BC Geological Survey
Assessment Report
39703

ASSESSMENT REPORT TITLE PAGE AND SUMMARY

TITLE OF REPORT: Technical Report on the 2020-2021 Exploration of the Yreka Mineral Claims, Vancouver Island, BC

TOTAL COST: 26,136.83

AUTHOR(S): Hardolph Wasteneys
SIGNATURE(S):

PROFESSIONAL PROVINCE OF Dr. H. A. WASTENEYS #32102 BRITISH COLUMBIA GEOSCIENTIST

NOTICE OF WORK PERMIT NUMBER(S)/DATE(S): Mx-8-292
STATEMENT OF WORK EVENT NUMBER(S)/DATE(S): 5848938/ October 27, 2021.

YEAR OF WORK: 2021

PROPERTY NAME: Yreka

CLAIM NAME(S) (on which work was done): 943990, 954784, 1010698, 1011334, 1011538, 1011539, 1011540, 101206, 1012960, 1013518, 1026664, 102904, 1061432, 1070164.

COMMODITIES SOUGHT: Copper, Silver, Gold, Molybdenum

MINERAL INVENTORY MINFILE NUMBER(S),IF KNOWN: 092L-052; 092L-105; 092L-336; 092L-236

MINING DIVISION: Alberni Mining Division
NTS / BCGS 92L/5
LATITUDE: 50° 27' 30"
LONGITUDE: 127° 34' 00" (at centre of work)
UTM Zone: 9 EASTING: 5590250 NORTHING: 601600

OWNER(S): Karmamount Mineral Exploration Inc.

MAILING ADDRESS: 1703 West 5th Avenue, Vancouver, BC V6J 1P1

OPERATOR(S) Karmamount Mineral Exploration Inc.

MAILING ADDRESS: 1703 West 5th Avenue, Vancouver, BC V6J 1P1

REPORT KEYWORDS: Yreka, Port Alice, Bonanza group, LeMare Volcanics, Quatsino Limestone, Parsons Bay Formation, Clyde workings, skarn, crystal tuffs

REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS:
Baldys 1999, 25797; Eden & Li 2016, 36110; Hicks , 1999, 26040; Bradshaw, 1993, 22804; Ball 1980, 07981; Crossley 1972, 4425; Wasteneys, 2018a, 2018b, 2020: (37259, 37658, 38782)

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	1:1000 100 ha	1011540, 1011541 1012506, 1013518, 1061432, 1070164.	15000
Photo interpretation			
GEOCHEMICAL (number of samples analysed for …)			
Soil	50		8000
Silt			
Rock	4		3136.83
Other			
PROSPECTING (scale/area)			
PREPATORY / PHYSICAL			
Line/grid (km)			
Topo/Photogrammetric (scale, area)			
Legal Surveys (scale, area)			
Road, local access (km)/trail			
Trench (number/metres)			
Underground development (metres)	14		
Other			
			26136.83

Technical Report, 2021:
Geology and Soil Geochemistry of the Yreka Mineral Claims

Statement of Work Event Numbers: 5848938
(Geological, Geochemical),
Period: **October 20, 2020 to October 20, 2021**

Location:
Northern Vancouver Island,
Nanaimo Mining Division

NTS 92 L/5E
Latitude: 50° 27' 30" N, Longitude: 127° 34' 00" W
NAD 83

Owner and Operator:
Karmamount Mineral Exploration Ltd
1703 West 5th Avenue, Vancouver, BC, V6J 1P1

Author:
Hardolph Wasteneys, Ph.D., P.Geo.
Campbell River, BC

January 15, 2022

Frontispiece

Large alpine firs on the south ridge of Comstock Mountain, 2 kilometers west of the old Yreka Mine

Abstract

The Yreka claim group on northern Vancouver Island near Port Alice includes the historic past producing Yreka copper skarn deposit. Yreka produced about 150,00 tonnes of ca. 3% copper intermittently between 1905 and 1967, but principally between 1965 and 1967. It lies within calcareous sediments of the Parsons Bay Formation of the Lower Jurassic to Upper Triassic Bonanza Group. The host stratigraphy of the skarn deposit is overlain by the Le Mare Lake Volcanics of the Jurassic Bonanza Group, which are the extrusive equivalents of the Island Intrusive Suite. The deposit is located on the eastern slope of Comstock Mountain above Neroutsos Inlet and was historically accessed by a tramline constructed in the early 1960s. Active logging roads lead to the slopes below the deposit on the east and to the summit ridge of Mt Comstock on the west. Although the skarn is expected to be related to igneous intrusions the nearest plutonic rocks, apart from a series of dioritic dykes, are in the Jurassic Klootchlimmis Pluton which outcrops on the west slopes of Comstock Mountain 5 km to the west. Skarns are also present in enclaves of volcanic and sedimentary rocks at the contact of the Kloochlimmis on the western slope of Comstock.

Exploration work by Karmamount from 2016 to the present has shown that the Klootchlimmis pluton includes two separate calc-alkaline plutonic suites on the basis of REE and HFSE geochemistry. Moss mat samples from the western slopes show anomalous concentrations of Mo in a branch creek within the Le Mare Lake volcanics. Connections between the Klootchlimmis and the Yreka skarn are being explored for porphyry type deposits. Garnet skarns were mapped on the west side of the Property in Le Mare Lake volcanics where they are intruded by certain facies of the Kloochlimmis pluton, as well as on the east side in calcareous tuffs of the Parsons Bay Formation where they are intruded by dioritic dykes geochemically similar to the Kloochlimmis at the Yreka deposit.

In 2019 Karmamount completed two reconnaissance IP lines totalling 12.9 km across parts of the Klootchlimmis and over the Yreka skarn. The most significant result is a high chargeability anomaly that is continuous from the Yreka skarn into overlying LeMare Lake group volcanics up for over 800 meters to the west. Reconnaissance mapping in the anomalous area has found silica pyrite altered volcanic and possibly plutonic rocks.

The currently reported exploration work in 2020 and 2021 found geochemically anomalous soils 800 meters west of the Yreka deposit near the Le Mare Lake volcanic contact where it is intruded by swarms of strongly altered dioritic dykes. The anomalies correspond to part of the the area of the main IP chargeability anomalies at the eastern end of the two reconnaissance IP lines. In part the high chargeability may be "formational" in nature, caused by pyrite in cherty, argillaceous tuffs exposed along a north trending ridge north of the northern IP line. However, soils samples from the area of the tuffs are not anomalous. Closer to the IP line, there are numerous, north-trending, altered dioritic dykes cutting the rocks although there is not much exposure of strata in which garnet skarns or stockwork mineralization might be present.

Other IP anomalies were observed in the Klootchlimmis pluton on the west side of Comstock Ridge, but without corresponding soil geochemical anomalies in the samples taken to date. Skarns are however present in rocks adjacent to the contact of parts of the Kloochlimmis pluton. In one place, minor chalcopyrite mineralization was observed in a garnet-epidoite skarn developed in enclaves of dark argillite.

Table of Contents

List of Figures

List of Tables

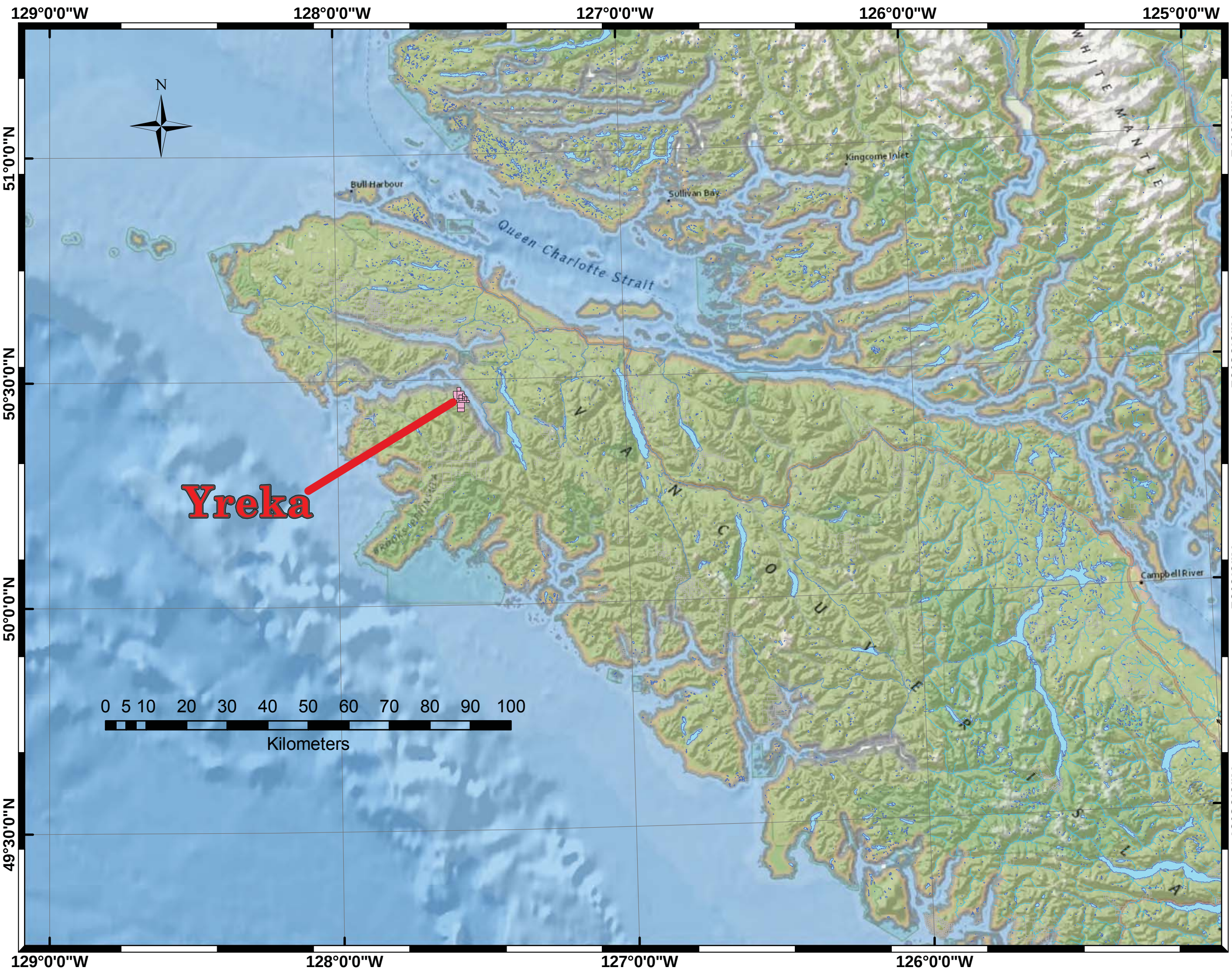

Figure 1: The Yreka claim group on northwestern Vancouver Island.
The claims are on the western slope of Neroutsos Inlet, which is a south branch of Quatsino Sound.

Introduction

The Yreka mineral claims cover an area around a copper skarn mineral deposit from which about 150,000 tonnes of copper-gold-silver mineralization was mined by Noranda in the 1960s. The property is located south of Quatsino Sound on the west side of Neroutsos Inlet opposite Port Alice on northern Vancouver Island. The property has high potential for concealed skarn mineralization within the host stratigraphic sequence, which dips moderately to the west in an undeformed homoclinal sequence capped by the Le Mare Lake Volcanics of the Bonanza Group. It also has potential for stockwork porphyry copper molybdenum mineralization west of the main skarns and possibly related to the Kloochlimmis batholith exposed in the western slopes of Comstock Mountain.

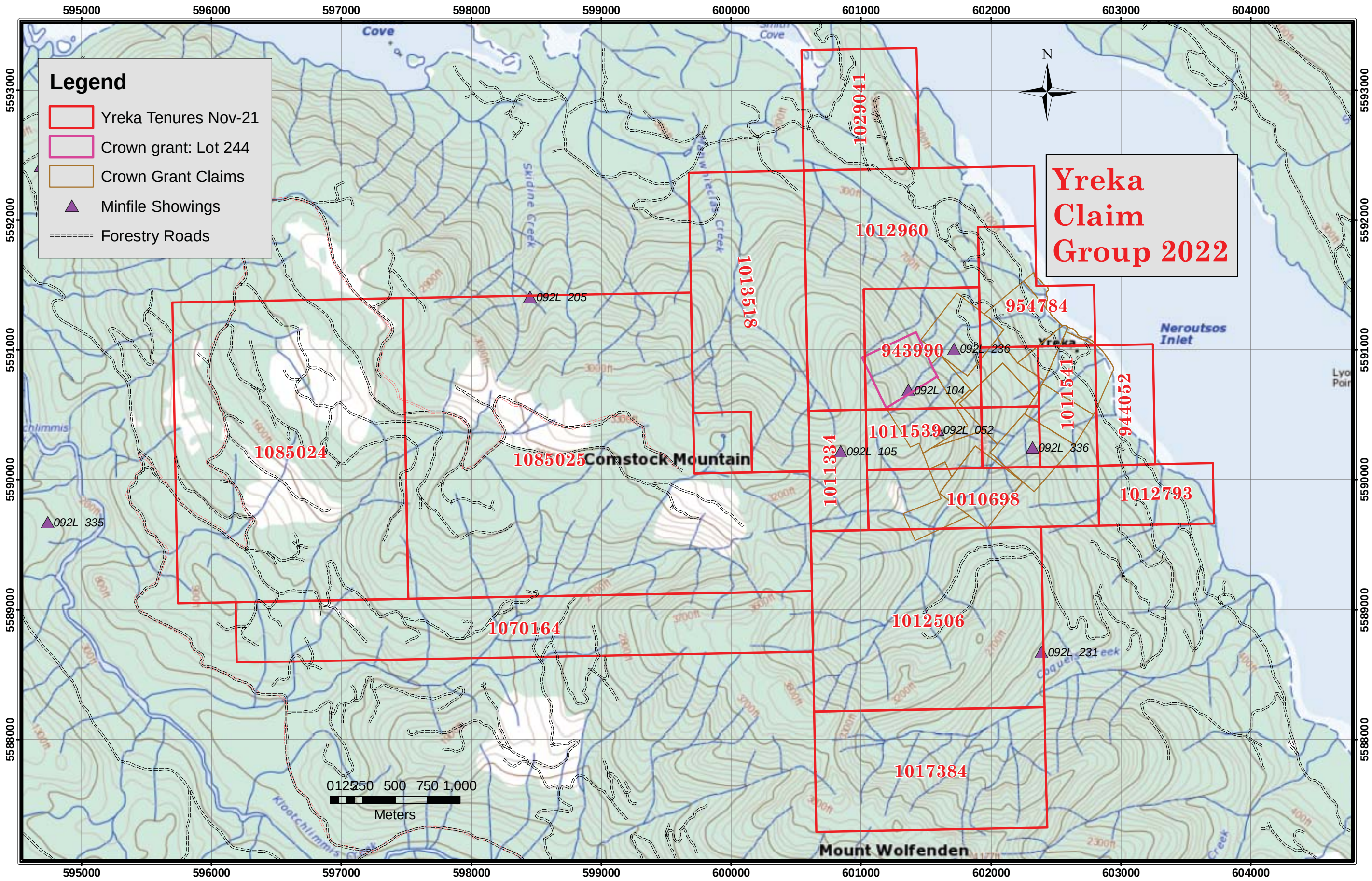

Figure 2: Yreka Claim Group Map
Yreka claims and tenure numbers are show in red. Crown Grants, and Minfile showings indicated by symbols in legend. Map base is Toporama series with elevations and contours in feet.

Tenure No	Claim Name #	Issue Date	Good To	Hectares	Client No.	OWNER
943990		20120129210654	20230530	82.3	258348	KARMAMOUNT MINERAL EXPLORATION INC
954784		20120302100126	20230530	61.7	258348	KARMAMOUNT MINERAL EXPLORATION INC
944052		20120130100228	20220530	41.1	258348	KARMAMOUNT MINERAL EXPLORATION INC
1026664	FEKK5	20140313081558	20230530	20.6	258348	KARMAMOUNT MINERAL EXPLORATION INC
1029041	FEKK8	20140616123901	20220530	82.3	258348	KARMAMOUNT MINERAL EXPLORATION INC
1013518	MAHWIECLAS PORPHYRY	20121003151431	20230530	185.1	258348	KARMAMOUNT MINERAL EXPLORATION INC
1011538	BLUEGROUSE	20120531100219	20230530	20.6	258348	KARMAMOUNT MINERAL EXPLORATION INC
1017384	FEKK3	20130301123806	20220530	164.7	258348	KARMAMOUNT MINERAL EXPLORATION INC
1011539	YREKA	20120531100219	20230530	41.1	258348	KARMAMOUNT MINERAL EXPLORATION INC
1011540	TUSCADORA	20120703101642	20230530	20.6	258348	KARMAMOUNT MINERAL EXPLORATION INC
1011541	RGS 3180 ppm CU	20120703101642	20230530	41.1	258348	KARMAMOUNT MINERAL EXPLORATION INC
1012793	Y KNOT	20120912100106	20220530	41.2	258348	KARMAMOUNT MINERAL EXPLORATION INC
1012506	COPPER CANYON	20120902102501	20230530	246.9	258348	KARMAMOUNT MINERAL EXPLORATION INC
1010698	CLYDE	20120703174653	20230530	82.3	258348	KARMAMOUNT MINERAL EXPLORATION INC
1011334	CLIMAX	20120720100229	20230530	41.1	258348	KARMAMOUNT MINERAL EXPLORATION INC
1012960	ANVIL	20120918100117	20230530	185.1	258348	KARMAMOUNT MINERAL EXPLORATION INC
1070164	COMSTOCKCREEK	20190807235340	20220530	205.8	215130	WASTENEYS, HARDOLPH ALEXANDER
1085024	Comstock Valley	20180626174143	20220530	411.5	215130	WASTENEYS, HARDOLPH ALEXANDER
1085025	Comstock Ridge	20180626174143	20230530	596.6	215130	WASTENEYS, HARDOLPH ALEXANDER

Table 1: Mineral Cell Claims in the Yreka Claim Group
Nineteen claims are held by Karmamount and Hardolph Wasteneys (agent for Karmamount) forming the Yreka Property; Claim Name, Tenure numbers, Issue dates, current Good to Dates and area in hectares are shown. Total area 2571.75 hectares

Property Description and Location

The Yreka Property is located on northern Vancouver Island (Fig. 1) on the mountainous west slope of Neroutsos Sound and west of the old logging town of Port Alice, British Columbia. The property is centred at Latitude: 50° 27' 30" N, Longitude: 127° 34' 00" W, NAD 83 datum, UTM Zone 9, 601600 E, 5590250 N, in the NTS map sheet 92 L/5 , BCGS Map 092L043 in the Nanaimo Mining Division (Figure 3). It consists of 19 variously named cell claims listed in Table 1, issued between January 2012 and July 2018 and currently with Good To Dates of May 30, 2022 or May 30, 2023. The total area of the tenures is 2571.75 hectares. A single Crown Granted claim remains in active unreverted status shown in Figure 2.

Access, Climate, Local Resources, and Physiography

The main access to the Yreka property is via the Vancouver Island Highway system to Port Alice and thence via logging roads controlled by Western Forest Products based out of a division in Port McNeill. Driving time to the property from Campbell River in 2018 was about 3.5 hours. From Port Alice access is via Marine Drive south around the inlet and then north to Marine Drive "0 km" at a log loading terminal where log rafts are assembled. Marine Drive is coextensive with Teeta Main from which Yreka 500 leads to the property. The logging road network along the west shore of Neroutsos Inlet branches from the Yreka 500 main line that runs parallel to the shore north to Kultus Cove on the south shore of Quatsino Sound. Alternate access is via logging roads from Mahatta River on Quatsino Sound and water accessible from Coal Harbour. Personnel from LeMare Logging commonly travel by a short boat ride to Mahatta River rather than by the long winding Highway 30 from Highway 19 to Port Alice. From Mahatta River the Klootchlimmis Valley is traversed by the K500 logging road which connects on a 604 meter altitude pass to the Teeta 500 road and descends by switchbacks to Teeta Main. Branch roads from the K500 main access logging areas on the west side of the ridge near the Yreka deposit and were used for exploration of the western part of the property extended by the Comstock Ridge, Comstock Valley, and Comstock Creek claims. From the highest point of these roads, traverses were completed into the upper slopes above the old Yreka mine in late 2020 and during August of 2021 (Figure 2).

The Yreka deposit is located on the eastern flanks of the 12 km long ridge that runs NW from Teeta Creek to Kultus Cove with 1300 m peaks at Mount Wolfenden and Comstock Mountain (Figure 2). The ridge is steep sided with slopes up to 40 degrees and intermittent cliffs. However, a few intervals at the northern extent and on the east side of Comstock Mountain have steep easterly and much shallower westerly aspects forming a *cuesta* reflecting the moderate westerly dip of cliff-forming sedimentary and volcanic strata. Creeks in the Yreka property are all steep with canyon-like forms in many places inhibiting access.

The lower slopes above Neroutsos Inlet along the Yreka 500 mainline have been mechanically logged typically by feller-bunchers, and in steeper parts, for example just south of the Yreka mine, using spar pole systems. Logging debris greatly inhibits traverses in these areas especially in the steeper terrane and in particular along creeks where logging debris combined with natural deadfall across the creek has created nearly impassable mazes of large trunks and brush.

The area is heavily forested within the Coastal Hemlock Zone and most of it remains in old growth hemlock and fir trees. Annual precipitation is up to a few meters mainly as rain. Winters are mild, but snowfall accumulations can be several meters above 600 meters altitude.

On the west side of the claim site there has been extensive recent logging, with more logging planned near the summit of Comstock. Currently the logging extends almost to the top of Comstock Mountain which is in the north side of the claim area at just over 1,000 meters. Remant old growth exists in riparian zones along some creeks and on the eastern slopes of the Compstock ridge. At lower elevations, original forest is a mix of Amabilis Fir and Western Hemlock with some Red Cedar. Higher up Fir and Hemlock are joined by Mountain Hemlock and Yellow Cedar. The logged areas have been replanted after logging and are variously between about 3 and 15 years old.

On the east side of the ridge there are strips of Red Alder growing on old access roads from the 1960s mining operations. Further south, across Canyon creek from Yreka, there are active current logging slashes up into valleys and ridges overlooking Neroutsos Inlet. The trees are Western Hemlock and Amabilis Fir with some Yellow Cedar and Mountain Hemlock up higher and Red Cedar down lower in the wet areas. In some of the original forest the undergrowth is negligible as there is very little light penetration. Where there is more light available on south facing slopes and in large openings there is an abundance of blueberry species mixed with white rhododendron and copperbush.

Property History

The area of the Yreka claim group has a history of exploration, development and production dating back to the late 18th century. The first claims were recorded in 1898 and by 1903 a few thousand tonnes of copper silver ore had been shipped from the Clyde workings, which lie just south of the main Yreka orebody. This mining operation, like others that followed utilized aerial tramways to transport ore from adits cut into the steep face of the ridge at 700 meters elevation, down to shallower slopes accessible by truck above Neroutsos Inlet. Early production ceased until 1917 when high copper prices during the First World War provided incentive to ship another 900 tonnes, although from new facilities.

Noranda Exploration Company Ltd. took over the property in 1952 and initiated the first diamond drilling programs, which eventually led to the delineation of the main Yreka deposit. Underground development and drilling continued through 1956 with over 40 thousand feet of core and 6 thousand feet of drifting. Between 1958 and 1964 the property was dormant, but was reactivated by a consortium between Noranda and Minoca Mines in 1965 based on reserves of about 150,000 tonnes of 3.7% copper and 41 g/t silver plus some additional indicated resources. Production over the period from 1965 to 1967 was 133,000 tonnes grading 2.9% Cu, 32.8 g/t Ag and 0.36 g/t Au mainly from the “A” zone, a lens measuring 15 by 49 and 60 meters high.

Thereafter, although significant exploration programmes were conducted both locally around the deposit and peripherally on new showings involving EM and magnetic geophysical surveys, geochemistry and geological mapping, no further development or production was recorded. A series of option arrangements occurred after 1970 with Green Eagle Mines and ISO Explorations Ltd.

Much of the exploration work was focused on defining the limits of the skarn horizon that hosted the Yreka deposit. In 1971 and 1972, 1844 feet of diamond drilling tested copper silver showings near the Yreka deposit at the Comstock-Edison and North Arm Creek prospects. Work ceased until 1979 when Uke Resources drilled 300 feet in 3 holes on the Tuscarora prospect. The prospect names are reflected in the names of the underlying and now-reverted Crown Grant claims. In 1988 Teck Exploration expanded the exploration area using regional stream silt surveys that showed anomalous gold and zinc southwest of Mt Wolfenden, which led to detailed surveys showing anomalous zones on the northeastern slopes of that mountain along the same slope as Yreka. In 1998 Talltree Resources initiated a reassessment of the resource potential of the area mainly by prospecting, rock assaying and soil sampling, but also significant

Figure 3: Forest on the eastern slopes of Comstock Ridge along upper Canyon Creek
Hemlock forest at the margin of logging slashes accessed by Y400 road. A traverse in September 2016 took 5 hours to complete a 1 km circuit through this logging slash and debris choked creek bed.

recompilation of old data (Baldys, 1999).

Since the late 90s work by Talltree, no significant development or exploration work has been completed on the property. The main block of present mineral tenures were acquired by Eden Investment on December 13, 2012 and transferred to Karmamount Mineral Exploration Ltd on March 16, 2015. The Comstock Ridge claim, number 1061432, was staked by the author in 2018 to cover the western aspect of the ridge above Yreka to explore for magmatic connections to the Kloochlimmis Pluton and this was extended to the south with the most recently staked Comstock Creek claim 1070164. The large Comstock Ridge claim was subdivided by the author in November 2021.

Karmamount completed a couple of evaluation programs in the period from 2012 to 2019 (Eden and Li, 2016, and Wasteneys, 2018a, b and Wasteneys 2020) . By the summer of 2016, Western Forest Products, which holds a TFL in the area, had completed several new logging roads along the lower parts of the claim group towards Quatsino Sound that have provided new exposures of rocks within the host stratigraphic section. Newer roads were also provided access to the Comstock Ridge and Comstock Creek claims in the west and logging has been completed.

The 2016 Karmamount Exploration Program

Previous work in 2015 by Karmamount on the Yreka claims involved soil sampling south of the old Yreka and Clyde portals and rock sampling along the Y400 logging road ((Eden and Li, 2016). New logging roads branching from Yreka Main have exposed significant outcrops on Banter and Pender Points at the north end of the claims that are along strike with the

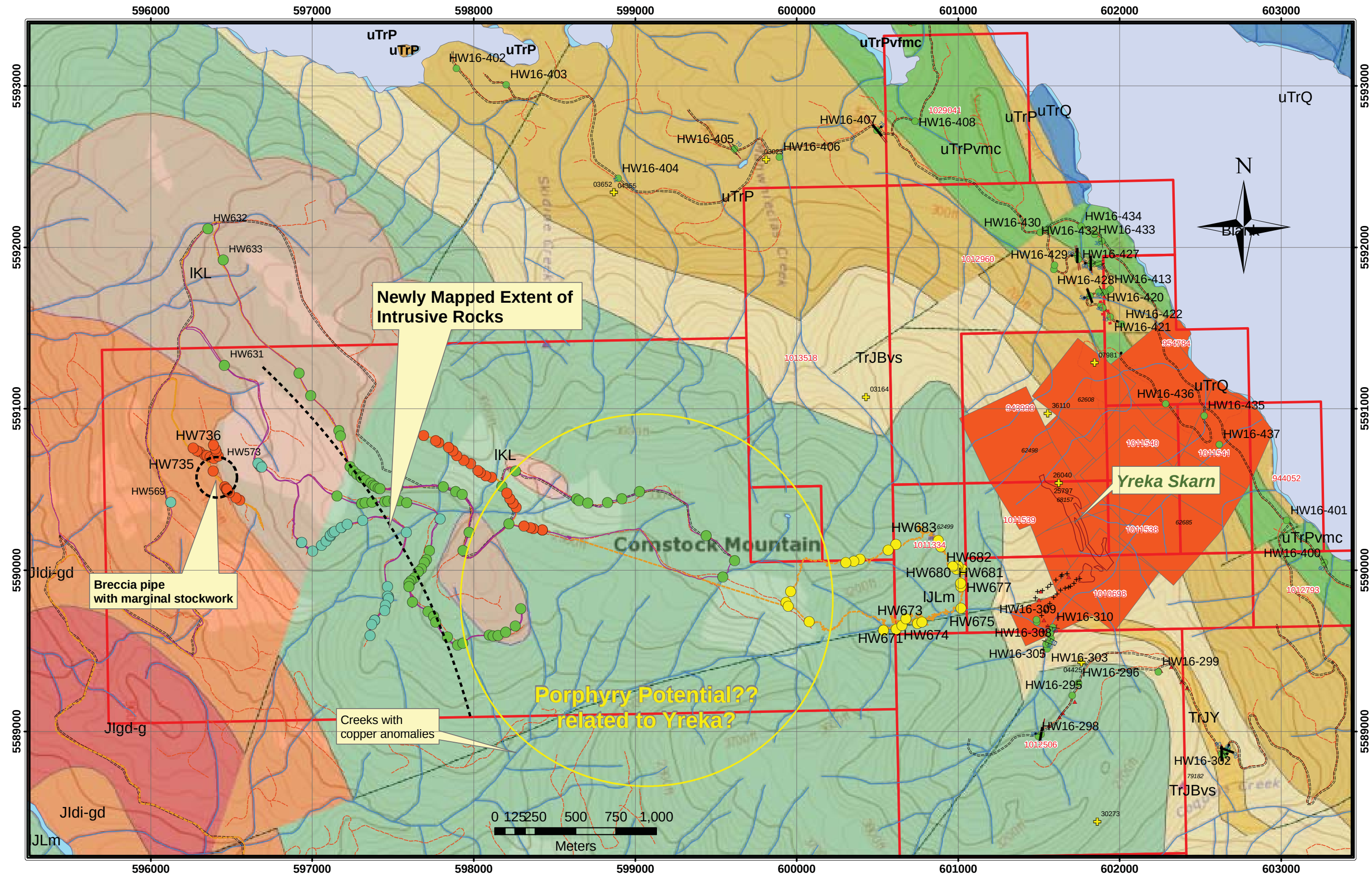

Figure 4: Geological Map showing the geology stations from previous work in 2018 and 2016 and speculative theories.
The 2018 stations are large red, green, yellow and blue dots each colour representing a different field day. Station from the 2016 program are indicated by green dots and labelled HW16-xxx.

Figure 5: Upper Canyon Creek
Outcrops are common along the upper reaches of the creek and many samples of rusty silicified volcanics were found in the creek bed in 2018. The new work in 2019 confirmed the occurrences and was one target of the IP geophysical survey.

stratigraphic section underlying the property. Other branch roads north of the Yreka deposit also exposed new outcrops that were examined in 2016.

Two property visits were completed by Wasteneys in 2016: The first involved geological mapping on the new logging roads at the north end of the property over a two day period on July 27th and 28th, and a second over 3 days on September 5th to 7th to more closely examine stratigraphic units exposed on the Y400 road previously mapped by Graham Nixon of the BCGS (pers. comm. 2016). The highlight of the work took place in wet weather on September 7th, 2016, when a one kilometer return traverse was completed from the Y400 road to the major junction in Canyon Creek about one kilometer south of the old Yreka mine (Figure 3 and 4). The objective was to evaluate reported showings of porphyry style mineralization (Baldys, 1999) in upper Canyon Creek, but terrain obstacles and dense regrowth of logging slash prevented extending the traverse to examine the North Arm showings upstream from the creek junction in the time available. Large tree trunks, up to 4 feet in diameter, blocked the southern branch creek bed in places causing jams of debris while the northern creek branch was nearly impassable with mesh of interwoven tree tops either from blow downs or dropped in the logging operations. However, some well exposed outcrop was mapped in the creek bed including north striking felsic dykes.

The 2018 Karmamount Exploration Program

Work in 2018 focused on mapping areas stratigraphically above the Yreka deposit on the steep eastern slopes of Comstock Mountain and on the less extreme slopes on the west side of Comstock Ridge covered by claim 1061432 (Figure 2). Work consisted of several days of mapping and sampling along a network of logging roads and one traverse through a pass in Comstock Ridge to access the area above the old Yreka Mine as displayed in Figure 4.

The objective of the 2018 work was to explore geological connections between the Yreka skarn deposits and the Kloochlimmis Pluton which is exposed in the Mahatta River Valley about 5 kilometers to the west. No significant intrusive bodies had been identified in proximity to the Yreka skarn deposits on the eastern slopes of Comstock Ridge to which the genesis of the skarns could be attributed. Figure 4 shows the Mahatta River Map of Nixon et al. (2007) without revision, and 2016 and 2018 traverse stations and speculative notes on the interpretation of the greater extent of intrusive unit of the Klootchlimmis Pluton. At a couple of locations in the Kloochlimmis, igneous breccias were recognized in plutonic rocks that may have implications for porphyry mineralization. The geology of the western slopes is described below in ‘Geology of the Yreka Property’.

The 2019 Karmamount Exploration Program

The 2019 exploration program proceeded from recommendations in the 2018 program report (Wasteneys, 2018b), namely to explore the main creeks of the western slopes in claims 1061432 and 1070164 using moss mats and to complete reconnaissance IP surveys across the Comstock Ridge. Broadly, the intent of the 2019 work was to explore possible links between known skarn mineralization at the Yreka Mine and potential porphyry type stockworks either proximal to Yreka skarn orebodies or on the margin of the Kloochlimmis pluton on the western side of the claim group.

Two exploration programs were carried out by the author and an assistant in July and September 2019 followed by a contract geophysical program conducted by Scott Geophysics Ltd in late September and early October, 2019. Field work in July included geological mapping along several kilometers of logging roads in the Comstock Ridge and Comstock Creek claims as well as the collection of 14 moss mat samples from road accessible parts of the same claims. The geological work was augmented by the use in the field of a portable XRF unit (Niton

XL3t) to determine mainly Zr and Ti contents of granitoid rocks in order to help classify them according to the high and low Zr monzogranite and quartz monzonite suites defined by the 2018 lithogeochemistry study. The field work in September by the author and assistant was to reexamine some of the rock outcrops and to establish target areas and routes for the IP survey.

2019 Karmamount IP Survey

Several anomalous geophysical signatures are identified on Figures 6 through 9. The features were principally defined by high chargeability responses shown in the inverted chargeability section Figure 7 and subject to interpretation by evaluating the corresponding resistivity signal in Figure 9. The geology of the anomalous sites is revealed by plotting the lines on maps in Figures 6 and 8. Using the survey parameters of a=100 meters and 1 to 6 separations the modeled IP responses are expected to show values to about 300 meters depth along the lines.

The western ends of both lines run across granitoid rocks of the Klootchlimmis Pluton. The lines then pass into volcanics of the LeMare Lake Formation mixed with dykes either from the pluton or volcanic feeders. The lines then cross the crest of Comstock Mountain at the summit on line 2000N and in a col at the head of deeply incised streams on line 1000 N. On the eastern side of the ridge the lines continue in volcanics to an indeterminate contact with Parsons Bay Formation sediments, Line 2000 N ends just downslope of the surface outline of the Yreka skarn deposit and line 1000 N ends just upslope of it about 500 meters to the south. The southern line was not continued farther east to avoid dense scrub and steep slopes.

The inverted data results (Figure 7) show anomalies dipping steeply west into the slope at the eastern end of the lines (hereafter referred to as the Yreka slope) roughly oriented along the westerly dip of strata of the LeMare Lake Volcanics and the Parson Bay Formation. The anomalies are marked on Figures 6 to 9 between points C and D on line 2000 N and between point F and G on line 1000 N. Steeply dipping, north trending dykes were also mapped in the area on the Yreka slope and these may contribute to the apparent orientation of chargeable bodies. Most notably, the western edge of both chargeability anomalies at C and F on the Yreka slope appear to be aligned north to south parallel to the strike of strata, dykes and perhaps even the Yreka skarn body suggesting some continuity of chargeable rocks up-slope for about 1000 meters. As well the continuity of the anomalies along both lines which are separated by only about 500 meters suggests that the chargeable body may be continuous at least between the two lines and probably for some considerable distance beyond.

The corresponding inverted resistivity signals between C and D and F and G are displayed on Figure 8. Up-slope of points C and F are high resistivity responses predictably corresponding to massive flows in mafic volcanic rocks of the LeMare Lake volcanics at the top of the slope. Below point D (Line 2000 N) resistivity increases to the end of the line, which may accurately represent a change to unmineralized limestone strata in the Parsons Bay Formation compared to expected high conductivity in the Yreka skarn at point 6700N. The high chargeability zone C-D shows a range of moderate resistivity values with the most conductive ranging from 150 to 300 ohm-meters in the zone between 5850 and 6050 E and the remainder ranging no higher than 1500 Ohm-meters A similar range is modeled in the F to G interval of line 1000 N, with a zone of higher conductivity modeled by 150 to 300 Ohm-meter values at a few hundred meters depth.

The few outcrops that were observed within the C-D – F-G zone include silicified volcanics and feldspar porphyries with mafic phenocrysts replaced by pyrite, locally stockwork fracturing with pyrite or pyrrhotite, and some red and white banded cherty argillites or skarns at the end

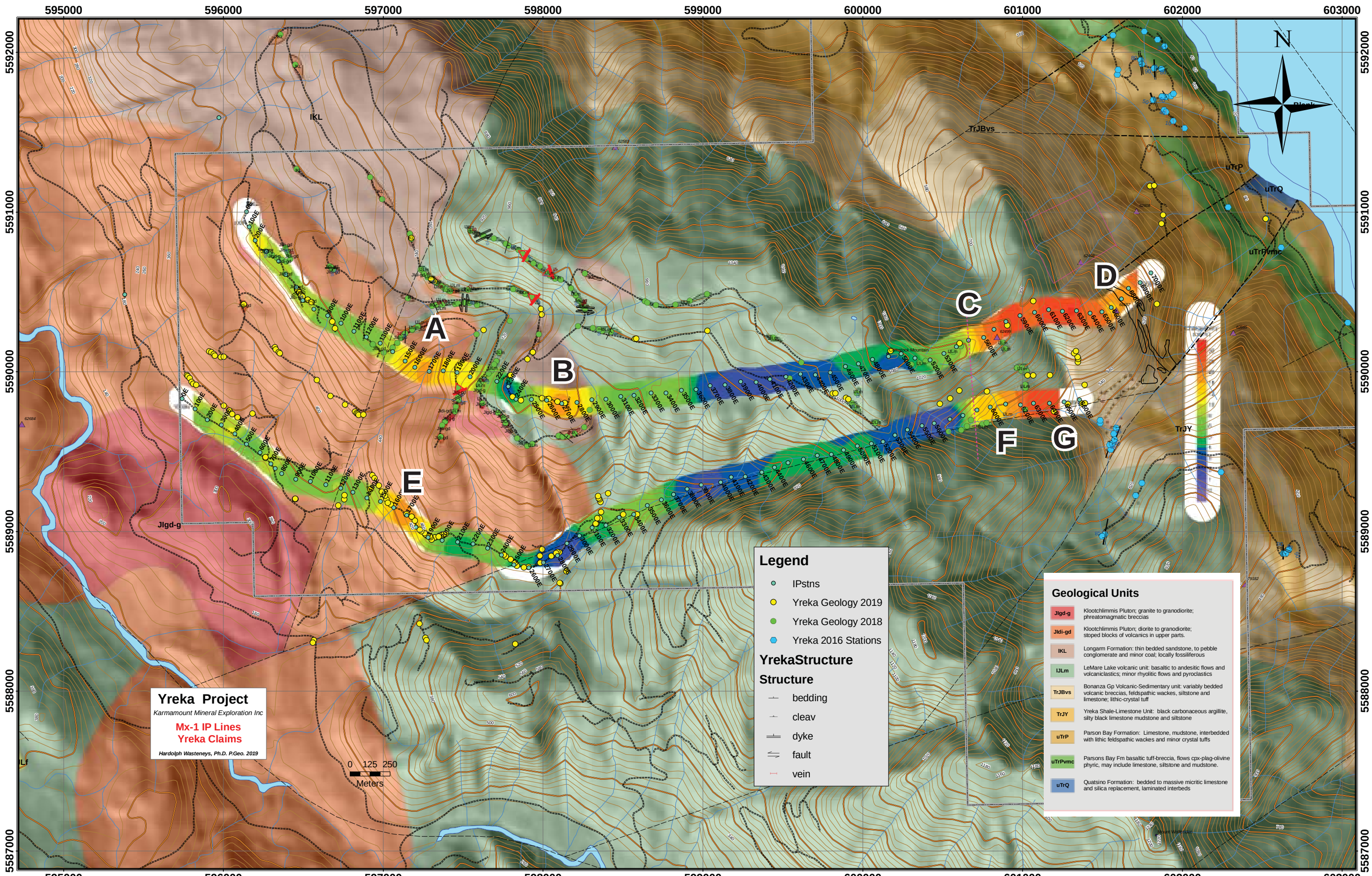

Figure 6: Map of the IP Chargeability near surface.
The colour scheme along the IP lines represents the n=1 separation of the array shown on the pseudosections or the surface of the inversions (Figs. 7 & 9). IP Stations are labelled in meters from the start of each line for reference to the pseudo-sections and the inversion section in Figure 7. Chargeability anomalies identified in the inverted section Figure 26 are located by letter labels A to G. Anomalies A and E are in granitoids and plausibly connected as is the section from C and D to F and G, which are in volcanics. Site B appears solitary and may be restricted to sedimentary strata in unit IKL.

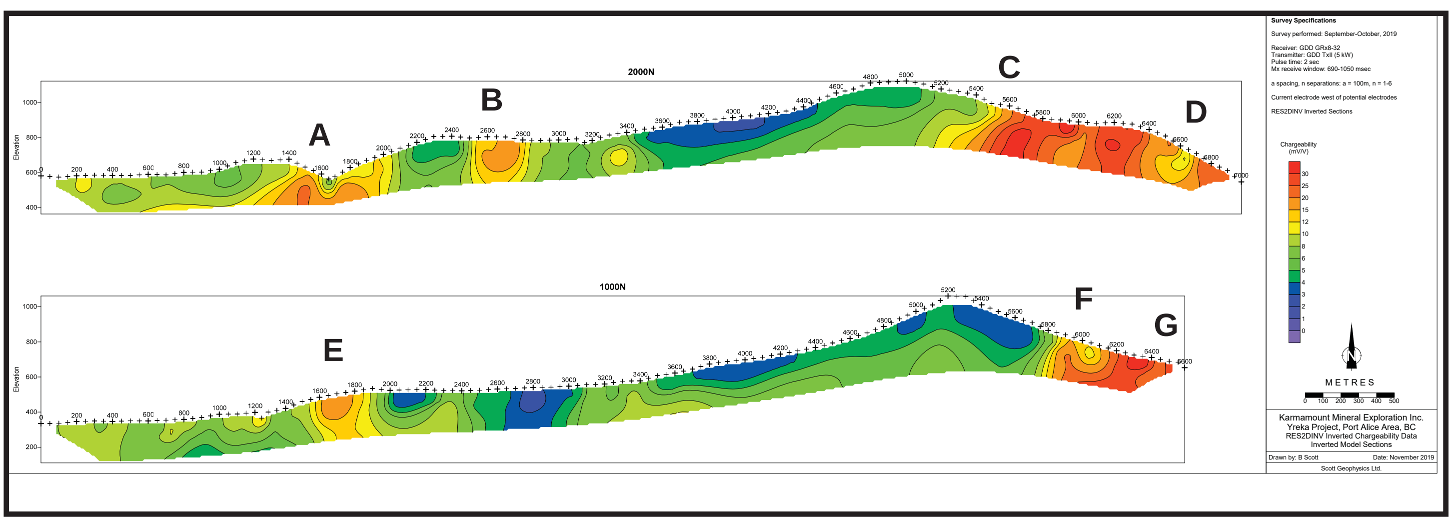

Figure 7: IP 2D Inverted Chargeability on Lines 1000 N and 2000 N
Anomalous features on the two lines are labelled A to F. The same features are located on the map Figure 25 and corresponding resistivity map (Figure 27) and section (Figure 28). Strong, high chargeability anomalies potentially indicative of mineralization are evident at sites A and E, possibly at B, and in the interval between C and D and F to G.

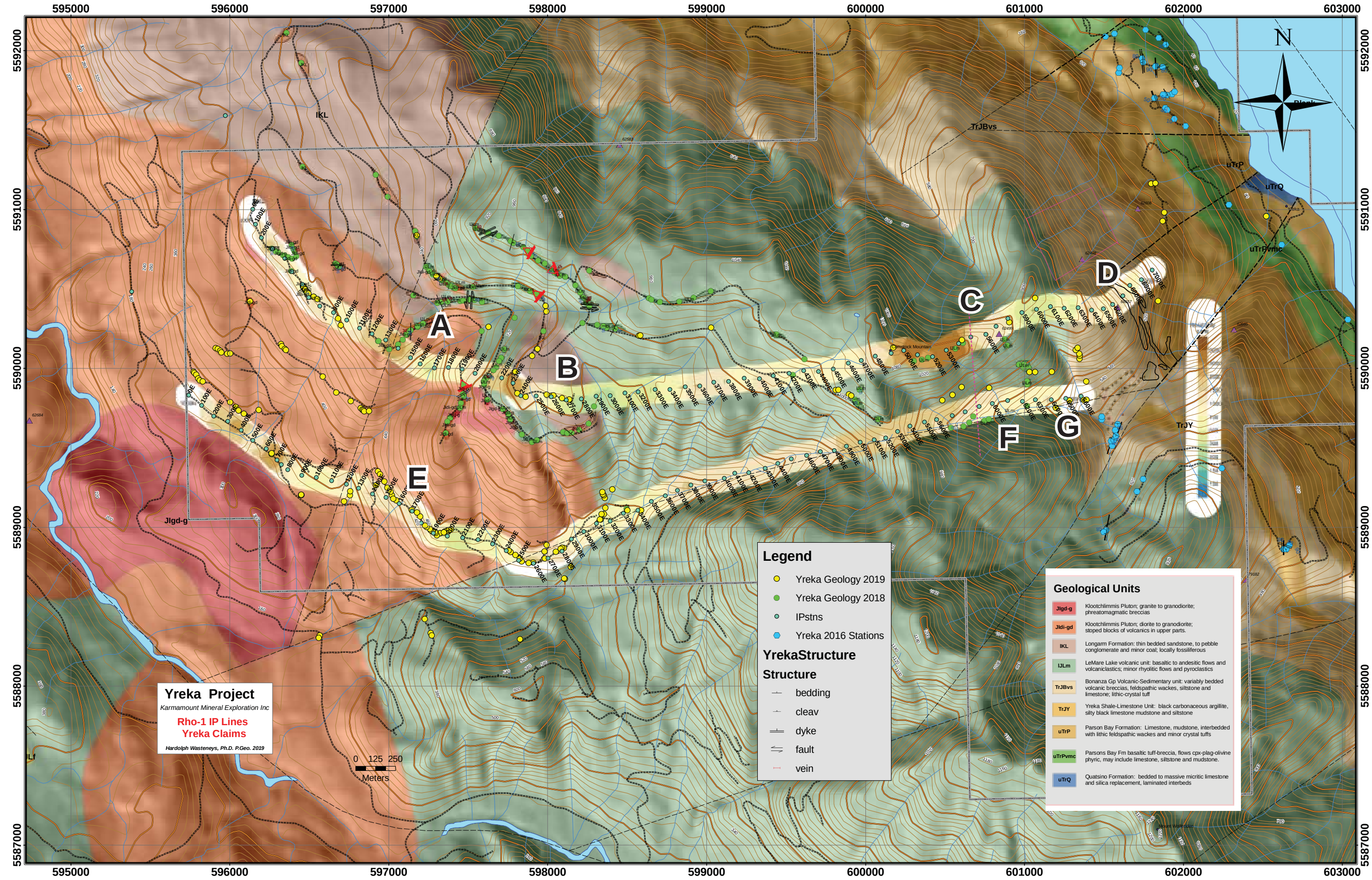

Figure 8: Map view of IP Resistivity near surface.
Anomalous chargeability features identified in the inverted chargeability section Figure 26 and located on a map view of the chargeability line (Figure 25) are shown here for further interpretation of the geophysical responses. Feature B is shown to be correlated with deformed sedimentary rocks of the Longarm Formation, which are possibly highly conductive. Other anomalies are within granitoid rocks or volcanics, which have moderate resistivities.

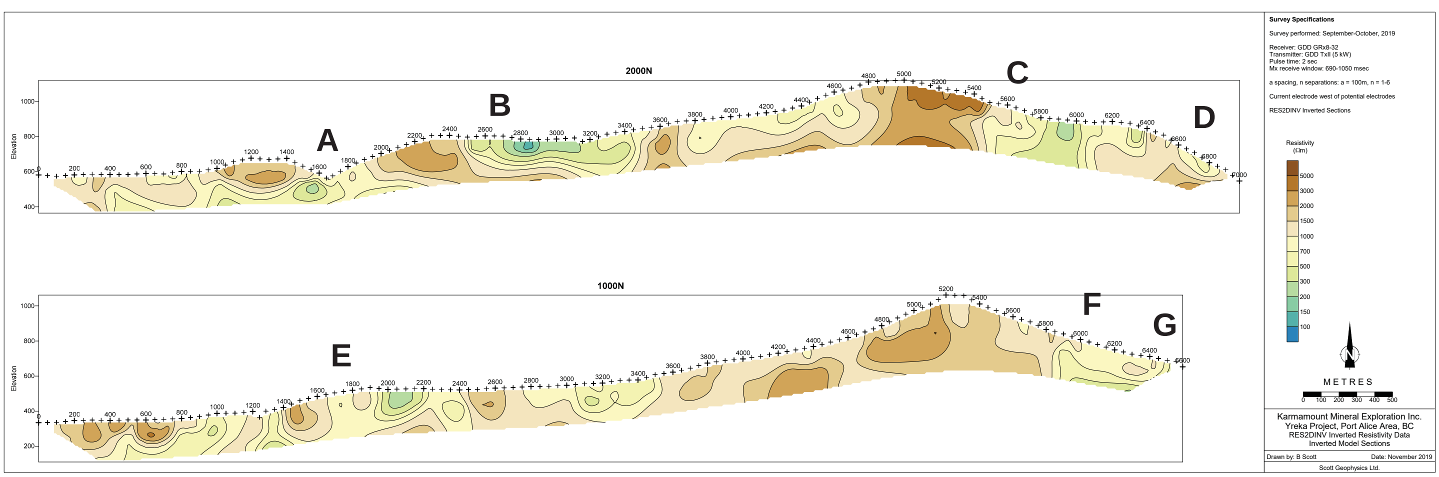

Figure 9: IP 2D inverted resistivity sections.
Labels show the position of chargeability anomalies defined on Figure 26.
A shows a mixed moderate to low resistivity that continues to feature E where it is moderate in resistivity.
Feature B shows low resistivity possibly indicating that the high chargeability is in conductive strata such as black shales in unit IKL. Feature C, D and F to G show complex resistivity but mainly in the moderate range suggesting a continuous block of fractured mineralized strata cut by intrusive bodies.

of line 1000N. The observed disseminated and stockwork pyrite and pyrrhotite may explain the chargeability anomaly, while the moderate resistivities are compatible with the altered rocks and disseminated sulphides.

In strong contrast to the high chargeability and moderate resistivity on the Yreka slope, the section of both lines draping over Comstock Ridge shows very low chargeability and high resistivity in the inverted sections in Figures 7 and 9. This IP response corresponds well with the properties of the underlying rocks shown in the map on Figure 6 which are dominantly LeMare Lake volcanics of basaltic composition, commonly amygdaloidal and massive flows intruded by a few unaltered dioritic dykes.

Along the western part of the two lines there are 3 significant chargeability anomalies marked at points A and B on Line 2000 N and E on Line 1000 N. The anomaly at A appears between 1400 and 2000 E across a steep ravine. The corresponding inverted resistivity response on the Figure 9 section is a moderate to low resistivity zone bordered by high resistivity west of 1400 E and east of 2000 E. Local outcrops on a road above the north side of the ravine include a gypsum-veined altered dioritic rocks and some pyritic replacement of mafic minerals. It is not yet clear if these characteristics of the rocks are responsible for the IP response or if they are alteration peripheral to more intense mineralization in the ravine.

The anomaly at E on the southern line is a near surface high chargeability zone between 1550 and 1850 E. The inverted resistivity profile shows moderate values between about 500 and 1000 Ohm-meters. The geology is dominated by gabbroic rocks with minor disseminated pyrite and zones of closely spaced chloritic slips. There is no indication of continuity between the anomalies at A and F based on the known geology.

Anomaly B is a near surface chargeability zone on the line between 2550 and 2850 E. The corresponding Resistivity is very low and appears to conform to a shallow band from about 2550 to 3200 E. The center of the chargeability anomaly lies within outcrops of an outlier of lower Cretaceous Longarm Formation (unit lKL) consisting of deformed dark siltstones, laminated limestones and hematitic conglomerates and grits. The high conductivity response and chargeability may reflect graphitic content of these rocks or perhaps a zone at the underlying unconformity. Elsewhere the unconformity surface was observed to be deeply weathered into the granitoid rocks of the Klootchlimmis pluton.

2019 Geochemistry

Survey description

Previous work in the western part of the Yreka property indicated anomalous copper contents in streams on the west side of Comstock Ridge (Bradshaw, 1993). Geological mapping in 2018 extended the boundary of the Klootchlimmis Pluton to the east and prompted a reexamination of the copper anomalies in that area. Accordingly a total of 14 moss mat samples were collected, 13 of which were from streams on the west side of the divide. The 14th sample was collected from a predictably anomalous stream on the slope below the Yreka deposit as an orientation sample.

Silt was generally absent in most of the creeks in the area all of which have high flow gradients so moss mats were used instead. A modified technique was used in order to harvest enough silt from the arrays of thin moss available offer the main exploration geochemical alternative to silts, but even so moss mats were not always readily available. To obtain sufficient silt for analysis several mats were collected at a site and rinsed in a large plastic rock sample bag to liberate silt from the moss fabric until enough silt was obtained to nearly fill a ca. 1 liter

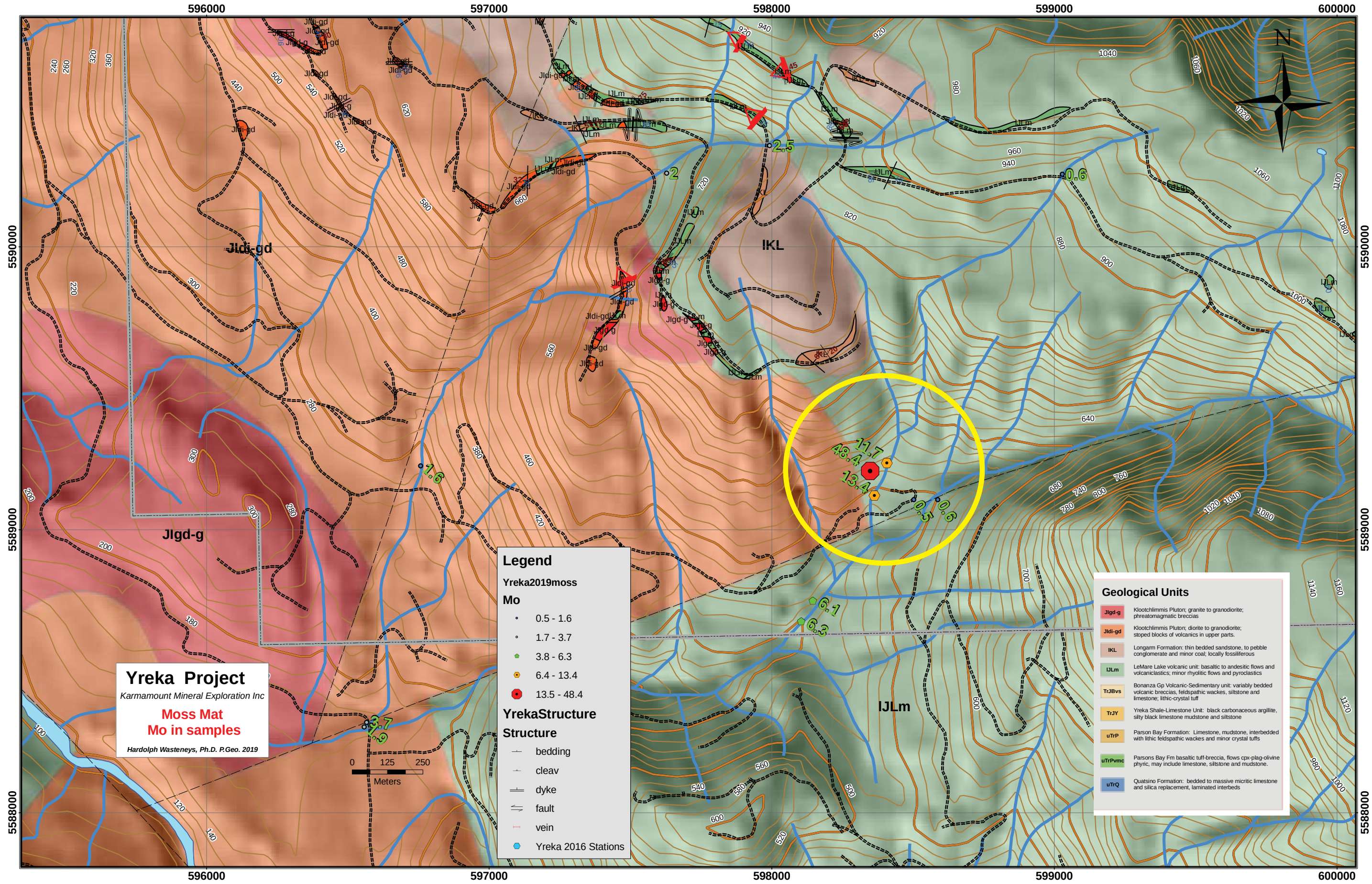

Figure 10: Mo concentration in Mat Samples.
Mo concentrations in ppm. Only one multi-sample anomaly was observed in the sample set other than the orientation sample below the Yreka skarn deposit. The yellow circle indicates the anomalous area.

sized Hubco bag. The bag was then agitated to promote separation of water from the silt and filtration through the bag's fabric. At a few locations where the moss mats had ample silt in the moss fabric or under the mat the whole mat was stuffed into the same size Hubco bag. This was the case at the Yreka orientation sample site. Consequently, all analyzed samples reported a sufficient mass of silt in the -80 mesh fractions to complete the analysis. However, it is unclear if modified procedure misrepresented the stream geochemistry of the leaner moss mat sites.

Analytical Results

The samples were shipped to ALS Limited in North Vancouver for analysis by ultra Trace Aqua Regia ICP-MS using ALS code ME-MS41. The main anomalous element in the sample set from the samples on the west side of the Comstock Ridge was Mo. One anomalous zone was located represented by a cluster of samples in one branch of a steep creek shown in Figure 10. There one sample ran 48.4 ppm Mo, while nearby samples in adjacent creeks ran 11 and 13 pp, Mo. Above the confluence of the anomalous creek, the main creek only ran 0.6 ppm Mo, while down stream of the confluence two samples ran 6 ppm Mo. The cause of the anomaly can only be attributed to argillaceous sediment layers in LeMare Lake volcanics at this stage of exploration.

Geological Mapping

Several new roads were traversed in 2019 and some sites from 2018 revisited for more detailed examination. As well a new traverse was completed from the west side Comstock Ridge in to the upper reaches of Canyon Creek and the spur ridge above the Yreka skarn. The area is somewhat inaccessible from the east side because of an arduous several hundred meter climb through logging slashes and overgrown trails to reach the area. From the west, deactivated logging roads come within a few hundred meters of the ridge near the summit and a col at the head of a major stream on Comstock Mountain. From the ridge, accessing the area above Yreka requires a descent of about 600 meters either along steep stream banks or along the spur ridge. This was accomplished one day from a high camp on Comstock Mountain. The lowest point in the north arm of Canyon Creek reached was at the edge of logging slashes mixed with land slips which had regrown into difficult near impenetrable bush, but a few hundred meters above Yreka. From the lowest point reached in the creek the return traverse followed a relatively gentle ridge to the summit of Comstock.

Silicified, pyritic porphyritic rocks were observed in the Canyon Creek ravine at several locations in addition to those observed in 2018. At the lowest point reached, laminated skarn-altered argillites were observed corresponding to the Parsons Bay Formation on BCGS map GM2011-3 (Nixon et al., 2011). Disseminated pyrite and pyrrhotite were notable in both of the lithologies and probably account for the strong chargeability responses in the two IP survey lines uphill from the Yreka deposit.

Geological observations on the western slopes were mainly within the Klootchlimmis pluton along a lower series of logging roads than traversed in 2018. The main lithology observed was coarse hornblende diorite to gabbro varying to monzonite with pink alkali feldspars.

A breccia complex found in 2018 (Figure 24) was reexamined critically and reinterpreted. It was found that the rock face previously interpreted as a phreato-magmatic breccia was actually a form of igneous breccia covered by a thick veneer of fault gouge that gave the impression of streaming around pebbles in a phreatomagmatic breccia. The gouge was about 5 mm thick and was deflected around larger fragments in the underlying breccia, which was at the margin of a medium grained hornblende diorite. Above the fault contact, which was only observed along strike of the rock face, is a fine grained leucocratic diorite that has been stockwork fractured possibly as a result of fault motion, but perhaps also as a result of hydrothermal decompression. The breccia below the fault resembles a coarse volcanic breccia, but grades into a coherent non-brecciated phaneritic rock a few meters below the fault surface. The breccia fragments are subrounded to angular medium grained hornblende diorite surrounded by finer grained diorite without much evidence of rock flour or mechanical gouge. The IP line closest to the breccia did not show a high chargeability response despite observed fractured controlled sulphides, indicating that the breccia is of narrow extent associated with a fault zone.

Along the new traverses on the lower roads gabbros and hornblende diorites were the most common lithologies observed. The most common lithology was biotite and hornblende phyric gabbros to diorites with accessory magnetite. Biotite appears as a primary mineral. Pink feldspars are evident in some more leucocratic varieties that are probably monzonitic and in one new outcrop appear as dykes cutting the more mafic phases. Minor alteration was observed mainly shown by coarse pyrite, but along one of the IP lines at a chargeability anomaly, gypsum veinlets were observed in 2018. At another chargeability anomaly on the southern line minor chloritic slips were observed cutting the gabbros.

No clear evidence was found of the second magma series determined in the lithogeochemical study of 2018. Instead of whole rock lithogeochemistry. a handheld XRF (Niton XL3t) was used to determine, at least qualitatively, several rock forming elements in the rocks. These included Fe, Ti, Zr, Ca, K, Sr, Zr, Hf, Mn, Cr, V, and S. The objective was to classify the intrusive rocks in the two suite identified by the lithogeochemical analysis of rock collected in 2018 within the Klootchlimmis pluton. Zr and Ti were the main distinguishing elements and in practice Zr proved to be the most consistently useful element for analysis with the XRF. Other major rock forming elements such as Ca and Fe displayed a lot of variability that was difficult to reconcile with the actual compositions without analyzing the rock by whole rock geochemistry. This probably was a consequence of the relatively small area of the analyzer beam relative to the coarse phaneritic nature of the intrusive rocks. Individual analyses of the same rock show variability reflecting different proportions of mafic silicates and feldspars under the beam.

Generally, no significant mappable pattern was discernible in the data and it remains to reanalyze whole rock samples from the 2018 work to clarify their utility. At one location high Zr readings, above 300 ppm, were notable in a fine grained diorite with unclear contacts with surrounding gabbros and diorites. Elsewhere, high Zr readings were found in sucrose-textured feldspar porphyritic dykes of probable granitic or quartz monzonitic composition representing the second magma series. Titanium readings were not as consistent, but many in the high Zr group were relatively low. Other elements determined by the pXRF were not consistent enough to be diagnostic.

Units of the Cretaceous Longarm Formation were confirmed within the map area. One location was along the northern IP line at a significant chargeability anomaly. Outcrops consisted of coarse hematitic grits interbedded with laminated grey and black siltstones. Although the Longarm Formation was unconformably deposited on the LeMare Lake group volcanics and the Klootchlimmis pluton, deformation has affected the Longarm resulting in northerly trending folding with one measured fold axis trending 325 and plunging north at 20 degrees. The IP chargeability anomaly “B” on line 2000N (Figures 6 to 9) occurs in the middle of the area covered by the formation and therefore may be caused by minerals within the rocks such as hematite in the grits or graphite in the siltstones. The corresponding resistivity is low indicating a relatively conductive body in this case possibly the observed shales or graphitic siltstones.

Recommendations from the results of geological mapping after the IP survey

The IP survey has revealed unexpected anomalies on the western slope of Comstock Ridge that are worthy of additional ground exploration. The two anomalies within the Klootchlimmis pluton both have moderate resistivity responses, which is in the usual range for stockwork mineralization. No significant alteration has been noted around the area of the anomalies except for gypsum veining, which is found in some porphyry system peripheral to mineralization. Ground exploration should be focused on two aspects with a 2 square km area designated area “A” on Figure 28: 1. Stream geochemistry using moss mats in the streams through the IP anomalies and 2. Detailed lithogeochemistry to sort out mappable unit of the two magma series differentiated in 2018 in the area of the anomalies to determine if either is associated with mineralization. Current mapping in 2019 augmented by pXRF did not confirm any distinctly mappable units representing the two magma series partly because of the broad overlap of rock forming element compositions except for Zr.

On the Yreka slope an anomalous IP response was expected proximal to the skarn horizons. Unexpectedly, however, a strong chargeability anomaly continued up-slope above the skarns for over 800 meters into the LeMare Lake Volcanics where many occurrences of strongly silicified, pyritically altered volcanics and possibly dioritic intrusives were observed this year and in 2018. Although the immediate area of the Yreka deposit, such as between 6300 E and 7000 E on line 2000N, can be expected to have been thoroughly explored, the farther parts of the same IP anomaly between 6300 E and 5600 E do not appear to have much recorded exploration. The same chargeability response is apparent on line 1000 N suggesting continuity across the slope in the LeMare Lake volcanics. Access to the area was improved during the 2019 season to aid the IP survey and it looks feasible to explore a 2 km by 1 km strip centred across the western edge of the anomalous IP designated area “B” on Figure 28. The southern end of the area can be reached from the Y400 road system while the center and north can be reached by trails reopened below Yreka.

Regional Geology

Vancouver Island is a significant transect across the southern part of the Mid-Paleozoic to Early Mesozoic Wrangellian tectonostratigraphic terrane that extends northward though the Queen Charlotte Island into southern Alaska. On Vancouver Island Wrangellia is intruded to the east by rocks of the Coast Plutonic Complex and tectonically sliced to the west by the Pacific Rim Terrane and the Westcoast Crystalline Complex (Wheeler and McFeely, 1991). The Wrangellian terrane on Vancouver Island is essentially composed of two oceanic volcanic arcs separated by voluminous flood basalts that formed an oceanic plateau. The earliest arc, forming the basement of the island geology is exposed in several fault-bounded tectonic uplifts in the central part of the island, most notably around Buttle Lake where the prolific massive sulphide deposits of Myra Falls are located in felsic volcanics of the Devonian to Early Permian Sicker and Buttle Lake Groups. The basement uplifts were deformed and the engulfed by the voluminous flood basalts of the Karmutsen Formation, the lower part of the Vancouver Group, that dominates the alpine skyline of much of the central Vancouver Island. A return to volcanic arc magmatism came in the Triassic with the onset of the Bonanza Group that deposited a series of increasingly volcanic-dominated strata on the Quatsino Formation limestones that capped the Karmutsen Formation flood basalt plateau. The Bonanza Group is mainly composed of the Parson Bay Formation and the Bonanza Volcanics. The Parson Bay Formation is a mixed carbonate-clastic-volcanic succession with a significant island-arc volcanic and volcaniclastic affinity that separates it conformably from the earlier limestone strata of the Quatsino Formation and premonitory to Bonanza Group volcanic arc volcanism culminating in the volcanic dominated LeMare Lake Volcanics. Coeval granitoid intrusions of the Island Plutonic Suite cut volcanic strata of the Karmutsen Formation as well as those of the Bonanza Group and resulted in both porphyry copper deposits and, where intruding limestones, significant skarn deposits of magnetite and, at Yreka, copper sulphides.

The Bonanza Arc rocks were eroded following a major Jurassic contractional event and covered unconformably by clastic sedimentary rocks of the terrigeneous Nanaimo Group that include coal-bearing conglomerates in places along the eastern side of Vancouver Island. The history of faulting on northern Vancouver Island is complex and dominated by Cretaceous transpression and Tertiary extension. The present crustal architecture exhibits a dominant northwesterly-trending structural grain manifested by the distribution of major lithostratigraphic units and granitoid plutons (Figure 11). Numerous fault-bounded blocks of homoclinal, Early Mesozoic strata such as that around Yreka on the east shore of Neroutsos Inlet, generally dip to the south west and west whereas Jura-Cretaceous clastic strata are preserved as disparate fault bounded remnants of formerly more extensive Cretaceous basins on the north side of Quatsino Sound, to the north of Yreka (Nixon and Orr, 2007).

Geology of the Yreka Property

The eastern slopes of the Comstock- Wolfenden Ridge from the shores of Neroutsos Inlet to the ridge crest is underlain by a homoclinal sequence (Figure 14) consisting in ascending order of the Quatsino Limestone, Parson Bay Formation and LeMare Lake volcanics. The base of the sequence is presumably laid on Karmutsen Formation that is not exposed within the inlet, but forms much of the outcrop on Vancouver Island and is the major unit in the Vancouver Group. The Quatsino Formation Limestone caps the Karmutsen Formation that forms the major volume of the Vancouver Group. It underlies much of the east side of Neroutsos Inlet and outcrops in the Yreka area in a few fault bounded blocks along the coast. Unconformably overlying the Vancouver Group, the Bonanza Group consists in the Parson Bay Formation sedimentary rocks, the Volcaniclastic-Sedimentary Unit and the LeMare Lake Formation volcanics. The Parson

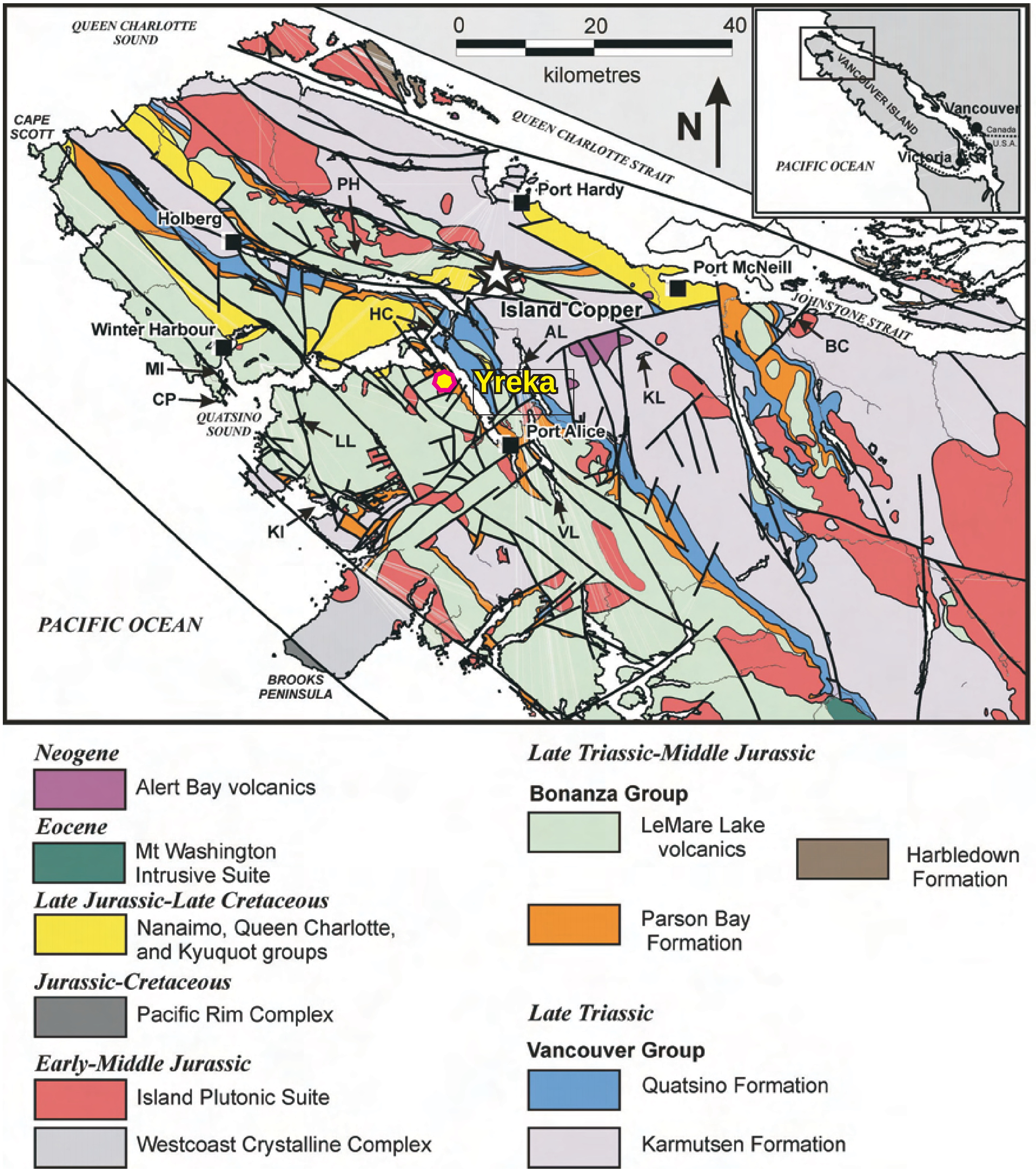

Figure 11: Regional Geology of northern Vancouver Island (from Nixon & Orr, 2007, after Massey et al. 2005)

Yreka is indicated by yellow polygon and label along a northwesterly trending belt of Quatsino Parson Bay and Le Mare Lake Formations that form homoclinal blocks copping the edge of Karmutsen basalts.

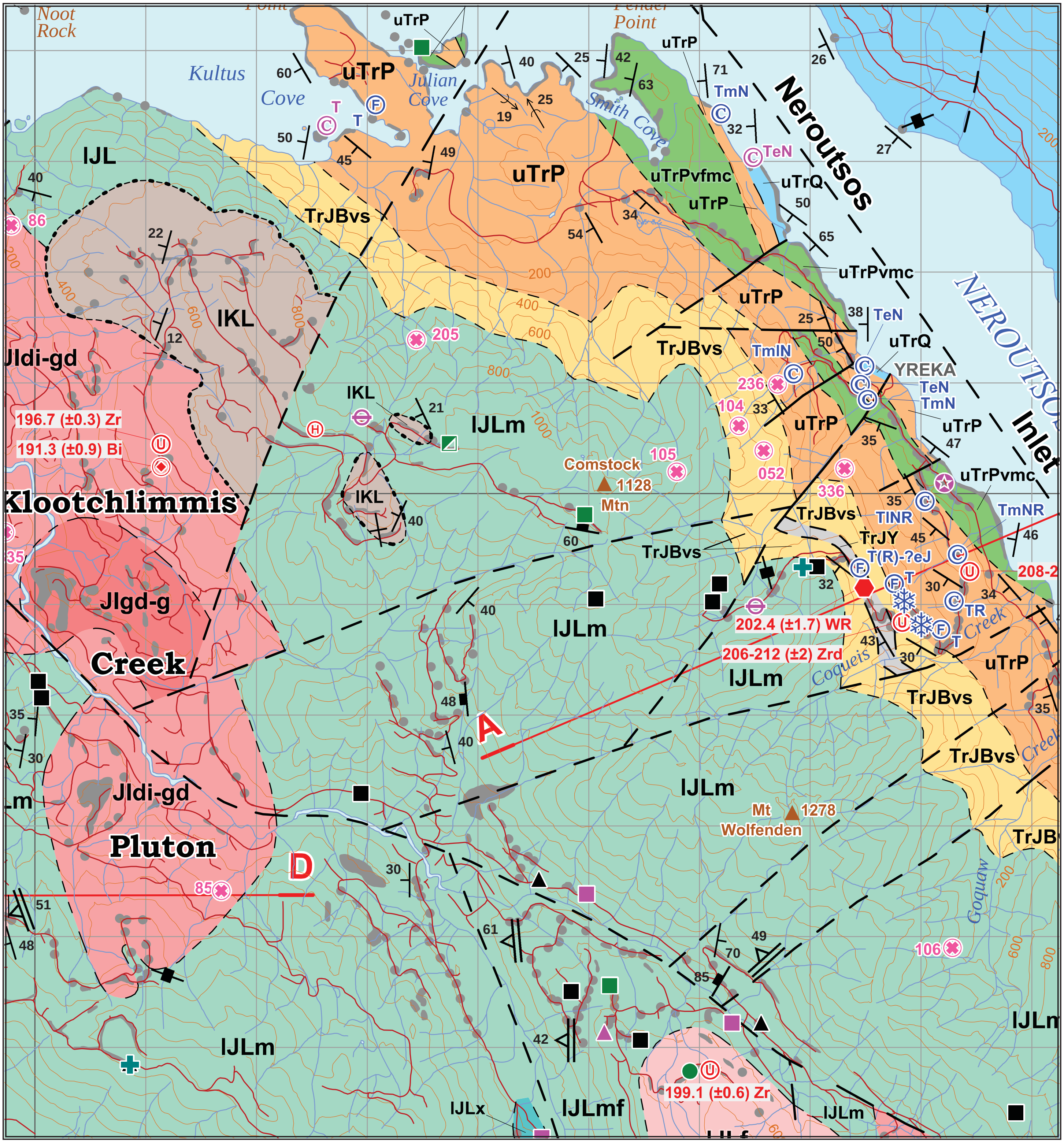

Figure 12: Part of Map GM2011-3 of Nixon et al. (2011) showing the Yreka district geology. Location of cross section in Figure 10 is shown at red line A-B. Symbols: back and green squares; basalts unaltered and altered; blue circles with letter fill: C = conodont date, U = U-Pb zircon date, F = macrofossil. Pink circles with pink X; Minfile localities with code number

LOWER CRETACEOUS

Upper Valanginian to Barremian

LONGARM FORMATION EQUIVALENTS

IKL	Greenish to brownish grey, thinly bedded to massive sandstone, siltstone, mudstone, pebble conglomerate and minor coal; locally fossiliferous

UPPER TRIASSIC TO LOWER JURASSIC

BONANZA GROUP

Lower Jurassic (Hettangian to Upper Sinemurian)

LE MARE LAKE VOLCANIC UNIT

IJL	Undifferentiated basaltic to rhyolitic flows and pyroclastic rocks (mainly subaerial); includes ash-flow and rare airfall tuff and reworked equivalents, minor pillow lava, pillow breccia, hyaloclastite and rare pyroclastic surge deposits, locally intercalated with marine to non-marine volcanic conglomerate, sandstone, siltstone, mudstone, impure limestone and debris-flow deposits
IJLm	Dark grey-green, basaltic to andesitic flows with minor intercalated volcaniclastic and sedimentary lithotypes similar to unit IJLvs; locally includes minor pillow lava/breccia; may include minor rhyolitic flows and pyroclastic rocks

VOLCANICLASTIC-SEDIMENTARY UNIT

TrJBvs	Interbedded volcaniclastic and sedimentary strata (predominantly submarine): buff to grey-green, thin to very thickly bedded, calcareous to non-calcareous, volcanic breccia, lithic and feldspathic wacke, siltstone and limestone, locally coralline; lithic-crystal tuff, lapilli tuff and reworked equivalents; and minor vitric tuff, pebbly sandstone, siltstone, and volcaniclastic debris-flow deposits; may include black carbonaceous shale, mudstone, siltstone and limestone (locally coralline) equivalent to unit TrJY
TrJY	Yreka shale-limestone unit: black carbonaceous or graphitic shale passing upward into black to medium grey, thin to medium-bedded, variably carbonaceous, silty limestone with shale partings, concretionary limestone, mudstone and siltstone; locally fossiliferous; may be included in unit TrJBvs where not mapped separately (or pass laterally into coarser-grained clastic deposits)

Upper Triassic (Carnian to Rhaetian)

PARSON BAY FORMATION

uTrP	Medium grey to black, thinly laminated to medium bedded, impure limestone, calcareous to non-calcareous mudstone, siltstone and shale intercalated with variable proportions of grey-green lithic feldspathic/tuffaceous wacke, minor crystal-lithic tuff and reworked equivalents, volcaniclastic breccia and debris-flow deposits, and rare vitric tuff, pebbly sandstone and conglomerate; shale locally yields abundant thin-shelled bivalves (Halobia sp., Monotis sp.); limestone locally contains rare algal structures; may include coralline limestone (Sutton limestone equivalent in part; see below) near the top of the succession
uTrPvmc	Dark grey-green, basaltic tuff-breccia, lapilli tuff and reworked equivalents; aphanitic to coarsely clinopyroxene-plagioclase±olivine-phyric; may include minor limestone, wacke, siltstone and mudstone
uTrPvfmc	Dark grey-green tuff-breccia, crystal-lithic lapilli tuff and lesser basaltic flows; aphanitic to coarsely clinopyroxene-plagioclase±olivine-phyric; may include minor limestone, wacke, siltstone and mudstone

UPPER TRIASSIC

VANCOUVER GROUP

Upper Triassic (Carnian to Lower Norian)

QUATSINO FORMATION

uTrQ	Medium to pale grey, thinly bedded to massive micritic limestone and locally bioclastic limestone; minor silica replacement and chert nodules; rare laminated interbeds, oolitic layers and algal structures; locally fossiliferous; unit is very thin (<40m) on the west coast of northern Vancouver Island

Upper Triassic (Carnian; possibly Middle Triassic (Ladinian) at the base)

KARMUTSEN FORMATION

Upper Karmutsen Formation: Flow Member

uTruKf	Dark grey-green, aphanitic to plagioclase-phyric and minor plagioclase-megacrystic basalt flows, commonly amygdaloidal and locally exhibiting laminar flow features (vesicle trains) and pipe vesicles; may include minor pillow lava and hyaloclastite

Figure 13: Geological Units on cross section A-B

Unit descriptions are from GM2011-3 Map by Nixon et al. (2011)

Bay Formation occupies about half of the slope up to the Wolfenden - Comstock ridge crest. It is subdivided into volcanic- and limestone-dominant units. The Volcaniclastic-Sedimentary Unit and LeMare Lake Formation volcanics complete the section to the crest of the ridge and hosts the skarn deposits at Yreka. The LeMare Lake volcanics range in composition from felsic to mafic with pyroclastic and coherent flow dominated units.

Quatsino Formation (uTrQ)

The Upper Triassic, Carnian to lower Norian Quatsino Formation was mapped by Nixon et al. (2011) at two restricted shoreline locations in the Yreka area. Quatsino Formation is the upper-most formation in the Vancouver Group, which largely consists of the voluminous basalt flows and volcaniclastics of the Upper Triassic Karmutsen Formation. The Quatsino caps the flood basalts of the Karmutsen oceanic flood basalt plateau that itself is built on island arc volcanics of the Permian Sicker Group, now exposed mainly in structural uplifts at the south end of Buttle Lake and near Port Alberni. The Quatsino is described by Nixon et al, (2007) as a medium to pale grey, thinly bedded to massive micritic and locally bioclastic limestone with minor silica replacement and chert nodules. It has rare laminated interbeds, oolitic layers and algal structures and is locally fossiliferous. Its restricted occurrence in the area corresponds to its lack of thickness (<40m) on the west coast of northern Vancouver Island.

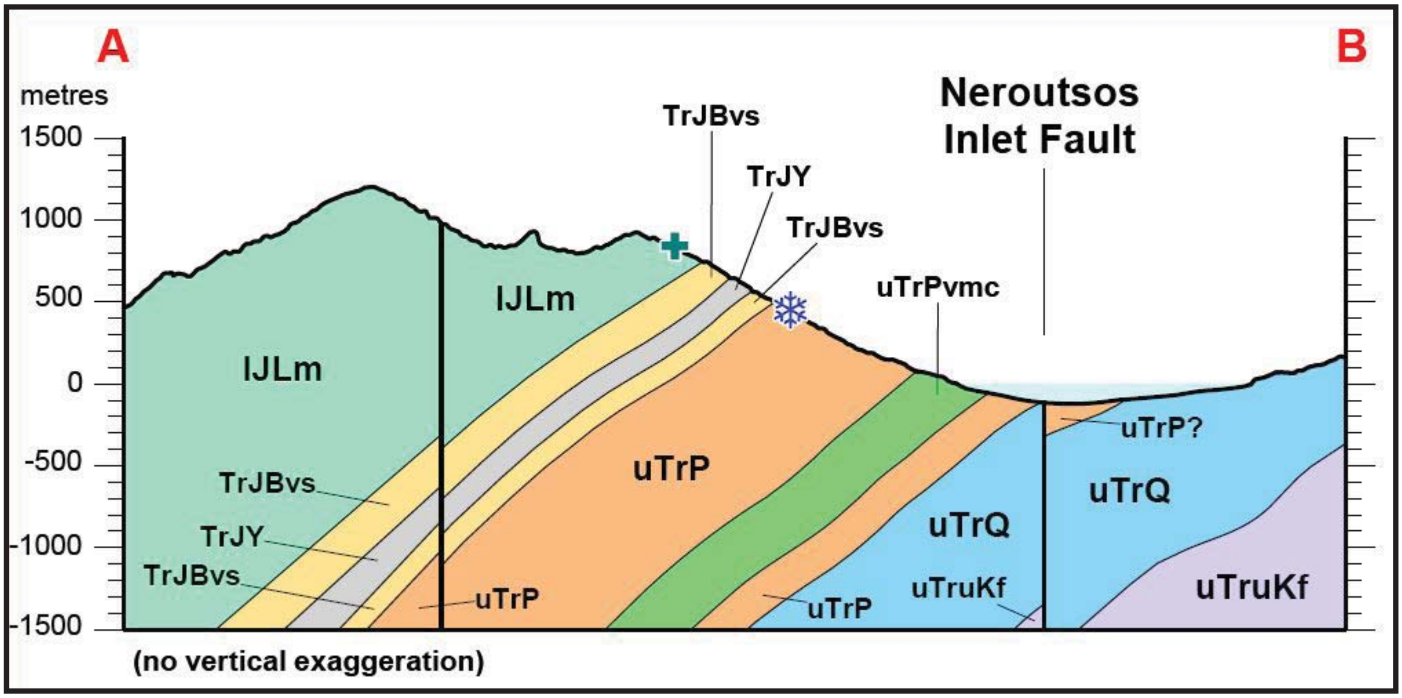

Figure 14: Cross section through homoclinal sequence at Yreka from Map GM2011 (Nixon et al., 2011)

Bonanza Group: Parson Bay Formation (uTrP)

The main unit of the Parson Bay Formation uTrP was mapped by Nixon et al. (2011) in a near continuous band along the west coast of Neroutsos Inlet from Kultus Cove south. It is subdivided into two additional volcanic dominated units, uTrPvfmc and uTrPvmc that form a series of fault delimited blocks within the main formation from Smith Cove south to the coast a few kms south of Yreka. The main Parson Bay Formation described by Nixon et al. (2011) consists of medium grey to black, thinly laminated to medium bedded, impure limestone, calcareous to non-calcareous mudstone, siltstone and shale intercalated with variable proportions of grey-green lithic feldspathic/tuffaceous wacke, minor crystal-lithic tuff and reworked equivalents, volcaniclastic breccia and debris-flow deposits, and rare vitric tuff, pebbly sandstone and conglomerate. Shale units locally yield abundant thin-shelled bivalves (Halobia sp., Monotis sp.), and limestone locally contains rare algal structures; may include coralline limestone described as the Sutton limestone equivalent, near the top of the succession.

Work by the author in 2016 in the Kultus Cove block showed the Parson Bay Fm to be a mix of grey massive limestone and gritty limestone with zones of dark green calcareous crystal tuffs that weather brick red commonly cut by E-W calcite veins. To the east, the formation consists of non-calcareous sediments with rusty tuffaceous zones, dark grey, finely fractured massive limestone interbedded with calcareous volcanic grit and limestone conglomerate. White weathering hornblende-feldspar porphyritic felsic dykes cut the limestone steeply at 160 degree

Figure 15: Road cuts in logging areas within Parson Bay Formation along Neroutsos Inlet. Dark weathering limestones and calcareous crystal tuffs are poorly bedded through much of the section that dips into the foreground. Dog named Beau (130lbs) for scale near centre of photo.

strike locally.

An adjacent fault block of the upper Parson Bay Formation is dominated by calcareous tuffs, commonly massive bedded, with some beds up to 10 m thick and grading upward to agglomerates with rounded porphyritic clasts (Wasteneys, 2017). In places limestone occurs as a host to dark grey calcareous crystal tuffs and crystal-lithic breccias with vesicular lapilli, but the units surveyed are predominantly of volcanic origin within a 20 hectare area traversed by new logging roads. Felsic dykes, up to several meters wide sporadically cut the sediments and tuffs in a N-S strike. Pyrite alteration of hornblende is notable along with thin veins of pyrite observed in the vicinity of the dykes cutting the tuffs.

Parson Bay Formation volcanic units (uTrPvfmc and uTrPvmc)

The mapped volcanic dominated sections within the Parson Bay Formation includes units uTrPvfmc and uTrPvmc and are described by Nixon et al. (2011) as follows: uTrPvfmc is a dark grey-green tuff-breccia, crystal-lithic lapilli tuff and lesser basaltic flows that are aphanitic to coarsely clinopyroxene-plagioclase±olivine-phyric. The unit may include minor limestone, wacke, siltstone and mudstone. The unit uTrPvmc consists of dark grey-green, basaltic tuff-breccia, lapilli tuff and reworked equivalents that are aphanitic to coarsely clinopyroxene-plagioclase±olivine-phyric and may include minor limestone, wacke, siltstone and mudstone.

Mapping in 2016 was within two fault blocks of this unit, one near Smith Cove, which also includes occurrences of subunit uTrPvfmc on some small islands in the cove. This sub unit (uTrPfvmc) is described as "dark grey-green basaltic flows and lesser volcaniclastic breccia and lapilli tuff; aphanitic to coarsely clinopyroxene-plagioclase±olivine-phyric,", which differs from the uTrPvfmc unit in predominance of flows over tuffs.

In the Smith Cove peninsula the unit uTrPvmc varies from predominantly dark grey

Figure 16: Moderately west dipping conglomerates in the Parson Bay Formation. Clasts are porphyritic volcanics. Rock weathers brown as in the photo, but is dark green on fresh surfaces. The exposure is along a logging road on the east side of the property.

Figure 17: Dyke intruding Parson Bay Formation
A light coloured felsic dyke 3 meters wide is at center of photo

gritty limestone to lithic and crystal lithic tuffs. Epidote alteration and pyrite and chalcopyrite mineralization are common, but sporadic forming veinlets and disseminations. The epidote generally indicates the presence of altered plagioclase feldspar crystals in volcanics in this case tuffs and helps differentiate the calcareous tuffs from gritty limestones.

The southern block of uTrPvmc all consist in crystal-lithic lapilli tuffs that are generally calcareous and display sporadic epidote and chlorite alteration. Generally, 2016 observations by the author corroborate the designation and description of the units on the GM2011 map of Nixon et al. (2011)

South of Yreka, uTrPvmc consists of grey weathering, well bedded siltstone to sandstone, but varying over 30 meters to the north to amygdaloidal feldspar-phyric intermediate flows.

Bonanza Group: Volcaniclastic-Sedimentary Unit (TrJBvs)

The Parson Bay Formation is stratigraphically overlain by the Volcaniclastic-Sedimentary Unit of the Bonanza Group, which exposures are found along the Y400 logging branch road that winds about 600 meters upwards into the valley south of the old Yreka workings (Fig. 18). The main unit is described by Nixon et al. (2011) as “Interbedded volcaniclastic and sedimentary strata (predominantly submarine): buff to grey-green, thin to very thickly bedded, calcareous to non-calcareous, volcanic breccia, lithic and feldspathic wacke, siltstone and limestone, locally coralline; lithic-crystal tuff, lapilli tuff and reworked equivalents; and minor vitric tuff, pebbly sandstone, siltstone, and volcaniclastic debris-flow deposits; may include black carbonaceous

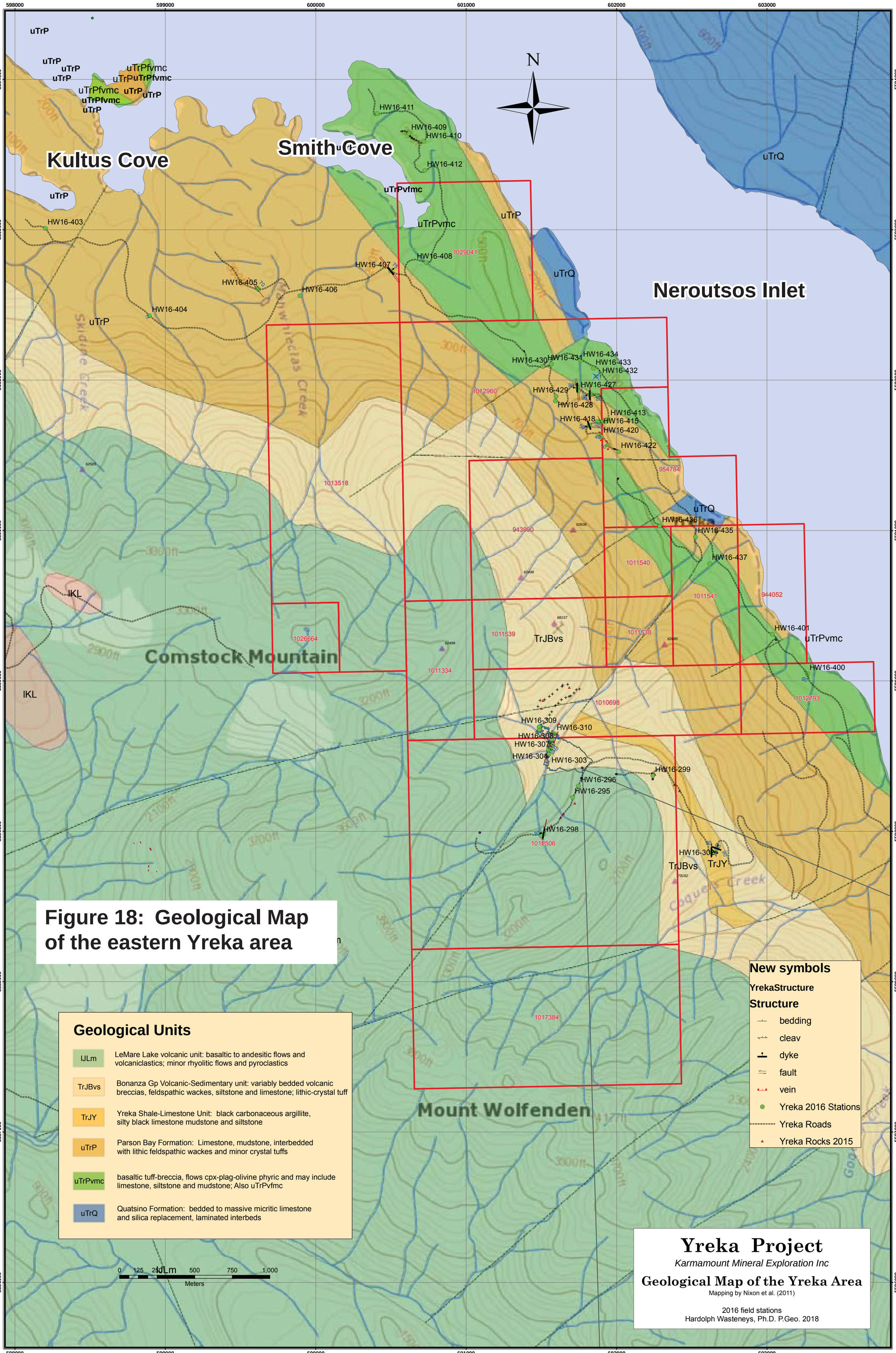

Figure 18: Geological Map of the eastern Yreka area

shale, mudstone, siltstone and limestone (locally coralline) equivalent to unit TrJY ".

The off road traverse started along the Y400 Road and descended into the creek through densely overgrown logging slash. The creek bed had good outcrops, but progress was impeded by heavy deadfall of old growth trees that dammed the creek bed at intervals. Large porphyritic felsic dykes occupied much of the base of the creek and formed some of its steep banks. In 2016 two dykes of about 3 meters width were continuously mapped for over 200 meters along the creek. Both displayed altered- to pyrite-replaced acicular hornblende phenocrysts, and feldspar phenocrysts in a light coloured matrix. Host rocks to the dykes were finely bedded, orange to yellow weathering tuffs, with moderate north and west dips. Sulphide impregnations were observed in the tuffs in places appearing bleached or varying to a white cherty tuff.

South of the confluence of Canyon Creek and North Arm Creek (a tributary), an outcrop was described as a black, variably deformed argillite with pyritic veinlets and locally rusty weathering. The unit may correspond to the TrJY - Yreka shale-Limestone unit observed along

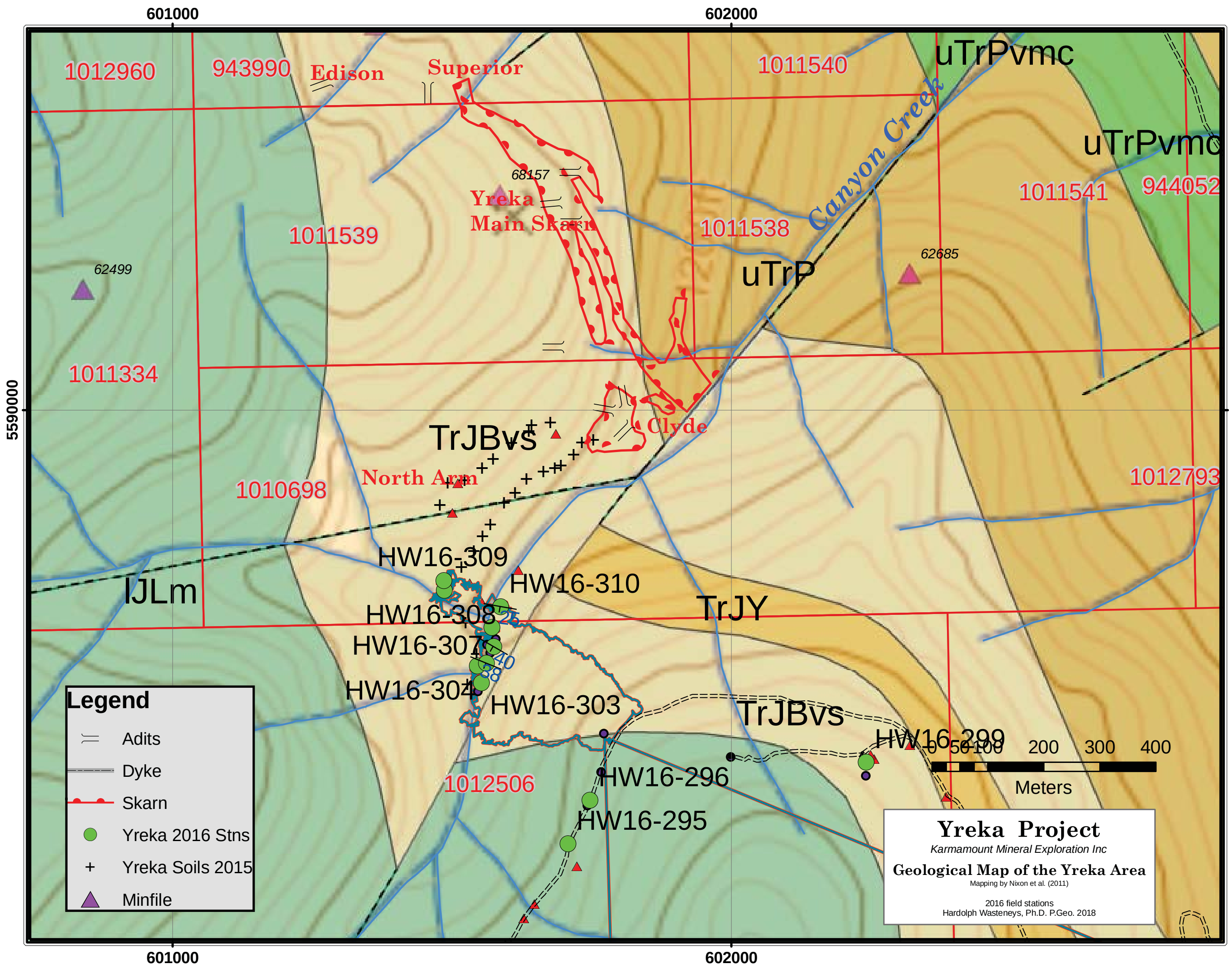

Figure 19: Geology of the Yreka Mine area.
Red line with half circles encloses surface area of mapped skarn assemblages in the main skarn area surrounding the Yreka sulphide lens. Adits from old working indicate other areas of mineralization. Karmamount Map stations from 2016 shown in green circles, black crosses are Karmamount soils from 2015.. Geological Units are explained in text and legend of map in Figure 8 and Appendix B (full size).

the Y400 road, and presumed to terminate against a fault farther downstream in the creek. Possibly this could be the continuation of the unit in the adjacent fault block.

The subunit TrJY named the Yreka shale-limestone unit (Nixon et al. 2007), consists of black carbonaceous or graphitic shale passing upward into black to medium grey, thin to medium-bedded, variably carbonaceous, silty limestone with shale partings, concretionary limestone, mudstone and siltstone; locally fossiliferous. This unit occurs along Y400 within the

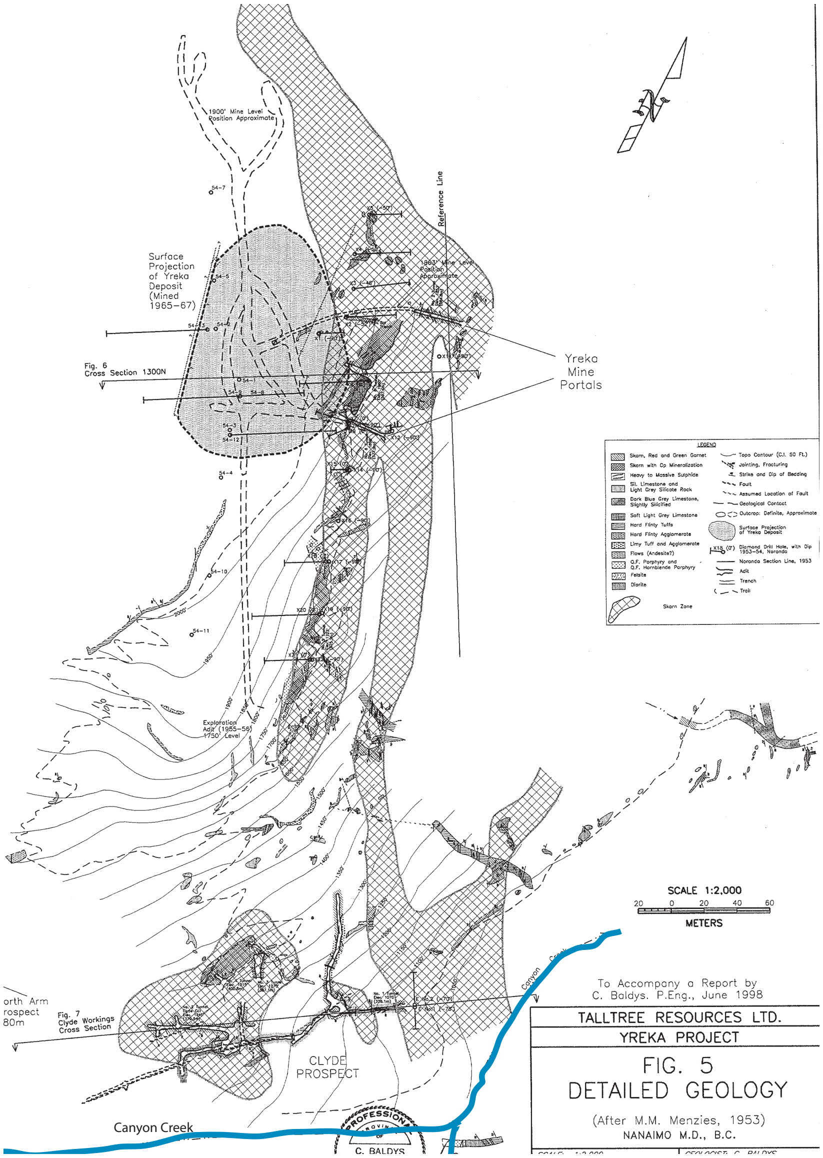

Figure 20: Historical Geological map of the Yreka Mine and Clyde Workings area. The map was produced by compilation of sections and plans in internal Noranda reports (Menzies, 1953), by Baldys (1998). The map shows the surface extent of the skarn horizon (diagonal hatched area) north of Canyon Creek and the vertical projection to surface of the mine developments and skarn sulphide mineralization. Sections through the Clyde and Yreka zones show the skarn dipping west within the stratigraphic units.

larger Volcaniclastic-Sedimentary unit and was examined by the writer in 2016 (Wasteneys, 2017a). There it is described as a black slate to black argillite in contact with amygdaloidal basalt with sulphides concentrated at the contact. Dykes of feldspar porphyry cut the Yreka shale-limestone unit at these outcrops.

Bonanza Group: LeMare Lake Volcanic Unit (lJLm)

Above the volcaniclastic-sedimentary unit is the volcanic dominated Le Mare Lake volcanics. This unit is described by Nixon et al. (2011) as dark grey-green, basaltic to andesitic flows with minor intercalated volcaniclastic and sedimentary lithotypes and locally includes minor pillow lava/breccia, minor rhyolitic flows and pyroclastic rocks. Within the mapped area, stations from the 2016 work were located along the Y400 road near its upper end in the NE trending valley south of Yreka. These describe, along a 500 meter stretch of the road, feldspar porphyritic volcanic flows and volcaniclastics cut by phyllosilicate-altered quartz-feldspar porphyritic felsic dykes in which hornblende mafic phenocrysts are replaced by epidote and pyrite and the feldspars are altered. A nearby fault zone is mineralized with black sphalerite and pyrite-quartz in a white clay gouge.

The 2018 work by the author (Wasteneys, 2019a) examined extensive areas of Le Mare Lake Formation in road cuts on the western slopes of Comstock Ridge. The objective was to explore the contacts of the Kloochlimmis Pluton with the Le Mare Lake Volcanics for breccias, dykes, alteration effects, skarn formation, and mineralization.

Klootchlimmis Pluton and other Intrusive Rocks

Dykes constitute the main intrusive rocks evident in the eastern part of the claims explored in 2016 and were mapped at about a dozen stations shown on the geological map (Figure 12). Dykes dominantly have near north-south strikes (azimuths range from 190 to 160) and steep dips. It is not clear if the dykes pre or post-date the fault blocks mapped on GM2011 (Nixon et al., 2007) since they were not traced from one block into another. Dykes in the south reach of Canyon Creek appear to form a swarm and parallel fault structures mapped at the southern end of the Y400 logging road.

Large plutonic bodies of the Kloochlimmis Creek Pluton outcrop on the western slopes of Comstock Ridge to an elevation of about 750 meters, which is about 1 km east of the previously mapped extent of the pluton shown on the maps of Nixon et al. (2007). Higher up the slopes in the Mahatta Valley, dykes, probably from the pluton, cut LeMare Lake volcanics.

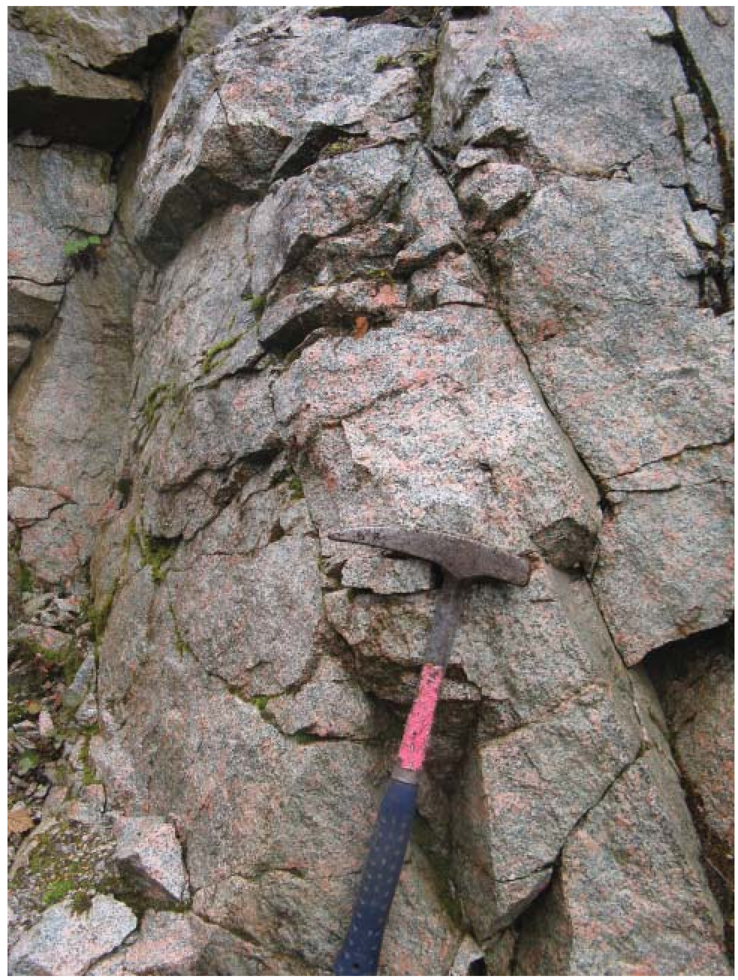

Figure 21: Pink feldspars in monzonite
The rock is located near the eastern contact of the Klootchlimmis pluton sampled in 2018 in an area of volcanic inclusions stoped from the overlying Le Mare Lake volcanics..

The Klootchlimmis Creek Pluton is divided into two main phases (within the map area): a biotite hornblende phyric diorite that contains accessory sphene and magnetite, and a monzonitic suite varying from monzogabbroic to monzonitic phases that have variable proportions of conspicuously pink orthoclase feldspar (Fig. 21). Grain size variation from fine to coarse was observed over narrow intervals indicating multiple intrusive events. The contact zone between the Le Mare Lake volcanics and the Klootchlimmis Pluton is characterized by extensive dyking into the volcanics and by stoping of volcanic blocks into larger masses of the pluton. Some

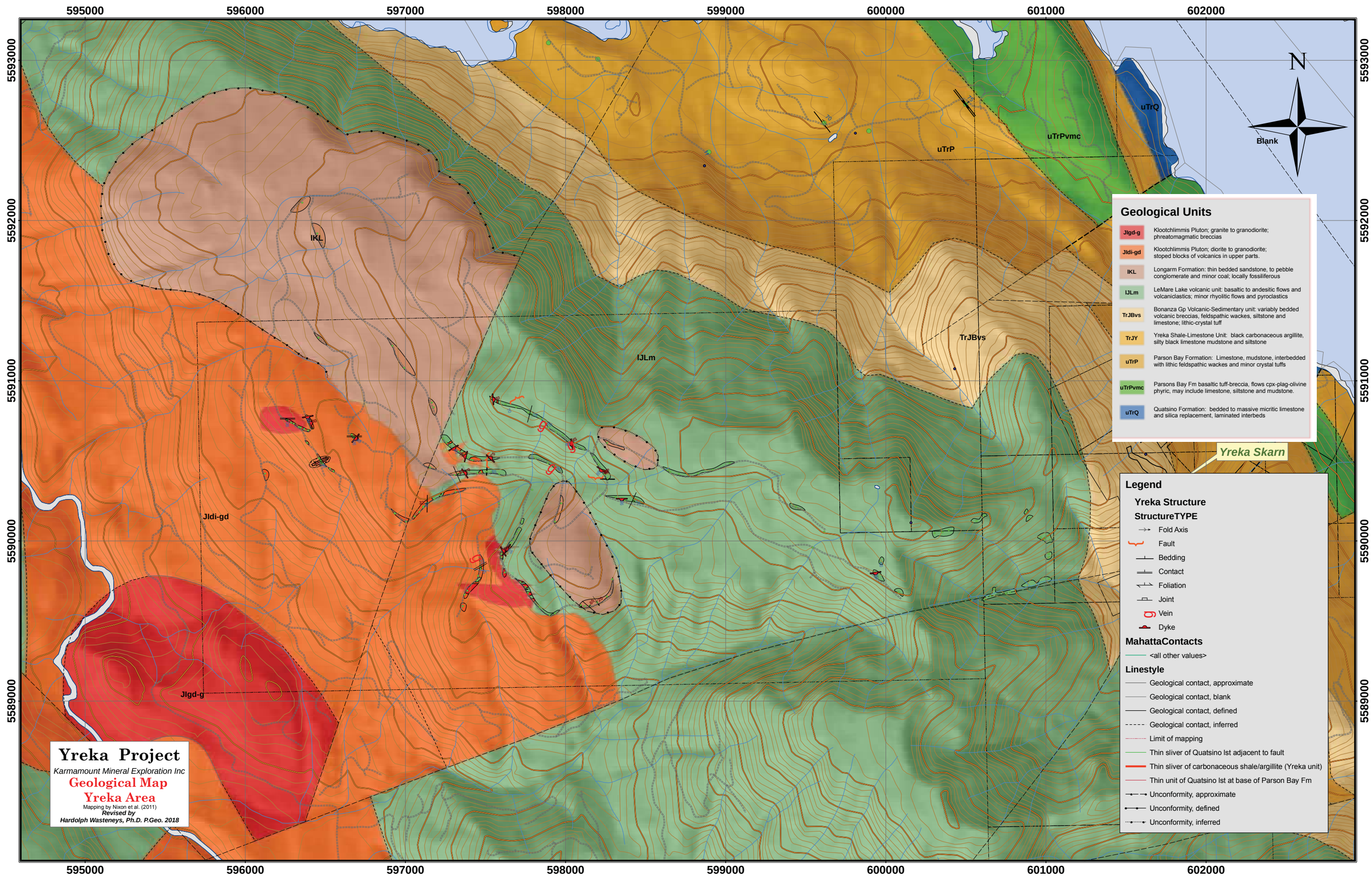

Figure 22: Geological Map of the Yreka Property 2018
Mapping utilized the network of logging roads in the new Comstock Ridge claim to revise the contact of the Klootchlimmis pluton eastward. Breccia bodies, skarns, and stoped block of volcanics characterize the intrusive contact zone of the pluton under the Le Mare Lake Volcanics. Numerous granitoid dykes intrude the volcanics away from the exposed contact The IKL unit is the Longarm Formation a Cretaceous facies of the Nanaimo Group which underlies much of the Strait of Georgia, lies unconformably on the Le Mare Lake Group and the Kloochlimmis Pluton..

contact zone alteration was also observed in the form of apparently silicified volcanics with a rhyolitic appearance. Skarn assemblages were also observed near the contact in stoped blocks of mafic volcanics and argillaceous sediments consisting of garnet, epidote, calcite, and pyrite.

Lithogeochemistry of the Klootchlimmis Pluton

A lithogeochemical study of 14 rocks from the Klootchlimmis pluton and associated volcanics was reported in Wasteneys (2019) and is summarized below. Fourteen granitoid rocks were analysed from various parts of the upper pluton and from dykes into the Le Mare Lake volcanics twelve of which are shown in map Figure 25. The other two are from the altered rocks in the eastern slope of Comstock ridge

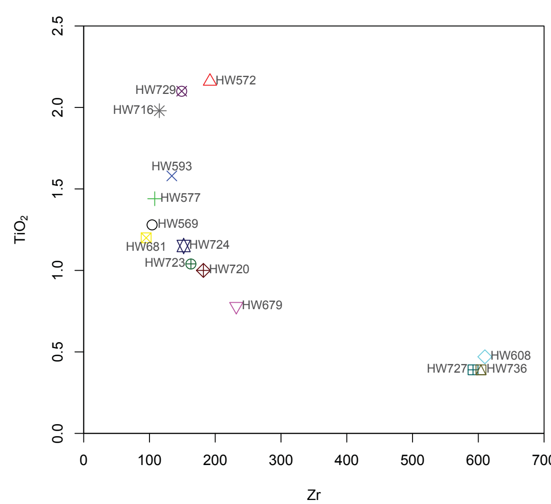

Figure 23: Zr-TiO2 binary plot of 14 igneous rocks from Yreka

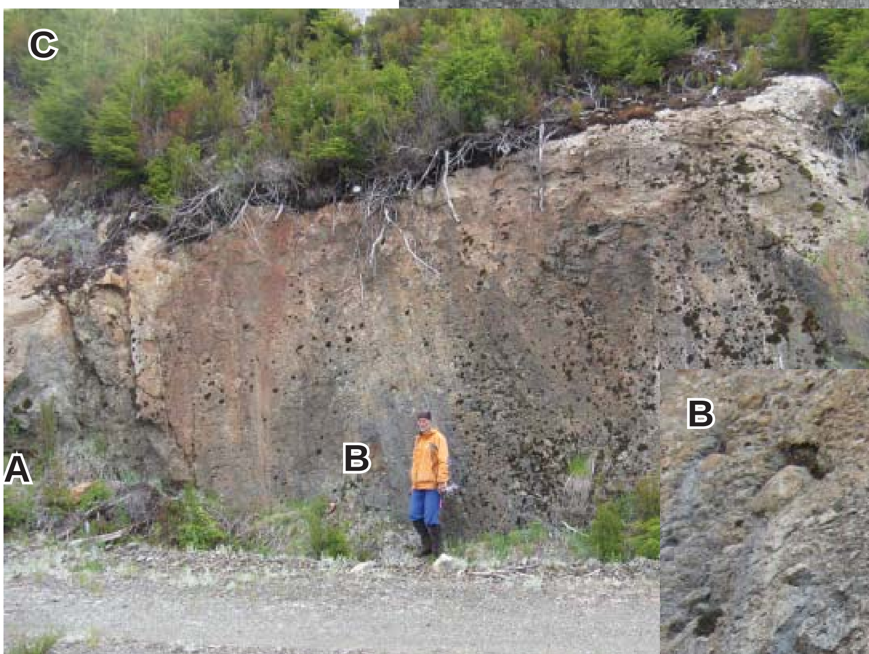

Figure 24: Breccias in the Klootchlimmis pluton

A. Magmatic breccia below the fault veneer shown in B. The breccia grades to coherent rock over a few meters into the surface. Pencil for scale.

lB. Normal fault veneer creates an apparent streaming of underlying magmatic breccia fragments. Rock hammer for scale.

C. Breccia exposed in a normal fault smoothed by glaciation. Photo B is located next to geologist in orange jacket. Photo A is at the left edge of the picture.

above the Yreka deposit. The compositions for the granitoid rocks are summarized in a Total Alkali Silica diagram of Middlemost (1994) in Figure 26. The results of the analysis revealed two separate plutonic suite within the Klootchlimmis Pluton separated on the basis of distinct $Zr-TiO_2$ fractionation trends (Figure 23) and patterns of enrichment and depletion of LILE, REEs and HFSEs (Figure 27). Compositional data, rock descriptions and detailed lithogeochemical analysis are documented in Wasteneys (2019).

By their major element composition the plutonic rocks of the Klootchlimmis pluton, and the probably related dykes intruding the adjacent Le Mare Lake volcanics, generally show an alkaline granitoid range from monzogabbros to quartz monzonites on Figure 25. However, the $Zr-TiO_2$ diagram highlights 3 rocks with unusually high Zr and low Ti compared to the other rocks and this relationship is confirmed in REE plots which show a separate range of compositions for many HFS and REE elements. This indicates a separate origin or parental magma for the high Zr-low Ti rocks.

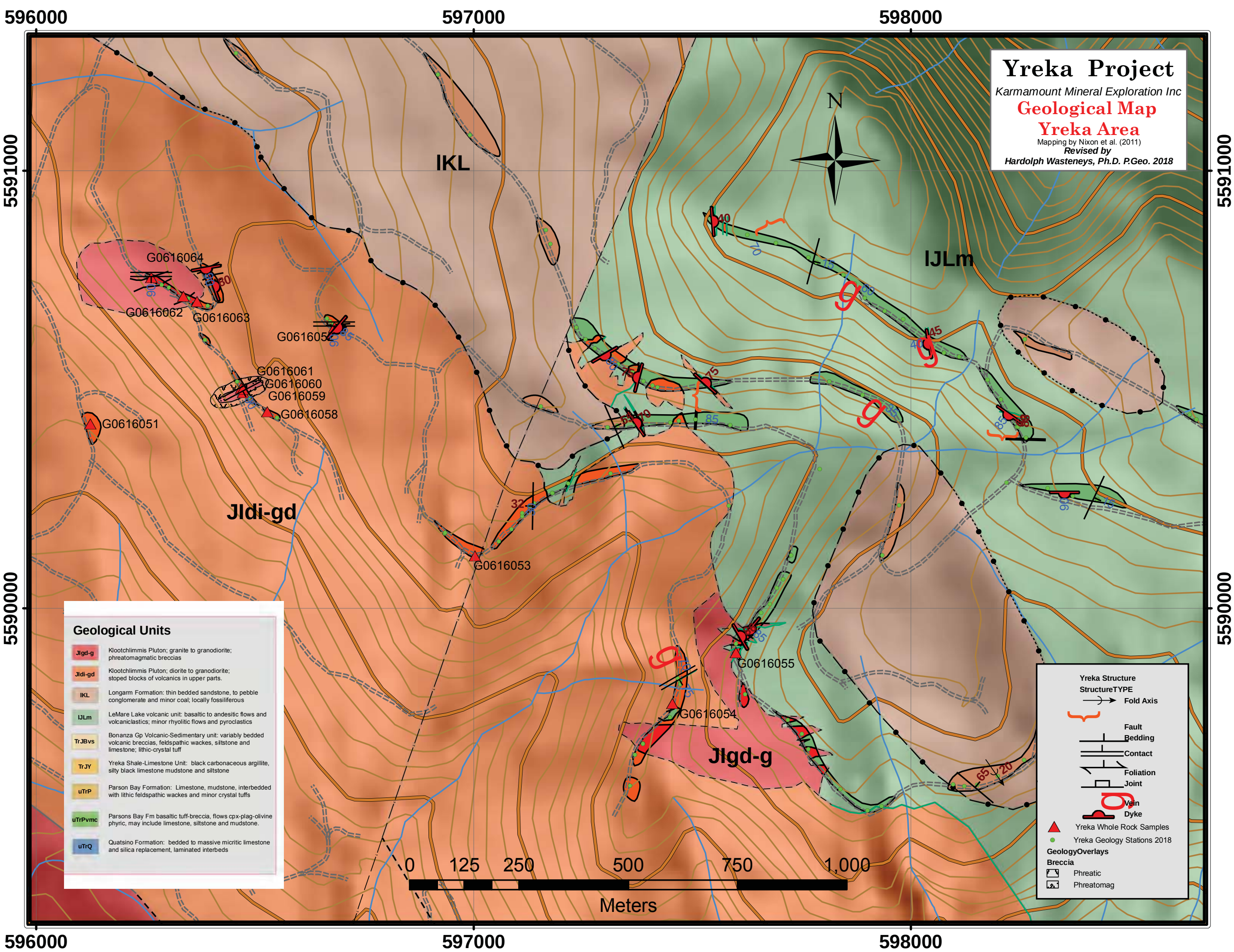

Figure 25: Klootchlimmis Pluton contact zone (2018 rock sample sites).
In the upper left of the map are two areas of breccias, the more northerly one involves a possible granitic stock coring a zone of phreatic breccias in diorite. Three hundred meters south is a breccia dyke or pipe of dioritic composition with marginal phreatic breccias. Geology stations and geochemical samples from the previous work in 2018 are marked.

More generally, the Klootchlimmis suites are typical of calc-alkaline arc rocks as is the sharp depletion of europium ("Eu anomaly") indicative of the previous removal of europium in its reduced Eu^{2+} (rather than its normal Eu^{3+}) making it compatible in the melt by ready substitution for Ca^{2+} in plagioclase. The most evolved rocks, the granite and quartz monzonite, have the highest REE concentrations and the sharpest Eu anomaly. The lowest REE concentrations are in monzodiorites, which also have relatively low LREE:HREE ratios plotting as nearly flat lines, but generally, all the samples have positive LREE:HREE normalized ratios typical of calc-alkaline fractionation.

The quartz monzonites (pink field) show strong depletions in the HFSEs Sr, P and Ti, relative to the monzodioritic suite. The single granite sample (not shown here) has a similar trend to the quartz monzonites, but additionally is depleted in the LILEs Cs, Ba, Rb and K.

Meanwhile the quartz monzonites (or granodiorite-granites) appear to be derived from a Zr-Nb enriched, Sr, Ti, P and LILE depleted source or by different degrees of partial melting and assimilation than the monzodioritic series. Plagioclase fractionation is indicated suggesting high level magma chambers for the source of the quartz monzonite-granite rocks. The difference in chemistry between the suites may reflect a change in tectonic environment as result of increased

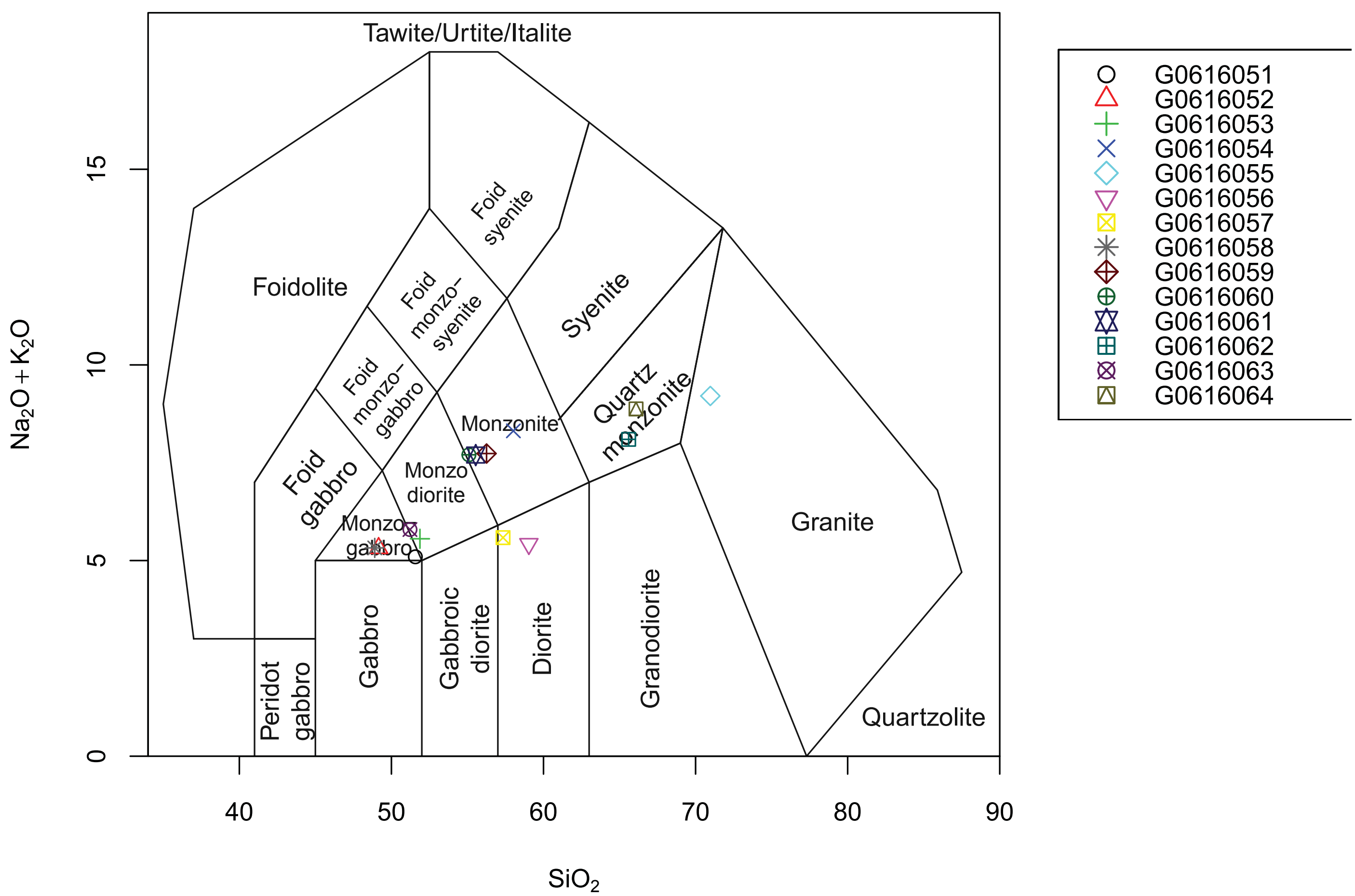

Figure 26: Total alkali silica plot for Yreka granitoids (Middlemost, 1994)
Sample numbers are keyed to symbols plotted in the diagram and on map Figure 25.

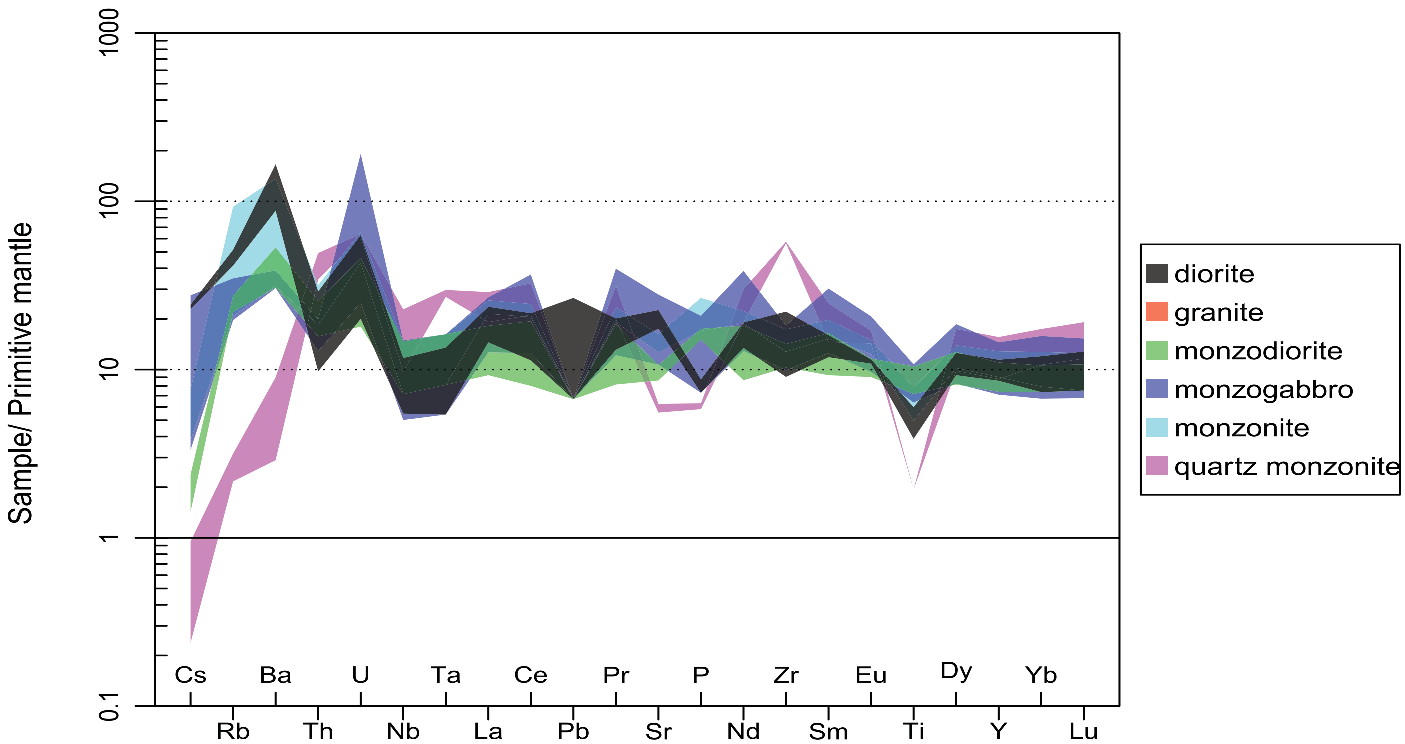

Figure 27: Spider Plot Primitive Mantle normalization of Klootchlimmis pluton granitoids
Normalizing element compositions for primitive mantle from McDonough and Sun (1995).
The classification of the rocks shown in the legend is by the total Alkali Silica diagram in Figure 26.

rates of convergence and resultant tectonic thickening or changes in the geometry of subduction.

The lithogeochemical composition of the Klootchlimmis Pluton ranges from monzogabbros to granites defined by high total alkali concentrations of Na_2O and K_2O. However, the ratio of K_2O : Na_2O varies widely suggesting that hydrothermal alteration may locally have depleted or enriched the alkalis. Petrological systematics revealed by High Field Strength Elements (HFSE) and REEs indicate that the igneous compositional range cannot be produced by a single fractionation trend and instead represent two distinct calc-alkaline suites. The more voluminous and probably earliest consanguinous suite is represented by monzogabbros, monzodiorites, and monzonites which were derived by low degrees of partial melting of a Ti-P enriched peridotitic mantle wedge. The more felsic rocks were probably derived after a period of uplift and crustal thickening from high level magmas chambers undergoing plagioclase fractionation.

New Exploration Work 2020-2021

Introduction

In September and October of 2019, a reconnaissance IP survey was conducted on the Yreka property to test for stockwork mineralization in the related to the Kloochlimmis pluton, extensions of known skarn mineralization at the old Yreka mine area and for possible stockwork mineralization peripheral to Yreka (Wasteneys, 2019). The survey consisted of two sinuous lines totalling 12 km. The results, described in Wasteneys (2019) and above, revealed two IP anomalous zones, one near the Yreka deposit and another near the eastern contact of the Kloochlimmis with the Le Mare Lake Fm volcanics. The anomalies were investigated in late 2020 and during 2021 by geological mapping and soil geochemistry. The most significant anomaly is located along the last 600 meters of the eastern end of the two IP lines and on the east side of Comstock Mountain and is described in Wasteneys (2019). This anomaly continues across the known location of the Yreka skarn deposit where it is assumed to be detecting disseminated sulphide and magnetite mineralization in garnetite skarn. The second anomalous area defined by the IP survey is midway along both lines in the logging blocks on the western slopes of Comstock near the intrusive contact of plutonic rocks with mafic volcanics.

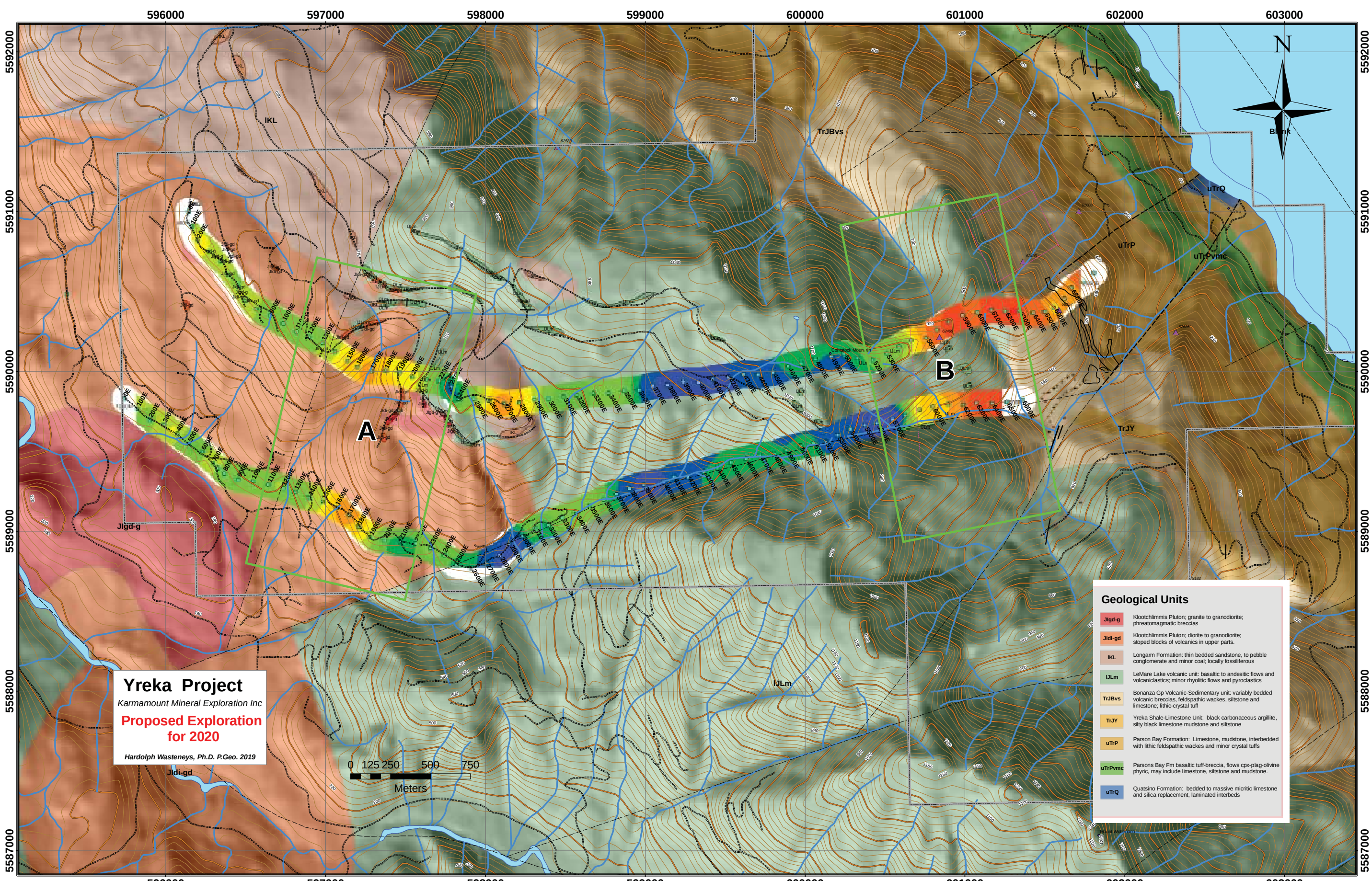

Figure 28: Target areas for the 2020 - 2021 field seasons
Area B is the priority on the strength of the IP anomaly and the observed presence of strongly altered rocks distal to the Yreka skarn in LeMare Lake Volcanics. The northern part of Area A is in a steep ravine, but is generally readily accessible from logging roads.

Follow-up exploration work was initiated in October of 2020 by the author and one assistant focusing on the target areas defined by the 2019 IP survey. The work was conducted from a camp site on inactive logging roads near the peak of Comstock Mountain. Two traverses were run from the camps into the area of the main IP anomaly a few hundred meters above the old mine. Initially the area was accessed by contouring across the forested slopes from a col at the headwaters of Canyon Creek, but numerous steep bluffs and cliffs forced the traverse line down through bushy undergrowth. It was found that it was simpler to follow the ridgelines over the peak of Comstock in both directions. The forest along the spur running east from Comstock Peak was generally open with minor patches of avoidable undergrowth allowing easy travel despite intervals of slopes greater than 30 degrees. The spur between Comstock and the col above Canyon Creek was also relatively open, but being adjacent to the cutting boundary was impeded by several large blowdowns from the exposed forest edge. The western IP anomaly was investigated in the October 2020 work by a single traverse along the roads cuts through the IP anomaly which is located a few kilometers west of Comstock Peak. The 2020 traverses combined geological mapping and prospecting with soil geochemistry.

During August of 2021, the author returned to Yreka twice in August, first based out of high camps along inactive logging roads on the western slopes of Comstock and later from the old Yreka mine road above Neroutsos Inlet. The main focus of these traverses was to discover the cause of the IP chargeability anomalies upslope of the original Yreka deposit by geological mapping, prospecting and soil geochemistry. A handheld XRF was used for preliminary evaluation of soil geochemistry and in one traverse was the primary means.

Geological Mapping

The two areas highlighted by the IP anomalies were mapped by the author, with greater emphasis on the area upslope of the Yreka skarn deposit. The western anomalous area was investigated by mapping logging road cuts into bedrock through deep colluvium and till. In the area above and around the Yreka mine, natural outcrops were mapped using a Garmin 62s handheld GPS unit for locations. However, GPS signals were attenuated by denser forest, proximity to steep slopes, and dense cloud and rain particularly in the area around the mine. Old mine area mapping from Noranda's tenure in the 1950s was incorporated into the present maps by digitizing images of the old maps and attempting to match them with current outcrop mapping in Figures 30 and 31. Of course finding coincidence with current GPS locations was limited by the reduced GPS precision mentioned above. Instead, georeference alignment of the old maps was achieved by relying on the surveyed boundaries of Crown Grant claims shown on the Noranda maps and their coincidence with current digital mapping of the same from government records. Initial evaluation of the fit shows good correspondence of topographic features on the old maps

Figure 29: Banded limestone below the Yreka Skarn
Knodules are likely chert concretions, but may also be clusters of calc-silicates indicative of incipient skarn formation.

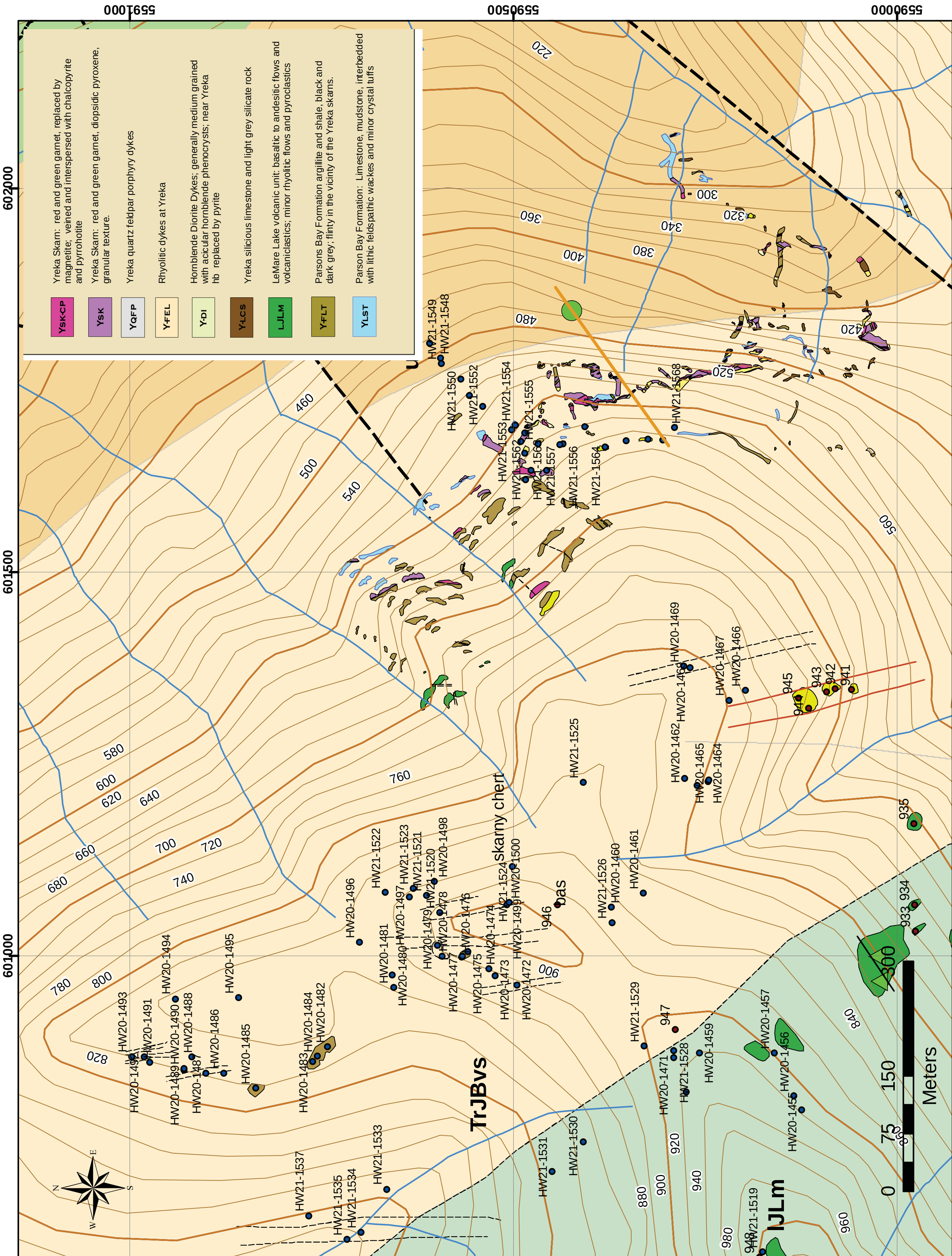

Figure 30: Geological map of the eastern slope at Yreka

New mapping stations from 2020 and 2021 are labeled HW20-xxxx. The Yreka deposit is located on the steep eastern slope below the “T-shaped” bench defined by the shape of the 800 meter contour. Legend shows main lithological units established at the mine area by Noranda in the 1950s.

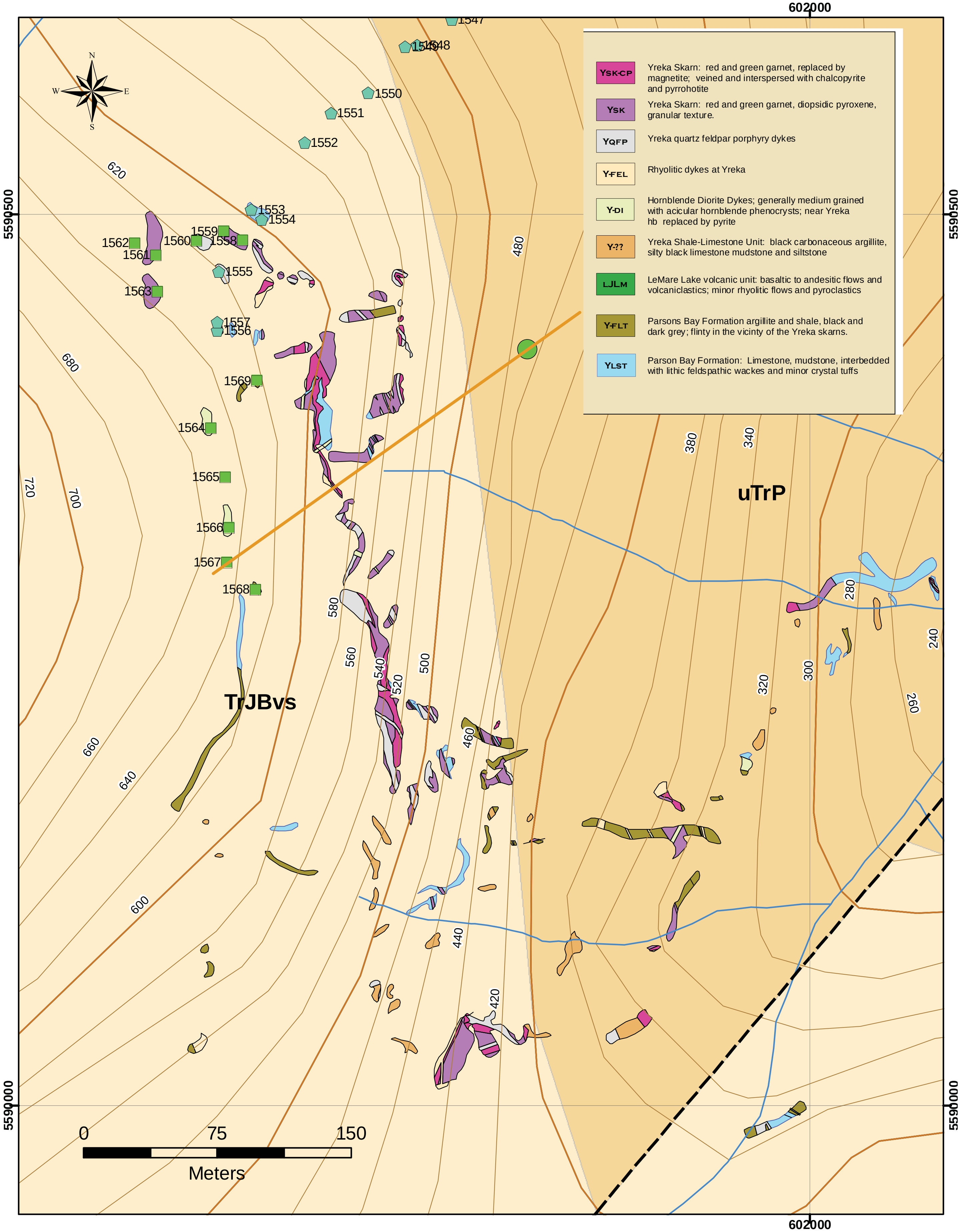

Figure 31: Geological Map of the Yreka deposit environs: Noranda mapping 1955.
Numbered outcrops are from the author's traverses; others are digitized from Noranda mapping ca.1955.

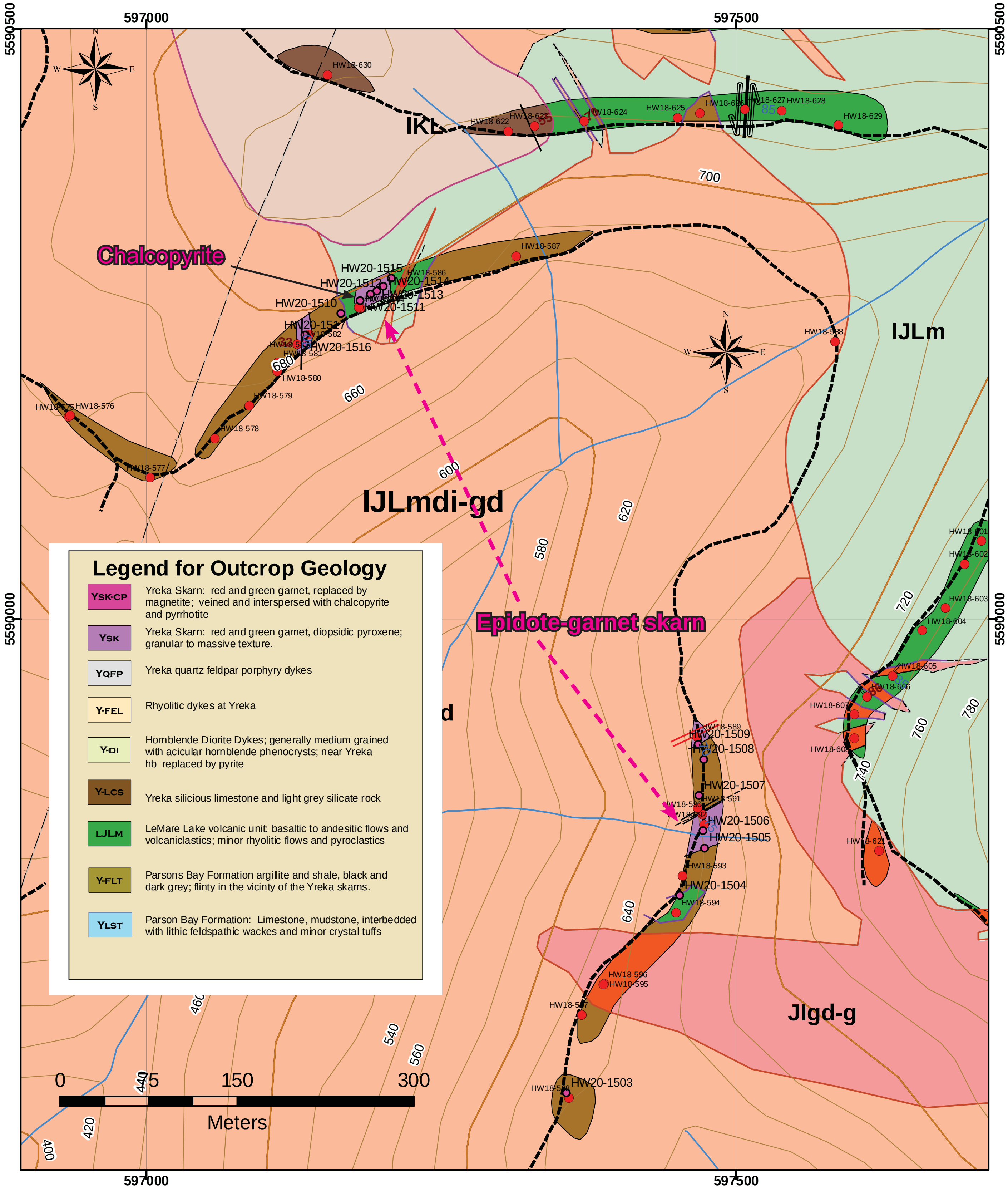

Figure 32: Geological Map of the Kloochlimmis pluton IP anomaly

The IP anomaly is centred in the ravine at cnetrer of the map and extends, approximately, between the ropad outcrops mapped here. Epidote-garnet skarns occur in enclaves of volcanic rocks and sediments within the pluton near it main contact with the LeMare Lake Fm and designated as unit Ysk (legend). In the skarn on the north side of the ravine, disseminated chalcopyrite produced XRF analyses of 0.5 ppm.

Figure 33: Skarned Inclusions of Bonanza Gp argillites in marginal zone of the Kloochlimmis pluton
Garnet epidote pyrite skarns are developed in the light coloured rock where the hammer is placed at station HW20-1505. The dark zones are enclaves of argillite or cherty tuff. Monzonitic intrusions envelop the enclaves.

with currently available mapping as well as the limited amount of geology.

Mapping in the saddle area between the headwaters of North Arm and Mahwheiclas Creeks indicated that the previously mapped contact between the LeMare Lake Formation and the upper Parson Bay Formation should be moved west to the break in slope in the saddle rather than along contours around the T-shaped promontory. This conflicts with mapping by Wilson (1955) who recorded a contact at the head of Tuscarora Creek between sedimentary and volcanic strata as well as outcrops of coherent basalt in the round, easterly promontory that lies southeast of the narrow subpeak above 900 meters. Stations HW20-1460 to 1465 are mainly in cherty argillites cut by porphyritic dykes. The ridge north of the subpeak was found to be dominantly underlain by cherty argillites and cherty tuffs cut by narrow, north trending dioritic dykes. The continuity of the dykes could not be established and by comparison to previous mapping around the Yreka deposit, these dykes may also be lens-like.

Proximal to the Yreka skarn outcrops, the current mapping traverses recorded limestones, limestone with calc-silicate mineral inclusions, and several skarn lithologies including dense garnetites and garnetite with disseminated chalcopyrite. Within the core area of the Yreka deposit several lenses of massive magnetite and pyrrhotite skarn were mapped. The pyrrhotite

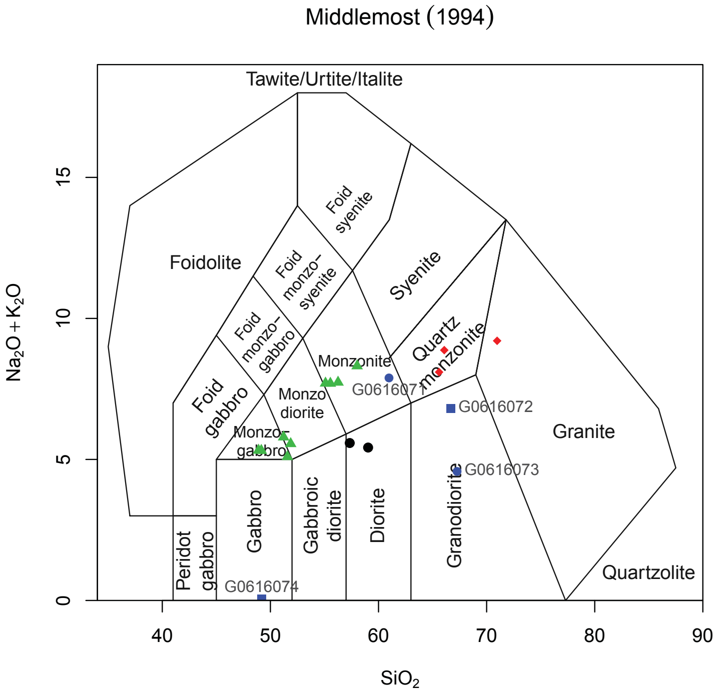

Figure 34: Total Alkali Silica Diagram for Igneous rocks
New analyses are indicated in dark blue squares and circles and labeled with the analytical sample number. Fourteen previously analyzed rocks are numbered in figure 27 and indicated by green triangles, red triangles and black circles here.

bearing outcrops weather deeply to friable rust. Similarly many outcrops of garnetite which has a significant pyrrhotite or chalcopyrite are rubbly and friable from weathering of the sulphides.. Less obvious skarn facies include pyroxene skarn adjacent to limestone strata and may be a peripheral phase of the main skarn body.

Whole Rock Analyses

Four rocks samples were analysed at ALS Geochemistry labs in North Vancouver by a suite of methods to completely characterize major and trace elements including REEs as well as carbon and sulphur. Two samples are from cherty tuffs mapped along the T-shaped bench (samples G0616071 and 073) above Yreka. A third rock is from a plagioclase porphyritic dyke cutting the sequence of strata on the bench (G0616072). The fourth is unrelated to the other 3 and is from a banded epidote-garnet skarn with chalcopyrite-pyrite mineralization surrounding enclaves of argillite in the Kloochlimmis pluton (Fig. 33). These rocks add to an existing suite of 14 whole rock analyses from parts of the Kloochlimmis pluton and some altered dykes reported in Wasteneys (2018).

The two argillite-cherty tuff rocks show similar early identical compositions in major and trace elements and nearly identical REE concentrations and patterns (Figs. 35 and 36). Compositionally, they are similar to granodioritic and monzonitic rocks in the TAS diagram, but possibly the granodioritic composition of G0616073 is a result of having lost alkalis by alteration. The REE patterns support the possibility that the tuffaceous component of the rocks was derived from the same igneous source as the monzodiorites of the Klootchlimmis plutons. REE concentrations are significantly lower than the plutonic rocks as might be expected for a rock with a mixed sedimentary - igneous origin, but indicate that the tuffs may be the eruptive phase of the plutonic rocks. The LREEs have a slight negative sloping profile while the HREEs are flat.

The REE profile of the plagioclase porphyry contrasts strongly with the tuffs and the previously analysed Kloochlimmis plutonic rocks by way of a significantly steeper LREE slope from Ce to Ho than other analyzed rocks from the Kloochlimmis pluton in Figure 35. The porphyry's affiliation is not recognized in the data sets obtained to date, but it may simply be a

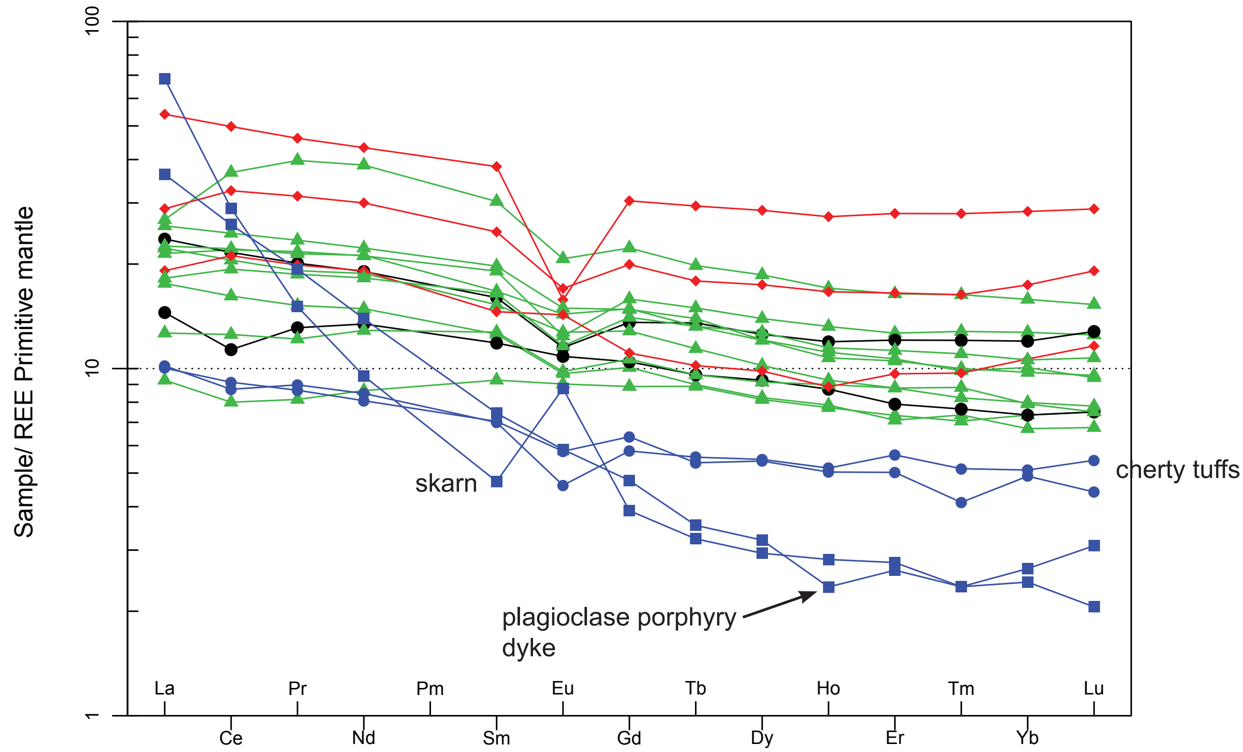

Figure 35: REE spider diagram for new analyses compared to Kloochlimmis pluton
New samples are in blue: circles are two cherty tuffs from the eastern area and squares, a skarn (positive Eu anomaly) and a plagioclase porphyry. Black circles represent altered diorite dykes in the Yreka mine area. Green and red symbols are plutonic phases of the Kloochlimmis pluton

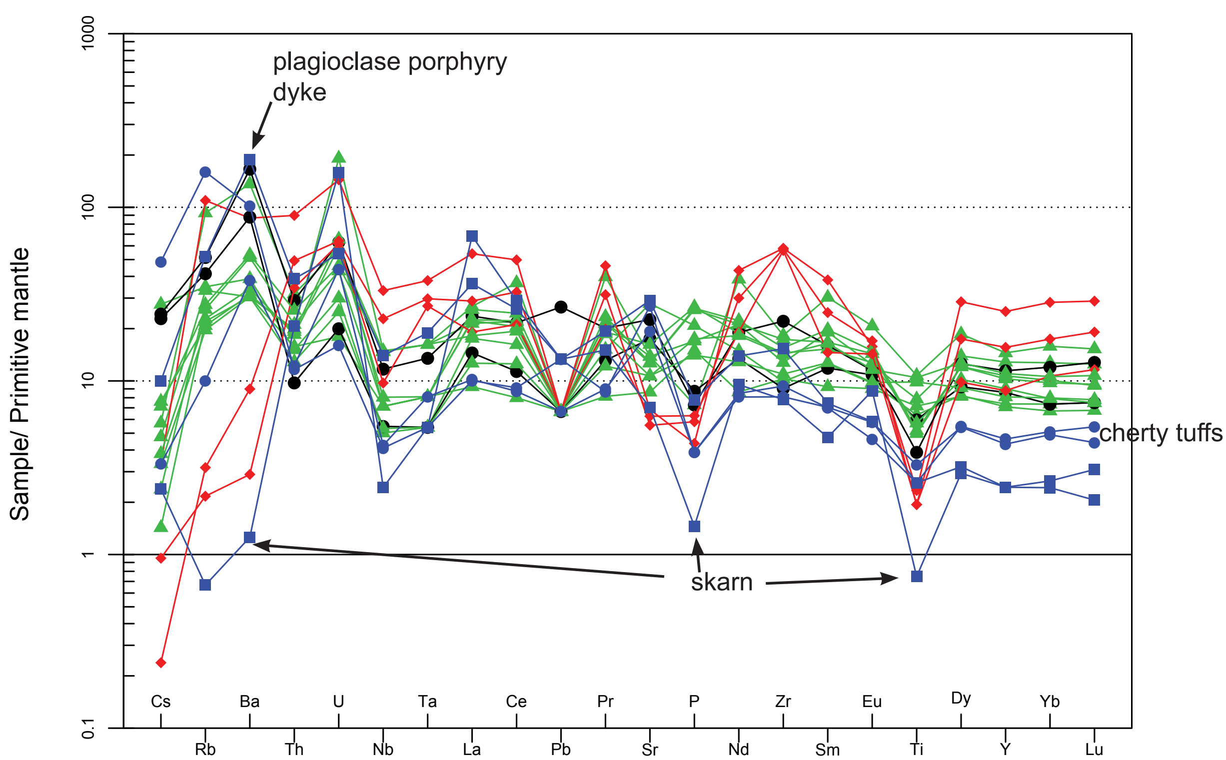

Figure 36: Extended REE spider diagram contrasting new analyses with Kloochlimmis pluton
Symbols are the same as in Fig. 34. The skarn shows strong depletion anomalies in LILEs from Cs to Ba, and HFSEs Nb, Ta, P and Ti.

later phase of the Island Plutonic Suite recognized elsewhere on the island.

The skarn sample (G0616074) shows a diagnostic positive Eu anomaly on a REE plot in Fig. 35. Like the plagioclase porphyry, it has a much steeper negative LREE profile than any of the Kloochlimmis plutonic rocks or other dykes previously analyzed near the Yreka deposit. The positive Eu anomaly results from growth of andraditic garnet in the presence of magmatic fluids where Eu^{2+} substitutes preferentially for Ca^{2+}. Like the Kloochlimmis pluton, the four rocks all are of calc-alkaline affiliation indicated by Nb, Ta, P, and Ti depletion.

Soil Geochemistry

In the fall of 2020, 47 soils samples were collected from the areas around two defined IP anomalies. The samples were collected in brown kraft paper bags by Peter Ravensbergen who recorded site information shown in Appendix C, Table 4. The samples were first analyzed by the author using a handheld XRF and then submitted to ALS Geochemistry Laboratories in North Vancouver for Induction coupled plasma mass spectrometric analysis using ALS method AuME-TL43. Three sample duplicates were created by splits from 3 of the larger samples to make up a total of 50 samples for analysis.

The target sample media was B-horizon soils. In places this was difficult to find through thick organic accumulations in old growth forest. The most reliable sites were found on the shoulders of steep slopes below areas of ridge outcrops. Steeper slopes, typically 40 degrees, in interior drainage basins such as the headwaters of Mahwhieclas Creek, commonly were found to have water-saturated soils generating a deep black organic layer laced with fine roots that was practically impossible to penetrate and in places had poor " horizon development.

Samples were analyzed by ALS Geochemistry at their lab in North Vancouver using method AuME-TL43, a package procedure optimized for gold and trace elements in soils. This analytical procedure provides precise analysis of gold from a 25 gram split of the sieved sample combined with 51 element analysis by ICP-MS. Aqua regia digestion is used for the gold extraction, and the same solution is used for the multi-element ICP analysis.

Prior to shipment of the samples the author dried the samples and analyzed all 47 samples using a Niton XL3t handheld XRF. The XRF was used mainly in "soils mode" to compensate for loose matrix materials, for a collection period of 60 seconds with the analytical gun placed in contact with the sample through a single layer part of the kraft bags. Results were generally good with signals consistently above detection limit for copper, zinc, and arsenic as listed in Table 5 in Appendix C. Other elements such as bismuth and silver were generally lower than detection limits. Correlation of the XRF and ALS geochemical results was quite good for copper and arsenic with differences of less than 20%.

East Slope Soil Geochemistry

The area is highlighted by IP chargeability anomalies in the last 800 meters of the eastern end of both reconnaissance lines. The more northerly line runs along a narrow easterly trending ridge below the summit of Comstock Mountain to a north south oriented bench about 1 kilometer long at elevations between 800 and 900 meters. To the east of this bench is a steep slope, incised at intervals by creeks, and running down to about 300 meters elevation above the shore of Neroutsos Inlet. The bench is separated from the main Comstock ridgeline by the deep creek valleys of south-flowing North Arm Creek and south flowing Mahwhieclas Creek. Geologically, the plateau area is at or near a conformable West dipping contact between the LeMare Lake volcanics which underlies the peak of Comstock Mountain and the N-S ridgeline and the upper strata of the Parsons Bay Formation, which underlies the lower slopes of the ridge above the

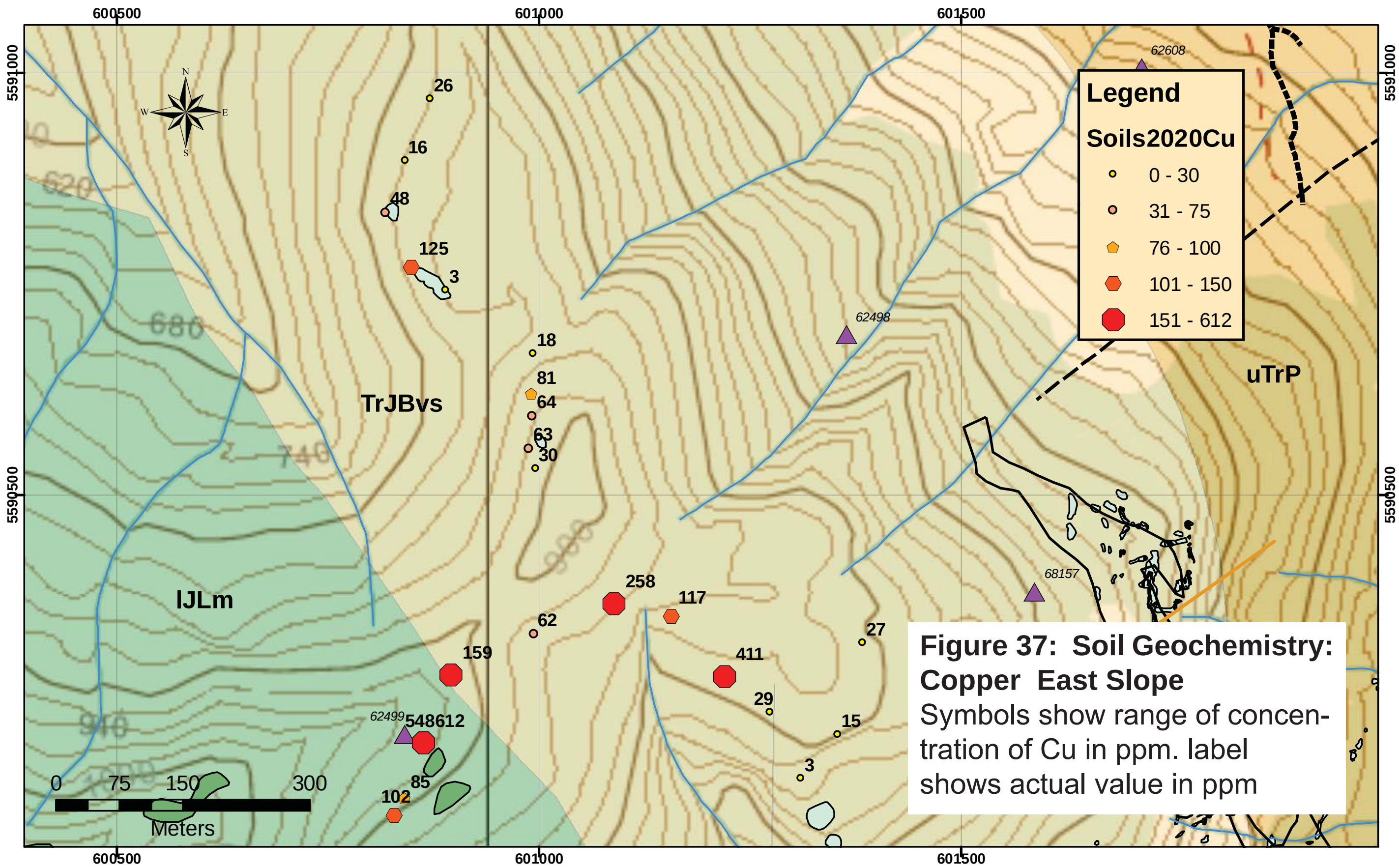

Figure 37: Soil Geochemistry: Copper East Slope
Symbols show range of concentration of Cu in ppm. label shows actual value in ppm

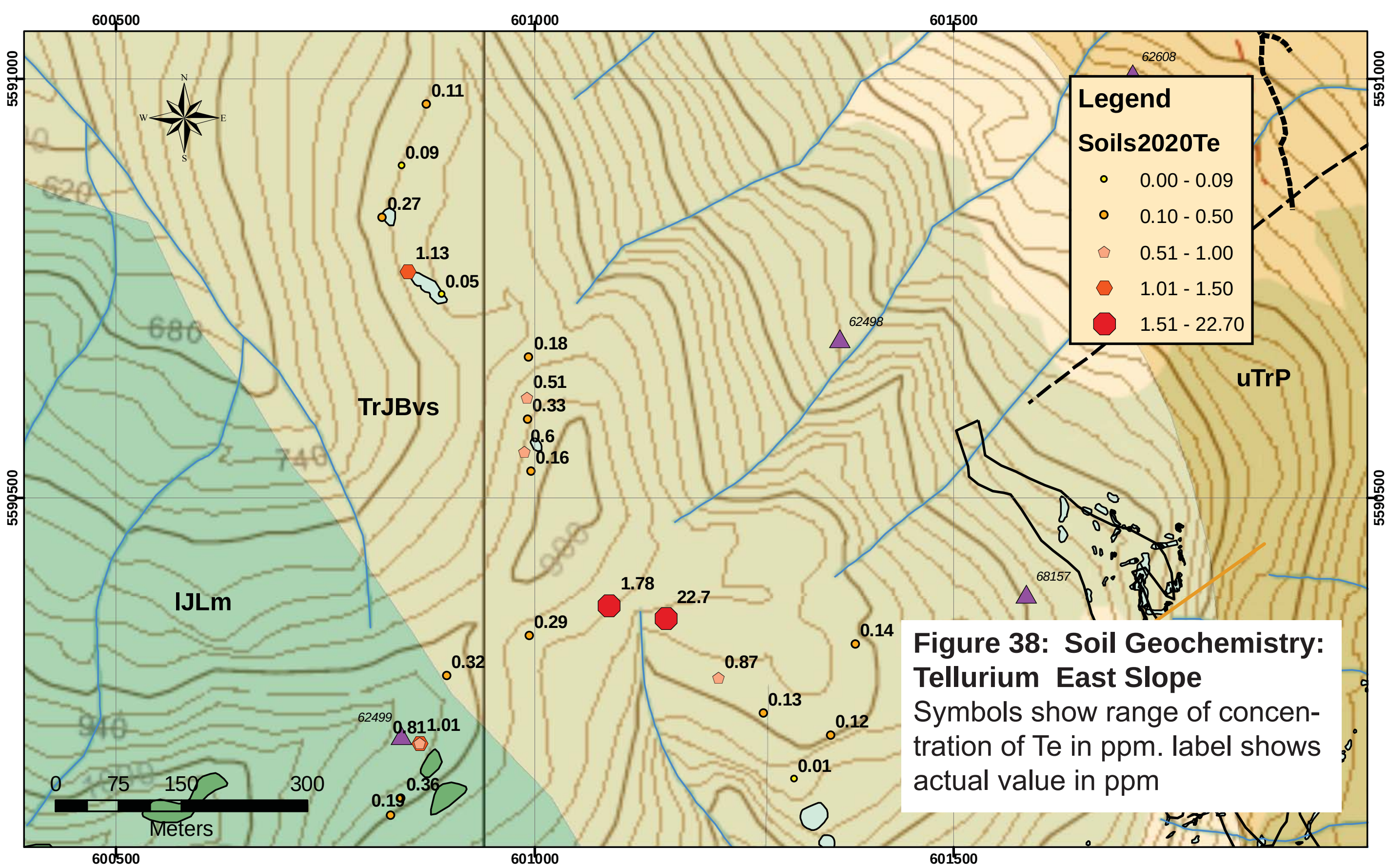

Figure 38: Soil Geochemistry: Tellurium East Slope
Symbols show range of concentration of Te in ppm. label shows actual value in ppm

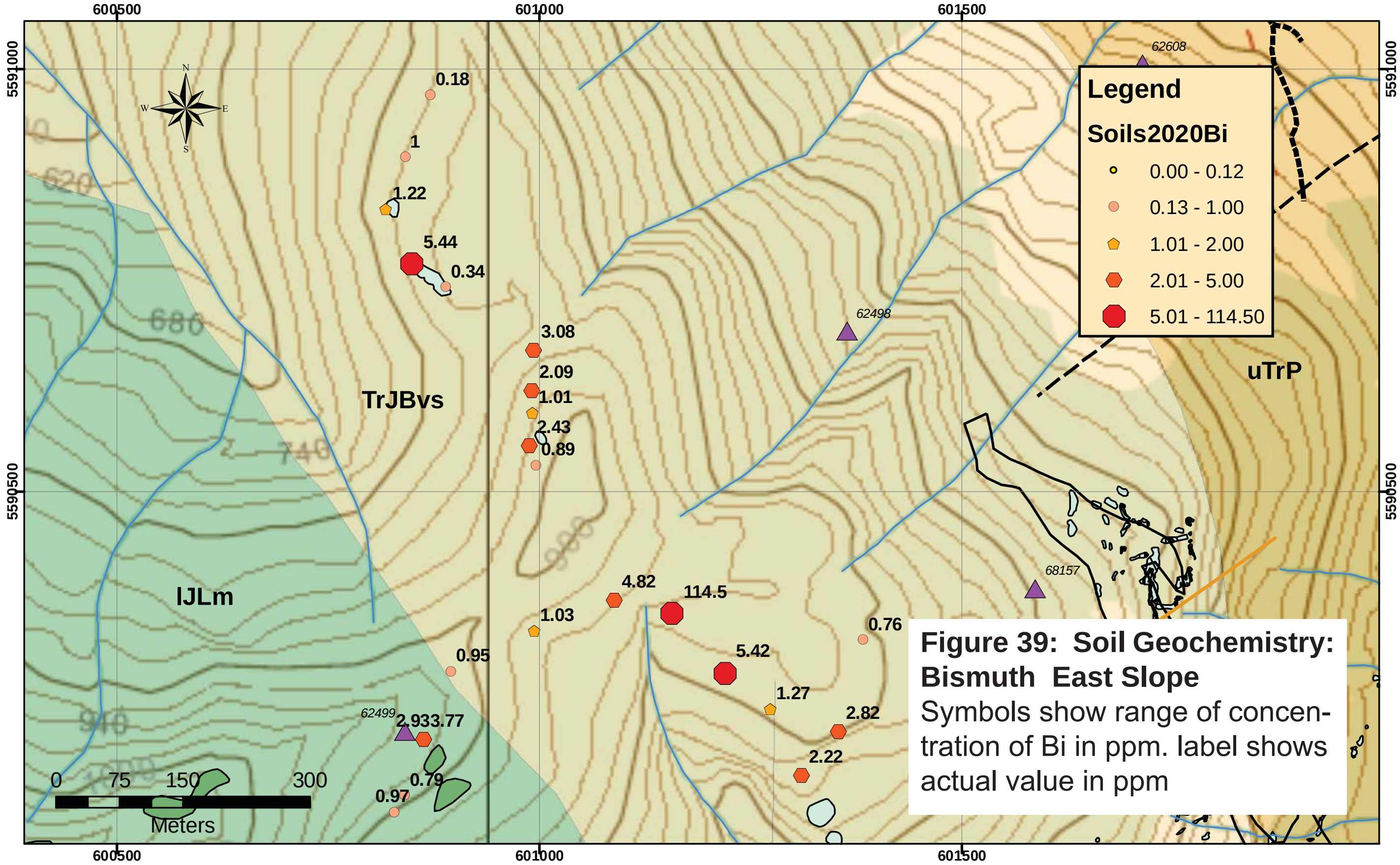

Figure 39: Soil Geochemistry: Bismuth East Slope
Symbols show range of concentration of Bi in ppm. label shows actual value in ppm

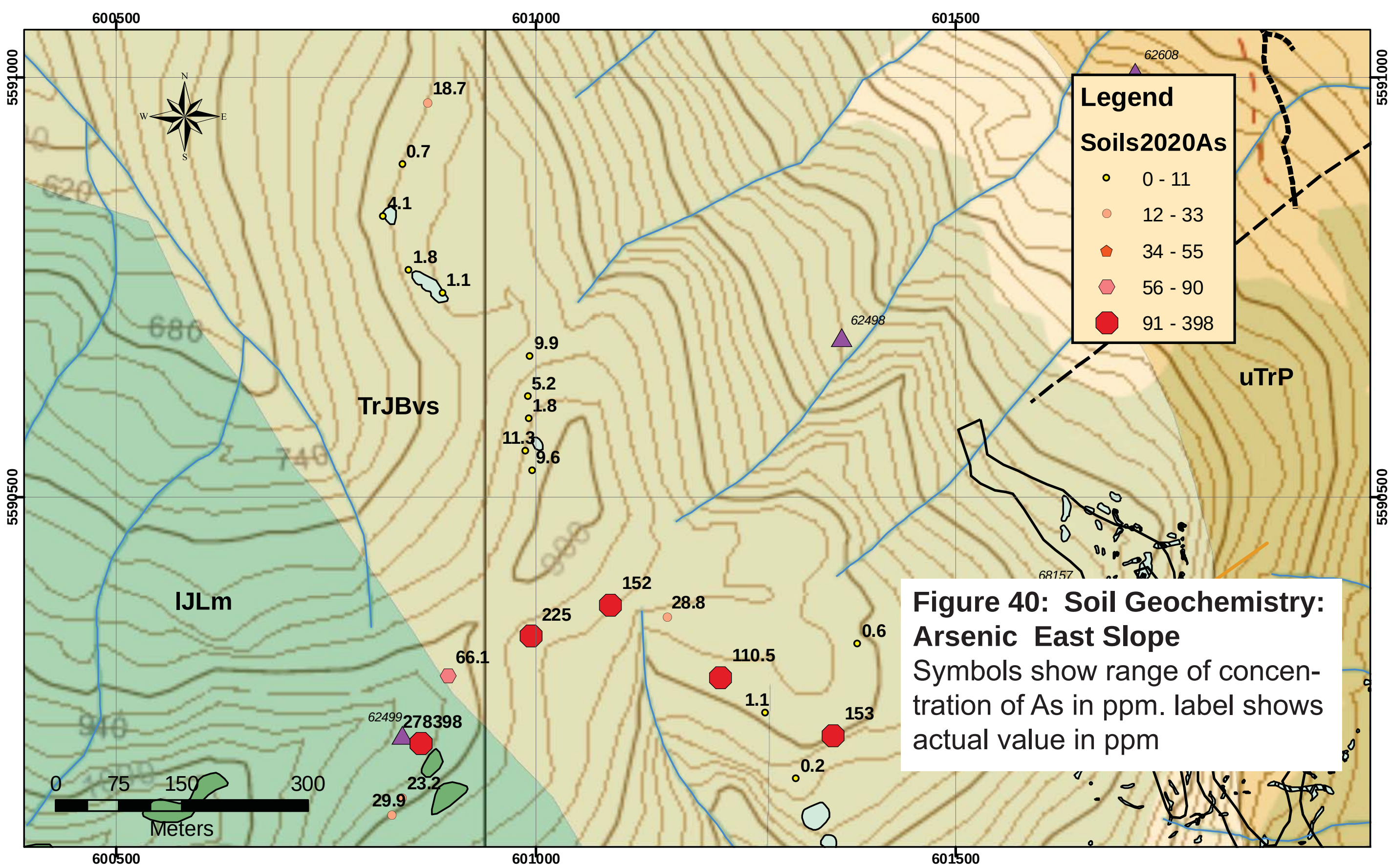

Figure 40: Soil Geochemistry: Arsenic East Slope
Symbols show range of concentration of As in ppm. label shows actual value in ppm

shore. The Yreka skarn deposit is formed within the Parsons Bay Formation and located in the southern extent of this ridge between elevations of roughly 600 and 700 meters.

The soil sampling survey was focussed around the western shoulder of the N-S ridge and the saddle between North Arm and Mahwhieclas Creeks. Twenty three (23) samples were collected on October 24 and 25th, 2021 in cold, but dry weather. Sites along the shoulders of the ridges were generally found to have acceptable B horizon development below 5 to 25 cm of A horizon humus. Sites were located by a Garmin 62s GPS unit and sampled by Peter Ravensbergen who noted types of vegetation and physiography as well as depth and soil types.

Anomaly maps for copper (Cu), tellurium (Te), bismuth (Bi), and arsenic (As) are shown in Figures 37 to 40. Results for many elements are anomalous in the headwaters of North Arm Creek, but background along the Mahwhieclas ridge (north) where numerous altered dykes cut cherty and argillaceous pyritic tuffs. The main elements of interest and pathfinders for mineralization that are anomalous include Cu, Bi, Te, As, Zn, and Sb. Many other elements show a wide range of concentration possibly reflecting the underlying rock type, but no systematic pattern is observed. Mafic volcanic rocks predominate in the western part of the sol survey area on the Comstock ridgeline. The most significant geological variation appears to be across the contact between Le Mare Lake Formation mafic volcanics and underlying tuffaceous argillites of the Parson Bay Formation. Diorite dykes are common in the survey area.

Four samples are anomalous in copper in the range from 150 to 612 ppm, and arrayed about the ravine at the top of North Arm Creek (Fig. 37). Te is anomalous in two samples in the same interval, while Bi is anomalous in two samples (5 to 114. 5 ppm) and As is anomalous (5 to 400 ppm) in 5 samples over a broader area about the ravine. One sample on the west side of the north ridge is anomalous in Bi, Te and As, but only elevated in Cu at 115 ppm.

The cause of the copper-bismuth-arsenic anomaly in the saddle zone is not apparent. Altered hornblende porphyritic dykes run north south at intervals through the saddle zone and the bench, but no mineralization or significant skarning was observed. The north ridge is predominantly cherty tuffs and argillites, while the saddle zone is not well-exposed.

Comstock West Soil Geochemistry

A moderate chargeability IP anomaly is centered about a steep ravine that is crossed by a logging road that contours at an elevation of 650 meters. Dense logging slash impeded access through the ravine and an initial traverse of soil samples was collected at intervals along the logging road. The road cuts through a series of rock outcrops mapped in Figure 32 and the core of the ravine is underlain by a mix of clayey tills and colluvium. Soil profiles are poorly developed, but well exposed in the road cuts and samples were collected directly from the near vertical, overburden faces. Where the top of the bank was within safe reach (some steep banks are over 3 meters high) visible B horizon soils developed in till or colluvium were sampled. The samples were analyzed in the same 47 sample batch as those of the Yreka vicinity.

No significant variations were observed in the values of elements of interest and all were below threshold. Maps showing values for Cu, Te, As, and Sb are shown in Figures 41 to 44. Previous stream moss mat sampling also did not reveal any significant geochemical anomalies. Chalcopyrite mineralization was observed in a garnet skarn on the north side of the traverse marked on Fig. 32. No associated copper enrichment was observed in the soils. but the soils sampled may be mainly transported and not reflect the underlying bedrock. Additional sampling lower in the ravine may be required to find a response to the known mineralization.

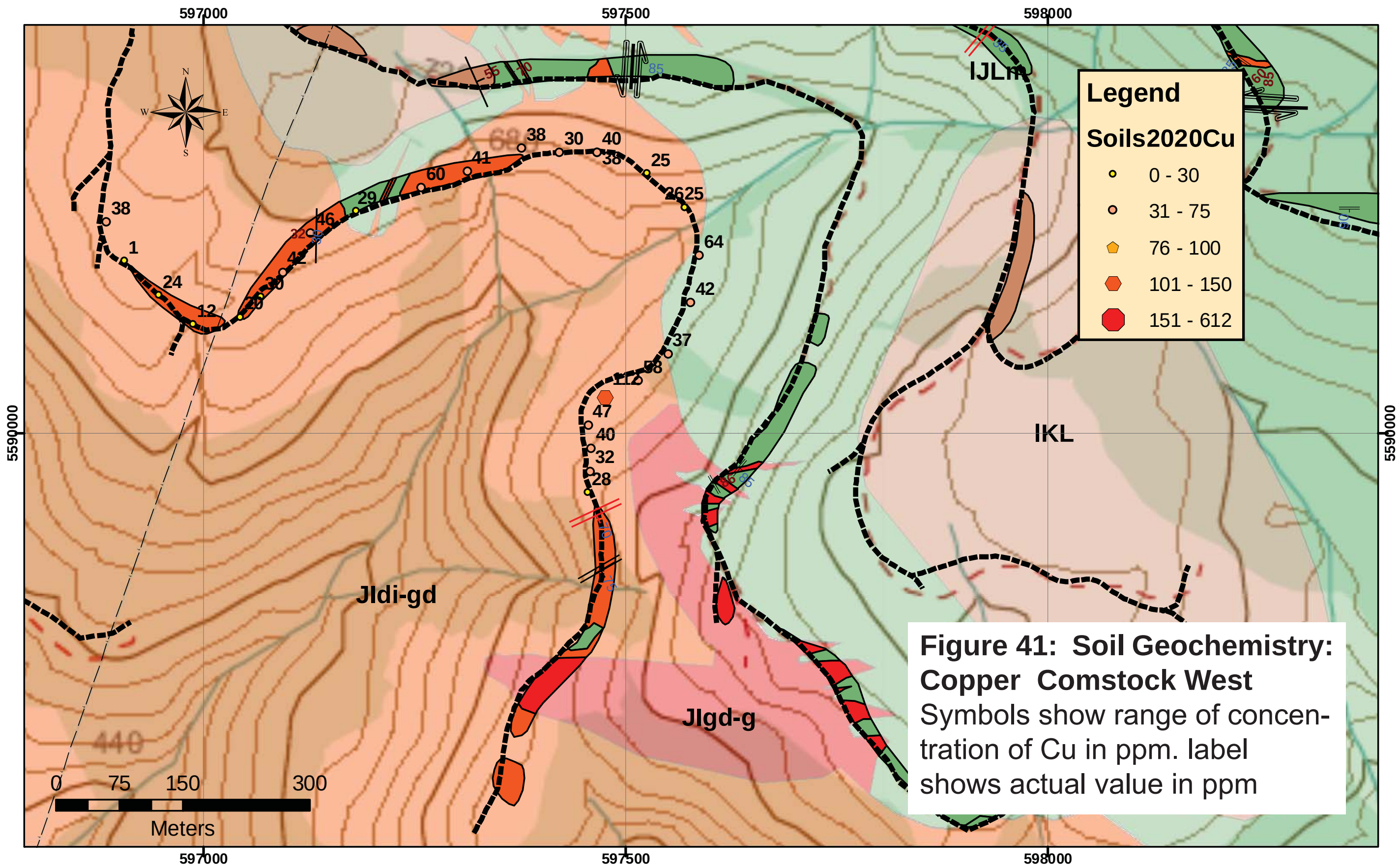

Figure 41: Soil Geochemistry: Copper Comstock West
Symbols show range of concentration of Cu in ppm. label shows actual value in ppm

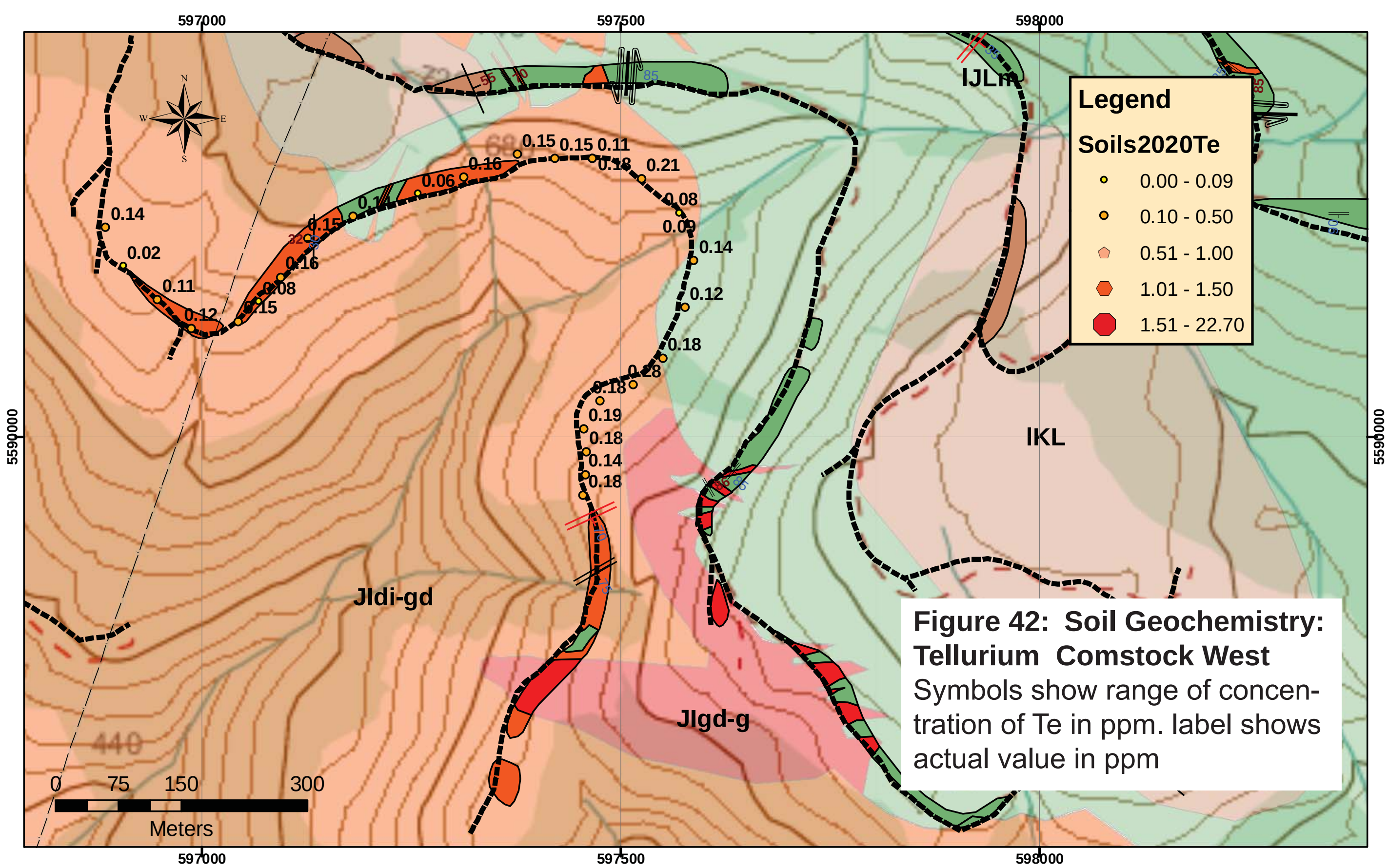

Figure 42: Soil Geochemistry: Tellurium Comstock West
Symbols show range of concentration of Te in ppm. label shows actual value in ppm

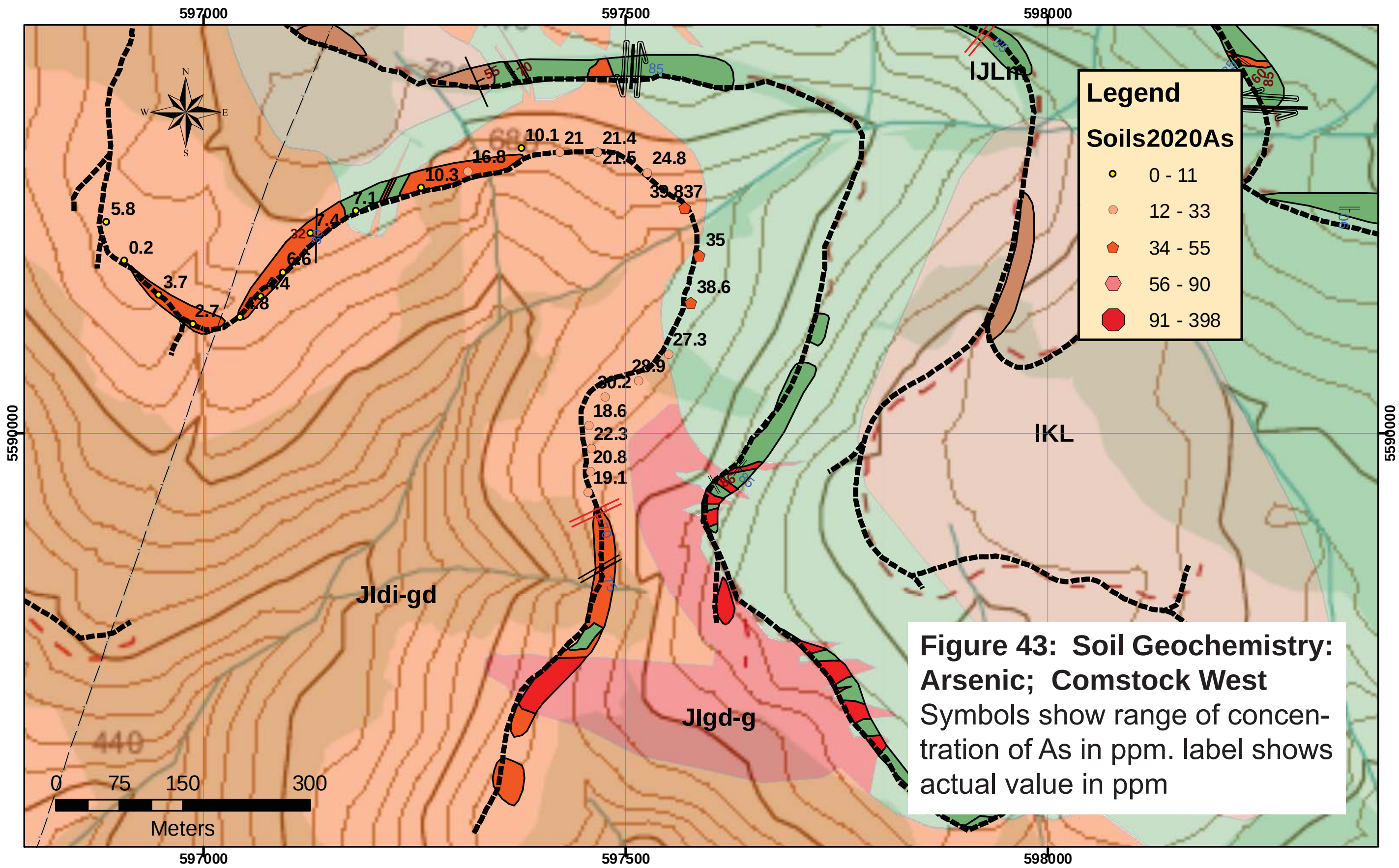

Figure 43: Soil Geochemistry: Arsenic; Comstock West
Symbols show range of concentration of As in ppm. label shows actual value in ppm

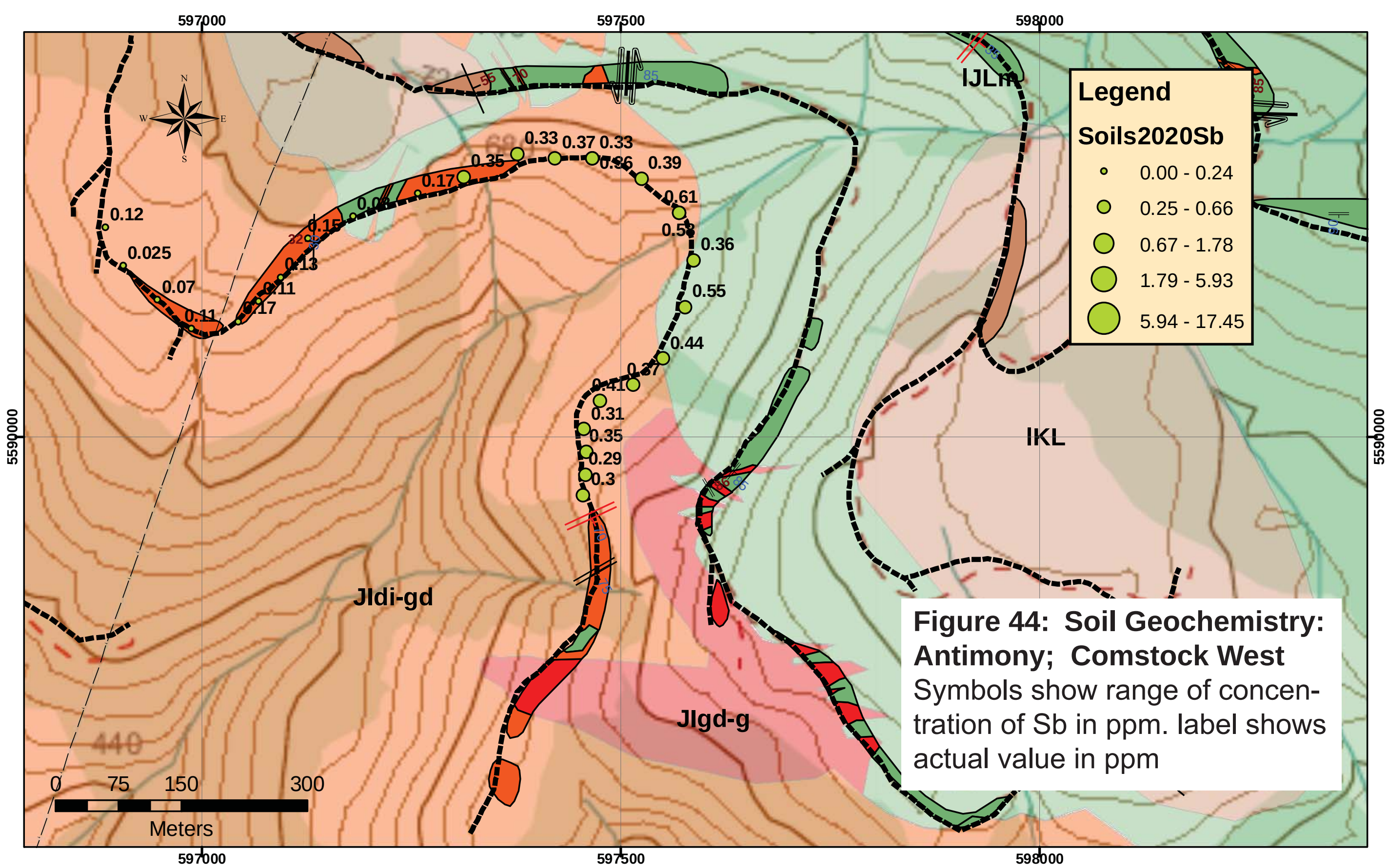

Figure 44: Soil Geochemistry: Antimony; Comstock West
Symbols show range of concentration of Sb in ppm. label shows actual value in ppm

Skarn Sampling

Several mineralized rocks were collected as reference specimens of the various skarn facies in the vicinity of the Yreka deposit. Skarn facies represented include, garnetite and garnetite with disseminated chalcopyrite, massive pyrrhotite-magnetite. All of the rocks were analysed with the Niton XL3t handheld to confirm visual estimates based on volume percent of chalcopyrite disseminated in the skarns. However, the XRF analyser beam only interacts with a spot about 1 cm in diameter and to an indeterminate depth (possibly a few mm) and therefore is not a substitute for a bulk analysis especially in coarse grained rocks.

Nine samples from the Yreka skarn were collected on a traverse uphill tha used to old mine road for access. Sample stations range from HW21-1543 to HW21-1569 and are located on map in Figures 30 and 31. The samples were analyzed using a Niton XL3t handheld XRF results of which are compiled in Table 2.

Station	XRF Analysis 1	XRF Analysis 2	Description
HW21-1547	Cu 387 ppm; Fe 23%; S 1.5%		po-cpy cherty skarn; loose blocks
HW21-1548	Cu 687 ppm; Fe 24%; S 14%	Cu 325 ppm; Fe 48%; S 15%	disseminated patchy po in bleached diorite, cherty altered, streaky banded semi-msv pyrrhotite w diss cpy
HW21-1554	Cu 1.4%; Fe 13%; S 1.9%; Ca 11%	Cu 3959 ppm; Fe 25%; Ca 8.9%	rusty wx resistant layer in garnet skarned limestone and diss cpy
HW21-1555	Cu 3.4% Fe; 20%; S 2.9%; Ca 8.8%	Cu 4.3%; Fe 21%; S 5.3% Ca 8.0%	coarse granular 1 mm yellow garnet wi interstitial cpy and ?bornite
HW21-1556	Cu 1.5%; Fe 46% S 16%; Ca 2.0%	Cu 1300 ppm; Fe 41%; S 12%; Ca 1.7%	Massive pyrrhotite-chalcopyrite; rusty weathering band of sulphides on low ridge
HW21-1557	Cu 3.8%; Fe 17.7%; S 1.6%	Cu 1.1%; Fe 15 %; Ca 16%	pale brown garnetite skarn w diss blebs chalcopyrite.
HW21-1561	Cu 555 ppm; Fe 20%; Ca 24%	Cu 1570 ppm; Fe 18%; Ca 24%; W 405 ppm	deeply rusty weathered skarn; yellow euhedral garnet w diss cpy
HW21-1564	K 5.6%, Ca 1%; Fe 3.7%	K 2746 ppm, Ca 11.5%; Fe 1.9%	pale green vfg altered tuff or microdiorite; cherty alteration
HW21-1569	Cu 1.2%; Fe 29%; Ca 7.8%; Bi 323 ppm	Cu 2.6%; Fe 21%; S 6.4%; Ca 14%	coarse grained massive garnet with cpy in fractures; rusty wx, friable; from old trench

Table 2: Skarn sample descriptions and XRF analyses
The analytical data were obtained by 60 second counts using a handheld Niton XL3t XRF device. Selected significant and characteristic elements in the analyses are shown that are above 2 sigma error limit.

The table shows two spot analyses for most samples with values for Cu, Fe, S, and Ca where they are above the 2 sigma background error. Other elements are shown when they are unusual in concentration such as Bi, W, or K. The concentrations of Cu, Fe, S, and Ca generally reflect signals from chalcopyrite, iron sulphides, and andraditic garnet. Cu, Fe, and S indicate the presence of chalcopyrite, pyrrhotite, or pyrite while Fe may be also be in garnet. Ca and Fe reflect two of the main variable, but characteristic components of andraditic garnet. The copper grades of the skarn are variable, ranging from less than 1% to 4.3% in the spot analyses. The most consistent copper grades occur in the garnet skarn as chalcopyrite (and possibly bornite) disseminated as grains between subhedral garnet crystals or as fracture fillings. In the massive sulphide lens within the skarn body the copper content is generally low and the rock is dominated by pyrrhotite. Pyrrhotite oxidation in the skarn may account for much of the deep rusty weathering and friable nature of some of some of the garnet skarn outcrops and the appearance of pore space around individual garnet crystals where pyrrhotite and chalcopyrite have dissolved.

Conclusions and Recommendations

The current work has revealed a coincident copper soils anomaly with an underlying high chargeability IP anomaly that lies over 800 meters west of the previously mined Yreka skarn deposit. No specific mineralization has yet been located to account for the geochemical anomaly. The geology of the anomalous area is obscured by a lack of outcrop except for a ridge running north of the anomalous area that is underlain by cherty tuffs with compositions that suggest consanguineity with the Kloochlimmis pluton exposed on the west side of Comstock Peak.

Garnet epidote skarns in volcanics and sediments at the margin of the Kloochlimmis pluton west of Comstock Peak were discovered in the course of mapping along a logging road through a second, moderate IP anomaly on the western slopes. The garnet skarns associated with mineralization at the historic Yreka deposit are spatially associated with dykes of dioritic composition similar to that of phases of the Kloochlimmis, but there are no exposed major plutons in the vicinity. The presence of skarns around the Kloochlimmis pluton 2 km to the west therefore suggest that phases of the same pluton may be responsible for the mineralized skarns at Yreka.

Continuing work in the area should further delineate the copper in soils anomaly near the contact between the sediment-dominated part of the Parson Bay formation and the overlying LeMare Lake volcanics.

References

Ball, C.W. (1980) Assessment Work, Tuscarora Mineral Claim Yreka Copper - Zinc Property, Nanaimo M.D., British Columbia, Assessment Report 798 1

Betmanis, A.I. (1989) Report on Geochemical Surveys, Wolf Claim Group Nanaimo Mining Division, Teck Exploration Ltd Assessment Report 19,248

Betmanis, A,I. (2007) Technical Report on the Geochemical and Geological Evaluation of the Wolfenden Property Tenure #553019, Geological Survey Branch Assessment Report 29396.

Betmanis, A,I. (2007) Geological and Geochemical Technical report including Magnetic Evaluation of the Wolfenden Property; Wolfenden Tenure #553019, Coquis Tenure #577450 and Wolfqueis Tenure #590479; Geological Survey Branch Assessment Report 30273

Bradshaw, P.M.D., (1993). Moss Mat Drainage Sediment and Soil Geochemical Studies on the Klimis Claim Group. MEMPR Assessment report number 22804.

Crossley, R.V. (1972) Report on Exploration, Yreka (Green Eagle Mines Ltd. Option), IS0 Explorations Ltd., Assessment Report 4425

Eden, Fred, Li, Bin (2016). Technical Report on the Yreka Property BC Geological Survey Assessment Report #36110.

Geo Data Solutions GDS Inc. (2013): Heliborne High Resolution Aeromagnetic Survey: Northern Vancouver Island, BC; Geoscience BC, Report 2013-02, 26 p.

Greene, A.R., Scoates, J.S., Nixon, G.T. and Weis, D. (2006):Picritic lavas and basal sills in the Karmutsen flood basalt province, northern Vancouver Island; in Geological Fieldwork 2005, BC Ministry of Energy, Mines and Petroleum Resources, Paper 2006-1, pages 39–51.

Hart, C.J.R., Baker, T. and Burke, M. (2000): New exploration concepts for country-rock-hosted, intrusion-related gold systems: Tintina Gold belt in Yukon; in the Tintina Gold Belt: Concepts, Exploration and Discoveries, Tucker, T.L. and Smith, M.T., Editors, British Columbia and Yukon Chamber of Mines, Special Volume 2, pages 145–172.

Lincoln, Timothy N., 1981. The Redistribution of Copper During Low-Grade Metamorphism of The Karmutsen Volcanics, Vancouver Island, British Columbia. Economic Geology Vol. 76, 1981, pp. 2147-2161

Muller, J.E., Northcote, K.E., and Carlisle, D. (1974) Geology and Mineral Deposits of Alert Bay - Cape Scott Map Area, Vancouver Island, B.C.; GSC Paper 74-8.

Nixon, G.T. and Orr, A.J. (2007): Recent revisions to the Early Mesozoic stratigraphy of northern Vancouver Island (NTS 102I; 092L) and metallogenic implications, British Columbia; in Geological Fieldwork 2006, BC Ministry of Energy, Mines and Petroleum Resources, Paper 2007-1, pages 163–177.

Nixon, G.T., Hammack, J.L., Koyanagi, V.M., Payie, G.J., Snyder,L.D., Panteleyev, A., Massey, N.W.D., Archibald D.A.,Haggart, J.W., Or chard, M.J., Fried man, R.M., Tozer, E.T.,Tip per, H.W., Poulton, T.P., Palfy, J., Cordey, F and Barron,D.J. (2006c): Geology of the Holberg – Winter Harbour area, northern Vancouver Island; BC Ministry of Energy, Mines and Petroleum Resources, Geoscience Map 2006-3,scale 1:50 000.

Nixon, G.T., Snyder, L.D., Payie, G.J., Long, S., Finnie, A., Friedman, R.M., Archibald D.A., Orchard, M.J., Tozer, E.T.,Poulton, T.P. and Haggart, J.W. (2006d): Geology of the Alice Lake area, northern Vancouver Island; BC Ministry of Energy, Mines and Petroleum Resources, Geoscience Map 2006-1, scale 1:50 000

Nixon, G.T. Larocque, J. Pals, A., Styan, J.,Greene, A.R., and Scoates, J.S. (2008) High-Mg Lavas in the Karmutsen Flood Basalts, Northern Vancouver Island (NTS 092L): Stratigraphic Setting and Metallogenic Significance. in Geological Fieldwork 2007, Paper 2008-1

Jeletzky, J.A. (1976) Mesozoic and Tertiary Rocks of Quatsino Sound, Vancouver Island, British Columbia; Geological Survey of Canada, Bulletin 242.

Mechanic, N.D. (1953) British Columbia, Report of the Minister of Mines, Annual Report of Mines, 1953

Massey, N.W.D. (1995) The Vancouver Island Mineral Potential Project (92B,C,E,F,G,K,L, and 1021), Geological Fieldwork 1994, Paper 1995-l , Mineral Resources Division GSB, Government of British Columbia

Minfile Report (1989) Mineral Resource Division GSB, Government of British Columbia, MINFILE NO. 92LO52

Meinert, D.L. (1992) Skarn Deposits in the Porphyry Copper Environment, Short Course “Porphyry Copper Model” Abstracts, Northwest Mining Association, 1992

Menzies, M.M. (1954-55) Property File, British Columbia Energy, Mines and Petroleum Resources, Yreka Property (1954 - 1955):Assay & Geological Plans, 1:600, 1953, Yreka Mine, 1900’ Level 1:120, 1955, Cross Sections 1:600, 1955. Noranda Explorations Company Limited

Nixon, G.T. et al (1993) Preliminary Geology of the Mahatta Creek Area (92 L/5); B.C. Ministry of Energy, Mines and Petroleum Resources, Open File 1993-10, scale 1:50 000.

Nixon, G.T. et al (1993) Quatsino - San Josef Map Area, Northern Vancouver Island; Geological Overview (92 L/12W, 1021/8,9) Geological Fieldwork 1994, Paper 1995- 1, Mineral Resources Division GSB, Government of British Columbia

Panteleyev, A. et al (1945) $Ar^{40/}/Ar^{39}$ Ages of Hydrothermal Minerals in Acid Sulphate Altered Bonanza Volcanics, Northern Vancouver Island (NTS 92L/12), Geological Fieldwork 1994, Paper 1995-1, Mineral Resources Division GSB, Government of British Columbia

Ray, G.E., Webster, ICI (1995) The Geochemistry of Mineralized Skarns in British Columbia, Geological Fieldwork 1994, Paper 1995-l, Mineral Resources Division GSB, Government of British Columbia

Robinson, W.C. (1967) British Columbia Mines and Petroleum Resources, Annual Report 1967.

Wasteneys, H. A., and Yang, W. (2013). Technical Report on Geology, Stream Sediment Geochemistry and Airborne Geophysics at the Zymoetz River Claims Northern Zymoetz River, Ventura Peak Area, Hazelton Mountains, Omineca Mining Division . EMPRBC ARIS report #33733.

Wasteneys, Hardolph, (2015) Technical Report on Induced Polarization Geophysics and Soil Geochemistry: Zymoetz River Claims, BC. Hazelton Mountains, Omineca Mining Division . EMPRBC Assessment Report #35770.

Wasteneys, H. A. (2020) Technical Report on the 2019 Induced Polarization Survey of the Yreka Mineral Claims Northern Vancouver Island EMPR BC ARIS number 38782.

Wasteneys, H.A. (2018) Technical Report on the Yreka Mineral Claims, Northern Vancouver Island EMPR BC ARIS number 37658, 58p.

Wasteneys, H.A. (2017) Technical Report on the Yreka Mineral Claims, Northern Vancouver Island EMPRBC ARIS number 37259, 30p..

Wheeler, J.O. and McFeely, P. (1991): Tectonic Assemblage Map of the Canadian Cordillera and adjacent parts of the United States of America, Geological Survey of Canada, Map 1712A

Wilson, P.R. (1955) The Geology and Mineralogy of the Yreka Copper Property, Quatsino Sound, British Columbia, Unpublished M.Sc. Thesis, University of British Columbia

Yreka2021

Exploration Work type	Comment	Days			Totals
Personnel (Name)* / Position	**Field Days (list actual days)**	**Days**	**Rate**	**Subtotal***	
Hardolph Wasteneys / Chief Geo	Oct 23-26, 2020	4	$800.00	$3,200.00	
Peter Ravensbergen /assistant	Oct 23-26, 2020	4	$420.00	$1,680.00	
Hardolph Wasteneys / Chief Geo	Aug 11-16; 26-28, 2021	9	$800.00	$7,200.00	
Peter Ravensbergen /assistant	Aug 11-16; 26-28, 2021	9	$420.00	$3,780.00	
				$15,860.00	**$15,860.00**
Office Studies	**List Personnel (note - Office only, do not include field days**				
Literature search			$0.00	$0.00	
Database compilation	Hardolph Wasteneys	1.0	$800.00	$800.00	
Computer modelling			$0.00	$0.00	
General research			$0.00	$0.00	
Report preparation	Hardolph Wasteneys	5.0	$800.00	$4,000.00	
				$4,800.00	**$4,800.00**
Ground Exploration Surveys	**Area in Hectares/List Personnel**				
Geological mapping	100/ Hardolph Wasteneys				
Regional		*note: expenditures here*			
Reconnaissance		*should be captured in Personnel*			
Trenches	Define by length and width			$0.00	**$0.00**
Ground geophysics	**Line Kilometres / Enter total amount invoiced list personnel** (details in personnel and other categories)				
Other (specify)					
				$0.00	**$0.00**
Geochemical Surveying	**Number of Samples**	**No.**	**Rate**	**Subtotal**	
Soil samples		50	$44.42	$2,221.00	
Rock	*laboratory costs*		$0.00	$0.00	
Whole rock	4 rocks	0.4	$1,126.58	$450.63	
Petrology			$0.00	$0.00	
Other (specify)			$0.00	$0.00	
				$2,671.63	**$2,671.63**
Transportation		**No.**	**Rate**	**Subtotal**	
kilometers	Wasteneys vehicle 3 trips to Yreka	2,284	$0.55	$1,256.20	
fuel	Wasteneys		$324.00	$324.00	
Other	Ravensbergen shuttle	360.00	$0.55	$198.00	
				$1,778.20	**$1,778.20**
Accommodation & Food	**Rates per day**				
Camp	Wasteneys gear expenses			$212.00	
Meals	Wasteneys (camp groceries)			$600.00	
				$812.00	**$812.00**
Miscellaneous					
Telephone			$0.00	$0.00	
Other (Specify)	VHF Radios and InReach fees			$95.00	
				$95.00	**$95.00**
Equipment Rentals					
Field Gear (Specify)	chain saw and gas		$120.00	$120.00	
				$120.00	**$120.00**
TOTAL Expenditures					**$26,136.83**

Table 3: Abbreviations
Measurement Units, Element Abbreviations and Acronyms used in this report.:

Measurement Units:

C	Celsius
cm	centimeter
g/t	g/t
ha	hectares
Hz	Hertz
km	kilometer
kg	kilogram
m	meter
mm	millimeter
Ma	Million years ago
Mt	Million tonnes
ppb	parts per billion
ppm	parts per million
t	tonnes
wt%	weight percent

Element Abbreviations:

Ag	Silver
As	Arsenic
Au	Gold
Cd	Cadmium
Ce	Cerium
Cu	Copper
Eu	Europium
La	Lanthanum
Mo	Molybdenum
Mn	Manganese
Pb	Lead
Pd	Palladium
Pt	Platinum
Sb	Antimony
Yb	Ytterbium
Zn	Zinc

Minerals:

bn	bornite
cc	chalcocite
cpy	chalcopyrite
po	pyrrhotite
py	pyrite
sp	sphalerite

Geological Terms

Fm	Formation
Gp	Group
SW	southwest
NW	northwest

Acronyms:

AAS	Atomic Absorption Spectroscopy
ARIS	British Columbia Assessment Report Index System
BCGSB	B.C. Geological Survey Branch
EM	Electromagnetic
MEMPR	Ministry of Energy Mines and Petroleum Resources
FA	Fire Assay
GIS	Geographic Information System
GPS	Geographic Positioning System
Mag	Magnetometer
N-MORB	Normal Mid-Ocean Ridge Basalt
NTS	National Topographic Series
QA	Quality Assurance
QC	Quality Control
REE	Rare Earth Element
RGS	Regional Geochemistry Survey
TMI	Total Magnetic Intensity
UTM	Universal Transverse Mercator

Station	Easting	Northing	Alt.	Sample	Field Notes
HW20-1455	600800	5590124	901		Contouring across slope to East; Rusty wx pyrite altered bleached qtz diorite talus
HW20-1456	600819	5590134	904		Large OC columnar-jointed massive fg basalt; wx surface shows plag phenos
HW20-1457	600874	5590160	888		OC or pile of talus (base) coarse feldspar porphyry with pyrite replacement of ? hb
HW20-1458	600824	5590275	928		IP Line Stn pink and blue on ridge; Quatsino Sound visible
HW20-1459	600874	5590258	910		Fsp porphyritic basalt; large corroded phenos with outline best seen on some wxd surfaces and ? Mafics replaced by fg patchy pyrite
HW20-1460	601064	5590372	859		L2N 6000E; open Forest old growth alpine fir; searching for OC (none for 100 m.)
HW20-1461	601082	5590331	838		OC; jointing 018/55; of br wx; vfg aphyric black-dk green ?; OC continues across slope showing jnt __
HW20-1462	601232	5590276	800		E of deep valley across trav. line, loose rocks under Tree roots; silicous argillite; soil sample site PR 475
HW20-1463	601223	5590261	790		Top of steep creek; OC silicious pyritic argillite
HW20-1464	601228	5590246	776		In Creek OC; pyritic layers or veins in silicious argillite (sample)
HW20-1465	601230	5590245	775	G0616071	Continue down Creek to check fx mg dark layer 070/70 +/- sulphidic
HW20-1466	601347	5590197	771		Rusty wx OC jointed on 310/89; 040/59 fg-vfg sucrose qtzite lite grey
HW20-1467	601334	5590219	781		Similar to 1466; lt Grey vfg ?silicified jointed but white wx on exposed surfaces and rust on enclosed fxs
HW20-1468	601376	5590269	789		Plag porphyritic
HW20-1469	601379	5590277	789	G0616072	Fresh plag porphyritic diorite; mg grey-white plag w fg
HW20-1470	600197	5590099	1122		IP Survey line at Summit of Comstock
HW20-1471	600868	5590291	895		147L OC; Rusty wx 1/4ö deep, hb feldspar porphyritic ? Diorite or volc.
HW20-1472	600963	5590496	885		Acicular hb-plag porphyry vfg-aph matrix; grey fine diss py cubes; Rusty wx well jointed 310/89
HW20-1473	600974	5590524	887		OC dark wx cherty vfg maroon with diss py (float nearby with py veinlets)
HW20-1474	600984	5590532	884		Black cherty rock with fg diss py and irreg qtz veins and py-po clusters; jointing 200/85
HW20-1475	601006	5590560	891		Cherty rock with pyrite veilets showing bleaching halos
HW20-1476	600999	5590567	881	G0616073	Below OC of 1475; Grey chert with pyrite diss. and in veinlets
HW20-1477	601001	5590567	877		Two intersecting fabric layers in chert; black and white body 285/45 ? bedding/banding
HW20-1478	601001	5590593	879		Cont. OC along with aspect chert - grey mottled with white patch + diss py vf on and along fxs
HW20-1479	601015	5590599	881		Silicified hb-plag porph dk Grey hard vfg-aph Matrix accic hg < . 0.5mm wide, ghosty plag equant phenos; varies to coarser texture 10 m. E with diss pyrite plus hb alteration; ? ch
HW20-1480	600976	5590657	838		Black polyethylane prp; 1” buried under moss
HW20-1481	600960	5590656	834		Top end of steel pipe 1 and fit into black poly. ôWOTAULICö 1ö pipe couples pipe continues NW towards Mawhielcas creek source
HW20-1482	600882	5590742	821		Walk N on ridge and drop over West side of large OCs Rusty wx dk Grey green cherty rocks with irreg. Patches and veinlets of vfg pyrite

Table 4: Geological observations and rock descriptions
Station numbers indicate the year of the field work (HW20 indicates 2020). Coordinates are in NAD 83, UTM zone 9. Samples numbers G0616071 etc are for 4 whole rock analyses. Others are hand samples analysed by portable handheld XRF.

HW20-1483	600863	5590761	812		More chert OC dark green vfg-aph rusty joints patchy vfg pyrite;
HW20-1484	600870	5590756	812		Same OC as 1483;darker, vfg with diss pyrite and felted texture
HW20-1485	600828	5590836	806		Dark Grey chert patchy pyrite vfg rusty wx OC; bleached outcrop with py-po cores; Biotite veinlets and patches
HW20-1486	600848	5590877	819		Rusty wx black jointed OC fac; joints: 140/89; 241/86; 161/38; dark Grey green fg sediment silicified, ovoid cavity filled spots and clusters of accicular green ma +/- pyrite
HW20-1487	600848	5590901	816		Talus silicified hb-plag porphyry or diss. Pyrite (10 m uphill)
HW20-1488	600869	5590919	823		Silicified hb plag porphyry vfg matrix pale Grey patches of diss pyrite
HW20-1489	600852	5590929	820		No entry/missing
HW20-1490	600854	5590929	818		Dark grey cherty rock iwth vf diss pyrite and some tiny veinlets with dark green mineral
HW20-1491	600862	5590974	814		Pyrite bands in black sediment Cut by dyke; crumbly along joint planes
HW20-1492	600869	5590981	812		Dyke: pale Grey qsp alteration diss pyrite throughout; very faint porph texture; 359/90 +/- ~3 m., wide
HW20-1493	600870	5590997	820		Big OC dark Grey chert in contact with porphyry dyke; contact 360/90; Dyke to E; chert downhill side
HW20-1494	600945	5590941	840		Highly fxd dk Grey sed with minor diss. pyrite; overlooking Neroutsos Inlet
HW20-1495	600946	5590858	853		Dk Grey chert OC diss pyrite
HW20-1496	601018	5590700	850		Black silicious sediment light wx. N-S ridge
HW20-1497	601077	5590635	865		Pipe continues Rusty half barrel; water vlave; no sign of porph
HW20-1498	601097	5590603	864		Old camp - photo bed frames; fuel barrels, cabin or tent frame
HW20-1499	601067	5590508	905		NO ENTRY/MISSING
HW20-1500	601070	5590505	906		Dyke N/S Ridge
HW20-1501	600296	5590091	1101		Photo looking at inlet Quatsino Sound and Neroutsos
HW20-1502	599392	5589944	917		Car park
HW20-1503	597356	5589598	621		Hb gabbro hb altering to chlorite; abundant mag and or pyrrhotit;e pyrite sharply defined texture Grey cg rock
HW20-1504	597452	5589765	624		Pink Granitoid; pink domains appear to be overprinted on other feldspars; mafics look altered from hb to masses of chlorite +/- epidote? 2.6% K
HW20-1505	597473	5589806	629		Black blocky fx aphantic alteration SKARN - Garnet epidote-pyrite; possibly on perhiphery of ingeous intrusion at 1504 black rock argillite w patchy pyrite.
HW20-1506	597472	5589820	630		Blck argillite rock at periphery if 1505 skarn patchy pyrite throughout
HW20-1507	597468	5589850	629		Mg hb gabbro near argillite and skarn transitions to N into coarser grained gabbro phase and altered pink phase
HW20-1508	597472	5589881	631		Cg hb gabbro in patchy pink domains throughout
HW20-1509	597468	5589894	631		Contact skarn zone like 1505-1506; green skarn intrusion into black argillite; photo with hammer near dykelet
HW20-1510	597165	5590259	674		Highly fx OC Brown wx slightly rusty; vcg biotite granit-grnodioritic pink feldspar domains
HW20-1511	597181	5590269	671	G0616074	Grungy banded ?skarn Garnet epidote and py- cpy; very grungy wx OC; looks stratified; XRF 3680 Cu and 4660 Cu
HW20-1512	597190	5590275	672		Deeply wxd banded skarn rock dk bands and pale yellow banding 170/65 W
HW20-1513	597196	5590278	672		Graphitic layers in grungy black banded skarn?
HW20-1514	597201	5590282	671		Photo of dark goethite layers and light finely banded
HW20-1515	597208	5590288	671		Granitoid: ?diorite contact showed retrograde endoskarn alteration for 2 m. To highly oxidized zone to west in skarn
HW20-1516	597134	5590234	672		XRF #521; Banded skarn zone between lobes of deeply wx crumbly diorite; very tough rock layers; felted texture in pxs
HW20-1517	597135	5590240	670		Thick dark layer with trace pyrite in skarn, rusty wx; plag porphyritic fg diorite with diss py
HW21-1558	601682	5590485	619		[Second trip; Camp on road up Hill to Yreka;] just east of cleft resistant ridge above 1554; lst bands with malachite

HW21-1559	601671	5590490	619		N end of resistant ridge; skarn - garnet yellow punky; dense rocks w wx out sulphides; contact with dyke not visible
HW21-1560	601656	5590485	624		Around OC spur ridge nose pt n edge in cleft through various yellowy skarn facies; OC bleached feldspar porphyry (prob?)
HW21-1561	601633	5590477	635		OC vertical face deeply Rusty wx skarn; yellow garnet with diss cpy; punky wx sulphide depeleted
HW21-1562	601621	5590484	643		Traverse left along base of bluff and up cleft; cg yellow Garnet skarn continues up Hill to 660 m.
HW21-1563	601634	5590457	662		Blocky fxd OC +/- 25 m pale blue green vfg cherty ? Px skarn; possible tuff angular shards (shattered?)
HW21-1564	601664	5590380	673		Pale green vfg altered tuff or diorite massive (not quite cherty); bluff of 570 to South of 1553 100 m. Passed pile of black poly pipe
HW21-1565	601672	5590353	660		Poor GPS reception +/-40m : Trail Cut logs ? 25 years
HW21-1566	601674	5590324	661		Base of 10 m bluff very smooth wx dark grey-diss pyrite Rusty wx at base of bluff
HW21-1567	601673	5590305	661		Rusty cables 3 of them tied back to big trees; one remaining intact above ground over cliff
HW21-1568	601689	5590290	660		Firmly laminated tuff; Bedding 148/35; buff wx; massive layer looks like lapilli tuff
HW21-1569	601690	5590407	640	HW21-1569	Trench 270 edge of cliff in heavy skarn; Rusty wx coarse grained garnet with cpy in fxs; samples from 2 higher grade spots; all material Rusty and falling apart.
HW21-1518	600251	5590095	1113		Hike up ridge to Comstock; new major blowndown along Ridgeline up to summit; On East ridge overlooking Quatsino Sound at 11:30 a.m.
HW21-1519	600615	5590175	1020		NO ENTRY
HW21-1520	601057	5590596	898		Steep hillside above old camp; microdiorite fine acicular black hb in fg-mg plag phyrite; pale buff rock with moderate Rusty wx; diss. pyrite
HW21-1521	601079	5590613	876		Old Wood sign nailed to Tree
HW21-1522	601083	5590667	879		Decrepit Heli? pad; balsam firs ~ 30 years old have grown up through pad and been topped perhaps 15 years ago; logs and planks look ~ 50 years old ? Mid 1960s; East facing slope. Lunch at old camp; Coordinates 601102 E 5990618 N
HW21-1523	601089	5590630	874		First soil by XRF #525 direct; PR-129; Cu= 43 ppm; near old camp on steep slope of gulley NW trend
HW21-1524	601118	5590501	878		OC fg-maroon basalt coherent; Pale Grey wx patchy diss py. Bigger samples show oemeboid coarse textures like maroon chert with veins of pyroxene-argite. XRF #532 ambigous; marked as HW21-1534?
HW21-1525	601226	5590409	855		Forested flat bluff; dense blueberries; humocky ground with low ridges but no OC
HW21-1526	601044	5590372	875		OC plag porphyritic basalt-int subhedral twinned plag phenos to 3 mm long moderately close in dk Grey vfg Matrix
HW21-1527	600170	5590058	1086		Near summit of Comstock on way in; nice grassy patch; avoided blowdown along ridge by dropping below East side
HW21-1528	600877	5590291	908		PR 135 XRF#534? Old soil hole tested with XRF; Cu=123; Co=428 probably
HW21-1529	600883	5590329	904		Small OC under tree; drk gr-black vfg ? Basalt non-porphyritic with patchy pyrite diss. Hard dherty varies o dk green fragmented cherty with pyrite diss as small specs and some altered structures? (RWx)?
HW21-1530	600758	5590409	835		On North side of ridge in head Wall of Mahwhieclas Creek 30 degree slope but no OC; narrow gulleys filled with salmonberry and mush

HW21-1531	600720	5590449	818		1/2 m block dk Grey fg plag phyric basalt talus block generally, NO OC
HW21-1533	600697	5590665	715		Traverse down densely vegetated Creek, DevilÆs Club, salmonberry, blueberry; Creek bed rubble angular; 5% Rusty wx black pyritic volcaniclastic cherty break mg pervasive diss pyr
HW21-1534	600640	5590698	694		OC in creek; fractured fg altered granitoid bleached < 1 mm gs; immersed ? In pyrite; Rusty weathering; forms East Bank of Creek bed; Fully fxd widely spaced. XRF #537 CU 78 plus XRF #538-#540
HW21-1535	600631	5590717	690		Cont. OC to this point (all granitoid from last point) dyke? Fg bleached granitoid, fine hb and bi and diss. pyrite. Fx 296/80 15 cm spacing. XRF # 541 vf vein qtz-granitoid
HW21-1536	600597	5590776	677		Creek junction on West, massive colluvium on Banks no more OC, EXIT east up to ridge
HW21-1537	600662	5590767	703		Steel Pipe aligned along 290 downhill towards Creek
HW21-1538	598103	5589595	739		Limestone bed; b 165/80 ~ 1/2 m. thick; Grey vfg sandwiched in pale Brown wx siltstone; IKL deformed or part of LeMare Lake
HW21-1539	598259	5589656	748		Cuspate Spalling dk Grey mudstone; breaks into cuspate frags
HW21-1540	597923	5589542	735		Walking back along road. Quartzite altered ? Vlc; XRF zaps - one in pale green altered rock, another in qtzite veining, #542 pale green T;1015 K 5048; #543 qtzite T: 286, K ? 191; large leucocratic altered qtzite light moss
HW21-1541	601539	5589005	626		T400 lower road large blocky talus of mg alt diorite abundant meter-sized blockd covered by fine scree
HW21-1542	601513	5588986	628		OC altered diorite cg, and patches of augite-bearing skarn
HW21-1543	601502	5588972	631	HW21-1543	Skarny looking argillite black, irregular felspathic veins, qtz-sphalerite pyrite vein
HW21-1544	601498	5588973	631		Pale Brown wx dyke alt hb diorite pyritic; hb-feldspar porphyritic; Cont 170/90 against dk green skarny sediment
HW21-1545	601892	5590708	419		Grey and black cherty argillite in small OCs - loose ine diss pyrite + ? cpy; open steep Forest ? Regrowth from early 1900s
HW21-1546	601839	5590644	471		Rock ledge in Forest; hard brittle biotite-feldspar porphyry with some resistant ribs? Veins
HW21-1547	601799	5590609	505	HW21-1547	Po-cpy cherty skarn loose block
HW21-1548	601779	5590595	524	HW21-1548	Source of 1547 sample, Rusty wx OC; wavy jointing 200/70; diss patchy po in bleached diorite; very cherty; varies to streaky banded semi msv 275/70 fabric; trace cpy diss.
HW21-1549	601773	5590594	527		Adjacent to 1548 bleached fg? Diorite with round patches of po; faint hb porph texture
HW21-1550	601752	5590568	553		(Chip sample); ? Lapilli tuff-like texture; prominent wx small Pebble frags dk Grey matrix; texture does not appear on fresh surface
HW21-1551	601731	5590557	585		OC band probable skarn maroon and green mottled silicous hard sediment
HW21-1552	601716	5590540	602		Chip; pale pink buff cg clastic, or felsic pheno packed granitoid
HW21-1553	601686	5590502	630		Skarny limestone; patchy skarn assemblages prominent wx in layers; just below (5 m.) malachite stained OC
HW21-1554	601692	5590497	634		Limestone with resistant layers with diss cpy; b 320/45
HW21-1555	601668	5590468	643		Resistant knob adjacent to deep cleft knobby textured Rusty wx cpy diss. Granular texture ,<1 mm rounded grains; Feldspar close-packed phenos; igneous?
HW21-1556	601667	5590435	643		Massive po-cpy sulphide chunks found in deep cleft rolled down from OC on ridge to East
HW21-1557	601667	5590440	649		Crest of resistant ridge ? Pale Brown Garnet skarn with diss. Blobs cpy; bleached hb porphyritic diorite

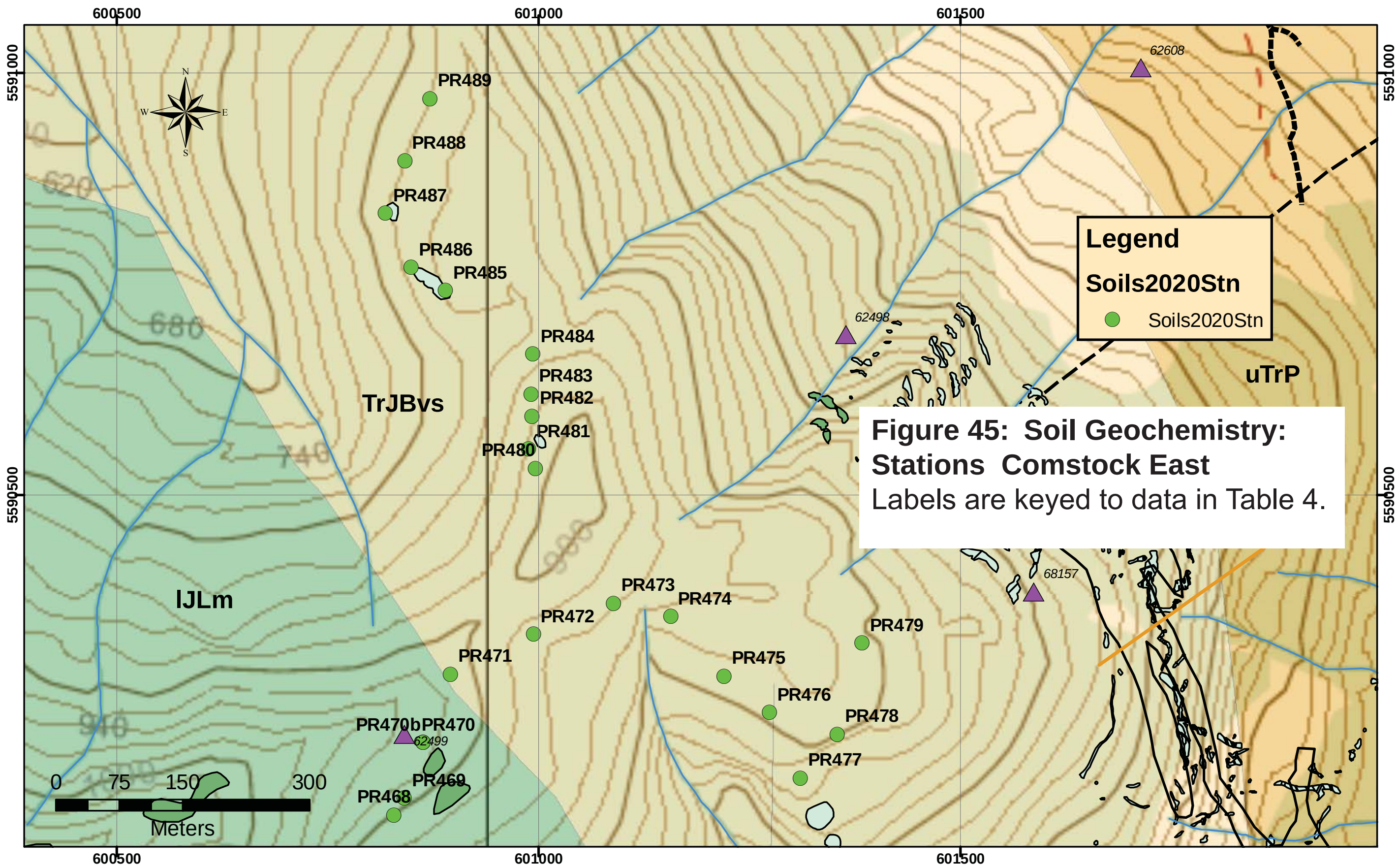

Figure 45: Soil Geochemistry: Stations Comstock East
Labels are keyed to data in Table 4.

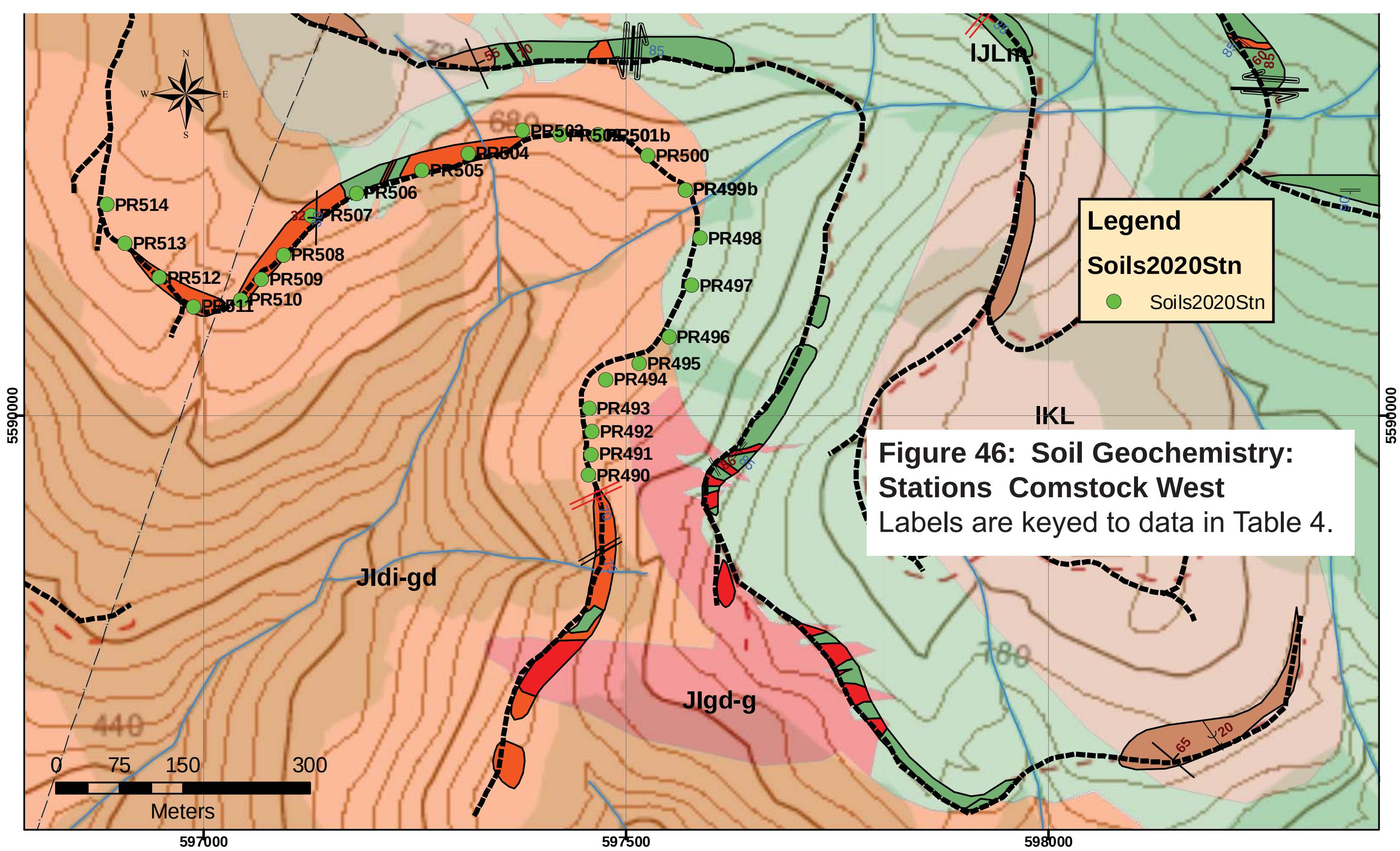

Figure 46: Soil Geochemistry: Stations Comstock West
Labels are keyed to data in Table 4.

Station	Easting	Northing	Alt.	SAMPLE	dep	B col	Au	Ag	Bi	Te	W	Cu	Pb	Zn
PR468	600828	5599184	894	W813201	25	orange	0.0040	0.13	0.97	0.19	0.21	102	4.5	65
PR469	600840	5599203	901	W813202	5	orange	0.0020	0.09	0.79	0.36	0.12	85	2.4	87
PR470	600862	5599267	912	W813203	10	dk brn	0.0690	0.58	2.93	0.81	0.08	548	5.9	807
PR470b	600862	5599267	912	W813248	10	dk brn	0.0790	0.56	3.77	1.01	0.06	612	6.3	836
PR471	600895	5599345	906	W813204	10	lt gr	0.0250	0.06	0.95	0.32	0.07	159	3.5	111
PR472	600993	5599384	869	W813205	5	dk brn	0.0040	0.59	1.03	0.29	0.17	62	3.4	38
PR473	601088	5599413	852	W813206	5	orange	0.0210	0.60	4.82	1.78	0.43	258	5.4	396
PR474	601156	5599393	842	W813207	10	or brn	0.0120	0.24	114.50	22.70	0.39	117	21.8	196
PR475	601219	5599317	807	W813208	5	dk brn	0.0540	0.55	5.42	0.87	2.63	411	11.5	233
PR476	601273	5599269	784	W813209	10	dk brn	0.0010	0.23	1.27	0.13	0.14	29	5.1	15
PR477	601310	5599189	767	W813210	2.5	dk brn	0.0080	0.04	2.22	0.01	0.03	3	8.0	2
PR478	601354	5599237	779	W813211	2.5	dk brn	0.0480	0.10	2.82	0.12	0.10	15	35.1	30
PR479	601383	5599342	804	W813212	15	lt gr	0.0010	0.14	0.76	0.14	0.10	27	1.7	2
PR480	600995	5599580	881	W813213	10	red brn	0.0020	0.06	0.89	0.16	0.18	30	4.3	29
PR481	600988	5599604	867	W813214	15	dk brn	0.0030	2.80	2.43	0.60	0.36	63	8.2	33
PR482	600992	5599642	866	W813215	10	dk brn	0.0030	0.10	1.01	0.33	0.21	64	2.4	22
PR483	600991	5599669	864	W813216	10	dk brn	0.0110	0.92	2.09	0.51	0.41	81	5.3	38
PR484	600993	5599716	846	W813217	5	grey	0.0140	0.16	3.08	0.18	0.05	18	11.2	28
PR485	600889	5599800	819	W813218	10	grey	0.0010	0.16	0.34	0.05	0.09	3	3.1	6
PR486	600849	5599830	799	W813219	5	red brn	0.0020	0.27	5.44	1.13	0.14	125	4.2	66
PR487	600818	5599897	794	W813220	15	dk brn	0.0010	0.26	1.22	0.27	0.26	48	5.3	108
PR488	600841	5599956	809	W813221	10	lt brn	0.0005	0.23	1.00	0.09	0.21	16	6.3	7
PR489	600871	5600027	819	W813222	15	dk brn	0.0050	0.18	0.18	0.11	0.33	26	13.6	34
PR490	597456	5599265	629	W813223	20	red brn	0.0010	0.29	0.10	0.18	0.14	28	9.0	55
PR491	597459	5599290	631	W813224	20	red brn	0.0005	0.16	0.07	0.14	0.22	32	8.5	53
PR492	597460	5599316	628	W813225	20	red brn	0.0040	0.30	0.09	0.18	0.19	40	9.4	57
PR493	597456	5599344	625	W813226	20	red brn	0.0100	0.19	0.08	0.19	0.17	47	7.6	56
PR494	597476	5599376	621	W813227	20	red brn	0.0060	0.12	0.05	0.18	0.13	112	9.7	123
PR495	597515	5599392	620	W813228	20	red brn	0.0020	0.25	0.07	0.28	0.24	58	6.7	57
PR496	597551	5599421	621	W813229	20	lt brn	0.0020	0.23	0.08	0.18	0.12	37	8.5	86
PR497	597577	5599479	626	W813230	20	red brn	0.0040	0.11	0.11	0.12	0.16	42	10.0	68
PR498	597588	5599534	633	W813231	20	red brn	0.0030	0.11	0.06	0.14	0.03	64	5.1	75
PR499	597570	5599593	634	W813232	20	red brn	0.0020	0.08	0.10	0.09	0.03	26	6.6	62
PR499b	597570	5599593	634	W813249	20	red brn	0.0010	0.09	0.10	0.08	0.03	25	6.8	61
PR500	597526	5599637	644	W813233	20	red brn	0.0030	0.11	0.07	0.21	0.16	25	5.6	60
PR501	597467	5599666	650	W813234	20	red brn	0.0005	0.15	0.09	0.18	0.14	38	6.9	66
PR501b	597467	5599666	650	W813250	20	red brn	0.0020	0.13	0.10	0.11	0.08	40	7.4	71
PR502	597422	5599669	652	W813235	20	red brn	0.0005	0.20	0.11	0.15	0.12	30	6.9	64
PR503	597377	5599678	656	W813236	20	lt brn	0.0010	0.10	0.11	0.15	0.07	38	5.8	51
PR504	597313	5599656	661	W813237	20	red brn	0.0010	0.06	0.09	0.16	0.11	41	6.2	88
PR505	597258	5599641	663	W813238	20	red brn	0.0010	0.27	0.08	0.06	0.34	60	6.1	105
PR506	597181	5599620	670	W813239	20	red brn	0.0010	0.25	0.06	0.14	0.23	29	9.9	125
PR507	597127	5599598	677	W813240	20	red brn	0.0005	0.14	0.07	0.15	0.19	46	7.2	82
PR508	597094	5599554	668	W813241	20	red brn	0.0020	0.03	0.06	0.16	0.20	42	4.3	56
PR509	597068	5599528	659	W813242	20	red brn	0.0010	0.06	0.07	0.08	0.19	30	3.9	41
PR510	597044	5599506	654	W813243	20	red brn	0.0005	0.04	0.10	0.15	0.15	20	5.6	38
PR511	596988	5599502	643	W813244	20	red brn	0.0005	0.02	0.11	0.12	0.09	12	5.9	16
PR512	596948	5599540	642	W813245	20	red brn	0.0010	0.05	0.04	0.11	0.18	24	3.0	61
PR513	596907	5599583	643	W813246	10	red brn	0.0005	0.01	0.03	0.02	0.03	1	2.0	2
PR514	596886	5599631	645	W813247	20	red brn	0.0010	0.05	0.05	0.14	0.19	38	3.8	45

Table 5: Soil Geochemical analyses

The table contains station numbers, coordinates in UTM zone 9, ALS sample numbers, brief sample descriptions, ICP geochemical analyses by TL43 using aqua regia extraction for gold and other elements, and XRF analyses of the soil samples in columns labelled e.g Cu_X. Samples highlighted in yellow and with station suffix “b” are duplicates of the sample in the row immediately above and with same station number. In the XRF analyses ‘0”s are analyses below detection limit.

Station	Mo	Al	Sb	As	B	Ba	Be	Ca	Cd	Ce	Co	Cr	Cs	Fe	Ga	Ge	Hf	Hg
PR468	1.0	5.39	0.53	29.9	5	30	0.29	0.12	0.09	7.40	11	22	0.75	10.85	25.7	0.07	0.45	0.19
PR469	0.7	8.79	0.23	23.2	5	30	0.69	0.11	0.15	10.45	19	33	1.87	6.76	14.6	0.07	0.50	0.21
PR470	0.5	4.38	5.34	278.0	5	110	0.52	0.06	1.60	16.20	29.2	21	1.05	6.94	8.9	0.06	0.12	0.17
PR470b	0.8	4.50	5.93	398.0	10	90	0.55	0.06	1.64	17.05	33	20	1.24	7.87	9.8	0.06	0.09	0.17
PR471	0.9	5.04	0.86	66.1	5	130	0.39	0.17	0.26	12.60	40.8	18	1.94	5.49	11.0	0.07	0.14	0.04
PR472	1.9	3.11	1.21	225.0	5	30	0.29	0.04	0.11	15.60	5.5	10	0.53	8.72	17.1	0.06	0.14	0.38
PR473	4.0	6.06	0.66	152.0	5	80	0.73	0.15	0.66	25.20	14.3	19	1.73	7.24	15.7	0.07	0.32	0.27
PR474	1.7	1.55	0.33	28.8	10	30	0.29	0.69	0.72	9.65	10.9	5	0.38	2.43	4.0	0.07	0.05	0.06
PR475	7.9	2.73	0.92	110.5	5	20	0.24	0.45	0.11	7.11	4	10	1.00	7.64	15.2	0.06	0.04	0.11
PR476	3.2	0.69	0.39	1.1	5	10	0.03	0.14	0.12	4.36	0.7	4	0.09	2.88	16.0	0.03	0.05	0.12
PR477	2.4	0.17	0.28	0.2	5	20	0.03	0.02	0.01	2.37	0.1	3	0.17	0.14	9.2	0.03	0.03	0.04
PR478	6.7	0.96	17.45	153.0	5	10	0.03	0.01	0.02	4.64	0.8	6	0.63	1.88	19.1	0.03	0.01	0.03
PR479	6.9	0.13	0.15	0.6	5	5	0.03	0.01	0.01	1.49	0.2	3	0.03	1.25	5.1	0.03	0.02	0.01
PR480	2.5	2.66	0.37	9.6	5	40	0.35	0.10	0.10	19.85	4.7	1	0.82	7.24	25.4	0.08	0.05	0.10
PR481	2.9	1.62	0.24	11.3	5	10	0.11	0.09	0.08	6.64	2.2	8	0.24	6.32	16.2	0.07	0.03	0.26
PR482	2.4	2.55	0.19	1.8	5	20	0.18	0.09	0.17	9.84	2.2	13	0.89	5.23	11.0	0.07	0.12	0.14
PR483	7.5	1.51	0.33	5.2	5	10	0.09	0.07	0.23	4.60	1.6	14	0.38	5.85	20.0	0.03	0.07	0.09
PR484	5.2	0.74	0.20	9.9	5	10	0.03	0.03	0.05	3.42	1.6	4	1.09	0.90	11.6	0.03	0.01	0.05
PR485	2.4	0.28	0.11	1.1	5	5	0.03	0.01	0.04	4.62	0.2	0.5	0.08	1.49	8.2	0.03	0.01	0.03
PR486	7.0	2.84	0.55	1.8	5	10	0.36	0.04	0.22	7.95	2	15	0.22	7.90	22.9	0.06	0.32	0.10
PR487	7.0	4.05	0.52	4.1	5	10	0.40	0.07	0.41	8.10	4.7	14	0.79	7.22	16.7	0.06	0.08	0.17
PR488	8.5	0.92	0.62	0.7	5	10	0.03	0.03	0.05	5.07	2	3	0.13	3.78	18.9	0.03	0.03	0.07
PR489	32.6	4.24	1.78	18.7	5	10	0.27	0.02	0.07	8.04	2.6	15	0.52	5.58	15.5	0.03	0.30	0.19
PR490	2.1	3.95	0.30	19.1	5	20	0.69	0.09	0.12	15.00	10.8	32	0.51	6.72	16.4	0.05	0.11	0.14
PR491	2.7	4.13	0.29	20.8	5	10	0.58	0.12	0.11	12.25	20.2	36	0.53	7.84	16.0	0.06	0.14	0.18
PR492	2.8	4.79	0.35	22.3	5	20	0.64	0.12	0.10	16.00	9.5	35	0.62	6.92	14.2	0.06	0.21	0.19
PR493	4.3	4.28	0.31	18.6	5	20	0.42	0.15	0.16	16.25	14.1	44	0.40	6.53	18.1	0.05	0.35	0.20
PR494	4.5	4.64	0.41	30.2	10	20	0.66	0.29	0.20	29.10	30.2	35	0.73	5.52	12.3	0.08	0.11	0.11
PR495	4.8	5.54	0.37	28.9	10	10	0.68	0.13	0.15	19.65	12.3	34	0.42	7.50	15.2	0.07	0.36	0.25
PR496	2.6	4.19	0.44	27.3	5	40	1.11	0.11	0.23	32.10	21.4	16	0.37	6.91	15.5	0.08	0.13	0.23
PR497	2.8	3.77	0.55	38.6	5	30	0.86	0.08	0.14	34.10	13.9	25	0.57	5.73	13.3	0.09	0.18	0.24
PR498	2.1	5.00	0.36	35.0	5	70	0.87	0.17	0.13	29.00	24.7	36	0.67	8.20	15.3	0.07	0.35	0.13
PR499	3.7	2.64	0.58	37.0	5	70	0.43	0.06	0.12	20.80	10.4	19	0.27	6.21	16.4	0.05	0.16	0.06
PR499b	3.7	2.55	0.61	39.8	5	70	0.40	0.06	0.10	19.50	10.5	19	0.28	6.42	15.7	0.05	0.15	0.05
PR500	3.7	6.78	0.39	24.8	5	30	0.94	0.05	0.08	29.10	10.2	35	0.51	8.10	14.1	0.08	1.08	0.14
PR501	4.2	5.08	0.36	21.5	5	30	1.02	0.10	0.16	25.10	36.2	34	0.70	9.01	17.3	0.06	0.48	0.14
PR501b	4.1	5.21	0.33	21.4	5	30	1.04	0.10	0.15	23.70	32.3	34	0.80	8.94	17.9	0.07	0.38	0.12
PR502	4.1	3.77	0.37	21.0	5	30	1.01	0.09	0.11	23.80	13.2	28	1.09	9.37	19.9	0.06	0.22	0.12
PR503	4.1	4.63	0.33	10.1	5	20	0.96	0.14	0.06	18.50	10.5	35	0.74	8.06	23.5	0.05	0.26	0.15
PR504	3.5	4.77	0.35	16.8	5	30	0.88	0.09	0.11	17.30	13.7	36	0.77	8.66	19.5	0.05	0.36	0.04
PR505	5.1	5.73	0.17	10.3	10	20	0.79	0.23	0.46	13.05	17.9	36	1.32	6.21	14.3	0.06	0.56	0.36
PR506	3.8	10.40	0.08	7.1	10	10	1.44	0.06	0.47	35.90	8.4	39	0.36	6.41	12.4	0.08	0.66	0.25
PR507	4.1	6.30	0.15	7.4	5	10	0.86	0.11	0.15	17.10	8.2	42	0.77	6.36	17.3	0.07	0.38	0.27
PR508	1.6	8.72	0.13	6.6	5	10	0.69	0.09	0.18	12.00	9.4	68	0.80	6.93	14.9	0.06	0.62	0.28
PR509	1.4	8.65	0.11	4.4	5	10	0.62	0.09	0.08	8.64	8.6	66	0.86	7.79	18.6	0.06	0.53	0.17
PR510	1.8	3.75	0.17	4.8	5	10	0.43	0.11	0.14	6.40	5.5	48	0.78	7.87	18.3	0.05	0.16	0.16
PR511	1.9	2.64	0.11	2.7	5	10	0.38	0.09	0.10	7.99	2.8	21	0.85	8.94	32.9	0.05	0.04	0.12
PR512	1.4	6.50	0.07	3.7	5	10	0.57	0.09	0.23	18.10	8.2	38	0.45	7.78	15.8	0.07	0.44	0.19
PR513	0.3	0.31	0.03	0.2	5	5	0.03	0.01	0.03	2.76	0.2	2	0.14	0.16	4.0	0.03	0.01	0.02
PR514	1.6	7.05	0.12	5.8	5	20	0.80	0.09	0.09	26.30	9.9	39	0.66	8.24	18.0	0.07	0.59	0.37

Station	In	K	La	Li	Mg	Mn	Na	Nb	Ni	P	Rb	Re	S	Sc	Se	Sn	Sr
PR468	0.097	0.08	3.0	9.9	1.07	160	0.03	1.29	25.9	420	4.2	0.001	0.03	10.8	1.8	1.1	9.9
PR469	0.052	0.07	4.3	19.3	1.41	159	0.02	0.80	34.7	510	5.7	0.001	0.06	17.3	2.7	0.5	18.5
PR470	0.23	0.04	5.4	10.1	1.46	563	0.01	0.08	30.3	290	5.6	0.001	0.01	15.1	1.7	0.7	38.7
PR470b	0.437	0.05	6.5	11.0	1.36	620	0.01	0.06	28.9	330	7.0	0.001	0.01	16.2	1.9	0.8	29.3
PR471	0.035	0.28	3.7	10.4	1.35	703	0.04	0.29	34.9	790	24.2	0.001	0.01	8.7	0.7	0.4	49.6
PR472	0.064	0.06	5.7	4.0	0.32	116	0.01	2.13	9.8	770	3.1	0.001	0.02	5.8	2.7	1.1	8.9
PR473	0.137	0.09	6.0	23.2	1.23	322	0.01	1.89	16.5	710	9.7	0.001	0.02	11.1	2.7	1.1	16.6
PR474	0.118	0.02	2.5	35.5	1.45	796	0.01	0.19	4.8	130	1.7	0.001	0.01	3.8	0.6	1.1	11.6
PR475	0.235	0.06	3.2	9.9	0.87	198	0.01	1.72	6.6	360	4.2	0.001	0.01	3.5	1.5	2.2	4.4
PR476	0.046	0.03	2.1	0.9	0.17	73	0.01	3.30	1.7	240	1.0	0.001	0.01	1.5	0.3	2.2	16.0
PR477	0.016	0.02	1.2	0.1	0.01	2.5	0.01	0.69	0.5	50	0.5	0.001	0.01	0.7	0.1	1.9	2.2
PR478	0.019	0.02	2.5	1.7	0.18	30	0.01	1.22	2.1	90	1.4	0.001	0.01	1.4	0.3	1.1	2.3
PR479	0.003	0.01	0.8	0.1	0.01	5	0.01	0.91	0.6	80	0.2	0.001	0.01	0.3	0.2	1.0	1.3
PR480	0.045	0.09	8.2	5.0	0.44	101	0.02	3.09	1.6	860	5.6	0.001	0.01	4.1	0.9	1.8	40.6
PR481	0.103	0.04	2.9	3.3	0.49	243	0.03	2.87	6.8	470	3.0	0.001	0.01	4.1	2.4	1.2	13.1
PR482	0.024	0.14	4.0	5.4	0.70	111	0.03	2.26	3.0	360	9.8	0.001	0.04	6.7	2.4	0.7	10.4
PR483	0.117	0.02	1.7	1.3	0.19	61	0.01	2.02	2.5	220	1.7	0.001	0.01	2.6	1.6	1.5	5.2
PR484	0.024	0.02	1.8	3.0	0.17	53	0.01	0.71	1.7	160	2.3	0.001	0.01	0.8	0.4	1.0	4.8
PR485	0.01	0.01	2.0	0.2	0.03	15	0.01	1.33	0.3	120	0.8	0.001	0.01	0.6	0.3	1.0	2.0
PR486	0.097	0.01	2.7	4.2	0.23	95	0.01	4.03	1.9	380	1.0	0.001	0.02	3.3	1.4	2.5	5.2
PR487	0.056	0.04	3.1	7.3	0.53	155	0.02	2.08	3.8	330	3.1	0.001	0.01	5.7	3.4	1.0	12.5
PR488	0.018	0.02	2.5	0.6	0.07	53	0.01	2.36	3.0	250	0.9	0.001	0.01	1.5	0.7	1.7	16.2
PR489	0.056	0.02	3.1	9.7	0.22	70	0.01	1.59	6.8	460	2.8	0.002	0.06	7.7	2.7	0.8	5.4
PR490	0.057	0.02	8.7	20.8	0.32	257	0.01	1.27	13.6	740	2.2	0.001	0.02	10.5	1.1	1.2	6.2
PR491	0.066	0.01	5.3	20.6	0.56	772	0.01	1.45	14.9	700	1.6	0.001	0.02	9.8	1.7	0.9	6.4
PR492	0.076	0.02	6.8	23.2	0.44	313	0.01	1.62	15.9	760	2.8	0.001	0.02	12.7	1.2	1.0	7.7
PR493	0.065	0.01	5.2	19.6	0.59	414	0.02	1.59	22.5	430	1.3	0.001	0.02	12.0	1.7	1.1	8.4
PR494	0.06	0.02	9.1	28.7	1.22	1060	0.02	0.40	37.3	660	2.1	0.001	0.02	17.5	0.5	0.7	13.1
PR495	0.081	0.01	7.0	26.6	0.54	296	0.01	1.46	15.7	470	1.3	0.001	0.03	14.3	2.2	0.8	6.9
PR496	0.073	0.02	11.9	32.0	0.60	635	0.01	1.44	9.7	600	1.5	0.001	0.03	12.8	1.4	0.9	11.0
PR497	0.08	0.02	14.2	34.5	0.42	493	0.01	1.75	9.5	700	2.4	0.001	0.03	10.4	1.6	0.9	9.6
PR498	0.061	0.02	9.0	26.7	1.11	771	0.01	0.28	30.7	510	2.8	0.001	0.05	18.9	1.0	0.7	18.3
PR499	0.054	0.02	7.6	17.1	0.62	377	0.01	0.55	11.8	300	1.7	0.001	0.01	10.0	0.7	1.1	7.7
PR499b	0.048	0.02	7.3	15.4	0.63	394	0.01	0.43	11.8	300	1.7	0.001	0.01	9.1	0.5	1.1	7.7
PR500	0.104	0.02	7.2	33.7	0.51	208	0.01	1.64	13.0	570	2.8	0.001	0.11	19.2	1.9	0.8	6.1
PR501	0.096	0.02	4.3	31.4	0.50	624	0.01	1.65	15.9	440	2.8	0.001	0.03	11.6	1.7	1.0	10.6
PR501b	0.093	0.03	4.7	31.6	0.55	535	0.01	1.22	17.1	390	3.0	0.001	0.02	11.8	1.6	1.1	10.8
PR502	0.109	0.03	4.6	31.1	0.57	284	0.01	1.61	14.1	420	4.0	0.001	0.02	8.3	1.3	1.2	10.0
PR503	0.086	0.02	5.9	30.5	0.38	142	0.01	1.97	19.2	380	2.2	0.001	0.03	9.2	1.5	1.3	12.0
PR504	0.084	0.02	3.3	38.5	0.55	240	0.01	0.80	21.9	460	3.1	0.001	0.04	8.9	0.8	1.2	7.0
PR505	0.074	0.02	4.3	27.2	0.59	266	0.01	1.51	41.3	710	1.6	0.001	0.06	7.9	2.4	0.7	11.9
PR506	0.141	0.01	9.0	18.2	0.47	188	0.01	1.79	15.1	650	0.7	0.001	0.08	17.3	3.4	0.6	4.2
PR507	0.082	0.01	7.3	18.7	0.39	134	0.01	2.63	15.9	460	1.5	0.001	0.05	9.3	2.9	0.7	6.4
PR508	0.097	0.01	5.6	21.2	0.49	151	0.01	1.23	15.6	720	1.9	0.001	0.08	14.7	2.8	0.6	6.5
PR509	0.072	0.01	3.3	18.4	0.45	130	0.01	1.40	19.9	430	1.6	0.001	0.07	12.7	3.0	0.6	7.1
PR510	0.073	0.02	2.8	20.3	0.20	102	0.01	1.38	9.1	750	1.8	0.001	0.02	6.6	1.5	0.9	6.5
PR511	0.08	0.02	3.7	5.1	0.09	57	0.01	1.50	2.9	1280	1.5	0.001	0.01	4.8	1.0	1.7	4.3
PR512	0.098	0.01	3.5	17.3	0.48	166	0.01	1.45	8.8	1020	1.0	0.001	0.05	16.8	2.3	0.7	4.3
PR513	0.005	0.01	1.5	0.1	0.01	13	0.01	0.37	0.3	120	0.3	0.001	0.01	0.3	0.2	0.9	2.0
PR514	0.09	0.01	6.5	20.1	0.44	183	0.01	1.37	10.1	2210	1.6	0.001	0.03	16.7	2.1	1.0	5.9

Station	Ta	Th	Ti	Tl	U	V	Y	Zr	Stn	XRF No.	Mode	Time	Cu_X	V_X	Co_X
PR468	0.005	0.8	0.348	0.06	0.32	228	6.10	9.7	PR468	435	Mining	60.72	131	260	749
PR469	0.005	0.8	0.197	0.1	0.26	142	10.85	12.5	PR469	436	Mining	60.54	177	196	786
PR470	0.005	1.1	0.016	0.21	0.14	81	13.30	3.2	PR470	427	Mining	60.85	622	358	461
PR470b	0.005	1.2	0.014	0.23	0.14	86	14.15	2.3		0		0	0	0	0
PR471	0.005	0.5	0.128	0.31	0.14	108	9.49	2.9	PR471	438	Mining	60.68	158	298	636
PR472	0.005	0.7	0.173	0.06	0.44	122	8.32	3.1	PR472	439	Mining	60.56	78	252	876
PR473	0.005	1.3	0.207	0.13	0.66	124	12.35	8.6	PR473	440	Mining	60.72	382	230	531
PR474	0.005	0.7	0.075	0.1	0.28	45	4.64	2.7	PR474	441	Mining	60.99	178	157	0
PR475	0.005	0.7	0.196	0.05	0.56	116	3.21	1.9	PR475	442	Mining	60.78	496	189	751
PR476	0.005	0.4	0.218	0.01	0.27	90	1.34	1.4	PR476	431	Mining	60.6	77	373	0
PR477	0.005	0.4	0.315	0.01	0.11	41	0.39	0.9	PR477	432	Mining	60.57	0	471	0
PR478	0.005	0.6	0.149	0.02	0.17	99	0.52	0.3	PR478	433	Mining	60.65	73	249	249
PR479	0.005	0.4	0.175	0.01	0.20	94	0.21	0.3	PR479	434	Mining	60.89	0	314	0
PR480	0.005	1.1	0.57	0.07	0.43	146	13.65	1.5	PR480	451	Mining	60.21	73	398	762
PR481	0.005	0.2	0.285	0.03	0.44	187	6.49	0.7	PR481	452	Mining	60.85	57	246	548
PR482	0.005	0.4	0.309	0.12	0.70	166	8.33	1.9	PR482	454	Soil	60.4	90	118	513
PR483	0.005	0.5	0.452	0.02	0.49	264	2.73	2.2	PR483	455	Soil	60.34	79	176	622
PR484	0.005	0.1	0.073	0.03	0.23	87	0.71	0.3	PR484	456	Soil	60.26	34	117	0
PR485	0.005	0.3	0.174	0.01	0.07	25	1.45	0.3	PR485	457	Soil	60.47	0	0	302
PR486	0.01	0.6	0.482	0.01	0.34	93	7.09	6.7	PR486	458	Soil	60.59	147	119	444
PR487	0.005	0.4	0.285	0.05	0.34	177	8.13	2.4	PR487	459	Soil	60.12	74	111	0
PR488	0.005	0.3	0.255	0.02	0.24	160	1.47	0.5	PR488	428	Mining	60.44	0	352	521
PR489	0.005	0.9	0.054	0.04	3.60	118	5.50	10.1	PR489	461	Soil	60.49	56	0	427
PR490	0.005	0.5	0.186	0.05	0.39	209	15.90	4.0	PR490	462	Soil	60.93	54	175	466
PR491	0.005	0.5	0.247	0.06	0.40	208	11.85	5.0	PR491	463	Soil	60.69	0	106	421
PR492	0.005	0.7	0.219	0.05	0.53	176	14.40	8.3	PR492	464	Soil	61.05	66	141	0
PR493	0.005	0.8	0.306	0.02	0.59	209	11.40	11.8	PR493	465	Soil	61.55	50	166	626
PR494	0.005	0.7	0.246	0.06	0.65	152	28.00	3.8	PR494	466	Soil	60.36	121	0	0
PR495	0.005	0.8	0.273	0.02	0.77	196	17.25	12.0	PR495	467	Soil	64.15	50	0	574
PR496	0.005	0.4	0.162	0.03	0.72	174	24.20	4.2	PR496	468	Soil	61.08	0	155	398
PR497	0.005	0.5	0.067	0.03	0.56	134	22.30	4.9	PR497	469	Soil	61.4	63	144	0
PR498	0.005	0.8	0.169	0.04	0.46	180	22.00	9.9	PR498	470	Soil	60.59	55	127	0
PR499	0.005	0.7	0.164	0.03	0.34	196	9.89	5.9	PR499	471	Soil	60.61	0	243	0
PR499b	0.005	0.7	0.161	0.03	0.30	205	8.97	5.6		0		0	0	0	0
PR500	0.005	1.1	0.191	0.03	0.60	169	18.90	26.9	PR500	480	Soil	60.38	57	137	0
PR501	0.005	1.1	0.177	0.04	0.71	198	10.90	13.6	PR501	481	Soil	61.1	0	114	0
PR501b	0.005	1.1	0.158	0.04	0.74	203	11.35	11.1		0		0	0	0	0
PR502	0.005	0.8	0.227	0.04	0.69	223	11.75	6.4	PR502	482	Soil	60.68	0	0	0
PR503	0.005	0.8	0.238	0.03	0.53	248	11.50	8.6	PR503	483	Soil	60.45	61	121	716
PR504	0.005	0.8	0.25	0.03	0.45	240	8.23	11.3	PR504	484	Soil	61.15	46	164	448
PR505	0.005	0.7	0.278	0.05	0.64	142	7.22	17.2	PR505	485	Soil	60.86	86	0	0
PR506	0.005	2.4	0.149	0.01	0.86	116	23.50	16.0	PR506	486	Soil	60.53	0	0	0
PR507	0.005	1.9	0.184	0.02	0.79	177	13.75	9.5	PR507	487	Soil	60.4	51	116	0
PR508	0.005	1.3	0.174	0.02	0.69	157	11.80	15.7	PR508	430	Mining	60.6	74	219	683
PR509	0.005	1.0	0.21	0.01	0.38	179	8.54	13.0	PR509	489	Soil	60.31	59	111	555
PR510	0.005	0.6	0.155	0.02	0.37	232	5.24	4.8	PR510	473	Soil	63.54	0	122	0
PR511	0.005	0.6	0.25	0.01	0.41	387	6.02	1.4	PR511	474	Soil	60.74	0	242	833
PR512	0.005	1.1	0.212	0.01	0.51	165	11.70	10.7	PR512	475	Soil	60.46	0	0	0
PR513	0.005	0.1	0.035	0.01	0.13	11	1.03	0.3	PR513	429	Mining	61.6	55	282	0
PR514	0.005	1.7	0.213	0.01	0.78	185	15.70	14.2	PR514	476	Soil	60.59	0	108	0

Station	Fe_X	Sr_X	Rb_X	Bi_X	As_X	Pb_X	Zn_X	Mn_X	Ti_X	Ca_X
PR468	109633	305	0	0	28	0	106	406	3047	6130
PR469	92260	319	17	0	22	0	111	551	3050	6146
PR470	64084	1125	0	0	115	0	608	613	3314	8802
PR470b	0	0	0	0	0	0	0	0	0	0
PR471	74628	793	23	0	42	0	118	1384	2787	8600
PR472	114489	313	16	18	175	0	57	489	3219	3009
PR473	88870	657	21	0	129	0	485	804	3627	7308
PR474	38721	684	0	99	21	25	231	1533	1541	34359
PR475	136297	493	0	0	101	0	336	722	2201	8620
PR476	45538	1091	23	20	0	0	48	563	3731	9345
PR477	8242	1509	43	22	0	0	25	0	5112	4473
PR478	27338	1053	0	0	143	41	53	195	3178	8259
PR479	22970	1829	0	0	0	0	30	187	3390	11540
PR480	106506	886	0	0	0	20	62	814	6598	7608
PR481	64818	720	0	0	0	0	0	429	2817	5949
PR482	33341	190	26	0	0	0	41	148	2580	4788
PR483	68191	198	14	0	0	0	73	446	3247	5536
PR484	9043	273	26	0	14	0	56	176	3653	5350
PR485	21510	266	7	0	0	0	26	167	3393	4348
PR486	68720	192	15	0	10	0	65	293	3411	3653
PR487	68166	205	30	0	0	0	98	253	2460	3043
PR488	66498	1157	18	0	0	0	0	0	4252	6650
PR489	56811	158	32	0	19	0	65	0	2613	2314
PR490	60240	170	32	0	18	0	87	557	4516	4112
PR491	76642	145	34	0	28	0	76	1734	2796	3292
PR492	78051	381	17	0	22	0	94	712	3542	4932
PR493	62532	147	17	0	18	0	63	845	3652	6586
PR494	52997	177	15	0	26	0	155	1465	3119	9576
PR495	68599	154	19	0	30	0	62	441	2679	5451
PR496	67745	167	26	0	29	0	110	916	3972	2975
PR497	61387	198	24	0	40	0	82	1013	4038	3359
PR498	78174	223	14	0	41	0	107	1152	2641	4216
PR499	54579	215	19	0	41	17	68	536	4950	3320
PR499b	0	0	0	0	0	0	0	0	0	0
PR500	59555	182	23	0	23	0	74	323	3050	3017
PR501	92105	178	19	0	19	0	78	1020	3204	3195
PR501b	0	0	0	0	0	0	0	0	0	0
PR502	84931	170	29	0	19	0	69	485	3408	3069
PR503	101134	104	31	0	13	0	68	263	3262	3501
PR504	71460	216	22	0	13	0	135	512	4007	4741
PR505	59286	122	24	0	0	0	117	499	2375	6338
PR506	57890	101	25	0	0	0	210	289	1364	3331
PR507	62010	182	22	0	0	0	99	382	2314	5560
PR508	90959	619	16	0	0	0	95	323	2320	5760
PR509	85074	140	18	0	0	0	57	379	1914	3908
PR510	70875	154	26	0	0	0	58	612	2723	3045
PR511	111917	134	25	0	0	0	51	644	3441	3020
PR512	80544	178	17	0	0	0	70	488	1827	4123
PR513	11750	723	0	0	0	0	25	694	1986	4178
PR514	67384	168	13	0	0	0	54	430	2076	4224

Complete Characterization Packages

By combining a number of methods into one cost effective package, a complete sample characterization is obtained. These packages combine whole rock analysis, trace elements by fusion, aqua regia digestion for the volatile trace elements, carbon and sulphur by combustion analysis, and several detection limit options for the base metals.

Other method combinations are available for complete characterization. Please enquire with your local client services team for more information.

These packages are suitable only for unmineralised samples. To add gold analysis, please see the Precious Metals section.

Minimum sample size is 10g.

CODE	ANALYTES AND RANGES (ppm)								PRICE PER SAMPLE
ME-ICP06	SiO_2	0.01-100%	MgO	0.01-100%	TiO_2	0.01-100%	BaO	0.01-100%	Sold only as complete packages. CCP-PKG01 **$88.15** CCP-PKG03 **$101.65** Includes ME-XRF26 instead of ME-ICP06
	Al_2O_3	0.01-100%	Na_2O	0.01-100%	MnO	0.01-100%	LOI	0.01-100%	
	Fe_2O_3	0.01-100%	K_2O	0.01-100%	P_2O_5	0.01-100%			
	CaO	0.01-100%	Cr_2O_3	0.002-100%	SrO	0.01-100%			
ME-IR08	C	0.01-50%	S	0.01-50%					
ME-MS81™	Ba	0.5-10,000	Gd	0.05-1,000	Sm	0.03-1,000	W	1-10,000	
	Ce	0.1-10,000	Hf	0.2-10,000	Sn	1-10,000	Y	0.1-10,000	
	Cr	10-10,000	Ho	0.01-10,000	Sr	0.1-10,000	Yb	0.03-1,000	
	Cs	0.01-10,000	La	0.1-10,000	Ta	0.1-2,500	Zr	2-10,000	
	Dy	0.05-1,000	Lu	0.01-1,000	Tb	0.01-1,000			
	Er	0.03-1,000	Nb	0.2-2,500	Th	0.05-1,000			
	Eu	0.03-1,000	Nd	0.1-10,000	Tm	0.01-1,000			
	Ga	0.1-1,000	Pr	0.03-1,000	U	0.05-1,000			
	Ge	5-1,000	Rb	0.2-10,000	V	5-10,000			
ME-MS42™*	As	0.1-250	In	0.005-250	Se	0.2-250			
	Bi	0.01-250	Re	0.001-250	Te	0.01-250			
	Hg	0.005-25	Sb	0.05-250	Tl	0.2-250			
ME-4ACD81	Ag	0.5-100	Cu	1-10,000	Ni	1-10,000	Zn	2-10,000	
	Cd	0.5-1,000	Li	10-10,000	Pb	2-10,000			
	Co	1-10,000	Mo	1-10,000	Sc	1-10,000			
ME-MS61™	Ag	0.01-100	Cu	0.2-10,000	Ni	0.2-10,000	Zn	2-10,000	CCP-PKG05 **$101.75** Includes ME-MS61™ instead of ME-4ACD81
	Cd	0.02-1,000	Li	0.2-10,000	Pb	0.5-10,000			
	Co	0.1-10,000	Mo	0.05-10,000	Sc	0.1-10,000			
ME-MS61L™	Ag	0.002-100	Cu	0.02-10,000	Ni	0.08-10,000	Zn	0.2-10,000	CCP-PKG06 **$126.50** Includes ME-MS61L™ with super trace detection limits.
	Cd	0.005-1,000	Li	0.2-10,000	Pb	0.01-10,000			
	Co	0.005-10,000	Mo	0.02-10,000	Sc	0.01-10,000			

*Other customisable options such as super trace detection limits ME-MS42L™ available for substitution of ME-MS42™

Table 6: Analytical ranges for CCP-Pkg01 Whole Rock Analysis
Combined digestion and analytical procedures for complete characterization of rock samples. This method was used for the analysis of the 4 rock samples from Yreka

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

To: WASTENEYS, HARDOLPH
PO BOX 2160
CAMPBELL RIVER BC V9W 5C5

Page: 1
Total # Pages: 2 (A – E)
Plus Appendix Pages
Finalized Date: 11-SEP-2021
Account: WATHAR

CERTIFICATE VA21196625

Project: BABS + YREKA

This report is for 10 samples of Rock submitted to our lab in Vancouver, BC, Canada on 29-JUL-2021.

The following have access to data associated with this certificate:

HARDOLPH WASTENEYS

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LOG-21	Sample logging - ClientBarCode
CRU-31	Fine crushing - 70% <2mm
DISP-01	Disposal of all sample fractions
CRU-QC	Crushing QC Test
PUL-QC	Pulverizing QC Test
SPL-21	Split sample - riffle splitter
PUL-31	Pulverize up to 250g 85% <75 um

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
ME-MS42	Up to 34 elements by ICP-MS	ICP-MS
OA-GRA05	Loss on Ignition at 1000C	WST-SEQ
TOT-ICP06	Total Calculation for ICP06	
ME-4ACD81	Base Metals by 4-acid dig.	ICP-AES
ME-ICP06	Whole Rock Package - ICP-AES	ICP-AES
C-IR07	Total Carbon (IR Spectroscopy)	LECO
S-IR08	Total Sulphur (IR Spectroscopy)	LECO
ME-MS81	Lithium Borate Fusion ICP-MS	ICP-MS

Table 7: Certificates of Geochemical Analysis for 4 Rock Samples
The certificates include 10 analyses, of which four (4) are for rocks from Yreka, numbered G0616071 to G0616074, and 6 from another project.

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

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

To: WASTENEYS, HARDOLPH
PO BOX 2160
CAMPBELL RIVER BC V9W 5C5

Page: 2 - A
Total # Pages: 2 (A – E)
Plus Appendix Pages
Finalized Date: 11-SEP-2021
Account: WATHAR

Project: BABS + YREKA

CERTIFICATE OF ANALYSIS VA21196625

Method / Sample Description	WEI-21	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	ME-ICP06	OA-GRA05
Analyte	Recvd Wt.	SiO2	Al2O3	Fe2O3	CaO	MgO	Na2O	K2O	Cr2O3	TiO2	MnO	P2O5	SrO	BaO	LOI
Units	kg	%	%	%	%	%	%	%	%	%	%	%	%	%	%
LOD	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.002	0.01	0.01	0.01	0.01	0.01	0.01
G0616065	1.22	67.2	12.95	6.08	1.57	2.00	3.17	3.42	0.004	0.50	0.01	0.21	0.07	0.14	1.18
G0616066	1.18	61.9	14.70	10.70	1.41	1.90	3.90	4.06	0.005	0.54	0.02	0.23	0.05	0.13	1.10
G0616067	0.90	63.5	15.25	7.98	2.05	2.32	4.50	2.81	0.004	0.57	0.02	0.27	0.07	0.09	0.86
G0616068	1.32	60.8	16.70	5.12	4.10	1.12	3.66	1.13	0.006	0.66	0.03	0.24	0.08	0.08	6.38
G0616069	1.14	72.4	13.95	2.19	1.07	0.49	4.18	4.31	0.003	0.24	0.10	0.08	0.02	0.14	0.69
G0616070	1.10	68.8	16.70	2.58	2.58	0.93	5.93	2.53	0.005	0.31	0.06	0.15	0.17	0.23	0.87
G0616071	0.98	59.4	15.25	6.28	3.39	4.59	2.66	5.02	0.003	0.66	0.07	0.08	0.06	0.08	1.93
G0616072	1.22	65.8	16.45	2.61	4.15	2.18	4.20	2.52	0.005	0.52	0.05	0.16	0.06	0.14	1.57
G0616073	1.46	66.5	11.35	5.30	7.46	2.97	4.11	0.42	0.005	0.52	0.14	0.08	0.05	0.03	1.14
G0616074	1.30	48.1	3.71	13.00	22.9	9.12	0.04	<0.01	<0.002	0.15	0.69	0.03	0.01	<0.01	2.07

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

To: WASTENEYS, HARDOLPH
PO BOX 2160
CAMPBELL RIVER BC V9W 5C5

Page: 2 - B
Total # Pages: 2 (A - E)
Plus Appendix Pages
Finalized Date: 11-SEP-2021
Account: WATHAR

Project: BABS + YREKA

CERTIFICATE OF ANALYSIS VA21196625

Sample Description	TOT-ICP06	C-IR07	S-IR08	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81
Analyte	Total	C	S	Ba	Ce	Cr	Cs	Dy	Er	Eu	Ga	Gd	Ge	Hf	Ho
Units	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
LOD	0.01	0.01	0.01	0.5	0.1	10	0.01	0.05	0.03	0.02	0.1	0.05	5	0.1	0.01
G0616065	98.50	0.08	0.12	1225	16.7	40	0.55	1.15	0.61	0.50	21.5	1.40	<5	2.9	0.23
G0616066	100.65	0.07	0.06	1190	24.4	40	1.05	1.70	0.76	0.79	26.4	2.39	<5	3.1	0.29
G0616067	100.29	0.05	0.04	825	20.9	30	0.97	1.68	1.05	0.71	25.0	1.91	<5	3.4	0.34
G0616068	100.11	0.85	1.63	744	21.1	40	2.53	1.88	1.23	0.65	22.4	2.17	<5	4.1	0.42
G0616069	99.86	0.01	0.02	1270	54.6	30	0.65	3.27	2.11	0.73	15.8	3.16	<5	4.6	0.62
G0616070	101.85	0.03	0.01	2100	26.9	40	0.24	1.44	0.72	0.74	24.3	1.84	<5	2.9	0.27
G0616071	99.47	0.03	0.37	672	15.3	20	1.02	3.65	2.20	0.89	16.2	3.46	<5	2.6	0.75
G0616072	100.42	0.03	0.09	1240	43.5	30	0.21	2.16	1.15	0.90	18.6	2.59	<5	4.0	0.35
G0616073	100.08	0.06	0.82	250	14.6	40	0.07	3.69	2.47	0.71	12.3	3.15	<5	2.8	0.77
G0616074	99.82	0.06	0.12	8.3	48.5	10	0.05	1.98	1.21	1.35	7.1	2.12	<5	2.1	0.42

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

To: WASTENEYS, HARDOLPH
PO BOX 2160
CAMPBELL RIVER BC V9W 5C5

Page: 2 - C
Total # Pages: 2 (A - E)
Plus Appendix Pages
Finalized Date: 11-SEP-2021
Account: WATHAR

Project: BABS + YREKA

CERTIFICATE OF ANALYSIS VA21196625

Sample Description	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81
Analyte	La	Lu	Nb	Nd	Pr	Rb	Sm	Sn	Sr	Ta	Tb	Th	Tm	U	V
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
LOD	0.1	0.01	0.1	0.1	0.02	0.2	0.03	1	0.1	0.1	0.01	0.05	0.01	0.05	5
G0616065	8.1	0.10	7.4	9.0	2.12	48.0	1.86	1	663	0.5	0.19	4.02	0.08	0.86	100
G0616066	11.4	0.12	6.9	13.4	3.17	55.8	2.68	1	424	0.5	0.29	3.96	0.11	1.37	127
G0616067	9.8	0.16	7.5	10.8	2.67	51.3	2.59	2	635	0.5	0.28	4.33	0.15	1.80	108
G0616068	11.7	0.21	9.2	10.4	2.59	28.3	2.10	2	720	0.7	0.30	5.66	0.20	3.09	113
G0616069	28.8	0.32	9.8	21.3	6.02	112.5	4.27	1	194.0	0.8	0.45	7.67	0.32	2.02	17
G0616070	12.7	0.11	3.5	14.1	3.39	34.0	2.55	1	1490	0.2	0.20	1.69	0.10	0.72	51
G0616071	6.5	0.30	2.7	10.1	2.20	96.0	2.86	1	537	0.2	0.53	0.93	0.28	0.32	170
G0616072	23.5	0.14	9.2	17.4	4.91	31.3	3.02	3	579	0.7	0.35	3.10	0.16	1.08	83
G0616073	6.6	0.37	2.8	10.6	2.28	6.0	2.84	1	384	0.3	0.55	0.98	0.35	0.88	618
G0616074	44.3	0.21	1.6	11.9	3.83	0.4	1.92	6	140.0	0.2	0.32	1.66	0.16	3.17	42

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

To: WASTENEYS, HARDOLPH
PO BOX 2160
CAMPBELL RIVER BC V9W 5C5

Page: 2 - D
Total # Pages: 2 (A - E)
Plus Appendix Pages
Finalized Date: 11-SEP-2021
Account: WATHAR

Project: BABS + YREKA

CERTIFICATE OF ANALYSIS VA21196625

Sample Description	Method / Analyte / Units / LOD	ME-MS81 W ppm 1	ME-MS81 Y ppm 0.1	ME-MS81 Yb ppm 0.03	ME-MS81 Zr ppm 2	ME-MS42 As ppm 0.1	ME-MS42 Bi ppm 0.01	ME-MS42 Hg ppm 0.005	ME-MS42 In ppm 0.005	ME-MS42 Re ppm 0.001	ME-MS42 Sb ppm 0.05	ME-MS42 Se ppm 0.2	ME-MS42 Te ppm 0.01	ME-MS42 Tl ppm 0.02	ME-4ACD81 Ag ppm 0.5	ME-4ACD81 Cd ppm 0.5
G0616065		1	5.8	0.60	109	0.4	1.51	<0.005	0.114	<0.001	<0.05	4.1	0.46	0.18	3.7	<0.5
G0616066		1	8.2	0.70	116	0.6	0.29	<0.005	0.039	0.002	<0.05	0.8	0.07	0.20	0.8	<0.5
G0616067		1	9.4	1.02	129	0.5	0.24	<0.005	0.042	0.017	<0.05	0.8	0.08	0.25	0.6	<0.5
G0616068		7	11.3	1.40	155	11.1	0.43	<0.005	0.269	0.002	0.28	1.5	0.30	0.07	2.3	<0.5
G0616069		1	16.6	2.48	177	1.4	0.05	<0.005	0.010	0.001	0.07	<0.2	0.01	0.02	<0.5	<0.5
G0616070		<1	6.7	0.66	102	0.5	0.01	<0.005	0.006	<0.001	0.06	<0.2	<0.01	<0.02	<0.5	<0.5
G0616071		<1	18.6	2.16	85	7.2	0.08	<0.005	0.022	0.005	0.07	0.5	0.07	0.23	<0.5	0.6
G0616072		1	10.5	1.07	161	1.2	0.46	<0.005	0.083	<0.001	0.08	0.5	0.16	<0.02	2.7	0.9
G0616073		1	19.9	2.25	98	1.1	1.19	<0.005	0.013	0.001	0.19	1.3	0.62	0.02	<0.5	<0.5
G0616074		3	10.5	1.17	82	2.4	0.04	<0.005	0.633	<0.001	0.05	0.3	0.01	<0.02	1.0	<0.5

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

To: WASTENEYS, HARDOLPH
PO BOX 2160
CAMPBELL RIVER BC V9W 5C5

Page: 2 - E
Total # Pages: 2 (A - E)
Plus Appendix Pages
Finalized Date: 11-SEP-2021
Account: WATHAR

Project: BABS + YREKA

CERTIFICATE OF ANALYSIS VA21196625

Sample Description	Method / Analyte / Units / LOD	ME-4ACD81 Co ppm 1	ME-4ACD81 Cu ppm 1	ME-4ACD81 Li ppm 10	ME-4ACD81 Mo ppm 1	ME-4ACD81 Ni ppm 1	ME-4ACD81 Pb ppm 2	ME-4ACD81 Sc ppm 1	ME-4ACD81 Zn ppm 2
G0616065		7	4070	10	2	19	6	7	34
G0616066		7	1895	10	2	19	4	6	57
G0616067		8	1240	10	17	17	6	7	43
G0616068		46	1250	10	4	34	4	7	78
G0616069		2	10	10	5	2	10	3	44
G0616070		5	10	<10	1	4	8	3	56
G0616071		16	78	10	1	10	2	18	113
G0616072		9	1155	10	2	11	2	8	143
G0616073		9	97	10	7	7	<2	16	64
G0616074		17	892	10	3	9	2	4	87

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

To: WASTENEYS, HARDOLPH
PO BOX 2160
CAMPBELL RIVER BC V9W 5C5

Page: Appendix 1
Total # Appendix Pages: 1
Finalized Date: 11-SEP-2021
Account: WATHAR

Project: BABS + YREKA

CERTIFICATE OF ANALYSIS VA21196625

CERTIFICATE COMMENTS

LABORATORY ADDRESSES

Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.

Applies to Method:	C-IR07	CRU-31	CRU-QC	DISP-01
	LOG-21	ME-4ACD81	ME-ICP06	ME-MS42
	ME-MS81	OA-GRA05	PUL-31	PUL-QC
	S-IR08	SPL-21	TOT-ICP06	WEI-21

Low Level Gold in Soils & Sediments

Our trace level methods by aqua regia digestion and ICP-MS finish are excellent for regolith, where gold anomalies indicating mineralisation below surface are well-characterised. Aqua regia dissolves native gold as well as gold bound in sulphide minerals; however, depending on the composition of the soil, gold determined by this method may or may not match recovery from fire assay methods.

As with our super trace methods, multi-element packages can be read from the same digestion solution as trace level gold for a complete exploration tool.

CODE	ANALYTE	RANGE (ppm)	DESCRIPTION	PRICE PER SAMPLE
Trace Level				
Au-TL43	Au	0.001-1	Au by aqua regia extraction with ICP-MS finish. **25g sample**	**$17.40**
Au-TL44			**50g sample**	**$19.50**
Intermediate Grade				
Au-OG43	Au	0.01-100	Au by aqua regia extraction with ICP-MS finish. **25g sample**	**$16.95**
Au-OG44			**50g sample**	**$18.80**

CODE	ANALYTES & RANGES (ppm)										PRICE PER SAMPLE
	Au	0.001-1	Co	0.1-10000	La	0.2-10000	Re	0.001-50	Tl	0.02-10000	
	Ag	0.01-100	Cr	1-10000	Li	0.1-10000	S	0.01-10%	U	0.05-10000	
	Al	0.01-25%	Cs	0.05-500	Mg	0.01-25%	Sb	0.05-10000	V	1-10000	
	As	0.1-10000	Cu	0.2-10000	Mn	5-50000	Sc	0.1-10000	W	0.05-10000	
AuME-TL43™ **25g sample**	B	10-10000	Fe	0.01-50%	Mo	0.05-10000	Se	0.2-1000	Y	0.05-500	**$38.05**
	Ba	10-10000	Ga	0.05-10000	Na	0.01-10%	Sn	0.2-500	Zn	2-10000	
AuME-TL44™ **50g sample**	Be	0.05-1000	Ge	0.05-500	Nb	0.05-500	Sr	0.2-10000	Zr	0.5-500	**$41.20**
	Bi	0.01-10000	Hf	0.02-500	Ni	0.2-10000	Ta	0.01-500			
	Ca	0.01-25%	Hg	0.01-10000	P	10-10000	Te	0.01-500			
	Cd	0.01-1000	In	0.005-500	Pb	0.2-10000	Th	0.2-10000			
	Ce	0.02-500	K	0.01-10%	Rb	0.1-10000	Ti	0.005-10%			

Table 8: Analytical ranges for AuME-TL43
Aqua Regia digestion with ICP-MS finish for both gold and multiple trace and major elements from the ALS Schedule of analytical procedures. This method was used for the analysis of the 50 soils samples from Yreka

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

To: WASTENEYS, HARDOLPH
PO BOX 2160
CAMPBELL RIVER BC V9W 5C5

Page: 1
Total # Pages: 3 (A - D)
Plus Appendix Pages
Finalized Date: 24-APR-2021
This copy reported on 26-APR-2021
Account: WATHAR

CERTIFICATE VA21070608

Project: Yreka
P.O. No.: WATHAR
This report is for 50 samples of Soil submitted to our lab in Vancouver, BC, Canada on 23-MAR-2021.
The following have access to data associated with this certificate:
HARDOLPH WASTENEYS

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LOG-21	Sample logging - ClientBarCode
SCR-41	Screen to -180um and save both
DISP-01	Disposal of all sample fractions

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
AuME-TL43	25g Trace Au + Multi Element PKG	

Table 9: Certificates of Geochemical Analysis for 50 Soil Samples

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

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

To: WASTENEYS, HARDOLPH
PO BOX 2160
CAMPBELL RIVER BC V9W 5C5

Page: 2 - A
Total # Pages: 3 (A - D)
Plus Appendix Pages
Finalized Date: 24-APR-2021
Account: WATHAR

Project: Yreka

CERTIFICATE OF ANALYSIS VA21070608

Sample Description (Method / Analyte / Units / LOD)	WEI-21 Recvd Wt. kg 0.02	AuME-TL43 Au ppm 0.001	AuME-TL43 Ag ppm 0.01	AuME-TL43 Al % 0.01	AuME-TL43 As ppm 0.1	AuME-TL43 B ppm 10	AuME-TL43 Ba ppm 10	AuME-TL43 Be ppm 0.05	AuME-TL43 Bi ppm 0.01	AuME-TL43 Ca % 0.01	AuME-TL43 Cd ppm 0.01	AuME-TL43 Ce ppm 0.02	AuME-TL43 Co ppm 0.1	AuME-TL43 Cr ppm 1	AuME-TL43 Cs ppm 0.05
W813201	0.20	0.004	0.13	5.39	29.9	<10	30	0.29	0.97	0.12	0.09	7.40	11.0	22	0.75
W813202	0.33	0.002	0.09	8.79	23.2	<10	30	0.69	0.79	0.11	0.15	10.45	19.0	33	1.87
W813203	0.28	0.069	0.58	4.38	278	<10	110	0.52	2.93	0.06	1.60	16.20	29.2	21	1.05
W813204	0.48	0.025	0.06	5.04	66.1	<10	130	0.39	0.95	0.17	0.26	12.60	40.8	18	1.94
W813205	0.12	0.004	0.59	3.11	225	<10	30	0.29	1.03	0.04	0.11	15.60	5.5	10	0.53
W813206	0.28	0.021	0.60	6.06	152.0	<10	80	0.73	4.82	0.15	0.66	25.2	14.3	19	1.73
W813207	0.40	0.012	0.24	1.55	28.8	10	30	0.29	114.5	0.69	0.72	9.65	10.9	5	0.38
W813208	0.45	0.054	0.55	2.73	110.5	<10	20	0.24	5.42	0.45	0.11	7.11	4.0	10	1.00
W813209	0.19	0.001	0.23	0.69	1.1	<10	10	<0.05	1.27	0.14	0.12	4.36	0.7	4	0.09
W813210	0.20	0.008	0.04	0.17	0.2	<10	20	<0.05	2.22	0.02	0.01	2.37	0.1	3	0.17
W813211	0.30	0.048	0.10	0.96	153.0	<10	10	<0.05	2.82	0.01	0.02	4.64	0.8	6	0.63
W813212	0.35	0.001	0.14	0.13	0.6	<10	<10	<0.05	0.76	0.01	<0.01	1.49	0.2	3	<0.05
W813213	0.26	0.002	0.06	2.66	9.6	<10	40	0.35	0.89	0.10	0.10	19.85	4.7	1	0.82
W813214	0.15	0.003	2.80	1.62	11.3	<10	10	0.11	2.43	0.09	0.08	6.64	2.2	8	0.24
W813215	0.18	0.003	0.10	2.55	1.8	<10	20	0.18	1.01	0.09	0.17	9.84	2.2	13	0.89
W813216	0.17	0.011	0.92	1.51	5.2	<10	10	0.09	2.09	0.07	0.23	4.60	1.6	14	0.38
W813217	0.20	0.014	0.16	0.74	9.9	<10	10	<0.05	3.08	0.03	0.05	3.42	1.6	4	1.09
W813218	0.16	0.001	0.16	0.28	1.1	<10	<10	<0.05	0.34	0.01	0.04	4.62	0.2	<1	0.08
W813219	0.25	0.002	0.27	2.84	1.8	<10	10	0.36	5.44	0.04	0.22	7.95	2.0	15	0.22
W813220	0.13	0.001	0.26	4.05	4.1	<10	10	0.40	1.22	0.07	0.41	8.10	4.7	14	0.79
W813221	0.15	<0.001	0.23	0.92	0.7	<10	10	<0.05	1.00	0.03	0.05	5.07	2.0	3	0.13
W813222	0.26	0.005	0.18	4.24	18.7	<10	10	0.27	0.18	0.02	0.07	8.04	2.6	15	0.52
W813223	0.26	0.001	0.29	3.95	19.1	<10	20	0.69	0.10	0.09	0.12	15.00	10.8	32	0.51
W813224	0.19	<0.001	0.16	4.13	20.8	<10	10	0.58	0.07	0.12	0.11	12.25	20.2	36	0.53
W813225	0.27	0.004	0.30	4.79	22.3	<10	20	0.64	0.09	0.12	0.10	16.00	9.5	35	0.62
W813226	0.27	0.010	0.19	4.28	18.6	<10	20	0.42	0.08	0.15	0.16	16.25	14.1	44	0.40
W813227	0.36	0.006	0.12	4.64	30.2	10	20	0.66	0.05	0.29	0.20	29.1	30.2	35	0.73
W813228	0.20	0.002	0.25	5.54	28.9	10	10	0.68	0.07	0.13	0.15	19.65	12.3	34	0.42
W813229	0.27	0.002	0.23	4.19	27.3	<10	40	1.11	0.08	0.11	0.23	32.1	21.4	16	0.37
W813230	0.20	0.004	0.11	3.77	38.6	<10	30	0.86	0.11	0.08	0.14	34.1	13.9	25	0.57
W813231	0.31	0.003	0.11	5.00	35.0	<10	70	0.87	0.06	0.17	0.13	29.0	24.7	36	0.67
W813232	0.16	0.002	0.08	2.64	37.0	<10	70	0.43	0.10	0.06	0.12	20.8	10.4	19	0.27
W813233	0.32	0.003	0.11	6.78	24.8	<10	30	0.94	0.07	0.05	0.08	29.1	10.2	35	0.51
W813234	0.21	<0.001	0.15	5.08	21.5	<10	30	1.02	0.09	0.10	0.16	25.1	36.2	34	0.70
W813235	0.26	<0.001	0.20	3.77	21.0	<10	30	1.01	0.11	0.09	0.11	23.8	13.2	28	1.09
W813236	0.19	0.001	0.10	4.63	10.1	<10	20	0.96	0.11	0.14	0.06	18.50	10.5	35	0.74
W813237	0.36	0.001	0.06	4.77	16.8	<10	30	0.88	0.09	0.09	0.11	17.30	13.7	36	0.77
W813238	0.28	0.001	0.27	5.73	10.3	10	20	0.79	0.08	0.23	0.46	13.05	17.9	36	1.32
W813239	0.29	0.001	0.25	10.40	7.1	10	10	1.44	0.06	0.06	0.47	35.9	8.4	39	0.36
W813240	0.25	<0.001	0.14	6.30	7.4	<10	10	0.86	0.07	0.11	0.15	17.10	8.2	42	0.77

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

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

To: WASTENEYS, HARDOLPH
PO BOX 2160
CAMPBELL RIVER BC V9W 5C5

Page: 2 – B
Total # Pages: 3 (A – D)
Plus Appendix Pages
Finalized Date: 24–APR–2021
Account: WATHAR

Project: Yreka

CERTIFICATE OF ANALYSIS VA21070608

Sample Description	Method / Analyte / Units / LOD	AuME–TL43 Cu ppm 0.2	AuME–TL43 Fe % 0.01	AuME–TL43 Ga ppm 0.05	AuME–TL43 Ge ppm 0.05	AuME–TL43 Hf ppm 0.02	AuME–TL43 Hg ppm 0.01	AuME–TL43 In ppm 0.005	AuME–TL43 K % 0.01	AuME–TL43 La ppm 0.2	AuME–TL43 Li ppm 0.1	AuME–TL43 Mg % 0.01	AuME–TL43 Mn ppm 5	AuME–TL43 Mo ppm 0.05	AuME–TL43 Na % 0.01	AuME–TL43 Nb ppm 0.05
W813201		102.0	10.85	25.7	0.07	0.45	0.19	0.097	0.08	3.0	9.9	1.07	160	1.02	0.03	1.29
W813202		84.5	6.76	14.55	0.07	0.50	0.21	0.052	0.07	4.3	19.3	1.41	159	0.67	0.02	0.80
W813203		548	6.94	8.88	0.06	0.12	0.17	0.230	0.04	5.4	10.1	1.46	563	0.52	0.01	0.08
W813204		159.0	5.49	11.00	0.07	0.14	0.04	0.035	0.28	3.7	10.4	1.35	703	0.89	0.04	0.29
W813205		62.2	8.72	17.10	0.06	0.14	0.38	0.064	0.06	5.7	4.0	0.32	116	1.87	0.01	2.13
W813206		258	7.24	15.65	0.07	0.32	0.27	0.137	0.09	6.0	23.2	1.23	322	4.02	0.01	1.89
W813207		116.5	2.43	3.97	0.07	0.05	0.06	0.118	0.02	2.5	35.5	1.45	796	1.72	0.01	0.19
W813208		411	7.64	15.15	0.06	0.04	0.11	0.235	0.06	3.2	9.9	0.87	198	7.91	0.01	1.72
W813209		29.1	2.88	16.00	<0.05	0.05	0.12	0.046	0.03	2.1	0.9	0.17	73	3.23	0.01	3.30
W813210		3.2	0.14	9.21	<0.05	0.03	0.04	0.016	0.02	1.2	0.1	0.01	<5	2.44	<0.01	0.69
W813211		14.7	1.88	19.10	<0.05	<0.02	0.03	0.019	0.02	2.5	1.7	0.18	30	6.67	0.01	1.22
W813212		27.4	1.25	5.07	<0.05	0.02	0.01	<0.005	<0.01	0.8	0.1	0.01	5	6.89	<0.01	0.91
W813213		29.7	7.24	25.4	0.08	0.05	0.10	0.045	0.09	8.2	5.0	0.44	101	2.48	0.02	3.09
W813214		63.3	6.32	16.20	0.07	0.03	0.26	0.103	0.04	2.9	3.3	0.49	243	2.91	0.03	2.87
W813215		63.6	5.23	11.00	0.07	0.12	0.14	0.024	0.14	4.0	5.4	0.70	111	2.43	0.03	2.26
W813216		80.9	5.85	19.95	<0.05	0.07	0.09	0.117	0.02	1.7	1.3	0.19	61	7.48	0.01	2.02
W813217		17.5	0.90	11.60	<0.05	<0.02	0.05	0.024	0.02	1.8	3.0	0.17	53	5.22	0.01	0.71
W813218		2.8	1.49	8.19	<0.05	<0.02	0.03	0.010	0.01	2.0	0.2	0.03	15	2.38	0.01	1.33
W813219		124.5	7.90	22.9	0.06	0.32	0.10	0.097	0.01	2.7	4.2	0.23	95	6.95	0.01	4.03
W813220		48.2	7.22	16.70	0.06	0.08	0.17	0.056	0.04	3.1	7.3	0.53	155	6.98	0.02	2.08
W813221		16.0	3.78	18.90	<0.05	0.03	0.07	0.018	0.02	2.5	0.6	0.07	53	8.46	0.01	2.36
W813222		26.3	5.58	15.45	<0.05	0.30	0.19	0.056	0.02	3.1	9.7	0.22	70	32.6	0.01	1.59
W813223		27.8	6.72	16.40	0.05	0.11	0.14	0.057	0.02	8.7	20.8	0.32	257	2.14	0.01	1.27
W813224		31.9	7.84	16.00	0.06	0.14	0.18	0.066	0.01	5.3	20.6	0.56	772	2.69	0.01	1.45
W813225		40.4	6.92	14.15	0.06	0.21	0.19	0.076	0.02	6.8	23.2	0.44	313	2.76	0.01	1.62
W813226		46.8	6.53	18.05	0.05	0.35	0.20	0.065	0.01	5.2	19.6	0.59	414	4.31	0.02	1.59
W813227		112.0	5.52	12.25	0.08	0.11	0.11	0.060	0.02	9.1	28.7	1.22	1060	4.46	0.02	0.40
W813228		57.8	7.50	15.20	0.07	0.36	0.25	0.081	0.01	7.0	26.6	0.54	296	4.75	0.01	1.46
W813229		37.1	6.91	15.45	0.08	0.13	0.23	0.073	0.02	11.9	32.0	0.60	635	2.58	0.01	1.44
W813230		41.8	5.73	13.25	0.09	0.18	0.24	0.080	0.02	14.2	34.5	0.42	493	2.84	0.01	1.75
W813231		64.0	8.20	15.30	0.07	0.35	0.13	0.061	0.02	9.0	26.7	1.11	771	2.14	0.01	0.28
W813232		26.1	6.21	16.35	0.05	0.16	0.06	0.054	0.02	7.6	17.1	0.62	377	3.71	0.01	0.55
W813233		25.2	8.10	14.05	0.08	1.08	0.14	0.104	0.02	7.2	33.7	0.51	208	3.69	0.01	1.64
W813234		38.1	9.01	17.30	0.06	0.48	0.14	0.096	0.02	4.3	31.4	0.50	624	4.23	0.01	1.65
W813235		30.2	9.37	19.85	0.06	0.22	0.12	0.109	0.03	4.6	31.1	0.57	284	4.09	0.01	1.61
W813236		37.7	8.06	23.5	0.05	0.26	0.15	0.086	0.02	5.9	30.5	0.38	142	4.05	0.01	1.97
W813237		40.6	8.66	19.45	0.05	0.36	0.04	0.084	0.02	3.3	38.5	0.55	240	3.54	0.01	0.80
W813238		60.1	6.21	14.25	0.06	0.56	0.36	0.074	0.02	4.3	27.2	0.59	266	5.11	0.01	1.51
W813239		29.3	6.41	12.40	0.08	0.66	0.25	0.141	0.01	9.0	18.2	0.47	188	3.76	0.01	1.79
W813240		45.9	6.36	17.25	0.07	0.38	0.27	0.082	0.01	7.3	18.7	0.39	134	4.10	0.01	2.63

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

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

To: WASTENEYS, HARDOLPH
PO BOX 2160
CAMPBELL RIVER BC V9W 5C5

Page: 2 – C
Total # Pages: 3 (A – D)
Plus Appendix Pages
Finalized Date: 24–APR–2021
Account: WATHAR

Project: Yreka

CERTIFICATE OF ANALYSIS VA21070608

Sample Description	Method / Analyte / Units / LOD	AuME–TL43 Ni ppm 0.2	AuME–TL43 P ppm 10	AuME–TL43 Pb ppm 0.2	AuME–TL43 Rb ppm 0.1	AuME–TL43 Re ppm 0.001	AuME–TL43 S % 0.01	AuME–TL43 Sb ppm 0.05	AuME–TL43 Sc ppm 0.1	AuME–TL43 Se ppm 0.2	AuME–TL43 Sn ppm 0.2	AuME–TL43 Sr ppm 0.2	AuME–TL43 Ta ppm 0.01	AuME–TL43 Te ppm 0.01	AuME–TL43 Th ppm 0.2	AuME–TL43 Ti % 0.005
W813201		25.9	420	4.5	4.2	<0.001	0.03	0.53	10.8	1.8	1.1	9.9	<0.01	0.19	0.8	0.348
W813202		34.7	510	2.4	5.7	<0.001	0.06	0.23	17.3	2.7	0.5	18.5	<0.01	0.36	0.8	0.197
W813203		30.3	290	5.9	5.6	<0.001	<0.01	5.34	15.1	1.7	0.7	38.7	<0.01	0.81	1.1	0.016
W813204		34.9	790	3.5	24.2	<0.001	<0.01	0.86	8.7	0.7	0.4	49.6	<0.01	0.32	0.5	0.128
W813205		9.8	770	3.4	3.1	<0.001	0.02	1.21	5.8	2.7	1.1	8.9	<0.01	0.29	0.7	0.173
W813206		16.5	710	5.4	9.7	<0.001	0.02	0.66	11.1	2.7	1.1	16.6	<0.01	1.78	1.3	0.207
W813207		4.8	130	21.8	1.7	<0.001	<0.01	0.33	3.8	0.6	1.1	11.6	<0.01	22.7	0.7	0.075
W813208		6.6	360	11.5	4.2	<0.001	<0.01	0.92	3.5	1.5	2.2	4.4	<0.01	0.87	0.7	0.196
W813209		1.7	240	5.1	1.0	<0.001	<0.01	0.39	1.5	0.3	2.2	16.0	<0.01	0.13	0.4	0.218
W813210		0.5	50	8.0	0.5	<0.001	<0.01	0.28	0.7	<0.2	1.9	2.2	<0.01	0.01	0.4	0.315
W813211		2.1	90	35.1	1.4	<0.001	<0.01	17.45	1.4	0.3	1.1	2.3	<0.01	0.12	0.6	0.149
W813212		0.6	80	1.7	0.2	<0.001	<0.01	0.15	0.3	0.2	1.0	1.3	<0.01	0.14	0.4	0.175
W813213		1.6	860	4.3	5.6	<0.001	<0.01	0.37	4.1	0.9	1.8	40.6	<0.01	0.16	1.1	0.570
W813214		6.8	470	8.2	3.0	<0.001	<0.01	0.24	4.1	2.4	1.2	13.1	<0.01	0.60	0.2	0.285
W813215		3.0	360	2.4	9.8	0.001	0.04	0.19	6.7	2.4	0.7	10.4	<0.01	0.33	0.4	0.309
W813216		2.5	220	5.3	1.7	<0.001	<0.01	0.33	2.6	1.6	1.5	5.2	<0.01	0.51	0.5	0.452
W813217		1.7	160	11.2	2.3	<0.001	<0.01	0.20	0.8	0.4	1.0	4.8	<0.01	0.18	<0.2	0.073
W813218		0.3	120	3.1	0.8	<0.001	<0.01	0.11	0.6	0.3	1.0	2.0	<0.01	0.05	0.3	0.174
W813219		1.9	380	4.2	1.0	<0.001	0.02	0.55	3.3	1.4	2.5	5.2	0.01	1.13	0.6	0.482
W813220		3.8	330	5.3	3.1	<0.001	0.01	0.52	5.7	3.4	1.0	12.5	<0.01	0.27	0.4	0.285
W813221		3.0	250	6.3	0.9	0.001	<0.01	0.62	1.5	0.7	1.7	16.2	<0.01	0.09	0.3	0.255
W813222		6.8	460	13.6	2.8	0.002	0.06	1.78	7.7	2.7	0.8	5.4	<0.01	0.11	0.9	0.054
W813223		13.6	740	9.0	2.2	<0.001	0.02	0.30	10.5	1.1	1.2	6.2	<0.01	0.18	0.5	0.186
W813224		14.9	700	8.5	1.6	<0.001	0.02	0.29	9.8	1.7	0.9	6.4	<0.01	0.14	0.5	0.247
W813225		15.9	760	9.4	2.8	<0.001	0.02	0.35	12.7	1.2	1.0	7.7	<0.01	0.18	0.7	0.219
W813226		22.5	430	7.6	1.3	<0.001	0.02	0.31	12.0	1.7	1.1	8.4	<0.01	0.19	0.8	0.306
W813227		37.3	660	9.7	2.1	<0.001	0.02	0.41	17.5	0.5	0.7	13.1	<0.01	0.18	0.7	0.246
W813228		15.7	470	6.7	1.3	<0.001	0.03	0.37	14.3	2.2	0.8	6.9	<0.01	0.28	0.8	0.273
W813229		9.7	600	8.5	1.5	<0.001	0.03	0.44	12.8	1.4	0.9	11.0	<0.01	0.18	0.4	0.162
W813230		9.5	700	10.0	2.4	<0.001	0.03	0.55	10.4	1.6	0.9	9.6	<0.01	0.12	0.5	0.067
W813231		30.7	510	5.1	2.8	<0.001	0.05	0.36	18.9	1.0	0.7	18.3	<0.01	0.14	0.8	0.169
W813232		11.8	300	6.6	1.7	<0.001	<0.01	0.58	10.0	0.7	1.1	7.7	<0.01	0.09	0.7	0.164
W813233		13.0	570	5.6	2.8	<0.001	0.11	0.39	19.2	1.9	0.8	6.1	<0.01	0.21	1.1	0.191
W813234		15.9	440	6.9	2.8	<0.001	0.03	0.36	11.6	1.7	1.0	10.6	<0.01	0.18	1.1	0.177
W813235		14.1	420	6.9	4.0	<0.001	0.02	0.37	8.3	1.3	1.2	10.0	<0.01	0.15	0.8	0.227
W813236		19.2	380	5.8	2.2	<0.001	0.03	0.33	9.2	1.5	1.3	12.0	<0.01	0.15	0.8	0.238
W813237		21.9	460	6.2	3.1	<0.001	0.04	0.35	8.9	0.8	1.2	7.0	<0.01	0.16	0.8	0.250
W813238		41.3	710	6.1	1.6	<0.001	0.06	0.17	7.9	2.4	0.7	11.9	<0.01	0.06	0.7	0.278
W813239		15.1	650	9.9	0.7	<0.001	0.08	0.08	17.3	3.4	0.6	4.2	<0.01	0.14	2.4	0.149
W813240		15.9	460	7.2	1.5	<0.001	0.05	0.15	9.3	2.9	0.7	6.4	<0.01	0.15	1.9	0.184

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

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

To: WASTENEYS, HARDOLPH
PO BOX 2160
CAMPBELL RIVER BC V9W 5C5

Page: 2 - D
Total # Pages: 3 (A - D)
Plus Appendix Pages
Finalized Date: 24-APR-2021
Account: WATHAR

Project: Yreka

CERTIFICATE OF ANALYSIS VA21070608

Sample Description	Method	AuME-TL43	AuME-TL43	AuME-TL43	AuME-TL43	AuME-TL43	AuME-TL43	AuME-TL43
	Analyte	Tl	U	V	W	Y	Zn	Zr
	Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.02	0.05	1	0.05	0.05	2	0.5
W813201		0.06	0.32	228	0.21	6.10	65	9.7
W813202		0.10	0.26	142	0.12	10.85	87	12.5
W813203		0.21	0.14	81	0.08	13.30	807	3.2
W813204		0.31	0.14	108	0.07	9.49	111	2.9
W813205		0.06	0.44	122	0.17	8.32	38	3.1
W813206		0.13	0.66	124	0.43	12.35	396	8.6
W813207		0.10	0.28	45	0.39	4.64	196	2.7
W813208		0.05	0.56	116	2.63	3.21	233	1.9
W813209		<0.02	0.27	90	0.14	1.34	15	1.4
W813210		<0.02	0.11	41	<0.05	0.39	2	0.9
W813211		0.02	0.17	99	0.10	0.52	30	<0.5
W813212		<0.02	0.20	94	0.10	0.21	2	<0.5
W813213		0.07	0.43	146	0.18	13.65	29	1.5
W813214		0.03	0.44	187	0.36	6.49	33	0.7
W813215		0.12	0.70	166	0.21	8.33	22	1.9
W813216		0.02	0.49	264	0.41	2.73	38	2.2
W813217		0.03	0.23	87	0.05	0.71	28	<0.5
W813218		<0.02	0.07	25	0.09	1.45	6	<0.5
W813219		<0.02	0.34	93	0.14	7.09	66	6.7
W813220		0.05	0.34	177	0.26	8.13	108	2.4
W813221		0.02	0.24	160	0.21	1.47	7	0.5
W813222		0.04	3.60	118	0.33	5.50	34	10.1
W813223		0.05	0.39	209	0.14	15.90	55	4.0
W813224		0.06	0.40	208	0.22	11.85	53	5.0
W813225		0.05	0.53	176	0.19	14.40	57	8.3
W813226		0.02	0.59	209	0.17	11.40	56	11.8
W813227		0.06	0.65	152	0.13	28.0	123	3.8
W813228		0.02	0.77	196	0.24	17.25	57	12.0
W813229		0.03	0.72	174	0.12	24.2	86	4.2
W813230		0.03	0.56	134	0.16	22.3	68	4.9
W813231		0.04	0.46	180	<0.05	22.0	75	9.9
W813232		0.03	0.34	196	<0.05	9.89	62	5.9
W813233		0.03	0.60	169	0.16	18.90	60	26.9
W813234		0.04	0.71	198	0.14	10.90	66	13.6
W813235		0.04	0.69	223	0.12	11.75	64	6.4
W813236		0.03	0.53	248	0.07	11.50	51	8.6
W813237		0.03	0.45	240	0.11	8.23	88	11.3
W813238		0.05	0.64	142	0.34	7.22	105	17.2
W813239		<0.02	0.86	116	0.23	23.5	125	16.0
W813240		0.02	0.79	177	0.19	13.75	82	9.5

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

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

To: WASTENEYS, HARDOLPH
PO BOX 2160
CAMPBELL RIVER BC V9W 5C5

Page: 3 - A
Total # Pages: 3 (A - D)
Plus Appendix Pages
Finalized Date: 24-APR-2021
Account: WATHAR

Project: Yreka

CERTIFICATE OF ANALYSIS VA21070608

Sample Description	Method	WEI-21	AuME-TL43	AuME-TL43	AuME-TL43	AuME-TL43	AuME-TL43	AuME-TL43	AuME-TL43	AuME-TL43	AuME-TL43	AuME-TL43	AuME-TL43	AuME-TL43	AuME-TL43	AuME-TL43
	Analyte	Recvd Wt.	Au	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cs
	Units	kg	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
	LOD	0.02	0.001	0.01	0.01	0.1	10	10	0.05	0.01	0.01	0.01	0.02	0.1	1	0.05
W813241		0.30	0.002	0.03	8.72	6.6	<10	10	0.69	0.06	0.09	0.18	12.00	9.4	68	0.80
W813242		0.26	0.001	0.06	8.65	4.4	<10	10	0.62	0.07	0.09	0.08	8.64	8.6	66	0.86
W813243		0.18	<0.001	0.04	3.75	4.8	<10	10	0.43	0.10	0.11	0.14	6.40	5.5	48	0.78
W813244		0.24	<0.001	0.02	2.64	2.7	<10	10	0.38	0.11	0.09	0.10	7.99	2.8	21	0.85
W813245		0.27	0.001	0.05	6.50	3.7	<10	10	0.57	0.04	0.09	0.23	18.10	8.2	38	0.45
W813246		0.17	<0.001	0.01	0.31	0.2	<10	<10	<0.05	0.03	0.01	0.03	2.76	0.2	2	0.14
W813247		0.33	0.001	0.05	7.05	5.8	<10	20	0.80	0.05	0.09	0.09	26.3	9.9	39	0.66
W813248		0.20	0.079	0.56	4.50	398	10	90	0.55	3.77	0.06	1.64	17.05	33.0	20	1.24
W813249		0.14	0.001	0.09	2.55	39.8	<10	70	0.40	0.10	0.06	0.10	19.50	10.5	19	0.28
W813250		0.09	0.002	0.13	5.21	21.4	<10	30	1.04	0.10	0.10	0.15	23.7	32.3	34	0.80

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

To: WASTENEYS, HARDOLPH
PO BOX 2160
CAMPBELL RIVER BC V9W 5C5

Page: 3 - B
Total # Pages: 3 (A - D)
Plus Appendix Pages
Finalized Date: 24-APR-2021
Account: WATHAR

Project: Yreka

CERTIFICATE OF ANALYSIS VA21070608

Sample Description	Method Analyte Units LOD	AuME-TL43 Cu ppm 0.2	AuME-TL43 Fe % 0.01	AuME-TL43 Ga ppm 0.05	AuME-TL43 Ge ppm 0.05	AuME-TL43 Hf ppm 0.02	AuME-TL43 Hg ppm 0.01	AuME-TL43 In ppm 0.005	AuME-TL43 K % 0.01	AuME-TL43 La ppm 0.2	AuME-TL43 Li ppm 0.1	AuME-TL43 Mg % 0.01	AuME-TL43 Mn ppm 5	AuME-TL43 Mo ppm 0.05	AuME-TL43 Na % 0.01	AuME-TL43 Nb ppm 0.05
W813241		41.5	6.93	14.90	0.06	0.62	0.28	0.097	0.01	5.6	21.2	0.49	151	1.58	0.01	1.23
W813242		29.6	7.79	18.55	0.06	0.53	0.17	0.072	0.01	3.3	18.4	0.45	130	1.36	0.01	1.40
W813243		20.4	7.87	18.25	0.05	0.16	0.16	0.073	0.02	2.8	20.3	0.20	102	1.78	0.01	1.38
W813244		11.7	8.94	32.9	0.05	0.04	0.12	0.080	0.02	3.7	5.1	0.09	57	1.90	0.01	1.50
W813245		24.2	7.78	15.80	0.07	0.44	0.19	0.098	0.01	3.5	17.3	0.48	166	1.41	0.01	1.45
W813246		1.4	0.16	4.04	<0.05	<0.02	0.02	0.005	0.01	1.5	0.1	0.01	13	0.25	0.01	0.37
W813247		38.2	8.24	18.00	0.07	0.59	0.37	0.090	0.01	6.5	20.1	0.44	183	1.56	0.01	1.37
W813248		612	7.87	9.79	0.06	0.09	0.17	0.437	0.05	6.5	11.0	1.36	620	0.84	0.01	0.06
W813249		24.7	6.42	15.70	0.05	0.15	0.05	0.048	0.02	7.3	15.4	0.63	394	3.74	0.01	0.43
W813250		39.6	8.94	17.90	0.07	0.38	0.12	0.093	0.03	4.7	31.6	0.55	535	4.13	0.01	1.22

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

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

To: WASTENEYS, HARDOLPH
PO BOX 2160
CAMPBELL RIVER BC V9W 5C5

Page: 3 - C
Total # Pages: 3 (A - D)
Plus Appendix Pages
Finalized Date: 24-APR-2021
Account: WATHAR

Project: Yreka

CERTIFICATE OF ANALYSIS VA21070608

Sample Description	Method Analyte Units LOD	AuME-TL43 Ni ppm 0.2	AuME-TL43 P ppm 10	AuME-TL43 Pb ppm 0.2	AuME-TL43 Rb ppm 0.1	AuME-TL43 Re ppm 0.001	AuME-TL43 S % 0.01	AuME-TL43 Sb ppm 0.05	AuME-TL43 Sc ppm 0.1	AuME-TL43 Se ppm 0.2	AuME-TL43 Sn ppm 0.2	AuME-TL43 Sr ppm 0.2	AuME-TL43 Ta ppm 0.01	AuME-TL43 Te ppm 0.01	AuME-TL43 Th ppm 0.2	AuME-TL43 Ti % 0.005
W813241		15.6	720	4.3	1.9	<0.001	0.08	0.13	14.7	2.8	0.6	6.5	<0.01	0.16	1.3	0.174
W813242		19.9	430	3.9	1.6	<0.001	0.07	0.11	12.7	3.0	0.6	7.1	<0.01	0.08	1.0	0.210
W813243		9.1	750	5.6	1.8	<0.001	0.02	0.17	6.6	1.5	0.9	6.5	<0.01	0.15	0.6	0.155
W813244		2.9	1280	5.9	1.5	<0.001	0.01	0.11	4.8	1.0	1.7	4.3	<0.01	0.12	0.6	0.250
W813245		8.8	1020	3.0	1.0	<0.001	0.05	0.07	16.8	2.3	0.7	4.3	<0.01	0.11	1.1	0.212
W813246		0.3	120	2.0	0.3	<0.001	<0.01	<0.05	0.3	0.2	0.9	2.0	<0.01	0.02	<0.2	0.035
W813247		10.1	2210	3.8	1.6	<0.001	0.03	0.12	16.7	2.1	1.0	5.9	<0.01	0.14	1.7	0.213
W813248		28.9	330	6.3	7.0	0.001	<0.01	5.93	16.2	1.9	0.8	29.3	<0.01	1.01	1.2	0.014
W813249		11.8	300	6.8	1.7	<0.001	<0.01	0.61	9.1	0.5	1.1	7.7	<0.01	0.08	0.7	0.161
W813250		17.1	390	7.4	3.0	<0.001	0.02	0.33	11.8	1.6	1.1	10.8	<0.01	0.11	1.1	0.158

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

To: WASTENEYS, HARDOLPH
PO BOX 2160
CAMPBELL RIVER BC V9W 5C5

Page: 3 - D
Total # Pages: 3 (A - D)
Plus Appendix Pages
Finalized Date: 24-APR-2021
Account: WATHAR

Project: Yreka

CERTIFICATE OF ANALYSIS VA21070608

Sample Description	AuME-TL43 Tl ppm 0.02	AuME-TL43 U ppm 0.05	AuME-TL43 V ppm 1	AuME-TL43 W ppm 0.05	AuME-TL43 Y ppm 0.05	AuME-TL43 Zn ppm 2	AuME-TL43 Zr ppm 0.5
W813241	0.02	0.69	157	0.20	11.80	56	15.7
W813242	<0.02	0.38	179	0.19	8.54	41	13.0
W813243	0.02	0.37	232	0.15	5.24	38	4.8
W813244	<0.02	0.41	387	0.09	6.02	16	1.4
W813245	<0.02	0.51	165	0.18	11.70	61	10.7
W813246	<0.02	0.13	11	<0.05	1.03	2	<0.5
W813247	<0.02	0.78	185	0.19	15.70	45	14.2
W813248	0.23	0.14	86	0.06	14.15	836	2.3
W813249	0.03	0.30	205	<0.05	8.97	61	5.6
W813250	0.04	0.74	203	0.08	11.35	71	11.1

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

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

To: WASTENEYS, HARDOLPH
PO BOX 2160
CAMPBELL RIVER BC V9W 5C5

Page: Appendix 1
Total # Appendix Pages: 1
Finalized Date: 24-APR-2021
Account: WATHAR

Project: Yreka

CERTIFICATE OF ANALYSIS VA21070608

CERTIFICATE COMMENTS

LABORATORY ADDRESSES

Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.

Applies to Method: AuME-TL43 DISP-01 LOG-21 SCR-41 WEI-21

Appendix D: Statement of Qualifications

Hardolph Wasteneys Ph.D., P.Geo.

I, Hardolph Wasteneys, Ph.D, P.Geo. resident at Strathcona Park Lodge, Campbell River BC, do hereby certify that:

I am a self employed Professional Geoscientist and have worked primarily in mineral exploration, mining, geological and U-Pb geochronological research, and geological education since 1976.

I am a registered member of the Association of Professional Engineers and Geoscientists of British Columbia License number 32102.

I graduated with the degree of Bachelor of Science in Geological Engineering, Mineral Resources option from the Faculty of Applied Science, Queen's University, Kingston in 1979.

I graduated with the degree of Doctor of Philosophy (Geological Sciences) from Queen's University, Kingston in 1990 in the field of economic geology with research specialized in the study of epithermal ore deposits of southern Peru under the supervision of Prof. Alan H. Clark.

I conducted U-Pb geochronological research at the Jack Satterley Geochronology Laboratory in the Royal Ontario Museum directed by Dr. T. E. Krogh from 1990 to 1997 and completed numerous studies on the timing of ore deposition and regional metamorphism in collaboration with university and government survey geologists and resulting in several publications in peer reviewed international journals.

I have read the definition of "Qualified Person" set out in National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfil the requirements to be a "Qualified Person" for the purposes of NI 43-101.

I am familiar with the Yreka property held by Karmamount Mineral Exploration Inc having completed geological mapping on the property in Aug and Sept. 2016, Aug. 2018, and Sept. 2019.

signed at Upper Campbell Lake,

December 15, 2021

Hardolph Wasteneys, PhD, PGeo.

PROFESSIONAL
PROVINCE OF
Dr. H. A. WASTENEYS
#32102
BRITISH COLUMBIA
GEOSCIENTIST