

Ministry of Energy and Mines
BC Geological Survey

Assessment Report
Title Page and Summary

TYPE OF REPORT [type of survey(s)]: Geological, Geochemical, Petrographic & Prospecting

TOTAL COST: \$12650

AUTHOR(S): H. Sigurgeirson

SIGNATURE(S): _____

NOTICE OF WORK PERMIT NUMBER(S)/DATE(S): n/a

YEAR OF WORK: 2017

STATEMENT OF WORK - CASH PAYMENTS EVENT NUMBER(S)/DATE(S): 5662850

PROPERTY NAME: Wen-Toe

CLAIM NAME(S) (on which the work was done): _____

1053101, 1053102, 1053103, 1053104, 1032322, 1032321, 1053091, 1053093, 1050557, 1050558, 1054183

COMMODITIES SOUGHT: Cu, Au

MINERAL INVENTORY MINFILE NUMBER(S), IF KNOWN: 092HNE002, 058, 059, 060, 144, 269 & 270

MINING DIVISION: Nicola

NTS/BCGS: 092H/098 & 099

LATITUDE: 49 ° 58 ' _____ " LONGITUDE: 120 ° 27 ' _____ " (at centre of work)

OWNER(S):

1) Victory Resources Corporation

2) _____

MAILING ADDRESS:

734-1055 DUNSMUIR STREET

Vancouver, BC V7X 1B1

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

1) Victory Resources Corporation

2) _____

MAILING ADDRESS:

734-1055 DUNSMUIR STREET

Vancouver, BC V7X 1B1

PROPERTY GEOLOGY KEYWORDS (lithology, age, stratigraphy, structure, alteration, mineralization, size and attitude):

Basalt, Granodiorite, Diorite, Triassic Nicola Group, Jurassic Pennask Batholith, propylitic, quartz vein, chalcopyrite, stockwork

REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS: 1586, 4230, 9590, 24800, 427039, 29976, 30405, 30728, 30747, 32160 & 35449

TYPE OF WORK IN THIS REPORT	EXTENT OF WORK (IN METRIC UNITS)	ON WHICH CLAIMS	PROJECT COSTS APPORTIONED (incl. support)
GEOLOGICAL (scale, area)			
Ground, mapping	12 hectares at 1:2500	1053101, 1053102	\$4000
Photo interpretation			
GEOPHYSICAL (line-kilometres)			
Ground			
Magnetic			
Electromagnetic			
Induced Polarization			
Radiometric			
Seismic			
Other			
Airborne			
GEOCHEMICAL (number of samples analysed for...)			
Soil	12 (soil and till)	1053101, 1053102, 1053103, 1054183	\$1500
Silt	1	1054183	\$150
Rock	23 (49 analyses)	1053101, 1053102, 1054183	\$4500
Other			
DRILLING (total metres; number of holes, size)			
Core			
Non-core			
RELATED TECHNICAL			
Sampling/assaying			
Petrographic	3 thin sections	1053101	\$1000
Mineralographic			
Metallurgic			
PROSPECTING (scale, area)	40 hectares, 1:5000	1053101, 1053103	\$1500
PREPARATORY / PHYSICAL			
Line/grid (kilometres)			
Topographic/Photogrammetric (scale, area)			
Legal surveys (scale, area)			
Road, local access (kilometres)/trail			
Trench (metres)			
Underground dev. (metres)			
Other			
TOTAL COST:			\$12650

Geological, Geochemical, Petrographic and
Prospecting Assessment Report
on the Wen-Toe Property

Aspen Grove, British Columbia
Nicola Mining Division

Map Sheets 092H/098 & 099

UTM 683500 E, 5535 000 N (Zone 10)

Claims 1053101, 1053102, 1053103,
1053104, 1032322, 1032321, 1053091,
1053093, 1050557, 1050558, 1054183

Prepared for:
Victory Resources Corporation

Prepared by:
Helgi Sigurgeirson, P.Geo.
February 21, 2018

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Introduction

Location, Access and Physiography

The property is about 30 km southeast of Merritt in south-central British Columbia (Figure 1). It is accessed by taking highway 97C southeast to the Loon Lake Road Exit, which connects to the logging road network which criss-crosses the property. The property is centred at approximately 685000E, 5535000N (Zone 10).

The topography is moderate and is characterized by rolling hills. It ranges in elevation from 1720 m in the southeast part of the property to 1040 m in the Quilchena Creek valley in the northwest corner of the property. Most of the property is covered by second growth forest, and cut blocks at various stages of regrowth are common. Summers are generally hot and dry and snow can be expected from November to March.

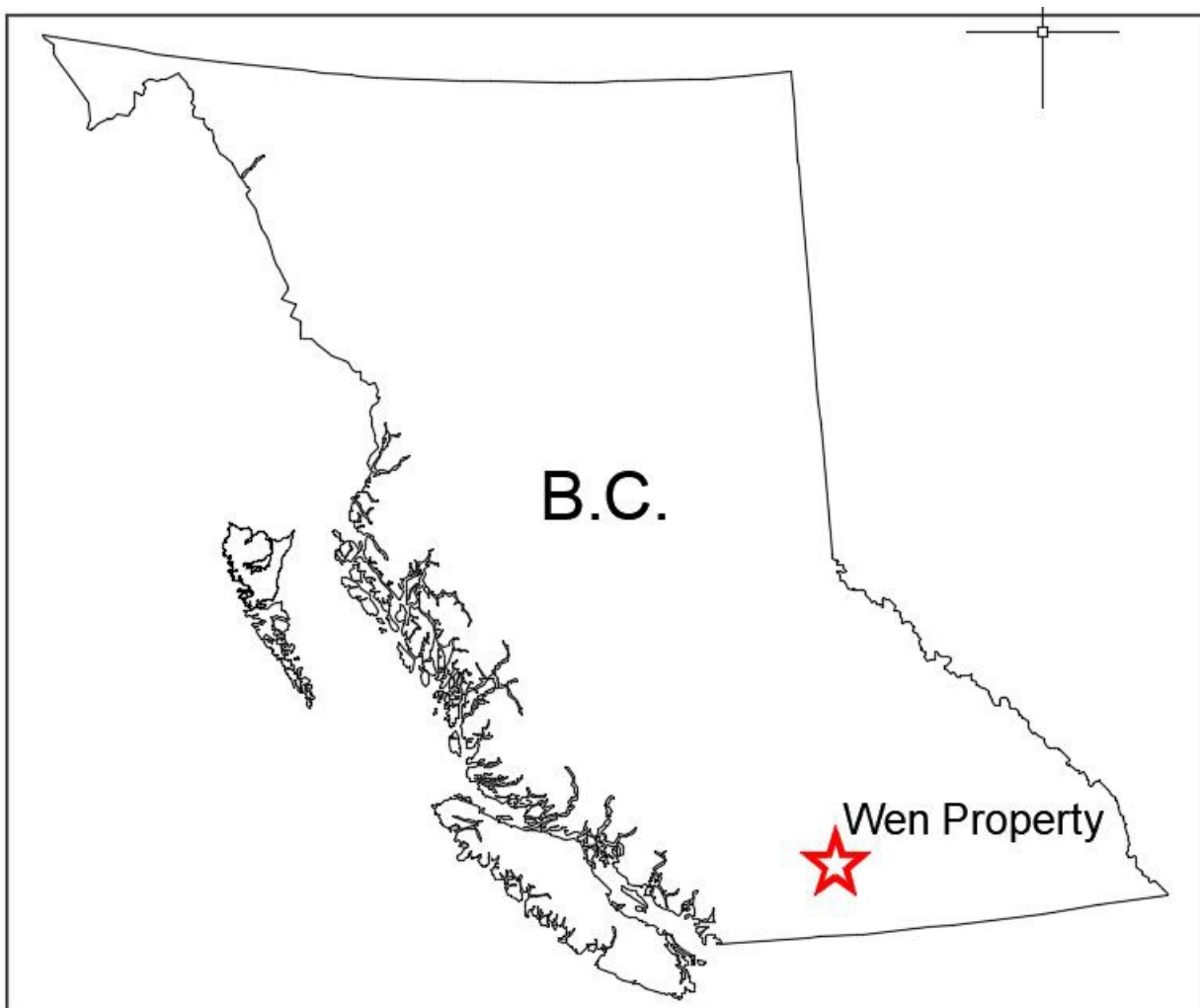


Figure 1 : Location Map

Property Definition

The Wen-Toe Property consists of 11 claims totalling 6300.81 hectares (Figure 2). The claims are 100% held by Victory Resources Corporation. A statement of work was filed (EV#5662850) for the work described in this report on September 2, 2017. Claim details are given in Table 1.

Claim	Good to date	Hectares
1053101	2018/JAN/03	727.8
1053102	2018/JAN/03	685.92
1053103	2018/JAN/03	1102.08
1053104	2018/JAN/03	519.72
1032322	2018/JAN/03	623.83
1032321	2018/JAN/03	644.52
1053091	2018/JAN/03	145.57
1053093	2018/JAN/03	103.97
1050557	2018/JAN/03	478.51
1050558	2018/JAN/03	332.85
1054183	2018/JAN/03	936.04

Table 1: Claim details.

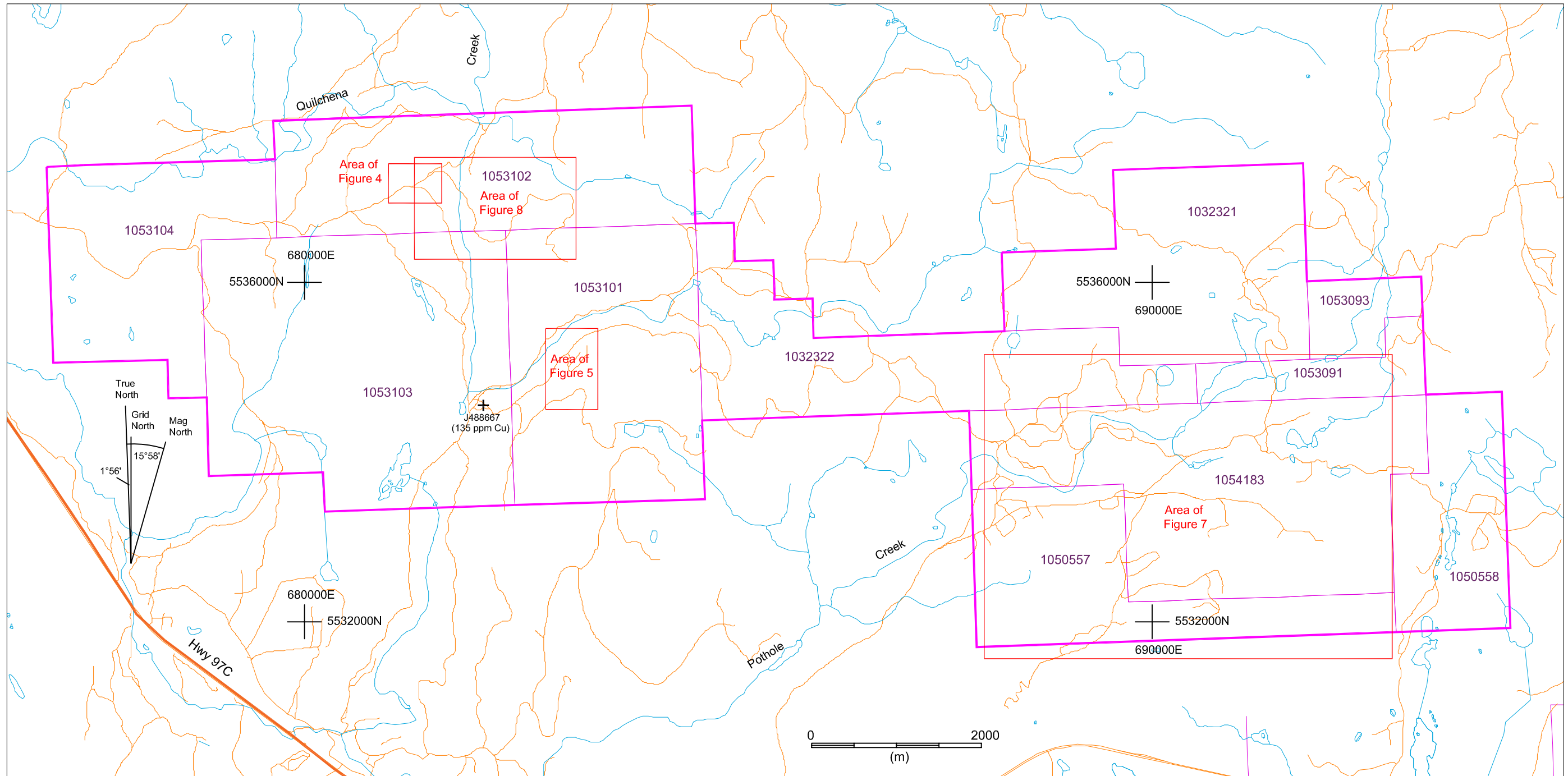


Figure 2: Claim & Index Map

Scale = 1:50 000

Previous Work

A considerable amount of exploration has been done on the property and is summarized on Table 2. However, most of these programs were small and narrowly focused. Reconnaissance mapping was done by Consolidated Skeena Mines Ltd. (Sharp, 1968) over part of the property and limited mapping was done in the Au, Mal and HN-Wen Prospect areas. Consolidated Skeena Ltd. (Sharp, 1968) put in large soil and magnetometer grids in the Mal and Toe areas. Nitracell Canada Ltd. (Kierans, 1972) put in a large soil, magnetometer and IP grid in the HN-Wen area. Significant drill programs were done by Nitracell Canada Ltd. (Kierans, 1972), George Resource Company Ltd. (Verley, 1997) and Victory Resources at the Wen Prospect (Verzosa, 2003; Sookochoff, 2007, 2008 & 2009). The Mal Prospect was mainly drilled by Kerr-Addison Gold Mines Ltd. (alluded to in other reports, but not recorded) and Abaton Resources Ltd. (Tully, 1981). Pyramid Gold Mines reportedly drilled 7 holes at the Au Prospect, but the results are not recorded. Victory Resources drilled 11 holes in the Toe area over several years (Sookochoff, 2008, 2009 & 2011). Limited mapping and petrography were done by Victory Resources in the early part of the 2017 field season (Sigurgeirson, 2018).

Wen-Toe Property Minfiles (Figure 3):

- Toe (092HNE060) – A copper soil anomaly.
- HN-Wen (092HNE058) - A Cu[±]-Au quartz vein and stockwork mineralization.
- Echo (092HNE059) – A number of minor chalcopyrite showings.
- Mal (092HNE002) – A Cu skarn prospect.
- Malachite 7 (092HNE269) – A Cu skarn showing.
- Au-Wen (092HNE144) – Sulphides with (Au [±] Cu) bearing fracture zone.
- Kit (092HNE270) - Minor chalcopyrite and molybdenum bearing shear zone

Work Program Summary

The purpose of the August-September 2017 work program was to:

1. Map and sample the Mal prospect.
2. Lithochemical and petrographic sampling at the Wen Prospect to better characterize the intrusives and alteraatin there.
3. Overburden and rock sampling in the Toe area.
4. Prospect the area of the Echo Minfile.

Six days of fieldwork were done from August 28 to September 2. 13 samples were submitted for geochemical analysis. 18 samples were submitted for lithochemical analysis. 12 overburden samples were submitted for analysis. 3 samples were submitted for petrography. About 8 hectares were mapped at a 1:2500 scale. Approximately 4 additional hectares were mapped at the Wen prospect at a 1:2500 scale. Prospecting was done over a 40 hectare area.

Geological, Geochemical, Petrographic and Prospecting Assessment Report on the Wen-Toe Property 2018-02-21

Year	AR#	Author(s)	Company	Zone	Geological	Geochemical	Geophysical	Drilling	Other
1961	403	Rutherford	Skeena Silver Mines Ltd.	Mal			e.m.		
(1962)		(see AR#449 & 1586)	Kerr-Addison Gold Mines Ltd.	Mal				17? DDHs (1219 m)	Limited trenching
1962	449	Sirola	Kerr-Addison Gold Mines Ltd.	Mal	Prospect area		SP, mag		
(1967)		(EMPR AR 1967)	Marengo Mines	Kit				2 DDHs	60 m trench
1967	1049	Sharp	Consolidated Skeena Mines Ltd.	Mal (Echo), Toe		Soil sampling			
1967	1089	Sharp	Consolidated Skeena Mines Ltd.	Toe		Soil sampling	mag, e.m. & radioactivity		
1968	1586	Sharp	Consolidated Skeena Mines Ltd.	Mal, Toe	Reconnaissance	Soil sampling	Mag		
1968	1703	Caven	Consolidated Skeena Mines Ltd.	Toe			IP		
1968	1718	Boniwell	Consolidated Skeena Mines Ltd.	Mal			IP		
1972	4082	Lewis	Balfour Mines Ltd.	Mal (south)			airborne mag		
1972	4230	Kierans	Nitracell Canada Ltd.	Wen	Prospect area	Soil & rock sampling	IP, mag	5 DDHs (884.7 m)	
(1974)		(see AR#7293)	Pyramid Gold Mines	Au				7? DDHs	Trenching
1979	7293	McGowan	Invex Resources Ltd.	Au		Soil & rock sampling			Trenching
1979	7399	McGowan	Invex Resources Ltd.	Au		Soil sampling			
1980	8453	Tully	Abaton Resources Ltd.	Mal		Rock sampling	VLF, mag		Trenching
1981	9078	Mark	Omineca Resources Ltd.	Mal (south)			e.m.		
1981	9194	Mark	Core Energy Corporation	Mal (Echo)			e.m.		
1981	9590	Tully	Abaton Resources Ltd.	Mal				7 DDHs (616.18 m)	
1983	11241	Quin	Imperial Metals Corporation	Au				2 DDHs (167.8 m)	
1986	16008	Freeze & White	Algo Resources Ltd.	Au	Prospect area	Rock sampling	IP, mag		
1991	20994	Clayton	Minova Incorporated	Toe (south)	Area south of Toe	Soil & rock sampling			
1992	22566	Watson	Laramide Resources Ltd.			Rock sampling			
1992	22305	Heyman	D. A. Heyman	Au		Soil sampling	Mag		
1994	23446	Balon	Fairfield Minerals Ltd	Au		Soil & rock sampling			
1997	24800	Verley	George Resource Company Ltd.	Wen				16 DDHs (1636.8 m)	
1997	24806	Verley	George Resource Company Ltd.	Au		Soil & rock sampling			Trenching
2000	26469	Dahrouge	Commerce Resources Corporation	Au, Mal, Wen	Reconnaissance	Rock sampling			
2001	26605	Reeder & Dahrouge	Commerce Resources Corporation	Toe		Soil & rock sampling			
2003	27039	Verzosa	Lateegra Resources Corporation	Mal, Wen		Soil sampling	VLF, mag	6 DDHs (702.5 m)	
2005		Verzosa	Victory Resources	Au, Mal, Wen, Toe					43-101 Report
2007	28905	Sookochoff	Victory Resources	Wen		MMI			
2007	28924	Sookochoff	Victory Resources	Au		MMI			
2007	29976	Sookochoff	Victory Resources	Toe				1 DDH (160 m)	
2008	30340	Sookochoff	Victory Resources	Toe				1 DDH (283.3 m)	
2008	30405	Sookochoff	Victory Resources	Wen				1 DDH (88.39 m)	
2009	30728	Sookochoff	Victory Resources	Wen				4 DDHs (183.43 m)	
2009	30747	Sookochoff	Victory Resources	Toe				3 DDHs (160 m)	
2010	31189	Sookochoff	Victory Resources	Mal (southwest)					Lineament study
2010	31194	Sookochoff	Victory Resources	Mal (south)					Lineament study
2011	32160	Sookochoff	Victory Resources	Wen				6 DDHs (702.5 m)	
2013	33747	Sookochoff	Victory Resources	Toe					Lineament study
2013	34282	Sookochoff	Victory Resources	Au					Lineament study
2015	35209	Sookochoff	Victory Resources	Connector					Lineament study
2015	35449	Sookochoff	Victory Resources	Mal (south)			IP		
2016	35487	Sookochoff	Victory Resources	Wen			Mag		Lineament study
2016	36193	Sookochoff	Victory Resources	Connector			Mag		Economic evaluation(?)
2018		Sigurgeirson	Victory Resources	Wen, Toe, Mal (south)	Wen Prospect				Prospecting, overburden exam

Table 2: Property History

Regional Geology

The property is located within the Quesnel Terrane, which is composed of Paleozoic and Mesozoic arcs and is an important metallogenic belt hosting numerous porphyry Cu-Au-Mo deposits. The property is within the eastern Belt of the late Triassic Nicola Group, which is composed of basaltic volcanic rocks and fine grained sediments. The Nicola Group rocks are intruded by granodiorites and quartz diorites of the early Jurassic Pennask Batholith (Preto, 1979; Monger, 1989). Major north-south trending faults, such as the Kentucky-Alleyne Fault immediately west of the property, are the dominant structural feature in the area. The metamorphic grade of the Nicola group rocks is commonly prehnite-pumpellyite.

The Dillard Creek Property, about 20 km to the south, hosts an alkalic porphyry system in the same (eastern) belt of the Nicola Group (Mihalynuk & Logan, 2013) as the property. The alkalic porphyry deposits of the Iron Mask Batholith also occur within Nicola Group volcanics, about 75 km to the north (Logan & Mihalynuk, 2006). In addition, Logan et al (2011) consider the Pennask Batholith to be part of the Takomkane/Wildhorse Suite, one of the three main mesozoic magmatic suites that displays Cu Porphyry mineralization. The Brenda Deposit, about 20 km to the east is an example of a porphyry deposit associated with this suite.

Property Geology

Recent mapping by the BC Geological Survey (Mihalynuk et al, 2017) shows the property to be underlain by 5 units (Figure 3), four of which are part of the eastern belt of the Nicola Group. The central part of the property is dominated by augite phyric mafic volcanic rocks, mapped as augite porphyry breccia. Both the Mal and Wen prospects are within this unit. The most widespread unit to the east is the Paradise conglomerate, composed of medium grained pyroxene-phyric mafic volcanic rocks interfingering with conglomerate derived from augite-feldspar-rich mafic volcanic porphyries, and lesser monzonite sourced conglomerate. A toe shaped part of the Pennask Batholith cuts across the eastern part of the property. This appears to be mainly a white, hornblende granodiorite in those exposures on the property seen by the author. The western part of the property is mainly underlain by rocks of the eastern siliciclastic succession, mainly siltstone and sandstone. On the western edge of the property are polymictic volcanic conglomerates and more augite phyric volcanic breccias. The rocks are generally unfoliated. Bedding is commonly west dipping.

Mineralization on the property includes a Au-Cu bearing quartz vein and mineralized shears, as well as Cu bearing skarns. DDH 96-1 at the HN-Wen Prospect included a 6.5 m quartz vein intersect which averaged 16.6 g/t Au, 12.9 g/t Ag and 0.75% Cu (Verley, 1997).

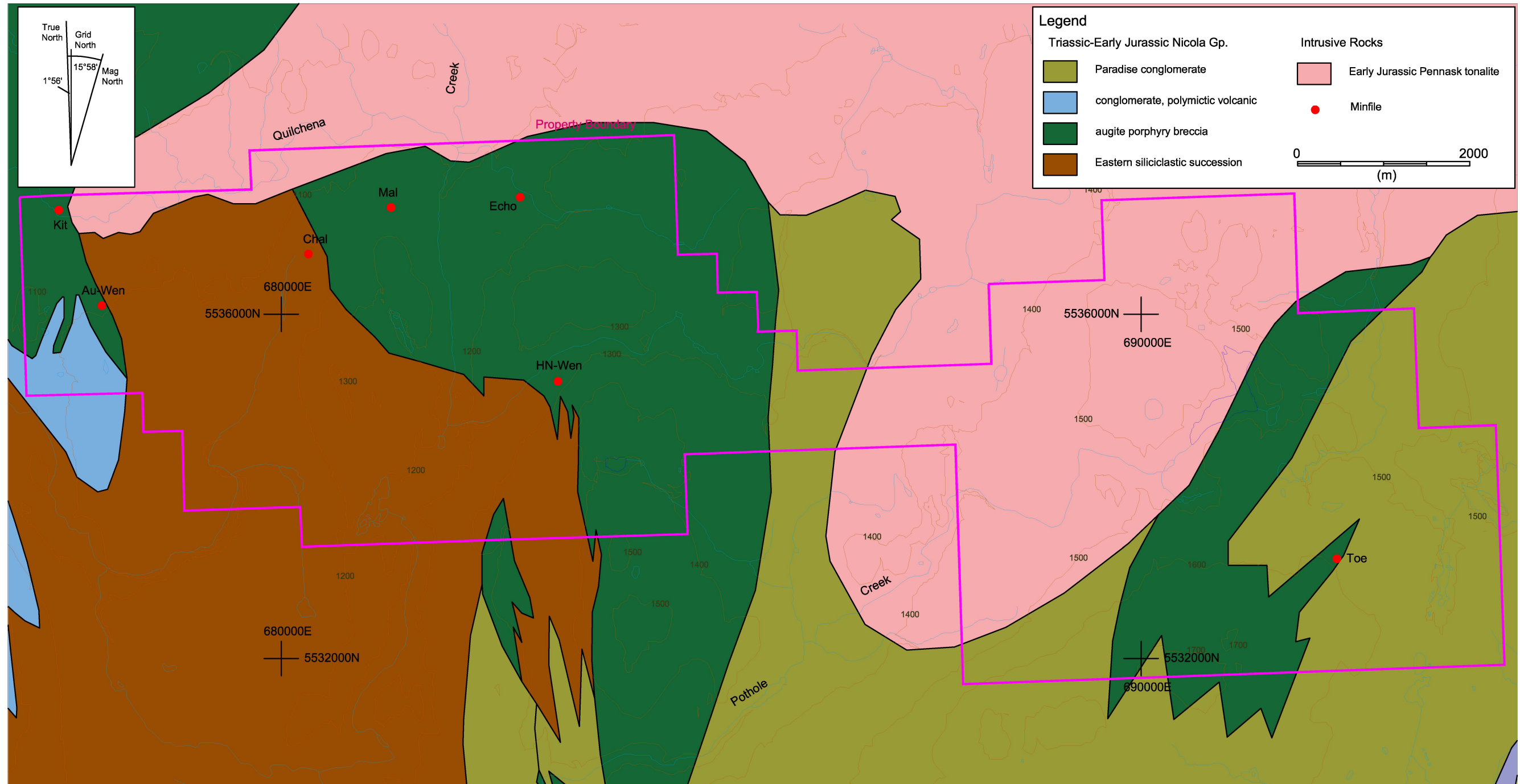


Figure 3: Property Geology Map

Scale = 1:50 000

Geological Mapping

Mal Prospect

The area of the Mal Prospect was mapped at a 1:2500 scale (Figure 4). The purpose of the work was to accurately locate, map and sample the prospect. Epidote dominant skarn containing erratic chalcopyrite mineralization occurs with basalts over a 200 m area. The main showing is a 15 m x 20 m area of subcrop and float mainly composed of massive green epidote with frequent malachite staining. Historical drilling (only approximately located) indicates that there is a contact between the volcanics and sediments a short distance to the west (Verzosa, 2003). Significant trenching exposes more skarn east of the main showing, both to the north and south of the road. About 250 m to the east northeast is an outcrop of diorite or gabbro.

Wen Prospect

More outcrop was mapped at a 1:2500 scale (Figure 5) to the north and south of the area mapped in July 2017 (Sigurgeirson, 2018). The purpose of the mapping and remapping was to determine whether intrusives and other manifestations of porphyry style mineralization occur in the prospect area. Some of the outcrop mapped in July was reclassified with respect to lithology. Fine grained, greenish grey pyroxene-plagioclase gabbros were mapped to the west and northwest of the lower adit, as well as further south. Dark greyish green, very fine grained basalts were mapped to the southeast. Grey green tuffs and lapilli tuffs are found to the west, east and south of the basalts. Black and grey mudstone and siltstone occur to the west of the volcanics. It is expected that there will be further revision of the lithologies as more mapping, petrography and lithogeochemistry is done. For this reason, no contacts have been drawn. Previous drill programs paid little attention to lithology and cast little light on the volcanic-intrusive relationships. Petrography done in this program (see below) and by Sigurgeirson (2018) indicates that fine grained gabbros and a hornblende phyric syenite? occur within the volcanic rocks. Verley (1997) reports quartz feldspar porphyry dikes in the vicinity of the Wen mineralization, though none has been mapped on surface.

A carbonate and lesser epidote matrix breccia with volcanic clasts and sparse chalcopyrite occurs in a southeast trending band in the southern part of the map area. Another hydrothermal breccia was sampled (J488625) in trench float in the north part of the map area. Figure 6 is a photo of this breccia and shows jigsaw fit clasts of variably altered (potassic, sodic? and epidote or actinolite? patches) gabbro with a matrix of quartz and a dark green mineral, along with clots of chalcopyrite. These breccias occur within a poorly defined, southeast trending zone or zones of alteration and spotty mineralization approximately 70 m wide and 650 m long.

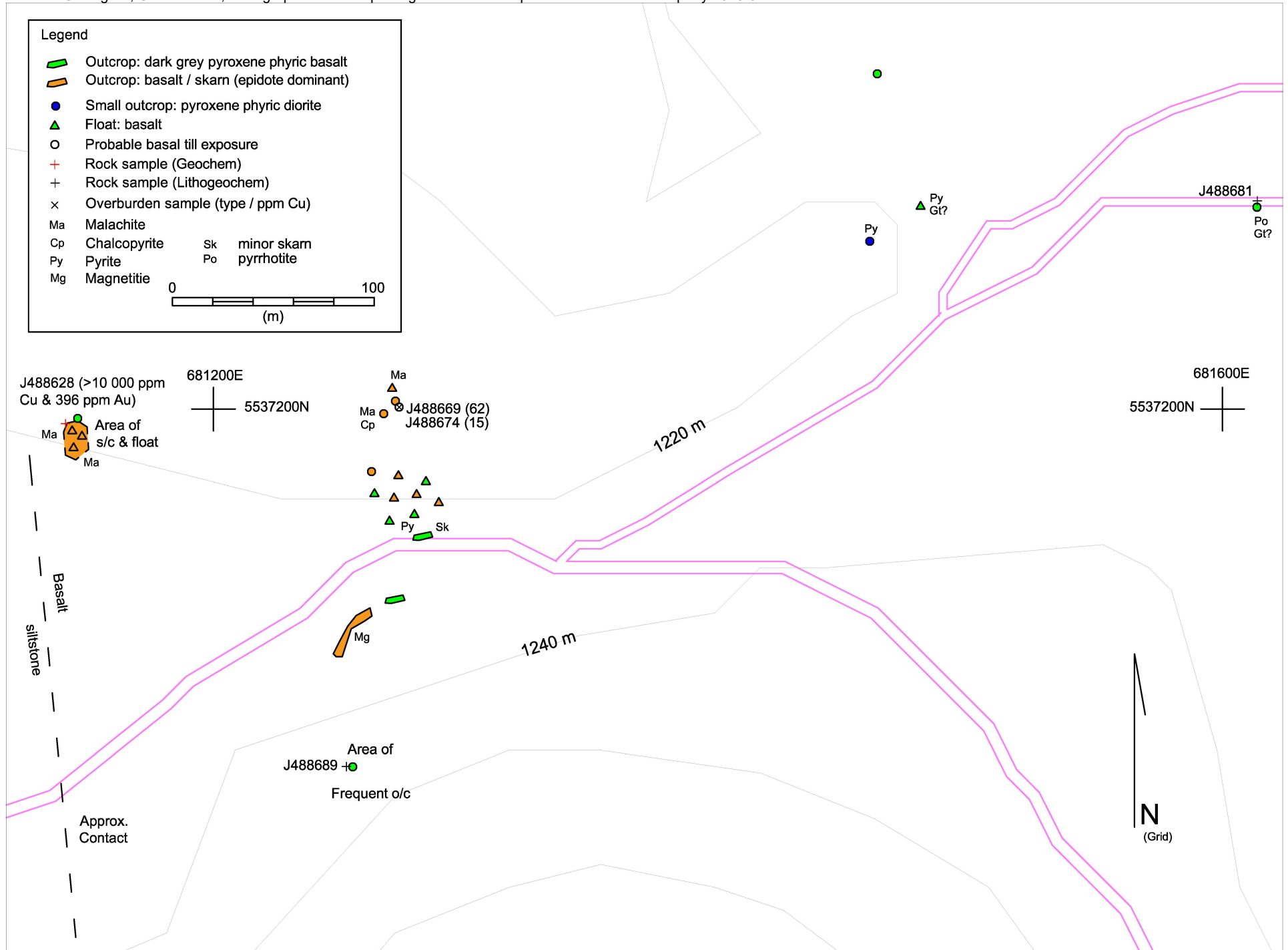


Figure 4: Mal Prospect and SampleMap

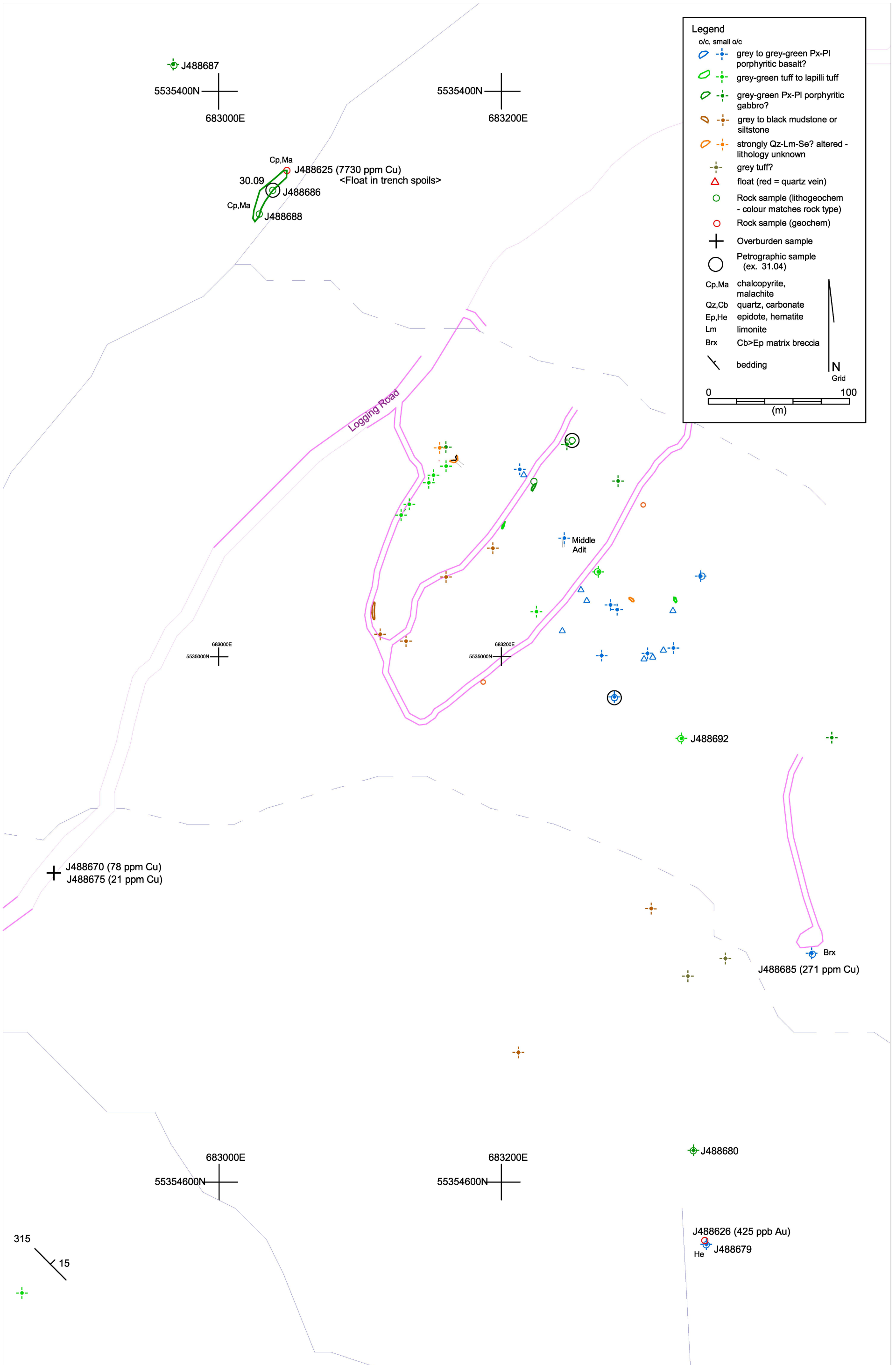


Figure 5: Wen Geology and Rock Sample Locations

Scale = 1:2500



Figure 6: Altered brecciated and mineralized gabbro from the Wen Prospect.

Geochemical Surveys

Lithochemical Sampling

18 samples were collected and submitted for lithochemical analysis. The purpose of the sampling was to determine:

1. whether rocks identified in the field as intrusives were geochemically distinct from the volcanics.
2. how the intrusives compare to rocks hosting alkalic porphyries elsewhere.

Rock samples were collected for lithochemical analysis from float and outcrop at the locations shown on Figures 4, 5, 7 & 8. Samples were crushed to 75% less than 2 mm, 250 g were split off and pulverized to 85% passing 75 microns. The samples were subjected to a sodium peroxide fusion followed by ICP-AES and ICP-MS analysis for major and trace elements. They were then submitted to ore grade borate fusion and xrf analysis for the major elements under reported or not reported by the main analysis (ie. Si and Na). Sample descriptions are given in Table 3. Appendix I contains the assay and QA/QC certificates.

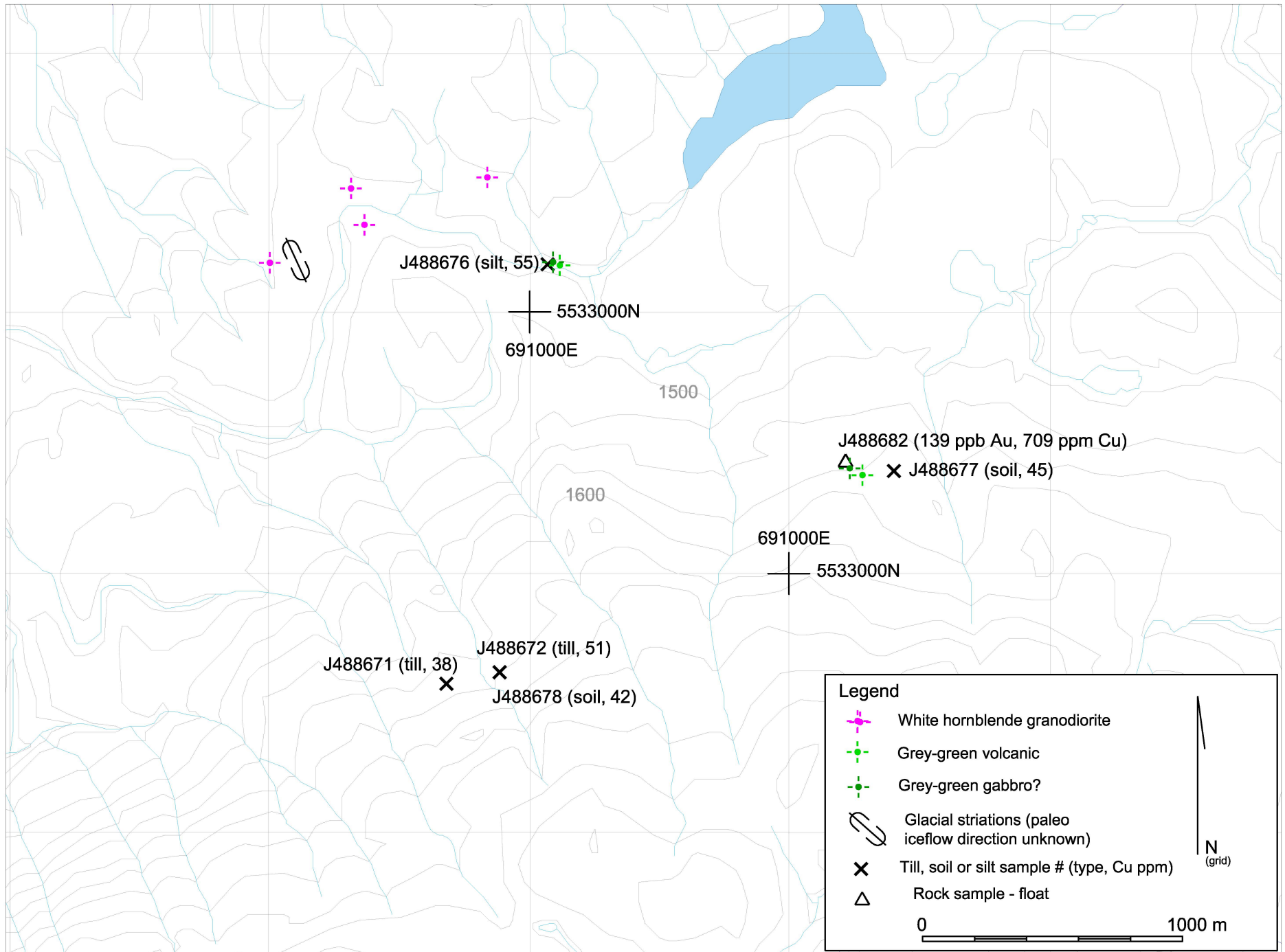


Figure 7: Toe Zone rock and overburden sample location map

Scale = 1:20 000

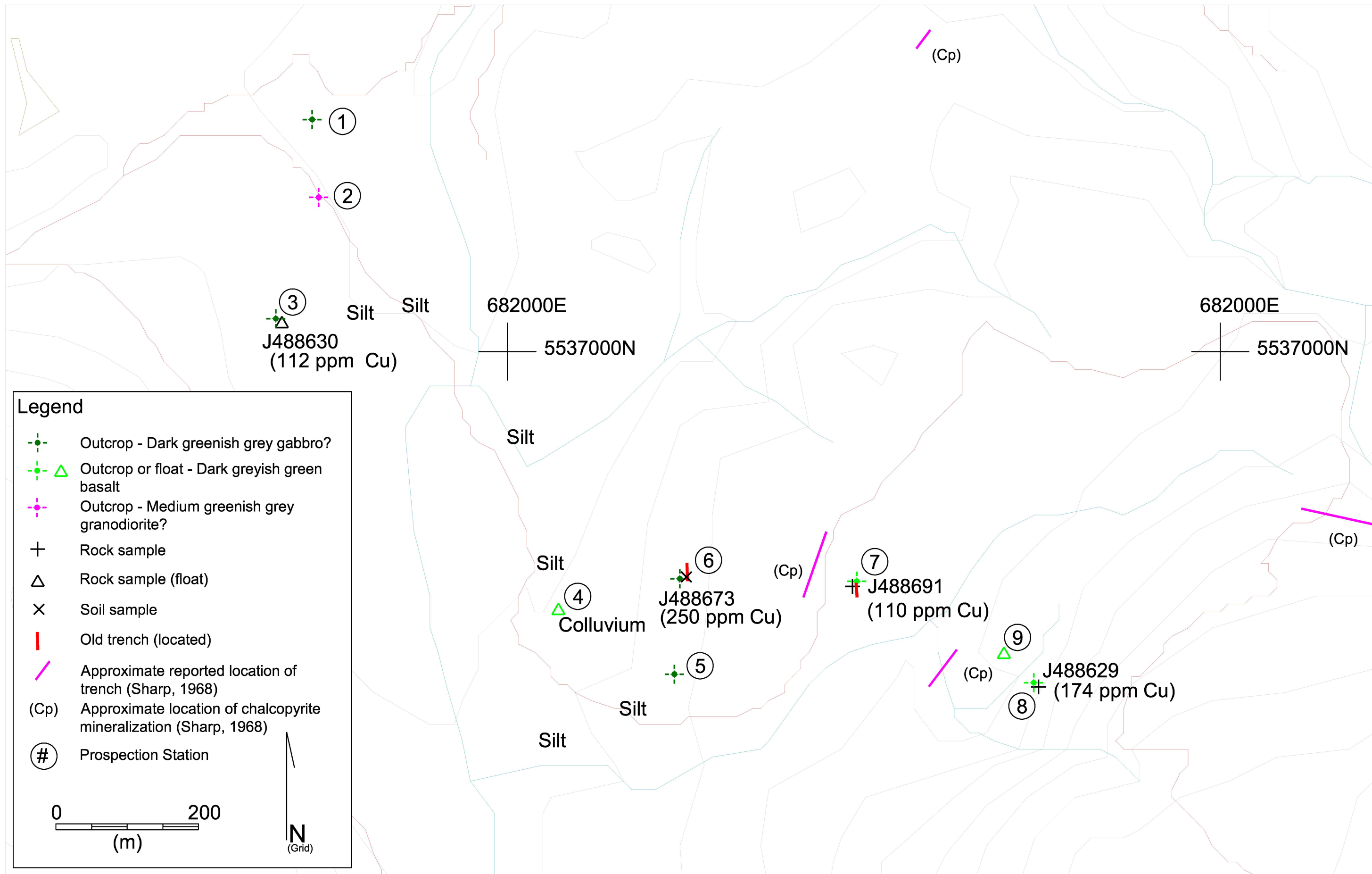


Figure 8: Echo Zone prospecting map

Scale = 1:5000

Sample #	Easting	Northing	Lithology	Description	Zone	Thin section?	Assay type
J488679	683345	5534584	BAS?	Dark grey, fine grained, gabbro? with occasional clast or xenolith. ~15% Px & ~20% Pl. Cb veinlet w specular He.	Wen	No	WR
J488680	683336	5534650	GBR	Dark grey, fine grained, gabbro? with crystalline matrix of Fl>Mf & occasional Px phenocryst (up to 2 mm). ~3% Py.	Wen	No	WR + Geochem
J488681	681617	5537300	BAS	Medium green grey, very fine grained, non-magnetic basalt. Silicified & pyritic (~4%)	Mal	No	WR + Geochem
J488682	691233	5533395	BAS	Dark green grey, fine grained basalt. ~5% anhedral Fl phenocrysts.	Toe	No	WR + Geochem
J488683	683250	5535153	GBR	Medium grey green fine grained gabbro with about 15% Px & 10% Fl phenocrysts	Wen	Yes	WR + Geochem
J488684	690090	5534190	GBR	Dark grey, fine grained gabbro? w about 20% fine Fl & Mf phenocrysts. Weakly brecciated. Trace Py.	Toe	No	WR + Geochem
J488685	683420	5534790	BAS	Clast supported breccia. Dark green grey, very fine grained basalt clasts with an epidote and carbonate matrix. Rare Cp.	Wen	No	WR + Geochem
J488686	683038	5535330	GBR	Medium green grey gabbro with fine grained feldspathic groundmass, ~25% Px (1 mm).	Wen	Yes	WR + Geochem
J488687	682965	5535420	GBR	Dark green, fine grained gabbro with crystalline groundmass of white Fl & greenish black Mf phenocrysts.	Wen	No	WR
J488688	683033	5535310	GBR	Medium green grey gabbro with pale green, very fine grained matrix and 20% Px & 10% Fl phenocrysts.	Wen	No	WR
J488689	681169	5537023	BAS	Dark grey, very fine grained basalt with 10% Px phenocrysts.	Mal	No	WR
J488690	683223	5535124	GBR	Light green gabbro? with pale green finely crystalline groundmass & 10% Px phenocrysts. Ep alteration? Qz-Ep-Cb veinlet.	Wen	No	WR
J488691	682490	5536680	BAS	Dark grey green, very fine grained basalt with trace pyrite.	Echo	No	WR
J488692	683327	5534942	BBX?	Breccia. Dark green, variably porphyritic clasts with an Ep & Qz altered matrix.	Wen	No	WR
J488693	691280	5533370	BAS	Basalt with dark grey, very fine grained matrix & about 25% Fl & Mf phenocrysts (1 mm). Occasional large Px phenocryst (3 mm).	Toe	No	WR
J488694	683268	5535060	BLT	Medium greyish green lapilli tuff with dark green, sand to pebble sized, sub-round, aphanitic clasts (50%) & light green very fine grained matrix.	Wen	No	WR
J488695	683342	5535057	BAS	Dark green grey, very fine grained basalt	Wen	No	WR
J488696	683280	5534971	BAS	Very fine grained, dark greenish grey basalt.	Wen	Yes	WR

Table 3: Lithochemical Sample Descriptions

On a TAS plot (Figure 9) the intrusives mostly fall in the alkaline field and in the silica saturated alkalic field of Lang et al. (1995) (Figure 10). A REE plot (Figure 11) shows the rocks classified as intrusive in the field plotting as a distinct group, with enriched LREE values relative to the basalts. The REE profiles of the intrusives are also very similar to those of the intrusives at Dillard Creek (Mihalynuk & Logan, 2013) and Miner Mountain (Mihalynuk et al, 2013). On a Zr/TiO₂ vs Nb/Y plot, the intrusives generally plot (Figure 12) in a distinct cluster, though the pattern is less clear here. These results indicate that the intrusives are geochemically as well as texturally distinct from the volcanics. J488680 plots as more alkaline and evolved on TAS and trace element discriminant plots. On the REE plot as well it is elevated relative to the other rocks. Spatially it is separate from the bulk of the samples taken in the Wen area and is the second furthest south. J488679 (from the same area as J488680) was also noteworthy in that it was called an intrusive? in the field (though it was transitional texturally), but is in the volcanics field on the REE plot.

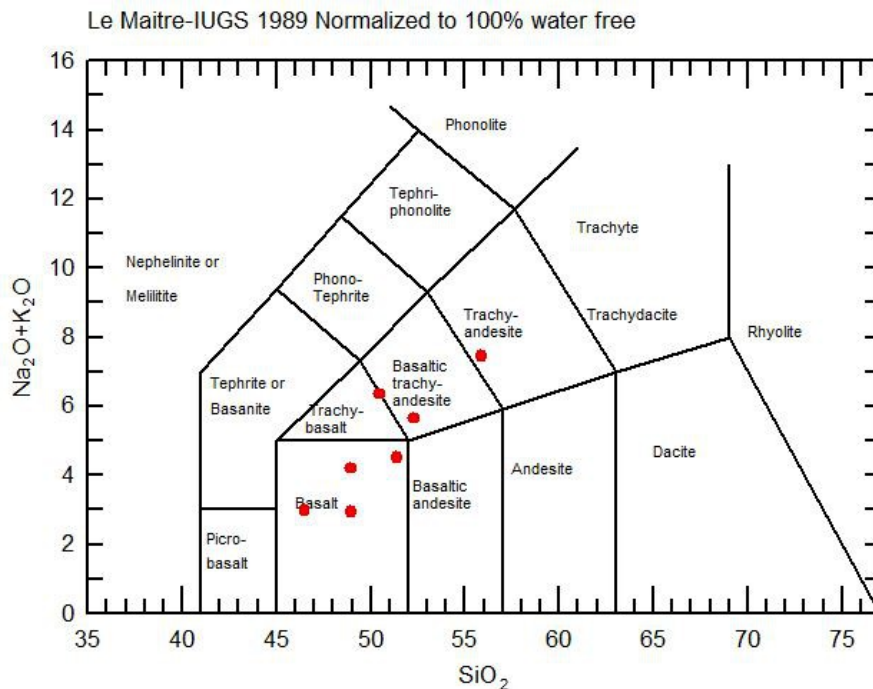


Figure 9: TAS plot of mafic intrusives.

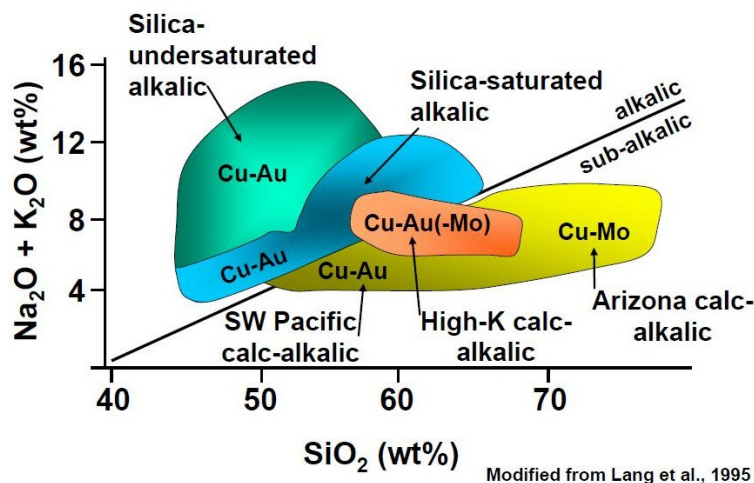


Figure 10: Porphyry Cu-Au-Mo Deposit Classification. Modified from Lang et al., 1995

Sun+McDon. 1989-REEs

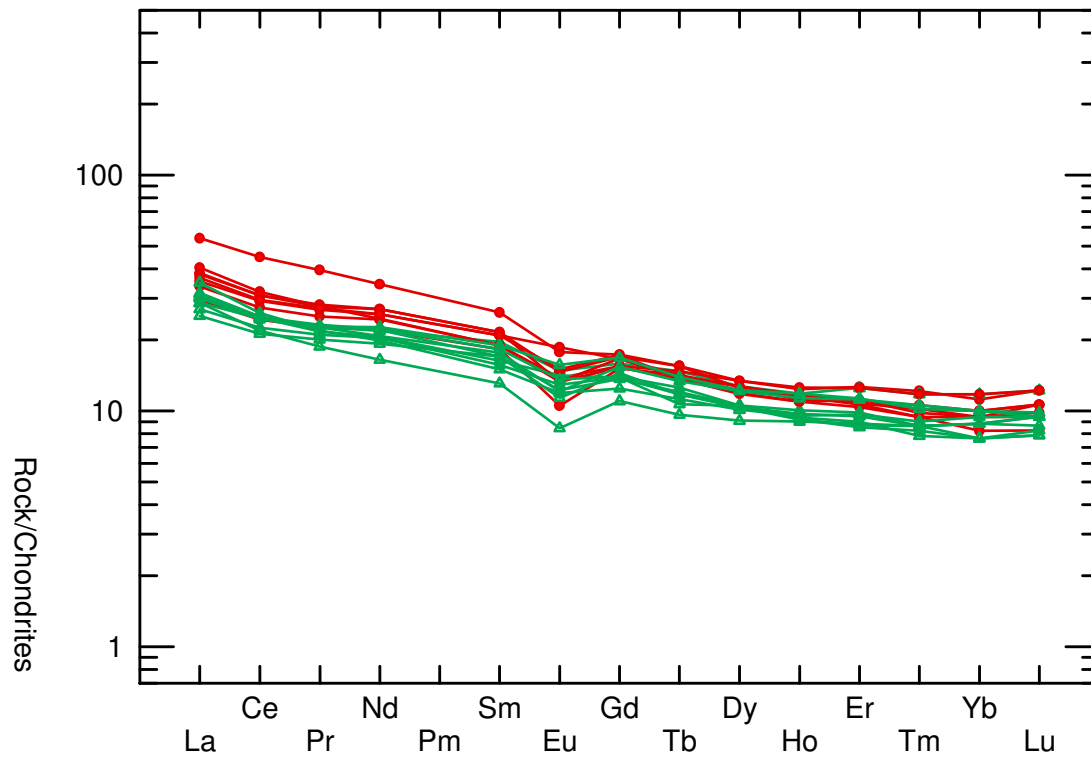


Figure 11: REE plot (intrusives = red circles, volcanics = green triangles)

rock types: Pearce 1996

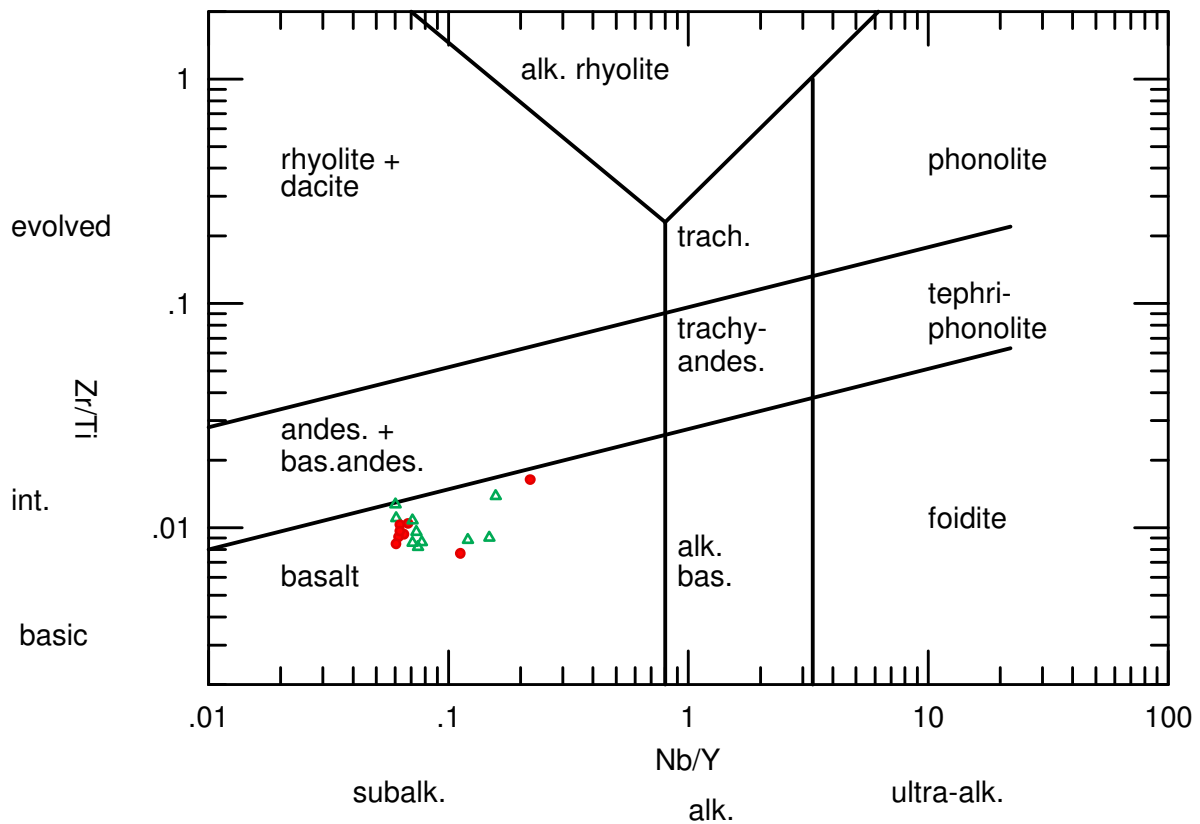


Figure 12: Trace element discriminant plot.

Geochemical Sampling

13 samples were collected and submitted for geochemical analysis. The purpose of the sampling was to determine which types of alteration and lithologies carry significant mineralization. Geochemical sampling was secondary to litho-geochemical sampling during this program. In other words, sampling was not directed to methodically defining mineralized zones, rather it was done as an adjunct to other surveys.

Rock samples were collected from float and outcrop at the locations shown on Figures 4, 5, 7 & 8. Samples were crushed to 75% less than 2 mm, 250 g were split off and pulverized to 85% passing 75 microns. Samples were subjected to fire assay for Au, Pt and Pd with ICP-AES finish. They were also subjected to aqua regia digestion and ICP-AES analysis. Sample descriptions are given in Table 4. Appendix I contains the assay and QA/QC certificates.

Four samples returned anomalous results. Sample J488628 was taken from the main skarn zone at the Mal Prospect. It consisted of massive green epidote with malachite staining and returned over 1% Cu, 396 ppb Au, 53 ppm Ag, 488 ppm Co and 26 ppm Mo. Sample 488625 was from an old trench north of the creek at the Wen Prospect. The sample was taken from trench rubble and was of a hydrothermal breccia with altered gabbro clasts and a siliceous matrix with clots of chalcopyrite. It returned 7730 ppm Cu. Sample J488626 was sampled from the south end of Wen sampling area. It was pyritic and altered basalt (probable) which returned 425 ppb Au and 100 ppm W. Sample J488682 was a float sample taken from the Toe area. It was pyritic basalt that returned 139 ppb Au and 709 ppm Cu.

Overburden Sampling

12 overburden samples were collected and submitted for analysis. The purpose of the sampling was to determine which surficial material(s) carried geochemical anomalies.

Overburden samples of various types were taken at the locations shown on Figure 2, 4, 5, 7 & 8. Basal till samples were screened to -230 mesh and soil or silt samples were screened to -180 mesh. A 25 gram split was then subjected to aqua regia digestion followed by ICP-MS analysis for 49 elements including Au. Sample descriptions are given in Table 5. Appendix I contains the assay and QA/QC certificates. Basal till samples were sieved to -230 mesh to allow direct comparison to the regional till sampling (Jackman, 2010). The highest Cu value obtained in the basal till samples was from J488667. The average value (135 ppm) of this sample and the field duplicate are shown on Figure 2. The 90th percentile for Cu from the regional sampling is 140.10 ppm, therefore the sample is fairly anomalous. It is about 2 kilometers directly down ice from the Mal Prospect.

At two sample sites, a probable basal till was sampled as well as a soil sample from the overlying material (probably derived from supraglacial till). In each case, the basal till was weakly anomalous (J488669 & J488670 = 68 & 78 ppm Cu; 70th percentile regionally = 76.9 ppm Cu), while the soil samples reported low Cu values (J488674 & J488675 = 15 & 721 ppm Cu). This suggests that past soil surveys were likely often sampling supraglacial tills that were geochemically unrelated to the bedrock. The highest value for copper, and the only significant soil sample, was taken from colluvium forming the wall of an old trench in the area of the Echo showing. It returned 250 ppm Cu which is highly anomalous relative to historic soil surveys. This sample was taken from an area that had some reconnaissance mapping and sampling in the 1960's which reported frequent old workings, chalcopyrite, and a soil anomaly. No work has been reported in the area since.

Probable basal till and soil samples taken in the approximate area of historical soil anomalies in the Toe area (Sharp, 1968) did not return anomalous Cu values. These results, together with the observation that the trend of the anomaly is perpendicular to the dominant ice flow direction, suggests that the historical anomaly may be related to nearby bedrock mineralization. Glacial striations were measured to be 145° at one location, which corresponds to the regional ice flow direction given by Bobrowski et al (2002).

Sample #	Easting	Northing		Zone	Assay Type	Au ppb	Cu ppm
J488680	683336	5534650	Dark grey, fine grained, gabbro? with crystalline matrix of Fl>Mf & occasional Px phenocryst (up to 2 mm). ~3% Py.	Wen	WR + Geochem	2	19.4
J488681	681617	5537300	Medium green grey, very fine grained, non-magnetic basalt. Silicified & pyritic (~4%)	Mal	WR + Geochem	27	166
J488682	691233	5533395	Dark green grey, fine grained basalt. ~5% anhedral Fl phenocrysts. Ep & Py veinlets	Toe	WR + Geochem	139	709
J488683	683250	5535153	Medium green grey fine grained gabbro with about 15% Px & 10% Fl phenocrysts	Wen	WR + Geochem	3	175
J488684	690090	5534190	Dark grey, fine grained gabbro? w about 20% fine Fl & Mf phenocrysts. Weakly brecciated. Trace Py.	Toe	WR + Geochem	5	98.6
J488685	683420	5534790	Clast supported breccia. Dark green grey, very fine grained basalt clasts with an Ep and Cb matrix. Rare Cp.	Wen	WR + Geochem	2	271
J488686	683038	5535330	Medium green grey gabbro with fine grained feldspathic groundmass, ~25% Px (1 mm).	Wen	WR + Geochem	4	141
J488625	683055	5535335	Altered & brecciated gabbro. Angular jig-saw fit clasts with feldspathic groundmass and about 10% Px phenocrysts (<=1mm). Patchy white or pink or green alteration (Al-K-Ep or Ac?). Dark grey, hard aphanitic matrix (Qz-Ch or Ac?) with about 1% clots of Cp.	Wen	Geochem	24	7730
J488626	683345	5534584	Fine grained, pale olive mafic rock with pale orange pink patches. Subhedral Fl xstals visible (5%), but can't tell if rock clastic or coherent. Irregular Cb + specular He veinlets common. ~2% Py. Same outcrop as sample J488679	Wen	Geochem	425	124
J488628	681028	5537191	Massive green epidote with malachite staining.	Mal	Geochem	396	>10000
J488629	682745	5536530	Dark greyish green, very fine grained basalt. Trace Py.	Echo	Geochem	9	174
J488630	681675	5537043	Pale grey, very fine grained, hard, limonitic, angular float. 5% Py disseminated and in veinlets.	Echo	Geochem	10	112

Table 4: Geochemical Sample Descriptions

Sample #	Easting	Northing	Description	Zone	Probable type	Au ppb	Cu ppm
J488667	682118	5534551	Diamicton. Light brown sand-silt = pebbles and cobbles. Rounded to sub-angular clasts. Moderately dense. Flat cobbles strewn area. 25 cm depth.	Mal-Wen	basal till	8	142
J488668	682118	5534551	Field duplicate of J488667	Mal-Wen	basal till	5	128
J488669	681192	5537201	Dense diamicton. Light brown sand>silt>clay.Weak fissility. About 50% sub-angular to sub-round polymictic clasts. 130 cm depth.	Mal	basal till	4	62
J488670	682883	5534847	Dense diamicton. Medium brown clay=silt>sand. Clasts = matrix. Sub-round to angular clasts. Mafic intrusive or volcanic > granitoid clasts. 70 cm depth.	Wen	basal till	6	78
J488671	689686	5532560	Dense diamicton. Pale tan-grey silt. Sub-round to sub-angular pebbles and cobbles. Flat area with scattered boulders. 30 cm depth.	Toe	basal till	<1	31
J488672	689921	5532634	Dense diamicton. Medium brown clay=silt=sand. Clast supported. 80 cm depth.	Toe	basal till	4	58
J488673	682251	5536684	Moderately dense diamicton (colluvium). Angular to sub-angular clast supported with matrix of sandy silt. Clasts a fine grained mafic intrusive (some pyritic). 90 cm depth.	Echo	soil	19	250
J488674	681192	5537201	Same pit as J488669. Moderately dense diamicton. Light brownish grey, matrix supported. Sub-round cobbles dominant. 50 cm depth.	Mal	soil	<1	15
J488675	682883	5534847	Same pit as J488670. Loose diamicton. Light tan, matrix supported silt>clay. 20 cm depth.	Wen	soil	2	21
J488676	690069	5534182	Silt sample from 1 m wide, gentle creek. Mainly angular cobbles and boulders of local derivation.	Toe	silt	3	55
J488677	691402	5533382	Light tan matrix supported diamicton. Silt. Frequent sub-round to sub-angular pebbles, cobbles and boulders. 40 cm depth.	Toe	soil	3	45
J488678	689921	5532634	Same pit as J488672. Light tan-grey, dense diamicton. Fewer, smaller clasts than J488672. 30 cm depth.	Toe	soil	3	42

Figure 5: Overburden Sample Descriptions

QA/QC

Due to the relatively small number of samples and the preliminary nature of the surveys, little QA/QC was done. A field duplicate (J488668) of sample J488667 was taken. The values were within 10% which is acceptable. The whole rock sample were analyzed by both ICP and XRF, which allowed the comparison between the methods for the major elements. A comparison of 2 elements used in the discriminant plots above is shown on Table 5. TiO₂ values given by the two methods were within 5%, but more than half the K₂O values were between 5 – 9%. The XRF values were used in the discriminant plots. Standards should be inserted in the future if these analysis methods are used again.

Sample #	K (ICP)	K ₂ O (ICP)	K ₂ O (XRF)	% diff	Ti (ICP)	TiO ₂ (ICP)	TiO ₂ (XRF)	% diff
J488679	4.4	5.3	5.2	1.8	0.42	0.70	0.7	0.09
J488680	2	2.4	2.3	3.4	0.53	0.88	0.87	1.61
J488681	2.8	3.4	3.0	6.8	0.43	0.72	0.7	2.44
J488682	3.7	4.5	4.3	2.8	0.3	0.50	0.5	0.09
J488683	2.6	3.1	2.9	6.0	0.42	0.70	0.7	0.09
J488684	1.5	1.8	1.7	6.0	0.49	0.82	0.81	0.91
J488685	0.4	0.5	0.4	8.9	0.39	0.65	0.65	0.09
J488686	2	2.4	2.3	3.4	0.42	0.70	0.68	2.98
J488687	3.4	4.1	3.8	5.3	0.44	0.73	0.71	3.32
J488688	0.8	1.0	0.9	5.2	0.46	0.77	0.74	3.63
J488689	1.5	1.8	1.6	6.4	0.41	0.68	0.68	0.57
J488690	1.2	1.4	1.3	5.0	0.42	0.70	0.71	-1.33
J488691	1.3	1.6	1.4	7.8	0.47	0.78	0.77	1.80
J488692	1.5	1.8	1.7	4.4	0.5	0.83	0.81	2.93
J488693	2.2	2.7	2.4	6.2	0.36	0.60	0.61	-1.57
J488694	1.7	2.0	1.9	5.3	0.41	0.68	0.67	2.06

Table 6: ICP versus XRF comparison.

Prospecting

A prospecting traverse was made in the area of the Echo Prospect. The purpose of the traverse was to follow up on geological and geochemical reconnaissance done in the 1960's (Sharp, 1968). The traverse passed over a significant area covered by silt, located 2 old trenches and collected 3 rock samples and a soil sample. The prospecting stations are described in Table 7.

The single soil sample collected was highly anomalous for Cu (250 ppm). This together with the reported occurrence of old workings, soil anomalies and chalcopyrite, suggests that more work should be done in this area.

Station	Easting	Northing	Description	Sample
1	681724	5537325	s/c - medium to dark grey Hb? Diorite?	
2	681736	5537216	o/c - medium greensih grey granodiorite. Trace Py.	
3	681675	5537043	o/c – dark grey green Px gabbro.	
3	681675	5537043	Float – very fine grained, limonitic, pale grey felsic tuff?. 5% Py.	J488630
4	682065	5536640	Colluvium – dark grey green, pyritic basalt.	
5	682227	5536550	s/c – dark green grey, fine grained gabbro?	
6	682251	5536684	Trench (float) – dark grey green fine grained gabbro.	
6	682251	5536684	soil sample	J488673
7	682490	5536680	Trench (s/c) – dark grey green, very fine grained basalt.	J488691
8	682745	5536530	o/c – dark grey green , very fine grained basalt? Trace Py	J488629
9	682700	5536575	Excavation? (float) – Basalt. Pyritic.	

Table 7: Prospecting stations (Echo Zone)

Petrography

Three samples were submitted for petrographic examination. The locations of the thin sections are shown on Figure 5. Sample 30.09 corresponds to sample J488686 (Table 3). Sample 31.04 corresponds to sample J488683. Sample 31.071 corresponds to sample J488696. The petrographic report is in Appendix 2.

Two samples identified in the field as fine grained mafic intrusives and one basalt were examined. The basalt was found to be texturally distinct from the intrusives, though possibly related. The mafic intrusives were classified as hypabyssal gabbros. A number of alteration minerals were identified in the samples, including tremolite/actinolite, epidote, k-feldspar, calcite, hematite, pyrite and possible albite. All of these minerals are commonly found in alkalic porphyry deposits.

Conclusions and Recommendations

The results of the 2017 mapping and petrography indicate that fine grained porphyritic gabbros are spatially associated with mineralization, and are themselves altered and mineralized. A quartz-feldspar porphyry (Verley, 1997) and an altered and mineralized hornblende syenite (Sigurgeirson, 2018) have also been reported in drillcore. However, more mapping is needed to aid in determining whether these intrusives are essentially synvolcanic and are simply part of the volcanic pile that was later mineralized, or whether they are part of a later intrusive event that is directly related to the mineralization.

Two types of hydrothermal breccia were identified in float and outcrop in the Wen Prospect area. Both occur within a larger zone of spotty, low grade stockwork mineralization. Tremolite/actinolite, epidote, k-feldspar, calcite, hematite, pyrite and possible albite alteration have been identified in thin section. Taken together, the above factors support the hypothesis that the Wen Prospect mineralization is part of a porphyry system.

Lithochemical plots show the gabbros to be geochemically distinct from the volcanics, though related. A TAS plot puts the intrusives in the alkaline field and in the same field as silica saturated alkalic porphyries.

Overburden sampling suggests that past soil surveys have likely often sampled the veneer of supraglacial till that is found in many places on the property. Therefore the results of these surveys are difficult to interpret without a better understanding of the distribution of the surficial materials.

Limited sampling in the area of the Toe Prospect suggests that the historical soil anomaly may not be significantly transported.

Considerably more mapping, sampling and petrography should be done at Wen Prospect and the surrounding area to better define and characterize the lithology, alteration and mineralization.

Preliminary mapping, sampling and prospecting should be done throughout the property.

Overburden pitting and sampling, utilizing a backhoe, should be done along roads across the property to better characterize the types of surficial material present.

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Statement of Qualifications

I certify the following:

1. I graduated in 1995 from the University of British Columbia with a B.Sc. in the Geological Sciences.
2. I have worked in mining and mineral exploration continuously since graduation.
3. I have worked on VMS, porphyry, epithermal and mesothermal Au vein, anorthosite hosted Ti, nephrite and other exploration programs in Canada, Mexico and China. I have developed and operated 3 dimension stone quarries on the BC coast.
4. I am a professional geoscientist in the Association of Professional Engineers and Geoscientists of British Columbia, and have been a member in good standing (member #28920) since 2004.
5. I carried out the work program described herein and wrote this report.



H. Sigurgeirson, P. Geo

FEBRUARY 21, 2018

Date

This document represents an electronic version of the original hard copy document, sealed, signed and dated by Helgi Sigurgeirson, P. Geo and retained on file. The content of the electronically transmitted document can be confirmed by referring to the original hard copy and filed

Cost Statement

Consultant	Days	Rate	Amount	Total
H. Sigurgeirson, P.Geo.	Fieldwork: Aug. 28 to Sept. 2	\$550.00	6	\$3,300.00
	Travel (half rate)	\$275.00	2	\$550.00
	Report	\$2,800.00	1	\$2,800.00
Subtotal				\$6,650.00
Mileage				
2007 F-150 4x4		\$100.00	9	\$900.00
Expenses				
Accommodations		\$120.00	8	\$960.00
Fuel		\$50.00	9	\$450.00
Food		\$50.00	9	\$450.00
Gear		\$25.00	7	\$175.00
Subtotal				\$2,035.00
Rock Sample Analysis				\$2,200.00
Petrography				\$865.00
TOTAL =				\$12,650.00

Appendix I

Certificate of Analysis VC173019
(ICP MS & AES)

Certificate of Analysis VC173019A
(XRF)

Certificate of Analysis VC173018
(ICP MS)

Appendix II

Petrographic Report



Certificate of Analysis
Work Order : VC173019
[Report File No.: 000027709]

Date: February 13, 2018

To: Helgi Sigurgeirson
COD SGS MINERALS - GEOCHEM VANCOUVER
 Saxifrage Geological Services Ltd.
 47312 Schooner Way
 Pender Island
 BC V0N 2M2

P.O. No.: Victory Resources/Au-Wen 24 Rock Samples
Project No.: -
Samples: 24
Received: Sep 11, 2017
Pages: Page 1 to 13
 (Inclusive of Cover Sheet)

Methods Summary

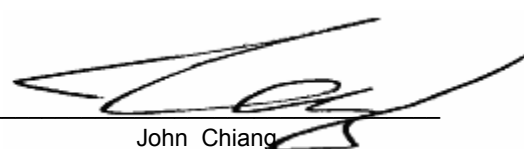
<u>No. Of Samples</u>	<u>Method Code</u>	<u>Description</u>
24	G_LOG02	Pre-preparation processing, sorting, logging, boxing
24	G_WGH79	Weighing of samples and reporting of weights
24	G_PRP89	Weigh, dry,(up to3.0 kg) crush to 75% passing 2 mm, split 250 g, pulverize to
18	GE_IC90A	Sodium Peroxide fusion/ICP-AES finish
18	GE_IC90M	Sodium Peroxide fusion/ICP-MS finish
13	GE_FAI313	@Au, Pt, Pd, FAS, ICP-AES, 30g - 5ml (Clean Pots only)
13	GE_ICP14B	Aqua Regia digestion/ICP-AES package

Storage: Pulp & Reject

REJECT STORAGE : DISPOSE AFTER 30 DAYS
 PULP STORAGE : DISPOSE AFTER 90 DAYS

Comments:

Upon Client's request, this Certificate/Report has been issued in more than one original. Only the first original is a legally binding document and may be used for any legal purpose, including payment.

Certified By : 
 John Chiang
 QC Chemist

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at <http://www.scc.ca/en/search/palcan/sgs>

Report Footer: L.N.R. = Listed not received I.S. = Insufficient Sample
 n.a. = Not applicable -- = No result
 *INF = Composition of this sample makes detection impossible by this method
 M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion
 Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
 Elements marked with the @ symbol (e.g. @Cu) denote assays performed using accredited test methods

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Element Method Det.Lim. Units	WtKg	@Al	@Ba	@Be	@Ca	@Cr	@Cu	@Fe
	G_WGH79	GE_ICM90A	GE_ICM90A	GE_ICM90A	GE_ICM90A	GE_ICM90A	GE_ICM90A	GE_ICM90A
	0.01	0.01	10	5	0.1	10	10	0.01
	kg	%	ppm	ppm	%	ppm	ppm	%
J488679	0.917	7.58	2460	<5	5.9	20	50	7.45
J488680	0.461	9.10	1090	<5	4.5	<10	20	5.71
J488681	0.790	8.09	1000	<5	7.3	140	160	8.82
J488682	1.010	7.74	1780	<5	7.5	20	690	9.96
J488683	1.389	8.01	1760	<5	8.2	20	180	7.80
J488684	1.146	9.96	930	<5	7.1	30	100	6.21
J488685	1.635	6.82	250	<5	7.6	180	280	8.31
J488686	1.292	7.55	1200	<5	7.1	30	140	7.43
J488687	0.942	8.26	1790	<5	7.0	30	190	8.02
J488688	1.137	7.73	150	<5	10.2	30	90	8.17
J488689	1.036	6.51	860	<5	8.8	310	80	8.13
J488690	1.773	8.26	640	<5	10.8	20	110	7.50
J488691	1.190	7.77	1200	<5	6.1	280	110	7.04
J488692	0.524	7.09	610	<5	7.8	100	90	8.69
J488693	0.546	9.54	1170	<5	5.4	30	290	5.18
J488694	1.203	5.92	840	<5	9.8	290	40	7.86
J488695	1.445	6.59	790	<5	7.1	220	110	7.84
J488696	0.950	6.21	1770	<5	7.5	380	50	7.84
J488625	0.186	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488626	1.858	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488627	0.759	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488628	0.994	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488629	0.946	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488630	0.286	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
*Rep J488688		7.89	150	<5	10.7	30	90	8.16
*Std OREAS624		4.16	1080	<5	1.5	20	>10000	16.5
*Blk BLANK		<0.01	<10	<5	<0.1	<10	<10	<0.01

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Element Method Det.Lim. Units	@K	@Li	@Mg	@Mn	@Ni	@P	@Sc	Si
	GE_ICM90A 0.1 %	GE_ICM90A 10 ppm	GE_ICM90A 0.01 %	GE_ICM90A 10 ppm	GE_ICM90A 5 ppm	GE_ICM90A 0.01 %	GE_ICM90A 5 ppm	GE_ICM90A 0.1 %
J488679	4.4	20	2.43	1040	24	0.24	27	21.7
J488680	2.0	30	2.23	1090	<5	0.12	20	26.2
J488681	2.8	<10	1.31	2340	50	0.17	38	22.9
J488682	3.7	<10	2.41	1360	11	0.12	17	23.0
J488683	2.6	20	3.05	1430	12	0.22	34	21.8
J488684	1.5	<10	2.87	1960	16	0.19	45	24.0
J488685	0.4	10	4.23	1610	39	0.17	39	23.6
J488686	2.0	<10	2.91	1410	16	0.20	34	23.4
J488687	3.4	<10	3.33	1560	10	0.25	37	23.7
J488688	0.8	<10	3.19	1910	8	0.22	38	22.4
J488689	1.5	20	5.55	1540	81	0.16	41	23.0
J488690	1.2	10	2.89	1590	14	0.23	35	20.6
J488691	1.3	20	5.87	1270	51	0.13	43	23.7
J488692	1.5	<10	3.57	1410	31	0.17	43	22.4
J488693	2.2	<10	2.78	1400	15	0.18	34	25.9
J488694	1.7	<10	4.44	1650	51	0.16	41	20.7
J488695	1.8	20	5.17	1360	35	0.17	40	23.1
J488696	2.3	<10	4.27	1220	41	0.15	41	23.1
J488625	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488626	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488627	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488628	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488629	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488630	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
*Rep J488688	0.8	<10	3.18	1900	10	0.22	39	23.0
*Std OREAS624	1.0	10	1.32	670	13	0.05	7	19.7
*Blk BLANK	<0.1	<10	<0.01	<10	<5	<0.01	<5	<0.1

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Element Method Det.Lim. Units	@Sr	@Ti	@V	@Zn	@Ag	@As	@Bi	@Cd
	GE_ICM90A 10 ppm	GE_ICM90A 0.01 %	GE_ICM90A 5 ppm	GE_ICM90A 5 ppm	GE_ICM90A 1 ppm	GE_ICM90A 5 ppm	GE_ICM90A 0.1 ppm	GE_ICM90A 0.2 ppm
J488679	430	0.42	362	99	<1	<5	<0.1	<0.2
J488680	560	0.53	230	93	<1	<5	<0.1	<0.2
J488681	580	0.43	320	122	<1	10	0.3	0.4
J488682	380	0.30	277	53	<1	<5	0.7	<0.2
J488683	1200	0.42	380	74	<1	<5	<0.1	<0.2
J488684	540	0.49	388	99	<1	<5	0.1	<0.2
J488685	480	0.39	325	91	<1	<5	<0.1	<0.2
J488686	540	0.42	368	65	<1	6	<0.1	<0.2
J488687	1480	0.44	367	105	<1	6	<0.1	<0.2
J488688	970	0.46	454	76	<1	13	<0.1	<0.2
J488689	1110	0.41	321	108	<1	<5	<0.1	<0.2
J488690	2260	0.42	390	70	<1	<5	0.1	<0.2
J488691	730	0.47	323	99	5	<5	<0.1	<0.2
J488692	630	0.50	366	78	<1	<5	<0.1	<0.2
J488693	570	0.36	331	104	<1	<5	<0.1	<0.2
J488694	610	0.41	305	71	<1	<5	<0.1	<0.2
J488695	560	0.39	302	83	<1	<5	<0.1	<0.2
J488696	470	0.36	266	71	<1	<5	<0.1	<0.2
J488625	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488626	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488627	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488628	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488629	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488630	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
*Rep J488688	1000	0.46	459	75	<1	13	<0.1	<0.2
*Std OREAS624	40	0.15	34	>10000	44	114	22.2	125
*Blk BLANK	<10	<0.01	<5	<5	<1	<5	<0.1	<0.2

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Element Method Det.Lim. Units	@Ce	@Co	@Cs	@Dy	@Er	@Eu	@Ga	@Gd
	GE_ICM90A	GE_ICM90A	GE_ICM90A	GE_ICM90A	GE_ICM90A	GE_ICM90A	GE_ICM90A	GE_ICM90A
	0.1	0.5	0.1	0.05	0.05	0.05	1	0.05
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
J488679	14.9	45.0	1.8	3.09	1.76	0.61	18	3.11
J488680	27.5	14.7	1.4	3.41	2.09	1.03	21	3.56
J488681	15.2	44.2	3.5	3.23	2.07	0.86	20	3.26
J488682	13.4	14.7	0.3	2.31	1.46	0.49	26	2.26
J488683	18.9	27.8	1.9	3.18	1.78	0.85	20	3.49
J488684	19.6	20.7	1.3	3.40	2.07	0.80	22	3.18
J488685	15.2	39.6	0.6	2.63	1.44	0.82	17	2.84
J488686	16.8	28.8	0.4	3.03	1.72	0.77	19	3.14
J488687	18.9	33.5	1.9	3.22	1.82	0.77	18	3.43
J488688	17.9	30.0	0.4	3.23	1.83	1.08	27	3.41
J488689	13.0	39.7	11.2	2.68	1.63	0.71	15	2.81
J488690	18.1	31.1	3.5	3.00	1.84	0.87	22	3.55
J488691	15.0	35.0	0.8	3.08	1.85	0.70	16	3.16
J488692	15.1	37.0	1.0	3.11	1.87	0.91	17	3.46
J488693	15.9	17.0	0.9	2.57	1.60	0.69	21	2.56
J488694	13.8	36.9	1.7	2.67	1.49	0.75	16	2.85
J488695	15.3	35.7	2.1	2.68	1.41	0.79	16	2.87
J488696	15.4	36.2	1.4	2.64	1.57	0.66	13	2.97
J488625	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488626	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488627	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488628	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488629	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488630	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
*Rep J488688	17.9	28.8	0.4	3.00	1.81	1.07	26	3.45
*Std OREAS624	33.9	279	1.2	2.98	1.75	1.30	24	3.33
*Blk BLANK	<0.1	<0.5	<0.1	<0.05	<0.05	<0.05	<1	<0.05

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Element Method Det.Lim. Units	@Ge	@Hf	@Ho	@In	@La	@Lu	@Mo	@Nb
	GE_ICM90A 1 ppm	GE_ICM90A 1 ppm	GE_ICM90A 0.05 ppm	GE_ICM90A 0.2 ppm	GE_ICM90A 0.1 ppm	GE_ICM90A 0.05 ppm	GE_ICM90A 2 ppm	GE_ICM90A 1 ppm
J488679	1	2	0.65	<0.2	7.0	0.21	<2	1
J488680	1	2	0.70	<0.2	12.8	0.31	<2	4
J488681	2	2	0.67	<0.2	7.2	0.31	5	1
J488682	3	2	0.51	0.3	6.8	0.24	<2	2
J488683	2	1	0.65	<0.2	9.1	0.27	2	1
J488684	2	1	0.71	<0.2	9.6	0.31	<2	2
J488685	2	1	0.52	<0.2	7.1	0.20	<2	1
J488686	3	1	0.62	<0.2	8.0	0.25	<2	1
J488687	2	1	0.63	<0.2	9.0	0.27	<2	1
J488688	4	1	0.66	<0.2	8.4	0.24	<2	1
J488689	3	1	0.57	<0.2	6.0	0.24	<2	2
J488690	4	1	0.62	<0.2	8.7	0.27	<2	1
J488691	2	2	0.64	<0.2	7.2	0.25	2	1
J488692	2	1	0.67	<0.2	6.8	0.24	<2	2
J488693	2	2	0.54	<0.2	8.3	0.24	<2	1
J488694	2	1	0.53	<0.2	6.4	0.21	<2	1
J488695	2	1	0.52	<0.2	7.4	0.20	<2	1
J488696	2	1	0.55	<0.2	7.5	0.22	<2	1
J488625	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488626	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488627	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488628	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488629	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488630	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
*Rep J488688	4	1	0.64	<0.2	8.3	0.25	<2	1
*Std OREAS624	1	3	0.62	3.8	17.6	0.29	18	4
*Blk BLANK	<1	<1	<0.05	<0.2	<0.1	<0.05	<2	<1

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Element Method Det.Lim. Units	@Nd	@Pb	@Pr	@Rb	@Sb	@Sm	@Sn	@Ta
	GE_ICM90A 0.1 ppm	GE_ICM90A 5 ppm	GE_ICM90A 0.05 ppm	GE_ICM90A 0.2 ppm	GE_ICM90A 0.1 ppm	GE_ICM90A 0.1 ppm	GE_ICM90A 1 ppm	GE_ICM90A 0.5 ppm
J488679	10.3	<5	2.15	101	0.8	2.8	<1	<0.5
J488680	16.1	<5	3.76	47.8	0.5	4.0	<1	<0.5
J488681	10.2	14	2.17	61.5	7.2	3.0	<1	<0.5
J488682	7.7	<5	1.78	42.8	3.0	2.0	1	<0.5
J488683	12.6	7	2.63	54.4	1.0	3.3	<1	<0.5
J488684	11.5	6	2.64	30.7	0.3	2.9	<1	<0.5
J488685	9.6	8	2.06	8.6	0.5	2.5	<1	<0.5
J488686	11.4	9	2.39	32.1	0.7	2.9	<1	<0.5
J488687	12.6	5	2.68	113	0.3	3.3	<1	<0.5
J488688	12.0	11	2.55	14.9	1.2	3.2	<1	<0.5
J488689	9.0	6	1.91	43.7	2.9	2.6	<1	<0.5
J488690	12.0	11	2.59	30.6	2.4	3.2	3	<0.5
J488691	9.7	7	2.15	22.6	1.2	2.7	<1	<0.5
J488692	10.6	7	2.16	34.5	1.2	2.9	<1	<0.5
J488693	9.3	6	2.08	44.8	0.1	2.3	<1	<0.5
J488694	9.5	5	2.00	49.1	1.4	2.4	<1	<0.5
J488695	10.4	5	2.20	48.6	0.4	2.8	<1	<0.5
J488696	10.3	5	2.16	50.9	0.5	2.6	<1	<0.5
J488625	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488626	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488627	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488628	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488629	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488630	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
*Rep J488688	12.3	11	2.50	14.7	1.2	3.2	<1	<0.5
*Std OREAS624	15.4	6200	4.04	34.3	69.7	3.6	15	<0.5
*Blk BLANK	<0.1	<5	<0.05	<0.2	<0.1	<0.1	<1	<0.5

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Element Method Det.Lim. Units	@Tb	@Th	@Tl	@Tm	@U	@W	@Y	@Yb
	GE_ICM90A	GE_ICM90A	GE_ICM90A	GE_ICM90A	GE_ICM90A	GE_ICM90A	GE_ICM90A	GE_ICM90A
	0.05	0.1	0.5	0.05	0.05	1	0.5	0.1
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
J488679	0.53	1.8	0.5	0.24	0.72	28	14.7	1.4
J488680	0.58	2.3	<0.5	0.31	1.09	<1	18.2	1.9
J488681	0.55	1.5	0.8	0.30	1.21	6	16.5	2.0
J488682	0.36	1.3	<0.5	0.22	0.97	<1	12.7	1.5
J488683	0.58	1.9	<0.5	0.26	1.02	1	15.9	1.7
J488684	0.55	1.1	<0.5	0.30	0.53	<1	17.8	2.0
J488685	0.44	1.5	<0.5	0.22	0.75	<1	13.6	1.3
J488686	0.51	1.8	<0.5	0.24	0.90	<1	15.3	1.6
J488687	0.53	1.9	<0.5	0.27	1.16	<1	16.1	1.7
J488688	0.52	1.8	<0.5	0.26	1.00	<1	16.5	1.6
J488689	0.45	1.2	<0.5	0.22	0.71	<1	13.5	1.5
J488690	0.51	1.9	<0.5	0.25	1.22	2	15.9	1.6
J488691	0.50	1.2	<0.5	0.27	0.63	1	16.6	1.7
J488692	0.52	1.3	<0.5	0.26	0.60	<1	16.6	1.7
J488693	0.42	1.3	<0.5	0.23	0.74	<1	14.1	1.6
J488694	0.40	1.3	<0.5	0.20	0.69	<1	13.4	1.3
J488695	0.47	1.6	<0.5	0.21	0.77	<1	12.9	1.3
J488696	0.44	1.5	<0.5	0.22	0.42	<1	14.1	1.5
J488625	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488626	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488627	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488628	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488629	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488630	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
*Rep J488688	0.52	1.8	<0.5	0.25	0.97	<1	16.0	1.6
*Std OREAS624	0.49	4.1	1.1	0.30	1.27	5	16.0	1.9
*Blk BLANK	<0.05	<0.1	<0.5	<0.05	<0.05	<1	<0.5	<0.1

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Element Method Det.Lim. Units	@Zr	Au@	@Ag	@Al	@As	@Ba	@Be	@Bi
	GE_ICM90A 0.5 ppm	GE_FAI313 1 ppb	GE_ICP14B 2 ppm	GE_ICP14B 0.01 %	GE_ICP14B 3 ppm	GE_ICP14B 5 ppm	GE_ICP14B 0.5 ppm	GE_ICP14B 5 ppm
J488679	43.8	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488680	85.4	2	<2	2.30	7	145	0.8	<5
J488681	46.3	27	<2	3.28	15	45	<0.5	<5
J488682	41.5	139	<2	0.84	4	49	<0.5	<5
J488683	43.2	3	<2	2.82	4	71	<0.5	<5
J488684	37.3	5	<2	3.27	<3	83	<0.5	<5
J488685	37.3	2	<2	1.61	3	45	<0.5	<5
J488686	38.1	4	<2	1.25	<3	40	<0.5	<5
J488687	38.7	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488688	37.6	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488689	36.9	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488690	41.1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488691	58.7	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488692	42.9	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488693	39.5	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488694	33.0	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488695	33.1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488696	30.3	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488625	N.A.	24	12	1.61	<3	32	<0.5	<5
J488626	N.A.	425	<2	1.15	3	58	<0.5	<5
J488627	N.A.	<1	<2	1.47	<3	36	<0.5	<5
J488628	N.A.	396	53	1.48	13	21	<0.5	<5
J488629	N.A.	9	<2	1.98	<3	52	<0.5	<5
J488630	N.A.	10	<2	3.82	7	171	<0.5	<5
*Rep J488683			<2	2.84	5	72	<0.5	<5
*Std OREAS502B			<2	1.88	19	301	<0.5	<5
*Blk BLANK			<2	<0.01	<3	<5	<0.5	<5
*Rep J488688	40.4							
*Std OREAS624	102							
*Blk BLANK	<0.5							
*Rep J488629		10						
*Std OREAS151B		60						
*Blk BLANK		<1						

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Element Method Det.Lim. Units	@Ca	@Cd	@Co	@Cr	@Cu	@Fe	@Hg	@K
	GE_ICP14B	GE_ICP14B	GE_ICP14B	GE_ICP14B	GE_ICP14B	GE_ICP14B	GE_ICP14B	GE_ICP14B
	0.01 %	1 ppm	1 ppm	1 ppm	0.5 ppm	0.01 %	1 ppm	0.01 %
J488679	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488680	2.52	3	11	8	19.4	4.15	<1	0.14
J488681	2.95	6	43	59	166	6.59	<1	0.14
J488682	1.29	3	13	7	709	4.69	<1	0.13
J488683	4.18	4	22	21	175	5.15	<1	0.13
J488684	2.64	2	11	17	98.6	2.58	<1	0.38
J488685	2.55	3	18	71	271	3.85	<1	0.08
J488686	2.46	3	13	14	141	3.75	<1	0.07
J488687	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488688	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488689	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488690	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488691	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488692	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488693	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488694	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488695	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488696	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488625	1.59	4	16	21	7730	5.22	<1	0.05
J488626	7.64	4	15	24	124	4.10	<1	0.15
J488627	1.66	3	21	33	13.3	4.37	<1	0.03
J488628	2.25	11	488	18	>10000	9.14	<1	0.03
J488629	2.14	2	20	86	174	2.60	<1	0.12
J488630	2.66	3	20	53	112	4.01	<1	0.33
*Rep J488683	4.20	4	22	21	174	5.00	<1	0.13
*Std OREAS502B	1.14	4	18	80	7660	5.09	<1	0.99
*Blk BLANK	<0.01	<1	<1	<1	<0.5	<0.01	<1	<0.01

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Element Method Det.Lim. Units	@La	@Li	@Mg	@Mn	@Mo	@Na	@Ni	@P
	GE_ICP14B	GE_ICP14B	GE_ICP14B	GE_ICP14B	GE_ICP14B	GE_ICP14B	GE_ICP14B	GE_ICP14B
	0.5 ppm	1 ppm	0.01 %	2 ppm	1 ppm	0.01 %	1 ppm	0.01 %
J488679	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488680	4.1	25	1.23	661	<1	0.16	4	0.12
J488681	2.3	6	0.32	521	2	0.18	50	0.16
J488682	<0.5	1	0.28	218	<1	0.04	11	0.12
J488683	2.4	23	2.55	817	<1	0.03	16	0.23
J488684	4.1	8	1.00	570	<1	0.40	9	0.19
J488685	1.4	9	1.74	587	<1	0.12	23	0.17
J488686	2.1	6	1.12	412	<1	0.05	12	0.21
J488687	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488688	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488689	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488690	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488691	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488692	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488693	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488694	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488695	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488696	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488625	2.1	8	1.72	638	<1	0.04	11	0.15
J488626	1.8	8	1.14	838	1	0.03	12	0.23
J488627	3.9	5	1.52	581	<1	0.09	25	0.17
J488628	<0.5	2	0.82	369	26	<0.01	66	0.10
J488629	1.1	5	1.05	329	<1	0.25	25	0.12
J488630	2.8	6	0.65	232	1	0.51	22	0.18
*Rep J488683	1.9	23	2.58	810	<1	0.03	16	0.22
*Std OREAS502B	25.8	32	1.28	389	217	0.13	35	0.10
*Blk BLANK	<0.5	<1	<0.01	<2	<1	<0.01	<1	<0.01

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Element Method Det.Lim. Units	@Pb	@S	@Sb	@Sc	@Sn	@Sr	@Ti	@V
	GE_ICP14B	GE_ICP14B	GE_ICP14B	GE_ICP14B	GE_ICP14B	GE_ICP14B	GE_ICP14B	GE_ICP14B
	2	0.01	5	0.5	10	0.5	0.01	1
	ppm	%	ppm	ppm	ppm	ppm	%	ppm
J488679	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488680	3	0.59	<5	7.3	<10	51.8	0.24	129
J488681	6	4.11	<5	7.5	<10	164	0.18	122
J488682	<2	2.16	<5	1.6	<10	57.9	0.15	64
J488683	<2	0.06	<5	13.2	<10	315	0.24	185
J488684	<2	0.04	<5	8.5	<10	149	0.20	157
J488685	<2	0.03	<5	6.1	<10	72.7	0.22	110
J488686	2	<0.01	<5	4.8	<10	129	0.22	136
J488687	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488688	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488689	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488690	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488691	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488692	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488693	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488694	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488695	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488696	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488625	<2	0.40	<5	10.3	<10	74.4	0.13	132
J488626	<2	0.02	<5	13.9	<10	111	0.14	174
J488627	<2	<0.01	<5	5.6	<10	69.5	0.33	126
J488628	6	4.60	<5	3.6	<10	191	0.15	68
J488629	<2	0.33	<5	7.4	<10	132	0.23	95
J488630	4	1.46	<5	6.1	<10	160	0.23	119
*Rep J488683	<2	0.06	<5	13.3	<10	314	0.23	184
*Std OREAS502B	21	0.94	<5	6.5	<10	65.3	0.33	115
*Blk BLANK	<2	<0.01	<5	<0.5	<10	<0.5	<0.01	<1

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Element Method Det.Lim. Units	@W	@Y	@Zn	@Zr
	GE_ICP14B	GE_ICP14B	GE_ICP14B	GE_ICP14B
	10	0.5	1	0.5
	ppm	ppm	ppm	ppm
J488679	N.A.	N.A.	N.A.	N.A.
J488680	<10	7.5	74	16.4
J488681	<10	6.8	49	5.5
J488682	<10	4.3	9	4.8
J488683	<10	6.0	54	7.9
J488684	<10	6.2	38	3.2
J488685	<10	5.1	40	9.6
J488686	<10	4.8	24	7.6
J488687	N.A.	N.A.	N.A.	N.A.
J488688	N.A.	N.A.	N.A.	N.A.
J488689	N.A.	N.A.	N.A.	N.A.
J488690	N.A.	N.A.	N.A.	N.A.
J488691	N.A.	N.A.	N.A.	N.A.
J488692	N.A.	N.A.	N.A.	N.A.
J488693	N.A.	N.A.	N.A.	N.A.
J488694	N.A.	N.A.	N.A.	N.A.
J488695	N.A.	N.A.	N.A.	N.A.
J488696	N.A.	N.A.	N.A.	N.A.
J488625	<10	4.3	57	4.6
J488626	100	10.2	44	5.2
J488627	<10	9.5	58	24.1
J488628	<10	3.3	31	8.1
J488629	<10	6.3	23	3.5
J488630	<10	7.9	23	4.2
*Rep J488683	<10	5.9	54	7.9
*Std OREAS502B	<10	14.4	122	12.5
*Blk BLANK	<10	<0.5	<1	<0.5

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Certificate of Analysis
Work Order : VC173019A
[Report File No.: 000027708]

Date: February 13, 2018

To: Helgi Sigurgeirson
COD SGS MINERALS - GEOCHEM VANCOUVER
Saxifrage Geological Services Ltd.
47312 Schooner Way
Pender Island
BC V0N 2M2

P.O. No.: Victory Resources/Au-Wen 24 Rock Samples
Project No.: -
Samples: 24
Received: Jan 3, 2018
Pages: Page 1 to 3
(Inclusive of Cover Sheet)

Methods Summary

<u>No. Of Samples</u>	<u>Method Code</u>	<u>Description</u>
18	G_LOG02	Pre-preparation processing, sorting, logging, boxing
18	GO_XRF76V	Ore grade Borate fusion, XRF

Storage: Pulp & Reject

REJECT STORAGE : DISPOSE AFTER 30 DAYS
PULP STORAGE : DISPOSE AFTER 90 DAYS

Comments:

Upon Client's request, this Certificate/Report has been issued in more than one original. Only the first original is a legally binding document and may be used for any legal purpose, including payment.

Certified By :

John Chiang
QC Chemist

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at <http://www.scc.ca/en/search/palcan/sgs>

Report Footer: L.N.R. = Listed not received I.S. = Insufficient Sample
n.a. = Not applicable -- = No result
*INF = Composition of this sample makes detection impossible by this method
M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion
Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
Elements marked with the @ symbol (e.g. @Cu) denote assays performed using accredited test methods

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Element Method Det.Lim. Units	@LOI	@SiO2	@Al2O3	@Fe2O3	@MgO	@CaO	@K2O	@Na2O
	GO_XRF76V	GO_XRF76V	GO_XRF76V	GO_XRF76V	GO_XRF76V	GO_XRF76V	GO_XRF76V	GO_XRF76V
	-10.000	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	%	%	%	%	%	%	%	%
J488679	7.38	45.9	14.5	10.5	4.14	8.10	5.16	2.61
J488680	2.67	53.5	16.9	8.06	3.58	6.16	2.29	4.83
J488681	4.36	48.5	15.6	12.3	2.16	10.5	3.04	1.62
J488682	2.66	47.3	14.7	13.9	3.82	10.5	4.27	1.17
J488683	5.77	45.5	15.1	11.1	5.22	11.8	2.86	1.03
J488684	1.27	50.3	18.8	8.79	4.85	10.1	1.65	2.77
J488685	2.81	49.7	12.9	11.6	7.08	10.9	0.42	3.60
J488686	2.94	50.3	14.4	10.6	4.96	10.2	2.29	3.14
J488687	1.57	49.1	15.2	11.1	5.59	9.75	3.78	2.40
J488688	2.80	47.2	14.5	11.5	5.37	14.7	0.89	1.94
J488689	1.70	48.2	12.2	11.3	9.24	12.7	1.64	1.74
J488690	6.89	42.9	15.5	10.7	4.85	15.2	1.34	1.41
J488691	2.97	49.3	14.5	9.83	9.81	8.34	1.39	2.62
J488692	2.74	48.4	13.6	12.1	5.99	11.4	1.69	2.90
J488693	1.72	55.2	18.1	7.29	4.45	7.52	2.41	2.91
J488694	5.66	45.5	11.4	11.1	7.46	14.2	1.89	2.68
J488695	1.82	49.8	12.6	11.2	8.66	10.1	2.00	2.93
J488696	2.95	50.2	11.8	11.1	7.30	10.9	2.67	2.96
J488625	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488626	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488627	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488628	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488629	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488630	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
*Rep J488679	7.34	45.9	14.5	10.5	4.17	8.11	5.20	2.65
*Std SY4	4.56	49.7	20.8	6.25	0.56	8.02	1.66	7.20
*Blk BLANK	N.A.	0.02	<0.01	0.01	<0.01	<0.01	<0.01	<0.01

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Element Method Det.Lim. Units	@TiO2	@MnO	@P2O5	@Cr2O3	@V2O5	Sum
	GO_XRF76V	GO_XRF76V	GO_XRF76V	GO_XRF76V	GO_XRF76V	GO_XRF76V
	0.01	0.01	0.01	0.01	0.01	0
	%	%	%	%	%	%
J488679	0.70	0.14	0.53	0.01	0.06	99.6
J488680	0.87	0.14	0.25	<0.01	0.05	99.4
J488681	0.70	0.30	0.34	0.02	0.05	99.4
J488682	0.50	0.17	0.26	<0.01	0.04	99.3
J488683	0.70	0.18	0.50	0.01	0.06	99.7
J488684	0.81	0.25	0.41	<0.01	0.08	100.1
J488685	0.65	0.20	0.39	0.03	0.05	100.3
J488686	0.68	0.18	0.47	<0.01	0.06	100.2
J488687	0.71	0.19	0.53	0.01	0.06	100.0
J488688	0.74	0.25	0.49	<0.01	0.08	100.5
J488689	0.68	0.20	0.36	0.05	0.05	100.0
J488690	0.71	0.20	0.53	<0.01	0.07	100.3
J488691	0.77	0.16	0.30	0.04	0.05	100.0
J488692	0.81	0.18	0.38	0.02	0.07	100.3
J488693	0.61	0.18	0.40	<0.01	0.06	100.9
J488694	0.67	0.21	0.37	0.05	0.05	101.2
J488695	0.64	0.18	0.40	0.04	0.05	100.4
J488696	0.59	0.15	0.37	0.06	0.05	101.1
J488625	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488626	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488627	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488628	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488629	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
J488630	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
*Rep J488679	0.71	0.13	0.53	<0.01	0.08	99.8
*Std SY4	0.28	0.11	0.13	<0.01	<0.01	99.2
*Blk BLANK	<0.01	<0.01	<0.01	<0.01	<0.01	N.A.

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Certificate of Analysis
Work Order : VC173018
[Report File No.: 000027710]

Date: February 13, 2018

To: Helgi Sigurgeirson
COD SGS MINERALS - GEOCHEM VANCOUVER
 Saxifrage Geological Services Ltd.
 47312 Schooner Way
 Pender Island
 BC V0N 2M2

P.O. No.: Victory Resources/Au-Wen 12 Soil Samples
Project No.: -
Samples: 12
Received: Sep 11, 2017
Pages: Page 1 to 8
 (Inclusive of Cover Sheet)

Methods Summary

<u>No. Of Samples</u>	<u>Method Code</u>	<u>Description</u>
12	G_LOG02	Pre-preparation processing, sorting, logging, boxing
12	G_WGH79	Weighing of samples and reporting of weights
12	G_DRY10	Dry samples <3.0 kg, 105°C
12	GE_ARM133_VA	Aqua Regia Digest 25g-300ml, ICPMS (Vancouver)

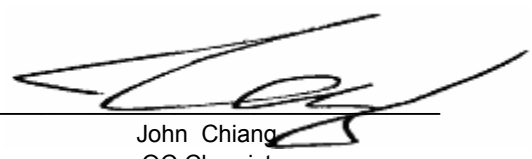
Storage: Pulp & Reject

REJECT STORAGE : DISPOSE AFTER 30 DAYS
 PULP STORAGE : DISPOSE AFTER 90 DAYS

Comments:

Upon Client's request, this Certificate/Report has been issued in more than one original. Only the first original is a legally binding document and may be used for any legal purpose, including payment. Preparation of samples was performed off site

Certified By : _____



John Chiang
 QC Chemist

SGS Minerals Services Geochemistry Vancouver conforms to the requirements of ISO/IEC 17025 for specific tests as listed on their scope of accreditation which can be found at <http://www.scc.ca/en/search/palcan/sgs>

Report Footer: L.N.R. = Listed not received I.S. = Insufficient Sample
 n.a. = Not applicable -- = No result
 *INF = Composition of this sample makes detection impossible by this method
 M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion
 Methods marked with an asterisk (e.g. *NAA08V) were subcontracted
 Elements marked with the @ symbol (e.g. @Cu) denote assays performed using accredited test methods

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Element Method Det.Lim. Units	WtKg	Ag	As	Au	Ba	Be	Bi	Cd
	G_WGH79	GE_ARM133	GE_ARM133	GE_ARM133	GE_ARM133	GE_ARM133	GE_ARM133	GE_ARM133
	0.01	0.02	0.5	1	0.5	0.02	0.01	0.02
	kg	ppm	ppm	ppb	ppm	ppm	ppm	ppm
J488667	2.309	0.17	10.0	8	210	0.58	0.19	0.13
J488668	2.311	0.18	6.8	5	189	0.58	0.15	0.10
J488669	2.223	0.13	4.3	4	237	0.48	0.14	0.09
J488670	1.827	0.13	4.8	6	243	0.50	0.27	0.06
J488671	1.817	0.03	2.7	<1	183	0.29	0.12	0.04
J488672	1.574	<0.02	3.6	4	184	0.40	0.11	0.04
J488673	0.781	0.17	6.6	19	69.3	0.31	0.13	0.14
J488674	0.763	0.04	1.3	<1	102	0.24	0.07	0.14
J488675	0.555	0.09	1.6	2	134	0.24	0.10	0.04
J488676	1.065	0.23	1.2	3	170	0.22	0.06	0.07
J488677	0.469	<0.02	2.2	3	87.1	0.39	0.11	0.04
J488678	0.891	<0.02	2.1	3	124	0.32	0.07	0.03
*Rep J488677		<0.02	2.5	5	91.4	0.44	0.11	0.05
*Blk BLANK		<0.02	<0.5	<1	<0.5	<0.02	<0.01	<0.02
*Std OREASH1		0.84	1.3	12	46.1	0.17	6.04	0.84

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Element	Ce	Co	Cs	Cu	Dy	Er	Eu	Ga
Method	GE_ARM133	GE_ARM133	GE_ARM133	GE_ARM133	GE_ARM133	GE_ARM133	GE_ARM133	GE_ARM133
Det.Lim.	0.05	0.1	0.01	1	0.01	0.01	0.01	0.05
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
J488667	22.2	16.9	4.97	142	2.65	1.57	0.89	8.19
J488668	19.8	15.4	4.44	128	2.55	1.52	0.84	7.57
J488669	26.1	10.5	2.00	62	2.54	1.56	0.93	7.12
J488670	23.6	13.2	2.77	78	2.35	1.43	0.84	7.26
J488671	20.0	10.2	1.92	31	1.28	0.76	0.46	6.05
J488672	22.6	9.4	1.91	58	2.30	1.42	0.79	6.00
J488673	11.5	28.7	2.57	250	2.00	1.28	0.71	7.51
J488674	11.9	7.3	1.23	15	0.74	0.43	0.27	4.21
J488675	17.3	6.4	1.16	21	1.11	0.67	0.38	4.70
J488676	12.9	8.6	1.80	55	1.43	0.90	0.51	4.86
J488677	10.00	8.2	1.24	45	0.73	0.42	0.23	7.53
J488678	19.0	7.0	1.35	42	1.53	0.93	0.56	4.90
*Rep J488677	10.6	8.7	1.31	47	0.78	0.45	0.25	7.78
*Blk BLANK	<0.05	<0.1	<0.01	<1	<0.01	<0.01	<0.01	<0.05
*Std OREASH1	45.8	2.1	0.53	27	1.02	0.47	0.26	10.5

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Element Method Det.Lim. Units	Gd	Hf	Hg	Ho	In	La	Li	Lu
	GE_ARM133	GE_ARM133	GE_ARM133	GE_ARM133	GE_ARM133	GE_ARM133	GE_ARM133	GE_ARM133
	0.01	0.01	0.02	0.01	0.01	0.05	0.01	0.02
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
J488667	2.93	0.11	<0.02	0.51	0.03	12.8	20.1	0.19
J488668	2.75	0.10	<0.02	0.48	0.02	11.9	17.7	0.19
J488669	3.02	0.18	0.03	0.49	0.02	15.5	12.1	0.21
J488670	2.71	0.17	0.06	0.45	0.02	14.4	14.8	0.19
J488671	1.43	0.08	<0.02	0.24	0.02	8.45	18.2	0.10
J488672	2.61	0.06	<0.02	0.45	0.02	13.1	11.9	0.19
J488673	2.24	0.08	<0.02	0.40	0.02	7.15	15.1	0.17
J488674	0.85	0.13	<0.02	0.14	0.01	5.52	7.31	0.05
J488675	1.24	0.13	<0.02	0.21	0.01	7.14	12.7	0.09
J488676	1.62	0.04	0.03	0.28	0.01	7.02	11.1	0.13
J488677	0.80	0.13	<0.02	0.13	0.02	4.29	10.3	0.05
J488678	1.79	0.05	0.03	0.30	0.01	9.79	10.6	0.12
*Rep J488677	0.87	0.13	<0.02	0.15	0.02	4.48	11.0	0.06
*Blk BLANK	<0.01	<0.01	<0.02	<0.01	<0.01	<0.05	<0.01	<0.02
*Std OREASH1	1.76	1.78	0.14	0.18	0.01	25.1	1.53	0.05

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Element	Mn	Mo	Nb	Nd	Ni	Pb	Pr	Rb
Method	GE_ARM133	GE_ARM133	GE_ARM133	GE_ARM133	GE_ARM133	GE_ARM133	GE_ARM133	GE_ARM133
Det.Lim.	0.5	0.02	0.02	0.05	0.5	0.2	0.01	0.05
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
J488667	663	0.67	0.60	13.8	39.5	8.0	3.32	35.1
J488668	629	0.62	0.69	12.9	35.1	5.2	3.07	31.4
J488669	473	0.82	0.69	15.5	22.9	4.5	3.85	11.1
J488670	554	1.27	0.58	14.2	28.9	4.6	3.50	15.4
J488671	386	0.75	0.90	8.00	19.1	4.4	2.05	16.1
J488672	402	3.46	0.76	12.8	30.8	4.1	3.17	9.32
J488673	644	1.44	0.34	8.80	36.2	5.0	1.97	3.25
J488674	151	0.30	0.83	4.98	8.7	3.1	1.30	13.2
J488675	220	0.35	0.84	6.74	13.0	2.9	1.77	9.57
J488676	766	0.56	0.61	7.65	10.9	2.5	1.85	7.25
J488677	191	0.71	0.67	4.19	9.3	4.6	1.07	6.37
J488678	266	0.45	0.86	9.35	11.4	3.7	2.35	7.45
*Rep J488677	202	0.73	0.72	4.41	10.3	4.8	1.16	6.74
*Blk BLANK	<0.5	<0.02	<0.02	<0.05	<0.5	<0.2	<0.01	<0.05
*Std OREASH1	31.1	4.73	0.04	16.4	9.3	16.4	4.80	5.90

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Element Method Det.Lim. Units	Re	Sb	Sc	Se	Sm	Sn	Sr	Ta
	GE_ARM133	GE_ARM133	GE_ARM133	GE_ARM133	GE_ARM133	GE_ARM133	GE_ARM133	GE_ARM133
	0.01	0.02	0.1	0.5	0.02	0.05	0.1	0.01
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
J488667	<0.01	0.67	11.2	0.5	2.69	0.60	63.7	<0.01
J488668	<0.01	0.47	10.3	<0.5	2.50	0.49	59.9	<0.01
J488669	<0.01	0.48	8.3	<0.5	2.96	0.54	65.9	<0.01
J488670	<0.01	0.66	9.3	<0.5	2.64	0.50	75.4	<0.01
J488671	<0.01	0.37	4.8	<0.5	1.48	0.52	55.3	<0.01
J488672	<0.01	0.40	7.1	<0.5	2.45	0.46	50.4	<0.01
J488673	<0.01	0.67	11.7	0.6	1.90	0.33	89.9	<0.01
J488674	<0.01	0.17	2.7	<0.5	0.89	0.40	35.5	<0.01
J488675	<0.01	0.27	4.0	<0.5	1.27	0.43	49.7	<0.01
J488676	<0.01	0.14	4.5	0.5	1.49	0.28	48.1	<0.01
J488677	<0.01	0.13	3.3	<0.5	0.79	0.51	19.2	<0.01
J488678	<0.01	0.27	4.4	<0.5	1.77	0.37	35.3	<0.01
*Rep J488677	<0.01	0.14	3.6	<0.5	0.85	0.52	20.7	<0.01
*Blk BLANK	<0.01	<0.02	<0.1	<0.5	<0.02	<0.05	<0.1	<0.01
*Std OREASH1	<0.01	3.20	1.7	1.4	2.61	6.72	5.5	<0.01

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Element Method Det.Lim. Units	Tb	Te	Th	Tl	U	W	Y	Yb
	GE_ARM133	GE_ARM133	GE_ARM133	GE_ARM133	GE_ARM133	GE_ARM133	GE_ARM133	GE_ARM133
	0.005	0.05	0.01	0.01	0.01	1	0.02	0.01
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
J488667	0.424	0.06	2.92	0.21	0.91	1	13.6	1.30
J488668	0.411	<0.05	2.58	0.19	0.85	1	12.9	1.29
J488669	0.418	0.14	3.53	0.10	0.73	1	14.1	1.34
J488670	0.385	0.13	3.23	0.11	0.91	3	12.1	1.22
J488671	0.206	<0.05	2.21	0.06	0.72	2	6.31	0.67
J488672	0.366	<0.05	2.89	0.09	1.01	2	12.7	1.22
J488673	0.317	0.15	1.28	0.05	0.50	4	11.4	1.10
J488674	0.124	<0.05	1.57	0.05	0.40	<1	3.67	0.39
J488675	0.183	<0.05	1.91	0.05	0.59	<1	5.36	0.59
J488676	0.229	<0.05	0.78	0.10	0.70	<1	7.87	0.78
J488677	0.118	<0.05	1.22	0.05	0.42	<1	3.46	0.38
J488678	0.254	<0.05	1.81	0.06	0.78	<1	8.29	0.79
*Rep J488677	0.128	<0.05	1.32	0.05	0.44	<1	3.69	0.39
*Blk BLANK	<0.005	<0.05	<0.01	<0.01	<0.01	<1	<0.02	<0.01
*Std OREASH1	0.212	2.75	20.2	0.03	2.91	<1	4.41	0.31

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Report File No.: 0000027710

Element Method Det.Lim. Units	Zn	Zr
	GE_ARM133 1 ppm	GE_ARM133 0.1 ppm
J488667	69	8.1
J488668	61	7.2
J488669	55	9.8
J488670	52	8.5
J488671	43	3.8
J488672	41	2.3
J488673	57	3.4
J488674	57	5.3
J488675	35	6.8
J488676	45	1.5
J488677	46	10.5
J488678	30	1.9
*Rep J488677	49	10.7
*Blk BLANK	<1	<0.1
*Std OREASH1	6	65.4

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Report 180093
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Samples: 30.09, 31.04, 31.071

Summary:

Sample 30.09 is of hypabyssal gabbro porphyry that contains phenocrysts of diopside (altered strongly to tremolite/actinolite) and plagioclase that are set in an extremely fine grained groundmass dominated by K-feldspar and plagioclase with accessory epidote and tremolite/actinolite, and minor opaque.

Sample 31.04 is of hypabyssal gabbro porphyry that contains phenocrysts of diopside (altered completely to actinolite-(calcite-opaque) and lesser phenocrysts of plagioclase (altered slightly to strongly to epidote); these are set in a groundmass of K-feldspar and plagioclase that in much of the section was replaced strongly to completely by epidote. A large irregular replacement patch and several smaller ones are of K-feldspar and lesser calcite; the large patch also contains an elongate cluster of pyrite. Veinlets are of calcite-(hematite).

Sample 31.071 is of porphyritic basalt that contains phenocrysts of clinopyroxene (fresh to altered moderately to tremolite/actinolite) and much less patches of calcite (probably replacing plagioclase phenocrysts); these are set in an extremely fine grained groundmass of plagioclase and tremolite/actinolite, with minor disseminated opaque and K-feldspar. A few replacement patches are of plagioclase or calcite-plagioclase. Several veinlets are of calcite or calcite-(plagioclase); some of these grade into replacement patches of calcite-plagioclase.

Comparison of Gabbro and Basalt

Clinopyroxene phenocrysts are similar in habit and alteration in all the samples. Plagioclase phenocrysts are fresh to altered slightly to completely to epidote in the gabbro samples, and, if my interpretation is correct, are altered completely to calcite in the basalt.

K-feldspar is abundant in the gabbro and in replacement patches and much less abundant in the basalt.

The basalt has a finer grained groundmass and a different texture and composition than the gabbro porphyry. However, the presence of minor K-feldspar in the basalt and the similarity in clinopyroxene phenocrysts suggests that the rocks could be related to the same fractionating magma.

Sample 31.04 shows strong epidote alteration, which may be a contact effect.

Sample 30.09**Hypabyssal Gabbro Porphyry**

Phenocrysts of diopside (altered strongly to tremolite/actinolite) and plagioclase and are set in an extremely fine grained groundmass dominated by K-feldspar and plagioclase with accessory epidote and tremolite/actinolite, and minor opaque.

mineral	percentage	main grain size range (mm)	
phenocrysts			
diopside	17-20%	0.5-1.2	
plagioclase	12-15	0.3-1.0	(a few up to 2 mm long)
groundmass			
K-feldspar	30-35	0.02-0.03	
plagioclase	15-17	0.07-0.15	
epidote	5- 7	0.02-0.07	
tremolite/actinolite	2- 3	0.02-0.03	
opaque	0.7	0.05-0.2	
calcite	0.1	0.1-0.4	
apatite	minor	0.07-0.1	

Diopside forms stubby subhedral to euhedral prismatic phenocrysts with a pale green colour. Many are altered strongly to completely to light green to pale green tremolite/actinolite, with some grains also containing ragged patches of calcite.

Plagioclase forms subhedral prismatic phenocrysts that were altered slightly to dusty sericite-semi-opaque.

In the groundmass, K-feldspar forms interlocking aggregates of anhedral, equant grains.

Plagioclase is concentrated in patches up to 1 mm in size of anhedral to subhedral grains, with textures in many patches suggesting that they formed by replacement.

Tremolite/actinolite forms disseminated grains and clusters of grains with a light green colour, most of which are intergrown with K-feldspar.

Epidote forms disseminated irregular patches up to 1 mm in size, mainly associated with groundmass plagioclase.

Opaque (probably ilmenite) forms disseminated equant grains. A few opaque grains that are associated with epidote are of sulphide.

Calcite forms several grains, a few of which border diopside phenocrysts.

Apatite forms a few euhedral, stubby prismatic grains.

Sample 31.04**Hypabyssal Gabbro Porphyry****Replacement: Epidote; K-feldspar-(Calcite-Pyrite)****Veinlets: Calcite-(Hematite)**

Phenocrysts of diopside (altered completely to actinolite-(calcite-opaque) and lesser phenocrysts of plagioclase (altered slightly to strongly to epidote) are set in a groundmass of K-feldspar and plagioclase that in much of the section was replaced strongly to completely by epidote. A large irregular replacement patch and several smaller ones are of K-feldspar and lesser calcite; the large patch also contains an elongate cluster of pyrite. Veinlets are of calcite-(hematite).

mineral	percentage	main grain size range (mm)	
phenocrysts			
diopside	25-30%	0.5-1.5	(a few 1.5-2 mm long)
plagioclase	7- 8	0.3-1.0	
groundmass			
epidote	30-35	0.03-0.07	
K-feldspar	5- 7	0.015-0.03	
plagioclase	4- 5	0.03-0.05	
chlorite	0.3	0.02-0.05	
replacement			
K-feldspar	15-17	0.03-0.08	(locally up to 1.5 mm)
calcite	0.5	0.05-0.3	
pyrite	0.3	0.05-0.7	
epidote	minor	0.02-0.05	
veinlets			
1) calcite-(hematite)	3- 4	0.02-0.05 (ct); 0.005-0.05 (he)	

Diopside forms subhedral to euhedral phenocrysts that were altered completely to pseudomorphic actinolite and locally minor to moderately abundant disseminated opaque (ilmenite/Ti-oxide).

Plagioclase forms subhedral prismatic phenocrysts that were altered slightly to completely to epidote.

The groundmass is variable; in much of the section it is dominated by replacement patches of epidote (which also replaces plagioclase phenocrysts completely in these areas. Elsewhere it consists of patches of K-feldspar and plagioclase.

Chlorite forms disseminated patches up to 0.5 mm in size of intergrown equant flakes with a light green colour and yellowish brown interference colour.

An irregular elongate replacement patch is dominated by K-feldspar with much less abundant calcite. Pyrite forms an elongate cluster 3 mm long of anhedral grains intergrown coarsely with K-feldspar. Epidote forms a few ragged patches of grains near the pyrite-rich lens.

A few sharply defined to irregular veinlets up to 0.4 mm wide are of calcite with locally moderately abundant disseminated clusters of hematite. Where some veinlets cut actinolite grains, actinolite is altered to calcite in irregular patches up to 0.5 mm away from the veinlet.

Sample 31.071**Porphyritic Basalt****Replacement: Plagioclase****Veins, Veinlets: Calcite-(Plagioclase)**

Phenocrysts of clinopyroxene (fresh to altered moderately to tremolite/actinolite) and much less patches of calcite (probably replacing plagioclase phenocrysts) are set in an extremely fine grained groundmass of plagioclase and tremolite/actinolite, with minor disseminated opaque and K-feldspar. A few replacement patches are of plagioclase or calcite-plagioclase. Several veinlets are of calcite or calcite-(plagioclase); some of these grade into replacement patches of calcite-plagioclase.

mineral	percentage	main grain size range (mm)
phenocrysts		
clinopyroxene	17-20%	0.5-1.5
calcite (plagioclase?)	3- 4	0.3-0.7
groundmass		
plagioclase	35-40	0.005-0.03
tremolite/actinolite	20-25	0.005-0.01
opaque	2- 3	0.03-0.05; 0.005-0.01; 0.2-0.3
K-feldspar	1- 2	0.003-0.01
replacement		
plagioclase-calcite	4- 5	0.03-0.08 (pl); 0.05-0.3 (ct)
veinlets		
1) calcite-(plagioclase)	2- 3	0.05-0.4 (locally up to 0.5 mm)

Clinopyroxene forms euhedral to subhedral phenocrysts that range from fresh to altered moderately to tremolite/actinolite, mainly along grain borders and fractures.

Subhedral to euhedral patches of calcite probably are secondary, possible after plagioclase phenocrysts.

The groundmass contains disseminated patches of tremolite (0.03-0.05 mm; probably secondary after clinopyroxene) in a matrix that contains lathy plagioclase grains (0.03-0.05 mm long) in a cryptocrystalline intergrowth of uncertain composition, probably plagioclase and tremolite/actinolite, with disseminated equant opaque grains. The weak patchy yellow stain in the offcut block indicates that minor K-feldspar is present in the groundmass.

A large replacement patch is of calcite-plagioclase. Smaller replacement patches and a few veinlets are of plagioclase with minor calcite.

Veinlets up to 0.5 mm wide and smaller veinlets are of calcite and locally plagioclase.

Photographic Notes:

The scanned section shows the gross textural features of the sections; these features are seen much better on the digital image than on the printed image. For the photographs, sample numbers are shown in the upper left corner, photo numbers are shown in the lower left corner, and the letter in the lower right corner indicates the lighting conditions: incident light in crossed nicols = X. Locations of photographs are shown on the scanned section.

List of Photographs

Photo	Section	Description
01	30.09	phenocrysts of plagioclase (altered slightly to dusty sericite-semi-opaque) and of diopside (altered strongly to in part pseudomorphic tremolite/actinolite) and grains of opaque (probably ilmenite) in a groundmass of K-feldspar with local concentrations of tremolite/actinolite, with patches of epidote, and with replacement/recrystallized patches of coarser grained plagioclase.
02	30.09	large diopside phenocryst (altered moderately to strongly inwards from its margins to tremolite/actinolite); smaller plagioclase phenocrysts and diopside phenocrysts (altered completely to tremolite/actinolite, with or without calcite); groundmass of K-feldspar with lesser plagioclase and accessory patch of epidote, euhedral grain of apatite, and patch of opaque (ilmenite?).
03	31.04	phenocrysts of plagioclase (altered slightly to epidote) and of diopside (altered completely to pseudomorphic actinolite and lesser epidote) in a groundmass dominated by epidote with locally abundant plagioclase.
04	31.04	to the left: replacement patch of K-feldspar cut by a veinlet of calcite; to the right: two subhedral diopside phenocrysts (altered completely to pseudomorphic actinolite, enclosed in massive epidote with a small patch of opaque/semi-opaque.
05	31.071	large subhedral to euhedral phenocrysts of clinopyroxene (altered slightly on fractures to tremolite/actinolite), patches of calcite-(opaque) (possibly after phenocrysts of plagioclase) in an extremely fine grained groundmass of lathy plagioclase and tremolite/actinolite with minor K-feldspar, disseminated opaque, and a few small clinopyroxene grains (some altered completely to tremolite/actinolite); small replacement patches of equant, interlocking plagioclase.
06	31.071	phenocryst of clinopyroxene (altered strongly to tremolite/actinolite) in a groundmass of extremely fine grained plagioclase and tremolite/actinolite, with minor opaque and K-feldspar; replaced by an irregular elongate patch of calcite-plagioclase, a few small patches of plagioclase, and a veinlet of calcite-(plagioclase).

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