

**2013 REPORT ON EXPLORATION ACTIVITIES  
PROSPECTING & SOIL SAMPLING  
SKOONKA CREEK PROPERTY  
(CLAIMS: 503067, 503071, 503075, 503076, 503078,  
503082 to 503085, 503087-503091, 515980)**

Kamloops Mining Division  
Lytton-Spences Bridge Area, British Columbia  
NTS: 92I/5, 6; BCGS: 092I023, 33  
**Latitude 50° 20' 36"N Longitude 121° 29' 20"W**  
UTM Zone 10: 607521E, 5577897N (NAD 83)  
(Approximate centre of claims)

**BC Geological Survey  
Assessment Report  
34626**

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February 26<sup>th</sup>, 2014

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1 CD-R (back pocket) with Final Report as pdf document

## SUMMARY

The Skoonka Creek project is located approximately 15 km northeast of Lytton, BC.

The project is a joint venture option acquired from Almaden Minerals Ltd. (Almaden) with Strongbow Exploration Inc. (Strongbow) operator and currently holding a 65.86% interest.

In 2003 Almaden discovered the JJ and Discovery gold epithermal quartz vein showings as a result of surface exploration follow-up of a BC government gold in silt anomaly. In 2005 Strongbow optioned the property and conducted comprehensive exploration programs from 2005 to 2007, including soil sampling, airborne and ground geophysical surveys, prospecting and mapping, and diamond drilling. Strongbow's work detailed and expanded the understanding of the JJ and Discovery zones as well as new discoveries including the Deadwood, Ember, Backburn, and Zebra gold showings.

In 2013 a small program of geological mapping and soil Ah horizon sampling was conducted over a period of 5 days (10 man days), including mobilization and demobilization to the property from Vancouver. Winter conditions severely hampered the geological mapping and soil Ah sample production.

A half day was spent investigating a porphyry, mapped in 2006, which is spatially associated with anomalous soil geochemistry (arsenic, antimony and mercury) that could be related to epithermal gold mineralization. No significant mineralization was noted but minor hematite and chalcedonic quartz vein alteration was noted locally. Further work is required to geochemically characterize the porphyry and follow-up in detail the surrounding soil geochemical anomalies.

One day of geological mapping in the JJ West area traversed an inferred late normal fault and contact between the Pimainus Formation and Spius Formation. Several outcrops were mapped that support the previous geological mapping. Physical evidence of the actual contact between the Pimainus and Spius formations remains elusive and the nature of the inferred fault contact remains enigmatic. Additional geological mapping is recommended to focus on unravelling the nature of the fault contact and the extents of the Spius and Pimainus formations in the JJ West area.

A soil Ah horizon orientation sampling program was conducted to evaluate the effectiveness of the method and provide guidance for further exploration and targeting of the known JJ mineralized zone and a promising geochemical anomaly in the JJ West area. A total of 64 samples were collected including three samples in the immediate vicinity of the JJ showing, orientation lines east and west of the JJ showing and a test line crossing a 2006 soil B horizon gold-arsenic anomaly (48 ppb and 16.5 ppm, respectively) in the JJ West area. The Ah soil sampling effectively detected a robust multi-element geochemical anomaly in the immediate vicinity of the JJ showing. Comparison of results from historic B horizon versus the 2013 Ah horizon soil samples generally indicates that

the soil Ah results return more subdued values, however an explanation for the subdued response must take into account many factors including sample population size, disparate analytical techniques and sample area extents. Comparison of the overall range of values represented by percentile scores for gold and a suite of pathfinder elements (silver, arsenic, mercury, molybdenum and antimony) suggests the soil Ah method is more sensitive (i.e. produces a stronger signal) for the pathfinder elements silver, mercury and antimony, is about the same for arsenic and antimony and is less sensitive to gold. Several anomalies are noted beyond the immediate JJ showing area in pathfinder elements from Ah soil samples, but not in gold. These anomalies are generally subtle, one to two station anomalies. Of note are a three station mercury anomaly 300 m northeast of the JJ showing and a two station molybdenum and coincident one station antimony anomaly 350 m southeast of the JJ Showing. Both of these anomalous areas occur well outside the area of past drilling, showing potential for new discoveries or expansion of the known extent of the JJ mineralization. Scattered geochemical anomalies along the west of JJ test line are encouraging and compliment anomalous results from historic B soil samples and drilling but did not clearly define a robust new target area. The soil Ah sample results in the JJ West support the original soil B horizon gold-arsenic anomaly that was targeted. In addition seven contiguous samples over the north end of the JJ West orientation line (including the area of targeted soil B anomaly) are anomalous in either gold, arsenic, mercury, molybdenum or antimony, and form a 450 m trend of anomalous results approximately 1 km along strike (west-southwest) of the main JJ trend.

Recommended future exploration includes further follow-up geological mapping of the porphyry target, geological mapping to better understand and constrain the Pimainus-Spius formations fault contact in the JJ West area and detailed Ah soil sampling in the JJ and JJ West areas.

## 1.0 INTRODUCTION

In October of 2013, Strongbow conducted a brief (five days including travel) ground exploration program comprised of prospecting and geological mapping over two areas, an orientation soil Ah sampling program and mechanical reclamation of trenches in the JJ area. The work was hampered by several inches of snow cover that fell on the first two days of field work.

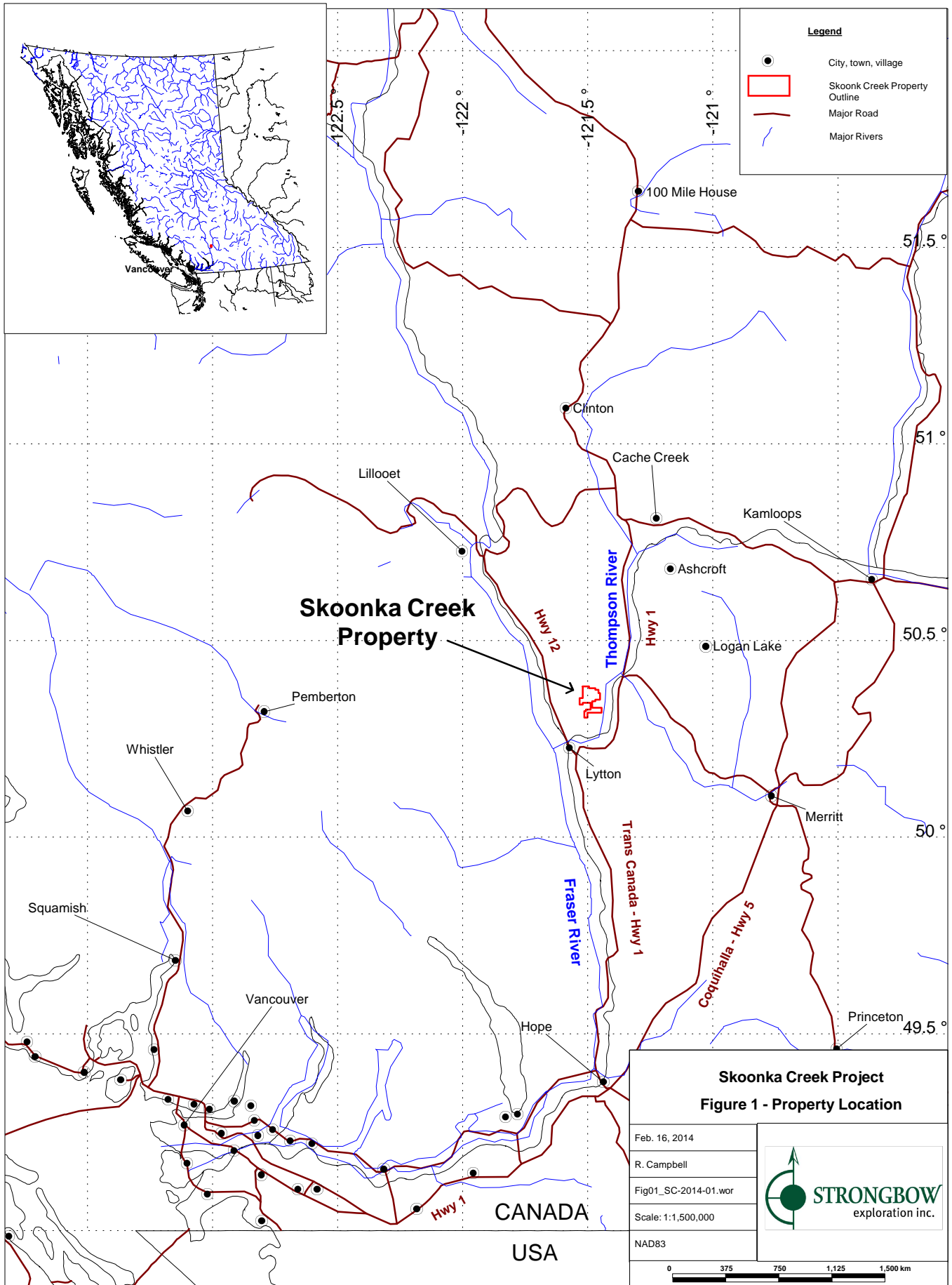
### *1.1 Location, Access, Physiography and Climate*

Most of the following section (1.1) is accredited to Chang and Gale (2008).

The Skoonka Creek project is situated at latitude 50°22'N and longitude 121°30'W or 606040E, 5578070N (UTM NAD 83, Zone 10). It is located between the communities of Lytton and Spences Bridge in south-central British Columbia, less than 10 km from the Trans-Canada Highway and the Canadian National Railway line, and an approximate three hour drive from Vancouver in southern British Columbia. The property area is bounded to the west, south and east by the Fraser and Thompson Rivers and is covered by 1:50,000 scale NTS map sheet 92I/05 and 06 (Figure 1).

The property can be accessed via the Botanie Lake Road, which is approximately 1 km northeast of the Trans-Canada Highway, along Highway 12. Primary access points for to the property are through the Sleetis Creek forestry road located approximately 9 km from the start of the Botanie Lake Road for the southern area of the property and the Skoonka Forestry Road through Botanie Indian Reserve #15, which is located at the north end of Botanie Lake Road (Figure 2). The Sleetis Creek and Skoonka Forestry roads are linked via a 1.5 km connecting road dubbed the "JJ Connector", which was built in 2006 to allow easier access through the property. The Firebreak road is a 2.6 km long, deactivated fire trail, which was cleared in 2006 to allow access to the Backburn area. A new trail was constructed in 2007 to provide access to the Ember area by joining the end of the Discovery road, also known as the West Spur Road, to the Central Spur Road (Figure 2). The Skoonka Creek property sees active logging between the months of June and November, during which logging vehicles and equipment share the road and radio communication is essential.

Although Strongbow had not been active in the area for a number of years the road and trail conditions in the JJ, JJ West and porphyry areas area were in good condition. New logging road construction was in progress during the 2013 exploration program in the JJ west area: a branch off of the Sleetis Main road is being extended to the northwest and west of the JJ West soil Ah line. New logging in this area will open up access to new areas and possibly new rock exposures.



The Skoonka Creek property lies within the western margin of the Intermontane physiographic region, on the Scarped Range between the Fraser Plateau and the northern Cascade Mountains (Balon, 2005). The topography consists of rolling upland to rugged mountain terrain, with elevations up to 1,780m. Gold Creek is northward flowing branch off Skoonka Creek which, subsequently flows eastward into the Thompson River. Soil and glacial till cover is generally thin although extensive, and is generally thicker (> 5m) at lower elevations, particularly in the northern part of the property (Balon, 2005). Bedrock is moderate to well-exposed in road cuts, some stream gullies, steep slopes and ridge tops; otherwise bedrock exposure is poor to moderate. Based on the glacial striae in outcrop along the West Spur Road, the predominant ice direction is approximately 110° (Balon, 2005).

## 1.2 Claim Data

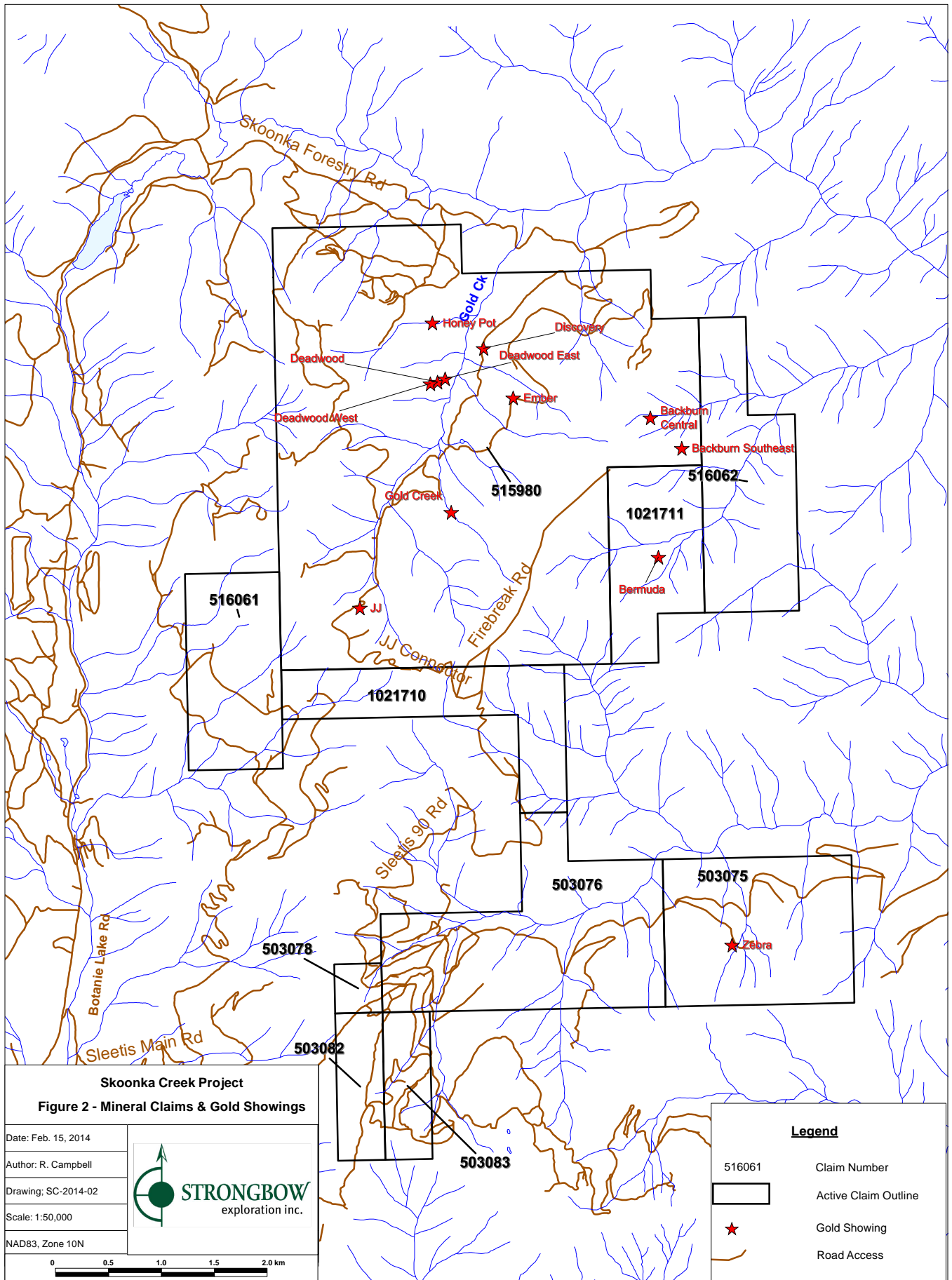
The Skoonka Creek property (Skoonka property) was initially staked by Almaden Minerals Ltd. (Almaden) as sixteen contiguous claims comprising 3,500 hectares (SAM 1 to 16 claims). In early 2005, this land position was reconfigured into four claims: 515980, 516059, 516061 and 516092 and thirteen new claims were additionally staked to comprise seventeen contiguous claims that cover a north-south rectangular block of 10,190 hectares. In June 2005 Strongbow entered into an option joint venture agreement with Almaden to acquire an interest in the Skoonka property. Based on the 2005 and 2006 exploration expenditures, Strongbow had earned a 51% interest in the Skoonka Creek property as per the joint venture partnership with Almaden. In May 2007, Almaden elected not to participate in the 2007 exploration program at Skoonka Creek, therefore the program was entirely funded by Strongbow. Following the 2007 exploration program Strongbow had earned a 65.86% interest in the property. In August 2013 the Skoonka property was reduced to a core holding of 10 claims comprising 2,783.59 ha. (Table 1, Figure 2).

**Table 1:** Skoonka Creek Mineral Claims

<b>Tenure Number</b>	<b>Issue Date (d-m-yr)</b>	<b>New Good to Date<sup>1</sup> (d-m-yr)</b>	<b>Area (ha.)</b>	<b>Owner Name</b>
503075	13-Jan-05	16-Jul-15	247.57	Almaden Minerals Ltd.
503076	13-Jan-05	16-Jul-15	330.09	Almaden Minerals Ltd.
503078	13-Jan-05	16-Jul-15	20.63	Almaden Minerals Ltd.
503082	13-Jan-05	16-Jul-15	61.91	Almaden Minerals Ltd.
503083	13-Jan-05	16-Jul-15	61.91	Almaden Minerals Ltd.
515980	4-Jul-04	16-Jul-15	1,381.09	Almaden Minerals Ltd.
516061	5-Jul-05	16-Jul-15	164.96	Almaden Minerals Ltd.
516062	5-Jul-05	16-Jul-15	206.15	Almaden Minerals Ltd.
1021710	5-Jul-05	16-Jul-15	164.98	Almaden Minerals Ltd.
1021711	5-Jul-05	16-Jul-15	144.32	Almaden Minerals Ltd.
<b>Total =</b>		<b>10 claims</b>	<b>2,783.59</b>	

1. Pending acceptance of expenditures associated with this report.





### ***1.3 History***

The following section (1.3) is accredited to Chang and Gale (2008).

The discovery of placer gold in gravel bars adjacent to the Skoonka Creek property ignited the Fraser and Thompson rivers gold rush between the 19<sup>th</sup> and 20<sup>th</sup> centuries (Balon, 2005). Placer gold was mined from the gravel bars on major tributaries in the Ashcroft-Lytton-Lillooet district. A regional silt geochemical survey was carried out for NTS sheet 92I and reanalyzed in 1994, then re-released as BC RGS 40 or GSC Open File 2666. Two gold anomalies (19ppb and 23ppb) located within the Skoonka Creek drainage were the initial attraction for Almaden in this area.

In 2003, Almaden collected 22 rocks, 41 stream sediments, and 14 soil samples and prospecting led to the discovery of gold-bearing chalcedonic quartz vein rubble in a road cut adjacent to Gold Creek (Discovery showing) and prompted the staking of SAM 1-10 claims. Follow-up work by Almaden in 2004 resulted in the collection of 41 rock, 8 silt, and 417 soil samples through soil and silt sampling along road cuts, prospecting, and bedrock mapping, and hand trenching and channel sampling at the JJ and Discovery showings. In addition, access road clearing and minor road repairs were performed to maintain their condition.

Strongbow took over operation of the Skoonka Creek project in 2005. Regional silt sampling (29 samples), detailed and regional soil sampling (3,588 samples), geological mapping and prospecting (224 samples), ground magnetic and VLF geophysics surveys and diamond drilling were conducted on the property. This work highlighted five main areas of interest: JJ, Discovery, Gold Creek, Ember and Backburn. Eleven drill holes were drilled at JJ to test a coincident geophysical and soil geochemical anomaly that was interpreted to represent the host structure for high grade epithermal quartz veins. Drilling results (824 drill core samples) highlighted 20.2 g/t gold over 12.8m and extended the surface showing to a strike length of approximately 350 m.

The 2006 exploration consisted of both reconnaissance and detailed work. A total of 4,533 soil, 76 silt, and 1,624 rock samples were collected. In addition to sampling, surface work involved mapping and prospecting, and detailed soil and hand/mechanized trenching over zones with anomalous gold results. A 206 line-kilometre airborne geophysics was flown to cover the 2005 regional soil sampling grid. Ground geophysical surveys comprised 33.7 line kilometres of magnetics over five grids (Discovery, JJ, Ember, Deadwood and Backburn) and a 5.45 line kilometre IP survey over the JJ showing. Drilling was conducted over two phases and totalled 4,403.29m and 2,353 samples, which successfully tested the Discovery showing (3 holes) down to a depth of 110m over a 50m strike and extended the JJ mineralization (18 holes) over a strike of 750m and a depth of 250m. Road building in the north half of the property allowed a link between the north and south network of forestry roads and provided access for detailed work and drilling.

The 2007 exploration program consisted of mapping (1:10,000 and 1:2,500 scale) detailed to reconnaissance, grid and trench soil sampling (2,262 samples), surface or trench rock sampling (783 samples), mechanized and hand trenching (432 m), ground geophysics (33.9 line km of magnetometer surveying) and airborne geophysics (580 line km DIGHEM V survey) diamond drilling (3,147 m in 13 holes; 1,129 core samples assayed) and road construction (1.46 km). Summer surface work focused on developing the Ember, Deadwood, Blackburn, and Zebra showings as drill targets for a fall program.

The property-scale mapping (1:10,000) covered the eastern part of the property and focused on the Spius and Pimainus Formation contact while detailed mapping (1:2,500) was conducted over the Blackburn and Zebra showings. Ground geophysics was conducted over Deadwood, Ember, Blackburn, and Zebra areas. The airborne magnetic, electromagnetic and radiometric survey was flown to cover 70% of the property and ties onto the 2006 airborne survey area. The fall diamond drilling program tested the Deadwood (6 holes), Ember (2 holes), Blackburn (4 holes), and JJ (1 hole) zones. In addition a 1.46 km road was constructed to provide backhoe and drill access to the Ember showing.

Detailed soil grid sampling, soil trenching, and prospecting aided in extending and identifying new geochemical anomalies in each area, which was then followed up by hand or mechanized trenching over the best zones on surface. The DIGHEM V airborne results were useful for distinguishing the relatively more magnetic Spius Formation from the less magnetic Pimainus Formation and mapping large-scale structures. Ground magnetic surveys, comprising 33.9 line-kilometres, carried out over the showings were useful for mapping lineaments that may represent alteration or faults.

The focus of the Deadwood, Ember, and Blackburn diamond drilling was to test the down dip extent of their respective surface showings. The single hole drilled at the JJ showing was designed to test the potential for a significant north-dipping conjugate structure that may be linked to the high-grade JJ veins. Drilling successfully extended the JJ and Discovery zones of mineralization and both continue to be open at depth. The Deadwood, Ember, Discovery and Blackburn gold showings define a 3-km long corridor of low grade gold mineralization.

## **2.0 GEOLOGICAL SETTING**

### ***2.1 Regional Geology and Mineral Deposits***

The following sections (2.1, 2.2) are accredited to Chang and Gale (2008).

The Skoonka Creek project is situated within the Spences Bridge Group (SBG), which is part of the southern Intermontane tectonic belt of the Canadian Cordillera. The Intermontane tectonic belt is a region of relatively low topographic and structural relief with mainly sub-greenschist metamorphic grade rocks exposed across its entire width. Predominant lithologies in the southwest corner of the 92I map sheet consist of Nicola

Group volcanics, metasediments of the Ladner and Relay Mountain groups, Jackass Mountain Group sediments and Spences Bridge Group volcanics (Banfield and Mountjoy, 1997; Map 1). Stratigraphy is intruded by abundant Late Triassic and/or Jurassic to Miocene plutons. Metamorphic assemblages consist of Cache Creek Complex mélanges and Bridge River Complex metamorphic and ultramafic rocks. Quaternary sediments occur as thick drifts along the main rivers and some of the larger creeks. Eocene and older rocks in the area are cut by steeply dipping normal faults that are parallel to subparallel to the main west-bounding Fraser fault (Balon, 2005). These faults display two geometries, trending both northwest-southeast and north-south (Map 1).

The Highland Valley porphyry copper mine (Map 1) and Craigmont copper iron skarn mine are two major mineral deposits that occur in the Spences Bridge region. The Highland Valley deposit is situated within the Late Triassic to Early Jurassic Guichon Creek batholith and is hosted by porphyritic quartz monzonite and granodiorite. Mineral reserves at Highland Valley as of December 31, 2012 include 359,900,000 tonnes in the proven category grading 0.34% copper and 0.007% molybdenum, and 337,500,000 tonnes in the probable category grading 0.24% copper and 0.009% molybdenum. Total reserves are 697,400,000 tonnes grading 0.29% copper and 0.008% molybdenum. (Teck Resources Ltd., 2013). The Craigmont mine contained 33 million tonnes grading 1.3% Cu hosted in calcareous sedimentary rocks of the Nicola Group comprised of limestones, limy tuffs, greywackes and argillites (Balon, 2005). Mineralization consists of magnetite, hematite and chalcopyrite and occurs as massive pods, lenses and disseminations extending through the calc-silicate horizon.

## ***2.2 Property Geology, Alteration and Mineralization***

The property geology for Skoonka Creek is the product of two stages of mapping in 2006 and 2007. The Mount Lytton Complex, which underlies the Spences Bridge Group volcanic rocks, is well exposed in the southern part of the Skoonka Creek project area in several deeply eroded drainages that drain southward into the Thompson River. This complex is briefly mapped along its contact with the overlying Spences Bridge Group as layered units that likely represent volcanoclastic rocks, intruded and metamorphosed by at least one granitic intrusion (Cooley, 2006).

The Spences Bridge Group underlying the Skoonka Creek property is further divided into two assemblages, the Pimainus Formation (PF) and the Spius Formation (SF). In the southern part of the property a 500m thick section of PF is well exposed in two deeply eroded tributaries that drain southward into the Thompson River. At the bottom of the PF, a heterolithic conglomerate sits unconformably above the Mount Lytton Complex (PFcon). It consists of mainly subangular to well-rounded cobbles and boulders of epidotized metavolcanic that likely represent eroded clasts of Mount Lytton Complex (Cooley, 2006). The thickness of the conglomerate is quite variable and is likely absent in many places.

Above the basal conglomerate, the rest of the Pimainus consists of mainly pyroclastic-dominated volcanic rocks with minor sandstone, shale, conglomerate and rare coal. The predominant rock type in these pyroclastic units is a poorly sorted, weakly to non-bedded monomictic lapilli-ash tuff (PFlap). Clasts are generally subrounded to well-rounded and range in size from lapilli to boulder. Also present within the Pimainus Formation are well stratified, well sorted fragmental units with grain sizes that range from medium-grained to lapilli-size to cobble and boulder-dominated layers (PFlap). Grading in bedded units are generally normal (coarsening upwards), although in most outcrops grading is not consistent. These units are interpreted to be air fall deposits. Andesite flows (PFash), previously mapped as fine-grained crystal tuff (2006), make up approximately 25% of this section and may contain up to 50% amygdules, which are commonly filled with quartz, epidote or calcite. The reassignment of what were originally called “crystal tuffs” as coherent lava flows is supported by thin section textures, where consistently-sized crystals spaced evenly in an unidentifiable matrix represented a coherent rather than fragmental nature (Kelman, 2007).

Near the top of the Pimainus lies a sequence of generally metre-thick sandstone, interbedded with decimetre-thick shale layers (PFsst). This unit is evident only at the southern edge of the property. Carbonized wood fragments and leaf impressions are common within the sandstones. These sedimentary units are tentatively correlated with the Dot beds which occur between the Pimainus and Spius Formations approximately 30 to 40 km to the east of the property (Thorkelson, 1986). Above this sedimentary sequence is a variably thick layer of coarse-grained lithic fragments which resembles the polymictic volcanoclastic to epiclastic unit. This unit is dominant and well exposed in the southeast part of the property where it is in contact with the Mount Lytton complex and may represent reworked Pimainus tuffs that were deposited in some low-lying areas prior to eruption of Spius Formation flows (Cooley, 2006). Andesite dykes thought to represent feeders to Spius flows cut this unit and indicate that this uppermost pyroclastic unit was unlithified when the dykes intruded.

The Spius Formation andesite flows that occur on the property have been subdivided into two main rock types: massive fine-grained flows and amygdaloidal flows. Massive flows occur as layered units with rarely visible flow tops and as thick featureless flow packages (SFmfl). They commonly occur at the base of amygdaloidal flows (Cooley, 2006). The massive flows are fine to medium-grained, dark greenish black or dark purple in colour, commonly with maroon streaks. The flows exhibit conchoidal fracture and contain up to 20% coarse-grained (<5mm), tabular to acicular plagioclase crystals. Mafic minerals comprise approximately 5% of the rock and are tentatively identified as pyroxene, which are commonly altered to a dark red unidentified mineral or to chlorite.

Amygdaloidal flows are generally fine-grained to aphanitic with no readily-visible porphyroblasts (SFaf). Amygdules are commonly filled with calcite, silica or zeolite, and less commonly epidote, with rare chlorite. Amygdule-rich layers often occur at the tops of thicker flow horizons and commonly exhibit flow top and flow bottom autolithic breccia (Cooley, 2006). These flows are more resistant to erosion than the underlying

pyroclastic strata of the Pimainus Formation and commonly form a thin layer that caps most of the high ridges in the project area.

The uppermost flows of possible SF affinity, which overly the amygdaloidal flows, are exposed in a 6 km long down-dropped normal fault block that lies along the northwest part of the Skoonka Creek project area. These flows are predominantly felsic, fine-grained flows with flow banding (SFdac). Within the upper most portion of the SF, the youngest flow is hornblende-phyric (SFhfl) (Cooley, 2006).

Felsic plugs are predominantly represented by hornblende-phyric plagioclase porphyry (Por). The porphyry generally contains up to 70% white stubby to elongate laths of plagioclase and 1 to 10% hornblende crystals (Cooley, 2006). The felsic plugs have only been observed within Pimainus Formation and older units and may not occur within the overlying Spius Formation flows. These plugs are not altered, they are interpreted to intrude along normal faults in the project area and are spatially associated with nearby alteration zones characterised by strong silicification and disseminated pyrite in host rocks (Cooley, 2006). The adjacent alteration is most likely caused by an earlier alteration event, along a structure that controlled subsequent porphyry emplacement.

Diorite dykes (SFdyk) typically intrude all units within the Spences Bridge Group, particularly the underlying Pimainus Formation but rarely the uppermost amygdaloidal flows of the Spius Formation. They are a common feature on the eastern half of the property where they intrude along and parallel to older normal fault zones. The dykes have also been displaced by later faulting. These dykes typically dip steeply to the west and have a north to northeast strike. Proper identification of these diorite dykes on the outcrop scale can be extremely challenging. These dykes contain amygdules that confuse them with amygdaloidal flows in smaller outcrops. In addition, where feldspar crystals are present, these dykes can easily be misinterpreted as an amygdaloidal crystal tuff. Where these dykes occur as fine-medium grained, massive bodies they become difficult to distinguish from massive flows.

Structural geology of the Skoonka Creek property is characterised by kilometre-scale blocks of uniformly-dipping ( $\sim 30^\circ$ ) pyroclastic rocks and overlying flows that define distinctive dip domains with abrupt boundaries (Cooley, 2006). The dip domain boundaries are commonly marked by abrupt changes in rock type, which implies the presence of faults. These faults strike east-west to northeast-southwest. Drastically different dip directions across these faults suggest independent rotations within individual blocks, all within a broad zone affected by normal faulting (Cooley, 2006). In contrast to the domains of uniformly-dipping strata, most ridge crests, and the 6 km long section along the northwest edge of the project area, are underlain by horizontally-bedded flows that do not show evidence of rotation (Cooley, 2006). These horizontally-bedded flows that belong to the upper part of the Spius Formation are interpreted to have been deposited after much of the normal faulting had occurred. The area is cut by linear, north to northeast-trending features that transect dip domain boundaries and displaces the horizontally-bedded flows. These late normal faults consistently show a west-side down sense of displacement, with no apparent strike-slip movement and are interpreted to be

late normal faults that cut the earlier structures and younger units (Cooley, 2006). The youngest faults observed on the property strike northwest-southeast and typically display a sinistral sense of displacement on the order of metres to tens of metres and are observed to offset geologic contacts, including diorite dykes (Cooley, 2006). These sinistral faults have en-echelon calcite and zeolite veins associated with them.

There are two styles of gold mineralization and alteration on the Skoonka Creek property: (1) multi-stage massive, banded veins with associated breccia zones and intense proximal silica to distal argillic alteration and (2) narrow stockwork veinlets with disseminated pyrite and moderate silica, minor carbonate, limonite, and clay alteration. Hematite alteration is ubiquitous throughout all the showings but is likely not related to hydrothermal processes. The first style is well represented by the JJ and Discovery showings, located in the northern half of the claim (Figure 2). The second style of mineralization is more typical of Deadwood, Ember, Blackburn, and Zebra.

## **3.0 METHODOLOGY**

### ***3.1 Sampling Procedures***

Soil samples were collected from the soil Ah horizon. The ideal sample material sought primarily included decomposing organic material and humus black to brown organic soil that formed a layer located within about 1 to 5 cm of surface and distinct from any underlying Ae or B soil horizon. Samples were collected with the aid of a trowel or geotul to clear snow and the uppermost surface cover, and then picked by hand to obtain the most representative organic to humus material of the Ah horizon. Each sample filled most of a kraft soil sample bag, representing approximately 200 g of material. In order to collect enough good quality Ah soil material the samples were often a composite of material collected from multiple spots within a few metres of the ideal UTM location.

Recent surface disturbances, such as roads, trails or trenches were avoided however it should be noted that much of the sample areas was logged in the 1990's or early 2000's, hence there is a possibility of lingering cultural contamination within these old clear cut areas. Sites closest to the mains JJ showings and trenches are also areas where contamination is possible although every effort was made to avoid the trench, drill site or trail disturbances (the last work completed in the JJ area was in 2007).

The approximate centre of each sample site was marked by a flagging tape with the sample number that was hung from tree branches or bushes for maximum visibility. Locations of the sample sites were obtained with either a hand held Garmin "GPSmap 60Cx:" or a hand held Trimble "Juno SB" series computer. In the more open areas of past clear cuts the accuracy of the GPS location is generally in the order of +/- 5 m to as low as +/- 2m but in areas of dense forest cover or steep slopes the accuracy of hand held GPS units can be hampered and may be in the order of +/- 10 m. Each kraft sample bag was marked with the sample number, included a waterproof numbered sampled tag on the inside and was secured with a plastic self-locking cable tie.

### ***3.2 Analytical Procedures and Quality Control Measures***

All samples were submitted for Acme Analytical Laboratories Ltd. (Acme) for ultra-low detection ICP-MS analyses (Acme code 1F05). Acme's sample preparation and analytical procedures are presented in Appendix I.

Due to the inherent variable nature of soil sample data, a small orientation soil Ah program, as well as time constraints, no field duplicates were collected. Third party standards for soil sampling are neither available nor necessary for this early stage type of exploration. The within laboratory control standards (discussed below) are considered sufficient for quality control and quality assurance control over a soil sampling program of this nature.

The Acme laboratory in Vancouver is an ISO 9001 accredited laboratory and includes the following QA/QC statement on their website (<http://acmelab.com/services/quality-control/>):

“Blanks (analytical and method), duplicates and standard reference materials inserted in the sequences of client samples provide a measure of background noise, accuracy and precision. QA/QC protocol incorporates a granite or quartz sample-prep blank(s) carried through all stages of preparation and analysis as the first sample(s) in the job. Typically an analytical batch will be comprised of 34-36 client samples, a pulp duplicate to monitor analytical precision, a -10 mesh reject duplicate to monitor sub-sampling variation (rock and drill core), a reagent blank to measure background and an aliquot of Certified Reference Material (CRM) or Inhouse Reference Material to monitor accuracy. In the absence of suitable CRMs Inhouse Reference Materials are prepared and certified against internationally certified reference materials such as CANMET and USGS standards where possible and will be externally verified at a minimum of 3 other commercial laboratories. Using these inserted quality control samples each analytical batch and complete job is rigorously reviewed and validated prior to release”.

The soil Ah sample results, locations and field descriptions are presented in Appendix II.

The Acme laboratory results include repeat measurements of two certified reference material (CRM) standards (DS10 and OXC109, two repeat measurements of the submitted soil Ah sample pulps (89760 and 89613), and two measurements of Acme internal blanks, which is considered adequate for the number of submitted soil Ah samples (64). The results of the repeat analyses of Acme's standards and sample pulp repeats are generally within an acceptable variance (e.g. less than 20%). Occasionally repeat analyses occur for some elements range from a 20% to 100% difference (all but one is 46% or less) from the initial analysis but in all instances these results are associated with values close to detection levels. Both blank analyses returned less than



detection for all elements.

## **4.0 EXPLORATION IN 2013**

### ***4.1 Introduction***

Exploration in 2013 took place over 5 days including mobilization and demobilization from Vancouver to Lytton, where the two field geologists were based. The program consisted of geological investigation and mapping in two areas and the collection of 64 soil Ah horizon (soil Ah) samples in two areas. In addition mechanically dug trenches in the JJ area were reclaimed with the aid a backhoe contracted from Lytton and then reseeded. Several inches of snow fell over the first two days of field work which severely curtailed the amount of work that could be accomplished.

### ***4.2 Geological Work***

A half day was dedicated to investigation of previously mapped (i.e. 2006 to 2007) dacite “porphyry” target area located in the southwest corner of the claim area (Figures 2 and 3). Previous soil geochemistry revealed elevated pathfinder elements of arsenic, antimony, and mercury that could be related to epithermal mineralization that were coincident and immediately adjacent to the mapped porphyry, however the gold in soil values are very low to absent. The porphyry rock consists predominately of fine feldspar, crystals up to 2-3 mm in length, and 2-4% hornblende. The porphyry is weakly to moderately magnetic whereas the host rocks, fine grained flows and lapilli tuffs, are non to very weakly magnetic. Alteration in the area is localized to the porphyry and mostly consists of mm to cm scale veining. Figure 4 shows cm scale reddish brown hematite fractures/veins crosscut by later mm to cm scale discontinuous chalcedonic quartz veins. At the time of the visit, a significant portion of the area was under several centimeters of snow cover, which severely restricted the investigation. It is recommended that additional mapping, with specific attention to alteration, be conducted along with prospecting and expansion of the historic soil grid. In addition, one to three whole rock samples should be collected to refine the rock classification of the “porphyry” rock type. No samples were collected during the 2013 visit.

One day of geologic mapping was completed in the JJ West area. The mapping confirmed the past geologic mapping. Figure 5 is the previous geology map with the recently collected 2013 geologic data superimposed. The mapping traverse transected an inferred late, north-striking normal fault (west side down) separating two main lithological packages: the eastern package is a sequence of brown to maroon, massive to bedded to thinly laminated, subaerial block to ash tuffs (interpreted Pimainus Fm. Volcaniclastics; Figure 6); the western package is a sequence of feldspar phyric andesitic flows and flow breccia (interpreted Spius Fm. flows). Figure 6 shows an example of maroon, laminated ash tuffs.

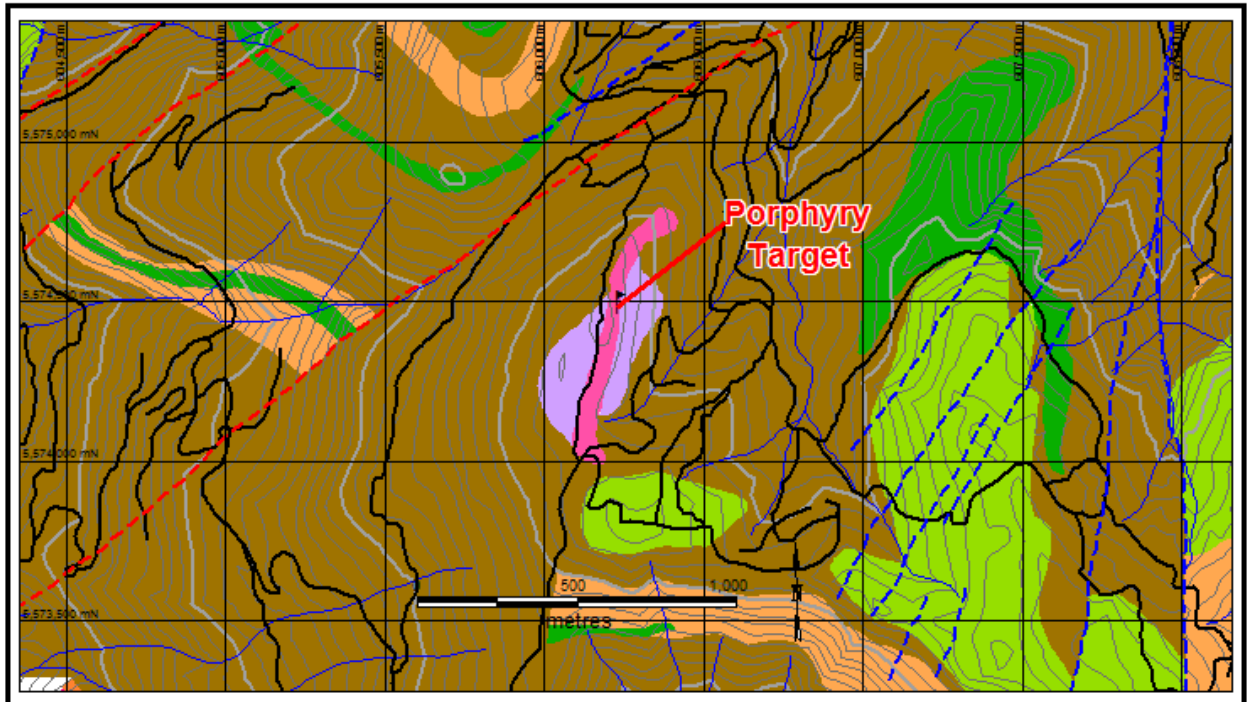


Figure 3: Porphyry Target – Geology Map



Figure 4: Rock Photo of the Porphyry.  
 Note hematite altered fractures cross-cut by discontinuous, chalcidonic quartz veining.

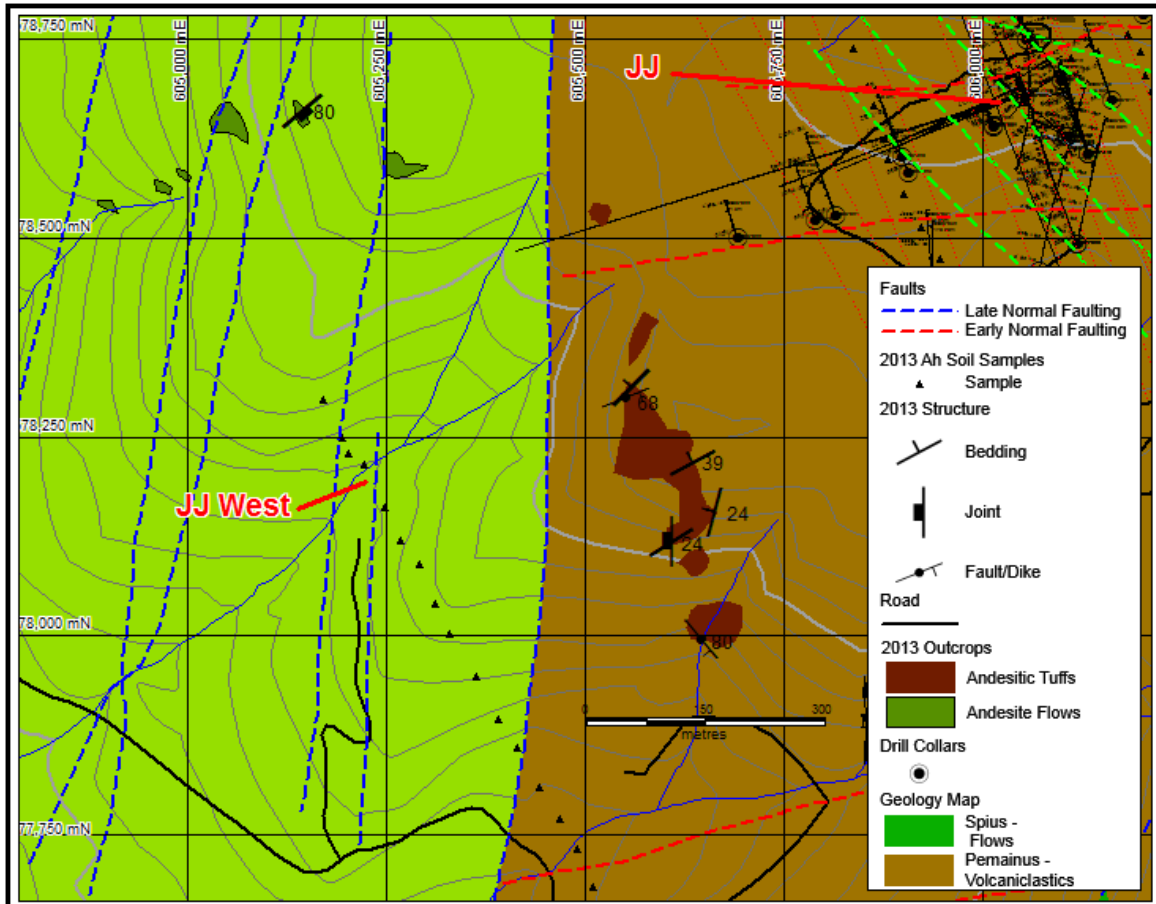


Figure 5: JJ West Geology Map. Outcrops and structure symbols superimposed on 2007 geology map.



Figure 6: Photo - Maroon ash fall tuffs, Pimainus formation.

Within the tuff units, bedding dips moderately to the northwest at an average of 30 degrees. Within the flow sequence, locally a strong fracture and joint set was observed, dipping steeply to the southeast at 80 degrees and commonly hosting cm scale hematite altered selvages.

### ***4.3 Soil Ah Sampling***

A total of 64 soil Ah samples were collected from the JJ and JJ West areas including 3 samples straddling the JJ vein showing area, and three north-northwest oriented samples lines (Map 2). Sample spacing was at approximately 50 m, as determined by compass sighting and accuracy of the hand held GPS. The objectives of the soil Ah sampling were:

- i. Collect soil Ah samples in the vicinity of the main JJ showing area to determine the effectiveness and signal contrast of this method in an area of known mineralization
- ii. Complete orientation test lines east and west of the main JJ to identify new anomalies or complement existing anomalies.
- iii. Complete a test line of soil Ah in the JJ West area in the vicinity of historic (2006) single station soil B horizon gold and arsenic anomaly
- iv. Compare the effectiveness of soil Ah horizon results with existing detailed soil B horizon results.

The metadata and analytical results from the soil Ah sampling are included in Appendices II and III respectively. Sample numbers and locations are shown on Map 2. Maps 3 through 8 display the soil Ah results for gold, silver, arsenic, mercury, molybdenum and antimony respectively. These elements are plotted thematically using the 97.5%, 95<sup>th</sup>%, 90<sup>th</sup>% and 70<sup>th</sup>% cut-offs. Also thematically plotted are the historic (2003 to 2007) soil B horizon results using 97.5%, 95<sup>th</sup>%, 90<sup>th</sup>% and 70<sup>th</sup>% cut-offs that were compiled by Chang and Gale (2008).

#### ***4.3.2 JJ Showing Area***

Two soil Ah samples in the immediate vicinity of the main JJ showing are strongly anomalous in gold and pathfinder elements including up to 1,068 ppb Au, 895 ppb Ag, 41.4 ppm As, 0.13 Hg, 3.86 ppm Mo and 1.12 Sb (Maps 3, 4, 6,7 and 8). A third sample, located approximately 75 m to east, returned lower values (8.9 ppb Au, 304 ppb Ag, 17.4 ppm As, 0.214 Hg, 1.75 ppm Mo and 0.77 ppm Sb) but with the exception of Hg and Mo, these elements are still significantly anomalous (i.e.>90<sup>th</sup>%).

The test soil Ah line to the east of the JJ showing returned one 90<sup>th</sup> % gold anomaly (11.2 ppb) along the interpreted ENE strike extension of the JJ mineralization, approximately 170 m from the JJ surface showing (Map 3). This gold anomaly is not supported by any pathfinder trace elements but is consistent with an adjacent soil B anomaly of 18.2 ppb Au.

At the north end of the east JJ test line there is a cluster of three anomalous mercury values (0.368 to 0.44 ppm; Map 6).

At the south end of the east JJ test line there are two consecutive stations with an overlap of two anomalous silver values (388 to 577 ppb; Map 4) and one anomalous antimony value (0.56 ppm; Map 8).

On the west JJ test line there is coincident anomalous silver (323 ppb), arsenic (7.9 ppm) and antimony (0.52 ppm) at one station, located approximately 205 west-northwest of the JJ showing (Maps 4, 5, and 8).

Also of note on the west JJ test line are three stations in the vicinity of diamond drill holes SC06-20 and SC06-023 that are variably elevated to anomalous in silver (265 to 333 ppb; Map 4) and mercury (0.314 to 0.327 ppm; Map 6). This area is also of interest because it is along strike (west-southwest) of the JJ showing. Further south along the west JJ test line are two contiguous stations with anomalous molybdenum (1.96 to 3.07 ppm; Map 8) but no other anomalous pathfinder elements. Both of these stations lie in the vicinity of or along the trace of drill hole SC06-031 (Map 2).

### ***4.3.2 JJ West Area***

A single Ah soil line was completed in the JJ west area (Map 2). The main objective was to test a soil B horizon anomaly (48.8 ppb gold and 16.5 ppm arsenic) located at 5,578,235N and 605,202 E. An Ah sample immediately north (~18 m) of the B-soil anomaly compliments that anomaly with an anomalous gold value of 28 ppb (Map 3). Adjacent stations flanking either side of the anomalous gold in Ah and B soil samples are anomalous in arsenic (8.2 to 8.3 ppm; Map 5), molybdenum (1.25 ppm to 1.89 ppm; Map 7) and antimony (1 station: 0.41 ppm; Map 8). The south end of the JJ West line displays a weak gold anomaly (6.8 ppb; Map 3) flanked by anomalous molybdenum (3.53 ppm; Map 8) to the south. To the north of that anomaly is a station close to the contact between the Spius and Pimainus formations with anomalous arsenic (28 ppm; Map 5) and molybdenum (3.85 ppm; Map 7). There are also non-contiguous anomalies of mercury (0.481 ppm; Map 6) and antimony (0.41 to 0.49 ppm; Map 8) in the central portion of the JJ West soil Ah line.

## **5.0 INTERPRETATION**

### ***5.1 Geological Work***

Mapping in the area between JJ showing and the JJ West provided more data that suggests a reinterpretation of the location of the contact between the main lithological packages (Pimainus and Spius Formations). Visually distinguishing the Spius Formation rocks from the Pimainus Formation in the field remains a key challenge that introduces

some uncertainty in the current fault-contact relationship. Previous mapping assigns the andesitic flows described above (Section 4.2) to the Spius Formation, which requires a significant fault or basin formation to down drop the Spius Formation to a lower elevation relative to the Pimainus Formation, which lies at higher elevations to the east of these andesitic flows (Figure 5 - Note the previously interpreted north-south fault contact between the Spius Formation and Pimainus formations). However if this is the case, the JJ West geochemical anomalies are located in the Spius Formation which may limit the mineral potential of the area since conventional thought places the primary JJ mineralizing event pre-Spius. Alternatively, one may consider that the JJ west soil geochemical anomaly might reflect mineralization at depth in the Pimainus Formation that is seeping or bleeding up through a thin layer of Spius Formation, possibly along basin growth faults?

Further geologic mapping is recommended along the inferred fault that juxtaposes the Spius and Pimainus Formations with the objective to more closely understand the contact and fault relationship and add confidence to the geological mapping of the Spius versus Pimainus formation rocks in this area. This may help confirm that the flows to the west belong to either the Spius Formation or the more important, with respect to mineralization, Pimainus Formation.

## ***5.2 Ah Soil Sampling***

Interpretation of the Ah soil sampling should be made in the context of the previous soil B horizon sampling as well as drill results, however, there are significant complications when comparing soil B with Soil Ah results: for example the disparate mediums, differences in sample size population (n= many thousands for the B samples versus n=64 for the Ah samples), disparate area of coverage (an extensive area in the case of the B samples versus a quite limited area for the Ah samples) and disparate analytical to techniques (e.g. minimum detection levels).

One particular problem arises in the definition of what constitutes an anomalous geochemical result for each of the soil sample mediums (soil B, Soil Ah). For the purpose of this report the percentile cut-offs employed in the 2008 report by Chang and Gale (2008) were adapted for the B-horizon (Table 2). Those results were compiled from thousands of analyses, representing all available previous soil sampling (dating back to 2003). The medium of the soil Ah horizon are believed to be sufficiently different from the soil B horizon that the same percentile cut-offs could not be applied. Instead a unique percentile score was calculated for the Ah sample population (Table 3). The small sample size of the soil Ah sample population (n=64) should be kept in mind when reviewing the interpretation of this data, particularly in comparison with the soil B horizon percentiles.

**Table 2: Soil B Horizon Percentile Cut-offs (after Chang and Gale, 2008)**

<b>Element</b>	<b>Au</b>	<b>Ag</b>	<b>As</b>	<b>Hg</b>	<b>Mo</b>	<b>Sb</b>
<b>Unit</b>	<b>ppb</b>	<b>ppm</b>	<b>Ppm</b>	<b>ppm</b>	<b>ppm</b>	<b>ppm</b>
<b>70</b>	3.8	0.1	6.09	0.029	0.8	0.3
<b>90</b>	20.4	0.2	10.5	0.059	1.2	0.5
<b>95</b>	60.1	0.3	15.34	0.09	1.5	0.6
<b>97.5</b>	158.2	0.4	23.52	0.14	1.89	1

**Table 3: Soil Ah Horizon Percentile Cut-offs**

<b>Element</b>	<b>Au</b>	<b>Ag</b>	<b>As</b>	<b>Hg</b>	<b>Mo</b>	<b>Sb</b>
<b>Unit</b>	<b>ppb</b>	<b>ppm</b>	<b>Ppm</b>	<b>ppm</b>	<b>ppm</b>	<b>ppm</b>
<b>70</b>	1.70	0.17	3.21	0.224	1.39	0.32
<b>90</b>	4.96	0.30	7.60	0.326	1.93	0.41
<b>95</b>	14.56	0.33	13.74	0.376	3.05	0.55
<b>97.5</b>	101.62	0.54	26.66	0.430	3.67	0.82

Some general observations regarding the soil Ah versus soil B horizon in terms of the percentile data are summarized in point form below.

- Gold percentile cut-offs are in the order of 60% lower on average in Ah samples compared to B samples. This suggests that Ah soil sampling is not picking up as strong a signal as the B soil sampling, although the Ah sampling in the immediate area of the JJ showing quite effectively identifies the JJ mineralization.
- Silver percentile cut-offs are on average 40% higher in Ah samples compared to B samples suggesting the Ah medium is more effectively storing, collecting or scavenging silver from buried mineralization. Note that silver often returns values near or below minimum cut-offs in soil B sampling, which make the results difficult to interpret. This is particularly true of the 2005 Soil B horizon data which appears to consistently return anomalously high silver in part because the 2005 laboratory data had a higher minimum detection level than most of the other soil B horizon data. However, overall it still appears that the soil Ah horizon may be a better or more sensitive medium for detecting silver than the soil B-horizon. More sample data is needed to test this hypothesis.
- Arsenic percentile cut-offs are slightly lower in Ah compared to B samples but overall are quite similar.
- Average values for mercury and the resultant percentile cut-offs are much higher (averaging over 400% higher) in the Ah samples compared to B samples. Again this suggests that the soil Ah horizon may be a more effective medium for identifying mercury anomalies in the JJ area compared to soil B horizon. Note mercury is often a difficult element to analyze for, in part due to the low concentrations that are often near the minimum detection level. More sample data is needed to test this hypothesis.
- Molybdenum is generally returning higher average percentile cut-off values (averaging 83%) in the Ah versus the B samples.

- Antimony appears to behave quite similarly in the Ah and B samples with the Ah samples averaging only 9% higher (statistically insignificant). Antimony values are often near the minimum detection level which can make the interpretation of anomalies difficult or suspect.

One reason that the Ah soil samples may appear to be more sensitive at detecting low level anomalies (as in mercury and molybdenum data) is the lower minimum detection level of the soil Ah analysis compared to the historic soil B sample analysis. A more in-depth analysis of the soil Ah versus soil B sample data should consider the effects of minimum detection level but it is not addressed in this report except as a passing reference and caveat. If additional Ah soil sampling is undertaken a more in depth comparative analysis of the relative strengths and weakness of soil B versus soil Ah sampling should be undertaken. Field duplicates of both select Ah stations, including coincident soil B horizon samples, would be useful for comparative purposes.

Soil Ah sampling in the immediate area of JJ showing returned robust anomalies of gold, silver, arsenic, molybdenum and antimony. Anomalous gold, silver, arsenic, and antimony occur approximately 80 m east of the JJ showing but these results may also reflect mineralization in drill hole SC06-017, which is located 30 m to the east.

There are several small clusters of overlapping or adjacent anomalies outside of the JJ showing, that are comprised of various pathfinder elements over 1 to 3 stations. The most interesting anomalies are as follows (Maps 3 through 8):

A three station mercury anomaly at the north end of the East of JJ soil Ah line is of interest. The anomaly is open to the north and warrants follow-up soil Ah and soil B sampling to extend coverage and confirm the extent of the anomaly. Note that anomalous mineralization, including mercury, occurs in drill hole SC06-019 which is located 170 to 250 m to the southeast (in plan view) of this mercury anomaly. There are no other anomalous pathfinder elements directly associated with the mercury anomaly, however B-horizon samples adjacent to the south end of the mercury anomaly are anomalous in silver, arsenic and mercury.

Anomalous silver (2 samples) and antimony (1 sample) at the south end of the east of JJ line are of interest. The area is supported by B-soil samples with anomalous silver (5 samples) and arsenic (2 samples). This target is of also of interest because there is no previous drilling in the area.

Scattered geochemical anomalies along the west JJ test line are encouraging but not sufficiently robust to define a strong target. Most of the anomalous results occur in the area of past drilling that identified some mineralization (holes SC05-05, SC06-031 and SC06-032). Coincident elevated silver, arsenic and antimony at a single station immediately north of the trace of hole SC06-023 might indicate that target is open to the north. This is also supported by anomalous silver, arsenic and antimony in the soil B samples.



A single station mercury anomaly immediately south of drill hole collar SC06-023 is unsupported by any other pathfinder elements, nor is it supported by any anomalous pathfinder results in the soil B horizon samples.

The south end of the west of JJ soil Ah line includes a 2 station molybdenum only anomaly that is supported by anomalous arsenic, molybdenum and antimony in soil B samples. A negative feature of this anomaly is that the trace of two drill hole (SC06-031 and SC06-032) crosses the anomaly and no significant mineralization is intersected in the drill samples immediately within or below the plan view area of the soil anomaly. An analysis of the drill hole geology may help interpret whether the source of the anomaly could still result from a source that is a down dip from the plan view location of soil Ah anomalies.

The Ah soil sample results in JJ West area support the targeted existing soil B gold-arsenic near the north end of the sample line and expand the target area. Seven contiguous Ah soil samples display anomalous results for at least one pathfinder element including gold (28 ppm), arsenic (up to 8.3 ppm), mercury (0.481 ppm), molybdenum (up to 2.94 ppm) and antimony (up to 0.49 ppm). Note that time constraints, in part due to poor weather limiting production, did not allow for the soil Ah line to be completed far enough north to cover several other pathfinder anomalies (arsenic, mercury, molybdenum and antimony) from the historic soil B sampling; ideally the soil Ah line would have continued at least another 200 m to the north. The anomalous pathfinder results from the soil Ah and B horizon samples in the JJ West area outline a 450 m north-northwest trend that is directly on strike (west-southwest) of the main JJ showing area. Additional exploration, including extensions of the existing JJ West soil Ah line and additional lines to fill in the area between JJ and JJ West is warranted.

Of final note in the JJ West area is an anomalous arsenic (14.7 ppm) and antimony (0.32 ppm) station immediately west of the interpreted Pimainus-Spius contact and a pair of stations to the east of the contact with anomalous gold (6.1 ppb) or molybdenum (3.53 ppm). The spatial association of these anomalies with the contact adds support to the importance of understanding the nature of this contact through geological mapping.

## **6.0 CONCLUSIONS**

The investigation of the previously mapped porphyry revealed local occurrences of fine fractures and mm to cm scale chalcedonic veining associated with hematite alteration but it is not clear whether these occurrences could be related to, or explain, the elevated arsenic, antimony and mercury values in soil B horizon samples in the surrounding area. Mapping and prospecting was severely restricted by several centimeters of fresh snowfall. Further investigation and rock sampling of the porphyry is warranted.

The contact and fault relationship between the Pimainus and Spius Formation in the JJ showing and JJ West areas requires further investigation. The interpretation of Spius Formation in the JJ west area is problematic because it is at a lower elevation than the

Pimainus Formation to the east, which requires a fault or down dropped basin formation. An additional complicating factor is the difficulty in visually separating Spius from Pimainus formation rocks in the field (especially under snow cover). The geological interpretation of this contact is relevant to the evaluation of the potential for JJ style epithermal mineralization in the JJ West area and the application and interpretation of both B and Ah soil surveys in the JJ West area because:

- i. Mineralization is believed to have occurred prior to deposition of the Spius Formation (Chang and Gale, 2008).
- ii. Mineralization is believed to be associated with a paleo surface represented by the contact between the Pimainus and Spius Formations (Chang and Gale, 2008).
- iii. Geochemical anomalies in the JJ West area will be of higher priority if it can be confirmed that the area is either underlain by a thin layer of Spius Formation or is in fact underlain by Pimainus Formation.

Comparison of the soil Ah with soil B results, based primarily on the calculated percentile cut-offs (70<sup>th</sup>, 90<sup>th</sup>, 95<sup>th</sup> and 97.5<sup>th</sup>) suggest that the Ah soil sample medium is less sensitive than soil B sample medium for gold, about the same for arsenic and antimony and significantly more sensitive for silver, mercury and molybdenum. In the case of mercury the difference is extreme, averaging greater than 400%. The reasons for the differences are unclear but may be related to physical process, disparate parameters of the data sets and disparate analytical techniques. More Ah sample data, particularly in conjunction with soil B- horizon duplicates would aid in establishing the best sample medium for particular elements and environments.

Overall, the soil Ah survey did not define a strong or extensive gold anomaly outside of the main JJ showing but that may in part be due to the limited scope of the survey. The Ah survey was successful in detecting the main JJ showing with a robust multi-element anomaly, complimenting soil B horizon anomalies in the JJ area, confirming and expanding the JJ West soil B anomaly and identifying several other areas of interest on all three test lines. It is concluded that there is enough encouragement from the soil Ah test lines to warrant additional Ah sampling on the Skoonka Creek property.

## **7.0 RECOMMENDATIONS**

### **Dacite Porphyry Area:**

- Additional mapping, with specific attention to alteration of the porphyry, in conjunction with prospecting over historic soil geochemical (arsenic, mercury, and antimony) anomalies;
- One to three whole rock samples should be collected to refine the rock classification of the “porphyry” rock type.
- Expansion of the historic soil grid, including duplicate soil Ah and Soil B horizon sampling, should be considered.

## JJ to JJ West Area:

- Further geologic mapping along the inferred fault that juxtaposes the Spius and Pimainus Formations to better understand the contact and/or fault relationship.
- Further prospecting and mapping in the JJ West area, particularly in the areas where new logging roads under construction in October 2013 are likely to open up access to new rock exposures.
- Additional soil Ah sampling in the JJ and JJ West areas. More specifically:
  - Sample spacing at a minimum 100 m line spacing and 50 m station spacing to replicate the detailed soil B horizon sample coverage.
  - Ensure the survey extends at least 200 m beyond the end of the 2013 Ah soil line east of the JJ showing.
  - Extend at least one line of sample coverage along the historic JJ baseline trend to tie into the JJ West area.
  - Extend the existing 2013 JJ West soil line at least 300 m to the north and add at least one line of Ah sampling (50 m spacing) approximately 100 m east and west of the existing 2013 sampling.
  - Collect field duplicates of the Ah samples at regular intervals (e.g. every 15 to 30 samples) for quality control.
  - Collect a statistically significant number of soil B horizon samples at the same sites as the Ah sample sites for a comparative analysis of the effectiveness of the methods for specific pathfinder elements.
- Pending favourable results from the soil Ah sampling and more detailed exploration including prospecting and ground geophysics (mag and IP) in the JJ West area, diamond drilling may be warranted in both the JJ and JJ west areas as well as the connecting area between them. More specifically:
  - Drill testing in the area of historic drill holes SC06-031 and SC06-032, as recommended in the 2007 Skoonka Creek assessment report (Chang and Gale, 2008), remain a valid target and is supported by the anomalous Hg in soil Ah results immediately north of the drill trace.
  - The mercury in soil Ah samples to the northwest of SC06-19 supports a preliminary drill target area pending further sampling and interpretation of results.

## 8.0 PERSONNEL AND CONTRACTORS

<b>Contractor</b>	<b>Type of Work</b>	<b>Address</b>
Robert Campbell	Geological consultant	Burnaby, BC
Dave Gale	Program planning	Port Coquitlam, BC
Lamont Leatherman	Geological consultant	Vancouver Island, BC
Glasgow Trucking Ltd.	Grader for reclamation work	Lytton, B.C.

## 9.0 STATEMENT OF COSTS

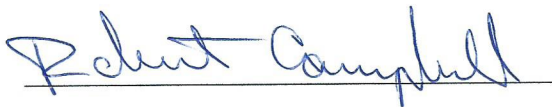
Items	Man Days	Time Period (reflects field and office time)	Rate per day	Total Cost
Dave Gale, VP Exploration	1.0	1.0 day planning	\$700.00	\$700.00
			<b>Sub-Total</b>	<b>\$700.00</b>
Consulting Personnel and Services				
Rob Campbell, Geologist	6.0	5 days field + 1 day logistics	\$500.00	\$3,500.00
Lamont Leatherman, Geologist	6.25	5 days field + 1.25 days planning.	\$600.00	\$3,750.00
Yvonne Bowen, GIS tech.	0.5	0.5 GIS data management & map making	\$300.00	\$150.00
B. Glasgow Trucking, Backhoe services-Lytton BC		1 day Reclamation of trenches		\$1,012.50
			<b>Sub-Total</b>	<b>\$8,412.50</b>
Geochemical Analysis				
ACME Labs, Vancouver BC		Soil Ah sampling		\$1,511.68
			<b>Sub-Total</b>	<b>\$1,511.68</b>
Accommodation, Travel, Food, Equipment Rental and Field Supplies				
		Field days Oct. 7 <sup>th</sup> to Oct. 11 <sup>th</sup> , 2013		\$2,469.09
			<b>Sub-Total</b>	<b>\$2,469.09</b>
PAC Account Withdrawal (30% of required expenditures)				
			<b>Sub-Total</b>	<b>\$6,411.57</b>
Documentation and Report Writing	3.5		<b>Sub-Total</b>	<b>\$1,925.00</b>
			<b>TOTAL</b>	<b>\$21,429.84</b>

## 10.0 STATEMENT OF QUALIFICATIONS

I, Robert M. Campbell of Burnaby BC do certify that:

1. I have been conferred with the academic degrees of Honours Bachelor of Science – Geology from the University of Toronto in 1991.
2. I have been engaged as an exploration geologist throughout Canada since 1989, more recently including Strongbow Exploration Inc. from 2002 to 2010.
3. I am a member of the Association of Professional Geoscientists of BC (Registration #27878).
4. I am currently working as a consulting geologist in mineral exploration and was employed by Strongbow Exploration Inc. for the field work reported herein.
5. I am the author of this report and to the best of my knowledge believe that all the data presented herein fairly represents the exploration work completed on the Skoonka Property, BC during 2013.
5. The costs related to the exploration program reported herein and submitted on behalf of Strongbow Exploration Inc. (200995) under the British Columbia Mineral Titles Online services (re Mine Permit No. MX-4-392) were incurred while carrying out exploration during 2013 on the Skoonka Property, BC.

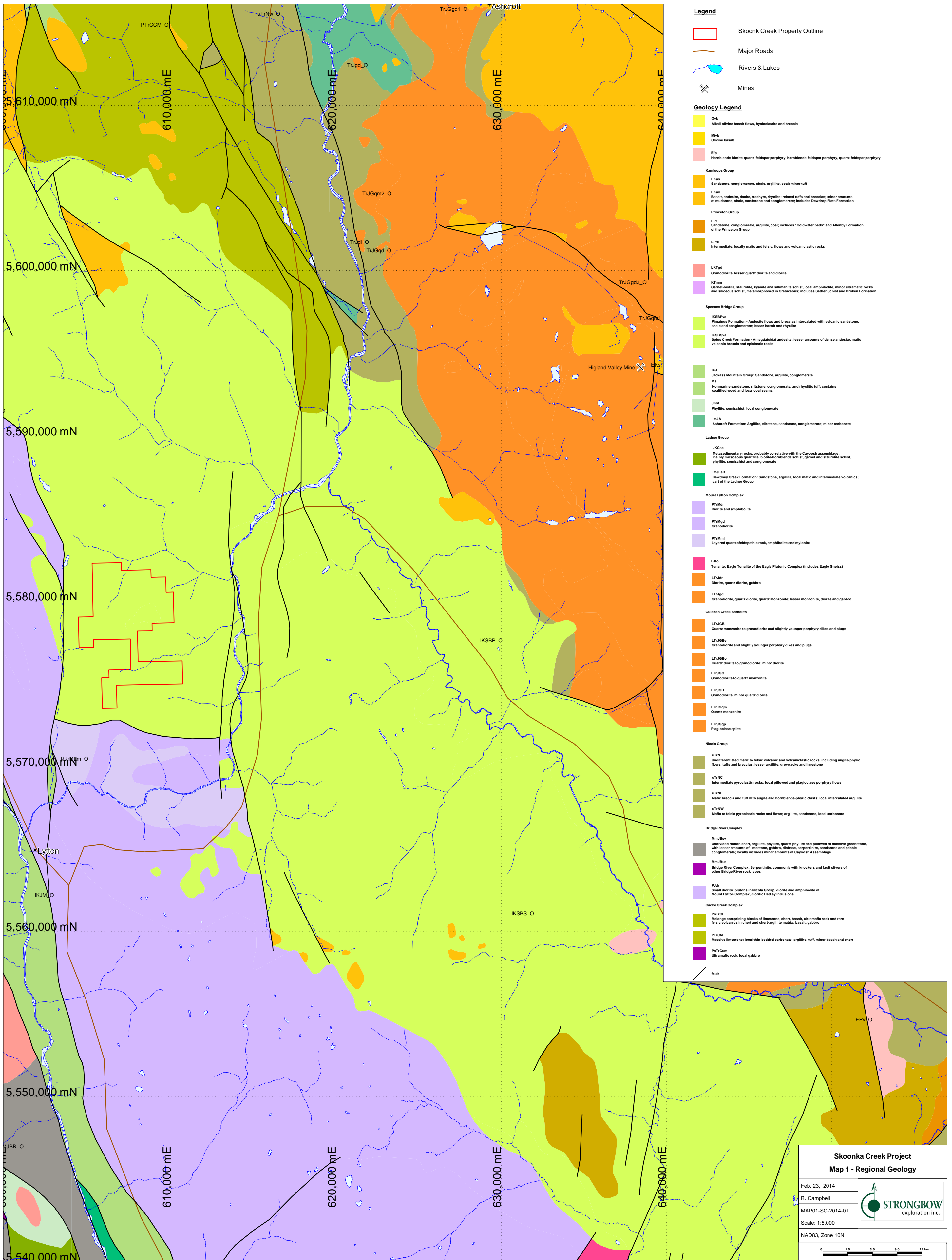
Dated at Burnaby, British Columbia, this 26<sup>th</sup> day of February, 2014.



Robert M. Campbell, P. Geo., B.Sc.

## 11.0 REFERENCES

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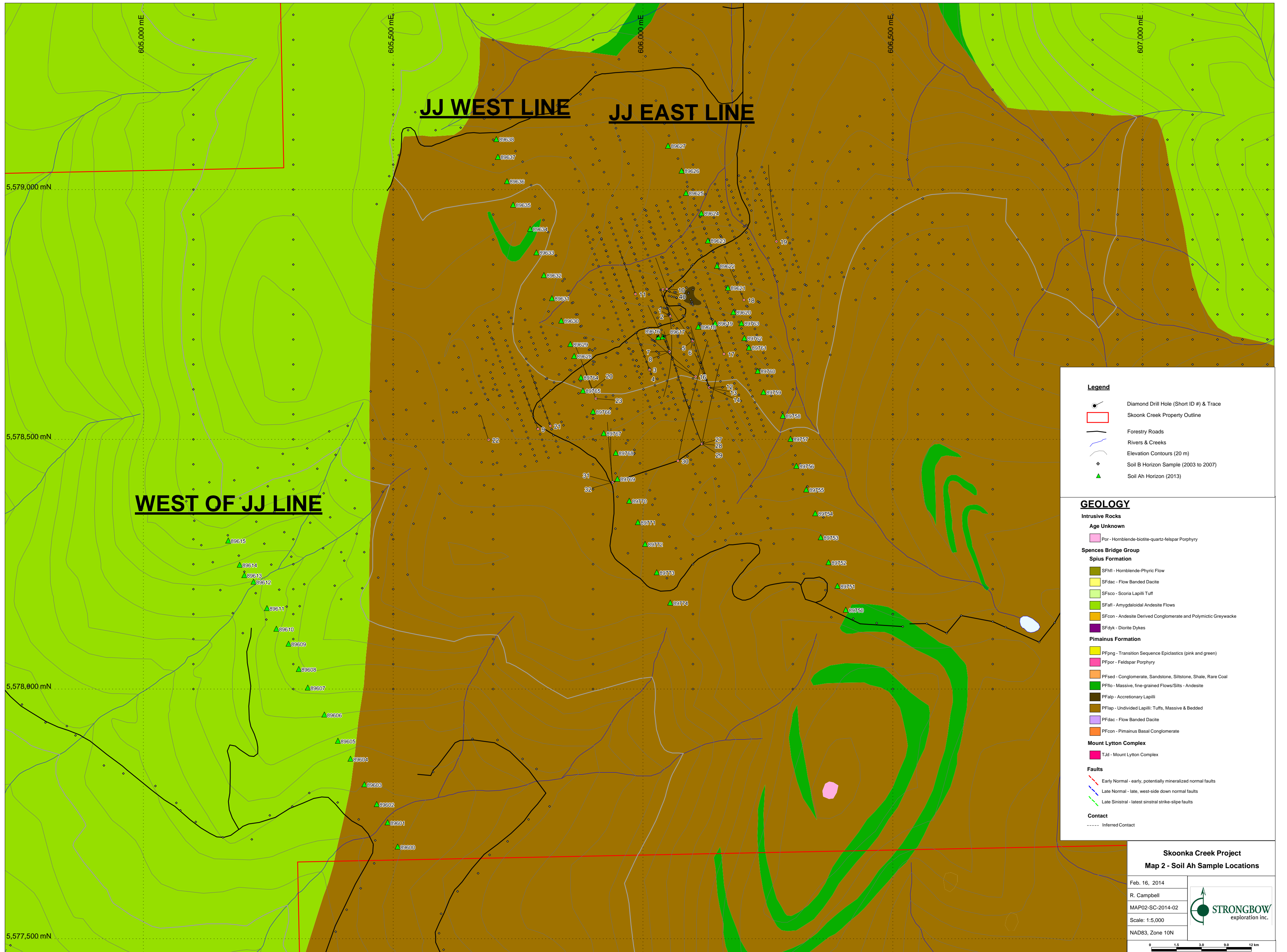


**Skoonka Creek Project**  
**Map 1 - Regional Geology**

Feb. 23, 2014  
 R. Campbell  
 MAP01-SC-2014-01  
 Scale: 1:5,000  
 NAD83, Zone 10N

0 1.5 3.0 6.0 12 km





**JJ WEST LINE**      **JJ EAST LINE**

**WEST OF JJ LINE**

**Legend**

- Diamond Drill Hole (Short ID #) & Trace
- Skoonka Creek Property Outline
- Forestry Roads
- Rivers & Creeks
- Elevation Contours (20 m)
- Soil B Horizon Sample (2003 to 2007)
- Soil Ah Horizon (2013)

**GEOLOGY**

**Intrusive Rocks**

**Age Unknown**

- Por - Hornblende-biotite-quartz-felspar Porphyry

**Spences Bridge Group**

**Spilus Formation**

- SFHh - Hornblende-Phyric Flow
- SFdac - Flow Banded Dacite
- SFsco - Scoria Lapilli Tuff
- SFall - Amygdaloidal Andesite Flows
- SFcon - Andesite Derived Conglomerate and Polymictic Greywacke
- SFdyk - Diorite Dykes

**Pimainus Formation**

- PFprg - Transition Sequence Epiclastics (pink and green)
- PFpor - Feldspar Porphyry
- PFfed - Conglomerate, Sandstone, Siltstone, Shale, Rare Coal
- PFflo - Massive, fine-grained Flows/Silts - Andesite
- PFalp - Accretionary Lapilli
- PFlap - Undivided Lapilli: Tuffs, Massive & Bedded
- PFdac - Flow Banded Dacite
- PFcon - Pimainus Basal Conglomerate

**Mount Lytton Complex**

- Tjd - Mount Lytton Complex

**Faults**

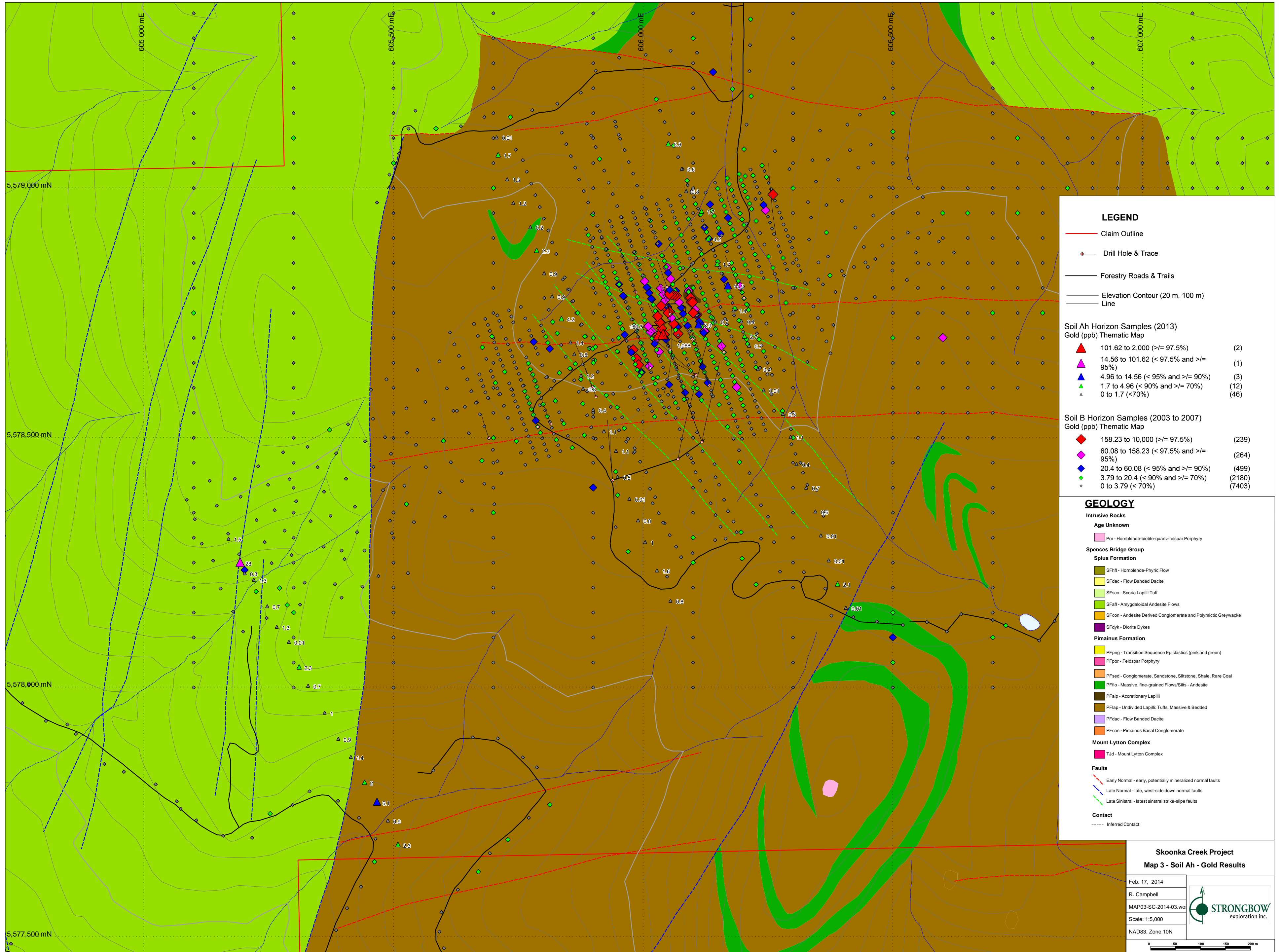
- Early Normal - early, potentially mineralized normal faults
- Late Normal - late, west-side down normal faults
- Late Sinistral - latest sinistral strike-slip faults

**Contact**

- Inferred Contact

**Skoonka Creek Project**  
**Map 2 - Soil Ah Sample Locations**

Feb. 16, 2014  
 R. Campbell  
 MAP02-SC-2014-02  
 Scale: 1:5,000  
 NAD83, Zone 10N



**LEGEND**

- Claim Outline
- Drill Hole & Trace
- Forestry Roads & Trails
- Elevation Contour (20 m, 100 m) Line

**Soil Ah Horizon Samples (2013) Gold (ppb) Thematic Map**

<span style="color: red;">▲</span>	101.62 to 2,000 (>= 97.5%)	(2)
<span style="color: magenta;">▲</span>	14.56 to 101.62 (< 97.5% and >= 95%)	(1)
<span style="color: blue;">▲</span>	4.96 to 14.56 (< 95% and >= 90%)	(3)
<span style="color: green;">▲</span>	1.7 to 4.96 (< 90% and >= 70%)	(12)
<span style="color: grey;">▲</span>	0 to 1.7 (< 70%)	(46)

**Soil B Horizon Samples (2003 to 2007) Gold (ppb) Thematic Map**

<span style="color: red;">◆</span>	158.23 to 10,000 (>= 97.5%)	(239)
<span style="color: magenta;">◆</span>	60.08 to 158.23 (< 97.5% and >= 95%)	(264)
<span style="color: blue;">◆</span>	20.4 to 60.08 (< 95% and >= 90%)	(499)
<span style="color: green;">◆</span>	3.79 to 20.4 (< 90% and >= 70%)	(2180)
<span style="color: grey;">◆</span>	0 to 3.79 (< 70%)	(7403)

**GEOLOGY**

**Intrusive Rocks**

**Age Unknown**

- Por - Hornblende-biotite-quartz-feldspar Porphyry

**Spences Bridge Group**

**Spilus Formation**

- SFHl - Hornblende-Phyric Flow
- SFdac - Flow Banded Dacite
- SFaco - Scoria Lapilli Tuff
- SFall - Amygdaloidal Andesite Flows
- SFcon - Andesite Derived Conglomerate and Polymictic Greywacke
- SFdyk - Diorite Dykes

**Pimainus Formation**

- PFprng - Transition Sequence Epiclastics (pink and green)
- PFpor - Feldspar Porphyry
- PFsed - Conglomerate, Sandstone, Siltstone, Shale, Rare Coal
- PFflo - Massive, fine-grained Flows/Silts - Andesite
- PFalp - Accretionary Lapilli
- PFlap - Undivided Lapilli: Tufts, Massive & Bedded
- PFdac - Flow Banded Dacite
- PFcon - Pimainus Basal Conglomerate

**Mount Lytton Complex**

- Tjd - Mount Lytton Complex

**Faults**

- - - Early Normal - early, potentially mineralized normal faults
- - - Late Normal - late, west-side down normal faults
- - - Late Sinistral - latest sinistral strike-slip faults

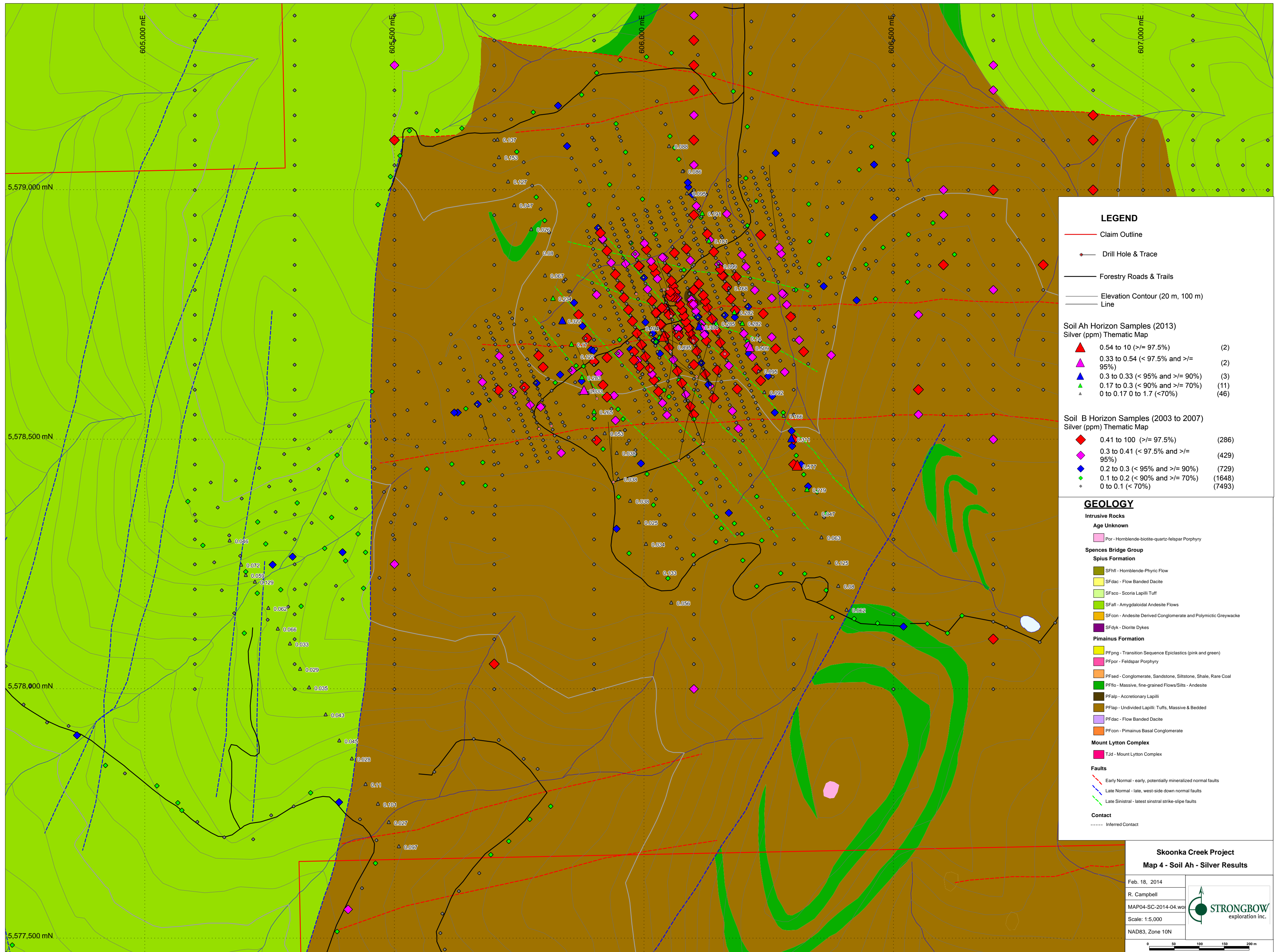
**Contact**

- - - Inferred Contact

**Skoonka Creek Project**  
**Map 3 - Soil Ah - Gold Results**

Feb. 17, 2014  
 R. Campbell  
 MAP03-SC-2014-03.wor  
 Scale: 1:5,000  
 NAD83, Zone 10N

0 50 100 150 200 m



**LEGEND**

- Claim Outline
- Drill Hole & Trace
- Forestry Roads & Trails
- Elevation Contour (20 m, 100 m) Line

- Soil Ah Horizon Samples (2013) Silver (ppm) Thematic Map**
- ▲ 0.54 to 10 ( $\geq 97.5\%$ ) (2)
  - ▲ 0.33 to 0.54 ( $< 97.5\%$  and  $\geq 95\%$ ) (2)
  - ▲ 0.3 to 0.33 ( $< 95\%$  and  $\geq 90\%$ ) (3)
  - ▲ 0.17 to 0.3 ( $< 90\%$  and  $\geq 70\%$ ) (11)
  - ▲ 0 to 0.17 ( $< 70\%$ ) (46)


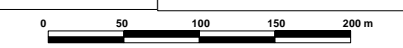
- Soil B Horizon Samples (2003 to 2007) Silver (ppm) Thematic Map**
- ◆ 0.41 to 100 ( $\geq 97.5\%$ ) (286)
  - ◆ 0.3 to 0.41 ( $< 97.5\%$  and  $\geq 95\%$ ) (429)
  - ◆ 0.2 to 0.3 ( $< 95\%$  and  $\geq 90\%$ ) (729)
  - ◆ 0.1 to 0.2 ( $< 90\%$  and  $\geq 70\%$ ) (1648)
  - ◆ 0 to 0.1 ( $< 70\%$ ) (7493)

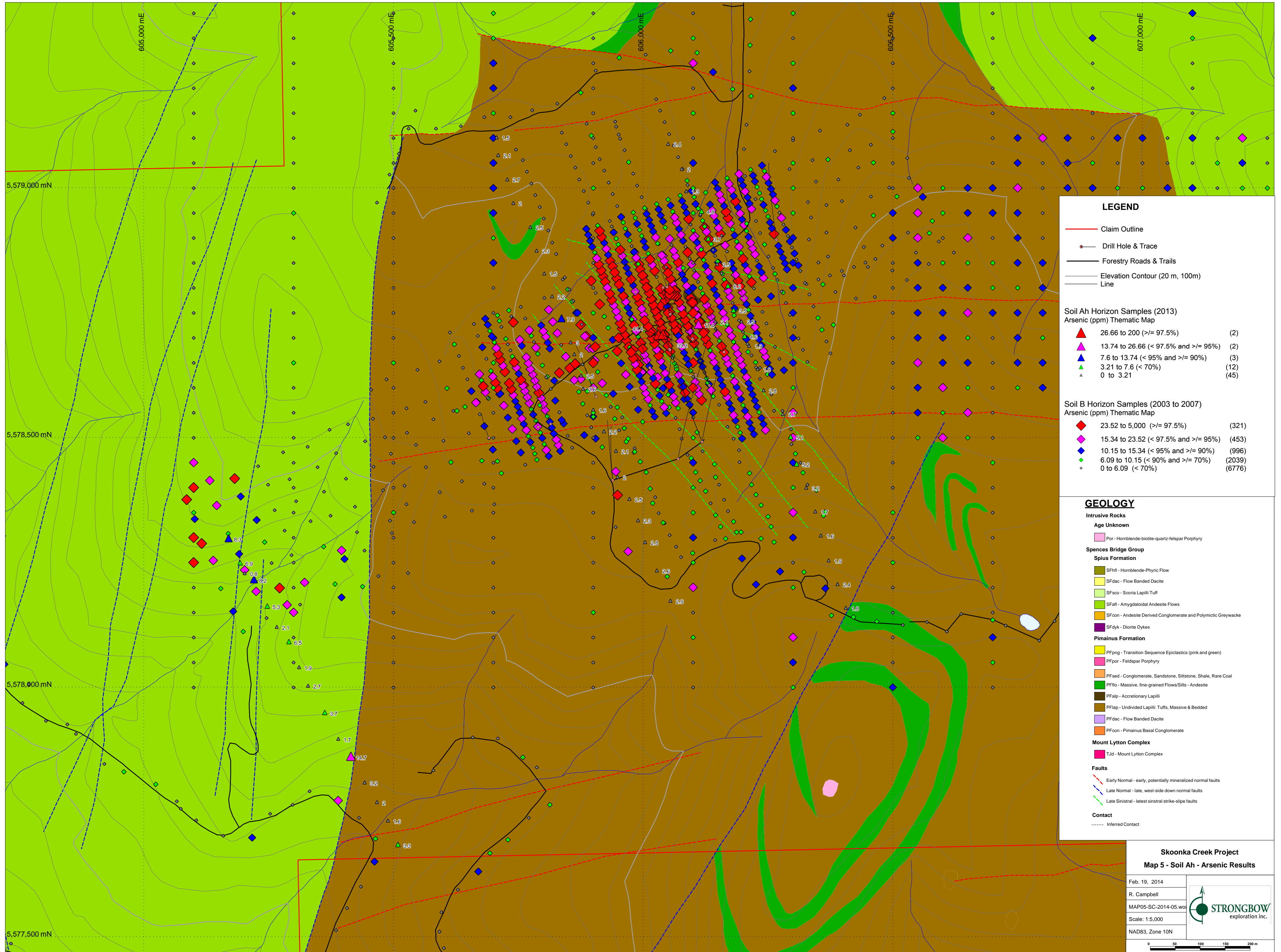
**GEOLOGY**

- Intrusive Rocks**
- Age Unknown**
- Por - Hornblende-biotite-quartz-feldspar Porphyry
- Spences Bridge Group**
- Spius Formation**
- SFHh - Hornblende-Phyric Flow
  - SFdac - Flow Banded Dacite
  - SFaco - Scoria Lapilli Tuff
  - SFall - Amygdaloidal Andesite Flows
  - SFcon - Andesite Derived Conglomerate and Polymictic Greywacke
  - SFdyk - Diorite Dykes
- Pimainus Formation**
- PFprng - Transition Sequence Epiclastics (pink and green)
  - PFpor - Feldspar Porphyry
  - PFsed - Conglomerate, Sandstone, Siltstone, Shale, Rare Coal
  - PFflo - Massive, fine-grained Flows/Salts - Andesite
  - PFalp - Accretionary Lapilli
  - PFflap - Undivided Lapilli: Tufts, Massive & Bedded
  - PFdac - Flow Banded Dacite
  - PFcon - Pimainus Basal Conglomerate
- Mount Lytton Complex**
- Tjd - Mount Lytton Complex
- Faults**
- Early Normal - early, potentially mineralized normal faults
  - Late Normal - late, west-side down normal faults
  - Late Sinistral - latest sinistral strike-slip faults
- Contact**
- Inferred Contact

**Skoonka Creek Project  
Map 4 - Soil Ah - Silver Results**

Feb. 18, 2014  
 R. Campbell  
 MAP04-SC-2014-04.wor  
 Scale: 1:5,000  
 NAD83, Zone 10N



### LEGEND

- Claim Outline
- Drill Hole & Trace
- Forestry Roads & Trails
- Elevation Contour (20 m, 100m)
- Line

#### Soil Ah Horizon Samples (2013) Arsenic (ppm) Thematic Map

- 26.66 to 200 ( $\geq 97.5\%$ ) (2)
- 13.74 to 26.66 ( $< 97.5\%$  and  $\geq 95\%$ ) (2)
- 7.6 to 13.74 ( $< 95\%$  and  $\geq 90\%$ ) (3)
- 3.21 to 7.6 ( $< 70\%$ ) (12)
- 0 to 3.21 (45)

#### Soil B Horizon Samples (2003 to 2007) Arsenic (ppm) Thematic Map

- 23.52 to 5,000 ( $\geq 97.5\%$ ) (321)
- 15.34 to 23.52 ( $< 97.5\%$  and  $\geq 95\%$ ) (453)
- 10.15 to 15.34 ( $< 95\%$  and  $\geq 90\%$ ) (996)
- 6.09 to 10.15 ( $< 90\%$  and  $\geq 70\%$ ) (2039)
- 0 to 6.09 ( $< 70\%$ ) (6776)

### GEOLOGY

#### Intrusive Rocks

##### Age Unknown

- Por - Hornblende-biotite-quartz-feldspar Porphyry

#### Spences Bridge Group

##### Spius Formation

- SFhl - Hornblende-Phyric Flow
- SFdac - Flow Banded Dacite
- SFaco - Scoria Lapilli Tuff
- SFall - Amygdaloidal Andesite Flows
- SFcon - Andesite Derived Conglomerate and Polymictic Greywacke
- SFdyk - Diorite Dykes

##### Pimainus Formation

- PFprng - Transition Sequence Epiclastics (pink and green)
- PFpor - Feldspar Porphyry
- PFsed - Conglomerate, Sandstone, Siltstone, Shale, Rare Coal
- PFflo - Massive, fine-grained Flows/Silts - Andesite
- PFalp - Accretionary Lapilli
- PFap - Undivided Lapilli: Tufts, Massive & Bedded
- PFdac - Flow Banded Dacite
- PFcon - Pimainus Basal Conglomerate

#### Mount Lytton Complex

- Tjd - Mount Lytton Complex

#### Faults

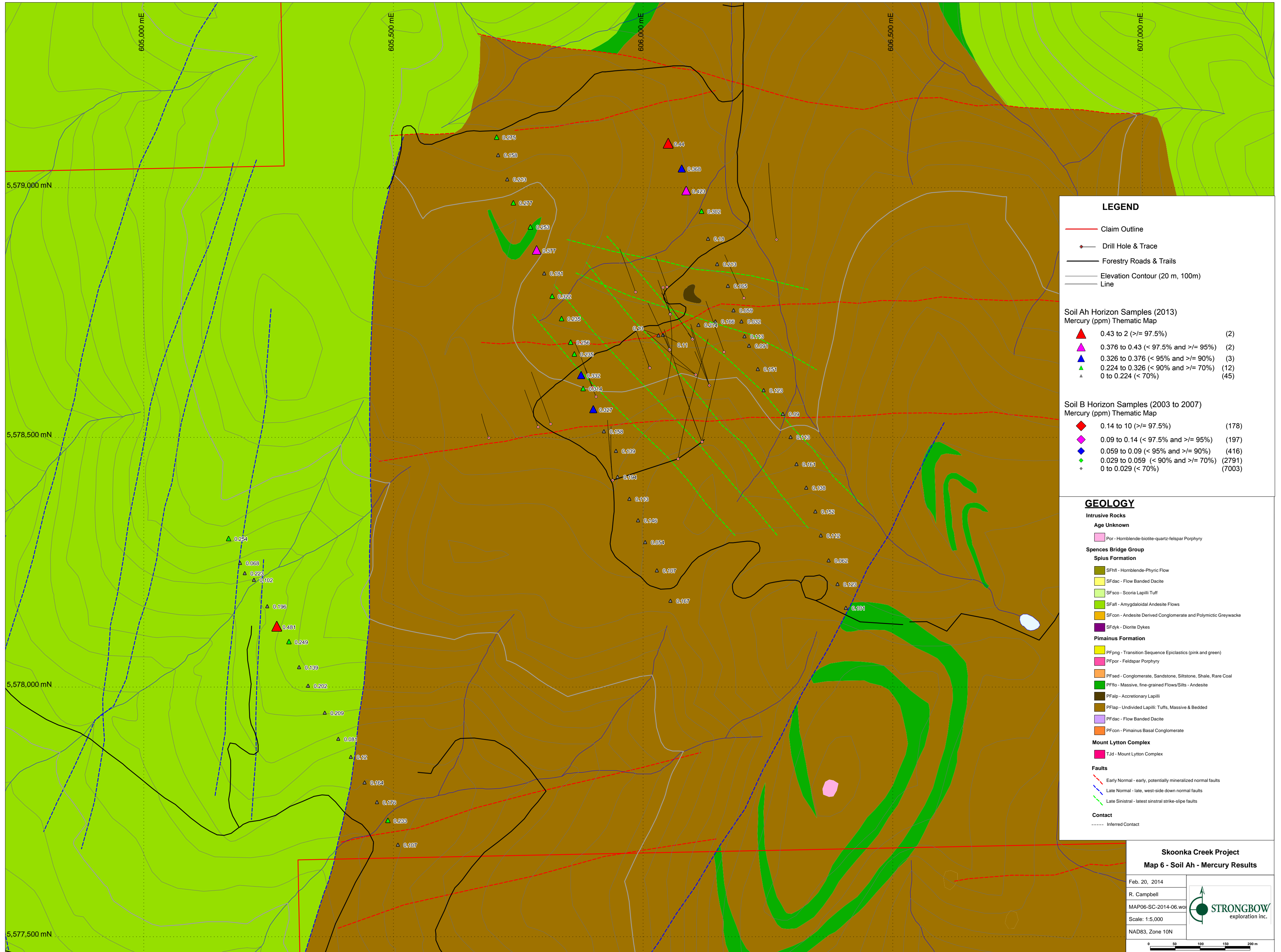
- Early Normal - early, potentially mineralized normal faults
- Late Normal - late, west-side down normal faults
- Late Sinistral - latest sinistral strike-slip faults

#### Contact

- Inferred Contact

**Skoonka Creek Project**  
**Map 5 - Soil Ah - Arsenic Results**

Feb. 19, 2014  
 R. Campbell  
 MAP05-SC-2014-05.wor  
 Scale: 1:5,000  
 NAD83, Zone 10N



**LEGEND**

- Claim Outline
- Drill Hole & Trace
- Forestry Roads & Trails
- Elevation Contour (20 m, 100m)
- Line

**Soil Ah Horizon Samples (2013)**

- Mercury (ppm) Thematic Map
- ▲ 0.43 to 2 (>= 97.5%) (2)
  - ▲ 0.376 to 0.43 (< 97.5% and >= 95%) (2)
  - ▲ 0.326 to 0.376 (< 95% and >= 90%) (3)
  - ▲ 0.224 to 0.326 (< 90% and >= 70%) (12)
  - ▲ 0 to 0.224 (< 70%) (45)

**Soil B Horizon Samples (2003 to 2007)**

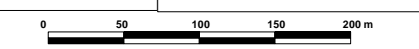
- Mercury (ppm) Thematic Map
- ◆ 0.14 to 10 (>= 97.5%) (178)
  - ◆ 0.09 to 0.14 (< 97.5% and >= 95%) (197)
  - ◆ 0.059 to 0.09 (< 95% and >= 90%) (416)
  - ◆ 0.029 to 0.059 (< 90% and >= 70%) (2791)
  - ◆ 0 to 0.029 (< 70%) (7003)

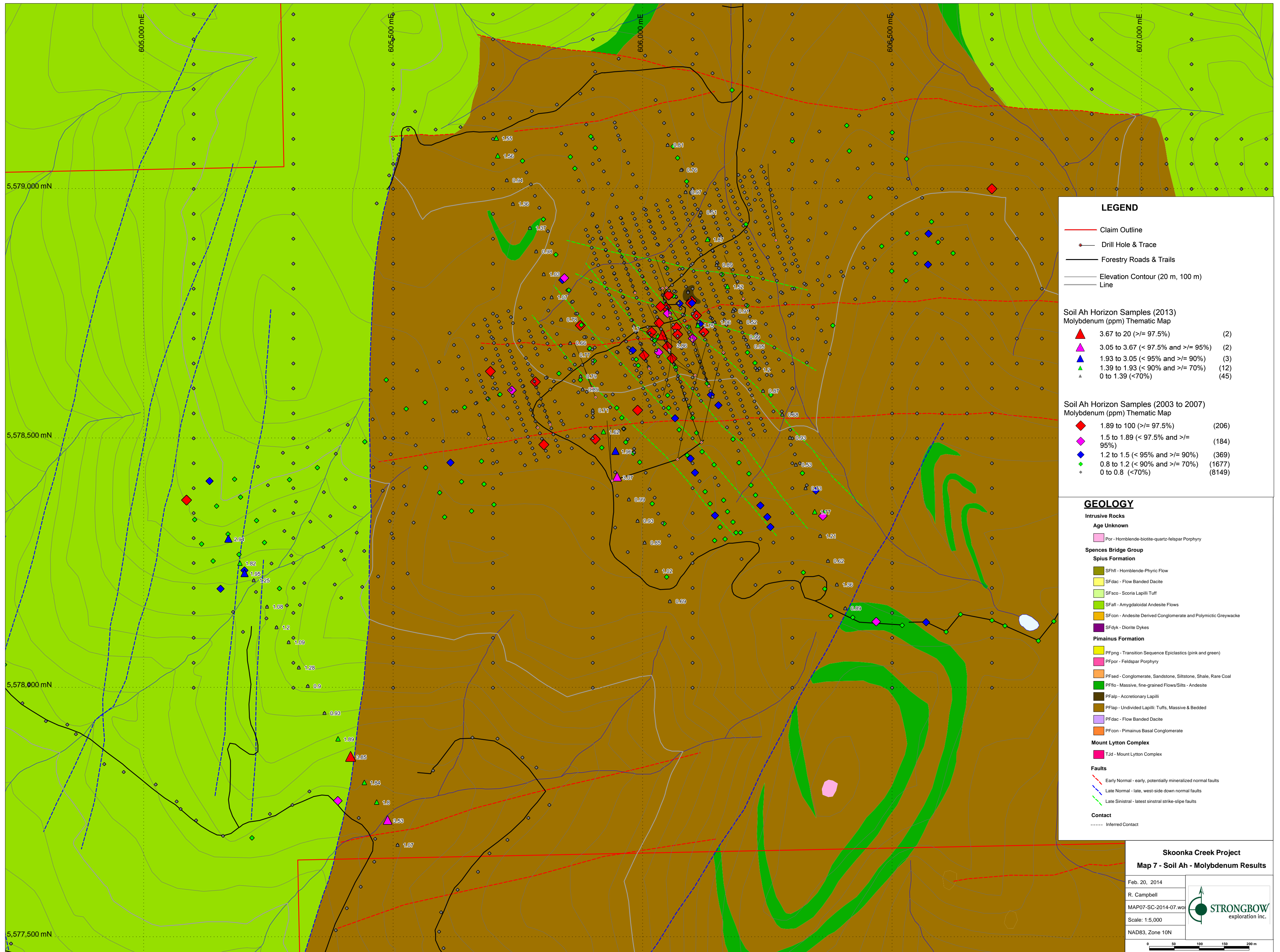
**GEOLOGY**

- Intrusive Rocks**
- Age Unknown**
- Por - Hornblende-biotite-quartz-felspar Porphyry
- Spences Bridge Group**
- Spius Formation**
- SFHf - Hornblende-Phyric Flow
  - SFdac - Flow Banded Dacite
  - SFaco - Scoria Lapilli Tuff
  - SFall - Amygdaloidal Andesite Flows
  - SFcon - Andesite Derived Conglomerate and Polymictic Greywacke
  - SFdyk - Diorite Dykes
- Pimainus Formation**
- PFprng - Transition Sequence Epiclastics (pink and green)
  - PFpor - Feldspar Porphyry
  - PFsed - Conglomerate, Sandstone, Siltstone, Shale, Rare Coal
  - PFflo - Massive, fine-grained Flows/Silts - Andesite
  - PFalp - Accretionary Lapilli
  - PFlap - Undivided Lapilli: Tufts, Massive & Bedded
  - PFdac - Flow Banded Dacite
  - PFcon - Pimainus Basal Conglomerate
- Mount Lytton Complex**
- Tjd - Mount Lytton Complex
- Faults**
- Early Normal - early, potentially mineralized normal faults
  - Late Normal - late, west-side down normal faults
  - Late Sinistral - latest sinistral strike-slip faults
- Contact**
- Inferred Contact

**Skoonka Creek Project**  
**Map 6 - Soil Ah - Mercury Results**

Feb. 20, 2014  
R. Campbell  
MAP06-SC-2014-06.wor  
Scale: 1:5,000  
NAD83, Zone 10N





### LEGEND

- Claim Outline
- Drill Hole & Trace
- Forestry Roads & Trails
- Elevation Contour (20 m, 100 m)
- Line

#### Soil Ah Horizon Samples (2013) Molybdenum (ppm) Thematic Map

- ▲ 3.67 to 20 (>= 97.5%) (2)
- ▲ 3.05 to 3.67 (< 97.5% and >= 95%) (2)
- ▲ 1.93 to 3.05 (< 95% and >= 90%) (3)
- ▲ 1.39 to 1.93 (< 90% and >= 70%) (12)
- ▲ 0 to 1.39 (< 70%) (45)

#### Soil Ah Horizon Samples (2003 to 2007) Molybdenum (ppm) Thematic Map

- ◆ 1.89 to 100 (>= 97.5%) (206)
- ◆ 1.5 to 1.89 (< 97.5% and >= 95%) (184)
- ◆ 1.2 to 1.5 (< 95% and >= 90%) (369)
- ◆ 0.8 to 1.2 (< 90% and >= 70%) (1677)
- ◆ 0 to 0.8 (< 70%) (8149)

### GEOLOGY

#### Intrusive Rocks

##### Age Unknown

- Por - Hornblende-biotite-quartz-feldspar Porphyry

#### Spences Bridge Group

##### Spius Formation

- SFHf - Hornblende-Phyric Flow
- SFdac - Flow Banded Dacite
- SFaco - Scoria Lapilli Tuff
- SFaf - Amygdaloidal Andesite Flows
- SFcon - Andesite Derived Conglomerate and Polymictic Greywacke
- SFdyk - Diorite Dykes

##### Pimainus Formation

- PFprng - Transition Sequence Epiclastics (pink and green)
- PFpor - Feldspar Porphyry
- PFsed - Conglomerate, Sandstone, Siltstone, Shale, Rare Coal
- PFflo - Massive, fine-grained Flows/Silts - Andesite
- PFalp - Accretionary Lapilli
- PFap - Undivided Lapilli: Tufts, Massive & Bedded
- PFdac - Flow Banded Dacite
- PFcon - Pimainus Basal Conglomerate

#### Mount Lytton Complex

- Tjd - Mount Lytton Complex

#### Faults


- - - Early Normal - early, potentially mineralized normal faults
- - - Late Normal - late, west-side down normal faults
- - - Late Sinistral - latest sinistral strike-slip faults

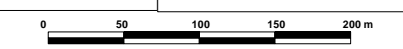
#### Contact

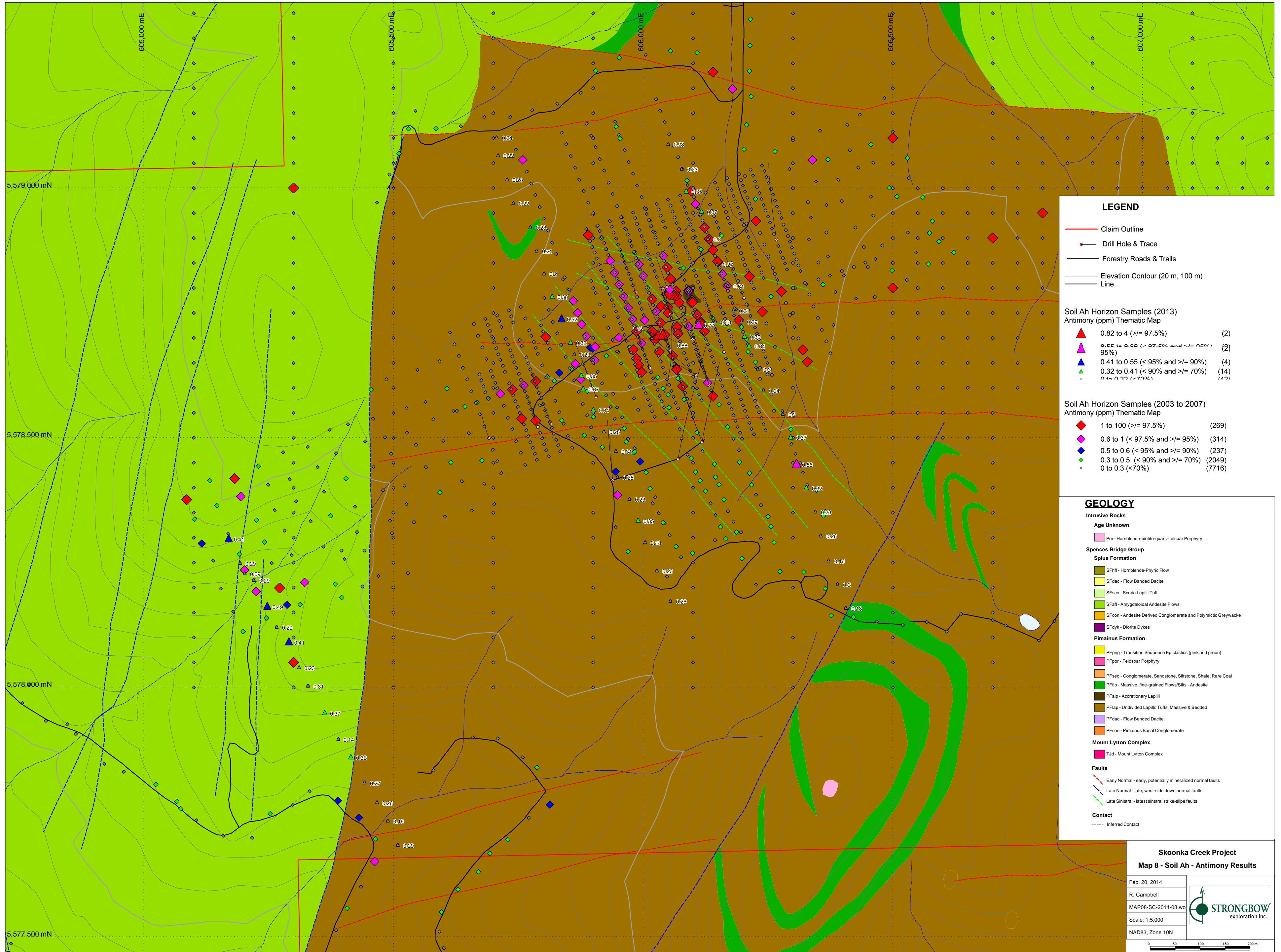
- - - Inferred Contact

**Skoonka Creek Project**  
**Map 7 - Soil Ah - Molybdenum Results**

Feb. 20, 2014  
R. Campbell  
MAP07-SC-2014-07.wor  
Scale: 1:5,000  
NAD83, Zone 10N







**LEGEND**

- Claim Outline
- Drill Hole & Trace
- Forestry Roads & Trails
- Elevation Contour (20 m, 100 m)
- Line

**Soil Ah Horizon Samples (2013) Antimony (ppm) Thematic Map**

- 0.82 to 4 (>= 97.5%) (2)
- 0.65 to 0.82 (< 95% and >= 90%) (2)
- 0.41 to 0.55 (< 95% and >= 90%) (4)
- 0.32 to 0.41 (< 90% and >= 70%) (14)
- 0 to 0.3 (< 70%) (14)

**Soil Ah Horizon Samples (2003 to 2007) Antimony (ppm) Thematic Map**

- 1 to 100 (>= 97.5%) (269)
- 0.6 to 1 (< 97.5% and >= 95%) (314)
- 0.5 to 0.6 (< 95% and >= 90%) (237)
- 0.3 to 0.5 (< 90% and >= 70%) (2049)
- 0 to 0.3 (< 70%) (7716)

**GEOLOGY**

**Intrusive Rocks**

**Age Unknown**

- Por - Hornblende-biotite-quartz-feldspar Porphyry

**Spences Bridge Group**

**Spilus Formation**

- SFhl - Hornblende-Phyric Flow
- SFdac - Flow Banded Dacite
- SFaco - Scoria Lapilli Tuff
- SFali - Amygdaloidal Andesite Flows
- SFcon - Andesite Derived Conglomerate and Polymictic Greywacke
- SFdyk - Diorite Dykes

**Pimainus Formation**

- PFprng - Transition Sequence Epiclastics (pink and green)
- PFpor - Feldspar Porphyry
- PFsed - Conglomerate, Sandstone, Siltstone, Shale, Rare Coal
- PFflo - Massive, fine-grained Flows/Silts - Andesite
- PFalp - Accretionary Lapilli
- PFap - Undivided Lapilli: Tufts, Massive & Bedded
- PFdac - Flow Banded Dacite
- PFcon - Pimainus Basal Conglomerate

**Mount Lytton Complex**

- Tjd - Mount Lytton Complex

**Faults**

- Early Normal - early, potentially mineralized normal faults
- Late Normal - late, west-side down normal faults
- Late Sinistral - latest sinistral strike-slip faults

**Contact**

- Inferred Contact

**Skoonka Creek Project**  
**Map 8 - Soil Ah - Antimony Results**

Feb. 20, 2014  
 R. Campbell  
 MAP08-SC-2014-08.wo  
 Scale: 1:5,000  
 NAD83, Zone 10N

# **APPENDIX I**

## **Skoonka Creek Property**

### **Acme Analytical Laboratories Ltd.**

- i. Internal QC Insertion and Evaluation**
- ii. General Sample Preparation Methods**
- iii. Method Specifications: Group 1D and 1F Geochemical Aqua Regia Digestion**



## ACME INTERNAL QC INSERTION AND EVALUATION

### QUALITY CONTROL MATERIALS

Samples submitted are analyzed with the strictest quality control. Blanks (analytical and method), duplicates and standard reference materials which are inserted in the sequences of client samples provide a measure of background noise, accuracy and precision. QA/QC protocol incorporates a granite or quartz sample-prep blank(s) carried through all stages of preparation and analysis as the first sample(s) in the job, a pulp replicate (REP) to monitor analytical precision, a -10 mesh reject duplicate (DUP) to monitor sub-sampling variation (drill core only), a reagent blank (BLK) to measure background and an aliquot of Certified Reference Material (CRM) or Inhouse Reference Material to monitor accuracy. In the absence of suitable CRMs Inhouse Reference Materials are prepared and certified against internationally certified reference materials such as CANMET and USGS standards where possible and will be externally verified at a minimum of 3 other commercial laboratories. Typically an analytical batch will be comprised of 34-36 client samples.

### DATA REVIEW AND APPROVAL

Prior to release of results data is reviewed by the instrument operator on a rack by rack basis, a senior technician reviews all racks for an analysis in a job and a certified assayer reviews all analysis for a job together.

During rack validation, in addition to instrument calibration, linearity and drift, the operator reviews the following guidelines to evaluate the internal quality control samples to approve a rack data and to determine if some or all of the samples in a rack must be reweighed. Exceptions to the following many apply if supported by additional investigation.

#### **Review the analytical blank (BLK).**

Concentrations exceeding 5% of the lowest sample concentration or 5 times the detection limit for that element, (whichever is higher) the blank reporting > DL must be confirmed by re-analysis of the same solution.

#### **Review pulp rerun samples (REP).**

Elements whose concentration exceeds 5 times the detection limit and do not repeat values within 10% will be flagged and investigated. Solutions will be rerun and if confirmed and the operator may retrieve the pulp material for the sample to inspect the material for homogeneity and fineness.

#### **Review of reject rerun samples (DUP).**

The process for evaluating reject reruns is the same as for pulp reruns except 30% is the acceptable tolerance.

#### **Review of standard reference materials inserted by Acme.**

Elements reporting concentrations outside the tolerance limits are flagged and the problems must be reviewed. Any one element reporting outside the tolerance limits will not necessarily result in the failure of a standard. Factors such as, sample concentration, element, holdback from client samples and others will be evaluated to determine if a standard passes or fails. Tolerance limits are determined by method precision, element concentration and homogeneity of the reference material and may not be as listed on the suppliers certificate of analysis.

**Review of preparation blanks.**

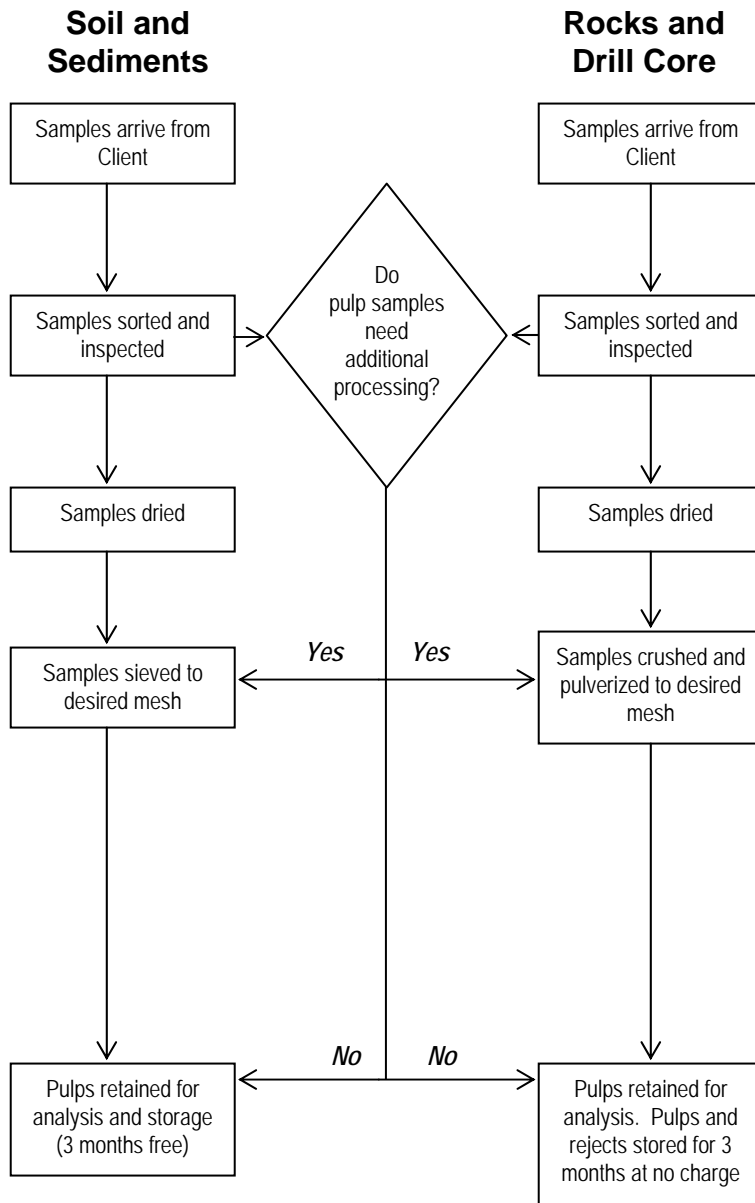
If reported concentrations are higher than expected values, contamination may have occurred. Preparation blanks (i.e. G-1, Flour) are used to monitor contamination only. Concentration of preparation blanks greater than 50 times the sample concentration should be rechecked by first re-analysis of a group of samples followed by re-weighing, if the contamination is confirmed.

**Review the sample concentrations for any anomalies.**

Samples with concentrations significantly above or below the average concentration for the set will be highlighted by the LIMS system. If majority of the samples report similar concentrations and one or more samples report much higher or lower concentrations. Low concentrations are flagged as potential missed runs, insufficient sample, or over correction due to blanking or inference and must be reviewed. Samples with high concentrations are flagged as over limit. If requested by the client over limit samples will be re-run by another method.

If all of the above have been reviewed and considered acceptable data is approved and validated by the operator.

## GENERAL SAMPLE PREPARATION METHODS



### Comments

**Receiving:** Samples arrive via courier, post or by client drop-off; shipment inspected for completeness.

**Sorting and Inspection:** Samples sorted and inspected for quality of use (quantity and condition). Pulp samples inspected for homogeneity and fineness. Coarse pulps are screened or pulverized after getting client's approval.

**Drying:** Wet or damp samples are dried at 60°C (40°C if specified by the client).

**Sieving:** Soil and sediment sieved to -80 mesh ASTM (-177 microns) unless client specifies otherwise. Sieve cleaned by brush and compressed air between samples. Reference material G-1 (pulp made of granite blank) is carried as first sample in sequence (sieve>weigh>digest>analyse) to monitor background noise.

**Crushing and Pulverizing:** Rock and Drill Core crushed to 70% passing 10 mesh (2 mm), homogenized, riffle split (250 g subsample) and pulverized to 95% passing 150 mesh (100 microns). Crusher and pulverizer are cleaned by brush and compressed air between routine samples. Granite wash scours equipment after high-grade samples, between changes in rock colour and at end of each file. Granite is crushed and pulverized as first sample in sequence and carried through to analysis to monitor background noise.

**Compositing:** Equal weights of crushed, pulverized or sieved material from 2 or more samples are combined and pulverized for 60+ seconds to produce a homogeneous mixture.

**Storage:** Pulp samples (up to 100g for soils or sediments and up to 250 g for rock and drill core) are archived for 3 months at no cost. Soil and sediment rejects are discarded immediately. Rock and drill core rejects are stored for 3 months at no charge. Client may request additional storage, return or disposal of pulps and rejects after initial free storage period.

## METHOD SPECIFICATIONS

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

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

#### 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.

For 1F07, Lead isotopes (Pb<sub>204</sub>, Pb<sub>206</sub>, Pb<sub>207</sub>, Pb<sub>208</sub>) are suitable for geochemical exploration of U and other commodities where gross differences in natural to radiogenic Pb ratios, is a benefit. Isotope values can be reported in both concentrations and intensities. Sample splits of 0.25g, 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

Element	Group 1D Detection	Group 1DX Detection	Group 1F Detection	Upper Limit
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%
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.

## **APPENDIX II**

### **Skoonka Creek Property**

### **Soil Ah Sample Laboratory Results**



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Acme Analytical Laboratories (Vancouver) Ltd.  
9050 Shaughnessy St Vancouver BC V6P 6E5 CANADA  
PHONE (604) 253-3158

Client: **Strongbow Exploration Inc.**  
860 - 625 Howe St.  
Vancouver BC V6C 2T6 Canada

Submitted By: Email Distribution List  
Receiving Lab: Canada-Vancouver  
Received: October 15, 2013  
Report Date: October 30, 2013  
Page: 1 of 4

## CERTIFICATE OF ANALYSIS

VAN13004204.1

### CLIENT JOB INFORMATION

Project: None Given  
Shipment ID: 3135-13-01  
P.O. Number 3135  
Number of Samples: 64

### SAMPLE DISPOSAL

RTRN-PLP Return  
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: Strongbow Exploration Inc.  
860 - 625 Howe St.  
Vancouver BC V6C 2T6  
Canada

CC: Lamont Leatherman

### SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
Dry at 60C	64	Dry at 60C			VAN
SS80	64	Dry at 60C sieve 100g to -80 mesh			VAN
1F05	64	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. Results apply to samples as submitted. \*\*\* asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.



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Acme Analytical Laboratories (Vancouver) Ltd.  
 9050 Shaughnessy St Vancouver BC V6P 6E5 CANADA  
 PHONE (604) 253-3158

Client: **Strongbow Exploration Inc.**  
 860 - 625 Howe St.  
 Vancouver BC V6C 2T6 Canada

Project: None Given  
 Report Date: October 30, 2013

Page: 2 of 4

Part: 1 of 3

# CERTIFICATE OF ANALYSIS

VAN13004204.1

Method	Analyte	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15
		Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
Unit		ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%
MDL		0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01	0.001	
89600	Soil	1.07	17.63	6.80	49.8	97	18.4	6.7	788	1.56	3.3	0.2	2.3	0.4	126.5	0.18	0.29	0.13	35	1.57	0.121
89601	Soil	3.53	16.44	9.74	24.0	27	7.2	2.8	517	0.48	1.6	0.1	0.9	<0.1	68.2	0.29	0.16	0.10	12	1.82	0.126
89602	Soil	1.80	25.98	9.95	70.3	101	17.4	6.4	869	1.35	2.0	0.2	6.1	0.1	97.5	0.45	0.26	0.08	31	1.92	0.138
89603	Soil	1.84	31.11	5.83	35.8	110	15.1	4.8	508	0.90	3.2	0.7	2.0	0.1	90.6	0.27	0.27	0.06	29	2.17	0.147
89604	Soil	3.85	17.07	2.14	25.5	28	17.7	12.6	>10000	2.78	14.7	0.2	1.4	<0.1	149.9	0.13	0.32	<0.02	24	3.22	0.240
89605	Soil	1.89	19.62	6.05	73.8	45	12.0	4.9	773	0.97	1.7	0.1	0.9	0.2	86.6	0.36	0.14	0.04	21	1.46	0.107
89606	Soil	0.93	21.03	13.60	93.0	43	14.2	7.5	758	1.47	3.7	0.2	1.0	0.3	95.5	0.72	0.37	0.06	35	1.25	0.110
89607	Soil	0.90	21.71	11.92	55.4	35	22.9	8.4	817	1.58	2.7	0.3	0.7	0.6	152.9	0.22	0.31	0.05	38	1.60	0.081
89608	Soil	1.28	18.77	15.40	113.6	29	24.7	9.9	1517	2.18	1.9	0.4	2.3	0.8	115.9	0.20	0.23	0.11	56	1.00	0.069
89609	Soil	1.09	25.23	20.65	73.5	33	35.5	10.0	1608	1.70	6.5	0.3	<0.2	0.4	132.2	0.31	0.41	0.09	41	1.58	0.104
89610	Soil	1.20	15.45	30.29	59.7	66	11.0	3.9	3514	0.69	2.1	0.1	1.3	<0.1	82.5	0.17	0.29	0.16	16	1.08	0.110
89611	Soil	1.08	15.90	15.08	49.8	62	12.5	4.7	664	0.84	5.3	0.3	0.7	<0.1	88.1	0.25	0.49	0.10	23	2.06	0.107
89612	Soil	1.25	31.54	4.93	75.6	129	28.6	15.2	2352	2.18	8.2	0.6	1.3	0.5	117.2	0.26	0.29	0.05	60	1.44	0.145
89613	Soil	1.95	11.88	5.85	36.8	59	3.7	1.3	460	0.22	0.8	<0.1	0.3	<0.1	130.4	0.26	0.09	0.04	5	2.12	0.130
89614	Soil	1.82	24.43	11.46	77.1	72	23.3	10.0	999	2.03	6.9	0.3	28.0	0.5	73.4	0.40	0.29	0.08	45	0.96	0.100
89615	Soil	2.94	13.74	27.40	76.5	46	17.2	8.3	1575	1.38	8.3	0.2	1.5	0.3	113.1	0.38	0.41	0.13	34	1.03	0.083
89616	Soil	1.70	23.05	4.97	42.4	194	22.9	9.7	532	1.93	41.4	0.3	150.7	0.2	121.5	0.11	1.12	0.04	44	1.70	0.127
89617	Soil	3.86	26.45	2.23	52.7	895	23.5	11.0	632	1.61	39.2	0.2	1068.0	0.2	115.7	0.11	0.88	0.02	33	2.20	0.149
89618	Soil	1.75	28.16	15.10	31.8	304	11.6	4.1	692	0.74	17.4	0.4	8.9	<0.1	75.7	0.51	0.77	0.06	24	2.33	0.132
89619	Soil	1.06	18.01	20.08	97.5	285	11.8	5.3	2341	0.91	2.1	0.1	0.7	<0.1	119.8	0.38	0.18	0.10	21	1.60	0.121
89620	Soil	0.91	19.09	15.12	55.6	282	21.4	7.6	535	1.52	3.5	0.2	1.4	0.1	74.4	0.51	0.21	0.10	34	1.17	0.084
89621	Soil	1.52	18.26	16.65	56.9	168	14.2	5.7	883	1.08	6.2	0.2	11.2	<0.1	116.0	0.21	0.31	0.07	25	1.92	0.129
89622	Soil	0.89	14.15	13.53	35.6	99	12.2	4.7	358	0.96	2.5	0.1	1.7	<0.1	122.3	0.18	0.27	0.07	21	1.65	0.087
89623	Soil	1.87	24.23	2.66	56.9	181	25.2	8.4	519	1.52	3.7	0.2	4.2	0.2	170.3	0.15	0.30	0.02	34	2.10	0.145
89624	Soil	0.51	25.32	15.84	53.1	191	18.7	7.2	1205	1.51	4.8	0.6	1.7	0.1	95.4	0.37	0.37	0.13	42	1.72	0.101
89625	Soil	0.97	12.44	28.32	33.5	95	7.1	2.2	202	0.58	1.3	<0.1	0.8	<0.1	55.2	0.14	0.35	0.12	13	0.76	0.118
89626	Soil	0.76	10.92	21.01	33.5	86	11.3	3.6	378	0.92	2.0	0.1	0.6	<0.1	41.4	0.05	0.23	0.10	20	0.60	0.090
89627	Soil	0.81	14.03	16.22	82.0	88	15.1	5.9	3416	1.15	2.4	0.2	2.6	0.2	161.9	0.25	0.28	0.09	29	1.92	0.101
89628	Soil	0.77	13.91	15.60	36.2	122	6.0	2.4	251	0.58	2.0	<0.1	0.5	<0.1	67.6	0.20	0.23	0.07	13	1.63	0.098
89629	Soil	0.66	28.08	21.00	77.2	170	7.9	2.6	1549	0.48	3.0	0.2	1.4	<0.1	88.7	0.38	0.32	0.09	14	2.94	0.138

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**Client:** Strongbow Exploration Inc.  
860 - 625 Howe St.  
Vancouver BC V6C 2T6 Canada

**Project:** None Given  
**Report Date:** October 30, 2013

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**Part:** 2 of 3

CERTIFICATE OF ANALYSIS

VAN13004204.1

Method Analyte Unit MDL	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Sc ppm	Tl ppm	S %	Hg ppb	Se ppm	Te ppm	Ga ppm	Cs ppm	Ge ppm	Hf ppm	
	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	0.02	
89600	Soil	4.1	17.9	0.48	118.9	0.080	8	1.72	0.013	0.19	0.1	3.0	0.03	0.09	107	0.2	0.04	4.3	0.75	<0.1	0.14
89601	Soil	1.3	6.8	0.28	43.7	0.027	9	0.42	0.012	0.13	<0.1	1.0	<0.02	0.18	233	0.2	0.02	1.4	0.70	<0.1	0.05
89602	Soil	3.3	16.0	0.44	101.4	0.068	9	1.18	0.015	0.19	0.1	2.0	0.02	0.15	176	0.2	0.04	3.6	0.84	<0.1	0.07
89603	Soil	5.5	14.6	0.44	45.1	0.038	11	1.01	0.019	0.17	<0.1	1.9	<0.02	0.22	164	1.0	<0.02	2.6	0.37	<0.1	0.10
89604	Soil	3.0	10.0	0.49	116.4	0.030	19	0.72	0.052	0.23	<0.1	1.3	0.02	0.30	120	0.4	0.04	2.1	0.39	<0.1	0.02
89605	Soil	2.5	12.1	0.35	87.6	0.052	11	0.92	0.012	0.26	<0.1	2.0	0.02	0.13	81	0.3	<0.02	2.5	0.52	<0.1	0.07
89606	Soil	3.6	16.5	0.41	92.9	0.071	10	1.07	0.013	0.29	<0.1	2.7	0.02	0.12	209	<0.1	<0.02	2.9	0.55	<0.1	0.09
89607	Soil	6.8	26.6	0.50	114.4	0.078	7	1.54	0.018	0.19	<0.1	4.3	0.03	0.09	202	0.2	0.05	3.8	0.22	<0.1	0.22
89608	Soil	5.9	20.8	0.58	140.6	0.200	5	2.17	0.026	0.22	<0.1	4.9	0.03	0.04	139	<0.1	0.03	5.6	0.59	<0.1	0.19
89609	Soil	5.6	29.3	0.69	97.9	0.126	6	1.85	0.021	0.15	0.2	3.6	0.05	0.11	249	<0.1	<0.02	4.8	0.66	<0.1	0.16
89610	Soil	1.6	10.7	0.20	133.9	0.030	6	0.68	0.012	0.10	0.1	1.0	0.05	0.15	481	0.1	<0.02	2.0	0.66	<0.1	<0.02
89611	Soil	2.5	12.2	0.36	64.5	0.040	10	0.86	0.017	0.17	<0.1	1.7	0.02	0.16	196	0.3	<0.02	2.3	0.70	<0.1	0.05
89612	Soil	9.1	28.4	0.71	104.5	0.107	7	2.12	0.028	0.23	<0.1	5.4	0.03	0.10	102	0.3	0.03	5.1	0.82	<0.1	0.09
89613	Soil	0.7	4.2	0.15	74.1	0.011	16	0.21	0.005	0.09	<0.1	0.6	0.02	0.18	223	0.4	<0.02	0.6	0.39	<0.1	0.04
89614	Soil	5.2	24.6	0.54	126.7	0.105	4	2.02	0.017	0.19	<0.1	4.0	0.04	0.06	68	0.1	0.04	5.9	1.36	<0.1	0.07
89615	Soil	3.1	17.2	0.41	130.0	0.094	4	1.47	0.016	0.14	0.1	2.8	0.05	0.07	254	0.2	<0.02	4.8	0.88	<0.1	0.05
89616	Soil	7.3	20.5	0.69	83.2	0.046	6	1.81	0.017	0.16	0.1	3.7	0.03	0.10	130	0.4	<0.02	4.7	0.56	<0.1	0.05
89617	Soil	5.6	20.1	0.71	76.3	0.016	12	1.17	0.017	0.24	<0.1	2.8	0.04	0.16	110	0.4	0.06	3.0	0.26	<0.1	0.07
89618	Soil	14.5	8.9	0.32	42.3	0.017	11	0.88	0.014	0.07	<0.1	1.1	0.05	0.16	214	0.7	<0.02	2.4	0.65	0.1	0.04
89619	Soil	2.4	11.6	0.27	198.6	0.036	5	0.77	0.010	0.13	<0.1	1.1	0.05	0.07	166	0.2	<0.02	3.2	0.79	<0.1	<0.02
89620	Soil	3.8	18.2	0.45	89.2	0.056	4	1.36	0.012	0.10	<0.1	2.0	0.02	0.05	59	0.1	0.03	4.8	0.66	<0.1	0.03
89621	Soil	4.3	11.9	0.40	103.5	0.011	6	1.02	0.009	0.18	<0.1	1.1	0.03	0.12	165	0.4	<0.02	2.8	0.57	<0.1	<0.02
89622	Soil	2.9	12.4	0.33	95.2	0.036	7	0.97	0.009	0.08	<0.1	1.6	0.02	0.12	213	0.4	0.04	2.7	0.54	<0.1	0.06
89623	Soil	6.7	19.7	0.68	71.1	0.054	13	1.56	0.016	0.28	<0.1	4.1	<0.02	0.14	180	0.2	<0.02	3.6	0.58	<0.1	0.11
89624	Soil	12.9	18.3	0.48	85.7	0.034	6	1.88	0.015	0.12	<0.1	3.6	0.06	0.08	302	0.2	<0.02	5.2	0.83	<0.1	0.02
89625	Soil	2.1	7.6	0.17	57.7	0.021	4	0.62	0.009	0.11	<0.1	0.9	0.03	0.11	423	0.3	0.04	2.1	0.57	0.1	<0.02
89626	Soil	2.1	11.2	0.23	53.3	0.048	4	0.91	0.008	0.07	0.1	1.5	0.03	0.10	368	<0.1	<0.02	3.1	1.03	<0.1	0.07
89627	Soil	2.3	13.8	0.35	186.5	0.078	11	1.15	0.010	0.16	<0.1	2.1	0.05	0.11	440	0.2	0.03	3.4	0.95	<0.1	0.09
89628	Soil	1.5	7.2	0.22	66.1	0.022	8	0.52	0.009	0.13	<0.1	0.8	0.02	0.13	235	0.1	0.04	1.8	0.47	<0.1	0.03
89629	Soil	10.5	6.2	0.26	89.8	0.014	13	0.53	0.015	0.19	<0.1	0.7	0.05	0.16	256	0.6	<0.02	1.5	0.87	<0.1	0.02

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Client: **Strongbow Exploration Inc.**  
 860 - 625 Howe St.  
 Vancouver BC V6C 2T6 Canada

Project: None Given  
 Report Date: October 30, 2013

Page: 2 of 4

Part: 3 of 3

# CERTIFICATE OF ANALYSIS

VAN13004204.1

Method	Analyte	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
		Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pd	Pt
Unit		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppb	ppb	
MDL		0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	10	2	
89600	Soil	1.25	7.9	0.4	<0.05	6.3	2.48	9.7	0.04	<1	0.6	6.3	<10	2
89601	Soil	0.47	4.4	0.3	<0.05	1.8	1.03	3.0	<0.02	<1	<0.1	1.9	<10	2
89602	Soil	1.23	15.3	0.4	<0.05	3.5	2.02	7.4	<0.02	<1	0.4	4.4	<10	<2
89603	Soil	0.84	4.7	0.3	<0.05	5.2	4.89	8.6	<0.02	<1	0.2	7.2	<10	<2
89604	Soil	0.61	5.7	0.2	<0.05	1.0	2.77	6.6	<0.02	<1	0.2	2.7	<10	<2
89605	Soil	0.78	8.3	0.2	<0.05	3.0	1.68	6.7	<0.02	<1	0.2	3.6	<10	<2
89606	Soil	1.19	7.3	0.3	<0.05	5.0	2.24	10.4	<0.02	<1	0.2	3.9	<10	<2
89607	Soil	1.70	4.9	0.4	<0.05	8.4	4.59	15.1	0.03	<1	0.5	3.3	<10	3
89608	Soil	2.87	9.4	0.6	<0.05	8.3	3.15	15.3	<0.02	<1	0.6	5.8	<10	<2
89609	Soil	2.11	8.3	0.5	<0.05	5.2	3.63	13.7	<0.02	<1	0.4	5.3	<10	<2
89610	Soil	0.50	6.4	0.4	<0.05	0.5	0.98	3.4	0.02	<1	<0.1	2.1	<10	<2
89611	Soil	0.70	7.0	0.3	<0.05	2.7	2.12	6.6	<0.02	<1	0.2	4.2	<10	<2
89612	Soil	1.42	8.9	0.5	<0.05	4.8	8.73	20.2	<0.02	<1	0.4	9.6	<10	<2
89613	Soil	0.15	3.5	0.2	<0.05	0.9	0.57	1.5	<0.02	<1	<0.1	1.0	<10	<2
89614	Soil	1.43	23.2	0.5	<0.05	3.1	3.37	14.2	<0.02	<1	0.4	8.0	<10	<2
89615	Soil	1.15	8.8	0.6	<0.05	2.5	1.64	7.3	0.02	<1	0.1	4.7	<10	<2
89616	Soil	1.25	6.9	0.4	<0.05	3.4	5.52	17.8	0.02	<1	0.7	8.8	<10	3
89617	Soil	0.56	4.3	0.2	<0.05	3.5	4.44	14.0	<0.02	<1	0.3	6.1	<10	<2
89618	Soil	0.45	3.9	0.3	<0.05	1.7	9.43	9.9	<0.02	<1	0.4	3.4	<10	<2
89619	Soil	0.53	7.2	0.4	<0.05	0.9	1.38	4.8	<0.02	<1	0.2	2.6	<10	<2
89620	Soil	1.04	5.8	0.4	<0.05	1.5	2.18	8.0	<0.02	<1	0.3	6.4	<10	<2
89621	Soil	0.45	5.5	0.3	<0.05	0.6	3.24	9.0	<0.02	<1	0.3	4.9	<10	<2
89622	Soil	0.75	3.9	0.3	<0.05	2.6	2.07	5.3	<0.02	<1	0.3	3.5	<10	<2
89623	Soil	1.14	9.4	0.3	<0.05	4.9	5.79	15.4	<0.02	<1	0.3	5.3	<10	<2
89624	Soil	0.93	6.3	0.5	<0.05	1.4	9.84	18.7	<0.02	<1	0.7	9.5	<10	<2
89625	Soil	0.38	2.6	0.5	<0.05	0.8	1.41	4.0	<0.02	<1	0.1	1.9	<10	2
89626	Soil	0.75	3.6	0.5	<0.05	2.8	1.15	4.3	<0.02	<1	<0.1	2.9	<10	<2
89627	Soil	1.14	7.3	0.3	<0.05	4.0	1.16	5.0	<0.02	<1	<0.1	5.2	<10	<2
89628	Soil	0.43	5.6	0.3	<0.05	1.2	1.04	3.3	<0.02	<1	<0.1	2.5	<10	<2
89629	Soil	0.24	7.6	0.4	<0.05	0.7	6.50	7.1	<0.02	<1	<0.1	2.8	<10	<2

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: None Given  
Report Date: October 30, 2013

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# CERTIFICATE OF ANALYSIS

## VAN13004204.1

Method Analyte	Unit MDL	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15
		Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
		ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%
		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	0.001
89630	Soil	0.78	31.32	7.90	41.0	322	11.1	4.2	1075	0.73	7.9	0.5	4.2	<0.1	84.7	0.32	0.52	0.04	25	2.11	0.133
89631	Soil	1.07	21.52	37.98	117.8	234	14.4	5.5	2164	0.92	2.2	0.1	0.9	<0.1	124.2	0.43	0.38	0.21	20	1.88	0.118
89632	Soil	1.03	22.08	21.93	65.1	67	35.9	10.6	2034	1.67	1.5	0.2	0.9	0.2	150.5	0.13	0.20	0.08	37	1.42	0.131
89633	Soil	0.98	19.38	28.11	75.8	80	36.2	9.3	2571	1.57	2.3	0.2	2.3	0.3	102.6	0.17	0.21	0.12	32	1.32	0.144
89634	Soil	1.37	23.62	36.45	63.5	26	44.3	13.4	2709	1.94	2.5	0.3	0.2	0.7	212.7	0.27	0.28	0.13	44	1.55	0.098
89635	Soil	1.36	18.36	25.56	81.2	47	17.6	6.9	3407	1.17	2.0	0.2	1.2	<0.1	120.4	0.37	0.22	0.11	22	0.98	0.145
89636	Soil	0.94	21.76	29.19	60.7	127	17.8	7.1	2017	1.44	2.7	0.3	1.3	0.2	92.0	0.47	0.28	0.21	42	1.12	0.102
89637	Soil	1.56	16.82	19.72	51.4	153	13.5	6.1	993	1.35	2.1	0.2	1.7	0.2	66.0	0.29	0.22	0.17	31	0.61	0.118
89638	Soil	1.55	15.42	24.85	46.1	137	11.7	6.1	1967	1.01	1.5	0.1	<0.2	<0.1	86.4	0.36	0.24	0.15	23	0.94	0.107
89750	Soil	0.89	15.04	13.13	40.4	62	12.9	4.4	142	1.30	1.8	0.2	<0.2	<0.1	42.3	0.23	0.18	0.17	31	0.39	0.080
89751	Soil	1.36	15.68	16.65	32.3	80	11.8	4.2	370	1.14	2.4	0.1	2.1	<0.1	79.5	0.18	0.20	0.14	28	0.77	0.077
89752	Soil	0.62	19.45	12.29	39.5	125	11.9	3.9	267	1.11	1.9	0.1	<0.2	<0.1	51.2	0.26	0.16	0.19	25	0.53	0.080
89753	Soil	1.21	12.32	22.08	28.1	63	8.4	2.3	83	0.69	1.6	0.1	<0.2	<0.1	64.0	0.35	0.26	0.19	16	0.63	0.081
89754	Soil	1.77	15.53	23.65	34.8	47	9.4	2.8	132	0.80	1.7	0.1	0.6	<0.1	64.7	0.26	0.23	0.18	18	0.56	0.070
89755	Soil	0.73	22.47	14.43	29.6	219	16.7	5.7	777	1.34	3.2	0.5	0.7	0.1	60.2	0.28	0.32	0.13	41	1.46	0.074
89756	Soil	0.53	36.28	15.90	34.5	577	17.0	6.3	1072	1.51	5.2	1.1	0.4	0.2	64.0	0.41	0.56	0.14	57	2.22	0.102
89757	Soil	0.93	40.33	12.38	31.4	311	19.6	8.0	2752	1.69	5.1	0.8	1.1	0.1	62.2	0.51	0.37	0.13	63	1.53	0.079
89758	Soil	0.68	19.34	11.21	34.1	166	14.8	5.7	410	1.40	2.7	0.3	0.3	0.3	45.5	0.36	0.20	0.15	41	1.11	0.064
89759	Soil	0.87	15.76	17.01	50.4	92	16.4	6.1	628	1.47	2.8	0.1	<0.2	0.2	42.1	0.32	0.24	0.12	34	0.58	0.089
89760	Soil	1.20	11.56	20.20	32.3	95	9.7	2.9	165	0.80	1.8	0.1	0.4	<0.1	48.3	0.13	0.30	0.13	18	0.68	0.083
89761	Soil	0.95	29.87	39.15	196.9	509	16.8	6.4	8101	1.24	1.9	0.2	0.7	0.1	109.3	0.92	0.34	0.24	28	1.41	0.131
89762	Soil	0.99	18.44	7.42	59.4	140	20.6	7.5	656	1.70	4.6	0.2	2.7	0.2	76.1	0.11	0.36	0.08	38	0.99	0.133
89763	Soil	0.52	24.03	15.06	95.8	282	21.8	8.2	1154	1.75	2.5	0.2	0.4	0.2	70.3	0.40	0.29	0.11	41	1.01	0.189
89764	Soil	0.79	12.79	25.05	60.8	283	8.3	3.0	808	0.79	2.5	0.1	1.2	<0.1	78.6	0.26	0.35	0.14	19	1.13	0.085
89765	Soil	0.89	13.03	21.50	30.8	333	11.5	4.2	869	0.90	2.6	0.2	0.3	<0.1	94.8	0.40	0.37	0.15	23	1.98	0.082
89766	Soil	0.71	8.88	22.92	47.2	265	5.3	1.7	649	0.45	1.6	<0.1	0.4	<0.1	44.7	0.29	0.34	0.12	10	0.88	0.069
89767	Soil	1.62	13.56	25.20	39.1	53	11.8	4.4	1070	1.21	2.2	0.1	1.1	0.3	64.4	0.14	0.28	0.15	29	0.58	0.073
89768	Soil	1.96	13.88	29.99	32.6	38	12.9	5.3	1443	1.17	2.1	0.1	1.1	0.2	78.9	0.27	0.31	0.18	27	0.75	0.075
89769	Soil	3.07	16.93	27.31	27.8	38	13.5	6.0	1028	1.01	2.0	0.2	0.5	0.1	110.4	0.20	0.25	0.14	21	1.25	0.106
89770	Soil	0.99	14.61	26.85	54.7	38	22.5	7.8	788	1.74	2.5	0.2	<0.2	0.5	61.2	0.12	0.23	0.13	40	0.66	0.106

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.

# CERTIFICATE OF ANALYSIS

VAN13004204.1

Method	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15
Analyte	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga	Cs	Ge	Hf	
Unit	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm	ppm	
MDL	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	0.02	
89630	Soil	10.6	8.2	0.31	45.2	0.014	8	0.78	0.014	0.14	<0.1	1.2	0.03	0.16	235	0.5	0.03	2.0	0.46	<0.1	0.03
89631	Soil	2.5	11.3	0.26	218.8	0.040	5	0.89	0.013	0.14	<0.1	1.5	0.05	0.09	322	0.2	0.04	3.3	0.95	<0.1	0.04
89632	Soil	4.5	20.8	0.70	157.9	0.111	5	2.12	0.016	0.17	<0.1	3.1	0.05	0.10	181	0.2	<0.02	5.2	0.97	<0.1	0.12
89633	Soil	2.7	15.5	0.69	153.8	0.122	8	1.75	0.016	0.19	0.1	2.4	0.05	0.09	377	0.3	0.05	5.2	0.73	<0.1	0.12
89634	Soil	6.1	18.8	1.02	142.5	0.178	6	2.00	0.029	0.21	0.1	5.0	0.05	0.07	253	<0.1	<0.02	5.2	0.79	<0.1	0.27
89635	Soil	3.0	12.3	0.39	142.1	0.054	4	1.16	0.014	0.15	<0.1	1.8	0.07	0.10	277	0.2	0.05	3.8	1.39	<0.1	0.05
89636	Soil	9.4	18.5	0.48	122.0	0.061	5	1.68	0.015	0.09	0.1	3.4	0.05	0.07	213	0.1	<0.02	5.5	1.07	<0.1	0.05
89637	Soil	2.7	15.4	0.28	129.7	0.070	3	1.02	0.012	0.08	0.1	1.7	0.04	0.07	158	<0.1	<0.02	4.4	0.76	<0.1	0.04
89638	Soil	2.5	12.8	0.26	152.8	0.043	5	0.78	0.012	0.12	<0.1	1.2	0.08	0.11	275	<0.1	0.03	3.1	0.94	<0.1	0.03
89750	Soil	3.2	14.8	0.27	86.5	0.060	2	1.00	0.012	0.06	<0.1	1.4	0.02	0.05	101	<0.1	<0.02	5.5	0.97	<0.1	0.03
89751	Soil	3.1	13.4	0.25	106.4	0.058	2	0.88	0.011	0.08	0.1	1.4	0.02	0.06	123	<0.1	<0.02	4.2	1.02	<0.1	0.02
89752	Soil	3.0	12.5	0.21	119.9	0.050	1	0.90	0.010	0.06	<0.1	1.1	0.02	0.05	62	<0.1	<0.02	4.1	1.22	<0.1	0.03
89753	Soil	2.2	8.4	0.16	90.4	0.033	2	0.51	0.010	0.06	<0.1	1.0	0.02	0.08	112	0.2	<0.02	2.5	1.96	<0.1	0.03
89754	Soil	2.9	10.1	0.11	164.3	0.036	1	0.60	0.011	0.06	0.1	1.2	0.02	0.06	152	0.3	<0.02	2.8	1.26	<0.1	<0.02
89755	Soil	9.8	16.7	0.38	44.7	0.048	4	1.57	0.018	0.05	<0.1	3.0	0.03	0.08	138	0.3	0.03	4.8	1.64	0.1	0.04
89756	Soil	25.3	17.2	0.43	49.1	0.047	3	2.06	0.021	0.06	0.1	3.8	0.04	0.09	161	0.3	0.09	6.3	5.67	<0.1	0.03
89757	Soil	24.6	18.8	0.42	67.8	0.050	3	2.07	0.018	0.05	<0.1	3.5	0.05	0.07	113	0.2	<0.02	6.4	3.93	<0.1	<0.02
89758	Soil	9.1	17.3	0.38	47.5	0.066	1	1.44	0.018	0.05	<0.1	2.9	<0.02	0.05	90	<0.1	<0.02	5.5	1.18	<0.1	0.06
89759	Soil	3.3	16.5	0.30	134.9	0.069	1	1.36	0.011	0.07	<0.1	1.9	0.04	0.04	123	<0.1	<0.02	5.0	1.45	<0.1	0.05
89760	Soil	2.3	10.6	0.17	99.0	0.032	2	0.62	0.011	0.08	<0.1	1.0	<0.02	0.08	151	<0.1	0.05	2.5	0.55	<0.1	0.03
89761	Soil	3.4	16.4	0.29	340.6	0.043	3	1.13	0.016	0.13	<0.1	1.7	0.09	0.03	91	0.2	0.07	3.8	1.28	<0.1	<0.02
89762	Soil	3.7	23.3	0.51	100.8	0.068	<1	1.82	0.012	0.11	<0.1	2.3	0.03	0.06	113	<0.1	0.03	5.4	1.11	<0.1	0.04
89763	Soil	4.4	22.9	0.44	189.4	0.076	4	1.74	0.026	0.18	<0.1	2.4	0.02	0.02	32	<0.1	<0.02	5.9	1.04	<0.1	0.04
89764	Soil	2.0	9.3	0.20	140.9	0.038	5	0.61	0.010	0.11	<0.1	1.2	0.05	0.11	332	0.1	<0.02	2.7	0.59	<0.1	<0.02
89765	Soil	2.0	10.2	0.33	109.7	0.042	5	0.90	0.011	0.10	<0.1	1.5	0.05	0.10	314	0.1	<0.02	2.6	0.99	0.1	0.05
89766	Soil	1.2	5.6	0.12	85.7	0.019	3	0.36	0.007	0.08	<0.1	0.7	0.04	0.10	327	0.2	<0.02	1.5	0.55	<0.1	<0.02
89767	Soil	3.2	12.9	0.25	126.2	0.073	1	0.94	0.011	0.10	<0.1	1.9	0.03	0.05	158	0.3	<0.02	4.6	0.67	<0.1	0.04
89768	Soil	3.5	13.1	0.25	122.2	0.066	<1	0.92	0.012	0.10	0.1	1.9	0.03	0.06	139	<0.1	<0.02	4.5	0.67	<0.1	0.03
89769	Soil	4.0	10.4	0.25	93.3	0.057	2	0.88	0.012	0.13	0.2	1.7	0.03	0.09	194	0.2	<0.02	3.3	0.96	<0.1	0.05
89770	Soil	3.4	18.6	0.49	111.8	0.113	1	1.76	0.012	0.10	0.1	2.6	0.04	0.06	113	0.3	<0.02	6.6	1.09	<0.1	0.10



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Project: None Given  
 Report Date: October 30, 2013

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# CERTIFICATE OF ANALYSIS

VAN13004204.1

	Method	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
		Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pd	Pt
Analyte	Unit	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppb	ppb	
	MDL	0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	10	2	
89630	Soil	0.37	4.6	0.2	<0.05	1.7	12.44	8.3	<0.02	<1	0.2	6.2	<10	<2
89631	Soil	0.58	7.9	0.7	<0.05	1.1	1.49	5.2	<0.02	<1	0.3	2.8	<10	<2
89632	Soil	1.69	9.1	0.4	<0.05	5.7	2.61	11.0	<0.02	<1	0.4	7.6	<10	<2
89633	Soil	2.11	12.6	0.6	<0.05	6.2	1.72	6.2	0.02	<1	0.2	6.8	<10	2
89634	Soil	2.70	9.1	0.6	<0.05	16.8	4.90	16.1	0.02	<1	0.4	7.5	<10	<2
89635	Soil	0.85	8.4	0.5	<0.05	2.3	2.15	7.0	<0.02	<1	0.4	4.0	<10	<2
89636	Soil	0.95	4.7	0.6	<0.05	1.8	8.77	13.3	0.04	<1	0.4	7.8	<10	<2
89637	Soil	1.07	3.8	0.5	<0.05	2.1	1.34	5.4	0.03	<1	0.4	4.4	<10	<2
89638	Soil	0.73	4.8	0.5	<0.05	1.0	1.41	5.5	<0.02	<1	0.3	2.7	<10	<2
89750	Soil	1.05	3.6	0.5	<0.05	1.3	1.70	6.4	<0.02	<1	0.1	3.8	<10	<2
89751	Soil	0.92	4.5	0.4	<0.05	1.7	1.46	5.8	0.02	1	0.2	3.2	<10	<2
89752	Soil	0.89	3.1	0.4	<0.05	1.5	1.70	6.0	<0.02	<1	<0.1	3.3	<10	<2
89753	Soil	0.50	2.6	0.5	<0.05	1.1	1.09	4.3	<0.02	<1	0.2	1.6	<10	<2
89754	Soil	0.61	2.2	0.5	<0.05	1.0	1.49	5.4	<0.02	<1	0.2	1.6	<10	<2
89755	Soil	1.02	3.6	0.4	<0.05	2.2	10.34	13.8	<0.02	<1	0.9	11.8	<10	<2
89756	Soil	0.99	3.7	0.5	<0.05	2.9	25.11	23.3	0.03	<1	1.0	13.6	<10	<2
89757	Soil	1.01	2.7	0.5	<0.05	1.5	21.86	28.3	0.02	<1	0.9	8.7	<10	<2
89758	Soil	1.14	2.8	0.6	<0.05	2.7	6.51	11.3	0.03	<1	0.4	8.0	<10	<2
89759	Soil	1.02	6.1	0.5	<0.05	2.5	1.74	6.5	0.02	<1	0.2	5.1	<10	<2
89760	Soil	0.53	2.8	0.4	<0.05	1.0	1.18	4.3	<0.02	<1	0.1	1.7	<10	<2
89761	Soil	0.47	7.3	0.8	<0.05	0.9	2.14	7.5	0.03	<1	0.1	3.0	<10	<2
89762	Soil	1.27	7.9	0.4	<0.05	2.5	2.17	9.5	<0.02	<1	0.3	6.9	<10	<2
89763	Soil	0.85	10.0	0.6	<0.05	1.3	2.33	8.9	<0.02	<1	0.3	5.4	<10	5
89764	Soil	0.67	6.5	0.5	<0.05	1.4	1.03	4.0	<0.02	<1	0.1	2.9	<10	<2
89765	Soil	0.72	5.6	0.3	<0.05	1.8	1.38	4.7	0.02	<1	0.1	6.3	<10	<2
89766	Soil	0.26	2.8	0.4	<0.05	0.7	0.67	2.3	<0.02	<1	<0.1	0.9	<10	<2
89767	Soil	0.99	4.8	0.6	<0.05	1.8	1.49	6.3	<0.02	<1	0.1	3.6	<10	<2
89768	Soil	0.92	5.5	0.6	<0.05	1.7	1.75	6.2	0.02	<1	0.1	3.4	<10	<2
89769	Soil	0.83	5.1	0.5	<0.05	2.9	2.24	6.7	<0.02	<1	<0.1	2.7	<10	<2
89770	Soil	1.70	9.5	0.7	<0.05	4.9	1.69	6.9	0.03	<1	0.4	7.2	<10	<2



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Project: None Given

Report Date: October 30, 2013

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# CERTIFICATE OF ANALYSIS

VAN13004204.1

Method	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15
Analyte	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	
Unit	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	
MDL	0.01	0.01	0.01	0.1	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	0.001	
89771	Soil	0.93	15.46	29.74	42.8	25	24.0	7.8	377	1.61	2.3	0.2	0.8	0.4	148.4	0.12	0.35	0.13	35	0.68	0.097
89772	Soil	0.85	16.29	18.06	61.2	34	33.3	12.9	1702	2.11	2.8	0.3	1.0	0.5	241.5	0.23	0.18	0.12	43	0.90	0.085
89773	Soil	1.02	15.40	16.41	62.6	133	18.2	6.4	1335	1.57	2.6	0.2	1.6	0.3	64.2	0.27	0.23	0.12	35	0.71	0.098
89774	Soil	0.69	19.89	27.23	71.8	56	27.6	8.9	1569	1.86	2.9	0.2	0.8	0.5	114.9	0.14	0.26	0.13	41	0.81	0.131



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# CERTIFICATE OF ANALYSIS

VAN13004204.1

Method	Analyte	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
		La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga	Cs	Ge	Hf
Unit		ppm	ppm	%	ppm	%	ppm	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm	ppm	
MDL		0.5	0.5	0.01	0.5	0.001	1	0.01	0.001	0.01	0.1	0.1	0.02	5	0.1	0.02	0.1	0.02	0.1	0.02	
89771	Soil	3.6	14.9	0.56	102.1	0.137	2	1.80	0.015	0.14	0.1	2.9	0.03	0.07	146	0.3	0.02	5.3	0.68	<0.1	0.23
89772	Soil	4.2	21.3	0.76	162.5	0.171	<1	2.53	0.013	0.19	<0.1	3.5	0.05	0.03	54	<0.1	0.04	7.5	1.02	<0.1	0.18
89773	Soil	3.0	16.5	0.38	117.6	0.077	<1	1.46	0.009	0.12	<0.1	2.0	0.05	0.06	107	0.2	<0.02	5.2	1.23	<0.1	0.04
89774	Soil	3.6	18.0	0.62	90.9	0.112	<1	2.05	0.013	0.13	<0.1	2.9	0.04	0.06	167	0.4	<0.02	6.5	2.54	<0.1	0.07



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# CERTIFICATE OF ANALYSIS

VAN13004204.1

	Method	1F15												
		Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pd	Pt
Analyte	Unit	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppb	ppb
	MDL	0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	2
89771	Soil	1.98	8.5	0.7	<0.05	12.6	2.02	7.2	<0.02	<1	<0.1	5.7	11	<2
89772	Soil	1.97	13.6	0.6	<0.05	7.9	1.92	8.4	0.02	<1	0.5	8.8	<10	<2
89773	Soil	1.17	10.5	0.4	<0.05	2.1	1.65	7.3	<0.02	<1	0.2	5.9	<10	<2
89774	Soil	1.36	8.3	0.7	<0.05	4.0	2.38	8.1	0.02	<1	0.3	6.4	<10	<2





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# QUALITY CONTROL REPORT

VAN13004204.1

Method	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
Analyte	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	
Unit	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	
MDL	0.01	0.01	0.01	0.1	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	0.001	
Pulp Duplicates																					
89613	Soil	1.95	11.88	5.85	36.8	59	3.7	1.3	460	0.22	0.8	<0.1	0.3	<0.1	130.4	0.26	0.09	0.04	5	2.12	0.130
REP 89613	QC	2.07	11.48	6.24	38.1	57	3.8	1.2	460	0.22	0.8	<0.1	<0.2	<0.1	131.5	0.23	0.10	0.03	5	2.13	0.136
89760	Soil	1.20	11.56	20.20	32.3	95	9.7	2.9	165	0.80	1.8	0.1	0.4	<0.1	48.3	0.13	0.30	0.13	18	0.68	0.083
REP 89760	QC	1.26	11.61	20.25	32.6	90	9.9	3.3	166	0.80	1.9	0.1	0.5	<0.1	49.3	0.13	0.26	0.13	18	0.69	0.081
Reference Materials																					
STD DS10	Standard	14.34	149.57	151.69	339.2	1882	70.8	12.7	864	2.70	45.1	2.7	105.6	7.7	67.4	2.52	9.47	12.15	42	1.05	0.075
STD DS10	Standard	15.59	150.11	152.69	345.8	1912	75.3	13.1	886	2.76	44.8	2.7	89.0	7.9	72.5	2.44	8.89	11.89	42	1.09	0.073
STD OXC109	Standard	1.58	34.57	10.98	38.1	13	72.5	20.2	404	2.81	0.5	0.6	213.6	1.5	149.4	0.03	0.06	<0.02	45	0.69	0.105
STD OXC109	Standard	1.50	34.10	10.70	37.0	19	73.3	19.0	408	2.80	0.7	0.6	197.9	1.4	150.7	0.06	0.08	0.03	46	0.72	0.102
STD DS10 Expected		14.69	154.61	150.55	352.9	1960	74.6	12.9	861	2.7188	43.7	2.59	91.9	7.5	67.1	2.48	9.51	11.65	43	1.0355	0.073
STD OXC109 Expected		201																			
BLK	Blank	<0.01	<0.01	<0.01	<0.1	4	<0.1	<0.1	<1	<0.01	0.3	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	<0.02	<2	<0.01	<0.001
BLK	Blank	<0.01	<0.01	<0.01	<0.1	6	<0.1	<0.1	2	<0.01	<0.1	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	<0.02	<2	<0.01	<0.001



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# QUALITY CONTROL REPORT

VAN13004204.1

Method	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
Analyte	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga	Cs	Ge	Hf	
Unit	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	ppm	ppm	ppm	
MDL	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	0.02	
Pulp Duplicates																					
89613	Soil	0.7	4.2	0.15	74.1	0.011	16	0.21	0.005	0.09	<0.1	0.6	0.02	0.18	223	0.4	<0.02	0.6	0.39	<0.1	0.04
REP 89613	QC	0.8	3.8	0.16	77.0	0.012	15	0.21	0.005	0.09	<0.1	0.6	0.02	0.18	221	0.5	<0.02	0.8	0.41	<0.1	0.03
89760	Soil	2.3	10.6	0.17	99.0	0.032	2	0.62	0.011	0.08	<0.1	1.0	<0.02	0.08	151	<0.1	0.05	2.5	0.55	<0.1	0.03
REP 89760	QC	2.1	10.4	0.16	98.0	0.031	<1	0.63	0.010	0.08	<0.1	0.9	<0.02	0.08	144	0.2	<0.02	2.6	0.52	<0.1	0.03
Reference Materials																					
STD DS10	Standard	17.1	49.8	0.77	320.2	0.077	6	1.06	0.067	0.33	3.4	2.9	4.78	0.28	251	2.3	4.81	4.0	2.56	<0.1	0.07
STD DS10	Standard	19.4	52.7	0.79	368.1	0.086	8	1.12	0.070	0.35	3.0	3.0	4.72	0.27	270	2.0	4.71	4.5	2.70	0.1	0.05
STD OXC109	Standard	12.0	55.3	1.45	54.5	0.358	<1	1.50	0.693	0.40	0.2	0.8	0.03	<0.02	<5	<0.1	0.05	5.5	0.16	<0.1	0.32
STD OXC109	Standard	12.1	55.8	1.45	55.7	0.363	3	1.56	0.682	0.41	0.2	0.9	0.02	<0.02	<5	<0.1	<0.02	5.4	0.16	<0.1	0.30
STD DS10 Expected		17.5	54.6	0.7651	349	0.0817		1.0259	0.0638	0.3245	3.34	2.8	4.79	0.2743	289	2.3	4.89	4.3	2.63	0.08	0.05
STD OXC109 Expected																					
BLK	Blank	<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	<0.02
BLK	Blank	<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	<0.02

## QUALITY CONTROL REPORT

VAN13004204.1

Method		1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
Analyte		Nb	Rb	Sn	Ta	Zr	Y	Ce	In	Re	Be	Li	Pd	
Unit		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppb	
MDL		0.02	0.1	0.1	0.05	0.1	0.01	0.1	0.02	1	0.1	0.1	10	
Pulp Duplicates														
89613	Soil	0.15	3.5	0.2	<0.05	0.9	0.57	1.5	<0.02	<1	<0.1	1.0	<10	<2
REP 89613	QC	0.19	3.5	0.2	<0.05	1.0	0.58	1.5	<0.02	<1	0.1	0.7	<10	<2
89760	Soil	0.53	2.8	0.4	<0.05	1.0	1.18	4.3	<0.02	<1	0.1	1.7	<10	<2
REP 89760	QC	0.54	2.6	0.4	<0.05	1.0	1.13	4.1	<0.02	<1	<0.1	2.1	<10	<2
Reference Materials														
STD DS10	Standard	1.62	27.8	1.5	<0.05	2.5	7.56	35.1	0.23	39	0.6	19.6	101	169
STD DS10	Standard	1.69	27.7	1.7	<0.05	3.0	8.42	39.9	0.27	47	0.8	19.4	106	191
STD OXC109	Standard	1.47	12.7	1.2	<0.05	21.5	4.12	24.0	<0.02	<1	0.8	2.3	12	<2
STD OXC109	Standard	1.03	12.9	1.2	<0.05	23.2	3.90	23.3	0.02	<1	0.6	2.3	20	<2
STD DS10 Expected		1.33	27.7	1.6		2.3	7.77	36	0.22	50	0.6	19.1	110	188
STD OXC109 Expected														
BLK	Blank	<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	<0.1	<0.1	<0.05	<0.1	<0.01	<0.1	<0.02	<1	<0.1	<0.1	<10	<2

**APPENDIX III**

**Skoonka Creek Property**

**Soil Ah Sample Metadata (Locations and Descriptions)**

SKOONKA CREEK PROJECT - OCTOBER 2013														
APPENDIX II														
SOIL Ah SAMPLE METADATA														
NAD83, Z10N														
Target_Area	SampleID	Sample_Type_Comment	Sampled_By	Date_Sampled	NAT_East	NAT_North	Elevation_m_asl	Survey_Method	Accuracy_East_North_m	Colour	Depth_cm	Slope_Dip	Slope_Direction	Comments
JJ_West	89600	Composite-3 spots	R. Campbell	9-Oct-13	605509	5577685		Garmin GPSmap 60Cx	5	Black	2	Moderate	North	Old clear-cut. Grove of 15ft pines. Good organic layer ~1 cm thick below moss & forest litter of minor twigs, decomposed wood chips & pine needles. Light brown till below Ah. Moderate slope to N. Pink flags mark all Ah samples unless otherwise indicated
JJ_West	89601	Composite-3 spots	R. Campbell	9-Oct-13	605489	5577733		Garmin GPSmap 60Cx	3.1	Black	2 to 3	Low	South	Good black Ah 1-3 cm deep below grass, moss & pine needles & twigs. Old clear-cut; 15ft second growth pine. Valley about 3 m to NW of running stream about 0.5 m wide. Low south slope.
JJ_West	89602	Composite-3 spots	R. Campbell	9-Oct-13	605467	5577770	1462	Garmin GPSmap 60Cx	3.7	Black	2 to 3	Low	South	Clear cut valley. Sparse pines, generally ~10ft tall but this sample under grove of 30ft pines. Surface litter of pine needles, twigs, some grass. Low slope to N.
JJ_West	89603	Composite-3 spots	R. Campbell	9-Oct-13	605442	5577809	1461	Garmin GPSmap 60Cx	3.0	Black	3 to 5	Low	South	Old clear-cut. Sparse 10 to 15ft pines. This sample under/around older pine groves of trees 50ft high. Grass, moss, small plants & pine needles and twigs at surface. Thick Ah layer 2 to 6 cm. Low slope to SW.
JJ_West	89604	Composite-3 spots	R. Campbell	9-Oct-13	605415	5577861	1475	Garmin GPSmap 60Cx	2.0	Black	2 to 3	Steep	South	Up to NW edge of stream valley. Base of steep alpine, sparse treed slope. Sampled edge of alder grove. We snow covered peaty organic layer with moss, grass and green leaf litter.
JJ_West	89605	Composite-4 spots	R. Campbell	9-Oct-13	605389	5577897	1497	Garmin GPSmap 60Cx	2.9	Brown	2 to 3	Steep	Southwest	Steep alpine slope-SW facing. Mainly grassy meadow. Groves of moderate large pine, 30 to 40ft high. Ok to poor humus/Ah layer. Silty brown material immediately below thick grass cover.
JJ_West	89606	Composite-3 spots	R. Campbell	9-Oct-13	605362	5577949	1512	Garmin GPSmap 60Cx	3.6	Brown	2	Steep	Southwest	Steep SW facing slope. Mostly grassy meadow with pockets of pine/spruce up to 30 to 50 ft. tall. Thin humous silty layer. Lots of pine/spruce needles mixed with grass surface litter. Some low 'juniper' type bushes around trees.
JJ_West	89607	Composite	R. Campbell	9-Oct-13	605329	5578003	1528	Garmin GPSmap 60Cx	3.3	Dark brown to black	2	Steep	Southwest	Steep SW slope. Mix of grassy meadow and groves of spruce up to 60ft tall. Sample taken below/around 30ft spruce. Grassy cover with small bushes & spruce needle litter. Thin organic layer with lots of twigs and needles.
JJ_West	89608	Composite-3 spots	R. Campbell	9-Oct-13	605311	5578040	1558	Garmin GPSmap 60Cx	3.3	Brown	3	Steep	West	Steep west facing slope. Thick grassy meadow with groves of large spruce +/- pine. Sampled under +60ft spruce. Thick grass cover. Peaty brown humus below grass, 2 to 5 cm thick.

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JJ_West	89609	Composite-4 spots	R. Campbell	9-Oct-13	605291	5578091	1562	Garmin GPSmap 60Cx	3.8	Dark brown to black	2	Steep	West	Steep west facing slope. Local outcrop of volcanics (flows? fine grain). Sparse spruce forest, mature. Juniper bushes & other low bushes. Local exposed soil due to erosion. Thin sporadic or local Ah humus layer, not well developed or eroded.
JJ_West	89610	Composite-4 spots	R. Campbell	9-Oct-13	605266	5578121	1540	Garmin GPSmap 60Cx	4.3	Black	2	Steep	North	Steep north facing slope. Spruce forest and deadfall. Low, sparse bush cover & spruce needle litter. Thin weakly developed humus layer. Lots of twigs & needles. Local white to light grey leached horizons below or within Ah organic humus layer.
JJ_West	89611	Composite-3 spots	R. Campbell	9-Oct-13	605247	5578162	1524	Garmin GPSmap 60Cx	3.2	Black	3	Steep-moderate	North	Old clear cut. Scattered planted pines 5 to 10 ft tall. Thick grass & low bush cover. Steep to moderate north slope, near bottom with gully ~5 m below. Peaty organic layer ~5 cm thick below grass and minor pine needle litter.
JJ_West	89612	Composite-4 spots	R. Campbell	9-Oct-13	605220	5578215	1525	Garmin GPSmap 60Cx	2.7	Brown	2 to 3	Low	West	Old clear-cut-like sample 89611. Sparse spruce trees, 5-10ft tall, thick grassy meadow. Low west slope down the creek valley trend. humus brown silty soil. Sample mostly under small spruce for better organic material-ok but not great. Very thick grass roots.
JJ_West	89613	Composite-3 spots	R. Campbell	9-Oct-13	605202	5578228	1524	Garmin GPSmap 60Cx	3.1	Dark brown	2 to 3	Low		Old soil sample with As anomy (48ppm). Found flag but soil hole not evident. Grove of large spruce trees-north side of clear-cut meadow & creek drainage. No plant cover. Thick surface litter of twigs & spruce needles. Local bleached/leached light gray/white patches below humus layer.
JJ_West	89614	Composite-3 spots	R. Campbell	9-Oct-13	605193	5578249	1524	Garmin GPSmap 60Cx	4.8	Dark brown	2 to 3	Moderate	West	Old Strongbow soil site-flagged but hole not evident. Under spruce forest canopy-no plant growth. Spruce needle & twig cover. Moderate west slope. humus layer fairly thick, ~5 cm.
JJ_West	89615	Composite-3 spots	R. Campbell	9-Oct-13	605170	5578297	1560	Garmin GPSmap 60Cx	4.6	Dark brown	2 to 3	Steep	Southwest	Steep southwest facing slope. Mature but somewhat sparse pine/spruce growth. Good humus layer below, ~5 cm thick.
JJ_BL2000N	89616	Composite-3 spots	R. Campbell	10-Oct-13	606031	5578705	1575	Garmin GPSmap 60Cx	3.2	Dark brown	2	Low	North	Old clear-cut. Beside Strongbow soil sample (flag) under small grove of 10-12 ft spruce within alder patch (JJ area). About 15 ft east of old drill site access road. Moss ground cover, minor alder leaf litter and grass cover. Good humus layer, ~2-4 cm thick.

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JJ_BL2000N	89617	Composite-5 spots	R. Campbell	10-Oct-13	606040	5578706	1574	Garmin GPSmap 60Cx	2.5	Dark brown and black	1	Low	North	Old clear-cut. ~3m east of main JJ qtz vein showing & hand dug trench. Thick alder grove. Low north slope. Very thin organic layer. Mostly alder leaf litter, partially decomposed. Difficult to get good sample-possibly due to hand trench disturbance? Lots of angular rock pebbles to cobbles in soil.
JJ_BL2000N	89618	Composite-3 spots	R. Campbell	10-Oct-13	606111	5578726	1571	Garmin GPSmap 60Cx	2.2	Black	3	Low	North	Old clear-cut. Mix of spruce, up to 20ft tall and alder grove/thicket of bushes. Strongbow grid base line with flag marked "BL2000/5475E 06 SL #44625 IL/B?". Strong leaf litter of alders + minor spruce needles. Lots of punky wood in thick humus layer. Fairly good Ah soil.
JJ_BL2000N	89619	Composite-3 spots	R. Campbell	10-Oct-13	606144	5578733	1567	Garmin GPSmap 60Cx	2.1	Dark brown to black	2	Moderate	North	Old clear-cut with replanted spruce ~10 to 15ft tall & low alder bushes. Lots of old punky wood at/in surface layer. Moss cover with fairly good peaty layer below but patch and thin. Moderate north slope.
JJ_L5500E	89620	Composite-3 spots	R. Campbell	10-Oct-13	606181	5578755	1565	Garmin GPSmap 60Cx	2.3	Dark brown to black	2 to 3	Moderate	North	Old clear-cut. Dense mixed alder bush & spruce ~10 to 20ft tall. Thick alder leaf litter with some spruce needles and grass. Patchy thin humus layer (Ah). Lots of punky wood in soil.
JJ_L5500E	89621	Composite-3 spots	R. Campbell	10-Oct-13	606170	5578804	1548	Garmin GPSmap 60Cx	3.6	Dark brown	3 to 4	Moderate	North	Old clear-cut with replanted spruce ~15 to 20ft tall. Minor alders. Moderate north slope. Mossy cover, minor leaf (alder) litter & grass + some spruce needles. Local punky wood horizons at/in surface.
JJ_L5500E	89622	Composite-3 spots	R. Campbell	10-Oct-13	606148	5578847	1539	Garmin GPSmap 60Cx	3.8	Dark brown	2 to 3	Moderate to low	North	Old clear-cut with replanted spruce +/- pin, 10 to 20ft high. Mossy ground cover, some bushes & leaf cover +/- spruce needles. North moderate to low slope. Mostly peaty organic layer, 3 to 4 cm thick.
JJ_L5500E	89623	Composite	R. Campbell	10-Oct-13	606130	5578898	1527	Garmin GPSmap 60Cx	2.7	Dark brown to black	1 to 2	Low	North	Old clear-cut. Sparse spruce trees, 10 to 20 ft. Grassy to mossy cover & bushes. This sample collected under/around spruce canopy. Thin organic Ah soil. Several volcanic rocks in soil. Low north slope above edge of steep north slope into gully below.
JJ_L5500E	89624	Composite-4 spots	R. Campbell	10-Oct-13	606117	5578953	1531	Garmin GPSmap 60Cx	2.8	Brown	3 to 5	Low	North	Edge of mature spruce forest, about 3 m north of old clear cut. Thick spruce needle litter, ~3cm. Silty humus layer, lots of dead punky wood horizons & local white leached humus layers (not sampled).
JJ_L5500E	89625	Composite-3 spots	R. Campbell	10-Oct-13	606086	5578993	1528	Garmin GPSmap 60Cx	3.6	Brown to dark brown	3 to 4			Mature forest lots of dead fall. Mossy with spruce needle forest litter. Low bushes. Moss ~2-3cm thick. Somewhat silty organic layer.

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JJ_L5500E	89626	Composite-2 spots	R. Campbell	10-Oct-13	606077	5579038	1535	Garmin GPSmap 60Cx	3.5	Dark brown to black	2 to 3	Moderate	West	Mature spruce forest. Lots of dead fall. Moderate west slope. Sporadic moss cover & spruce needles, ~1 to 2 cm thick litter layer. Good humous Ah Layer, 1 to 2 cm thick.
JJ_L5500E	89627	Composite-3 spots	R. Campbell	10-Oct-13	606050	5579088	1540	Garmin GPSmap 60Cx	2.6	Dark brown	2 to 4	Moderate	West	Mature spruce forest. Lots of dead fall. Twigs & branches & spruce needle surface litter + some deciduous tree leaf litter. Moderate west slope.
JJ_L5225E	89628	Composite-3 spots	R. Campbell	11-Oct-13	605862	5578667	1596	Garmin GPSmap 60Cx	2.8	Black	2 to 3	Low	North	Old clear cut, replanted spruce 10 to 15ft tall, sparse. Local alder grove nearby. Leaf litter & some spruce needles. Good organic soil layer, ~2 to 5 cm thick. Sample under canopy of 3 spruce. Low north slope. ~ 22 m from logging road.
JJ_L5225E	89629	Composite-3 spots	R. Campbell	11-Oct-13	605855	5578691	1589	Garmin GPSmap 60Cx	2.3	Black	2 to 3	Low	North-northeast	Old clear cut, replanted sparse spruce, ~10ft tall/4" diameter. Light low ground bush cover. Sampled under spruce canopy. Minor spruce needles, plant litter and minor moss. Low slope to north-northeast.
JJ_L5225E	89630	Composite-4 spots	R. Campbell	11-Oct-13	605836	5578738	1576	Garmin GPSmap 60Cx	2.0	Dark brown	2 to 4			Old clear cut, sparse replanted spruce & alder bushes. Spruce 5 to 15ft tall, 5 to 12cm diameter. Lots of leaf litter. 3 of 4 spots sampled under spruce canopy + 1 of 4 under leaf litter. Light bush cover. Moss common. Peaty soil with local decomposing logs.
JJ_L5225E	89631	Composite-3 spots	R. Campbell	11-Oct-13	605818	5578783	1579	Garmin GPSmap 60Cx	2.3	Dark brown & black	2 to 3	Moderate	Northeast	Old clear cut, near edge. Spruce 5 to 20ft tall. Sample under spruce canopy. Light low ground bush cover. Spruce needle litter and local moss. Moderate northeast slope.
JJ_L5225E	89632	Composite-2 spots	R. Campbell	11-Oct-13	605802	5578829	1595	Garmin GPSmap 60Cx	2.3	Dark brown	1	Steep	East-northeast	Difficult to sample-not much Ah due to steep terrain & erosion. Upper part of clear cut, steep ENE slope. Spruce 10 to 20ft tall, 6 to 16 cm diameter. Very thin rare Ah. Light low bush cover and alder groves. Most of sample collected about 10 to NW of UTM location.
JJ_L5225E	89633	Composite-several	R. Campbell	11-Oct-13	605787	5578874	1610	Garmin GPSmap 60Cx	2.9	Brown to dark brown	1 to 2	Steep	East to east-southeast	Mature spruce forest, up to 75ft tall-30cm diameter. Steep E to E-SE slope. Sparse cover, rare alders. Lots of thick spruce needle cover and twigs. Patchy thin Ah horizon but discontinuous.
JJ_L5225E	89634	Composite-3 spots	R. Campbell	11-Oct-13	605774	5578921	1620	Garmin GPSmap 60Cx	2.7	Brown to dark brown	2 to 4	Low	East-southeast	East of mountain top clearing-sand-gravel covered (natural or man made?). Mature spruce, up to 50ft tall, 25cm diameter- <b>most are dead</b> in immediate area. Adjusted sample location away from clearing. Variable usually poor Ah. Heavy low bush & grass cover. Low east-southeast slope above steep east slope.



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JJ_L5225E	89635	Composite-3 spots	R. Campbell	11-Oct-13	605740	5578970	1608	Garmin GPSmap 60Cx	3.5	Dark brown to black	2 to 3	Moderate	North-northwest	Mature spruce forest. Moderate low bush cover. Thick (2dm) spruce needle litter. Locally mossy cover. Some deadfall. Moderate north-northwest slope.
JJ_L5225E	89636	Composite-3 spots	R. Campbell	11-Oct-13	605728	5579017	1599	Garmin GPSmap 60Cx	4.4	Dark brown	2 to 4	Low	North-northwest	Mature spruce forest. Moderate cover of alder & low bush. Base or bench below steep north-northwest slope. Low north-northwest slope here. Thick spruce needle litter, local moss and leaf litter.
JJ_L5225E	89637	Composite-3 spots	R. Campbell	11-Oct-13	605710	5579066	1586	Garmin GPSmap 60Cx	3.6	Dark brown	2 to 4	Steep	North-northwest	Mature dense spruce forest. Trees 30 to 70ft-8 to 30cm diameter. Lots of dead fall. Steep north-northwest slope. Sparse cover. Thick spruce needle cover. Thick spruce needle litter, local moss cover.
JJ_L5225E	89638	Composite-3 spots	R. Campbell	11-Oct-13	605706	5579101	1562	Garmin GPSmap 60Cx	3.1	Dark brown and black	2 to 4	Steep	North-northwest	Sparse small spruce-5 to 12ft tall, 2 to 6 cm diameter. Just above stream gully (~5m below). Just past edge of mature forest (~7m above). Moderate bush cover. Mossy ground cover with pine needles +/- alder leaf litter. Peaty below moss locally. Steep north-northwest slope,
JJ_L5500E	89750		L. Leatherman	10-Oct-13	606406	5578159		Trimble Juno SB		dk brown	3-4			forest 8 -18 in trees, mod underbrush, mod ne slope
JJ_L5500E	89751		L. Leatherman	10-Oct-13	606389	5578207		Trimble Juno SB		dark brown	3-5			forest, 6-18 in trees, mod n slope
JJ_L5500E	89752		L. Leatherman	10-Oct-13	606371	5578254		Trimble Juno SB		brown	2-4			forest 8-18 in trees, mod n slope, heavy underbrush
JJ_L5500E	89753		L. Leatherman	10-Oct-13	606356	5578304		Trimble Juno SB		dark brown	2-3			forest, predom 6-10 in trees, mod n slope, thick underbrush
JJ_L5500E	89754		L. Leatherman	10-Oct-13	606345	5578352		Trimble Juno SB		brown to dark brown	3			forest, 4-12 in tress, gentle n slope , abundant dead fall, mod underbrush
JJ_L5500E	89755		L. Leatherman	10-Oct-13	606327	5578400		Trimble Juno SB		v dark brown	2-4			edge of small opening in forest, 12-24 in trees , v gentle slope minor underbrush
JJ_L5500E	89756		L. Leatherman	10-Oct-13	606307	5578447		Trimble Juno SB		dark brown	2-4			forest, 6-24 in trees , gentle n slope
JJ_L5500E	89757		L. Leatherman	10-Oct-13	606295	5578501		Trimble Juno SB		dark brown	4-5			forest sample taken under 24 in tree, mod n slope ,minor underbrush
JJ_L5500E	89758		L. Leatherman	10-Oct-13	606280	5578547		Trimble Juno SB		dark brown	2-5			forest, 6-18 in trees, mod n slope, minor underbrush

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JJ_L5500E	89759		L. Leatherman	10-Oct-13	606241	5578595		Trimble Juno SB		brown to black	1-3			forest ,predom 8-12 in trees, poss old burn, v difficult to find material., gentle n slope
JJ_L5500E	89760		L. Leatherman	10-Oct-13	606230	5578637		Trimble Juno SB		brown	2-5			edge of forest before cut block, 10-24 in trees , mod to heavy underbrush , mod n slope
JJ_L5500E	89761		L. Leatherman	10-Oct-13	606212	5578684		Trimble Juno SB		brown to black	2			in cut block, 4-8 in, mod n slope, mod underbrush
JJ_L5500E	89762		L. Leatherman	10-Oct-13	606203	5578703		Trimble Juno SB		brown	2			v thin Ah, taken on edge of cut block , 4-6 in trees, mod underbrush , gentle slope
JJ_L5500E	89763		L. Leatherman	10-Oct-13	606197	5578733		Trimble Juno SB		dark brown	2-3			edge of cut block, 6-8 in trees, abundant alder, gentle n slope
JJ_L5225E	89764		L. Leatherman	11-Oct-13	605876	5578624		Trimble Juno SB		dark brown	1-2			2-8in trees, thin ah, gentle slope , mod underbrush
JJ_L5225E	89765		L. Leatherman	11-Oct-13	605880	5578598		Trimble Juno SB		dark brown	2-4			patchy ah loc thick, cut block , 2-6in trees approx2-3 m apart, gentle slope , mod underbrush
JJ_L5225E	89766		L. Leatherman	11-Oct-13	605900	5578556		Trimble Juno SB		dark brown loc reddish	2-4			cut block, 3-8in trees 1-3 m apart, v gentle slope ,mod underbrush
JJ_L5225E	89767		L. Leatherman	11-Oct-13	605921	5578512		Trimble Juno SB		brown to dark brown	2-3			thin ah, forest, 4-24in trees, mod n slope, mod underbrush
JJ_L5225E	89768		L. Leatherman	11-Oct-13	605946	5578473		Trimble Juno SB		brwn	2-3			forest, 12-24in trees, mod n slope mod underbrush
JJ_L5225E	89769		L. Leatherman	11-Oct-13	605949	5578421		Trimble Juno SB		brown	2-4			v thin ah, forest 12-24in trees, mod w slope , minor underbrush
JJ_L5225E	89770		L. Leatherman	11-Oct-13	605972	5578377		Trimble Juno SB		brown	2-3			v thin ah, forest 8-18 in trees , gentle west slope , 10-15 n of old drill road
JJ_L5225E	89771		L. Leatherman	11-Oct-13	605990	5578334		Trimble Juno SB		brown to dark brown	3-5			thin ah, edge of opening in forest, 8-24in trees, mod underbrush , mod w slope
JJ_L5225E	89772		L. Leatherman	11-Oct-13	606004	5578291		Trimble Juno SB		brown	2-3			patchy ah, saplings to 12in trees , gentle w slope , mod to heavy underbrush

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JJ_L52 25E	89773		L. Leatherman	11-Oct-13	606027	5578234		Trimble Juno SB		brown	1			v little material, poor sample, cut block , saplings to 8in trees 1-3 m apart, gentle west slope , abundant angular to rounded block
JJ_L52 25E	89774		L. Leatherman	11-Oct-13	606055	5578173		Trimble Juno SB		dark brown	1			v thin ah, cut block 4-6in trees at 1-3 m spacing, minor underbrush , gentle slope