

**BC Geological Survey  
Assessment Report  
37404**



**ASSESSMENT REPORT TITLE PAGE AND SUMMARY**

**TITLE OF REPORT: Assessment Report on Geological and Geochemical work conducted during August 2017 on the Andalusite Peak Mineral Tenure**

**TOTAL COST: \$17,793.21**

AUTHOR(S): Luke Bickerton, Tony Barresi, Graeme Hopkins

SIGNATURE(S): 

NOTICE OF WORK PERMIT NUMBER(S)/DATE(S):  
STATEMENT OF WORK EVENT NUMBER(S)/DATE(S) : 5681229/January 12, 2018

YEAR OF WORK: 2017

PROPERTY NAME: Andalusite Peak

CLAIM NAME(S) (on which work was done): Andalusite Peak

COMMODITIES SOUGHT: Cu, Mo, Au, Ag

MINERAL INVENTORY MINFILE NUMBER(S), IF KNOWN:

MINING DIVISION: Liard Mining Division  
NTS / BCGS: NTS 104I  
LATITUDE: 58° 16' 33"  
LONGITUDE: 129° 28' 40" (at centre of work)  
UTM Zone: 9N                      EASTING: 471895                      NORTHING: 6459520

OWNER(S):

Tony Barresi  
MAILING ADDRESS:  
62 East Side Rd. Ketch Harbour NS, B3V 1K5

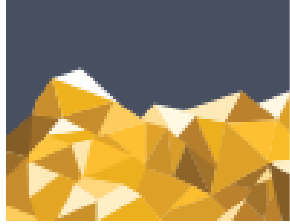
OPERATOR(S) [who paid for the work]:

Triumph Gold Corp  
MAILING ADDRESS:  
1111 Melville St., Suite 1100  
Vancouver, BC, Canada, V6E 3V6

REPORT KEYWORDS (lithology, age, stratigraphy, structure, alteration, mineralization, size and attitude. **Do not use abbreviations or codes**)  
Horn Mountain Formation; Hazelton Group; Porphyry; Lithocap

REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS:  
Barresi, T., 2009. Rock and Stream Sediment Geochemistry on the JD Mineral Claims (JD 1-4, 6-9, 13-14, & 19-27 Mineral Claims). BC Geological Survey Assessment Report 30590.

TYPE OF WORK IN THIS REPORT	EXTENT OF WORK (in metric units)	ON WHICH CLAIMS	PROJECT COSTS APPORTIONED (incl. support)
GEOLOGICAL (scale, area)			
Ground, mapping			
Photo interpretation			
GEOPHYSICAL (line-kilometres)			
Ground			
Magnetic			
Electromagnetic			
Induced Polarization			
Radiometric			
Seismic			
Other			
Airborne			
GEOCHEMICAL (24)			
Soil			
Silt			
Rock	5 km2	Andalusite Peak	\$6,000.00
Other			
DRILLING (total metres, number of holes, size, storage location)			
Core			
Non-core			
RELATED TECHNICAL			
Sampling / Assaying			
Petrographic			
Mineralographic	5 Km2	Andalusite Peak	\$6793.21
Metallurgic	5 Km2	Andalusite Peak	\$5,000.00
PROSPECTING (scale/area)			
PREPATORY / PHYSICAL			
Line/grid (km)			
Topo/Photogrammetric (scale, area)			
Legal Surveys (scale, area)			
Road, local access (km)/trail			
Trench (number/metres)			
Underground development (metres)			
Other			
		<b>TOTAL COST</b>	\$17,644.57



TRIUMPH  
GOLD

Assessment Report on Geological and Geochemical work  
conducted during August 2017 on the  
**Andalusite Peak Mineral Tenure**

Liard Mining Division  
British Columbia, Canada

Latitude / Longitude: 58° 16' 33" N, 129° 28' 40" W  
UTM, NAD 83 Zone 9N: 471895mE, 6459520mN  
1:250,000 NTS Map Sheet: 104I

Work Completed on Claim:  
1049497  
Report Completed: April 20, 2018

Owner and Operator:  
Triumph Gold Corp.  
1100-1111 Melville St.  
Vancouver BC Canada  
V6E 3V6

Contributions by:  
Luke Bickerton, Tony Barresi, Graeme Hopkins

## **SUMMARY**

The Andalusite Peak mineral tenure is located on the southeastern edge of the Stikine Plateau, approximately 36 km southeast of Dease Lake, British Columbia, and 21 km east of Highway 37 (Stewart-Cassiar). The tenure is a single claim that totals an area of 629.73 ha. This assessment report summarizes the work completed during a three day, 2017, exploration program completed by Triumph Gold Corp personnel.

The area containing the mineral tenure is relatively unexplored, with the only significant mineral exploration work in the region being completed on the Tanzilla property (West Cirque/Freeport McMoRan/Kaizen Discovery), 11 km to the northwest, and more recent reconnaissance exploration on the McBride property (Teck), 12 km to the southeast.

The Andalusite Peak property is located along the northeastern margin of the Stikine terrane, a Triassic-Jurassic island arc complex that hosts several significant porphyry Cu-Au±Mo deposits (e.g., KSM, Galore Creek, Schaft Creek, Red Chris, Kemess) and many smaller, less developed occurrences. More local to the tenure, mineral occurrences are located along a trend of argillic alteration (~17 km) that extends from the Tanzilla property to the McBride property.

The 2017 exploration program consisted of prospecting, collecting samples for TerraSpec © hyperspectral analyses, and geochemical rock sampling, with a spatial distribution covering the colour anomalies found on the tenure. Samples were collected from outcrop and sub-crop to determine alteration mineral assemblages and assays were conducted on samples that contained mineralization. Assays defined two new gold-silver-copper occurrences, the Julep showing and Gentleman vein. The Julep showing graded 0.09-1.18 g/t Au, 11.2-21.1 g/t Ag, and 1.14-2.72 wt% Cu and samples from the Gentleman vein graded 0.009-1.84 g/t Au, 0.9-17.3 g/t Ag, and 0.11-2.25 wt% Cu.

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# 1. INTRODUCTION

The Andalusite Peak property is located on the Stikine Plateau, approximately 36 km southeast of Dease Lake, British Columbia (BC) and 410 km northwest of Smithers, BC (Figure 1). The property was acquired by staking in January 2017 and comprises one claim that covers a total area of 629.73 hectares (ha) (Figure 2).

This assessment report summarizes the work completed on the Andalusite Peak mineral tenure by Triumph Gold Corp. from August 11<sup>th</sup> to 13<sup>th</sup>, 2017. Assessment work totaling \$14,644.57 was applied to mineral claim 1049497, described in Table 1, under event number 5681229.

## 2. PROPERTY LOCATION AND DESCRIPTION

### 2.1 Location

The Andalusite Peak property is located approximately 36 km southeast of Dease Lake, BC, and 410 km north-northwest of Smithers, BC, within the Stikine Plateau of the Liard Mining Division (Figure 1). At a larger scale, the property specifically lies northeast of Horn Mountain, abutting Glacial Lake to the southeast, at a latitude of 58° 16' 33" N and longitude of 129° 28' 40" W (UTM NAD83, Zone 9N) and on NTS 104 I/5, 6; BCGS 104I 023.

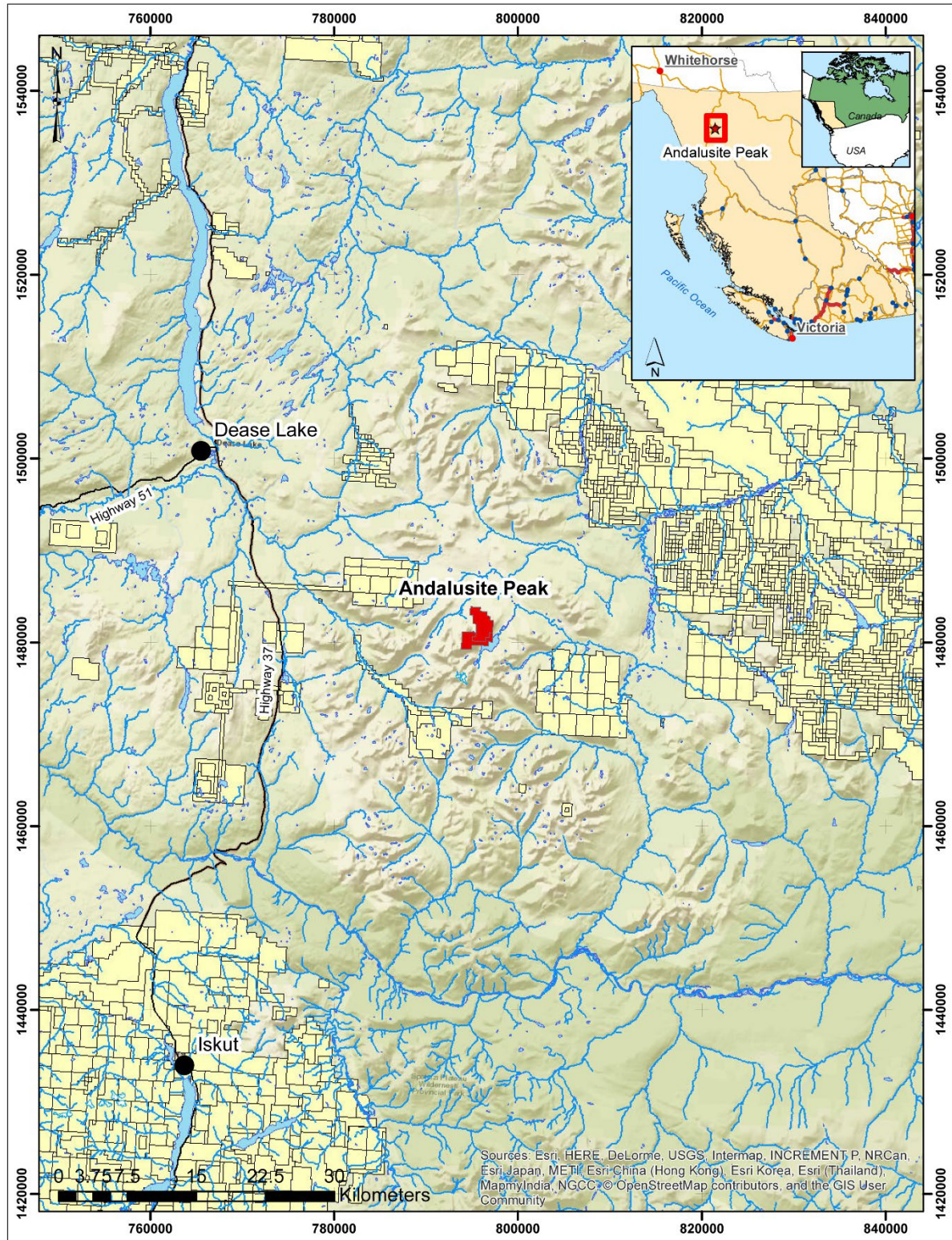
### 2.2 Description

The Andalusite Peak mineral tenure consists of a single mineral claim with a total area of 629.73 ha (Figure 2), adjacent to a second Triumph Gold Corp. property in the area, the Julep mineral tenure. The details of these tenures (tenure number, expiry date, claim size) are contained in Table 1.

**Table 1. Andalusite Peak mineral claim**

Claim	Tenure Number	Owner	Issue Date	Area (ha)	Good-To-Date
<b>ANDALUSITE PEAK</b>	1049497	Tony Barresi	2017-01-25	629.73	2019-01-25
<b>JULEP</b>	1057768	Tony Barresi	2018-01-18	357.58	2019-01-18





**Figure 1. Regional scale geography with location of Andalusite Peak mineral tenure and surrounding claim boundaries.**



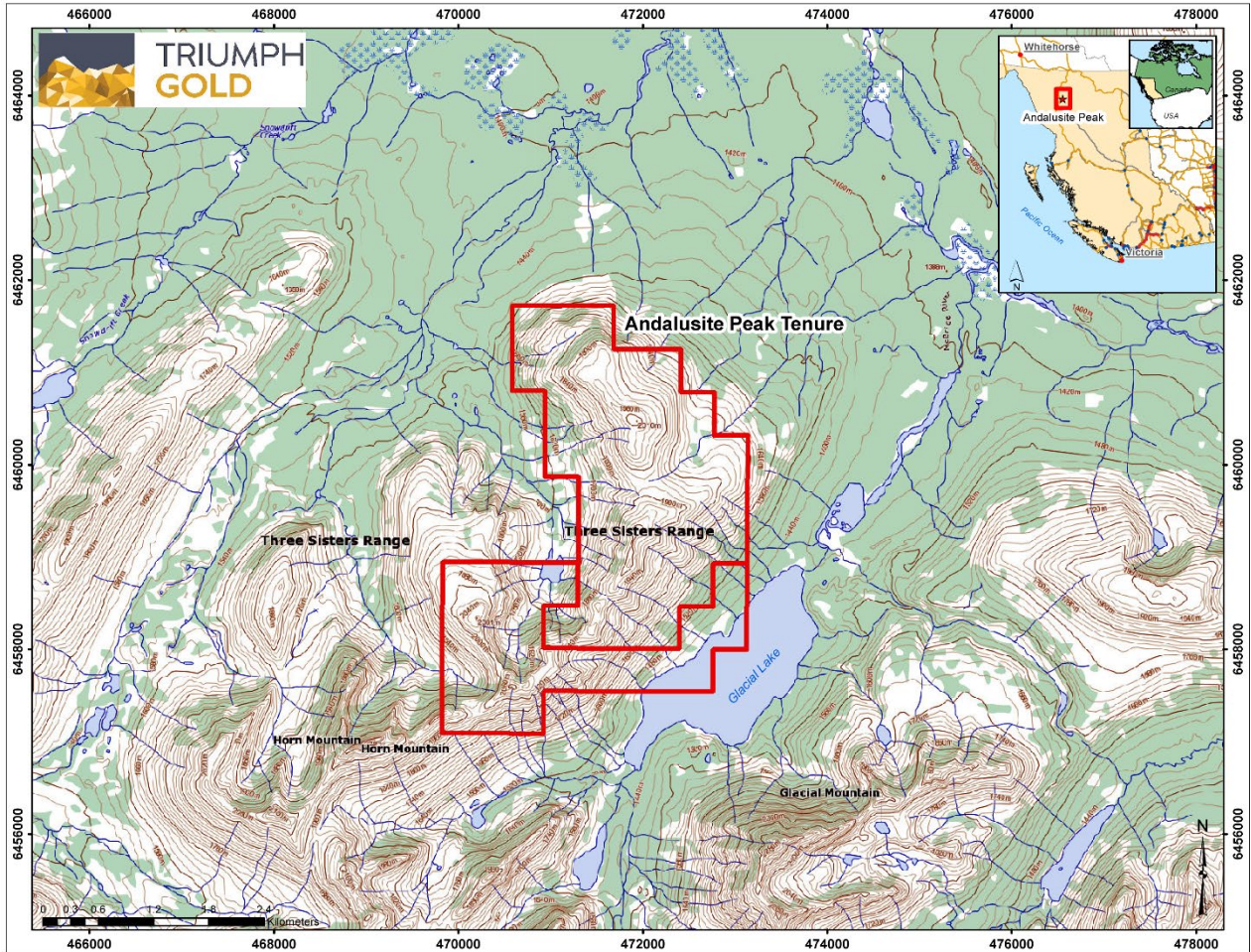


Figure 2. Property scale geography with location of Andalusite Peak mineral tenure, vegetation line, and surrounding peaks.

### 3. ACCESS, INFRASTRUCTURE and PHYSIOGRAPHY

#### 3.1 Access

The Andalusite Peak property is located approximately 36 km southeast of Dease Lake, BC, at latitude 58° 16' 33" N and longitude of 129° 28' 40" W in NTS map area 104I (Figure 1). The mineral tenure is accessible via helicopter from Dease Lake. Dease Lake is located along Highway 37 (Stewart-Cassiar), approximately 600 km drive north from Smithers, BC. Fixed wing service to a paved airstrip in Dease Lake during the summer months is normally available.

#### 3.2 Infrastructure and Local Resources

The primary access to the region is Highway 37, which runs north from Highway 16 near Smithers, BC, until it intersects Highway 1, the Alaska Highway, in southern Yukon. Dease

Lake is an approximate 600 km drive north from Smithers, BC, via Bell II (at 360 km N) and Iskut village (at 515 km N). Dease Lake, located on Highway 37 has a paved airstrip with a small airport and a helicopter base operated by Lakelse Air (formerly Pacific Western Helicopters). Amenities in Dease Lake include a gas station, grocery and general store, hotel and B&B accommodation, a health clinic, and a RCMP detachment.

Power is supplied to the region via the BC Hydro Northwest Transmission Line (NTL) which extends a 287-kV transmission line from Skeena sub-station to the Bob Quinn Lake area, 190 km south of Dease Lake. This power project was completed in 2014 as part of an effort to facilitate development of potential mines in the region.

### **3.3 Climate and Physiography**

The Andalusite Peak property is in the Stikine region, situated northeast of the Three Sisters Range and west of the McBride River on the southeastern edge of the Stikine Plateau. Topography in the area is variable from wide glacially smoothed valley floors to rugged, steep ridges and cirques. Elevation in the area ranges from 1300 m in the valley bottoms to >2300 m at ridge peaks. On the mineral tenure, elevation ranges from 1500 to 2000 m.

The tree line ranges from 1500 to 1600 m, below which is a mixed forest of primarily boreal character, typical of the northern interior Cordillera. Forests below treeline are composed of spruce, willow, birch, fir, pine, aspen and alder. Above the treeline there is juniper, dwarf willow ('buckbrush'), alpine grasses, mosses and lichens. Above 1650 to 1700 m, vegetation is sparse.

The climate in the area is typical of subalpine to alpine regions in the interior Cordillera plateaus of northern British Columbia. Winters are long and cold with thick snow accumulation from mid-November through to mid-March, and summers are short with long days and moderately warm temperatures, averaging in the mid-teens to -twenties (°C).

## **4. HISTORY**

### **4.1 Exploration History**

Historical exploration has taken place in the region during the 1970s and 1980s and more recently in 2008, summarized in assessment reports that are detailed in Table 2 and accessible

online via the B.C. Ministry of Energy, Mines and Petroleum Resources website:

<http://www.empr.gov.bc.ca/mining/geoscience/aris>.

**Table 2. Historical exploration in the Andalusite Peak area.**

Report #	Year	Company	Work Completed
<b>Placer Dome File #: 1967-28; 1968-37</b>	1967-1968	US Smelting, Refining and Mining Corp.	IP, trenching, diamond drilling
<b>4498</b>	1972	El Paso Mining	Mapping, soil sampling
<b>4644</b>	1973	Kennco	IP
<b>4645</b>	1973	Kennco	Soil Sampling
<b>4659</b>	1973	Kennco	Airborne Magnetics
<b>4660</b>	1973	Kennco	Ground Magnetics
<b>10356; 10923</b>	1982	Serrana Res / Noranda	Soil Sampling
<b>30590</b>	2009	Paget Moly Corp.	Rock and stream sediment geochemistry

The stream sediment and rock sampling program in 2008 displayed consistent elevated Cu +/- Mo concentrations at three mineralization prospects, the Joyce, And Ginger, and Straight Up showings (see Figure 6), indicating the presence of a large, intrusion-related acid-leach alteration system (Barresi 2009). This is the only publicly documented historical work that has ever been conducted on the current tenure.

#### **4.2 Government Surveys**

Northwest of the Andalusite Peak claim, regional mapping was completed in the Dease Lake map area (104J; Gabrielse, 1980) and the western part of the Cry Lake map area (NTS 104I) as as part of ‘Operation Stikine’ by the Geological Survey of Canada (GSC; Gabrielse, 1998). Further work in the area was conducted more recently as part of the QUEST-Northwest ‘Dease Lake Geoscience’ Mapping project by the British Columbia Geological Survey (BCGS) in the region (NTS 104I, J; Logan et al. 2012, and references therein).

The area south of the mineral claim is the Stikine River Provincial Park and the Spatsizi Plateau Wilderness Provincial Park was part of a detailed study mapping project titled ‘Geology of the Spatsizi River Area’ (Evenchick and Thorkelson 2005).

The most recent government mapping in the area was conducted by the BCGS in 2015 and 2016 north of the Hotailuh Batholith, and covers an area that includes the Tanzilla, Andalusite Peak, and McBride mineral tenures (van Straaten and Gibson 2016; van Straaten and Nelson 2016). This recent study summarizes the local lithostratigraphic and intrusive units into a regional context.

## **5. REGIONAL GEOLOGY**

The Andalusite Peak property is located along the northeastern margin of the Stikine terrane (Stikinia; Fig. 3). Stikinia is an allochthonous Triassic-Jurassic island arc complex built upon para-autochthonous Devonian to Permian carbonate and metavolcanic units (Stikine Assemblage) outboard from the western Laurentian margin prior to accreting to ancestral North America (Mihalynuk et al. 1994; Nelson and Colpron 2007). The volcanic and related sedimentary rocks of the Late Triassic Stuhini Group and Lower Jurassic Hazelton Group are the dominant exposed Stikinia units in the northern part of the terrane (Currie and Parrish 1997). The Lower Cretaceous Bowser Lake Group and Upper Cretaceous Sustut Groups are post-accretionary clastic sedimentary units that overlie the Stikinia volcanic rocks (Evenchick and Thorkelson 2005).

The tenure is in the northern part of Stikinia, termed the ‘Stikine Arch’ in British Columbia, where plutonic suites are associated with large Cu-Au-Ag<sup>±</sup>-Mo porphyry-style mineral deposits (e.g., KSM, Galore Creek, Schaft Creek, Red Chris, Kemess; Figure 3). Intrusive suites that occur within Stikinia include the Forest-Kerr (Devono-Carboniferous), the Stikine and Copper Mountain (Late Triassic), the Texas Creek and Cone Mountain (Early Jurassic), and Three Sisters (Middle Jurassic; Anderson 1983, 1993; Brown et al. 1996; Logan et al. 2000). Plutonic rocks in the mineral tenure area include those of the mid- to Late Triassic Stikine suite (Cake Hill pluton, south-southwest of the tenure), the Middle Jurassic Three Sisters suite, and the early Late Jurassic Snowdrift Creek pluton (van Straaten and Gibson 2017).



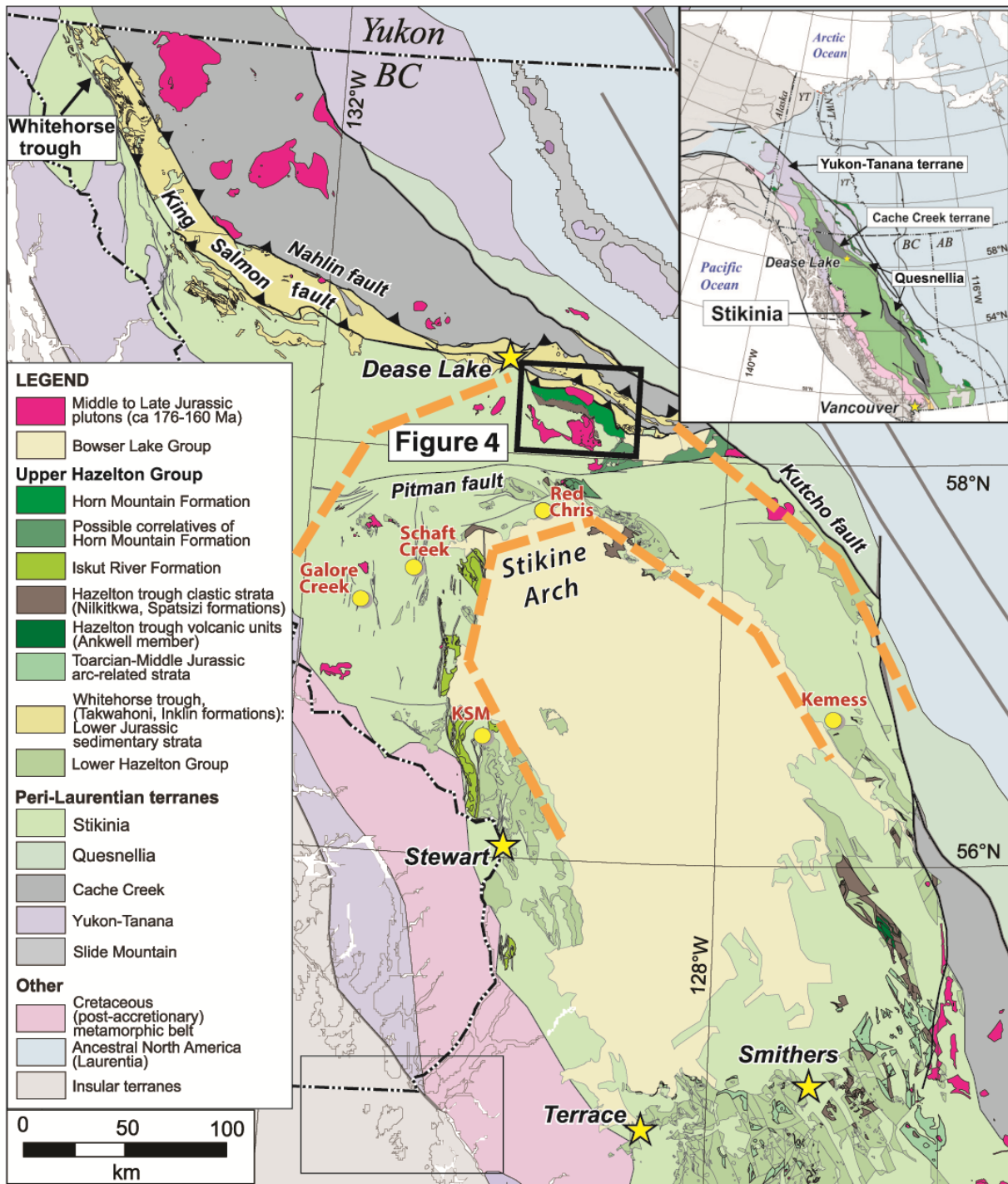


Figure 3. Regional geology of northern British Columbia (modified after van Straaten and Nelson, 2016) featuring the 'Stikine Arch' and associated major porphyry Cu-Au+/-Mo mineral deposits. Inset shows tectonic terranes of the northern Cordillera and Figure 4 (tenure local geology) is outlined.

North of Andalusite Peak the terrane-bounding north- to northeast-dipping King Salmon fault separates Whitehorse trough and Stikinia rocks to the south, and rocks of the Cache Creek accretionary complex to the north (Figure 4).

## **5.1 Stratigraphy**

Lithostratigraphic units in the area comprise two main domains; siliciclastic sedimentary units of the Whitehorse trough, north of the Kehlechoa fault (hanging wall), and the mafic volcanic and volcanoclastic to siliciclastic sedimentary rocks of Stikinia, south of the Kehlechoa fault (footwall; Figure 4). The following stratigraphic Groups have been recorded in the field area surrounding the Andalusite Peak mineral tenure:

### **5.1.1 Triassic Stuhini Group (Stikinia)**

The Stuhini Group is a thick succession of Late Triassic andesitic volcanic rocks and lesser sedimentary rocks. The dark green, massive augite- and lesser augite-plagioclase-phyric flows, volcanic breccia, tuffaceous conglomerate, volcanoclastic sandstone and siltstone are thought to have been deposited in a submarine environment (Anderson 1983; Gabrielse 1998; Logan et al. 2012b). The succession is cross-cut by Late Triassic porphyry dikes in the Gnat Pass area and is unconformably to conformably overlain by the Lower to Middle Jurassic Hazelton Group (Figure 5), therefore likely represent Triassic arc construction in Stikinia (van Straaten et al. 2012; van Straaten and Gibson 2017).

### **5.1.2 Lower to Middle Jurassic upper Hazelton Group (Stikinia)**

The Lower to Middle Jurassic upper Hazelton Group forms a north-dipping ~10 km wide belt that trends northwest-southeast in the tenure area (Fig. 4). This Group is a volcano-sedimentary sequence that contains a lower sedimentary unit (Spatsizi Formation) and an upper volcanic unit (Horn Mountain Formation) that is newly defined in the region (van Straaten and Nelson 2016; van Straaten and Gibson 2017); it had previously been interpreted as Stuhini Group or undivided Triassic-Jurassic volcanic rocks.





**Stratified rocks**

**Overlap assemblages**

Miocene-Pleistocene, Tuya Formation

*MPTvm* Olivine basalt

**Stikinia**

Middle Jurassic, Bowser Lake Group

*mJBLs* Sandstone and conglomerate

Lower to Middle Jurassic, upper Hazelton Group

Middle Jurassic, Horn Mountain Formation

*mJHMUvm* Upper mafic volcanic rocks

*mJHMUvf* Upper felsic volcanic rocks

Lower to Middle Jurassic, Horn Mountain Formation

*ImJHMMv* Middle maroon volcanic rocks

*ImJHMLvm* Lower mafic volcanic rocks

*ImJHMLvs* Volcaniclastic sandstone

*ImJHMLmv.po* Lowermost platy plagioclase-phyric volcanic rocks

*ImJHMLvm* Lowermost mafic volcanic rocks

Lower to Middle Jurassic Spatsizi Formation

*ImJSPsv* Volcaniclastic sandstone

*ImJSPs* Argillite, siltstone and sandstone

*ImJSPv.po* Platy plagioclase-phyric volcanic rocks

*ImJSPcg* Basal sandstone and conglomerate

Triassic, Stuhini Group

*TrSTvm* Mafic volcanic rocks

*TrSTs* Sandstone, volcaniclastic sandstone and argillite

**Whitehorse trough**

Lower Jurassic, Laberge Group

Lower Jurassic, Takwahoni Formation

*IJTs* Siltstone

*IJtgw* Sandstone

**Cache Creek**

Paleozoic to Jurassic

*PzJCC* Undivided

**Intrusive rocks**

Late Jurassic, Snowdrift Creek pluton

*LJSCgd* Biotite-bearing hornblende granodiorite

Middle Jurassic, Three Sisters pluton

*MJTSgr* Biotite-bearing hornblende monzogranite

*MJTSqm* Biotite-bearing hornblende quartz monzodiorite

*MJTSqd* Hornblende-clinopyroxene diorite

Early to Middle Jurassic, Spatsizi/Horn Mountain intrusions

*EMJm.po* Platy plagioclase porphyry

*EMJm* Mafic intrusive complex

Triassic to Jurassic

*TrJgb* Clinopyroxene-rich diorite to gabbro

Late Triassic, Gnat Pass intrusion

*LTrGP* Plagioclase porphyry

Late Triassic, Cake Hill pluton

*LTrCHgr* Hornblende monzogranite

*LTrCHqm* Hornblende quartz monzodiorite

- Contact
- · — · — Unconformity
- — Fault
- ■ Normal fault
- ▲▲ Thrust fault
- ▲ Peak
- ⊙ Minfile / mineral occurrence



Figure 4 continued...

### **5.1.3 Middle Jurassic Bowser Lake Group (Stikinia)**

The Middle Jurassic to mid-Cretaceous Bowser Lake Group is a clastic overlap assemblage that defines a large sedimentary basin through much of interior northern British Columbia (Bowser Basin; Figure 3). The Group consists of thick sequences of shale, siltstone, sandstone and conglomerate that overlap the Stuhini and Hazelton groups. This Group is a prominent overlap assemblage south of the mineral tenure, bounded by parts of the Stikinia that have been uplifted during the Middle Jurassic relative to the rest of the terrane (i.e., the ‘Skeena Arch’ and ‘Stikine Arch’), contributing detritus to the basin until the mid-Cretaceous (Evenchick and Thorkelson 2005).

### **5.1.4 Lower Jurassic Laberge Group (Whitehorse trough)**

The Laberge Group is the primary unit within the Whitehorse trough, a forearc basin that became a syn-orogenic piggy-back basin by the Lower Jurassic, and overlaps both Stikinia and parts of Quesnel terrane as well as containing detritus from the Cache Creek terrane (Colpron et al. 2015). The Laberge Group is subdivided into the Takwahoni Formation and the Inklin Formation, but the Takwahoni is the more typical formation exposed in the region; it is comprised of conglomerate-rich clastic rocks (with Stikine terrane provenance) with interbedded siltstone, greywacke, feldspathic arenite, and rare calcareous sandstone (Schiarizza 2012).

## **5.2 Intrusive Rocks**

There are multiple intrusive units that occur in the region, they are various ages depending on the plutonic suite with which they are associated. There are also Early to Middle Jurassic hypabyssal to subvolcanic stocks, sills, and dikes that occur across the area as part of the volcanic rock dominated formations; although these units locally crosscut the lithostratigraphic rocks, they are not described separately here as they can be considered part of the Stuhini Group and Hazelton Group volcanic pile.

South of the Andalusite Peak mineral tenure is the Hotailuh batholith, a composite intrusive complex that contains intrusions from multiple plutonic suites representing the Late Triassic (Stikine), the Early Jurassic (Cone Mountain), and the Middle Jurassic (Three Sisters).

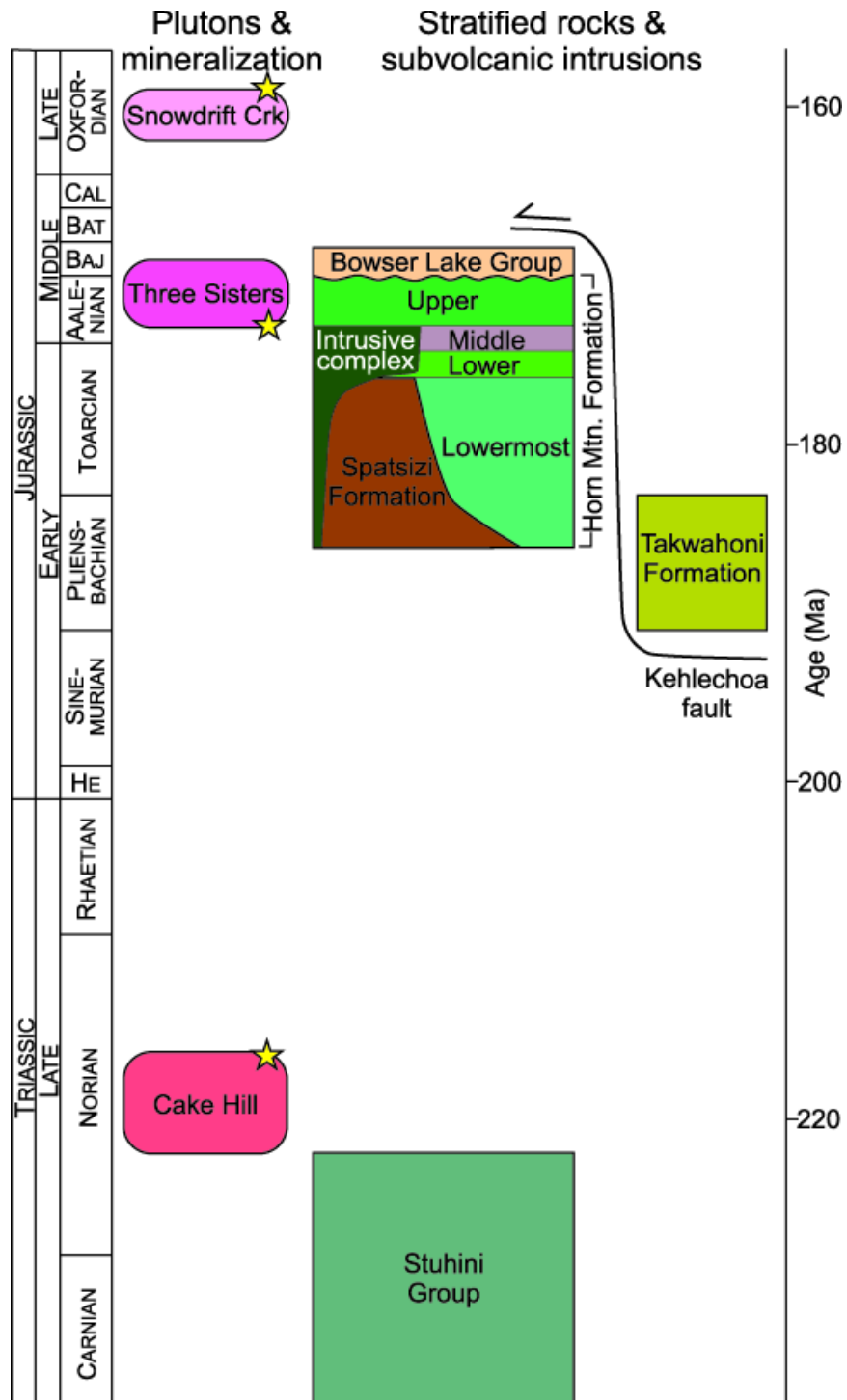


Figure 5. Schematic stratigraphic column of Mesozoic units in northern Stikinia and in the Andalusite Peak mineral tenure area (van Straaten and Gibson 2017). Yellow stars indicate main mineralization events in the region. Jurassic stage abbreviations: Hettanigian (He), Bajocian (Baj), Bathonian (Bat), Callovian (Cal).

### **5.2.1 Late Triassic Cake Hill Pluton**

The Cake Hill Pluton, the largest and oldest component of the Hotailuh batholith, is composed of homogeneous, equigranular hornblende quartz-monzodiorite to quartz monzonite and has been dated using U-Pb zircon at  $218.2 \pm 1.3$  Ma (Figure 5; van Straaten et al. 2012).

### **5.2.2 Middle Jurassic Three Sisters intrusions**

The Early to Middle Jurassic Three Sisters Suite is comprised of intrusions that range from hornblende-biotite quartz diorite to quartz monzonite and quartz monzodiorite and can be broken up into four distinct phases: i) a fine grained mafic to intermediate phase, ii) a mafic phase, iii) a central felsic phase, and iv) a late crosscutting potassic phase (van Straaten et al. 2012).

### **5.2.3 Late Jurassic Snowdrift Creek intrusions**

The Late Jurassic Snowdrift Creek intrusions are mostly recessive granodiorite and quartz diorite to tonalite, underlying an area of  $\sim 100$  km<sup>2</sup> north of the mineral tenure (Figure 4; van Straaten and Nelson 2016). The intrusions are interpreted to crosscut the Kehlechoa fault (thrust fault that brings basal units of the Whitehorse trough structurally above rocks of Stikinia and the Bowser Lake Group) and is dated by U-Pb zircon to be  $160.43 \pm 0.16$  Ma (van Straaten and Gibson 2017).

## **5.3 Structure**

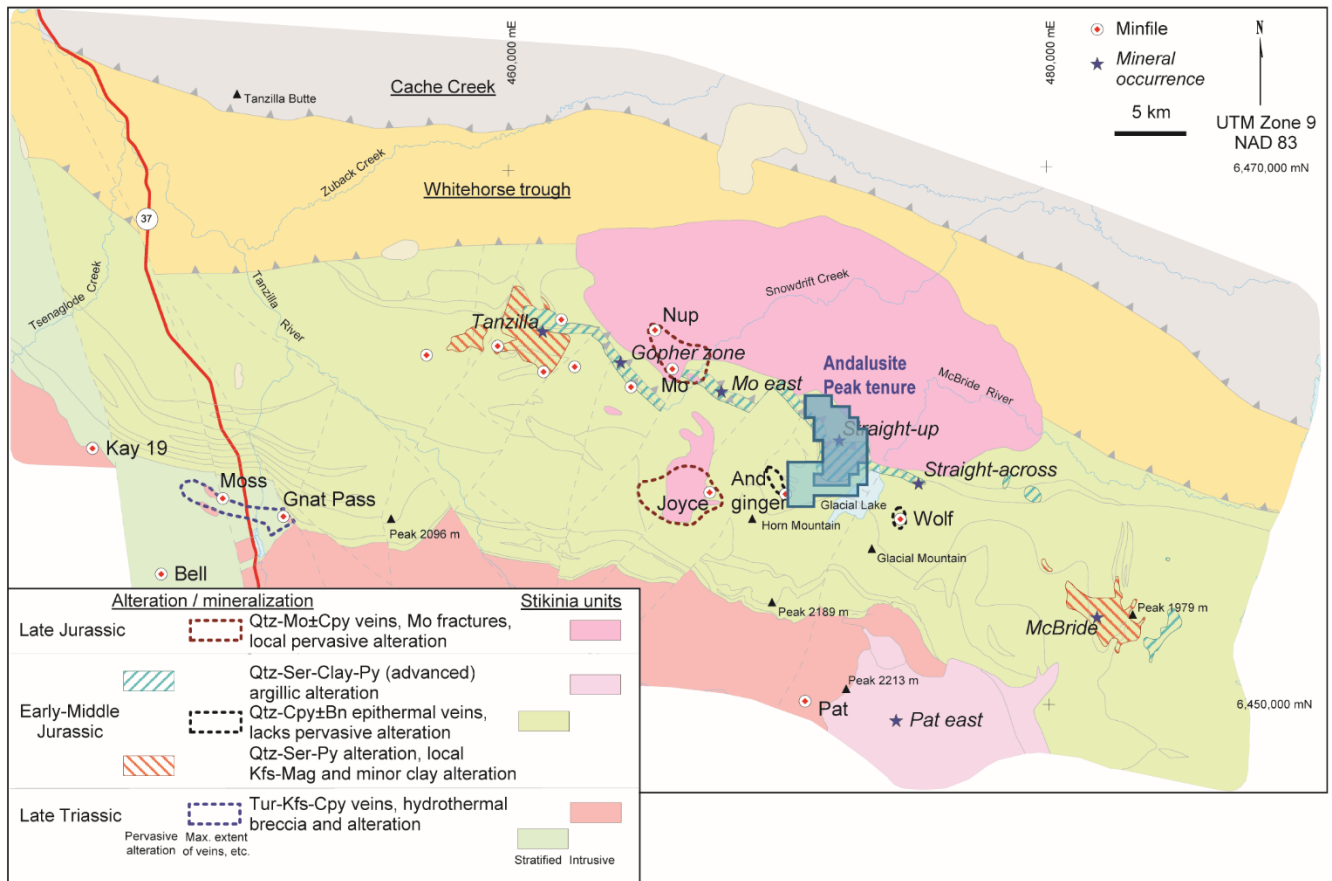
Regionally, in Stikinia, the oldest deformation is caused by the ‘Tahltanian Orogeny’ and is recorded in the Paleozoic Stikina assemblage by strong penetrative foliation and greenschist facies metamorphism and a disconformable contact with the above lying Stuhini Group (Logan et al. 2000). The Stuhini Group is unconformably overlain by the Hazelton Group, demarcating a deformation event that occurred by the Early Jurassic, as indicated by the lack of foliation in the Early Jurassic plutons in the region, relative to the older intrusive bodies (Gabrielse 1998).

Overprinting Stikinia is a deformation event related to the Early to Middle Jurassic accretion of the Cache Creek terrane to the Stikine margin, resulting in south-southwest vergent folds and north-northeast dipping faults as well as a penetrative schistosity and cleavage, particularly near these faults (Nelson and Colpron 2007; Logan et al. 2012). In the area containing the mineral tenure, the Hazelton Group forms a moderately north-northeast dipping homocline, cut by

northeast striking normal faults and northwest-striking transtensional faults with dextral displacement (Figure 4; van Straaten and Gibson 2017).

### 5.4 Mineralization

Regionally, the ‘Stikine Arch’ is host to several significant porphyry Cu-Au±Mo discoveries and many smaller, less developed occurrences. Several major deposits include Kerr-Sulphurets-Mitchell (KSM; Seabridge), Galore Creek (NovaGold/Teck), Schaft Creek (Teck/Copper Fox), Red Chris (Imperial Metals), Kemess (AuRico Metals). Smaller active properties include Saddle (GT Gold), Spectrum-GJ (Skeena Resources), Castle and North Rok (Colorado Resources), Tanzilla (Kaizen Discovery) and Gnat Pass and McBride (Teck Resources).



**Figure 6. Mineralization occurrences, MINFILES, and alteration trends in the tenure map area, Andalusite Peak outlined in blue (after van Straaten and Gibson 2017).**

Mineral occurrences in the tenure area include Late Triassic porphyry-style mineralization at Gnat Pass and nearby Moss, and extensive aerially visible gossans at Tanzilla and McBride showings. The trend of argillic alteration (~27 km) extends across the Horn Mountain Formation from the Tanzilla property to the McBride property, with the Andalusite Peak tenure located central to this trend (Figure 6; van Straaten and Gibson 2017).

## **6. 2017 EXPLORATION PROGRAM**

The 2017 exploration program was highlighted by brief fieldwork over the course of three days in August to collect TerraSpec© samples and lithogeochemical samples to further understand the alteration and mineralization associated with previously identified gossanous areas on the property.

### **6.1 TerraSpec© Sampling**

TerraSpec © is an instrument that uses hyperspectral reflectance to identify normally difficult to distinguish minerals. The TerraSpec© survey was intended to map the distribution of alteration minerals (particularly phyllosilicates, but silicates and oxides were also noted) on the property. Understanding the alteration assemblage distribution will assist in vectoring towards zones of porphyry-style mineralization/alteration. Details on the TerraSpec© samples that were collected, the mineral assemblages interpreted from resultant spectra, and interpreted alteration facies are found in Table 3.

#### **6.1.1 TerraSpec© Sample Preparation and Analysis**

A total of 68 samples were collected for hyperspectral reflectance analysis, typically from subcrop and outcrop on discoloured (i.e., gossanous) slopes and gullies on the Andalusite Peak property. Multiple spectra were typically collected from each sample for a total of 125 spectral readings (Table 3). Samples from recorded locations (handheld GPS) were collected and analyzed, followed by being photographed (wet and dry) prior to the end of the field program. The spectra were obtained through the SpecWin software and were manually interpreted using comparison with reference spectra in the SpecMin ASD database.

Figure 7. Location of TerraSpec® samples and intermediate to advanced argillic alteration on the Andalusite Peak mineral tenure.

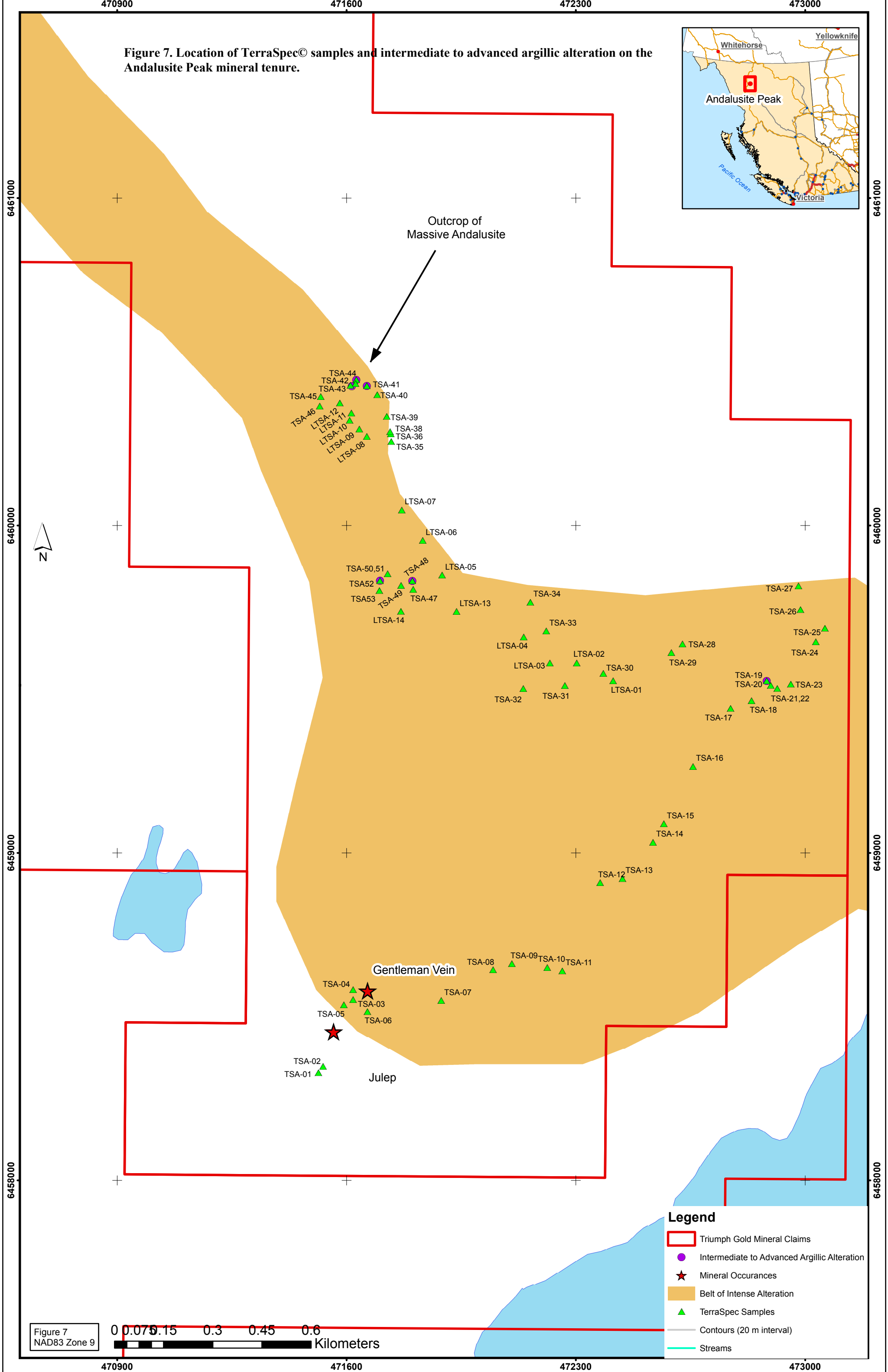
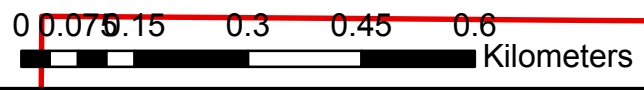


Figure 7  
NAD83 Zone 9



- Legend**
- Triumph Gold Mineral Claims
  - Intermediate to Advanced Argillic Alteration
  - ★ Mineral Occurrences
  - Belt of Intense Alteration
  - ▲ TerraSpec Samples
  - Contours (20 m interval)
  - Streams



### 6.1.2 TerraSpec Sample Results©

The hyperspectral reflectance results from the Andalusite Peak property show several alteration mineral assemblages that indicate a distribution of zeolite, propylitic, phyllic, and intermediate to advanced argillic alteration at Andalusite Peak. Minerals discovered using the TerraSpec© include chlorite (propylitic), muscovite (sericite; phyllic- commonly as sericite-chlorite-clay, or SCC), well crystalline illite and kaolinite (intermediate argillic), as well as andalusite and pyrophyllite (advanced argillic). Weathering and/or zeolite facies alteration of some samples resulted in spectra that indicated poorly crystalline smectite and illite.

**Table 3. Results of Terraspec sample spectra interpretation. Chl – chlorite, jar – jarosite, hem – hematite, musc – muscovite, ill – illite, sme – smectite, pyro – pyrophyllite, goe – goethite, andl – Andalusite. (See Appendix VI for sample descriptions)**

Sample	Spectra	Easting	Northing	Phyllosil.1	Phyllosil.2	Sulfate	Oxide	Silicate	Alt_Assem.
TSA-01	TSS-002	471514.68	6458328.82	chl					propylitic
TSA-02	TSS-124	471528.6	6458347.54			jar	hem		<i>weathering</i>
TSA-02	TSS-125	471528.6	6458347.54	chl					propylitic
TSA-03	TSS-126	471592.27	6458536.14	musc					Phyllic
TSA-03	TSS-127	471592.27	6458536.14	ill					<i>weathering</i>
TSA-04	TSS-003	471620.35	6458582.48	musc					Phyllic
TSA-04	TSS-004	471620.35	6458582.48	musc					Phyllic
TSA-05	TSS-005	471620.54	6458551.53	musc					Phyllic
TSA-05	TSS-006	471620.54	6458551.53	musc					Phyllic
TSA-06	TSS-007	471664.28	6458515.14	musc					Phyllic
TSA-06	TSS-008	471664.28	6458515.14	musc					Phyllic
TSA-07	TSS-009	471889.11	6458548.6	sme	musc				Phyllic
TSA-07	TSS-010	471889.11	6458548.6	sme	musc				Phyllic
TSA-08	TSS-011	472047.48	6458642.57	ill		jar			interm. argillic
TSA-08	TSS-012	472047.48	6458642.57	ill		jar			interm. argillic
TSA-09	TSS-013	472104.7	6458661.2	ill		jar			interm. argillic
TSA-10	TSS-014	472212.98	6458649.86	ill		jar			interm. argillic
TSA-10	TSS-015	472212.98	6458649.86	musc					Phyllic
TSA-11	TSS-016	472259.08	6458639.74	sme	ill				interm. argillic
TSA-11	TSS-017	472259.08	6458639.74	sme	ill				interm. argillic
TSA-12	TSS-018	472374.66	6458908.71	chl					propylitic
TSA-12	TSS-019	472374.66	6458908.71	chl					propylitic
TSA-13	TSS-020	472442.57	6458921.26	ill					interm. argillic
TSA-13	TSS-021	472442.57	6458921.26	ill					interm. argillic
TSA-14	TSS-022	472535.85	6459032.18	musc					Phyllic
TSA-14	TSS-023	472535.85	6459032.18	musc					Phyllic

Sample	Spectra	Easting	Northing	Phyllosil.1	Phyllosil.2	Sulfate	Oxide	Silicate	Alt_Assem.
TSA-16	TSS-024	472657.89	6459263.81	ill					interm. argillic
TSA-16	TSS-025	472657.89	6459263.81	ill					interm. argillic
TSA-15	TSS-026	472568.86	6459088.62	musc					Phyllic
TSA-15	TSS-027	472568.86	6459088.62	musc					Phyllic
TSA-17	TSS-028	472772.56	6459441.17	musc	ill	jar			phyllic (SCC?)
TSA-17	TSS-029	472772.56	6459441.17	musc	ill	jar			phyllic (SCC?)
TSA-17	TSS-030	472772.56	6459441.17	musc	ill	jar			phyllic (SCC?)
TSA-18	TSS-031	472836.19	6459464.56	musc		jar			Phyllic
TSA-18	TSS-032	472836.19	6459464.56	musc		jar			Phyllic
TSA-19	TSS-033	472882.77	6459525.36	pyro					adv. argillic
TSA-19	TSS-034	472882.77	6459525.36	pyro					adv. argillic
TSA-20	TSS-035	472894.99	6459511.14	musc	ill				phyllic (SCC?)
TSA-20	TSS-036	472894.99	6459511.14	musc	ill				phyllic (SCC?)
TSA-20	TSS-037	472894.99	6459511.14	musc	ill				phyllic (SCC?)
TSA-21	TSS-038	472915.04	6459501.98	ill		jar			argillic(?)
TSA-21	TSS-039	472915.04	6459501.98	ill		jar			argillic(?)
TSA-22	TSS-040	472915.04	6459501.98	ill					argillic(?)
TSA-22	TSS-041	472915.04	6459501.98	ill					argillic(?)
TSA-23	TSS-042	472956.49	6459515.06	musc	sme				phyllic (SCC?)
TSA-23	TSS-043	472956.49	6459515.06	musc	sme				phyllic (SCC?)
TSA-24	TSS-044	473032.56	6459643.7	ill		jar			<i>weathering</i>
TSA-24	TSS-045	473032.56	6459643.7	ill		jar			<i>weathering</i>
TSA-25	TSS-046	473060.59	6459685.81	ill		jar	hem		interm. argillic
TSA-25	TSS-047	473060.59	6459685.81	ill		jar	hem		interm. argillic
TSA-26	TSS-048	472985.67	6459742.89	musc					Phyllic
TSA-26	TSS-049	472985.67	6459742.89	musc			goe		Phyllic
TSA-27	TSS-051	472980.01	6459815.41	musc			goe		Phyllic
TSA-28	TSS-052	472625.81	6459638.03	musc			goe		Phyllic
TSA-28	TSS-053	472625.81	6459638.03	musc					Phyllic
TSA-29	TSS-054	472591.49	6459610.77	chl					propylitic
TSA-29	TSS-055	472591.49	6459610.77	chl					propylitic
TSA-30	TSS-056	472413.81	6459525.38	ill					<i>weathering</i>
TSA-31	TSS-057	472266.78	6459510.82	musc		jar			Phyllic
TSA-31	TSS-058	472266.78	6459510.82	sme		jar			<i>weathering</i>
TSA-32	TSS-059	472139.78	6459500.8	musc		jar			Phyllic
TSA-33	TSS-060	472209.94	6459677.23	musc	chl				phyllic (SCC?)
TSA-33	TSS-061	472209.94	6459677.23	musc		jar			Phyllic
TSA-34	TSS-062	472161.41	6459765.31	musc					Phyllic
Sample	Spectra	Easting	Northing	Phyllosil.1	Phyllosil.2	Sulfate	Oxide	Silicate	Alt_Assem.

Sample	Spectra	Easting	Northing	Phyllosil.1	Phyllosil.2	Sulfate	Oxide	Silicate	Alt_Assem.
TSA-34A	TSS-063	472161.41	6459765.31	musc					Phyllic
TSA-34B	TSS-064	472161.41	6459765.31	ill		jar			interm. argillic
TSA-34B	TSS-065	472161.41	6459765.31	ill		jar			interm. argillic
TSA-35	TSS-066	471736.76	6460255.89	musc					Phyllic
TSA-35	TSS-067	471736.76	6460255.89	musc					Phyllic
TSA-36	TSS-068	471735.1	6460278.73			jar			<i>weathering</i>
TSA-36	TSS-069	471735.1	6460278.73			jar			<i>weathering</i>
TSA-37	TSS-070			sme					<i>weathering</i>
TSA-38	TSS-071	471732.93	6460286.09	ill		jar			<i>weathering</i>
TSA-38	TSS-072	471732.93	6460286.09	ill					<i>weathering</i>
TSA-39	TSS-073	471723.12	6460332.82	musc					Phyllic
TSA-40	TSS-074	471694.26	6460398.49	ill					interm. argillic
TSA-40	TSS-075	471694.26	6460398.49	ill					interm. argillic
TSA-41	TSS-076	471662.38	6460425.55	sme				andl	adv. argillic
TSA-41	TSS-077	471662.38	6460425.55	sme				andl	adv. argillic
TSA-42	TSS-078	471629.62	6460444.38	pyro					adv. argillic
TSA-42	TSS-079	471629.62	6460444.38				goe		<i>weathering</i>
TSA-42	TSS-080	471629.62	6460444.38	pyro					adv. argillic
TSA-43	TSS-081	471627.65	6460432.04	musc					Phyllic
TSA-43	TSS-082	471627.65	6460432.04	musc					Phyllic
TSA-44	TSS-083	471612.43	6460427.14	sme					<i>weathering</i>
TSA-44	TSS-084	471612.43	6460427.14	sme		jar			<i>weathering</i>
TSA-45	TSS-085	471521.4	6460392.61	sme					interm. argillic
TSA-46	TSS-086	471518.67	6460363.68	ill	sme				interm. argillic
TSA-46	TSS-087	471518.67	6460363.68	ill	sme				interm. argillic
TSA-47	TSS-088	471803.85	6459804.14	ill		jar			interm. argillic
TSA-47	TSS-089	471803.85	6459804.14	ill		jar			interm. argillic
TSA-48	TSS-090	471801.11	6459831	musc	kaol				adv. argillic
TSA-48	TSS-091	471801.11	6459831	kaol	musc				adv. argillic
TSA-49	TSS-092	471766.51	6459815.66	musc	ill				Phyllic
TSA-50	TSS-093	471725.36	6459852.14	chl		jar			propylitic
TSA-50	TSS-094	471725.36	6459852.14	chl		jar			propylitic
TSA-51	TSS-095	471725.36	6459852.14	ill		jar			<i>weathering</i>
TSA-51	TSS-096	471725.36	6459852.14	ill		jar			interm. argillic
TSA-52	TSS-097	471702.22	6459831.26	kaol					interm. argillic
TSA-52	TSS-098	471702.22	6459831.26	ill					interm. argillic
TSA-53	TSS-099	471700.3	6459800.77	ill					interm. argillic
TSA-53	TSS-100	471700.3	6459800.77	ill					interm. argillic

Sample	Spectra	Easting	Northing	Phyllosil.1	Phyllosil.2	Sulfate	Oxide	Silicate	Alt_Assem.
LTSA-01	TSS-101	472384.1	6459547.7	ill		jar			<i>weathering</i>
LTSA-02	TSS-102	472302.9	6459580	sme					<i>weathering</i>
LTSA-03	TSS-103	472221	6459580	musc		jar			Phyllic
LTSA-03	TSS-104	472221	6459580	musc		jar			Phyllic
LTSA-04	TSS-105	472141	6459659	ill					<i>weathering</i>
LTSA-04	TSS-106	472141	6459659	ill	musc				Phyllic
LTSA-05	TSS-107	471892	6459848	ill					interm. argillic
LTSA-05	TSS-108	471892	6459848	ill		jar			interm. argillic
LTSA-06	TSS-109	471833	6459953.6	ill					<i>weathering</i>
LTSA-07	TSS-110	471769	6460047	ill		jar			interm. argillic
LTSA-08	TSS-111	471662	6460272	musc					Phyllic
LTSA-08	TSS-112	471662	6460272	musc					Phyllic
LTSA-08	TSS-113	471662	6460272	musc	chl				phyllic (SCC?)
LTSA-09	TSS-114	471639	6460294	ill					interm. argillic
LTSA-10	TSS-115	471610	6460321	ill					interm. argillic
LTSA-10	TSS-116	471610	6460321	ill					interm. argillic
LTSA-11	TSS-117	471615	6460343	ill					interm. argillic
LTSA-11	TSS-118	471615	6460343	ill		jar			interm. argillic
LTSA-12	TSS-119	471580	6460374	musc		jar			Phyllic
LTSA-12	TSS-120	471580	6460374	musc		jar			Phyllic
LTSA-13	TSS-121	471936	6459737	musc					Phyllic
LTSA-13	TSS-122	471936	6459737	musc		jar			Phyllic
LTSA-14	TSS-123	471766.3	6459737.6	musc					Phyllic

## 6.2 Geochemical Sampling

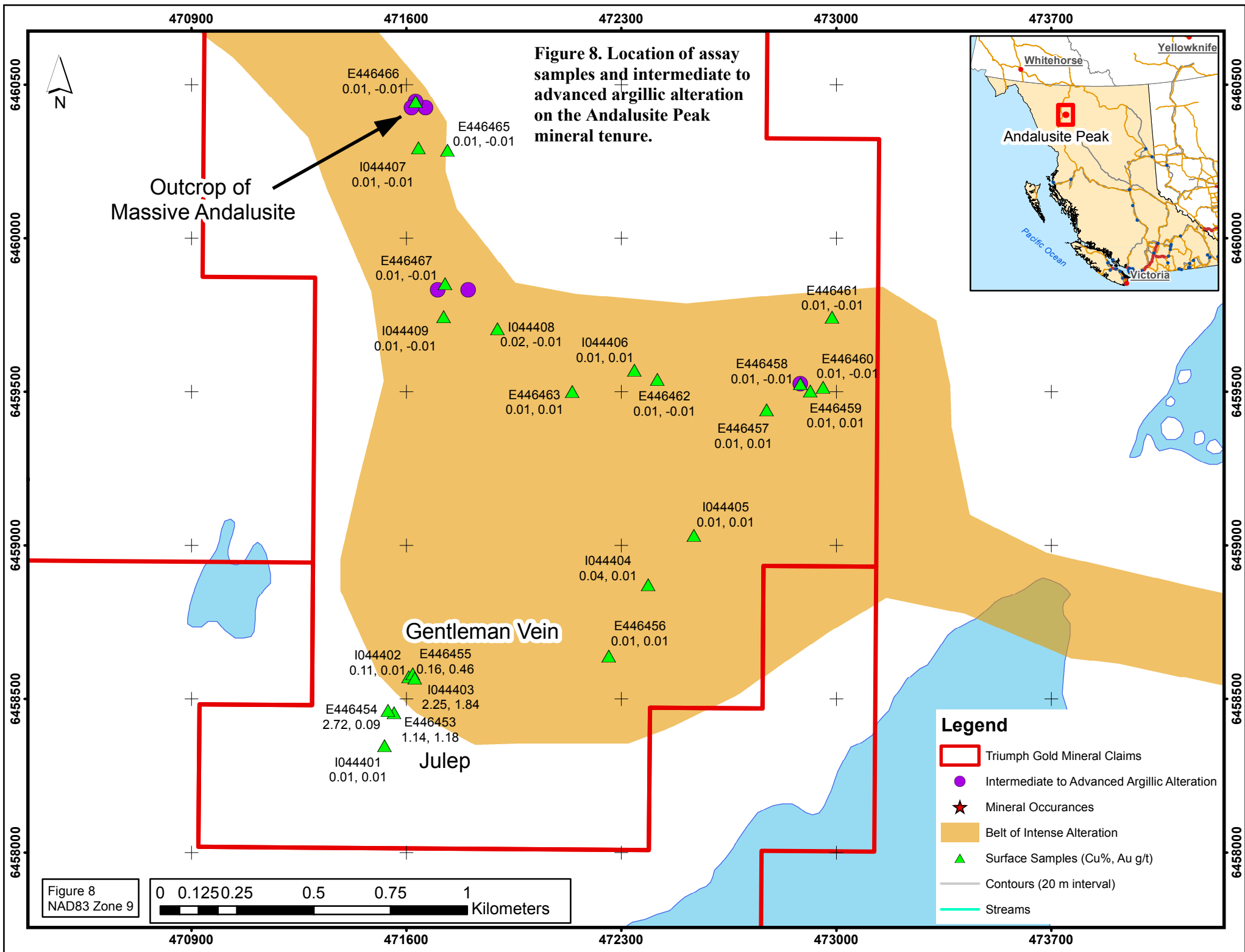
During the 2017 exploration program, geochemical samples were collected from potentially mineralized rocks, in particular within areas where mineralization was visible or where higher temperature alteration minerals were noted (i.e., pyrophyllite, andalusite). Geochemical sample locations and two showings of mineralization sampled for assay, the Gentleman vein and Julep showing, are shown in Figure 8. The Julep showing consists of a feldspar porphyritic mafic intrusion with disseminated clots and veins of tetrahedrite, chalcocite, and secondary malachite and azurite. The Gentleman vein is up to 20 cm thick and contains quartz-carbonate-magnetite-sulfide (primarily chalcopyrite) with heavily altered and mineralized vein selvages. Assay data from the samples collected are presented in Appendix IV, analytical certificates are provided in Appendix V and sample descriptions in Appendix VI.

### **6.2.1 Rock Sample Preparation and Analysis**

The 2017 rock samples were delivered directly to ALS Global prep-lab in Whitehorse, YT, and sent for preparation and analysis at ALS Canada Ltd. in North Vancouver, BC via Thunder Bay, ON. In total, 24 samples were submitted for analysis and were prepared following the ALS method package Prep35 (methods CRU-31, SPL-21 and PUL-35); that is, fine crushing (70% < 2mm), split sample (using riffle splitter) and pulverization of 250g split to 95% <106µm. Analysis of ore grade elements and ore grade Cu was conducted on the pulverized splits using Aqua Regia ICP-AES (methods ME-OG46 and Cu-OG46). Analysis of Au was conducted by using Au 30g fire assay with Atomic Absorption finish (AAS; method Au-AA23) and the remaining 35 elements were analyzed using ICP-AES after an Aqua Regia digestion (method ME-ICP41). The over limit samples for Cu were re-tested using the same technique with a higher range of detection via assay grade Aqua Regia digestion (method ME-OG46).

### **6.2.2 Quality Control and Data Verification for Rock Samples**

The quality assurance and control are maintained in lab by ALS Canada Ltd. using internal standards, blanks and duplicates.



### 6.2.3 Rock Sample Results

The 2017 sampling resulted in discovery of two new gold-silver-copper occurrences, to be named the Julep and Gentleman vein (Figure 8). Grab samples from the Julep showing collected 21 meters apart graded 0.09-1.18 grams per tonne (g/t) Au, 11.2-21.1 g/t Ag, and 1.14-2.72 weight per cent (wt%) Cu (Table 4). Samples from the Gentleman vein showing, collected 17 meters apart, graded 0.009-1.84 g/t Au, 0.9-17.3 g/t Ag, and 0.11-2.25 wt% Cu (Table 4).

**Table 4. Assay results of significant mineralized samples from Andalusite Peak.**

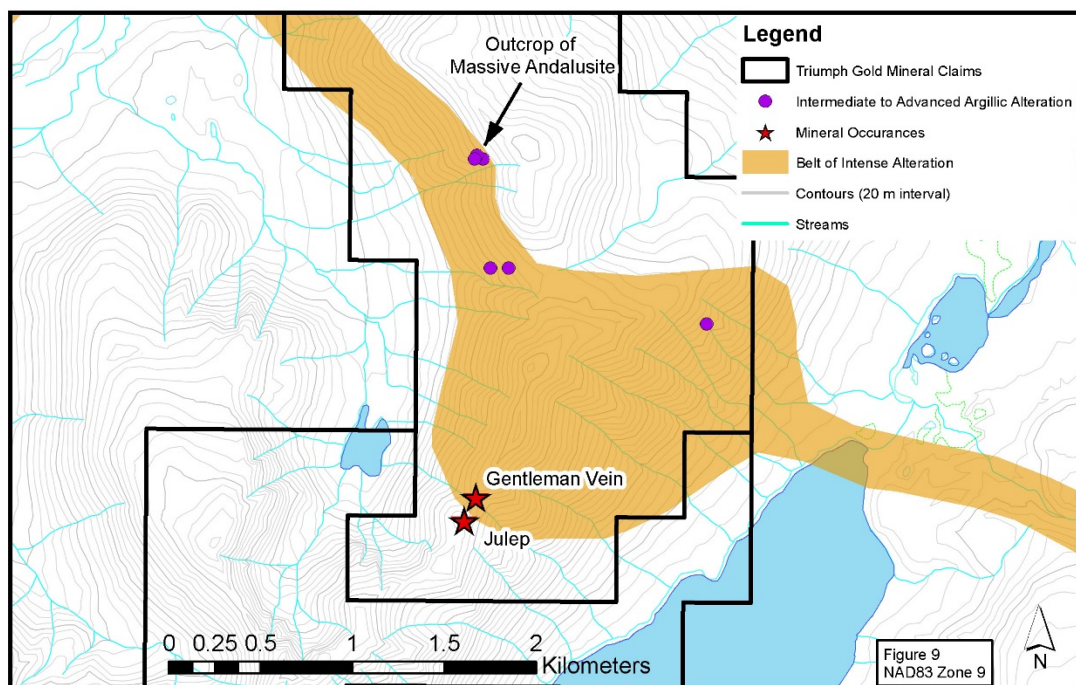
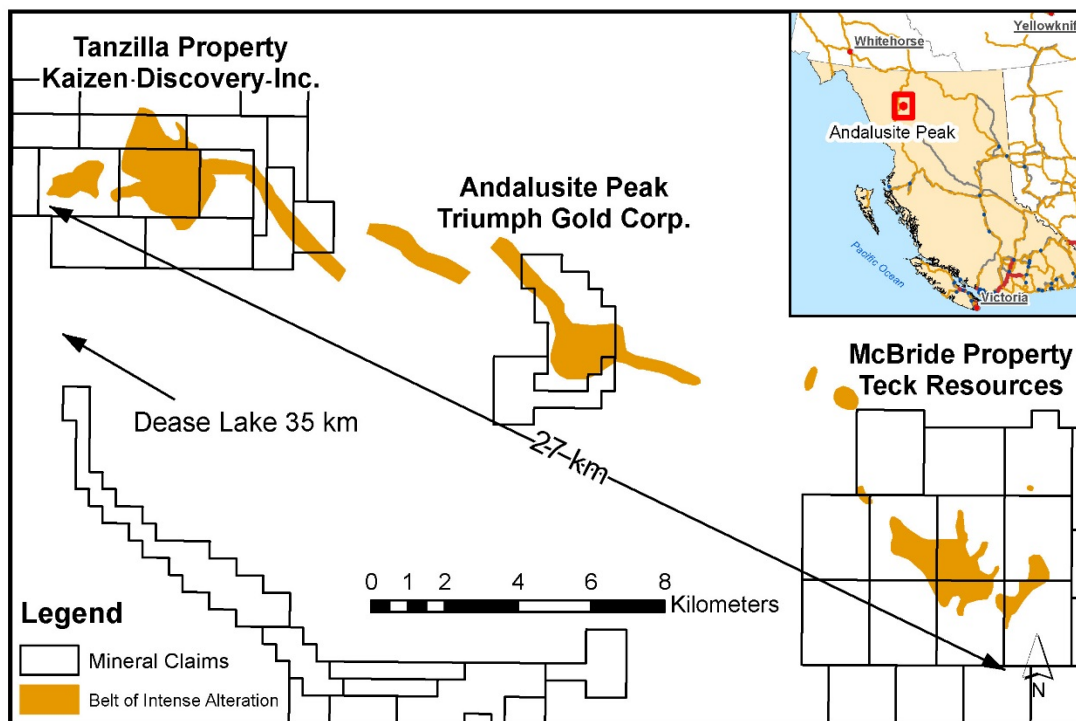
Sample ID	Easting	Northing	Au	Ag	Cu	Showing
	<i>NAD83 Zone 9</i>		<i>g/t</i>	<i>g/t</i>	<i>weight%</i>	
<b>E446453</b>	471559	6458455	1.180	11.2	1.135	Julep
<b>E446454</b>	471540	6458462	0.090	21.1	2.720	Julep
<b>E446455</b>	471620	6458582	0.459	2.4	0.163	Gentleman
<b>I044402</b>	471607	6458573	0.009	0.9	0.111	Gentleman
<b>I044403</b>	471627	6458567	1.840	17.3	2.250	Gentleman

## 7. CONCLUSIONS and RECOMMENDATIONS

Exploration of the Andalusite Peak property in 2017 included prospecting and some geological mapping that resulted in discovery of two mineralization showings and several high-temperature (advanced argillic) alteration assemblages, including the presence of pyrophyllite and andalusite. The mineral claim covers a zone of alteration that is the center of a 27-kilometer stretch of intermediate to advanced argillic alteration containing assemblages of quartz-sericite-clay-pyrite (van Straaten and Gibson 2017; Figure 6 and 9). This stretch of alteration is delimited on either side of the Andalusite Peak property by occurrences of porphyry-style mineralization and quartz-sericite-pyrite alteration with local K-feldspar-magnetite alteration assemblages; found on the Tanzilla property, 11 km to the northwest (Kaizen Discovery), and the McBride property, 12 km to the southeast (Teck Resources).

The two showings discovered in 2017 are not fully mapped or characterized and therefore remain open for further constraint. To further define areas of interest in the Andalusite Peak property, detailed geologic mapping and identification of structural trends and alteration assemblages is required in tandem with geophysical surveys (magnetic and induced polarization) to target potential porphyry mineralization at depth.





**Figure 9. A) Belt of intermediate to advanced argillic alteration in the Andalusite Peak region; B) property overview with location of high-temperature alteration assemblages and mineralization showings.**

# **Appendix I**

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**Appendix II**  
**Statement of Expenditures**

<b>Statement of Costs</b>					
<b>Item</b>	<b>Name</b>	<b>#</b>	<b>Cost</b>	<b>Item sub-total</b>	<b>Sub-totals</b>
<b>Geological Salaries and Wages</b>					
	Tony Barresi	3	\$ 700.00	\$ 2,100.00	
	Luke Bickerton	3	\$ 400.00	\$ 1,200.00	
					\$ 3,300.00
<b>Food and Accommodation</b>					
				\$ 3,142.49	
					\$ 3,142.49
<b>Geochemical</b>					
	Rock Sample Assays	24	\$ 23.71	\$ 569.04	
					\$ 569.04
<b>Vehicle</b>					
	Rental			\$ 1,320.09	
					\$ 1,320.09
<b>Helicopter</b>					
				\$ 3,561.59	
					\$ 3,561.59
<b>Equipment Rental</b>					
	Terraspec			\$ 1,000.00	
					\$ 1,000.00
<b>Report</b>					
	Luke Bickerton	5	\$ 400.00	\$ 2,000.00	
	Tony Barresi	1	\$ 700.00	\$ 700.00	
					\$ 2,700.00
<b>Mobe/Demob</b>					
	Tony Barresi	2	\$ 700.00	\$ 1,400.00	
	Luke Bickerton	2	\$ 400.00	\$ 800.00	
					\$ 2,200.00
				<b>Total</b>	\$ 17,793.21

**Appendix III**  
**Statement of Qualification**

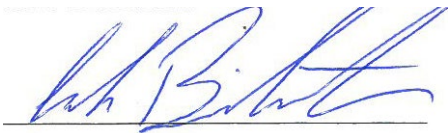


Statement of qualification:

I, Luke Bickerton, certify that:

1. I am currently a PhD. Candidate in Precambrian Geology and Mineral Deposits at the Harquail School of Earth Sciences, Laurentian University, 935 Ramsey Lake Road, Sudbury, Ontario, Canada, P3E 2C6
2. I am a graduate of Saint Francis Xavier University having obtained the degree of Bachelor of Science – Honours, in Earth Sciences in 2011.
3. I am a graduate of Simon Fraser University having obtained the degree of Master of Science in Geology in 2014.
4. That since 2011, when not a student, I have been continuously employed as an exploration geologist at the greenfields and brownfields level in the mineral exploration industry with experience in copper and copper/gold porphyry deposits.
5. I participated in the 2017 exploration program at Andalusite Peak and am therefore familiar with the geology of the property and the work conducted in 2017. I have co-prepared all sections of this report.
6. I am a seasonal project geologist with Triumph Gold Corp.

Signed and dated this 20th day of April, 2018.



Signature

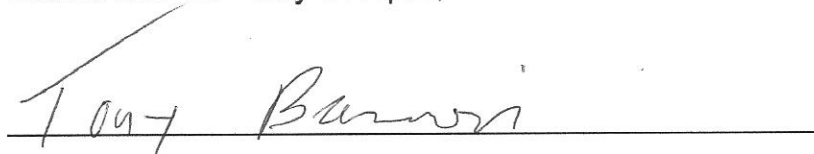
Luke A. Bickerton, M.Sc.

Statement of Qualification:

I, Tony Barresi certify that:

1. I am employed by Triumph Gold Corp. as VP of Exploration. 1100 - 1111 Melville St., Vancouver BC, V6E 3V6.
2. I graduated from Dalhousie University in 2015 with a Ph.D. in Earth Sciences.
3. I graduated from Saint Mary's University in 2004 with a B.Sc. in Geology.
4. I am a Professional Geoscientist registered with Geoscientists Nova Scotia since 2016.
5. Since 2004 I have been continuously employed in exploration for base and precious metals in North America.
6. I supervised and participated in the 2017 exploration program at Andalusite Peak and am therefore personally familiar with the geology of the property and the work conducted in 2017. I have co-prepared all sections of this report.

Dated this 20<sup>th</sup> day of April, 2018

A handwritten signature in cursive script that reads "Tony Barresi". The signature is written in black ink and is positioned above a solid horizontal line.

Signature

Tony Barresi, P.Geo., Ph.D.

## STATEMENT OF QUALIFICATIONS

I, Graeme Hopkins, B.Sc., certify that:

1. I am employed at Triumph Gold Corp as GIS/Database with a business address located at:  
1100 – 1111 Melville St.  
Vancouver, BC, Canada  
V6E3V6
2. I graduated from the University of Victoria in 1994 with a Bachelor of Science in Geography and from the BCIT Advanced Diploma Program in Geographical Information Systems in 2000.
3. I have been employed in the mineral sector since 2008 and in GIS since 2000 based in Vancouver, BC.
4. I have provided data services and mapping for this report on the Analusite Peak property in Northwestern BC.

Dated this 20<sup>th</sup> Day of April, 2018

A handwritten signature in black ink, appearing to read 'Graeme Hopkins', with a stylized flourish at the end.

Signature

Graeme Hopkins, B. Sc.

**Appendix IV**  
**Geochemical Results**

<i>METHOD</i>			WEI-21	ME- ICP41	ME- ICP41	ME- ICP41	ME- ICP41	ME- ICP41	ME- ICP41	ME- ICP41	ME- ICP41	ME- ICP41	ME- ICP41
<b>SAMPLE</b>	<b>EASTING</b>	<b>NORTHING</b>	Recvd Wt.	<b>Fe</b>	<b>Al</b>	<b>Ca</b>	<b>Na</b>	<b>K</b>	<b>Mg</b>	<b>Ti</b>	<b>Mn</b>	<b>P</b>	<b>S</b>
<i>DESCRIPTION</i>			kg	%	%	%	%	%	%	%	ppm	ppm	%
<i>DETECTION</i>			0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	5	10	0.01
<b>E446453</b>	471559.3	6458455.3	1.17	4.27	2.72	1.44	0.09	1.16	2.5	0.22	938	1750	0.25
<b>E446454</b>	471539.8	6458462.4	1.18	5.04	3.16	1.97	0.06	0.73	2.79	0.18	1270	1640	0.53
<b>E446455</b>	471620.4	6458582.5	2.89	6.21	1.66	0.98	0.07	0.41	0.47	0.06	526	810	4.35
<b>E446456</b>	472259.1	6458639.7	1.29	2.4	0.29	0.01	0.04	0.26	0.03	0.01	28	250	1.73
<b>E446457</b>	472772.6	6459441.2	1.27	7.49	1.21	0.06	0.22	0.76	0.71	0.06	170	1280	1.38
<b>E446458</b>	472882.8	6459525.4	1.24	0.27	0.1	0.01	0.01	0.01	<0.01	<0.01	26	40	0.03
<b>E446459</b>	472915	6459502	0.78	3.68	0.28	0.02	0.03	0.12	0.01	<0.01	21	100	0.12
<b>E446460</b>	472956.5	6459515.1	1.02	3.96	1.15	0.02	0.11	0.5	0.61	0.03	165	390	1.74
<b>E446461</b>	472985.7	6459742.9	1.26	5.63	0.36	0.01	0.02	0.21	0.01	0.01	26	830	0.08
<b>E446462</b>	472417	6459540.3	1.37	1.29	0.48	0.08	0.03	0.03	0.34	0.03	197	120	0.03
<b>E446463</b>	472139.8	6459500.8	0.94	6.7	0.41	<0.01	0.07	0.17	0.01	<0.01	7	1250	0.24
<b>E446464</b>			1.39	4.25	0.61	0.11	0.15	0.18	0.18	0.08	217	150	3.1
<b>E446465</b>	471732.9	6460286.1	1.41	4.6	0.03	<0.01	0.01	0.02	<0.01	<0.01	22	90	4.65
<b>E446466</b>	471629.6	6460444.4	1.42	0.95	0.12	0.01	0.01	0.05	<0.01	0.01	27	140	0.08
<b>E446467</b>	471725.4	6459852.1	1.43	4.2	0.21	<0.01	0.04	0.52	<0.01	<0.01	22	850	0.97
<b>I044401</b>	471528.6	6458347.5	0.94	7.71	3.06	2.07	0.04	0.55	3.25	0.09	874	1800	4.32
<b>I044402</b>	471607.4	6458572.9	0.78	5.6	3.79	1.3	0.24	0.69	2.12	0.14	1270	770	0.11
<b>I044403</b>	471627.2	6458567.3	1.8	7.59	1.88	0.32	0.02	0.48	0.7	0.06	702	760	2.74
<b>I044404</b>	472387.5	6458872	0.61	6.44	2.49	0.66	0.08	1.91	2.2	0.33	977	1570	0.03
<b>I044405</b>	472535.9	6459032.2	1.13	6.52	0.5	0.01	0.12	0.42	0.17	0.01	85	340	2.75
<b>I044406</b>	472342	6459570	0.66	7.3	4.06	0.12	0.12	0.81	1.98	0.12	440	370	0.51
<b>I044407</b>	471639	6460294	0.97	8.43	3.23	0.15	0.09	0.07	1.19	0.01	1380	1270	0.42
<b>I044408</b>	471896.4	6459705.7	1.5	6.63	4.48	1.76	0.5	1.45	1.88	0.22	765	900	4.24
<b>I044409</b>	471721	6459744	1.37	2.37	0.42	0.06	0.02	0.1	0.27	<0.01	142	750	1

<i>METHOD</i>			ME- ICP41	ME- ICP41	ME- ICP41	ME- ICP41	ME- ICP41	Au- AA23	ME- ICP41	ME- ICP41	ME- ICP41	Cu- OG46	ME- ICP41	ME- ICP41
<i>SAMPLE</i>	<i>EASTING</i>	<i>NORTHING</i>	<b>B</b>	<b>Ba</b>	<b>Be</b>	<b>Bi</b>	<b>Co</b>	<b>Au</b>	<b>Ag</b>	<b>Zn</b>	<b>Cu</b>	<b>Cu</b>	<b>Mo</b>	<b>W</b>
<i>DESCRIPTION</i>			ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm
<i>DETECTION</i>			10	10	0.5	2	1	0.005	0.2	2	1	0.001	1	10
<b>E446453</b>	471559.3	6458455.3	<10	450	<0.5	<2	35	1.18	11.2	96	>10000	1.135	<1	<10
<b>E446454</b>	471539.8	6458462.4	<10	400	<0.5	<2	36	0.09	21.1	109	>10000	2.72	1	<10
<b>E446455</b>	471620.4	6458582.5	<10	20	<0.5	8	50	0.459	2.4	71	1630		71	<10
<b>E446456</b>	472259.1	6458639.7	<10	30	<0.5	<2	1	0.005	<0.2	2	42		1	<10
<b>E446457</b>	472772.6	6459441.2	<10	130	<0.5	3	<1	0.005	0.3	18	118		<1	<10
<b>E446458</b>	472882.8	6459525.4	<10	10	<0.5	<2	<1	<0.005	<0.2	8	5		1	<10
<b>E446459</b>	472915	6459502	<10	80	<0.5	2	<1	0.006	<0.2	2	15		8	<10
<b>E446460</b>	472956.5	6459515.1	<10	70	<0.5	<2	6	<0.005	<0.2	17	49		5	<10
<b>E446461</b>	472985.7	6459742.9	<10	60	<0.5	<2	<1	<0.005	<0.2	3	35		5	<10
<b>E446462</b>	472417	6459540.3	<10	10	<0.5	<2	2	<0.005	<0.2	20	29		<1	<10
<b>E446463</b>	472139.8	6459500.8	<10	70	<0.5	<2	<1	0.005	<0.2	2	107		3	<10
<b>E446464</b>			<10	70	<0.5	<2	11	<0.005	<0.2	38	71		4	<10
<b>E446465</b>	471732.9	6460286.1	<10	10	<0.5	<2	2	<0.005	0.2	<2	67		2	<10
<b>E446466</b>	471629.6	6460444.4	<10	40	<0.5	<2	<1	<0.005	<0.2	<2	7		1	<10
<b>E446467</b>	471725.4	6459852.1	<10	100	<0.5	<2	<1	<0.005	<0.2	<2	5		33	<10
<b>I044401</b>	471528.6	6458347.5	<10	70	<0.5	<2	26	0.006	0.4	113	108		1	<10
<b>I044402</b>	471607.4	6458572.9	<10	120	<0.5	<2	22	0.009	0.9	118	1110		1	<10
<b>I044403</b>	471627.2	6458567.3	<10	20	<0.5	3	25	1.84	17.3	168	>10000	2.25	50	<10
<b>I044404</b>	472387.5	6458872	<10	860	<0.5	<2	28	0.01	0.3	121	389		1	<10
<b>I044405</b>	472535.9	6459032.2	<10	70	<0.5	3	4	0.011	0.3	12	124		2	<10
<b>I044406</b>	472342	6459570	<10	120	<0.5	<2	8	0.005	<0.2	47	96		<1	<10
<b>I044407</b>	471639	6460294	<10	40	<0.5	<2	10	<0.005	<0.2	62	39		2	<10
<b>I044408</b>	471896.4	6459705.7	<10	40	<0.5	10	28	<0.005	0.4	93	218		1	50
<b>I044409</b>	471721	6459744	<10	30	<0.5	<2	3	<0.005	<0.2	9	12		1	<10

<b>METHOD</b>			ME- ICP41	ME- ICP41	ME- ICP41	ME- ICP41	ME- ICP41	ME- ICP41	ME- ICP41	ME- ICP41	ME- ICP41	ME- ICP41	ME- ICP41	ME- ICP41	ME- ICP41	ME- ICP41	ME- ICP41
<b>SAMPLE</b>	<b>EASTING</b>	<b>NORTHING</b>	<b>Ni</b>	<b>Cr</b>	<b>Sb</b>	<b>Cd</b>	<b>As</b>	<b>Hg</b>	<b>Pb</b>	<b>Ga</b>	<b>La</b>	<b>Sc</b>	<b>Sr</b>	<b>Th</b>	<b>Tl</b>	<b>U</b>	<b>V</b>
<b>DESCRIPTION</b>			ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
<b>DETECTION</b>			1	1	2	0.5	2	1	2	10	10	1	1	20	10	10	1
<b>E446453</b>	471559.3	6458455.3	62	79	2	<0.5	2	<1	30	10	<10	6	173	<20	<10	<10	147
<b>E446454</b>	471539.8	6458462.4	59	97	<2	<0.5	2	<1	9	10	10	9	305	<20	<10	<10	146
<b>E446455</b>	471620.4	6458582.5	11	10	<2	0.6	4	<1	784	<10	<10	1	21	<20	<10	<10	56
<b>E446456</b>	472259.1	6458639.7	1	2	<2	<0.5	<2	<1	7	<10	10	1	9	<20	<10	<10	1
<b>E446457</b>	472772.6	6459441.2	3	8	<2	<0.5	<2	1	8	<10	<10	2	81	<20	<10	<10	56
<b>E446458</b>	472882.8	6459525.4	<1	7	<2	<0.5	<2	<1	3	<10	<10	<1	11	<20	<10	<10	2
<b>E446459</b>	472915	6459502	<1	4	<2	<0.5	<2	<1	9	<10	10	1	9	<20	<10	<10	12
<b>E446460</b>	472956.5	6459515.1	2	3	<2	<0.5	<2	<1	3	<10	10	2	62	<20	<10	<10	38
<b>E446461</b>	472985.7	6459742.9	<1	4	<2	<0.5	<2	<1	5	<10	10	1	25	<20	<10	<10	15
<b>E446462</b>	472417	6459540.3	3	19	<2	<0.5	<2	<1	<2	<10	<10	1	18	<20	<10	<10	29
<b>E446463</b>	472139.8	6459500.8	<1	3	<2	<0.5	<2	<1	5	<10	10	1	68	<20	<10	<10	14
<b>E446464</b>			3	11	<2	<0.5	15	1	7	<10	10	5	45	<20	<10	<10	70
<b>E446465</b>	471732.9	6460286.1	1	11	<2	<0.5	<2	1	<2	<10	<10	1	1	<20	<10	<10	1
<b>E446466</b>	471629.6	6460444.4	1	11	<2	<0.5	2	<1	3	<10	10	1	46	<20	<10	<10	24
<b>E446467</b>	471725.4	6459852.1	<1	5	<2	<0.5	<2	<1	<2	<10	10	1	40	<20	<10	<10	6
<b>I044401</b>	471528.6	6458347.5	26	19	<2	<0.5	29	1	29	10	<10	6	46	<20	<10	<10	116
<b>I044402</b>	471607.4	6458572.9	5	4	<2	<0.5	<2	<1	5	10	<10	4	90	<20	<10	<10	118
<b>I044403</b>	471627.2	6458567.3	6	7	2	1.5	4	<1	23	10	<10	2	7	<20	<10	<10	72
<b>I044404</b>	472387.5	6458872	17	20	<2	<0.5	<2	<1	<2	10	<10	5	33	<20	<10	<10	230
<b>I044405</b>	472535.9	6459032.2	1	1	<2	<0.5	<2	<1	8	<10	10	1	43	<20	<10	<10	14
<b>I044406</b>	472342	6459570	9	19	<2	<0.5	<2	<1	7	10	<10	15	62	<20	<10	<10	232
<b>I044407</b>	471639	6460294	12	7	<2	<0.5	<2	<1	4	10	10	6	85	<20	<10	<10	219
<b>I044408</b>	471896.4	6459705.7	9	6	<2	<0.5	2	1	5	10	<10	11	202	<20	<10	<10	214
<b>I044409</b>	471721	6459744	3	12	<2	<0.5	<2	<1	<2	<10	<10	<1	13	<20	<10	<10	10

**Appendix V**  
**Analytical Certificates**





ALS Canada Ltd.  
2103 Dollarton Hwy  
North Vancouver BC V7H 0A7  
Phone: +1 (604) 984 0221 Fax: +1 (604) 984 0218  
www.alsglobal.com/geochemistry

To: TRIUMPH GOLD CORP.  
1111 MELVILLE STREET  
SUITE 1100  
VANCOUVER BC V6E 3V6

Page: 1  
Total # Pages: 2 (A - C)  
Plus Appendix Pages  
Finalized Date: 8- SEP- 2017  
Account: NOFREG

**CERTIFICATE WH17171152**

Project: Andalusite Peak  
P.O. No.: 1005139- - NOFREG- - R1  
This report is for 24 Rock samples submitted to our lab in Whitehorse, YT, Canada on 14- AUG- 2017.

The following have access to data associated with this certificate:

TONY BARRESI

JESSE HALLE

GRAEME HOPKINS

**SAMPLE PREPARATION**

ALS CODE	DESCRIPTION
WEI- 21	Received Sample Weight
LOG- 21	Sample logging - ClientBarCode
CRU- QC	Crushing QC Test
PUL- QC	Pulverizing QC Test
CRU- 31	Fine crushing - 70% < 2mm
SPL- 21	Split sample - riffle splitter
PUL- 35	Pulv 250 g Split to 95% < 106 um

**ANALYTICAL PROCEDURES**

ALS CODE	DESCRIPTION	INSTRUMENT
ME- OG46	Ore Grade Elements - AquaRegia	ICP- AES
Cu- OG46	Ore Grade Cu - Aqua Regia	ICP- AES
Au- AA23	Au 30g FA- AA finish	AAS
ME- ICP41	35 Element Aqua Regia ICP- AES	ICP- AES

To: TRIUMPH GOLD CORP.  
ATTN: TONY BARRESI  
1111 MELVILLE STREET  
SUITE 1100  
VANCOUVER BC V6E 3V6

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

\*\*\*\*\* See Appendix Page for comments regarding this certificate \*\*\*\*\*

Signature:



Colin Ramshaw, Vancouver Laboratory Manager



ALS Canada Ltd.  
 2103 Dollarton Hwy  
 North Vancouver BC V7H 0A7  
 Phone: +1 (604) 984 0221 Fax: +1 (604) 984 0218  
 www.alsglobal.com/geochemistry

To: TRIUMPH GOLD CORP.  
 1111 MELVILLE STREET  
 SUITE 1100  
 VANCOUVER BC V6E 3V6

Page: 2 - A  
 Total # Pages: 2 (A - C)  
 Plus Appendix Pages  
 Finalized Date: 8- SEP- 2017  
 Account: NOFREG

Project: Andalusite Peak

**CERTIFICATE OF ANALYSIS WH17171152**

Sample Description	Method Analyte Units LOR	WEI- 21	Au- AA23	ME- ICP41	ME- ICP41	ME- ICP41	ME- ICP41	ME- ICP41	ME- ICP41	ME- ICP41	ME- ICP41	ME- ICP41	ME- ICP41	ME- ICP41	ME- ICP41	ME- ICP41
		Recvd Wt. kg	Au ppm	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %
E446453		1.17	1.180	11.2	2.72	2	<10	450	<0.5	<2	1.44	<0.5	35	79	>10000	4.27
E446454		1.18	0.090	21.1	3.16	2	<10	400	<0.5	<2	1.97	<0.5	36	97	>10000	5.04
E446455		2.89	0.459	2.4	1.66	4	<10	20	<0.5	8	0.98	0.6	50	10	1630	6.21
E446456		1.29	0.005	<0.2	0.29	<2	<10	30	<0.5	<2	0.01	<0.5	1	2	42	2.40
E446457		1.27	0.005	0.3	1.21	<2	<10	130	<0.5	3	0.06	<0.5	<1	8	118	7.49
E446458		1.24	<0.005	<0.2	0.10	<2	<10	10	<0.5	<2	0.01	<0.5	<1	7	5	0.27
E446459		0.78	0.006	<0.2	0.28	<2	<10	80	<0.5	2	0.02	<0.5	<1	4	15	3.68
E446460		1.02	<0.005	<0.2	1.15	<2	<10	70	<0.5	<2	0.02	<0.5	6	3	49	3.96
E446461		1.26	<0.005	<0.2	0.36	<2	<10	60	<0.5	<2	0.01	<0.5	<1	4	35	5.63
E446462		1.37	<0.005	<0.2	0.48	<2	<10	10	<0.5	<2	0.08	<0.5	2	19	29	1.29
E446463		0.94	0.005	<0.2	0.41	<2	<10	70	<0.5	<2	<0.01	<0.5	<1	3	107	6.70
E446464		1.39	<0.005	<0.2	0.61	15	<10	70	<0.5	<2	0.11	<0.5	11	11	71	4.25
E446465		1.41	<0.005	0.2	0.03	<2	<10	10	<0.5	<2	<0.01	<0.5	2	11	67	4.60
E446466		1.42	<0.005	<0.2	0.12	2	<10	40	<0.5	<2	0.01	<0.5	<1	11	7	0.95
E446467		1.43	<0.005	<0.2	0.21	<2	<10	100	<0.5	<2	<0.01	<0.5	<1	5	5	4.20
I044401		0.94	0.006	0.4	3.06	29	<10	70	<0.5	<2	2.07	<0.5	26	19	108	7.71
I044402		0.78	0.009	0.9	3.79	<2	<10	120	<0.5	<2	1.30	<0.5	22	4	1110	5.60
I044403		1.80	1.840	17.3	1.88	4	<10	20	<0.5	3	0.32	1.5	25	7	>10000	7.59
I044404		0.61	0.010	0.3	2.49	<2	<10	860	<0.5	<2	0.66	<0.5	28	20	389	6.44
I044405		1.13	0.011	0.3	0.50	<2	<10	70	<0.5	3	0.01	<0.5	4	1	124	6.52
I044406		0.66	0.005	<0.2	4.06	<2	<10	120	<0.5	<2	0.12	<0.5	8	19	96	7.30
I044407		0.97	<0.005	<0.2	3.23	<2	<10	40	<0.5	<2	0.15	<0.5	10	7	39	8.43
I044408		1.50	<0.005	0.4	4.48	2	<10	40	<0.5	10	1.76	<0.5	28	6	218	6.63
I044409		1.37	<0.005	<0.2	0.42	<2	<10	30	<0.5	<2	0.06	<0.5	3	12	12	2.37



ALS Canada Ltd.  
 2103 Dollarton Hwy  
 North Vancouver BC V7H 0A7  
 Phone: +1 (604) 984 0221 Fax: +1 (604) 984 0218  
 www.alsglobal.com/geochemistry

To: TRIUMPH GOLD CORP.  
 1111 MELVILLE STREET  
 SUITE 1100  
 VANCOUVER BC V6E 3V6

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 Plus Appendix Pages  
 Finalized Date: 8- SEP- 2017  
 Account: NOFREG

Project: Andalusite Peak

**CERTIFICATE OF ANALYSIS WH17171152**

Sample Description	Method Analyte Units LOR	ME- ICP41	ME- ICP41	ME- ICP41	ME- ICP41	ME- ICP41	ME- ICP41	ME- ICP41	ME- ICP41	ME- ICP41	ME- ICP41	ME- ICP41	ME- ICP41	ME- ICP41	ME- ICP41	ME- ICP41
		Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm	Sc ppm	Sr ppm
E446453		10	<1	1.16	<10	2.50	938	<1	0.09	62	1750	30	0.25	2	6	173
E446454		10	<1	0.73	10	2.79	1270	1	0.06	59	1640	9	0.53	<2	9	305
E446455		<10	<1	0.41	<10	0.47	526	71	0.07	11	810	784	4.35	<2	1	21
E446456		<10	<1	0.26	10	0.03	28	1	0.04	1	250	7	1.73	<2	1	9
E446457		<10	1	0.76	<10	0.71	170	<1	0.22	3	1280	8	1.38	<2	2	81
E446458		<10	<1	0.01	<10	<0.01	26	1	0.01	<1	40	3	0.03	<2	<1	11
E446459		<10	<1	0.12	10	0.01	21	8	0.03	<1	100	9	0.12	<2	1	9
E446460		<10	<1	0.50	10	0.61	165	5	0.11	2	390	3	1.74	<2	2	62
E446461		<10	<1	0.21	10	0.01	26	5	0.02	<1	830	5	0.08	<2	1	25
E446462		<10	<1	0.03	<10	0.34	197	<1	0.03	3	120	<2	0.03	<2	1	18
E446463		<10	<1	0.17	10	0.01	7	3	0.07	<1	1250	5	0.24	<2	1	68
E446464		<10	1	0.18	10	0.18	217	4	0.15	3	150	7	3.10	<2	5	45
E446465		<10	1	0.02	<10	<0.01	22	2	0.01	1	90	<2	4.65	<2	1	1
E446466		<10	<1	0.05	10	<0.01	27	1	0.01	1	140	3	0.08	<2	1	46
E446467		<10	<1	0.52	10	<0.01	22	33	0.04	<1	850	<2	0.97	<2	1	40
I044401		10	1	0.55	<10	3.25	874	1	0.04	26	1800	29	4.32	<2	6	46
I044402		10	<1	0.69	<10	2.12	1270	1	0.24	5	770	5	0.11	<2	4	90
I044403		10	<1	0.48	<10	0.70	702	50	0.02	6	760	23	2.74	2	2	7
I044404		10	<1	1.91	<10	2.20	977	1	0.08	17	1570	<2	0.03	<2	5	33
I044405		<10	<1	0.42	10	0.17	85	2	0.12	1	340	8	2.75	<2	1	43
I044406		10	<1	0.81	<10	1.98	440	<1	0.12	9	370	7	0.51	<2	15	62
I044407		10	<1	0.07	10	1.19	1380	2	0.09	12	1270	4	0.42	<2	6	85
I044408		10	1	1.45	<10	1.88	765	1	0.50	9	900	5	4.24	<2	11	202
I044409		<10	<1	0.10	<10	0.27	142	1	0.02	3	750	<2	1.00	<2	<1	13





ALS Canada Ltd.  
 2103 Dollarton Hwy  
 North Vancouver BC V7H 0A7  
 Phone: +1 (604) 984 0221 Fax: +1 (604) 984 0218  
 www.alsglobal.com/geochemistry

To: TRIUMPH GOLD CORP.  
 1111 MELVILLE STREET  
 SUITE 1100  
 VANCOUVER BC V6E 3V6

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 Plus Appendix Pages  
 Finalized Date: 8- SEP- 2017  
 Account: NOFREG

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Sample Description	Method Analyte Units LOR	ME- ICP41	ME- ICP41	ME- ICP41	ME- ICP41	ME- ICP41	ME- ICP41	ME- ICP41	Cu- OG46
		Th ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm	Cu %
E446453		<20	0.22	<10	<10	147	<10	96	1.135
E446454		<20	0.18	<10	<10	146	<10	109	2.72
E446455		<20	0.06	<10	<10	56	<10	71	
E446456		<20	0.01	<10	<10	1	<10	2	
E446457		<20	0.06	<10	<10	56	<10	18	
E446458		<20	<0.01	<10	<10	2	<10	8	
E446459		<20	<0.01	<10	<10	12	<10	2	
E446460		<20	0.03	<10	<10	38	<10	17	
E446461		<20	0.01	<10	<10	15	<10	3	
E446462		<20	0.03	<10	<10	29	<10	20	
E446463		<20	<0.01	<10	<10	14	<10	2	
E446464		<20	0.08	<10	<10	70	<10	38	
E446465		<20	<0.01	<10	<10	1	<10	<2	
E446466		<20	0.01	<10	<10	24	<10	<2	
E446467		<20	<0.01	<10	<10	6	<10	<2	
I044401		<20	0.09	<10	<10	116	<10	113	
I044402		<20	0.14	<10	<10	118	<10	118	
I044403		<20	0.06	<10	<10	72	<10	168	2.25
I044404		<20	0.33	<10	<10	230	<10	121	
I044405		<20	0.01	<10	<10	14	<10	12	
I044406		<20	0.12	<10	<10	232	<10	47	
I044407		<20	0.01	<10	<10	219	<10	62	
I044408		<20	0.22	<10	<10	214	50	93	
I044409		<20	<0.01	<10	<10	10	<10	9	



ALS Canada Ltd.  
2103 Dollarton Hwy  
North Vancouver BC V7H 0A7  
Phone: +1 (604) 984 0221 Fax: +1 (604) 984 0218  
www.alsglobal.com/geochemistry

To: TRIUMPH GOLD CORP.  
1111 MELVILLE STREET  
SUITE 1100  
VANCOUVER BC V6E 3V6

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CERTIFICATE OF ANALYSIS WH17171152

### CERTIFICATE COMMENTS

#### LABORATORY ADDRESSES

Applies to Method:	Processed at ALS Thunder Bay located at 645 Norah Crescent, Thunder Bay, ON, Canada		
	CRU- 31	CRU- QC	LOG- 21
	PUL- QC	SPL- 21	WEI- 21
			PUL- 35
Applies to Method:	Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.		
	Au- AA23	Cu- OG46	ME- ICP41
			ME- OG46

**Appendix VI**  
**Sample Descriptions**

SAMPLE	DESCRIPTION
E446453	Talus of bladed feldspar porphyry. Moderately to strongly magnetic. Malachite _ epidote on fracture surface with dis. Tetrahedrite in selvages to fracture/vein.
E446454	Talus of bladed feldspar porphyry with 5mm thick bornite to chalcocite to malachite vein + malachite on fractures.
E446455	Mineralized pyrite-chalcopyrite-calcite-quartz vein with coxcomb texture. Sample is of variably quartz-sericite-pyrite altered wall rock that includes dark domains with high magnetite component, light domains with high quartz component. Both domains have 10% fine disseminated pyrite + irregular 3mm quartz veins, some with coarse chalcopyrite clots
E446456	Locally highly gossanous talus of silicified quartz sericite schist with 5% disseminated pyrite.
E446457	Several boulders in bottom of gully. A is quartz kaolinite altered with quartz. B is quartz sericite schist with quartz stockwork and limonite boxwork.
E446458	Whiteish gossan. Fine grained granular prismatic quartz + specular hematite + coarse white mica (after feldspar phenocrysts) in bladed feldspar porphyry protolith.
E446459	White altered rock strongly weathered at surface and rusty below surface. TS sample 21 is quartz sericite schist, sample 22 is rusty rock below surface. Assay sample is of mainly delithified coarse white mica with a rusty vein.
E446460	Sample collected from edge of large red gossan that occupies most of a rib leading down the mountain. Coarse mica + quartz with 3% disseminated pyrite - subcrop.
E446461	Coarse white mica + quartz. Massive-sulfide but now leached out veins. Also some coarse prismatic quartz veins.
E446462	Rusty bill quartz vein 20 cm thick in plagioclase porphyritic amygdaloidal basalt
E446463	Prominent band of quartz sericite schist on ridge with rusty subcrop that contains leached quartz sulfide veins.
E446464	Locally derived talus of strongly silicified quartz sericite schist with 8% disseminated pyrite and trace disseminated chalcopyrite.
E446465	Rib of local subcrop. Strongly silicified rock, vuggy silica with > 10% disseminated pyrite.
E446466	Top of andalusite exposure. 1-3mm euhedral quartz + andalusite + hematite + dumortierite + quartz veins with limonite boxwork. Radiating sprays of coarse white mica on fractures. 3mm to 3 cm vugs filled with white mica or ingrowing andalusite crystals.
E446467	Common in talus across this slope: mafic volcanic rock with strong white mica and/or chlorite alteration but no schistose fabric. At this location outcrop with strong clay/argillic altered zone with high proportion of pyrite and in places hematite (TS sample 50). also here a large pod of white clay rock that has been transported fluidly from beneath the bold outcrop. Sample (assay and TS51) is of float: strongly quartz sericite altered rock with coarse quartz + limonite veins.
I044401	Foliated basalt in saddle. Sericite pyrite alteration with 5% pyrite.
I044402	
I044403	Coarse quartz-carbonate vein with abundant chalcopyrite, malachite and magnetite in selvages.
I044404	green volcanic rock
I044405	Quartz sericite schist with 5% disseminated pyrite
I044406	Near last sample, sanple taken of similar rock. Plg-phyric andesite with Fe-staining and qtz-pyr veining, representative of leached rock along lower shoulder.
I044407	Near where gullys join, gossanous rock in centre of chute collects boulders of QSP altered volcanic/sub-volcanic. Peacock tarnish (cpy?) on one sample collected for assay.
I044408	Further down gully is outcrop of vfg to fg felsic tuff, mostly altered to clays with rusted out sulfides. Unit is fissile, foliated. White to buff - same colour as gossan
I044409	Veining through outcrop as described above sampled for assay
TSA-01	Foliated quartz-sericite-pyrite altered vesicular basalt in 2 m thick zone. Basalt has coarse quartz veins in low density. Alteration zone has 2-3% pyrite and minor narrow quartz veins.
TSA-02	Foliated basalt in saddle. Sericite pyrite alteration with 5% pyrite.
TSA-02	Foliated basalt in saddle. Sericite pyrite alteration with 5% pyrite.

TSA-03	Abruptly quartz-sericite-pyrite altered fine grained basalt?. Total textural destruction apparent. Strike of altered zone is perpendicular to ridge. Contains quartz eyes, so possibly a felsic dyke?
TSA-03	Abruptly quartz-sericite-pyrite altered fine grained basalt?. Total textural destruction apparent. Strike of altered zone is perpendicular to ridge. Contains quartz eyes, so possibly a felsic dyke?
TSA-04	Mineralized pyrite-chalcopyrite-calcite-quartz vein with coxcomb texture. Sample is of variably quartz-sericite-pyrite altered wall rock that includes dark domains with high magnetite component, light domains with high quartz component. Both domains have 10% fine disseminated pyrite + irregular 3mm quartz veins, some with coarse chalcopyrite clots
TSA-04	Mineralized pyrite-chalcopyrite-calcite-quartz vein with coxcomb texture. Sample is of variably quartz-sericite-pyrite altered wall rock that includes dark domains with high magnetite component, light domains with high quartz component. Both domains have 10% fine disseminated pyrite + irregular 3mm quartz veins, some with coarse chalcopyrite clots
TSA-05	8 metre wide ridge+swaths of boulders are foliated clay altered rock.
TSA-05	8 metre wide ridge+swaths of boulders are foliated clay altered rock.
TSA-06	Quartz sericite schist
TSA-06	Quartz sericite schist
TSA-07	Narrow band of clay altered rock in otherwise epidote altered volcanoclastic rock. A few coarse quartz veins around.
TSA-07	Narrow band of clay altered rock in otherwise epidote altered volcanoclastic rock. A few coarse quartz veins around.
TSA-08	Quartz sericite schist in small patch of subcrop
TSA-08	Quartz sericite schist in small patch of subcrop
TSA-09	Last station to here is mainly underlain by quartz sericite schist. Now transitioning into non clay altered andesite
TSA-10	Quartz sericite schist in outcrop. Variable silicification.
TSA-10	Quartz sericite schist in outcrop. Variable silicification.
TSA-11	Locally highly gossanous talus of silicified quartz sericite schist with 5% disseminated pyrite.
TSA-11	Locally highly gossanous talus of silicified quartz sericite schist with 5% disseminated pyrite.
TSA-12	Bladed feldspar porphyry locally completely altered to white mica. Some remnant texture present but mineralogically destroyed.
TSA-12	Bladed feldspar porphyry locally completely altered to white mica. Some remnant texture present but mineralogically destroyed.
TSA-13	Completely clay altered bladed feldspar porphyry.
TSA-13	Completely clay altered bladed feldspar porphyry.
TSA-14	Quartz sericite schist with 5% disseminated pyrite
TSA-14	Quartz sericite schist with 5% disseminated pyrite
TSA-16	Strongly white mica altered quartz sericite schist. Coarse mica. Exposed in gopher hole.
TSA-16	Strongly white mica altered quartz sericite schist. Coarse mica. Exposed in gopher hole.
TSA-15	Quartz sericite schist with 5% disseminated pyrite. Remnant bladed feldspar porphyry texture.
TSA-15	Quartz sericite schist with 5% disseminated pyrite. Remnant bladed feldspar porphyry texture.
TSA-17	Several boulders in bottom of gully. A is quartz kaolinite altered with quartz. B is quartz sericite schist with quartz stockwork and limonite boxwork.
TSA-17	Several boulders in bottom of gully. A is quartz kaolinite altered with quartz. B is quartz sericite schist with quartz stockwork and limonite boxwork.
TSA-17	Several boulders in bottom of gully. A is quartz kaolinite altered with quartz. B is quartz sericite schist with quartz stockwork and limonite boxwork.
TSA-18	Coarse white and army green micas in quartz sericite schist subcrop.
TSA-18	Coarse white and army green micas in quartz sericite schist subcrop.
TSA-19	Whiteish gossan. Fine grained granular prismatic quartz + specular hematite + coarse white mica (after feldspar phenocrysts) in bladed feldspar porphyry protolith.



TSA-19	Whiteish gossan. Fine grained granular prismatic quartz + specular hematite + coarse white mica (after feldspar phenocrysts) in bladed feldspar porphyry protolith.
TSA-20	Whiteish well crystalline quartz + andalusite + dumortierite? + green mica + hematite + coarse white mica. Hot alteration!
TSA-20	Whiteish well crystalline quartz + andalusite + dumortierite? + green mica + hematite + coarse white mica. Hot alteration!
TSA-20	Whiteish well crystalline quartz + andalusite + dumortierite? + green mica + hematite + coarse white mica. Hot alteration!
TSA-21	White altered rock strongly weathered at surface and rusty below surface. TS sample 21 is quartz sericite schist, sample 22 is rusty rock below surface. Assay sample is of mainly delithified coarse white mica with a rusty vein.
TSA-21	White altered rock strongly weathered at surface and rusty below surface. TS sample 21 is quartz sericite schist, sample 22 is rusty rock below surface. Assay sample is of mainly delithified coarse white mica with a rusty vein.
TSA-22	White altered rock strongly weathered at surface and rusty below surface. TS sample 21 is quartz sericite schist, sample 22 is rusty rock below surface. Assay sample is of mainly delithified coarse white mica with a rusty vein.
TSA-22	White altered rock strongly weathered at surface and rusty below surface. TS sample 21 is quartz sericite schist, sample 22 is rusty rock below surface. Assay sample is of mainly delithified coarse white mica with a rusty vein.
TSA-23	Sample collected from edge of large red gossan that occupies most of a rib leading down the mountain. Coarse mica + quartz with 3% disseminated pyrite - subcrop.
TSA-23	Sample collected from edge of large red gossan that occupies most of a rib leading down the mountain. Coarse mica + quartz with 3% disseminated pyrite - subcrop.
TSA-24	Subcrop of quartz sericite schist with trace pyrite.
TSA-24	Subcrop of quartz sericite schist with trace pyrite.
TSA-25	Quartz rich quartz-sericite schist with trace specular hematite.
TSA-25	Quartz rich quartz-sericite schist with trace specular hematite.
TSA-26	Coarse white mica + quartz. Massive-sulfide but now leached out veins. Also some coarse prismatic quartz veins.
TSA-26	Coarse white mica + quartz. Massive-sulfide but now leached out veins. Also some coarse prismatic quartz veins.
TSA-27	Quartz sericite schist. At higher elevation looks less, even un- altered.
TSA-28	Quartz sericite schist with a low proportion of disseminated pyrite.
TSA-28	Quartz sericite schist with a low proportion of disseminated pyrite.
TSA-29	Coarse quartz sericite schist. Patchy quartz chlorite schist. Some mixed. Up to 2 % disseminated pyrite.
TSA-29	Coarse quartz sericite schist. Patchy quartz chlorite schist. Some mixed. Up to 2 % disseminated pyrite.
TSA-30	Quartz sericite schist in narrow saddle. Looks like low temperature assemblage, possibly fault related.
TSA-31	Quartz sericite schist domains cross weakly or unaltered bladed feldspar porphyry beginning here (moving NW).
TSA-31	Quartz sericite schist domains cross weakly or unaltered bladed feldspar porphyry beginning here (moving NW).
TSA-32	Prominent band of quartz sericite schist on ridge with rusty subcrop that contains leached quartz sulfide veins.
TSA-33	Historic sample site. Band of quartz sericite/chlorite schist with possible remnant plagioclase porphyritic volcanic. Some epidote alteration. 5% disseminated pyrite.
TSA-33	Historic sample site. Band of quartz sericite/chlorite schist with possible remnant plagioclase porphyritic volcanic. Some epidote alteration. 5% disseminated pyrite.
TSA-34A	Sample collected from field of altered subcrop in saddle. Here quartz sericite schist with coarse mica exposed in a frost boil.
TSA-34A	Sample collected from field of altered subcrop in saddle. Here quartz sericite schist with coarse mica exposed in a frost boil.
TSA-34B	Sample collected from field of altered subcrop in saddle. Here quartz sericite schist with coarse mica exposed in a frost boil.
TSA-34B	Sample collected from field of altered subcrop in saddle. Here quartz sericite schist with coarse mica exposed in a frost boil.
TSA-35	Band of quartz sericite schist exposed in saddle. Low proportion of disseminated pyrite.
TSA-35	Band of quartz sericite schist exposed in saddle. Low proportion of disseminated pyrite.
TSA-36	Quartz sericite schist with disseminated specular hematite and intact biotite? Subcrop that is probably slightly transported downslope.
TSA-36	Quartz sericite schist with disseminated specular hematite and intact biotite? Subcrop that is probably slightly transported downslope.

TSA-37	Quartz sericite schist. Subcrop transported slightly downslope.
TSA-38	Locally derived talus of strongly silicified quartz sericite schist with 8% disseminated pyrite and trace disseminated chalcopyrite.
TSA-38	Locally derived talus of strongly silicified quartz sericite schist with 8% disseminated pyrite and trace disseminated chalcopyrite.
TSA-39	Rib of local subcrop. Strongly silicified rock, vuggy silica with > 10% disseminated pyrite.
TSA-40	Vesicular basalt with pink hematite + clay alteration. Actinolite amygdules.
TSA-40	Vesicular basalt with pink hematite + clay alteration. Actinolite amygdules.
TSA-41	Quartz sericite schist with volcanic rock protolith with epidote amygdules partly preserved. 10% fine disseminated specular hematite in schist. Historical sample from here.
TSA-41	Quartz sericite schist with volcanic rock protolith with epidote amygdules partly preserved. 10% fine disseminated specular hematite in schist. Historical sample from here.
TSA-42	Top of andalusite exposure. 1-3mm euhedral quartz + andalusite + hematite + dumortierite + quartz veins with limonite boxwork. Radiating sprays of coarse white mica on fractures. 3mm to 3 cm vugs filled with white mica or ingrowing andalusite crystals.
TSA-42	Top of andalusite exposure. 1-3mm euhedral quartz + andalusite + hematite + dumortierite + quartz veins with limonite boxwork. Radiating sprays of coarse white mica on fractures. 3mm to 3 cm vugs filled with white mica or ingrowing andalusite crystals.
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TSA-43	Massive coarse quartz and andalusite.
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TSA-44	Quartz sericite schist that outcrops right beside the andalusite outcrop.
TSA-44	Quartz sericite schist that outcrops right beside the andalusite outcrop.
TSA-45	Subcrop of quartz sericite schist.
TSA-46	5% pyrite in laminated mafic tuff. Chlorite altered; cut by bands of porphyroblastic? clay altered rock (terraspec sample).
TSA-46	5% pyrite in laminated mafic tuff. Chlorite altered; cut by bands of porphyroblastic? clay altered rock (terraspec sample).
TSA-47	Strongly altered quartz sericite schist in 1m across zone approximately oriented 120 degrees. Between outcrops of rusty blocky-feldspar porphyry that are not strongly altered.
TSA-47	Strongly altered quartz sericite schist in 1m across zone approximately oriented 120 degrees. Between outcrops of rusty blocky-feldspar porphyry that are not strongly altered.
TSA-48	Quartz sericite schist with fine white clay (kaolinite?) and disseminated hematite? Subcrop probably transported downslope slightly.
TSA-48	Quartz sericite schist with fine white clay (kaolinite?) and disseminated hematite? Subcrop probably transported downslope slightly.
TSA-49	Large patch of clay rich white mica schist under rusty talus.
TSA-50	Common in talus across this slope: mafic volcanic rock with strong white mica and/or chlorite alteration but no schistose fabric. At this location outcrop with strong clay/argillic altered zone with high proportion of pyrite and in places hematite (TS sample 50). also here a large pod of white clay rock that has been transported fluidly from beneath the bold outcrop. Sample (assay and TS51) is of float: strongly quartz sericite altered rock with coarse quartz + limonite veins.
TSA-50	Common in talus across this slope: mafic volcanic rock with strong white mica and/or chlorite alteration but no schistose fabric. At this location outcrop with strong clay/argillic altered zone with high proportion of pyrite and in places hematite (TS sample 50). also here a large pod of white clay rock that has been transported fluidly from beneath the bold outcrop. Sample (assay and TS51) is of float: strongly quartz sericite altered rock with coarse quartz + limonite veins.
TSA-51	Common in talus across this slope: mafic volcanic rock with strong white mica and/or chlorite alteration but no schistose fabric. At this location outcrop with strong clay/argillic altered zone with high proportion of pyrite and in places hematite (TS sample 50). also here a large pod of white clay rock that has been transported fluidly from beneath the bold outcrop. Sample (assay and TS51) is of float: strongly quartz sericite altered rock with coarse quartz + limonite veins.

TSA-51	Common in talus across this slope: mafic volcanic rock with strong white mica and/or chlorite alteration but no schistose fabric. At this location outcrop with strong clay/argillic altered zone with high proportion of pyrite and in places hematite (TS sample 50). also here a large pod of white clay rock that has been transported fluidly from beneath the bold outcrop. Sample (assay and TS51) is of float: strongly quartz sericite altered rock with coarse quartz + limonite veins.
TSA-52	Granular quartz sericite schist
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TSA-53	Clay band running approximately N-S. Quartz sericite schist altered from volcanic protolith on margin of altered domain.
TSA-53	Clay band running approximately N-S. Quartz sericite schist altered from volcanic protolith on margin of altered domain.
LTSA-01	Lower on shoulder is an oxidized qtz-chl-pyrite altered porphyry(?). Terra-spec collected
LTSA-02	Passed over scree of act-breccia +/- veining of volcanoclastic rock. Here, terra-spec candidate collected of qtz-pyr-clay assemblage. Rusty to buff-yellow-white alteration.
LTSA-03	Further south along slope, scree becomes (more commonly) clay/ser(?) altered and weathered out pyrite is abundant. Difficult to tell protolith but surrounding is plag-rich andesite
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LTSA-04	At base of slope, metavolcanic schist is oxidized and clay altered (white and green mica, ser+chl?) with pyrite. Sampled for possible thin section.
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LTSA-05	station of fsp-phyric metavolcanic that is locally altered to QSP and foliated
LTSA-05	station of fsp-phyric metavolcanic that is locally altered to QSP and foliated
LTSA-06	Sidehill outcrop of plg-phyric andesite that is extensively altered and veined to QS(?)P +/- chl
LTSA-07	South side of slope, sampled metavolcanic - stained by FeOx, QSP altered
LTSA-08	gossanous gully on SW side of ridge. QSP alteration with weathered out pyr, qtz>>ser locally. Some veining with radial growths (pyrophyllite?) and host rock is grey-blue silicified.
LTSA-08	gossanous gully on SW side of ridge. QSP alteration with weathered out pyr, qtz>>ser locally. Some veining with radial growths (pyrophyllite?) and host rock is grey-blue silicified.
LTSA-08	gossanous gully on SW side of ridge. QSP alteration with weathered out pyr, qtz>>ser locally. Some veining with radial growths (pyrophyllite?) and host rock is grey-blue silicified.
LTSA-09	Near where gullies join, gossanous rock in centre of chute collects boulders of QSP altered volcanic/sub-volcanic. Peacock tarnish (cpy?) on one sample collected for assay.
LTSA-10	near middle of gully, outcrop of orange gossan, sampled. Metavolcanic/qtz-ser schist with clay +FeOx alteration
LTSA-10	near middle of gully, outcrop of orange gossan, sampled. Metavolcanic/qtz-ser schist with clay +FeOx alteration
LTSA-11	Nearby to the west, schistose layer is strongly altered by a white mica and qtz+/- sulfides (now weathered?). Pophyrobasts are also altered/weathered
LTSA-11	Nearby to the west, schistose layer is strongly altered by a white mica and qtz+/- sulfides (now weathered?). Pophyrobasts are also altered/weathered
LTSA-12	Terra spec sample of QSP altered metavolcanic schist
LTSA-12	Terra spec sample of QSP altered metavolcanic schist
LTSA-13	Qtz-ser-chl +/-pyr metavolcanic schist. Foliation and qtz-augen are visible, ser-pyr replacement common.
LTSA-13	Terra spec sample of qsp altered plag-phyric andesite/monzonite.
LTSA-14	Terra spec sample of qsp altered plag-phyric andesite/monzonite.