



## ASSESSMENT REPORT TITLE PAGE AND SUMMARY

TITLE OF REPORT: 2019 GEOLOGICAL RECONNAISSANCE AND PROSPECTING REPORT, INDEPENDENCE AND SLIPPERY IAN PROPERTIES, STEWART AREA, BRITISH COLUMBIA

TOTAL COST: \$112,500

AUTHOR(S): TOM SETTERFIELD, KATARINA BJORKMAN, SHARYN ALEXANDER

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SIGNATURE(S):

NOTICE OF WORK PERMIT NUMBER(S)/DATE(S): STATEMENT OF WORK EVENT NUMBER(S)/DATE(S):

YEAR OF WORK: 2019 PROPERTY NAME: Independence and Slippery Ian CLAIM NAME(S) (on which work was done): 402839, 833717, 896484, 1044473, 1020165, 1052978, 1062037, 1062038, 1062039, 1062040

COMMODITIES SOUGHT: Gold, silver, copper, lead, zinc

MINERAL INVENTORY MINFILE NUMBER(S),IF KNOWN: 104A010, 104A034, 104A038, 104A040, 104A061, 104A068, 104A073, 104A090, 104A091, 104A098, 104A131, 104A132, 104A164

MINING DIVISION: Skeena NTS / BCGS: 104A/04W, 104A001 LATITUDE: 56° 06' LONGITUDE: 129° 57' (at centre of work) UTM Zone: 09 EASTING: 441000

NORTHING:6219000

OWNER(S): Richard Billingsley

MAILING ADDRESS: 11114 147A St, Surrey, BC, V3R 3W2

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

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REPORT KEYWORDS (lithology, age, stratigraphy, structure, alteration, mineralization, size and attitude. **Do not use abbreviations or codes**) Lower to Middle Jurassic volcanic and sedimentary rocks of the Hazleton Group (Unuk River, Betty Creek, Mount Dilworth, Salmon River formations). Vein style mineralization is associated with NW striking Cenozoic dikes. Veins contain variable Au, Ag, Cu, Pb, Zn, magnetite and barite.

REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS: 8968, 11800, 12394, 12973, 15581, 17609, 19747, 20195, 21367, 21457, 21950, 22893, 23555, 26219, 33400, 35249, 36124, 36576, 37315

TYPE OF WORK IN THIS REPORT	EXTENT OF WORK (in metric units)	ON WHICH CLAIMS	PROJECT COSTS APPORTIONED (incl. support)
GEOLOGICAL (scale, area)		All claims (see list on first page)	
Ground, mapping			50,200
Photo interpretation			
GEOPHYSICAL (line-kilometres)			
Ground			
Magnetic			
Electromagnetic			
Induced Polarization			
Radiometric			
Seismic			
Other			
Airborne			
GEOCHEMICAL (number of sample	es analysed for)		
Soil			
Silt			
Rock (266)		All claims (see list on first page)	14,200
Other			
DRILLING (total metres, number of	holes, size, storage location)		
Core			
Non-core			
PROSPECTING (scale/area) (variable scale)		All claims (see list on first page)	48,100
PREPATORY / PHYSICAL			
Line/grid (km)			
Topo/Photogrammetric (scal	le, area)		
Legal Surveys (scale, area)			
Road, local access (km)/trail	l		
Trench (number/metres)			
Underground development (	metres)		
Other			
		Total Cost	112,500

## **2019 GEOLOGICAL RECONNAISSANCE AND**

## **PROSPECTING REPORT**

## **INDEPENDENCE AND SLIPPERY IAN PROPERTIES,**

# STEWART AREA, BRITISH COLUMBIA

Property Tenures: 402839, 833717, 896484, 1044473, 1020165, 1052978, 1062037, 1062038, 1062039, 1062040

Total Assessment Report Related Expenditures: \$111,548

NTS Map 104A/04W BCGS Map 104A001 Latitude 56° 06'N Longitude 129° 57'W UTM Zone 09 (NAD 83): 441000E/6219000N Skeena Mining Division British Columbia Minfiles: 104A010, 104A034, 104A038, 104A040, 104A061, 104A068, 104A073, 104A090, 104A091, 104A098, 104A131, 104A132, 104A164

Property Owner **139085-Richard Billingsley** 11114 147A St Surrey, BC V3R 3W2

Date: January 6, 2020

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<u>"Signed & Sealed"</u> Dr. Tom Setterfield, P.Geo, Dr. Katarina Bjorkman and Sharyn Alexander

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## SUMMARY

The Independence and Slippery Ian properties are located approximately 15 km north-northeast of Stewart in northwestern British Columbia, close to the border with Alaska. They are situated near the former gold mining operations of Silback-Premier and Big Missouri within the historic Stewart mining camp of the Golden Triangle. The properties consist of ten mineral tenures covering a total of 2,647.88 hectares (26.5 km<sup>2</sup>). All tenures comprising the properties are 100% owned by Richard Billingsley of Surrey, British Columbia. A geological mapping and prospecting program was undertaken in July and August 2019 on the properties. Two geologists and two prospectors conducted field work from July 21<sup>st</sup> to July 31<sup>st</sup>. One geologist and one prospector returned for additional field work from August 16<sup>th</sup> to 23<sup>rd</sup>. The program aimed to verify historical mineralization and to discover new mineralization, as well as to improve geological understanding of the mineralization. The approach taken was to locate, sample and map around historical workings and retreating glaciers.

Road access to the extreme eastern part of the Independence Property is gained from Highway 37A from Stewart, and then through a network of forest roads. However the bulk of the property is only accessible by helicopter thence by foot because of the lack of forest roads due to its rugged terrain. There are drill roads on the Slippery Ian property that were established in the 1990's; the property was accessible by four wheel drive vehicles at that time. These roads would need to be upgraded in order to use them now; normal access to this property is via helicopter.

The properties occur on the eastern edge of the Coast Mountains; terrain is mountainous with significant relief. Elevation on the Independence property ranges from 120 m ASL to over 1980 m. The lower parts of the property are forested, whereas the higher elevations contain bare rock or locally glaciers. The tree line is at approximately 1,000 m ASL. The Slippery Ian property is above the main tree line; elevations range from 1020 m ASL to 1620 m. The glaciers have retreated significantly from when most exploration was completed on the properties, uncovering additional rock exposures that have not previously been examined.

The properties are underlain by Lower to Middle Jurassic volcanic and sedimentary rocks of the Hazelton Group. Late (Cenozoic-Mesozoic) diorite to granodiorite dikes striking west-northwest and northwest cut the Jurassic strata. The Hazelton Group consists of four formations on the properties: i) basal intermediate flows and volcaniclastic sequences of the Unuk River Formation that are unconformably overlain by the ii) lithologically similar Betty Creek Formation; iii) mixed felsic to intermediate pyroclastic tuff, pyritic tuff and limestone of the Mount Dilworth Formation, which serves as a marker horizon; unconformably overlain by iv) banded to laminated siliciclastic rocks of the Salmon River Formation.

Mineralization occurs mostly as polymetallic Au-Ag-Cu-Zn-Pb replacement veins localized along fault structures. There is an apparent spatial association between late veins and dikes, suggesting a similar structural control, where deep crustal pathways focused magmas and later mineralizing fluids. Syngenetic sulphide occurrences are locally present, but have not been previously investigated in any detail. The main showings on the properties were explored in the 1920's, including via exploration adits. A major gap in recorded exploration occurs from 1930 to 1965, after which intermittent exploration (local prospecting, soil surveys, minor geophysics and drilling) occurred. Thirteen mineral occurrences

are listed in the provincial MINFILE database of the British Columbia Geological Survey for the properties.

Two new mineralized zones were identified in 2019, and most historical occurrences were located, including: Independence, Daly-Sullivan, Big Casino, Slippery Ian, Silver Crown, Iron Cap, Spider No. 1 and Spider No. 3. Abundant low level gold (up to 10.7 g/t) and copper (up to 2.92%) occur at the Independence vein system; consistently anomalous lead (up to 6.81%) and zinc (up to 15.75%) are also present. The second highest gold value from the program, 15.1 g/t, came from the Daly-Sullivan vein on the Independence property; a new showing 1 km away may be on strike from this vein. Silver results from Big Casino were good (up to 1470 g/t), and the three highest copper values from the program (up to 13.75%) are from this locality. Zinc results are also impressive (highest 12.5%), and two samples returned lead values of greater than 1%. The Silver Crown–M.J.- Slippery Ian mineralized system yielded the most consistently elevated base and precious metals over a strike of 900 m, with overall gold values up to 9.28 g/t, silver up to 185 g/t, and base metals up to 0.66% Cu, 19.1% Pb and 19.6% Zn. The Spider No. 3 showing on the northern boundary of the Slippery Ian property produced the highest precious metal values from the program-50.7 g/t Au and 9,300 g/t Ag. While copper results are low, lead is consistently anomalous, with a high of 5.48%; likewise zinc is consistently anomalous, with a high of 12.75%.

The exploration program in 2019 was a first pass effort to establish the location and setting of historical occurrences and to prospect for new mineralization along areas of ablated glaciers. The work was significant because it was the first field program to consider the entire properties, and it was the first sustained program to include the use of modern GPS instruments to enable the capture of highly accurate spatial data. While the results of this program are very encouraging, it is important to realize that the program only scratched the surface when it comes to documenting the true extent of mineralization on these two large properties. Several historical occurrences were not visited, time was limited at the occurrences visited, and much of the area of glacier retreat remains unexplored. Moreover, although economic syngenetic sulphides were not discovered, exhalative horizons associated with the Mount Dilworth Formation were noted at Iron Cap and JT. Therefore, the properties have potential for additional polymetallic veining and for syngenetic sulphide mineralization. Major exploration programs are clearly warranted on both properties.

General recommendations include: a more complete compilation of historical exploration, particularly at Slippery Ian; checking on the feasibility of driving to the Slippery Ian property; working with mountain guides to safely explore high relief terrain; and consideration of drone photography to aid geologic mapping and structural interpretation.

Property-wide recommendations include: a regional structural interpretation of the properties, using magnetic, geological and satellite data; property-wide mapping and prospecting to complete the geologic picture and identify new mineralization; additional mapping, prospecting and sampling around all known occurrences; and additional exploration targeted on ground newly exposed by retreating glaciers. This work would be in advance of ground geophysics and drilling on the properties.

The assessment-eligible work documented in this report cost \$111,548.

# 1.0 INTRODUCTION

#### 1.1 General

The Independence and Slippery Ian properties are located approximately 15 km north-northeast of the small town of Stewart in northwestern British Columbia, close to the border with Alaska (Fig. 1). They are situated near the former gold mining operations of Silback-Premier and Big Missouri, along with several advanced prospects, all within the historic Stewart mining camp of the Golden Triangle (Bailey, 2017).

The main showings on the properties were explored in the 1920's, including via exploration adits. A major gap in recorded exploration occurs from 1930 to 1965, after which intermittent exploration (local prospecting, soil surveys, minor geophysics and drilling) occurred (Section 5). Thirteen mineral occurrences are listed in the provincial MINFILE database of the British Columbia Geological Survey (BCGS) for the properties.

The properties are 100% owned by Richard Billingsley. The senior author, a principal of Geo Exploration Scouts, was commissioned to organize and implement a prospecting/geological reconnaissance campaign on the properties in the summer of 2019. The main objectives were to sample potentially mineralized rocks from known and new mineral occurrences, to prospect newly uncovered rocks proximal to retreating glaciers, and to obtain property-scale geological information.

The 1983 North American Datum (NAD83) co-ordinate system is used in this report. The properties are in Universal Transverse Mercator (UTM) Zone 09N.

## **1.2** Abbreviations Used in the Report

Ag – silver	cpy – chalcopyrite
Au – gold	py – pyrite
Cu – copper	qtz – quartz
Mo – molybdenum	sphal - sphalerite
Pb – lead	ARIS – asessment reports, BCGS
Sb - antimony	BCGS – British Columbia Geological Survey
Zn – zinc	Ma (mega-annum) - a million years
g/t – grams per tonne	PROP – property files, BCGC
cm – centimeter	QFP - quartz feldspar porphyry
m – meter	
km - kilometer	
oz - ounce	



Figure 1: Location of the Independence and Slippery Ian Properties in British Columbia

# 2.0 PROPERTY DESCRIPTION AND LOCATION

The properties occur 15 km north-northeast of Stewart (population 500) in the Skeena Mining Division (Fig. 2). Stewart is an approximately 3.5 hour drive from the larger centers of Smithers and Terrace (Fig. 1). The properties consist of ten mineral tenures covering a total of 2,647.88 hectares (26.5 km<sup>2</sup>), and are centered at approximately 441000E/6219000N (UTM Co-ordinates) or 56°06'N/129° 57'W (longitude /latitude), in National Topographic System (NTS) 1:50,000 map sheet 104A/04 (Table 1; Figs. 2 and 3; Map 1). All tenures comprising the properties are 100% owned by Richard Billingsley (Client #139085) of Surrey, British Columbia.



Figure 2: Location of the Independence and Slippery Ian properties

Title No	Claim Name	Property	Issue Date	Good To Date	Area (ha)
402839	BUNTING 1	Independence	2003/JUN/06	2024/JAN/31	500.000
1044473	<b>RED CLIFF EXTERNAL</b>	Independence	2016/JUN/02	2021/JUN/02	36.09
1062037	INDEPENDENCE 1	Independence	2018/JUL/30	2024/JAN/31	451.20
1062038	INDEPENDENCE 2	Independence	2018/JUL/30	2024/JAN/31	126.33
1062039	<b>INDEPENDENCE 3</b>	Independence	2018/JUL/30	2024/JAN/31	559.71
1062040	<b>INDEPENDENCE 4</b>	Independence	2018/JUL/30	2024/JAN/31	523.71
833717	SLIPPERY IAN	Slippery Ian	2010/SEP/16	2024/MAR/31	234.46
896484	SLIPPERY IAN 2	Slippery Ian	2011/SEP/11	2024/MAR/31	72.12
1020165	SLIPPERY IAN 3	Slippery Ian	2013/JUN/09	2024/MAR/31	18.04
1052978	SLIPPERY IAN 3	Slippery Ian	2017/JUL/07	2024/MAR/31	126.22

Table 1. Mineral Tenures Comprising the Independence and Slippery Ian Properties

# 3.0 ACCESS AND PHYSIOGRAPHY

Road access to the extreme eastern part of the Independence Property is gained from Highway 37A from Stewart, and then through a network of forest roads. However the bulk of the property is only accessible by helicopter thence by foot because of the lack of forest roads due to its rugged terrain. There are drill roads on the Slippery Ian property that were established in the 1990's; the property was accessible by four wheel drive vehicles at that time from immediately north of Long Lake (Fig. 3). These roads would need to be upgraded in order to use them now; normal access to the Slippery Ian property is via helicopter.

The properties occur on the eastern edge of the Coast Mountains; terrain is mountainous with significant relief (Plate 1). Elevation on the Independence property ranges from 120 m ASL on the Bear River to over 1980 m at the top of Mount Bunting (Fig. 4). The lower parts of the property are forested, whereas the higher elevations contain bare rock or locally glaciers. The tree line is at approximately 1,000 m ASL. The Slippery Ian property is above the main tree line; elevations range from 1020 m ASL near Long Lake to 1620 m on the eastern side of the property. The glaciers have retreated significantly from the areal extent shown in Figure 4, uncovering significant additional rock exposures that have not previously been examined.



Figure 3: Mineral Tenures Comprising the Independence Property



Figure 4: Physiography of the Independence and Slippery Ian Properties



Plate 1: Mountainous Terrain of the Independence Property. Photo Taken at 442000E/6217500N

# 4.0 GEOLOGIC SETTING

The properties are underlain by Lower to Middle Jurassic volcanic and sedimentary rocks of the Hazelton Group (Grove, 1986; Alldrick, 1993). Late (Cenozoic-Mesozoic) diorite to granodiorite dikes striking west-northwest and northwest cut the Jurassic strata (Plate 2). The Hazelton Group consists of four formations on the properties: i) basal intermediate flows and volcaniclastic sequences of the Lower Jurassic Unuk River Formation that are unconformably overlain by the ii) lithologically similar Middle Jurassic Betty Creek Formation; iii) mixed felsic to intermediate pyroclastic tuff, pyritic tuff and limestone of the Mount Dilworth Formation, which serves as a marker horizon; unconformably overlain by iv) banded to laminated siliciclastic rocks of the Salmon River Formation. Given the lithological similarities between the Unuk River and Betty Creek formations, they were not differentiated during this work. Figure 5 shows the distribution of formations according to the BC Geological Survey (BCGS), as well as the Minfile occurrences on the two properties.



Plate 2: Dike Swarm Cutting Hazleton Group Rocks. Photo Taken at 442100E/6217525N

# 5.0 PREVIOUS EXPLORATION

## 5.1 Independence Property

Historic work on the Independence property was compiled from assessment reports and property files (Alexander, 2019). Report images were georeferenced and important features (e.g. drill holes and sample locations) were digitized. Note that the spatial accuracy of the digitized data was limited at times due to the varying quality of source images and/or the absence of a standardized geographic grid to locate the activity spatially. Therefore, spatial locations of digitized objects should be considered to have  $a \pm 200$  m accuracy.

The Independence property has been subjected to intermittent exploration since the 1910s by various groups, with historic work being reported in the BC Minister of Mines Annual Reports. Much of the early exploration and prospecting completed in this area was in the vicinity of Independence, Independence 1, and Big Casino MINFILE occurrences (Fig. 5). Exploration activities completed at the Independence property are summarized in Table 2.

In 1919, several vein zones were discovered and traced on surface, and six adits were developed at the Independence showing (Figs. 5 and 6). In 1920, a small pit exposed a 14 ft wide quartz-calcite-jasper vein with pyrite, sphalerite and galena assaying approximately 18 oz/ton Ag. Further prospecting in 1920 or 1922 revealed the presence of additional veins, or the same vein at different locations, including a grab sample from an 8 ft wide vein assaying 15 oz/ton and a sample assaying 0.04 oz/ton Au and 28 oz/t Ag (Di Spirito et al., 1986; Gewargis and Tomlinson, 1990; Gewargis, 1991; Bailey, 2011).



Figure 5: Geology and Minfile Occurrences of the Independence and Slippery Ian Properties Area Based on Mapping by the BCGS.

References	Year	Drilling / Adits / Open Cuts	Sampling / Trenching	Mapping / Surveys / Other Work
Sookochoff (2016), Sookochoff (2015), Bailey (2011), Di Spirito et al. (1986), Smitheringale (1984)	1920	Open cut qtz-calcite-jasper vein. Additional veins discovered. Also drilled 2 holes, not anomalous	Grab sample (assayed in 1922?)	
Sookochoff (2016), Sookochoff (2015)	1921	Exploration adit		
Sookochoff (2016), Sookochoff (2015), Bailey (2011), Di Spirito et al (1986), Smitheringale (1984)	1925- 1929	Two exploration adits (or tunnels). Some drilling		
Bailey (2017), Di Spirito et al (1986),	1965		Soil geochem, trenching	Geological mapping, magnetometer survey, soil geochem, trenching
Bailey (2017), Sookochoff (2016), Sookochoff (2015), Bailey (2011), Di Spirito et al (1986), Smitheringale (1984), DeLeen & Klepacki (1980), Gewargis & Tomlinson (1990), Gewargis (1991)	1980		19 samples from UG/surface workings. 8 samples from lower tunnel	Geological mapping of surface and underground workings
Bailey (2017), Sookochoff (2016), Sookochoff (2015), Smitheringale (1984)	1984		3 stream silt/sediment geochem samples	Geological mapping (1:5k)
Bailey (2017), Sookochoff (2016), Sookochoff (2015), Bailey (2011), Gewargis & Tomlinson (1990), Di Spirito et al (1986),	1986		157 (113?) soil samples, 121 (5?) rock samples, 13 (12?) silt samples - different reports	Heliborne VLF-EM and ground magnetometer surveys, geological mapping, mapped underground workings. 4 mineralized veins discovered
Bailey (2017), Bailey (2011), Gewargis & Tomlinson (1990), Gewargis (1991)	1988	Diamond drilling	Sampling only (Trenching not completed due to snow)	Geological mapping/prospecting
Bailey (2017), Sookochoff (2016), Gewargis & Tomlinson (1990), Gewargis (1991)	1990	6 diamond drillholes testing mineralized veins (764.13m). 4 trenches excavated	63 rock chip samples. 23 soil samples	Geological mapping/ prospecting (1:5k), DIGHEM (EM, resistivity, magnetic, VLF) airborne survey. Several anomalies identified
Bailey (2017), Sookochoff (2016), Gewargis (1991)	1991	11 diamond drillholes (1338.5m)	21 chip/ grab samples	Geological mapping
Cremonese (2006)	2006			Heli-borne geophysical survey
Sookochoff (2015)	2014			Structural analysis
Sookochoff (2016)	2015		6 rock samples from cross structures	Structural analysis
Bailey (2017)	2016		Shear zones channel sampled	
Walcott & Walcott (2018)	2017			Heli-borne magnetic survey (200m/1000m spacing)

 Table 2. Summary of Independence Property Exploration History (from Alexander, 2019)



Between 1925 and 1929, two 700 ft tunnels/exploration adits were driven at 900 m (No. 1 tunnel) and 840 m elevation (No. 2 tunnel; Smitheringale, 1984; Bailey, 2011). The No. 1 tunnel had low grade mineralization from 300 ft to the face; however, a series of crosscuts intersected higher grade. At 600 ft, a crosscut intersected 16 ft of 18 oz/ton silver, and at 700 ft, a crosscut intersected 15 ft of 1.8 oz/ton silver and 3.8% zinc (Smitheringale, 1984; Di Spirito et al., 1986; Gewargis and Tomlinson, 1990). The No. 2 tunnel is said to be in low grade mineralization for its entire length, with a crosscut at 700 ft containing a 5 ft zone of 1.6 oz/ton silver and 4% zinc (Smitheringale, 1984).

In the early 1920s, the Algunican Development Company Ltd. drilled two angled holes in the vicinity of the pits above Adit 1 (No. 1 tunnel) for a length of 155 m; however, both core recovery and assay results were poor, possibly because they did not reach vein material (Gewargis and Tomlinson, 1990; Gewargis, 1991). The exact location of these holes is not known.

Work on the Independence property commenced again in 1965 when Canex Aerial Exploration Company conducted geological mapping, a magnetometer survey, soil geochemistry and a limited amount of trenching (Di Spirito et al., 1986; Gewargis and Tomlinson, 1990; Gewargis, 1991; Bailey, 2017). The original report for this work was not found.

In 1979 or 1980, Tournigan Mining Explorations Ltd conducted sampling and geological mapping in the area of the Independence surface showings and old underground workings (Deleen and Klepacki, 1980). A total of 19 samples were taken from the underground and surface workings (Deleen and Klepacki 1980). Eight samples were taken from Vein 1 in the lower tunnel, with assay results up to 0.46 oz/ton gold, 2.72 oz/ton silver, 4.66% copper, 4.4% lead, and 2.96% zinc (Deleen and Klepacki, 1980). A 30 cm chip sample from a narrow vein assayed 0.13 oz/ton gold, 1.57 oz/ton silver, and 1.27% copper (Smitheringale, 1984; Gewargis and Tomlinson 1990); however the exact location of this vein is unknown.

In 1984, Tournigan Mining conducted geological mapping and stream sediment sampling (Smitheringale, 1984; Sookochoff, 2015; 2016). This work led to the discovery of the Tournigan, A&T and Rock of Ages MINFILE occurrences (Fig. 5).

In 1986, Moche Resources completed heliborne VLF-EM and magnetometer surveys, soil, silt and rock sampling, and geological mapping (Di Spirito et al., 1986), including mapping the underground workings at the Independence showings. Results of the airborne VLF-EM survey, which was flown along north-south widely spaced lines, were generally inconclusive (Di Spirito et al., 1986; Bailey, 2011). 113 soil samples were collected over the mineralized zones at Independence, and 12 silt samples were collected from various creeks on the property. Anomalous gold, silver, copper, lead and zinc from silt samples are generally attributable to areas of known mineralization (Di Spirito et al., 1986). Additional work included exploring and mapping two adits and several trenches containing gold and silver bearing silica-jasper-barite veins mineralized with pyrite, magnetite, sphalerite and galena. These veins occur at contacts between quartz monzonite dikes and country rock.

A second phase of exploration was completed in 1988 by Moche Resources, including geological mapping, trenching and sampling aimed at increasing the known strike length of the previously trenched veins containing massive sulphides (Gewargis and Tomlinson, 1990). Significant values of silver and gold were obtained from sampling along the Independence vein system, and twelve assays returned silver values in excess of 4 oz/ton (Gewargis and Tomlinson, 1990; Gewargis, 1991). The results of the program were documented in a 1988 report by G. Richmond; however this report was not available.

In 1990, Aremeno Resources Inc. conducted prospecting and geological mapping, geochemical surveys, trenching, geophysical surveys (magnetometer and VLF-EM), and Phase 1 of a diamond drilling program (Gewargis and Tomlinson, 1990; Gewargis, 1991). Six holes were drilled close to the Independence showing (Fig. 6) totalling 764.13 m, with a total of 200 samples taken from the drill holes (Gewargis and Tomlinson, 1990). This drilling phase concentrated on testing the economic potential of Veins 1 and 2, in the vicinity of Trenches 5, 6, 7 and the area between Adits 1 and 2, and to also evaluate and test the possibility of volcanogenic massive sulphide mineralization on the property (Gewargis, 1991). Four drill holes (90-1, 90-2, 90-3 and 90-5) returned significant silver, gold and copper values (Table 3). The best hole (90-5), drilled at a location west of Adit 1, intersected two zones of massive sulphide (Gewargis and Tomlinson, 1990; Gewargis, 1991).

Drillhole		From (m)	To (m)	Width (m)	Au (oz/t)	Ag (oz/t)	Cu (%)
90-1		45.1	49.4	4.3	0.0035	5.59	-
	Includes	48.0	48.7	0.7	0.001	15.20	-
		88.1	89.3	1.2	0.001	0.34	-
90-2		57.8	64.5	6.7	0.006	7.78	-
		60.6	61.4	0.8	0.04	54.3	-
90-3		93.9	95.0	1.1	0.007	1.19	-
90-5		71.9	73.3	1.4	0.006	1.61	1.77
	Includes	71.9	72.2	0.3	0.011	4.53	6.04
		106.5	108.0	1.5	0.152	2.17	2.02
	Includes	106.9	107.7	0.8	0.237	0.75	0.32
	and	107.7	108.0	0.7	0.068	2.33	2.72

Table 3. Significant Mineralized Intercepts - 1990 Drilling (Gewargis and Tomlinson, 1990)

A preliminary attempt was made to calculate "possible ore reserves" for silver in the main vein structure between Trench 7 on the surface and Adit/Vein #1 (underground workings), which occur approximately 95 to 99 metres below the surface. These geological possible ore reserves were based on limited drilling and estimated at ~196,000 tons grading 7 to 10 oz/ton silver (Gewargis and Tomlinson, 1990).

63 rock samples and 23 soil samples were collected in 1990, with several samples detecting anomalous gold values at the end of the soil grid lines (Gewargis and Tomlinson, 1990). Four trenches (90-1 to 90-4) were excavated in the main grid area. These samples and trenches can be seen in Figure 6. The results of the DIGHEM VLF-EM airborne survey were not provided in the report; however, they were cited as disappointing (Gewargis and Tomlinson, 1990).

In 1991, a second phase of diamond drilling was completed by Armenex Resources Canada Inc., with the objective of evaluating the potential of the gold-copper mineralization along the strike and at depth in the south extension of the grid, proximal to Minfile showing Independence 1 (Gewargis, 1991). Eleven drill holes were completed for a total of 1,338.5 m (Fig. 6; Gewargis, 1991). Drill holes 91-1 to 91-3 and 91-6 to 91-9 intersected the main mineralized zone with encouraging gold, silver and copper values, confirming the existence of mineral zonation wherein metal values increase at depth (Table 4; Gewargis 1991).

Drillhole	From (m)	To (m)	Width (m)	Au (oz/t)	Ag (oz/t)	Cu (%)	<b>Pb</b> (%)	Zn (%)
91-1	29.3	29.9	0.6	< 0.002	0.82	0.27	-	-
	43.0	46.7	3.7	0.042	1.398	0.89	-	-
	56.0	56.5	0.5	0.064	0.93	0.98	0.28	1.44
	57.4	59.3	1.9	0.014	0.21	0.23	0.28	0.22
	80.1	80.4	0.3	0.015	0.56	0.34	0.34	8.61
91-2	61.1	62.7	1.6	0.021	1.30	2.40	0.41	1.92
	71.6	72.1	0.5	0.010	0.39	1.30	0.08	0.30
91-3	30.0	30.3	0.3	0.005	1.44	1.12	-	-
	80.1	81.1	1.0	0.012	0.45	0.57	0.01	0.05
	93.2	93.5	0.3	0.081	0.09	0.12	0.01	0.03
	94.7	95.2	0.5	0.053	0.43	0.63	-	-
91-4	34.7	35.0	0.3	0.011	0.25	0.34	-	-
91-6	3.1	3.5	0.4	0.122	4.34	2.35	-	-
	22.4	24.0	1.6	0.014	0.31	-	-	-
	26.4	26.7	0.3	0.049	0.31	0.19	0.02	0.05
91-7	28.2	30.1	1.9	0.033	0.357	0.797	-	-
	42.2	43.0	0.6	0.019	0.24	-	-	-
91-8	53.7	54.6	0.9	0.015	0.10	-	-	-
	59.0	60.5	1.5	0.012	0.10	-	-	-
91-9	27.6	28.6	1.0	0.013	0.29	-	-	-
	56.4	57.2	0.8	0.016	0.23	-	-	-
	57.7	58.0	0.3	0.010	1.06	-	-	-
	58.8	59.7	0.9	0.013	0.16	-	-	-
91-10	17.4	18.0	0.6	0.011	0.28	0.08	-	-

Table 4. Significant Mineralized Intercepts - 1991 Drilling (Gewargis, 1991)

Also during the 1991 program, prospecting, geological mapping, and rock (chip and grab) sampling was conducted to locate Adit 5 and explore for massive sulphide mineralization (Gewargis, 1991). 21 rock chip and grab samples were taken from several locations on the property, mainly near Independence 1, assaying as high as 0.029 oz/ton gold, 5.1 oz/ton silver and 1.16 % copper (Gewargis, 1991).

An airborne magnetic/electromagnetic survey was flown over a property immediately north of the Independence property in 2006 (Cremonese, 2006). The survey covers the northeastern 5% of the present Independence property and the northeastern 10% of the present Slippery Ian property.

In 2014, a structural analysis was completed on Tenure 402839 (Fig. 3) for Richard Billingsley to delineate structures which could control potentially economic mineral zones (Sookochoff, 2015). The analysis involved marking observed lineaments on Google Earth imagery, with a total of 69 lineaments indicated. Three structural intersections were identified for follow-up. A similar structural analysis was completed in the southeastern portion of the present property in 2015, identifying a further three structural intersections. Six rock samples were collected during a brief field visit, but no anomalous values were obtained (Sookochoff, 2016).

In late 2016, a short reconnaissance sampling program was undertaken at the Independence occurrence to determine whether shear hosted mineralization might illustrate a metal zonation (Bailey 2017). Two known mineralized shear structures were sampled; an upper shear zone, and one at a lower elevation where mining had been undertaken (Bailey 2017). Best results were: 3.77 g/t Au, >100 g/t Ag, 0.23% Cu, >1% Pb and >1% Zn (different samples).

A heliborne magnetic survey was flown over the Independence and Slippery Ian properties on 200 m spaced, north-south lines in 2017 (Walcott and Walcott, 2018). The survey showed several magnetic domains, as well as a dominant northwesterly fabric, possibly reflected by the known northwesterly trending dikes (Walcott and Walcott, 2018). The Total Field Intensity (TMI) and First Vertical Derivative (1VD) maps from the survey are shown in Figures 7 and 8 respsectively, along with the most obvious structures as interpreted by the present authors.

Decade Resources Ltd./Mountain Boy Minerals Ltd. have a property immediately northeast of Independence, including legacy claims which partially underlie Billingsley's tenure 402839 (Fig. 4). This property contains the Red Cliff and Montrose mineral occurrences (Fig. 5). Red Cliff is a past producing gold-copper deposit; recent work has outlined gold  $\pm$  copper  $\pm$  zinc mineralization over a 2 km long northerly trending shear zone (Dick, 2014). Although most maps produced by Decade Resources show north-trending mineralization, some maps indicate a zone of east-west trending mineralization, which would have the potential to strike onto the Independence property. Similarly, Montrose contains north-trending structurally controlled mineralization that could likewise strike onto the Independence property.

# 5.2 Slippery Ian Property

A limited prospecting and geology program was completed on the southwest corner of the Slippery Ian Property in 1983 (Lyngberg, 1983). A trench with minor pyrite and galena (the Lois occurrence; Fig. 5) was noted; no samples were taken. Minor prospecting was conducted on the northern portion of the Slippery Ian property in 1984 (Cremonese, 1984). No samples were collected from the property. In 1988 an airborne magnetic/VLF-EM survey was flown over a property than includes the northeastern third of the present Slippery Ian property (Hermary and Woods, 1988). The results of this survey have been superseded by Billingsley's 2017 heliborne magnetic survey.

In 1989 White Channel Resources Inc. conducted geological/prospecting, soil surveying and a ground magnetic-VLF survey on the eastern portion of the present Slippery Ian property (Yacoub and Kikauka, 1989). They noted "*twelve quartz-sulphide veins, concentrated along the axial plane of a north plunging anticline, which have been exposed over a strike length of 700 metres*". A 40 cm rock chip sample from one vein assayed 22.42 g/t Au, 447 g/t Ag, 1.5% Pb and 0.96% Zn. Unfortunately the maps from this report are particularly difficult to georeference; it is thought that the mineralized system described in the report is the Silver Crown system (Fig. 5; see below).

In 1990 Amphora Resources flew a magnetic/VLF-EM survey over the bulk of the present Slippery Ian property (Murton, 1990). This survey has also been superseded by the 2017 survey.

Navarre Resources carried out important work on the Slippery Ian property from 1990 to 1995, although not all of it was well documented. Following on from the work of White Channel Resources, Navarre conducted mapping, sampling, soil geochemistry and a ground EM survey, as well drilling 10 diamond drill holes in 1990 (Kikauka, 1990). By the end of this work they had defined 18 quartz-sulphide veins within a 1.4 km long, northerly trending mineralized system (Fig. 9). The average value of 102 channel samples from this system was 1.5 g/t Au, 45.0 g/t Ag, 0.1% Cu, 7.0% Pb and 2.0% Zn (Kikauka, 1990). The highest grab sample was 78.89 g/t Au, 14,720 g/t Ag, 0.06% Cu, 10.1% Pb and 0.33% Zn. The best drill intersection was 1.2 m @ 4.98 g/t Au and 5.4 g/t Ag from the Baseline Vein.



Figure 7: Total Magnetic Intensity, Independence and Slippery Ian Properties (2017 Survey)



Figure 8: First Vertical Derivative of TMI, Independence and Slippery Ian Properties (2017 Survey)



Figure 9: Historical Exploration of the Slippery Ian Property (information from Kikauka, 1990; 2012)

Navarre conducted a small field program in 1992, performing minor trenching, stream sediment geochemistry and ground EM (Kikauka, 1992). The average of seven trench channel samples was 0.2 m @ 12.96 g/t Au, 8.88 g/t Ag, 0.82% Cu, 7.34% Pb and 14.55% Zn. These samples were all collected from the same high grade vein over a strike length of approximately 20 m, but it is not clear exactly which vein was sampled. Seven holes were drilled in 1993 (Kikauka, 1994), but the results were not discussed; their locations are shown in a later report (Kikauka, 2012). In 1994 Navarre undertook ground VLF surveys and took an additional eight samples from the known high grade veins. A long conductor is associated with the Iron Cap showing (Fig. 5). An additional ten holes were drilled in 1995, but the location of these holes was not documented (Kikauka, 2000).

In 2012 Dynasty Gold Corp. undertook a small program on the eastern two thirds of the present Slippery Ian property (Kikauka, 2012). Part of the program involved compiling previous work, including producing a map showing the locations of most of the 1993 and 1995 drill holes. The locations of most historical holes (missing 93-1 and 95-6) are shown on Figure 9. 75 soil samples and 12 rock chip samples were collected in 2012 from the Baseline and Knob zones (Fig. 9); best results are 7.2 g/t Au, 4,395 g/t Ag, 0.15% Cu, 1.81% Pb and 7.21% Zn (different samples; Kikauka, 2012).

# 6.0 2019 EXPLORATION

## 6.1 General

A prospecting and geological reconnaissance program was completed in 2019 on the Independence and Slippery Ian properties for the owner, Richard Billingsley. A team of two geologists and two prospectors worked on the properties from July 22 to July 31, and a team of one geologist and one prospector worked on the properties from August 19 to August 23. The teams were based in Stewart, and flew to the properties with Yellowhead Helicopters most mornings. Ten days were spent in the field on the Independence property, four on the Slippery Ian property, and on three days weather prevented any fieldwork from being accomplished. The work was important because it was the first field program to consider the entire properties, and it was the first sustained program to include the use of modern GPS instruments to enable the capture of highly accurate spatial data.

The program focused on re-locating known mineral occurrences and exploring in areas where the glacier had recently retreated-note that the areal distribution of the glacier shown in Figure 4 is no longer accurate. Local geological mapping was completed to improve the current understanding of the lithology, structures and alteration immediately around the occurrences. Prospecting was conducted to obtain an improved knowledge of the distribution of anomalous metals on the property. Mapping/prospecting was undertaken using the ESRI Collector application on personal mobile devices. Location was obtained by Bluetooth connection to external high precision Arrow Gold GPS receivers, which provide sub-meter spatial accuracy. The geological interpretations are based on a combination of historical property and regional observations, and the current targeted program. A caveat is that the current mapping program was limited in scope, so interpretations are stretched based on observations, and local features like dikes and faults are not represented if they were not encountered. Approximately 1.5 km<sup>2</sup> (150 ha) of reconnaissance geological mapping was completed on the Independence property, and 0.75 km<sup>2</sup> (75 ha) on the Slippery Ian property (see maps below). Structural data was collected in the areas mapped, and where applicable, orientations of veins sampled were taken. A total of 266 samples were collected on the property; of these 144 were taken from the Independence property and 122 from

the Slippery Ian property. Sample locations shown on Map 2. Gold values are shown on Maps 3 and 4, silver values on Maps 5 and 6, and lead values are provided on Maps 7 and 8. Sample descriptions and key assays are provided in Appendix A and Certificates of Assay in Appendix B.

Samples collected in the field were photographed and then put into plastic sample bags along with the sample tag; the sample bag was zip locked. Sample locations were written on the sample tag book as well as digitally recorded in the field. Every twentieth sample was a blank (decorative white marble). Samples were put into labeled rice bags at the end of each day, which were secured when full. The rice bags were kept in the locked accommodation site used during the exploration campaign until they were transported by the authors to ALS Global's sample preparation facility in Terrace, British Columbia. A sample submittal form was filled out and presented to ALS staff along with the samples. Analytical results were sent directly to the senior author via email.

Sample preparation was completed at the ALS Global facility located at 2912 Molitor Street, Terrace, British Columbia. ALS Global ("ALS") is ISO/IEC 17025:2017 and ISO 9001:2015 certified and has been in business since 1999. ALS is independent of Billingsley. Samples were subjected to ALS's "PREP-31" sample preparation protocol. They were oven-dried at 110-120°C, and then crushed to 70% passing a 10 mesh (2 mm) stainless steel screen. A 250 g split was taken, which was then pulverized to better than 85% passing 75 microns. The pulp was sent to ALS's analytical facility at 2103 Dollarton Highway, North Vancouver, British Columbia for analysis. The ALS "ME-ICP61" and "Au-AA23" analytical protocols were used on the samples. ME-ICP61 involves a four acid digestion followed by the analysis of 33 elements by the ICP-AES technique. Elements of interest obtained by this method include silver, copper, molybdenum, lead and zinc, amongst others. The ME-ICP61 protocol has an upper limit of detection of 100 g/t for silver and 1% for copper, molybdenum, lead and zinc; samples with values of these elements greater than these limits were reanalyzed with ALS's "OG62" protocol (for ore grade samples). The Au-AA23 protocol involves analyzing a 30 g sample of pulp for gold via fire assay, with an atomic absorption finish. Samples that assay more that 10 g/t gold were reassayed using the "Au-GRA21" protocol, which analyzes a 30 g sample of pulp via fire assay, with a gravimetric finish.

#### 6.2 Geological Observations

Figure 10 illustrates an interpretation of the distribution of basic stratigraphy across the properties according to rock types, highlighting regional folding along northwest plunging axes. Mafic flows (e.g. Plate 3) and tuffs of the Middle Jurassic Unuk River and Betty Creek formations dominate the geology. Felsic to intermediate pyroclastic tuffs (Plate 4) with minor cherty limestone of the Mount Dilworth Formation occur at the top of the andesitic formations and serve as a stratigraphic marker horizon below the Salmon River Formation. The Mount Dilworth Formation was also observed in the northern part of the Independence property, where it is interpreted to be structurally repeated (Fig. 10). Property-wide folds have exposed Upper Jurassic Salmon River siliciclastic rocks in synclines. These rocks comprise grey banded and laminated mudstone, siltstone and sandstone with local conglomerate and cherty horizons. Siltstone-mudstone horizons are typically 1-4 cm thick and striped in appearance, whereas sandstone occurs as massive m-thick beds. The sedimentary sequence is characteristically folded in chevron folds across the property (Plate 5).

Porphyritic diorite, granodiorite, quartz monzodiorite and granite dikes cut the Hazelton Group. In general, granitic dikes predate diorite dikes, which are in turn cut by fine-grained mafic dikes. Most dikes dip steeply and trend WNW to NNW. Only dikes that were observed in person are shown on the

map, and consequently, the intrusive component is under-represented; there are portions of the property where dikes comprise 30-40% of exposed geology (e.g. Plate 2).

Mineralization occurs foremost as polymetallic Au-Ag-Cu-Zn-Pb replacement veins localized along fault structures. Polymetallic veins characterize the Independence, Big Casino, Daly-Sullivan, JT, Silver Crown-Slippery Ian-MJ and Spiders occurrences. Syngenetic sulphide occurrences include the Iron Cap and JT. There is an apparent spatial association between late veins and dikes, suggesting a similar structural control where deep crustal pathways focused magmas and later mineralizing fluids. The locations of most historical occurrences on the Independence and Slippery Ian properties obtained from the BC Minfile database were verified/improved upon. New sulphide and gold mineralization was found and sampled in two locations: at the J-T showing and 900 m west of the JT showing (see below). Both were previously covered by glacier ice. Gold results from the program are shown in Figure 11.

# 6.3 Mineralization on the Independence Property

#### 6.3.1 Independence Area

#### 6.3.1.1 General

Several historical workings in the Independence area were observed, most of which are 3-10 m wide blasted pits in the hillside or short (<25 m) tunnels. These historical workings lie on the east side of Bear Ridge, within heavily forested, steep slopes to subalpine heather-covered tundra. Old overgrown drill trails, drill pads and core boxes are scattered along the hillside. There are two very good landing spots at previous camps. Camp 1990, or the Tournigan Camp, provides access to Adit 6 and several blasted pits. The Shangri-La Camp provides the safest access to the main occurrence (Adit 1) and also to the drill road network and the Miner's Camp nearby Adit 1. The area between Adit 1 and the Tournigan Camp is best traversed using an ephemeral creek ravine to the west. Two four-person and two two-person days were spent in the Independence area. The first day examined geology to the northwest, on the ridge, whereas the second day was spent at the easily-accessed Independence workings. The latter two days were in part spent in unsuccessful attempts to access adits 3, 4 and 5.



Figure 10: Interpreted Geology Map of the Independence and Slippery Ian Properties



Plate 4: Ignimbrite, Mount Dilworth Formation

Plate 3: Pillowed Flow with Pyrite Along Selvages, JT Occurrence



Plate 5: Folded Siliciclastic Sediments, Salmon River Formation



Figure 11: Gold Results from 2019 Exploration Program

Mineralization at the Independence area is localized in NNW trending shear zones and breccia veins (Figs. 12 and 13). There are three main subparallel veins, and vein mineralogy varies by location, including quartz- magnetite-jasper  $\pm$  barite  $\pm$  pyrite  $\pm$  chalcopyrite  $\pm$  pyrrhotite  $\pm$  sphalerite  $\pm$  galena (e.g. Plate 6). Barite occurs as long blades with quartz, but rarely has any associated base metal sulphides. Pyrite occurs as fine-grained laminations and medium-grained euhedral cubes and dodecahedrons infilling space. Galena, sphalerite and chalcopyrite are most commonly medium-grained and concentrated in bands or pods. Assay results are shown in Table 5; best results are 10.7 g/t Au, 501 g/t Ag, 2.92% Cu, 6.8% Pb and 15.8% Zn (different samples). In general, elevated Pb and Zn are widespread across rocks excavated by the workings of the area, but high Cu and especially Au are constrained to Adit 1. The highest silver values are all located external to Adit 1. It is not surprising then, that Pb and Zn show a very strong correlation and Cu and Au show a strong correlation. Silver is best correlated to Cd, and then Pb. Metals show a negative correlation with Ba and K, suggesting that barite may have been a separate vein event. Based on metal ratios and observed mineralogy, Adit 1 is distinct from veins exposed in workings to the north.



Figure 12: Geology and Lead Distribution in the Greater Independence Area. Coloured Circles Indicate Outcrops of Specific Lithologies



Figure 13: Geology and Gold Distribution in the Immediate Independence Area



Plate 6: Quartzbarite-hematitemagnetite-sulphide vein, Independence Showing. From Trench/Pit 5

The Independence area is dominated by fine to medium-grained, grey-green plagioclase porphyritic andesitic flows and tuffs (Figs. 12 and 13). Flows comprise 10-30% medium-grained, porphyritic plagioclase in a fine to aphanitic matrix. Tuffaceous rocks to the northwest are felsic to intermediate in composition, with common chert clasts. These pyroclastic rocks range from fine-grained tuff to a lapilli tuff with flattened pumice clasts (Plate 4) and tuff breccia. They can be variably oxidized to reduced, giving an irregular patchwork appearance of deep mauve to pale green from a distance. Bedding is evident in this unit, generally trending NE. All volcano-sedimentary strata are cut at a high angle by NW-trending, steeping dipping diorite and granodiorite dikes, interpreted as part of the Portland Canal dike swarm. Late veins and shear structures are commonly localized alongside and occasionally within dikes, with a subparallel orientation. The spatial correlation between dikes and mineralized structures suggests a relationship between late magma pathways and fluid pathways.

#### 6.3.1.2 Adit 1

Adit 1 is the most extensive working in the Independence area and is easily spotted by the air due to >100 m of muck on the steep mountainside. The 2 x 2.5 m adit reportedly follows the 2.2-6.6 m wide shear structure for over 200 m into the mountainside. The adit was followed for ~50 m in 2019. Although the entrance shows evidence of some caving, it is in excellent condition, with timbers and rails along the floor. It could readily be mapped and sampled if a light source was available. Based on the exposure at the entrance, and the continuation along the adit, the main shear structure strikes NW and dips at 75° toward 220°. The mineralized shear is hosted in plagioclase porphyritic andesite flows. Several sulphide veinlets and narrow alteration zones occur subparallel to the shear in the andesite west of the adit. At the entry to the adit, a steeply SW dipping granodiorite dike cuts the shear, but is itself sheared and altered. Fresh granodiorite is located to the east of the adit. The shear hosts brecciated and laminated quartz-barite-magnetite-jasper  $\pm$  pyrite  $\pm$  chalcopyrite  $\pm$  pyrrhotite  $\pm$  sphalerite  $\pm$  galena veining with associated Au and Ag values. Some of the veins are vuggy, with clasts of wallrocks, whereas others are laminated.

Sample ID	Easting	Northing	Location	Au (ppm)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Mo (ppm)
Y610008	442903.7	6216350.3	Pit 6	0.029	208	266	68100	66500	3
Y610009	442915	6216551	oc, N	<0.005	4.5	42	211	376	1
Y610010	442857.8	6216527.6	Pit N	0.014	90.8	65	174	279	74
Y610011	442857.8	6216526.5	Pit N	0.006	98	159	1535	15200	6
Y610012	442853.1	6216502.9	Pit N	0.019	34.1	215	2030	9950	6
Y610013	442867.4	6216552	Pit N	<0.005	5	16	94	388	5
Y610056	442908.4	6216392.7	Pit 5	0.034	165	103	2230	1965	10
Y610057	442905	6216348.5	Pit 6	0.07	208	1105	9470	24700	14
Y610058	442945	6216311.5	Adit 6	0.052	28.9	112	2050	2500	90
Y610059	442946.3	6216308.1	Adit 6	0.035	12.2	24	213	538	75
Y610061	442852.1	6216497.6	Pit N	<0.005	1.2	11	70	230	2
Y610072	442990.9	6216209.1	Adit 1	5.21	72.8	368	53700	157500	2
Y610073	442991.1	6216207.8	Adit 1	1.18	226	3860	2050	14900	2
Y610074	442991.2	6216207.4	Adit 1	0.576	21.6	782	11350	29700	8
Y610075	443054.6	6216180.6	Adit 1	0.727	188	28000	443	13950	4
Y610104	442859	6216534	Pit N	0.043	83	559	792	3740	4
Y610115	442992.2	6216199.1	Adit 1	7.95	22.4	197	9380	48400	<1
Y610116	442997.7	6216200	Adit 1	0.104	40.1	1075	3140	21100	1
Y610117	442991.2	6216203.5	Adit 1	1.285	30.1	2280	552	1505	18
Y610118	442990.3	6216203.2	Adit 1	0.073	18.2	2510	548	29900	<1
Y610119	443025.6	6216175.9	Adit 1	2.72	63.9	830	1100	8880	3
Y610157	442909.2	6216383.4	Pit 5	0.022	501	479	40300	62500	2
Y610158	442909.2	6216387.4	Pit 5	0.025	197	62	412	1250	20
Y610159	442902.2	6216361.4	Pit 6	0.032	127	174	1120	1910	1
Y610160	442899.2	6216355.4	Pit 6	0.008	15.5	43	195	349	<1
Y610161	442947.4	6216308.6	Adit 6	0.232	94.7	383	3300	1460	45
A0863010	443054.9	6216386.9	N of Adit 1	0.005	1	27	93	461	1
A0863058	443063.8	6216225.9	E of Adit 1	10.7	85.3	29200	83	348	7
A0863059	443094.5	6216255.6	E of Adit 1	1.36	54.2	13150	51	359	2

Table 5: Assay Results from the Independence Area

#### 6.3.1.3 Adit 6

Adit 6 is a narrow exposure that continues at least 10 m into the rock, but is only 30 cm wide by 2 m high, with a low support pillar that makes the adit look much shorter from the entrance. The adit likely accommodated movement, becoming narrower with time. Like Adit 1, it is centered on a mineralized shear zone dipping very steeply to the southeast. Host rocks are grey, fine to medium-grained andesite and grey diorite. Medium-grained shiny pyrite is located along the adit walls, but unstable conditions make it unsafe to sample in the adit. The entrance was sampled, as were two 1-10 cm NW-striking, SW-
dipping sulphide-quartz veins along the west side of the adit, one of which returned anomalous Au, Ag, Pb values (Y610161; Table 5). Andesite east of the adit hosts several subparallel sulphides veinlets.

#### 6.3.1.4 Pits and Trenches North and East of Adit 1

Several pits north and east of Adit 1 were described and sampled (Fig. 13). Trench 5 is immediately south of the landing spot of the Tournigan Camp. The blast wall is oriented north-northeast and exposes 6 m of laminated quartz-pyrite-barite-magnetite galena  $\pm$  sphalerite veining corresponding to Vein #2. The vein strikes NW and dips 86° toward 233° and appears to exploit a northwest trending shear structure sandwiched between felsic dikes, in turn hosted by grey-green massive to porphyritic andesite. Vein texture, mineralogy and magnetic susceptibility (0.1->100 x 10<sup>-3</sup> SI) varies along its width. On the east side, next to a pink granodiorite dike, host volcanic rocks are strongly silicified, carbonate altered and bleached to a pale yellow-white colour with 5% pyrite and magnetic. Barite commonly occurs in clusters as blades filling in vugs. The vein becomes less magnetic with increasing sulphide content. The central portion of the vein is laminated on the mm to cm scale with quartz-jasper-magnetite-pyrite-carbonate. There is 5-25% pyrite occurring as very fine disseminations concentrated in bands, and as medium-grained cubes and dodecahedrons in rusty vuggy quartz. The west side of the exposed vein is sheared with chlorite-sericite alteration next to fine-grained intermediate to felsic dike.

Another blasted wall 50 m south of the camp corresponds to Trench 6. The blasting exposes a 4 m zone of laminated quartz-barite-magnetite-sulphide vein dipping very steeply toward 040°, hosted in light grey fine-grained andesite. A sample from the muck pile containing bands with semi-massive galena returned 208 g/t Ag and 6.81% Pb (Table 5).

Four blasted pits were sampled north of the Tournigan Camp (Fig. 13). These pits follow northwest trending shear zones. Pit/trench 5 (Fig. 13) is particularly interesting; three samples from this pit average 288 g/t Ag, with highs of 4.03% Pb and 6.25% Zn. Three samples from the same structure 160 m to the NW average 91 g/t Ag, with highs of 0.15% Pb and 1.52% Zn. All values occur in multi-stage, multi-mineral veins, mostly within granodiorite dikes (e.g. Plates 6 and 7).

Two new occurrences were found between adits 1 and 3/4 (Fig. 13). These are steeply dipping, 1-2 m wide shear zones containing quartz-magnetite-chalcopyrite veins. The shear zones are hosted by medium-grained grey-green plagioclase-porphyritic andesite cut by dark green, fine-grained and steeply dipping mafic dikes. Samples A0863058 and A0863059 from these occurrences ran 10.7 and 1.36 g/t Au respectively, as well as 2.92 and 1.31% Cu (Table 5).

#### 6.3.1.5 Other Adits

An extensive search was conducted for Adit 2, which should be immediately southeast of Adit 1, but it appears to be covered in muck from Adit 1. Adit 5, the Independence 1 Minfile occurrence, was not located from the air or on the ground. Early maps show a trail from Fitzgerald Creek to Independence Creek that accessed Adit 5. A traverse from the Shangri-La Camp southwards was unsuccessful in locating the trail. Moreover, although the team was able to get within 250 m of the supposed location of Adit 5, an area of rock cliffs turned them around. Reconnaissance from the helicopter indicated that the area is mostly cliffs. Adits 3 and 4 were spotted from the helicopter, located in the eastern cliff wall of Independence Creek. Two attempts were made to access these adits. It is clear that these adits must be accessed with ropes, support structures, or from glacial ice. Waterfalls in the steep creek canyon prevent access from the creek below, and steep creek walls prevented access from the east.





#### 6.3.2 Daly-Sullivan Area

The Daly–Sullivan occurrence is at the contact of folded siliciclastic rocks of the Salmon River Formation and rocks of the Mount Dilworth Formation (Fig. 14). It consists of a NNW-trending, 1 m wide quartz-carbonate vein dipping moderately steeply to the WSW. A short adit has been driven on the vein in one location (Plate 8). Two samples were collected; one ran 15.1 g/t Au and 231 g/t Ag, and the other ran 5.68 g/t Au and 488 g/t Ag. Unlike other parts of the property, the base metal content of the vein is quite low. Other nearby quartz  $\pm$  pyrite veins (Plate 9) did not contain anomalous metals.

A gold-silver bearing quartz-carbonate vein system was discovered approximately 1 km SSE of the Daly-Sullivan occurrence (Fig. 14). The veins similarly strike NNW and dip moderately to steeply to the WSW. The best results were 3.63 g/t Au and 161 g/t Ag in one sample and 1.6 g/t Au and 10.9 g/t Ag in another. When elevation is considered, these newly discovered veins are along strike from the Daly-Sullivan occurrence. The veins are narrow but traceable along strike and are also associated with low base metal contents, which strengthens the case for a linked mineral system between the Daly–Sullivan and the southern veins. The veins crosscut a well exposed succession of mafic to intermediate, pillowed and brecciated flows and coarsely bedded volcaniclastic rocks, interpreted as the Betty Creek Formation. The volcanic succession is folded, but generally bedding and stratigraphic contacts strike just west of north and dip moderately to the east-northeast.



Figure 14: Geology and Gold Distribution in the Daly-Sullivan and JT Areas



Plate 8: Daly-Sullivan Quartz Vein and Adit

Plate 9: Quartz-pyrite Vein 30 m NE of Daly-Sullivan

#### 6.3.3 JT Occurrence

The JT occurrence (Fig. 14) was noted from the air as a rusty zone surrounded by glacier ice in the southern part of the Independence property, and is a new finding of the program. Documented glacier outlines (Fig. 4) suggest that it was covered by ice when the area was mapped by Grove (1986). Two two-person days were spent in the area. Syngenetic Fe-sulphide mineralization occurs at changes in

lithology from pillowed flows to exhalative and tuffaceous horizons. Although the syngenetic mineralization is barren, significant Au values were obtained from quartz veins in these lithologies.

Moving from SE to NW, the area contains volcanic rocks of the Betty Creek Formation overlain by mixed felsic to intermediate pyroclastic tuff, pyritic tuff and limestone of the Mount Dilworth Formation, in turn overlain by the Salmon River Formation (Fig. 14). Volcanic stratigraphy generally trends north-south, and is interpreted to young to the east. Limestone horizons in the Mount Dilworth Formation are haphazardly folded. Bedded and folded siliciclastic rocks of the Salmon River Formation occur at an angle to the volcanic succession, indicating tilting before deposition.

In the westernmost (lowest) part of the observed volcanic stratigraphy, plagioclase porphyritic mafic flows are massive to pillowed and brecciated. Pyrite locally occurs along pillow selvages (Plate 3). Mafic volcanics are strongly silicified, and locally enriched in very fine pyrite. There are interbedded units featuring angular clasts of hyaloclastite in a sulphidic, muddy matrix (Plate 10). This unit is overlain by dacitic lapilli tuff that is intercalated with cherty limestone, which is in turn overlain by a volcaniclastic unit. Cherty carbonate horizons are clearly folded in contact with felsic to intermediate volcanic lapilli tuff and tuff breccia. Late 20-60 cm quartz veins with chlorite alteration and chunky pyrite overprint the cherty exhalative horizon (Plate 11). There are abundant 1-10 cm quartz veins cutting the entire volcanic package. The package is also cut by northwest trending mafic dikes and silicified and pyritic shear zones. Only a few veins were sampled, but several returned significant gold. A vein cutting the mafic volcanics had 8.2 g/t Au, and three samples of veins cutting the cherty package is approximately 20 m thick, has a rusty appearance, and is in steep terrain on the edge of a glacier (Plate 12), so is thus difficult to follow on the ground.

#### 6.3.4 Big Casino

The Big Casino trenches lie 60 m south of the northern Independence property boundary and 175 m east of its nominal Minfile location (Fig. 5). The area is accessed by helicopter, with good landing spots to the south. A short two-person day was spent prospecting the trench area. Mapping and structural geology was not accomplished on account of a snow-sleet blizzard during the visit. Local geology consists of steeply dipping grey, plagioclase porphyritic andesite flows and tuffs. Northwest trending porphyritic granodiorite and granite dikes cut the volcanic rocks. There are two main blast pits spaced 20 m apart at the Big Casino showing, with at least two additional pits to the southeast. Bedrock is largely obscured, but the vein/fault structure is 2-5 m wide, hosted within chlorite altered intermediate volcanic rocks. Veins within the shear structure have a breccia texture with angular vein clasts and some wallrock clasts with wisps of chlorite and patches of hematite. Vein mineralogy consists of quartzhematite-magnetite  $\pm$  chalcopyrite  $\pm$  malachite  $\pm$  azurite  $\pm$  chalcocite  $\pm$  pyrite  $\pm$  pyrihotite with minor to trace galena and sphalerite. Two 1 and 2 m wide quartz-pyrite mineralized zones/veins ~300 m to the west-southwest were sampled and several rusty areas near the property boundary were spotted from the air. At least part of the Montrose workings seems to be on the property, and from the air, associated muck piles look substantial.

Fourteen samples were collected from the Big Casino area (Table 6). Gold results are not impressive (highest 0.33 g/t Au), but silver results were good (up to 1470 g/t), and the three highest copper values from the program (13.75%, 5.34% and 3.46%) are from Big Casino. Zinc results are also impressive (six samples above 2% Zn, highest 12.5%), and two samples returned lead values of greater than 1%.



Plate 10: Hyaloclastite, JT Occurrence; Angular Clasts of Silicified Mafic Volcanics in a Matrix of Sulphidic Mud

Plate 11: Coarse Pyrite in Cherty Carbonate, JT Occurrence

Plate 12: JT Occurrence: Rusty Cherty/Carbonate Exhalative Adjacent to Glacier

Sample	Easting	Northing	Au g/t	Ag g/t	Cu ppm	Mo ppm	Pb ppm	Zn ppm
A0863001	443227	6217802	<0.005	8.1	38	1	828	387
A0863002	443266	6217828	<0.005	9.4	73	3	685	252
A0863003	443504	6217965	0.008	38.2	144	0.5	5650	22400
A0863004	443504	6217964	0.029	27.6	630	3	1520	1450
A0863005	443501	6217966	0.006	79.1	4380	6	1465	125000
A0863006	443489	6217978	0.084	270	53400	20	14450	41900
A0863007	443490	6217979	0.112	36.2	943	1	2130	35200
A0863051	443225	6217805	<0.005	7.3	28	0.5	633	202
A0863052	443260	6217830	<0.005	5	31	1	283	181
A0863053	443498	6217964	0.095	454	13500	1	1385	8960
A0863054	443497	6217966	0.129	216	14700	2	2620	45700
A0863055	443497	6217965	0.332	131	34600	4	1795	4110
A0863056	443493	6217978	0.024	94.3	12050	4	4210	9660
A0863057	443489	6217978	0.18	1470	137500	85	14100	76200

Table 6: Assay Results from the Big Casino Area

#### 6.3.5 Tournigan

Tournigan occurs in an area of steep cliffs near the base of the east side of Bear River Ridge (Fig. 5). One two-person day was spent exploring for this showing. The area can be accessed by road, with parking at the Red Cliff portal. Lydden Creek must be crossed, which is best done at low water. The area is underlain by andesitic flows and tuffs with minor rusty seams. It is unclear if the actual showing was encountered; the most likely candidate is an area in a creek ravine with rusty northeast-trending shear zones (443975E/6216720N). The main shear zone is 2 m wide and dips steeply NW. It is strongly silicified and sericite altered, and bleached to a pale yellow and white. There is 2-20% pyrite-magnetite finely disseminated and concentrated as veinlets and pods. Two small ( $1.5 \times 1 \times 2 m$ ) blasted pits were sampled. Several rusty zones were noted along the creek ravine, some of which also have associated historical blasting, but there was insufficient time to examine them. Nine samples were collected from this area, but no particularly anomalous metals were encountered.

## 6.4 Mineralization on the Slippery Ian Property

#### 6.4.1 General

The Slippery Ian claims are easily traversed by foot. At higher elevations, rock is bare, whereas alpine tundra and stunted forests occur at lower elevations near Long Lake. There is a network of old gravel roads that lead to old camps and drill pads. These roads could be traversed using ATVs. Access to the Slippery Ian claim is currently by helicopter from Stewart, however, an alternative plan would involve driving to Long Lake via the Hyder–Summit Road to the Premier Mine, then the Indian Lake Road. Historical roads crossed at the north end of Long Lake, before the dam, but now, one would need to boat across Long Lake. Then old roads could provide access to the property, which would decrease access costs.

The 2019 exploration program examined shear-hosted polymetallic veining of the Silver Crown mineralized system, which includes the Slippery Ian, Silver Crown and MJ showings; the Spider No. 1 and 3 showings in the west; and the central syngenetic sulphide mineralization of Iron Cap (Figs. 5 and 15). The Silver Crown zone occurs within a property-wide syncline, whereas the Spider zone occurs within an anticline. Both have excellent outcrop exposure. Three four-person days were spent at the Silver Crown zone, a half one-man day was spent at Iron Cap, and a half two-person day at the Spider zone.

In brief, mafic to intermediate volcanic rocks (Plate 13) underlie the area of the Spider zones and the Slippery Ian showing, whereas folded siliciclastic rocks (Plate 14) dominate at Silver Crown. Felsic volcanic pyroclastic tuff (Plate 15) and limestone (Plate 16) of the Mount Dilworth Formation serve as a marker horizon between the mafic to intermediate volcanic flows and the folded siltstone-mudstone. The Iron Cap occurs at the Mount Dilworth interface, as could be expected of syngenetic sulphide mineralization. The contact between the Betty Creek and Mount Dilworth formations was not observed by the authors in outcrop. West-northwest trending plagioclase porphyritic diorite dikes comprise 20-35% of the area, and cut earlier northeast trending quartz-feldspar porphyritic granite dikes. Later fine-grained mafic dikes trend northwest.



Figure 15: Interpreted geology of the Slippery Ian Property illustrating the property-wide folding with NW-plunging axes. There is a syncline at Silver Crown with a structural repetition of the Betty Creek Formation between Silver Crown and Iron Cap, and an anticline at Spider–Lois. Circles are lithological points with colours corresponding to the Lithology legend.



Plate 13: Pillowed Mafic Volcanics West of Slippery Ian Showing



Plate 15: Squashed Pumice, Mount Dilworth Formation

Plate 14: Folded Siliciclastic Sediments, Silver Crown Area



Plate 16: Fossiliferous Limestone, Mount Dilworth Formation

The Silver Crown mineralized system consists of a north-trending zone of polymetallic vein and replacement vein mineralization that stretches over at least 900 m along strike is on the order of 300 m wide. The Au-Ag - Zn-Pb - Cu mineralization is hosted within and along variably textured quartz carbonate  $\pm$  barite  $\pm$  sulphide veins associated with NNW trending sinistral shear zones. 92 samples were collected from the Silver Crown system; assay results are provided in Table 7 and Au and Pb results are shown on Figures 16 and 17 respectively. The shearing and veining together with strong sericite-ankerite-silica alteration stand out as pale zones compared to the rock they are emplaced into. There are short blasted trenches across the main shear vein structures, but due to timing constraints, only some blast pits were mapped. Effort was made to sample variously oriented veins and vein types, as well as some wallrock of both dikes and the sedimentary host. The Silver Crown showing is underlain by folded siliciclastic Salmon River Formation, which is cut by numerous northwest trending plagioclase + hornblende porphyritic diorite dikes. The dikes comprise  $\sim 30\%$  of the exposed bedrock. In contrast, the Slippery Ian and M.J. occurrences are underlain by pillowed to massive mafic volcanic flows and intermediate to mafic volcaniclastic rocks of the Betty Creek Formation, with fewer dikes. The veins and alteration cut both the volcano-sedimentary strata and the plagioclase porphyritic diorite dikes at a high angle.

#### 6.4.2 Slippery Ian

Slippery Ian is located at the south end of the Silver Crown system, and consists of two main zones of quartz-carbonate-sulphide veining and alteration, with subsidiary intervening veins, over an overall strike length of 175 m (Figs. 16 and 17). It is hosted by dark green chloritic mafic pillowed, massive and brecciated flows. In general, the Slippery Ian samples are high in base metals (up to 0.66% Cu, 13.2% Pb, 16.8% Zn), with low but anomalous Au (up to 0.62 ppm) and variable Ag (up to 116 g/t; Table 7).

The southern end of Slippery Ian manifests as a light orange quartz-carbonate-sulphide alteration zone against dark green country rocks. The alteration and mineralization zone is ~7 m wide and 23 m along strike to the NNW. There are two major shear veins. A 10-80 cm anastomosing quartz-carbonate-sulphide shear vein (Plate 17) marks the south end of the alteration zone and dips steeply to the west. It contains pyrite, galena, sphalerite and chalcopyrite disseminated and concentrated in bands. At the north end of the outcrop it narrows to a 20 cm quartz vein with malachite staining and 10% galena, 2% sphalerite 3% chalcopyrite and 1% pyrite. There is a network of minor extension veinlets above and northwest of the shear vein that suggest intrusion during transpression, including a vein set with galena>sphalerite > chalcopyrite >> pyrite dipping moderately to the ENE. Several veins at the extreme south end of Slippery Ian, close to the glacier, were not sampled.

The northern part of Slippery Ian also stands out as a light coloured rusty alteration and mineralization zone, 30 m wide and 70 m along strike, trending north. There are several blast pits along brecciated quartz veins with variable chalcopyrite, pyrite, galena and trace sphalerite. The northeastern side is bounded by a normal-sinistral fault with slickensides dipping 70° toward 250° and quartz-pyrite> chalcopyrite veins. Within the alteration zone, NW trending, sheared quartz veins dominantly dip moderately NE, obliquely to the main structure, most consistent with sinistral faulting. These veins are anastomosing < 2 m wide and can show milled breccia textures, laminations and vugs. There are also shallow veins dipping ~40° toward 340° that cut the shear veins, consistent with compression and/or transpression. These veins are variably mineralized with galena – sphalerite > chalcopyrite – pyrite. One of the 50 cm shear veins is distinctly folded. A plagioclase porphyritic diorite dike marks the northwestern contact of mineralization, and has been strongly silica-ankerite-pyrite altered.

Table 7: Assay Results from the Silver Crown Mineralized System. Assays for Au >1.0 g/t, Ag >100 g/t, Cu >0.5%, Pb, Zn >1.0% and Mo >25 ppm are in bold.

						Cu	Pb	Zn	Мо
Sample	Easting	Northing	Location	Au (g/t	Ag (g/t	(ppm)	(ppm)	(ppm)	(ppm)
Y610026	440799	6220093	M.J.	0.654	37.2	30	10550	12200	2
Y610027	440713	6220148	M.J.	0.031	22.7	2860	265	161	<1
Y610028	440690	6220159	M.J.	0.922	71.6	209	133500	31300	3
Y610029	440690	6220160	M.J.	0.145	6.9	83	1685	2220	49
Y610030	440676	6220160	M.J.	0.815	161	2530	93300	11850	1
Y610031	440673	6220159	M.J.	0.421	10.7	776	10300	14900	2
Y610032	440680	6220142	M.J.	0.48	117	2660	128500	163500	<1
Y610033	440673	6220129	M.J.	1.12	121	14050	31600	68900	3
Y610034	440658	6220132	M.J.	0.117	6.3	125	700	632	3
Y610035	440649	6220124	M.J.	0.205	16.5	1435	2700	2950	2
Y610036	440651	6220114	M.J.	0.481	23	2050	7520	160	5
Y610037	440673	6220065	M.J.	0.466	37.8	985	29300	87	3
Y610038	440657	6220088	M.J.	0.268	9.3	195	703	276	1
Y610039	440639	6220163	M.J.	1.3	11.2	391	599	56	2
Y610041	440616	6220205	M.J.	0.409	23.4	1725	131	79	2
Y610025	440483	6220214	Silver Crown	0.008	1.4	9	864	587	2
Y610042	440568	6220478	Silver Crown	0.293	185	64	190500	195500	44
Y610043	440462	6220659	Silver Crown	0.384	6.5	32	3720	2810	2
Y610044	440461	6220661	Silver Crown	0.018	2	90	1075	1710	1
Y610045	440500	6220600	Silver Crown	0.064	9.3	11	1270	849	6
Y610046	440508	6220591	Silver Crown	0.075	18.9	129	14450	17500	16
Y610047	440505	6220593	Silver Crown	9.28	185	507	77100	26500	4
Y610048	440509	6220589	Silver Crown	0.064	4.6	12	494	138	5
Y610049	440505	6220573	Silver Crown	0.351	15	123	5250	337	7
Y610050	440504	6220566	Silver Crown	0.272	27.7	116	18300	27400	11
Y610068	440401	6220320	Silver Crown	0.722	38.3	234	702	171	4
Y610069	440388	6220232	Silver Crown	1.025	130	463	20400	4920	10
Y610070	440398	6220246	Silver Crown	0.622	64.9	200	70100	59	24
Y610071	440360	6220403	Silver Crown	0.073	13.9	3100	4700	546	6
Y610169	440399	6220316	Silver Crown	0.045	4.4	35	115	57	3
Y610170	440401	6220332	Silver Crown	0.017	3.7	31	39	80	8
Y610171	440397	6220326	Silver Crown	0.272	9.4	51	2120	348	6
Y610172	440397	6220331	Silver Crown	0.041	2.4	23	145	22	13
Y610173	440397	6220330	Silver Crown	0.007	3.6	315	46	60	2
Y610174	440390	6220271	Silver Crown	0.328	6.4	8	3260	65	22
Y610175	440384	6220369	Silver Crown	0.182	23.1	619	2970	25	2
Y610176	440396	6220439	Silver Crown	0.458	43.4	1170	459	158	2
Y610177	440387	6220454	Silver Crown	0.038	3.5	51	2090	63	15

						Cu	Pb	Zn	Мо
Sample	Easting	Northing	Location	Au (g/t	Ag (g/t	(ppm)	(ppm)	(ppm)	(ppm)
Y610178	440357	6220498	Silver Crown	2.68	73.9	63	94800	3240	2
Y610179	440390	6220368	Silver Crown	0.103	12.9	299	5120	53	3
Y610180	440360	6220487	Silver Crown	1.055	47.7	516	56700	23200	6
Y610181	440477	6220671	Silver Crown	0.124	3.3	246	642	130	2
Y610182	440471	6220635	Silver Crown	0.309	2.1	9	330	123	10
Y610183	440476	6220623	Silver Crown	0.337	11.2	168	9230	23500	12
Y610184	440482	6220626	Silver Crown	0.085	5.6	16	1890	1845	6
Y610185	440488	6220620	Silver Crown	0.83	1.2	4	115	28	2
Y610186	440490	6220635	Silver Crown	0.032	2.2	4	180	98	6
Y610187	440463	6220575	Silver Crown	0.033	2.1	6	285	382	5
Y610188	440474	6220552	Silver Crown	0.092	5.9	59	417	582	5
Y610189	440471	6220539	Silver Crown	2.81	136	61	49900	46500	6
Y610190	440471	6220505	Silver Crown	0.396	1.4	9	146	78	2
Y610191	440481	6220456	Silver Crown	1.085	59	147	79300	106500	7
Y610192	440496	6220402	Silver Crown	0.952	8.3	70	461	213	9
Y610193	440478	6220404	Silver Crown	0.131	56.8	10	54300	2450	22
Y610194	440506	6220363	Silver Crown	0.869	26.6	2440	4880	5520	1
Y610195	440458	6220466	Silver Crown	0.169	28.9	688	39300	15600	6
Y610201	440503	6220566	Silver Crown	0.993	89.4	23	6280	1930	12
Y610202	440502	6220561	Silver Crown	0.169	28.5	17	18800	9350	15
Y610203	440503	6220561	Silver Crown	0.054	57.1	90	73600	1105	5
Y610204	440504	6220561	Silver Crown	0.138	13.4	108	5040	12850	43
Y610205	440503	6220560	Silver Crown	0.046	14.5	1730	1505	28600	2
Y610206	440502	6220557	Silver Crown	0.058	9.9	24	6440	4040	10
Y610207	440480	6220474	Silver Crown	2.86	86.8	1910	117500	64500	<1
Y610208	440485	6220467	Silver Crown	1.2	69.8	1890	88900	4160	5
Y610209	440408	6220448	Silver Crown	0.099	43.9	1390	69000	393	6
Y610210	440419	6220435	Silver Crown	1.135	58	729	49700	7120	51
Y610211	440449	6220448	Silver Crown	0.102	10.2	16	507	601	12
Y610014	440543	6219812	Slippery Ian	0.054	11.8	1740	653	54800	<1
Y610015	440542	6219812	Slippery Ian	0.076	11.3	1635	537	14750	1
Y610016	440544	6219812	Slippery Ian	0.005	0.7	134	294	1955	<1
Y610017	440540	6219819	Slippery Ian	0.17	56.7	3740	27800	24300	4
Y610062	440540	6219818	Slippery Ian	0.62	116	1165	131500	32200	7
Y610063	440549	6219878	Slippery Ian	0.051	79.9	177	22000	908	9
Y610064	440553	6219855	Slippery Ian	0.061	43.7	1955	3140	177	1
Y610065	440563	6219918	Slippery Ian	0.034	6	152	825	344	2
Y610066	440560	6219946	Slippery Ian	0.073	98.1	5130	60400	79100	<1
Y610067	440552	6219961	Slippery Ian	0.176	46.4	3750	9160	269	<1
Y610105	440535	6219828	Slippery Ian	0.127	105	6640	14300	43500	5
Y610163	440555	6219857	Slippery Ian	0.211	88.3	2250	46100	167500	<1

Sample	Easting	Northing	Location	Au (g/t	Ag (g/t	Cu (ppm)	Pb (ppm)	Zn (ppm)	Mo (ppm)
Y610164	440548	6219860	Slippery Ian	0.159	38.8	3590	3890	3700	1
Y610165	440565	6219916	Slippery Ian	0.051	28	953	1090	490	1
Y610166	440568	6219927	Slippery Ian	0.044	13.6	346	194	53	2
Y610167	440563	6219937	Slippery Ian	0.019	6.9	250	2240	1280	5
Y610168	440540	6219969	Slippery Ian	0.059	2.6	92	1250	158	4
Y610018	440380	6220055	Slippery Ian North	0.059	8.6	134	5810	199	10
Y610019	440386	6220059	Slippery Ian North	0.292	21	97	28100	151	16
Y610021	440390	6220072	Slippery Ian North	0.065	2.4	21	237	57	8
Y610022	440413	6220094	Slippery Ian North	0.155	56.5	5880	149	33	1
Y610023	440407	6220092	Slippery Ian North	0.194	121	523	81100	12050	16
Y610024	440405	6220103	Slippery Ian North	0.071	20.3	1885	647	40	13
Y610107	440388	6220090	Slippery Ian North	0.069	7.2	713	152	150	1
Y610108	440392	6220092	Slippery Ian North	0.051	7.1	113	212	539	6



Plate 17: Quartz-ankerite-sulphide-malachite Vein, Slippery Ian Showing.



Figure 16: Silver Crown area showing distribution of Au in g/t. Note that the best values are at the Silver Crown area. Zinc has a similar distribution.



Figure 17: Silver Crown System showing distribution of Pb in ppm. Silver has a similar spatial distribution. Note that high Pb occurs throughout the mineralized system.

A vein system between Slippery Ian and Silver Crown (Slippery Ian North; Table 7) was partially delineated by mapping/sampling. Values up to 0.19 g/t Au, 121 g/t Ag, 0.59% Cu, 8.11% Pb and 1.21% Zn were obtained.

#### 6.4.3 M.J.

The M.J. occurrence consists of quartz-ankerite-barite-sulphide veins hosted by mafic volcanic flows, pillowed flows and flow breccia. Quartz veins dip in variable orientations, but can nevertheless be grouped into i) striking NW and dipping steeply to the SW; ii) striking NW and dipping moderately steeply to the NE; and iii) several outliers. Both precious and base metal tenors are encouraging at M.J., being consistently higher than at Slippery Ian. Gold and silver values range to 1.3 and 161 g/t respectively, whereas copper, lead and zinc values are up to 1.41%, 13.4% and 16.4% respectively.

#### 6.4.4 Silver Crown

The Silver Crown occurrence is a northward continuation of the mineralization at M.J. and Slippery Ian. The mineralization styles are similar, with quartz-carbonate  $\pm$  barite –sulphide replacement veins exploiting, and associated with sinistral – reverse structures. Host lithology is the major difference: mafic volcanic rocks underlie M.J. and Slippery Ian, whereas metasediments underlie Silver Crown, and dikes are more numerous at the latter. It is likely that the metasediments either structurally or chemically formed a better trap for mineralizing fluids, or that the numerous dikes at Silver Crown were important physiochemical traps. Laminated siltstone -mudstone of the Salmon River Formation is tightly folded in the area (Plate 14). Fold axes plunge shallowly to the north, with local south-plunging axes. The unit is interpreted to be upright and exposed in a regional syncline. Pyritic lapilli tuff, fossiliferous sandy limestone and tuff breccia of the Mount Dilworth Formation outcrops to the east and west of the Silver Crown showing (Figs. 16 and 17).

The Silver Crown mineralized structures trend NNW. They are typically 2-8 m wide and anastomosing (Plate 18). At the southern extent of Silver Crown, a 25 m alteration zone is subparallel to, and cutting, a NNW trending plagioclase porphyritic diorite dike. The dike is strongly ankerite-silica-sericite altered to a pale cream colour and is locally folded. The dike and the mineralization zone cut banded altered mudstone-siltstone. Moving northward, east of the camp and core, there is a reverse shear system with shallow barren quartz-ankerite veins. Although the main sulphide in the veins is chunky cubic silvery pyrite (Plate 19), there is local galena and chalcopyrite. Silver Crown produced the best results from the property, with consistently good base metal values along strike, and with overall gold values up to 9.28 g/t, silver up to 185 g/t, and base metals up to 0.31% Cu, 19.05% Pb and 19.55% Zn. Sample YB610042 produced the highest Pb and Zn values from the program (19.05% and 19.55%); it is from the eastern side of Silver Crown (Map 2), in an area that may have been covered by glacial ice when early exploration was completed on the property.



Plate 18: Anastomosing quartz-carbonate veins, Silver Crown

Plate 19: Coarse pyrite in quartz-carbonate vein, Silver Crown

#### 6.4.5 Iron Cap

The Iron Cap horizon was subjected to a short investigation, during which the horizon was traced for 300 m. The occurrence is part of the Mount Dilworth Formation; mineralization occurs where a north-trending, shallowly east-dipping, ?pyroclastic tuff breccia (Plate 20) has its matrix partially replaced by pyrite and sulphidic mud (Plate 21). Four samples of pyrite-bearing tuff breccia were collected; all had low Au, Ag, Cu and Pb values, with weakly anomalous Zn (up to 539 ppm). Surprisingly, the samples contained highly anomalous Co (up to 98 ppm, the second highest value from the program) and Mo (up to 101 ppm).



Plate 20: Tuff breccia from the Mount Dilworth Formation immediately below the Iron Cap occurrence



Plate 21: The Iron Cap occurrence: pyrite replacing the matrix of tuff breccia

#### 6.4.6 Spider No. 1 and 3

Mineralization at the Spider area consists of northwest trending polymetallic quartz breccia veins hosted in plagioclase–augite porphyritic andesite flows. The veins have been explored by blasted pits, adits and open cuts. One half day for two people was spent in the area, concentrating on locating and sampling the mineralization rather than on geological characterization. Eleven samples were taken from Spider 3 and fourteen from Spider 1; results are provided in Table 8.

Sample	Easting	Northing	Au g/t	Ag g/t	Cu ppm	Mo ppm	Pb ppm	Zn ppm	Location
A0863017	439017	6221785	50.7	6830	468	11	54800	127500	Spider 3
A0863070	439019	6221783	8.4	9300	146	3	33500	10650	Spider 3
A0863068	439016	6221786	6.5	3390	128	5	12700	17600	Spider 3
A0863071	438875	6222022	0.174	494	67	17	12100	8720	Spider 3
A0863019	438893	6221923	0.716	305	60	2	6900	12600	Spider 3
A0863069	439016	6221786	2.25	3020	72	0.5	5990	2220	Spider 3
A0863018	439019	6221784	0.221	476	153	0.5	4750	1315	Spider 3
A0863072	438875	6222022	0.096	212	244	10	4400	2280	Spider 3
A0863021	438895	6221923	0.018	24.2	38	0.5	2510	28300	Spider 3
A0863016	438938	6221731	0.093	83.6	1470	0.5	1950	1715	Spider 3
A0863067	438916	6221744	0.056	13	183	0.5	360	1050	Spider 3
A0863078	439010	6221239	5.39	2490	703	0.5	38300	102500	Spider 1
A0863077	439040	6221194	2.47	869	180	4	7000	3870	Spider 1
A0863073	439008	6221235	0.008	44	61	2	1025	1570	Spider 1
A0863025	439088	6221039	0.757	36.7	286	2	121	74	Spider 1
A0863024	439088	6221039	3.53	57.9	1240	4	104	70	Spider 1
A0863022	439085	6221105	1.255	13.4	293	0.5	84	157	Spider 1
A0863079	439008	6221235	0.01	11.8	5	0.5	68	145	Spider 1
A0863023	439086	6221107	0.012	4.1	155	0.5	61	160	Spider 1
A0863026	439125	6220878	0.221	19.8	27	1	45	49	Spider 1
A0863074	439054	6221184	0.162	13.6	7690	3	25	109	Spider 1
A0863027	439125	6220876	0.479	5.4	91	1	18	50	Spider 1
A0863075	439051	6221190	0.212	15.5	7850	5	17	59	Spider 1
A0863075	439051	6221190	0.006	8.1	4010	0.5	5	71	Spider 1
A0863076	439041	6221196	0.01	6.1	3220	1	4	11	Spider 1

Table 8: Assay Results from the Spider Occurrences

The main vein at Spider No. 3 is exposed over a ~300 m strike length by an intermittent, 3–6 m wide pit that straddles the northern claim boundary; the main part of the pit lies within claims to the north. The shear/fault structure pinches and swells from 1–4 m wide and dips 70° toward 213°. There is a parallel shear vein along the south side of the structure. Extension veins within the structure strike NW and dip steeply SW. Vein material is brecciated, and consists of quartz –carbonate - pyrite – sphalerite – galena – chalcopyrite, locally containing up to15% sulphides. Given the historical descriptions, the located occurrence likely corresponds to the No. 3 vein, and the No. 2 vein would be 240 m to the NNW (outside the Slippery Ian property). Barren quartz – carbonate  $\pm$  pyrite veins in a northwest en echelon array were mapped south of the open cut. Additional workings, including an old dam across a creek, were noted to the north from the helicopter.

Four samples from Spider No. 3 have in excess of 2.0 g/t Au, including one result of 50.7 g/t Au, the highest value from the program. The highest silver value from the program, 9300 g/t, also occurs at this showing. While copper results are low, lead is consistently anomalous, with a high of 5.48%; likewise zinc is consistently anomalous, with a high of 12.75% (Table 8). These values are right on the border of the Slippery Ian property (Fig. 18).



Figure 18: Gold Results from Grab Samples at the Spider Occurrences

The Spider No. 1 vein is located 550 m south from the SE adit of Spider No 3. It is a 1 - 3 m sheared polymetallic breccia vein located in a creek ravine. Two blast pits were noted. West of the main shear vein, there are shallowly dipping 1-15 cm vuggy quartz –chalcopyrite veins striking variably from NNW to NNE. Results from this showing are not as good as from Spider No. 3, but are still encouraging. The highest values are 5.39 g/t Au, 2490 g/t Ag, 0.79% Cu, 3.83% Pb and 10.25% Zn. Most of these are from one sample; other samples have significantly less metal concentration (Table 8).

### 7.0 CONCLUSIONS AND RECOMMENDATIONS

The Independence and Slippery Ian properties occur in the prolific Stewart camp of the Golden Triangle. The properties are underlain by the Unuk River, Betty Creek, Mount Dilworth and Salmon River formations of the Jurassic Hazelton Group; these volcanic and sedimentary rocks are cut by numerous granodiorite to diorite dikes, generally trending NW. Mineralization occurs dominantly as polymetallic Au-Ag-Cu-Zn-Pb replacement veins localized along fault structures. There is an apparent spatial association between late veins and dikes, suggesting a similar structural control, where deep crustal pathways focused magmas and later mineralizing fluids. The locations of most historical occurrences on the properties obtained from the BC Minfile database were verified. New sulphide and gold

mineralization was found and sampled in two locations: at the JT showing and 900 m west of the JT showing in the western part of the Independence property. Both were previously covered by glacier ice. The amount and tenor of mineralization on both properties is impressive; grab samples from the exploration program yielded results of 50.7 g/t Au, 9,300 g/t Ag, 13.75% Cu, 19.05% Pb and 19.55% Zn (different samples).

The exploration program in 2019 was a first pass effort to establish the location and setting of historical occurrences and to prospect for new mineralization along areas of ablated glaciers. The work was significant because it was the first field program to consider the entire properties, and it was the first sustained program to include the use of modern GPS instruments to enable the capture of highly accurate spatial data. While the results of this program are very encouraging, it is important to realize that the program only scratched the surface when it comes to documenting the true extent of mineralization on these two large properties. Several historical occurrences were not visited, time was limited at the occurrences visited, and much of the area of glacier retreat remains unexplored. Moreover, although economic syngenetic sulphides were not discovered, exhalative horizons associated with the Mount Dilworth Formation were noted at Iron Cap and JT. Therefore, the properties have potential for additional polymetallic veining and for syngenetic sulphide mineralization. Major exploration programs are clearly warranted on both properties.

General recommendations include:

- A more complete compilation of historical exploration, particularly at Slippery Ian;
- Checking on the feasibility of driving to the Slippery Ian property-this would reduce costs for exploration on that property;
- Working with mountain guides to safely explore high relief terrain, particularly at Independence; and
- Consideration of drone photography to aid geologic mapping and structural interpretation

Property-wide recommendations include:

- A regional structural interpretation of the properties, using magnetic, geological and satellite data;
- property-wide mapping and prospecting to complete the geologic picture and identify new mineralization. Understanding the regional and property scale geological context is important for geological modelling and further exploration targeting;
- additional mapping, prospecting and sampling around all known occurrences. Time constraints prevented a complete examination of any of the occurrences; and
- Additional exploration targeted on ground newly exposed by retreating glaciers;

Specific recommendations related to individual occurrences include:

• Sampling of adits at Independence. The samples from Adit 1 and some blasted cuts returned encouraging assay results, but previous work on the property yielded far higher metal tenor in outcrop within the adit compared to derived muck. Accordingly, follow-up sampling within Adit 1 is recommended to provide a spatially constrained picture of the mineralization in order to guide potential drilling in the area. Bright lights and gas monitors would be mandatory to ensure safety and air quality. Effort should be made to access adits 3 and 4

from the east side of Independence Creek and Adit 5 (Independence 1) from the purported trail from Fitzgerald Creek;

- The JT showing is a new discovery and a new type of mineralization. It is recommended that the syngenetic mineralization, which was restricted to barren pyrite in the current program, be followed along strike for potential base metal accumulations. Gold values in nearby quartz veins reached 8 g/t. A limited number of veins were sampled, because the focus was on the syngenetic sulphide potential. Therefore, it is recommended that this area is further prospected, with particular attention to sampling of quartz veins;
- The Daly-Sullivan adit produced the second highest gold value from the program. A new vein system was discovered potentially on strike 1 km to the SSE. Detailed prospecting between these two areas is recommended;
- The Big Casino area comprises several blasted pits and trenches. Only two pits were sampled during a half-day visit in a snow and sleet blizzard, yet encouraging silver and base metal values were obtained. Several rusty zones were spotted nearby from the air, but there was no time to visit them. Therefore, upwards of a day should be spent in the area sampling and mapping the additional pits and trenches and surrounding geology, in addition to obvious rusty locations;
- The A&T showing was not accessed during 2019 exploration and it is not clear if Tournigan was found. These showings occur on the rocky cliffs that make up the east side of Bear Pass in the Red Cliff area. The Montrose showing occurs mostly to the NE of the Independence claim group, but part of it, south of Lydden Creek, looks to be on the property. The A&T showing occurs in a creek ravine that feeds into Fitzgerald Creek. Fitzgerald Creek is marked by waterfalls and cliffs, so it is likely not possible to traverse from the American-Bear Creek Valley without ropes and a mountain guide. A potential access would be from the Shangri-La camp to Fitzgerald Creek and upwards to the A&T ravine;
- Drill core present on the Slippery Ian property should be examined to see if it would be possible to relog the core; effort should also be made to locate and GPS individual historic drill holes;
- The Silver Crown vein system should be sampled in detail over its entire length, including chip samples along/ across historical trenches. Veins at various orientations should be sampled, and the orientation documented during sampling;
- The Spider No. 3 showing yielded the highest precious metals encountered during the program, in spite of the limited amount of time spent there. Further prospecting near both Spider showings is a high priority-this area could produce an early drill target; and
- Additional prospecting of the entire Slippery Ian property is warranted. Exposure is very good, and the terrain is not as severe as the Independence property.

Once the overall geological/structural setting and distribution of surface mineralization is better established by the above tasks, the next stage of exploration would be ground geophysics and/or drilling.

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## 9.0 CERTIFICATES OF QUALIFICATION

I, Tom Setterfield, PhD, P.Geo. do hereby certify that:

1.	I am a Principal of	Geo Exploration Scouts
	-	5-570 Crescent Road West
		Qualicum Beach, British Columbia, V9K 1H9

2. I graduated with a BSc degree in Geology and Chemistry from Carleton University in 1980. In addition, I have obtained an MSc in Geology from the University of Western Ontario in 1984, and a PhD in Earth Sciences from the University of Cambridge in 1991.

3. I am a member of the Association of Professional Engineers and Geoscientists of the Province of British Columbia (membership #209990).

4. I have worked as a geologist for a total of 39 years since my graduation from university.

5. I supervised and participated in the fieldwork on the Independence and Slippery Ian properties described in this report.

Dated this 30th Day of November, 2019.

Tom Setterfield

Tom Setterfield

I, Katarina Bjorkman, PhD, do hereby certify that:

1. I am a Consulting geologist with:

Bjorkman Prospecting 225 Whiskeyjack Road, PO Box 1814 Atikokan, ON, P0T1C0

2. I graduated with an HBSc degree in Geology from Lakehead University in 2011. In addition, I have obtained a PhD in Geology from The University of Western Australia in 2017.

3. I have worked as a geologist for a total of five years since my graduation from university and as a prospector for seven years prior to enrolling in geology.

4. I participated in the fieldwork on the Independence and Slippery Ian properties described in this report.

Dated this 26th Day of November, 2019.

Katarina Bjorkman

## **Statement of Qualifications**

I, Sharyn Alexander, do hereby certify that:

- I am a geologist currently residing at 21-3242 Cowichan Lake Road, Duncan, BC, V9L 4B9.
- I am a graduate of McMaster University with a Bachelor of Science (B.Sc.) in Geology (2001), and the University of Toronto with a Master of Science (M.Sc.) in Geology (2004). In addition, I have obtained an Advanced Diploma in GIS from the British Columbia Institute of Technology (2014).
- 3. I have worked continuously in the mineral exploration and natural resources industry for a total of 15 years since my graduation from university.
- 4. I reviewed the exploration history, compiled the historic datasets, and generated spatial data products pertaining to the Independence and Slippery Ian properties described in this report.

Dated this 27th Day of November 2019.

Sharyn Alexander, M.Sc.

# 10.0 STATEMENT OF COSTS

	COST STATEMENT, IND	PEPENI	<b>DENCE F</b>	PROPERT	'Y
Exploration Work type	Comment	Davs			Totals
		- Duje	1		
Personnel (Name)* / Position	Field Days (list actual days)	Days	Rate	Subtotal*	
Tom Setterfield/Supervisor		8.50	\$750.00	\$6,375.00	
Katarina Bjorkman/Geologist		15.50	\$700.00	\$10,850.00	
Jessica Bjorkman/Prospector		13.50	\$550.00	\$7,425.00	
Kieran Haward/Prospector		7.00	\$400.00	\$2,800.00	
				\$27,450.00	\$27,450.00
Office Studies	List Personnel (note - Office on	ly, do not	include fie	eld days	
Literature search	Dave Lefebure	1.00	\$750.00	\$750.00	
Database compilation	Tom Setterfield	1.50	\$750.00	\$1,125.00	
Compilation	Sharyn Alexander		\$0.00	\$5,117.50	
Reprocessing of data	Tom Setterfield	1.50	\$750.00	\$1,125.00	
General research	Katarina Bjorkman	4.00	\$700.00	\$2,800.00	
Report preparation	Tom Setterfield	4.00	\$750.00	\$3,000.00	
				\$13,917.50	\$13,917.50
Geochemical Surveying	Number of Samples	No.	Rate	Subtotal	
			<b>*</b> 0.00	<b>*</b> 7 <b>5</b> ( <b>7 0 0</b>	
Rock	144		\$0.00	\$7,567.28	+= = = = = =
				\$7,567.28	\$7,567.28
Transportation		No.	Rate	Subtotal	
Airfare	Crew to Smithers (2 campaigns)		\$0.00	\$3,747.81	
truck rental			\$0.00	\$2,464.29	
kilometers			\$0.00	\$864.29	
fuel			\$0.00	\$286.04	
Helicopter (hours)			\$0.00	\$13,815.88	
				\$21,178.31	\$21,178.31
Accommodation & Food	Rates per day				
Hotel			\$0.00	\$2,740.31	
Meals	actual costs		\$0.00	\$1,998.40	
				\$4,738.71	\$4,738.71
Miscellaneous					
Miscellaneous			\$0.00	\$471.77	
Map Printing				\$52.14	
				\$523.91	\$523.91
Equipment Rentals					
Radios			\$0.00	\$300.00	
GPS				\$342.86	
				\$642.86	\$642.86
Freight, rock samples					
			\$0.00	\$39.71	
				\$39.71	\$39.71
TOTAL Expenditures	7				\$76.058.28

	COST STATEMENT, SLI	IPPERY	IAN PF	ROPERTY	ζ
		_			
Exploration Work type	Comment	Days			Totals
Personnel (Name)* / Position	Field Days (list actual days)	Davs	Rate	Subtotal*	
Tom Setterfield/Supervisor		3.50	\$750.00	\$2,625.00	
Katarina Biorkman/Geologist		6.00	\$700.00	\$4,200.00	
Jessica Biorkman/Prospector		5.50	\$550.00	\$3,025.00	
Kieran Haward/Prospector		4.00	\$400.00	\$1,600.00	
				\$11,450.00	\$11,450.00
Office Studies	List Personnel (note - Office on	ly, do not	include fi	eld days	
Database compilation	Tom Setterfield	1.25	\$750.00	\$937.50	
Reprocessing of data	Tom Setterfield	1.13	\$750.00	\$843.75	
General research	Katarina Bjorkman	1.00	\$700.00	\$700.00	
Report preparation	Tom Setterfield	2.00	\$750.00	\$1,500.00	
				\$3,981.25	\$3,981.25
Geochemical Surveying	Number of Samples	No.	Rate	Subtotal	
Rock	122		\$0.00	\$6,411.17	
				\$6,411.17	\$6,411.17
Transportation		No.	Rate	Subtotal	
Airfare	Crew to Smithers (2 campaigns)		\$0.00	\$1,499.13	
truck rental			\$0.00	\$985.71	
kilometers			\$0.00	\$345.71	
fuel			\$0.00	\$114.41	
Helicopter (hours)			\$0.00	\$8,324.08	
				\$11,269.04	\$11,269.04
Accommodation & Food	Rates per day				
Hotel			\$0.00	\$1,096.12	
Meals	actual costs		\$0.00	\$799.36	
				\$1,895.48	\$1,895.48
Miscellaneous					
Miscellaneous			\$0.00	\$188.71	
Map Printing				\$20.86	
				\$209.57	\$209.57
Equipment Rentals					
Radios			\$0.00	\$120.00	
GPS				\$137.14	
				\$257.14	\$257.14
Freight, rock samples					
			\$0.00	\$15.89	
				\$15.89	\$15.89
TOTAL Expenditures					\$35,489.54

# APPENDIX A-GRAB SAMPLE DESCRIPTIONS

Geological Legend

CODE	<b>Broad Rock Classification</b>	LITH	Lithology	Texture	Texture of rock	Minz_type	Mineralization type
IGN	Igneous	VOL	Volcanic	peg	pegmatitic	ру	pyrite
META	Metamorphic	FV	Felsic Volcanic	crys	crystalline	сру	chalcopyrite
VOLC	Volcanic	FVT	Felsic Volcanic Tuff	sug	sugary	mal	malachite
INT	Intrusive	FVLP	Felsic Volcanic Lapilli Tuff	equi	equigranular	ро	pyrrhotite
SED	Sedimentary	FVTB	Felsic Volcanic Tuff Breccia	por	porphyritic	aspy	arsenopyrite
CLAS	Clastic Sedimentary	IV	Intermediate Volcanic	rnd	rounded	bn	bornite
CHEM	Chemical Sedimentary	IVT	Intermediate Volcanic Tuff	ang	angular	ht	hematite
LATE	Late vn, alt or minz	IVLP	Intermediate Volcanic Lapilli Tuff	shr	sheared	mt	magnetite
MAF	Mafic or UM Intrusive	IVM	Intermediate Volcanic Massive	sch	schistose	tel	tellurides
GRAN	Granite	IVP	Intermediate Volcanic Pillowed Flow	fol	foliated	gal	galena
FV	Felsic volcanic	MV	Mafic Volcanic	gns	gneissic	vg	visible gold
MV	Mafic volcanic	MVM	Mafic Volcanic Massive	band	banded	Ag	silver
		MVP	Mafic Volcanic Pillowed Flow	colf	colloform	pn	pentlandite
		MVB	Mafic Volcanic Breccia	bx	brecciated	sph	sphalerite
		MVT	Mafic Volcanic Tuff	stwk	stockwork	clc	calcocite
		DIOR	Diorite	vug	vuggy	az	azurite
		CONG	Conglomerate	ves	vesicular	real	realgar
		SST	Sandstone	den	dendritic	orp	orpiment
		SLST	Siltstone	bed	bedded	tet	tetrahedrite
		MDST	Mudstone	grd	graded		
		IF	Iron Formation			-	
		CHT	Chert				
		LIME	Limestone				
		GOSS	Gossan				
		MD	Mafic Dike				
		ID	Intermediate Dike				
		FD	Felsic Dike				
		GRDR	Granodiorite				
		MNZD	Monzodiorite				
		GRAN	Granite				
		MNZO	Monzonite				
		MINZ	Mineralization Zone				
		CRDZ	Carbonate Zone				
		ANKZ	Ankerite Zone				
		SILZ	Silicified Zone				
		PYZ	Pyrite Zone				
		VEIN	Vein				
		CBV	Carbonate Vein				
		SHRZ	Shear Zone				
		FLTZ	Fault Zone				
		SCHT	Schist				
		POR	Porphyry				
		QFP	Quartz-feldspar porphyry				
		QV	Quartz Vein				

Sample	Easting	Northing	Mapper	Code	Lith	Rock description pt 1	Rock description pt 2	Ro
Y610001	442480	6217323	JES	VOLC	QV	Vuggy quartz vein 1cm, vcg, 0.25% black sulfide		
Y610002	442449	6217324	JES	VOLC	QV	Quartz vein, vuggy with well-formed crystals,	1-10 cm wide vein, 0.25% black sulfide, 245/75	
Y610003	442436	6217322	JES	VOLC		Qv 265/90, shear 275/80, mm qvs in andesite?,	Weakly rusty, 5-7% rusted f-mg py	
Y610004	442431	6217325	JES	VOLC		Quartz flooded, sugary texture, 1% black/oxidized	Sulfide, 1-2 m wide zone, 265/75	
Y610005	442311	6217467	JES	VOLC		Andesite?, 1 m wide shear with mm qvs and rusty	0.25% fine py, 90/80 very localized shear	
Y610006	442088	6217562	JES	VOLC	IV	Volc Breccia, strongly rusty in places, 5-10% py		
Y610007	442086	6217560	JES	VOLC	IVB	Volc breccia, grey-dark grey, 1-3% fine py or po?	Strongly silicified, strongly rusty locally, oc	
Y610008	442904	6216350	JES	VOLC	QV	Quartz vein, rusty, 1% cpy, 7-10% galena, 3-5% py	Muckpile at adit	
Y610009	442915	6216551	JES	VOLC	IV	Andesite, grey, 2 cm quartz vein, weakly rusty	Minor oxidized sulfide	
Y610010	442858	6216528	JES	IGN	FD	Quartz vein, sugary, beige, semi-massive py in 1 cm	Band, trench muckpile, modly rusty	
Y610011	442858	6216527	JES	IGN	ID	Quartz vein 1.5 m, white grey, semi sacchroidal	In trench, next to 2 dikes finer grained and mg	5-7
Y610012	442853	6216503	JES	IGN	ID	Intermediate dike with 3-5% py, few cm qv, modly	Rusty	
Y610013	442867	6216552	JES	IGN	IV	Int volc, in small pit, weakly rusty, 5% fine py	Weak cm quartz stockwork, weak jasper	
Y610014	440543	6219812	JES	VOLC	MV	Quartz vein in mafic volcanic 5 cm, 5-7% galena,	1-3% py, 1% cpy, 170/50, vein is displaced by 1 m	
Y610015	440542	6219812	JES	VOLC	MV	10 cm quartz vein with mod ank, 1% fine py, 1% cpy		
Y610016	440544	6219812	JES	VOLC	ALTZ	Maf volc, alteration zone, mod ank, mod stockwork,	1% py	
Y610017	440540	6219819	JES	VOLC	ALTZ	Quartz vein is much wider here-several metres, str	Mal along fracture, 10% galena, 3% cpy, 1% py	
Y610018	440380	6220055	JES	SED	QV	Brecciated quartz vein with black chlorite frags	3% py, 1% gal, tr cpy, 1 cm band graphite, 180/83	Sec
Y610019	440386	6220059	JES	SED	QV	Vuggy quartz vein with coarse cm 5%galena 2% py		
Y610020						BLANK		
Y610021	440390	6220072	JES	SED	QV	Quartz vein 1 m wide, rusty, 3-5% py, white grey		
Y610022	440413	6220094	JES	IGN	ID	Quartz vein in int dike, local mod mal, 5% cpy		
Y610023	440407	6220092	JES	IGN	ID	Quartz vein, sacchroidal, 7% galena near ct w host	Part rotted, local stockwork, not continuous	Dir
Y610024	440405	6220103	JES	IGN	ID	Quartz vein 1.5 m wide, brecciated, 1% cpy, 5% py	Rusty, approx 110/75	
Y610025	440483	6220214	JES	VOLC	MV	Talus from above, can框 get better mineralizatio	Due to snow crevasse, 5% py locally, cm qvs	
Y610026	440799	6220093	JES	MV	QV	Quartz carb vein locally 30 cm wide (pinches),	315/70, 2% galena, 1% py, near int dike	
Y610027	440713	6220148	JES	VOLC		Quartz vein, brecciated fg grey volc, 3% cpy,	0.25% py, 0/66	
Y610028	440690	6220159	JES	MV	QV	Quartz vein approx 310/60 locally 15 cm, semi-mass	Galena locally in 2 cm band, 1% py	
Y610029	440690	6220160	JES	MV	MV	Cm quartz vein 330/90, 1 m fg mat volc w str stwk,	5-7% py, rusty	
Y610030	440676	6220160	JES	MV	QV	Quartz vein locally 30 cm wide, in pit, 5% galena,	3% py, 1-3% cpy, 160/73	
Y610031	4406/3	6220159	JES	VOLC		Int volc, Grey, fg, mm qtz carb veins, 3% gal, 1%	Cpy, 1% py, in pit oc	
Y 610032	440680	6220142	JES		Qv	Quartz vein rusty 15 cm wide, local mass gal, on	Strike with $qv$ in pit, 2% cpy, 5-10% py	<b>C</b> 1
Y 610033	4406/3	6220129	JES	VOLC	<u>OU</u>	Brecciated quartz vein 5-10 cm, mod azurite	And malachite, 3% cpy, approx 185/// anastomozing	5-1
Y 610034	440658	6220132	JES		QV	Quartz vein, weakly rusty, sacchroidal, 1% f-mg	305-315/65	
Y 610035	440649	6220124	JES	VOLC		Quartz vein $1/0/6/15$ cm wide, $1\%$ cpy, $1\%$ py		
Y 010030	440051	6220114	JES		IV	Quartz vein 0.5 m 145/60, 1% py, 1% cpy, 5% gai	With hasses and modern stady and a short substaff	Ма
101003/ V(10029	440075	6220003	JES			Quality vein 150/80 part of highly shichled zone	See whates of an atmetion maint	Ivia
Y 010038	440637	6220088	JES			Qv, sacchroidal red all, 1% roued py, 515/56	See photos of qv structure point	
Y 010039	440039	6220103	JES	VOLC		Quartz vein sacchroidal rusty, 5% py	No del strike	
Y 010040	110616	(220205	IEC	M	OV	BLANK	10.20 m wide $10/2$ m $10/2$ m $140/85$ second	Va
Y 010041	440010	6220205	JES		Qv	Quartz vein 10 cm part of rusty mineralized zone	10-30 m wide, 1% cpy, 1% py, 140/85, several	vei
Y 010042	440368	62204/8	JES			Quartz vein 4 cm 300/80 between contact of mar	voic and congiomerate, 40% galena	E0/
Y 010043	440462	6220659	JES IES		МЪ	Quartz vein 90/070 10cm wide part of 1 metre wide	Kusty zone w quartz veining, semi-sacchroidal	3%
Y 010044	440461	6220661	JES		MD	Ivianci dike with moderate mm-cm qtz stwk, 5% eu	Ng py, composite sample	
Y010045	440500	6220600	JES	SED		Dark grey sed with matic dike, strong quartz stwk,	170 cg py, vein is brecciated	
Y 610046	440508	6220591	JES	SED		Brecciated quartz vein with 5% py, 1% galena		

ock\_description pt 3

7% py, minor galena, 310/85

eds are strongly folded

rection

10% galena

lain vein, 5-7% gal, 1% py

eins with variable dips, moderate stockwork

5 subhedral py

Y610047	440505	6220593 JES	MV	MD	20 cm quartz vein in mafic dike, part rotted, 5-7%	Py, 2% galena	
Y610048	440509	6220589 JES	SED		Sed, strong 2-3mm quartz stockwork, 5-7% py	Infilling veins	
Y610049	440505	6220573 JES	SED		Quartz vein vuggy well formed quartz crystals,	3% coarse py, 3% coarse galena, 84/275	
Y610050	440504	6220566 JES	VOLC		Quartz vein in pit, 20% galena, 3% py, zone is 3 m		
Y610051	442434	6217309 KAT	LATE	QV	Dextral shear zone with quartz veins.		
Y610052	442333	6217449 KAT	LATE	QV	Anastomosing shear vein with variable alt halo.	Hosted in variably reduced or oxidized FVCT	Lo
Y610053	442231	6217494 KAT	LATE	MINZ	Qz barite py gal tetrahedrite veinlets in shear	Steep trending 68/035	cut
Y610054	442231	6217494 KAT	LATE	MINZ	Qz barite py gal tetrahedrite veinlets in shear	Steep trending 68/035	cut
Y610055	441978	6217491 KAT	LATE	MINZ	Qz barite py veinlets in shear	Steep trending 80/041	cut
Y610056	442908	6216393 KAT	LATE	PYZ	Part of blasted laminated quartz sulf vein	Grey quartz vein with diss py	Py
Y610057	442905	6216348 KAT	LATE	PYZ	Part of blasted laminated qz jasper bar sulf vein	Grey quartz vein w barite in vuggy seamsdiss py	Tra
Y610058	442945	6216312 KAT	LATE	PYZ	Part of blasted laminated qz jasper sulf vein	Taken in narrow adit along blasted sides	Fir
Y610059	442946	6216308 KAT	LATE	PYZ	W of blasted laminated qz jasper sulf vein	subparallel pyrite vein next to shear	1c1
Y610060					BLANK		
Y610061	442852	6216498 KAT	LATE	PYZ	Part of blasted laminated quartz sulf vein	Grey quartz vein with diss py	
Y610062	440540	6219818 KAT	LATE	QV	15cm QV in ser ank sil altd MV	Bands of gal py cpy	Dij
Y610063	440549	6219878 KAT	LATE	QV	En echelon flat veins in mafic volcanic	Local galena in cm pods	
Y610064	440553	6219855 KAT	LATE	QV	shear vein cuts laminated vein sampled by Kieren	Local galena and cpy diss and in bands	
Y610065	440563	6219918 KAT	LATE	QV	flat lying veins emplaced during compression	Local galena and cpy diss and in bands	
Y610066	440560	6219946 KAT	LATE	QV	flat lying veins emplaced during compression	Local galena and cpy diss and in bands	
Y610067	440552	6219961 KAT	LATE	QV	part of laminated breccia vein in blast pit	Local galena and cpy diss and in bands	
Y610068	440401	6220320 KAT	LATE	QV	part of laminated breccia vein in blast pit	coarse chunky dodecahedral py in bands diss	76/
Y610069	440388	6220232 KAT	LATE	QV	part of laminated breccia vein in blast pit	coarse chunky dodecahedral py in bands diss	75/
Y610070	440398	6220246 KAT	LATE	QV	part of laminated 50cm breccia vein, south side	py >>gal in bands diss	77/
Y610071	440360	6220403 KAT	LATE	QV	part of 5m wide alt, west side of laminated bx vn	diss cpy py gal and abundant mal staining	
Y610072	442991	6216209 KAT	LATE	PBZ	Part of blasted laminated qz jasper sulf vein	from muck of adit 1	Fir
Y610073	442991	6216208 KAT	LATE	MINZ	Part of blasted laminated qz ank chl mt sulf vein	from muck of adit 1	Lo
Y610074	442991	6216207 KAT	LATE	MINZ	Part of blasted laminated qz ank chl mt sulf vein	from muck of adit 1	ser
Y610075	443055	6216181 KAT	LATE	CUZ	muck pile from adit 1 keeps going.	quartz hem sulf breccia vein	loc
Y610076	440778	6215109 KAT	MV	MVM	Fine to medium grained light grey ser ank py alt	2% cubic pyrite diss	Fo
Y610077	440765	6215605 KAT	CLAS	SLST	Light grey aphanitic to vfg mudstone with rusty	Fractures. 2-5 % diss py and in fractures	Ne
Y610078	439763	6215041 KAT	LATE	QV	Laminated breccia quartz ankerite pyrite vein	5-20cm wide dips 88/208	1%
Y610079	439760	6215038 KAT	LATE	QV	Laminated breccia quartz ankerite pyrite vein	5-20cm wide dips 82/063. White to grey	5%
Y610080					BLANK		
Y610081	439733	6215057 KAT	LATE	QV	banded quartz >>chlorite > ankerite >pyrite vein	5-20cm wide dips 90/098. Qz centre chl ank sides	1%
Y610082	439622	6214999 KAT	LATE	QV	banded quartz >>chlorite > ankerite pyrite vein	5-20cm wide dips 81/240	5-2
Y610083	439623	6214998 KAT	LATE	PYZ	wallrock to Y610082. 30% qz veinlets with	10% chunky diss py	_
Y610084	439621	6214997 KAT	LATE	QV	banded quartz >ankerite pyrite veinlets in chl	shear vein. Chunky py in mm veinlets 10%	dai
Y610085	439620	6214998 KAT	LATE	QV	quartz veinlets in ank ser altd mafic dike	pyrite in seams and along contact	loc
Y610096	439678	6214924 JES	VOLC	QV	Same qv as #97 but without 1 cm mass py, 7% py	In brecciated qv 70/235	
Y610097	439678	6214924 JES	VOLC	QV	70/235, brecciated quartz vein 60 cm wide, massive	Py band 1 cm, rest	На
Y610098	439620	6215030 JES	MV	QV	Brecciated quartz vein with m-cg py 7%, 70/235,	1-7cm wide, vuggy	_
Y610099	439613	6215057 JES	VOLC	QV	Quartz carb vein, white w chl frets, 1% py in	Fractures, 70/250, tr gal, 10-15 cm wide, poss hem	Or
Y610100			T 1	0.1.1	BLANK		
Y610101	442451	6217299 TOMS	LATE	QV	0.5 m wide quartz vein breccia traceable f0r 20 m	trending 300 m, cutting plag porphyritic andesits	
Y610102	442218	6217495 TOMS	LATE	QV	multi stage quart-chl vein trending 016/80 SE	Cuts red-brown, clastic ('pyroclastic) rock	
Y610103	442080	6217523 TOMS	VOLC	FVTB	200 sq m of ?pyroclastic tuff breccia, locally rusty	0.5-4% disseminated pyrite	

bocal chunky pyrite diss and in veinlets atting feldspar porphyritic IV atting feldspar porphyritic IV atting bedded volcaniclastic y is cubic and vuggy in some seams and fine race mal w barite, fine black sphal-gal diss, tet and diss py with seams of gal mt hem cm massive vein

ip 57/053

5/274 5/273 7/282

ine diss py with seams of gal mt hem ocal veinlets of qz mal cpy gal spa py omi massive bands of f+mg py and fine gal sph cal gal sphal or whole rock ear dike contact % mg diss py % diss mg cubic py in wall rock and vein

% mg diss py along chl bands and fractures 25% m-cg pyrite in vein and wall rock

ark grey steel mineral - sphal? Telluride? cal steel grey mineral

as 7% f-mg py, rep, Kats vein

r mgt?

Y610104	442859	6216534 TOMS	LATE	QV	20 cm quartz vein trending 310/85NE	occurs on contact with granodiorite dike
y610105	440535	6219828 TOMS	LATE	QV	30 cm wide quartz vein breccia trending 150/90	-
Y610106	440366	6219848 TOMS	LATE	QV	Stockwork quartz veins	
y610107	440388	6220090 TOMS	LATE	QV	vein dipping 80 towards 013	
y610108	440392	6220092 TOMS	LATE	QV	silver crown vein. 30 cm wide dips 80 to 075.	part of 5 m wide altn/q vein zone
y610109	439832	6220619 TOMS	VOLC	FVLP		
y610110	439814	6220555 TOMS	VOLC	FVLP		
y610111	439822	6220420 TOMS	VOLC	FVLP	iron cap breccia with diss py	
y610112	439877	6220337 TOMS	VOLC	FVLP		
Y610113	444364	6215571 KIER	LATE		Disseminated fg py, very minor galena	Some chlorite
Y610114	444356	6215505 KIER	LATE		Grey wall rock with 3cm quartz vein	
Y610115	442992	6216199 KIER	LATE	QV	Vuggy QV breccia from muckpile at adit 1	
Y610116	442998	6216200 KIER	LATE	QV	Epidote altered quartz vein with jasper	Muckpile sample from adit 1
Y610117	442991	6216204 KIER	LATE	QV	Rusty quartz vein with some vugs	Muckpile sample from adit 1
Y610118	442990	6216203 KIER	LATE	QV	Slightly rusty quartz with some jasper	Muckpile sample from adit 1
Y610119	443026	6216176 KIER	LATE	MINZ	Slightly rusty quartz vein	Muckpile sample from adit 1
Y610120					BLANK	
Y610121	439411	6216334 KIER	SED	SLST	Very folded and layered rusty siltstone	
Y610122	439432	6216108 KIER	LATE	QV	Rusty QV 30cm wide with fg py	
Y610123	439413	6216016 KIER	LATE	QV	Dark grey rock with rusty 5 cm quartz vein	
y610124	439411	6216042 TOMS	CHEM	PYZ	50 cm long by 10 cm wide py lens in	sandstone which has 5%py
Y610125	439396	6216017 KIER	LATE	QV	Rusty quartz vein 30-50cm wide	Strike 150/ Dip 45
Y610126	439336	6216086 KIER	LATE	QV	Multi stage QV 40cm width, from adit	
Y610127	439872	6215268 KIER	LATE	QV	Grey quartz vein in very rusty zone (carbonate?)	Strike 216/ dip 56
Y610128	439751	6215033 KIER	LATE	QV	3cm rusty quartz vein	164 strike/ 86 dip
Y610129	439676	6214969 KIER	LATE	QV	Rusty quartz vein 5cm in width	Strike 322/ dip 60
Y610130	439630	6214975 KIER	LATE	QV	5-10cm QV grey on fresh face, rusty on weathered	118 strike/ 58 dip
Y610131	439579	6215021 KIER	LATE	QV		
Y610151	442514	6217291 KIER	VOLC	IV	Light grey to brown grey, fg matrix	mineralization at ctc but diverges as it heads NW
Y610152	442487	6217335 KIER	IGN		light grey 5% py	
Y610153	442425	6217348 KIER	LATE		small vein, grey and siliceous	fg py 2-3% in vein
Y610154	442357	6217434 KIER	LATE	IVT	fg py 5-10% on purple	
Y610155	442104	6217529 KIER	VOLC	FVT	blueish grey siliceous on contact zone with dike	fg py 5%
Y610156	442122	6217456 KIER	VOLC	FVT	grey, siliceous	fg py 3-7%
Y610157	442909	6216383 KIER	LATE	SILZ	from muck pile, rusty, sugary QV 3-5% gal 2-3% py	
Y610158	442909	6216387 KIER	LATE	PYZ	semimassive py banding in milky grey quartz	from muck pile
Y610159	442902	6216361 KIER	LATE	MINZ	25% bands of fine massive pyrite in situ	from upper part of trench, centre of blast wall
Y610160	442899	6216355 KIER	LATE	PYZ	5-10% fg py, bladed barite crystals, vuggy quartz	strike 310/90 (dip/DD 90/040)
Y610161	442947	6216309 KIER	LATE	PYZ	slightly vuggy with py banding and fault gouge	10cm wide quartz vein, 86/034 (?)
Y610162					BLANK	
Y610163	440555	6219857 KIER	LATE	QV	10cm wide QV with 3-5% mg py, 5% mg gal	52/340 (dip/DD) (?)
Y610164	440548	6219860 KIER	LATE	MINZ	3-5% cpy with mal staining and minor gal	
Y610165	440565	6219916 KIER	LATE	MINZ	vuggy and rusty quartz vein with fg cpy	mal staining
Y610166	440568	6219927 KIER	LATE	QV	20cm wide rusty quartz vein 1% mal	
Y610167	440563	6219937 KIER	LATE	QV	20cm wide rusty quartz vein with	1% gal, 1% py, 1% mal
Y610168	440540	6219969 KIER	LATE	QV	Strongly ankerite sericite altered host rock	5% quartz veinlets 7% pyrite disseminated
Y610169	440399	6220316 KIER	LATE	QV	10cm wide rusty quartz vein 5-10% mg py	

5-7% diss fg py. Strikes 306/82

insitu main horizon

3-5% pyrite
Y610170	440401	6220332 KIER	LATE	QV	Grey wall rock, fg diss py, 2-3%	
Y610171	440397	6220326 KIER	LATE	QV	quartz vein with fine pyrite 4-7%, ankerite	
Y610172	440397	6220331 KIER	LATE	QV	quartz vein with 2-3% pyrite from blast pile	
Y610173	440397	6220330 KIER	INT	DIOR	strongly altered sericite ankerite dike with 15%	quartz veinlets and 1-2% diss py
Y610174	440390	6220271 KIER	LATE	QV	quartz vein with 3-5% fg pyrite	2% fg galena from muck pile at blasted pit
Y610175	440384	6220369 KIER	LATE	QV	quartz breccia vein with 5-7% py	2-4% galena; dipping 40/088
Y610176	440396	6220439 KIER	LATE	QV	10cm qv, semi massive fg pyrite, 20%	
Y610177	440387	6220454 KIER	LATE	QV	10cm qv semi massive mg py, 15-25%	
Y610178	440357	6220498 KIER	LATE	QV	20cm wide qv on contact with dike 4-7% mg py	5-10% mg gal
Y610179	440390	6220368 KIER	LATE	QV	vuggy qv 3-5% fg py, 2-4% fg gal	
Y610180	440360	6220487 KIER	LATE	QV	10-20cm qv with 10-20% mg py, 4-7% gal mg	
Y610181	440477	6220671 KIER	LATE	QV	vuggy quartz vein in contact with ank altd dike	3% py
Y610182	440471	6220635 KIER	LATE	QV	Rusty quartz breccia vein, 2% py	
Y610183	440476	6220623 KIER	LATE	QV	quartz breccia vein with 3% fg py, 3% fg gal	
Y610184	440482	6220626 KIER	LATE	QV	rusty quartz vein with 5-10% fg py	
Y610185	440488	6220620 KIER	LATE	QV	rutsy quartz vein 5-7% mg py	
Y610186	440490	6220635 KIER	LATE	QV	quartz vein east of stockwork, 4% py	striking 146/74
Y610187	440463	6220575 KIER	LATE	QV	qv, 4-7% mg py, striking 354/25	
Y610188	440474	6220552 KIER	LATE	QV	quartz vein in pit, muck rock, 7-10% cg py	
Y610189	440471	6220539 KIER	LATE	QV	20-40cm quartz vein with semimassive 15% cg py	striking 134/74
Y610190	440471	6220505 KIER	LATE	QV	30-40cm qv, 10% mg py	striking 180/68
Y610191	440481	6220456 KIER	LATE	QV	25cm qv with 10% mg gal 5% mg py, bifurcating	strike 306/70
Y610192	440496	6220402 KIER	LATE	QV	40cm qv, 5% mg py	strike 042/88
Y610193	440478	6220404 KIER	LATE	QV	10-20cm qv with 5-7% gal, 5% fg py	strike 150/54
Y610194	440506	6220363 KIER	LATE	QV	5cm quartz vein 2% py, 4-6% cpy, 1-2% gal,	1-2% mal in ank altd dike. strike 342/54
Y610195	440458	6220466 KIER	LATE	QV	10cm qv with cg py 20-25%, 5% fg gal	on contact with dike, strike 322/68
y610196	440609	6215082 TOMS	VOLC	IV	bx andesite with stkwk q vns	
y610197	440701	6215127 TOMS	MV	MVP	sample mostly of py rich material	in selvages
y620198	440720	6215112 TOMS	CHEM	PYZ	interflow seds. exhalite?	
y610199	439365	6216263 TOMS	SED	SLST	siltstone/sandstone part of folded pckg	very local rusty area
y610200					BLANK	
Y610201	440503	6220566 JES	SED		Quartz vein part of 3 m zone, 7-10% coarse py	
Y610202	440502	6220561 JES	MV	MD	Quartz vein in pit, 5-7% py, strong sericite	
Y610203	440503	6220561 JES	MV	MD	Mafic dike with strong ser, 5% mg py, 10% cg gal	In pit oc
Y610204	440504	6220561 JES	SED		Sed with strong mm-cm quartz stockwork, 5-10% py	
Y610205	440503	6220560 JES	MV	MD	Mafic dike with quartz flooding, 7% coarse py,	15% coarse black sulfide
Y610206	440502	6220557 JES	SED	MINZ	Brecciated white grey quartz vein with 7-10% py	Infilling brecciated pieces, 3% galena, in mafic
Y610207	440480	6220474 JES	SED	QV	Quartz vein 10-30 cm wide, 15% coarse galena	7% coarse py, strike variable dipping NE steep
Y610208	440485	6220467 JES	SED		Quartz vein 5cm part of stockwork 5m wide, 10% py	2% galena
Y610209	440408	6220448 JES	MV	MD	Quartz vein 30 cm in mafic dike near sed contact	5-7% galena, 2% py, minor cpy
Y610210	440419	6220435 JES	SED		Sed with 5 cm qv and quartz stockwork, 7% gal,	4% py
Y610211	440449	6220448 JES	SED		Quartz vein in sed, at offset, 5-7% py	
Y610212	444404	6217878 JES	META		Felsic?, weakly rusty, 0.25% very fine py	
Y610213	444392	6215590 JES	VOLC		Grey, weakly rusty with quartz, 0.25% very fine py	
Y610214	444395	6215599 JES	IGN		Quartz vein orange rusty locally, minor fine py	
Y610215	444395	6215598 JES	IGN		White quartz vein with minor fine py in chl/ser	
Y610216	440675	6215055 JES	VOLC	IV	Quartz vein 5-10 cm, 5% fine py,	77/265

from muck pile at blasted pit

Dike and sed ct

Y610217	440679	6215033 JES	VOLC	IV	Brecciated andesite silica flooded, entire unit	Weakly to modly rusty, silica flooded, 0.25% very	Fin
Y610218	440637	6215012 JES	SED	SLST	Narrow cm vein 66/240, near ct, fg, grey 1% fine	Py, weakly rusty oc	
Y610219	440638	6214972 JES	VOLC		3 cm brecciated quartz vein in altered andesite	70/070 but is curving and pinches out, 1% py	
Y610220					BLANK		
Y610221	440630	6214939 JES	VOLC	IV	Andesite, grey mg, 1% fine py, modly rusty		
Y610222	440763	6215082 JES	VOLC		Andesite?, silicified, entire oc is rusty gossan	For several metres, 1-5% py?	
Y610223	440683	6215114 JES	VOLC		Pillowed flow, dark grey, 1% fine py		
Y610224	440768	6215048 JES	VOLC	QV	Massive pyrite part of zone several metres wide	With anastomosing quartz vein	
Y610225	440772	6215052 JES	VOLC		Brecciated quartz vein with massive py matrix		
Y610226	440776	6215053 JES	VOLC	MINZ	Strongly silicified andesite, 1-5% ver fine py		
Y610227	440780	6215059 JES	VOLC		Andesite, weakly rusty, 1-3% fine py		
Y610228	440779	6215066 JES	VOLC		Quartz vein or chert layer with 0.5% fine py		
Y610229	440778	6215091 JES	VOLC	IV	Semi massive py in rusty zone,		
Y610230	440780	6215095 JES	VOLC		Brecciated volcanic with mass py matrix		
Y610231	440695	6215071 JES	VOLC	IVLP	Int lapilli tuff, modly rusty, 0.5% fine py		
Y610232	440781	6215090 JES	VOLC		2-3 cm qv with fine py fractures and in vein		
Y610233	440780	6215111 KAT	VOLC		Late quartz vein in later unit?, minor fine py	Locally 40 cm wide but pinches out	
Y610234	440782	6215111 KAT	VOLC		Wall rock to qv in 233, mm qtz vnlets, light grey,	1-3% fine shiny py	
Y610235	440781	6215116 KAT	VOLC		Quartz stockwork, silicified mafic volcanic,	3% fine shiny py	
Y610236	440756	6215107 JES	VOLC				
Y610237	440742	6215109 KAT	VOLC		With plag phenocrysts, sample taken for whole rock		
Y610238	440722	6215111 KAT	VOLC		Felsic volcanic crystal tuff, quartz and feldspar	1% very fine py	San
Y610239	440593	6215234 JES	SED		Quartz stockwork, vuggy few cm wide, minor py	Weakly to modly rusty, 65/25	
Y610240					BLANK		
Y610241	440776	6215590 JES	IGN	ID	Dike, green grey, f/mg, calc carb fractures,	1% fine py, weakly rusty, next to rusty goss sed	
Y610242	440771	6215573 JES	SED		Sed rusty gossan weathered mudstone?, dark grey,	Fg, hard to guess py %	
Y610243	440771	6215590 JES	IGN		Granidiorite?, mg, white and dark green grey,	0.5% py	
Y610244	440785	6215628 JES	IGN		Quartz flooded, mg, grey, grandiorite?, minor f py		
Y610245	440819	6215628 JES	VOLC		Feldspar phenocrysts, tuff?, 3-5% py, wkly rusty	_	
Y610246	439850	6215116 JES	VOLC		Quartz vein trending 160 but very weak structure	Trace py	
Y610247	439853	6215100 JES	VOLC		Bleached volcanic with bluish quartz stockwork,	Crackled w stockwork, 1-3 mm with fine black sulf	
Y610248	439859	6215078 JES	VOLC		Brecciated volcanic with silicified fractures	Some sulfide, don框 know %, modly rusty, weakly	She
Y610249	439859	6215079 JES	VOLC	QV	Vuggy 5-10 cm quartz vein with tr py and metallic	Sheen possibly sulfide?, trending approx 125/60	
Y610250	439660	6215128 JES	SED		Mudstone?, fg, 1% fine py, black and grey		
A0863001	443227	6217802 JES	FV	IV	Rusty, mg, intermediate volcanic, weak potassic	Alt, 5% fine py	
A0863002	443266	6217828 JES	VOLC		Quartz vein rusty 10% py		-
A0863003	443504	6217965 JES	LATE	VEIN	Big Casino souther muck pile	Quartz vein with fine pyrite and gal	Loc
A0863004	443504	6217964 JES	LATE	ALTZ	Big Casino southern muck pile, host rock	Fine grained dark grey with pyrrhotite veins	Sul
A0863005	443501	6217966 JES	LATE	ALTZ	Big Casino southern muck pile	Brecciated alteration zone or veining	Qz
A0863006	443489	6217978 JES	LATE	CUZ	Big Casino northern muck pile	Quartz vein with diss mg cpy	
A0863007	443490	6217979 JES	LATE	QV	Big Casino northern muck pile	Brecciated quartz vein with fine chlorite wisps	
A0863008	443882	6216406 JES	VOLC		Kat/Jess, intermediate volcanic, grey, fg, wkly	Rusty, 1% py with mm qv	
A0863009	443890	6216426 JES	VOLC		Grey int vc with 1cm qv w 0.5% fine py and cpy?	Talus in waterfall	
A0863010	443055	6216387 JES	VOLC		Matic volcanic, very fg, purpley grey, weakly	Rusty, modly magnetic, 3% f-mg py on fractures	
A0863011	443952	6216562 JES	VOLC	IV	Intermediate volcanic mg Grey, modly. Rusty	Locally, minor fine py or Po	
A0863012	443974	6216719 JES	VOLC		Kat and Jess adit, strongly rusty, quartz flooded	1-3% py	~
A0863013	443973	6216721 JES	VOLC		Kat and Jess, add oc, sheared silicified zone 20	Cm wide on east side of adit, can't get fresh to	Gue

ne py

mple taken for wholerock

eared trending approx 130/60

ocally weakly magnetic If veins are magnetic z hem mt breccia vein with fine py>cpy

ess sulfide %

A0863014	440440	6217631 JES	VOLC		Felsic volcanic, mod sericite, light green, minor	Blackish mineral on fracture (non-mag)	
A0863015	440309	6216859 JES	SED		Mudstone, fg, black, modly rusty locally, quartz	Carb veining few cm wide, sample is composite	Wit
A0863016	438938	6221731 JES	VOLC		Kat and Jess, qv, orange with carb fractures	0.5% cpy, gal, minor py	
A0863017	439017	6221785 JES	VOLC		Muckpile Kat and Jess, Rusty, semi massive sph	5% py in local pod	
A0863018	439019	6221784 JES	VOLC		Quartz veining in trench wall, 3% sph 1% py		
A0863019	438893	6221923 JES	VOLC		Quartz vein with chlorite fractures, some galena	And cpy, muckpile	
A0863020					BLANK		
A0863021	438895	6221923 JES	VOLC		Quartz vein with sericite schist, 3% py	Muckpile near excavated workings	Noj
A0863022	439085	6221105 JES	VOLC		Kat and Jess brecciated qv with 5-7% mg py, rusty		
A0863023	439086	6221107 JES	VOLC		Quartz vein I think in place, rusty, chl fractures	Probably spider 2 area?	
A0863024	439088	6221039 JES	VOLC		Int volc?, f-mg, weakly rusty, light grey, quartz	Flooded, 10% f-mg py	
A0863025	439088	6221039 JES	VOLC		Same as 24 but of 1-2cm qv		
A0863026	439125	6220878 JES	VOLC		Quartz vein loose probably in place, 10-15 cm,	0.5% py, orange red	
A0863027	439125	6220876 JES	VOLC		Quartz vein in shear zone, approx 165/vertical	Minor py	
A0863051	443225	6217805 KAT	FV	IV	Light grey -green-pink fg volcanic breccia	Rusty weathering. 5-10% fine to mg pyrite	sub
A0863052	443260	6217830 KAT	FV	FV	Light grey -green-pink fg volcanic breccia	Rusty weathering. 5-10% fine to mg pyrite	alon
A0863053	443498	6217964 KAT	LATE	CUZ	Quartz vein with malachite and azurite	there is a fine dark grey mineral, possible hem or	poss
A0863054	443497	6217966 KAT	LATE	CUZ	brecciated dark grey and fine wall rock.	quartz cpy stockwork with malachite	fron
A0863055	443497	6217965 KAT	LATE	CUZ	quartz malachite breccia zone in volcanic	Rusty weathering. From Big Casino south muck pile	Loc
A0863056	443493	6217978 KAT	LATE	CUZ	Quartz vein. Light grey to white with rusty vugs	Blasted material from Big Casino northern trench	Bree
A0863057	443489	6217978 KAT	LATE	CUZ	5cm semimassive cpy band in quartz magnetite vein	several vugs with quartz crystals growing	fine
A0863058	443064	6216226 KAT	LATE	VEIN	Dark grey medium grained sheared and silicified	7cm wide, Likely a reverse fault? Noted by Jess	Fine
A0863059	443095	6216256 KAT	VOLC	IV	1m wide silicified zone in porphyritic andesite	With fg mafic dikes? There is cpy with the shear	And
A0863060					BLANK		
A0863061	443816	6216243 KAT	VOLC	IV	1 m wide silicified shear zone with local pyrite	In bands with carb veinlet and diss	Fine
A0863062	443870	6216516 KAT	VOLC	IV	50cm wide silicified shear zone with local	malachite. Dips 83/170	Fine
A0863063	443973	6216721 KAT	VOLC	IV	muck from 2m shear zone with 1m wide mini adit	light grey, fine grained and strongly silicified	Fine
A0863064	443970	6216721 KAT	VOLC	IV	shallow shear zone west of main adit	light grey, fine grained and strongly silicified	Fine
A0863065	440464	6217669 KAT	CLAS	SLST	Podiform rusty band of rounded clasts of mudstone	Quartz and sulphide. Secondary or primary?	
A0863066	440344	6217351 KAT	CLAS	SLST	intersection of a 20vm quartz veins at	cut by a 1cm pyrite vein at	Hos
A0863067	438916	6221744 KAT	LATE	QV	1-2m quart ankerite pyrite breccia vein	Podiform and punching out, muck from blasting	
A0863068	439016	6221786 KAT	LATE	QV	1-2m quart ankerite pyrite sphal breccia vein	Podiform and punching out, muck from blasting	Nea
A0863069	439016	6221786 KAT	LATE	QV	1-2m quart ankerite pyrite sphal breccia vein	Podiform and punching out, muck from blasting	Nea
A0863070	439019	6221783 KAT	LATE	QV	1-2m quart ankerite pyrite sphal breccia vein	Podiform and punching out, blasted wall	Nea
A0863071	438875	6222022 KAT	LATE	QV	1-2m quart ankerite pyrite sphal breccia vein	Podiform and punching out, muck from blasting	Nea
A0863072	438875	6222022 KAT	LATE	QV	1-2m quart ankerite pyrite sphal breccia vein	Podiform and punching out, muck from blasting	Nea
A0863073	439008	6221235 KAT	LATE	QV	1-2m quart ankerite pyrite sphal breccia vein	Podiform and punching out, muck from blasting	Nea
A0863074	439054	6221184 KAT	LATE	QV	flat vein set 5-15cm thick	vuggy with coarse sulphides	Var
A0863075	439051	6221190 KAT	LATE	QV	flat vein set 5-15cm thick	vuggy with coarse sulphides	Trer
A0863075	439051	6221190 KAT	LATE	QV	flat vein set 5-15cm thick	vuggy with coarse sulphides	Trer
A0863076	439041	6221196 KAT	LATE	QV	flat vein set 5-15cm thick	vuggy with coarse sulphides	Trei
A0863077	439040	6221194 KAT	LATE	QV	flat vein set 5-15cm thick	vuggy with coarse sulphides	Trer
A0863078	439010	6221239 KAT	LATE	QV	steep vein along creek. Blasted rock	vuggy with coarse sulphides breccia shear 1m	Trer
A0863079	439008	6221235 KAT	LATE	QV	steep vein along creek. Blasted rock	vuggy with coarse sulphides breccia shear 1m	Trer

thin a few metres

photo

o angular fragments <5cm onv qz breccia veining 50cm wide ssible sphalerite. From southern Big Casino muck om Big Casino southern muck pile cally magnetic ecciated. 1% diss cpy>py and malachite staining e magnetite concentrated in seams at margins hely diss magnetite with 5% mg stringer cpy ad chlorite alteration and fine magnetite

hely diss magnetite hely diss magnetite hely diss pyrite and as pods and veinlets hely diss pyrite and as pods and veinlets

sted in banded siltstone mudstone

ar adit and open cut to north ar adit ar a

Sample	Texture	Colour	Min1	Min2	Min%1	Min%2	Structure	Au g/t	Ag g/t	Cu ppm	Mo ppm	Pb ppm	Zn ppm
Y610001	crys	white				0	0	<0.005	<0.5	27	1	2	9
Y610002	crys	white				0	0	0.008	1.7	10	2	17	10
Y610003		tan	ру			5	0	<0.005	1.3	10	1	10	100
Y610004	sug	white				0	0	0.008	2.2	6	<1	13	60
Y610005		grey				0	0	0.005	3	8	1	98	21
Y610006		grey	ру			7	0	0.016	1.1	14	5	14	44
Y610007		grey	ру			1	0	<0.005	<0.5	16	<1	13	170
Y610008	sug	grey	gal	ру		7	3	0.029	208	266	3	68100	66500
Y610009		grey				0	0	<0.005	4.5	42	1	211	. 376
Y610010	sug	grey	ру		2	0	0	0.014	90.8	65	74	174	279
Y610011	sug	white	ру	gal		5	0 QV	0.006	98	159	6	1535	15200
Y610012	sug	grey	ру			3	0	0.019	34.1	215	6	2030	9950
Y610013		grey	ру			5	0	<0.005	5	16	5	94	388
Y610014		white	gal	cpy		5	1	0.054	11.8	1740	<1	653	54800
Y610015		white	ру	cpy		1	1	0.076	11.3	1635	1	537	14750
Y610016		grey	ру			1	0	0.005	0.7	134	<1	294	1955
Y610017		white	gal	cpy	1	0	3	0.17	56.7	3740	4	27800	24300
Y610018		white	ру	gal		3	1 QV	0.059	8.6	134	10	5810	199
Y610019	crys	white	gal	ру		5	2	0.292	21	97	16	28100	151
Y610020								<0.005	<0.5	2	<1	55	23
Y610021		ру				4	0	0.065	2.4	21	8	237	57
Y610022	sug	white	cpy			5	0	0.155	56.5	5880	1	149	33
Y610023	sug	white	gal			7	0	0.194	121	523	16	81100	12050
Y610024		white	cpy	ру		1	5	0.071	20.3	1885	13	647	40
Y610025		grey	ру			5	0	0.008	1.4	9	2	864	587
Y610026		white	gal	ру		2	1 QCV	0.654	37.2	30	2	10550	12200
Y610027	crys		cpy	ру		3	0 QV	0.031	22.7	2860	<1	265	161
Y610028		white	gal	ру	3	0	1 QV	0.922	71.6	209	3	133500	31300
Y610029		rusty	ру			5	0 QV	0.145	6.9	83	49	1685	2220
Y610030		white	gal	cpy		5	3 QV	0.815	161	2530	1	93300	11850
Y610031		grey	gal	cpy		3	1	0.421	10.7	776	2	10300	14900
Y610032		gal		сру	6	0	2	0.48	117	2660	<1	128500	163500
Y610033		grey	cpy	gal		3	7	1.12	121	14050	3	31600	68900
Y610034		ру				1	0	0.117	6.3	125	3	700	632
Y610035	sug	white	ру	cpy		1	1	0.205	16.5	1435	2	2700	2950
Y610036	sug	white	gal	cpy		3	1	0.481	23	2050	5	7520	160
Y610037		gal		ру		5	1	0.466	37.8	985	3	29300	87
Y610038	sug	red	ру			1	0	0.268	9.3	195	1	703	276
Y610039	sug	white	ру			5	0	1.3	11.2	391	2	599	56
Y610040								<0.005	<0.5	3	<1	18	30
Y610041	crys		cpy	ру		1	1	0.409	23.4	1725	2	131	. 79
Y610042		gal			4	0	0	0.293	185	64	44	190500	195500
Y610043	sug	white	ру			5	0	0.384	6.5	32	2	3720	2810
Y610044		tan	ру			3	0	0.018	2	90	1	1075	1710
Y610045		ру				7	0	0.064	9.3	11	6	1270	849
Y610046		ру		gal		5	1	0.075	18.9	129	16	14450	17500

Y610047 sug	white	ру	gal	5	2	9.28	185	507	4	77100	26500
Y610048	black	ру		5	0	0.064	4.6	12	5	494	138
Y610049 crys		ру	gal	3	3	0.351	15	123	7	5250	337
Y610050	gal		ру	20	3	0.272	27.7	116	11	18300	27400
Y610051 crys	rusty	ру	clc	1	0	0.028	4.3	13	2	227	63
Y610052 crys	rusty	ру	clc	1	0	0.059	6.2	11	1	55	102
Y610053 crys	rusty	ру	gal	2	3	0.01	15.4	1280	1	21000	32200
Y610054 crys	rusty	ру	gal	1	1	0.012	12	818	1	9120	50000
Y610055 crys	rusty	ру		2	0	<0.005	0.8	4	3	58	102
Y610056 sug	white	ру		10	0	0.034	165	103	10	2230	1965
Y610057 sug	white	ру	sph	1	1 SHR	0.07	208	1105	14	9470	24700
Y610058 sug	white	ру	gal	1	1 SHR	0.052	28.9	112	90	2050	2500
Y610059 sug	white	ру		4	0 SHR	0.035	12.2	24	75	213	538
Y610060						<0.005 <	<0.5	1 <1		21	29
Y610061 sug	white	ру		3	0	<0.005	1.2	11	2	70	230
Y610062 shr	rusty	gal	ру	20	3 QCV	0.62	116	1165	7	131500	32200
Y610063	rusty	gal		3	0	0.051	79.9	177	9	22000	908
Y610064	rusty	gal	cpy	2	2	0.061	43.7	1955	1	3140	177
Y610065	rusty	gal	cpy	1	1	0.034	6	152	2	825	344
Y610066	rusty	gal	cpy	2	2	0.073	98.1	5130 <1		60400	79100
Y610067	rusty	gal	cpy	2	2	0.176	46.4	3750 <1		9160	269
Y610068	grey	ру		20	0	0.722	38.3	234	4	702	171
Y610069	grey	ру	sph	20	1	1.025	130	463	10	20400	4920
Y610070	grey	ру	gal	20	5	0.622	64.9	200	24	70100	59
Y610071	rusty	ру	cpy	1	1 FLT	0.073	13.9	3100	6	4700	546
Y610072 sug	white	ру	gal	3	10 SHR	5.21	72.8	368	2	53700	157500
Y610073 sug	white	ру	gal	1	1 SHR	1.18	226	3860	2	2050	14900
Y610074 sug	white	ру	gal	15	3 SHR	0.576	21.6	782	8	11350	29700
Y610075 sug	green	ру	gal	3	1 SHR	0.727	188	28000	4	443	13950
Y610076 por	green	ру		1	0	0.084	1.7	60	2	100	282
Y610077	rusty	ру		3	0	0.009	0.8	95	12	41	136
Y610078	rusty	ру		1	0	0.014 <	<0.5	16	2	51	75
Y610079	rusty	ру		5	0	0.043	3.6	22	4	27	58
Y610080						<0.005 <	<0.5	4 <1		10	24
Y610081	rusty	ру		1	0	<0.005	1	13	3	85	87
Y610082 shr	rusty	ру		10	0 QV	0.112	14.5	86	9	64	127
Y610083 shr	rusty	ру		10	0 QV	0.059	9.6	28	7	249	350
Y610084 shr	rusty	ру	sph	10	0 QV	0.256	34.5	23	32	880	3180
Y610085 shr	rusty	ру	sph	4	0 QV	0.255	33.6	29	5	791	430
Y610096	ру			7	0	0.045	5.5	9	20	71	152
Y610097	ру			10	0	3.63	161	6	12	144	134
Y610098 crys	white	ру		7	0	1.6	10.9	4	5	503	380
Y610099	ру		gal	1	0	<0.005	0.7	1	1	46	206
Y610100						<0.005 <	<0.5	1 <1		7	18
Y610101						0.023	2.5	7	1	36	16
Y610102						<0.005	1.2	12	1	42	113
Y610103	grey	ру		4		0.042	37.5	938	15	1755	1085

Y610104		ру		3		0.043	83	559	4	792	3740
y610105	cpy			2	0 QV	0.127	105	6640	5	14300	43500
Y610106		ру	cpy	1	0	0.01	7.6	998	2	85	202
y610107	ру		cpy	1	1 QV	0.069	7.2	713	1	152	150
y610108				0	0 VEIN	0.051	7.1	113	6	212	539
y610109	ру			15	0	0.018	0.5	20	101	20	106
y610110	py			15	0	0.009 <0	).5	21	17	16	28
y610111	py			7	0	0.012 <0	).5	15	23	31	115
y610112	py			8	0	0.005	0.6	8	10	24	87
Y610113 crys	grey	ру	gal	1	0	0.011	0.7	5	2	38	125
Y610114 crys	grey	py	C	1	0	0.035	1	5	6	11	34
Y610115 ang	black	py		2	0	7.95	22.4	197 <1		9380	48400
Y610116 ang	grey	py		5	0	0.104	40.1	1075	1	3140	21100
Y610117 shr	rusty	py		5	0	1.285	30.1	2280	18	552	1505
Y610118 shr	grey	cpy	mal	2	2	0.073	18.2	2510 <1		548	29900
Y610119 shr	grey	py	gal	15	7	2.72	63.9	830	3	1100	8880
Y610120	C J	15	C			<0.005 <0	).5	6 <1		8	66
Y610121 sch	rusty	py		1	0	0.015	0.9	27	14	28	157
Y610122 shr	rusty	py		1	0	<0.005	0.6	3	1	47	68
Y610123 shr	rusty	py		5	0	15.1	231	18	28	636	1295
y610124	py	15		50	0	0.028	0.6	16	13	11	144
Y610125 shr	rusty	py		5	0	5.68	488	4	7	545	295
Y610126	rusty	py	cpv	1	1	0.167	6.6	17	12	68	89
Y610127	rusty	py	1 5	6	0	0.369	12	63	5	43	8
Y610128	rusty	py		1	0	0.006	0.9	27	1	14	33
Y610129	rusty	py		1	0	0.288	6.5	3	46	57	46
Y610130	grey	py		5	0	0.294	53.9	13	30	2280	3110
Y610131	py	15		2	0	0.425	31.6	6	16	131	144
Y610151 por	grey	py		6	0	0.012	4.3	500	4	51	127
Y610152	grey	py		5	0	0.034	1	217	16	39	221
Y610153	grey	py		3	0	0.008	1.5	16 <1		17	65
Y610154	mauve	py		7	0	0.011	2	41 <1		17	139
Y610155	grey	py		5	0	0.007	0.6	13	3	8	67
Y610156	grey	py		5	0	0.007	0.6	18	1	36	193
Y610157 sug	rusty	py	gal	3	4	0.022	501	479	2	40300	32500
Y610158 sug	rusty	py	C	25	0	0.025	197	62	20	412	1250
Y610159	rusty	py		25	0	0.032	127	174	1	1120	1910
Y610160	py	15		0	0	0.008	15.5	43 <1		195	349
Y610161	py			4	0	0.232	94.7	383	45	3300	1460
Y610162	1.5					<0.005	0.5	3 <1		17	32
Y610163	py		gal	4	5	0.211	88.3	2250 <1		46100	167500
Y610164	cpy		gal	4	1	0.159	38.8	3590	1	3890	3700
Y610165	cpv		mal	1	0	0.051	28	953	1	1090	490
Y610166	rusty	mal		1	0	0.044	13.6	346	2	194	53
Y610167	rusty	ру	mal	1	1	0.019	6.9	250	5	2240	1280
Y610168	rusty	py		7	0	0.059	2.6	92	4	1250	158
Y610169	rusty	ру		7	0	0.045	4.4	35	3	115	57

Y610170	grey	ру		3	0	0.017	3.7	31	8	39	80
Y610171	ру			6	0	0.272	9.4	51	6	2120	348
Y610172	ру			2	0	0.041	2.4	23	13	145	22
Y610173 por	grey	ру		2	0	0.007	3.6	315	2	46	60
Y610174	ру		gal	4	2	0.328	6.4	8	22	3260	65
Y610175	ру		gal	6	3	0.182	23.1	619	2	2970	25
Y610176	ру		-	20	0	0.458	43.4	1170	2	459	158
Y610177	ру			20	0	0.038	3.5	51	15	2090	63
Y610178	ру		gal	5	7	2.68	73.9	63	2	94800	3240
Y610179	ру		gal	4	3	0.103	12.9	299	3	5120	53
Y610180	ру		gal	15	6	1.055	47.7	516	6	56700	23200
Y610181	ру		-	3	0	0.124	3.3	246	2	642	130
Y610182	py			2	0	0.309	2.1	9	10	330	123
Y610183	ру		gal	3	3	0.337	11.2	168	12	9230	23500
Y610184	py		-	7	0	0.085	5.6	16	6	1890	1845
Y610185	ру			6	0	0.83	1.2	4	2	115	28
Y610186	py			4	0	0.032	2.2	4	6	180	98
Y610187	ру			5	0	0.033	2.1	6	5	285	382
Y610188	py			8	0	0.092	5.9	59	5	417	582
Y610189	py			15	0	2.81	136	61	6	49900	46500
Y610190	py			10	0	0.396	1.4	9	2	146	78
Y610191	gal		ру	10	5	1.085	59	147	7	79300	106500
Y610192	py			5	0	0.952	8.3	70	9	461	213
Y610193	py		gal	5	6	0.131	56.8	10	22	54300	2450
Y610194	py		gal	2	1	0.869	26.6	2440	1	4880	5520
Y610195	py		gal	22	5	0.169	28.9	688	6	39300	15600
y610196	ру		-	2	0	<0.005	0.6	11	2	119	96
y610197	py			12	0	0.01	0.6	10	215	138	836
y620198	ру			10	0	<0.005	3.1	8	44	48	95
y610199	ру			2	0	0.017	1.4	4	17	411	260
y610200						< 0.005	<0.5	1 <1		19	24
Y610201	white	ру		7	0	0.993	89.4	23	12	6280	1930
Y610202	grey	ру		5	0	0.169	28.5	17	15	18800	9350
Y610203	tan	gal	ру	10	5	0.054	57.1	90	5	73600	1105
Y610204	ру			7	0	0.138	13.4	108	43	5040	12850
Y610205	tan	ру	gal	7	15	0.046	14.5	1730	2	1505	28600
Y610206	ру		gal	7	3	0.058	9.9	24	10	6440	4040
Y610207	gal		ру	15	7	2.86	86.8	1910 <1		117500	64500
Y610208	ру		gal	10	2	1.2	69.8	1890	5	88900	4160
Y610209	gal		ру	5	2	0.099	43.9	1390	6	69000	393
Y610210	gal		ру	7	4	1.135	58	729	51	49700	7120
Y610211	ру			5	0	0.102	10.2	16	12	507	601
Y610212	ру			0	0	0.005	0.5	12	10	152	61
Y610213	ру			0	0	0.008	0.5	6	1	65	52
Y610214	ру			0	0	0.021 •	<0.5	6 <1		55	22
Y610215	ру			0	0	0.011	1.2	7 <1		332	167
Y610216	grey	ру		5	0	0.008	13.6	9	30	45	27

Y610217	grey			0	0	<0.005 <	<0.5	5	1	44	44
Y610218	grey			0	0	< 0.005	0.7	8 <1		30	95
Y610219	grey	ру		1	0	8.19	8	18	1	62	47
Y610220						< 0.005 <	<0.5	1 <1		14	18
Y610221	grey	ру		1	0	0.006 <	<0.5	12	19	25	59
Y610222	grey	ру		2	0	<0.005 <	<0.5	5	12	21	83
Y610223	ру			1	0	<0.005 <	<0.5	5	1	14	14
Y610224	ру			95	0	0.063	4.9	43	5	39	17
Y610225	ру			25	0	0.035	9.3	9	8	51	39
Y610226	ру			5	0	0.057	4.7	6	30	356	407
Y610227	ру			2	0	0.005	1.3	6	4	56	25
Y610228 sug		ру		0	0	0.026	0.7	4	26	31	43
Y610229				0	0	0.093	12.9	15	21	26	144
Y610230	ру			30	0	0.257	26.3	17	14	58	603
Y610231	py			0	0	<0.005 <	<0.5	7	12	24	42
Y610232 sug	white	ру		3	0	0.021	2	5	7	22	14
Y610233	ру			0	0	<0.005 <	<0.5	2	4	7	11
Y610234				0	0	0.966	6.3	15	9	85	111
Y610235	py			3	0	0.828	1.5	8	18	55	42
Y610236	1.5			0	0	< 0.005 <	<0.5	4	2	18	19
Y610237	grey			0	0	< 0.005 <	<0.5	5	7	19	20
Y610238	py			1	0	< 0.005 <	<0.5	4	4	10	29
Y610239	py			0	0	0.272	2.7	9	27	21	13
Y610240	15					<0.005	<0.5	1 <1		11	18
Y610241	green	py		1	0	< 0.005	<0.5	12	1	4	96
Y610242	grey	py		0	0	< 0.005	<0.5	49	1	18	147
Y610243	py	15		0	0	<0.005	<0.5	32	1	7	124
Y610244	py			0	0	<0.005	1.3	18	1	621	757
Y610245	py			3	0	<0.005	<0.5	7	10	13	17
Y610246	1.5			0	0	0.011	1.5	13	1	28	25
Y610247				0	0	<0.005	<0.5	14 <1		14	73
Y610248				0	0	< 0.005	<0.5	9	6	43	91
Y610249 crys	white			0	0	0.008	1.1	2	2	2	7
Y610250	py			1	0	0.03	7.8	43	12	55	92
A0863001	grey	py		5	0	<0.005	8.1	38	1	828	387
A0863002	py	15		10	0	<0.005	9.4	73	3	685	252
A0863003 ang	pink	py	gal	1	1	0.008	38.2	144 <1		5650	22400
A0863004 shr	grey	po	U	5	0	0.029	27.6	630	3	1520	1450
A0863005 ang	pink	pv	cpv	1	0	0.006	79.1	4380	6	1465	125000
A0863006 ang	grey	cpy	mt	8	4	0.084	270	53400	20	14450	41900
A0863007 ang	pink	cpv	pv	0	1	0.112	36.2	943	1	2130	35200
A0863008	py	15	15	1	0	0.006	1.2	245	3	46	193
A0863009	pv			1	0	0.045	1.1	708	3	20	163
A0863010	py			3	0	0.005	1	27	1	93	461
A0863011	grev			0	0	0.019	1	9	17	42	73
A0863012 sug	grev	py		1	0	< 0.005	1.7	18	25	45	95
A0863013				0	0	0.016	2.1	44	26	320	404

A0863014	green			0	0	<0.005	<0.5	4	1	39	190
A0863015	black			0	0	<0.005	0.7	25	15	27	75
A0863016	cpy		gal	0	0	0.093	83.6	1470 <1		1950	1715
A0863017	sph		ру	30	5	50.7	6830	468	11	54800	127500
A0863018	sph		ру	3	1	0.221	476	153 <1		4750	1315
A0863019				0	0	0.716	305	60	2	6900	12600
A0863020						<0.005	1.9	2 <1		27	59
A0863021	ру			0	0	0.018	24.2	38 <1		2510	28300
A0863022	py			5	0	1.255	13.4	293 <1		84	157
A0863023				0	0	0.012	4.1	155 <1		61	160
A0863024	ру			10	0	3.53	57.9	1240	4	104	70
A0863025				0	0	0.757	36.7	286	2	121	74
A0863026				0	0	0.221	19.8	27	1	45	49
A0863027				0	0	0.479	5.4	91	1	18	50
A0863051 rnd	pink	ру		8	0	<0.005	7.3	28 <1		633	202
A0863052 ang	pink	py		8	0	<0.005	5	31	1	283	181
A0863053 shr	green	mal	az	10	1	0.095	454	13500	1	1385	8960
A0863054 ang	grey	cpy		10	0	0.129	216	14700	2	2620	45700
A0863055 ang	rusty	cpy	mal	1	3	0.332	131	34600	4	1795	4110
A0863056 ang	grey	cpy	py	1	1	0.024	94.3	12050	4	4210	9660
A0863057 ang	yellow	cpy	mal	50	1	0.18	1470	137500	85	14100	76200
A0863058 shr	rusty	cpy	mt	5	5	10.7	85.3	29200	7	83	348
A0863059 crys	grev	cpv	mt	5	5	1.36	54.2	13150	2	51	359
A0863060	0 5	1.5				0.276	1.1	108 <1		7	31
A0863061 shr	green	py	mt	2	8	0.026	1.9	251	3	14	55
A0863062 shr	green	mal	mt	1	1	0.068	3.8	665	4	35	60
A0863063 shr	yellow	py	mt	5	0	0.052	4	58	88	64	155
A0863064 shr	vellow	pv	mt	5	0	0.01	1.3	26	9	31	85
A0863065 rnd	grev	pv		5	0	0.026	1.4	23	2	73	35
A0863066 shr	grev	pv		5	0	0.105	11.5	852	3	435	4050
A0863067	rustv	bv		1	0	0.056	13	183 <1		360	1050
A0863068	rustv	pv	sph	2	4	6.5	3390	128	5	12700	17600
A0863069	rusty	pv	sph	2	4	2.25	3020	72 <1		5990	2220
A0863070	rusty	pv	sph	2	4	8.4	9300	146	3	33500	10650
A0863071	rusty	pv	sph	2	4	0.174	494	67	17	12100	8720
A0863072	rusty	pv	sph	2	4	0.096	212	244	10	4400	2280
A0863073	rusty	pv	sph	2	4	0.008	44	61	2	1025	1570
A0863074	rusty	pv	cpv	1	2	0.162	13.6	7690	3	25	109
A0863075	rusty	py nv	cnv	1	5	0.212	15.5	7850	5	 17	59
A0863075	rusty	py nv	cny	1	5	0.006	8.1	4010 <1	5	-,	71
A0863076	rusty	py nv	cny	1	5	0.01	6.1	3220	1	4	11
A0863077	rusty	PJ DV	CDV	1	5	2 47	869	180	4	7000	3870
A0863078	rusty	PJ NV	~₽J σal	1	3	5 20	2490	703 <1	т	38300	102500
A0863079	rusty	PJ pv	gal	1	4	0.01	2	, <u>, , , , , , , , , , , , , , , , , , </u>		68	145
	iasty	r <i>j</i>	D""	1	•	0.01	11.0	5 1			1.5

**APPENDIX B-CERTIFICATES OF ASSAYS** 



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

# CERTIFICATE TR19189305

Project: Independence

This report is for 116 Rock samples submitted to our lab in Terrace, BC, Canada on 1-AUG-2019.

The following have access to data associated with this certificate:

TOM SETTERFIELD

To: TNS CONSULTING 21 TRIPP CRESCENT OTTAWA ON K2J 1C5 Page: 1 Total # Pages: 4 (A - C) Plus Appendix Pages Finalized Date: 23-AUG-2019 Account: TNSCON

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-31	Pulverize split to 85% <75 um						

ANALYTICAL PROCEDURES						
ALS CODE	DESCRIPTION	INSTRUMENT				
ME-ICP61	33 element four acid ICP-AES	ICP-AES				
Ag-OG62	Ore Grade Ag - Four Acid					
ME-OG62	Ore Grade Elements - Four Acid	ICP-AES				
Cu-OG62	Ore Grade Cu - Four Acid					
Pb-OG62	Ore Grade Pb - Four Acid					
Zn-OG62	Ore Grade Zn - Four Acid					
Au-AA23	Au 30g FA-AA finish	AAS				
Au-GRA21	Au 30g FA-GRAV finish	WST-SIM				

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.

Signature:

Colin Ramshaw, Vancouver Laboratory Manager

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

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# To: TNS CONSULTING 21 TRIPP CRESCENT OTTAWA ON K2J 1C5

Page: 2 - A Total # Pages: 4 (A - C) Plus Appendix Pages Finalized Date: 23-AUG-2019 Account: TNSCON

CERTIFICATE	OF	ANALYSIS	TR19189305

Sample Description	Method Analyte Units LOD	WEI-21 Recvd Wt. kg 0.02	Au-AA23 Au ppm 0.005	Au-GRA21 Au ppm 0.05	ME-ICP61 Ag ppm 0.5	ME-ICP61 AI % 0.01	ME-ICP61 As ppm 5	ME-ICP61 Ba ppm 10	ME-ICP61 Be ppm 0.5	ME-ICP61 Bi ppm 2	ME-ICP61 Ca % 0.01	ME-ICP61 Cd ppm 0.5	ME-ICP61 Co ppm 1	ME-ICP61 Cr ppm 1	ME-ICP61 Cu ppm 1	ME-ICP61 Fe % 0.01
Y610001		D.68	<0.005		<0.5	0.74	<5	70	<0.5	<2	5,44	<0.5	1	9	27	0.70
Y610002		0.88	0.008		1.7	0.99	7	3230	<0.5	<2	0.06	<0.5	6	10	10	2.70
Y610003		0.86	< 0.005		1.3	7.44	6	1980	1.2	<2	0.27	0.9	9	6	10	2.39
Y610004		0.90	0.008		2.2	2.08	<5	470	<0.5	2	0.05	0.6	6	9	6	2.28
Y610005		1.29	0.005		3.0	5.20	<5	1060	1.1	2	1.86	0.5	4	6	8	1.58
Y610006		0.69	0.016		1.1	5.26	179	110	1.0	<2	0.61	<0.5	8	19	14	8.15
Y610007		0.78	<0.005		<0.5	7.43	7	400	1.6	<2	1.36	0.5	11	23	16	7.81
Y610008		1.52	0.029		>100	0.23	40	30	1.6	8	0.66	749	2	7	266	2.71
Y610009		1.04	< 0.005		4.5	5.84	53	5250	4.1	<2	0.53	1.6	15	16	42	2.99
Y610010		0.91	0.014		90.8	0.18	70	60	1.7	<2	0.29	1.8	<1	23	65	7.09
Y610011	- 1	1.49	0.006		>100	0.21	33	40	4.5	<2	7.19	85.0	9	16	159	4.97
Y610012		1.15	0.019		34.1	5.88	158	330	1.9	<2	0.84	73.0	19	10	215	5.61
Y610013		0.72	< 0.005		5.0	4.32	150	220	1.7	<2	1.57	1.1	9	28	16	6.66
Y610014		1.17	0.054		11.8	2.32	<5	340	0.5	2	1.86	975	17	10	1740	3.73
Y610015		0.95	0.076		11.3	3.35	11	610	0.8	<2	0.23	212	12	18	1635	3.00
Y610016		1.07	0.005		0.7	8.05	9	1360	1.7	<2	0.98	29.5	26	8	134	6.52
Y610017		1.30	0.170		56.7	0.62	8	120	<0.5	4	0.01	375	11	24	3740	3.32
Y610018		0.79	0.059		8.6	1.42	12	130	<0.5	<2	0.02	3.1	1	31	134	1.32
Y610019		0.96	0.292		21.0	1.67	9	80	<0.5	<2	0.02	2.9	6	24	97	2.80
Y610020		0.71	< 0.005		<0.5	0.03	<5	1490	<0.5	<2	18.80	<0.5	1	1	2	0.15
Y610021		0.81	0.065		2.4	1.91	50	140	<0.5	<2	0.06	0.7	15	26	21	2.94
Y610022		0.57	0.155		56.5	0.97	<5	70	<0.5	<2	0.06	0.7	3	25	5880	1.82
Y610023		0.73	0.194		>100	1.55	5	120	<0.5	3	0.03	175.0	2	21	523	1.28
Y610024		0.94	0.071		20.3	2.39	14	220	0.5	2	0.02	0.7	1	23	1885	1.40
Y610025		0.86	0.008		1.4	4.97	5	690	0.9	<2	0.77	8.8	3	62	9	1.82
Y610026		0.91	0.654		37.2	0.27	12	70	<0.5	<2	6.19	164.5	8	8	30	5.44
Y610027		0.93	0.031		22.7	3.64	5	380	0.9	<2	0.10	2.2	4	22	2860	1.78
Y610028		0.74	0.922		71.6	0.34	<5	30	<0.5	<2	0.01	434	4	18	209	1.72
Y610029		0.73	0.145		6.9	2.27	77	150	<0.5	2	0.04	28.5	12	19	83	6.75
Y610030		0.78	0.815		>100	0.29	21	20	<0.5	<2	<0.01	192.5	14	20	2530	6.66
Y610031		0.77	0.421		10.7	4.08	6	210	0.6	<2	0.19	219	9	15	776	1.89
Y610032		0.78	0.480		>100	0.15	10	20	<0.5	5	<0.01	>1000	27	9	2660	3,19
Y610033		0.64	1,120		>100	1.15	9	130	<0.5	2	< 0.01	>1000	6	26	>10000	3.54
Y610034		0.82	0.117		6.3	1.22	<5	80	<0.5	<2	0.07	8.4	5	29	125	1.28
Y610035		0.42	0.205		16.5	1.09	<5	90	<0.5	<2	< 0.01	52.8	3	21	1435	1.21
Y610036		0.81	0.481		23.0	0.26	6	70	<0.5	2	< 0.01	2.6	3	41	2050	1.48
Y610037		0.77	0.466		37.8	0.72	6	90	<0.5	<2	< 0.01	1.9	9	18	985	1.88
Y610038		0.59	0.268		9.3	0.46	7	40	<0.5	<2	0.01	1.0	3	20	195	1.92
Y610039		1.06	1.300		11.2	1.16	8	130	<0.5	<2	0.01	<0.5	8	26	391	3.38
Y610040		0.59	<0.005		<0.5	0.03	<5	410	<0.5	<2	19.65	<0.5	1	1	3	0.11



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# To: TNS CONSULTING 21 TRIPP CRESCENT OTTAWA ON K2J 1C5

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Project: Independence

Sample Description	Method Analyte Units LOD	ME-ICP61 Ga ppm 10	ME-ICP61 K % 0.01	ME-ICP61 La ppm 10	ME-ICP61 Mg % 0.01	ME-ICP61 Mn ppm 5	ME-ICP61 Mo ppm 1	ME-ICP61 Na % 0.01	ME-ICP61 Ni ppm 1	ME-ICP61 P ppm 10	ME-ICP61 Pb ppm 2	ME-ICP61 S % 0.01	ME-ICP61 Sb ppm 5	ME-ICP61 Sc ppm 1	ME-ICP61 Sr ppm 1	ME-ICP61 Th ppm 20
Y610001		<10	0.24	<10	0.04	566	1	0.13	3	60	2	<0.01	<5	1	110	<20
Y610002		<10	0.27	10	0.06	559	2	0.26	1	160	17	0.22	<5	2	719	<20
Y610003		10	2.32	20	0.49	396	1	2.29	3	960	10	0.05	<5	12	134	<20
Y610004	- 1	10	0.84	10	0.30	614	<1	0.04	<1	100	13	0.11	<5	3	8	<20
Y610005		10	1.62	20	0.20	611	1	1.30	1	60	98	0.20	<5	3	148	<20
Y610006		10	0.37	10	0.10	242	5	3.61	5	1240	14	3.98	16	13	141	<20
Y610007		20	0.07	20	0.62	921	<1	4.23	8	1660	13	0.64	5	20	189	<20
Y610008		<10	0.07	<10	0.04	471	3	0.01	<1	30	>10000	5.60	154	<1	357	<20
Y610009		10	4.74	10	0.80	1090	1	0.84	3	820	211	0.15	44	11	184	<20
Y610010		<10	0.02	<10	0.02	96	74	0.01	1	30	174	5.46	6	<1	33	<20
Y610011		<10	0.01	<10	0.08	2090	6	0.01	<1	50	1535	4.23	16	<1	526	<20
Y610012		10	4.89	10	0.21	621	6	0.09	3	770	2030	3.90	15	9	142	<20
Y610013		10	3.55	10	0.29	921	5	0.05	2	560	94	3.30	28	7	261	<20
Y610014		10	1.02	<10	0.77	2200	<1	0.01	3	320	653	3.21	8	7	80	<20
Y610015		10	1.70	10	0.33	796	1	0.02	3	470	537	1.70	9	11	18	<20
Y610016		20	3.01	10	2.41	1235	<1	0.04	9	1220	294	0.56	<5	26	49	<20
Y610017		<10	0.27	<10	0.03	46	4	0.01	1	80	>10000	4.61	18	1	5	<20
Y610018		<10	0.47	<10	0.06	70	10	0.31	2	90	5810	0.47	10	3	31	<20
Y610019		<10	0.20	<10	0.10	422	16	0.81	10	100	>10000	2.37	17	2	50	<20
Y610020		<10	0.02	<10	12.70	327	<1	0.02	1	20	55	0.04	<5	<1	266	<20
Y610021		<10	0.75	<10	0.09	54	8	0.30	5	300	237	2.46	11	5	20	<20
Y610022		<10	0.30	<10	0.06	112	1	0.17	7	160	149	1.05	29	1	11	<20
Y610023		<10	0.61	<10	0.06	49	16	0.17	3	280	>10000	2.56	38	3	13	<20
Y610024		<10	0.98	10	0.10	56	13	0.22	6	170	647	0.68	16	4	17	<20
Y610025		10	1.74	20	0.21	592	2	0.87	4	980	864	0.96	<5	8	81	<20
Y610026		<10	0.07	<10	0.62	7820	2	0.01	4	20	>10000	1.73	13	1	204	<20
Y610027		10	1.19	10	0.17	403	<1	0.21	3	80	265	0.25	10	10	85	<20
Y610028		<10	0.08	<10	0.01	136	3	0.01	2	10	>10000	4.31	47	1	25	<20
Y610029		10	0.65	10	0.35	198	49	0.02	7	170	1685	4.08	6	6	16	<20
Y610030		<10	0.09	<10	0.01	45	1	<0.01	14	10	>10000	9.58	44	<1	4	<20
Y610031		10	1.02	20	0.08	60	2	1.37	4	1040	>10000	1.99	10	11	80	<20
Y610032		<10	0.04	<10	< 0.01	42	<1	0.01	12	10	>10000	>10.0	90	<1	2	<20
Y610033		<10	0.43	<10	0.02	35	3	0.04	5	10	>10000	6.62	26	3	21	<20
Y610034		<10	0.52	<10	0.04	125	3	0.02	5	290	700	0.36	14	3	14	<20
Y610035		<10	0.42	10	0.03	47	2	0.02	2	30	2700	0.90	18	3	12	<20
Y610036		<10	0.05	<10	<0.01	50	5	0.01	3	10	7520	0.96	18	<1	4	<20
Y610037		<10	0.26	<10	0.01	64	3	0.01	8	<10	>10000	1.54	30	2	6	<20
Y610038		<10	0.11	<10	0.02	175	1	0.01	2	20	703	0.31	16	1	7	<20
Y610039		<10	0.44	<10	0.03	60	2	0.02	6	170	599	2.39	20	3	11	<20
Y610040		<10	0.02	<10	13.10	340	<1	0.02	1	30	18	0.01	<5	<1	185	<20



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CERTIFICATE OF ANALYSIS TRI918930	CERTIFICATE	OF ANALYSIS	TR19189305
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Sample Description	Method Analyte Units LOD	ME-ICP61 Ti % 0.01	ME-ICP61 TI ppm 10	ME-ICP61 U ppm 10	ME-ICP61 V ppm 1	ME-ICP61 W ppm 10	ME-ICP61 Zn ppm 2	Ag-OG62 Ag ppm 1	Cu-OG62 Cu % 0.001	Pb-OG62 Pb % 0.001	Zn-OC62 Zn % 0.001	
Y610001		0.02	<10	<10	28	<10	9					
Y610002		0.04	<10	<10	21	<10	10					
Y610003		0.37	10	<10	98	<10	100					
Y610004		0.08	<10	<10	42	<10	60					
Y610005		0.07	<10	<10	23	<10	21					
Y610006		0.50	<10	<10	88	<10	44					
Y610007		0.67	<10	<10	123	<10	170			5.6	1.000	
Y610008		0.01	<10	<10	49	70	>10000	208		6.81	6.65	
Y610009		0.30	<10	<10	112	10	376					
Y610010		0.01	<10	<10	30	<10	279					
Y610011		0.02	<10	<10	49	<10	>10000	98			1.520	
Y610012	-0.1	0.26	10	<10	126	<10	9950					
Y610013		0.21	<10	<10	133	<10	388					
Y610014		0.14	<10	<10	75	<10	>10000				5.48	
Y610015		0.21	<10	<10	109	<10	>10000				1.475	
Y610016		0.58	<10	<10	230	<10	1955			- 57 - 5	- 100	
Y610017		0.03	<10	<10	17	<10	>10000			2.78	2.43	
Y610018		0.04	<10	<10	33	<10	199					
Y610019		0.05	<10	<10	17	<10	151			2.81		
Y610020		<0.01	<10	<10	2	<10	23					
Y610021		0.12	<10	<10	27	<10	57					
Y610022		0.06	<10	<10	11	<10	33					
Y610023		0.09	<10	<10	27	<10	>10000	121		8.11	1.205	
Y610024		0.08	<10	<10	71	<10	40					
Y610025		0.36	<10	<10	47	<10	587					
Y610026		< 0.01	<10	<10	6	<10	>10000			1,055	1.220	
Y610027		0.21	<10	<10	29	<10	161					
Y610028		0.01	<10	<10	2	<10	>10000			13.35	3.13	
Y610029		0.16	<10	<10	41	<10	2220					
Y610030		0.02	<10	<10	5	<10	>10000	161		9.33	1.185	
Y610031		0.41	<10	<10	56	<10	>10000			1.030	1.490	
Y610032		0.01	<10	<10	2	<10	>10000	117		12.85	16.35	
Y610033		0.07	<10	<10	12	<10	>10000	121	1.405	3.16	6.89	
Y610034		0.11	<10	<10	27	<10	632					
Y610035		0.06	<10	<10	16	<10	2950					
Y610036	-	0.01	<10	<10	2	<10	160					
Y610037		0.03	<10	<10	9	<10	87			2.93		
Y610038		0.02	<10	<10	6	<10	276					
Y610039		0.09	<10	<10	21	<10	56					
Y610040		< 0.01	<10	<10	2	<10	30					



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CERTIFICATE OF ANALYSIS	TR19189305

Sample Description	Method Analyte Units LOD	WEI-21 Recvd Wt. kg 0.02	Au-AA23 Au ppm 0.005	Au-GRA21 Au ppm 0.05	ME-ICP61 Ag ppm 0.5	ME-ICP61 AI % 0.01	ME-ICP61 As ppm 5	ME-ICP61 Ba ppm 10	ME-ICP61 Be ppm 0.5	ME-ICP61 Bi ppm 2	ME-ICP61 Ca % 0.01	ME-ICP61 Cd ppm 0.5	ME-ICP61 Co ppm 1	ME-ICP61 Cr ppm 1	ME-ICP61 Cu ppm 1	ME-ICP61 Fe % 0.01
Y610041		0.88	0.409		23.4	1.59	5	110	<0.5	<2	0.07	0.9	4	13	1725	2.53
Y610042		1.02	0.293		>100	0.29	20	30	<0.5	2	1.36	>1000	17	7	64	5.40
Y610043		1.10	0.384		6.5	0.62	14	60	<0.5	3	0.05	42.1	10	43	32	3.17
Y610044		0.86	0.018		2.0	7.43	10	550	1.5	<2	1.48	22.1	7	23	90	2.73
Y610045		0.63	0.064		9.3	3.77	5	470	0.6	<2	0.01	12.3	1	19	11	2.73
Y610046		1.05	0.075		18.9	3.11	11	380	0.5	2	0.01	331	4	26	129	3.01
Y610047		0.68	9.28		>100	0.29	<5	50	<0.5	2	< 0.01	429	2	18	507	2.05
Y610048		0.81	0.064		4.6	4.88	12	260	0.8	<2	0.02	1.7	5	35	12	3.18
Y610049		0.98	0.351		15.0	0.53	8	80	<0.5	<2	< 0.01	5.0	2	15	123	2.28
Y610050		0.71	0.272		27.7	1.07	15	140	<0.5	2	0.01	467	8	18	116	2.29
Y610051		1.20	0.028		4.3	2.61	6	640	0.5	5	0.04	0.9	5	15	13	3.33
Y610052		2.40	0.059		6.2	8.70	9	1670	1.9	<2	0.03	<0.5	14	11	11	6.47
Y610053		1.00	0.010		15.4	3.34	9	400	0.7	3	8.23	466	9	3	1280	2.52
Y610054		1.08	0.012		12.0	4.88	6	370	1.0	3	6.76	717	11	3	818	2.12
Y610055		1.29	<0.005		0.8	6.24	9	650	1.0	<2	0.11	1.1	5	7	4	2.70
Y610056		2.45	0.034		>100	0.05	441	40	1.1	<2	0.01	22.4	<1	17	103	16.75
Y610057		2.08	0.070		>100	0.23	6	100	2.3	8	0.03	287	3	9	1105	4.92
Y610058		0.81	0.052		28.9	2.12	151	210	1.1	5	0.08	21.5	3	21	112	5.03
Y610059		1.62	0.035		12.2	7.28	193	200	1.0	2	0.35	2.2	9	10	24	8.43
Y610060		0.76	<0.005		<0.5	0.05	<5	1910	<0.5	2	19.35	<0.5	2	1	1	0.15
Y610061		1.82	< 0.005		1.2	7.82	57	9070	1.1	<2	1.24	0.9	8	13	.11	3.92
Y610062		0.62	0.620		>100	0.94	15	170	<0.5	3	0.03	499	11	8	1165	6.04
Y610063		0.93	0.051		79.9	1.21	<5	200	<0.5	<2	0.02	12.5	1	21	177	0.87
Y610064		0.52	0.061		43.7	1.53	<5	210	0.5	30	0.06	2.8	12	13	1955	2.14
Y610065		0.75	0.034		6.0	1.80	6	180	<0.5	<2	0.22	5.9	12	11	152	4.48
Y610066		0.93	0.073		98.1	1.40	<5	180	<0.5	3	1.67	>1000	17	14	5130	3.15
Y610067		0.79	0.176		46.4	1.23	5	150	<0.5	15	0.15	3.6	9	17	3750	1.77
Y610068		0.77	0.722		38.3	0.67	89	60	<0.5	<2	0.03	3.3	25	13	234	27.2
Y610069		2.52	1.025		>100	0.67	23	80	<0.5	<2	<0.01	83.8	12	22	463	10.10
Y610070		1.00	0.622		64.9	1.18	24	90	<0.5	3	0.01	5.0	25	15	200	11.35
Y610071		0.68	0.073		13.9	0.74	<5	80	0.5	<2	0.16	5.5	5	21	3100	1.55
Y610072		1.15	5.21		72.8	1.12	114	70	0.9	6	0.35	863	6	11.	368	5.38
Y610073		0.54	1.180		>100	0.98	7	80	1.0	487	0.04	158.0	9	17	3860	5.24
Y610074		0.66	0.576		21.6	2.60	131	100	0.5	6	0.07	117.0	16	7	782	16.75
Y610075		1.15	0.727		>100	0.58	22	180	1.2	18	0.30	121.5	3	27	>10000	10.50
Y610076		1.05	0.084		1.7	6.89	60	300	1.7	<2	0.51	2.4	12	31	60	3.68
Y610077		0.68	0.009		0.8	5.84	75	660	0.9	<2	0.33	0.5	13	41	95	7.18
Y610078		0.69	0.014		<0.5	2.79	8	2630	<0.5	<2	0.12	<0.5	3	15	16	2.06
Y610079		0.89	0.043		3.6	1.55	14	220	<0.5	2	0.11	<0.5	11	16	22	3.76
Y610080		0.80	< 0.005		<0.5	0.04	<5	140	<0.5	<2	19.25	<0.5	<1	1	4	0.11



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Project: Independence

Sample Description	Method Analyte Units LOD	ME-ICP61 Ga ppm 10	ME-ICP61 K % 0.01	ME-ICP61 La ppm 10	ME-ICP61 Mg % 0.01	ME-ICP61 Mn ppm 5	ME-ICP61 Mo ppm 1	ME-ICP61 Na % 0.01	ME-ICP61 Ni ppm 1	ME-ICP61 P ppm 10	ME-ICP61 Pb ppm 2	ME-ICP61 S % 0.01	ME-ICP61 Sb ppm 5	ME-ICP61 Sc ppm 1	ME-ICP61 Sr ppm 1	ME-ICP61 Th ppm 20
Y610041		<10	0.58	10	0.08	226	2	0.07	5	260	131	0.98	17	4	10	<20
Y610042		<10	0.08	<10	0.05	1610	44	0.03	5	80	>10000	>10.0	115	<1	103	<20
Y610043		<10	0.23	<10	0.03	110	2	0.02	19	60	3720	2.82	17	1	7	<20
Y610044		20	2.58	20	0.34	1825	1	1.81	13	940	1075	0.38	5	7	190	<20
Y610045		10	1.66	10	0.16	52	6	0.28	7	40	1270	2.53	5	7	23	<20
Y610046		10	1.42	10	0.13	48	16	0.02	13	180	>10000	3.79	11	8	12	<20
Y610047		<10	0.08	<10	0.01	43	4	0.01	2	40	>10000	4.51	70	<1	6	<20
Y610048		10	2.06	10	0.19	38	5	0.59	15	100	494	3.03	<5	13	49	<20
Y610049		<10	0.18	<10	0.02	54	7	0.01	2	170	5250	1.44	23	1	7	<20
Y610050		<10	0.44	<10	0.04	41	11	0.04	11	70	>10000	3.82	19	2	6	<20
Y610051		10	0.92	10	0.11	347	2	0.61	2	410	227	0.88	<5	4	39	<20
Y610052		20	4.01	20	0.58	236	1	0.25	5	180	55	0.50	5	22	25	<20
Y610053		10	1.02	10	0.15	2040	1	1.08	1	120	>10000	2.32	<5	2	779	<20
Y610054		10	1.58	10	0.17	1610	1	1.65	2	160	9120	2.92	6	3	718	<20
Y610055		10	2.30	10	0.22	202	3	1.39	1	430	58	0.94	<5	5	148	<20
Y610056		<10	0.02	<10	< 0.01	73	10	< 0.01	1	<10	2230	>10.0	146	<1	8	<20
Y610057		<10	0.07	<10	0.03	408	14	0.01	<1	30	9470	1.97	33	<1	1020	<20
Y610058		10	2.24	<10	0.12	329	90	0.05	1	960	2050	2.61	36	3	79	<20
Y610059		10	5.75	10	0.23	1115	75	0.18	2	890	213	4.98	29	8	151	<20
Y610060		<10	0.05	<10	13.30	314	<1	0.02	1	20	21	0.06	<5	<1	212	<20
Y610061		10	5.32	10	0.78	1345	2	0.30	2	1070	70	0.46	9	14	267	<20
Y610062		<10	D.44	<10	0.07	61	7	0.02	2	140	>10000	8.43	36	2	15	<20
Y610063		<10	0.55	<10	0.07	65	9	0.01	<1	250	>10000	0.53	36	2	7	<20
Y610064		<10	0.72	<10	0.10	581	1	0.01	2	260	3140	0.75	18	3	7	<20
Y610065		<10	0.66	<10	0.09	1435	2	0.31	1	360	825	3.10	6	2	22	<20
Y610066		<10	0.57	<10	0.56	1610	<1	0.12	6	290	>10000	5.59	27	2	108	<20
Y610067		<10	0.56	<10	0.06	171	<1	0.01	8	670	9160	1.24	14	2	10	<20
Y610068		<10	0.31	<10	0.03	67	4	0.02	27	20	702	>10.0	5	1	3	<20
Y610069		<10	0.28	<10	0.03	47	10	0.01	20	40	>10000	>10.0	27	1	5	<20
Y610070		<10	0.53	<10	0.05	46	24	0.01	10	110	>10000	>10.0	65	3	9	<20
Y610071		<10	0.24	<10	0.03	1465	6	0.05	9	50	4700	0.46	24	2	8	<20
Y610072		10	0.02	20	0.41	1655	2	< 0.01	1	<10	>10000	>10.0	22	1	109	<20
Y610073		10	0.05	<10	0.33	795	2	< 0.01	1	30	2050	1.43	12	<1	11	<20
Y610074		10	0.90	10	0.95	2100	8	0.01	3	410	>10000	>10.0	24	5	32	<20
Y610075		10	0.21	<10	0.17	496	4	0.01	<1	70	443	3.23	48	1	16	<20
Y610076		20	3.11	40	0.75	209	2	0.03	9	2140	100	0.60	10	9	46	<20
Y610077		10	1.65	10	1.95	476	12	0.98	60	510	41	4,00	8	13	205	<20
Y610078		10	1.25	10	0.15	197	2	< 0.01	1	110	51	0.20	12	2	19	<20
Y610079		<10	0.46	<10	0.13	218	4	0.01	<1	170	27	1.83	13	3	21	<20
Y610080		<10	0.03	<10	12.85	327	<1	0.03	1	40	10	0.01	<5	<1	153	<20



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Project: Independence

Sample Description	Method Analyte Units LOD	ME-ICP61 Ti % 0.01	ME-ICP61 Ti ppm 10	ME-ICP61 U ppm 10	ME-ICP61 V ppm 1	ME-ICP61 W ppm 10	ME-ICP61 Zn ppm 2	Ag-OG62 Ag ppm 1	Cu-OG62 Cu % 0.001	Pb-OG62 Pb % 0.001	Zn-OC62 Zn % 0.001	
Y610041		0.11	<10	<10	30	<10	79	200.	P		in the second	
Y610042		0.02	<10	<10	4	<10	>10000	185		19.05	19.55	
Y610043		0.03	<10	<10	8	<10	2810					
Y610044	0.4	0.34	<10	<10	76	<10	1710					
Y610045		0.19	<10	<10	52	<10	849					
Y610046		0.19	<10	<10	68	<10	>10000			1.445	1.750	
Y610047		0.01	<10	<10	4	<10	>10000	185		7.71	2.65	
Y610048		0.24	<10	<10	94	<10	138					
Y610049		0.02	<10	<10	8	<10	337					
Y610050		0.06	<10	<10	17	<10	>10000			1.830	2.74	
Y610051	3	0.12	<10	<10	44	<10	63					
Y610052		0.49	<10	<10	162	<10	102					
Y610053		0.05	<10	<10	14	<10	>10000			2.10	3.22	
Y610054		0.08	<10	<10	22	<10	>10000				5.00	
Y610055		0.18	<10	<10	59	<10	102					
Y610056		<0.01	<10	<10	4	<10	1965	165				
Y610057		0.01	<10	<10	65	140	>10000	208			2.47	
Y610058		0.09	<10	<10	66	10	2500					
Y610059		0.29	<10	<10	114	30	538					
Y610060		<0.01	<10	<10	3	<10	29					
Y610061		0.39	<10	<10	152	80	230					
Y610062		0.05	<10	<10	31	<10	>10000	116		13.15	3.22	
Y610063		0.06	<10	<10	29	<10	908			2.20		
Y610064		0.08	<10	<10	36	<10	177					
Y610065		0.07	<10	<10	20	<10	344					
Y610066		0.09	<10	<10	25	<10	>10000			6.04	7.91	
Y610067		0.05	<10	<10	20	<10	269					
Y610068		0.03	10	<10	15	<10	171					
Y610069		0.03	<10	<10	18	<10	4920	130		2.04		
Y610070		0.05	<10	<10	25	<10	59			7.01		
Y610071	1	0.04	<10	<10	- 11	<10	546				22.2	
Y610072		<0.01	<10	<10	151	<10	>10000			5.37	15.75	
Y610073		<0.01	<10	<10	27	<10	>10000	226			1.490	
Y610074		0.10	<10	<10	96	10	>10000			1.135	2.97	
Y610075		0.02	<10	<10	108	290	>10000	188	2.80		1.395	
Y610076		0.65	<10	<10	136	10	282					
Y610077		0.19	<10	<10	106	<10	136					
Y610078		0.03	<10	<10	36	<10	75					
Y610079		0.06	<10	<10	36	<10	58					
Y610080		< 0.01	<10	<10	3	<10	24					



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ALS.	·								С	ERTIFIC	CATE O	F ANA	LYSIS	TR191	89305	<u> </u>
ample Description	Method Analyte Units LOD	WEI-21 Recvd Wt. kg 0.02	Au-AA23 Au ppm 0.005	Au-GRA21 Au ppm 0.05	ME-ICP61 Ag ppm 0.5	ME-ICP61 AI % 0.01	ME-ICP61 As ppm S	ME-ICP61 Ba ppm 10	ME-ICP61 Be ppm 0.5	ME-ICP61 Bi ppm 2	ME-ICP61 Ca % 0.01	ME-ICP61 Cd ppm 0.5	ME-ICP61 Co ppm 1	ME-ICP61 Cr ppm 1	ME-ICP61 Cu ppm 1	ME-ICP61 Fe % 0.01
610081		0.76	<0.005		1.0	2,56	<5	260	0.5	3	3.51	1.0	5	26	13	4.03
610082		1.18	0.112		14.5	1.92	47	110	<0.5	<2	0.13	1.2	10	28	86	5.86
610083		1.39	0.059		9.6	4.07	11	240	0.6	3	0.93	4./	9	36	28	4.35
610084		1.24	0.256		34.5	5.24	16	130	0.8	-2	0.18	37.5	11	10	23	10.35
010085		0.99	0.255		33.0	1.32	<2	120	<0.5	~2	0.09	3.0	4	15	29	2.01
610101		1.41	0.023		2.5	0.78	<5	180	<0.5	<2	0.01	<0.5	3	18	7	1.63
610102		0.64	<0.005		1.2	2.19	<5	480	0.7	6	0.07	<0.5	7	13	12	2.71
610103		1.04	0.042		37.5	3.42	922	100	<0.5	14	0.21	7.0	18	20	938	16.10
610104	1.1	1.28	0.043		83.0	0.89	44	110	3.2	4	3.38	20.4	11	31	559	10.75
610105		1.07	0.127		>100	1.70	9	220	0.5	<2	0.06	647	10	18	6640	2.46
610106		1.47	0.010		7.6	4.26	<5	530	0.8	<2	4.08	2.1	7	8	998	5.13
610107		1.28	0.069		7.2	1.32	<5	100	<0.5	<2	0.16	2.0	3	48	713	1.40
610108		1.36	0.051		7.1	1.14	<5	60	<0.5	<2	0.05	1.0	1	29	113	0.59
610109		1.11	0.018		0.5	7.23	66	300	1.7	<2	1.64	1.7	96	30	20	4.62
610110		1.20	0.009		<0.5	7.56	26	120	1.7	<2	0.49	<0.5	38	18	21	6.73
610111		1.02	0.012		<0.5	7.20	110	190	1.3	<2	0.48	<0.5	38	138	15	7.12
610112		1.23	0.005		0.6	7.53	52	420	1.2	<2	0.31	<0.5	15	150	8	4.11
610113		1.36	0.011		0.7	7.08	33	2410	1.0	<2	1.53	1.4	4	15	5	1.80
610114		1.17	0.035		1.0	7.05	51	3210	1.5	2	1.13	<0.5	2	4	5	2.35
610115		0.93	7.95		22.4	1.53	112	170	0.7	4	5.61	193.5	5	7	197	9.19
610116		1.36	0.104		40.1	0.38	14	70	1.1	8	10.35	154.0	2	9	1075	9.68
610117		1.27	1.285		30.1	0.53	149	40	<0.5	45	0.05	8.0	3	22	2280	13.15
610118		1.01	0.073		18.2	2.89	25	300	1.0	9	0.61	231	12	20	2510	2.78
610119		0.92	2.72		63.9	0.28	223	100	0.5	76	9.32	87.2	20	9	830	13.80
610120		0.90	<0.005		<0.5	0.05	<5	370	<0.5	<2	18.95	0.6	<1	1	6	0.15
610121	_	1.11	0.015		0.9	6.48	37	760	0.6	<2	0.26	1.2	3	27	27	3.21
610122		1.04	< 0.005		0.6	1.31	<5	100	<0.5	<2	0.50	0.7	1	21	3	1.14
610123		1.07	>10.0	15.10	>100	2.70	94	150	0.7	<2	0.30	30.6	10	30	18	7.00
610124		1.00	0.028		0.6	5.88	224	160	1.1	<2	0.27	<0.5	36	16	16	12.20
610125		1.10	5.68		>100	0.46	13	40	<0.5	<2	0,01	9.0	<1	30	4	2.35
610126		1,37	0.167		6.6	3.07	<5	390	0.9	<2	0.11	1.1	2	24	17	1,70
610127		0.84	0.369		12.0	0.43	126	40	<0.5	<2	0.01	<0.5	10	30	63	7.74
610128		0,90	0.006		0.9	2.45	<5	330	0.6	<2	2.92	<0.5	4	13	27	1,96
610129		1.25	0.288		6.5	0.85	<5	130	<0.5	<2	0.05	0.9	3	31	3	1.60
610130		1.31	0.294		53.9	1.90	21	170	<0.5	<2	0.10	47.8	13	28	13	6.03
610131		1.53	0.425		31.6	1.43	10	120	0.5	<2	0.06	1.8	6	22	6	2.17

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Project: Independence

Sample Description	Method Analyte Units LOD	ME-ICP61 Ga ppm 10	ME-ICP61 K % 0.01	ME-ICP61 La ppm 10	ME-ICP61 Mg % 0.01	ME-ICP61 Mn ppm 5	ME-ICP61 Mo ppm 1	ME-ICP61 Na % 0.01	ME-ICP61 Ni ppm 1	ME-ICP61 P ppm 10	ME-ICP61 Pb ppm 2	ME-ICP61 S % 0.01	ME-ICP61 Sb ppm S	ME-ICP61 Sc ppm 1	ME-ICP61 Sr ppm 1	ME-ICP61 Th ppm 20
Y610081		10	0.82	10	1.03	1355	3	0.02	3	480	85	0.52	8	4	407	<20
Y610082		10	0.69	10	0.14	152	9	0.01	6	220	64	4.55	12	3	12	<20
Y610083		10	1.93	10	0.36	488	7	0.04	6	650	249	2.25	8	9	55	<20
Y610084		20	2.59	20	0.19	150	32	0.04	7	1090	880	7.11	8	12	21	<20
Y610085		<10	0.51	10	0.07	175	5	0.01	3	210	791	1.02	11	2	10	<20
Y610101		<10	0.38	<10	0.05	279	1	0.01	1	60	36	0.05	5	1	4	<20
Y610102		10	0.70	<10	0.48	348	1	0.05	2	50	42	0.01	<5	3	22	<20
Y610103		10	0.04	20	0.41	572	15	0.98	5	950	1755	6.81	29	8	35	<20
Y610104		10	0.02	10	0.22	1485	4	0.01	3	30	792	8.04	25	1	132	<20
Y610105		10	0.78	<10	0.16	138	5	0.03	1	200	>10000	3.58	21	5	13	<20
Y610106		10	1.13	10	0.44	5340	2	1.58	2	630	85	0.56	6	5	172	<20
Y610107		<10	0.46	<10	0.06	724	1	0.23	6	210	152	0.41	15	2	16	<20
Y610108		<10	0.42	<10	0.06	68	6	D.11	1	210	212	0.04	19	2	11	<20
Y610109		10	0.73	40	0.34	297	101	4.13	33	4050	20	3.42	8	22	697	<20
Y610110		20	2.05	10	0.37	369	17	1.76	8	1680	16	5.47	<5	19	330	<20
Y610111		20	2.07	30	0.26	175	23	2.11	59	2010	31	6.01	11	23	296	<20
Y610112		20	2.25	30	0.22	113	10	2.36	32	1660	24	2.68	5	21	246	<20
Y610113		10	4.27	20	0.26	734	2	2.97	2	480	38	0.53	<5	4	185	<20
Y610114		10	5.04	10	0.81	655	6	0.82	<1	460	11	0.61	5	3	94	<20
Y610115		20	0.05	20	0.74	4180	<1	0.01	2	20	9380	7.55	14	<1	144	<20
Y610116		<10	0.09	10	0.12	2070	1	0.01	<1	70	3140	6.08	31	1	134	<20
Y610117		10	0.05	<10	0.16	755	18	<0.01	<1	10	552	>10.0	30	1	4	<20
Y610118		10	2.97	<10	0.29	843	<1	0.07	1	480	548	2.20	9	4	41	<20
Y610119		<10	0.03	<10	0.08	2120	3	<0.01	3	20	1100	>10.0	49	1	111	<20
Y610120		≪10	0.04	<10	12.60	406	<1	0.03	<1	40	8	0.03	<5	<1	158	<20
Y610121		10	1.47	10	0.44	240	14	2.85	15	550	28	1.14	11	16	243	<20
Y610122		<10	0.48	<10	0.15	288	1	0.03	2	130	47	0.17	8	1	26	<20
Y610123		10	1.24	10	0.17	257	28	0.14	4	480	636	6.96	15	7	26	<20
Y610124		10	1.49	20	0.24	380	13	3.02	9	990	11	>10.0	10	15	174	<20
Y610125		<10	0.19	<10	0.02	43	7	0.01	<1	10	545	2.17	14	1	5	<20
Y610126		10	1.49	10	0.22	272	12	0.02	1	160	68	0.51	7	4	13	<20
Y610127		<10	0.13	<10	0.02	58	5	0.01	2	30	43	8.04	15	<1	5	<20
Y610128		<10	1.09	10	0.29	762	1	0.02	2	460	14	0.14	13	6	215	<20
Y610129		<10	0.30	<10	0.05	82	46	0.01	1	120	57	0.68	19	2	8	<20
Y610130		10	0.84	10	0.10	99	30	0.02	1	420	2280	5.58	9	5	13	<20
Y610131		<10	0.65	<10	0.07	87	16	0.01	3	210	131	1.57	20	4	11	<20



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12.000 C									C	ERTIFIC	CATE OF	- ANALYSIS	TR19189305
Sample Description	Method Analyte Units LOD	ME-ICP61 Ti % 0.01	ME-ICP61 Ti ppm 10	ME-ICP61 U ppm 10	ME-ICP61 V ppm 1	ME-ICP61 W ppm 10	ME-ICP61 Zn ppm 2	Ag-OG62 Ag ppm 1	Cu-OG62 Cu % 0.001	Pb-OG62 Pb % 0.001	Zn-OG62 Zn % 0.001		
Y610081		0.09	<10	<10	48	<10	87						
Y610082		0.08	<10	<10	29	<10	127						
Y610083		0.20	<10	<10	71	<10	350						
Y610084		0.44	<10	<10	94	<10	3180						
Y610085		0.08	<10	<10	20	<10	430						
Y610101		0.03	<10	<10	18	<10	16						
Y610102		0.07	<10	<10	19	<10	113						
Y610103		0.27	<10	<10	80	<10	1085						
Y610104		0.01	<10	<10	85	<10	3740						
Y610105		0.12	<10	<10	63	<10	>10000	105		1.430	4.35		
Y610106		0.15	<10	<10	45	<10	202						
Y610107		0.08	<10	<10	19	<10	150						
Y610108		0.09	<10	<10	19	<10	539						
Y610109		0.71	<10	40	162	<10	106						
Y610110		0.71	<10	10	127	<10	28						
Y610111		0.70	<10	20	232	<10	115						
Y610112		0.72	<10	20	188	<10	87						
Y610113		0.16	<10	<10	34	<10	125						
Y610114		0.15	<10	<10	36	<10	34						
Y610115		<0.01	<10	<10	77	20	>10000				4.84		
V610116		0.01	<10	<10	129	90	>10000				2.11		
Y610117		<0.01	<10	10	39	<10	1505				2.0		
Y610118		0.13	<10	<10	93	10	>10000				2.99		
Y610110		<0.01	10	<10	73	<10	8880				2.00		
Y610120		< 0.01	<10	<10	3	<10	66						
V610121		0.36	<10	<10	188	<10	157	-					
Y610122		0.04	<10	<10	17	<10	68						
Y610123		0.26	<10	<10	78	<10	1295	231					
Y610124		0.57	10	<10	130	<10	144						
Y610125		0.02	<10	<10	13	<10	295	488					
V610126		0.08	<10	<10	65	<10	89						
Y610127		0.01	<10	<10	5	<10	8						
Y610128		0.13	<10	<10	58	<10	33						
Y610129		0.06	<10	<10	14	<10	46						
Y610130		0.18	<10	<10	43	<10	3110						
¥610131		0.12	<10	<10	39	<10	144	_					
1210101													





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#### To: TNS CONSULTING 21 TRIPP CRESCENT OTTAWA ON K2J 1C5

Page: Appendix 1 Total # Appendix Pages: 1 Finalized Date: 23-AUG-2019 Account: TNSCON

Project: Independence

		CERTIFICATE COM	MMENTS	
Applies to Method:	Processed at ALS Terrace CRU-31	LABOR e located at 2912 Molitor Street, Terra CRU-QC	ATORY ADDRESSES ice, BC, Canada. LOG-21	PUL-31
	PUL-QC	SPL-21	WEI-21	
Applies to Method:	Processed at ALS Vancou Ag-OG62 ME-ICP61	Iver located at 2103 Dollarton Hwy, No Au-AA23 ME-OG62	orth Vancouver, BC, Canada. Au-GRA21 Pb-OG62	Cu-OG62 Zn-OG62



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# CERTIFICATE TR19189306

# Project: Independence

This report is for 105 Rock samples submitted to our lab in Terrace, BC, Canada on 1-AUG-2019.

The following have access to data associated with this certificate:

TOM SETTERFIELD

SAMPLE PREPARATION	
DESCRIPTION	
Received Sample Weight	
Sample logging - ClientBarCode	
Crushing QC Test	
Pulverizing QC Test	
Fine crushing - 70% <2mm	
Split sample - riffle splitter	
Pulverize split to 85% <75 um	
	SAMPLE PREPARATION DESCRIPTION Received Sample Weight Sample logging - ClientBarCode Crushing QC Test Pulverizing QC Test Fine crushing - 70% <2mm Split sample - riffle splitter Pulverize split to 85% <75 um

ANALYTICAL PROCEDURES									
ALS CODE	DESCRIPTION								
Pb-OG62	Ore Grade Pb - Four Acid								
Zn-OG62	Ore Grade Zn - Four Acid								
Au-AA23	Au 30g FA-AA finish	AAS							
ME-ICP61	33 element four acid ICP-AES	ICP-AES							
Ag-OG62	Ore Grade Ag - Four Acid								
ME-OG62	Ore Grade Elements - Four Acid	ICP-AES							

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.

Signature:

Colin Ramshaw, Vancouver Laboratory Manager

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

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#### To: TNS CONSULTING 21 TRIPP CRESCENT OTTAWA ON K2J 1C5

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(123									С	ERTIFIC	CATE O	F ANA	LYSIS	TR191	89306	2	
Sample Description	Method Analyte Units LOD	WEI-21 Recvd Wt. kg 0.02	ME-ICP61 Ag ppm 0.5	ME-ICP61 AI % 0.01	ME-ICP61 As ppm 5	ME-ICP61 Ba ppm 10	ME-ICP61 Be ppm 0.5	ME-ICP61 Bi ppm 2	ME-ICP61 Ca % 0.01	ME-ICP61 Cd ppm 0.5	ME-ICP61 Co ppm 1	ME-ICP61 Cr ppm 1	ME-ICP61 Cu ppm 1	ME-ICP61 Fe % 0.01	ME-ICP61 Ga ppm 10	ME-ICP61 K % 0.01	
Y610151		1.41	4.3	7.39	33	950	1.1	2	4.31	0.6	19	4	500	4.62	20	1.65	Ĩ
Y610152		1.02	1.0	7.31	39	180	0.6	<2	0.86	<0.5	21	5	217	7.88	20	4.54	
Y610153		0.88	1.5	8.23	11	2420	1.4	~2	0.34	<0.5	10	3	16	3.19	20	3.03	
Y610154		0.91	2.0	9.60	6	1920	1.4	2	0.07	<0.5	16	11	41	5.71	20	4.14	
Y610155		1.02	0.6	5.84	16	460	1.1	<2	2.12	<0.5	14	17	13	7.44	10	0.39	
Y610156	- 5	1.07	0.6	6.89	26	340	1.4	2	1.17	<0.5	11	25	18	7.08	20	0.06	7
Y610157		1.25	>100	0.06	80	30	1.2	18	0.01	700	11	14	479	2.33	<10	0.02	
Y610158		1.11	>100	0.10	522	30	3.6	2	0.01	9.9	1	10	62	17.55	<10	0.04	
Y610159		1.49	>100	0.07	506	30	1.2	2	0.01	21.5	<1	8	174	24.8	<10	0.01	
Y610160		1.07	15.5	5.59	50	140	0.8	<2	0.13	0.7	4	10	43	5.80	10	4.09	
Y610161		0.84	94.7	0.73	264	80	<0.5	13	0.12	12.4	1	6	383	16.00	<10	0.62	-
Y610162		1.06	0.5	0.04	5	440	<0.5	<2	20.1	<0.5	1	1	3	0.11	<10	0.02	
Y610163		1 35	88.3	1.12	16	170	<0.5	4	0.13	>1000	36	7	2250	3.65	<10	0.47	
V610164		1 14	38.8	2.09	7	280	0.6	13	0.09	58.5	10	14	3590	2 11	10	1.03	
Y610165		1.09	28.0	2.93	5	540	0.7	<2	0.09	5.6	7	16	953	2.70	10	1.22	
Y610166		1 27	13.6	0.93	5	60	<0.5	3	0.03	0.9	2	32	346	0.66	<10	0.39	ł
Y610167		1.14	6.9	3.25	7	340	0.7	0	0.12	19.3	7	32	250	1.63	10	1.41	
Y610168		1.30	2.6	7 47	6	570	14	0	0.30	28	19	41	92	3 55	20	3.19	
Y610169		1.00	4.4	1.16	21	120	<0.5	0	0.01	0.8	6	25	35	4.52	<10	0.48	
Y610170		1.35	3.7	4.78	31	430	0.9	2	0.04	<0.5	7	31	31	3.93	10	1.36	
Y610171	-	0.72	9.4	1.77	16	220	<0.5	<2	0.01	4.1	7	19	51	3.48	<10	0.73	-
Y610172		1.04	2.4	1.66	7	280	<0.5	2	< 0.01	<0.5	2	25	23	1.39	10	0.76	
Y610173		1.09	3.6	5.34	8	220	0.8	<2	0.16	1.3	5	53	315	1.91	10	1.23	
Y610174		1.12	6.4	2.34	7	270	0.5	<2	0.02	0.8	1	29	8	1.48	10	1.10	
Y610175		0.96	23.1	0.99	9	210	<0.5	2	<0.01	<0.5	7	22	619	1.99	<10	D.39	
Y610176		0.90	43.4	0.31	38	40	<0.5	2	< 0.01	2.1	5	17	1170	7.38	<10	0.09	1
Y610177		1.39	3.5	1.17	19	120	<0.5	<2	0.01	1.0	8	26	51	3.72	<10	0.45	
Y610178		1.24	73.9	0.69	10	40	<0.5	11	< 0.01	49.2	6	17	63	3.04	<10	0.30	
Y610179		0.86	12.9	0.99	12	90	<0.5	<2	< 0.01	0.8	2	18	299	1.01	<10	0.41	
Y610180		0.78	47.7	1.75	29	100	<0.5	2	0.01	433	32	19	516	10.60	<10	0.81	
Y610181		0.79	3.3	1.39	10	140	<0.5	<2	0.08	1.7	4	23	246	1.82	<10	0.52	ī
Y610182		0.84	2.1	1.71	6	180	<0.5	<2	0.02	1.5	<1	21	9	1.65	<10	0.64	
Y610183		0.75	11.2	2,31	7	300	0.5	2	0.04	338	1	28	168	1.94	10	0.97	
Y610184		0.80	5.6	3.21	12	170	0.7	2	0.07	27.0	3	25	16	3.53	10	1.28	
Y610185		1.23	1.2	0.45	8	50	<0.5	<2	<0.01	<0.5	3	25	4	2.28	<10	0.15	
Y610186		1.18	2.2	0.76	5	100	<0.5	2	<0.01	1.0	3	27	4	1.14	<10	0.34	ī
Y610187		1.17	2.1	0.78	7	60	<0.5	<2	0.02	5.1	1	29	6	1.99	<10	0.27	
Y610188		1.11	5.9	1.37	16	160	<0.5	<2	< 0.01	8.7	1	25	59	3.24	10	0.66	
Y610189		1.09	>100	0.41	32	70	<0.5	<2	<0.01	765	3	13	61	8.24	<10	0.18	
Y610190		0.81	1.4	0.47	13	50	<0.5	~2	<0.01	1.3	8	18	9	3.49	<10	0.17	



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TR19189306

Project: Independence

CERTIFICATE OF ANALYSIS

19

<1

3

<20

0.01

<10

Sample Description	Method Analyte Units LOD	ME-ICP61 La ppm 10	ME-ICP61 Mg % 0.01	ME-ICP61 Mn ppm 5	ME-ICP61 Mo ppm 1	ME-ICP61 Na % 0.01	ME-ICP61 Ni ppm 1	ME-ICP61 P ppm 10	ME-ICP61 Pb ppm 2	ME-ICP61 \$ % 0.01	ME-ICP61 Sb ppm 5	ME-ICP61 Sc ppm 1	ME-ICP61 Sr ppm 1	ME-ICP61 Th ppm 20	ME-ICP61 Ti % 0.01	ME-ICP61 TI ppm 10
Y610151		20	0.86	1815	4	3.24	2	1740	51	1.07	-5	13	354	<20	0.48	<10
Y610152		<10	2.38	2490	16	1.11	9	1360	39	3.77	<5	20	179	<20	0.55	10
Y610153		20	0.61	489	<1	1.69	1	1340	17	0.08	<5	13	102	<20	0.46	<10
Y610154		10	0.72	212	<1	0.44	6	180	17	0.81	<5	23	35	<20	0.52	<10
Y610155		10	0.14	453	3	4.17	4	1300	8	3.17	<5	12	179	<20	0.52	<10
Y610156		20	0.55	636	1	4.38	7	1720	36	1,86	<5	19	284	<20	0.65	<10
Y610157		<10	<0.01	62	2	0.01	<1	20	>10000	5.30	74	<1	39	<20	< 0.01	<10
Y610158		<10	0.01	87	20	0.01	<1	<10	412	>10.0	179	<1	2	<20	< 0.01	10
Y610159		<10	< 0.01	59	1	< 0.01	<1	10	1120	>10.0	211	<1	5	<20	< 0.01	10
Y610160		<10	0.05	404	<1	0.16	1	690	195	3.59	16	9	127	<20	0.30	10
Y610161		<10	0.02	147	45	0.01	<1	110	3300	5.85	66	2	27	<20	0.03	<10
Y610162		<10	13.50	358	<1	0.03	2	30	17	0.02	<5	<1	199	<20	< 0.01	<10
Y610163		<10	0.16	691	<1	0.01	2	230	>10000	>10.0	31	2	10	<20	0.05	<10
Y610164		<10	0.13	579	1	0.01	1	350	3890	1.34	11	4	9	<20	0.10	<10
Y610165		<10	0.47	231	1	0.01	2	420	1090	0.36	6	10	10	<20	0.22	<10
Y610166	1	<10	0.04	81	2	0.02	2	140	194	0.14	11	1	4	<20	0.03	<10
Y610167	-	10	0.14	179	5	0.22	4	700	2240	0.43	11	5	22	<20	0.25	<10
Y610168		20	0.36	171	4	0.79	15	1710	1250	1.62	<5	12	52	<20	0.68	<10
Y610169		<10	0.05	36	3	0.10	11	50	115	4.88	19	3	12	<20	0.05	<10
Y610170		10	0.67	71	8	0.71	29	320	39	1.46	<5	12	52	<20	0.28	<10
Y610171		<10	0.07	62	6	0.12	18	60	2120	2.75	16	4	12	<20	0.07	<10
Y610172		<10	0.08	34	13	0.02	4	20	145	0.63	13	4	6	<20	0.06	<10
Y610173		20	0.21	53	2	1.97	11	1120	46	0.28	11	8	118	<20	0.51	<10
Y610174		<10	0.10	51	22	0.05	2	70	3260	0.99	14	6	11	<20	0.12	<10
Y610175		<10	0.04	34	2	0.06	15	120	2970	1.50	30	2	6	<20	0.04	<10
Y610176		<10	0.01	32	2	0.01	14	<10	459	8.20	19	<1	4	<20	0.01	<10
Y610177		<10	0.04	39	15	0.14	10	50	2090	3.71	11	3	10	<20	0.06	<10
Y610178		<10	0.03	34	2	0.01	6	20	>10000	4.60	49	<1	20	<20	0.02	<10
Y610179		<10	0.04	32	3	0.03	5	10	5120	0,74	32	2	8	<20	0.04	<10
Y610180		<10	0.08	39	6	0.05	28	40	>10000	>10.0	25	4	12	<20	0.08	<10
Y610181		<10	0.06	227	2	0.18	5	100	642	1.32	10	3	17	<20	0.06	<10
Y610182		<10	0.06	69	10	0.26	3	210	330	0.36	14	4	18	<20	0.09	<10
Y610183		<10	0.12	113	12	0.21	12	150	9230	2.49	22	5	20	<20	0.10	<10
Y610184		<10	0.19	164	6	0.38	13	120	1890	2.56	9	8	36	<20	0.16	<10
Y610185		<10	0.01	30	2	0.03	8	20	115	2.25	21	1	5	<20	0.02	<10
Y610186		<10	0.03	33	6	D.01	6	70	180	0.68	16	2	8	<20	0.04	<10
Y610187		<10	0.03	39	5	0.11	5	180	285	1.53	13	2	10	<20	0.03	<10
Y610188		<10	0.06	33	5	0.02	3	10	417	3.38	7	4	4	<20	0.06	<10
Y610189		<10	0.02	34	6	0.01	11	10	>10000	>10.0	20	1	5	<20	0.02	<10



Y610190

<10

0.02

30

2

0.01

8

<10

146

3.73

ALS)

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CERTIFICATE OF ANALYSIS TR19189306

	Method Analyte	ME-ICP61 U	ME-ICP61 V	ME-ICP61 W	ME-ICP61 Zn	Ag-OG62 Ag	Pb-OG62 Pb	Zn-OG62 Zn	Au-AA23 Au	
Sample Description	Units LOD	ppm 10	ppm 1	ppm 10	ppm 2	ppm 1	% 0.001	% 0.001	ppm 0.005	
Y610151		<10	148	10	127				0.012	
Y610152		<10	224	10	221				0.034	
Y610153		<10	89	<10	65				0.008	
Y610154		<10	150	10	139				0.011	
Y610155		<10	93	<10	.67				0.007	
Y610156		<10	102	<10	193	10.2	1.5	3.5	0.007	
Y610157		<10	6	20	>10000	501	4.03	6,25	0.022	
Y610158		<10	12	<10	1250	197			0.025	
Y610159		<10	30	10	1910	127			0.032	
Y610160		<10	97	20	349				0.008	
Y610161		<10	233	20	1460				0.232	
Y610162		<10	3	<10	32				<0,005	
Y610163	· · · · · · ·	<10	29	<10	>10000		4.61	16.75	0.211	
Y610164		<10	52	<10	3700				0.159	
Y610165		<10	102	<10	490				0,051	
Y610166		<10	13	<10	53				0.044	
Y610167		<10	53	<10	1280				0.019	
Y610168		<10	122	<10	158				0.059	
Y610169		<10	28	<10	57				0.045	
Y610170		<10	105	<10	80				0.017	
Y610171		<10	33	<10	348				0.272	
Y610172		<10	32	<10	22				0.041	
Y610173		<10	67	<10	60				0.007	
Y610174		<10	48	<10	65				0.328	
Y610175		<10	20	<10	25				0.182	
Y610176		<10	4	<10	158				0.458	
Y610177		<10	31	<10	63				0.038	
Y610178		<10	6	<10	3240		9.48		2.68	
Y610179		<10	22	<10	53		- Andre		0.103	
Y610180		<10	37	<10	>10000		5.67	2.32	1.055	
Y610181		<10	23	<10	130				0.124	
Y610182		<10	30	<10	123				0.309	
Y610183		<10	57	<10	>10000			2.35	0.337	
Y610184		<10	64	<10	1845				0.085	
Y610185		<10	8	<10	28				0.830	
Y610186		<10	21	<10	98				0.032	
Y610187		<10	19	<10	382				0.033	
Y610188		<10	35	<10	582				0.092	
Y610189		<10	9	<10	>10000	136	4.99	4.65	2.81	
Y610190		<10	6	<10	78				0.396	

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Project: Independence

Sample Description	Method Analyte Units LOD	WEI-21 Recvd Wt. kg 0.02	ME-ICP61 Ag ppm 0.5	ME-ICP61 AI % 0.01	ME-ICP61 As ppm 5	ME-ICP61 Ba ppm 10	ME-ICP61 Be ppm 0.5	ME-ICP61 Bi ppm 2	ME-ICP61 Ca % 0.01	ME-ICP61 Cd ppm 0.5	ME-ICP61 Co ppm 1	ME-ICP61 Cr ppm 1	ME-ICP61 Cu ppm 1	ME-ICP61 Fe % 0.01	ME-ICP61 Ga ppm 10	ME-ICP61 K % 0.01
Y610191		1.06	59.0	0.29	<5	40	<0.5	3	0.02	>1000	4	16	147	1.24	<10	0.09
Y610192		1.13	8.3	0.86	13	110	<0.5	<2	0,01	3.2	7	29	70	4.39	<10	0.30
Y610193		1.28	56.8	1.98	11	270	0.5	<2	0.09	41.0	4	17	10	2.53	10	0.91
Y610194		1.23	26.6	1.13	7	70	<0.5	<2	0.03	123.5	4	18	2440	1.87	<10	0.34
Y610195		1.09	28,9	1.22	46	90	<0.5	<2	0.09	272	3	22	688	12.75	<10	0.43
Y610196		1.36	0.6	5.56	30	3420	1,1	<2	0.04	0.9	1	28	11	1.26	10	4.80
Y610197		0.52	0.6	4.96	2580	40	1.8	<2	3.38	2.1	128	47	10	12.35	10	1.96
Y610198		D.66	3.1	6.85	823	130	1.1	<2	0.02	<0.5	27	12	8	4.58	20	4.96
Y610199		1.49	1.4	5.91	11	380	1.0	<2	0.15	2.4	2	15	4	4.35	20	2.35
Y610200		0.74	<0.5	0.07	<5	500	<0.5	<2	19.10	<0.5	<1	1	1	0.12	<10	0.05
Y610201		0.58	89.4	0.98	24	150	<0.5	<2	0.05	34.2	14	12	23	4.93	<10	0.40
Y610202		0.86	28.5	1.68	14	150	<0.5	2	0.04	136.5	5	24	17	3.13	10	0.72
Y610203		0.89	57.1	3.90	6	180	0.6	<2	1.15	34.7	7	33	90	2.86	10	1.29
Y610204		0.93	13.4	2.23	13	100	<0.5	2	0.04	234	4	27	108	2.10	<10	0.42
Y610205		0.97	14.5	2.93	6	130	0.5	2	2.35	476	4	30	1730	3.46	10	0.97
Y610206		1.12	9.9	2.93	11	350	0.5	<2	0.02	72.0	4	24	24	1.93	10	1.06
Y610207		0.79	86.8	0.18	7	20	<0.5	3	< 0.01	>1000	4	14	1910	4.78	<10	0.05
Y610208		0.75	69.8	1.46	10	200	<0.5	<2	0.01	64.6	16	17	1890	5.84	<10	0.60
Y610209		0.86	43.9	0.64	<5	40	<0.5	<2	0.01	10.5	<1	19	1390	1.10	<10	0.26
Y610210		1.07	58.0	0.69	13	80	<0.5	<2	0.01	134.0	4	26	729	4.37	<10	0.24
Y610211		0.87	10.2	2.48	27	50	<0.5	<2	0.01	7.8	3	36	16	8.62	10	0.85
Y610212		1.68	0.5	7.94	287	1760	1.5	<2	0.09	<0.5	1	6	12	2.06	20	3.92
Y610213		1.15	0.5	7.51	33	2010	1.4	<2	0,76	<0.5	6	7	6	2.52	20	4.61
Y610214		0.69	<0.5	4.93	12	2280	<0.5	<2	0,55	<0.5	3	9	6	1.06	10	4.08
Y610215		1.22	1.2	2.83	26	560	<0.5	<2	2.64	1.7	1	16	7	3.01	10	1.01
Y610216		0.76	13.6	4.61	301	150	0.6	<2	0.01	<0.5	2	36	9	5.21	10	2.97
Y610217		0.92	<0.5	5.72	14	1420	1.1	<2	0.17	<0.5	<1	15	5	1.12	10	4.80
Y610218		0.82	0.7	7.54	19	400	2.1	<2	0.06	0.6	9	15	8	4.28	20	3.72
Y610219		0.54	8.0	2.13	<5	160	0.8	2	0.01	<0.5	2	11	18	1.37	10	0.89
Y610220		0.76	<0.5	0.04	<5	690	<0.5	3	18.60	<0.5	<1	1	1	0.10	<10	0.03
Y610221		0.77	<0.5	8.99	24	1940	1.6	<2	0.07	<0.5	8	4	12	2.69	20	4.37
Y610222		0.97	<0.5	5.47	76	1520	2.0	<2	1.73	<0.5	9	8	5	1.56	10	2.15
Y610223		0.76	<0.5	7.59	13	1320	1.2	<2	0.02	<0.5	<1	5	5	1.29	20	4.63
Y610224		2.82	4.9	1.59	194	20	<0.5	2	0.01	<0.5	<1	6	43	30.9	<10	1.63
Y610225		1.15	9.3	3.68	250	40	0.6	<2	< 0.01	<0.5	<1	6	9	22.1	10	2.94
Y610226		1.12	4.7	3.69	19	550	0.5	2	0.01	3.4	2	11	6	1.75	10	3.03
Y610227		0.98	1.3	7.39	19	1760	1.3	<2	0.06	<0.5	1	11	6	1.63	10	4.68
Y610228		0.90	0.7	2.44	14	140	0.6	<2	0.02	<0.5	2	22	4	0.91	10	1.15
Y610229		1.29	12.9	3.10	81	40	0.5	<2	0.01	0.6	1	7	15	16.45	10	2.41
Y610230		0.96	26.3	4.22	456	90	0.8	<2	< 0.01	1.6	1	6	17	13.95	10	3.26



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TR19189306

Project: Independence

CERTIFICATE OF ANALYSIS

Sample Description	Method Analyte Units LOD	ME-ICP61 La ppm 10	ME-ICP61 Mg % 0.01	ME-ICP61 Mn ppm 5	ME-ICP61 Mo ppm 1	ME-ICP61 Na % 0.01	ME-ICP61 Ni ppm 1	ME-ICP61 P ppm 10	ME-ICP61 Pb ppm 2	ME-ICP61 S % 0.01	ME-ICP61 Sb ppm 5	ME-ICP61 Sc ppm 1	ME-ICP61 Sr ppm 1	ME-ICP61 Th ppm 20	ME-ICP61 Ti % 0.01	ME-ICP61 Ti ppm 10
Y610191		<10	0.01	67	7	0.01	4	10	>10000	7.41	32	<1	3	<20	0.01	<10
Y610192		<10	0.03	47	9	0.07	7	30	461	4.65	23	1	11	<20	0.03	<10
Y610193		10	0.09	80	22	0.03	7	330	>10000	3.36	20	4	16	<20	0.09	<10
Y610194		<10	0.03	49	1	0.28	7	90	4880	2.01	14	1	17	<20	0.04	<10
Y610195		<10	0.06	138	6	0.23	35	130	>10000	>10.0	19	2	21	<20	0.06	<10
Y610196		40	0.06	88	2	0.41	2	100	119	0.21	<5	3	108	20	0,08	10
Y610197		30	0.29	1310	215	0.89	175	430	138	>10.0	196	4	158	20	0.12	150
Y610198		30	0.19	108	44	0.34	33	50	48	4.87	229	4	77	<20	0.14	70
Y610199		20	0.41	177	17	0.37	4	1170	411	0.88	8	16	28	<20	0.51	<10
Y610200		<10	12.70	301	<1	0.04	1	40	19	0.02	<5	<1	203	<20	<0.01	<10
Y610201		<10	0.06	45	12	0.02	13	90	6280	5.37	20	2	10	<20	0.04	<10
Y610202		10	0.08	43	15	0.12	8	380	>10000	3.45	12	4	16	<20	0.18	<10
Y610203		20	0.33	928	5	0.94	8	1540	>10000	2.56	28	6	93	<20	0.44	<10
Y610204		<10	0.04	70	43	1.07	12	30	5040	2.81	10	4	52	<20	0.11	<10
Y610205		20	0.58	2290	2	0.75	11	1130	1505	3.21	10	5	141	<20	0.33	<10
Y610206		10	0.08	46	10	0.52	7	20	6440	2.07	-11	4	29	<20	0.10	<10
Y610207		<10	< 0.01	42	<1	0.01	7	10	>10000	>10.0	38	<1	5	<20	<0.01	10
Y610208		<10	0.06	41	5	0.16	11	20	>10000	7.77	49	3	11	<20	0.07	<10
Y610209		<10	0.02	50	6	0.02	<1	120	>10000	1.42	39	1	5	<20	0.05	<10
Y610210		<10	0.02	43	51	0.11	8	30	>10000	5.69	21	2	9	<20	0.04	<10
Y610211		<10	0.09	50	12	0.60	14	40	507	9.45	5	6	32	<20	0.13	<10
Y610212		20	0.32	144	10	0.51	1	480	152	0.43	5	6	43	<20	0.19	<10
Y610213		20	0.33	392	1	1.35	2	490	65	1.32	<5	4	81	<20	0.15	<10
Y610214		10	0.13	332	<1	1.13	1	310	55	0.19	<5	1	96	<20	0.08	<10
Y610215		<10	0.40	1390	<1	0.68	1	150	332	0.27	<5	2	191	<20	0.03	<10
Y610216		30	0.13	165	30	0.03	4	30	45	5.51	38	5	17	<20	0.11	<10
Y610217		30	0.12	151	1	0.52	1	50	44	0.40	<5	4	95	20	0.09	10
Y610218		20	0.64	224	<1	0.03	6	260	30	2.05	<5	18	49	<20	0.39	<10
Y610219		10	0.19	145	1	0.01	<1	20	62	0.13	12	2	9	<20	0.04	<10
Y610220		<10	12.30	313	<1	0.02	1	30	14	0.02	<5	<1	183	<20	<0.01	<10
Y610221		20	0.31	230	19	0.48	3	100	25	2.19	10	7	136	20	0.28	10
Y610222		20	0.34	807	12	1.13	11	50	21	0.85	12	7	192	<20	0.15	10
Y610223		40	0.16	125	1	0.67	1	50	14	0.88	<5	5	88	20	0.12	10
Y610224		10	0.02	777	5	0.04	1	10	39	>10.0	42	<1	11	<20	0.02	<10
Y610225		20	0.07	237	8	0.14	3	20	51	>10.0	38	1	22	<20	0.04	<10
Y610226		20	0.10	95	30	0.03	1	30	356	1.58	7	1	22	<20	0.03	<10
Y610227		30	0.15	86	4	0.91	1	110	56	1.06	<5	5	125	30	0.13	<10
Y610228		10	0.12	52	26	0.01	2	160	31	0.39	12	2	10	<20	0.09	<10
Y610229		20	0.06	286	21	0.17	2	20	26	>10.0	26	1	26	<20	0.03	<10
Y610230		20	0.10	111	14	0.05	2	30	58	>10.0	97	1	22	<20	0.04	10



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Sample Description	Method Analyte Units LOD	ME-ICP61 U ppm 10	ME-ICP61 V ppm 1	ME-ICP61 W ppm 10	ME-ICP61 Zn ppm 2	Ag-OG62 Ag ppm 1	Pb-OG62 Pb % 0.001	Zn-OG62 Zn % 0.001	Au-AA23 Au ppm 0.005	
Y610191		<10	4	<10	>10000		7.93	10.65	1.085	
Y610192		<10	16	<10	213				0.952	
Y610193		<10	45	<10	2450		5.43		0.131	
Y610194		<10	11	<10	5520				0.869	
Y610195		<10	30	<10	>10000		3.93	1.560	0.169	
Y610196		10	9	<10	96				<0.005	
Y610197		10	38	<10	836				0.010	
Y610198		<10	26	<10	95				<0.005	
Y610199		<10	127	<10	260				0.017	
Y610200		<10	2	<10	24				<0.005	
Y610201		<10	17	<10	1930		1.4.4.90		0.993	
Y610202		<10	38	<10	9350		1.880		0.169	
Y610203		<10	62	<10	1105		7.36		0.054	
Y610204		<10	54	<10	>10000			1.285	0.138	
Y610205		<10	43	<10	>10000			2.86	0.046	
Y610206		<10	34	<10	4040				0.056	
Y610207		<10	2	<10	>10000		11.75	6.45	2.86	
Y610208		<10	22	<10	4160		8.89		1.200	
Y610209		<10	16	<10	393		6.90		0.099	
Y610210		<10	18	<10	7120		4.97		1.135	
Y610211		<10	72	<10	601				0.102	
Y610212		<10	53	<10	61				0.005	
Y610213		<10	35	<10	52				0.008	
Y610214		<10	13	<10	22				0.021	
Y610215		<10	19	<10	167				0.011	
Y610216		<10	39	<10	27				0.008	
Y610217		<10	13	<10	44				< 0.005	
Y610218		<10	32	<10	95				<0.005	
Y610219		<10	29	<10	47				8.19	
Y610220		<10	3	<10	18				<0.005	
Y610221		<10	43	<10	59				0.006	
Y610222		10	30	<10	83				< 0.005	
Y610223		<10	13	<10	14				< 0.005	
Y610224		10	3	<10	17				0.063	
Y610225		<10	7	<10	39				0.035	
Y610226		<10	16	<10	407				0.057	
Y610227		<10	19	<10	25				0.005	
Y610228		<10	40	<10	43				0.026	
Y610229		<10	8	<10	144				0.093	
Y610230		<10	14	<10	603				0.257	

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(ALS	,								С	ERTIFI	CATE O	FANA	LYSIS	TR191	89306	
Sample Description	Method Analyte Units LOD	WEI-21 Recvd Wt. kg 0.02	ME-ICP61 Ag ppm 0.5	ME-ICP61 AI % 0.01	ME-ICP61 As ppm 5	ME-ICP61 Ba ppm 10	ME-ICP61 Be ppm 0.5	ME-ICP61 Bi ppm 2	ME-ICP61 Ca % 0.01	ME-ICP61 Cd ppm 0.5	ME-ICP61 Co ppm 1	ME-ICP61 Cr ppm 1	ME-ICP61 Cu ppm 1	ME-ICP61 Fe % 0.01	ME-ICP61 Ga ppm 10	ME-ICP61 K % 0.01
Y610231 Y610232 Y610233 Y610233 Y610234 Y610235 Y610236		0.94 0.68 0.70 0.61 1.18 0.82	<0.5 2.0 <0.5 6.3 1.5 <0.5 <0.5	5.97 1.66 1.01 5.61 3.12 5.43	96 22 5 33 45 21	1270 230 380 460 530 1700	1.4 <0.5 <0.5 1.2 0.8 0.8	5 A A A A A A	0.08 <0.01 0.02 0.24 0.14 0.02	<0.5 <0.5 <0.5 0.7 <0.5 <0.5	7 1 2 7 3 2	12 13 39 26 24 11	7 5 2 15 8 4	1.76 2.04 0.49 2.25 1.37 0.97	10 <10 <10 20 10	4.54 1.22 0.41 2.80 1.42 3.64
Y610237 Y610238 Y610239 Y610240		0.80 0.67 0.87	<0.5 <0.5 2.7 <0.5	6.19 2.00 0.03	44 43 13 <5	1810 1830 420 90	0.8 0.9 0.5 <0.5	4444	0.02 0.03 0.03 18.35	<0.5 <0.5 <0.5 <0.5	5 6 1 <1	15 16 20 4	3 4 9 1	0.91 0.95 1.32 0.10	10 10 10 <10	4.59 0.78 0.03
Y610241 Y610242 Y610243 Y610244 Y610245		0.76 0.79 0.80 1.25 0.99	<0.5 <0.5 <0.5 1.3 <0.5	7.63 7.26 7.54 6.87 6.15	<5 19 5 9 70	2650 1570 1320 1390 130	1.4 1.1 1.3 2.6 1.1	4 2 3 2 2 2	2.50 0.25 4.67 1.79 0.73	<0.5 <0.5 <0.5 6.5 <0.5	16 15 29 7 3	31 65 99 9 16	12 49 32 18 7	4.41 3.77 6.30 1.87 3.82	20 20 20 10	1.88 1.85 1.55 3.50 2.63
Y610246 Y610247 Y610248 Y610249 Y610250		0.74 0.99 0.73 1.02 0.83	1.5 <0.5 <0.5 1.1 7.8	1.25 8.17 9.94 0.68 7.61	<5 6 8 78	150 1120 450 110 190	0.5 1.4 1.9 <0.5 2.0	<2 <2 2 <2 5	0.57 1.51 0.46 0.03 4.21	<0.5 <0.5 0.9 <0.5 0.7	3 10 6 3 94	13 11 3 18 16	13 14 9 2 43	1.26 3.18 2.31 0.85 7.88	<10 10 20 <10 20	0.41 1.33 3.30 0.19 2.83
Y610096 Y610097 Y610098 Y610099 Y610099 Y610100		1.11 1.18 0.84 0.93 0.78	5.5 >100 10.9 0.7 <0.5	2.40 0.58 2.22 0.22 0.03	12 110 20 <5 ⊲5	190 50 190 580 610	0.5 <0.5 0.5 <0.5 <0.5	A & A & A	0.11 0.02 0.11 28.5 19.65	2.0 2.4 2.9 3.6 <0.5	8 9 8 5 2	18 13 15 1 1	9 6 4 1	3.87 18.45 4.48 5.27 0.10	10 <10 10 <10 <10	1.05 0.24 0.70 0.02 0.02

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TR19189306

Project: Independence

CERTIFICATE OF ANALYSIS

Sample Description	Method Analyte Units LOD	ME-ICP61 La ppm 10	ME-ICP61 Mg % 0.01	ME-ICP61 Mn ppm 5	ME-ICP61 Mo ppm 1	ME-ICP61 Na % 0.01	ME-ICP61 Ni ppm 1	ME-ICP61 P ppm 10	ME-ICP61 Pb ppm 2	ME-ICP61 S % 0.01	ME-ICP61 Sb ppm 5	ME-ICP61 Sc ppm 1	ME-ICP61 Sr ppm 1	ME-ICP61 Th ppm 20	ME-ICP61 Ti % 0.01	ME-ICP61 Ti ppm 10
Y610231		30	0.15	139	12	0.43	7	50	24	1.39	23	4	89	20	0.11	10
Y610232		10	0.04	51	7	0.03	1	40	22	1.71	20	1	14	<20	0.02	<10
Y610233		=10	0.05	324	4	0.01	1	60	7	0.05	16	.1	21	<20	0.04	<10
Y610234		20	0.34	124	9	0.02	4	1030	85	1.36	15	6	52	<20	0.37	<10
Y610235	1.1	10	0.19	176	18	0.01	2	330	55	0,76	15	3	34	<20	0.17	<10
Y610236		30	0.07	74	2	1.24	2	60	18	0.79	<5	2	130	100	0.06	10
Y610237		40	0.07	77	7	0.84	2	70	19	0.33	5	2	133	30	0.06	10
Y610238		40	0.09	84	4	0.59	8	70	10	0.65	24	2	144	20	0.07	10
Y610239		<10	0.13	80	27	0.07	1	170	21	0.27	19	4	11	<20	0.10	<10
Y610240		<10	12.75	328	<1	0.02	1	20	11	<0.01	<5	<1	197	<20	<0.01	<10
Y610241	1	40	1.56	877	1	3.54	16	2510	4	0.35	<5	9	721	<20	0.77	<10
Y610242		10	1.68	371	1	1.35	58	270	18	0.93	<5	16	248	<20	0.31	<10
Y610243		30	3.22	1020	1	2.49	63	2220	7	0.09	<5	18	778	<20	0.90	<10
Y610244		40	0.75	634	1	0.18	5	100	621	0.86	<5	6	151	20	0.15	<10
Y610245		20	0.18	253	10	1.74	3	190	13	3.28	<5	3	217	20	0.14	<10
Y610246		<10	0.20	481	1	0.02	1	180	28	0.14	10	2	30	<20	0.04	<10
Y610247		20	1.06	956	<1	4.38	1	1700	14	0.01	<5	11	461	<20	0.38	10
Y610248		20	0.32	500	6	2.85	2	1570	43	0.01	<5	13	99	20	0.45	<10
Y610249		<10	0.03	413	2	0.07	1	70	2	0.31	18	1	10	<20	0.02	<10
Y610250		30	0.55	384	12	1.54	29	>10000	55	4.47	6	21	320	<20	0.65	<10
Y610096		<10	0.25	167	20	0.01	4	290	71	2.09	12	5	9	<20	0.10	10
Y610097		<10	0.03	34	12	0.01	4	80	144	>10.0	11	1	3	<20	0.03	<10
Y610098		10	0.31	229	5	0.01	4	360	503	1.68	8	5	15	<20	0.15	<10
Y610099		<10	0.90	1785	1	< 0.01	4	80	46	0.41	<5	3	2850	<20	0.01	<10
		<10	12.20	323	<1	0.02	2	30	7	0.02	<5	<1	189	<20	<0.01	<10



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# To: TNS CONSULTING 21 TRIPP CRESCENT OTTAWA ON K2J 1C5

Page: 4 - C Total # Pages: 4 (A - C) Plus Appendix Pages Finalized Date: 21-AUG-2019 Account: TNSCON

CERTIFICATE OF ANALYSIS TR19189306

Sample Description	Method Analyte Units LOD	ME-ICP61 U ppm 10	ME-ICP61 V ppm 1	ME-ICP61 W ppm 10	ME-ICP61 Zn ppm 2	Ag-OG62 Ag ppm 1	Pb-OG62 Pb % 0.001	Zn-OG62 Zn % 0.001	Au-AA23 Au ppm 0.005	
Y610231		<10	17	<10	42				<0.005	
Y610232		<10	9	<10	14				0.021	
Y610233		<10	20	<10	31				<0.005	
Y610234		<10	142	<10	111				0.966	
Y610235		<10	64	<10	42				0,828	
Y610236		<10	19	<10	19	1000			<0.005	
Y610237		<10	14	<10	20				<0.005	
Y610238		<10	10	<10	29				<0.005	
Y610239		<10	46	<10	13				0.272	
Y610240		<10	3	<10	18				<0.005	
Y610241		<10	101	<10	96				< 0.005	
Y610242		<10	146	<10	147				<0.005	
Y610243		<10	166	<10	124				<0.005	
Y610244		<10	36	<10	757				<0.005	
Y610245		<10	18	<10	17				<0.005	
Y610246		<10	18	<10	25				0.011	
Y610247		<10	99	<10	73				<0.005	
Y610248		<10	122	<10	91				< 0.005	
Y610249		<10	8	<10	7				0.008	
Y610250	_	10	138	<10	92				0.030	
Y610096	-	<10	43	<10	152				0.045	
Y610097		<10	10	<10	134	161			3.63	
Y610098		<10	38	<10	380				1.600	
Y610099		<10	13	<10	206				<0.005	
Y610100		<10	2	<10	18				<0.005	



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Project: Independence

		CERTIFICATE CO	MMENTS	
Applies to Method:	Processed at ALS Terrace CRU-31 PUL-QC	LABOR located at 2912 Molitor Street, Terra CRU-QC SPL-21	ATORY ADDRESSES ace, BC, Canada. LOG-21 WEI-21	PUL-31
Applies to Method:	Processed at ALS Vancou Ag-OG62 Pb-OG62	ver located at 2103 Dollarton Hwy, N Au-AA23 Zn-OG62	orth Vancouver, BC, Canada. ME-ICP61	ME-OG62



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#### To: TNS CONSULTING 21 TRIPP CRESCENT OTTAWA ON K2J 1C5

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# CERTIFICATE TR19283056

Project: Independence

This report is for 57 Rock samples submitted to our lab in Terrace, BC, Canada on 6-NOV-2019.

The following have access to data associated with this certificate:

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-31	Pulverize up to 250g 85% <75 um							

	ANALYTICAL PROCEDURES									
ALS CODE	DESCRIPTION	INSTRUMENT								
ME-ICP61	33 element four acid ICP-AES	ICP-AES								
Ag-0062	Ore Grade Ag - Four Acid									
ME-0G62	Ore Grade Elements - Four Acid	ICP-AES								
Cu-OG62	Ore Grade Cu - Four Acid									
Pb-OG62	Ore Grade Pb - Four Acid									
Zn-0662	Ore Grade Zn - Four Acid									
Ag-GRA21	Ag 30g FA-GRAV finish	WST-SIM								
Au-AA23	Au 30g FA-AA finish	AAS								
Au-GRA21	Au 30g FA-GRAV finish	WST-SIM								

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:

Saa Traxler, General Manager, North Vancouver



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# To: TNS CONSULTING 21 TRIPP CRESCENT OTTAWA ON K2J 1C5

Page: 2 - A Total # Pages: 3 (A - C) Plus Appendix Pages Finalized Date: 18-DEC-2019 Account: TNSCON

Project: Independence

Sample Description	Method Analyte Units LOD	WE-21 Recvd Wt kg 0.02	Au-AA23 Au ppm 0.005	Au-CRA21 Au ppm 0.05	ME-ICP61 Ag ppm 0.5	ME-ICP61 Al N 0,01	ME-ICP61 As ppm 5	ME-ICP61 Da ppm 10	ME-ICP61 Ee ppm 0.5	ME-ICP61 Bi ppm 2	ME-ICP61 Ca. N 0.01	ME-ICP61 Cd ppm 0.5	ME-ICP61 Co ppm 1	ME-ICP61 Cr ppm 1	ME-ICP61 Cu ppm 1	ME-ICP61 Fe N 0,01
A0863001 A0863002 A0863003 A0863004 A0863005		0.72 0.90 0.84 0.96 0.96	<0.005 <0.005 0.008 0.029 0.006		8.1 9.4 38.2 27.6 79.1	6,59 2,68 0,91 7,08 0,48	284 714 20 47 60	330 100 240 70 110	1.9 3.3 4.8 0.8 1.4	200940	0.09 0.06 1.84 0.33 0.02	1.6 1.2 167.5 6.0 929	9 7 5 6 22	7 27 9 7 12	38 73 144 630 4350	6,81 6,38 4,17 10,90 13,10
A0863006 A0863007 A0863008 A0863009 A0863010		1.06 0.93 0.52 0.89 0.85	0.084 0.112 0.006 0.045 0.005		>100 36.2 1.2 1.1 1.0	0,27 0,65 3,65 7,51 6,70	195 7 23 5 12	110 290 30 3540 5050	1.3 1.4 1.1 0.8 0.8	41 30 13 <2 2	0.01 7.20 0.01 0.21 0.48	556 346 1.4 1.1 1.1	102 3 27 8 5	12 12 7 6 13	>10000 943 245 708 27	12.30 4.19 8.43 6.05 6.71
A0863011 A0863012 A0863013 A0863014 A0863015		0.71 0.92 0.69 0.65 1.04	0.019 <0.005 0.016 <0.005 <0.005		1.0 1.7 2.1 <0.5 0.7	6.91 7.46 7.27 5.93 3.90	190 1165 651 <5 10	2000 330 6150 610 850	0.8 1.1 1.3 2.1 0.8	88888	1.46 0.25 0.04 1.42 5.13	<0.5 <0.5 1.8 1.0 0.8	11 5 2 5 9	13 7 4 2 89	9 18 44 4 25	3.54 3.88 5.96 1.60 3.72
A0863016 A0863017 A0863018 A0863019 A0863020		1.10 0.42 1.17 1.92 0.55	0.093 >10.0 0.221 0.716 <0.005	50.7	83.6 >100 >100 >100 1.9	0.12 0.49 4.65 3.33 0.03	87 32 10 5 <5	20 110 310 250 180	<0.5 <0.5 0.7 0.8 <0.5	6 6 6 6 z	0.36 0.02 0.18 3.36 19.25	10.1 >1000 12.5 173.5 0.7	5 27 8 14 <1	20 8 10 17 1	1470 468 153 60 2	0.47 2.11 1.80 4.19 0.12
A0863021 A0863022 A0863023 A0863023 A0863024 A0863025		0.99 1.05 1.08 0.98 0.77	0.018 1.255 0.012 3.53 0.757		24.2 13.4 4.1 57.9 36.7	2.56 5.09 0.80 3.73 2.63	<5 14 <5 8 7	210 330 60 180 410	0.6 0.8 <0.5 0.6 <0.5	4 2 2 2 2 2 2 2 2	0.52 0.13 0.02 0.07 0.02	408 1.7 2.0 0.5 0.6	16 20 3 12 6	10 10 25 10 11	38 293 155 1240 286	3.14 6.86 1.13 7.06 5.41
A0863026 A0863027 A0863051 A0863052 A0863053		0.77 0.84 1.23 0.68 1.07	0.221 0.479 <0.005 <0.005 0.095		19.8 5.4 7.3 5.0 >100	1.15 3.11 5.59 6.88 0.30	8 5 506 454 29	190 490 290 840 130	<0.5 0.6 2.4 2.2 1.9	42 42 42 42 42 42 179	0.01 0.02 0.23 0.24 0.01	0.5 <0.5 1.9 <0.5 95.9	6 6 12 5 1	27 13 35 14 29	27 91 28 31 >10000	2.12 1.93 8,23 3.92 1.49
A0863054 A0863055 A0863056 A0863057 A0863058		1.50 1.04 0.70 1.18 0.58	0.129 0.332 0.024 0.180 >10.0	10.70	>100 >100 94.3 >100 85.3	1.44 3.61 0.26 1.05 3.20	30 79 18 576 27	120 1310 150 80 80	1.0 1.3 1.7 0.7 <0.5	59 15 17 112 40	3.40 0.30 0.15 0.05 0.01	328 25.0 121.0 904 2.8	14 10 20 481 17	17 4 18 5 5	>10000 >10000 >10000 >10000 >10000	7,58 17,65 6,84 16,25 13,85
A0863059 A0863060 A0863061 A0863062 A0863063		0.77 0.83 0.45 0.43 0.97	1.360 0.276 0.026 0.068 0.052		54,2 1,1 1,9 3,0 4,0	1.87 0.05 8.12 3.58 7.20	<5 <5 5 2200	170 130 4000 5460 200	<0.5 <0.5 0.9 0.6 1.0	9 Y 4 3 Y	0.19 19.75 0.16 0.15 0.12	2.1 <0.5 <0.5 <0.5 0.6	15 1 4 5 8	14 1 3 25 7	>10000 108 251 665 58	8,43 0,16 6,69 5,81 5,93



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Page: 2 - B Total # Pages: 3 (A - C) Plus Appendix Pages Finalized Date: 18-DEC-2019 Account: TNSCON

Project: Independence

Sample Description	Method Analyte Units LOD	ME-ICP61 Ga ppm 10	ME-ICP61 K % 0.01	ME-ICP61 La ppm 10	ME-ICP61 Mg % 0.01	ME-ICP61 Mn ppm 5	ME-ICP61 Mo ppm J	ME-ICP61 Na % 0.01	ME-ICP61 Ni ppm 1	МЕ-ІСР61 Р Ррт 10	ME-ICP61 Pb ppm 2	ME4CP61 S % 0.01	ME-ICP6) Sb ppm 5	ME-ICP61 Sc ppm 1	ME-ICP61 Sr ppm 1	ME-ICP61 Th ppm 20
A0863001 A0863002 A0863003 A0863004 A0863005		10 10 10 10	4.83 2.47 0.09 4.69 0.26	<10 10 100 <10	0.16 0.08 0.33 0.22	500 337 1670 1220 210	13136	0.10 0.04 0.01 0.11	1 3 2 1	810 320 40 1300 20	828 685 5650 1520	3.70 4.09 2.18 9.24 7.49	27 44 44 31	7 3 4 12 2	84 74 31 85	ବୁ ବୁ ବୁ ବୁ ବୁ ବୁ ବୁ ବୁ
A0863006 A0863007 A0863008 A0863009 A0863010		<10 10 20 10 10	0.09 0.07 5.18 5.00 4.90	10 20 <10 10 10	0.04 0.22 0.04 0.36 0.41	884 3040 557 499 1630	20 1 3 3 1	<0.01 0.01 0.24 0.28 0.14	<1 <1 1 <1 2	20 70 490 460 1080	>10000 2130 46 20 93	8.30 3.88 1.36 0.18 0.34	19 15 <5 <5 <5	1 2 5 12	5 131 2 58 122	ବିବିବିବିବି
A0863011 A0863012 A0863013 A0863014 A0863015		10 10 10 20 10	4.61 4.73 4.69 2.83 1.49	70 20 20 10	0.27 0.22 0.27 0.22 1.59	432 354 305 640 1070	17 25 26 1 15	1.39 1.71 0.64 0.47 0.14	1 <1 13 42	460 440 520 40 380	42 45 320 39 27	1.24 2,44 0,33 0.01 0.05	<5 64 26 <5 14	6 5 5 1 8	207 146 120 63 620	√20 √20 √20 20 √20
A0863016 A0863017 A0863018 A0863019 A0863020		<10 <10 10 10 <10	0.05 0.20 1.70 1.56 0.02	<10 <10 10 <10 <10	0.01 0.02 0.15 0.83 13.05	175 28 380 1860 335	<1 11 <1 2 <1	0.01 0.01 0.87 0.02 0.02	<1 <1 1 4 <1	20 60 780 530 40	1950 >10000 4750 6900 27	0.11 8.34 0.34 1.24 <0.01	10 219 20 13 <5	<1 1 9 12 <1	9 15 28 150 184	ବ ବ ବ ବ ବ ବ ବ ବ ବ
A0863021 A0863022 A0863023 A0863024 A0863025		10 10 <10 10 10	0.97 2.00 0.27 1.74 1.22	<10 10 <10 10 <10	0.40 0.50 0.06 0.20 0.14	1205 369 268 99 233	√ √ √ 4 2	0.01 0.73 0.06 0.15 0.06	1 3 41 3 2	290 840 40 610 380	2510 84 61 104 121	1,67 3.78 0.06 4.87 0.82	8 5 5 5 6	7 16 1 12 8	22 28 2 11 8	ବି ବି ବି ବି ବି
A0863026 A0863027 A0863051 A0863052 A0863053	- 1	<10 10 10 10 <10	0.51 1.46 4.11 4.73 0.06	<10 <10 <10 10 <10	0.04 0.17 0.08 0.18 0.03	51 238 577 946 130	1 1 1 1 1	0.02 0.05 0.08 0.13 0.01	1 2 1 1 <1	70 150 560 860 10	45 18 633 283 1385	0.52 0.11 6.74 1.25 1.08	11 6 50 11 464	4 9 5 8 <1	4 13 41 224 4	40 40 40 40 40 40 40
A0863054 A0863055 A0863056 A0863057 A0863057		10 20 <10 10 30	0.63 2.38 0.07 0.35 0.12	20 10 <10 <10 <10	0.29 0.51 0.05 0.17 1.23	2850 2560 412 589 2410	2 4 4 85 7	0.01 0.04 0.01 0.01 0.01	<1 <1 <1 <1 <1	160 590 20 90 90	2620 1795 4210 >10000 83	6.61 >10.0 4.51 >10.0 2.76	57 60 28 22 <5	3 8 1 1 2	37 25 5 5 2	20 20 20 20 20 20 20
A0863059 A0863060 A0863061 A0863062 A0863063		10 <10 10 10 10	0.48 0.03 4.95 2.98 5.12	<10 <10 20 20 10	0.68 12.55 0.61 0.38 0.15	743 325 468 465 122	2 √1 3 4 88	0.04 0.03 0.12 0.09 1.70	3 3 <1 <1 <1 <1	130 30 480 210 340	51 7 14 35 64	1.39 0.01 0.38 0.14 4.77	5 <5 <5 <5 128	2 <del>1</del> 5 2 5	38 175 77 77 147	ବି ବି ବି ବି ବି



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Project: Independence

Sample Description	Method Analyte Units LOD	ME-ICP61 Ti % 0.01	ME-ICP61 TI ppm 10	ME-ICP61 U ppm 10	ME-ICP61 V ppm 1	ME-ICP61 W ppm 10	ME-ICP61 Zn ppm 2	Ag-OC62 Ag ppm 1	Cu-OG62 Cu % 0.001	РЬ-ОС62 РЬ % 0.001	Zn-OG62 Zn % 0.001	Ag-GRA21 Ag ppm 5	
A0863001		0.26	<10	10	120	10	387						
A0863002		0.10	<10	<10	105	<10	252						
A0863003		0.01	<10	<10	73	<10	>10000				2.24		
A0803004		0.41	10	10	200	50	1450						
A0803005		<0.01	10	<10	130	230	>10000		-		12.50		
A0863006	1	0.01	<10	20	89	30	>10000	270	5.34	1.445	4.19		
A0863007		0.02	10	<10	121	10	>10000				3.52		
A0863008		0.19	<10	<10	56	<10	193						
A0863009		0.18	<10	<10	48	<10	163						
A0863010		0.34	10	<10	132	10	461						
A0863011		0.18	<10	<10	66	<10	73						
A0863012		0.18	10	10	44	<10	95						
A0863013		0.17	10	10	57	<10	404						
A0863014		0.05	10	<10	2	<10	190						
A0863015		0.19	10	<10	70	<10	75						
A0863016	0	< 0.01	10	<10	4	<10	1715						
A0863017		0.02	10	<10	15	<10	>10000	>1500		5.48	12.75	6830	
A0863018		0.21	<10	<10	97	<10	1315	476					
A0863019		0.21	10	<10	139	<10	>10000	305			1.260		
A0863020		< 0.01	<10	10	2	<10	59						
A0863021		0.11	10	<10	84	<10	>10000				2.83		
A0863022		0.32	10	<10	192	<10	157						
A0863023		0.01	<10	<10	37	<10	160						
A0863024		0.23	10	<10	180	<10	70						
A0863025		0.17	<10	<10	129	<10	74						
A0863026	1	0.07	10	<10	52	<10	49						
A0863027		0.17	10	<10	135	<10	50						
A0863051		0.19	20	10	123	10	202						
A0863052		0.27	<10	10	145	10	181						
A0863053		< 0.01	10	<10	14	10	8960	454	1.350				
A0863054		0.05	10	<10	140	20	>10000	216	1.470		4.57		
A0863055		0.20	<10	10	179	40	4110	131	3.46				
A0863056		< 0.01	<10	30	53	<10	>10000		1.205		0.966		
A0863057		0.04	<10	10	109	70	>10000	1500	13.75	1.410	7.62	1470	
A0863058		0.02	<10	<10	40	60	348		2.92				
A0863059	1	0.04	<10	<10	24	20	359		1.315				
A0863060	11	< 0.01	<10	<10	2	<10	31						
A0863061		0.19	<10	10	47	<10	55						
A0863062		0.09	<10	<10	36	<10	60						
A0863063		0.18	30	<10	50	<10	155						


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TR19283056

Project: Independence

CERTIFICATE OF ANALYSIS

Sample Description	Method Analyte Units LOD	WEI-21 Recvd Wt. Ng 0.02	Au-AA23 Au ppm 0.005	Au-CRA21 Au ppm 0.05	ME-ICP61 Ag ppm 0.5	ME-ICP61 Al N 0.01	ME-ICP61 As ppm 5	ME-ICP61 Ba ppm 10	ME-ICP61 Be ppm 0.5	MEHCP61 Bi ppm 2	ME-ICPET Ca N 0.01	ME4CP61 Cd ppm 0.5	ME-ICP61 Co ppm 1	ME-ICP61 Cr ppm 1	ME-ICP61 Cu ppm 1	MEHCP61 Fe N 0.01
A0863064 A0863065 A0863066 A0863067 A0863068		0.89 0.88 0.45 0.51 1.09	0.010 0.026 0.105 0.056 6.50		1.3 1.4 11.5 13.0 >100	7.61 3.03 1.77 1.63 2.12	329 103 521 11 39	1130 200 110 120 150	1.1 0.6 <0.5 <0.5 <0.5	66 * 66	0.44 0.05 0.68 0.02 0.03	<0.5 <0.5 15.4 6.4 244	10 7 10 2 25	8 53 57 13 10	26 23 852 183 128	2.93 4.10 10.40 1.62 5.95
A0863069 A0863070 A0863071 A0863072 A0863073		0.56 0.37 1.17 0.69 1.21	2.25 8.40 0.174 0.096 0.008	-	>100 >100 >100 >100 44.0	3.24 1.77 4.58 7.38 8.39	29 23 17 15 14	210 220 390 580 420	0.5 <0.5 0.9 1.2 1.2	8 8 8 8 8 8	0.08 0.18 0.57 0.29 1.10	25.2 126.5 128.5 17.1 25.0	2 5 20 14 26	12 16 12 16 19	72 146 67 244 61	1.44 4.61 5.09 4.15 6.96
A0863074 A0863075 A0863076 A0863077 A0863078		0.33 0.57 0.62 0.37 1.99	0.162 0.212 0.006 0.010 2.47		13.6 15.5 8.1 6.1 >100	7.87 1.35 2.00 0.14 2.45	5 6 5 5 5 9	190 20 40 20 260	0.6 <0.5 <0.5 <0.5 <0.5	37884	1.64 0.64 0.21 3.37 0.04	0,7 1.6 <0.5 <0.5 51.9	26 16 15 1 4	8 16 15 16 15	7690 7850 4010 3220 180	6.26 3.85 3.43 0.80 3.47
A0863079 A0863080		1.14 0.58	5.39 0.010		>100 11.8	1.61 0.08	15 <5	170 90	<0.5 <0.5	2 2	0.03 18.90	>1000 2.0	25 1	10 3	703 5	3.63 0.15



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Project: Independence

# CERTIFICATE OF ANALYSIS TR19283056

Sample Description	Method Analyte Units LOD	GA PPT 10	ME-ICP61 K N 0.01	ME-ICP61 La ppm 10	Mg N 0.01	ME-ICP6) Mn ppm S	ME-ICP61 Me ppm 1	NA NA 0.01	Ni ppm 1	P P Ppm 10	Pb ppm 2	ME4CP61 5 0.01	ME-ICP61 Sb ppm 5	ME-ICP61 Sc ppm 1	MEICP61 Sr ppm 1	MEICPSI Th ppm 20
A0863064 A0863065 A0863066 A0863067 A0863068		10 10 10 <10 <10	4.67 1.04 0.56 0.74 0.74	20 10 <10 <10 <10	0.21 0.26 0.41 0.08 0.07	278 59 121 758 59	0 2 0 7 0	2.51 0.69 0.17 0.01 0.05	1 50 33 <1 3	480 300 130 80 320	31 73 435 360 >10000	1.43 2.76 >10.0 0.09 5.08	19 13 <5 16 53	57354	245 77 164 5 10	<20 <20 <20 <20 <20 <20
A0863069 A0863070 A0863071 A0863072 A0863073		10 <10 10 20 20	1.32 0.70 2.28 3.20 2.20	<10 <10 10 10 10	0.12 0.06 0.33 0.34 0.71	59 50 1140 425 944	<1 3 17 10 2	0.42 0.22 0.09 0.75 2.34	<1 <1 4 2 8	580 2030 620 1200 1500	5990 >10000 >10000 4400 1025	0.32 2.13 2.93 1.68 1.12	53 47 10 13 <5	6 4 15 24 29	16 37 32 34 121	<20 <20 <20 <20 <20 <20
A0863074 A0863075 A0863076 A0863077 A0863078		10 <10 <10 <10 10	0.14 0.03 0.04 0.03 1.18	10 <10 <10 <10 <10	1.51 0.67 1.04 0.02 0.13	1220 715 720 577 163	3 5 1 1 4	4.21 0.20 0.49 0.04 0.10	1 2 2 ≼1 1	1570 100 150 30 320	25 17 5 4 7000	0.62 0.62 0.28 0.25 0.68	<5 <5 <5 <5 13	22 2 <1 9	227 19 17 31 17	<20 <20 <20 <20 <20 <20
A0863079 A0863080		<10 <10	0,83 0.05	<10 <10	0.08 13.35	58 286	বা বা	0.01 0.04	3 <1	50 40	>10000 68	8.64 0.01	36 <5	4 <1	5 136	<20 <20



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CERTIFICATE OF ANALYSIS TR19283056

Sample Description	Method Analyte Units LOD	ME-ICP61 Ti % 0.01	ME-ICP61 TI Ppm 10	ME-ICP61 U PPm 10	ME-ICP61 V ppm 1	ME-ICP61 W ppm 10	ME-ICP61 Zn ppm 2	Ag-OC62 Ag ppm 1	Cu-OG62 Cu % 0.001	РЬ-ОС62 РЬ % 0.001	Zn-OG62 Zn % 0.001	Ag-GRA21 Ag ppm 5	
A0863064 A0863065 A0863066 A0863067 A0863068		0.19 0.16 0.10 0.07 0.10	10 10 10 <10 10	<10 <10 <10 <10 <10 <10	45 60 32 48 48	<10 <10 <10 <10 <10 <10	85 35 4050 1050 >10000	>1500		1.270	1.760	3390	1
A0863069 A0863070 A0863071 A0863072 A0863073		0.15 0.07 0.27 0.45 0.53	<10 <10 10 <10 <10	<10 <10 <10 <10 <10 <10	76 60 181 267 261	<10 <10 <10 <10 <10	2220 >10000 8720 2280 1570	>1500 >1500 494 212		3.35 1.210	1.065	3020 9300	
A0863074 A0863075 A0863076 A0863076 A0863077 A0863078		0.52 0.02 0.05 0.01 0.16	10 10 10 10 10	<10 <10 <10 <10 <10 <10	173 61 54 3 97	<10 <10 <10 <10 <10	109 59 71 11 3870	869				2	
A0863079 A0863080		0.05	10 <10	<10 10	65 2	<10 <10	>10000 145	>1500		3.83	10.25	2490	



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## CERTIFICATE OF ANALYSIS TR19283056

	CERTIFICATE CON	MMENTS	
Processed at ALS Terrace CRU-31 PUL-QC	PUL-31		
Processed at ALS Vancou Ag-GRA21 Cu-OG62 Zn-OG62	ver located at 2103 Dollarton Hwy, N Ag-OG62 ME-ICP61	orth Vancouver, BC, Canada. Au-AA23 ME-OG62	Au-GRA21 Pb-OG62
	Processed at ALS Terrace CRU-31 PUL-QC Processed at ALS Vancou Ag-GRA21 Cu-OG62 Zn-OG62	CERTIFICATE CON Processed at ALS Terrace located at 2912 Molitor Street, Terra CRU-QC PUL-QC Processed at ALS Vancouver located at 2103 Dollarton Hwy, N Ag-GRA21 Cu-OG62 Cu-OG62 Ag-OG62 Ag-OG62 Ag-OG62	CERTIFICATE COMMENTS   LABORATORY ADDRESSES   Processed at ALS Terrace located at 2912 Molitor Street, Terrace, BC, Canada.   CRU-31 CRU-QC LOG-21   PUL-QC SPL-21 WEI-21   Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada. Ag-GRA21 Ag-OC62   Ag-GRA21 Ag-OC62 Au-AA23   Cu-OG62 ME-ICP61 ME-OG62

# **APPENDIX C-MAPS**



Map 1: Mineral Tenures Comprising the Independence and Slippery Ian Properties



Map 2: Samples Collected on the Independence and Slippery Ian Properties



Map 3: Gold Values (g/t) of Grab Samples Collected from the Independence Property in 2019



0.019 0.045 0.008,0.011,0.021 0.035 Hwy 37A Bear River Kilometers

Crown Grants 0.005 

Decade Resources'



Map 4: Gold Values (g/t) of Grab Samples Collected from the Slippery Ian Property in 2019



Map 5: Silver Values (g/t) of Grab Samples Collected from the Independence Property in 2019



Map 6: Silver Values (g/t) of Grab Samples Collected from the Slippery Ian Property in 2019



Map 7: Lead Values (ppm) of Grab Samples Collected from the Independence Property in 2019

42 55,332 38 Hwy 37A Bear River Kilometers

Decade Resources'

Crown Grants

152



Map 8: Lead Values (ppm) of Grab Samples Collected from the Slippery Ian Property in 2019