.0032	0.506	6.7	7.8	0.0175	1.98	1.6	4.1	0.0503	10.5	12.9	0.09	0.14
42349	Rock		0.82	0.022	126.2	0.0144	0.0005	0.0023	0.228	7.2	7.0	0.0165	2.09	1.2	2.9	0.0216	9.8	13.3	0.06	0.12
42350	Rock		1.50	0.005	2.24	0.0288	0.0004	0.0038	0.193	13.4	1.9	0.0304	3.33	0.9	2.9	0.0024	7.7	16.0	0.18	0.24
42351	Rock		2.93	<0.005	18.04	0.0560	0.0004	0.0033	0.244	13.5	4.9	0.0321	3.17	0.6	2.4	0.0091	8.0	20.6	0.04	0.11
42352	Rock		0.70	<0.005	1.60	0.0045	0.0005	0.0072	0.114	20.0	15.4	0.0368	4.01	2.2	0.5	0.0015	2.8	31.9	0.09	0.16
42353	Rock	1.755	0.52	0.185	1.77	>1	0.0002	0.0106	6.275	39.4	49.4	0.0922	7.82	1.8	0.1	0.2348	0.2	12.3	0.34	0.48
42354	Rock		1.11	0.153	338.5	0.4273	0.0009	0.0089	3.118	45.4	32.5	0.0349	3.42	2.5	0.9	0.2303	5.1	17.3	0.37	0.37
42355	Rock		1.52	0.008	3.44	0.1056	0.0015	0.0073	0.309	149.2	100.2	0.0809	10.82	53.0	0.2	0.0090	1.6	62.2	0.13	1.64
42356	Rock		0.73	0.086	1.21	0.0229	0.8713	>1	73.69	27.4	13.7	0.4435	5.85	>10000	0.2	0.0689	1.3	29.9	592.3	1529

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Project: Troitsa  
 Report Date: November 09, 2010

Page: 4 of 7 Part 2

CERTIFICATE OF ANALYSIS

SMI10000652.1

Method	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
Analyte	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	
Unit	ppm	ppm	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	
MDL	0.02	2	0.01	0.001	0.5	0.5	0.01	0.5	0.001	1	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	
42327	Rock	0.49	10	0.94	0.020	5.8	20.1	0.05	169.1	<0.001	1	0.27	0.001	0.09	0.2	0.7	0.12	0.23	53	0.1	0.11
42328	Rock	0.97	7	0.05	0.019	2.9	25.9	0.03	39.8	<0.001	1	0.25	0.001	0.07	0.4	0.5	0.12	0.42	103	0.1	0.18
42329	Rock	2.10	8	0.30	0.029	3.7	25.5	0.13	48.8	<0.001	<1	0.26	0.001	0.11	0.4	0.5	0.13	1.36	58	0.3	0.33
42330	Rock	7.44	23	0.86	0.089	8.7	18.3	0.60	21.6	0.007	1	0.92	0.014	0.24	0.9	1.9	0.14	3.22	18	1.4	1.25
42331	Rock	0.11	45	0.18	0.058	13.1	22.7	0.50	115.9	0.070	1	0.77	0.059	0.27	0.3	2.3	0.12	<0.02	6	0.2	<0.02
42332	Rock	0.11	17	3.80	0.037	10.3	12.8	0.73	165.9	0.002	1	0.52	0.007	0.21	0.2	1.8	0.10	0.29	46	0.2	0.06
42333	Rock	0.13	65	0.25	0.070	10.3	28.8	0.83	173.3	0.168	<1	0.90	0.077	0.47	0.2	3.2	0.23	0.08	7	0.4	0.08
42334	Rock	0.19	46	0.22	0.065	12.9	27.4	0.67	48.3	0.006	<1	1.02	0.050	0.17	0.1	2.3	0.06	0.02	5	0.2	<0.02
42335	Rock	1.69	47	0.84	0.086	9.9	30.0	0.98	20.6	0.003	<1	1.13	0.046	0.12	62.6	3.3	0.15	1.59	<5	0.2	0.26
42336	Rock	0.12	47	0.31	0.060	11.1	27.8	0.42	84.8	0.093	<1	0.61	0.065	0.25	0.9	2.0	0.10	0.04	6	<0.1	0.02
42337	Rock	0.15	47	0.31	0.060	12.8	26.6	0.54	95.5	0.090	2	0.78	0.059	0.28	0.2	2.5	0.12	0.05	11	0.2	0.03
42338	Rock	1.17	55	0.30	0.068	11.7	23.4	0.56	94.8	0.108	<1	0.76	0.070	0.29	16.9	2.3	0.11	0.27	18	0.7	0.12
42339	Rock	0.20	51	0.27	0.058	11.2	31.5	0.43	89.6	0.105	<1	0.66	0.077	0.28	0.2	1.8	0.10	0.04	6	0.5	0.03
42340	Rock	0.70	48	0.23	0.057	9.5	26.8	0.52	86.0	0.102	<1	0.68	0.061	0.25	1.4	2.1	0.08	0.04	6	0.3	0.06
42341	Rock	5.75	<2	0.04	0.076	3.6	3.9	0.09	95.6	<0.001	<1	0.33	0.011	0.23	0.6	0.3	0.07	0.90	7	2.8	1.91
42342	Rock	1.27	36	0.07	0.077	13.0	12.0	0.35	92.8	0.019	<1	1.04	0.025	0.32	0.1	2.0	0.27	0.25	8	0.3	0.70
42343	Rock	4.34	8	0.05	0.043	3.4	8.7	0.19	55.6	<0.001	<1	1.13	0.010	0.31	0.2	0.7	0.30	2.18	19	4.4	4.81
42344	Rock	6.51	9	0.05	0.048	2.5	12.3	0.16	55.9	<0.001	<1	0.85	0.038	0.27	0.2	0.7	0.41	1.13	14	2.0	4.36
42345	Rock	5.80	57	0.23	0.071	4.3	31.0	0.82	53.0	0.117	<1	1.18	0.057	0.45	1.1	4.1	0.31	2.17	<5	1.2	1.38
42346	Rock	186.2	10	0.41	0.022	6.1	26.9	0.08	4.6	<0.001	<1	0.18	0.009	0.09	12.9	0.7	0.08	>10	54	25.0	28.45
42347	Rock	1.16	44	0.18	0.046	14.6	25.6	0.28	70.5	0.131	<1	0.66	0.058	0.31	0.2	1.2	0.21	1.37	<5	3.2	0.67
42348	Rock	0.65	49	0.25	0.058	9.3	23.9	0.38	97.1	0.129	<1	0.61	0.068	0.37	0.2	1.1	0.10	0.07	<5	0.3	0.11
42349	Rock	0.18	52	0.22	0.057	8.6	23.5	0.58	98.8	0.150	<1	0.78	0.066	0.50	0.3	2.1	0.15	0.04	<5	0.1	0.05
42350	Rock	1.00	50	0.27	0.087	10.8	29.9	1.03	71.8	0.003	<1	1.32	0.033	0.14	2.6	3.2	0.10	<0.02	14	<0.1	0.05
42351	Rock	1.42	54	0.54	0.087	13.2	30.0	1.00	90.5	0.007	<1	1.24	0.035	0.16	15.5	3.9	0.14	0.08	7	<0.1	0.07
42352	Rock	0.25	102	0.61	0.142	7.3	35.1	1.11	142.5	0.278	<1	1.50	0.107	0.84	0.1	2.6	0.28	1.13	<5	<0.1	0.13
42353	Rock	0.98	171	0.26	0.061	2.3	21.5	2.38	17.6	0.070	1	3.11	0.045	0.80	<0.1	21.4	0.62	4.49	<5	1.5	0.53
42354	Rock	0.23	80	0.73	0.054	3.6	110.2	1.09	91.5	0.066	2	1.61	0.046	0.41	0.1	5.3	0.20	1.43	<5	1.1	0.20
42355	Rock	0.48	67	0.71	0.066	4.1	40.9	1.44	22.7	0.053	2	3.41	0.048	0.53	<0.1	8.6	0.60	6.63	6	3.3	0.52
42356	Rock	0.54	11	1.57	0.035	1.8	19.4	0.27	16.1	0.001	1	0.37	0.003	0.21	0.5	1.5	0.65	3.24	1568	1.8	0.11

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Project: Troitsa  
 Report Date: November 09, 2010

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CERTIFICATE OF ANALYSIS

SMI10000652.1

Method	Analyte	Unit	MDL	1F15 Ga	1F15 Cs	1F15 Ge	1F15 Hf	1F15 Nb	1F15 Rb	1F15 Sn	1F15 Ta	1F15 Zr	1F15 Y	1F15 Ce	1F15 In	1F15 Re	1F15 Be	1F15 Li	1F15 Pd	1F15 Pt
				ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppb	ppb	ppb
				0.1	0.02	0.1	0.02	0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2
42327	Rock			1.1	1.48	<0.1	0.03	<0.02	5.6	<0.1	<0.05	0.5	4.24	11.0	<0.02	<1	0.3	4.5	<10	<2
42328	Rock			1.0	0.79	<0.1	<0.02	<0.02	5.7	0.1	<0.05	0.7	2.76	5.8	<0.02	<1	0.2	3.8	<10	<2
42329	Rock			1.3	1.27	<0.1	0.02	<0.02	8.0	0.4	<0.05	0.9	2.22	7.8	<0.02	2	0.2	3.4	<10	<2
42330	Rock			3.5	2.06	<0.1	0.06	0.03	17.2	0.1	<0.05	2.0	6.30	17.6	0.05	7	0.2	9.8	20	<2
42331	Rock			3.8	1.71	<0.1	0.10	0.42	18.7	0.4	<0.05	1.6	5.05	28.4	0.03	15	0.3	6.7	<10	<2
42332	Rock			1.8	3.59	<0.1	0.03	<0.02	13.6	<0.1	<0.05	1.1	7.18	21.3	<0.02	<1	0.4	3.2	<10	<2
42333	Rock			5.4	2.27	0.1	0.11	0.32	38.9	0.6	<0.05	1.7	4.75	19.8	0.20	1	0.2	9.5	<10	<2
42334	Rock			5.0	1.37	<0.1	0.04	0.02	9.7	0.3	<0.05	0.9	5.70	35.5	0.06	21	0.3	13.3	<10	<2
42335	Rock			7.7	2.91	<0.1	0.15	<0.02	19.1	0.4	<0.05	4.2	5.91	19.4	0.05	2	0.2	16.0	<10	<2
42336	Rock			3.6	1.32	<0.1	0.11	0.54	19.8	0.4	<0.05	1.9	5.02	21.2	0.04	<1	0.1	6.4	<10	<2
42337	Rock			3.9	1.73	<0.1	0.10	0.29	21.8	0.4	<0.05	1.6	5.92	25.5	0.04	<1	0.3	8.1	<10	<2
42338	Rock			3.9	1.11	0.1	0.11	0.52	19.6	0.8	<0.05	2.4	5.38	22.7	0.10	<1	0.2	8.6	<10	<2
42339	Rock			3.8	0.99	<0.1	0.12	0.54	17.6	0.6	<0.05	1.7	4.90	22.1	0.05	2	0.2	7.3	<10	<2
42340	Rock			3.8	0.84	<0.1	0.12	0.47	14.6	0.4	<0.05	1.7	4.29	18.6	0.07	2	<0.1	6.9	<10	<2
42341	Rock			1.0	0.54	<0.1	0.03	<0.02	10.1	0.2	<0.05	2.5	3.06	6.1	0.02	<1	0.3	1.1	<10	<2
42342	Rock			5.6	3.13	<0.1	0.05	0.06	18.3	1.4	<0.05	3.3	4.06	26.1	0.04	<1	0.3	9.3	<10	<2
42343	Rock			5.3	2.42	<0.1	0.10	<0.02	13.6	0.2	<0.05	3.7	2.22	6.5	<0.02	2	0.4	13.2	<10	<2
42344	Rock			4.3	1.87	<0.1	0.07	<0.02	11.3	0.2	<0.05	3.0	1.97	4.5	0.02	1	0.4	6.4	<10	<2
42345	Rock			7.0	2.28	<0.1	0.12	0.14	32.7	0.8	<0.05	4.4	4.96	9.2	0.06	2	0.2	10.8	<10	<2
42346	Rock			0.6	0.66	0.1	<0.02	0.11	6.5	0.8	<0.05	0.5	2.15	11.2	1.23	585	0.1	1.4	*	<2
42347	Rock			3.2	1.35	<0.1	0.16	0.93	19.3	0.8	<0.05	3.0	6.05	35.4	2.31	49	<0.1	11.0	22	3
42348	Rock			3.3	1.24	<0.1	0.15	0.39	22.6	0.3	<0.05	2.4	4.73	20.1	0.16	11	0.1	12.3	12	<2
42349	Rock			3.7	2.06	<0.1	0.11	0.51	35.7	0.4	<0.05	1.9	4.50	18.6	0.07	22	0.2	12.4	<10	<2
42350	Rock			7.2	1.47	<0.1	0.13	<0.02	13.6	0.7	<0.05	4.4	5.16	29.5	<0.02	1	0.4	13.0	<10	<2
42351	Rock			7.3	2.18	<0.1	0.17	<0.02	19.3	0.7	<0.05	5.4	5.98	29.3	0.03	<1	0.4	14.0	<10	<2
42352	Rock			6.4	5.02	0.2	0.02	0.13	33.1	0.7	<0.05	1.2	3.79	17.6	0.05	<1	0.1	22.3	<10	<2
42353	Rock			8.8	8.09	<0.1	<0.02	<0.02	38.1	0.5	<0.05	0.2	6.67	6.4	0.11	<1	0.5	37.4	<10	<2
42354	Rock			6.0	3.52	<0.1	<0.02	0.06	20.9	0.7	<0.05	0.6	4.20	7.9	0.17	32	0.3	27.8	*	<2
42355	Rock			9.1	8.20	0.1	<0.02	0.09	34.5	0.9	<0.05	0.3	6.91	9.1	<0.02	5	0.9	55.4	<10	<2
42356	Rock			1.1	1.05	<0.1	<0.02	0.06	18.3	<0.1	<0.05	0.3	4.65	5.1	0.12	<1	0.2	2.1	<10	<2

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 Report Date: November 09, 2010

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CERTIFICATE OF ANALYSIS

SMI10000652.1

Method	7AR	G6Gr	WGHT	G6	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15
Analyte	Cu	Ag	Wgt	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb
Unit	%	gm/t	kg	gm/t	ppm	%	%	%	gm/t	ppm	ppm	%	%	ppm	ppm	gm/t	ppm	ppm	ppm	ppm
MDL	0.001	50	0.01	0.005	0.01	1e-006	1e-006	1e-005	0.002	0.1	0.1	0.0001	0.01	0.1	0.1	0.0002	0.1	0.5	0.01	0.02
42357	Rock		1.72	0.386	1.85	0.0044	0.0142	0.0358	2.230	12.6	10.2	0.0406	3.01	3687	0.6	0.3487	0.8	20.9	3.79	94.56
42358	Rock		0.68	<0.005	20.42	0.0008	0.0018	0.0062	0.148	5.8	3.5	0.0483	3.23	55.2	2.2	0.0016	1.1	13.0	0.77	3.19
42359	Rock		1.06	<0.005	2.28	0.0158	0.0004	0.0041	0.106	13.4	9.5	0.0518	2.53	18.0	2.5	0.0051	9.5	25.7	0.16	0.86
42360	Rock		1.32	0.046	6.13	0.1319	0.0045	0.0079	1.601	23.5	21.3	0.0728	3.84	29.5	1.8	0.0333	2.9	21.1	0.56	1.52
42361	Rock	408	0.94	1.956	507.9	0.3491	>1	>1	>100	24.1	64.4	0.0630	5.39	221.9	9.1	1.698	1.9	17.4	519.3	841.8
42362	Rock		1.18	0.677	25.60	0.1476	0.0605	0.0421	38.08	10.6	8.6	0.1657	2.79	128.5	4.4	0.6134	8.7	17.3	8.09	181.1
42363	Rock	1.305	0.81	0.076	63.40	>1	0.0018	0.0077	9.949	11.7	8.2	0.0571	2.46	4.6	8.5	0.1146	6.4	17.7	0.99	10.93
42364	Rock		0.79	0.007	1.30	0.0318	0.0018	0.0046	0.584	9.9	6.5	0.0146	2.08	2.3	3.0	0.0086	10.5	16.7	0.48	1.67
147001	Rock	1.190	1.36	0.008	0.33	>1	0.0008	0.0059	23.11	1.5	7.2	0.0525	1.75	108.2	0.3	0.0083	0.7	26.0	0.71	19.84
147002	Rock		1.70	<0.005	0.13	0.0031	0.0009	0.0031	0.098	<0.1	3.4	0.1534	1.20	2.8	0.2	0.0004	0.4	149.7	0.26	1.42
147003	Rock	4.890	0.68	0.202	0.23	>1	0.0005	0.0056	96.66	1.0	8.6	0.0368	1.32	591.5	0.2	0.0375	0.6	20.3	1.15	55.57
147005	Rock		2.08	<0.005	0.08	0.0113	0.0005	0.0145	0.271	4.9	17.6	0.1893	5.12	5.2	<0.1	0.0010	0.3	73.4	0.23	0.50
147006	Rock		1.14	<0.005	12.87	0.0178	0.1984	0.6898	1.376	5.2	18.5	0.3041	5.35	124.2	0.3	0.0006	0.4	22.6	74.92	1.44
147007	Rock		2.09	0.010	37.71	0.2274	0.0006	0.0041	0.823	11.3	9.6	0.0373	2.29	1.0	3.4	0.0181	9.6	18.1	0.27	0.25
147008	Rock		1.05	0.013	1332	0.2653	0.0027	0.0113	5.084	17.3	28.6	0.1064	4.62	14.6	4.9	0.0169	6.6	91.6	1.84	2.08
147009	Rock		2.26	0.010	12.59	0.0777	0.0140	0.0322	5.923	27.2	30.9	0.0331	3.06	44.9	1.8	0.0119	2.6	30.7	7.39	95.41
147010	Rock		2.07	0.346	2.75	0.1814	0.0015	0.0102	2.080	8.9	19.3	0.0679	17.71	9.6	<0.1	0.4968	<0.1	2.3	1.06	4.47
147011	Rock		1.75	0.070	0.09	0.7408	0.0002	0.0126	14.10	44.0	29.3	0.1104	4.39	48.7	<0.1	0.0787	0.1	17.5	1.65	2.06
147012	Rock		1.55	0.015	15.70	0.0029	0.0028	0.0008	0.878	0.6	1.8	0.0020	2.17	11.8	0.5	0.0153	2.7	5.7	0.07	0.30
147013	Rock		1.85	0.010	0.38	0.0036	0.0002	0.0016	0.224	11.6	23.7	0.0099	4.70	0.5	0.6	0.0111	3.7	13.0	0.02	0.12
147014	Rock		1.99	0.021	8.93	0.2799	0.0004	0.0041	2.558	12.6	13.9	0.0274	2.67	0.7	0.4	0.0216	4.7	15.2	0.20	0.19
147015	Rock		1.49	<0.005	2.06	0.0243	0.0004	0.0069	0.505	18.8	25.9	0.0576	4.77	3.2	0.2	0.0040	1.1	25.1	0.06	0.16
147016	Rock		2.10	0.025	19.24	0.3798	0.0003	0.0047	3.062	11.8	14.3	0.0205	2.51	1.0	0.6	0.0227	4.0	14.8	0.30	0.13
147017	Rock		3.37	0.026	37.72	0.2462	0.0003	0.0070	1.548	38.3	16.8	0.0361	3.15	0.4	0.2	0.0265	1.5	24.5	0.14	0.11
147018	Rock		1.29	<0.005	1.86	0.0149	0.0005	0.0025	0.099	7.5	5.6	0.0209	2.13	0.9	4.5	0.0004	16.2	20.9	0.07	0.11
147019	Rock		2.16	<0.005	1.74	0.0011	0.0006	0.0013	0.151	0.5	6.3	0.0017	3.56	2.7	<0.1	<0.0002	0.2	12.7	0.05	0.56
147020	Rock		2.50	0.405	6.74	0.8148	0.0012	0.0411	27.50	22.6	31.5	0.0657	3.68	489.4	1.0	0.3750	4.6	31.9	2.99	1.51
147021	Rock		1.44	0.031	15.07	0.1883	0.4440	0.0100	9.284	7.3	9.0	0.0817	1.80	15.0	5.5	0.0305	7.0	61.9	5.42	8.92
147022	Rock		1.65	0.009	116.8	0.3923	0.0015	0.0073	1.273	20.3	11.0	0.0239	2.12	5.4	8.4	0.0113	10.5	14.7	0.20	0.26
147023	Rock		0.95	0.012	289.9	0.3597	0.0018	0.0050	1.160	16.9	10.6	0.0194	2.00	2.5	9.1	0.0122	6.8	11.4	0.25	0.29

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Project: Troitsa  
 Report Date: November 09, 2010

Page: 5 of 7 Part 2

CERTIFICATE OF ANALYSIS

SMI10000652.1

Method	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
Analyte	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	
Unit	ppm	ppm	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	
MDL	0.02	2	0.01	0.001	0.5	0.5	0.01	0.5	0.001	1	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	
42357	Rock	0.11	9	0.19	0.068	3.2	13.8	0.03	35.7	<0.001	3	0.44	0.001	0.19	0.2	2.0	0.44	1.50	117	0.8	0.11
42358	Rock	0.07	60	0.08	0.020	4.1	25.0	0.24	43.6	0.057	1	0.79	0.026	0.24	<0.1	4.2	0.11	0.07	6	0.2	<0.02
42359	Rock	0.17	56	1.24	0.087	14.1	33.3	0.77	190.8	0.062	1	0.95	0.042	0.29	<0.1	3.9	0.13	0.04	6	0.2	0.03
42360	Rock	0.14	81	0.90	0.073	6.1	22.4	1.01	192.7	0.142	2	1.44	0.046	0.67	<0.1	8.7	0.38	0.67	23	0.3	0.08
42361	Rock	5.80	5	0.85	0.013	2.2	27.0	0.03	17.5	<0.001	<1	0.15	0.002	0.10	0.2	0.5	0.27	6.55	9542	6.2	0.78
42362	Rock	4.03	17	0.83	0.089	16.6	18.0	0.32	188.9	0.002	<1	0.91	0.007	0.25	0.3	2.0	0.15	0.52	172	1.4	0.38
42363	Rock	13.72	35	0.35	0.053	22.8	28.6	0.89	176.3	0.024	<1	1.08	0.022	0.22	0.2	3.2	0.11	0.51	17	2.2	2.40
42364	Rock	0.26	58	0.36	0.085	10.0	34.7	0.55	125.8	0.122	<1	0.67	0.078	0.30	0.2	1.6	0.11	<0.02	12	<0.1	0.04
147001	Rock	0.09	23	1.01	0.059	7.0	3.8	0.33	396.5	0.003	2	0.66	0.042	0.18	<0.1	4.3	0.05	0.25	17	1.1	0.02
147002	Rock	<0.02	12	11.26	0.051	4.2	1.5	0.21	63.2	0.002	2	0.26	0.034	0.16	0.1	3.6	0.02	<0.02	<5	0.2	<0.02
147003	Rock	0.10	20	0.86	0.055	5.9	3.5	0.25	159.0	0.002	1	0.57	0.041	0.17	<0.1	4.4	0.20	0.82	19	4.2	0.07
147005	Rock	<0.02	60	4.01	0.089	3.3	5.9	1.30	45.2	0.005	3	3.45	0.036	0.22	<0.1	9.3	<0.02	<0.02	7	0.3	0.07
147006	Rock	<0.02	190	1.75	0.074	2.8	5.7	1.18	97.7	0.008	<1	1.84	0.071	0.03	<0.1	15.7	<0.02	1.13	618	0.6	0.02
147007	Rock	0.47	51	0.35	0.075	10.7	34.1	0.77	223.5	0.028	1	0.83	0.053	0.10	4.7	2.8	0.03	0.17	22	0.6	0.09
147008	Rock	3.73	39	2.76	0.063	15.4	29.6	1.00	68.5	0.004	<1	1.35	0.025	0.13	25.5	1.8	0.06	1.27	29	2.4	0.72
147009	Rock	0.79	84	0.89	0.104	6.1	35.8	1.01	73.8	0.110	2	1.15	0.052	0.42	0.3	8.1	0.24	1.39	46	0.8	0.21
147010	Rock	5.38	91	0.39	0.006	1.8	10.1	0.32	17.4	0.002	2	0.34	0.006	<0.01	4.3	0.4	<0.02	0.13	25	1.4	2.99
147011	Rock	0.04	161	1.58	0.067	2.9	82.6	2.54	15.6	0.002	1	2.95	0.024	0.02	<0.1	15.5	<0.02	0.15	2361	6.4	0.04
147012	Rock	6.69	3	0.01	0.003	2.1	2.8	0.01	79.9	<0.001	<1	0.20	0.009	0.22	1.2	0.1	0.07	1.46	8	1.1	1.83
147013	Rock	3.63	21	0.12	0.090	2.4	9.8	0.56	34.0	0.018	<1	0.82	0.025	0.30	0.7	1.1	0.15	3.85	13	1.3	1.21
147014	Rock	1.01	63	0.48	0.065	3.1	21.6	0.90	38.7	0.110	<1	1.07	0.036	0.27	0.2	5.0	0.15	1.47	<5	1.3	0.18
147015	Rock	5.09	90	0.55	0.147	3.4	52.7	1.69	70.2	0.133	<1	1.98	0.049	0.95	0.5	4.3	0.81	2.12	<5	0.5	1.32
147016	Rock	1.22	64	0.45	0.055	3.1	21.7	0.81	48.6	0.110	<1	0.91	0.038	0.30	0.2	4.7	0.12	1.44	5	1.4	0.28
147017	Rock	0.74	75	0.31	0.036	3.6	48.4	1.36	177.9	0.160	<1	2.27	0.075	1.26	<0.1	6.3	0.64	0.89	7	0.9	0.15
147018	Rock	0.16	52	0.47	0.064	14.1	19.1	0.67	109.8	0.053	<1	0.72	0.043	0.18	3.6	2.7	0.05	0.03	<5	0.2	0.04
147019	Rock	0.42	2	0.04	0.001	<0.5	1.9	<0.01	55.8	<0.001	2	0.28	0.058	0.09	0.7	0.1	0.05	1.79	6	2.3	0.24
147020	Rock	7.12	73	1.58	0.126	12.6	44.5	1.43	107.8	0.034	1	1.51	0.049	0.05	0.1	5.2	0.02	1.33	<5	1.7	3.62
147021	Rock	7.90	6	1.52	0.066	14.0	6.3	0.55	83.0	<0.001	2	0.76	0.003	0.20	0.2	0.6	0.14	0.75	21	0.3	0.45
147022	Rock	0.34	59	0.40	0.057	3.5	30.5	0.83	66.9	0.120	1	1.19	0.064	0.17	0.2	5.7	0.08	0.56	<5	0.6	0.19
147023	Rock	0.41	71	0.32	0.070	3.6	33.4	0.84	190.3	0.194	<1	1.06	0.054	0.42	0.3	6.9	0.22	0.45	<5	0.4	0.21

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Project: Troitsa  
 Report Date: November 09, 2010

Page: 5 of 7 Part 3

CERTIFICATE OF ANALYSIS

SMI10000652.1

Method	Analyte	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
		Ga	Cs	Ge	Hf	Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pd	Pt
Unit		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppb	ppm	ppb	ppb
MDL		0.1	0.02	0.1	0.02	0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2
42357	Rock	1.3	3.41	<0.1	<0.02	<0.02	13.6	0.3	<0.05	0.6	2.43	7.9	0.10	<1	0.1	9.4	<10	<2
42358	Rock	4.4	2.64	<0.1	<0.02	<0.02	13.2	0.6	<0.05	0.3	2.49	9.0	<0.02	7	0.5	12.9	<10	<2
42359	Rock	5.1	2.88	<0.1	0.03	0.06	20.5	0.3	<0.05	0.6	8.14	32.5	0.03	1	0.4	13.7	<10	<2
42360	Rock	6.0	5.98	<0.1	<0.02	0.08	41.5	0.4	<0.05	0.3	8.82	14.3	0.04	2	0.3	21.4	<10	<2
42361	Rock	1.0	1.12	<0.1	<0.02	0.05	7.8	0.2	<0.05	0.4	2.90	5.1	0.26	7	0.2	1.6	<10	<2
42362	Rock	2.5	4.57	<0.1	<0.02	<0.02	19.4	0.1	<0.05	0.8	7.26	31.6	0.16	<1	0.3	7.0	<10	<2
42363	Rock	4.7	2.07	<0.1	0.03	0.06	17.0	0.6	<0.05	0.8	7.84	39.9	0.39	2	0.4	15.7	<10	<2
42364	Rock	4.0	1.50	<0.1	0.07	0.25	21.5	0.4	<0.05	1.5	4.97	22.4	0.05	<1	0.3	16.3	<10	<2
147001	Rock	1.6	0.93	<0.1	0.03	<0.02	4.8	0.2	<0.05	1.4	10.83	14.8	0.03	2	0.2	6.2	<10	<2
147002	Rock	0.8	0.69	<0.1	0.03	<0.02	4.7	0.2	<0.05	1.1	17.76	10.3	<0.02	<1	0.1	0.4	<10	<2
147003	Rock	1.3	1.02	<0.1	<0.02	<0.02	5.0	0.2	<0.05	1.0	8.79	13.0	0.03	15	0.1	6.9	<10	<2
147005	Rock	7.5	3.85	<0.1	0.07	<0.02	3.1	0.1	<0.05	0.8	10.16	9.4	0.05	<1	0.3	39.0	<10	<2
147006	Rock	10.1	0.23	0.1	0.03	<0.02	1.2	0.2	<0.05	1.5	12.70	7.7	0.07	<1	0.2	11.0	<10	<2
147007	Rock	4.5	0.71	<0.1	0.04	0.07	6.6	0.4	<0.05	0.7	5.62	23.0	0.11	2	0.2	9.0	<10	<2
147008	Rock	5.5	2.00	<0.1	0.02	0.02	7.8	0.3	<0.05	0.6	8.47	32.5	0.03	222	0.4	24.1	*	<2
147009	Rock	4.9	3.35	<0.1	<0.02	0.08	23.9	0.4	<0.05	0.5	7.64	14.9	0.03	4	0.3	15.7	<10	2
147010	Rock	3.8	0.03	0.2	<0.02	0.03	0.2	<0.1	<0.05	0.1	0.73	2.0	<0.02	<1	2.0	2.2	<10	<2
147011	Rock	8.8	0.87	<0.1	<0.02	<0.02	0.6	<0.1	<0.05	0.9	6.61	7.1	0.03	8	0.1	25.3	<10	2
147012	Rock	0.6	0.35	<0.1	0.14	0.08	6.5	<0.1	<0.05	3.2	0.47	4.7	<0.02	13	0.1	0.2	<10	<2
147013	Rock	3.9	1.81	<0.1	0.05	0.04	12.6	0.4	<0.05	1.8	1.42	5.2	<0.02	1	0.2	7.8	<10	<2
147014	Rock	5.6	1.02	<0.1	0.03	0.12	14.2	0.4	<0.05	0.5	5.20	7.9	0.09	25	0.2	10.2	<10	<2
147015	Rock	8.9	4.06	0.1	0.09	0.08	67.8	0.5	<0.05	2.4	3.33	8.9	<0.02	1	0.1	16.0	<10	<2
147016	Rock	5.4	0.96	<0.1	0.02	0.10	12.7	0.4	<0.05	0.4	4.31	7.4	0.12	72	0.2	9.2	<10	<2
147017	Rock	7.2	2.47	<0.1	<0.02	0.06	47.8	0.6	<0.05	1.6	3.32	9.1	0.05	88	0.2	13.9	<10	<2
147018	Rock	4.3	0.93	<0.1	0.11	0.15	10.4	0.3	<0.05	1.5	7.27	28.0	<0.02	<1	0.1	10.1	<10	<2
147019	Rock	0.5	0.50	<0.1	0.02	0.03	4.5	<0.1	<0.05	1.0	0.53	0.7	<0.02	<1	0.1	0.9	<10	<2
147020	Rock	8.0	2.17	<0.1	0.09	0.09	2.6	0.3	<0.05	2.6	6.76	28.8	0.65	<1	0.3	22.8	<10	<2
147021	Rock	1.8	3.00	<0.1	0.05	<0.02	17.4	<0.1	<0.05	2.1	5.13	25.4	0.08	<1	0.3	13.5	<10	<2
147022	Rock	5.0	1.47	0.1	<0.02	0.27	10.9	0.4	<0.05	0.6	5.29	8.0	0.22	4	0.2	20.5	16	<2
147023	Rock	5.0	1.54	0.1	<0.02	0.31	25.4	0.5	<0.05	0.5	6.89	9.1	0.18	4	0.1	15.8	*	<2

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Project: Troitsa  
 Report Date: November 09, 2010

Page: 6 of 7 Part 1

CERTIFICATE OF ANALYSIS

SMI10000652.1

Method	7AR	G6Gr	WGHT	G6	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15
Analyte	Cu	Ag	Wgt	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb
Unit	%	gm/t	kg	gm/t	ppm	%	%	%	gm/t	ppm	ppm	%	%	ppm	ppm	gm/t	ppm	ppm	ppm	ppm
MDL	0.001	50	0.01	0.005	0.01	1e-006	1e-006	1e-005	0.002	0.1	0.1	0.0001	0.01	0.1	0.1	0.0002	0.1	0.5	0.01	0.02
147024	Rock		1.78	0.035	284.0	0.6263	0.0005	0.0100	1.700	32.8	19.2	0.0316	3.24	3.7	5.0	0.0266	6.0	21.3	0.27	0.15
147025	Rock		1.06	0.241	634.9	0.3628	0.0009	0.0047	2.884	19.1	11.2	0.0282	2.40	1.2	2.7	0.2192	7.7	22.4	<0.01	0.08
147026	Rock		1.21	0.011	4.16	0.0233	0.0006	0.0080	0.070	18.1	10.3	0.0382	2.65	2.2	2.4	0.0038	8.2	20.0	0.14	0.07
147027	Rock		2.86	0.034	26.53	0.2622	0.0006	0.0059	1.819	15.8	38.0	0.0413	3.55	4.7	5.7	0.0320	5.3	33.6	0.17	0.84
147028	Rock		2.05	0.020	128.9	0.2978	0.0006	0.0030	2.587	19.8	17.3	0.0287	3.37	1.1	3.3	0.0149	9.0	26.8	0.16	0.91
147029	Rock	1.358	2.89	0.081	52.85	>1	0.0085	0.0059	8.504	13.7	9.2	0.0378	2.68	1.0	6.2	0.0907	5.9	25.9	1.35	0.52
147030	Rock		2.14	0.022	18.13	0.0566	0.0007	0.0028	1.099	7.0	8.5	0.0318	1.54	24.0	4.9	0.0204	5.6	41.5	0.18	4.60
147031	Rock		1.08	<0.005	2.83	0.0107	0.0005	0.0022	0.105	3.9	7.3	0.0168	1.07	2.5	2.1	0.0018	10.7	25.7	0.07	0.27
147032	Rock		1.35	0.006	5.28	0.0278	0.0003	0.0023	0.149	7.7	4.9	0.0233	2.12	1.1	2.4	0.0052	11.0	16.8	0.07	0.20
147033	Rock		1.45	0.007	1.96	0.0364	0.0004	0.0028	0.223	10.4	4.4	0.0367	2.51	0.5	2.1	0.0053	10.3	28.4	0.08	0.09
147034	Rock		1.76	0.014	0.67	0.0137	0.0007	0.0033	0.131	9.8	5.3	0.0195	2.82	11.2	1.6	0.0181	4.7	16.5	0.20	0.37
147035	Rock		0.93	0.009	1.92	0.0068	0.0007	0.0015	0.341	0.2	3.6	0.0020	2.69	4.1	0.4	0.0098	2.1	3.7	0.08	0.13
147036	Rock		1.31	<0.005	3.61	0.0608	0.0015	0.0061	0.333	11.2	5.1	0.1089	4.44	10.6	1.0	0.0037	1.1	13.8	0.13	0.17
147037	Rock		1.54	0.020	32.66	0.0052	0.0004	0.0007	0.561	60.2	165.0	0.0039	31.27	19.9	1.3	0.0489	0.4	1.0	0.17	7.65
147038	Rock	761	1.31	0.014	4.46	0.1419	0.4580	>1	>100	49.1	21.9	0.0710	1.73	9975	0.4	0.0124	1.2	7.9	1673	1096
147039	Rock		1.70	0.014	7.36	0.0340	0.0003	0.0087	0.451	26.4	15.4	0.0489	5.34	6.3	1.1	0.0104	1.2	18.5	0.59	0.58
147041	Rock		0.97	0.146	2.10	0.0176	>1	>1	55.74	11.9	14.3	0.9849	3.40	1083	2.6	0.1413	2.2	5.3	153.7	86.97
147051	Rock		0.58	<0.005	0.09	0.0006	0.0009	0.0020	0.143	0.7	2.0	0.0194	1.10	2.5	0.2	<0.0002	0.6	8.9	2.20	0.82
147052	Rock		2.07	0.005	22.97	0.2830	0.0061	0.0090	2.587	12.9	10.9	0.0434	2.45	3.2	3.3	0.0079	8.5	30.2	1.50	0.75
147055	Rock		1.68	<0.005	0.94	0.0211	0.0001	0.0034	0.293	16.7	10.3	0.0365	2.73	0.3	1.8	0.0016	7.7	24.2	0.06	0.11
147056	Rock		1.10	0.013	23.58	0.1196	0.0018	0.0030	2.999	10.7	12.4	0.0341	1.78	16.1	3.1	0.0132	3.6	16.2	0.18	0.93
147057	Rock		1.08	0.431	14.23	0.1722	>1	0.2574	92.19	10.2	43.9	0.0795	4.08	69.5	5.2	0.4851	4.4	73.8	69.99	122.9
147058	Rock		3.28	0.011	300.3	0.1067	0.0070	0.0041	1.661	10.9	17.3	0.0526	1.78	6.8	3.7	0.0069	9.7	72.1	0.17	0.52
147059	Rock		1.15	<0.005	48.48	0.0284	0.0950	0.0049	1.797	7.3	4.9	0.0895	1.87	8.6	6.0	0.0053	4.6	87.8	1.15	1.22
147060	Rock		1.18	<0.005	56.07	0.0914	0.0030	0.0045	2.063	5.7	7.2	0.0185	1.73	22.6	6.6	0.0069	2.7	36.7	0.55	6.35
147061	Rock		1.84	<0.005	40.42	0.2097	0.0083	0.0095	7.840	16.9	45.8	0.0699	4.39	62.0	9.6	0.0056	8.4	69.9	2.31	63.61
147251	Rock	4.511	2.89	0.057	>2000	>1	0.0032	0.0035	24.18	30.2	24.7	0.0161	6.78	6.8	16.5	0.0526	7.2	20.4	1.25	2.94
147252	Rock		2.18	0.098	542.9	0.4288	0.0023	0.0037	6.902	14.5	12.3	0.0473	2.61	18.1	6.5	0.0620	6.3	71.7	0.31	3.30
147253	Rock		0.80	<0.005	9.29	0.0713	0.0004	0.0033	0.646	14.4	8.1	0.0348	2.49	1.1	4.0	0.0126	10.9	43.7	0.09	0.19
147565	Rock	5.945	0.91	0.033	373.9	>1	0.0059	0.0060	36.07	19.5	172.1	0.0715	11.14	182.0	35.6	0.0274	5.0	51.7	1.15	5.71

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Client: **Callinan Mines Limited**  
 Suite 1100 - 736 Granville Street  
 Vancouver BC V6Z 1G3 Canada

Project: Troitsa  
 Report Date: November 09, 2010

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CERTIFICATE OF ANALYSIS

SMI10000652.1

Method	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
Analyte	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	
Unit	ppm	ppm	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	
MDL	0.02	2	0.01	0.001	0.5	0.5	0.01	0.5	0.001	1	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	
147024	Rock	0.56	113	0.50	0.129	8.3	52.3	1.66	149.0	0.158	<1	1.85	0.072	0.43	0.1	7.6	0.21	0.78	7	0.9	0.46
147025	Rock	31.70	90	0.62	0.119	8.8	39.9	1.32	97.0	0.241	1	1.46	0.060	0.30	0.2	7.1	0.09	0.38	<5	0.5	0.69
147026	Rock	0.15	93	0.51	0.120	11.2	39.2	0.97	252.6	0.254	<1	1.29	0.069	0.70	0.3	4.5	0.25	0.07	<5	0.2	0.05
147027	Rock	0.59	56	0.99	0.094	15.3	24.2	0.97	23.1	0.013	<1	1.32	0.033	0.12	0.3	3.4	0.06	1.35	12	1.0	0.58
147028	Rock	3.67	53	0.62	0.095	13.2	26.7	0.69	109.7	0.036	<1	0.81	0.031	0.17	0.3	3.3	0.08	1.30	29	1.4	0.84
147029	Rock	3.96	8	0.62	0.098	68.2	11.2	0.45	22.9	<0.001	1	0.62	0.012	0.15	0.8	1.2	0.09	1.85	14	3.4	0.86
147030	Rock	0.72	9	1.43	0.052	10.2	8.2	0.21	72.3	<0.001	<1	0.25	0.003	0.15	0.2	0.9	0.08	0.91	32	0.3	0.11
147031	Rock	0.52	27	0.35	0.065	14.3	14.0	0.54	269.3	0.004	1	0.77	0.029	0.13	2.2	2.0	0.07	0.02	<5	0.2	<0.02
147032	Rock	0.15	56	0.42	0.073	11.0	20.9	0.70	159.3	0.061	<1	0.76	0.045	0.16	0.8	2.9	0.05	0.04	5	0.2	0.04
147033	Rock	0.13	61	1.05	0.085	14.7	23.0	0.74	35.1	0.010	<1	0.80	0.036	0.08	0.1	4.1	<0.02	0.03	<5	0.1	0.02
147034	Rock	0.89	67	0.32	0.086	11.8	25.6	1.02	196.4	0.181	<1	1.23	0.055	0.66	0.4	4.6	0.38	0.41	<5	0.2	0.12
147035	Rock	1.29	<2	<0.01	0.004	7.2	4.1	0.03	45.6	<0.001	2	0.31	0.011	0.21	0.2	0.2	0.09	2.76	<5	0.8	0.53
147036	Rock	28.74	34	0.58	0.099	6.4	17.2	1.08	112.1	0.005	<1	2.19	0.007	0.28	0.1	2.1	0.27	0.57	<5	<0.1	0.17
147037	Rock	5.36	4	<0.01	<0.001	0.8	2.4	<0.01	2.2	<0.001	<1	0.04	<0.001	0.03	0.7	0.4	0.03	>10	350	5.2	4.13
147038	Rock	0.22	<2	0.21	0.005	1.7	9.3	0.04	13.6	<0.001	3	0.21	0.003	0.15	0.3	0.7	0.33	4.48	3674	6.6	0.24
147039	Rock	0.09	106	0.51	0.115	6.2	42.9	1.46	383.8	0.285	<1	2.33	0.058	1.57	0.1	7.6	0.92	0.29	8	0.1	0.05
147041	Rock	0.34	<2	0.18	0.033	4.1	10.0	0.19	14.4	<0.001	2	0.20	0.003	0.20	0.4	0.7	0.63	2.00	1533	0.8	<0.02
147051	Rock	<0.02	13	0.39	0.060	7.4	2.7	0.02	91.0	0.012	<1	0.30	0.012	0.23	<0.1	1.9	0.07	<0.02	7	0.1	<0.02
147052	Rock	0.60	34	0.73	0.091	15.8	21.1	0.78	92.7	0.003	2	1.12	0.018	0.13	20.4	2.1	0.06	0.23	21	1.4	0.10
147055	Rock	2.94	79	0.69	0.125	13.1	38.6	0.91	153.7	0.137	<1	0.89	0.061	0.37	0.2	3.6	0.13	0.18	6	0.1	0.04
147056	Rock	3.43	14	0.81	0.038	6.2	14.1	0.36	38.5	0.003	<1	0.50	0.010	0.10	0.2	0.7	0.06	0.84	37	0.3	0.48
147057	Rock	60.25	12	3.06	0.041	9.4	7.9	0.58	26.2	0.001	2	0.21	0.010	0.11	0.4	1.4	0.07	4.26	886	1.3	2.98
147058	Rock	1.73	26	1.92	0.080	70.9	16.3	0.36	114.7	0.001	2	0.46	0.023	0.13	2.0	2.9	0.07	0.64	10	0.5	0.09
147059	Rock	2.44	9	6.41	0.043	8.1	9.3	0.51	279.1	<0.001	1	0.35	0.008	0.13	0.2	0.8	0.08	0.37	21	0.3	0.46
147060	Rock	4.91	8	0.78	0.071	8.4	5.3	0.22	61.9	<0.001	2	0.30	0.007	0.19	0.1	0.7	0.14	0.95	26	0.1	0.39
147061	Rock	44.40	24	2.68	0.074	20.7	9.6	0.55	17.3	<0.001	2	0.25	0.017	0.13	0.2	1.9	0.13	3.17	285	0.9	1.73
147251	Rock	13.66	12	0.50	0.057	99.7	9.4	0.24	17.1	<0.001	<1	0.41	0.003	0.13	9.1	0.5	0.14	6.78	49	12.1	2.10
147252	Rock	4.04	26	1.53	0.064	19.8	20.0	0.72	88.0	0.003	<1	0.98	0.013	0.12	1.5	1.6	0.09	1.18	17	0.9	0.19
147253	Rock	0.98	57	1.08	0.100	44.1	28.0	0.80	145.9	0.024	1	0.85	0.039	0.13	0.1	3.5	0.04	0.16	8	0.1	0.08
147565	Rock	7.29	9	2.30	0.041	10.3	5.8	0.73	11.8	<0.001	1	0.20	0.007	0.13	0.2	0.8	0.10	8.75	546	14.9	4.92

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.



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Project: Troitsa  
 Report Date: November 09, 2010

Page: 6 of 7 Part 3

CERTIFICATE OF ANALYSIS

SMI10000652.1

Method	Analyte	Unit	MDL	1F15 Ga	1F15 Cs	1F15 Ge	1F15 Hf	1F15 Nb	1F15 Rb	1F15 Sn	1F15 Ta	1F15 Zr	1F15 Y	1F15 Ce	1F15 In	1F15 Re	1F15 Be	1F15 Li	1F15 Pd	1F15 Pt
				ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppb	ppb
				0.1	0.02	0.1	0.02	0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2
147024	Rock			7.0	2.94	0.2	<0.02	0.13	22.7	0.6	<0.05	0.6	11.94	21.8	0.45	9	0.3	32.1	*	<2
147025	Rock			6.2	2.83	0.3	<0.02	0.41	15.0	0.3	<0.05	0.6	10.12	22.1	<0.02	231	0.2	27.1	*	<2
147026	Rock			4.9	3.11	0.2	0.04	0.24	36.2	0.4	<0.05	0.7	8.00	26.7	0.03	<1	0.1	12.1	<10	<2
147027	Rock			5.6	2.78	<0.1	0.02	<0.02	8.1	0.3	<0.05	0.6	7.62	28.3	0.15	2	0.4	23.6	<10	<2
147028	Rock			4.4	1.67	<0.1	0.04	0.11	12.5	0.4	<0.05	0.8	7.41	27.3	0.15	15	0.2	11.5	17	<2
147029	Rock			1.8	2.90	<0.1	<0.02	<0.02	12.4	0.8	<0.05	0.7	7.17	101.5	0.52	3	0.2	8.7	<10	<2
147030	Rock			0.9	2.87	<0.1	<0.02	<0.02	8.7	<0.1	<0.05	0.6	4.52	20.5	0.02	1	0.3	1.5	<10	<2
147031	Rock			3.3	2.56	<0.1	<0.02	0.04	10.7	0.2	<0.05	0.5	8.37	34.9	<0.02	<1	0.2	10.4	<10	<2
147032	Rock			4.9	0.84	<0.1	0.06	0.20	10.6	0.5	<0.05	1.4	7.20	28.6	0.04	1	<0.1	10.4	<10	<2
147033	Rock			4.9	0.95	<0.1	0.03	0.02	6.1	0.4	<0.05	0.9	10.62	37.4	0.08	<1	0.3	12.6	<10	<2
147034	Rock			8.8	5.12	0.1	0.20	0.15	48.2	0.8	<0.05	6.6	7.20	23.6	0.04	<1	0.2	15.3	<10	<2
147035	Rock			1.2	2.87	<0.1	0.06	0.03	10.0	<0.1	<0.05	2.0	0.98	14.1	<0.02	<1	0.2	2.0	<10	<2
147036	Rock			7.6	1.81	<0.1	0.10	<0.02	26.9	0.2	<0.05	3.9	4.52	13.1	0.07	<1	0.2	22.7	<10	<2
147037	Rock			0.3	0.12	0.3	0.02	0.15	2.5	0.1	<0.05	0.4	2.41	1.3	0.04	1	<0.1	0.3	<10	<2
147038	Rock			2.0	3.83	<0.1	<0.02	0.02	10.2	0.5	<0.05	0.3	0.80	4.6	0.03	<1	0.2	0.5	*	<2
147039	Rock			10.1	13.47	0.2	<0.02	0.10	66.2	1.1	<0.05	0.4	7.77	15.3	0.02	3	0.2	27.1	<10	<2
147041	Rock			0.9	1.90	<0.1	<0.02	<0.02	16.7	<0.1	<0.05	0.5	2.89	8.5	<0.02	<1	0.1	0.5	<10	<2
147051	Rock			0.8	2.98	<0.1	0.05	<0.02	7.1	0.1	<0.05	1.5	11.58	11.9	<0.02	<1	0.2	0.3	<10	<2
147052	Rock			4.7	2.43	<0.1	<0.02	<0.02	10.1	0.1	<0.05	0.7	7.96	29.5	0.16	<1	0.4	18.9	<10	<2
147055	Rock			5.3	1.60	<0.1	0.06	0.05	30.3	0.4	<0.05	1.3	5.79	27.5	0.02	<1	0.2	9.6	<10	<2
147056	Rock			2.8	1.73	<0.1	<0.02	<0.02	8.4	<0.1	<0.05	0.4	2.44	11.2	0.08	1	0.2	6.7	<10	<2
147057	Rock			1.1	1.66	<0.1	0.04	<0.02	11.4	<0.1	<0.05	1.1	6.27	17.4	0.36	<1	0.2	2.8	<10	<2
147058	Rock			2.8	2.03	<0.1	0.02	<0.02	14.6	<0.1	<0.05	0.8	6.78	100.5	0.03	118	0.2	3.9	<10	<2
147059	Rock			1.5	1.95	<0.1	0.03	<0.02	12.8	<0.1	<0.05	1.2	5.37	15.3	0.02	2	0.5	5.1	<10	<2
147060	Rock			1.0	2.77	<0.1	0.20	<0.02	16.0	<0.1	<0.05	10.5	2.57	16.3	0.03	10	0.2	2.8	<10	<2
147061	Rock			1.1	2.32	<0.1	<0.02	<0.02	12.0	0.1	<0.05	1.3	6.61	33.5	0.25	6	0.3	2.1	<10	<2
147251	Rock			1.4	3.01	<0.1	<0.02	<0.02	10.2	2.4	<0.05	1.0	7.12	132.3	1.46	396	0.3	8.1	*	<2
147252	Rock			4.1	2.38	<0.1	<0.02	<0.02	8.6	0.2	<0.05	0.7	7.56	34.0	0.17	60	0.4	23.7	*	<2
147253	Rock			5.5	1.68	<0.1	0.04	<0.02	9.2	0.3	<0.05	0.9	8.60	70.2	0.06	3	0.3	13.7	<10	<2
147565	Rock			0.8	2.10	<0.1	0.05	<0.02	11.1	1.4	<0.05	1.4	7.40	18.6	1.99	29	0.3	4.0	*	<2

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Project: Troitsa  
 Report Date: November 09, 2010

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CERTIFICATE OF ANALYSIS

SMI10000652.1

Method	7AR	G6Gr	WGHT	G6	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
Analyte	Cu	Ag	Wgt	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	
Unit	%	gm/t	kg	gm/t	ppm	%	%	%	gm/t	ppm	ppm	%	%	ppm	ppm	gm/t	ppm	ppm	ppm	ppm	
MDL	0.001	50	0.01	0.005	0.01	1e-006	1e-006	1e-005	0.002	0.1	0.1	0.0001	0.01	0.1	0.1	0.0002	0.1	0.5	0.01	0.02	
147566	Rock		0.74	0.444	300.5	0.0182	>1	0.2139	24.45	26.1	96.2	0.0443	4.83	93.1	10.3	0.4303	2.5	24.6	41.85	19.98	
147567	Rock		1.25	<0.005	22.79	0.0127	0.0035	0.0072	0.353	8.6	3.9	0.2332	3.05	18.6	4.7	0.0115	1.2	301.9	0.24	7.66	
147568	Rock		0.63	<0.005	2.62	0.0016	0.0021	0.0084	0.256	7.8	10.8	0.0794	2.27	23.6	0.4	0.0069	1.2	20.2	0.14	0.37	
147569	Rock		1.25	<0.005	2.65	0.0334	0.0025	0.0053	1.700	11.9	9.4	0.0577	7.61	67.8	0.6	0.0127	1.4	5.5	0.11	1.31	
147570	Rock		0.63	<0.005	1.29	0.0019	0.0004	0.0003	0.275	0.4	5.3	0.0016	3.63	7.9	0.3	0.0030	4.4	1.8	0.03	0.13	
147745	Rock		0.78	<0.005	1.63	0.0272	0.0011	0.0050	0.125	13.5	7.7	0.0186	2.74	1.3	1.0	0.0009	2.1	24.2	0.13	0.17	
147746	Rock		0.73	<0.005	10.24	0.0506	0.0005	0.0089	0.253	14.4	98.3	0.0707	2.62	0.8	2.9	0.0008	11.7	33.2	0.51	0.20	
147747	Rock		0.66	0.754	453.2	0.0048	0.0134	0.0023	4.823	1.9	4.0	0.0096	1.84	75.8	3.5	0.7325	3.4	7.3	0.16	4.84	
147748	Rock		0.53	0.045	6.64	0.1480	0.0006	0.0047	1.455	42.8	11.6	0.0171	2.42	46.0	3.2	0.0573	3.0	6.4	0.26	1.14	
147749	Rock		0.52	0.189	208.8	0.0372	0.0544	0.0556	11.88	58.4	98.4	0.0410	6.62	279.4	531.6	0.1905	1.9	21.5	6.06	17.79	
147750	Rock	6.508	149	0.52	0.168	620.6	>1	0.0109	0.2251	>100	34.6	137.5	0.0753	23.21	333.2	14.1	0.1327	0.9	11.4	15.57	7.16
147751	Rock		1.05	0.102	387.6	0.2099	0.0047	0.0062	28.05	15.0	41.7	0.0413	7.86	108.3	24.6	0.0930	1.8	24.2	0.11	3.16	
147752	Rock		0.61	0.006	4.31	0.0067	0.0006	0.0021	0.594	18.7	6.7	0.0239	2.92	34.6	0.7	0.0153	2.7	8.1	0.03	1.07	
147753	Rock		0.36	0.009	2.94	0.0077	0.0016	0.0007	0.857	1.0	32.4	0.0022	4.52	51.7	0.9	0.0110	6.2	2.6	0.05	1.03	
147754	Rock		0.87	<0.005	2.29	0.0034	0.0006	0.0029	0.772	6.5	6.5	0.0354	3.35	5474	0.2	0.0024	0.4	15.9	0.05	187.0	
147755	Rock		0.68	<0.005	1.87	0.0014	0.0005	0.0030	0.192	7.8	7.7	0.0387	2.62	73.3	0.2	0.0012	0.7	74.2	0.08	8.72	
147756	Rock		1.07	<0.005	0.84	0.0019	0.0008	0.0048	0.198	7.0	6.7	0.0758	2.73	3.6	0.3	<0.0002	0.7	20.1	0.11	0.99	
147757	Rock		0.57	<0.005	1.21	0.0049	0.0003	0.0041	0.076	11.5	10.2	0.0431	3.71	1.1	0.2	<0.0002	1.0	13.5	0.04	0.31	
147758	Rock		0.74	<0.005	1.21	0.0035	0.0001	0.0045	0.058	12.1	11.3	0.0676	4.03	1.1	0.2	<0.0002	0.9	16.8	0.03	0.17	
147759	Rock		0.52	<0.005	0.23	0.0171	0.0001	0.0066	0.061	90.1	39.3	0.1232	5.64	1.2	<0.0002	0.2	10.9	0.04	0.06		
147760	Rock		1.05	<0.005	0.90	0.0006	0.0001	0.0031	0.017	9.6	5.4	0.1605	3.09	2.0	0.1	<0.0002	0.7	21.5	0.06	0.35	
148601	Rock		1.37	<0.005	0.29	0.0019	0.0010	0.0078	0.400	3.3	8.6	0.1444	3.72	7.9	<0.1	0.0021	0.3	35.2	0.15	0.24	
148602	Rock		0.47	0.009	0.30	0.0017	0.0004	0.0098	0.164	2.4	7.5	0.5095	4.46	2.4	<0.1	0.0072	0.1	54.5	0.30	0.09	
148603	Rock		1.19	<0.005	0.37	0.0013	0.0009	0.0114	0.139	<0.1	3.0	>1	6.64	6.4	<0.1	0.0014	<0.1	189.1	0.47	0.20	
148604	Rock		0.85	0.034	37.31	0.0428	0.0424	0.0054	2.078	10.4	6.7	0.0986	2.78	17.9	4.8	0.0406	2.7	122.5	1.42	2.72	
148605	Rock		1.19	<0.005	1.01	0.0089	0.0005	0.0034	0.205	13.4	10.4	0.0467	2.73	1.0	2.0	0.0005	10.3	22.8	0.05	0.12	



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 Suite 1100 - 736 Granville Street  
 Vancouver BC V6Z 1G3 Canada

Project: Troitsa  
 Report Date: November 09, 2010

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CERTIFICATE OF ANALYSIS

SMI10000652.1

Method	Analyte	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
		Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te
Unit		ppm	ppm	%	%	ppm	ppm	%	ppm	%	ppm	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	
MDL		0.02	2	0.01	0.001	0.5	0.5	0.01	0.5	0.001	1	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02
147566	Rock	62.40	6	1.16	0.013	3.6	7.7	0.17	17.1	<0.001	1	0.16	0.001	0.10	0.3	0.4	0.31	5.46	275	7.0	5.16
147567	Rock	1.68	5	13.80	0.013	3.9	2.5	4.13	14.8	<0.001	<1	0.14	0.004	0.09	1.0	0.7	0.06	0.21	199	<0.1	0.11
147568	Rock	0.19	46	0.35	0.058	4.2	11.5	1.10	296.7	0.004	<1	1.66	0.007	0.06	2.2	1.5	0.04	0.09	<5	<0.1	0.19
147569	Rock	24.96	86	0.24	0.127	3.5	16.1	1.56	38.2	0.013	2	3.04	0.011	0.32	0.5	4.0	0.23	1.94	6	0.7	1.00
147570	Rock	7.56	<2	<0.01	0.003	7.4	1.8	0.02	34.4	<0.001	1	0.26	0.005	0.21	0.3	0.1	0.07	3.44	<5	1.6	0.70
147745	Rock	0.43	82	0.60	0.141	13.6	58.7	0.51	39.1	0.070	1	0.68	0.052	0.04	0.5	2.4	<0.02	<0.02	<5	<0.1	<0.02
147746	Rock	1.78	65	0.76	0.097	14.7	36.6	0.57	89.5	0.015	<1	0.79	0.048	0.10	1.7	4.7	0.03	0.04	<5	0.1	0.05
147747	Rock	9.52	5	0.05	0.013	18.5	18.4	0.03	78.1	<0.001	2	0.19	0.005	0.19	1.3	0.4	0.13	0.98	20	1.1	0.96
147748	Rock	0.41	21	0.08	0.039	8.1	24.0	0.63	129.5	0.003	2	1.49	0.027	0.40	0.1	1.8	0.17	0.76	<5	1.3	0.08
147749	Rock	19.34	48	0.43	0.098	7.0	32.2	0.93	23.4	0.004	2	1.45	0.015	0.25	3.5	3.1	0.81	5.01	42	2.0	2.92
147750	Rock	42.65	36	0.28	0.095	3.8	8.4	0.35	8.7	0.013	<1	1.17	0.015	0.07	5.3	2.2	0.36	>10	57	21.3	6.49
147751	Rock	1.64	37	0.35	0.077	6.8	16.8	0.46	16.6	0.003	<1	1.03	0.027	0.10	11.1	1.5	0.11	4.91	12	2.1	4.05
147752	Rock	0.22	35	0.04	0.029	8.3	20.8	0.23	93.3	0.004	<1	1.06	0.007	0.32	0.5	0.7	0.20	0.86	6	0.2	0.13
147753	Rock	7.92	<2	0.01	0.004	3.6	2.1	0.01	28.8	<0.001	1	0.23	0.006	0.19	0.6	<0.1	0.06	5.21	60	2.6	0.57
147754	Rock	0.13	28	0.40	0.045	4.9	11.1	0.43	32.5	0.011	3	1.16	0.076	0.20	0.4	3.3	0.26	1.33	8	0.7	0.07
147755	Rock	0.12	23	0.73	0.024	6.1	8.8	0.53	35.5	0.038	2	2.07	0.215	0.22	<0.1	3.5	0.16	0.71	<5	0.3	0.22
147756	Rock	0.34	26	0.84	0.037	4.7	8.8	0.63	28.7	0.046	1	1.13	0.066	0.07	<0.1	4.9	0.03	0.39	<5	0.4	0.12
147757	Rock	0.12	77	0.23	0.061	5.9	22.1	0.60	60.1	0.016	2	1.55	0.039	0.16	<0.1	4.6	0.10	0.04	<5	<0.1	0.03
147758	Rock	0.13	69	0.23	0.049	5.8	13.9	0.51	76.8	0.020	2	1.60	0.045	0.19	<0.1	3.8	0.09	0.13	<5	<0.1	0.04
147759	Rock	<0.02	174	1.23	0.044	2.0	63.9	3.88	14.1	0.204	1	3.25	0.035	<0.01	<0.1	7.3	<0.02	<0.02	<5	<0.1	<0.02
147760	Rock	0.14	35	1.08	0.090	3.6	15.5	0.57	154.0	0.005	2	1.11	0.027	0.43	<0.1	2.9	0.17	0.37	7	<0.1	0.02
148601	Rock	0.05	52	1.74	0.066	3.7	6.7	0.69	24.6	0.002	4	0.45	0.052	0.04	<0.1	9.7	<0.02	0.12	6	<0.1	0.02
148602	Rock	0.03	35	9.11	0.050	5.4	4.8	2.36	35.2	0.001	3	0.77	0.030	0.10	<0.1	8.8	<0.02	0.09	<5	0.2	<0.02
148603	Rock	<0.02	17	19.67	0.005	11.5	1.1	7.66	37.3	<0.001	<1	0.06	0.012	0.02	<0.1	7.7	0.02	1.12	9	0.2	0.03
148604	Rock	3.63	9	2.81	0.070	11.2	4.3	0.24	73.7	0.002	2	0.45	0.006	0.29	0.2	1.3	0.22	1.72	27	0.1	0.35
148605	Rock	0.71	64	1.03	0.094	10.1	39.5	0.88	46.1	0.134	<1	0.98	0.055	0.12	0.9	3.9	0.04	0.07	<5	<0.1	0.17



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Project: Troitsa  
 Report Date: November 09, 2010

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CERTIFICATE OF ANALYSIS

SMI10000652.1

Method	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
Analyte	Ga	Cs	Ge	Hf	Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pd	Pt	
Unit	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppb	ppb	
MDL	0.1	0.02	0.1	0.02	0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2	
147566	Rock	0.7	1.77	<0.1	0.05	<0.02	8.8	<0.1	<0.05	1.9	3.45	6.8	<0.02	14	0.2	1.3	<10	<2
147567	Rock	0.6	1.35	<0.1	<0.02	<0.02	5.7	<0.1	<0.05	0.7	5.67	7.0	<0.02	<1	0.7	0.7	<10	<2
147568	Rock	7.6	0.25	<0.1	0.03	<0.02	3.2	0.3	<0.05	1.2	1.86	13.4	0.02	<1	0.2	34.2	<10	<2
147569	Rock	11.8	2.77	<0.1	0.03	<0.02	23.6	0.2	<0.05	0.7	10.60	9.9	0.09	1	0.4	47.8	<10	<2
147570	Rock	0.6	1.26	<0.1	0.07	0.02	10.4	0.1	<0.05	2.6	0.81	14.1	<0.02	<1	<0.1	0.6	<10	<2
147745	Rock	3.7	0.60	<0.1	0.09	<0.02	3.1	0.3	<0.05	2.4	4.65	27.8	0.02	<1	0.2	8.5	<10	<2
147746	Rock	4.7	1.44	<0.1	0.11	<0.02	7.3	0.3	<0.05	1.9	12.07	32.0	0.03	3	0.3	12.8	<10	<2
147747	Rock	0.8	1.64	<0.1	<0.02	<0.02	15.1	0.3	<0.05	0.6	2.02	28.4	<0.02	78	<0.1	0.9	<10	<2
147748	Rock	3.2	2.78	<0.1	0.03	<0.02	18.9	<0.1	<0.05	0.4	4.50	20.2	0.08	5	0.2	13.6	<10	<2
147749	Rock	5.8	3.43	<0.1	0.15	<0.02	17.4	0.2	<0.05	8.9	6.34	14.1	0.03	3	0.4	24.4	<10	<2
147750	Rock	5.1	0.99	0.3	0.03	0.07	5.8	4.9	<0.05	0.9	3.53	7.7	8.47	<1	0.2	9.7	*	<2
147751	Rock	5.7	0.91	<0.1	0.03	<0.02	6.2	0.6	<0.05	1.5	3.16	12.6	0.35	<1	0.1	12.5	<10	<2
147752	Rock	2.5	7.17	<0.1	<0.02	<0.02	15.6	<0.1	<0.05	0.4	5.52	18.8	<0.02	<1	0.9	16.6	<10	<2
147753	Rock	0.5	0.70	<0.1	0.06	<0.02	7.6	<0.1	<0.05	2.0	0.78	6.9	<0.02	<1	<0.1	0.6	<10	<2
147754	Rock	4.8	3.77	<0.1	0.03	<0.02	10.3	0.2	<0.05	0.9	6.51	9.8	0.03	4	0.2	13.8	<10	<2
147755	Rock	6.1	5.71	<0.1	0.09	<0.02	12.4	0.3	<0.05	2.1	7.66	13.8	<0.02	2	0.5	25.7	<10	<2
147756	Rock	5.9	0.95	<0.1	0.07	<0.02	2.8	0.4	<0.05	1.9	6.16	8.5	0.07	<1	0.1	18.5	<10	<2
147757	Rock	5.0	1.90	<0.1	<0.02	<0.02	8.7	0.1	<0.05	0.6	6.16	12.8	<0.02	<1	0.3	22.4	<10	<2
147758	Rock	4.9	2.58	<0.1	<0.02	<0.02	9.8	0.2	<0.05	0.4	5.07	12.7	<0.02	<1	0.3	22.8	<10	<2
147759	Rock	8.9	0.18	0.2	0.13	<0.02	0.5	0.1	<0.05	5.7	5.60	5.0	<0.02	<1	0.1	11.7	<10	<2
147760	Rock	2.8	4.35	<0.1	<0.02	<0.02	17.7	0.2	<0.05	0.3	5.87	9.3	<0.02	<1	0.3	9.3	<10	<2
148601	Rock	3.0	1.41	<0.1	0.03	<0.02	1.7	<0.1	<0.05	1.4	6.90	7.6	0.04	<1	0.2	8.0	<10	<2
148602	Rock	3.0	1.66	<0.1	0.02	<0.02	3.4	<0.1	<0.05	0.8	12.80	11.9	0.06	<1	0.2	5.2	<10	<2
148603	Rock	0.5	0.25	<0.1	<0.02	<0.02	0.8	<0.1	<0.05	0.4	31.34	21.5	0.08	<1	0.2	0.6	<10	<2
148604	Rock	1.5	2.34	<0.1	0.18	<0.02	26.4	<0.1	<0.05	7.9	5.44	22.0	0.03	13	0.3	2.6	<10	<2
148605	Rock	5.9	0.82	0.1	0.08	0.16	8.5	0.3	<0.05	1.3	6.17	21.2	<0.02	<1	0.3	12.6	<10	<2



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Project: Troitsa  
Report Date: November 09, 2010

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QUALITY CONTROL REPORT

SMI10000652.1

Method	7AR	G6Gr	WGHT	G6	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
Analyte	Cu	Ag	Wgt	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	
Unit	%	gm/t	kg	gm/t	ppm	%	%	%	gm/t	ppm	ppm	%	%	ppm	ppm	gm/t	ppm	ppm	ppm	ppm	
MDL	0.001	50	0.01	0.005	0.01	1e-006	1e-006	1e-005	0.002	0.1	0.1	0.0001	0.01	0.1	0.1	0.0002	0.1	0.5	0.01	0.02	
Pulp Duplicates																					
42176	Rock		1.86	0.005	0.07	0.0006	0.0002	0.0101	0.035	1.7	4.2	0.0605	1.54	37.2	<0.1	0.0028	0.4	2.7	0.62	0.20	
REP 42176	QC				0.01	0.0006	0.0002	0.0102	0.036	1.8	4.3	0.0615	1.54	37.0	<0.1	0.0023	0.4	2.7	0.64	0.22	
42179	Rock	7.535	152	0.81	0.409	437.3	>1	0.0159	0.0397	>100	30.7	32.3	0.0123	12.12	22.8	5.2	0.3903	3.2	3.7	11.60	13.96
REP 42179	QC		180																		
42182	Rock		1.17	0.030	>2000	0.6789	0.0239	0.0038	15.21	15.0	20.1	0.0221	3.51	16.3	5.5	0.0162	8.0	4.9	<0.01	1.28	
REP 42182	QC				>2000	0.6969	0.0228	0.0041	15.28	14.4	20.3	0.0229	3.56	15.2	5.3	0.0244	8.1	4.7	<0.01	1.26	
REP 42190	QC	2.227			0.074																
42306	Rock		1.22	0.129	102.6	0.0222	0.0095	0.0114	3.297	3.5	17.2	0.0232	3.22	3.9	2.3	0.1256	10.5	9.0	1.38	0.72	
REP 42306	QC				98.57	0.0212	0.0089	0.0110	3.106	3.4	16.1	0.0223	3.05	4.0	2.1	0.1158	10.0	8.8	1.41	0.67	
42323	Rock		1.87	0.106	7.50	0.0200	0.0060	0.0086	3.993	16.6	89.2	0.2078	9.00	44.6	7.5	0.0902	2.5	183.5	1.62	2.13	
REP 42323	QC				8.46	0.0199	0.0059	0.0088	3.980	16.4	87.5	0.2062	8.84	43.8	7.3	0.0882	2.7	182.6	1.63	2.15	
42329	Rock		2.13	0.057	42.34	0.0196	0.0027	0.0023	1.021	7.9	7.4	0.0289	2.17	30.1	7.9	0.0558	3.8	20.3	0.35	1.71	
REP 42329	QC			0.060																	
42341	Rock		1.19	0.011	9.32	0.0017	0.0016	0.0012	0.187	1.6	1.6	0.0081	5.27	3.7	3.1	0.0093	3.9	23.5	0.14	0.17	
REP 42341	QC				9.44	0.0016	0.0017	0.0012	0.181	1.8	1.7	0.0080	5.31	3.9	3.1	0.0093	4.2	24.1	0.08	0.15	
42352	Rock		0.70	<0.005	1.60	0.0045	0.0005	0.0072	0.114	20.0	15.4	0.0368	4.01	2.2	0.5	0.0015	2.8	31.9	0.09	0.16	
REP 42352	QC				1.84	0.0046	0.0005	0.0071	0.107	20.2	15.6	0.0365	3.96	2.2	0.5	0.0016	2.7	30.7	0.10	0.15	
42359	Rock		1.06	<0.005	2.28	0.0158	0.0004	0.0041	0.106	13.4	9.5	0.0518	2.53	18.0	2.5	0.0051	9.5	25.7	0.16	0.86	
REP 42359	QC			<0.005																	
147001	Rock	1.190		1.36	0.008	0.33	>1	0.0008	0.0059	23.11	1.5	7.2	0.0525	1.75	108.2	0.3	0.0083	0.7	26.0	0.71	19.84
REP 147001	QC	1.180																			
147006	Rock		1.14	<0.005	12.87	0.0178	0.1984	0.6898	1.376	5.2	18.5	0.3041	5.35	124.2	0.3	0.0006	0.4	22.6	74.92	1.44	
REP 147006	QC				12.73	0.0178	0.1920	0.6801	1.319	5.4	18.1	0.2973	5.25	121.6	0.3	<0.0002	0.4	22.0	73.30	1.43	
147021	Rock		1.44	0.031	15.07	0.1883	0.4440	0.0100	9.284	7.3	9.0	0.0817	1.80	15.0	5.5	0.0305	7.0	61.9	5.42	8.92	
REP 147021	QC				15.61	0.1918	0.4896	0.0099	9.484	7.4	9.5	0.0808	1.92	15.6	5.9	0.0302	7.5	63.7	5.69	8.78	
147035	Rock		0.93	0.009	1.92	0.0068	0.0007	0.0015	0.341	0.2	3.6	0.0020	2.69	4.1	0.4	0.0098	2.1	3.7	0.08	0.13	
REP 147035	QC				1.96	0.0069	0.0008	0.0015	0.359	0.2	3.8	0.0020	2.67	4.2	0.4	0.0103	2.2	3.8	0.08	0.14	
147061	Rock		1.84	<0.005	40.42	0.2097	0.0083	0.0095	7.840	16.9	45.8	0.0699	4.39	62.0	9.6	0.0056	8.4	69.9	2.31	63.61	



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QUALITY CONTROL REPORT

SMI10000652.1

Method	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
Analyte	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	
Unit	ppm	ppm	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	
MDL	0.02	2	0.01	0.001	0.5	0.5	0.01	0.5	0.001	1	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	
Pulp Duplicates																					
42176	Rock	0.03	13	0.05	0.028	6.8	2.9	<0.01	26.1	<0.001	<1	0.27	0.051	<0.01	<0.1	5.5	0.26	<0.02	26	0.1	<0.02
REP 42176	QC	0.03	13	0.05	0.029	6.8	3.0	<0.01	25.3	<0.001	<1	0.27	0.053	<0.01	<0.1	5.6	0.26	<0.02	29	0.1	<0.02
42179	Rock	65.73	12	0.08	0.030	3.1	3.4	0.66	16.8	<0.001	1	0.87	0.001	0.11	0.2	0.7	0.14	7.18	58	27.2	16.44
REP 42179	QC																				
42182	Rock	34.21	15	0.18	0.091	16.2	12.0	0.51	64.3	0.001	<1	1.05	0.013	0.15	0.6	1.1	0.11	1.49	28	4.9	1.51
REP 42182	QC	33.09	16	0.17	0.095	16.8	11.7	0.51	67.2	0.001	<1	1.07	0.013	0.16	0.5	1.1	0.11	1.50	18	4.9	1.27
REP 42190	QC																				
42306	Rock	13.62	7	0.08	0.035	11.3	3.5	0.03	49.9	<0.001	1	0.24	0.006	0.20	>100	0.7	0.10	2.30	<5	1.2	1.48
REP 42306	QC	12.79	7	0.08	0.034	10.6	3.3	0.03	48.0	<0.001	<1	0.23	0.006	0.19	96.4	0.8	0.09	2.19	7	0.9	1.56
42323	Rock	15.53	11	6.64	0.026	4.3	16.4	0.63	17.6	0.002	<1	0.74	0.003	0.16	1.2	0.8	0.10	7.91	20	2.2	3.66
REP 42323	QC	15.39	11	6.75	0.026	4.3	16.4	0.62	17.5	0.002	<1	0.73	0.003	0.16	1.1	0.8	0.10	7.92	23	2.2	3.92
42329	Rock	2.10	8	0.30	0.029	3.7	25.5	0.13	48.8	<0.001	<1	0.26	0.001	0.11	0.4	0.5	0.13	1.36	58	0.3	0.33
REP 42329	QC																				
42341	Rock	5.75	<2	0.04	0.076	3.6	3.9	0.09	95.6	<0.001	<1	0.33	0.011	0.23	0.6	0.3	0.07	0.90	7	2.8	1.91
REP 42341	QC	5.98	<2	0.04	0.076	3.6	4.2	0.09	89.8	<0.001	<1	0.33	0.011	0.23	0.6	0.3	0.06	0.90	7	2.8	1.79
42352	Rock	0.25	102	0.61	0.142	7.3	35.1	1.11	142.5	0.278	<1	1.50	0.107	0.84	0.1	2.6	0.28	1.13	<5	<0.1	0.13
REP 42352	QC	0.24	99	0.59	0.140	7.2	33.7	1.10	142.6	0.276	<1	1.48	0.104	0.83	0.2	2.7	0.28	1.12	<5	<0.1	0.10
42359	Rock	0.17	56	1.24	0.087	14.1	33.3	0.77	190.8	0.062	1	0.95	0.042	0.29	<0.1	3.9	0.13	0.04	6	0.2	0.03
REP 42359	QC																				
147001	Rock	0.09	23	1.01	0.059	7.0	3.8	0.33	396.5	0.003	2	0.66	0.042	0.18	<0.1	4.3	0.05	0.25	17	1.1	0.02
REP 147001	QC																				
147006	Rock	<0.02	190	1.75	0.074	2.8	5.7	1.18	97.7	0.008	<1	1.84	0.071	0.03	<0.1	15.7	<0.02	1.13	618	0.6	0.02
REP 147006	QC	<0.02	186	1.72	0.074	2.8	5.8	1.16	96.7	0.007	<1	1.76	0.066	0.03	<0.1	15.0	<0.02	1.11	625	0.5	<0.02
147021	Rock	7.90	6	1.52	0.066	14.0	6.3	0.55	83.0	<0.001	2	0.76	0.003	0.20	0.2	0.6	0.14	0.75	21	0.3	0.45
REP 147021	QC	8.33	7	1.58	0.069	14.4	6.2	0.58	91.1	<0.001	2	0.80	0.003	0.21	0.2	0.8	0.15	0.78	21	0.4	0.46
147035	Rock	1.29	<2	<0.01	0.004	7.2	4.1	0.03	45.6	<0.001	2	0.31	0.011	0.21	0.2	0.2	0.09	2.76	<5	0.8	0.53
REP 147035	QC	1.33	<2	<0.01	0.003	7.7	3.8	0.03	51.8	<0.001	1	0.30	0.011	0.22	0.2	0.2	0.09	2.75	<5	0.7	0.52
147061	Rock	44.40	24	2.68	0.074	20.7	9.6	0.55	17.3	<0.001	2	0.25	0.017	0.13	0.2	1.9	0.13	3.17	285	0.9	1.73

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Project: Troitsa  
Report Date: November 09, 2010

Page: 1 of 4 Part 3

# QUALITY CONTROL REPORT

SMI10000652.1

Method	Analyte	1F15 Ga	1F15 Cs	1F15 Ge	1F15 Hf	1F15 Nb	1F15 Rb	1F15 Sn	1F15 Ta	1F15 Zr	1F15 Y	1F15 Ce	1F15 In	1F15 Re	1F15 Be	1F15 Li	1F15 Pd	1F15 Pt	
Unit		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppb	ppb	
MDL		0.1	0.02	0.1	0.02	0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2	
Pulp Duplicates																			
42176	Rock	0.9	0.46	<0.1	0.05	<0.02	0.5	<0.1	<0.05	2.1	3.61	15.8	0.05	<1	<0.1	1.5	<10	<2	
REP 42176	QC	0.9	0.47	<0.1	0.03	<0.02	0.5	0.1	<0.05	1.8	3.83	16.1	0.05	<1	0.1	1.9	<10	<2	
42179	Rock	2.3	1.75	<0.1	<0.02	<0.02	8.1	4.5	<0.05	0.6	1.84	6.2	2.45	40	0.4	14.3	*	<2	
REP 42179	QC																		
42182	Rock	3.4	3.85	<0.1	<0.02	<0.02	9.2	0.3	<0.05	0.7	3.76	30.2	0.12	332	0.4	14.0	*	<2	
REP 42182	QC	3.4	3.92	<0.1	<0.02	<0.02	9.5	0.3	<0.05	0.6	3.69	30.1	0.11	325	0.3	13.9	*	<2	
REP 42190	QC																		
42306	Rock	0.8	1.19	<0.1	0.03	<0.02	12.5	0.1	<0.05	0.9	3.64	19.4	<0.02	10	0.2	1.0	<10	<2	
REP 42306	QC	0.7	1.10	<0.1	0.03	0.03	12.4	<0.1	<0.05	1.0	3.52	18.4	<0.02	7	0.2	0.9	<10	<2	
42323	Rock	2.4	0.92	<0.1	0.05	<0.02	13.6	0.8	<0.05	1.3	5.45	7.7	0.06	<1	0.2	5.1	<10	<2	
REP 42323	QC	2.3	0.92	<0.1	0.07	0.03	13.5	0.8	<0.05	2.1	5.36	7.9	0.05	2	0.2	5.0	<10	<2	
42329	Rock	1.3	1.27	<0.1	0.02	<0.02	8.0	0.4	<0.05	0.9	2.22	7.8	<0.02	2	0.2	3.4	<10	<2	
REP 42329	QC																		
42341	Rock	1.0	0.54	<0.1	0.03	<0.02	10.1	0.2	<0.05	2.5	3.06	6.1	0.02	<1	0.3	1.1	<10	<2	
REP 42341	QC	1.0	0.53	<0.1	0.05	<0.02	9.8	0.2	<0.05	2.9	3.16	6.0	<0.02	<1	0.2	1.1	<10	<2	
42352	Rock	6.4	5.02	0.2	0.02	0.13	33.1	0.7	<0.05	1.2	3.79	17.6	0.05	<1	0.1	22.3	<10	<2	
REP 42352	QC	6.3	5.02	0.1	<0.02	0.13	31.9	0.5	<0.05	1.2	3.79	17.3	0.06	<1	<0.1	21.9	<10	<2	
42359	Rock	5.1	2.88	<0.1	0.03	0.06	20.5	0.3	<0.05	0.6	8.14	32.5	0.03	1	0.4	13.7	<10	<2	
REP 42359	QC																		
147001	Rock	1.6	0.93	<0.1	0.03	<0.02	4.8	0.2	<0.05	1.4	10.83	14.8	0.03	2	0.2	6.2	<10	<2	
REP 147001	QC																		
147006	Rock	10.1	0.23	0.1	0.03	<0.02	1.2	0.2	<0.05	1.5	12.70	7.7	0.07	<1	0.2	11.0	<10	<2	
REP 147006	QC	10.2	0.22	0.2	0.04	<0.02	1.1	0.1	<0.05	1.5	12.32	7.5	0.06	<1	0.2	11.5	<10	<2	
147021	Rock	1.8	3.00	<0.1	0.05	<0.02	17.4	<0.1	<0.05	2.1	5.13	25.4	0.08	<1	0.3	13.5	<10	<2	
REP 147021	QC	1.9	3.25	<0.1	0.05	<0.02	17.8	<0.1	<0.05	2.1	5.35	27.1	0.08	<1	0.3	13.8	<10	<2	
147035	Rock	1.2	2.87	<0.1	0.06	0.03	10.0	<0.1	<0.05	2.0	0.98	14.1	<0.02	<1	0.2	2.0	<10	<2	
REP 147035	QC	1.2	3.02	<0.1	0.06	0.04	10.2	<0.1	<0.05	2.1	1.06	15.8	<0.02	<1	0.2	1.7	<10	<2	
147061	Rock	1.1	2.32	<0.1	<0.02	<0.02	12.0	0.1	<0.05	1.3	6.61	33.5	0.25	6	0.3	2.1	<10	<2	

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Project: Troitsa  
 Report Date: November 09, 2010

Page: 2 of 4 Part 1

QUALITY CONTROL REPORT

SMI10000652.1

		7AR	G6Gr	WGHT	G6	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
		Cu	Ag	Wgt	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb
		%	gm/t	kg	gm/t	ppm	%	%	%	gm/t	ppm	ppm	%	ppm	ppm	gm/t	ppm	ppm	ppm	ppm	ppm
		0.001	50	0.01	0.005	0.01	1e-006	1e-006	1e-005	0.002	0.1	0.1	0.0001	0.01	0.1	0.1	0.0002	0.1	0.5	0.01	0.02
REP 147061	QC					39.93	0.2143	0.0088	0.0096	7.299	17.1	45.4	0.0712	4.40	63.3	10.3	0.0065	9.0	69.7	2.42	62.52
147568	Rock			0.63	<0.005	2.62	0.0016	0.0021	0.0084	0.256	7.8	10.8	0.0794	2.27	23.6	0.4	0.0069	1.2	20.2	0.14	0.37
REP 147568	QC				<0.005																
147750	Rock	6.508	149	0.52	0.168	620.6	>1	0.0109	0.2251	>100	34.6	137.5	0.0753	23.21	333.2	14.1	0.1327	0.9	11.4	15.57	7.16
REP 147750	QC	6.528																			
147753	Rock			0.36	0.009	2.94	0.0077	0.0016	0.0007	0.857	1.0	32.4	0.0022	4.52	51.7	0.9	0.0110	6.2	2.6	0.05	1.03
REP 147753	QC					2.87	0.0077	0.0015	0.0007	0.841	1.0	32.6	0.0022	4.55	50.4	0.8	0.0102	6.0	2.6	0.06	1.05
Core Reject Duplicates																					
42190	Rock	2.224		1.30	0.089	9.03	>1	0.0267	0.0282	23.59	9.3	16.4	0.0333	3.97	8.1	3.3	0.0869	9.5	43.0	6.63	8.76
DUP 42190	QC	2.284			0.068	9.93	>1	0.0284	0.0303	23.84	9.4	15.4	0.0371	4.16	9.2	3.1	0.1163	9.4	44.0	7.06	11.39
42327	Rock			1.20	0.016	17.41	0.0030	0.0009	0.0028	0.416	7.6	5.4	0.0469	1.51	32.8	1.5	0.0131	2.7	13.3	0.15	1.71
DUP 42327	QC				0.019	17.77	0.0033	0.0009	0.0029	0.474	7.7	5.3	0.0504	1.65	37.7	1.6	0.0181	2.7	14.0	0.16	2.03
42362	Rock			1.18	0.677	25.60	0.1476	0.0605	0.0421	38.08	10.6	8.6	0.1657	2.79	128.5	4.4	0.6134	8.7	17.3	8.09	181.1
DUP 42362	QC				0.798	23.37	0.1521	0.0664	0.0441	43.65	9.7	8.8	0.1587	2.60	120.8	4.6	0.7155	8.7	16.3	8.62	192.7
147034	Rock			1.76	0.014	0.67	0.0137	0.0007	0.0033	0.131	9.8	5.3	0.0195	2.82	11.2	1.6	0.0181	4.7	16.5	0.20	0.37
DUP 147034	QC				0.021	0.73	0.0135	0.0007	0.0034	0.133	9.3	5.0	0.0184	2.75	11.5	1.6	0.0180	4.6	16.2	0.18	0.36
147755	Rock			0.68	<0.005	1.87	0.0014	0.0005	0.0030	0.192	7.8	7.7	0.0387	2.62	73.3	0.2	0.0012	0.7	74.2	0.08	8.72
DUP 147755	QC				<0.005	1.94	0.0020	0.0005	0.0030	0.197	7.7	7.5	0.0379	2.63	79.0	0.2	0.0014	0.7	77.4	0.07	9.03
Reference Materials																					
STD AGPROOF	Standard			90																	
STD CDN-ME-3	Standard			248																	
STD CDN-ME-3	Standard			259																	
STD DS7	Standard					21.43	0.0116	0.0073	0.0413	1.059	57.6	9.4	0.0634	2.47	52.4	5.0	0.0730	4.8	75.4	6.35	6.02
STD DS7	Standard					19.71	0.0107	0.0073	0.0362	0.941	53.0	9.2	0.0589	2.32	49.4	4.9	0.0890	4.8	72.7	6.04	6.07
STD DS7	Standard					19.49	0.0111	0.0063	0.0393	0.960	55.8	9.2	0.0590	2.32	48.1	4.5	0.0631	4.3	67.1	6.16	5.71
STD DS7	Standard					18.71	0.0098	0.0063	0.0363	0.973	52.2	9.0	0.0579	2.25	46.4	4.7	0.0654	4.4	67.8	5.99	5.54
STD DS7	Standard					20.62	0.0108	0.0067	0.0381	0.925	54.2	9.1	0.0598	2.25	47.2	4.7	0.0676	4.7	70.2	6.04	5.80
STD DS7	Standard					22.28	0.0104	0.0074	0.0393	1.020	58.3	9.6	0.0634	2.41	51.7	5.2	0.0876	5.0	70.3	6.41	5.94
STD DS7	Standard					19.77	0.0109	0.0071	0.0404	1.014	54.1	9.1	0.0604	2.35	49.6	4.9	0.0676	4.5	76.2	6.83	5.93



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Project: Troitsa

Report Date: November 09, 2010

Page: 2 of 4 Part 2

# QUALITY CONTROL REPORT

SMI10000652.1

		1F15 Bi ppm	1F15 V ppm	1F15 Ca %	1F15 P %	1F15 La ppm	1F15 Cr ppm	1F15 Mg %	1F15 Ba ppm	1F15 Ti %	1F15 B ppm	1F15 Al %	1F15 Na %	1F15 K %	1F15 W ppm	1F15 Sc ppm	1F15 Ti ppm	1F15 S %	1F15 Hg ppb	1F15 Se ppm	1F15 Te ppm
		0.02	2	0.01	0.001	0.5	0.5	0.01	0.5	0.001	1	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02
REP 147061	QC	46.35	24	2.74	0.076	21.3	9.8	0.59	17.3	<0.001	2	0.24	0.017	0.13	0.3	2.1	0.13	3.30	308	0.9	1.85
147568	Rock	0.19	46	0.35	0.058	4.2	11.5	1.10	296.7	0.004	<1	1.66	0.007	0.06	2.2	1.5	0.04	0.09	<5	<0.1	0.19
REP 147568	QC																				
147750	Rock	42.65	36	0.28	0.095	3.8	8.4	0.35	8.7	0.013	<1	1.17	0.015	0.07	5.3	2.2	0.36	>10	57	21.3	6.49
REP 147750	QC																				
147753	Rock	7.92	<2	0.01	0.004	3.6	2.1	0.01	28.8	<0.001	1	0.23	0.006	0.19	0.6	<0.1	0.06	5.21	60	2.6	0.57
REP 147753	QC	7.68	<2	0.01	0.003	3.6	2.1	0.01	28.8	<0.001	1	0.23	0.005	0.20	0.6	<0.1	0.05	5.08	40	2.3	0.54
Core Reject Duplicates																					
42190	Rock	21.00	9	0.82	0.058	8.5	6.1	0.24	49.8	<0.001	2	0.52	0.005	0.14	>100	3.1	0.10	2.45	*	5.5	1.48
DUP 42190	QC	18.35	9	0.83	0.059	8.4	7.0	0.25	42.1	<0.001	3	0.60	0.007	0.18	>100	3.1	0.12	2.55	*	5.4	1.51
42327	Rock	0.49	10	0.94	0.020	5.8	20.1	0.05	169.1	<0.001	1	0.27	0.001	0.09	0.2	0.7	0.12	0.23	53	0.1	0.11
DUP 42327	QC	0.49	11	0.98	0.020	6.3	22.2	0.06	168.0	<0.001	1	0.31	0.002	0.10	0.3	0.8	0.12	0.24	51	0.1	0.13
42362	Rock	4.03	17	0.83	0.089	16.6	18.0	0.32	188.9	0.002	<1	0.91	0.007	0.25	0.3	2.0	0.15	0.52	172	1.4	0.38
DUP 42362	QC	4.33	15	0.78	0.079	17.0	17.5	0.28	185.3	0.002	1	0.85	0.006	0.25	0.2	2.0	0.16	0.53	175	1.3	0.38
147034	Rock	0.89	67	0.32	0.086	11.8	25.6	1.02	196.4	0.181	<1	1.23	0.055	0.66	0.4	4.6	0.38	0.41	<5	0.2	0.12
DUP 147034	QC	0.84	66	0.30	0.084	11.2	25.8	0.99	184.9	0.172	<1	1.26	0.050	0.65	0.4	4.4	0.36	0.41	<5	0.2	0.14
147755	Rock	0.12	23	0.73	0.024	6.1	8.8	0.53	35.5	0.038	2	2.07	0.215	0.22	<0.1	3.5	0.16	0.71	<5	0.3	0.22
DUP 147755	QC	0.10	23	0.72	0.025	6.4	8.8	0.51	36.2	0.041	2	1.99	0.221	0.22	<0.1	3.7	0.16	0.69	<5	0.4	0.18
Reference Materials																					
STD AGPROOF	Standard																				
STD CDN-ME-3	Standard																				
STD CDN-ME-3	Standard																				
STD DS7	Standard	4.84	87	0.99	0.081	13.5	211.7	1.08	388.2	0.123	41	1.05	0.097	0.48	3.6	2.8	4.20	0.19	240	3.3	1.40
STD DS7	Standard	4.78	79	0.94	0.079	13.6	188.1	0.97	392.0	0.120	41	1.03	0.093	0.45	3.6	2.6	4.13	0.20	222	3.1	1.14
STD DS7	Standard	4.34	80	0.93	0.075	12.4	200.9	1.03	364.3	0.116	39	0.99	0.087	0.45	3.3	2.5	3.86	0.18	204	3.2	1.23
STD DS7	Standard	4.44	79	0.92	0.075	12.4	205.9	0.99	377.8	0.107	36	1.00	0.088	0.44	3.4	2.4	3.83	0.20	224	2.8	1.20
STD DS7	Standard	4.53	78	0.93	0.070	13.3	203.8	1.00	380.2	0.124	38	0.99	0.088	0.45	3.4	2.6	3.91	0.18	202	3.2	1.32
STD DS7	Standard	5.10	82	0.94	0.075	13.6	205.4	1.04	425.2	0.113	42	1.00	0.094	0.46	4.0	2.6	4.42	0.21	219	3.3	1.39
STD DS7	Standard	5.03	82	0.92	0.075	13.0	185.5	1.04	388.3	0.123	39	0.98	0.089	0.46	3.5	2.7	3.99	0.20	202	3.2	1.30



Acme Analytical Laboratories (Vancouver) Ltd.

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 Suite 1100 - 736 Granville Street  
 Vancouver BC V6Z 1G3 Canada

Project: Troitsa  
 Report Date: November 09, 2010

Page: 2 of 4 Part 3

QUALITY CONTROL REPORT

SMI10000652.1

		1F15 Ga ppm	1F15 Cs ppm	1F15 Ge ppm	1F15 Hf ppm	1F15 Nb ppm	1F15 Rb ppm	1F15 Sn ppm	1F15 Ta ppm	1F15 Zr ppm	1F15 Y ppm	1F15 Ce ppm	1F15 In ppm	1F15 Re ppb	1F15 Be ppm	1F15 Li ppm	1F15 Pd ppb	1F15 Pt ppb
REP 147061	QC	1.0	2.42	<0.1	0.03	<0.02	12.0	0.1	<0.05	1.4	6.54	35.5	0.22	4	0.3	2.2	<10	<2
147568	Rock	7.6	0.25	<0.1	0.03	<0.02	3.2	0.3	<0.05	1.2	1.86	13.4	0.02	<1	0.2	34.2	<10	<2
REP 147568	QC																	
147750	Rock	5.1	0.99	0.3	0.03	0.07	5.8	4.9	<0.05	0.9	3.53	7.7	8.47	<1	0.2	9.7	*	<2
REP 147750	QC																	
147753	Rock	0.5	0.70	<0.1	0.06	<0.02	7.6	<0.1	<0.05	2.0	0.78	6.9	<0.02	<1	<0.1	0.6	<10	<2
REP 147753	QC	0.5	0.68	<0.1	0.05	<0.02	7.7	0.1	<0.05	1.9	0.79	6.6	<0.02	<1	0.1	0.6	<10	<2
Core Reject Duplicates																		
42190	Rock	1.4	3.14	<0.1	0.04	<0.02	10.3	1.0	<0.05	1.3	7.76	18.0	0.58	3	0.3	7.7	<10	<2
DUP 42190	QC	1.6	2.94	<0.1	0.03	<0.02	11.8	1.0	<0.05	1.3	7.76	17.3	0.59	2	0.4	7.9	<10	<2
42327	Rock	1.1	1.48	<0.1	0.03	<0.02	5.6	<0.1	<0.05	0.5	4.24	11.0	<0.02	<1	0.3	4.5	<10	<2
DUP 42327	QC	1.4	1.64	<0.1	<0.02	<0.02	6.2	<0.1	<0.05	0.5	4.47	11.7	<0.02	<1	0.2	5.2	<10	<2
42362	Rock	2.5	4.57	<0.1	<0.02	<0.02	19.4	0.1	<0.05	0.8	7.26	31.6	0.16	<1	0.3	7.0	<10	<2
DUP 42362	QC	2.4	4.66	<0.1	<0.02	<0.02	19.7	0.1	<0.05	0.8	7.09	32.6	0.19	<1	0.5	7.0	<10	<2
147034	Rock	8.8	5.12	0.1	0.20	0.15	48.2	0.8	<0.05	6.6	7.20	23.6	0.04	<1	0.2	15.3	<10	<2
DUP 147034	QC	8.8	4.97	0.1	0.18	0.16	47.6	0.8	<0.05	6.4	7.10	22.8	0.04	<1	0.3	14.8	<10	<2
147755	Rock	6.1	5.71	<0.1	0.09	<0.02	12.4	0.3	<0.05	2.1	7.66	13.8	<0.02	2	0.5	25.7	<10	<2
DUP 147755	QC	6.3	5.94	<0.1	0.09	<0.02	13.1	0.3	<0.05	2.3	8.01	14.6	<0.02	3	0.6	24.9	<10	<2
Reference Materials																		
STD AGPROOF	Standard																	
STD CDN-ME-3	Standard																	
STD DS7	Standard	4.8	6.43	0.1	0.10	0.55	36.9	5.3	<0.05	5.2	5.99	39.5	1.66	5	1.7	30.7	84	44
STD DS7	Standard	4.5	6.24	0.2	0.12	0.75	35.1	4.8	<0.05	5.3	6.29	38.9	1.57	4	1.6	30.0	65	37
STD DS7	Standard	4.6	6.05	<0.1	0.13	0.54	35.0	4.7	<0.05	5.6	5.89	37.3	1.54	5	1.6	27.0	56	41
STD DS7	Standard	4.5	6.16	0.1	0.12	0.62	31.8	4.6	<0.05	5.0	6.00	36.9	1.34	4	1.4	26.3	62	37
STD DS7	Standard	4.7	6.07	<0.1	0.10	0.70	35.1	4.7	<0.05	5.6	6.36	39.3	1.51	4	1.3	27.4	62	42
STD DS7	Standard	4.8	6.59	0.1	0.13	0.81	39.0	4.9	<0.05	5.9	6.23	39.9	1.49	7	1.8	32.2	83	39
STD DS7	Standard	4.5	6.21	<0.1	0.09	0.53	34.9	5.4	<0.05	5.4	5.89	35.9	1.78	4	1.5	27.7	64	37

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 Vancouver BC V6Z 1G3 Canada

**Project:** Troitsa

**Report Date:** November 09, 2010

**Page:** 3 of 4 **Part** 1

QUALITY CONTROL REPORT

SMI10000652.1

		7AR	G6Gr	WGHT	G6	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15		
		Cu	Ag	Wgt	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	
		%	gm/t	kg	gm/t	ppm	%	%	%	gm/t	ppm	ppm	%	%	ppm	ppm	gm/t	ppm	ppm	ppm	ppm	
		0.001	50	0.01	0.005	0.01	1e-006	1e-006	1e-005	0.002	0.1	0.1	0.0001	0.01	0.1	0.1	0.0002	0.1	0.5	0.01	0.02	
STD DS7	Standard					22.30	0.0099	0.0066	0.0415	0.968	55.5	9.9	0.0604	2.34	49.6	4.8	0.0731	4.5	67.4	6.61	6.02	
STD GC-7	Standard	0.556																				
STD GC-7	Standard	0.564																				
STD GC-7	Standard	0.558																				
STD OXH66	Standard				1.300																	
STD OXH66	Standard				1.341																	
STD OXH66	Standard				1.302																	
STD OXH66	Standard				1.281																	
STD OXH66	Standard				1.211																	
STD OXH66	Standard				1.285																	
STD OXK79	Standard				3.681																	
STD OXK79	Standard				3.687																	
STD OXK79	Standard				3.567																	
STD OXK79	Standard				3.446																	
STD OXK79	Standard				3.498																	
STD OXK79	Standard				3.523																	
STD R4A	Standard	0.513																				
STD R4A	Standard	0.512																				
STD R4A	Standard	0.507																				
STD OXH66 Expected					1.285																	
STD OXK79 Expected					3.532																	
STD CDN-ME-3 Expected			276																			
STD AGPROOF Expected			94																			
STD GC-7 Expected		0.555																				
STD R4A Expected		0.502																				
STD DS7 Expected						20.5	0.0109	0.00706	0.0411	0.89	56	9.7	0.0627	2.39	48.2	4.9	0.07	4.4	68.7	6.38	4.6	
BLK	Blank					<0.01	<1e-006	<1e-006	<1e-005	<0.002	<0.1	<0.1	<0.0001	<0.01	<0.1	<0.1	<0.0002	<0.1	<0.5	<0.01	<0.02	
BLK	Blank				<0.005																	
BLK	Blank				<0.005																	



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**Project:** Troitsa

**Report Date:** November 09, 2010

**Page:** 3 of 4 **Part** 2

QUALITY CONTROL REPORT

SMI10000652.1

		1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
		Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te
		ppm	ppm	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm
		0.02	2	0.01	0.001	0.5	0.5	0.01	0.5	0.001	1	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02
STD DS7	Standard	4.70	80	0.91	0.078	12.4	227.4	1.02	393.0	0.108	38	0.99	0.091	0.45	3.6	2.6	4.16	0.19	232	3.5	1.41
STD GC-7	Standard																				
STD GC-7	Standard																				
STD GC-7	Standard																				
STD OXH66	Standard																				
STD OXH66	Standard																				
STD OXH66	Standard																				
STD OXH66	Standard																				
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STD OXH66	Standard																				
STD OXK79	Standard																				
STD OXK79	Standard																				
STD OXK79	Standard																				
STD OXK79	Standard																				
STD OXK79	Standard																				
STD OXK79	Standard																				
STD R4A	Standard																				
STD R4A	Standard																				
STD R4A	Standard																				
STD OXH66 Expected																					
STD OXK79 Expected																					
STD CDN-ME-3 Expected																					
STD AGPROOF Expected																					
STD GC-7 Expected																					
STD R4A Expected																					
STD DS7 Expected		4.51	84	0.93	0.08	11.7	179	1.05	410	0.124	38.6	0.959	0.089	0.44	3.4	2.5	4.19	0.19	200	3.5	1.08
BLK	Blank	<0.02	<2	<0.01	<0.001	<0.5	<0.5	<0.01	<0.5	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02
BLK	Blank																				
BLK	Blank																				

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 Vancouver BC V6Z 1G3 Canada

**Project:** Troitsa

**Report Date:** November 09, 2010

**Page:** 3 of 4 **Part** 3

QUALITY CONTROL REPORT

SMI10000652.1

		1F15 Ga ppm 0.1	1F15 Cs ppm 0.02	1F15 Ge ppm 0.1	1F15 Hf ppm 0.02	1F15 Nb ppm 0.02	1F15 Rb ppm 0.1	1F15 Sn ppm 0.1	1F15 Ta ppm 0.05	1F15 Zr ppm 0.1	1F15 Y ppm 0.01	1F15 Ce ppm 0.1	1F15 In ppm 0.02	1F15 Re ppb 1	1F15 Be ppm 0.1	1F15 Li ppm 0.1	1F15 Pd ppb 10	1F15 Pt ppb 2
STD DS7	Standard	4.7	6.62	0.1	0.10	0.65	35.4	5.1	<0.05	5.7	5.91	38.7	1.54	4	1.6	28.5	66	40
STD GC-7	Standard																	
STD GC-7	Standard																	
STD GC-7	Standard																	
STD OXH66	Standard																	
STD OXH66	Standard																	
STD OXH66	Standard																	
STD OXH66	Standard																	
STD OXH66	Standard																	
STD OXH66	Standard																	
STD OXK79	Standard																	
STD OXK79	Standard																	
STD OXK79	Standard																	
STD OXK79	Standard																	
STD OXK79	Standard																	
STD OXK79	Standard																	
STD R4A	Standard																	
STD R4A	Standard																	
STD R4A	Standard																	
STD OXH66 Expected																		
STD OXK79 Expected																		
STD CDN-ME-3 Expected																		
STD AGPROOF Expected																		
STD GC-7 Expected																		
STD R4A Expected																		
STD DS7 Expected		4.6	6.36	0.1	0.11	0.71	35.8	4.61		5.4	5.18	36	1.57	4	1.6	29.3	58	37
BLK	Blank	<0.1	<0.02	<0.1	<0.02	<0.02	<0.1	<0.1	<0.05	<0.1	<0.01	<0.1	<0.02	<1	<0.1	<0.1	<10	<2
BLK	Blank																	
BLK	Blank																	

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**Page:** 4 of 4 **Part** 2

**QUALITY CONTROL REPORT**

**SMI10000652.1**

		1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
		Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te
		ppm	ppm	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm
		0.02	2	0.01	0.001	0.5	0.5	0.01	0.5	0.001	1	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02
BLK	Blank	<0.02	<2	<0.01	<0.001	<0.5	<0.5	<0.01	<0.5	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02
BLK	Blank	<0.02	<2	<0.01	<0.001	<0.5	<0.5	<0.01	<0.5	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02
BLK	Blank	<0.02	<2	<0.01	<0.001	<0.5	<0.5	<0.01	<0.5	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02
BLK	Blank																				
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BLK	Blank	<0.02	<2	<0.01	<0.001	<0.5	<0.5	<0.01	<0.5	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank	<0.02	<2	<0.01	<0.001	<0.5	<0.5	<0.01	<0.5	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02
BLK	Blank																				
BLK	Blank	<0.02	<2	<0.01	<0.001	<0.5	<0.5	<0.01	<0.5	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02
BLK	Blank	<0.02	<2	<0.01	<0.001	<0.5	<0.5	<0.01	<0.5	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02
Prep Wash																					
G1	Prep Blank	0.21	33	0.41	0.081	9.5	7.4	0.48	156.5	0.095	<1	0.83	0.064	0.49	<0.1	1.7	0.33	<0.02	<5	0.1	<0.02
G1	Prep Blank	0.16	36	0.46	0.083	11.2	8.5	0.50	176.0	0.105	1	0.97	0.084	0.54	<0.1	2.0	0.34	<0.02	<5	0.1	<0.02

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Project: Troitsa

Report Date: November 09, 2010

Page: 4 of 4 Part 3

QUALITY CONTROL REPORT

SMI10000652.1

		1F15 Ga ppm 0.1	1F15 Cs ppm 0.02	1F15 Ge ppm 0.1	1F15 Hf ppm 0.02	1F15 Nb ppm 0.02	1F15 Rb ppm 0.1	1F15 Sn ppm 0.1	1F15 Ta ppm 0.05	1F15 Zr ppm 0.1	1F15 Y ppm 0.01	1F15 Ce ppm 0.1	1F15 In ppm 0.02	1F15 Re ppb 1	1F15 Be ppm 0.1	1F15 Li ppm 0.1	1F15 Pd ppb 10	1F15 Pt ppb 2
BLK	Blank	<0.1	<0.02	<0.1	<0.02	<0.02	<0.1	<0.1	<0.05	<0.1	<0.01	<0.1	<0.02	<1	<0.1	<0.1	<10	<2
BLK	Blank	<0.1	<0.02	<0.1	<0.02	<0.02	<0.1	<0.1	<0.05	0.1	<0.01	<0.1	<0.02	<1	<0.1	<0.1	<10	<2
BLK	Blank	<0.1	<0.02	<0.1	<0.02	<0.02	<0.1	<0.1	<0.05	<0.1	<0.01	<0.1	<0.02	<1	<0.1	<0.1	<10	<2
BLK	Blank																	
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BLK	Blank																	
BLK	Blank	<0.1	<0.02	<0.1	<0.02	<0.02	<0.1	<0.1	<0.05	<0.1	<0.01	<0.1	<0.02	<1	<0.1	<0.1	<10	<2
BLK	Blank																	
BLK	Blank																	
BLK	Blank																	
BLK	Blank	<0.1	<0.02	<0.1	<0.02	<0.02	<0.1	<0.1	<0.05	<0.1	<0.01	<0.1	<0.02	<1	<0.1	<0.1	<10	<2
BLK	Blank	<0.1	<0.02	<0.1	<0.02	<0.02	<0.1	<0.1	<0.05	<0.1	<0.01	<0.1	<0.02	<1	<0.1	<0.1	<10	<2
Prep Wash																		
G1	Prep Blank	4.1	3.08	<0.1	0.06	0.39	41.0	0.4	<0.05	1.0	4.29	18.6	0.02	<1	0.2	26.2	<10	<2
G1	Prep Blank	4.5	3.28	0.1	0.08	0.45	43.3	0.5	<0.05	1.2	5.15	21.8	<0.02	<1	0.2	27.4	<10	<2



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Client: Callinan Mines Limited
Suite 1100 - 736 Granville Street
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Submitted By: Narissa Saretsky
Receiving Lab: Canada-Smithers
Received: September 16, 2010
Report Date: December 06, 2010
Page: 1 of 4

CERTIFICATE OF ANALYSIS

SMI10000570.1

CLIENT JOB INFORMATION

Project: Troitsa
Shipment ID:
P.O. Number
Number of Samples: 66

SAMPLE DISPOSAL

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

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

Invoice To: Callinan Mines Limited
Suite 1100 - 736 Granville Street
Vancouver BC V6Z 1G3
Canada

CC: Ken Galambos

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Table with 6 columns: Method Code, Number of Samples, Code Description, Test Wgt (g), Report Status, Lab. Rows include R200-250, 1F05, G601, and 7AR.

ADDITIONAL COMMENTS



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Project: Troitsa  
 Report Date: December 06, 2010

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CERTIFICATE OF ANALYSIS

SMI10000570.1

Method	WGHT	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15
Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	
Unit	kg	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	
MDL	0.01	0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01	
147062	Rock	4.65	1.48	389.6	1.87	26.5	235	9.9	6.6	327	2.12	1.2	3.2	2.1	9.9	23.8	0.30	0.15	0.24	51	0.65
147063	Rock	8.78	9.98	344.5	2.49	24.2	199	10.8	6.9	357	2.12	0.9	3.5	1.1	10.0	25.2	0.14	0.17	0.13	51	0.75
147064	Rock	4.02	114.3	1726	1.94	32.9	727	9.4	7.9	309	2.26	0.6	3.8	13.6	10.3	22.4	0.12	0.11	0.25	51	0.58
147065	Rock	7.19	7.92	1008	3.85	38.3	438	11.9	9.7	397	2.46	0.7	3.7	11.7	10.8	41.5	0.29	0.23	0.26	50	1.05
147066	Rock	6.87	5.31	1831	2.75	31.1	840	10.9	8.7	341	2.30	0.8	3.8	6.0	9.6	34.4	0.18	0.29	0.37	49	0.88
147067	Rock	6.01	11.31	1434	20.25	44.6	5306	11.0	10.8	435	2.52	4.3	4.3	4.2	9.3	64.5	0.30	2.01	52.87	43	1.61
147068	Rock	5.37	3.38	1289	9.93	42.5	450	12.7	11.3	375	2.82	1.7	3.0	3.6	9.1	31.4	0.23	0.45	0.32	64	1.02
147069	Rock	5.93	7.44	685.6	2.19	27.9	466	11.2	8.6	287	2.83	1.6	2.5	3.8	7.1	23.4	0.07	0.10	0.48	63	0.85
147070	Rock	9.55	19.58	1255	2.53	33.1	825	11.8	9.2	284	2.56	1.4	3.0	4.8	8.6	32.4	0.12	0.17	0.33	54	1.02
147071	Rock	4.58	1.81	774.4	2.56	27.6	389	11.5	10.8	272	3.01	1.3	2.6	4.7	8.3	27.2	0.07	0.08	0.22	62	0.80
147072	Rock	4.48	22.22	2218	12.36	88.3	1426	11.8	9.6	332	2.81	1.7	3.3	16.6	8.5	36.7	0.94	1.24	0.53	54	1.42
147073	Rock	6.46	15.68	1076	4.51	31.1	583	9.6	8.0	391	2.62	2.6	2.7	6.5	10.8	43.2	0.12	1.28	0.40	53	1.67
147074	Rock	4.06	20.60	2578	33.96	89.8	2277	8.2	8.4	703	2.47	26.6	6.3	24.2	8.9	56.6	1.54	17.34	1.04	29	2.87
147075	Rock	5.07	89.66	6082	269.3	302.5	5641	5.3	10.9	461	2.02	25.8	8.4	10.8	9.4	37.8	7.35	7.97	1.94	7	1.73
147076	Rock	6.65	33.83	5454	4.03	72.9	2805	7.2	14.2	340	2.00	1.9	4.3	19.9	9.4	28.2	1.01	0.42	1.29	15	1.23
147077	Rock	7.05	103.5	9326	36.90	107.5	5273	6.9	11.4	335	2.25	3.2	5.2	45.6	9.7	20.9	1.88	0.84	1.72	12	1.02
147078	Rock	5.12	30.07	6629	21.36	109.3	4077	7.1	15.0	337	2.19	5.9	5.5	44.7	9.8	33.8	1.78	0.77	1.34	12	1.43
147079	Rock	3.44	45.18	5783	117.2	188.1	7074	5.0	9.7	414	1.85	42.3	8.2	10.1	9.6	21.6	3.62	20.09	3.33	8	1.25
147080	Rock	3.47	19.54	4310	13.55	117.6	2452	6.5	11.4	352	1.93	7.8	5.2	5.4	10.5	22.8	2.08	0.79	1.02	17	1.30
147081	Rock	4.98	58.08	4391	10.24	90.8	3310	5.9	12.3	443	2.03	10.0	5.6	4.9	10.4	27.2	1.66	1.22	1.03	11	1.12
147082	Rock	3.80	41.67	9391	120.5	166.7	19505	7.7	13.3	484	2.75	1.1	4.9	33.5	10.2	49.6	2.48	0.86	2.24	18	1.37
147083	Rock	0.35	0.51	26.50	2.24	34.8	38	2.5	3.1	160	1.02	0.3	1.7	1.4	3.8	81.7	0.02	0.05	0.04	13	0.42
147084	Rock	3.22	18.23	1566	9.77	57.3	767	19.2	14.0	550	3.65	2.1	4.0	6.0	7.1	30.5	0.50	0.58	0.52	92	0.93
147085	Rock	3.20	2.41	546.8	2.86	28.2	333	10.0	6.9	330	2.38	1.1	4.7	2.8	11.2	22.9	0.15	0.14	0.30	57	0.67
147086	Rock	3.53	2.07	478.0	4.14	33.0	268	8.3	6.0	276	2.15	1.5	3.8	2.4	11.2	31.0	0.26	0.16	0.13	47	0.73
147087	Rock	2.32	4.53	817.4	3.28	33.9	382	10.2	7.0	365	2.26	1.7	3.6	3.3	10.6	34.3	0.32	0.22	0.28	44	1.07
147088	Rock	5.76	8.04	830.8	5.07	44.5	501	9.5	7.9	331	2.18	2.2	3.7	4.7	8.4	26.0	0.40	0.18	0.21	47	0.80
147089	Rock	6.78	12.02	1497	2.93	28.8	1272	9.4	7.7	332	2.29	1.1	4.2	7.4	11.1	22.4	0.17	0.14	0.28	52	0.59
147090	Rock	4.64	2.94	1632	2.89	30.5	1495	9.8	7.4	361	2.23	0.9	4.9	3.2	11.9	27.7	0.17	0.09	0.27	47	0.74
147091	Rock	2.78	15.80	1881	4.54	29.8	1705	9.2	7.8	277	2.26	0.9	5.2	14.9	10.4	17.2	0.13	0.11	0.81	51	0.50

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Project: Troitsa  
 Report Date: December 06, 2010

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CERTIFICATE OF ANALYSIS

SMI10000570.1

Method	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
Analyte	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga	Cs	Ge	
Unit	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm	
MDL	0.001	0.5	0.5	0.01	0.5	0.001	1	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	0.1	
147062	Rock	0.079	12.9	22.9	0.75	74.3	0.101	1	0.73	0.050	0.19	9.7	2.8	0.10	0.03	<5	0.1	0.02	4.7	1.72	<0.1
147063	Rock	0.088	14.1	26.3	0.66	76.5	0.077	2	0.69	0.059	0.16	2.1	2.3	0.08	0.03	8	0.2	0.03	4.7	1.41	<0.1
147064	Rock	0.080	12.8	23.2	0.66	63.6	0.078	1	0.64	0.064	0.14	13.6	2.5	0.06	0.18	5	1.0	0.09	4.5	0.97	<0.1
147065	Rock	0.090	18.2	23.4	0.71	124.6	0.017	1	0.84	0.046	0.13	7.9	3.4	0.07	0.08	8	0.5	0.07	4.9	1.99	<0.1
147066	Rock	0.087	15.1	24.4	0.71	103.5	0.032	1	0.75	0.050	0.13	9.9	3.1	0.06	0.16	5	0.9	0.11	5.1	1.52	<0.1
147067	Rock	0.089	19.1	21.5	0.56	209.3	0.006	2	0.72	0.035	0.14	4.3	3.5	0.07	0.17	35	0.8	0.21	4.2	2.90	<0.1
147068	Rock	0.105	18.7	28.5	0.84	92.3	0.048	<1	0.93	0.043	0.14	18.0	4.5	0.07	0.10	12	0.5	0.12	6.0	2.24	<0.1
147069	Rock	0.098	12.5	29.6	1.02	73.3	0.144	2	1.08	0.051	0.13	20.9	3.9	0.05	0.05	5	0.3	0.08	6.8	2.00	<0.1
147070	Rock	0.095	17.9	24.3	0.88	101.7	0.045	2	1.00	0.045	0.14	40.0	3.1	0.06	0.11	15	0.5	0.06	6.9	2.07	<0.1
147071	Rock	0.099	13.6	27.9	1.07	79.5	0.119	2	1.08	0.046	0.13	29.6	3.6	0.05	0.09	<5	0.5	0.09	7.3	2.45	<0.1
147072	Rock	0.091	20.3	23.3	0.74	70.5	0.021	1	0.73	0.028	0.12	10.4	3.6	0.07	0.20	53	0.9	0.15	4.5	2.74	<0.1
147073	Rock	0.114	23.3	21.0	0.39	82.2	0.011	<1	0.45	0.022	0.12	2.7	4.7	0.06	0.10	78	0.4	0.09	2.4	3.81	<0.1
147074	Rock	0.074	16.8	10.1	0.56	63.0	0.004	2	0.36	0.007	0.12	1.7	3.3	0.09	0.28	375	1.1	0.26	1.6	4.61	<0.1
147075	Rock	0.069	11.2	5.7	0.48	58.7	<0.001	4	0.27	0.010	0.16	2.4	1.5	0.12	0.64	211	2.5	0.42	0.9	2.13	<0.1
147076	Rock	0.084	13.5	8.0	0.24	163.2	<0.001	3	0.30	0.019	0.18	1.5	1.9	0.10	0.45	27	2.3	0.42	1.3	1.55	<0.1
147077	Rock	0.079	11.1	7.3	0.17	94.1	<0.001	<1	0.25	0.017	0.16	6.9	1.9	0.11	0.74	62	4.0	0.42	0.9	1.27	<0.1
147078	Rock	0.086	11.7	6.9	0.32	144.9	<0.001	4	0.31	0.022	0.18	19.1	1.8	0.11	0.64	21	3.3	0.49	1.1	1.54	<0.1
147079	Rock	0.075	13.4	6.1	0.22	60.1	<0.001	3	0.29	0.012	0.18	0.6	1.5	0.23	0.64	345	2.4	0.42	1.0	2.49	<0.1
147080	Rock	0.091	15.1	8.5	0.14	48.7	<0.001	2	0.30	0.020	0.21	1.5	1.9	0.13	0.31	27	1.9	0.38	1.2	1.64	<0.1
147081	Rock	0.081	15.0	6.7	0.21	70.5	<0.001	3	0.29	0.015	0.18	20.6	1.7	0.14	0.53	96	1.8	0.41	1.1	1.93	<0.1
147082	Rock	0.090	12.8	9.4	0.44	82.9	<0.001	2	0.57	0.019	0.18	73.9	1.9	0.13	0.91	18	4.7	0.71	2.4	1.64	<0.1
147083	Rock	0.036	17.3	9.2	0.33	63.6	0.063	6	0.59	0.049	0.21	<0.1	1.2	0.07	<0.02	6	<0.1	0.02	2.9	0.32	<0.1
147084	Rock	0.159	21.0	40.0	1.20	232.5	0.097	1	1.17	0.054	0.19	26.7	5.4	0.09	0.08	9	0.8	0.07	8.3	1.45	<0.1
147085	Rock	0.090	15.8	25.4	0.75	73.2	0.111	2	0.80	0.070	0.19	9.4	3.3	0.09	0.02	<5	0.2	0.10	5.0	1.40	<0.1
147086	Rock	0.097	16.5	20.1	0.59	80.9	0.062	1	0.83	0.062	0.27	2.3	2.9	0.13	0.07	<5	0.2	0.06	4.7	2.90	<0.1
147087	Rock	0.103	16.3	22.7	0.56	60.5	0.040	1	0.86	0.052	0.15	12.4	4.0	0.08	0.05	<5	0.3	0.05	5.0	2.44	<0.1
147088	Rock	0.084	14.1	23.6	0.59	60.5	0.085	1	0.83	0.059	0.15	15.3	3.0	0.07	0.08	<5	0.6	0.06	5.0	1.93	<0.1
147089	Rock	0.094	14.2	26.2	0.68	58.5	0.091	1	0.78	0.084	0.16	11.1	2.7	0.07	0.12	<5	0.7	0.08	5.3	1.04	<0.1
147090	Rock	0.082	16.0	24.3	0.70	120.3	0.018	1	0.80	0.042	0.14	11.5	3.0	0.06	0.15	<5	0.6	0.13	4.9	1.24	<0.1
147091	Rock	0.084	14.2	22.3	0.69	64.5	0.114	1	0.76	0.065	0.20	40.7	3.0	0.10	0.16	<5	0.8	0.37	5.4	1.09	<0.1

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Project: Troitsa  
 Report Date: December 06, 2010

Page: 2 of 4 Part 3

CERTIFICATE OF ANALYSIS

SMI10000570.1

Method	Analyte	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	G6	7AR	
		Hf	Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pd	Pt	Au	Cu
Unit		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppb	ppb	gm/t	%
MDL		0.02	0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2	0.005	0.001
147062	Rock	0.07	0.15	18.3	0.5	<0.05	0.9	4.96	25.8	0.02	<1	0.3	11.5	<10	<2	<0.005	
147063	Rock	0.05	0.13	14.3	0.6	<0.05	0.9	5.68	28.9	<0.02	<1	0.3	10.8	<10	<2	<0.005	
147064	Rock	0.05	0.15	12.1	0.4	<0.05	1.1	5.67	27.3	0.04	5	0.2	9.4	13	<2	<0.005	
147065	Rock	0.04	0.04	11.7	0.3	<0.05	0.7	8.01	39.0	0.04	<1	0.6	10.4	<10	<2	<0.005	
147066	Rock	0.03	0.07	12.1	0.3	<0.05	0.8	6.90	31.1	0.07	1	0.3	10.7	<10	<2	0.006	
147067	Rock	<0.02	0.02	12.0	0.2	<0.05	0.7	8.78	37.6	0.07	1	0.4	10.1	<10	<2	<0.005	
147068	Rock	0.05	0.07	13.5	0.5	<0.05	1.0	7.68	38.3	0.04	<1	0.5	11.9	<10	<2	<0.005	
147069	Rock	0.05	0.12	10.0	0.5	<0.05	1.1	4.01	23.1	0.04	<1	0.3	15.5	<10	<2	0.007	
147070	Rock	0.03	0.04	13.0	0.3	<0.05	0.7	7.24	37.7	0.05	2	0.3	14.5	<10	<2	0.007	
147071	Rock	0.05	0.09	10.2	0.5	<0.05	0.9	4.38	25.8	0.03	<1	0.3	15.2	<10	<2	<0.005	
147072	Rock	0.04	0.04	13.1	0.4	<0.05	1.3	8.38	42.4	0.08	2	0.5	8.1	<10	<2	0.023	
147073	Rock	0.02	0.03	12.2	0.3	<0.05	0.9	9.58	44.0	0.05	2	0.4	2.2	<10	<2	0.007	
147074	Rock	0.03	<0.02	11.0	0.8	<0.05	1.0	8.27	32.7	0.11	2	0.1	7.8	<10	<2	0.036	
147075	Rock	0.10	<0.02	14.7	0.7	<0.05	3.4	5.46	19.8	0.18	2	0.1	10.2	<10	<2	0.012	
147076	Rock	0.09	<0.02	16.5	0.4	<0.05	3.6	5.89	24.3	0.15	<1	0.2	4.8	<10	<2	0.016	
147077	Rock	0.09	<0.02	15.9	0.7	<0.05	3.3	5.48	20.0	0.29	4	0.2	2.5	<10	<2	0.041	
147078	Rock	0.08	<0.02	15.6	0.2	<0.05	3.3	5.53	20.9	0.20	<1	0.2	4.0	<10	<2	0.038	
147079	Rock	0.07	<0.02	15.6	0.1	<0.05	3.4	5.21	22.8	0.22	1	0.3	7.9	<10	<2	0.009	
147080	Rock	0.11	<0.02	17.5	0.3	<0.05	3.5	5.98	27.7	0.13	<1	0.1	2.7	<10	<2	<0.005	
147081	Rock	0.10	<0.02	16.4	0.2	<0.05	3.6	5.31	26.6	0.12	<1	0.3	4.3	<10	<2	<0.005	
147082	Rock	0.07	<0.02	17.2	0.6	<0.05	2.8	5.77	22.7	0.36	1	0.2	4.6	<10	<2	0.035	
147083	Rock	0.43	0.11	9.1	0.5	<0.05	13.1	5.08	37.9	<0.02	1	0.2	15.2	<10	<2	<0.005	
147084	Rock	0.07	0.07	17.4	1.0	<0.05	2.0	9.67	41.7	0.06	2	0.4	16.2	<10	<2	0.006	
147085	Rock	0.10	0.18	17.0	0.7	<0.05	1.9	6.24	33.6	0.03	<1	0.3	10.8	<10	<2	<0.005	
147086	Rock	0.05	0.12	24.4	0.7	<0.05	1.2	7.68	34.4	0.03	<1	0.3	11.9	<10	<2	<0.005	
147087	Rock	0.05	0.07	14.8	0.5	<0.05	1.3	7.24	31.9	0.06	3	0.4	12.1	<10	<2	<0.005	
147088	Rock	0.08	0.13	14.7	0.5	<0.05	1.5	6.05	28.9	0.05	1	0.3	11.1	<10	<2	0.009	
147089	Rock	0.07	0.20	12.9	0.7	<0.05	1.7	6.35	29.5	0.07	2	0.3	10.4	<10	<2	0.012	
147090	Rock	0.04	0.04	11.9	0.6	<0.05	0.8	6.78	30.4	0.06	<1	0.2	10.7	<10	<2	<0.005	
147091	Rock	0.09	0.27	18.2	0.6	<0.05	1.6	5.49	27.7	0.10	<1	0.2	8.6	<10	<2	0.014	

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.



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Project: Troitsa  
 Report Date: December 06, 2010

Page: 3 of 4 Part 1

# CERTIFICATE OF ANALYSIS

SMI10000570.1

Method Analyte Unit MDL	WGHT	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	
	kg	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	
	0.01	0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01	
147092	Rock	4.40	8.16	909.2	3.68	22.6	1102	10.9	9.7	296	2.33	1.2	5.4	18.9	12.3	17.1	0.12	0.11	1.42	52	0.56
147093	Rock Pulp	0.05	0.98	>10000	90.64	438.4	10853	31.5	44.5	928	9.00	2.4	2.4	9.7	12.5	13.9	1.04	3.99	27.78	24	0.31
147094	Rock	4.62	12.96	998.5	3.10	29.6	939	10.2	9.6	319	2.30	1.0	4.5	25.1	11.5	22.0	0.13	0.11	0.48	52	0.76
147095	Rock	4.37	11.28	788.4	6.78	22.8	1003	8.4	15.2	339	2.00	5.9	4.1	9.1	9.2	39.8	0.13	1.10	1.08	34	1.25
147096	Rock	4.43	19.43	1674	3.95	26.2	1712	8.9	15.4	369	2.08	5.4	4.4	9.1	8.8	47.9	0.09	0.23	1.21	33	1.32
147097	Rock	5.25	177.1	2112	39.56	56.3	2655	9.9	8.4	373	2.10	4.1	3.3	15.2	9.1	43.9	0.31	0.46	0.46	44	1.06
147098	Rock	5.19	20.90	1128	72.17	70.3	1904	10.2	8.2	578	2.03	62.6	4.4	23.7	8.0	28.5	1.11	68.25	0.40	22	1.63
147099	Rock	2.60	40.86	6768	43.83	78.6	5226	7.1	10.7	372	1.95	5.3	5.9	8.1	8.2	23.1	1.00	1.21	1.62	17	1.16
147100	Rock	4.88	85.26	7567	10.75	57.2	8118	9.7	12.7	398	2.16	0.9	3.8	53.8	8.2	20.1	0.27	0.51	1.53	20	0.86
147151	Rock	4.42	59.72	5903	5.78	44.5	6356	8.2	9.1	325	1.75	0.8	4.5	62.2	8.0	23.5	0.25	0.28	2.59	19	0.76
147152	Rock	4.34	46.49	5981	26.34	65.0	7194	8.4	14.6	417	2.00	1.1	4.7	12.1	8.3	18.7	0.41	0.53	1.25	15	0.69
147153	Rock	4.64	66.56	4642	7.38	58.5	6043	8.5	11.2	594	1.77	1.6	5.1	10.8	8.6	18.1	0.41	0.51	0.53	15	0.72
147154	Rock	4.68	46.36	5824	9.40	51.8	5095	9.6	14.0	734	2.04	1.0	5.4	10.9	8.2	20.5	0.43	0.23	1.95	17	0.66
147155	Rock	4.68	106.2	6659	10.58	49.0	5892	9.9	15.8	614	2.23	1.1	5.8	7.1	7.9	13.4	0.29	0.42	2.17	15	0.45
147156	Rock	6.55	38.23	5198	9.17	50.2	4125	8.3	10.5	471	1.77	0.3	4.3	6.7	8.1	26.9	0.35	0.14	1.53	18	0.82
147157	Rock	4.90	39.46	7526	24.04	56.7	6310	9.0	12.3	438	2.13	1.1	4.4	9.4	8.4	24.3	0.47	0.23	2.47	19	0.82
147158	Rock	5.34	46.90	6374	37.16	67.5	5438	13.3	16.4	375	2.52	0.7	3.9	28.6	8.5	16.6	0.49	0.21	3.90	23	0.60
147159	Rock	5.26	15.55	4210	2.94	50.8	3157	9.3	10.1	344	2.14	1.7	3.1	4.7	8.6	22.7	0.25	0.15	2.55	28	0.80
147160	Rock	3.70	11.46	4609	29.34	70.9	4323	8.9	10.5	357	2.08	1.3	3.1	13.0	8.0	26.6	0.68	0.42	1.89	25	0.89
147161	Rock	4.96	9.40	796.2	1.64	36.2	683	11.1	8.1	369	2.01	0.9	3.3	4.8	10.5	30.7	0.18	0.14	0.32	45	1.06
147162	Rock	3.64	3.49	447.4	1.81	24.7	341	10.5	7.6	287	2.27	0.9	2.6	2.5	9.0	15.5	0.06	0.05	0.45	52	0.64
147163	Rock	3.25	1.25	204.0	1.83	26.7	150	10.8	6.5	239	2.32	1.0	2.3	1.2	8.8	15.9	0.09	0.05	0.50	54	0.63
147164	Rock	3.73	2.02	308.3	2.29	26.8	237	11.0	8.1	284	2.30	0.9	2.3	2.0	8.2	15.7	0.07	0.12	0.11	57	0.65
147165	Rock	2.71	1.22	333.6	1.97	22.4	237	10.3	7.3	235	2.18	0.9	2.3	2.5	7.4	14.1	0.06	0.06	0.28	55	0.60
147166	Rock	2.79	13.46	574.7	10.11	24.7	486	11.0	7.8	269	2.31	1.0	2.8	7.9	8.4	16.9	0.08	0.07	0.42	58	0.63
147167	Rock	3.92	4.57	423.7	1.53	23.5	292	11.0	7.7	272	2.39	1.1	2.7	3.0	8.6	15.9	0.08	0.06	0.42	56	0.57
147168	Rock	3.50	3.79	300.3	1.58	24.9	172	11.1	6.9	325	2.35	0.9	2.4	2.3	7.7	20.4	0.10	0.07	0.16	57	0.63
147169	Rock	2.56	5.05	535.5	1.61	26.8	324	12.6	9.0	321	2.29	0.5	2.3	1.7	7.2	24.8	0.08	0.04	0.29	54	0.80
147170	Rock	5.05	15.05	872.0	10.27	32.2	2888	12.2	8.2	383	2.35	0.4	3.2	4.6	7.7	24.8	0.14	0.07	7.44	54	0.85
147171	Rock	2.28	8.00	1139	3.35	47.8	1055	10.6	8.5	355	2.03	0.8	3.1	4.8	9.1	24.4	0.23	0.12	0.41	42	1.03



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Project: Troitsa  
Report Date: December 06, 2010

Page: 3 of 4 Part 2

# CERTIFICATE OF ANALYSIS

SMI10000570.1

Method	Analyte	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15
		P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga	Cs	Ge
Unit		%	ppm	ppm	%	ppm	%	ppm	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm	ppm
MDL		0.001	0.5	0.5	0.01	0.5	0.001	1	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	0.1
147092	Rock	0.084	14.1	24.5	0.66	49.3	0.119	2	0.73	0.064	0.14	10.3	2.7	0.06	0.16	<5	0.7	0.56	5.3	0.89	<0.1
147093	Rock Pulp	0.065	20.3	33.0	1.80	105.9	0.025	3	3.08	0.009	0.32	1.1	2.9	0.12	3.59	68	40.2	0.06	8.3	1.33	0.2
147094	Rock	0.081	17.0	25.6	0.72	56.8	0.062	<1	0.81	0.048	0.16	24.8	2.9	0.08	0.09	<5	0.5	0.16	5.4	1.40	<0.1
147095	Rock	0.070	15.1	17.4	0.39	149.9	0.006	1	0.44	0.031	0.10	7.0	2.5	0.06	0.27	18	0.7	0.34	2.9	1.60	<0.1
147096	Rock	0.073	13.7	14.4	0.47	194.8	0.009	1	0.41	0.025	0.13	29.0	2.5	0.07	0.37	<5	0.9	0.57	2.6	1.78	<0.1
147097	Rock	0.085	13.8	19.8	0.48	238.1	0.029	1	0.46	0.034	0.13	12.2	2.9	0.07	0.33	<5	1.0	0.21	3.2	2.00	<0.1
147098	Rock	0.067	12.4	10.1	0.30	61.2	0.002	1	0.21	0.011	0.12	1.6	2.2	0.08	0.54	3687	0.6	0.19	0.9	2.84	<0.1
147099	Rock	0.075	8.4	7.3	0.27	52.4	<0.001	1	0.21	0.016	0.13	3.7	1.6	0.08	0.61	29	2.5	0.31	0.8	1.04	<0.1
147100	Rock	0.075	8.2	11.8	0.47	114.0	<0.001	1	0.48	0.023	0.14	13.4	2.0	0.08	0.79	25	3.7	0.38	2.6	0.73	<0.1
147151	Rock	0.073	8.5	12.5	0.52	94.6	<0.001	<1	0.60	0.019	0.12	1.4	1.9	0.06	0.47	9	2.8	0.25	3.1	0.59	<0.1
147152	Rock	0.073	6.5	9.8	0.52	35.0	<0.001	<1	0.70	0.019	0.14	48.0	1.4	0.08	0.78	5	2.8	0.44	3.1	0.75	<0.1
147153	Rock	0.076	7.5	10.5	0.53	73.5	<0.001	<1	0.68	0.020	0.14	0.9	1.5	0.07	0.45	11	1.4	0.24	3.1	0.83	<0.1
147154	Rock	0.074	8.1	11.6	0.55	141.5	<0.001	<1	0.68	0.019	0.14	14.5	1.5	0.07	0.72	6	2.4	0.32	3.5	0.70	<0.1
147155	Rock	0.077	7.8	10.6	0.53	64.8	<0.001	<1	0.67	0.017	0.15	2.9	1.4	0.09	0.90	<5	3.3	0.56	3.2	0.82	<0.1
147156	Rock	0.074	9.6	13.3	0.58	61.5	<0.001	<1	0.69	0.019	0.14	12.4	1.6	0.08	0.49	<5	2.3	0.21	3.4	0.83	<0.1
147157	Rock	0.071	8.2	13.0	0.58	64.1	<0.001	<1	0.68	0.021	0.16	29.7	1.6	0.09	0.87	7	3.7	0.49	3.5	0.77	<0.1
147158	Rock	0.076	7.6	14.3	0.58	44.5	0.001	<1	0.78	0.019	0.14	2.0	1.6	0.09	1.10	<5	4.9	0.75	3.7	0.63	<0.1
147159	Rock	0.077	9.1	15.6	0.66	45.3	0.001	<1	0.89	0.024	0.16	2.2	2.0	0.09	0.41	<5	1.8	0.51	4.5	0.62	<0.1
147160	Rock	0.080	10.6	13.9	0.66	76.8	0.010	1	0.79	0.023	0.15	86.3	2.0	0.08	0.35	<5	1.6	0.19	3.6	0.99	<0.1
147161	Rock	0.095	14.4	22.5	0.54	118.9	0.024	<1	0.74	0.038	0.14	10.1	3.2	0.06	0.07	<5	0.2	0.03	4.3	2.50	<0.1
147162	Rock	0.088	10.3	26.2	0.76	70.3	0.088	<1	0.75	0.043	0.11	25.8	2.3	0.04	0.03	6	0.2	0.13	5.3	0.72	<0.1
147163	Rock	0.095	10.6	27.2	0.66	78.4	0.101	<1	0.80	0.049	0.14	9.3	1.9	0.05	<0.02	<5	0.2	0.05	5.4	0.51	<0.1
147164	Rock	0.093	10.8	26.8	0.72	99.0	0.096	<1	0.79	0.050	0.17	10.4	2.2	0.07	<0.02	<5	0.1	<0.02	5.3	0.71	<0.1
147165	Rock	0.087	9.8	25.6	0.66	100.5	0.108	<1	0.79	0.055	0.17	4.3	1.9	0.07	<0.02	<5	0.1	0.09	5.0	0.61	<0.1
147166	Rock	0.093	11.1	26.8	0.78	100.2	0.109	<1	0.80	0.048	0.16	13.9	2.4	0.06	0.04	<5	0.3	0.06	5.4	0.97	<0.1
147167	Rock	0.092	11.2	26.7	0.71	99.3	0.092	<1	0.74	0.047	0.14	9.9	2.3	0.05	0.03	<5	0.3	0.10	5.2	1.03	<0.1
147168	Rock	0.089	12.2	26.8	0.77	112.5	0.081	<1	0.77	0.054	0.15	3.3	2.5	0.06	<0.02	<5	0.2	<0.02	5.0	0.98	<0.1
147169	Rock	0.092	12.3	26.2	0.77	135.8	0.054	<1	0.82	0.040	0.11	2.4	2.9	0.04	0.04	<5	0.3	0.03	5.0	1.26	<0.1
147170	Rock	0.092	13.1	26.6	0.79	89.9	0.041	<1	0.77	0.041	0.12	5.1	3.5	0.05	0.07	<5	0.4	0.10	5.1	0.91	<0.1
147171	Rock	0.088	12.9	20.2	0.53	72.9	0.012	1	0.76	0.032	0.12	9.9	3.1	0.05	0.11	<5	0.5	0.06	4.2	2.44	<0.1

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.





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Project: Troitsa  
 Report Date: December 06, 2010

Page: 3 of 4 Part 3

# CERTIFICATE OF ANALYSIS

SMI10000570.1

Method	Analyte	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	G6	7AR	
		Hf	Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pd	Pt	Au	Cu
Unit		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppb	ppb	gm/t	%	
MDL		0.02	0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2	0.005	0.001
147092	Rock	0.08	0.28	12.4	0.5	<0.05	1.6	5.51	27.2	0.05	1	0.1	8.9	<10	<2	0.017	
147093	Rock Pulp	0.41	0.27	21.1	53.1	<0.05	16.4	13.59	44.5	3.61	1	0.8	24.3	<10	4	I.S.	3.593
147094	Rock	0.06	0.13	16.4	0.4	<0.05	1.4	6.65	32.8	0.04	1	0.3	9.2	<10	<2	0.006	
147095	Rock	0.03	0.03	8.5	0.3	<0.05	0.8	6.86	31.1	0.05	2	0.3	5.3	<10	<2	0.005	
147096	Rock	0.03	0.04	12.0	0.2	<0.05	0.9	6.24	29.0	0.07	3	0.2	5.1	<10	<2	0.011	
147097	Rock	0.03	0.07	11.9	0.5	<0.05	0.9	6.52	30.2	0.09	7	0.2	5.5	<10	<2	0.019	
147098	Rock	<0.02	<0.02	8.8	0.3	<0.05	0.6	7.78	25.1	0.06	1	0.3	1.3	<10	<2	0.023	
147099	Rock	0.11	<0.02	12.3	0.9	<0.05	4.3	4.90	16.0	0.25	3	0.2	2.2	<10	<2	0.010	
147100	Rock	0.10	<0.02	12.3	0.1	<0.05	3.9	4.15	15.3	0.31	6	0.2	5.5	<10	<2	0.039	
147151	Rock	0.10	<0.02	10.4	<0.1	<0.05	3.5	3.83	15.5	0.25	3	0.2	7.5	<10	<2	0.038	
147152	Rock	0.12	<0.02	12.0	0.2	<0.05	4.5	3.67	12.6	0.27	2	0.2	8.1	<10	<2	0.014	
147153	Rock	0.13	<0.02	11.4	<0.1	<0.05	3.9	3.78	14.2	0.16	7	0.2	7.3	<10	<2	0.010	
147154	Rock	0.12	<0.02	12.6	<0.1	<0.05	4.0	3.99	15.8	0.23	4	0.2	5.5	<10	<2	0.018	
147155	Rock	0.10	<0.02	13.1	0.1	<0.05	4.3	3.69	14.3	0.29	11	0.2	6.7	<10	<2	0.011	
147156	Rock	0.13	<0.02	12.8	<0.1	<0.05	3.9	4.04	16.9	0.20	4	0.2	7.4	<10	<2	0.008	
147157	Rock	0.11	<0.02	14.2	0.2	<0.05	4.1	3.92	15.7	0.31	3	0.2	6.1	<10	<2	0.014	
147158	Rock	0.13	<0.02	13.9	0.2	<0.05	4.1	3.76	14.8	0.28	3	0.2	8.5	<10	<2	0.050	
147159	Rock	0.11	<0.02	14.5	<0.1	<0.05	3.9	3.89	16.5	0.16	1	0.2	8.4	<10	<2	0.006	
147160	Rock	0.09	0.02	13.0	0.1	<0.05	2.6	4.41	20.2	0.18	3	0.2	8.9	<10	<2	0.010	
147161	Rock	0.08	0.04	12.5	0.3	<0.05	1.6	6.09	29.3	0.06	<1	0.3	9.9	<10	<2	0.011	
147162	Rock	0.08	0.10	7.8	0.3	<0.05	1.8	3.56	20.2	0.02	1	0.3	9.6	<10	<2	<0.005	
147163	Rock	0.10	0.13	10.2	0.4	<0.05	2.0	3.60	20.7	<0.02	<1	0.4	8.9	<10	<2	<0.005	
147164	Rock	0.09	0.12	13.1	0.3	<0.05	1.7	3.79	21.0	<0.02	2	0.3	8.6	<10	<2	<0.005	
147165	Rock	0.08	0.11	12.6	0.3	<0.05	1.6	3.25	19.3	<0.02	<1	0.3	7.6	<10	<2	<0.005	
147166	Rock	0.06	0.14	12.8	0.4	<0.05	1.5	3.84	21.6	0.02	2	0.3	10.2	<10	<2	<0.005	
147167	Rock	0.08	0.09	10.1	0.3	<0.05	1.4	3.83	22.5	<0.02	<1	0.3	9.0	<10	<2	<0.005	
147168	Rock	0.06	0.09	11.2	0.5	<0.05	1.4	4.35	24.2	<0.02	<1	0.3	10.1	<10	<2	<0.005	
147169	Rock	0.05	0.06	9.1	0.3	<0.05	1.1	5.21	26.0	0.02	<1	0.2	9.9	<10	<2	0.009	
147170	Rock	0.06	0.05	10.1	0.3	<0.05	1.0	6.04	27.0	0.04	<1	0.2	10.2	<10	<2	0.005	
147171	Rock	0.05	0.03	11.0	0.2	<0.05	1.4	5.52	27.3	0.07	<1	0.3	9.3	<10	<2	0.008	



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**Project:** Troitsa  
**Report Date:** December 06, 2010

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**CERTIFICATE OF ANALYSIS**

**SMI10000570.1**

Method	WGHT	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	
Unit	kg	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	
MDL	0.01	0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01	
147172	Rock	6.90	88.58	6125	6.37	50.5	4901	9.4	9.6	338	1.90	1.0	4.5	23.9	8.3	26.4	0.23	0.31	2.10	22	0.76
147173	Rock	4.75	21.23	2554	5.59	27.5	3049	9.8	8.4	287	2.26	0.6	5.2	22.2	9.1	15.0	0.12	0.08	5.86	48	0.45
147174	Rock	3.60	17.58	4976	23.69	145.0	3547	7.1	13.7	507	2.18	10.6	5.2	6.8	8.3	18.9	2.38	2.07	1.22	11	1.19
147175	Rock	1.73	45.70	1032	1.57	32.5	586	12.2	11.5	265	2.73	1.0	2.5	5.7	7.8	23.7	0.10	0.10	0.37	55	0.87
147176	Rock	2.36	18.44	3871	10.36	79.4	1983	13.5	14.1	446	2.87	1.5	3.6	8.9	8.1	35.5	0.77	0.88	0.77	50	1.02
147177	Rock	5.05	29.24	3160	6.75	35.3	3307	9.6	7.1	302	2.25	0.8	4.3	17.9	9.7	16.8	0.19	0.10	1.32	45	0.56



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Project: Troitsa  
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CERTIFICATE OF ANALYSIS

SMI10000570.1

Method	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15
Analyte	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga	Cs	Ge	
Unit	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm	
MDL	0.001	0.5	0.5	0.01	0.5	0.001	1	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	0.1	
147172	Rock	0.076	9.1	14.2	0.56	88.6	0.001	1	0.72	0.024	0.14	12.5	2.1	0.07	0.54	<5	2.7	0.29	3.4	0.60	<0.1
147173	Rock	0.076	11.5	24.3	0.73	63.6	0.086	1	0.83	0.054	0.20	39.4	2.7	0.09	0.20	<5	1.3	0.40	5.0	0.98	<0.1
147174	Rock	0.077	9.8	5.7	0.15	87.9	<0.001	2	0.27	0.011	0.17	11.2	1.5	0.13	0.65	100	2.9	0.41	0.9	1.80	<0.1
147175	Rock	0.089	16.8	24.4	0.85	130.4	0.021	<1	0.84	0.033	0.12	21.7	2.9	0.05	0.16	<5	0.6	0.10	6.3	1.74	<0.1
147176	Rock	0.110	13.1	21.7	0.83	90.8	0.021	1	0.96	0.022	0.19	48.4	3.4	0.12	0.29	<5	1.7	0.16	4.7	1.88	<0.1
147177	Rock	0.076	11.8	21.3	0.65	99.1	0.044	<1	0.76	0.039	0.13	16.0	2.5	0.05	0.28	<5	1.1	0.27	4.7	1.03	<0.1



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**Project:** Troitsa  
**Report Date:** December 06, 2010

**Page:** 4 of 4 Part 3

CERTIFICATE OF ANALYSIS

SMI10000570.1

Method	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	G6	7AR
Analyte	Hf	Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pd	Pt	Au	Cu
Unit	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppb	ppb	gm/t	%
MDL	0.02	0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2	0.005	0.001
147172	Rock	0.11	<0.02	12.9	<0.1	<0.05	4.2	4.07	16.9	0.25	5	0.2	7.8	<10	<2	0.029
147173	Rock	0.09	0.20	19.8	0.5	<0.05	1.6	4.85	23.9	0.11	<1	0.2	9.2	<10	<2	0.016
147174	Rock	0.11	<0.02	15.5	0.2	<0.05	4.0	5.18	18.4	0.15	<1	0.3	3.9	<10	<2	0.286
147175	Rock	0.03	0.03	11.9	0.2	<0.05	1.0	6.07	32.7	0.03	7	0.3	10.7	<10	<2	<0.005
147176	Rock	0.08	<0.02	21.1	0.2	<0.05	2.7	6.76	26.7	0.14	2	0.3	11.9	<10	<2	0.011
147177	Rock	0.04	0.11	11.9	0.3	<0.05	1.1	5.42	24.3	0.13	<1	0.3	9.6	<10	<2	0.019



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Project: Troitsa  
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QUALITY CONTROL REPORT

SMI10000570.1

Method	WGHT	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	
Unit	kg	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	
MDL	0.01	0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01	
Pulp Duplicates																					
147062	Rock	4.65	1.48	389.6	1.87	26.5	235	9.9	6.6	327	2.12	1.2	3.2	2.1	9.9	23.8	0.30	0.15	0.24	51	0.65
REP 147062	QC		1.53	368.4	1.82	26.1	229	10.0	6.5	331	2.16	1.1	3.1	1.5	9.3	23.0	0.29	0.16	0.24	51	0.65
147067	Rock	6.01	11.31	1434	20.25	44.6	5306	11.0	10.8	435	2.52	4.3	4.3	4.2	9.3	64.5	0.30	2.01	52.87	43	1.61
REP 147067	QC																				
147089	Rock	6.78	12.02	1497	2.93	28.8	1272	9.4	7.7	332	2.29	1.1	4.2	7.4	11.1	22.4	0.17	0.14	0.28	52	0.59
REP 147089	QC		12.18	1486	4.69	29.4	1285	9.5	7.9	319	2.30	1.4	4.2	6.2	10.9	23.1	0.23	0.15	0.29	53	0.60
147153	Rock	4.64	66.56	4642	7.38	58.5	6043	8.5	11.2	594	1.77	1.6	5.1	10.8	8.6	18.1	0.41	0.51	0.53	15	0.72
REP 147153	QC		68.63	4744	7.67	58.7	6330	8.4	10.9	599	1.79	1.7	5.2	7.4	8.6	18.4	0.42	0.52	0.56	16	0.72
147172	Rock	6.90	88.58	6125	6.37	50.5	4901	9.4	9.6	338	1.90	1.0	4.5	23.9	8.3	26.4	0.23	0.31	2.10	22	0.76
REP 147172	QC		82.24	6089	6.51	51.2	4776	9.4	9.0	340	1.90	1.0	4.5	25.4	8.2	27.5	0.24	0.29	2.07	21	0.75
147175	Rock	1.73	45.70	1032	1.57	32.5	586	12.2	11.5	265	2.73	1.0	2.5	5.7	7.8	23.7	0.10	0.10	0.37	55	0.87
REP 147175	QC																				
Core Reject Duplicates																					
147071	Rock	4.58	1.81	774.4	2.56	27.6	389	11.5	10.8	272	3.01	1.3	2.6	4.7	8.3	27.2	0.07	0.08	0.22	62	0.80
DUP 147071	QC		1.70	662.6	2.58	28.0	339	11.3	10.7	269	2.76	1.5	2.5	3.1	8.2	27.5	0.07	0.08	0.21	57	0.81
147156	Rock	6.55	38.23	5198	9.17	50.2	4125	8.3	10.5	471	1.77	0.3	4.3	6.7	8.1	26.9	0.35	0.14	1.53	18	0.82
DUP 147156	QC		42.22	5485	9.29	53.8	4642	8.8	12.2	491	1.84	0.6	4.6	4.5	8.4	27.8	0.39	0.15	1.66	19	0.87
Reference Materials																					
STD DS7	Standard		19.71	94.30	61.95	397.9	976	54.9	9.4	620	2.28	54.1	4.3	74.8	3.9	62.2	6.01	5.33	4.26	76	0.91
STD DS7	Standard		20.82	108.3	64.82	406.8	997	56.3	9.5	646	2.49	53.7	5.0	75.6	5.0	80.8	6.66	5.74	4.68	86	1.01
STD GC-7	Standard																				
STD OXH66	Standard																				
STD OXH66	Standard																				
STD OXH66	Standard																				
STD OXK79	Standard																				
STD OXK79	Standard																				
STD OXK79	Standard																				
STD R4A	Standard																				

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**Project:** Troitsa  
**Report Date:** December 06, 2010

**Page:** 1 of 2 Part 2

QUALITY CONTROL REPORT

SMI10000570.1

Method		1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
Analyte		P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga	Cs	Ge
Unit		%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm
MDL		0.001	0.5	0.5	0.01	0.5	0.001	1	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	0.1
Pulp Duplicates																					
147062	Rock	0.079	12.9	22.9	0.75	74.3	0.101	1	0.73	0.050	0.19	9.7	2.8	0.10	0.03	<5	0.1	0.02	4.7	1.72	<0.1
REP 147062	QC	0.078	13.3	22.7	0.75	74.3	0.100	1	0.74	0.049	0.19	9.5	3.0	0.09	0.03	<5	<0.1	0.04	4.7	1.68	<0.1
147067	Rock	0.089	19.1	21.5	0.56	209.3	0.006	2	0.72	0.035	0.14	4.3	3.5	0.07	0.17	35	0.8	0.21	4.2	2.90	<0.1
REP 147067	QC																				
147089	Rock	0.094	14.2	26.2	0.68	58.5	0.091	1	0.78	0.084	0.16	11.1	2.7	0.07	0.12	<5	0.7	0.08	5.3	1.04	<0.1
REP 147089	QC	0.095	14.8	25.6	0.68	61.2	0.092	2	0.80	0.082	0.16	10.3	3.0	0.07	0.13	<5	0.6	0.08	5.3	1.09	<0.1
147153	Rock	0.076	7.5	10.5	0.53	73.5	<0.001	<1	0.68	0.020	0.14	0.9	1.5	0.07	0.45	11	1.4	0.24	3.1	0.83	<0.1
REP 147153	QC	0.079	8.1	10.7	0.55	78.7	0.001	<1	0.67	0.021	0.14	0.9	1.6	0.08	0.43	6	1.7	0.20	3.3	0.89	<0.1
147172	Rock	0.076	9.1	14.2	0.56	88.6	0.001	1	0.72	0.024	0.14	12.5	2.1	0.07	0.54	<5	2.7	0.29	3.4	0.60	<0.1
REP 147172	QC	0.077	9.5	14.2	0.58	90.6	<0.001	<1	0.70	0.022	0.14	12.8	2.0	0.07	0.51	<5	2.6	0.22	3.5	0.59	<0.1
147175	Rock	0.089	16.8	24.4	0.85	130.4	0.021	<1	0.84	0.033	0.12	21.7	2.9	0.05	0.16	<5	0.6	0.10	6.3	1.74	<0.1
REP 147175	QC																				
Core Reject Duplicates																					
147071	Rock	0.099	13.6	27.9	1.07	79.5	0.119	2	1.08	0.046	0.13	29.6	3.6	0.05	0.09	<5	0.5	0.09	7.3	2.45	<0.1
DUP 147071	QC	0.086	13.7	27.6	1.03	84.5	0.128	2	1.07	0.044	0.13	23.7	3.9	0.06	0.07	5	0.3	0.09	7.4	2.73	<0.1
147156	Rock	0.074	9.6	13.3	0.58	61.5	<0.001	<1	0.69	0.019	0.14	12.4	1.6	0.08	0.49	<5	2.3	0.21	3.4	0.83	<0.1
DUP 147156	QC	0.075	10.3	14.0	0.64	61.5	<0.001	<1	0.77	0.020	0.15	10.2	1.6	0.09	0.51	<5	2.3	0.25	3.8	0.89	<0.1
Reference Materials																					
STD DS7	Standard	0.080	10.9	179.7	1.05	388.7	0.105	41	0.95	0.091	0.45	3.6	2.6	4.30	0.20	243	3.3	1.32	4.8	6.53	<0.1
STD DS7	Standard	0.089	14.1	176.9	1.10	414.5	0.135	48	1.09	0.122	0.48	3.9	3.2	4.30	0.21	236	3.3	1.37	5.3	6.91	0.1
STD GC-7	Standard																				
STD OXH66	Standard																				
STD OXH66	Standard																				
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**Report Date:** December 06, 2010

**Page:** 1 of 2 **Part** 3

QUALITY CONTROL REPORT

SMI10000570.1

Method	Analyte	Unit	MDL	1F15 Hf	1F15 Nb	1F15 Rb	1F15 Sn	1F15 Ta	1F15 Zr	1F15 Y	1F15 Ce	1F15 In	1F15 Re	1F15 Be	1F15 Li	1F15 Pd	1F15 Pt	G6 Au	7AR Cu
				ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppb	ppb	gm/t	%
				0.02	0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2	0.005	0.001
Pulp Duplicates																			
147062	Rock			0.07	0.15	18.3	0.5	<0.05	0.9	4.96	25.8	0.02	<1	0.3	11.5	<10	<2	<0.005	
REP 147062	QC			0.04	0.13	17.5	0.5	<0.05	0.9	4.94	25.9	<0.02	<1	0.4	10.8	<10	<2		
147067	Rock			<0.02	0.02	12.0	0.2	<0.05	0.7	8.78	37.6	0.07	1	0.4	10.1	<10	<2	<0.005	
REP 147067	QC																	<0.005	
147089	Rock			0.07	0.20	12.9	0.7	<0.05	1.7	6.35	29.5	0.07	2	0.3	10.4	<10	<2	0.012	
REP 147089	QC			0.07	0.21	13.2	0.7	<0.05	1.7	6.53	30.5	0.06	<1	0.2	10.2	<10	<2		
147153	Rock			0.13	<0.02	11.4	<0.1	<0.05	3.9	3.78	14.2	0.16	7	0.2	7.3	<10	<2	0.010	
REP 147153	QC			0.11	<0.02	12.4	<0.1	<0.05	4.1	3.92	15.4	0.17	7	0.2	7.4	<10	<2		
147172	Rock			0.11	<0.02	12.9	<0.1	<0.05	4.2	4.07	16.9	0.25	5	0.2	7.8	<10	<2	0.029	
REP 147172	QC			0.11	<0.02	12.3	0.1	<0.05	4.1	4.03	17.0	0.25	8	0.1	7.8	<10	<2		
147175	Rock			0.03	0.03	11.9	0.2	<0.05	1.0	6.07	32.7	0.03	7	0.3	10.7	<10	<2	<0.005	
REP 147175	QC																	<0.005	
Core Reject Duplicates																			
147071	Rock			0.05	0.09	10.2	0.5	<0.05	0.9	4.38	25.8	0.03	<1	0.3	15.2	<10	<2	<0.005	
DUP 147071	QC			0.06	0.08	10.7	0.4	<0.05	0.9	4.20	25.7	0.03	<1	0.8	14.9	<10	<2	<0.005	
147156	Rock			0.13	<0.02	12.8	<0.1	<0.05	3.9	4.04	16.9	0.20	4	0.2	7.4	<10	<2	0.008	
DUP 147156	QC			0.11	<0.02	13.3	<0.1	<0.05	4.2	4.16	17.6	0.19	5	0.2	7.8	<10	<2	<0.005	
Reference Materials																			
STD DS7	Standard			0.11	0.48	38.7	4.5	<0.05	5.7	5.40	35.8	1.55	5	1.8	30.1	72	42		
STD DS7	Standard			0.13	0.58	39.9	5.1	<0.05	5.6	7.16	42.0	1.68	5	1.4	29.3	59	45		
STD GC-7	Standard																		0.566
STD OXH66	Standard																		1.308
STD OXH66	Standard																		1.396
STD OXH66	Standard																		1.289
STD OXK79	Standard																		3.537
STD OXK79	Standard																		3.793
STD OXK79	Standard																		3.642
STD R4A	Standard																		0.510

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Vancouver BC V6Z 1G3 Canada

Project: Troitsa

Report Date: December 06, 2010

Page: 2 of 2 Part 1

# QUALITY CONTROL REPORT

SMI10000570.1

		WGHT	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
		Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca
		kg	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%
		0.01	0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01
STD DS7 Expected			20.5	109	70.6	411	890	56	9.7	627	2.39	50	4.9	70	4.4	72.3	6.38	4.6	4.51	84	0.93
STD GC-7 Expected																					
STD R4A Expected																					
STD OXH66 Expected																					
STD OXK79 Expected																					
BLK	Blank	<0.01	1.82	<0.01	<0.1	<2	<0.1	<0.1	<1	<0.01	<0.1	<0.1	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	<0.02	<2	<0.01
BLK	Blank	<0.01	<0.01	<0.01	<0.1	<2	<0.1	<0.1	<1	<0.01	<0.1	<0.1	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	<0.02	<2	<0.01
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
Prep Wash																					
G1	Prep Blank		0.10	6.71	2.81	47.1	11	3.2	4.2	559	2.03	0.3	1.7	0.7	4.8	63.7	<0.01	0.02	0.06	40	0.55
G1	Prep Blank		0.10	3.12	2.93	43.1	13	3.1	4.2	562	1.86	0.2	1.5	0.5	4.6	62.7	0.02	<0.02	0.05	36	0.57





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Project: Troitsa

Report Date: December 06, 2010

Page: 2 of 2 Part 2

# QUALITY CONTROL REPORT

SMI10000570.1

		1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
		P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga	Cs	Ge
		%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm
		0.001	0.5	0.5	0.01	0.5	0.001	1	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	0.1
STD DS7 Expected		0.08	12.7	192	1.05	410	0.124	38.6	1.0195	0.089	0.44	3.4	2.5	4.19	0.19	210	3.5	1.18	4.6	6.36	0.1
STD GC-7 Expected																					
STD R4A Expected																					
STD OXH66 Expected																					
STD OXK79 Expected																					
BLK	Blank	<0.001	<0.5	<0.5	<0.01	<0.5	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02	<0.1	<0.02	<0.1
BLK	Blank	<0.001	<0.5	<0.5	<0.01	<0.5	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02	<0.1	<0.02	<0.1
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
Prep Wash																					
G1	Prep Blank	0.090	12.0	10.3	0.57	196.1	0.133	1	0.94	0.101	0.48	<0.1	2.4	0.35	<0.02	<5	0.1	<0.02	5.3	3.31	<0.1
G1	Prep Blank	0.079	10.9	9.2	0.55	193.8	0.126	2	0.92	0.095	0.46	<0.1	2.4	0.34	<0.02	<5	<0.1	0.02	4.8	3.22	<0.1



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Project: Troitsa

Report Date: December 06, 2010

Page: 2 of 2 Part 3

## QUALITY CONTROL REPORT

SMI10000570.1

		1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	G6	7AR	
		Hf	Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pd	Pt	Au	Cu
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppb	ppb	gm/t	%
		0.02	0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2	0.005	0.001
STD DS7 Expected		0.11	0.71	35.8	4.61		5.4	5.18	36	1.57	4	1.6	29.3	70	40		
STD GC-7 Expected																	0.555
STD R4A Expected																	0.502
STD OXH66 Expected																	1.285
STD OXK79 Expected																	3.532
BLK	Blank	<0.02	<0.02	<0.1	<0.1	<0.05	0.1	<0.01	<0.1	<0.02	<1	<0.1	<0.1	<10	<2		
BLK	Blank	<0.02	<0.02	<0.1	<0.1	<0.05	<0.1	<0.01	<0.1	<0.02	<1	<0.1	<0.1	<10	<2		
BLK	Blank																<0.005
BLK	Blank																<0.005
BLK	Blank																<0.001
BLK	Blank																<0.005
BLK	Blank																<0.005
BLK	Blank																<0.005
BLK	Blank																<0.005
Prep Wash																	
G1	Prep Blank	0.07	0.38	42.8	0.5	<0.05	1.0	5.43	23.4	<0.02	<1	0.4	32.3	<10	<2	<0.005	
G1	Prep Blank	0.06	0.36	43.5	0.5	<0.05	1.0	4.93	21.9	<0.02	<1	0.3	31.3	<10	<2	<0.005	



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Suite 1100 - 736 Granville Street  
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Submitted By: Narissa Saretsky

Receiving Lab: Canada-Smithers

Received: October 01, 2010

Report Date: October 27, 2010

Page: 1 of 3

## CERTIFICATE OF ANALYSIS

SMI10000644.1

### CLIENT JOB INFORMATION

Project: Troitsa  
Shipment ID:  
P.O. Number  
Number of Samples: 33

### SAMPLE DISPOSAL

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

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

Invoice To: Callinan Mines Limited  
Suite 1100 - 736 Granville Street  
Vancouver BC V6Z 1G3  
Canada

CC: Ken Galambos

### SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Method Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
R200-250	33	Crush, split and pulverize 250 g rock to 200 mesh			SMI
G601	33	Fire Assay fusion Au by ICP-ES	30	Completed	VAN
1F05	33	1:1:1 Aqua Regia digestion Ultratrace ICP-MS analysis	15	Completed	VAN

### ADDITIONAL COMMENTS



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.

\*\* 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: Troitsa

Report Date: October 27, 2010

Page: 2 of 3 Part 1

CERTIFICATE OF ANALYSIS

SMI10000644.1

Method Analyte Unit MDL	WGHT	G6	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
	Wgt	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	
	kg	gm/t	ppm	%	%	%	gm/t	ppm	ppm	%	%	ppm	ppm	gm/t	ppm	ppm	ppm	ppm	ppm	ppm	
	0.01	0.005	0.01	1e-006	1e-006	1e-005	0.002	0.1	0.1	0.0001	0.01	0.1	0.1	0.0002	0.1	0.5	0.01	0.02	0.02	0.02	
42200	Rock	0.98	<0.005	0.10	0.2075	0.0002	0.0023	1.777	13.0	12.5	0.0471	5.36	0.7	0.2	0.0040	0.3	17.9	0.13	0.12	0.03	122
42365	Rock	1.16	<0.005	0.12	0.0003	0.0001	0.0067	0.010	44.4	15.4	0.1823	2.83	0.8	0.1	0.0005	2.1	17.5	0.05	0.07	0.03	26
42366	Rock	1.44	0.034	0.10	0.0345	0.0001	0.0155	0.313	18.8	24.1	0.2236	3.13	0.8	0.2	0.0300	0.7	39.7	0.05	0.09	1.11	63
42367	Rock	1.29	0.042	0.94	0.0165	0.0004	0.0042	0.662	14.3	13.1	0.0369	5.24	2.1	0.8	0.0381	0.4	56.6	0.03	0.21	4.03	64
42368	Rock	0.67	<0.005	0.32	0.0009	0.0001	0.0042	0.018	42.3	6.3	0.0486	1.72	0.9	<0.1	<0.0002	0.3	18.0	0.02	0.21	0.04	42
42369	Rock	1.27	0.006	1.69	0.0172	0.0006	0.0083	0.478	25.7	29.5	0.0657	4.32	1.7	0.4	0.0046	3.8	25.1	0.04	0.33	14.84	65
42370	Rock	1.53	0.052	0.04	0.0008	0.0021	0.0062	0.665	79.1	25.8	0.0501	5.31	3.4	0.1	0.0498	0.9	13.0	0.03	0.37	5.19	110
42371	Rock	1.40	0.008	1.92	0.0077	0.0006	0.0043	0.249	16.6	13.0	0.0443	4.91	4.4	1.1	0.0068	2.9	30.6	0.07	0.13	6.70	87
42451	Rock	2.83	<0.005	2.69	0.0098	0.0015	0.0089	0.361	67.3	43.9	0.1286	4.46	62.4	<0.1	<0.0002	0.5	36.0	0.44	0.95	1.48	45
42452	Rock	1.10	0.204	0.84	0.0097	0.0137	0.0099	1.535	86.0	196.9	0.0852	8.73	665.9	0.1	0.2568	0.3	47.4	0.56	1.17	7.07	69
147101	Rock	3.02	<0.005	19.21	0.0518	0.0010	0.0035	1.182	9.5	9.7	0.0892	2.22	10.3	5.7	0.0056	7.6	64.8	0.22	14.33	7.92	36
147102	Rock	4.35	0.016	32.82	0.0182	0.0037	0.0048	3.975	10.3	13.8	0.0426	2.68	31.5	4.0	0.0177	6.5	37.3	0.57	23.57	17.50	20
147103	Rock	1.79	0.008	5.08	0.0085	0.0006	0.0038	0.283	9.6	9.2	0.0765	2.28	6.4	3.4	0.0012	8.0	41.1	0.17	0.79	1.89	36
147104	Rock	2.12	0.005	3.30	0.0146	0.0004	0.0027	0.269	10.5	12.8	0.0302	2.32	1.2	2.4	0.0027	9.4	26.4	0.06	0.23	0.81	48
147105	Rock	3.30	<0.005	8.04	0.0359	0.0002	0.0028	0.399	12.3	10.4	0.0272	2.40	0.9	3.4	0.0025	9.2	20.4	0.04	0.09	6.06	51
147106	Rock	3.58	0.006	34.34	0.0469	0.0002	0.0030	0.471	14.0	10.2	0.0297	2.80	0.6	2.4	0.0037	9.3	25.9	0.05	0.14	1.63	55
147107	Rock	4.64	<0.005	1.14	0.0173	0.0002	0.0025	0.138	11.7	6.6	0.0262	2.48	0.9	1.9	0.0010	8.8	20.9	0.04	0.08	1.24	58
147108	Rock	1.75	0.017	11.64	0.0154	0.0576	0.0044	2.382	11.9	24.8	0.0412	2.91	2.9	2.6	0.0139	9.5	28.3	0.49	0.80	6.34	47
147109	Rock	1.62	<0.005	1.55	0.0265	0.0001	0.0027	0.224	13.7	8.1	0.0330	2.64	1.0	1.8	0.0015	8.8	24.9	0.04	0.11	0.48	68
147110	Rock	1.52	<0.005	1.24	0.0413	0.0003	0.0033	0.457	17.3	11.9	0.0362	3.21	1.0	1.6	0.0018	5.3	23.7	0.06	0.08	0.91	88
147111	Rock	1.48	<0.005	0.84	0.0095	0.0002	0.0023	0.122	12.2	10.3	0.0241	2.34	1.0	1.7	<0.0002	9.0	17.2	0.03	0.07	0.25	61
147112	Rock	2.73	0.016	1.01	0.0083	0.0003	0.0026	0.134	11.9	8.5	0.0306	2.30	1.1	2.1	0.0021	10.5	19.1	0.03	0.09	0.50	55
147113	Rock	3.00	0.005	67.20	0.0883	0.0007	0.0033	1.103	12.2	19.1	0.0409	2.60	3.3	12.4	0.0053	8.9	64.7	0.19	1.07	2.22	45
147114	Rock	3.53	0.015	140.5	0.1120	0.0075	0.0044	3.047	13.0	35.1	0.0368	3.15	1.5	7.2	0.0152	10.5	21.1	0.20	0.28	22.19	48
147115	Rock	2.86	0.021	75.23	0.0724	0.0027	0.0065	1.289	12.9	18.9	0.0345	2.78	2.4	2.7	0.0198	10.5	21.9	0.50	0.17	2.36	51
147116	Rock	2.07	0.139	42.36	0.0183	0.0136	0.0113	0.543	10.3	10.0	0.0695	2.19	15.1	3.7	0.1129	7.8	73.4	1.66	1.83	1.18	28
147117	Rock	2.14	0.006	9.34	0.0288	0.0008	0.0043	0.752	8.9	4.9	0.0518	2.22	12.3	3.5	0.0045	5.4	49.1	0.12	1.76	3.10	15
147118	Rock	1.40	<0.005	3.41	0.0102	0.0003	0.0027	0.277	10.6	7.1	0.0475	2.17	23.3	2.3	0.0014	8.7	43.8	0.04	2.31	1.44	40
147119	Rock	0.92	<0.005	0.29	0.0864	0.0001	0.0032	0.180	33.0	18.2	0.0526	2.52	6.7	0.1	0.0006	0.3	23.9	0.13	0.06	0.02	172
147178	Rock	1.07	<0.005	0.21	0.3606	0.0011	0.0194	2.366	4.3	5.3	0.0755	1.37	552.5	0.1	<0.0002	0.6	23.4	2.96	45.31	0.51	9

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Project: Troitsa  
 Report Date: October 27, 2010

Page: 2 of 3 Part 2

**CERTIFICATE OF ANALYSIS** SMI10000644.1

Method	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
Analyte	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga	Cs	
Unit	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	
MDL	0.01	0.001	0.5	0.5	0.01	0.5	0.001	1	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	
42200	Rock	1.38	0.022	2.4	27.4	0.22	71.0	0.079	<1	4.70	3.546	0.02	0.1	10.4	<0.02	<0.02	6	0.2	0.03	6.2	4.74
42365	Rock	1.18	0.084	20.3	34.7	1.30	55.5	0.002	<1	2.03	0.035	0.18	<0.1	3.0	0.07	<0.02	<5	0.2	<0.02	7.1	0.68
42366	Rock	2.18	0.151	11.6	21.2	1.77	55.0	0.007	1	2.23	0.026	0.29	<0.1	3.1	0.14	0.43	<5	0.2	0.55	9.9	0.46
42367	Rock	0.67	0.131	3.2	5.5	0.52	33.3	0.028	<1	1.62	0.134	0.17	<0.1	2.3	0.06	1.54	<5	0.6	2.46	5.5	0.80
42368	Rock	0.17	0.028	2.8	62.9	1.52	86.9	0.031	<1	1.37	0.038	0.35	<0.1	3.4	0.20	<0.02	5	<0.1	<0.02	3.9	3.14
42369	Rock	0.84	0.143	11.6	44.4	1.54	118.7	0.011	1	1.65	0.028	0.11	0.2	4.6	0.04	0.96	6	0.4	3.57	8.5	1.98
42370	Rock	0.30	0.089	3.6	130.4	2.14	52.0	0.211	<1	1.80	0.060	0.53	0.1	5.3	0.18	1.84	22	2.3	2.13	10.0	2.76
42371	Rock	0.38	0.103	3.6	33.3	1.31	49.5	0.169	<1	2.02	0.084	1.02	2.4	5.8	0.74	2.08	<5	0.4	1.59	8.5	5.83
42451	Rock	2.60	0.057	4.5	61.6	1.17	62.8	0.042	2	2.55	0.068	0.12	<0.1	5.9	0.07	1.06	<5	0.7	0.64	5.8	1.44
42452	Rock	0.52	0.110	2.1	57.5	1.65	22.1	0.055	2	2.44	0.079	0.13	<0.1	4.6	0.13	5.34	<5	2.1	1.33	7.9	4.86
147101	Rock	3.76	0.070	11.3	17.9	0.64	141.7	0.027	<1	0.51	0.025	0.11	0.3	2.4	0.07	0.32	319	0.2	0.14	2.7	1.21
147102	Rock	1.29	0.067	9.1	14.1	0.32	55.0	0.005	1	0.34	0.015	0.14	0.2	1.7	0.13	1.44	229	0.4	0.77	1.6	2.20
147103	Rock	1.49	0.090	12.8	17.8	0.55	85.5	0.013	2	0.66	0.032	0.16	0.3	2.4	0.11	0.24	14	0.3	0.16	3.4	1.41
147104	Rock	0.85	0.087	11.7	26.2	0.77	63.7	0.068	<1	0.81	0.043	0.14	1.7	2.9	0.06	0.25	24	0.3	0.08	4.8	1.15
147105	Rock	0.53	0.095	9.5	28.3	0.97	98.9	0.087	<1	0.98	0.041	0.14	0.9	3.1	0.05	0.36	<5	0.4	0.14	5.8	1.10
147106	Rock	0.74	0.104	11.9	29.5	0.99	92.6	0.031	<1	1.09	0.042	0.13	2.1	2.9	0.06	0.52	<5	0.4	0.15	6.4	1.52
147107	Rock	0.56	0.101	9.4	29.3	0.80	65.3	0.120	1	0.90	0.057	0.14	1.7	2.4	0.05	0.07	5	0.2	0.03	5.3	0.70
147108	Rock	0.82	0.092	10.0	27.3	0.73	66.8	0.050	1	0.83	0.037	0.13	0.4	2.9	0.05	0.82	8	0.5	0.59	4.4	1.47
147109	Rock	0.75	0.124	10.9	31.0	0.95	88.1	0.113	<1	1.03	0.052	0.21	0.4	3.0	0.08	0.06	<5	0.2	<0.02	5.6	1.03
147110	Rock	0.82	0.179	16.8	29.6	1.07	92.4	0.156	<1	1.20	0.054	0.19	0.9	2.1	0.07	0.03	<5	0.2	0.04	6.9	0.89
147111	Rock	0.57	0.114	11.4	30.9	0.69	113.0	0.147	1	0.83	0.058	0.23	0.5	1.8	0.10	0.02	<5	0.3	0.06	5.2	0.98
147112	Rock	0.57	0.104	12.1	32.0	0.75	86.2	0.119	<1	0.80	0.050	0.21	0.3	2.4	0.10	0.05	6	0.3	0.03	5.1	1.11
147113	Rock	1.67	0.094	16.2	24.2	0.85	65.2	0.015	1	1.01	0.030	0.12	1.2	2.7	0.07	0.63	15	0.6	0.23	5.2	1.64
147114	Rock	0.67	0.097	17.3	27.0	0.87	85.3	0.038	1	1.00	0.038	0.16	1.4	3.1	0.09	0.94	<5	1.0	0.74	5.5	1.66
147115	Rock	0.70	0.096	13.4	26.0	0.86	80.9	0.052	1	0.93	0.042	0.16	1.0	3.1	0.07	0.53	<5	0.6	0.33	5.6	1.34
147116	Rock	1.82	0.085	13.6	15.7	0.41	195.3	0.006	2	0.58	0.017	0.16	0.3	2.4	0.10	0.48	23	0.3	0.16	2.4	2.27
147117	Rock	1.82	0.075	14.5	8.3	0.34	136.6	<0.001	2	0.42	0.018	0.20	0.1	1.6	0.15	0.50	36	0.2	0.08	1.6	2.50
147118	Rock	1.64	0.093	14.9	19.2	0.58	73.1	0.033	1	0.49	0.027	0.15	0.2	2.5	0.64	0.11	103	0.2	0.06	2.7	1.73
147119	Rock	4.35	0.069	2.5	90.4	1.53	9.6	0.130	5	3.88	0.010	<0.01	<0.1	9.7	<0.02	<0.02	8	0.2	0.02	8.9	0.02
147178	Rock	2.13	0.008	5.3	3.3	0.90	29.1	<0.001	2	0.37	0.031	0.09	<0.1	1.9	0.15	0.79	413	1.7	0.49	1.1	2.62

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Project: Troitsa  
 Report Date: October 27, 2010

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CERTIFICATE OF ANALYSIS

SMI10000644.1

Method	Analyte	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15
		Ge	Hf	Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pd	Pt
Unit		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppb	ppb
MDL		0.1	0.02	0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2
42200	Rock	<0.1	0.10	<0.02	0.6	0.2	<0.05	2.8	11.15	5.5	0.02	<1	<0.1	4.3	12	<2
42365	Rock	<0.1	<0.02	<0.02	7.4	<0.1	<0.05	1.2	7.74	38.9	<0.02	<1	0.7	19.8	<10	<2
42366	Rock	<0.1	0.04	<0.02	14.7	0.1	<0.05	2.0	7.75	23.4	0.04	<1	0.2	13.7	<10	<2
42367	Rock	<0.1	0.03	0.04	8.4	0.2	<0.05	0.8	4.71	7.0	<0.02	<1	0.2	10.5	<10	<2
42368	Rock	<0.1	<0.02	<0.02	16.0	0.2	<0.05	0.4	3.03	6.4	<0.02	<1	0.2	20.5	<10	<2
42369	Rock	<0.1	0.03	0.03	7.0	0.1	<0.05	1.5	6.76	24.2	0.02	<1	0.2	18.1	<10	<2
42370	Rock	0.1	0.07	0.13	23.2	0.5	<0.05	3.0	5.73	8.1	<0.02	<1	0.2	23.9	<10	2
42371	Rock	0.1	0.14	0.07	48.1	1.0	<0.05	5.4	5.03	8.6	0.04	<1	0.2	14.6	<10	<2
42451	Rock	<0.1	0.06	0.03	4.1	0.4	<0.05	2.4	5.81	10.5	0.06	<1	0.4	45.4	<10	<2
42452	Rock	<0.1	0.03	0.05	6.2	0.1	<0.05	1.5	2.49	4.7	0.06	<1	0.2	47.7	<10	<2
147101	Rock	<0.1	0.08	0.05	6.6	0.1	<0.05	1.8	6.31	22.0	0.04	<1	0.3	7.4	<10	<2
147102	Rock	<0.1	0.11	0.04	9.4	<0.1	<0.05	4.3	4.13	17.6	<0.02	2	0.3	4.2	<10	<2
147103	Rock	<0.1	0.19	0.04	12.4	0.2	<0.05	6.4	5.39	25.0	<0.02	<1	0.3	12.3	<10	<2
147104	Rock	<0.1	0.05	0.07	9.6	0.3	<0.05	1.1	5.20	22.6	<0.02	<1	0.2	10.8	<10	<2
147105	Rock	<0.1	0.03	0.08	8.5	0.3	<0.05	1.1	6.35	18.9	<0.02	<1	0.3	12.7	<10	<2
147106	Rock	<0.1	0.04	0.05	10.0	0.2	<0.05	1.2	5.70	23.0	<0.02	<1	0.3	14.8	<10	<2
147107	Rock	<0.1	0.06	0.13	8.6	0.4	<0.05	1.5	4.02	18.2	<0.02	<1	0.3	10.1	<10	<2
147108	Rock	<0.1	0.06	0.09	9.1	0.2	<0.05	1.2	5.23	20.7	<0.02	<1	0.3	11.8	<10	<2
147109	Rock	<0.1	0.06	0.09	13.1	0.3	<0.05	1.2	5.37	21.5	<0.02	<1	0.3	13.6	<10	<2
147110	Rock	<0.1	0.05	0.09	12.1	0.3	<0.05	1.2	4.76	31.6	<0.02	<1	0.3	13.4	<10	<2
147111	Rock	0.1	0.08	0.16	16.2	0.3	<0.05	1.5	4.02	22.2	<0.02	<1	0.3	8.2	<10	<2
147112	Rock	<0.1	0.07	0.14	17.0	0.3	<0.05	1.5	5.40	25.1	<0.02	<1	0.2	11.0	<10	<2
147113	Rock	<0.1	0.05	0.03	10.3	0.2	<0.05	1.4	7.40	30.9	0.02	<1	0.2	13.3	<10	<2
147114	Rock	<0.1	0.06	0.08	12.6	0.2	<0.05	2.1	6.44	31.8	0.03	1	0.3	13.9	<10	<2
147115	Rock	<0.1	0.08	0.09	11.6	0.2	<0.05	2.6	5.76	25.8	0.04	2	0.3	13.3	<10	<2
147116	Rock	<0.1	0.07	<0.02	12.9	0.1	<0.05	3.1	6.10	26.4	<0.02	<1	0.3	6.8	<10	<2
147117	Rock	<0.1	0.19	<0.02	14.6	<0.1	<0.05	7.7	5.37	27.5	<0.02	<1	0.4	5.2	<10	<2
147118	Rock	<0.1	0.07	0.07	11.0	0.2	<0.05	1.7	6.88	28.7	<0.02	2	0.3	6.2	<10	<2
147119	Rock	0.1	0.18	0.02	0.2	0.2	<0.05	9.0	6.81	5.4	<0.02	<1	0.5	5.7	<10	<2
147178	Rock	<0.1	0.03	<0.02	2.4	0.1	<0.05	1.6	5.39	11.3	0.03	<1	0.2	5.2	<10	<2

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**Project:** Troitsa  
**Report Date:** October 27, 2010

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**CERTIFICATE OF ANALYSIS**

**SMI10000644.1**

Method	WGHT	G6	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
Analyte	Wgt	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	
Unit	kg	gm/t	ppm	%	%	%	gm/t	ppm	ppm	%	%	ppm	ppm	gm/t	ppm	ppm	ppm	ppm	ppm	ppm	
MDL	0.01	0.005	0.01	1e-006	1e-006	1e-005	0.002	0.1	0.1	0.0001	0.01	0.1	0.1	0.0002	0.1	0.5	0.01	0.02	0.02	2	
147179	Rock	0.75	<0.005	0.63	0.0104	0.0028	0.0082	0.222	148.8	30.3	0.0830	3.76	12.9	<0.1	<0.0002	0.2	61.9	0.36	0.48	0.61	33
147254	Rock	1.04	<0.005	0.67	0.0163	0.0003	0.0062	0.068	58.4	28.7	0.0621	4.44	5.0	<0.1	0.0005	0.2	124.4	0.06	0.19	0.04	150
147255	Rock	4.00	<0.005	0.57	0.0054	0.0007	0.0078	0.178	163.2	31.4	0.0843	4.86	127.8	<0.1	0.0011	0.4	93.4	0.18	1.29	1.99	59



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**CERTIFICATE OF ANALYSIS**

**SMI10000644.1**

Method	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
Analyte	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga	Cs	
Unit	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	
MDL	0.01	0.001	0.5	0.5	0.01	0.5	0.001	1	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	
147179	Rock	2.07	0.079	1.9	98.1	0.67	57.5	0.135	4	2.58	0.211	0.36	<0.1	4.7	0.18	1.11	<5	1.6	0.42	6.3	4.09
147254	Rock	2.29	0.152	1.3	83.7	3.67	231.6	0.291	2	6.95	0.526	3.55	<0.1	9.2	0.70	<0.02	<5	0.2	0.02	13.4	28.39
147255	Rock	1.99	0.083	4.3	134.4	1.08	79.7	0.170	2	4.34	0.306	1.11	<0.1	7.7	0.60	0.57	25	0.4	2.90	8.9	9.84





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CERTIFICATE OF ANALYSIS

SMI10000644.1

Method	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
Analyte	Ge	Hf	Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pd	Pt	
Unit	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppb	ppb	
MDL	0.1	0.02	0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2	
147179	Rock	<0.1	0.06	0.05	16.7	0.3	<0.05	1.8	4.66	4.5	<0.02	<1	0.5	16.4	<10	<2
147254	Rock	0.1	0.03	0.04	81.6	0.3	<0.05	3.1	3.38	3.4	<0.02	<1	0.6	35.6	<10	<2
147255	Rock	<0.1	0.04	0.04	43.8	0.4	<0.05	0.8	6.03	10.1	0.03	1	0.6	28.2	<10	<2



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# QUALITY CONTROL REPORT

SMI10000644.1

Method	WGHT	G6	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15
Analyte	Wgt	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	
Unit	kg	gm/t	ppm	%	%	%	gm/t	ppm	ppm	%	%	ppm	ppm	gm/t	ppm	ppm	ppm	ppm	ppm	ppm	
MDL	0.01	0.005	0.01	1e-006	1e-006	1e-005	0.002	0.1	0.1	0.0001	0.01	0.1	0.1	0.0002	0.1	0.5	0.01	0.02	0.02	2	
Pulp Duplicates																					
REP 42365	QC		0.12	0.0002	0.0001	0.0069	0.011	44.3	15.5	0.1819	2.84	0.9	0.1	<0.0002	2.2	17.2	0.06	0.09	0.03	26	
147108	Rock	1.75	0.017	11.64	0.0154	0.0576	0.0044	2.382	11.9	24.8	0.0412	2.91	2.9	2.6	0.0139	9.5	28.3	0.49	0.80	6.34	47
REP 147108	QC		0.016																		
147117	Rock	2.14	0.006	9.34	0.0288	0.0008	0.0043	0.752	8.9	4.9	0.0518	2.22	12.3	3.5	0.0045	5.4	49.1	0.12	1.76	3.10	15
REP 147117	QC			9.49	0.0285	0.0008	0.0043	0.758	8.6	5.0	0.0499	2.22	12.4	3.5	0.0042	5.4	48.8	0.12	1.70	3.06	15
Core Reject Duplicates																					
42365	Rock	1.16	<0.005	0.12	0.0003	0.0001	0.0067	0.010	44.4	15.4	0.1823	2.83	0.8	0.1	0.0005	2.1	17.5	0.05	0.07	0.03	26
DUP 42365	QC		<0.005	0.11	0.0004	0.0001	0.0067	0.025	43.0	15.1	0.1779	2.81	1.0	0.1	0.0005	2.1	17.3	0.04	0.09	0.03	26
Reference Materials																					
STD DS7	Standard			19.59	0.0108	0.0068	0.0377	0.907	51.4	9.0	0.0586	2.31	50.0	4.6	0.0593	4.5	69.5	5.95	5.71	4.43	79
STD OXH66	Standard		1.333																		
STD OXH66	Standard		1.278																		
STD OXK79	Standard		3.699																		
STD OXK79	Standard		3.569																		
STD OXH66 Expected			1.285																		
STD OXK79 Expected			3.532																		
STD DS7 Expected				20.5	0.0109	0.00706	0.0411	0.89	56	9.7	0.0627	2.39	48.2	4.9	0.07	4.4	68.7	6.38	4.6	4.51	84
BLK	Blank		<0.005																		
BLK	Blank		<0.005																		
BLK	Blank		<0.005																		
BLK	Blank		<0.005																		
BLK	Blank			<0.01	<1e-006	<1e-006	<1e-005	<0.002	<0.1	<0.1	<0.0001	<0.01	<0.1	<0.1	<0.0002	<0.1	<0.5	<0.01	<0.02	<0.02	<2
Prep Wash																					
G1	Prep Blank		0.005	0.09	0.0003	0.0004	0.0042	0.059	2.9	3.7	0.0484	1.69	0.4	1.8	0.0179	5.2	59.3	0.10	0.15	0.14	31
G1	Prep Blank		<0.005	0.09	0.0003	0.0003	0.0044	0.016	2.7	3.8	0.0522	1.75	0.4	2.0	0.0038	5.3	52.1	0.04	0.04	0.08	33



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QUALITY CONTROL REPORT

SMI10000644.1

Method	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
Analyte	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga	Cs	
Unit	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	
MDL	0.01	0.001	0.5	0.5	0.01	0.5	0.001	1	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	
Pulp Duplicates																					
REP 42365	QC	1.19	0.088	21.6	35.2	1.37	58.3	0.002	1	2.06	0.035	0.18	<0.1	3.2	0.08	<0.02	9	0.2	<0.02	7.1	0.77
147108	Rock	0.82	0.092	10.0	27.3	0.73	66.8	0.050	1	0.83	0.037	0.13	0.4	2.9	0.05	0.82	8	0.5	0.59	4.4	1.47
REP 147108	QC																				
147117	Rock	1.82	0.075	14.5	8.3	0.34	136.6	<0.001	2	0.42	0.018	0.20	0.1	1.6	0.15	0.50	36	0.2	0.08	1.6	2.50
REP 147117	QC	1.82	0.077	14.8	8.0	0.35	135.2	0.001	2	0.42	0.018	0.19	0.1	1.6	0.15	0.50	28	0.2	0.06	1.4	2.57
Core Reject Duplicates																					
42365	Rock	1.18	0.084	20.3	34.7	1.30	55.5	0.002	<1	2.03	0.035	0.18	<0.1	3.0	0.07	<0.02	<5	0.2	<0.02	7.1	0.68
DUP 42365	QC	1.18	0.086	20.1	33.9	1.29	50.8	0.003	<1	2.05	0.035	0.20	<0.1	3.4	0.07	<0.02	8	0.2	0.03	7.2	0.75
Reference Materials																					
STD DS7	Standard	0.92	0.082	12.5	180.3	1.02	384.6	0.113	39	1.00	0.091	0.45	3.3	2.6	3.96	0.18	209	3.1	1.17	4.5	6.09
STD OXH66	Standard																				
STD OXH66	Standard																				
STD OXK79	Standard																				
STD OXK79	Standard																				
STD OXH66 Expected																					
STD OXK79 Expected																					
STD DS7 Expected		0.93	0.08	11.7	179	1.05	410	0.124	38.6	0.959	0.089	0.44	3.4	2.5	4.19	0.19	200	3.5	1.08	4.6	6.36
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank	<0.01	<0.001	<0.5	<0.5	<0.01	<0.5	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02	<0.1	<0.02
Prep Wash																					
G1	Prep Blank	0.42	0.080	8.7	9.6	0.49	167.2	0.100	<1	0.83	0.069	0.44	<0.1	1.9	0.30	<0.02	33	0.1	<0.02	4.1	2.70
G1	Prep Blank	0.45	0.084	10.4	10.4	0.50	179.8	0.111	1	0.87	0.079	0.48	<0.1	2.0	0.33	<0.02	12	0.1	0.03	4.5	3.16

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.



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 Suite 1100 - 736 Granville Street  
 Vancouver BC V6Z 1G3 Canada

**Project:** Troitsa  
**Report Date:** October 27, 2010

**Page:** 1 of 1 **Part** 3

QUALITY CONTROL REPORT

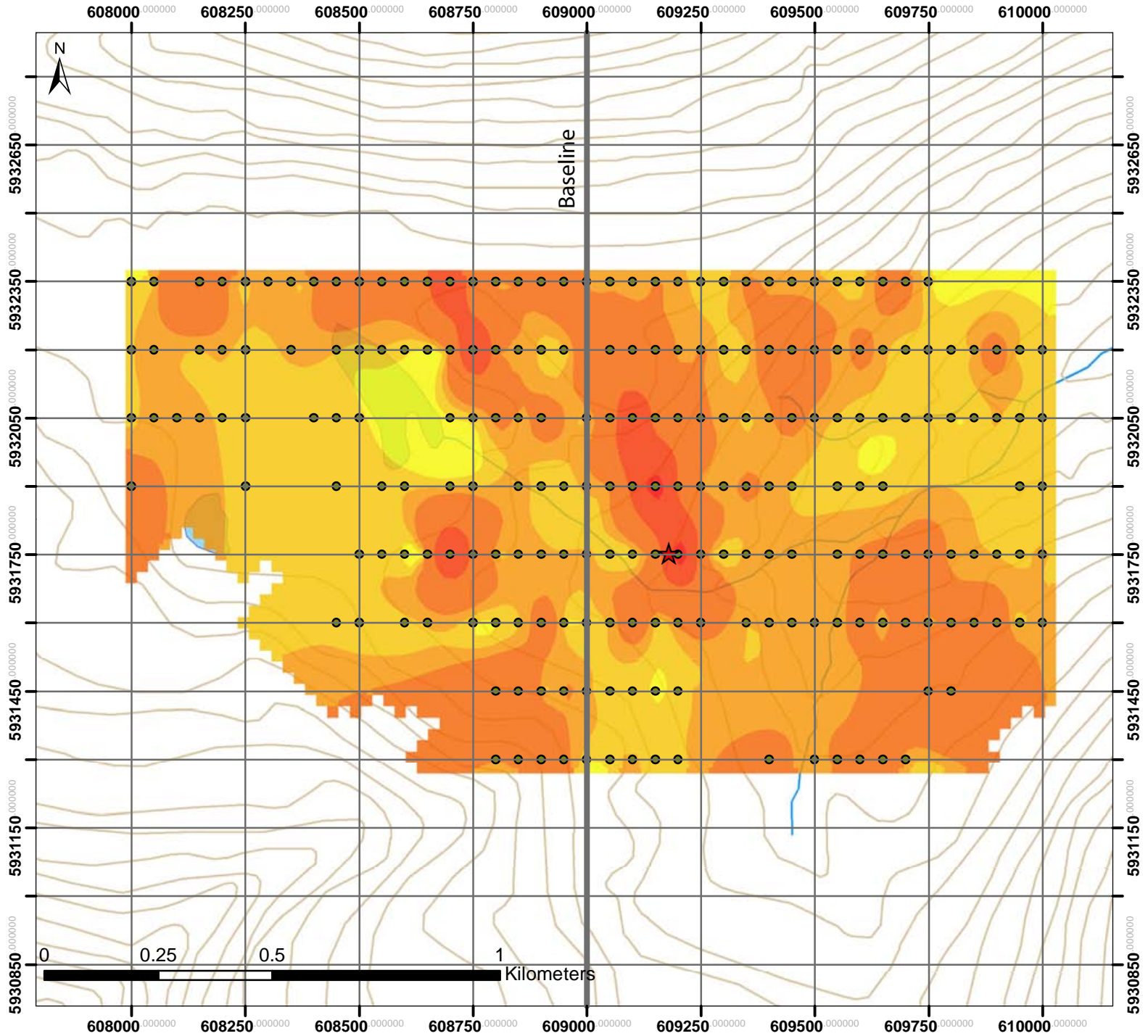
SMI10000644.1

Method	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
Analyte	Ge	Hf	Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pd	Pt	
Unit	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppb	ppb	
MDL	0.1	0.02	0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2	
Pulp Duplicates																
REP 42365	QC	<0.1	<0.02	<0.02	7.9	<0.1	<0.05	1.1	7.68	41.1	<0.02	<1	0.5	20.9	<10	<2
147108	Rock	<0.1	0.06	0.09	9.1	0.2	<0.05	1.2	5.23	20.7	<0.02	<1	0.3	11.8	<10	<2
REP 147108																
147117	Rock	<0.1	0.19	<0.02	14.6	<0.1	<0.05	7.7	5.37	27.5	<0.02	<1	0.4	5.2	<10	<2
REP 147117	QC	<0.1	0.14	<0.02	14.5	<0.1	<0.05	7.1	5.32	28.1	<0.02	<1	0.4	5.2	<10	<2
Core Reject Duplicates																
42365	Rock	<0.1	<0.02	<0.02	7.4	<0.1	<0.05	1.2	7.74	38.9	<0.02	<1	0.7	19.8	<10	<2
DUP 42365	QC	<0.1	0.02	<0.02	7.4	<0.1	<0.05	1.5	7.43	38.1	<0.02	<1	0.6	19.8	<10	<2
Reference Materials																
STD DS7	Standard	<0.1	0.11	0.48	35.6	4.8	<0.05	5.5	5.92	36.0	1.54	4	1.8	31.1	67	39
STD OXH66	Standard															
STD OXH66	Standard															
STD OXK79	Standard															
STD OXK79	Standard															
STD OXH66 Expected																
STD OXK79 Expected																
STD DS7 Expected		0.1	0.11	0.71	35.8	4.61		5.4	5.18	36	1.57	4	1.6	29.3	58	37
BLK	Blank															
BLK	Blank															
BLK	Blank															
BLK	Blank															
BLK	Blank	<0.1	<0.02	<0.02	<0.1	<0.1	<0.05	<0.1	<0.01	<0.1	<0.02	<1	<0.1	<0.1	<10	<2
Prep Wash																
G1	Prep Blank	<0.1	0.07	0.29	37.2	0.5	<0.05	1.0	3.99	17.0	0.05	3	0.3	30.1	<10	<2
G1	Prep Blank	<0.1	0.07	0.36	41.7	0.5	<0.05	1.2	4.76	19.9	0.02	<1	0.3	32.3	<10	<2

## **Appendix C**

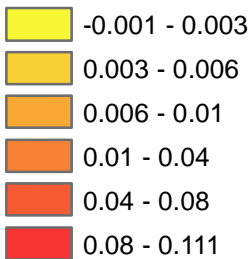
### **B-Horizon Soil Survey Plots**

# Troitsa B-Horizon Cu



**Cu 1F15 % 0.000001**

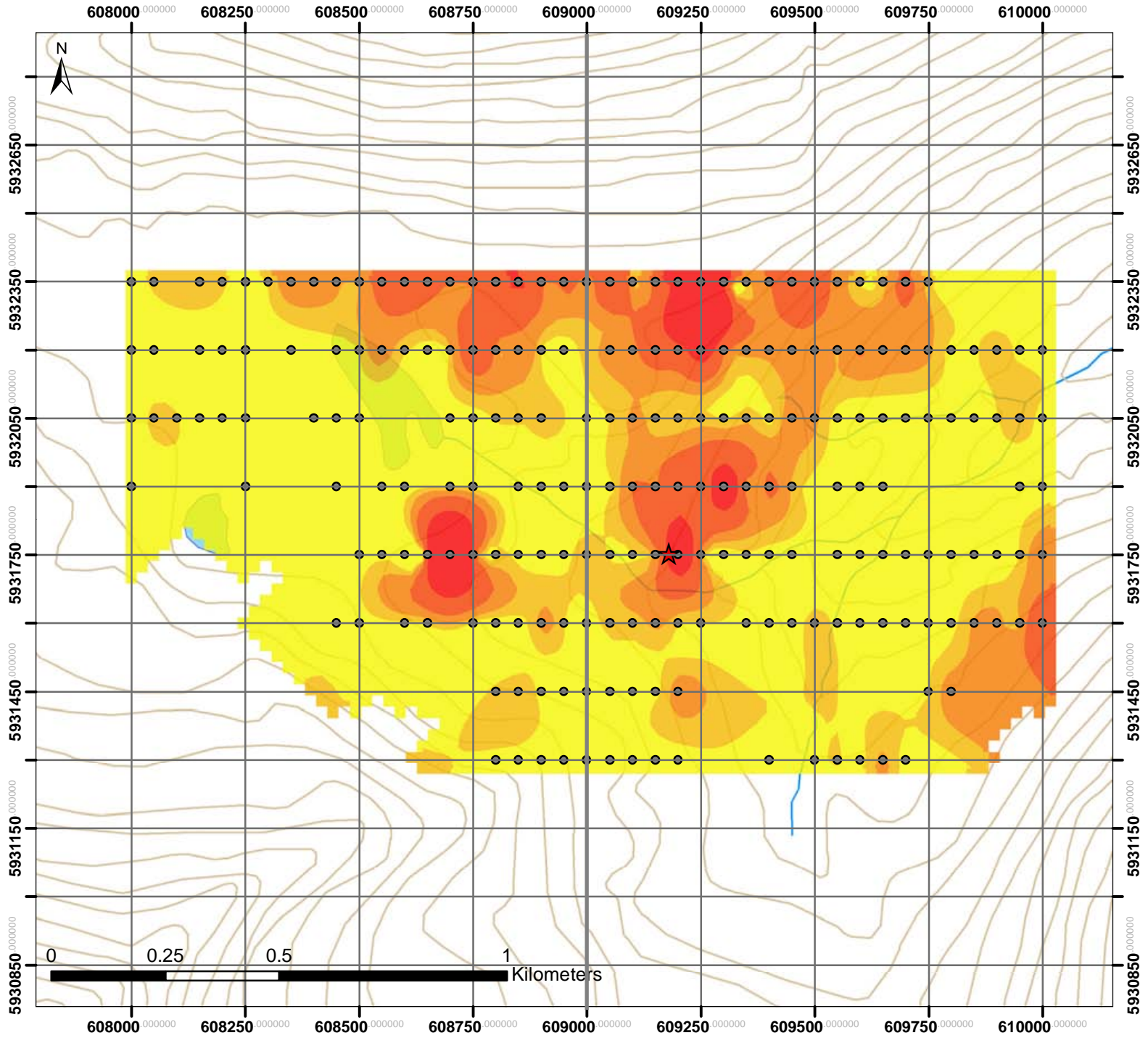
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Troitsa Main Showing

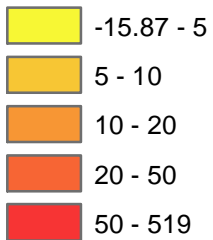


# Troitsa B-Horizon Mo



## Mo Grid 1F15 ppm 0.01

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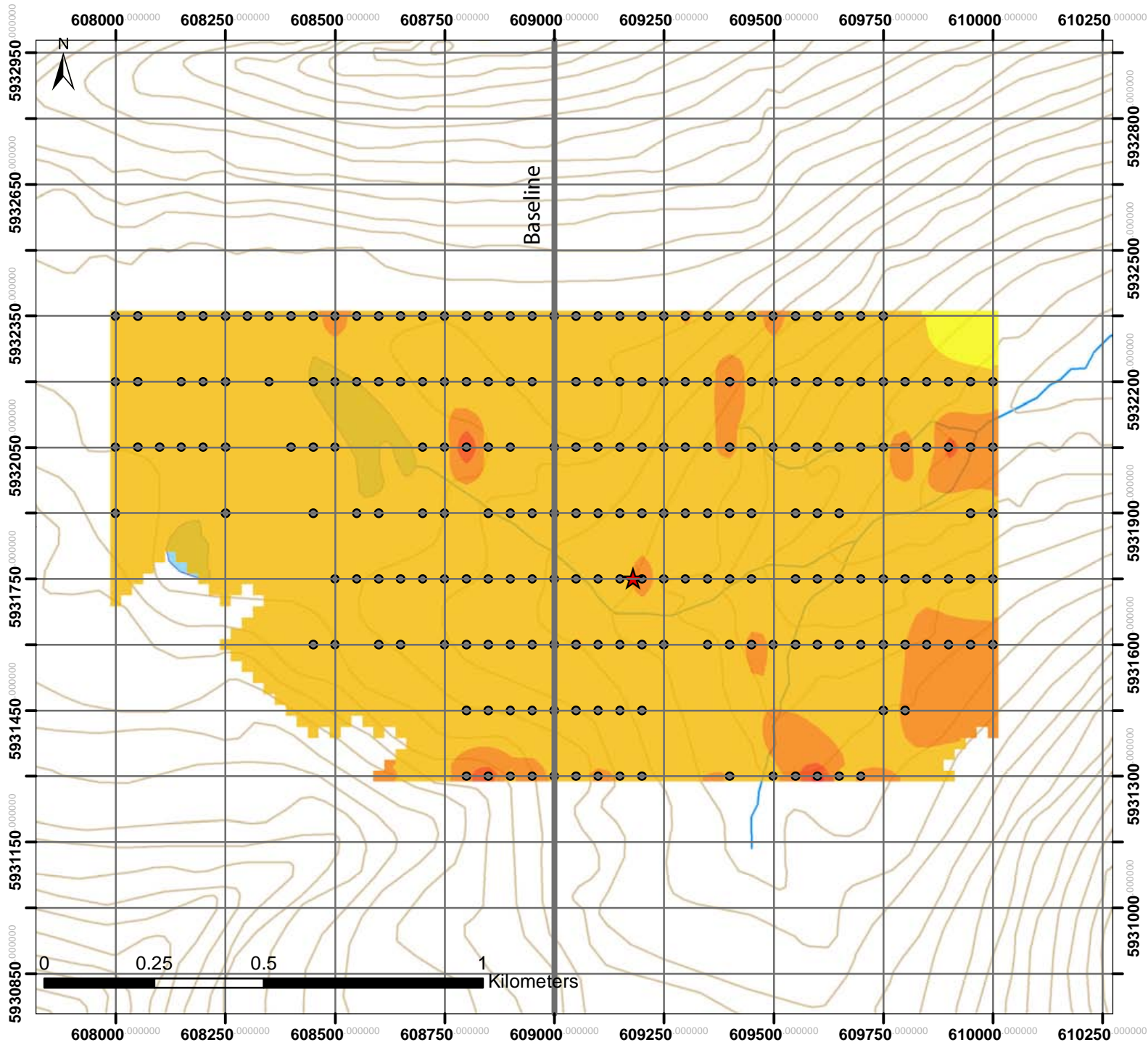


★ Troitsa Main Showing



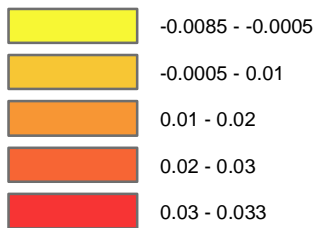
**CALLINAN MINES**  
LIMITED

# Troitsa B-Horizon Au



## Au Grid G6 g/mt 0.005

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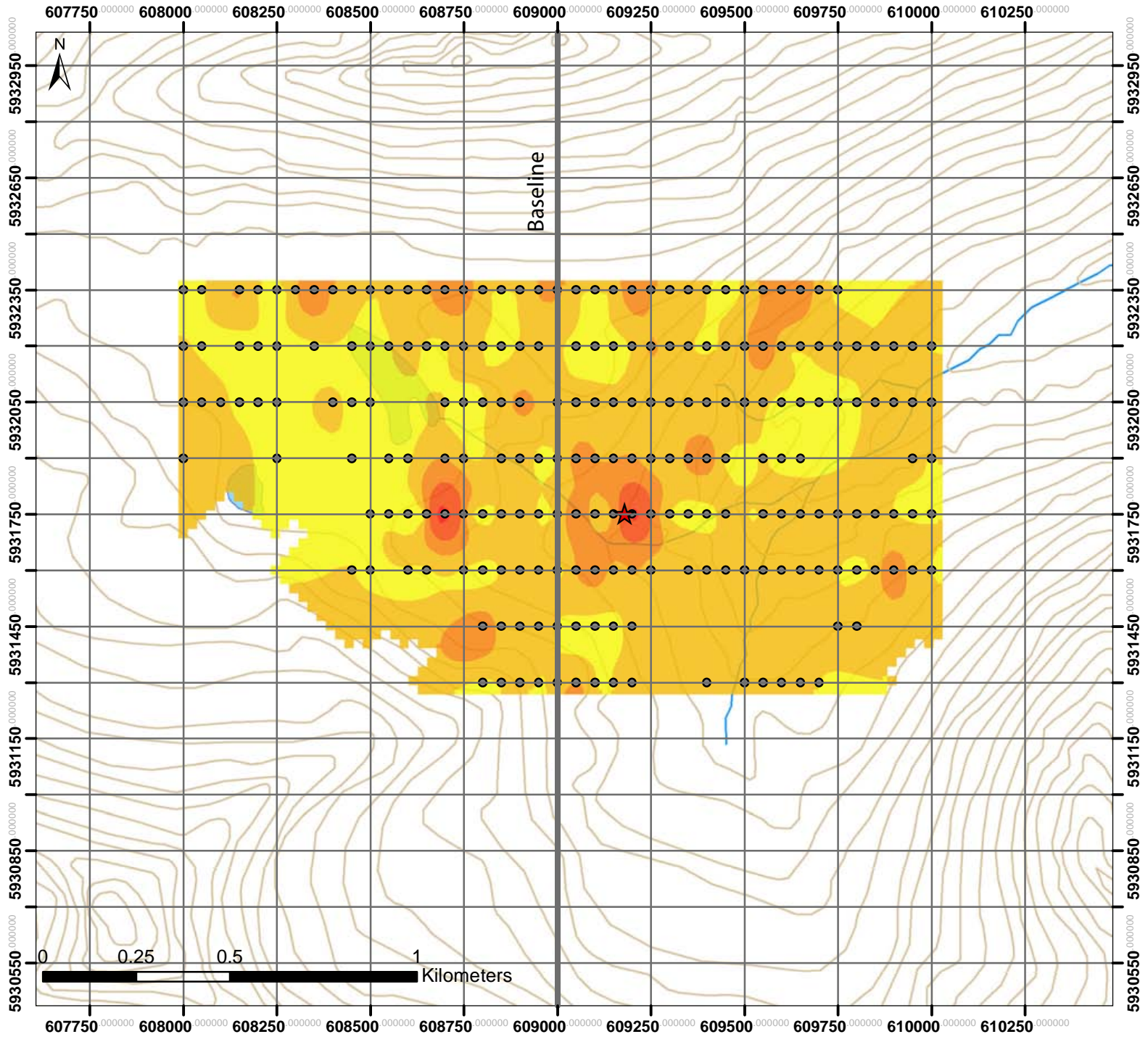
★ Troitsa Main Showing



**CALLINAN MINES**  
LIMITED

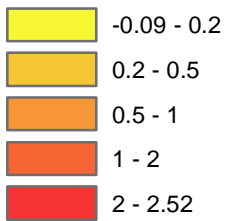


# Troitsa B-Horizon Ag



**Ag 1F15 g/mt 0.002**

**<VALUE>**



★ Troitsa Main Showing



**Appendix D**

**B-Horizon Soil Survey Assay Certificates**



1020 Cordova St. East Vancouver BC V6A 4A3 Canada

Acme Analytical Laboratories (Vancouver) Ltd.

www.acmelab.com

Client: Callinan Mines Limited
Suite 1100 - 736 Granville Street
Vancouver BC V6Z 1G3 Canada

Submitted By: Narissa Saretsky
Receiving Lab: Canada-Smithers
Received: September 24, 2010
Report Date: October 22, 2010
Page: 1 of 9

CERTIFICATE OF ANALYSIS

SMI10000620.1

CLIENT JOB INFORMATION

Project: Troitsa
Shipment ID:
P.O. Number
Number of Samples: 221

SAMPLE DISPOSAL

STOR-PLP Store After 90 days Invoice for Storage
DISP-RJT-SOIL Immediate Disposal of Soil Reject

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: Callinan Mines Limited
Suite 1100 - 736 Granville Street
Vancouver BC V6Z 1G3
Canada

CC:

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Table with 6 columns: Method Code, Number of Samples, Code Description, Test Wgt (g), Report Status, Lab. Rows include SS80, Dry at 60C, Soil Pulverize, G601, and 1F05.

ADDITIONAL COMMENTS



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. \*\* asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.



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 Suite 1100 - 736 Granville Street  
 Vancouver BC V6Z 1G3 Canada

Project: Troitsa  
 Report Date: October 22, 2010

Page: 2 of 9 Part 1

# CERTIFICATE OF ANALYSIS

SMI10000620.1

Method	Analyte	Unit	MDL	G6	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
				Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca
				gm/t	ppm	%	%	%	gm/t	ppm	ppm	%	%	ppm	ppm	gm/t	ppm	ppm	ppm	ppm	ppm	ppm	%
				0.005	0.01	1e-006	1e-006	1e-005	0.002	0.1	0.1	0.0001	0.01	0.1	0.1	0.0002	0.1	0.5	0.01	0.02	0.02	2	0.01
L1300N 8800E	Soil			0.016	3.57	0.0120	0.0018	0.0065	0.172	10.2	10.3	0.0604	2.91	17.6	1.6	0.0033	1.5	5.6	0.13	1.03	1.45	59	0.07
L1300N 8850E	Soil			0.029	3.31	0.0152	0.0021	0.0071	0.290	10.7	13.7	0.0886	3.31	26.7	2.3	0.0098	2.5	6.3	0.15	1.29	1.95	61	0.10
L1300N 8900E	Soil			0.008	2.19	0.0178	0.0019	0.0081	0.281	12.0	13.1	0.0951	3.37	25.4	1.2	0.0044	3.3	5.9	0.20	1.49	1.05	56	0.07
L1300N 8950E	Soil			0.020	2.53	0.0109	0.0020	0.0084	0.186	12.6	10.5	0.0652	3.37	24.1	1.2	0.0030	1.4	6.8	0.21	1.51	0.53	62	0.07
L1300N 9000E	Soil			<0.005	2.13	0.0035	0.0012	0.0043	0.323	5.5	4.0	0.0190	2.60	11.3	1.2	0.0024	0.3	5.6	0.12	0.67	0.35	49	0.04
L1300N 9050E	Soil			I.S.	2.94	0.0054	0.0012	0.0051	0.481	7.0	5.4	0.0283	2.87	13.3	1.5	0.0030	0.4	6.0	0.13	0.77	0.38	56	0.06
L1300N 9100E	Soil			0.013	1.30	0.0062	0.0021	0.0112	0.176	13.9	13.7	0.1181	3.59	29.3	0.5	0.0038	1.6	15.9	0.40	1.84	0.46	63	0.23
L1300N 9150E	Soil			0.008	1.18	0.0040	0.0016	0.0064	0.224	10.0	10.6	0.0676	3.06	27.2	0.9	0.0030	2.7	13.9	0.32	1.58	0.57	54	0.28
L1300N 9200E	Soil			0.007	2.30	0.0052	0.0016	0.0035	0.364	8.8	8.0	0.0341	2.57	7.8	2.1	0.0079	5.7	9.4	0.16	0.53	0.72	61	0.29
L1300N 9400E	Soil			0.010	1.80	0.0142	0.0015	0.0054	0.295	11.9	9.1	0.0546	2.47	13.5	1.2	0.0022	4.6	14.7	0.32	0.93	0.57	48	0.38
L1300N 9500E	Soil			0.007	3.25	0.0074	0.0012	0.0024	0.291	8.1	7.3	0.0251	3.09	9.2	2.8	0.0192	5.3	6.8	0.16	0.43	0.67	84	0.23
L1300N 9550E	Soil			0.017	5.79	0.0119	0.0014	0.0033	0.344	11.3	10.0	0.0375	3.34	17.6	4.1	0.0252	4.4	9.2	0.21	0.87	1.08	81	0.26
L1300N 9600E	Soil			0.032	2.43	0.0116	0.0014	0.0035	0.274	11.3	9.3	0.0405	3.50	14.8	2.5	0.0144	5.1	9.3	0.18	0.75	0.87	86	0.27
L1300N 9650E	Soil			0.008	11.62	0.0211	0.0015	0.0042	0.325	13.5	14.5	0.0621	3.39	18.0	4.0	0.0090	5.5	13.7	0.29	1.06	1.60	78	0.30
L1300N 9700E	Soil			0.011	2.11	0.0093	0.0007	0.0029	0.203	10.8	7.1	0.0251	2.85	8.0	2.1	0.0075	4.8	8.4	0.10	0.47	0.84	75	0.24
L1450N 8800E	Soil			<0.005	7.98	0.0276	0.0041	0.0067	0.793	13.4	14.8	0.0880	3.18	18.6	8.3	0.1104	3.9	6.8	0.41	1.46	3.25	55	0.17
L1450N 8850E	Soil			<0.005	9.64	0.0280	0.0025	0.0071	0.274	11.1	7.7	0.0340	2.71	16.1	12.4	0.0125	1.5	10.3	0.16	0.99	2.07	55	0.15
L1450N 8900E	Soil			<0.005	2.06	0.0050	0.0010	0.0047	0.204	6.4	5.0	0.0215	2.23	13.4	1.2	0.0054	1.0	5.4	0.07	0.73	0.33	50	0.07
L1450N 8950E	Soil			<0.005	2.99	0.0118	0.0013	0.0059	0.312	9.6	7.0	0.0297	2.45	14.8	1.6	0.0025	1.4	6.7	0.08	0.89	0.99	51	0.12
L1450N 9000E	Soil			<0.005	2.26	0.0066	0.0014	0.0063	0.171	9.6	6.8	0.0381	2.81	19.9	0.6	0.0021	0.7	6.5	0.16	1.14	0.42	48	0.09
L1450N 9050E	Soil			<0.005	4.62	0.0044	0.0009	0.0046	0.145	6.9	5.6	0.0270	2.67	19.3	0.9	0.0013	0.9	5.3	0.14	0.91	0.24	53	0.07
L1450N 9100E	Soil			<0.005	3.01	0.0058	0.0015	0.0058	0.132	8.8	6.9	0.0378	2.81	18.0	0.8	0.0015	0.9	5.6	0.10	1.07	0.46	47	0.07
L1450N 9150E	Soil			<0.005	2.53	0.0015	0.0008	0.0027	0.114	4.2	3.3	0.0159	2.50	7.3	1.1	0.0310	0.3	5.4	0.11	0.39	0.34	55	0.04
L1450N 9200E	Soil			<0.005	15.80	0.0053	0.0013	0.0058	0.310	7.9	7.8	0.0351	3.38	18.8	4.5	0.0017	0.5	15.0	0.12	0.79	0.27	68	0.14
L1450N 9750E	Soil			<0.005	3.95	0.0125	0.0010	0.0031	0.211	10.8	9.1	0.0342	2.95	10.3	2.6	0.0049	5.2	8.1	0.13	0.51	1.13	76	0.23
L1450N 9800E	Soil			0.013	15.26	0.0307	0.0021	0.0048	0.324	11.5	13.0	0.0351	3.73	10.1	8.1	0.0180	5.8	14.6	0.22	0.77	2.89	99	0.29
L1600N 8450E	Soil			0.006	3.35	0.0051	0.0009	0.0042	0.211	9.8	9.3	0.0500	2.75	11.1	3.2	0.0017	6.2	12.0	0.15	0.74	1.25	60	0.29
L1600N 8500E	Soil			0.006	3.69	0.0037	0.0008	0.0041	0.156	9.9	8.3	0.0347	3.11	16.4	3.3	0.0035	5.5	17.2	0.11	0.65	1.27	77	0.36
L1600N 08600E	Soil			0.005	3.73	0.0048	0.0012	0.0049	0.187	8.6	7.3	0.0357	2.53	14.8	2.4	0.0038	0.9	8.2	0.21	0.84	0.75	58	0.14
L1600N 08650E	Soil			<0.005	4.06	0.0063	0.0011	0.0051	0.159	11.9	10.7	0.0563	2.96	12.3	4.0	0.0038	5.4	15.8	0.13	0.70	1.23	68	0.27

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.



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Vancouver BC V6Z 1G3 Canada

**Project:** Troitsa  
**Report Date:** October 22, 2010

**Page:** 2 of 9 Part 2

# CERTIFICATE OF ANALYSIS

SMI10000620.1

Method	Analyte	Unit	MDL	1F15 P	1F15 La	1F15 Cr	1F15 Mg	1F15 Ba	1F15 Ti	1F15 B	1F15 Al	1F15 Na	1F15 K	1F15 W	1F15 Sc	1F15 Ti	1F15 S	1F15 Hg	1F15 Se	1F15 Te	1F15 Ga	1F15 Cs	1F15 Ge
				%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm
				0.001	0.5	0.5	0.01	0.5	0.001	1	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	0.1
L1300N 8800E	Soil			0.109	7.3	18.2	0.50	37.3	0.030	1	1.67	0.006	0.06	1.2	3.2	0.08	<0.02	13	0.3	0.12	5.5	2.63	<0.1
L1300N 8850E	Soil			0.118	9.2	17.6	0.51	45.1	0.024	<1	1.72	0.008	0.06	0.9	3.9	0.10	<0.02	19	0.5	0.16	5.0	2.88	<0.1
L1300N 8900E	Soil			0.097	8.9	18.2	0.55	66.0	0.030	1	1.78	0.008	0.08	1.0	5.7	0.12	<0.02	24	0.3	0.30	4.7	2.84	<0.1
L1300N 8950E	Soil			0.074	9.9	20.9	0.61	86.0	0.024	1	2.06	0.007	0.08	0.5	4.7	0.12	<0.02	18	0.3	0.16	6.1	3.54	<0.1
L1300N 9000E	Soil			0.064	10.3	18.8	0.33	39.1	0.034	1	2.53	0.007	0.04	0.2	2.6	0.08	0.04	68	0.7	0.04	7.4	2.15	<0.1
L1300N 9050E	Soil			0.096	8.1	17.9	0.42	52.4	0.013	<1	2.38	0.007	0.06	0.7	1.5	0.13	0.05	53	0.8	0.07	7.3	3.38	<0.1
L1300N 9100E	Soil			0.072	9.0	21.2	0.62	119.1	0.035	1	1.52	0.016	0.10	0.2	6.9	0.11	<0.02	26	0.2	0.22	4.4	2.59	<0.1
L1300N 9150E	Soil			0.086	9.3	18.5	0.43	51.8	0.034	<1	0.82	0.016	0.05	0.2	4.0	0.08	<0.02	17	0.2	0.14	2.9	1.24	<0.1
L1300N 9200E	Soil			0.114	12.5	25.7	0.42	33.5	0.036	<1	0.57	0.012	0.04	0.5	1.9	0.03	<0.02	12	<0.1	0.10	3.0	0.73	<0.1
L1300N 9400E	Soil			0.078	10.0	22.1	0.53	90.0	0.032	1	0.99	0.024	0.12	0.8	3.4	0.08	0.06	13	<0.1	0.07	3.6	1.98	<0.1
L1300N 9500E	Soil			0.102	12.8	32.8	0.23	25.1	0.031	<1	0.37	0.012	0.04	0.9	1.4	<0.02	<0.02	8	<0.1	0.07	2.4	0.59	<0.1
L1300N 9550E	Soil			0.099	11.0	34.9	0.30	35.1	0.027	<1	0.51	0.010	0.04	2.1	2.0	0.03	0.03	19	0.2	0.13	2.7	0.87	<0.1
L1300N 9600E	Soil			0.116	12.1	35.0	0.36	37.7	0.031	<1	0.57	0.013	0.04	1.5	2.2	0.03	0.03	15	0.2	0.11	2.8	0.93	<0.1
L1300N 9650E	Soil			0.101	13.9	33.5	0.43	58.0	0.036	<1	0.71	0.013	0.06	3.0	3.0	0.07	0.02	14	0.3	0.19	3.2	1.36	<0.1
L1300N 9700E	Soil			0.091	11.5	30.3	0.32	40.5	0.033	<1	0.51	0.011	0.05	0.9	1.9	0.02	<0.02	9	0.1	0.07	2.5	0.76	<0.1
L1450N 8800E	Soil			0.107	15.6	19.2	0.58	64.5	0.023	<1	1.44	0.006	0.08	1.5	3.8	0.10	<0.02	30	0.3	0.36	4.8	3.59	<0.1
L1450N 8850E	Soil			0.085	10.4	21.4	0.55	51.8	0.028	<1	1.89	0.008	0.07	1.0	3.6	0.11	0.03	42	0.4	0.17	5.3	3.36	<0.1
L1450N 8900E	Soil			0.070	7.3	19.0	0.37	27.0	0.026	<1	2.52	0.006	0.03	0.4	3.0	0.06	0.03	46	0.5	0.07	5.0	1.30	<0.1
L1450N 8950E	Soil			0.097	11.0	19.0	0.46	40.3	0.025	1	1.64	0.007	0.06	0.8	3.5	0.10	<0.02	28	0.4	0.13	4.7	2.40	<0.1
L1450N 9000E	Soil			0.070	7.8	16.1	0.47	56.5	0.015	2	1.85	0.008	0.08	0.3	3.2	0.13	<0.02	35	0.4	0.11	4.8	2.72	<0.1
L1450N 9050E	Soil			0.070	7.9	17.1	0.39	29.1	0.039	1	2.17	0.008	0.05	0.3	3.2	0.06	0.03	45	0.7	0.09	5.3	1.69	<0.1
L1450N 9100E	Soil			0.061	7.0	15.5	0.46	41.6	0.019	<1	1.73	0.006	0.07	0.3	3.2	0.11	<0.02	29	0.5	0.09	4.8	2.51	<0.1
L1450N 9150E	Soil			0.075	5.0	16.2	0.24	28.9	0.043	1	1.68	0.006	0.05	0.1	1.2	0.09	0.05	60	0.6	0.04	8.5	2.24	<0.1
L1450N 9200E	Soil			0.087	10.1	20.5	0.61	67.6	0.059	2	3.28	0.011	0.08	0.2	3.5	0.13	0.05	58	1.0	0.06	7.8	2.67	<0.1
L1450N 9750E	Soil			0.100	12.2	32.1	0.33	39.1	0.034	<1	0.55	0.011	0.05	1.8	2.1	0.04	<0.02	16	0.2	0.15	2.9	0.90	<0.1
L1450N 9800E	Soil			0.121	14.4	41.6	0.43	45.9	0.038	1	0.69	0.009	0.05	7.8	2.5	0.04	<0.02	15	0.3	0.19	3.8	1.66	<0.1
L1600N 8450E	Soil			0.109	15.0	22.7	0.53	45.0	0.037	<1	0.81	0.015	0.06	0.3	2.6	0.05	<0.02	13	0.1	0.11	3.8	1.45	<0.1
L1600N 8500E	Soil			0.104	11.4	29.8	0.52	44.0	0.032	<1	0.85	0.012	0.06	0.6	2.4	0.04	<0.02	17	0.1	0.08	4.2	1.38	<0.1
L1600N 08600E	Soil			0.084	11.4	16.9	0.40	52.0	0.019	<1	1.34	0.010	0.06	0.2	2.7	0.10	<0.02	27	0.3	0.06	4.9	1.95	<0.1
L1600N 08650E	Soil			0.103	14.8	28.2	0.61	50.8	0.050	<1	1.10	0.015	0.06	0.2	3.5	0.06	<0.02	17	0.3	0.12	4.6	1.81	<0.1

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Project: Troitsa  
 Report Date: October 22, 2010

Page: 2 of 9 Part 3

CERTIFICATE OF ANALYSIS

SMI10000620.1

Method	Analyte	Unit	MDL	1F15 Hf	1F15 Nb	1F15 Rb	1F15 Sn	1F15 Ta	1F15 Zr	1F15 Y	1F15 Ce	1F15 In	1F15 Re	1F15 Be	1F15 Li	1F15 Pd	1F15 Pt
		ppm		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppb	ppb
L1300N 8800E	Soil	<0.02	0.27	7.6	0.3	<0.05	0.3	4.54	18.2	0.04	<1	0.3	13.1	<10	<2		
L1300N 8850E	Soil	<0.02	0.23	7.1	0.3	<0.05	0.4	5.67	25.6	0.04	<1	0.3	12.6	<10	<2		
L1300N 8900E	Soil	<0.02	0.18	6.5	0.3	<0.05	1.1	5.59	26.5	0.04	<1	0.4	11.8	<10	<2		
L1300N 8950E	Soil	<0.02	0.31	8.4	0.4	<0.05	0.6	7.74	22.3	0.05	<1	0.4	15.6	<10	<2		
L1300N 9000E	Soil	<0.02	1.74	6.9	0.6	<0.05	1.1	10.27	22.1	0.04	<1	0.2	8.6	<10	<2		
L1300N 9050E	Soil	<0.02	0.88	8.6	0.5	<0.05	0.3	5.51	15.3	0.05	1	0.2	9.0	<10	<2		
L1300N 9100E	Soil	0.03	0.05	5.7	0.3	<0.05	1.7	10.95	19.0	0.04	<1	0.5	13.6	<10	<2		
L1300N 9150E	Soil	0.02	0.10	2.9	0.2	<0.05	1.3	8.79	18.5	0.02	<1	0.2	8.7	<10	<2		
L1300N 9200E	Soil	<0.02	0.15	3.6	0.2	<0.05	0.4	5.68	25.0	<0.02	<1	0.1	7.6	<10	<2		
L1300N 9400E	Soil	0.04	0.04	7.2	0.2	<0.05	1.4	6.79	20.7	0.03	1	0.2	11.8	<10	<2		
L1300N 9500E	Soil	<0.02	0.14	3.1	0.2	<0.05	0.6	5.34	25.4	<0.02	<1	0.2	5.9	<10	<2		
L1300N 9550E	Soil	<0.02	0.14	3.6	0.2	<0.05	0.4	6.49	22.5	0.03	<1	0.2	7.1	<10	<2		
L1300N 9600E	Soil	0.04	0.11	3.5	0.2	<0.05	1.1	6.91	25.3	0.02	<1	0.2	7.3	<10	<2		
L1300N 9650E	Soil	<0.02	0.22	5.4	0.2	<0.05	0.8	8.11	29.6	0.03	<1	0.2	9.3	<10	<2		
L1300N 9700E	Soil	0.03	0.13	4.0	0.2	<0.05	0.9	5.95	23.4	<0.02	<1	0.2	7.1	<10	<2		
L1450N 8800E	Soil	<0.02	0.18	8.7	0.3	<0.05	0.2	9.03	39.2	0.03	<1	0.5	15.6	<10	<2		
L1450N 8850E	Soil	<0.02	0.39	7.9	0.3	<0.05	0.3	6.34	22.6	0.04	<1	0.3	16.6	<10	<2		
L1450N 8900E	Soil	<0.02	0.57	3.4	0.3	<0.05	1.0	4.86	14.7	0.04	<1	0.2	10.2	<10	<2		
L1450N 8950E	Soil	<0.02	0.33	6.8	0.3	<0.05	0.4	7.79	23.9	0.03	<1	0.2	12.3	<10	<2		
L1450N 9000E	Soil	<0.02	0.34	6.3	0.3	<0.05	0.2	5.71	15.6	0.03	<1	0.4	12.2	<10	<2		
L1450N 9050E	Soil	<0.02	0.59	4.6	0.3	<0.05	0.6	6.08	16.1	0.03	<1	0.1	10.3	<10	<2		
L1450N 9100E	Soil	<0.02	0.31	6.4	0.3	<0.05	0.2	4.32	15.6	0.03	<1	0.3	12.6	<10	<2		
L1450N 9150E	Soil	<0.02	1.33	5.7	0.6	<0.05	0.7	1.92	9.5	0.03	<1	<0.1	4.0	<10	<2		
L1450N 9200E	Soil	<0.02	2.70	8.4	0.8	<0.05	2.2	10.41	22.9	0.04	<1	0.4	13.7	<10	<2		
L1450N 9750E	Soil	<0.02	0.30	4.8	0.2	<0.05	0.7	6.05	26.1	<0.02	<1	0.2	7.0	<10	<2		
L1450N 9800E	Soil	<0.02	0.19	6.7	0.2	<0.05	0.5	7.06	30.2	0.03	1	0.2	8.9	<10	<2		
L1600N 8450E	Soil	<0.02	0.16	5.3	0.2	<0.05	0.3	7.90	29.7	0.02	<1	0.2	11.1	<10	<2		
L1600N 8500E	Soil	<0.02	0.23	5.3	0.2	<0.05	0.2	5.87	26.1	<0.02	<1	0.1	11.3	<10	<2		
L1600N 08600E	Soil	<0.02	0.15	5.9	0.2	<0.05	<0.1	6.78	23.0	0.03	<1	0.2	11.6	<10	<2		
L1600N 08650E	Soil	<0.02	0.20	5.8	0.2	<0.05	0.5	8.34	30.5	0.03	<1	0.4	13.1	<10	<2		

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Page: 3 of 9 Part 1

CERTIFICATE OF ANALYSIS

SMI10000620.1

Method	Analyte	G6	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
		Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	
Unit		gm/t	ppm	%	%	%	gm/t	ppm	ppm	%	%	ppm	ppm	gm/t	ppm	ppm	ppm	ppm	ppm	ppm	%	
MDL		0.005	0.01	1e-006	1e-006	1e-005	0.002	0.1	0.1	0.0001	0.01	0.1	0.1	0.0002	0.1	0.5	0.01	0.02	0.02	ppm	2	0.01
L1600N 08700E	Soil	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
L1600N 08750E	Soil	<0.005	1.67	0.0026	0.0010	0.0029	0.154	4.8	2.7	0.0116	1.76	8.5	0.8	0.0012	0.2	4.9	0.05	0.41	0.26	44	0.04	
L1600N 08800E	Soil	<0.005	2.01	0.0027	0.0010	0.0059	0.140	7.7	5.4	0.0245	2.61	14.8	0.9	0.0019	0.6	4.6	0.06	0.68	0.26	61	0.06	
L1600N 08850E	Soil	0.009	1.51	0.0043	0.0016	0.0090	0.209	13.9	11.8	0.0822	3.41	24.3	0.9	0.0013	0.9	6.8	0.18	1.28	0.36	69	0.04	
L1600N 08900E	Soil	<0.005	14.63	0.0182	0.0031	0.0060	0.399	10.0	14.0	0.1133	2.89	15.4	5.8	0.0065	1.0	9.5	0.21	1.34	2.10	51	0.13	
L1600N 08950E	Soil	I.S.	3.63	0.0029	0.0011	0.0049	0.390	6.8	4.5	0.0196	3.19	14.7	1.4	0.0069	0.5	13.9	0.17	0.68	0.35	63	0.07	
L1600N 09000E	Soil	<0.005	2.79	0.0051	0.0010	0.0050	0.114	10.8	5.9	0.0316	2.89	14.5	0.9	0.0058	1.3	4.3	0.11	0.68	0.28	51	0.10	
L1600N 09050E	Soil	0.011	7.28	0.0048	0.0009	0.0027	0.539	5.8	3.2	0.0167	2.53	10.0	1.3	0.0018	0.4	3.4	0.10	0.45	0.42	48	0.04	
L1600N 09100E	Soil	0.006	5.75	0.0224	0.0011	0.0034	0.790	10.5	5.8	0.0300	2.21	8.8	1.2	0.0032	3.3	3.4	0.14	0.51	0.52	42	0.17	
L1600N 09150E	Soil	<0.005	12.80	0.0021	0.0019	0.0009	0.306	1.8	0.6	0.0041	0.84	3.7	1.3	0.0011	0.3	5.3	0.05	0.28	0.61	29	0.03	
L1600N 09200E	Soil	<0.005	4.38	0.0123	0.0015	0.0052	0.569	11.7	8.2	0.0618	2.74	12.3	1.1	0.0017	1.0	7.2	0.14	0.62	0.42	57	0.15	
L1600N 09250E	Soil	<0.005	5.22	0.0156	0.0023	0.0087	0.286	20.2	11.7	0.0866	3.27	22.1	1.9	0.0030	5.7	6.5	0.32	0.78	1.13	56	0.14	
L1600N 09300E	Soil	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
L1600N 09350E	Soil	I.S.	2.76	0.0060	0.0016	0.0053	0.396	11.7	11.0	0.0808	3.09	14.4	1.7	0.0020	3.5	9.1	0.27	0.91	0.63	61	0.22	
L1600N 09400E	Soil	<0.005	2.34	0.0070	0.0015	0.0039	0.220	9.8	8.7	0.0459	2.71	10.2	2.0	0.0076	4.4	11.0	0.22	0.65	1.35	65	0.28	
L1600N 09450E	Soil	0.013	1.92	0.0073	0.0014	0.0036	0.288	9.0	8.2	0.0412	3.04	10.2	2.0	0.0077	2.3	8.6	0.13	0.63	0.81	73	0.22	
L1600N 09500E	Soil	I.S.	7.52	0.0073	0.0017	0.0034	0.313	9.6	9.1	0.0412	3.08	10.8	4.3	0.0069	4.1	8.7	0.14	0.69	1.11	73	0.23	
L1600N 09550E	Soil	<0.005	3.60	0.0079	0.0011	0.0030	0.202	9.3	7.5	0.0243	3.25	9.3	2.1	0.0191	4.4	9.0	0.11	0.62	1.14	88	0.26	
L1600N 09600E	Soil	0.011	3.09	0.0133	0.0016	0.0036	0.417	10.3	8.0	0.0368	2.59	7.9	2.7	0.0049	7.2	10.3	0.21	0.55	1.34	62	0.30	
L1600N 09650E	Soil	<0.005	1.97	0.0081	0.0010	0.0025	0.200	8.5	7.4	0.0315	2.83	7.0	1.8	0.0051	4.8	6.1	0.07	0.52	0.65	74	0.17	
L1600N 09700E	Soil	0.006	3.85	0.0141	0.0016	0.0032	0.276	10.6	10.1	0.0449	3.41	10.3	3.0	0.0217	5.2	8.2	0.09	0.65	1.48	87	0.20	
L1600N 09750E	Soil	<0.005	1.53	0.0091	0.0007	0.0025	0.193	9.0	6.9	0.0292	2.89	9.3	2.0	0.0081	4.4	7.5	0.07	0.49	0.67	77	0.22	
L1600N 09800E	Soil	0.010	2.48	0.0120	0.0008	0.0037	0.185	11.4	8.1	0.0320	2.99	8.3	2.9	0.0052	5.2	9.2	0.13	0.47	0.73	80	0.25	
L1600N 09850E	Soil	0.015	11.17	0.0160	0.0015	0.0063	0.242	16.3	10.6	0.0446	2.97	17.6	6.1	0.0190	2.1	17.1	0.15	0.94	0.97	57	0.20	
L1600N 09900E	Soil	I.S.	15.06	0.0220	0.0013	0.0034	0.912	8.5	4.9	0.0125	2.39	5.3	10.1	0.0077	0.5	8.3	0.16	0.61	0.78	47	0.12	
L1600N 09950E	Soil	I.S.	7.06	0.0024	0.0013	0.0022	0.291	7.0	5.0	0.0150	2.14	2.8	2.0	0.0029	1.2	5.3	0.05	0.22	1.05	66	0.06	
L1600N 10000E	Soil	0.015	41.68	0.0107	0.0016	0.0048	0.182	6.5	6.1	0.0420	2.65	11.8	9.4	0.0717	0.3	20.7	0.13	0.76	1.92	57	0.19	
L1750N 8500E	Soil	<0.005	1.54	0.0045	0.0006	0.0030	0.108	7.1	5.7	0.0279	2.09	5.0	2.8	0.0009	7.4	12.0	0.09	0.41	0.19	51	0.30	
L1750N 8550E	Soil	<0.005	2.98	0.0047	0.0006	0.0031	0.172	8.0	6.3	0.0279	2.58	5.6	3.3	0.0017	6.5	13.3	0.10	0.48	0.20	69	0.31	
L1750N 8600E	Soil	<0.005	1.28	0.0046	0.0007	0.0032	0.104	7.9	6.6	0.0351	2.20	5.3	2.2	0.0013	6.9	13.3	0.10	0.42	0.18	56	0.31	

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Report Date: October 22, 2010

Page: 3 of 9 Part 2

CERTIFICATE OF ANALYSIS

SMI10000620.1

Method	Analyte	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15
		P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Ti	S	Hg	Se	Te	Ga	Cs	Ge
Unit		%	ppm	ppm	%	ppm	%	ppm	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm	ppm
MDL		0.001	0.5	0.5	0.01	0.5	0.001	1	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	0.1
L1600N 08700E	Soil	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
L1600N 08750E	Soil	0.059	5.8	14.4	0.24	28.5	0.013	<1	1.42	0.006	0.04	0.2	1.2	0.11	0.03	49	0.3	<0.02	4.7	1.91	<0.1
L1600N 08800E	Soil	0.070	6.0	19.1	0.44	29.5	0.037	1	2.28	0.010	0.07	0.2	3.8	0.10	0.03	67	0.7	0.07	6.9	2.14	<0.1
L1600N 08850E	Soil	0.084	7.9	21.5	0.59	69.4	0.034	1	2.34	0.010	0.09	0.2	5.7	0.15	<0.02	16	0.3	0.11	6.3	3.55	<0.1
L1600N 08900E	Soil	0.117	12.0	19.2	0.46	56.8	0.013	<1	1.67	0.008	0.08	1.0	2.5	0.15	0.04	52	0.6	0.15	5.0	3.34	<0.1
L1600N 08950E	Soil	0.050	9.3	19.5	0.40	56.5	0.047	<1	3.12	0.009	0.06	0.2	4.0	0.12	0.05	72	0.9	0.05	10.9	2.21	<0.1
L1600N 09000E	Soil	0.072	6.9	20.8	0.40	31.9	0.024	<1	2.59	0.006	0.04	0.7	2.8	0.07	0.03	48	0.8	0.07	5.1	1.36	<0.1
L1600N 09050E	Soil	0.059	5.1	17.8	0.27	23.5	0.053	1	2.19	0.008	0.05	0.8	1.7	0.10	0.06	98	1.0	0.07	9.1	1.98	<0.1
L1600N 09100E	Soil	0.097	9.0	16.7	0.35	31.3	0.017	<1	1.48	0.004	0.05	1.7	1.9	0.06	<0.02	47	0.3	0.09	3.7	1.30	<0.1
L1600N 09150E	Soil	0.018	5.5	7.5	0.04	23.3	0.061	3	0.88	0.006	0.02	0.2	1.0	0.19	<0.02	11	0.3	0.02	7.9	1.95	<0.1
L1600N 09200E	Soil	0.076	11.0	19.7	0.45	57.9	0.023	<1	1.38	0.008	0.07	1.3	2.5	0.10	<0.02	27	0.4	0.10	4.7	2.13	<0.1
L1600N 09250E	Soil	0.085	16.7	20.2	0.58	79.5	0.044	<1	1.54	0.009	0.15	0.9	4.0	0.14	<0.02	25	0.2	0.12	5.8	4.09	<0.1
L1600N 09300E	Soil	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
L1600N 09350E	Soil	0.081	10.9	20.6	0.48	33.9	0.046	1	0.91	0.012	0.07	0.6	3.3	0.11	<0.02	22	0.4	0.13	4.1	1.31	<0.1
L1600N 09400E	Soil	0.103	11.4	23.5	0.41	33.8	0.041	<1	0.68	0.013	0.05	0.6	2.4	0.05	<0.02	13	<0.1	0.07	3.1	1.03	<0.1
L1600N 09450E	Soil	0.092	10.3	26.9	0.37	25.9	0.032	<1	0.67	0.013	0.04	0.9	2.2	0.05	<0.02	20	0.2	0.37	3.1	1.08	<0.1
L1600N 09500E	Soil	0.103	10.8	26.7	0.37	25.1	0.033	<1	0.62	0.013	0.04	0.6	2.0	0.04	<0.02	19	0.3	0.13	3.1	0.89	<0.1
L1600N 09550E	Soil	0.100	11.0	33.7	0.30	24.6	0.027	<1	0.50	0.011	0.04	1.5	1.7	0.02	<0.02	<5	0.1	0.08	2.7	0.84	<0.1
L1600N 09600E	Soil	0.113	14.0	23.7	0.42	54.5	0.043	<1	0.62	0.016	0.07	1.2	2.1	0.05	<0.02	13	0.1	0.08	3.1	1.07	<0.1
L1600N 09650E	Soil	0.079	8.7	27.5	0.31	19.0	0.035	<1	0.52	0.013	0.04	1.0	1.9	0.03	<0.02	15	0.1	0.08	2.8	0.79	<0.1
L1600N 09700E	Soil	0.092	11.0	32.1	0.38	35.3	0.038	<1	0.66	0.014	0.06	2.4	2.3	0.05	<0.02	12	0.2	0.14	3.3	1.13	<0.1
L1600N 09750E	Soil	0.093	9.8	28.9	0.26	21.7	0.030	<1	0.41	0.012	0.03	0.8	1.6	0.02	<0.02	7	<0.1	0.06	2.4	0.56	<0.1
L1600N 09800E	Soil	0.097	11.6	30.5	0.35	48.8	0.039	<1	0.62	0.017	0.07	1.3	2.0	0.03	<0.02	12	0.2	0.09	3.2	1.04	<0.1
L1600N 09850E	Soil	0.068	10.1	23.9	0.56	97.9	0.031	1	1.65	0.016	0.10	1.2	3.4	0.11	<0.02	24	0.6	0.10	5.0	2.97	<0.1
L1600N 09900E	Soil	0.121	12.3	18.4	0.39	26.3	0.029	1	2.06	0.009	0.04	0.9	1.6	0.06	0.11	87	1.4	0.05	4.4	1.55	<0.1
L1600N 09950E	Soil	0.039	4.2	28.7	0.38	32.1	0.098	1	0.84	0.006	0.04	0.4	1.2	0.07	0.03	19	0.3	<0.02	8.0	2.65	<0.1
L1600N 10000E	Soil	0.068	7.4	11.9	0.40	75.3	0.018	2	1.36	0.008	0.06	1.1	1.3	0.10	0.05	9	0.5	0.08	6.4	4.37	<0.1
L1750N 8500E	Soil	0.108	12.5	19.0	0.38	41.1	0.040	<1	0.56	0.013	0.06	0.3	1.8	0.03	<0.02	5	<0.1	0.03	3.0	0.95	<0.1
L1750N 8550E	Soil	0.107	12.7	25.8	0.36	42.1	0.042	<1	0.59	0.014	0.06	0.4	1.9	0.03	<0.02	7	0.1	0.03	3.1	0.94	<0.1
L1750N 8600E	Soil	0.104	12.7	20.6	0.38	51.1	0.048	<1	0.64	0.018	0.07	0.4	2.2	0.04	<0.02	<5	0.1	0.04	3.2	1.03	<0.1

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Project: Troitsa  
 Report Date: October 22, 2010

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CERTIFICATE OF ANALYSIS

SMI10000620.1

Method	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
Analyte	Hf	Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pd	Pt	
Unit	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppb	ppb	
MDL	0.02	0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2	
L1600N 08700E	Soil	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	
L1600N 08750E	Soil	<0.02	0.31	4.8	0.3	<0.05	0.2	3.01	12.2	0.02	<1	0.2	8.8	<10	<2
L1600N 08800E	Soil	<0.02	0.51	6.2	0.4	<0.05	0.5	3.91	12.5	0.04	<1	0.1	9.7	<10	<2
L1600N 08850E	Soil	<0.02	0.27	9.1	0.4	<0.05	0.3	7.17	19.1	0.03	<1	0.4	14.4	<10	<2
L1600N 08900E	Soil	<0.02	0.19	10.6	0.3	<0.05	0.1	7.09	27.1	0.03	<1	0.4	13.3	12	<2
L1600N 08950E	Soil	0.04	5.75	6.1	1.1	<0.05	3.7	8.81	18.7	0.04	<1	0.3	12.4	<10	<2
L1600N 09000E	Soil	0.04	1.18	3.7	0.2	<0.05	2.1	4.05	14.8	0.03	<1	0.3	13.1	<10	<2
L1600N 09050E	Soil	<0.02	1.40	5.0	0.4	<0.05	0.5	2.26	10.6	0.03	1	0.2	6.1	<10	<2
L1600N 09100E	Soil	<0.02	0.49	4.7	0.1	<0.05	0.4	3.76	18.5	0.02	<1	0.3	10.4	<10	<2
L1600N 09150E	Soil	<0.02	1.56	3.8	0.8	<0.05	0.2	1.48	11.4	<0.02	<1	0.1	6.5	<10	<2
L1600N 09200E	Soil	<0.02	0.27	7.8	0.2	<0.05	0.2	6.17	24.7	0.03	<1	0.4	11.3	<10	<2
L1600N 09250E	Soil	0.05	0.30	14.7	0.3	<0.05	2.4	9.21	35.5	0.02	<1	0.6	19.1	<10	<2
L1600N 09300E	Soil	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
L1600N 09350E	Soil	<0.02	0.51	6.1	0.2	<0.05	0.3	7.28	25.6	<0.02	<1	0.3	10.4	<10	<2
L1600N 09400E	Soil	<0.02	0.26	3.8	0.2	<0.05	0.4	5.80	25.1	<0.02	<1	0.2	9.5	<10	<2
L1600N 09450E	Soil	<0.02	0.16	4.0	0.2	<0.05	0.2	5.56	22.5	<0.02	<1	0.2	8.6	<10	<2
L1600N 09500E	Soil	<0.02	0.20	3.4	0.2	<0.05	0.3	5.68	22.5	<0.02	<1	0.3	8.2	<10	<2
L1600N 09550E	Soil	<0.02	0.16	3.4	0.2	<0.05	0.5	5.31	23.8	<0.02	<1	0.1	7.0	<10	<2
L1600N 09600E	Soil	0.03	0.28	5.6	0.2	<0.05	1.2	6.90	29.9	0.02	<1	0.3	8.5	<10	<2
L1600N 09650E	Soil	<0.02	0.24	3.8	0.2	<0.05	0.6	4.42	19.6	<0.02	<1	0.1	6.8	<10	<2
L1600N 09700E	Soil	<0.02	0.25	4.8	0.2	<0.05	0.4	5.88	24.1	0.02	<1	0.2	8.3	<10	<2
L1600N 09750E	Soil	0.02	0.16	2.6	0.1	<0.05	0.9	5.45	21.1	<0.02	<1	0.1	5.7	<10	<2
L1600N 09800E	Soil	<0.02	0.29	5.4	0.3	<0.05	0.5	6.04	25.3	<0.02	<1	0.2	7.9	<10	<2
L1600N 09850E	Soil	<0.02	0.31	8.9	0.3	<0.05	0.2	6.34	19.2	0.03	<1	0.4	15.3	<10	<2
L1600N 09900E	Soil	<0.02	0.66	5.3	0.3	<0.05	0.4	7.23	21.2	0.03	<1	0.3	9.3	<10	<2
L1600N 09950E	Soil	<0.02	1.51	7.1	0.6	<0.05	0.5	1.68	8.3	<0.02	<1	0.1	6.4	<10	<2
L1600N 10000E	Soil	<0.02	0.25	14.3	0.4	<0.05	<0.1	5.11	11.6	0.02	<1	0.3	11.3	<10	<2
L1750N 8500E	Soil	0.04	0.19	5.8	0.2	<0.05	1.1	6.25	25.5	<0.02	<1	0.2	8.3	<10	<2
L1750N 8550E	Soil	0.03	0.23	5.2	0.2	<0.05	1.0	6.43	25.9	<0.02	<1	0.2	8.0	<10	<2
L1750N 8600E	Soil	0.02	0.29	5.9	0.2	<0.05	1.0	6.09	26.3	<0.02	<1	0.2	8.9	<10	<2

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**Project:** Troitsa  
**Report Date:** October 22, 2010

**Page:** 4 of 9 Part 1

# CERTIFICATE OF ANALYSIS

## SMI10000620.1

Method	Analyte	Unit	MDL	G6	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15		
				Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca
				gm/t	ppm	%	%	%	gm/t	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm		
				0.005	0.01	1e-006	1e-006	1e-005	0.002	0.1	0.1	0.0001	0.01	0.1	0.1	0.0002	0.1	0.5	0.01	0.02	0.02	2	0.01
L1750N 8650E	Soil	<0.005	1.74	0.0050	0.0008	0.0038	0.119	8.8	7.3	0.0398	2.34	6.1	2.0	0.0009	5.2	12.6	0.11	0.48	0.20	60	0.27		
L1750N 8700E	Soil	0.007	244.0	0.0847	0.0060	0.0033	2.884	5.6	11.4	0.2826	3.61	9.0	4.4	0.0131	0.7	4.9	0.16	4.56	10.11	41	0.06		
L1750N 8750E	Soil	<0.005	17.79	0.0284	0.0016	0.0058	0.371	18.4	8.2	0.0261	3.43	21.6	1.7	0.0015	1.3	7.8	0.08	1.30	1.06	89	0.13		
L1750N 8800E	Soil	<0.005	9.85	0.0059	0.0014	0.0032	0.199	5.2	2.7	0.0134	1.64	6.0	1.1	0.0009	0.1	6.3	0.05	0.42	0.42	41	0.04		
L1750N 8850E	Soil	<0.005	1.47	0.0096	0.0013	0.0084	0.214	14.4	8.8	0.0476	3.06	15.5	0.7	0.0018	1.3	7.7	0.11	0.92	0.26	62	0.07		
L1750N 8900E	Soil	<0.005	2.52	0.0067	0.0012	0.0042	0.390	8.8	11.1	0.0466	3.15	16.4	1.8	0.0018	1.0	5.1	0.13	0.65	0.31	54	0.05		
L1750N 8950E	Soil	<0.005	3.45	0.0065	0.0009	0.0041	0.112	7.8	5.4	0.0270	2.03	7.1	2.1	0.0017	0.8	10.0	0.09	0.57	0.31	59	0.18		
L1750N 9000E	Soil	<0.005	9.04	0.0068	0.0011	0.0037	0.239	6.8	4.5	0.0228	2.37	10.4	1.7	0.0015	0.5	9.8	0.11	0.51	0.33	44	0.08		
L1750N 9050E	Soil	<0.005	3.49	0.0036	0.0008	0.0026	0.937	7.1	4.0	0.0128	3.39	6.3	1.5	0.0020	0.5	4.1	0.19	0.37	0.19	69	0.03		
L1750N 9100E	Soil	<0.005	4.34	0.0022	0.0012	0.0036	0.173	6.1	4.0	0.0309	6.42	17.0	0.8	0.0009	2.1	5.1	0.17	0.72	0.43	131	0.04		
L1750N 9150E	Soil	<0.005	4.16	0.0158	0.0015	0.0054	0.412	10.8	7.4	0.0620	2.81	13.3	1.3	0.0024	0.8	7.4	0.07	0.67	0.49	60	0.09		
L1750N 9200E	Soil	0.016	105.2	0.1106	0.0261	0.0090	2.430	16.9	18.9	0.0894	3.57	21.3	6.4	0.0114	9.5	7.6	0.38	5.16	2.32	62	0.15		
L1750N 9250E	Soil	<0.005	6.59	0.0164	0.0017	0.0039	0.841	9.2	5.9	0.0495	3.07	15.2	1.8	0.0048	2.1	5.9	0.06	0.47	0.99	47	0.12		
L1750N 9300E	Soil	<0.005	1.07	0.0036	0.0013	0.0082	0.171	12.5	10.6	0.0531	3.04	17.0	0.3	0.0208	1.0	8.0	0.25	1.33	0.29	57	0.10		
L1750N 9350E	Soil	<0.005	4.19	0.0073	0.0011	0.0035	0.148	9.4	5.2	0.0190	4.70	13.4	0.9	0.0093	1.8	4.0	0.34	0.47	0.92	65	0.06		
L1750N 9400E	Soil	<0.005	2.50	0.0082	0.0014	0.0075	0.158	15.2	12.2	0.0739	3.10	23.2	0.9	0.0061	1.6	13.6	0.29	1.54	0.33	61	0.23		
L1750N 9450E	Soil	<0.005	3.07	0.0073	0.0013	0.0058	0.240	13.2	11.2	0.0566	2.79	19.5	1.8	0.0051	3.8	12.6	0.21	1.07	0.72	56	0.27		
L1750N 09550E	Soil	0.006	3.66	0.0090	0.0011	0.0043	0.203	11.3	10.8	0.0573	3.25	10.9	3.2	0.0041	6.8	7.9	0.14	0.68	0.63	78	0.25		
L1750N 09600E	Soil	<0.005	3.90	0.0105	0.0019	0.0039	0.418	12.6	12.4	0.0498	3.56	20.4	3.0	0.0206	4.9	8.5	0.23	0.74	1.79	76	0.26		
L1750N 09650E	Soil	<0.005	3.05	0.0113	0.0010	0.0031	0.245	10.1	8.2	0.0317	2.50	7.5	3.0	0.0050	4.0	10.0	0.17	0.48	0.87	57	0.23		
L1750N 09700E	Soil	0.005	3.38	0.0111	0.0009	0.0031	0.289	9.0	6.8	0.0271	2.31	6.4	2.3	0.0032	4.3	9.1	0.10	0.46	0.60	55	0.19		
L1750N 09750E	Soil	0.006	5.23	0.0168	0.0011	0.0037	0.283	11.1	9.8	0.0357	2.64	12.5	2.8	0.0077	4.6	7.6	0.19	0.64	1.24	58	0.23		
L1750N 09800E	Soil	0.007	2.59	0.0081	0.0015	0.0075	0.232	14.2	13.0	0.0696	3.35	29.2	1.2	0.0026	1.4	15.7	0.27	1.65	0.59	64	0.30		
L1750N 09850E	Soil	0.009	1.49	0.0068	0.0018	0.0113	0.290	13.4	12.4	0.0927	3.58	24.6	0.7	0.0280	1.7	20.1	0.37	1.67	0.37	68	0.36		
L1750N 09900E	Soil	<0.005	1.26	0.0058	0.0018	0.0115	0.196	15.4	13.5	0.1153	3.57	28.4	0.4	0.0014	1.4	17.6	0.37	2.02	0.31	63	0.28		
L1750N 09950E	Soil	<0.005	4.61	0.0051	0.0020	0.0131	0.162	11.9	15.9	0.1423	3.88	18.3	0.7	0.0013	1.2	23.7	0.22	1.26	0.18	79	0.30		
L1750N 10000E	Soil	<0.005	17.76	0.0065	0.0014	0.0062	0.192	12.3	24.6	0.1469	3.69	22.0	2.5	0.0020	1.1	6.7	0.15	1.51	0.40	53	0.09		
L1900N 8000E	Soil	<0.005	2.39	0.0127	0.0009	0.0038	0.315	12.0	10.6	0.0438	2.82	7.0	2.3	0.0007	7.7	12.5	0.17	0.42	0.34	65	0.35		
L1900N 8250E	Soil	<0.005	2.34	0.0049	0.0008	0.0035	0.166	9.5	7.3	0.0317	2.30	8.3	2.3	0.0005	5.0	10.7	0.12	0.48	0.26	54	0.29		
L1900N 8450E	Soil	<0.005	2.18	0.0052	0.0007	0.0031	0.188	9.3	7.2	0.0315	2.72	8.0	2.0	0.0015	4.6	8.7	0.12	0.48	0.17	71	0.25		

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**Project:** Troitsa  
**Report Date:** October 22, 2010

**Page:** 4 of 9 Part 2

**CERTIFICATE OF ANALYSIS**

**SMI10000620.1**

Method	Analyte	Unit	MDL	1F15 P	1F15 La	1F15 Cr	1F15 Mg	1F15 Ba	1F15 Ti	1F15 B	1F15 Al	1F15 Na	1F15 K	1F15 W	1F15 Sc	1F15 TI	1F15 S	1F15 Hg	1F15 Se	1F15 Te	1F15 Ga	1F15 Cs	1F15 Ge
				%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm
				0.001	0.5	0.5	0.01	0.5	0.001	1	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	0.1
L1750N 8650E	Soil			0.100	12.3	22.7	0.44	43.4	0.052	<1	0.80	0.015	0.08	0.4	2.5	0.06	<0.02	7	<0.1	0.06	3.6	1.21	<0.1
L1750N 8700E	Soil			0.190	9.0	18.7	0.33	75.8	0.006	<1	1.94	0.004	0.08	4.2	0.6	0.35	0.07	85	1.0	0.45	8.4	5.96	<0.1
L1750N 8750E	Soil			0.093	10.8	35.4	0.65	24.5	0.094	<1	2.35	0.011	0.05	0.3	3.3	0.07	0.04	65	1.1	0.15	10.4	2.08	<0.1
L1750N 8800E	Soil			0.046	6.7	17.8	0.23	28.1	0.018	1	1.96	0.006	0.04	<0.1	1.6	0.10	0.03	60	0.5	0.04	8.2	2.22	<0.1
L1750N 8850E	Soil			0.057	6.8	23.1	0.62	48.5	0.029	1	2.85	0.010	0.07	0.2	5.2	0.09	0.02	41	0.7	0.11	5.6	2.35	<0.1
L1750N 8900E	Soil			0.082	9.9	25.3	0.38	32.9	0.041	<1	4.18	0.010	0.04	0.3	4.6	0.09	0.06	94	1.0	0.06	5.8	1.35	<0.1
L1750N 8950E	Soil			0.077	10.4	22.1	0.40	29.9	0.028	<1	1.03	0.010	0.05	0.5	2.0	0.06	<0.02	12	0.1	0.06	3.8	1.57	<0.1
L1750N 9000E	Soil			0.071	7.9	18.9	0.35	35.2	0.018	<1	1.82	0.008	0.05	0.4	1.2	0.12	0.04	41	0.4	0.04	5.1	1.55	<0.1
L1750N 9050E	Soil			0.065	6.1	25.2	0.29	36.5	0.087	<1	4.22	0.006	0.04	0.3	2.7	0.05	0.06	159	1.0	0.04	8.2	1.16	<0.1
L1750N 9100E	Soil			0.112	5.2	22.7	0.26	31.7	0.119	<1	1.91	0.006	0.05	0.4	2.6	0.13	0.03	88	0.3	0.08	17.2	2.67	<0.1
L1750N 9150E	Soil			0.065	8.0	21.0	0.44	46.6	0.032	<1	1.99	0.009	0.09	0.8	2.7	0.12	0.02	25	0.5	0.08	5.7	3.01	<0.1
L1750N 9200E	Soil			0.131	13.5	23.9	0.68	53.0	0.038	<1	2.04	0.006	0.10	7.4	4.5	0.14	<0.02	14	1.0	0.43	6.5	4.28	<0.1
L1750N 9250E	Soil			0.166	9.5	24.4	0.37	40.3	0.012	<1	2.07	0.005	0.06	1.5	1.1	0.08	0.04	152	0.5	0.13	4.7	1.92	<0.1
L1750N 9300E	Soil			0.059	5.4	18.0	0.51	50.6	0.017	1	1.31	0.009	0.06	0.3	3.4	0.07	<0.02	64	0.3	0.13	4.1	1.92	<0.1
L1750N 9350E	Soil			0.094	4.4	23.0	0.36	40.1	0.027	<1	1.55	0.004	0.03	1.7	1.3	0.07	0.03	98	0.5	0.09	7.1	2.28	<0.1
L1750N 9400E	Soil			0.068	8.4	20.3	0.52	67.5	0.034	<1	1.28	0.019	0.09	0.4	4.2	0.10	<0.02	22	0.3	0.11	4.2	2.27	<0.1
L1750N 9450E	Soil			0.092	9.6	20.3	0.53	53.8	0.039	2	0.94	0.016	0.08	0.7	3.3	0.08	<0.02	16	0.3	0.11	3.7	1.88	<0.1
L1750N 09550E	Soil			0.114	11.9	28.6	0.45	27.6	0.032	<1	0.76	0.010	0.05	0.9	2.3	0.05	<0.02	20	0.2	0.11	3.7	1.31	<0.1
L1750N 09600E	Soil			0.098	11.0	30.1	0.36	31.5	0.030	<1	0.58	0.012	0.04	0.9	2.4	0.06	0.05	14	0.4	0.20	2.8	0.78	<0.1
L1750N 09650E	Soil			0.082	8.9	23.1	0.36	33.3	0.026	<1	0.52	0.009	0.05	1.8	1.8	0.04	0.03	9	0.3	0.08	2.5	0.82	<0.1
L1750N 09700E	Soil			0.069	7.2	21.5	0.36	31.2	0.027	<1	0.52	0.010	0.04	1.1	1.7	0.03	<0.02	<5	0.1	0.05	2.5	0.79	<0.1
L1750N 09750E	Soil			0.098	10.5	23.3	0.40	33.8	0.031	<1	0.57	0.010	0.04	2.3	1.8	0.04	<0.02	14	0.2	0.14	2.7	0.96	<0.1
L1750N 09800E	Soil			0.071	8.5	20.7	0.58	68.3	0.035	1	1.27	0.025	0.09	0.8	4.3	0.11	<0.02	24	0.4	0.15	4.3	2.34	<0.1
L1750N 09850E	Soil			0.068	9.5	18.0	0.65	102.8	0.040	2	1.32	0.025	0.10	0.3	6.6	0.09	<0.02	15	0.3	0.10	4.4	2.43	<0.1
L1750N 09900E	Soil			0.069	8.4	16.6	0.68	93.2	0.037	2	1.47	0.023	0.12	0.2	6.1	0.13	<0.02	16	0.2	0.12	4.6	2.93	<0.1
L1750N 09950E	Soil			0.083	8.9	16.9	0.74	80.7	0.045	2	1.75	0.022	0.11	0.1	6.7	0.09	<0.02	21	0.3	0.06	4.8	2.65	<0.1
L1750N 10000E	Soil			0.047	11.3	18.3	0.50	49.1	0.025	2	1.58	0.011	0.06	0.4	4.0	0.11	<0.02	18	0.8	0.10	4.1	2.04	<0.1
L1900N 8000E	Soil			0.108	13.5	23.7	0.65	77.0	0.056	<1	0.87	0.015	0.10	0.5	2.4	0.06	<0.02	8	0.2	0.10	4.3	1.49	<0.1
L1900N 8250E	Soil			0.102	10.7	22.5	0.38	35.8	0.032	<1	0.56	0.012	0.06	0.5	1.7	0.03	<0.02	11	<0.1	0.05	2.7	1.06	<0.1
L1900N 8450E	Soil			0.090	9.6	28.3	0.32	27.8	0.028	<1	0.47	0.012	0.05	0.4	1.6	0.03	<0.02	10	0.1	0.04	2.5	0.73	<0.1

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Project: Troitsa  
 Report Date: October 22, 2010

Page: 4 of 9 Part 3

CERTIFICATE OF ANALYSIS

SMI10000620.1

Method	Analyte	Unit	MDL	1F15 Hf	1F15 Nb	1F15 Rb	1F15 Sn	1F15 Ta	1F15 Zr	1F15 Y	1F15 Ce	1F15 In	1F15 Re	1F15 Be	1F15 Li	1F15 Pd	1F15 Pt
		ppm		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppb	ppb
L1750N 8650E	Soil	<0.02	0.48	6.8	0.2	<0.05	0.3	6.16	26.3	<0.02	<1	0.2	9.8	<10	<2		
L1750N 8700E	Soil	<0.02	0.55	27.4	0.4	<0.05	0.1	2.20	17.4	0.13	2	0.5	11.9	11	<2		
L1750N 8750E	Soil	0.06	2.90	5.7	1.0	<0.05	4.3	6.07	22.4	0.05	<1	0.2	10.0	<10	<2		
L1750N 8800E	Soil	<0.02	0.73	5.7	0.6	<0.05	0.2	2.91	13.5	0.04	1	0.1	8.1	<10	<2		
L1750N 8850E	Soil	0.04	0.51	5.7	0.3	<0.05	1.2	4.98	16.3	0.04	<1	0.3	15.3	<10	<2		
L1750N 8900E	Soil	0.03	1.04	3.8	0.3	<0.05	1.3	13.39	24.7	0.06	<1	0.5	10.2	<10	<2		
L1750N 8950E	Soil	<0.02	0.23	5.6	0.2	<0.05	0.1	6.54	22.8	0.02	<1	0.2	11.2	<10	<2		
L1750N 9000E	Soil	<0.02	0.48	5.9	0.2	<0.05	<0.1	3.49	14.0	0.02	<1	0.2	9.8	<10	<2		
L1750N 9050E	Soil	0.02	2.63	3.4	0.5	<0.05	1.2	3.37	12.1	0.04	<1	0.3	5.9	<10	<2		
L1750N 9100E	Soil	<0.02	2.15	6.7	0.8	<0.05	0.6	1.85	10.7	0.05	<1	<0.1	5.1	<10	<2		
L1750N 9150E	Soil	<0.02	0.36	12.0	0.3	<0.05	0.2	4.13	17.9	0.03	<1	0.2	12.2	<10	<2		
L1750N 9200E	Soil	<0.02	0.37	13.7	0.5	<0.05	0.3	6.59	39.8	0.07	<1	0.5	17.1	<10	<2		
L1750N 9250E	Soil	<0.02	0.57	7.3	0.2	<0.05	0.3	3.52	18.5	0.04	<1	0.3	16.7	<10	<2		
L1750N 9300E	Soil	<0.02	0.18	6.6	0.3	<0.05	0.5	3.45	12.2	0.07	<1	0.1	11.2	<10	<2		
L1750N 9350E	Soil	<0.02	0.95	7.7	0.3	<0.05	0.2	1.69	10.4	0.05	<1	0.2	13.0	<10	<2		
L1750N 9400E	Soil	<0.02	0.20	6.3	0.2	<0.05	0.3	7.85	19.4	0.04	<1	0.4	13.6	<10	<2		
L1750N 9450E	Soil	<0.02	0.23	5.4	0.2	<0.05	0.5	6.53	24.3	0.02	<1	0.3	13.0	<10	<2		
L1750N 09550E	Soil	<0.02	0.20	4.9	0.2	<0.05	0.4	6.30	27.9	<0.02	<1	0.3	10.2	<10	<2		
L1750N 09600E	Soil	<0.02	0.14	3.1	0.1	<0.05	0.6	7.53	23.1	<0.02	<1	0.3	7.8	<10	<2		
L1750N 09650E	Soil	<0.02	0.16	3.6	0.1	<0.05	0.4	4.96	19.1	<0.02	<1	0.1	7.1	<10	<2		
L1750N 09700E	Soil	0.02	0.12	3.7	0.1	<0.05	0.8	4.59	16.6	<0.02	<1	0.1	7.6	<10	<2		
L1750N 09750E	Soil	<0.02	0.19	3.6	0.1	<0.05	0.5	6.26	23.6	0.02	<1	0.2	7.9	<10	<2		
L1750N 09800E	Soil	<0.02	0.21	6.1	0.2	<0.05	0.3	7.94	20.0	0.03	<1	0.5	13.9	<10	<2		
L1750N 09850E	Soil	0.03	0.14	5.5	0.3	<0.05	1.5	11.84	19.8	0.03	<1	0.2	12.8	<10	<2		
L1750N 09900E	Soil	0.03	0.08	6.3	0.2	<0.05	1.7	10.19	20.3	0.04	<1	0.3	14.2	<10	<2		
L1750N 09950E	Soil	<0.02	0.14	6.5	0.3	<0.05	1.6	9.63	21.7	0.04	<1	0.5	12.6	<10	<2		
L1750N 10000E	Soil	<0.02	0.19	5.6	0.2	<0.05	0.2	11.51	24.5	0.02	<1	0.4	11.4	<10	<2		
L1900N 8000E	Soil	0.03	0.11	9.5	0.2	<0.05	0.9	7.57	29.3	<0.02	<1	0.3	13.0	<10	<2		
L1900N 8250E	Soil	<0.02	0.16	4.7	0.2	<0.05	0.7	5.99	22.9	<0.02	<1	<0.1	8.1	<10	<2		
L1900N 8450E	Soil	<0.02	0.15	3.5	0.1	<0.05	0.6	5.35	20.1	<0.02	1	0.2	6.6	<10	<2		

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CERTIFICATE OF ANALYSIS

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Table with columns: Method, Analyte, Unit, MDL, G6, 1F15 (Au, Mo, Cu, Pb, Zn, Ag, Ni, Co, Mn, Fe, As, U, Au, Th, Sr, Cd, Sb, Bi, V), 1F15 (%), 1F15 (ppm), 1F15 (%). Rows include samples L1900N 8550E to L2050N 08450E.



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Method	Analyte	Unit	MDL	1F15 P	1F15 La	1F15 Cr	1F15 Mg	1F15 Ba	1F15 Ti	1F15 B	1F15 Al	1F15 Na	1F15 K	1F15 W	1F15 Sc	1F15 TI	1F15 S	1F15 Hg	1F15 Se	1F15 Te	1F15 Ga	1F15 Cs	1F15 Ge
				%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm
				0.001	0.5	0.5	0.01	0.5	0.001	1	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	0.1
L1900N 8550E	Soil			0.080	8.1	17.6	0.29	29.9	0.025	<1	0.45	0.013	0.05	0.4	1.7	0.03	<0.02	<5	0.2	0.04	2.0	0.72	<0.1
L1900N 8600E	Soil			0.094	10.5	21.4	0.42	51.4	0.039	<1	0.74	0.019	0.08	0.4	2.4	0.05	<0.02	7	0.2	0.05	3.0	1.18	<0.1
L1900N 8700E	Soil			0.075	8.8	23.4	0.44	43.9	0.036	2	3.54	0.010	0.05	0.3	4.9	0.10	0.05	57	0.8	0.09	6.0	1.76	<0.1
L1900N 8750E	Soil			0.111	5.7	23.2	0.37	34.7	0.031	<1	3.34	0.006	0.04	0.6	2.0	0.08	0.06	121	0.9	0.16	6.1	1.24	<0.1
L1900N 8850E	Soil			0.050	9.3	26.4	0.62	93.1	0.021	2	2.03	0.011	0.12	0.4	3.6	0.12	0.02	51	0.3	0.08	5.5	3.15	<0.1
L1900N 8900E	Soil			0.084	6.1	22.3	0.41	30.1	0.035	<1	3.18	0.006	0.05	0.1	2.7	0.10	0.08	108	1.2	0.05	8.0	1.39	<0.1
L1900N 8950E	Soil			0.060	5.8	21.1	0.52	32.5	0.038	<1	2.19	0.006	0.05	0.2	3.4	0.05	0.03	45	0.7	0.05	5.7	1.64	<0.1
L1900N 9000E	Soil			0.061	7.9	25.3	0.48	47.8	0.024	2	1.79	0.012	0.08	0.4	3.3	0.09	0.02	27	0.4	0.05	4.5	2.18	<0.1
L1900N 9050E	Soil			0.208	10.5	24.0	0.33	36.6	0.022	1	3.42	0.011	0.04	0.1	1.3	0.12	0.18	157	1.3	0.03	7.6	1.16	<0.1
L1900N 9100E	Soil			0.140	6.5	25.5	0.58	69.4	0.016	1	3.11	0.010	0.10	0.2	1.2	0.19	0.10	77	0.9	0.08	8.5	3.79	<0.1
L1900N 9150E	Soil			0.140	8.6	16.3	0.24	48.1	0.015	1	2.04	0.008	0.04	0.2	0.8	0.16	0.09	67	0.6	0.03	6.8	2.13	<0.1
L1900N 9200E	Soil			0.193	5.6	14.5	0.11	33.1	0.007	<1	2.53	0.008	0.06	0.2	0.6	0.22	0.16	103	1.1	<0.02	5.7	1.60	<0.1
L1900N 9250E	Soil			0.054	7.3	16.4	0.49	56.4	0.015	1	1.74	0.007	0.05	0.1	1.9	0.15	0.08	83	0.6	0.04	6.7	2.63	<0.1
L1900N 9300E	Soil			0.128	6.6	21.5	0.41	43.1	0.028	1	2.63	0.006	0.06	0.2	2.2	0.18	0.12	59	0.9	0.06	8.8	3.36	<0.1
L1900N 9350E	Soil			0.077	9.0	31.2	0.62	49.3	0.032	2	3.12	0.006	0.07	0.2	4.2	0.13	0.06	77	1.0	0.09	6.2	2.80	<0.1
L1900N 9400E	Soil			0.074	10.0	21.1	0.59	72.4	0.009	1	2.04	0.010	0.08	0.4	3.2	0.14	0.05	45	0.5	0.07	5.6	3.05	<0.1
L1900N 9450E	Soil			0.058	6.6	21.1	0.53	51.1	0.014	<1	1.68	0.010	0.06	0.2	3.7	0.10	0.03	18	0.4	0.05	4.8	2.18	<0.1
L1900N 9550E	Soil			0.061	7.0	20.5	0.55	77.5	0.024	1	1.31	0.015	0.07	0.2	5.0	0.10	<0.02	17	0.4	0.11	3.7	2.27	<0.1
L1900N 9600E	Soil			0.083	7.0	21.0	0.51	66.5	0.033	1	1.02	0.019	0.08	0.2	4.3	0.06	<0.02	14	0.3	0.10	3.5	1.74	<0.1
L1900N 9650E	Soil			0.076	7.7	20.6	0.43	51.6	0.043	2	0.93	0.020	0.07	0.3	3.8	0.07	<0.02	35	0.2	0.12	3.3	1.46	<0.1
L1900N 09950E	Soil			0.045	11.9	16.8	0.56	66.9	0.019	3	1.75	0.012	0.09	0.1	5.0	0.14	0.02	38	0.7	0.11	4.9	3.12	<0.1
L1900N 10000E	Soil			0.075	8.8	19.5	0.63	77.1	0.045	3	1.64	0.023	0.12	0.2	6.2	0.12	<0.02	29	0.2	0.17	4.6	2.79	<0.1
L2050N 08000E	Soil			0.091	9.1	26.7	0.30	21.9	0.034	1	0.51	0.011	0.04	0.6	1.7	0.02	<0.02	13	0.1	0.12	2.5	0.67	<0.1
L2050N 08050E	Soil			0.090	9.1	35.6	0.38	22.9	0.031	<1	0.60	0.010	0.04	0.9	1.7	0.02	0.03	14	0.2	0.10	3.1	0.82	<0.1
L2050N 08100E	Soil			0.076	9.2	25.9	0.40	31.3	0.036	1	0.62	0.012	0.05	0.6	1.9	0.03	0.02	14	<0.1	0.08	3.1	0.94	<0.1
L2050N 08150E	Soil			0.063	7.2	23.4	0.36	23.6	0.031	1	0.57	0.011	0.05	0.4	1.7	0.03	<0.02	8	0.2	0.05	2.5	0.67	<0.1
L2050N 08200E	Soil			0.082	11.3	20.2	0.53	67.0	0.052	2	0.88	0.020	0.10	0.4	2.8	0.06	<0.02	12	<0.1	0.06	4.0	1.53	<0.1
L2050N 08250E	Soil			0.067	7.6	17.2	0.34	42.1	0.033	<1	0.60	0.015	0.06	0.2	2.0	0.04	<0.02	<5	<0.1	0.06	2.7	0.93	<0.1
L2050N 08400E	Soil			0.104	14.0	33.1	0.41	54.8	0.048	1	0.72	0.017	0.09	0.6	2.1	0.05	<0.02	15	0.1	0.07	3.6	1.27	<0.1
L2050N 08450E	Soil			0.080	11.2	18.9	0.50	71.0	0.054	<1	0.84	0.023	0.12	0.4	2.4	0.07	<0.02	9	<0.1	0.04	3.7	1.49	<0.1

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Project: Troitsa  
 Report Date: October 22, 2010

Page: 5 of 9 Part 3

CERTIFICATE OF ANALYSIS

SMI10000620.1

Method	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
Analyte	Hf	Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pd	Pt	
Unit	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppb	ppb	
MDL	0.02	0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2	
L1900N 8550E	Soil	0.03	0.09	3.4	<0.1	<0.05	0.9	4.34	17.4	<0.02	<1	0.2	6.1	<10	<2
L1900N 8600E	Soil	<0.02	0.28	5.9	0.2	<0.05	0.6	6.34	23.3	0.02	<1	0.3	8.9	<10	<2
L1900N 8700E	Soil	0.10	2.37	4.9	0.3	<0.05	4.9	7.27	19.1	0.04	<1	0.3	11.0	<10	<2
L1900N 8750E	Soil	<0.02	0.79	3.3	0.2	<0.05	0.4	4.20	13.1	0.04	<1	0.3	8.9	<10	<2
L1900N 8850E	Soil	<0.02	0.38	10.3	0.2	<0.05	0.2	5.94	20.1	0.03	<1	0.6	17.8	<10	<2
L1900N 8900E	Soil	<0.02	1.31	3.5	0.3	<0.05	1.0	5.38	13.1	0.04	<1	0.2	8.0	<10	<2
L1900N 8950E	Soil	<0.02	0.80	5.0	0.3	<0.05	0.7	5.48	12.7	0.03	<1	0.4	11.1	<10	<2
L1900N 9000E	Soil	<0.02	0.28	6.9	0.2	<0.05	0.2	6.12	20.7	0.03	<1	0.5	14.0	<10	<2
L1900N 9050E	Soil	<0.02	3.27	4.4	0.5	<0.05	0.9	11.46	22.7	0.03	<1	0.4	8.0	<10	<2
L1900N 9100E	Soil	<0.02	1.55	11.7	0.8	<0.05	0.2	4.62	12.5	0.04	<1	0.4	14.8	<10	<2
L1900N 9150E	Soil	<0.02	0.70	7.6	0.4	<0.05	0.3	6.06	13.8	0.02	1	0.6	6.9	<10	<2
L1900N 9200E	Soil	<0.02	0.79	5.6	0.3	<0.05	0.3	5.92	10.5	0.03	<1	0.4	4.1	<10	<2
L1900N 9250E	Soil	<0.02	1.02	7.2	0.5	<0.05	0.3	5.19	15.0	0.03	<1	<0.1	11.2	<10	<2
L1900N 9300E	Soil	<0.02	1.86	7.9	0.6	<0.05	0.4	4.57	12.2	0.03	<1	0.1	8.4	19	<2
L1900N 9350E	Soil	<0.02	0.99	7.8	0.4	<0.05	0.7	12.34	23.9	0.03	<1	0.4	13.8	<10	<2
L1900N 9400E	Soil	<0.02	0.23	9.3	0.3	<0.05	0.2	11.82	18.5	0.04	<1	0.4	13.6	<10	<2
L1900N 9450E	Soil	<0.02	0.24	5.3	0.3	<0.05	0.2	6.49	14.7	0.04	<1	0.2	11.3	<10	<2
L1900N 9550E	Soil	<0.02	0.24	5.9	0.2	<0.05	0.5	6.06	17.1	0.03	<1	0.6	11.2	<10	<2
L1900N 9600E	Soil	<0.02	0.14	5.0	0.2	<0.05	0.5	7.78	17.4	0.03	<1	0.3	10.3	<10	<2
L1900N 9650E	Soil	<0.02	0.16	4.5	0.3	<0.05	0.5	6.26	17.5	0.03	2	0.2	10.1	<10	<2
L1900N 09950E	Soil	<0.02	0.08	9.2	0.3	<0.05	0.1	19.10	18.7	0.03	<1	0.5	13.2	<10	<2
L1900N 10000E	Soil	0.03	0.13	7.5	0.2	<0.05	0.6	7.95	21.3	0.03	2	0.3	14.1	<10	<2
L2050N 08000E	Soil	0.02	0.16	2.9	0.2	<0.05	0.7	5.70	19.0	<0.02	<1	0.2	7.9	<10	<2
L2050N 08050E	Soil	<0.02	0.13	3.1	0.2	<0.05	0.1	5.09	19.4	<0.02	1	<0.1	9.0	<10	<2
L2050N 08100E	Soil	<0.02	0.22	4.1	0.2	<0.05	0.4	5.57	18.9	<0.02	<1	0.1	9.2	<10	<2
L2050N 08150E	Soil	0.03	0.17	3.2	0.1	<0.05	0.6	4.63	15.4	<0.02	<1	<0.1	8.8	<10	<2
L2050N 08200E	Soil	0.04	0.27	7.8	0.3	<0.05	1.1	6.77	24.3	<0.02	<1	0.2	11.5	<10	<2
L2050N 08250E	Soil	0.02	0.11	4.7	0.2	<0.05	1.0	4.90	16.2	<0.02	<1	0.1	7.6	<10	<2
L2050N 08400E	Soil	0.02	0.25	7.5	0.2	<0.05	0.5	7.34	28.4	<0.02	<1	0.1	9.2	<10	<2
L2050N 08450E	Soil	0.04	0.10	9.6	0.2	<0.05	1.1	5.93	23.4	<0.02	<1	0.2	11.6	<10	<2

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Project: Troitsa  
 Report Date: October 22, 2010

Page: 6 of 9 Part 1

**CERTIFICATE OF ANALYSIS**

**SMI10000620.1**

Method	Analyte	Unit	MDL	G6	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15		
				Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca
				gm/t	ppm	%	%	%	gm/t	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	
				0.005	0.01	1e-006	1e-006	1e-005	0.002	0.1	0.1	0.0001	0.01	0.1	0.1	0.0002	0.1	0.5	0.01	0.02	0.02	2	0.01
L2050N 08500E	Soil			0.005	2.84	0.0038	0.0007	0.0032	0.101	7.4	5.4	0.0220	1.82	5.9	1.9	0.0010	2.7	10.1	0.09	0.44	0.19	46	0.24
L2050N 08700E	Soil			<0.005	1.22	0.0032	0.0009	0.0053	0.223	11.9	6.8	0.0418	2.79	8.2	0.7	0.0051	0.2	5.9	0.10	0.55	0.18	56	0.06
L2050N 08750E	Soil			<0.005	1.08	0.0027	0.0011	0.0057	0.116	9.3	5.9	0.0323	3.02	12.7	0.5	0.0009	0.3	5.3	0.08	0.74	0.21	58	0.05
L2050N 08800E	Soil			0.031	6.69	0.0151	0.0010	0.0059	0.172	10.4	6.4	0.0293	2.80	14.1	1.6	0.0031	1.0	6.6	0.07	0.70	0.26	57	0.08
L2050N 08850E	Soil			<0.005	5.01	0.0049	0.0010	0.0034	0.346	8.9	4.6	0.0237	3.32	7.7	2.2	0.0004	0.4	4.8	0.14	0.41	0.46	58	0.04
L2050N 08900E	Soil			<0.005	8.78	0.0196	0.0013	0.0116	0.664	18.5	10.0	0.0499	4.22	14.4	2.8	0.0012	0.4	11.6	0.37	0.89	0.34	73	0.10
L2050N 08950E	Soil			L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
L2050N 09000E	Soil			<0.005	2.86	0.0041	0.0013	0.0056	0.193	8.7	5.6	0.0314	4.75	13.8	0.7	0.0007	0.2	8.4	0.42	0.65	0.31	92	0.04
L2050N 09050E	Soil			<0.005	4.39	0.0218	0.0013	0.0074	0.293	9.8	6.2	0.0345	4.30	12.8	0.9	0.0015	0.3	5.5	0.25	0.69	0.37	69	0.03
L2050N 09100E	Soil			0.007	13.40	0.0852	0.0068	0.0049	0.274	11.6	13.7	0.0883	3.58	7.0	2.4	0.0028	0.8	5.6	0.22	0.43	0.59	85	0.12
L2050N 09150E	Soil			<0.005	6.23	0.0198	0.0009	0.0045	0.242	10.2	5.9	0.0233	3.32	10.6	2.0	0.0019	0.7	4.5	0.10	0.66	0.48	64	0.04
L2050N 09200E	Soil			0.007	4.49	0.0265	0.0013	0.0058	0.170	15.4	10.3	0.0457	3.29	15.8	1.6	0.0046	2.3	5.1	0.20	0.87	0.43	58	0.06
L2050N 09250E	Soil			<0.005	7.20	0.0120	0.0013	0.0028	0.530	7.3	3.5	0.0129	1.82	7.6	2.0	0.0017	0.6	3.0	0.08	0.34	0.33	39	0.02
L2050N 09300E	Soil			<0.005	2.19	0.0091	0.0015	0.0059	0.216	12.6	7.0	0.0279	1.93	8.0	2.2	0.0022	0.7	8.3	0.21	0.49	0.35	44	0.10
L2050N 09350E	Soil			0.007	9.70	0.0047	0.0013	0.0052	0.336	8.8	5.9	0.0365	5.49	18.9	1.2	0.0031	0.5	4.1	0.25	0.92	0.32	81	0.03
L2050N 09400E	Soil			0.013	1.61	0.0092	0.0013	0.0093	0.191	24.9	14.3	0.1014	3.23	19.4	0.7	0.0021	3.1	29.2	0.35	1.11	0.37	58	0.82
L2050N 09450E	Soil			<0.005	16.96	0.0132	0.0010	0.0045	0.439	9.9	6.7	0.0372	3.06	13.2	2.5	0.0026	0.4	4.2	0.18	0.45	0.64	53	0.04
L2050N 09500E	Soil			<0.005	11.56	0.0078	0.0011	0.0044	0.299	10.3	7.8	0.0282	2.52	11.0	4.5	0.0027	0.4	5.9	0.18	0.54	0.41	50	0.05
L2050N 09550E	Soil			0.010	1.73	0.0058	0.0016	0.0108	0.241	15.7	11.8	0.0611	3.48	18.6	0.6	0.0016	0.5	16.1	0.29	1.01	0.26	68	0.25
L2050N 09600E	Soil			<0.005	0.85	0.0039	0.0013	0.0096	0.140	14.8	10.8	0.0739	3.17	16.8	0.3	0.0017	0.7	16.7	0.25	1.06	0.24	61	0.22
L2050N 09650E	Soil			<0.005	1.54	0.0037	0.0012	0.0103	0.161	12.4	8.5	0.0647	3.57	16.4	0.4	0.0040	0.9	8.6	0.20	0.91	0.31	69	0.07
L2050N 09700E	Soil			<0.005	0.95	0.0034	0.0012	0.0074	0.107	14.2	10.3	0.0738	3.13	16.7	0.5	0.0020	1.3	16.4	0.25	1.07	0.23	62	0.28
L2050N 09750E	Soil			0.007	1.50	0.0045	0.0015	0.0086	0.105	15.0	12.6	0.0892	3.28	20.5	0.6	0.0023	0.9	10.0	0.23	1.17	0.33	58	0.11
L2050N 09800E	Soil			0.015	1.45	0.0030	0.0011	0.0053	0.153	9.1	5.7	0.0238	2.99	13.7	0.6	0.0040	0.4	7.8	0.11	0.89	0.34	65	0.11
L2050N 09850E	Soil			<0.005	1.94	0.0032	0.0010	0.0049	0.312	8.8	6.2	0.0624	2.84	19.0	0.6	0.0010	0.2	7.3	0.11	0.95	0.37	52	0.05
L2050N 09900E	Soil			0.025	4.11	0.0070	0.0010	0.0037	0.213	9.8	8.3	0.0457	2.93	9.3	2.4	0.0037	4.1	19.3	0.24	0.57	0.81	69	0.33
L2050N 09950E	Soil			0.011	9.53	0.0042	0.0019	0.0068	0.557	8.5	9.1	0.0617	3.59	17.3	2.3	0.0068	0.2	13.6	0.24	0.99	0.46	60	0.14
L2050N 10000E	Soil			0.018	2.79	0.0050	0.0009	0.0034	0.152	9.9	8.2	0.0295	3.78	9.1	2.3	0.0059	6.0	11.1	0.10	0.62	0.26	104	0.28
L2200N 08000E	Soil			<0.005	2.78	0.0057	0.0011	0.0037	0.230	8.1	8.3	0.0451	1.97	10.8	2.2	0.0016	4.9	11.9	0.15	0.57	0.22	37	0.27
L2200N 08050E	Soil			<0.005	2.08	0.0076	0.0006	0.0026	0.172	7.3	6.0	0.0237	1.88	5.3	2.2	0.0016	5.5	10.1	0.09	0.37	0.22	44	0.27

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Project: Troitsa  
 Report Date: October 22, 2010

Page: 6 of 9 Part 2

CERTIFICATE OF ANALYSIS

SMI10000620.1

Method	Analyte	Unit	MDL	1F15 P %	1F15 La ppm	1F15 Cr ppm	1F15 Mg %	1F15 Ba ppm	1F15 Ti %	1F15 B ppm	1F15 Al %	1F15 Na %	1F15 K %	1F15 W ppm	1F15 Sc ppm	1F15 TI ppm	1F15 S %	1F15 Hg ppb	1F15 Se ppm	1F15 Te ppm	1F15 Ga ppm	1F15 Cs ppm	1F15 Ge ppm
L2050N 08500E	Soil			0.089	10.0	18.6	0.34	28.8	0.033	1	0.68	0.010	0.04	0.4	1.9	0.05	<0.02	<5	<0.1	0.06	2.9	1.11	<0.1
L2050N 08700E	Soil			0.064	5.6	20.1	0.48	32.1	0.045	1	1.88	0.007	0.04	0.4	1.9	0.06	0.07	75	0.6	0.09	7.0	1.36	<0.1
L2050N 08750E	Soil			0.055	5.2	21.7	0.35	27.2	0.029	<1	2.35	0.006	0.03	0.1	2.8	0.07	0.04	80	0.5	0.08	5.6	1.43	<0.1
L2050N 08800E	Soil			0.060	6.8	20.5	0.39	28.3	0.039	1	2.12	0.008	0.04	0.2	4.6	0.09	0.02	45	0.6	0.07	4.5	1.56	<0.1
L2050N 08850E	Soil			0.064	6.9	29.9	0.36	30.3	0.043	<1	3.06	0.007	0.05	0.2	2.3	0.09	0.07	98	0.8	0.07	10.3	1.32	<0.1
L2050N 08900E	Soil			0.141	14.9	35.0	0.68	148.7	0.011	2	4.31	0.009	0.13	0.2	3.1	0.32	0.09	113	0.9	0.12	9.8	4.15	<0.1
L2050N 08950E	Soil			L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
L2050N 09000E	Soil			0.056	4.4	20.3	0.36	51.0	0.033	1	1.98	0.006	0.05	0.2	2.0	0.08	0.05	111	0.4	0.10	10.3	2.08	<0.1
L2050N 09050E	Soil			0.057	5.3	21.2	0.36	46.0	0.026	<1	2.49	0.005	0.06	0.2	2.2	0.09	0.03	89	0.4	0.10	9.3	2.49	<0.1
L2050N 09100E	Soil			0.139	7.7	22.2	0.64	33.5	0.041	2	1.94	0.006	0.06	0.9	1.5	0.19	0.07	41	0.6	0.06	9.3	3.47	<0.1
L2050N 09150E	Soil			0.061	7.4	25.8	0.41	27.1	0.042	1	2.20	0.006	0.05	0.4	2.1	0.13	0.06	57	0.6	0.04	7.5	1.59	<0.1
L2050N 09200E	Soil			0.041	8.8	27.8	0.52	50.7	0.038	1	2.41	0.007	0.09	0.6	3.7	0.10	0.02	54	0.6	0.10	5.6	2.51	<0.1
L2050N 09250E	Soil			0.036	8.9	16.7	0.27	39.5	0.018	<1	1.86	0.006	0.07	0.5	1.7	0.15	0.03	50	0.8	0.04	6.5	2.00	<0.1
L2050N 09300E	Soil			0.056	10.7	20.8	0.44	71.2	0.017	<1	1.60	0.008	0.07	0.3	3.2	0.11	0.03	52	0.4	0.06	5.1	2.37	<0.1
L2050N 09350E	Soil			0.058	4.6	25.1	0.30	42.4	0.026	<1	2.33	0.005	0.04	0.2	2.8	0.09	0.05	112	0.5	0.07	9.0	1.84	<0.1
L2050N 09400E	Soil			0.073	9.7	26.1	0.71	138.1	0.047	2	1.48	0.036	0.20	0.2	5.9	0.15	0.08	23	0.2	0.07	5.1	3.18	<0.1
L2050N 09450E	Soil			0.097	8.2	21.6	0.30	45.2	0.014	<1	1.86	0.006	0.07	1.1	0.8	0.12	0.09	53	0.4	0.12	7.4	2.36	<0.1
L2050N 09500E	Soil			0.055	7.5	19.5	0.40	37.9	0.021	<1	1.68	0.008	0.07	0.6	1.4	0.09	0.05	47	0.5	0.04	5.5	2.17	<0.1
L2050N 09550E	Soil			0.055	6.6	20.9	0.56	102.4	0.016	2	2.03	0.015	0.09	0.2	5.1	0.10	0.02	45	0.2	0.11	5.4	2.71	<0.1
L2050N 09600E	Soil			0.062	7.3	19.9	0.52	59.8	0.034	1	1.27	0.018	0.09	0.1	4.9	0.06	0.03	19	0.2	0.10	4.1	1.78	<0.1
L2050N 09650E	Soil			0.078	5.3	20.5	0.43	87.3	0.014	<1	1.84	0.008	0.07	0.2	4.3	0.12	<0.02	59	0.2	0.10	6.7	3.05	<0.1
L2050N 09700E	Soil			0.068	7.7	20.5	0.48	61.5	0.041	1	1.10	0.020	0.07	0.2	4.3	0.07	0.02	16	0.1	0.07	3.5	1.50	<0.1
L2050N 09750E	Soil			0.059	8.6	20.9	0.49	58.1	0.031	2	1.58	0.011	0.08	0.2	4.5	0.10	<0.02	42	0.5	0.11	4.8	2.48	<0.1
L2050N 09800E	Soil			0.064	6.5	20.4	0.38	34.4	0.023	<1	1.21	0.010	0.05	0.2	2.6	0.11	0.02	35	0.3	0.07	4.3	1.70	<0.1
L2050N 09850E	Soil			0.080	6.2	18.5	0.27	41.4	0.009	1	1.27	0.007	0.07	0.2	1.4	0.14	0.06	52	0.2	0.07	5.8	3.39	<0.1
L2050N 09900E	Soil			0.095	9.8	30.4	0.32	39.0	0.026	<1	0.47	0.010	0.05	2.0	1.6	0.03	0.03	27	<0.1	0.10	2.7	0.83	<0.1
L2050N 09950E	Soil			0.102	7.5	16.7	0.45	81.1	0.014	3	1.68	0.010	0.07	0.4	1.5	0.13	0.07	52	0.4	0.09	5.3	2.85	<0.1
L2050N 10000E	Soil			0.109	10.9	36.7	0.39	24.0	0.037	2	0.68	0.012	0.05	1.1	2.2	0.03	<0.02	12	0.1	0.07	3.4	1.21	<0.1
L2200N 08000E	Soil			0.091	10.2	13.6	0.39	39.7	0.038	2	0.72	0.014	0.06	0.5	2.4	0.06	<0.02	17	0.1	0.08	3.1	1.52	<0.1
L2200N 08050E	Soil			0.088	10.4	17.9	0.37	42.4	0.032	1	0.57	0.014	0.07	0.4	1.7	0.04	<0.02	13	<0.1	0.03	2.8	0.96	<0.1

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Project: Troitsa  
 Report Date: October 22, 2010

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CERTIFICATE OF ANALYSIS

SMI10000620.1

Method	Analyte	Unit	MDL	1F15 Hf	1F15 Nb	1F15 Rb	1F15 Sn	1F15 Ta	1F15 Zr	1F15 Y	1F15 Ce	1F15 In	1F15 Re	1F15 Be	1F15 Li	1F15 Pd	1F15 Pt
				ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppb	ppb
				0.02	0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2
L2050N 08500E	Soil			<0.02	0.30	4.1	0.2	<0.05	0.1	5.50	21.7	<0.02	<1	0.2	8.1	<10	<2
L2050N 08700E	Soil			<0.02	1.89	4.0	0.6	<0.05	1.2	3.85	11.2	0.04	1	<0.1	8.0	<10	<2
L2050N 08750E	Soil			<0.02	0.59	4.0	0.3	<0.05	0.4	3.73	11.1	0.03	<1	0.2	9.4	<10	<2
L2050N 08800E	Soil			0.05	0.79	4.4	0.4	<0.05	2.7	7.66	16.5	0.02	<1	0.2	8.5	<10	<2
L2050N 08850E	Soil			0.02	2.44	4.5	0.6	<0.05	1.2	4.56	14.1	0.04	<1	0.2	7.0	<10	<2
L2050N 08900E	Soil			0.03	1.83	12.0	0.7	<0.05	0.6	22.87	20.7	0.07	<1	0.6	20.4	<10	<2
L2050N 08950E	Soil			L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
L2050N 09000E	Soil			<0.02	0.98	7.9	0.5	<0.05	0.2	1.95	8.5	0.03	<1	0.2	6.0	<10	<2
L2050N 09050E	Soil			<0.02	0.92	8.5	0.5	<0.05	0.3	2.94	11.0	0.07	<1	0.2	11.1	<10	<2
L2050N 09100E	Soil			<0.02	1.40	9.4	0.6	<0.05	0.4	3.44	14.4	0.06	<1	0.4	13.0	<10	<2
L2050N 09150E	Soil			<0.02	2.28	8.4	0.5	<0.05	1.3	3.80	14.1	0.03	<1	0.3	8.5	<10	<2
L2050N 09200E	Soil			<0.02	0.81	9.0	0.3	<0.05	0.6	4.94	18.3	0.03	<1	0.2	14.3	<10	<2
L2050N 09250E	Soil			<0.02	0.83	6.1	0.4	<0.05	0.2	3.74	17.4	0.02	<1	0.1	9.9	<10	<2
L2050N 09300E	Soil			<0.02	0.32	7.8	0.3	<0.05	0.1	7.33	22.4	0.04	<1	0.2	12.2	<10	<2
L2050N 09350E	Soil			<0.02	2.31	4.9	0.6	<0.05	0.8	2.08	9.1	0.05	<1	0.1	8.6	<10	<2
L2050N 09400E	Soil			0.08	0.14	12.2	0.4	<0.05	3.2	9.01	21.2	0.03	<1	0.3	15.6	<10	<2
L2050N 09450E	Soil			<0.02	0.68	13.3	0.3	<0.05	0.1	3.30	15.3	0.03	<1	0.2	9.3	<10	<2
L2050N 09500E	Soil			<0.02	0.62	9.8	0.3	<0.05	0.2	4.48	14.5	<0.02	<1	0.2	12.0	<10	<2
L2050N 09550E	Soil			<0.02	0.25	8.8	0.3	<0.05	0.3	7.84	14.8	0.03	<1	0.5	14.0	<10	<2
L2050N 09600E	Soil			<0.02	0.18	7.3	0.3	<0.05	0.3	7.39	16.9	0.03	<1	0.3	10.9	<10	<2
L2050N 09650E	Soil			<0.02	0.29	15.6	0.4	<0.05	0.4	2.87	11.1	0.03	<1	0.2	14.0	<10	<2
L2050N 09700E	Soil			<0.02	0.16	4.5	0.2	<0.05	0.7	7.95	16.9	0.02	<1	0.2	11.3	<10	<2
L2050N 09750E	Soil			<0.02	0.25	6.6	0.3	<0.05	0.3	7.17	20.0	0.03	<1	0.3	12.3	<10	<2
L2050N 09800E	Soil			<0.02	0.22	4.9	0.3	<0.05	0.2	5.05	13.8	0.02	<1	0.1	9.1	<10	<2
L2050N 09850E	Soil			<0.02	0.37	18.1	0.4	<0.05	0.1	2.18	12.4	0.03	<1	0.2	5.7	<10	<2
L2050N 09900E	Soil			<0.02	0.32	7.7	0.1	<0.05	0.2	5.05	20.6	<0.02	<1	0.2	6.9	<10	<2
L2050N 09950E	Soil			<0.02	0.25	8.6	0.3	<0.05	0.1	4.19	13.0	0.04	<1	0.4	12.6	<10	<2
L2050N 10000E	Soil			<0.02	0.30	4.0	0.2	<0.05	0.2	6.23	22.4	<0.02	<1	0.2	9.5	<10	<2
L2200N 08000E	Soil			<0.02	0.22	4.7	0.2	<0.05	0.9	7.03	22.5	<0.02	<1	0.2	10.6	<10	<2
L2200N 08050E	Soil			<0.02	0.19	5.5	0.2	<0.05	0.5	5.55	21.1	<0.02	<1	0.1	8.4	<10	<2

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**Project:** Troitsa  
**Report Date:** October 22, 2010

**Page:** 7 of 9 **Part** 1

**CERTIFICATE OF ANALYSIS**

**SMI10000620.1**

Method	Analyte	Unit	MDL	G6	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15		
				Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca
				gm/t	ppm	%	%	%	gm/t	ppm	ppm	%	%	ppm	ppm	gm/t	ppm	ppm	ppm	ppm	ppm		
				0.005	0.01	1e-006	1e-006	1e-005	0.002	0.1	0.1	0.0001	0.01	0.1	0.1	0.0002	0.1	0.5	0.01	0.02	0.02		
L2200N 08150E	Soil			<0.005	1.01	0.0053	0.0005	0.0020	0.125	5.9	5.4	0.0238	1.60	3.9	1.6	0.0008	5.3	9.7	0.08	0.31	0.18	37	0.27
L2200N 08200E	Soil			<0.005	1.72	0.0077	0.0008	0.0044	0.197	10.7	9.3	0.0428	2.45	5.6	2.2	0.0045	7.7	16.1	0.13	0.47	0.28	54	0.35
L2200N 08250E	Soil			<0.005	1.06	0.0042	0.0006	0.0033	0.129	7.4	6.2	0.0304	1.93	4.7	1.5	0.0021	5.1	13.5	0.11	0.42	0.23	44	0.30
L2200N 08350E	Soil			<0.005	1.43	0.0069	0.0006	0.0029	0.168	7.8	6.9	0.0281	2.21	5.9	1.8	0.0011	5.7	11.4	0.11	0.40	0.22	52	0.27
L2200N 08450E	Soil			<0.005	3.85	0.0064	0.0011	0.0047	0.173	10.9	10.4	0.0606	3.61	14.7	2.3	0.0052	7.0	16.5	0.18	0.63	0.30	66	0.36
L2200N 08500E	Soil			<0.005	2.53	0.0040	0.0006	0.0032	0.119	7.4	6.3	0.0301	2.30	6.2	1.6	0.0041	4.2	9.5	0.10	0.51	0.16	52	0.23
L2200N 08550E	Soil			<0.005	18.43	0.0063	0.0019	0.0068	0.122	12.0	7.1	0.0304	3.21	20.8	2.4	0.0031	1.5	10.9	0.09	1.27	0.44	71	0.18
L2200N 08600E	Soil			<0.005	4.17	0.0045	0.0015	0.0107	0.414	14.0	9.2	0.0468	3.96	14.8	1.5	0.0016	0.5	10.0	0.16	0.93	0.27	71	0.10
L2200N 08650E	Soil			<0.005	2.73	0.0031	0.0015	0.0086	0.144	9.5	7.5	0.0396	3.28	11.0	0.9	0.0021	0.7	7.9	0.15	0.79	0.21	66	0.07
L2200N 08700E	Soil			<0.005	1.85	0.0066	0.0017	0.0092	0.090	10.7	10.3	0.0682	3.64	17.4	0.6	0.0034	0.6	8.2	0.20	0.96	0.26	71	0.08
L2200N 08750E	Soil			0.009	47.87	0.0919	0.0026	0.0079	0.636	12.3	15.7	0.1016	5.10	41.4	6.1	0.0089	4.7	7.5	0.09	2.12	0.63	66	0.13
L2200N 08800E	Soil			<0.005	6.56	0.0090	0.0015	0.0070	0.098	9.7	9.1	0.0525	3.04	14.6	3.0	0.0019	0.8	9.6	0.12	0.80	0.25	67	0.11
L2200N 08850E	Soil			<0.005	24.03	0.0125	0.0011	0.0078	0.092	11.9	9.6	0.0221	4.95	34.5	9.4	0.0026	5.8	8.3	0.07	0.69	1.20	108	0.18
L2200N 08900E	Soil			<0.005	1.13	0.0039	0.0013	0.0081	0.241	9.2	6.8	0.0308	2.79	11.3	0.7	0.0029	0.4	8.1	0.15	0.67	0.23	56	0.08
L2200N 08950E	Soil			<0.005	2.04	0.0029	0.0013	0.0065	0.250	6.6	5.3	0.0316	4.49	15.3	0.7	0.0010	0.2	5.6	0.16	0.80	0.23	76	0.04
L2200N 09050E	Soil			<0.005	14.64	0.0417	0.0011	0.0084	0.166	9.9	8.0	0.0365	3.25	14.0	3.4	0.0026	0.4	8.7	0.09	0.95	0.25	68	0.09
L2200N 09100E	Soil			0.005	15.67	0.0056	0.0014	0.0045	0.160	7.7	5.4	0.0224	2.06	5.1	4.2	0.0014	0.8	8.9	0.05	0.36	0.33	59	0.09
L2200N 09150E	Soil			<0.005	37.62	0.0230	0.0011	0.0070	0.101	8.0	8.3	0.0349	2.50	8.1	9.3	0.0016	0.4	15.8	0.12	0.59	0.29	57	0.10
L2200N 09200E	Soil			<0.005	28.84	0.0054	0.0011	0.0046	0.177	7.1	5.5	0.0293	2.67	5.8	8.6	0.0021	1.1	8.3	0.14	0.55	0.65	67	0.06
L2200N 09250E	Soil			I.S.	84.66	0.0126	0.0025	0.0036	0.624	4.2	13.6	0.1315	3.69	5.9	16.3	0.0031	0.5	17.6	0.23	0.47	0.94	71	0.17
L2200N 09300E	Soil			<0.005	18.73	0.0032	0.0016	0.0081	0.277	10.4	8.2	0.0608	2.50	8.1	10.0	0.0020	0.2	24.5	0.22	0.59	0.32	61	0.18
L2200N 09350E	Soil			<0.005	13.75	0.0036	0.0017	0.0045	0.211	6.0	4.6	0.0213	6.40	15.0	1.3	0.0015	0.7	7.6	0.26	0.71	0.37	103	0.06
L2200N 09400E	Soil			0.023	12.47	0.0194	0.0016	0.0045	0.187	9.7	7.3	0.0190	2.80	10.9	4.6	0.0068	1.0	5.4	0.09	0.39	1.45	48	0.08
L2200N 09450E	Soil			<0.005	17.92	0.0189	0.0017	0.0066	0.226	12.6	18.3	0.0765	2.76	13.5	8.6	0.0038	1.1	6.8	0.26	0.54	0.52	55	0.07
L2200N 09500E	Soil			0.007	18.77	0.0196	0.0025	0.0081	0.394	10.7	13.4	0.0837	3.32	9.3	6.6	0.0030	0.8	4.8	0.10	0.55	0.77	63	0.06
L2200N 09550E	Soil			<0.005	8.61	0.0049	0.0014	0.0036	0.933	5.8	3.7	0.0169	3.43	15.6	2.4	0.0021	0.3	5.1	0.31	0.84	0.39	65	0.04
L2200N 09600E	Soil			0.006	23.38	0.0150	0.0014	0.0057	0.215	11.5	11.4	0.0489	3.07	10.6	6.0	0.0030	0.7	25.6	0.17	0.54	0.67	68	0.21
L2200N 09650E	Soil			<0.005	13.33	0.0065	0.0017	0.0090	0.234	8.8	11.8	0.2085	3.11	13.0	2.8	0.0020	0.2	23.3	0.18	0.69	0.57	60	0.16
L2200N 09700E	Soil			<0.005	15.25	0.0035	0.0009	0.0031	0.264	6.8	3.6	0.0130	1.49	6.5	2.1	0.0035	0.2	7.1	0.04	0.28	0.56	48	0.05
L2200N 09750E	Soil			<0.005	12.00	0.0059	0.0020	0.0035	0.377	7.2	4.4	0.0170	1.50	4.0	3.5	0.0023	<0.1	11.0	0.11	0.36	0.40	39	0.08

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Project: Troitsa  
 Report Date: October 22, 2010

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CERTIFICATE OF ANALYSIS

SMI10000620.1

Method	Analyte	Unit	MDL	1F15 P %	1F15 La ppm	1F15 Cr ppm	1F15 Mg %	1F15 Ba ppm	1F15 Ti %	1F15 B ppm	1F15 Al %	1F15 Na %	1F15 K %	1F15 W ppm	1F15 Sc ppm	1F15 TI ppm	1F15 S %	1F15 Hg ppb	1F15 Se ppm	1F15 Te ppm	1F15 Ga ppm	1F15 Cs ppm	1F15 Ge ppm
L2200N 08150E	Soil			0.094	9.8	14.6	0.29	33.9	0.027	<1	0.44	0.014	0.05	0.3	1.5	0.03	<0.02	6	<0.1	0.03	2.3	0.69	<0.1
L2200N 08200E	Soil			0.092	12.4	21.9	0.60	84.7	0.049	2	0.99	0.023	0.11	0.4	2.9	0.07	0.03	8	<0.1	0.09	4.6	1.65	<0.1
L2200N 08250E	Soil			0.085	9.9	16.8	0.37	51.4	0.040	2	0.69	0.021	0.08	0.4	2.3	0.05	<0.02	7	<0.1	0.04	3.1	1.03	<0.1
L2200N 08350E	Soil			0.083	10.2	19.4	0.37	48.1	0.033	1	0.63	0.016	0.07	0.3	2.0	0.04	<0.02	9	<0.1	0.06	3.0	1.02	<0.1
L2200N 08450E	Soil			0.104	13.2	25.3	0.53	81.1	0.058	1	0.96	0.022	0.09	0.6	3.1	0.08	<0.02	13	0.1	0.11	4.2	1.69	0.1
L2200N 08500E	Soil			0.087	8.4	18.7	0.32	23.3	0.030	1	0.57	0.011	0.04	0.5	2.0	0.02	<0.02	6	0.1	0.04	2.5	0.86	<0.1
L2200N 08550E	Soil			0.094	11.6	22.0	0.65	58.9	0.024	2	2.25	0.011	0.08	0.4	3.4	0.14	0.03	36	0.5	0.05	7.0	3.67	<0.1
L2200N 08600E	Soil			0.065	9.2	25.7	0.64	73.4	0.021	2	3.02	0.009	0.07	0.2	3.7	0.18	0.04	61	0.7	0.09	7.1	3.16	<0.1
L2200N 08650E	Soil			0.043	8.3	20.0	0.53	45.5	0.031	2	2.56	0.007	0.05	0.1	3.7	0.09	0.03	54	0.6	0.08	7.8	2.18	<0.1
L2200N 08700E	Soil			0.055	6.8	20.4	0.46	37.9	0.037	2	2.16	0.008	0.04	0.2	4.0	0.07	0.02	56	0.9	0.12	5.2	1.70	<0.1
L2200N 08750E	Soil			0.112	11.6	22.5	0.50	36.7	0.031	1	1.85	0.007	0.06	0.4	5.2	0.09	<0.02	55	1.6	0.19	4.9	4.23	<0.1
L2200N 08800E	Soil			0.082	8.1	20.3	0.44	40.1	0.034	2	2.32	0.009	0.04	0.2	4.0	0.08	0.04	60	0.7	0.09	5.0	1.85	<0.1
L2200N 08850E	Soil			0.093	12.8	21.4	0.72	66.6	0.048	<1	1.96	0.007	0.07	0.9	4.2	0.09	<0.02	25	0.6	0.14	6.2	2.60	<0.1
L2200N 08900E	Soil			0.061	7.1	18.2	0.47	41.6	0.032	2	2.85	0.009	0.05	0.2	3.8	0.10	0.05	69	0.8	0.06	5.8	1.88	<0.1
L2200N 08950E	Soil			0.059	4.8	18.7	0.30	35.2	0.020	2	2.74	0.005	0.04	0.1	2.4	0.07	0.04	101	0.6	0.08	8.1	1.92	<0.1
L2200N 09050E	Soil			0.050	9.1	19.5	0.54	44.0	0.030	2	2.25	0.008	0.05	0.2	4.1	0.11	0.02	33	0.6	0.12	7.1	2.30	<0.1
L2200N 09100E	Soil			0.053	7.5	20.5	0.48	32.1	0.093	2	1.86	0.009	0.05	<0.1	2.6	0.13	0.02	44	0.6	0.03	12.6	2.65	<0.1
L2200N 09150E	Soil			0.049	6.5	14.6	0.54	54.7	0.043	2	1.77	0.007	0.06	0.2	2.8	0.17	0.04	37	0.5	0.05	8.4	3.25	<0.1
L2200N 09200E	Soil			0.062	8.2	16.4	0.39	36.3	0.057	2	1.93	0.007	0.04	0.3	2.8	0.21	0.06	59	0.7	0.04	10.6	2.39	<0.1
L2200N 09250E	Soil			0.089	9.6	14.0	0.20	45.8	0.033	2	2.17	0.008	0.05	0.7	1.6	0.18	0.10	96	1.0	0.07	7.0	3.07	<0.1
L2200N 09300E	Soil			0.053	7.7	22.6	0.57	86.5	0.024	2	2.20	0.008	0.08	0.3	2.3	0.13	0.05	52	0.4	0.04	8.3	3.79	<0.1
L2200N 09350E	Soil			0.041	5.7	20.2	0.20	33.7	0.057	1	2.02	0.007	0.03	0.3	2.6	0.08	0.04	83	0.6	0.11	12.0	1.77	<0.1
L2200N 09400E	Soil			0.106	10.9	22.3	0.46	46.0	0.009	1	2.37	0.005	0.08	3.1	0.7	0.18	0.05	59	0.8	0.11	7.5	4.62	<0.1
L2200N 09450E	Soil			0.049	12.7	21.0	0.53	67.1	0.030	1	2.04	0.007	0.08	0.8	2.7	0.16	0.04	36	0.7	0.06	6.1	3.48	<0.1
L2200N 09500E	Soil			0.103	12.8	25.3	0.50	69.0	0.036	2	2.44	0.007	0.10	0.8	1.8	0.22	0.05	58	1.1	0.09	8.9	5.05	<0.1
L2200N 09550E	Soil			0.072	9.6	17.2	0.14	36.5	0.029	1	1.77	0.006	0.05	0.4	1.2	0.16	0.06	71	0.7	0.09	9.3	2.53	<0.1
L2200N 09600E	Soil			0.092	11.3	25.3	0.50	93.4	0.023	1	1.59	0.010	0.11	1.2	1.5	0.12	0.07	32	0.5	0.07	6.0	3.80	<0.1
L2200N 09650E	Soil			0.096	6.5	16.9	0.31	101.6	0.022	1	1.42	0.007	0.09	0.6	1.0	0.12	0.06	33	0.4	0.08	6.6	3.46	<0.1
L2200N 09700E	Soil			0.081	6.3	15.9	0.29	46.5	0.026	<1	1.11	0.008	0.06	0.5	1.0	0.18	0.07	39	0.3	0.05	8.3	2.58	<0.1
L2200N 09750E	Soil			0.105	6.9	16.1	0.32	49.2	0.018	2	1.55	0.007	0.07	0.6	0.7	0.11	0.10	58	0.6	<0.02	5.7	3.77	<0.1

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Project: Troitsa  
 Report Date: October 22, 2010

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CERTIFICATE OF ANALYSIS

SMI10000620.1

Method	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
Analyte	Hf	Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pd	Pt	
Unit	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppb	ppb	
MDL	0.02	0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2	
L2200N 08150E	Soil	0.03	0.15	3.9	0.1	<0.05	0.8	5.51	21.1	<0.02	<1	0.1	6.4	<10	<2
L2200N 08200E	Soil	0.04	0.20	9.8	0.2	<0.05	1.3	7.25	26.3	0.02	<1	0.3	12.8	<10	<2
L2200N 08250E	Soil	0.05	0.17	6.0	0.2	<0.05	1.2	5.87	20.9	<0.02	<1	0.2	8.4	<10	<2
L2200N 08350E	Soil	0.04	0.22	6.1	0.2	<0.05	1.0	5.91	21.3	<0.02	<1	0.1	8.3	<10	<2
L2200N 08450E	Soil	0.02	0.56	8.6	0.3	<0.05	1.3	8.05	27.9	<0.02	<1	0.3	12.0	<10	<2
L2200N 08500E	Soil	<0.02	0.15	3.0	0.2	<0.05	0.8	5.32	17.5	<0.02	<1	0.1	8.3	<10	<2
L2200N 08550E	Soil	<0.02	0.46	10.3	0.4	<0.05	0.2	7.07	22.4	0.03	<1	0.3	19.7	<10	<2
L2200N 08600E	Soil	<0.02	0.43	7.5	0.4	<0.05	1.2	14.04	17.7	0.06	3	0.5	14.9	<10	<2
L2200N 08650E	Soil	<0.02	1.48	5.7	0.5	<0.05	0.8	6.63	15.7	0.05	<1	0.3	12.4	<10	<2
L2200N 08700E	Soil	<0.02	0.48	4.5	0.3	<0.05	0.6	5.71	16.3	0.04	<1	0.2	10.4	<10	<2
L2200N 08750E	Soil	<0.02	0.43	7.7	0.4	<0.05	1.2	9.79	34.8	0.11	<1	0.4	11.4	<10	<2
L2200N 08800E	Soil	<0.02	0.48	5.4	0.3	<0.05	0.6	6.69	22.0	0.04	<1	0.3	11.6	<10	<2
L2200N 08850E	Soil	<0.02	0.42	8.0	0.3	<0.05	0.6	9.98	27.7	0.04	<1	0.6	18.5	<10	<2
L2200N 08900E	Soil	<0.02	0.65	5.1	0.3	<0.05	0.5	6.18	15.6	0.04	<1	0.3	11.3	<10	<2
L2200N 08950E	Soil	<0.02	0.62	4.5	0.4	<0.05	0.3	2.97	9.6	0.05	<1	0.2	7.4	<10	<2
L2200N 09050E	Soil	<0.02	0.67	7.2	0.4	<0.05	0.5	9.60	14.1	0.04	<1	0.3	12.6	<10	<2
L2200N 09100E	Soil	0.03	4.29	8.6	1.9	<0.05	2.7	3.58	15.0	0.03	<1	0.2	8.8	<10	<2
L2200N 09150E	Soil	<0.02	1.06	8.6	0.6	<0.05	0.5	3.86	11.1	0.03	<1	0.2	12.0	<10	<2
L2200N 09200E	Soil	<0.02	1.87	7.0	0.7	<0.05	0.7	7.03	15.3	0.04	<1	0.2	8.2	<10	<2
L2200N 09250E	Soil	<0.02	1.77	9.8	0.5	<0.05	0.5	7.21	16.2	0.05	1	0.3	6.3	<10	<2
L2200N 09300E	Soil	<0.02	0.50	11.8	0.5	<0.05	0.1	7.38	13.9	0.04	<1	0.3	16.9	<10	<2
L2200N 09350E	Soil	<0.02	1.66	6.2	0.5	<0.05	0.6	2.69	11.1	0.05	<1	0.1	4.4	<10	<2
L2200N 09400E	Soil	<0.02	0.69	17.1	0.4	<0.05	0.3	3.27	20.9	0.06	1	0.4	21.7	<10	<2
L2200N 09450E	Soil	<0.02	0.58	20.2	0.3	<0.05	0.2	11.41	25.4	0.03	<1	0.6	18.3	<10	<2
L2200N 09500E	Soil	<0.02	1.62	26.8	0.6	<0.05	0.5	8.09	25.2	0.04	<1	0.4	16.1	<10	<2
L2200N 09550E	Soil	<0.02	0.81	15.4	0.4	<0.05	0.2	5.13	18.1	0.03	<1	0.2	4.8	<10	<2
L2200N 09600E	Soil	<0.02	0.46	21.3	0.3	<0.05	0.1	6.36	21.7	0.03	<1	0.3	16.0	<10	<2
L2200N 09650E	Soil	<0.02	0.32	33.9	0.4	<0.05	0.1	3.10	14.1	0.03	<1	0.3	10.0	<10	<2
L2200N 09700E	Soil	<0.02	0.91	12.5	0.5	<0.05	0.2	1.76	11.9	0.02	<1	<0.1	8.6	<10	<2
L2200N 09750E	Soil	<0.02	0.67	14.1	0.4	<0.05	0.1	3.26	13.2	0.02	<1	0.2	10.6	<10	<2

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Project: Troitsa  
Report Date: October 22, 2010

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CERTIFICATE OF ANALYSIS

SMI10000620.1

Method Analyte Unit MDL	G6	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	
	gm/t	ppm	%	%	%	gm/t	ppm	ppm	%	%	ppm	ppm	gm/t	ppm	ppm	ppm	ppm	ppm	ppm	ppm	
L2200N 09800E	Soil	<0.005	2.55	0.0051	0.0015	0.0034	0.247	8.0	4.0	0.0145	1.08	3.6	2.7	0.0026	0.2	5.5	0.06	0.27	0.37	33	0.06
L2200N 09850E	Soil	<0.005	4.19	0.0059	0.0015	0.0036	0.200	8.3	4.2	0.0153	1.35	4.3	2.5	0.0015	0.6	4.6	0.05	0.29	0.33	38	0.06
L2200N 09900E	Soil	<0.005	8.05	0.0169	0.0020	0.0080	0.250	16.5	20.0	0.0839	3.34	21.8	3.0	0.0198	2.1	6.7	0.32	1.17	0.62	66	0.09
L2200N 09950E	Soil	<0.005	3.57	0.0032	0.0016	0.0055	0.455	10.3	5.0	0.0168	3.20	10.1	0.9	0.0078	1.2	8.5	0.27	0.37	0.67	58	0.08
L2200N 10000E	Soil	<0.005	3.93	0.0049	0.0007	0.0038	0.133	8.5	9.1	0.0426	2.38	8.7	1.3	0.0041	3.0	8.6	0.13	0.81	0.17	50	0.20
L2350N 08000E	Soil	<0.005	2.41	0.0041	0.0006	0.0034	0.097	7.5	6.0	0.0402	2.45	9.6	1.3	0.0044	3.3	10.7	0.07	0.55	0.17	56	0.24
L2350N 08050E	Soil	<0.005	5.96	0.0053	0.0006	0.0034	0.155	8.8	7.2	0.0765	2.57	7.7	2.6	0.0037	4.4	18.5	0.12	0.52	0.18	62	0.28
L2350N 08100E	Soil	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
L2350N 08150E	Soil	0.006	9.32	0.0448	0.0017	0.0055	0.571	9.4	12.5	0.0638	4.12	10.7	3.4	0.0071	2.3	5.1	0.12	0.62	0.56	76	0.09
L2350N 08200E	Soil	<0.005	5.95	0.0111	0.0019	0.0069	0.167	11.1	11.5	0.0855	3.43	9.2	2.6	0.0037	1.9	7.7	0.12	0.68	0.44	95	0.13
L2350N 08250E	Soil	<0.005	2.44	0.0044	0.0005	0.0036	0.110	7.9	7.1	0.0473	2.15	5.8	1.4	0.0021	3.1	8.1	0.16	0.50	0.13	48	0.19
L2350N 08300E	Soil	0.005	4.54	0.0111	0.0020	0.0060	0.353	9.7	9.3	0.0601	3.84	12.8	1.8	0.0037	2.6	4.9	0.10	0.62	0.52	80	0.11
L2350N 08350E	Soil	<0.005	16.77	0.0077	0.0020	0.0037	1.180	4.8	4.1	0.0234	2.82	10.0	5.9	0.0030	0.3	11.1	0.21	0.47	0.45	67	0.08
L2350N 08400E	Soil	<0.005	15.11	0.0063	0.0027	0.0059	0.348	11.0	11.9	0.0680	3.63	8.7	10.6	0.0021	1.2	7.1	0.33	0.53	1.12	72	0.07
L2350N 08450E	Soil	<0.005	12.73	0.0421	0.0016	0.0056	0.301	8.5	5.8	0.0198	2.34	8.1	8.0	0.0027	0.9	10.8	0.12	0.43	0.59	48	0.12
L2350N 08500E	Soil	0.019	7.93	0.0174	0.0015	0.0046	0.226	8.7	5.8	0.0200	2.60	8.7	7.4	0.0043	1.2	6.6	0.06	0.39	5.90	61	0.11
L2350N 08550E	Soil	<0.005	29.32	0.0167	0.0015	0.0057	0.243	11.7	16.3	0.0675	3.41	9.5	11.4	0.0046	1.0	20.7	0.17	0.49	4.18	65	0.27
L2350N 08600E	Soil	<0.005	43.95	0.0258	0.0017	0.0079	0.506	9.3	10.1	0.0822	3.79	10.9	19.0	0.0024	0.6	26.6	0.18	0.74	1.20	86	0.24
L2350N 08650E	Soil	<0.005	24.21	0.0296	0.0026	0.0061	0.369	9.1	9.6	0.0491	2.85	8.4	12.5	0.0078	0.5	19.5	0.28	0.52	2.11	65	0.18
L2350N 08700E	Soil	<0.005	20.36	0.0789	0.0011	0.0044	0.774	7.1	11.5	0.0493	3.65	6.4	30.3	0.0051	0.7	17.9	0.24	0.54	0.92	60	0.21
L2350N 08750E	Soil	<0.005	16.28	0.0191	0.0018	0.0067	0.702	7.6	12.4	0.1298	4.00	9.5	19.3	0.0024	1.2	13.6	0.38	0.58	0.56	84	0.13
L2350N 08800E	Soil	<0.005	42.39	0.0092	0.0017	0.0045	0.254	7.7	29.0	0.2026	2.77	7.5	14.5	0.0035	0.3	28.3	0.31	0.41	1.87	55	0.19
L2350N 08850E	Soil	<0.005	62.53	0.0125	0.0010	0.0046	0.201	9.2	7.5	0.0229	2.83	5.4	45.1	0.0021	1.0	18.8	0.09	0.45	1.08	66	0.24
L2350N 08900E	Soil	<0.005	14.71	0.0144	0.0014	0.0079	0.188	11.0	8.6	0.0345	3.97	15.2	17.2	0.0122	1.7	10.3	0.14	0.57	0.79	77	0.09
L2350N 08950E	Soil	<0.005	31.11	0.0237	0.0021	0.0077	0.588	10.5	7.0	0.0221	3.06	8.2	26.1	0.0091	0.7	22.1	0.22	0.52	2.14	60	0.25
L2350N 09000E	Soil	<0.005	5.10	0.0073	0.0021	0.0031	0.580	4.5	3.4	0.0168	2.30	6.3	2.8	0.0029	0.3	8.6	0.14	0.27	1.25	59	0.07
L2350N 09050E	Soil	0.006	60.39	0.0090	0.0025	0.0083	0.234	10.8	9.9	0.0672	3.89	10.6	18.2	0.0018	0.7	24.9	0.08	0.64	0.75	79	0.19
L2350N 09100E	Soil	<0.005	5.35	0.0063	0.0013	0.0049	0.208	10.6	7.3	0.0336	3.56	6.0	5.5	0.0010	1.1	5.9	0.15	0.43	0.36	76	0.11
L2350N 09150E	Soil	<0.005	37.62	0.0113	0.0015	0.0088	0.197	10.6	9.6	0.0448	3.17	9.7	33.3	0.0024	1.2	11.4	0.14	0.55	0.57	77	0.11
L2350N 09200E	Soil	0.006	22.34	0.0068	0.0012	0.0067	0.936	6.6	10.6	0.0867	3.54	9.0	11.8	0.0022	0.5	9.5	0.49	0.60	0.22	70	0.09

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Project: Troitsa  
 Report Date: October 22, 2010

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CERTIFICATE OF ANALYSIS

SMI10000620.1

Method	Analyte	Unit	MDL	1F15 P %	1F15 La ppm	1F15 Cr ppm	1F15 Mg %	1F15 Ba ppm	1F15 Ti %	1F15 B ppm	1F15 Al %	1F15 Na %	1F15 K %	1F15 W ppm	1F15 Sc ppm	1F15 TI ppm	1F15 S %	1F15 Hg ppb	1F15 Se ppm	1F15 Te ppm	1F15 Ga ppm	1F15 Cs ppm	1F15 Ge ppm
L2200N 09800E	Soil			0.049	10.4	18.5	0.42	47.9	0.028	1	1.56	0.006	0.05	0.4	1.4	0.13	0.05	30	0.6	0.03	5.4	2.46	<0.1
L2200N 09850E	Soil			0.039	9.3	17.3	0.41	41.9	0.021	<1	1.59	0.006	0.05	0.5	1.9	0.12	0.04	27	0.6	0.03	5.3	3.02	<0.1
L2200N 09900E	Soil			0.073	10.3	27.5	0.58	55.3	0.026	3	2.44	0.009	0.11	0.7	3.5	0.16	0.04	67	0.7	0.10	6.0	3.09	<0.1
L2200N 09950E	Soil			0.069	5.0	24.6	0.44	58.1	0.029	2	2.64	0.006	0.04	0.4	3.1	0.09	0.06	151	0.6	0.10	6.8	2.56	<0.1
L2200N 10000E	Soil			0.070	7.6	18.0	0.38	22.5	0.028	1	0.67	0.012	0.04	0.4	2.2	0.05	<0.02	18	<0.1	0.05	2.9	1.27	<0.1
L2350N 08000E	Soil			0.080	8.0	19.7	0.34	23.1	0.027	1	0.60	0.011	0.04	0.4	1.9	0.03	<0.02	10	0.1	0.03	2.7	0.94	<0.1
L2350N 08050E	Soil			0.089	9.2	22.4	0.37	45.0	0.031	1	0.63	0.014	0.05	0.6	2.0	0.03	<0.02	17	<0.1	0.06	2.9	0.98	<0.1
L2350N 08100E	Soil			L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
L2350N 08150E	Soil			0.091	13.2	23.7	0.56	37.4	0.027	4	2.43	0.006	0.06	0.6	3.0	0.14	0.04	47	0.6	0.11	7.1	2.86	<0.1
L2350N 08200E	Soil			0.112	10.1	25.0	0.63	50.7	0.044	2	2.11	0.009	0.08	0.3	3.9	0.13	0.02	71	0.5	0.08	8.2	3.54	<0.1
L2350N 08250E	Soil			0.067	7.2	17.4	0.36	25.2	0.027	<1	0.60	0.012	0.04	0.4	1.9	0.03	<0.02	10	0.1	0.05	2.6	0.92	<0.1
L2350N 08300E	Soil			0.087	8.7	21.4	0.51	29.6	0.036	1	2.17	0.006	0.05	1.2	3.1	0.07	0.02	46	0.5	0.08	6.0	1.80	<0.1
L2350N 08350E	Soil			0.114	12.2	17.4	0.23	80.0	0.007	<1	1.88	0.006	0.04	0.2	0.7	0.23	0.07	84	0.6	0.05	8.9	2.84	<0.1
L2350N 08400E	Soil			0.090	11.9	22.8	0.46	71.0	0.027	1	2.11	0.007	0.09	1.1	2.0	0.14	0.07	71	0.8	0.21	8.8	5.06	<0.1
L2350N 08450E	Soil			0.093	14.9	16.0	0.42	62.5	0.011	2	1.85	0.006	0.06	0.7	1.8	0.15	0.04	50	0.5	0.06	5.8	4.42	<0.1
L2350N 08500E	Soil			0.101	13.1	26.1	0.50	40.2	0.017	1	2.24	0.006	0.06	1.5	1.8	0.13	0.04	64	0.8	0.29	7.9	2.73	<0.1
L2350N 08550E	Soil			0.092	12.8	22.1	0.52	80.0	0.026	2	2.00	0.007	0.09	1.5	1.7	0.12	0.06	51	0.5	0.25	7.6	5.01	<0.1
L2350N 08600E	Soil			0.091	16.1	17.7	0.45	96.8	0.018	2	2.39	0.008	0.07	0.4	1.9	0.23	0.07	50	0.5	0.13	9.5	6.16	<0.1
L2350N 08650E	Soil			0.089	18.9	19.8	0.39	102.1	0.029	1	1.83	0.007	0.09	1.1	1.9	0.18	0.07	55	0.5	0.17	8.9	5.20	<0.1
L2350N 08700E	Soil			0.129	22.3	21.1	0.38	58.7	0.021	2	2.52	0.008	0.05	0.9	1.4	0.17	0.11	167	1.0	0.11	6.9	3.45	<0.1
L2350N 08750E	Soil			0.100	17.7	21.0	0.44	50.6	0.054	1	2.58	0.007	0.05	0.9	3.0	0.18	0.09	89	0.7	0.06	9.3	3.42	<0.1
L2350N 08800E	Soil			0.107	12.3	16.4	0.38	74.5	0.014	1	1.51	0.007	0.09	1.4	1.0	0.20	0.08	55	0.6	0.10	7.2	7.20	<0.1
L2350N 08850E	Soil			0.089	14.8	21.8	0.56	73.7	0.022	1	1.66	0.007	0.07	2.8	1.9	0.08	0.06	33	1.0	0.07	7.4	7.41	<0.1
L2350N 08900E	Soil			0.086	15.9	23.2	0.58	58.6	0.034	1	2.75	0.007	0.08	0.7	3.2	0.16	0.07	74	0.7	0.10	8.5	4.54	<0.1
L2350N 08950E	Soil			0.094	20.9	20.3	0.46	117.0	0.018	1	2.41	0.008	0.09	0.9	1.9	0.28	0.08	80	1.0	0.14	8.0	5.90	<0.1
L2350N 09000E	Soil			0.097	7.1	17.8	0.19	56.2	0.020	1	1.93	0.006	0.04	2.8	0.9	0.13	0.07	174	0.5	0.10	9.3	2.69	<0.1
L2350N 09050E	Soil			0.058	9.7	20.7	0.57	84.8	0.025	1	2.06	0.007	0.08	0.4	3.2	0.12	0.05	63	0.3	0.10	8.1	4.18	<0.1
L2350N 09100E	Soil			0.083	11.7	29.2	0.47	51.8	0.116	<1	3.18	0.012	0.06	0.3	4.1	0.07	0.06	107	1.1	0.06	10.0	1.46	<0.1
L2350N 09150E	Soil			0.057	15.1	19.6	0.57	84.3	0.042	2	2.34	0.008	0.08	0.5	3.8	0.13	0.05	34	0.8	0.04	7.4	5.96	<0.1
L2350N 09200E	Soil			0.130	8.5	20.1	0.36	46.4	0.025	2	3.06	0.009	0.06	0.2	1.2	0.25	0.11	172	0.7	0.04	7.0	3.46	<0.1

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Project: Troitsa  
 Report Date: October 22, 2010

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CERTIFICATE OF ANALYSIS

SMI10000620.1

Method	Analyte	Unit	MDL	1F15 Hf	1F15 Nb	1F15 Rb	1F15 Sn	1F15 Ta	1F15 Zr	1F15 Y	1F15 Ce	1F15 In	1F15 Re	1F15 Be	1F15 Li	1F15 Pd	1F15 Pt
				ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppb	ppb	ppb
				0.02	0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2
L2200N 09800E	Soil			<0.02	0.66	6.6	0.3	<0.05	0.1	4.88	19.9	0.02	<1	0.1	12.7	<10	<2
L2200N 09850E	Soil			<0.02	0.55	7.4	0.3	<0.05	0.2	4.81	18.4	<0.02	<1	0.2	14.7	<10	<2
L2200N 09900E	Soil			<0.02	0.80	13.6	0.4	<0.05	0.7	7.24	25.3	0.08	1	0.4	17.9	<10	<2
L2200N 09950E	Soil			0.04	1.05	8.1	0.3	<0.05	1.2	2.67	10.1	0.05	1	0.2	13.4	<10	<2
L2200N 10000E	Soil			<0.02	0.14	6.3	0.2	<0.05	0.5	5.35	17.2	<0.02	<1	0.1	10.2	<10	<2
L2350N 08000E	Soil			<0.02	0.16	4.8	0.2	<0.05	0.6	5.06	17.4	<0.02	<1	<0.1	9.1	<10	<2
L2350N 08050E	Soil			<0.02	0.15	5.7	0.2	<0.05	0.6	5.78	20.2	<0.02	<1	0.1	10.0	<10	<2
L2350N 08100E	Soil			L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
L2350N 08150E	Soil			<0.02	0.63	12.4	0.4	<0.05	0.3	7.96	36.5	0.10	<1	0.4	13.0	<10	<2
L2350N 08200E	Soil			<0.02	0.61	17.5	0.5	<0.05	0.5	6.06	25.5	0.05	<1	0.4	13.3	<10	<2
L2350N 08250E	Soil			<0.02	0.13	6.3	0.1	<0.05	0.5	4.87	15.7	<0.02	<1	0.1	9.5	<10	<2
L2350N 08300E	Soil			<0.02	0.54	8.0	0.3	<0.05	0.5	5.29	21.4	0.05	<1	0.2	10.4	<10	<2
L2350N 08350E	Soil			<0.02	0.29	9.9	0.5	<0.05	<0.1	6.13	19.9	0.05	<1	0.4	7.5	<10	<2
L2350N 08400E	Soil			<0.02	0.90	21.0	0.4	<0.05	0.2	7.77	24.8	0.04	<1	0.3	18.4	<10	<2
L2350N 08450E	Soil			<0.02	0.42	16.3	0.4	<0.05	<0.1	7.34	24.9	0.05	<1	0.3	16.6	<10	<2
L2350N 08500E	Soil			<0.02	0.67	13.0	0.4	<0.05	0.3	6.13	27.0	0.05	<1	0.3	15.0	<10	<2
L2350N 08550E	Soil			<0.02	0.62	20.0	0.4	<0.05	0.2	7.33	22.4	0.04	<1	0.4	20.0	<10	<2
L2350N 08600E	Soil			<0.02	0.78	16.6	0.6	<0.05	0.2	9.70	17.8	0.05	<1	0.5	15.6	<10	<2
L2350N 08650E	Soil			<0.02	1.35	20.6	0.8	<0.05	0.3	9.31	24.1	0.04	<1	0.5	14.0	<10	<2
L2350N 08700E	Soil			<0.02	1.12	14.0	0.4	<0.05	0.2	18.10	31.1	0.05	1	0.7	10.5	<10	<2
L2350N 08750E	Soil			<0.02	3.21	13.1	1.2	<0.05	1.0	15.39	27.4	0.05	<1	0.5	10.0	<10	<2
L2350N 08800E	Soil			<0.02	0.59	21.6	0.5	<0.05	0.1	7.46	18.6	0.03	<1	0.4	15.1	<10	<2
L2350N 08850E	Soil			<0.02	0.50	16.1	0.5	<0.05	0.2	9.83	20.0	0.03	4	0.4	31.2	10	<2
L2350N 08900E	Soil			<0.02	1.81	17.0	0.6	<0.05	0.6	10.72	19.1	0.05	<1	0.6	17.4	<10	<2
L2350N 08950E	Soil			<0.02	0.83	18.2	0.4	<0.05	0.2	13.32	21.4	0.05	<1	0.5	27.5	<10	<2
L2350N 09000E	Soil			<0.02	1.28	9.9	0.5	<0.05	0.2	2.43	13.5	0.03	<1	0.3	5.7	<10	<2
L2350N 09050E	Soil			<0.02	0.40	17.3	0.4	<0.05	0.2	7.29	14.5	0.05	<1	0.4	19.1	<10	<2
L2350N 09100E	Soil			0.15	10.19	9.0	1.9	0.07	10.4	9.22	25.7	0.04	1	0.4	6.8	<10	<2
L2350N 09150E	Soil			<0.02	0.89	15.3	0.5	<0.05	0.5	12.23	20.4	0.04	4	0.5	27.2	<10	<2
L2350N 09200E	Soil			<0.02	1.01	12.9	0.4	<0.05	0.3	5.53	16.7	0.05	<1	0.4	12.5	<10	<2

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 Report Date: October 22, 2010

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CERTIFICATE OF ANALYSIS

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Method	G6	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15
Analyte	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	
Unit	gm/t	ppm	%	%	%	gm/t	ppm	ppm	%	%	ppm	ppm	gm/t	ppm	ppm	ppm	ppm	ppm	ppm	ppm	
MDL	0.005	0.01	1e-006	1e-006	1e-005	0.002	0.1	0.1	0.0001	0.01	0.1	0.1	0.0002	0.1	0.5	0.01	0.02	0.02	0.02	2	0.01
L2350N 09250E	Soil	<0.005	616.3	0.0053	0.0029	0.0095	0.419	6.9	35.2	0.2517	9.24	28.6	144.6	0.0055	1.5	38.1	0.19	1.06	0.55	180	0.39
L2350N 09300E	Soil	0.012	13.74	0.0034	0.0015	0.0029	0.496	4.4	3.7	0.0203	3.54	9.1	1.5	0.0052	2.4	4.7	0.12	0.48	0.54	111	0.04
L2350N 09350E	Soil	<0.005	13.92	0.0123	0.0014	0.0088	0.336	9.2	9.4	0.1064	3.41	8.9	20.9	0.0026	0.5	24.9	0.18	0.50	0.90	63	0.27
L2350N 09400E	Soil	<0.005	19.23	0.0080	0.0015	0.0103	0.203	10.9	9.1	0.0589	3.75	15.5	13.8	0.0016	0.4	13.8	0.23	0.74	0.30	78	0.14
L2350N 09450E	Soil	<0.005	36.28	0.0081	0.0019	0.0138	0.116	11.7	9.7	0.0564	4.24	18.0	14.4	0.0018	1.3	15.0	0.08	0.98	0.20	84	0.11
L2350N 09500E	Soil	0.016	29.93	0.0069	0.0012	0.0048	0.229	9.3	6.3	0.0151	1.48	2.9	12.9	0.0041	1.0	19.7	0.10	0.19	0.27	57	0.20
L2350N 09550E	Soil	<0.005	14.74	0.0053	0.0019	0.0059	0.554	13.3	7.7	0.0355	3.30	18.6	3.1	0.0012	1.0	9.7	0.15	0.83	0.41	70	0.07
L2350N 09600E	Soil	<0.005	4.31	0.0033	0.0015	0.0047	0.928	9.5	5.2	0.0258	4.62	16.5	0.8	0.0013	0.7	5.6	0.40	0.82	0.40	73	0.04
L2350N 09650E	Soil	0.008	5.40	0.0147	0.0016	0.0065	0.845	16.8	7.5	0.0241	2.48	11.3	1.9	0.0022	0.7	8.3	0.20	0.38	0.66	52	0.06
L2350N 09700E	Soil	<0.005	32.11	0.0140	0.0016	0.0059	0.290	8.4	12.1	0.0802	3.43	9.5	13.1	0.0010	0.9	14.8	0.16	0.55	1.03	74	0.13
L2350N 09750E	Soil	<0.005	2.80	0.0023	0.0010	0.0014	0.168	4.8	2.7	0.0071	2.85	9.8	0.7	0.0003	0.4	4.2	0.10	0.63	0.52	67	0.02



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**Project:** Troitsa  
**Report Date:** October 22, 2010

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**CERTIFICATE OF ANALYSIS**

**SMI10000620.1**

Method	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
Analyte	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga	Cs	Ge	
Unit	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm	
MDL	0.001	0.5	0.5	0.01	0.5	0.001	1	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	0.1	
L2350N 09250E	Soil	0.110	28.3	29.1	0.37	96.3	0.028	1	2.77	0.007	0.06	3.1	4.8	0.29	0.15	79	3.4	0.05	7.6	7.34	0.1
L2350N 09300E	Soil	0.056	6.1	19.3	0.23	31.3	0.084	<1	2.05	0.005	0.04	0.2	2.5	0.12	0.04	78	0.5	0.06	12.0	3.14	<0.1
L2350N 09350E	Soil	0.130	27.5	22.1	0.48	141.6	0.015	1	2.93	0.009	0.06	0.2	1.6	0.38	0.10	93	0.7	0.05	7.8	6.68	<0.1
L2350N 09400E	Soil	0.084	11.3	21.5	0.56	57.9	0.030	2	2.33	0.008	0.08	0.2	3.3	0.14	0.07	68	0.7	0.08	7.9	3.20	<0.1
L2350N 09450E	Soil	0.045	7.1	19.8	0.56	68.2	0.017	2	2.82	0.008	0.07	0.2	5.6	0.14	0.05	54	0.7	0.09	6.9	2.83	<0.1
L2350N 09500E	Soil	0.070	12.9	17.1	0.66	110.1	0.024	1	1.83	0.007	0.04	0.2	2.6	0.14	0.13	35	0.6	<0.02	7.4	2.78	<0.1
L2350N 09550E	Soil	0.040	9.0	25.6	0.46	67.8	0.026	1	2.61	0.008	0.09	0.4	3.1	0.16	0.03	43	0.6	0.05	7.5	2.75	<0.1
L2350N 09600E	Soil	0.048	6.2	25.4	0.31	54.9	0.033	<1	2.14	0.006	0.06	0.4	2.1	0.14	0.05	109	0.5	0.07	9.2	2.48	<0.1
L2350N 09650E	Soil	0.055	10.5	28.3	0.72	96.9	0.024	2	2.94	0.007	0.13	0.8	2.3	0.19	0.05	57	0.7	0.03	8.7	5.53	<0.1
L2350N 09700E	Soil	0.065	11.4	17.4	0.49	63.9	0.041	1	1.75	0.007	0.07	0.7	2.6	0.15	0.05	47	0.5	0.10	7.3	4.05	<0.1
L2350N 09750E	Soil	0.037	8.2	22.1	0.09	42.5	0.056	<1	1.06	0.004	0.05	0.2	1.3	0.07	0.03	47	0.3	0.12	10.1	1.76	<0.1



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Project: Troitsa  
 Report Date: October 22, 2010

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CERTIFICATE OF ANALYSIS

SMI10000620.1

Method	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
Analyte	Hf	Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pd	Pt	
Unit	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppb	ppb	
MDL	0.02	0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2	
L2350N 09250E	Soil	<0.02	1.16	13.4	0.4	<0.05	0.3	26.09	70.3	<0.02	9	1.1	23.2	*	<2
L2350N 09300E	Soil	0.02	2.60	10.1	0.6	<0.05	1.1	2.63	13.4	0.04	<1	0.2	6.6	<10	<2
L2350N 09350E	Soil	<0.02	0.91	17.1	0.5	<0.05	0.1	32.99	36.0	0.04	<1	1.4	21.4	<10	<2
L2350N 09400E	Soil	<0.02	0.86	11.4	0.5	<0.05	0.4	11.13	14.9	0.05	<1	0.4	14.4	<10	<2
L2350N 09450E	Soil	<0.02	0.60	10.7	0.4	<0.05	0.9	5.99	11.1	0.05	<1	0.3	16.8	<10	<2
L2350N 09500E	Soil	<0.02	0.73	6.9	0.4	<0.05	0.2	8.53	26.1	0.03	4	0.3	22.9	<10	<2
L2350N 09550E	Soil	<0.02	0.72	14.5	0.4	<0.05	0.2	5.23	19.5	0.03	1	0.3	18.4	<10	<2
L2350N 09600E	Soil	<0.02	1.30	10.8	0.4	<0.05	0.3	2.04	13.1	0.05	2	0.1	12.0	<10	<2
L2350N 09650E	Soil	<0.02	1.07	20.1	0.4	<0.05	0.2	5.77	24.2	0.05	<1	0.5	23.1	<10	<2
L2350N 09700E	Soil	<0.02	0.96	12.0	0.5	<0.05	0.4	7.39	18.6	0.03	<1	0.4	14.5	<10	<2
L2350N 09750E	Soil	<0.02	1.57	6.3	0.7	<0.05	0.4	1.86	17.0	0.02	<1	0.1	1.2	<10	<2



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Project: Troitsa  
Report Date: October 22, 2010

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QUALITY CONTROL REPORT

SMI10000620.1

Method	G6	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15
Analyte	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	
Unit	gm/t	ppm	%	%	%	gm/t	ppm	ppm	%	%	ppm	ppm	gm/t	ppm	ppm	ppm	ppm	ppm	ppm	%	
MDL	0.005	0.01	1e-006	1e-006	1e-005	0.002	0.1	0.1	0.0001	0.01	0.1	0.1	0.0002	0.1	0.5	0.01	0.02	0.02	2	0.01	
Pulp Duplicates																					
L1300N 9200E	Soil	0.007	2.30	0.0052	0.0016	0.0035	0.364	8.8	8.0	0.0341	2.57	7.8	2.1	0.0079	5.7	9.4	0.16	0.53	0.72	61	0.29
REP L1300N 9200E	QC		2.22	0.0051	0.0016	0.0034	0.357	9.1	7.7	0.0340	2.62	7.5	2.3	0.0096	5.8	9.8	0.17	0.53	0.81	64	0.29
L1450N 8950E	Soil	<0.005	2.99	0.0118	0.0013	0.0059	0.312	9.6	7.0	0.0297	2.45	14.8	1.6	0.0025	1.4	6.7	0.08	0.89	0.99	51	0.12
REP L1450N 8950E	QC	<0.005																			
L1600N 08600E	Soil	0.005	3.73	0.0048	0.0012	0.0049	0.187	8.6	7.3	0.0357	2.53	14.8	2.4	0.0038	0.9	8.2	0.21	0.84	0.75	58	0.14
REP L1600N 08600E	QC		3.72	0.0048	0.0013	0.0050	0.182	8.5	7.3	0.0360	2.57	14.6	2.4	0.0019	0.8	8.2	0.21	0.83	0.72	59	0.14
L1600N 09150E	Soil	<0.005	12.80	0.0021	0.0019	0.0009	0.306	1.8	0.6	0.0041	0.84	3.7	1.3	0.0011	0.3	5.3	0.05	0.28	0.61	29	0.03
REP L1600N 09150E	QC	I.S.																			
L1600N 09400E	Soil	<0.005	2.34	0.0070	0.0015	0.0039	0.220	9.8	8.7	0.0459	2.71	10.2	2.0	0.0076	4.4	11.0	0.22	0.65	1.35	65	0.28
REP L1600N 09400E	QC		2.32	0.0069	0.0015	0.0039	0.213	9.5	8.4	0.0464	2.71	10.4	2.0	0.0070	4.4	11.1	0.22	0.68	1.24	65	0.27
L1600N 09950E	Soil	I.S.	7.06	0.0024	0.0013	0.0022	0.291	7.0	5.0	0.0150	2.14	2.8	2.0	0.0029	1.2	5.3	0.05	0.22	1.05	66	0.06
REP L1600N 09950E	QC		7.59	0.0026	0.0014	0.0025	0.301	7.9	5.5	0.0167	2.23	3.1	2.1	0.0023	1.1	5.7	0.05	0.24	1.05	65	0.07
L1750N 09800E	Soil	0.007	2.59	0.0081	0.0015	0.0075	0.232	14.2	13.0	0.0696	3.35	29.2	1.2	0.0026	1.4	15.7	0.27	1.65	0.59	64	0.30
REP L1750N 09800E	QC		2.53	0.0076	0.0015	0.0075	0.218	13.3	12.5	0.0693	3.30	28.1	1.1	0.0022	1.3	15.5	0.26	1.56	0.57	62	0.29
L1900N 8750E	Soil	<0.005	2.16	0.0049	0.0011	0.0054	0.201	10.2	6.7	0.0387	3.58	20.8	1.0	0.0008	0.4	4.6	0.18	0.71	0.21	61	0.06
REP L1900N 8750E	QC	0.007																			
L1900N 9550E	Soil	<0.005	1.65	0.0041	0.0016	0.0091	0.220	14.0	13.7	0.0844	3.20	16.4	0.6	0.0015	1.2	14.0	0.21	1.13	0.26	64	0.20
REP L1900N 9550E	QC		1.99	0.0047	0.0017	0.0106	0.238	15.0	14.5	0.0903	3.35	18.4	0.7	0.0006	1.3	15.0	0.22	1.28	0.29	67	0.21
L1900N 09950E	Soil	0.005	2.28	0.0045	0.0018	0.0095	0.273	10.7	13.4	0.1126	3.29	21.0	0.9	0.0029	0.3	9.3	0.28	1.37	0.43	66	0.10
REP L1900N 09950E	QC		2.17	0.0047	0.0018	0.0095	0.275	10.8	13.4	0.1152	3.25	21.2	0.9	0.0061	0.2	9.0	0.29	1.37	0.42	66	0.10
L2050N 09400E	Soil	0.013	1.61	0.0092	0.0013	0.0093	0.191	24.9	14.3	0.1014	3.23	19.4	0.7	0.0021	3.1	29.2	0.35	1.11	0.37	58	0.82
REP L2050N 09400E	QC		1.78	0.0095	0.0013	0.0098	0.200	24.6	15.0	0.1031	3.32	20.1	0.8	0.0016	3.0	31.4	0.38	1.21	0.38	60	0.84
L2050N 09450E	Soil	<0.005	16.96	0.0132	0.0010	0.0045	0.439	9.9	6.7	0.0372	3.06	13.2	2.5	0.0026	0.4	4.2	0.18	0.45	0.64	53	0.04
REP L2050N 09450E	QC	I.S.																			
L2200N 08450E	Soil	<0.005	3.85	0.0064	0.0011	0.0047	0.173	10.9	10.4	0.0606	3.61	14.7	2.3	0.0052	7.0	16.5	0.18	0.63	0.30	66	0.36
REP L2200N 08450E	QC		3.96	0.0071	0.0011	0.0049	0.181	11.3	10.9	0.0617	3.62	15.0	2.3	0.0019	7.0	15.9	0.20	0.63	0.29	65	0.37
L2200N 09450E	Soil	<0.005	17.92	0.0189	0.0017	0.0066	0.226	12.6	18.3	0.0765	2.76	13.5	8.6	0.0038	1.1	6.8	0.26	0.54	0.52	55	0.07
REP L2200N 09450E	QC	<0.005																			

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.



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**Project:** Troitsa  
**Report Date:** October 22, 2010

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QUALITY CONTROL REPORT

SMI10000620.1

Method	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
Analyte	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Ti	S	Hg	Se	Te	Ga	Cs	Ge	
Unit	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm	
MDL	0.001	0.5	0.5	0.01	0.5	0.001	1	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	0.1	
Pulp Duplicates																					
L1300N 9200E	Soil	0.114	12.5	25.7	0.42	33.5	0.036	<1	0.57	0.012	0.04	0.5	1.9	0.03	<0.02	12	<0.1	0.10	3.0	0.73	<0.1
REP L1300N 9200E	QC	0.107	12.1	27.5	0.41	33.9	0.040	<1	0.58	0.011	0.04	0.4	1.9	0.03	<0.02	9	<0.1	0.09	2.9	0.75	<0.1
L1450N 8950E	Soil	0.097	11.0	19.0	0.46	40.3	0.025	1	1.64	0.007	0.06	0.8	3.5	0.10	<0.02	28	0.4	0.13	4.7	2.40	<0.1
REP L1450N 8950E	QC																				
L1600N 08600E	Soil	0.084	11.4	16.9	0.40	52.0	0.019	<1	1.34	0.010	0.06	0.2	2.7	0.10	<0.02	27	0.3	0.06	4.9	1.95	<0.1
REP L1600N 08600E	QC	0.086	11.2	17.4	0.40	54.2	0.019	2	1.34	0.011	0.06	0.2	2.4	0.10	<0.02	22	0.3	0.12	4.9	1.92	<0.1
L1600N 09150E	Soil	0.018	5.5	7.5	0.04	23.3	0.061	3	0.88	0.006	0.02	0.2	1.0	0.19	<0.02	11	0.3	0.02	7.9	1.95	<0.1
REP L1600N 09150E	QC																				
L1600N 09400E	Soil	0.103	11.4	23.5	0.41	33.8	0.041	<1	0.68	0.013	0.05	0.6	2.4	0.05	<0.02	13	<0.1	0.07	3.1	1.03	<0.1
REP L1600N 09400E	QC	0.103	11.4	23.5	0.42	33.3	0.041	<1	0.68	0.013	0.05	0.7	2.2	0.05	<0.02	8	0.2	0.08	3.2	1.04	<0.1
L1600N 09950E	Soil	0.039	4.2	28.7	0.38	32.1	0.098	1	0.84	0.006	0.04	0.4	1.2	0.07	0.03	19	0.3	<0.02	8.0	2.65	<0.1
REP L1600N 09950E	QC	0.044	4.5	29.7	0.41	34.6	0.130	<1	0.87	0.007	0.05	0.7	1.3	0.08	0.03	13	0.3	<0.02	8.7	3.16	<0.1
L1750N 09800E	Soil	0.071	8.5	20.7	0.58	68.3	0.035	1	1.27	0.025	0.09	0.8	4.3	0.11	<0.02	24	0.4	0.15	4.3	2.34	<0.1
REP L1750N 09800E	QC	0.069	8.0	21.2	0.56	64.1	0.033	2	1.26	0.024	0.09	0.8	4.0	0.11	<0.02	23	0.3	0.11	4.4	2.17	<0.1
L1900N 8750E	Soil	0.111	5.7	23.2	0.37	34.7	0.031	<1	3.34	0.006	0.04	0.6	2.0	0.08	0.06	121	0.9	0.16	6.1	1.24	<0.1
REP L1900N 8750E	QC																				
L1900N 9550E	Soil	0.061	7.0	20.5	0.55	77.5	0.024	1	1.31	0.015	0.07	0.2	5.0	0.10	<0.02	17	0.4	0.11	3.7	2.27	<0.1
REP L1900N 9550E	QC	0.071	7.5	22.2	0.53	82.2	0.028	2	1.28	0.018	0.07	0.2	5.5	0.11	<0.02	17	0.3	0.12	4.4	2.50	<0.1
L1900N 09950E	Soil	0.045	11.9	16.8	0.56	66.9	0.019	3	1.75	0.012	0.09	0.1	5.0	0.14	0.02	38	0.7	0.11	4.9	3.12	<0.1
REP L1900N 09950E	QC	0.043	12.4	16.7	0.56	68.2	0.018	3	1.73	0.012	0.10	0.2	4.8	0.15	0.02	38	0.6	0.13	5.0	3.17	<0.1
L2050N 09400E	Soil	0.073	9.7	26.1	0.71	138.1	0.047	2	1.48	0.036	0.20	0.2	5.9	0.15	0.08	23	0.2	0.07	5.1	3.18	<0.1
REP L2050N 09400E	QC	0.076	10.4	27.4	0.72	144.2	0.049	2	1.55	0.037	0.21	0.3	6.0	0.15	0.08	27	<0.1	0.11	5.2	3.44	<0.1
L2050N 09450E	Soil	0.097	8.2	21.6	0.30	45.2	0.014	<1	1.86	0.006	0.07	1.1	0.8	0.12	0.09	53	0.4	0.12	7.4	2.36	<0.1
REP L2050N 09450E	QC																				
L2200N 08450E	Soil	0.104	13.2	25.3	0.53	81.1	0.058	1	0.96	0.022	0.09	0.6	3.1	0.08	<0.02	13	0.1	0.11	4.2	1.69	0.1
REP L2200N 08450E	QC	0.108	13.4	26.0	0.54	83.7	0.053	1	0.95	0.023	0.09	0.6	3.0	0.08	<0.02	14	0.1	0.07	4.4	1.69	<0.1
L2200N 09450E	Soil	0.049	12.7	21.0	0.53	67.1	0.030	1	2.04	0.007	0.08	0.8	2.7	0.16	0.04	36	0.7	0.06	6.1	3.48	<0.1
REP L2200N 09450E	QC																				

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QUALITY CONTROL REPORT

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Method	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
Analyte	Hf	Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pd	Pt	
Unit	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppb	ppb	
MDL	0.02	0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2	
Pulp Duplicates															
L1300N 9200E	Soil	<0.02	0.15	3.6	0.2	<0.05	0.4	5.68	25.0	<0.02	<1	0.1	7.6	<10	<2
REP L1300N 9200E	QC	<0.02	0.19	3.6	0.2	<0.05	0.5	5.73	24.3	<0.02	<1	0.2	8.2	<10	<2
L1450N 8950E	Soil	<0.02	0.33	6.8	0.3	<0.05	0.4	7.79	23.9	0.03	<1	0.2	12.3	<10	<2
REP L1450N 8950E	QC														
L1600N 08600E	Soil	<0.02	0.15	5.9	0.2	<0.05	<0.1	6.78	23.0	0.03	<1	0.2	11.6	<10	<2
REP L1600N 08600E	QC	<0.02	0.17	6.0	0.2	<0.05	<0.1	6.77	22.4	0.02	<1	0.2	12.2	<10	<2
L1600N 09150E	Soil	<0.02	1.56	3.8	0.8	<0.05	0.2	1.48	11.4	<0.02	<1	0.1	6.5	<10	<2
REP L1600N 09150E	QC														
L1600N 09400E	Soil	<0.02	0.26	3.8	0.2	<0.05	0.4	5.80	25.1	<0.02	<1	0.2	9.5	<10	<2
REP L1600N 09400E	QC	<0.02	0.27	4.0	0.2	<0.05	0.5	5.79	25.1	<0.02	<1	0.2	9.3	<10	<2
L1600N 09950E	Soil	<0.02	1.51	7.1	0.6	<0.05	0.5	1.68	8.3	<0.02	<1	0.1	6.4	<10	<2
REP L1600N 09950E	QC	<0.02	1.41	8.7	0.7	<0.05	0.4	1.83	8.5	0.02	1	0.2	6.9	<10	<2
L1750N 09800E	Soil	<0.02	0.21	6.1	0.2	<0.05	0.3	7.94	20.0	0.03	<1	0.5	13.9	<10	<2
REP L1750N 09800E	QC	<0.02	0.20	5.9	0.2	<0.05	0.3	7.73	18.8	0.02	<1	0.2	14.0	<10	<2
L1900N 8750E	Soil	<0.02	0.79	3.3	0.2	<0.05	0.4	4.20	13.1	0.04	<1	0.3	8.9	<10	<2
REP L1900N 8750E	QC														
L1900N 9550E	Soil	<0.02	0.24	5.9	0.2	<0.05	0.5	6.06	17.1	0.03	<1	0.6	11.2	<10	<2
REP L1900N 9550E	QC	<0.02	0.25	6.6	0.2	<0.05	0.5	6.60	18.1	0.03	<1	0.4	11.2	<10	<2
L1900N 09950E	Soil	<0.02	0.08	9.2	0.3	<0.05	0.1	19.10	18.7	0.03	<1	0.5	13.2	<10	<2
REP L1900N 09950E	QC	<0.02	0.08	8.6	0.3	<0.05	<0.1	18.75	18.8	0.04	<1	0.4	12.9	<10	<2
L2050N 09400E	Soil	0.08	0.14	12.2	0.4	<0.05	3.2	9.01	21.2	0.03	<1	0.3	15.6	<10	<2
REP L2050N 09400E	QC	0.09	0.06	12.7	0.4	<0.05	3.3	9.46	22.2	0.04	<1	0.5	17.5	<10	<2
L2050N 09450E	Soil	<0.02	0.68	13.3	0.3	<0.05	0.1	3.30	15.3	0.03	<1	0.2	9.3	<10	<2
REP L2050N 09450E	QC														
L2200N 08450E	Soil	0.02	0.56	8.6	0.3	<0.05	1.3	8.05	27.9	<0.02	<1	0.3	12.0	<10	<2
REP L2200N 08450E	QC	0.02	0.45	8.5	0.2	<0.05	1.2	7.95	28.0	0.02	<1	0.3	12.3	<10	<2
L2200N 09450E	Soil	<0.02	0.58	20.2	0.3	<0.05	0.2	11.41	25.4	0.03	<1	0.6	18.3	<10	<2
REP L2200N 09450E	QC														

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Project: Troitsa  
 Report Date: October 22, 2010

Page: 2 of 3 Part 1

QUALITY CONTROL REPORT

SMI10000620.1

		G6	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15
		Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca
		gm/t	ppm	%	%	%	gm/t	ppm	ppm	%	%	ppm	ppm	gm/t	ppm	ppm	ppm	ppm	ppm	ppm	%
		0.005	0.01	1e-006	1e-006	1e-005	0.002	0.1	0.1	0.0001	0.01	0.1	0.1	0.0002	0.1	0.5	0.01	0.02	0.02	2	0.01
L2200N 09850E	Soil	<0.005	4.19	0.0059	0.0015	0.0036	0.200	8.3	4.2	0.0153	1.35	4.3	2.5	0.0015	0.6	4.6	0.05	0.29	0.33	38	0.06
REP L2200N 09850E	QC		4.43	0.0065	0.0016	0.0038	0.216	8.7	4.4	0.0156	1.42	4.6	2.7	0.0023	0.5	4.9	0.05	0.31	0.37	41	0.06
L2200N 09900E	Soil	<0.005	8.05	0.0169	0.0020	0.0080	0.250	16.5	20.0	0.0839	3.34	21.8	3.0	0.0198	2.1	6.7	0.32	1.17	0.62	66	0.09
REP L2200N 09900E	QC		8.22	0.0170	0.0021	0.0080	0.248	16.6	20.3	0.0830	3.31	21.7	3.1	0.0106	2.1	6.8	0.28	1.13	0.70	66	0.09
L2350N 09250E	Soil	<0.005	616.3	0.0053	0.0029	0.0095	0.419	6.9	35.2	0.2517	9.24	28.6	144.6	0.0055	1.5	38.1	0.19	1.06	0.55	180	0.39
REP L2350N 09250E	QC	<0.005																			
L2350N 09550E	Soil	<0.005	14.74	0.0053	0.0019	0.0059	0.554	13.3	7.7	0.0355	3.30	18.6	3.1	0.0012	1.0	9.7	0.15	0.83	0.41	70	0.07
REP L2350N 09550E	QC	<0.005																			
L2350N 09650E	Soil	0.008	5.40	0.0147	0.0016	0.0065	0.845	16.8	7.5	0.0241	2.48	11.3	1.9	0.0022	0.7	8.3	0.20	0.38	0.66	52	0.06
REP L2350N 09650E	QC		5.34	0.0142	0.0016	0.0063	0.828	16.6	7.4	0.0239	2.45	10.9	1.8	0.0027	0.7	7.7	0.23	0.39	0.66	50	0.05
Reference Materials																					
STD DS7	Standard		19.52	0.0098	0.0066	0.0384	1.055	51.4	9.2	0.0608	2.27	51.7	4.7	0.0931	4.4	71.5	6.25	5.81	4.63	78	0.89
STD DS7	Standard		19.23	0.0116	0.0063	0.0401	0.966	56.4	9.2	0.0613	2.32	49.0	4.5	0.0842	4.0	62.7	6.00	5.75	4.46	81	0.89
STD DS7	Standard		20.46	0.0112	0.0069	0.0399	1.012	54.4	9.4	0.0623	2.45	51.5	5.1	0.0703	5.1	81.5	6.51	5.20	4.87	84	1.01
STD DS7	Standard		19.02	0.0106	0.0065	0.0381	1.004	51.1	8.9	0.0587	2.29	49.9	4.6	0.0695	4.4	69.7	6.28	5.80	4.58	80	0.94
STD DS7	Standard		21.38	0.0116	0.0068	0.0401	0.981	55.7	10.0	0.0642	2.42	51.7	4.9	0.0777	4.8	72.2	6.45	6.03	4.79	80	0.99
STD DS7	Standard		20.70	0.0112	0.0069	0.0390	0.973	55.7	9.7	0.0613	2.36	49.6	4.9	0.0629	4.8	71.0	6.43	5.88	4.60	83	0.98
STD DS7	Standard		20.07	0.0108	0.0060	0.0376	1.008	54.5	9.1	0.0578	2.27	48.0	4.5	0.0975	4.3	66.2	5.86	5.22	4.31	75	0.92
STD DS7	Standard		21.10	0.0094	0.0059	0.0405	1.006	57.3	8.2	0.0633	2.36	43.7	4.4	0.0779	4.3	72.9	5.94	5.34	4.01	80	0.94
STD OXH66	Standard	1.391																			
STD OXH66	Standard	1.372																			
STD OXH66	Standard	1.362																			
STD OXH66	Standard	1.391																			
STD OXH66	Standard	1.167																			
STD OXH66	Standard	1.241																			
STD OXH66	Standard	1.167																			
STD OXH66	Standard	1.232																			
STD OXH66	Standard	1.189																			
STD OXH66	Standard	1.278																			

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Project: Troitsa

Report Date: October 22, 2010

Page: 2 of 3 Part 2

QUALITY CONTROL REPORT

SMI10000620.1

		1F15 P %	1F15 La ppm	1F15 Cr ppm	1F15 Mg %	1F15 Ba ppm	1F15 Ti %	1F15 B ppm	1F15 Al %	1F15 Na %	1F15 K %	1F15 W ppm	1F15 Sc ppm	1F15 Ti ppm	1F15 S %	1F15 Hg ppb	1F15 Se ppm	1F15 Te ppm	1F15 Ga ppm	1F15 Cs ppm	1F15 Ge ppm
L2200N 09850E	Soil	0.039	9.3	17.3	0.41	41.9	0.021	<1	1.59	0.006	0.05	0.5	1.9	0.12	0.04	27	0.6	0.03	5.3	3.02	<0.1
REP L2200N 09850E	QC	0.043	10.0	18.3	0.44	46.7	0.025	1	1.68	0.006	0.05	0.5	2.0	0.13	0.04	26	0.6	0.02	5.7	3.32	<0.1
L2200N 09900E	Soil	0.073	10.3	27.5	0.58	55.3	0.026	3	2.44	0.009	0.11	0.7	3.5	0.16	0.04	67	0.7	0.10	6.0	3.09	<0.1
REP L2200N 09900E	QC	0.074	10.2	27.6	0.58	57.4	0.025	3	2.43	0.008	0.11	0.7	3.6	0.16	0.04	54	0.6	0.09	5.8	3.16	<0.1
L2350N 09250E	Soil	0.110	28.3	29.1	0.37	96.3	0.028	1	2.77	0.007	0.06	3.1	4.8	0.29	0.15	79	3.4	0.05	7.6	7.34	0.1
REP L2350N 09250E	QC																				
L2350N 09550E	Soil	0.040	9.0	25.6	0.46	67.8	0.026	1	2.61	0.008	0.09	0.4	3.1	0.16	0.03	43	0.6	0.05	7.5	2.75	<0.1
REP L2350N 09550E	QC																				
L2350N 09650E	Soil	0.055	10.5	28.3	0.72	96.9	0.024	2	2.94	0.007	0.13	0.8	2.3	0.19	0.05	57	0.7	0.03	8.7	5.53	<0.1
REP L2350N 09650E	QC	0.055	10.1	27.7	0.70	91.4	0.021	1	2.84	0.007	0.12	0.8	2.0	0.17	0.05	54	0.8	0.04	8.5	5.20	<0.1
Reference Materials																					
STD DS7	Standard	0.080	13.2	181.5	1.01	387.0	0.119	42	0.99	0.096	0.44	3.5	2.7	3.91	0.18	206	3.2	1.31	4.5	6.13	<0.1
STD DS7	Standard	0.078	10.5	178.0	1.02	373.8	0.113	40	0.94	0.085	0.45	3.5	2.2	3.94	0.18	226	3.2	1.25	4.5	6.15	0.1
STD DS7	Standard	0.077	14.9	182.3	1.08	377.3	0.121	40	1.10	0.102	0.47	3.4	3.0	4.32	0.20	220	3.1	1.31	5.4	6.67	0.1
STD DS7	Standard	0.077	12.8	171.6	1.01	400.3	0.116	40	1.01	0.094	0.45	3.5	2.6	3.89	0.18	194	3.1	1.24	4.9	6.34	0.1
STD DS7	Standard	0.081	13.7	185.6	1.08	397.0	0.122	41	1.07	0.095	0.48	3.8	2.9	4.24	0.19	216	3.2	1.28	5.1	6.72	0.2
STD DS7	Standard	0.075	14.3	188.7	1.07	384.8	0.121	39	1.03	0.097	0.46	3.6	2.8	4.15	0.19	215	3.1	1.27	5.0	6.48	<0.1
STD DS7	Standard	0.075	12.3	184.8	0.98	367.7	0.116	35	1.01	0.089	0.45	3.3	2.6	3.71	0.19	203	3.1	1.11	4.5	5.97	<0.1
STD DS7	Standard	0.072	12.2	212.5	1.03	408.3	0.121	40	1.01	0.101	0.45	3.6	2.5	4.32	0.19	220	3.3	1.31	5.3	5.86	0.1
STD OXH66	Standard																				
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**Project:** Troitsa  
**Report Date:** October 22, 2010

**Page:** 2 of 3 **Part** 3

QUALITY CONTROL REPORT

SMI10000620.1

		1F15 Hf ppm 0.02	1F15 Nb ppm 0.02	1F15 Rb ppm 0.1	1F15 Sn ppm 0.1	1F15 Ta ppm 0.05	1F15 Zr ppm 0.1	1F15 Y ppm 0.01	1F15 Ce ppm 0.1	1F15 In ppm 0.02	1F15 Re ppb 1	1F15 Be ppm 0.1	1F15 Li ppm 0.1	1F15 Pd ppb 10	1F15 Pt ppb 2
L2200N 09850E	Soil	<0.02	0.55	7.4	0.3	<0.05	0.2	4.81	18.4	<0.02	<1	0.2	14.7	<10	<2
REP L2200N 09850E	QC	<0.02	0.59	7.7	0.3	<0.05	0.1	5.24	20.2	0.03	<1	0.2	15.7	<10	<2
L2200N 09900E	Soil	<0.02	0.80	13.6	0.4	<0.05	0.7	7.24	25.3	0.08	1	0.4	17.9	<10	<2
REP L2200N 09900E	QC	<0.02	0.77	14.1	0.3	<0.05	0.7	7.33	26.5	0.04	<1	0.4	18.1	<10	<2
L2350N 09250E	Soil	<0.02	1.16	13.4	0.4	<0.05	0.3	26.09	70.3	<0.02	9	1.1	23.2	*	<2
REP L2350N 09250E	QC														
L2350N 09550E	Soil	<0.02	0.72	14.5	0.4	<0.05	0.2	5.23	19.5	0.03	1	0.3	18.4	<10	<2
REP L2350N 09550E	QC														
L2350N 09650E	Soil	<0.02	1.07	20.1	0.4	<0.05	0.2	5.77	24.2	0.05	<1	0.5	23.1	<10	<2
REP L2350N 09650E	QC	<0.02	1.04	18.4	0.5	<0.05	0.3	5.62	22.9	0.04	<1	0.4	22.9	<10	<2
Reference Materials															
STD DS7	Standard	0.11	0.57	37.4	4.8	<0.05	4.7	6.17	36.0	1.50	3	1.4	28.9	73	39
STD DS7	Standard	0.09	0.42	35.9	4.5	<0.05	5.4	5.04	34.2	1.43	8	1.9	29.8	88	35
STD DS7	Standard	0.10	0.63	38.8	5.5	<0.05	5.7	7.08	41.0	1.82	4	1.5	29.8	58	42
STD DS7	Standard	0.11	0.55	36.3	4.8	<0.05	5.5	6.04	39.0	1.56	5	1.5	29.6	59	40
STD DS7	Standard	0.12	0.71	39.7	5.0	<0.05	6.0	6.71	38.4	1.69	3	1.6	31.2	55	36
STD DS7	Standard	0.12	0.63	46.6	5.0	<0.05	5.7	7.00	41.2	1.62	5	1.6	29.8	54	44
STD DS7	Standard	0.11	0.45	36.4	4.8	<0.05	5.1	6.08	36.4	1.37	2	1.8	28.6	70	34
STD DS7	Standard	0.13	0.72	37.0	4.6	<0.05	6.0	5.87	39.6	1.50	3	1.7	27.7	104	42
STD OXH66	Standard														
STD OXH66	Standard														
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**Project:** Troitsa

**Report Date:** October 22, 2010

**Page:** 3 of 3 **Part** 2

QUALITY CONTROL REPORT

SMI10000620.1

		1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15		
		P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga	Cs	Ge	
		%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm	
		0.001	0.5	0.5	0.01	0.5	0.001	1	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.02	0.1	
STD OXH66	Standard																					
STD OXH66	Standard																					
STD OXH66	Standard																					
STD DS7 Expected		0.08	11.7	179	1.05	410	0.124	38.6	0.959	0.089	0.44	3.4	2.5	4.19	0.19	200	3.5	1.08	4.6	6.36	0.1	
STD OXH66 Expected																						
BLK	Blank	<0.001	<0.5	<0.5	<0.01	<0.5	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02	<0.1	<0.02	<0.1	
BLK	Blank	<0.001	<0.5	<0.5	<0.01	<0.5	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02	<0.1	<0.02	<0.1	
BLK	Blank	<0.001	<0.5	<0.5	<0.01	<0.5	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02	<0.1	<0.02	<0.1	
BLK	Blank	<0.001	<0.5	<0.5	<0.01	<0.5	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02	<0.1	<0.02	<0.1	
BLK	Blank	<0.001	<0.5	<0.5	<0.01	<0.5	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02	<0.1	<0.02	<0.1	
BLK	Blank	<0.001	<0.5	<0.5	<0.01	<0.5	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02	<0.1	<0.02	<0.1	
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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.



Acme Analytical Laboratories (Vancouver) Ltd.

1020 Cordova St. East Vancouver BC V6A 4A3 Canada

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

www.acmelab.com

Client: **Callinan Mines Limited**

Suite 1100 - 736 Granville Street

Vancouver BC V6Z 1G3 Canada

Project: Troitsa

Report Date: October 22, 2010

Page: 3 of 3 Part 3

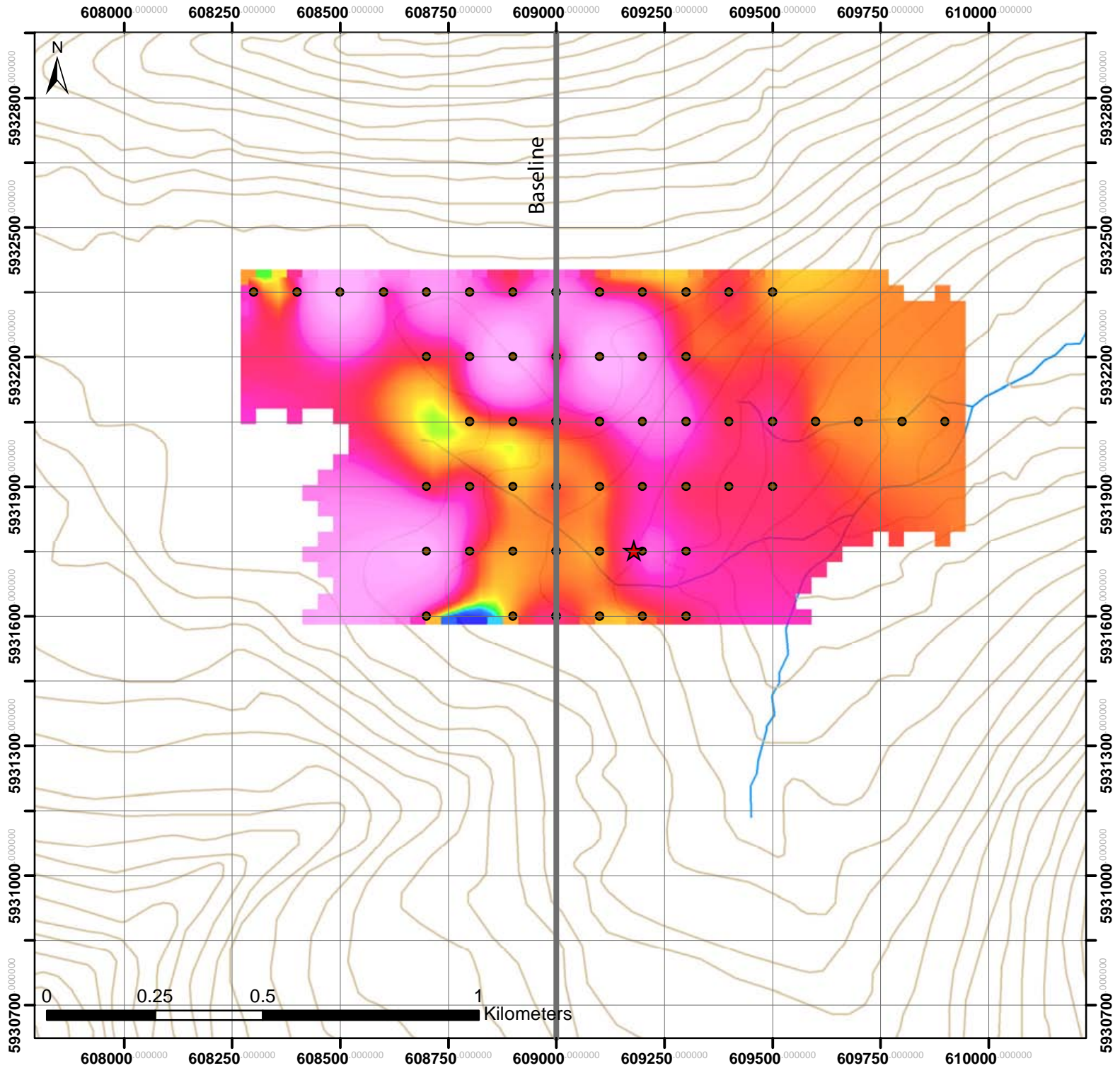
# QUALITY CONTROL REPORT

SMI10000620.1

		1F15 Hf ppm 0.02	1F15 Nb ppm 0.02	1F15 Rb ppm 0.1	1F15 Sn ppm 0.1	1F15 Ta ppm 0.05	1F15 Zr ppm 0.1	1F15 Y ppm 0.01	1F15 Ce ppm 0.1	1F15 In ppm 0.02	1F15 Re ppb 1	1F15 Be ppm 0.1	1F15 Li ppm 0.1	1F15 Pd ppb 10	1F15 Pt ppb 2
STD OXH66	Standard														
STD OXH66	Standard														
STD OXH66	Standard														
STD DS7 Expected		0.11	0.71	35.8	4.61		5.4	5.18	36	1.57	4	1.6	29.3	58	37
STD OXH66 Expected															
BLK	Blank	<0.02	<0.02	<0.1	<0.1	<0.05	<0.1	<0.01	<0.1	<0.02	<1	<0.1	<0.1	<10	<2
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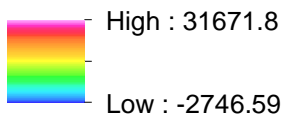
**Appendix E**  
**MMI Soil Survey Plots**

# Troitsa MMI Cu



## Cu MMI M5 ppb 10

### Value

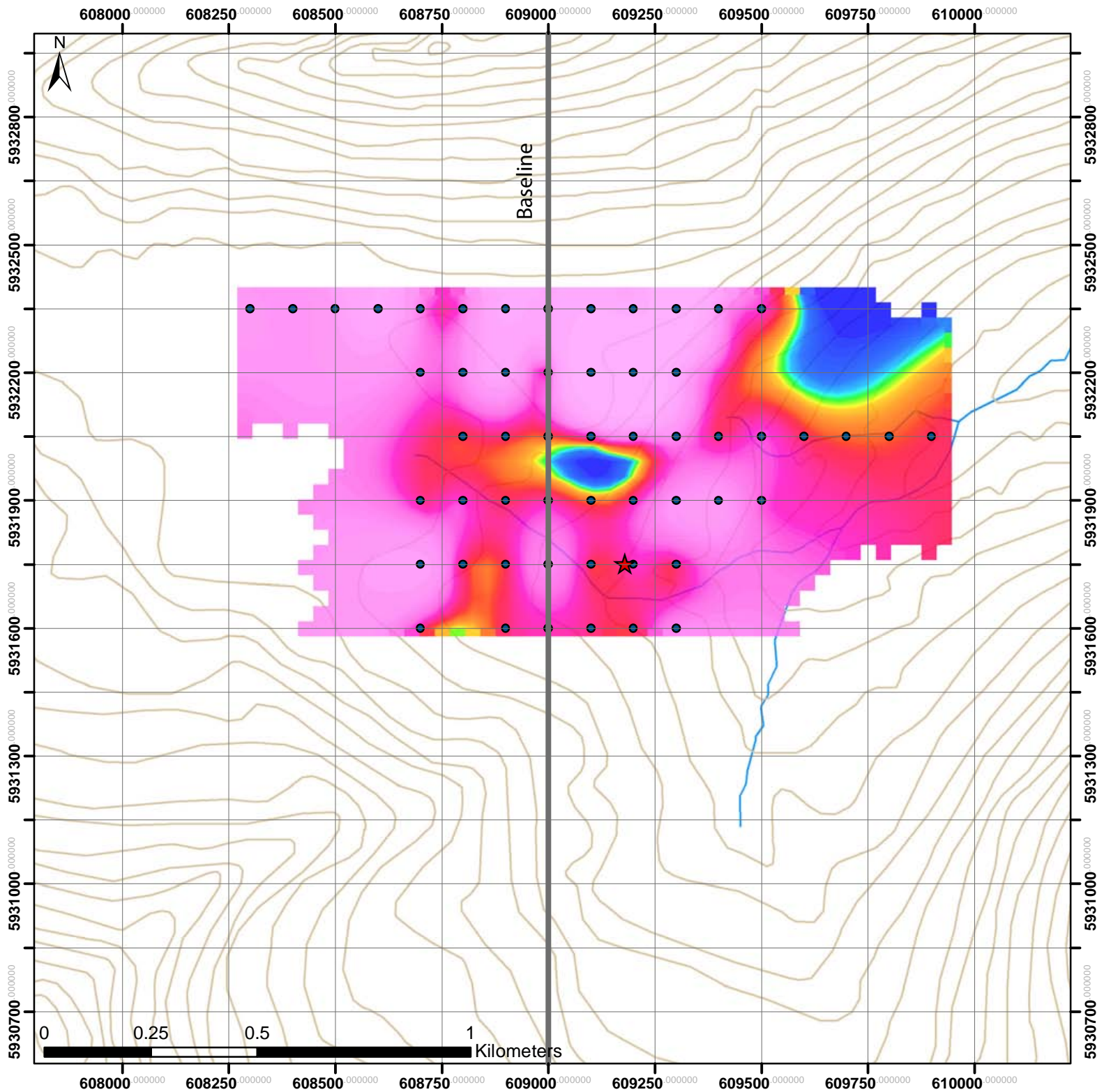


★ Troitsa Main Showing



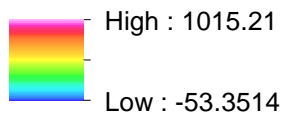
**CALLINAN MINES**  
LIMITED

# Troitsa MMI Mo



## Mo MMI M5 ppb 5

### Value

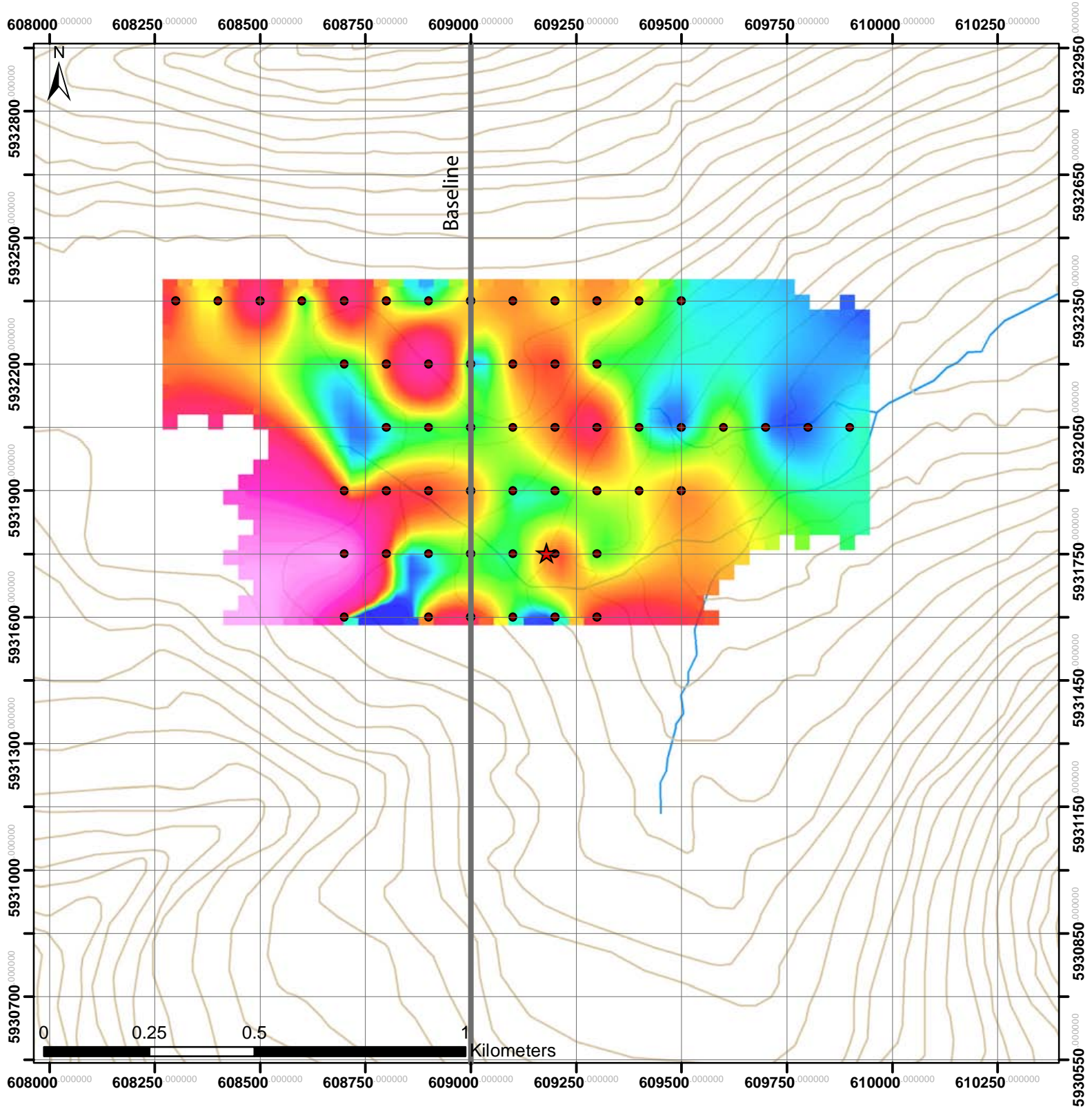


★ Troitsa Main Showing



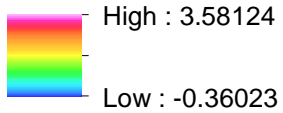
**CALLINAN MINES**  
LIMITED

# Troitsa MMI Au



**Au MMI M5 ppb 0.1**

**Value**

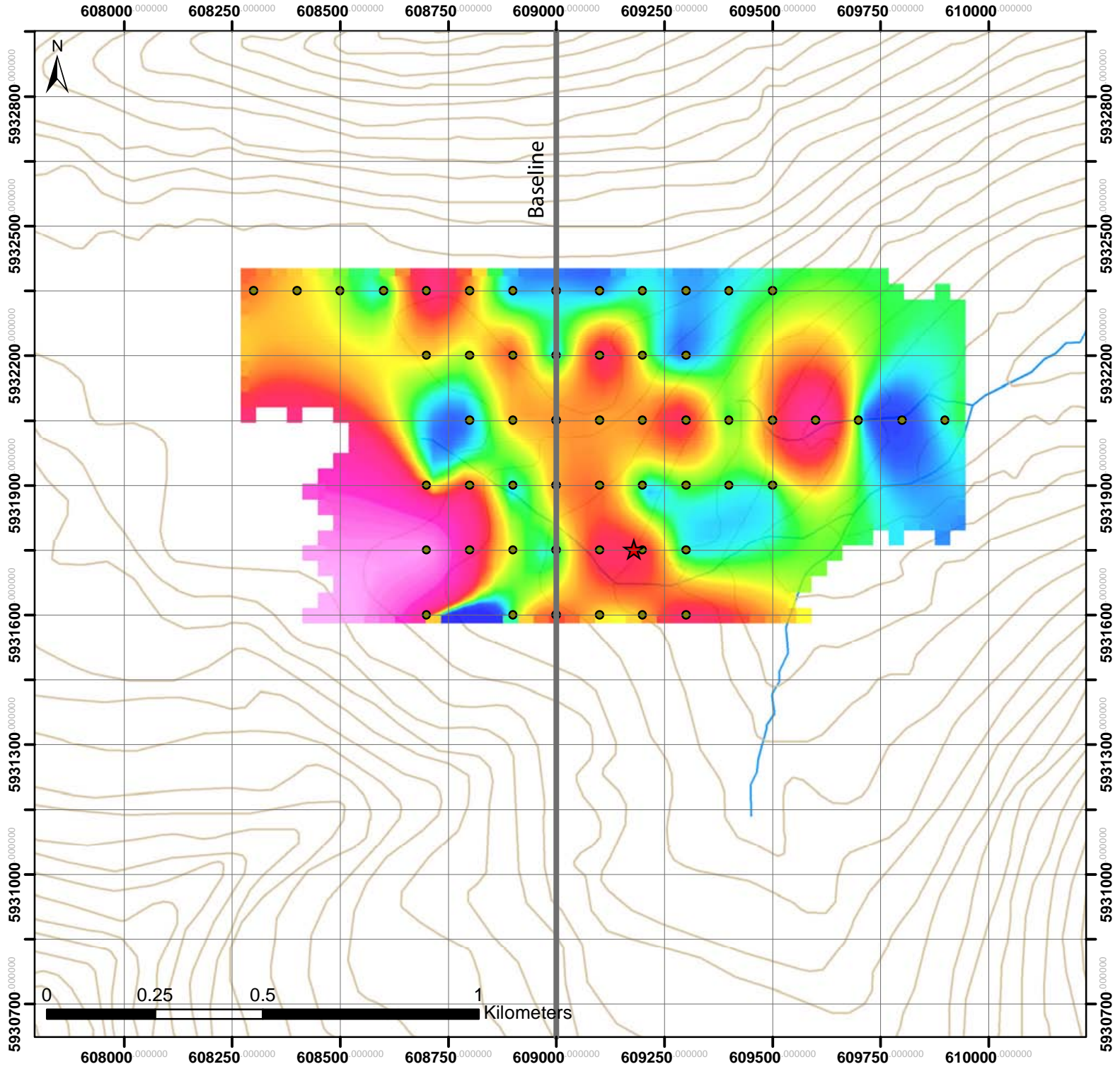


★ Troitsa Main Showing



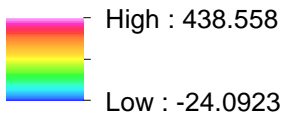


# Troitsa MMI Ag



## Ag MMI M5 ppb 1

Value



★ Troitsa Main Showing



**CALLINAN MINES**  
LIMITED

**Appendix F**  
**MMI Soil Survey Assay Certificates**



## Certificate of Analysis

Work Order: TO112190

To: **Narissa Saretsky**  
**Callinan Mines Ltd.**  
1100-736 Granville Street  
VANCOUVER  
BC V6Z 1G3

Date: Nov 27, 2010

P.O. No. : Project:TROITSA  
Project No. : -  
No. Of Samples : 61  
Date Submitted : Oct 27, 2010  
Report Comprises : Pages 1 to 13  
(Inclusive of Cover Sheet)

**Distribution of unused material:**

STORE:

Certified By :

Gavin McGill  
Operations Manager

*SGS Minerals Services (Toronto) is accredited by Standards Council of Canada (SCC) and conforms to the requirements of ISO/IEC 17025 for specific tests as indicated on the scope of accreditation to be found at <http://www.scc.ca/en/programs/lab/mineral.shtml>*

Report Footer:

L.N.R. = Listed not received  
n.a. = Not applicable

I.S. = Insufficient Sample  
-- = No result

\*INF = Composition of this sample makes detection impossible by this method

M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

Methods marked with an asterisk (e.g. \*NAA08V) were subcontracted

Methods marked with the @ symbol (e.g. @AAS21E) denote accredited tests

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Element Method Det.Lim. Units	Ag MMI-M5 1 ppb	Al MMI-M5 1 ppm	As MMI-M5 10 ppb	Au MMI-M5 0.1 ppb	Ba MMI-M5 10 ppb	Bi MMI-M5 1 ppb	Ca MMI-M5 10 ppm	Cd MMI-M5 1 ppb	Ce MMI-M5 5 ppb	Co MMI-M5 5 ppb
L1600N-042259	41	288	50	0.3	680	4	<10	16	242	53
L1600N-042260	35	201	<10	0.1	240	<1	<10	10	42	21
L1600N-042261	32	>300	20	0.1	590	1	<10	18	53	26
L1600N-042262	60	297	90	0.4	940	2	<10	9	201	98
L1600N-147207	37	>300	60	0.5	760	1	<10	3	298	38
L1600N-147208	59	237	50	0.4	840	1	<10	1	319	27
L1600N-147209	19	290	40	0.3	250	1	<10	4	105	14
L1600N-147210	40	288	20	0.1	260	1	<10	8	101	6
L1750N-042256	64	221	<10	0.1	110	<1	<10	14	40	13
L1750N-042257	11	266	30	0.1	810	2	20	15	80	24
L1750N-042258	25	270	50	0.2	610	2	<10	18	112	41
L1750N-042263	57	>300	70	0.4	980	4	<10	16	518	116
L1750N-147205	361	287	<10	3.1	630	10	<10	9	119	22
L1750N-147206	30	284	20	0.1	240	1	<10	12	59	10
L1750N-147211	61	230	<10	0.1	120	<1	<10	8	26	7
L1750N-147212	13	254	30	0.1	760	1	<10	97	36	52
L1900N-042254	12	234	10	0.4	170	<1	<10	21	69	28
L1900N-042255	7	187	<10	0.1	190	1	30	24	44	58
L1900N-042264	10	>300	30	0.1	1280	1	20	44	129	49
L1900N-042265	19	241	60	0.2	1560	3	10	11	139	19
L1900N-147202	30	>300	90	0.3	640	2	<10	10	326	146
L1900N-147203	49	284	90	0.3	770	2	<10	7	405	80
L1900N-147204	64	>300	20	0.5	470	3	<10	3	132	6
L1900N-147213	46	191	<10	0.1	120	<1	<10	47	18	15
L1900N-147214	25	>300	130	0.2	830	2	<10	8	97	18
L1900N-147215	20	254	80	0.3	3680	1	20	10	320	66
L2050N-042251	9	>300	20	0.1	670	<1	<10	16	74	46
L2050N-042252	14	244	<10	<0.1	800	<1	<10	50	26	18
L2050N-042253	66	265	30	0.2	1640	<1	<10	36	84	11
L2050N-042267	19	>300	80	0.1	1210	2	20	55	141	187
L2050N-042268	11	188	<10	<0.1	80	<1	<10	13	25	48
L2050N-042269	43	44	10	<0.1	4550	<1	300	54	18	163
L2050N-042270	63	209	30	0.5	430	2	<10	6	112	<5
L2050N-042271	38	264	<10	0.2	320	<1	<10	12	60	13
L2050N-147201	39	>300	30	0.1	440	<1	<10	8	76	9
L2050N-147216	2	144	<10	<0.1	70	<1	<10	8	21	27
L2050N-147217	98	291	110	0.2	520	2	<10	5	211	12
L2050N-147218	19	274	30	0.1	640	1	<10	99	62	55
L2050N-147219	40	>300	30	0.3	590	<1	<10	15	80	20
L2200N-147365	53	>300	90	0.3	470	4	<10	12	188	14
L2200N-147366	7	224	40	0.1	1430	1	60	13	43	6
L2200N-147367	25	>300	160	0.4	1420	4	<10	7	408	50
L2200N-147368	65	229	100	0.3	830	1	20	2	250	47

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Element Method Det.Lim. Units	Ag MMI-M5 1 ppb	Al MMI-M5 1 ppm	As MMI-M5 10 ppb	Au MMI-M5 0.1 ppb	Ba MMI-M5 10 ppb	Bi MMI-M5 1 ppb	Ca MMI-M5 10 ppm	Cd MMI-M5 1 ppb	Ce MMI-M5 5 ppb	Co MMI-M5 5 ppb
L2200N-147369	13	285	30	<0.1	530	<1	<10	8	80	14
L2200N-147370	49	>300	140	0.9	3810	5	50	14	613	106
L2200N-147371	27	>300	40	0.3	620	2	<10	6	463	16
L2200N-147372	35	>300	20	0.1	430	<1	<10	13	98	21
L2350N-147351	43	54	50	0.4	810	1	70	18	208	35
L2350N-147352	34	>300	90	0.2	970	3	<10	17	176	13
L2350N-147353	27	245	20	0.6	780	1	20	11	124	36
L2350N-147354	15	197	10	0.1	1190	8	70	28	61	170
L2350N-147355	70	177	10	0.6	2010	<1	190	19	68	38
L2350N-147356	40	>300	10	0.2	760	1	10	31	152	35
L2350N-147357	11	248	<10	0.1	260	2	50	9	178	21
L2350N-147358	15	299	60	0.3	800	22	30	4	139	13
L2350N-147359	12	260	40	0.2	1150	25	60	5	95	15
L2350N-147360	10	258	60	0.3	1860	9	80	14	171	26
L2350N-147361	19	199	<10	0.2	110	<1	<10	10	47	47
L2350N-147362	11	153	30	0.3	760	1	190	32	236	19
L2350N-147363	16	218	10	0.2	1100	<1	40	8	157	8
L2350N-147364	21	271	20	0.1	360	<1	<10	10	45	35
*Rep L-1600N-042260	37	216	<10	0.1	250	<1	<10	10	50	22
*Rep L-1900N-147214	25	>300	130	0.2	840	2	<10	8	96	17
*Rep L-2050N-147219	41	>300	30	0.2	630	<1	<10	16	83	21
*Rep L-2350N-147355	87	209	20	0.7	2370	<1	190	19	79	43
*Rep L-2350N-147362	11	146	20	0.2	890	1	180	33	205	13
*Std MMISRM16	17	45	20	23.2	60	<1	170	4	19	67
*Std AMISD169	10	72	20	0.2	700	<1	40	3	912	133
*Blk BLANK	<1	1	<10	<0.1	<10	<1	<10	<1	<5	<5
*Blk BLANK	<1	<1	<10	<0.1	<10	<1	<10	<1	<5	<5

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Final : TO112190 Order: Project:TROITSA

Element Method Det.Lim. Units	Cr MMI-M5 100 ppb	Cs MMI-M5 0.5 ppb	Cu MMI-M5 10 ppb	Dy MMI-M5 1 ppb	Er MMI-M5 0.5 ppb	Eu MMI-M5 0.5 ppb	Fe MMI-M5 1 ppm	Ga MMI-M5 1 ppb	Gd MMI-M5 1 ppb	Hg MMI-M5 1 ppb
L1600N-042259	<100	33.0	5610	37	23.8	8.5	157	16	30	1
L1600N-042260	<100	19.5	790	20	15.4	2.5	29	8	9	<1
L1600N-042261	<100	17.5	660	9	5.1	2.7	82	18	8	<1
L1600N-042262	<100	50.0	3240	42	19.7	11.6	103	32	42	2
L1600N-147207	<100	38.3	2630	44	17.9	16.4	69	25	51	1
L1600N-147208	<100	48.0	5420	39	14.6	16.2	53	21	50	1
L1600N-147209	<100	39.3	870	34	17.7	7.2	54	15	24	1
L1600N-147210	<100	24.5	1790	23	14.9	4.5	63	14	16	1
L1750N-042256	<100	17.0	2200	13	10.0	1.9	24	5	7	1
L1750N-042257	<100	12.0	1160	14	9.0	3.0	148	17	12	1
L1750N-042258	<100	19.7	2000	22	13.2	4.1	143	18	16	1
L1750N-042263	100	45.4	7930	43	18.1	13.2	114	16	46	1
L1750N-147205	<100	73.1	24400	7	3.0	2.8	103	6	8	1
L1750N-147206	<100	25.8	1110	22	13.1	3.8	32	11	13	<1
L1750N-147211	<100	24.3	850	3	1.5	1.0	79	18	2	<1
L1750N-147212	<100	20.4	5320	17	12.1	2.5	67	19	9	<1
L1900N-042254	<100	31.5	470	37	23.7	5.3	35	10	23	<1
L1900N-042255	<100	11.8	1390	47	23.6	6.5	22	12	28	<1
L1900N-042264	<100	15.1	5660	53	31.1	10.5	83	40	39	1
L1900N-042265	<100	18.2	3440	92	42.4	17.2	102	11	69	<1
L1900N-147202	<100	30.0	2320	64	28.0	19.0	113	17	87	1
L1900N-147203	<100	35.7	2420	98	43.0	34.1	84	19	118	1
L1900N-147204	<100	42.7	5790	21	9.2	5.7	43	11	21	1
L1900N-147213	<100	16.7	1080	26	18.0	1.8	8	5	8	<1
L1900N-147214	<100	35.7	3090	51	29.7	8.6	148	31	35	1
L1900N-147215	<100	40.4	3540	59	24.4	21.1	74	21	71	1
L2050N-042251	<100	30.4	790	18	9.6	4.0	67	9	14	1
L2050N-042252	<100	11.1	2530	49	38.6	4.1	45	7	17	<1
L2050N-042253	<100	14.1	4270	131	63.8	21.8	45	10	92	<1
L2050N-042267	<100	28.3	1560	14	7.0	3.4	182	23	11	2
L2050N-042268	<100	17.8	1570	4	4.5	1.0	55	16	3	<1
L2050N-042269	<100	5.1	4820	14	8.4	3.6	7	<1	16	<1
L2050N-042270	<100	20.3	7900	70	42.1	12.8	37	15	47	<1
L2050N-042271	<100	21.6	4070	14	9.6	3.4	62	12	11	<1
L2050N-147201	<100	30.3	1340	21	12.3	4.2	60	15	15	<1
L2050N-147216	<100	14.5	860	16	18.5	1.8	25	5	7	<1
L2050N-147217	<100	35.8	1370	113	63.3	25.3	125	34	103	<1
L2050N-147218	<100	40.3	2780	16	11.2	3.2	61	15	11	<1
L2050N-147219	<100	20.1	9860	16	9.7	3.4	38	14	12	1
L2200N-147365	<100	22.1	6620	85	52.3	17.2	133	45	64	<1
L2200N-147366	<100	41.4	2040	56	40.0	7.4	85	15	33	<1
L2200N-147367	100	34.5	13400	102	44.0	33.1	211	43	118	<1
L2200N-147368	<100	30.0	29700	191	101	57.8	115	25	232	1

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Element Method Det.Lim. Units	Cr MMI-M5 100 ppb	Cs MMI-M5 0.5 ppb	Cu MMI-M5 10 ppb	Dy MMI-M5 1 ppb	Er MMI-M5 0.5 ppb	Eu MMI-M5 0.5 ppb	Fe MMI-M5 1 ppm	Ga MMI-M5 1 ppb	Gd MMI-M5 1 ppb	Hg MMI-M5 1 ppb
L2200N-147369	<100	22.3	1010	37	21.9	6.6	71	17	28	<1
L2200N-147370	100	60.5	33000	166	77.5	56.2	155	32	203	<1
L2200N-147371	<100	25.7	5600	204	96.1	48.5	94	34	207	<1
L2200N-147372	<100	33.1	3180	24	13.4	5.0	69	16	18	<1
L2350N-147351	<100	35.0	5880	40	18.6	15.6	37	6	56	<1
L2350N-147352	<100	32.1	3010	60	36.1	13.2	177	46	53	<1
L2350N-147353	<100	92.1	31000	77	41.3	21.6	51	8	88	<1
L2350N-147354	<100	60.0	4800	37	19.2	7.8	49	11	34	<1
L2350N-147355	<100	89.9	16400	98	59.2	19.4	22	2	80	<1
L2350N-147356	<100	35.1	8540	84	40.9	16.5	32	15	69	<1
L2350N-147357	<100	50.8	3780	69	30.3	18.0	111	12	82	<1
L2350N-147358	100	32.0	11900	44	20.4	11.2	108	27	44	<1
L2350N-147359	100	33.8	10700	36	17.9	9.5	96	26	38	<1
L2350N-147360	<100	62.1	3620	68	35.3	16.0	179	29	66	<1
L2350N-147361	<100	25.2	3160	60	34.6	8.4	25	9	41	<1
L2350N-147362	<100	129	1160	56	29.8	11.8	62	8	53	<1
L2350N-147363	<100	25.6	3160	134	61.0	29.3	26	6	128	<1
L2350N-147364	<100	18.7	810	43	27.1	5.9	51	11	27	<1
*Rep L-1600N-042260	<100	19.3	840	22	16.5	2.9	33	8	11	<1
*Rep L-1900N-147214	<100	30.6	3100	51	28.9	8.9	153	32	35	1
*Rep L-2050N-147219	<100	21.2	9710	17	9.8	3.8	39	15	13	<1
*Rep L-2350N-147355	<100	96.2	16900	103	60.6	20.7	29	2	82	<1
*Rep L-2350N-147362	<100	129	1210	57	30.8	11.2	46	6	51	<1
*Std MMISRM16	<100	13.2	670	3	1.2	1.3	2	<1	5	15
*Std AMIS0189	100	8.5	4800	34	14.8	13.5	50	14	52	<1
*Bik BLANK	<100	<0.5	<10	<1	<0.5	<0.5	<1	<1	<1	<1
*Bik BLANK	<100	<0.5	<10	<1	<0.5	<0.5	<1	<1	<1	<1

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Element Method Det.Lim. Units	In MMI-M5 0.5 ppb	K MMI-M5 0.1 ppm	La MMI-M5 1 ppb	Li MMI-M5 5 ppb	Mg MMI-M5 1 ppm	Mn MMI-M5 10 ppb	Mo MMI-M5 5 ppb	Nb MMI-M5 0.5 ppb	Nd MMI-M5 1 ppb	Ni MMI-M5 5 ppb
L1600N-042259	<0.5	7.6	104	<5	1	5670	40	4.1	128	64
L1600N-042260	<0.5	4.8	19	<5	<1	580	8	1.1	27	30
L1600N-042261	<0.5	9.2	33	<5	1	100	18	5.5	33	51
L1600N-042262	0.5	4.6	90	<5	<1	6190	70	13.6	135	24
L1600N-147207	<0.5	3.3	125	<5	<1	2220	24	3.2	177	21
L1600N-147208	<0.5	3.7	125	<5	<1	1730	33	2.2	186	26
L1600N-147209	<0.5	7.2	44	<5	<1	460	15	2.5	70	21
L1600N-147210	<0.5	3.1	68	<5	<1	240	17	5.8	65	26
L1750N-042256	<0.5	3.4	18	<5	<1	720	<5	2.3	24	26
L1750N-042257	<0.5	27.4	60	<5	5	1010	84	2.6	47	71
L1750N-042258	<0.5	19.5	74	<5	2	2210	80	3.4	64	89
L1750N-042263	<0.5	11.2	154	<5	1	9380	38	2.4	182	112
L1750N-147205	0.5	8.1	58	<5	1	2840	169	7.2	50	29
L1750N-147206	<0.5	2.8	29	<5	<1	140	9	2.0	39	19
L1750N-147211	<0.5	4.8	14	<5	<1	40	5	2.1	12	52
L1750N-147212	<0.5	4.9	19	<5	1	530	7	2.6	26	44
L1900N-042254	<0.5	6.3	40	<5	<1	1540	11	1.4	56	27
L1900N-042255	<0.5	10.1	16	<5	2	480	7	1.3	51	72
L1900N-042264	<0.5	14.6	76	<5	3	1200	31	7.2	115	51
L1900N-042265	<0.5	8.5	51	<5	1	880	119	2.1	145	42
L1900N-147202	<0.5	6.8	104	<5	<1	13300	26	2.9	183	31
L1900N-147203	<0.5	7.0	129	<5	<1	8560	37	2.8	333	36
L1900N-147204	<0.5	3.9	61	<5	<1	690	48	4.0	78	16
L1900N-147213	<0.5	5.5	8	<5	<1	110	<5	1.9	14	23
L1900N-147214	<0.5	6.7	53	<5	1	1100	107	6.4	87	40
L1900N-147215	<0.5	9.6	115	<5	1	7390	39	4.2	223	36
L2050N-042251	<0.5	8.2	34	<5	<1	3070	6	2.2	42	35
L2050N-042252	<0.5	13.0	20	<5	1	250	<5	1.0	34	41
L2050N-042253	<0.5	6.7	56	<5	<1	490	6	1.8	162	35
L2050N-042267	<0.5	22.3	33	<5	3	5400	12	3.7	35	181
L2050N-042268	<0.5	9.4	13	<5	<1	80	<5	3.0	13	33
L2050N-042269	<0.5	19.0	6	<5	26	12400	46	<0.5	20	228
L2050N-042270	<0.5	4.1	42	<5	<1	70	88	6.8	120	14
L2050N-042271	<0.5	7.4	29	<5	<1	260	6	5.0	36	28
L2050N-147201	<0.5	4.5	41	<5	<1	290	15	3.1	50	28
L2050N-147216	<0.5	9.2	11	<5	<1	270	<5	0.8	19	17
L2050N-147217	<0.5	4.0	102	<5	<1	650	12	9.7	232	26
L2050N-147218	<0.5	11.8	29	<5	<1	610	10	4.7	39	44
L2050N-147219	<0.5	4.9	48	<5	<1	590	10	5.3	45	31
L2200N-147365	<0.5	4.8	118	<5	<1	380	238	6.8	193	34
L2200N-147366	<0.5	4.6	40	<5	4	1050	103	2.5	80	56
L2200N-147367	0.5	5.5	192	<5	<1	8320	1140	8.9	364	25
L2200N-147368	<0.5	5.6	173	<5	<1	5810	686	8.2	567	14

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Final : TO112190 Order: Project:TROITSA

Element Method Det.Lim. Units	In MMI-M5 0.5 ppb	K MMI-M5 0.1 ppm	La MMI-M5 1 ppb	Li MMI-M5 5 ppb	Mg MMI-M5 1 ppm	Mn MMI-M5 10 ppb	Mo MMI-M5 5 ppb	Nb MMI-M5 0.5 ppb	Nd MMI-M5 1 ppb	Ni MMI-M5 5 ppb
L2200N-147369	<0.5	6.3	35	<5	<1	600	6	1.7	63	39
L2200N-147370	0.5	7.8	488	<5	1	5670	195	6.7	735	36
L2200N-147371	<0.5	4.6	179	<5	<1	1060	68	14.6	536	15
L2200N-147372	<0.5	3.9	49	<5	<1	730	57	2.6	62	15
L2350N-147351	<0.5	5.1	100	<5	2	8330	117	1.4	207	81
L2350N-147352	0.6	6.7	136	<5	<1	1350	91	4.9	191	34
L2350N-147353	<0.5	6.2	183	<5	<1	1350	121	1.1	322	24
L2350N-147354	<0.5	24.2	59	<5	3	8890	214	1.4	109	44
L2350N-147355	<0.5	9.4	189	<5	18	1800	56	<0.5	260	63
L2350N-147356	<0.5	6.8	121	<5	<1	2100	41	4.1	222	26
L2350N-147357	<0.5	7.4	170	<5	2	550	222	2.4	313	40
L2350N-147358	<0.5	5.5	106	<5	1	140	149	4.0	153	28
L2350N-147359	<0.5	6.2	88	<5	3	180	211	3.7	135	33
L2350N-147360	<0.5	7.7	132	<5	3	1450	333	4.5	226	41
L2350N-147361	<0.5	3.6	41	<5	<1	2760	121	2.8	97	29
L2350N-147362	<0.5	10.6	61	<5	8	6310	631	2.5	119	80
L2350N-147363	<0.5	4.8	126	<5	2	650	84	3.6	348	21
L2350N-147364	<0.5	6.8	35	<5	<1	2970	37	3.7	64	21
*Rep L-1600N-042280	<0.5	4.8	23	<5	<1	680	9	1.3	31	32
*Rep L-1900N-147214	0.5	6.6	53	<5	1	1050	109	6.4	86	38
*Rep L-2050N-147219	<0.5	5.6	50	<5	<1	710	11	5.5	48	34
*Rep L-2350N-147355	<0.5	10.7	212	<5	19	2050	54	<0.5	281	56
*Rep L-2350N-147362	<0.5	11.2	56	<5	10	4950	478	1.9	110	84
*Std MMISRM16	<0.5	31.8	4	<5	24	130	71	<0.5	18	311
*Std AMIS0169	<0.5	48.3	471	<5	37	4530	10	3.9	439	535
*Blk BLANK	<0.5	<0.1	<1	<5	<1	<10	<5	<0.5	<1	<5
*Blk BLANK	<0.5	<0.1	<1	<5	<1	<10	<5	<0.5	<1	<5

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Element Method Det.Lim. Units	P MMI-M5 0.1 ppm	Pb MMI-M5 10 ppb	Pd MMI-M5 1 ppb	Pr MMI-M5 1 ppb	Pt MMI-M5 1 ppb	Rb MMI-M5 5 ppb	Sb MMI-M5 1 ppb	Sc MMI-M5 5 ppb	Sm MMI-M5 1 ppb	Sn MMI-M5 1 ppb
L1600N-042259	6.1	480	<1	30	<1	157	3	74	30	<1
L1600N-042260	1.8	420	<1	6	<1	105	1	42	7	<1
L1600N-042261	4.3	160	<1	8	<1	107	1	28	8	<1
L1600N-042262	10.1	650	<1	29	<1	260	3	75	38	1
L1600N-147207	4.1	480	<1	40	<1	125	3	86	50	<1
L1600N-147208	2.7	410	<1	41	<1	191	3	63	51	<1
L1600N-147209	3.1	430	<1	15	<1	160	2	74	21	<1
L1600N-147210	3.2	650	<1	16	<1	108	1	31	15	<1
L1750N-042256	1.8	410	<1	5	<1	77	<1	32	6	<1
L1750N-042257	8.5	430	<1	12	<1	88	1	31	10	<1
L1750N-042258	6.6	700	<1	16	<1	113	2	36	15	<1
L1750N-042263	15.6	660	<1	43	<1	284	3	71	47	<1
L1750N-147205	6.3	240	<1	13	<1	655	2	16	11	<1
L1750N-147206	2.5	460	<1	9	<1	118	1	37	11	<1
L1750N-147211	2.5	210	<1	3	<1	125	<1	13	3	<1
L1750N-147212	3.4	560	<1	6	<1	124	1	26	7	<1
L1900N-042254	2.0	540	<1	12	<1	148	1	43	16	<1
L1900N-042255	1.2	580	<1	9	<1	121	1	31	18	<1
L1900N-042264	19.6	380	<1	24	<1	194	1	55	32	1
L1900N-042265	7.9	1120	<1	25	<1	165	3	142	50	<1
L1900N-147202	9.5	590	<1	37	<1	161	6	133	58	1
L1900N-147203	9.1	590	<1	62	<1	178	5	184	108	<1
L1900N-147204	5.5	810	<1	18	<1	158	1	51	21	<1
L1900N-147213	1.5	510	<1	3	<1	122	<1	36	5	<1
L1900N-147214	7.2	350	<1	17	<1	193	3	76	26	1
L1900N-147215	6.4	380	<1	45	<1	171	3	88	67	1
L2050N-042251	5.5	390	<1	9	<1	120	<1	56	12	<1
L2050N-042252	3.4	560	<1	6	<1	122	<1	76	11	<1
L2050N-042253	2.6	750	<1	27	<1	112	2	110	60	<1
L2050N-042267	11.6	460	<1	8	<1	199	2	43	10	<1
L2050N-042268	2.4	110	<1	3	<1	85	<1	24	3	<1
L2050N-042269	0.4	210	<1	3	<1	99	<1	20	8	<1
L2050N-042270	0.9	1310	<1	23	<1	117	2	62	37	<1
L2050N-042271	2.6	370	<1	8	<1	127	<1	37	10	<1
L2050N-147201	3.7	430	<1	11	<1	108	1	49	13	<1
L2050N-147216	1.7	310	<1	4	<1	59	<1	62	6	<1
L2050N-147217	3.3	440	<1	44	<1	136	3	134	77	1
L2050N-147218	5.2	650	<1	8	<1	186	1	37	10	<1
L2050N-147219	7.6	550	<1	11	<1	135	1	36	12	<1
L2200N-147365	5.2	830	<1	42	<1	160	2	82	55	<1
L2200N-147366	2.6	280	<1	15	<1	188	1	93	24	<1
L2200N-147367	7.9	500	<1	73	<1	173	6	174	109	1
L2200N-147368	4.0	250	<1	102	<1	352	7	237	186	<1

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Element Method Det.Lim. Units	P MMI-M5 0.1 ppm	Pb MMI-M5 10 ppb	Pd MMI-M5 1 ppb	Pr MMI-M5 1 ppb	Pt MMI-M5 1 ppb	Rb MMI-M5 5 ppb	Sb MMI-M5 1 ppb	Sc MMI-M5 5 ppb	Sm MMI-M5 1 ppb	Sn MMI-M5 1 ppb
L2200N-147369	1.6	500	<1	12	<1	131	1	74	20	<1
L2200N-147370	10.9	8040	<1	160	<1	224	6	265	191	<1
L2200N-147371	6.6	270	<1	105	<1	149	1	185	163	<1
L2200N-147372	2.6	500	<1	14	<1	166	<1	49	17	<1
L2350N-147351	2.3	160	<1	39	<1	144	2	33	55	<1
L2350N-147352	9.4	480	<1	41	<1	184	2	86	47	<1
L2350N-147353	2.2	970	<1	70	<1	345	<1	76	86	<1
L2350N-147354	3.6	430	<1	22	<1	396	<1	32	29	<1
L2350N-147355	0.4	420	<1	56	<1	525	<1	62	64	<1
L2350N-147356	5.6	390	<1	46	<1	179	<1	64	61	<1
L2350N-147357	5.2	110	<1	66	<1	127	<1	37	82	<1
L2350N-147358	6.9	550	<1	34	<1	246	2	63	40	<1
L2350N-147359	9.4	530	<1	29	<1	261	2	57	36	<1
L2350N-147360	6.3	710	<1	48	<1	289	3	65	62	<1
L2350N-147361	1.3	210	<1	18	<1	174	<1	63	29	<1
L2350N-147362	1.6	270	<1	23	<1	354	1	91	37	<1
L2350N-147363	1.8	160	<1	64	<1	164	<1	61	101	<1
L2350N-147364	3.5	640	<1	13	<1	114	1	55	19	<1
*Rep L-1600N-042260	2.1	450	<1	7	<1	101	1	45	8	<1
*Rep L-1900N-147214	7.4	350	<1	18	<1	175	3	75	26	1
*Rep L-2050N-147219	7.7	520	<1	12	<1	148	1	37	13	<1
*Rep L-2350N-147355	0.7	450	<1	62	<1	567	<1	67	70	<1
*Rep L-2350N-147362	1.3	270	<1	21	<1	372	1	92	35	<1
*Std MMISRM16	0.3	110	28	3	<1	316	1	9	6	<1
*Std AMIS0169	3.0	140	<1	114	<1	277	1	70	73	1
*Blk BLANK	<0.1	<10	<1	<1	<1	<5	<1	<5	<1	<1
*Blk BLANK	<0.1	<10	<1	<1	<1	<5	<1	<5	<1	<1

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Element Method Def.Lim. Units	Sr MMI-M5 10 ppb	Ta MMI-M5 1 ppb	Tb MMI-M5 1 ppb	Te MMI-M5 10 ppb	Th MMI-M5 0.5 ppb	Ti MMI-M5 3 ppb	Tl MMI-M5 0.5 ppb	U MMI-M5 1 ppb	W MMI-M5 1 ppb	Y MMI-M5 5 ppb
L1600N-042259	60	<1	6	<10	47.7	1370	1.1	218	4	183
L1600N-042260	<10	<1	2	<10	14.4	309	1.2	45	1	109
L1600N-042261	260	<1	1	<10	16.1	1180	0.7	52	2	41
L1600N-042262	30	1	7	<10	63.9	1960	1.7	45	51	177
L1600N-147207	40	<1	8	<10	80.1	685	1.2	39	11	151
L1600N-147208	50	<1	8	<10	85.3	447	1.9	33	16	128
L1600N-147209	10	<1	5	<10	30.0	820	1.3	29	2	140
L1600N-147210	10	<1	3	<10	29.6	1110	1.1	38	2	135
L1750N-042256	<10	<1	2	<10	11.9	378	1.2	16	2	65
L1750N-042257	250	<1	2	<10	45.8	789	1.9	30	2	67
L1750N-042258	100	<1	3	<10	64.8	1070	2.4	45	4	109
L1750N-042263	50	<1	8	<10	151	751	1.9	68	10	157
L1750N-147205	40	<1	1	<10	95.8	387	4.8	90	1	27
L1750N-147206	<10	<1	3	<10	13.3	764	1.3	15	1	108
L1750N-147211	20	<1	<1	<10	12.8	559	0.7	9	3	10
L1750N-147212	60	<1	2	<10	14.2	1230	0.8	18	1	85
L1900N-042254	<10	<1	5	<10	10.3	551	1.5	11	1	226
L1900N-042255	280	<1	6	<10	7.5	219	0.6	28	<1	266
L1900N-042264	220	<1	8	<10	20.6	1950	1.9	45	1	260
L1900N-042265	200	<1	14	<10	31.7	1160	1.9	309	2	395
L1900N-147202	30	<1	11	<10	50.8	1730	1.8	47	3	298
L1900N-147203	30	<1	18	<10	42.4	1640	1.4	65	4	432
L1900N-147204	20	<1	4	<10	77.0	800	1.2	45	3	76
L1900N-147213	<10	<1	3	<10	3.3	158	0.7	6	<1	122
L1900N-147214	50	<1	7	<10	34.1	3610	1.7	106	3	270
L1900N-147215	130	<1	11	<10	24.2	1470	1.6	57	3	238
L2050N-042251	30	<1	3	<10	20.4	696	1.0	10	<1	68
L2050N-042252	90	<1	5	<10	7.4	377	1.9	22	<1	209
L2050N-042253	70	<1	19	<10	13.3	1010	1.7	34	1	548
L2050N-042267	220	<1	2	<10	82.3	1290	0.8	33	3	51
L2050N-042268	<10	<1	<1	<10	8.2	624	<0.5	11	1	21
L2050N-042269	1150	<1	2	<10	2.7	8	1.2	29	<1	69
L2050N-042270	<10	<1	10	<10	24.2	1210	2.1	230	3	280
L2050N-042271	<10	<1	2	<10	19.2	655	0.9	21	<1	55
L2050N-147201	20	<1	3	<10	19.0	1370	1.0	59	<1	85
L2050N-147216	<10	<1	2	<10	5.8	281	<0.5	15	<1	89
L2050N-147217	20	<1	18	<10	25.3	3550	1.0	71	6	501
L2050N-147218	30	<1	2	<10	20.3	1690	1.3	59	3	60
L2050N-147219	20	<1	3	<10	41.6	1150	1.3	57	1	64
L2200N-147365	60	<1	13	<10	59.2	2830	2.2	536	5	413
L2200N-147366	900	<1	7	<10	23.1	2050	<0.5	1300	2	357
L2200N-147367	120	<1	19	<10	119	6940	2.4	1310	10	362
L2200N-147368	50	<1	34	<10	29.7	3740	1.1	480	3	836

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Element Method Det.Lim. Units	Sr MMI-M5 10 ppb	Ta MMI-M5 1 ppb	Tb MMI-M5 1 ppb	Te MMI-M5 10 ppb	Th MMI-M5 0.5 ppb	Ti MMI-M5 3 ppb	Tl MMI-M5 0.5 ppb	U MMI-M5 1 ppb	W MMI-M5 1 ppb	Y MMI-M5 5 ppb
L2200N-147369	20	<1	6	<10	12.1	1200	1.5	15	<1	164
L2200N-147370	350	<1	32	<10	97.6	3360	2.4	850	8	755
L2200N-147371	50	<1	35	<10	36.2	2620	1.0	71	5	667
L2200N-147372	20	<1	4	<10	36.3	1420	1.2	26	2	95
L2350N-147351	460	<1	8	<10	98.8	500	1.0	188	5	200
L2350N-147352	100	<1	10	<10	115	3600	2.1	273	2	303
L2350N-147353	140	<1	14	<10	65.2	722	1.1	1160	3	374
L2350N-147354	540	<1	6	<10	40.6	646	1.3	717	4	175
L2350N-147355	1440	<1	15	<10	33.5	50	4.2	722	<1	601
L2350N-147356	130	<1	13	<10	73.2	1030	1.8	574	3	376
L2350N-147357	250	<1	13	<10	141	494	0.5	1390	5	333
L2350N-147358	160	<1	7	<10	108	2340	2.0	654	5	205
L2350N-147359	320	<1	6	<10	91.1	1790	2.1	663	6	190
L2350N-147360	460	<1	11	<10	77.7	2820	0.9	1590	8	315
L2350N-147361	20	<1	8	<10	21.7	595	0.6	1040	1	374
L2350N-147362	940	<1	9	<10	29.8	754	<0.5	4650	4	294
L2350N-147363	250	<1	22	<10	27.6	401	3.5	578	1	737
L2350N-147364	20	<1	6	<10	14.4	1580	1.8	164	1	260
*Rep L-1600N-042260	<10	<1	3	<10	16.5	404	1.1	48	1	118
*Rep L-1900N-147214	50	<1	7	<10	33.6	3710	1.6	105	3	272
*Rep L-2050N-147219	20	<1	3	<10	42.9	1220	1.5	57	2	67
*Rep L-2350N-147355	1660	<1	15	<10	35.7	80	4.4	658	<1	646
*Rep L-2350N-147362	1070	<1	9	<10	25.1	570	<0.5	4690	3	313
*Std MMISRM16	430	<1	1	<10	23.7	15	<0.5	57	<1	13
*Std AMIS0169	80	<1	8	<10	90.9	481	1.3	32	2	149
*Bik BLANK	<10	<1	<1	<10	<0.5	9	<0.5	<1	<1	<5
*Bik BLANK	<10	<1	<1	<10	<0.5	<3	<0.5	<1	<1	<5

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Element Method Det.Lim. Units	Yb MMI-M5 1 ppb	Zn MMI-M5 20 ppb	Zr MMI-M5 5 ppb
L1600N-042259	19	210	82
L1600N-042260	13	80	23
L1600N-042261	4	120	69
L1600N-042262	14	180	359
L1600N-147207	13	170	183
L1600N-147208	10	180	146
L1600N-147209	13	90	113
L1600N-147210	11	140	133
L1750N-042256	8	80	28
L1750N-042257	7	360	22
L1750N-042258	10	210	30
L1750N-042263	14	420	76
L1750N-147205	3	40	123
L1750N-147206	9	100	39
L1750N-147211	2	130	15
L1750N-147212	10	410	35
L1900N-042254	16	110	38
L1900N-042255	16	120	19
L1900N-042264	24	390	105
L1900N-042265	29	250	61
L1900N-147202	20	350	99
L1900N-147203	32	420	93
L1900N-147204	6	70	162
L1900N-147213	13	140	25
L1900N-147214	21	160	110
L1900N-147215	17	920	81
L2050N-042251	7	180	86
L2050N-042252	29	240	19
L2050N-042253	40	270	49
L2050N-042267	5	690	49
L2050N-042268	6	100	20
L2050N-042269	7	1050	<5
L2050N-042270	31	50	65
L2050N-042271	8	90	110
L2050N-147201	9	150	71
L2050N-147216	18	120	15
L2050N-147217	47	150	128
L2050N-147218	9	200	63
L2050N-147219	7	100	98
L2200N-147365	41	80	50
L2200N-147366	34	390	33
L2200N-147367	33	160	216
L2200N-147368	81	110	206

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Element	Yb	Zn	Zr
Method	MMI-M5	MMI-M5	MMI-M5
Det.Lim.	1	20	5
Units	ppb	ppb	ppb
L2200N-147369	16	210	44
L2200N-147370	58	380	168
L2200N-147371	63	70	440
L2200N-147372	10	110	50
L2350N-147351	14	300	25
L2350N-147352	29	200	60
L2350N-147353	33	110	51
L2350N-147354	14	460	15
L2350N-147355	43	410	16
L2350N-147356	29	130	75
L2350N-147357	21	190	31
L2350N-147358	15	130	61
L2350N-147359	13	150	52
L2350N-147360	28	290	72
L2350N-147361	26	140	47
L2350N-147362	20	530	32
L2350N-147363	41	40	25
L2350N-147364	20	250	80
*Rep L-1600N-042260	13	90	26
*Rep L-1900N-147214	21	170	110
*Rep L-2050N-147219	7	110	101
*Rep L-2350N-147355	44	450	21
*Rep L-2350N-147362	21	540	27
*Std MMISRM16	1	260	20
*Std AMIS0169	12	270	64
*Blk BLANK	<1	<20	<5
*Blk BLANK	<1	<20	<5

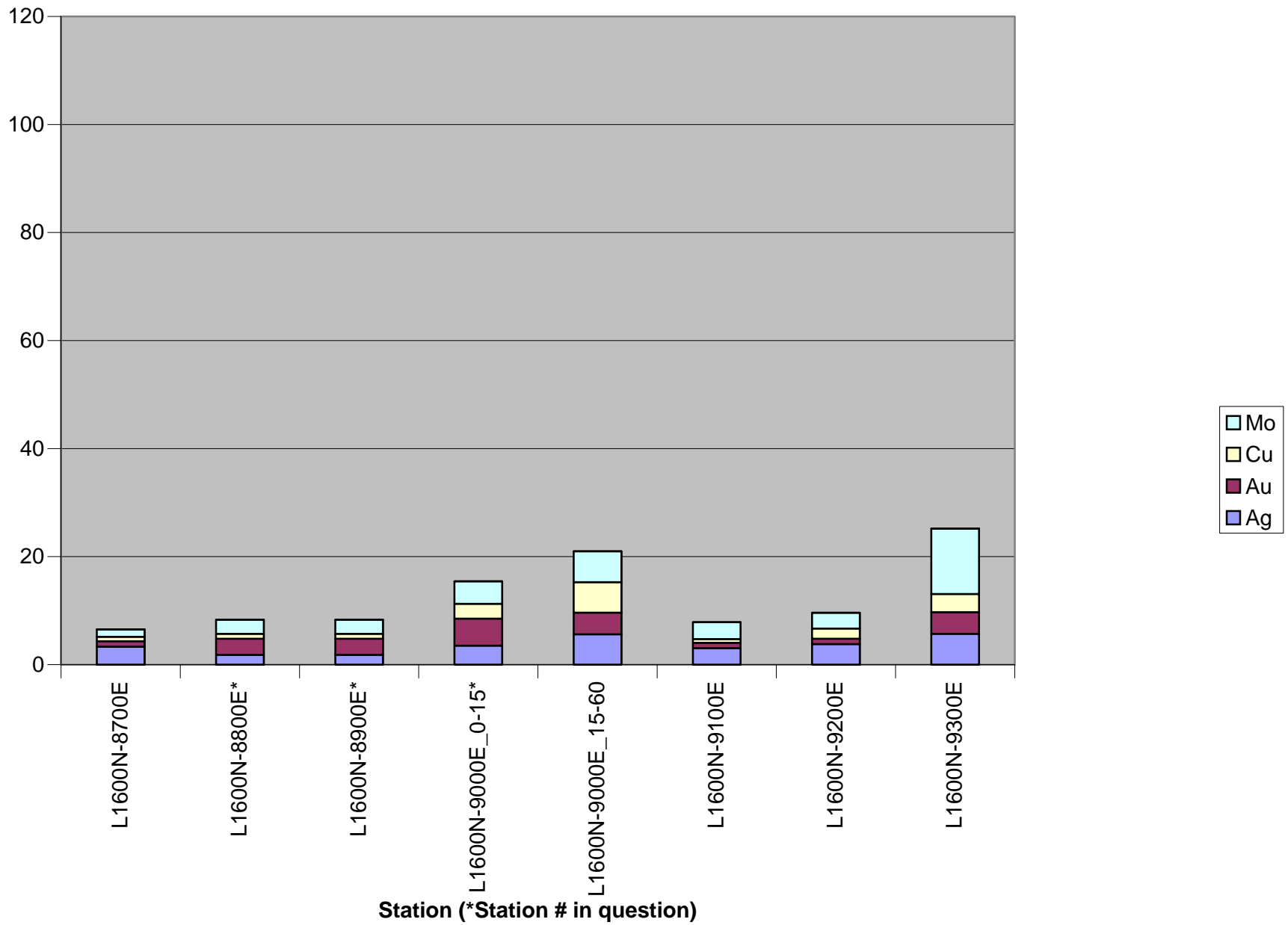
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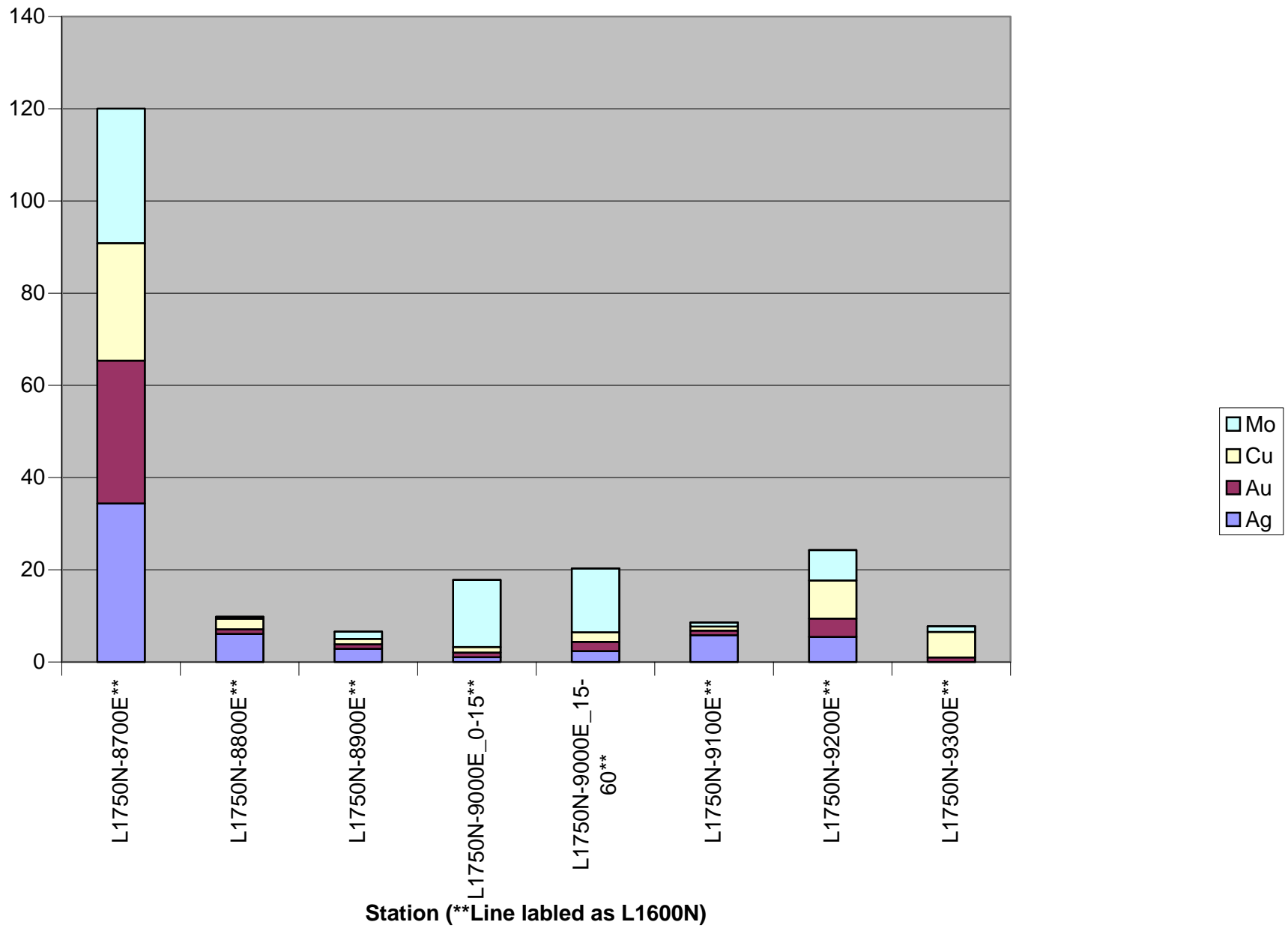
**Appendix G**  
**MMI Response Ratios**



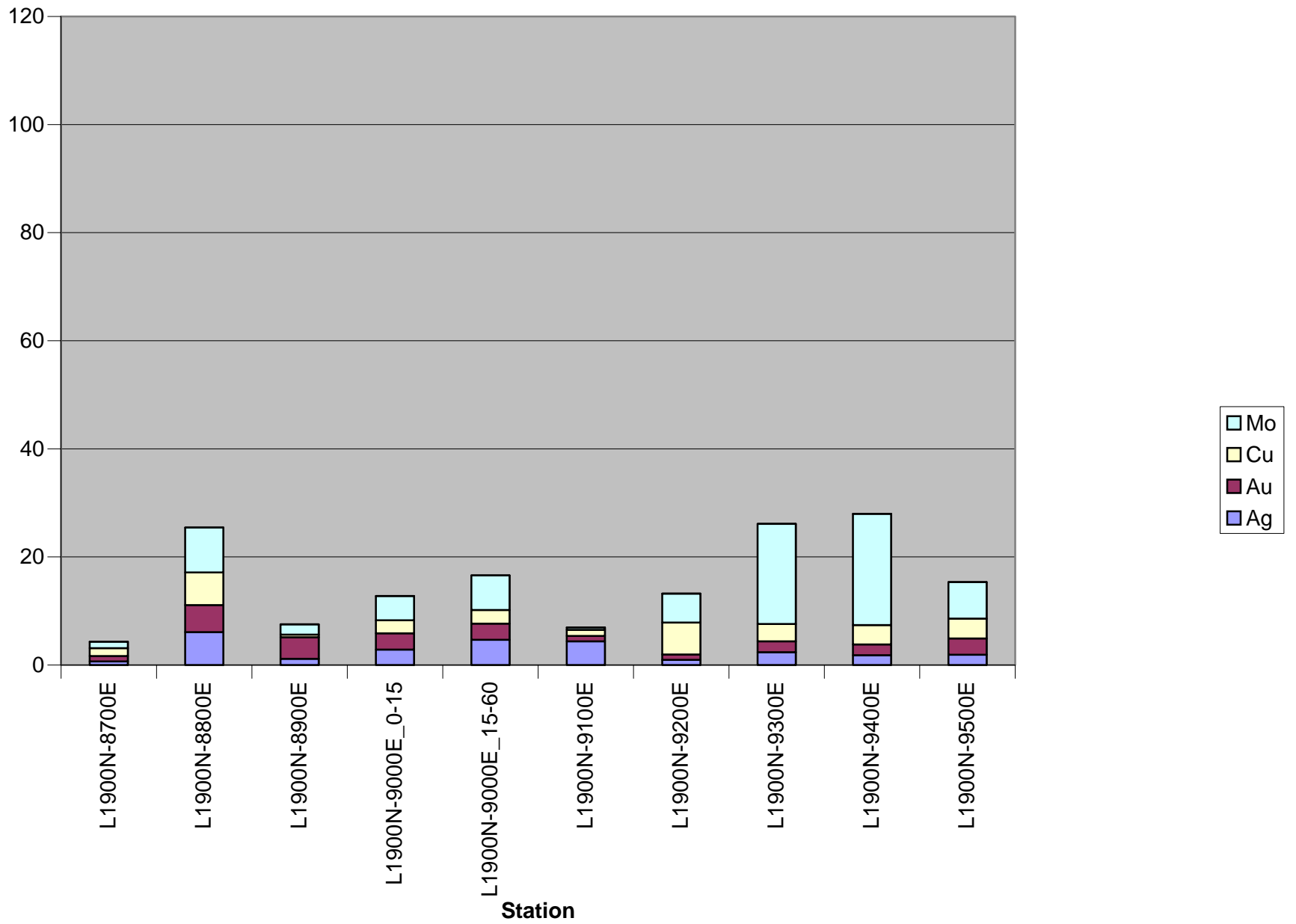
### Response Ratios



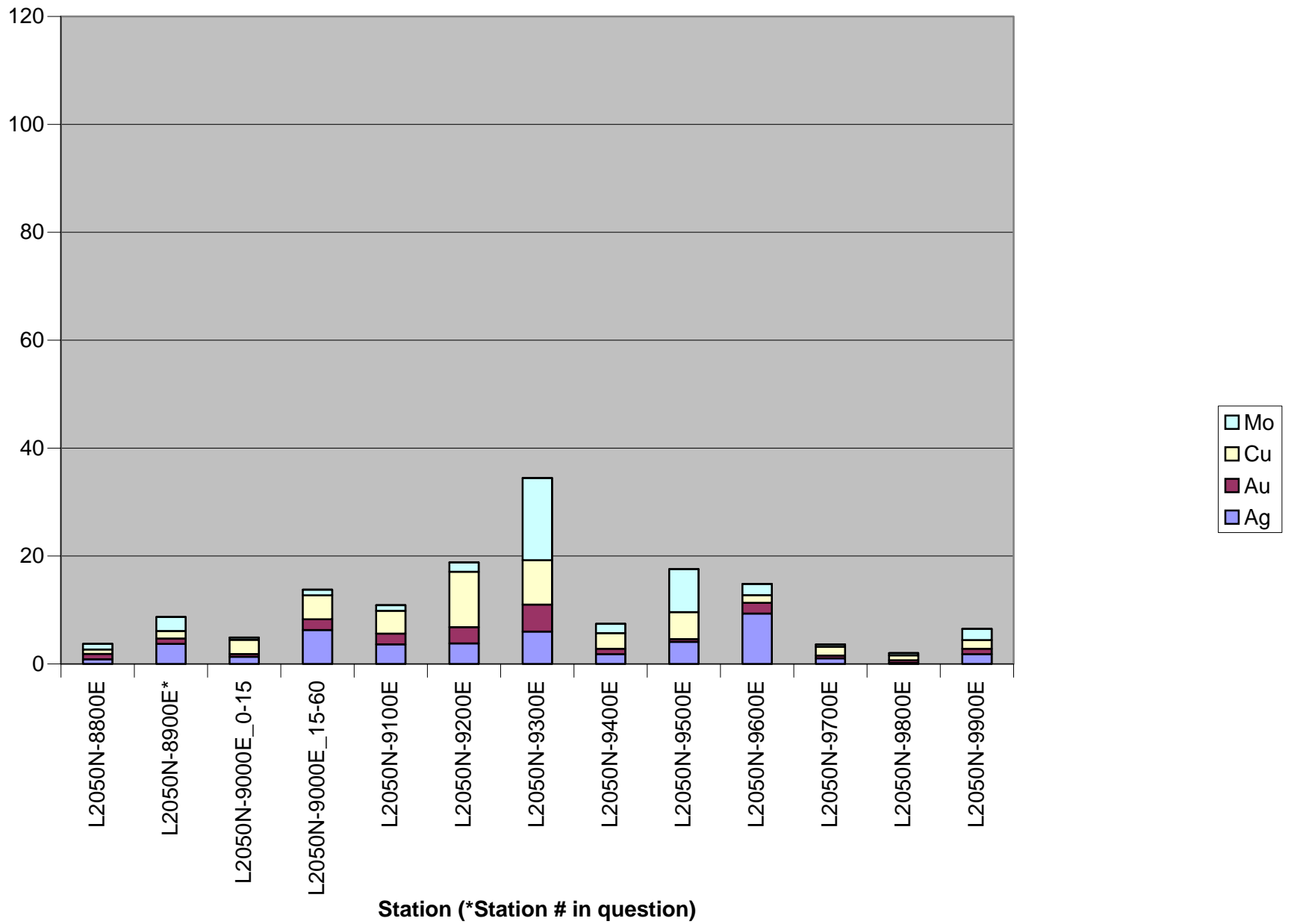
# Response Ratios



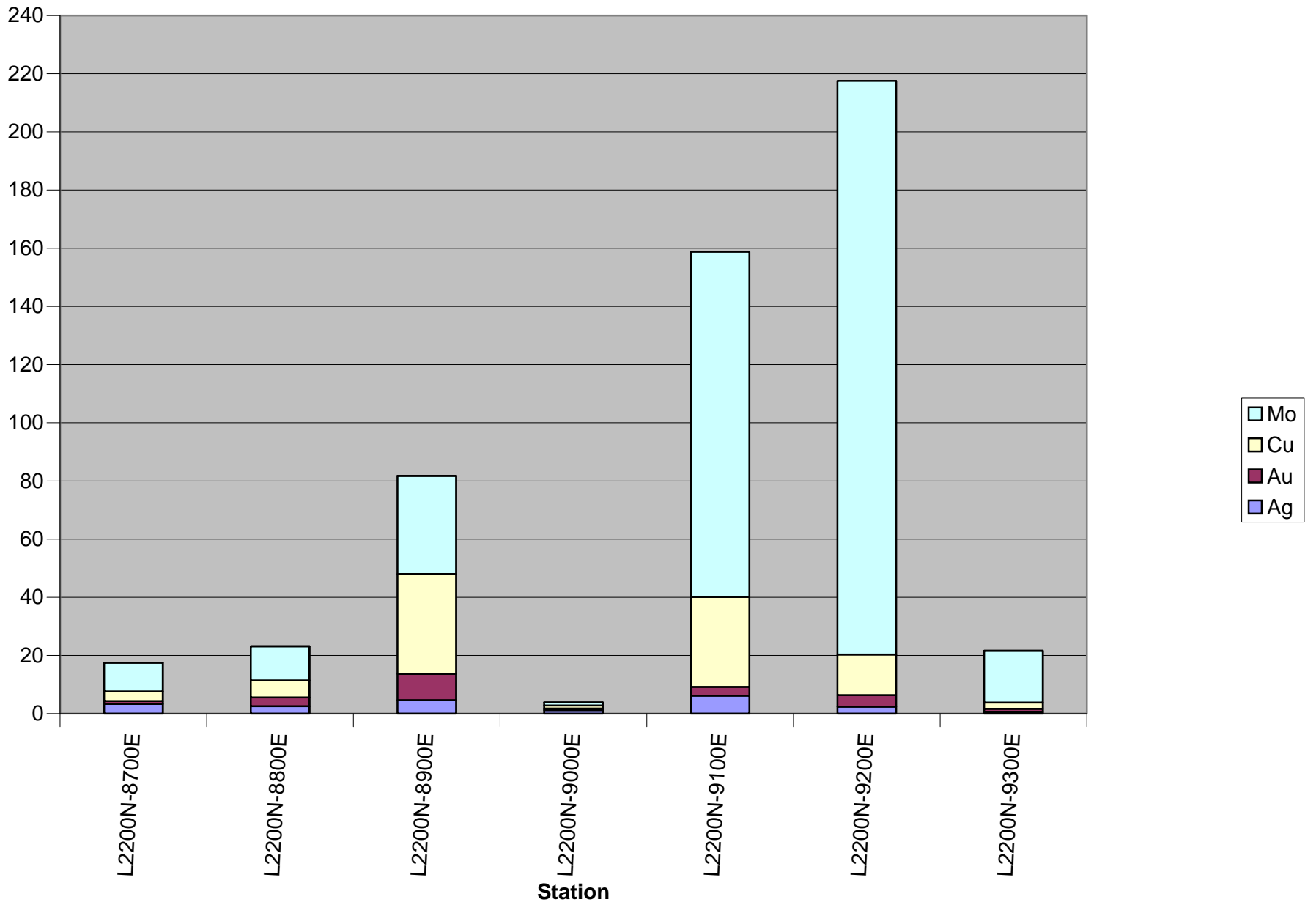
### Response Ratios



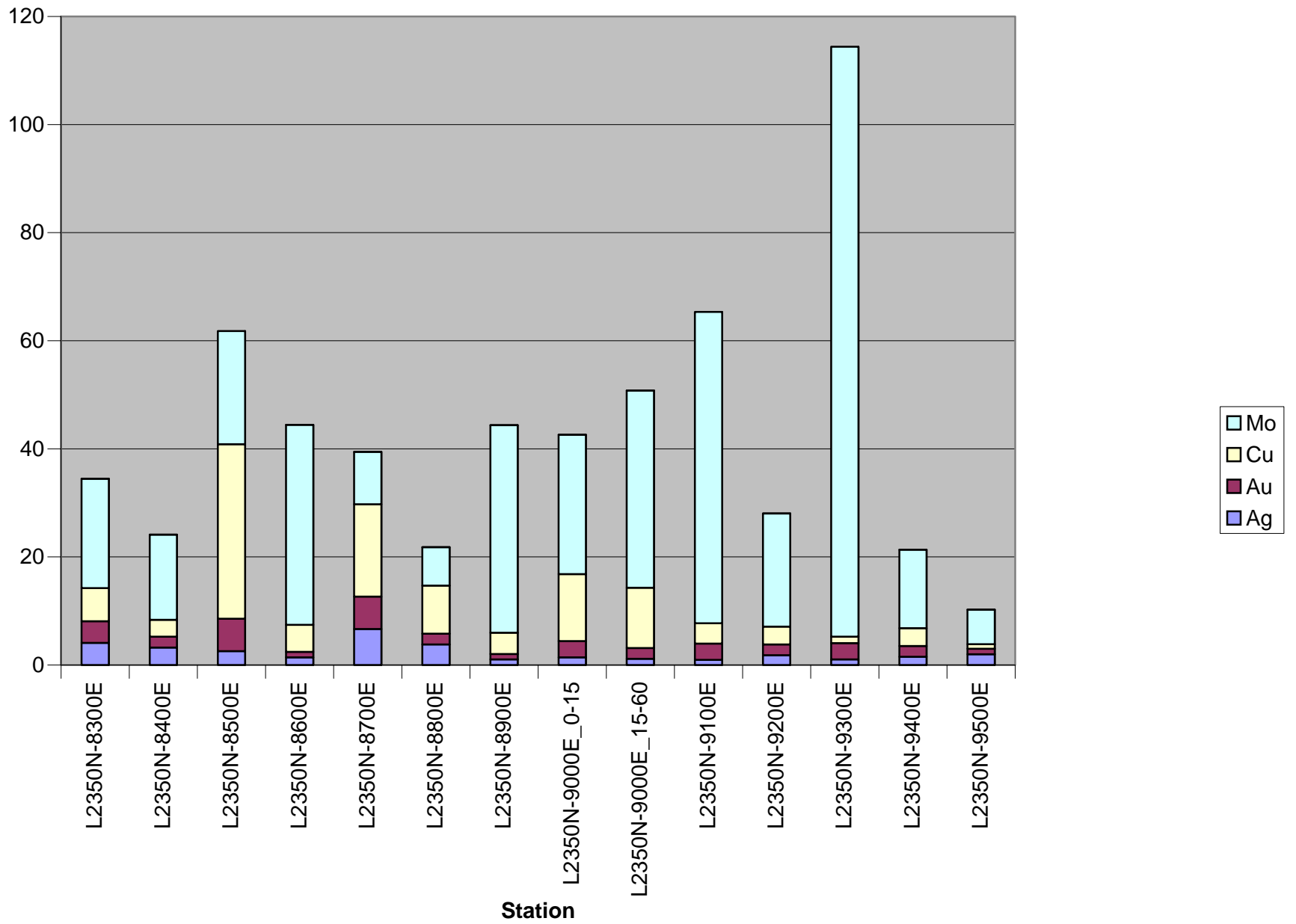
### Response Ratios



### Response Ratios



### Response Ratios



## **Appendix H**

### **Analytical Procedures and Detection Limits**

## METHOD SPECIFICATIONS

### GROUP 1D AND 1F – GEOCHEMICAL AQUA REGIA DIGESTION

<b>Package Codes:</b>	<b>1D01 to 1D03, 1DX1 to 1DX3, 1F01 to 1F07</b>
<b>Sample Digestion:</b>	<b>HNO<sub>3</sub>-HCl acid digestion</b>
<b>Instrumentation Method:</b>	<b>ICP-ES (1D), ICP-MS (1DX, 1F)</b>
<b>Applicability:</b>	<b>Sediment, Soil, Non-mineralized Rock and Drill Core</b>

#### Method Description:

Prepared sample is digested with a modified Aqua Regia solution of equal parts concentrated HCl, HNO<sub>3</sub> and DI H<sub>2</sub>O for one hour in a heating block of hot water bath. Sample is made up to volume with dilute HCl. Sample splits of 0.5g, 15g or 30g can be analyzed.

Element	Group 1D Detection	Group 1DX Detection	Group 1F Detection	Upper Limit
Ag	0.3 ppm	0.1 ppm	2 ppb	100 ppm
Al*	0.01%	0.01%	0.01%	10%
As	2 ppm	0.5 ppm	0.1 ppm	10000 ppm
Au	2 ppm	0.5 ppb	0.2 ppb	100 ppm
B*^	20 ppm	20 ppm	20 ppm	2000 ppm
Ba*	1 ppm	1 ppm	0.5 ppm	10000 ppm
Bi	3 ppm	0.1 ppm	0.02 ppm	2000 ppm
Ca*	0.01%	0.01%	0.01%	40%
Cd	0.5 ppm	0.1 ppm	0.01 ppm	2000 ppm
Co	1 ppm	0.1 ppm	0.1 ppm	2000 ppm
Cr*	1 ppm	1 ppm	0.5 ppm	10000 ppm
Cu	1 ppm	0.1 ppm	0.01 ppm	10000 ppm
Fe*	0.01%	0.01%	0.01%	40%
Ga*	-	1 ppm	0.1 ppm	1000 ppm
Hg	1 ppm	0.01 ppm	5 ppb	50 ppm
K*	0.01%	0.01%	0.01%	10%
La*	1 ppm	1 ppm	0.5 ppm	10000 ppm
Mg*	0.01%	0.01%	0.01%	30%
Mn*	2 ppm	1 ppm	1 ppm	10000 ppm
Mo	1 ppm	0.1 ppm	0.01 ppm	2000 ppm
Na*	0.01%	0.001%	0.001%	5%
Ni	1 ppm	0.1 ppm	0.1 ppm	10000 ppm
P*	0.001%	0.001%	0.001%	5%
Pb	3 ppm	0.1 ppm	0.01 ppm	10000 ppm
S	0.05%	0.05%	0.02%	10%



Element	Group 1D Detection	Group 1DX Detection	Group 1F Detection	Upper Limit
Sb	3 ppm	0.1 ppm	0.02 ppm	2000 ppm
Sc	-	0.1 ppm	0.1 ppm	100 ppm
Se	-	0.5 ppm	0.1 ppm	100 ppm
Sr*	1 ppm	1 ppm	0.5 ppm	10000 ppm
Te	-	0.2 ppm	0.02 ppm	1000 ppm
Th*	2 ppm	0.1 ppm	0.1 ppm	2000 ppm
Ti*	0.01%	0.001%	0.001%	5%
Tl	5 ppm	0.1 ppm	0.02 ppm	1000 ppm
U*	8 ppm	0.1 ppm	0.05 ppm	2000 ppm
V*	1 ppm	2 ppm	2 ppm	10000 ppm
W*	2 ppm	0.1 ppm	0.05 ppm	100 ppm
Zn	1 ppm	1 ppm	0.1 ppm	10000 ppm
Be*	-	-	0.1 ppm	1000 ppm
Ce*	-	-	0.1 ppm	2000 ppm
Cs*	-	-	0.02 ppm	2000 ppm
Ge*	-	-	0.1 ppm	100 ppm
Hf*	-	-	0.02 ppm	1000 ppm
In	-	-	0.02 ppm	1000 ppm
Li*	-	-	0.1 ppm	2000 ppm
Nb*	-	-	0.02 ppm	2000 ppm
Rb*	-	-	0.1 ppm	2000 ppm
Re	-	-	1 ppb	1000 ppb
Sn*	-	-	0.1 ppm	100 ppm
Ta*	-	-	0.05 ppm	2000 ppm
Y*	-	-	0.01 ppm	2000 ppm
Zr*	-	-	0.1 ppm	2000 ppm
Pt*	-	-	2 ppb	100 ppm
Pd*	-	-	10 ppb	100 ppm
Pb <sub>204</sub>	-	-	0.01 ppm	10000 ppm
Pb <sub>206</sub>	-	-	0.01 ppm	10000 ppm
Pb <sub>207</sub>	-	-	0.01 ppm	10000 ppm
Pb <sub>208</sub>	-	-	0.01 ppm	10000 ppm

\* Solubility of some elements will be limited by mineral species present.

^Detection limit = 1 ppm for 15g / 30g analysis.

**Limitations:**

Au solubility can be limited by refractory and graphitic samples.

## METHOD SPECIFICATIONS

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

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

#### Method Description:

Prepared sample is custom-blended with fire-assay fluxes, PbO litharge and a Ag inquart. Firing the charge at 1050 °C liberates Ag ± Au ± PGEs that report to the molten Pb-metal phase. After cooling the Pb button is recovered, placed in a cupel and fired at 950 °C to render a Ag ± Au ± PGEs dore bead. The bead is digested for ICP analysis or weighed and parted in ACS grade HNO<sub>3</sub> to dissolve Ag leaving a Au sponge. Au is weighed for Gravimetric determination; ACS grade HCl is added dissolving the Au ± PGE sponge for Instrument determination.

Element	3B Detection	3B Upper Limit	3B-MS Detection	3B-MS Upper Limit
<b>Au</b>	2 ppb	10 ppm	1 ppb	10 ppm
<b>Pt</b>	3 ppb	10 ppm	0.1 ppb	10 ppm
<b>Pd</b>	2 ppb	10 ppm	0.5 ppb	10 ppm

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

#### Note:

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

**MMI - M :**                    **The Determination of Mobile Metal Ions (MMI): Ag, Al, As, Au, Ba, Bi, Ca, Cd, Ce, Co, Cr, Cs, Cu, Dy, Er, Eu, Fe, Ga, Gd, Hg, In, K, La, Li, Mg, Mn, Mo, Nb, Nd, Ni, P, Pb, Pd, Pr, Pt, Rb, Sb, Sc, Se, Sm, Sn, Sr, Ta, Tb, Te, Th, Ti, U, V, W, Y, Yb, Zn, Zr by partial extraction and ICP-MS.**

**1. Parameter(s) measured, unit(s):**

Silver (Ag); Aluminum (Al); Arsenic (As); Gold (Au); Barium (Ba); Bismuth (Bi); Calcium (Ca); Cadmium (Cd); Cerium (Ce); Chromium (Cr); Cobalt (Co); Cesium (Cs); Copper (Cu); Dysprosium (Dy); Erbium (Er); Europium (Eu); Iron (Fe); Gallium (Ga); Gadolinium (Gd); Mercury (Hg); Indium (In); Potassium (K); Lanthanum (La); Lithium (Li); Magnesium (Mg); Manganese (Mn); Molybdenum (Mo); Niobium (Nb); Neodymium (Nd); Nickel (Ni); Phosphorus (P); Lead (Pb); Palladium (Pd); Praseodymium (Pr); Platinum (Pt); Rubidium (Rb); Antimony (Sb); Scandium (Sc); Samarium (Sm); Tin (Sn); Strontium (Sr); Tantalum (Ta); Terbium (Tb); Tellurium (Te); Thorium (Th); Titanium (Ti); Thallium (Tl); Uranium (U); Tungsten (W); Yttrium (Y); Ytterbium (Yb); Zinc (Zn) and Zirconium (Zr) by partial extraction and ICP-MS: ppb.

**2. Typical sample size:**

50 g

**3. Type of sample applicable (media):**

Soils

**4. Sample preparation technique used:**

Mobile metal ions present in soil samples are partially extracted using a concentrated MMI –M solution.

**5. Method of analysis used:**

The extracted sample solution is analyzed by Inductively coupled plasma Mass Spectrometer (ICP-MS). Samples are analyzed against known calibration materials to provide quantitative analysis of the original sample.

**6. Data reduction by:**

The results are exported via computer, on line, data fed to the SGS Laboratory Information Management System (SLIM) with secure audit trail.

**7. Figures of Merit:**

This method has been fully validated for the range of samples typically analyzed. Method validation includes the use of certified reference materials, replicates and blanks to calculate accuracy, precision, linearity, range, limit of detection, limit of quantification, specificity and measurement uncertainty.

Element	Reporting Limit (ppb)	Element	Reporting Limit (ppb)	Element	Reporting Limit (ppb)	Element	Reporting Limit (ppb)
Ag	1.0	Er	0.5	Nd	1.0	Ta	1.0
Al	1.0 (ppm)	Eu	0.5	Ni	5.0	Tb	1.0
As	10	Fe	1.0 (ppm)	P	0.1 (ppm)	Te	10
Au	0.1	Ga	1.0	Pb	10	Th	0.5
Ba	10	Gd	1.0	Pd	1.0	Ti	3.0
Bi	1.0	Hg	1.0	Pr	1.0	Tl	0.5
Ca	10 (ppm)	In	0.5	Pt	1.0	U	1.0
Cd	1.0	K	0.1 (ppm)	Rb	5.0	V	NA
Ce	5.0	La	1.0	Sb	1.0	W	1.0
Co	5.0	Li	5.0	Sc	5.0	Y	5.0
Cr	100	Mg	1.0 (ppm)	Se	NA	Yb	1.0
Cs	0.5	Mn	10	Sm	1.0	Zn	20

Cu	10	Mo	5.0	Sn	1.0	Zr	5.0
Dy	1.0	Nb	0.5	Sr	10		

The estimated Measurement Uncertainty (MU) has been established for the following base metal parameters of this method at the following concentration ranges and is based on laboratory replicate data (comprising of different samples, analysts, laboratory conditions, equipment, etc.).

**Estimated Measurement Uncertainty (MU) +/- (ppb)**

Concentration Range (ppm)	Element	Concentration (ppm)	Element	Concentration (ppm)	Element	Concentration (ppm)
At: 0.5 - 1.0 ppb	<b>Ag</b>		<b>As</b>		<b>Ba</b>	
At: 1.0 - 5.0 ppb		0.68				2.46
At: 5.0 - 10.0 ppb		1.42				17.14
At: 10 - 50 ppb		7.39		8.08		54.32
At: 50 - 100 ppb		10.34		15.76		104.15
At: 100 - 500 ppb		48.31		46.02		328.39
At: 500 - 1000 ppb		115.91		115.88		769.60
At: 1000 - 5000 ppb		529.85		217.14		1604.49
At: 5000 - 10000 ppb		4209.52				
At: 10000 - 50000 ppb						
At: 0.5 - 1.0 ppb	<b>Bi</b>		<b>Cd</b>		<b>Ce</b>	
At: 1.0 - 5.0 ppb		0.98		0.80		2.06
At: 5.0 - 10.0 ppb		1.81		2.21		7.36
At: 10 - 50 ppb		9.93		4.44		14.95
At: 50 - 100 ppb				14.88		46.55
At: 100 - 500 ppb				37.04		141.53
At: 500 - 1000 ppb				79.33		320.43
At: 1000 - 5000 ppb				238.49		2.32
At: 5000 - 10000 ppb						
At: 10000 - 50000 ppb						
At: 0.5 - 1.0 ppb	<b>Co</b>		<b>Cr</b>		<b>Cs</b>	0.13
At: 1.0 - 5.0 ppb						0.86
At: 5.0 - 10.0 ppb		1.61				1.20
At: 10 - 50 ppb		9.10				2.76
At: 50 - 100 ppb		11.57				10.10
At: 100 - 500 ppb		53.85		46.91		21.25
At: 500 - 1000 ppb		153.02		54.98		
At: 1000 - 5000 ppb		63.36				
At: 5000 - 10000 ppb						
At: 10000 - 50000 ppb						
At: 0.5 - 1.0 ppb	<b>Cu</b>		<b>Dy</b>		<b>Er</b>	0.176
At: 1.0 - 5.0 ppb				1.22		0.902
At: 5.0 - 10.0 ppb				1.24		1.327
At: 10 - 50 ppb		10.69		5.23		5.054
At: 50 - 100 ppb		17.94		14.35		16.261
At: 100 - 500 ppb		55.49		28.01		17.292
At: 500 - 1000 ppb		104.21		18.23		
At: 1000 - 5000 ppb		478.49				
At: 5000 - 10000 ppb		1678.04				
At: 10000 - 50000 ppb		3489.55				



Minerals Services METHOD SUMMARY

At: 0.5 - 1.0 ppb	<b>Eu</b>	0.174	<b>Ga</b>		<b>Gd</b>	
At: 1.0 - 5.0 ppb		0.702		0.584		1.030
At: 5.0 - 10.0 ppb		1.218		1.318		1.228
At: 10 - 50 ppb		3.787		3.814		3.920
At: 50 - 100 ppb		9.710		10.967		9.857
At: 100 - 500 ppb		8.260		20.056		30.582
At: 500 - 1000 ppb						34.349
At: 1000 - 5000 ppb						18.975
At: 5000 - 10000 ppb						
At: 10000 - 50000 ppb						
At: 0.5 - 1.0 ppb	<b>Hg</b>		<b>In</b>	0.124	<b>La</b>	
At: 1.0 - 5.0 ppb		0.748		0.404		0.679
At: 5.0 - 10.0 ppb		2.355				2.230
At: 10 - 50 ppb		6.873		22.893		7.822
At: 50 - 100 ppb						12.789
At: 100 - 500 ppb						63.720
At: 500 - 1000 ppb						120.122
At: 1000 - 5000 ppb						254.485
At: 5000 - 10000 ppb						215.932
At: 10000 - 50000 ppb						
At: 0.5 - 1.0 ppb	<b>Li</b>		<b>Mn</b>		<b>Mo</b>	
At: 1.0 - 5.0 ppb						
At: 5.0 - 10.0 ppb		2.019				2.004
At: 10 - 50 ppb		5.778		17.006		5.888
At: 50 - 100 ppb		13.854		24.556		18.408
At: 100 - 500 ppb		52.799		69.743		64.386
At: 500 - 1000 ppb				182.627		82.271
At: 1000 - 5000 ppb				656.283		590.598
At: 5000 - 10000 ppb				2013.953		
At: 10000 - 50000 ppb				5885.797		
50000 ppb -100000 ppb		12919.59				
At: 0.5 - 1.0 ppb	<b>Nb</b>	0.186	<b>Nd</b>		<b>Ni</b>	
At: 1.0 - 5.0 ppb		1.014		0.888		
At: 5.0 - 10.0 ppb		1.615		1.705		0.937
At: 10 - 50 ppb		6.996		5.739		9.748
At: 50 - 100 ppb		10.539		12.438		12.052
At: 100 - 500 ppb				30.763		58.581
At: 500 - 1000 ppb				123.618		136.042
At: 1000 - 5000 ppb				294.067		375.994
At: 5000 - 10000 ppb				297.066		
At: 10000 - 50000 ppb						
At: 0.5 - 1.0 ppb	<b>Pb</b>		<b>Pd</b>	0.3596	<b>Pr</b>	0.776
At: 1.0 - 5.0 ppb						1.613
At: 5.0 - 10.0 ppb						5.094
At: 10 - 50 ppb		11.790				14.719
At: 50 - 100 ppb		11.527				25.930
At: 100 - 500 ppb		53.803				73.722
At: 500 - 1000 ppb		132.346				47.335
At: 1000 - 5000 ppb		394.734				
At: 5000 - 10000 ppb		682.695				
At: 10000 - 50000 ppb		4287.704				



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At: 0.5 - 1.0 ppb	<b>Pt</b>		<b>Rb</b>		<b>Sb</b>	1.059	
At: 1.0 - 5.0 ppb							1.851
At: 5.0 - 10.0 ppb						1.801	3.701
At: 10 - 50 ppb						7.067	
At: 50 - 100 ppb						6.241	
At: 100 - 500 ppb						42.847	
At: 500 - 1000 ppb						56.351	
At: 1000 - 5000 ppb							
At: 5000 - 10000 ppb							
At: 10000 - 50000 ppb							
At: 0.5 - 1.0 ppb	<b>Sc</b>		<b>Sm</b>		<b>Sn</b>		
At: 1.0 - 5.0 ppb						1.083	1.210
At: 5.0 - 10.0 ppb		1.625				1.581	1.721
At: 10 - 50 ppb		5.417				6.095	6.424
At: 50 - 100 ppb		10.910				15.803	
At: 100 - 500 ppb		38.211				33.997	
At: 500 - 1000 ppb						146.800	
At: 1000 - 5000 ppb						34.430	
At: 5000 - 10000 ppb							
At: 10000 - 50000 ppb							
At: 0.5 - 1.0 ppb	<b>Sr</b>		<b>Ta</b>		<b>Tb</b>		
At: 1.0 - 5.0 ppb						0.805	0.797
At: 5.0 - 10.0 ppb						1.357	1.059
At: 10 - 50 ppb		11.692					5.109
At: 50 - 100 ppb		14.504					7.330
At: 100 - 500 ppb		65.132					2.793
At: 500 - 1000 ppb		103.715					
At: 1000 - 5000 ppb		429.336					
At: 5000 - 10000 ppb		1162.784					
At: 10000 - 50000 ppb		5707.675					
At: 0.5 - 1.0 ppb	<b>Te</b>		<b>Th</b>		<b>Ti</b>	0.991	
At: 1.0 - 5.0 ppb						0.191	2.545
At: 5.0 - 10.0 ppb						0.878	10.151
At: 10 - 50 ppb						1.651	20.952
At: 50 - 100 ppb						5.756	85.222
At: 100 - 500 ppb						15.201	156.462
At: 500 - 1000 ppb						30.036	563.821
At: 1000 - 5000 ppb							1660.291
At: 5000 - 10000 ppb							4291.639
At: 10000 - 50000 ppb							
At: 0.5 - 1.0 ppb	<b>Tl</b>	0.220	<b>U</b>		<b>V</b>		
At: 1.0 - 5.0 ppb		0.248				0.739	
At: 5.0 - 10.0 ppb		0.710				0.992	
At: 10 - 50 ppb						6.036	
At: 50 - 100 ppb						11.145	
At: 100 - 500 ppb						59.023	
At: 500 - 1000 ppb						109.144	
At: 1000 - 5000 ppb						814.620	
At: 5000 - 10000 ppb							
At: 10000 - 50000 ppb							

At: 0.5 - 1.0 ppb	<b>W</b>		<b>Y</b>		<b>Yb</b>	
At: 1.0 - 5.0 ppb		0.542		1.124		0.778
At: 5.0 - 10.0 ppb		2.126		1.445		1.744
At: 10 - 50 ppb		2.450		6.324		5.650
At: 50 - 100 ppb		2.038		18.229		11.247
At: 100 - 500 ppb				56.457		16.852
At: 500 - 1000 ppb				100.585		
At: 1000 - 5000 ppb				201.752		
At: 5000 - 10000 ppb						
At: 10000 - 50000 ppb						
At: 0.5 - 1.0 ppb	<b>Zn</b>		<b>Zr</b>			
At: 1.0 - 5.0 ppb						
At: 5.0 - 10.0 ppb				1.722		
At: 10 - 50 ppb		8.171		4.643		
At: 50 - 100 ppb		17.121		16.786		
At: 100 - 500 ppb		65.907		50.275		
At: 500 - 1000 ppb		153.700				
At: 1000 - 5000 ppb		547.141				
At: 5000 - 10000 ppb		1107.713				
At: 10000 - 50000 ppb		2502.386				
50000 ppb -100000 ppb	23198.392					

**Estimated Measurement Uncertainty (MU) +/- (ppm) - Majors**

Concentration Range (%)	Element	Concentration (ppm)	Element	Concentration (ppm)	Element	Concentration (ppm)
At: 0.10 - 0.50 ppm	<b>Al</b>		<b>Ca</b>		<b>Fe</b>	
At: 0.50 - 1.0 ppm						
At: 1.0 - 5.0 ppm		0.63035		1.58941		0.802365
At: 5.0 - 10 ppm		1.63216		2.237797		2.174293
At: 10 - 50 ppm		7.34230		6.891509		7.729652
At: 50 - 100 ppm		8.50614		12.80499		13.00837
At: 100 - 500 ppm		30.41945		43.86097		48.90275
At: 500 - 1000 ppm				77.20875		40.2965
At: 1000 - 5000 ppm				348.0501		27.11565
At: 5000 - 10000 ppm						489.3677
At: 0.10 - 0.50 ppm	<b>K</b>	0.24931	<b>Mg</b>		<b>P</b>	0.066049
At: 0.50 - 1.0 ppm		0.403717				0.190449
At: 1.0 - 5.0 ppm		0.844258		0.527679		0.555625
At: 5.0 - 10 ppm		1.221449		1.278639		1.495856
At: 10 - 50 ppm		3.030796		4.421038		3.542621
At: 50 - 100 ppm		5.859685		13.13744		
At: 100 - 500 ppm		10.62485		21.69363		
At: 500 - 1000 ppm				41.98163		
At: 1000 - 5000 ppm						
At: 5000 - 10000 ppm						

**8. Quality control:**

Instrument calibration is performed for each batch or work order and calibration checks are analyzed within each analytical run. Quality control materials include method blanks, replicates, duplicates and reference materials and are randomly inserted with the frequency set according to method protocols at ~14%.

Quality assurance measures of precision and accuracy are verified statistically using SLIM control charts with set criteria for data acceptance. Data that fails is subject to investigation and repeated as necessary.