2019 SUMMARY REPORT FOR YMEP PROGRAM

PROSPECTING, SOIL GEOCHEMISTRY AND PETROGRAPHY AT THE CDL PROJECT

YMEP FOCUSED REGIONAL PROJECT 19- 086

CLAIMS: CDL 1 – 36, YD132137 - YD132172

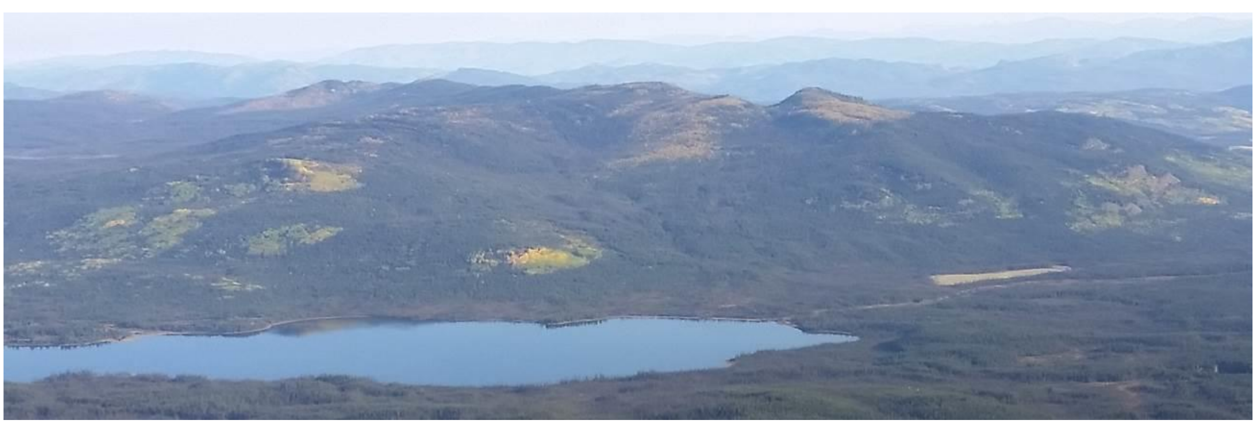
Whitehorse Mining Division, Yukon Territory, CANADA

NTS 105E/ 7

Latitude 61^{o} 24'N; Longitude 134^{o} 54'W

By: Lori Walton, P.Geo. and William Mann, P.Geo.

Field Work Performed September 1 – 6, 2019



SUMMARY

The CDL 1-36 claims are located 70 km (by air) northeast of Whitehorse, Yukon on NTS mapsheet 105E/7 between the north end of Lake Laberge and the Teslin River. The claims were staked to cover ground considered favorable for intrusion-related mineralization, particularly alkali gold copper porphyry mineralization analogous to that found on the MARS Minfile occurrence 10 km to the south. The CDL project was approved for funding in May, 2019 under the "focused regional" module of the Yukon Mineral Exploration Program.

The CDL property is underlain mainly by Jurassic Laberge Group sedimentary rocks and minor Triassic Lewes River Group limestone. These units are intruded by middle Jurassic Bryde Suite monzonite. A large, prominent magnetic high is related to the monzonitic intrusions on the CDL property. These intrusions are thought to be less eroded at the CDL property than at the MARS property, and therefore have potential for a greater vertical extent of mineralization. The BACON Minfile occurrence and a polymetallic skarn are found in the northern part of the property.

The 2019 work program included 94 soil samples and 7 rock samples sent for analysis. A portable XRF unit was used in the field to screen samples and guide daily work. Petrographic descriptions by Dr. T. LIverton were commissioned to advance knowledge of rock composition and alteration zones.

The CDL project is an early stage mineral exploration property with poor outcrop, heavy vegetation, poor visibility, and moraine blanket soils that in places may not reflect bedrock. The 2019 program was useful for orientation, locating important geological and logistical features, and confirming locations of reported mineralization, historical campsites and cutlines, and evaluating effectiveness of soil geochemistry. Further prospecting and geochemistry work is recommended, focused on the potential for alkalic copper-gold porphyry mineralization.

Contents

INTRODUCTION

The authors prepared this Technical Report to satisfy the reporting requirements of the Yukon Mineral Exploration Program (YMEP) funded by the Government of Yukon. YMEP is designed to support individuals exploring for mineral occurrences in the Yukon by supplying some of the risk capital to locate, explore, and develop mineral exploration targets. In May 2019, the CDL project was approved for YMEP funding under the "focused regional" module. Under the terms of the YMEP funding agreement, a Technical Report for the CDL property is to be submitted to Government of Yukon by January 31, 2020.

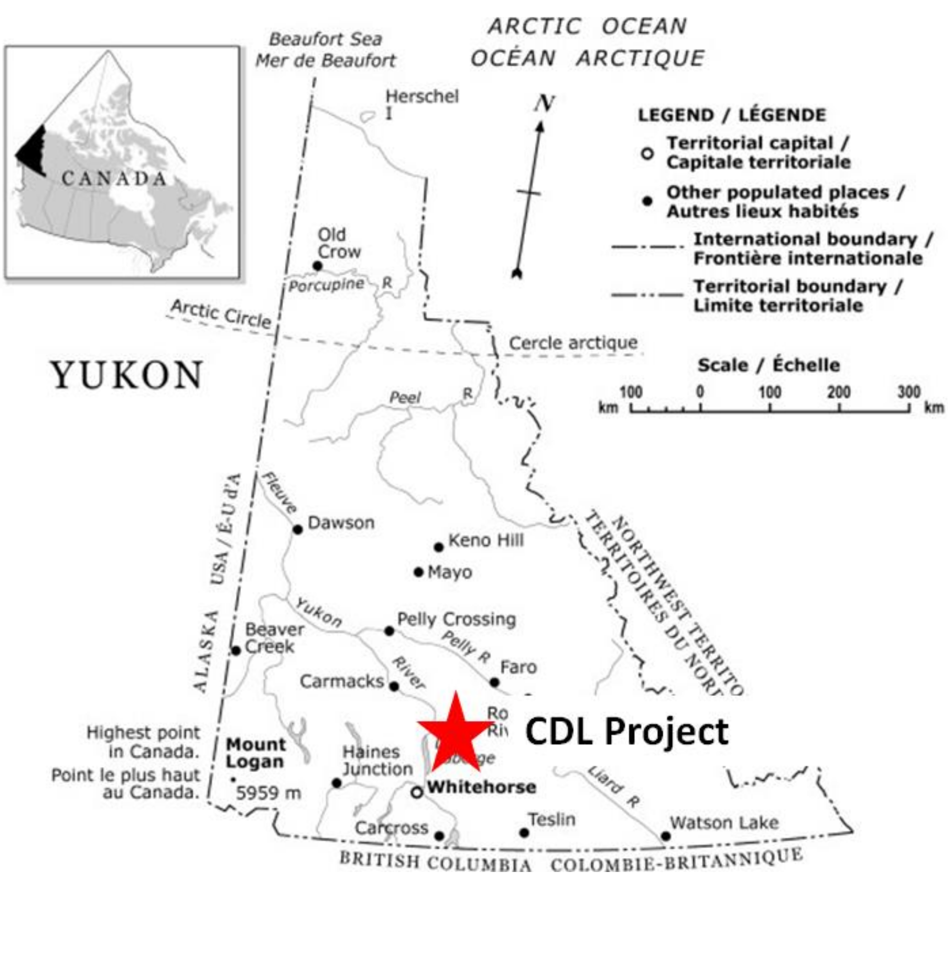
This report documents the previous work, geology, mineralization, exploration target parameters, and results of the fieldwork performed in 2019. Most historical information presented in this report is obtained from public documents, assessment reports, and other literature sources cited.

W. Mann conducted staking on the property on June 10, 2019. At the same time, the CDL project area was assessed for geological structures, potential campsites, and ground accessibility to areas of interest. L. Walton and W. Mann, assisted by C. Ouellette, conducted fieldwork on the property from September 1-6, 2019. Fieldwork consisted of prospecting, soil and rock sampling, and re-locating sites of previous exploration activity to validate and compile GPS location coordinates.

LOCATION, ACCESS and CLAIM STATUS

The CDL property is located 70 km (by air) northeast of Whitehorse, Yukon on NTS mapsheet 105E/7 between the north end of Lake Laberge and the west bank of the Teslin River (Figure 1). The property consists of 36 contiguous quartz claims north of Miller Creek, covering 752.4 hectares centered at latitude 61^{o} 24'N and 134^{o} 54'W.

Figure 1 CDL Property Location Map



The property is accessed by helicopter from Whitehorse. Landing sites are rare due to thick forest cover. During the 2019 field program, vegetation at historical landing sites was re-cut for future access. Suitable landing site coordinates and notes are presented in Table 1. It may be possible to land a float plane on Little Miller Lake, which marks the south boundary of the CDL area of interest. A winter tote trail to the Livingstone Creek placer mining area passes within 25 km of the CDL claims (Figure 2).

Figure 2 CDL and Area of Interest

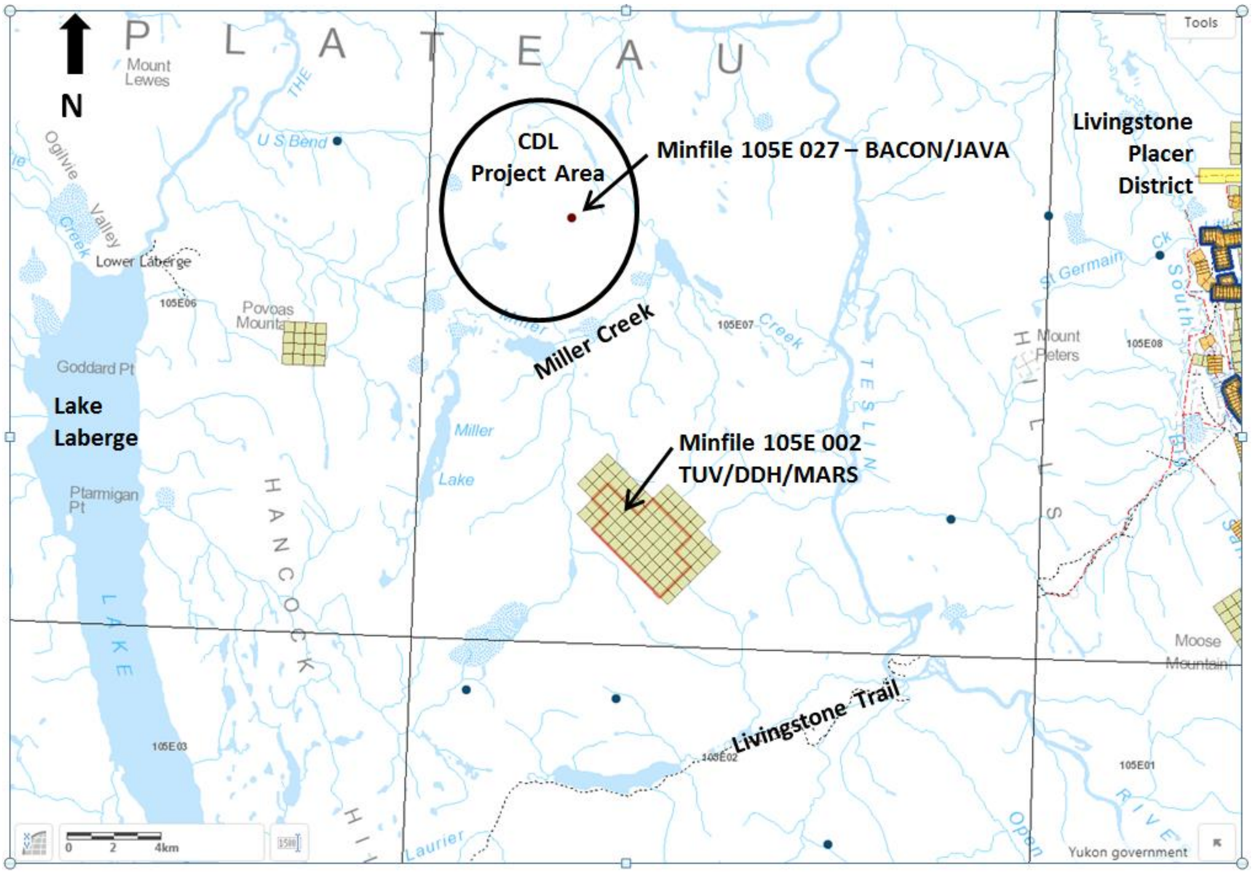


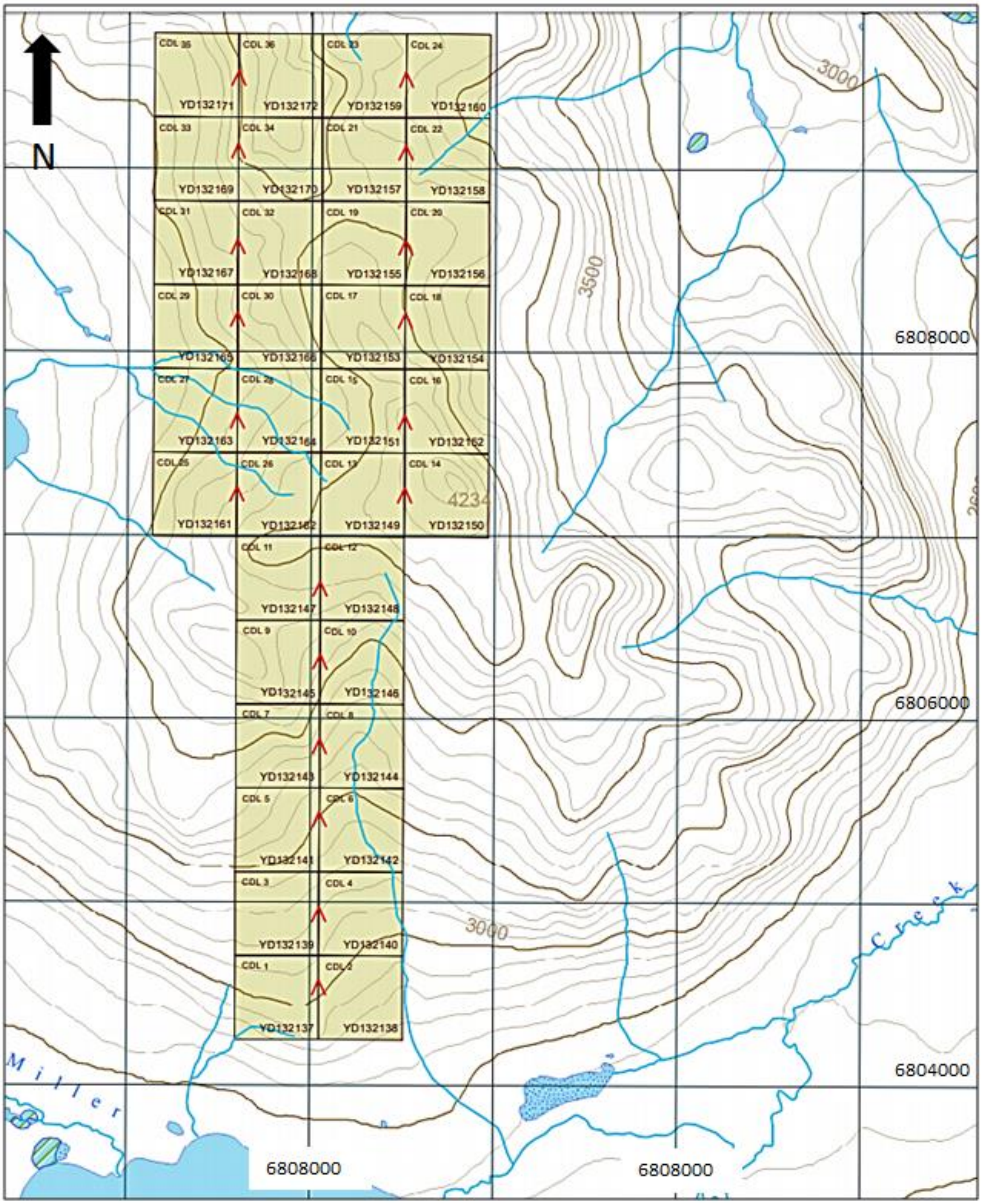
Table 1 CDL Property Helicopter Landing Sites

Site	East	North	Description
2019 Camp	505840	6807280	Highest point on claims, good camp site, central
1999 Camp	505100	6808510	Good landing site and camp site
Cutline Camp	505190	6806840	Near pond and head of cutline, good campsite
Staking pickup	504880	6809430	Above large limestone outcrop, marginal camping
Toe-in site	504990	6804300	Above large outcrop - needs more cutting to land

(UTM WGS 84 Zone 8V)

The CDL 1-36 claims (Grant No. YD132137-YD132172) were located on June 10, 2019 and recorded on June 12 with the Whitehorse Mining Recorder (Figure 2). The CDL claims are registered (100%) in the name of William Mann and are in good standing under the *Quartz Mining Act* until June 12, 2020. William Mann holds the claims in a 49%/51% partnership with Lori Walton.

Figure 3 CDL 1-36 Claimblock



TOPOGRAPHY, VEGETATION AND CLIMATE

The claims cover a moderately rugged mountainous area that lies below treeline, within the Yukon Plateau physiographic region. The lowest elevation on the property lies above the valley floor at about 2800 feet (850 m), and extends to the highest peak in the area at 4234 feet (1290 m), where the 2019 camp was located.

The climate is cool and arid, with warm summers and long, cold winters. The property is normally free of snow from late May to late September.

The property lies within the Yukon Southern Lakes ecoregion of the Boreal Cordillera ecozone (Smith et. al., 2004). The claims are covered by boreal/subalpine coniferous forest, with a thick mixture of subalpine fir, pine, white spruce, aspen and rare paper birch. A thick understory of dwarf birch, willow, alder and other shrubs is present in most areas. The claim area has not been burnt by forest fire in recent decades. The claims lie within the sporadic discontinuous permafrost zone, with some frost encountered in soil sample holes, especially at higher elevations and on north or east facing slopes.

PROPERTY HISTORY

Placer gold was discovered in the late 1800s in the Livingstone Creek area, 30 km to the southeast of the CDL property. The first 1:250,000 geological map of the area was released by the Geological Survey of Canada (GSC) in 1938 (Bostock and Lees, 1938).

There are no records of mineral discoveries in the general area prior to 1971. The history of the TUV/DDH/MARS porphyry occurrence south of Miller Creek is included due to its proximity and geological similarity to the CDL property. The CDL property has also been known as the BOND, BACON, or JAVA property.

1971

United Keno Hill Mines Ltd, in a joint venture with Falconbridge and Canadian Superior, carried out a regional helicopter-supported stream sediment sampling program. Selected grab rock samples returned up to 0.53% copper and 0.04% molybdenum in the area south of Miller Creek. Over 900 soil sample results showed small, isolated, erratic anomalies paralleling the main ridge topography (Pangman, P.G. and VanTassell, 1972).

1975

The DC Syndicate (Dome and Cominco) conducted a large-scale reconnaissance exploration program for copper in the area north of Whitehorse and east of Lake Laberge. The DC Syndicate targeted small intrusive bodies which were thought to be favorable targets for porphyry copper deposits and related mineralized skarns. The BOND claims were staked by the DC Syndicate within the CDL project area to cover minor malachite, chalcopyrite and molybedenite mineralization associated with monzonite north of Miller Creek. Geological mapping and soil sampling work was completed[1]and the “Bacon” Minfile (105E 027) occurrence is recorded.

1978- 1979

Surficial geological mapping of the area is completed (Klassen and Morison, 1987). A moraine blanket is mapped at the CDL property.

1984

The GSC releases an updated 1:250,000 scale map of the Laberge area (Tempelman-Kluit, 1984). The intrusive stock underlying the TUV porphyry copper occurrence south of Miller Creek is dated as Jurassic. The map shows several small exposures of the Jurassic intrusive north of Miller Creek.

1996-2000

TUV/DDH/MARS Minfile Occurrence – south of Miller Creek

In 1996 the TUV occurrence on Windy Mountain south of Miller Creek was staked as the DDH and MARS claims. Fieldwork by Camdan Exploration including prospecting, mapping, soil sampling and a ground magnetic survey

[1] No assessment work was recorded.

confirmed the gold content of the porphyry system and the presence of abundant magnetite veins and disseminations (Walton, 1996). The property was optioned to Placer Dome Canada in 1997 who flew an airborne gamma-ray and magnetic geophysics survey and completed additional sampling over the property (Wark, 1997).

The Yukon Geological Survey studied the geology and geochemistry of the underlying monzonite on the MARS property, termed the Teslin Crossing Pluton, and determined that the pluton is consistent with Jurassic alkali plutons in British Columbia that host gold-rich porphyry copper deposits (Hart, 1997).

BACON/JAVA Minfile Occurrence – north of Miller Creek

The original BOND claims area north of Miller Creek and explored by the DC Syndicate was re-staked as the JAVA property in 1997 by Camdan Exploration to cover an aeromagnetic anomaly similar to the one underlying the TUV/DDH/MARS property south of Miller Creek. Camdan carried out small prospecting and rock and soil sampling programs in 1997 and 1999. Massive to semi-massive chalcopyrite-sphalerite skarn mineralization was discovered in 1997 (Ouellette, 1997 and 2000).

2001 to 2004

TUV/DDH/MARS Minfile Occurrence – south of Miller Creek

Saturn Ventures Inc. conducted rock and soil sampling on the DDH/MARS claims. Rock samples from mineralized zones returned up to 1.7% copper and 4,790 ppb gold. In 2004 Saturn completed 827 m of diamond drilling in seven holes. The intrusive is identified as a silica-oversaturated alkali copper-gold-molybdenum porphyry with strong similarities to the Cadia and Goonumbia deposits in Australia (Lang and McClaren, 2003).

2009

BACON/JAVA Minfile occurrence – north of Miller Creek (CDL project area)

An airborne geophysical survey covering 62.6 line km at 100 m spacing to collect radiometric and magnetic data was completed over the JAVA claimblock. The survey covered 3 km by 2.2 km with lines spaced 100 m apart. The average terrain clearance was 42.8 m. The survey shows a strong 500 m x 300 m magnetic anomaly centered on the skarn occurrence (Ouellette, 2010).

2013 – 2014

A regional program of biogeochemical sampling of spruce bark included work at or near the current CDL property (Kreft, 2013). Prospecting and biogeochemical sampling traverses were designed to assess granitic bodies and positive aeromagnetic anomalies in the area. Two anomalous areas were identified from bark analysis.

B. Kreft (YMIP 2014-022) commissioned a combined magnetic and radiometric airborne geophysical survey over the CDL area north of Miller Lake to follow-up on the spruce bark sampling and further examine the gold-copper porphyry potential of the area. This survey covered a much larger area than the 2010 program, roughly 8 km x 6 km, but with a 200 m line spacing. The average terrain clearance was 40 m. The radiometric data appears to be useful for differentiating discrete intrusive bodies (Kreft, 2015). The southern intrusive body has the strongest magnetic high and potassium anomaly.

No further mineral exploration work in the area north of Miller Creek is documented.

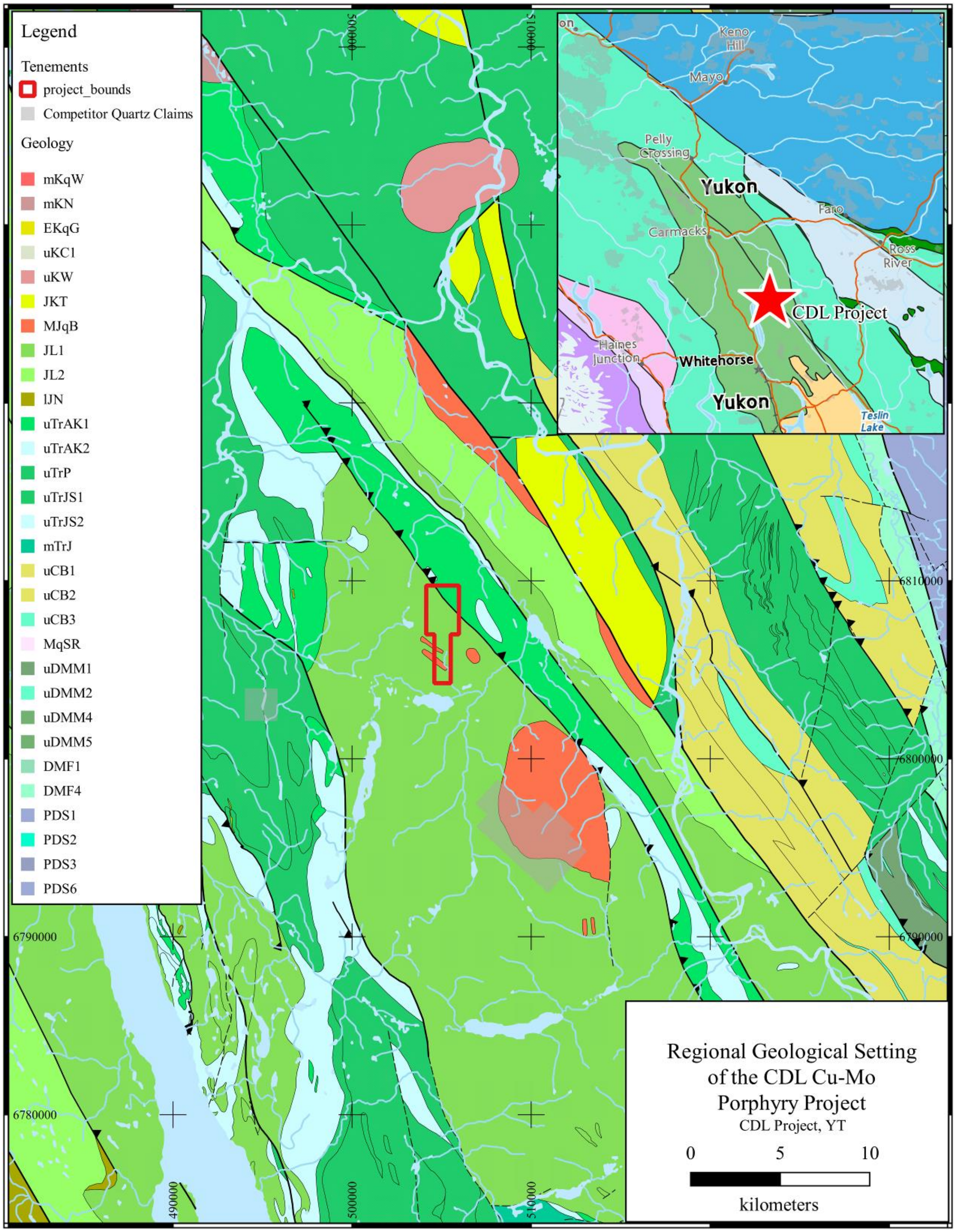
With only seven drill holes to date, work on evaluating the potential of the areas north and south of Miller Creek is still at the embryonic stage. The area south of Miller Creek over the Teslin Crossing Pluton is now held as the DDH, STAR and STARS claims by Archer, Cathro & Associates. The area over the BOND/BACON/JAVA area of interest north of Miller Creek is now covered by the CDL 1-36 claims.

GEOLOGICAL SETTING AND MINERALIZATION

Regional Geology

The CDL property is located at the northern end of Stikinia Terrane, part of the Intermontane region of the Canadian Cordillera. The Triassic Lewes River volcanic arc evolved during the Middle and Late Triassic and eventually eroded into the adjacent marginal basin through Middle Jurassic. The basin is now called the Whitehorse Trough. Figure 4 shows the regional geological setting.

Figure 4 Regional Geology in the CDL area (from GeoYukon)



The following rock units are found in the CDL area (Colpron, 2011):

EARLY CRETACEOUS

EKqG — Goddard Suite (138-136 Ma) quartz-phyric rhyolite and rhyodacite dikes

MIDDLE JURASSIC

MJqb — BRYDE SUITE: undeformed volcanic rocks

Teslin Crossing Pluton: medium to find grained, equigranular leucocratic monzonite, syenite and granite and related dykes of dacite to andesite porphyry with euhedral andesine, hornblende and locally quartz in aphanitic greenish, or gray groundmass

LOWER TO MIDDLE JURASSIC

JLt — LABERGE GROUP

Tanglefoot Formation: poorly sorted, medium bedded to massive lithic sandstone and minor mudstone with interbeds and thick members of resistant heterolithic pebble and boulder conglomerate, calcareous siltstones, minor ash and crystal tuff; coal; limestone

UPPER TRIASSIC

LEWES RIVER GROUP

Aksala Formation: mixed clastic-carbonate assemblage divisible into three dominant facies including calcareous lithic sandstone and locally thick carbonate

uTAKc — Casca Member: brown mudstone, black and minor red siltstone, greenish-grey, calcareous sandstone and interbedded bioclastic, argillic limestone; igneous or limestone clast pebble and cobble conglomerate, laharic debris flows; rare feldspar-augite porphyry flows.

uTAKh — Hancock Member: massive to thick bedded limestone; minor thin bedded argillaceous to sooty limestone; coarsely crystalline, massive dolostone, minor laminated chert, massive to poorly bedded, limestone conglomerate debris flows and fanglomerate; calcareous sandstone.

Property Geology

Recent work by the Yukon Geological Survey has enhanced knowledge about the geology underlying the Miller Creek area. The Teslin Crossing Pluton is identified as belonging to the Bryde suite (172-168 Ma) of alkalic post-collisional plutons that intrude Stikinia and Cache Creek terranes and Whitehorse Trough. A bedrock geology compilation map of the Whitehorse Trough (Colpron, 2011) and recent bedrock geology mapping and investigations in the area east of Lake Laberge (Bordet, et al., 2019) have led to a better understanding of the regional geology and structural features. Of particular interest is a new aeromagnetic survey (Kiss and Boulanger, 2018) over a broad area of southern Yukon, including the Miller Creek area. Property geology knowledge was further enhanced by the aeromagnetic survey by Kreft (2015).

A series of Middle Jurassic monzonite, syenite and granitic sills intrude Triassic Lewes River volcanic units intermixed with limestone and Jurassic Laberge Group sedimentary rocks on the CDL property. The intrusive rocks are thought to be related to the Teslin Crossing Pluton suite of volcanic rocks. Northwest trending structures include a thrust fault contact in the area of the skarn zone and a syncline in the Laberge sedimentary units in the west CDL area. Early Cretaceous rhyolite and rhyodacite dykes are noted on Bordet, et al., (2019) in the project area.

Thin section petrography indicates a series of lapilli tuff, andesite, monzonite on the property. Triassic Lewes River Group limestone is noted in the north and east part of the property and in the south overlooking Little Miller Lake. Relation of the rock units to each other and an understanding of the structure is limited due to lack of outcrop.

The original DC Syndicate “Bacon” Minfile occurrence 105E 027, is recorded as chalcopyrite and molybdenite in dry fractures in a monzonite stock cutting andesite volcanic rocks and greywacke. According to the file, andesite float containing chalcopyrite was reported west of the original BOND claims, but DC Syndicate’s soil geochemistry program did not locate a specific area of interest.

Skarn mineralization consisting of massive chalcopyrite and sphalerite with elevated silver, gold, and bismuth was identified in the northern part of the CDL area (Ouellette, 1997). Rock samples collected during this time returned values up to 18,031 ppm copper, 7.1% zinc, 31.8 ppm silver, 1639 ppb gold and 1513 ppm bismuth.

A second skarn zone was identified late in the program on the far south of the claims, overlooking Little Miller Lake. A sample of bleached and limonitic, medium grained dioritic rock with minor malachite staining was collected 30 m east and downslope of the second skarn zone during Camdan’s 1999 program; however no significant mineralization was identified. The area of the second skarn zone corresponds with anomalous bark samples collected by Kreft (2013).

EXPLORATION PROGRAM - 2019

The 2019 CDL project exploration program was based from a camp located at the highest point in the area, central to the claim block. The area was traversed on foot from the camp, with access to the distal parts of the claims difficult due to long distances through thick bush (Figure 4).

Three workers performed a combination of prospecting and soil geochemistry from September1 to 6, 2019. A total of 94 soil samples were collected along UTM grid lines, along the cutline established in 1997 and in opportunistic locations. Seven rock samples were sent for assay from a much larger number of rocks brought back to camp for detailed examination. Six rocks were sent to VanPetro for thin section preparation and potassium staining. These thin sections along with sixteen thin sections and polished mounts from the JAVA property prepared in 1997 were examined and described.

A Niton XL3t portable hand-held XRF was used in the field to provide rapid qualitative evaluation of soils and rocks. The information provided by the XRF was useful in confirming anomalous areas, and could be used to adjust soil line locations and lengths. XRF readings were taken for 30 seconds through the soil sample bags, and high values of Pb, Zn, Cu and As used as indicators of mineralization. Rock samples were also analyzed by XRF, and this information was used to reduce the number of rock samples submitted for assay.

Geochemical results are shown in Figures 6,7, and 8.

Figure 5 CDL Property Waypoints and Features

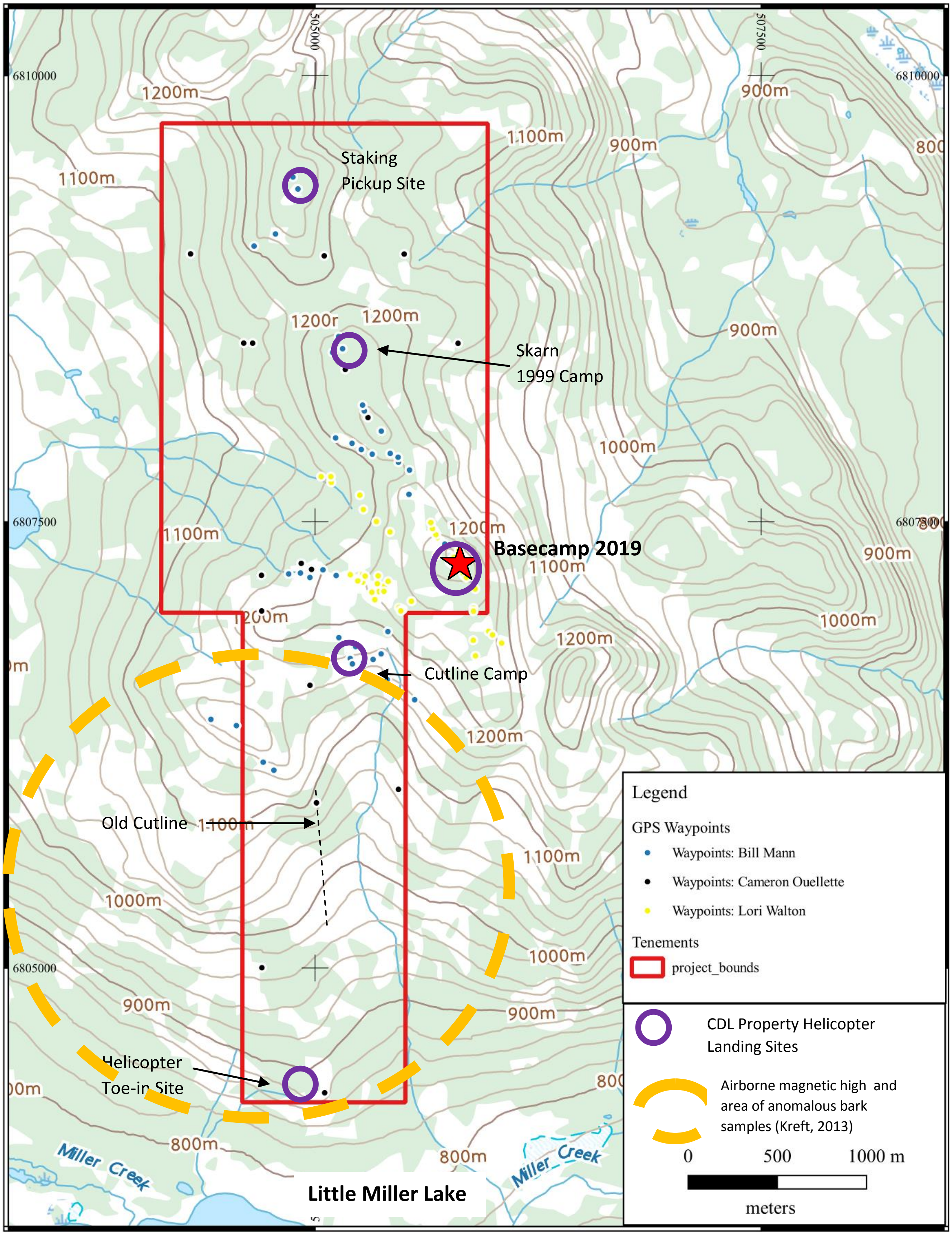


Figure 6 Copper in Soils (Soil sample number: ppm) - North

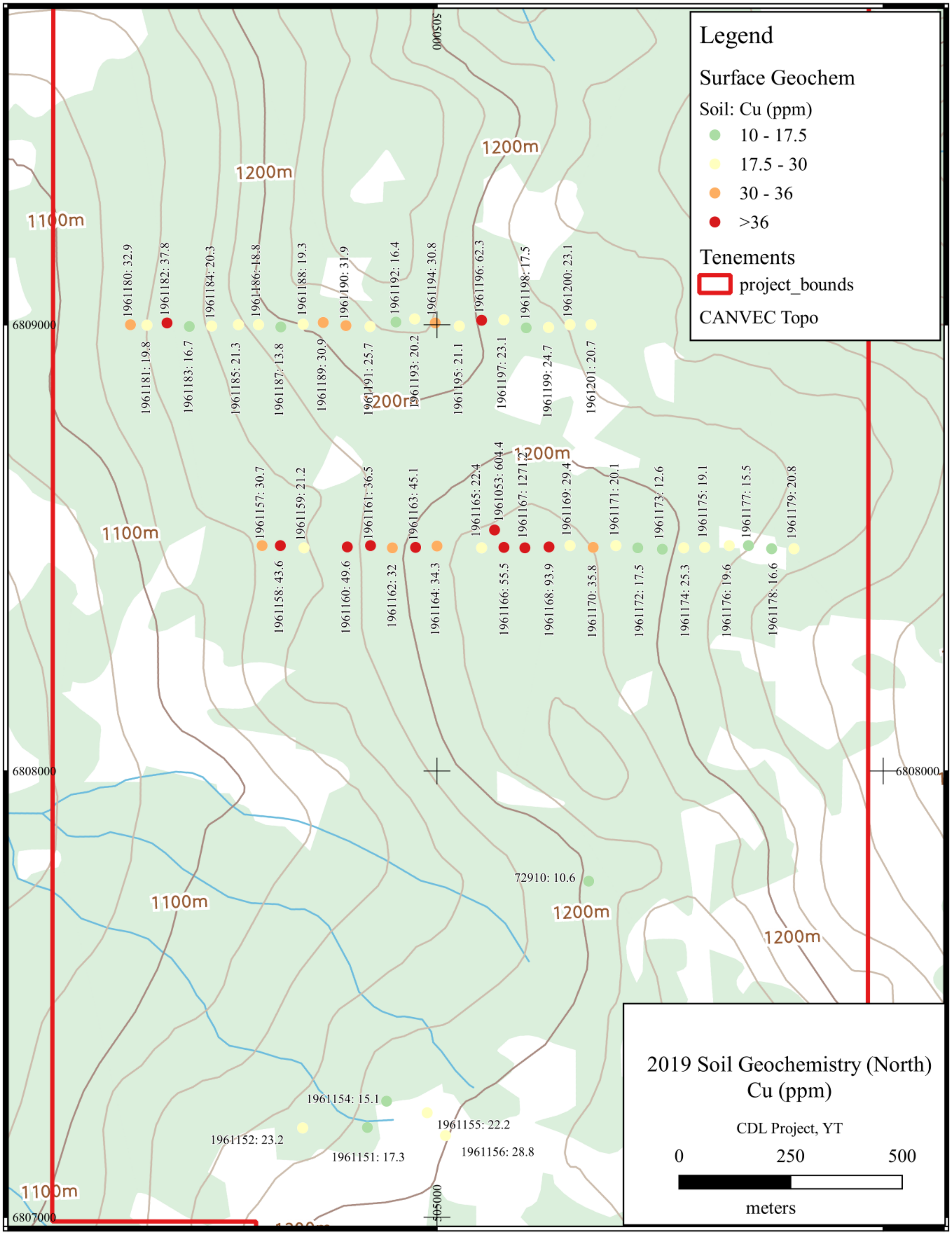


Figure 7 Copper in Soils (Soil sample number: ppm) – South

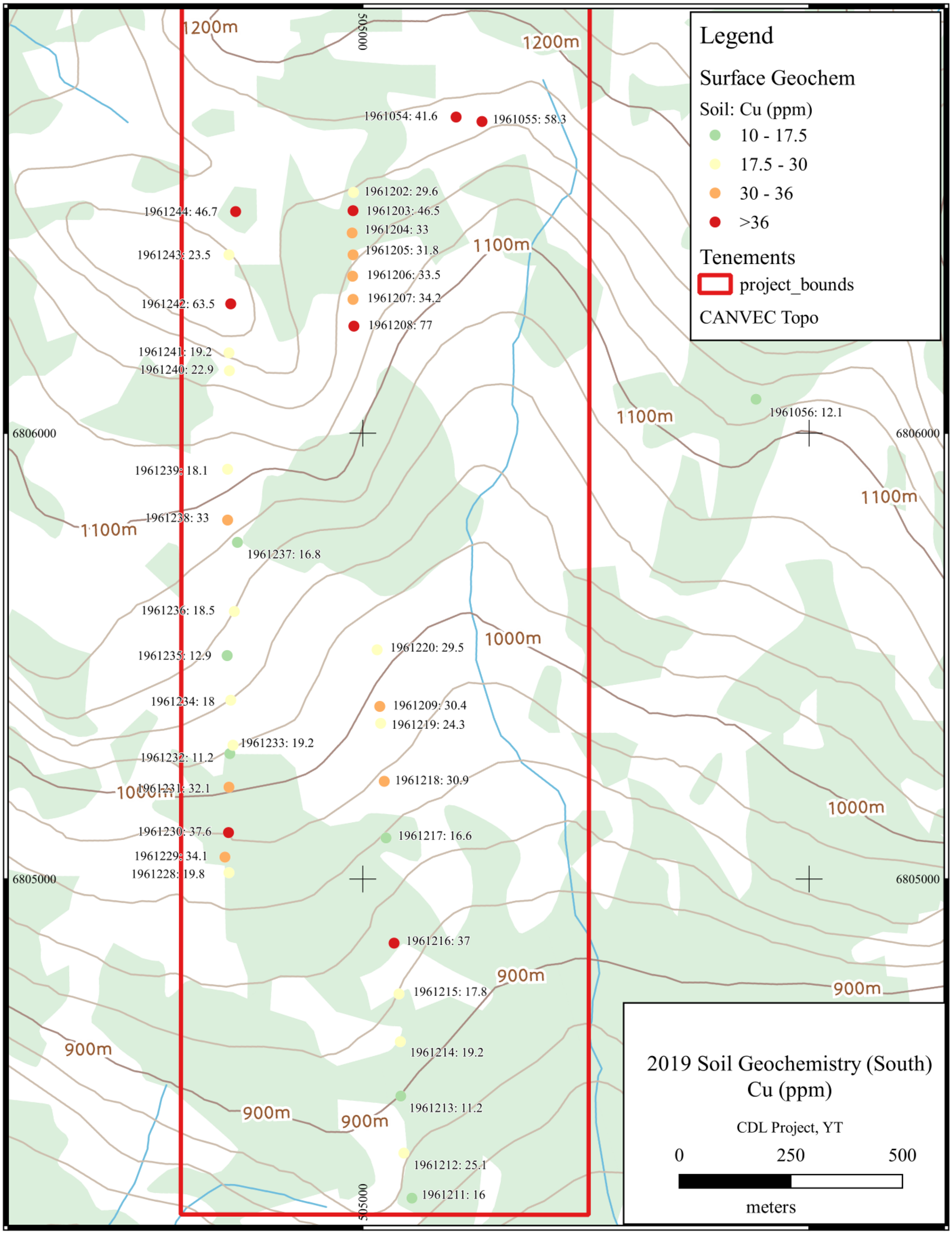
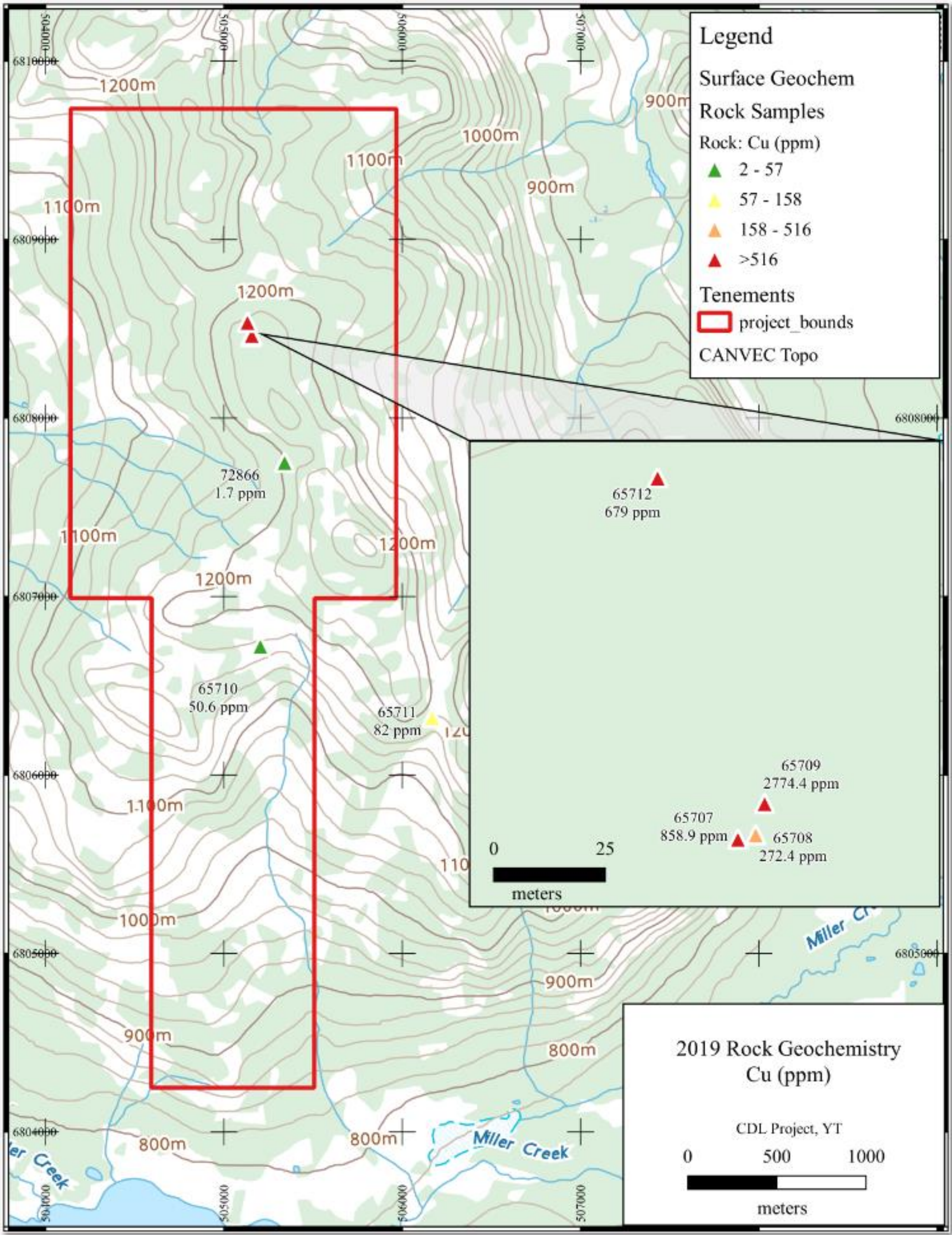


Figure 8   Copper Values – Rock



2019 Soil Geochemistry

A total of 94 soil samples were collected along UTM grid lines at 50 m spacing, along the cutline established in 1997, and in opportunistic locations. Soil sample locations and descriptions are presented in Appendix A. Samples were collected with a narrow spade from as deep a hole as practical. Care was taken to avoid organic soils (locally over 30 cm thick) and the White River ash layer (up to 10 cm thick), and to seek angular pebbles indicating proximal material. Samples were placed into kraft paper bags along with a unique sample tag. The sample number was written in felt pen on each bag, and sample sites were marked in the field with numbered flagging tape. Sample location was determined by GPS and recorded along with sample depth, colour and texture. A photograph was taken of each sample site in the field, along with the sample material.

Sample preparation, analysis and security followed standard procedures; Bureau Veritas Minerals in Vancouver completed the analysis. Details on laboratory procedures, including quality control and results are attached in Appendix A.

2019 Rock Geochemistry

Seven rock samples were sent for assay from a much larger number of rocks brought back to camp for detailed examination. These rocks were known to be mineralized based on visual and XRF examination. The rock samples were sent to Bureau Veritas Minerals in Vancouver for analysis, after preparation at their Whitehorse facility. Rock geochemical results and quality control information are presented in Appendix B. Results from the NITON XRF probe in camp are in Appendix C.

Four of the samples were collected from the JAVA/ BACON area within or proximal to re-discovered prospecting pits near the skarn occurrence discovered previously. The camp and helicopter pad from 1999 exploration was located along with several hand dug pits (Ouellette, 2000). The 2019 analyses confirm the mineralized nature of this area, with highly anomalous values for Mo, Cu, Pb, Zn, Ag, Au, W, Sb and Bi. This showing appears to be skarn and endoskarn associated with a biotite granite.

Table 2 Rock Sample Locations and Descriptions

	UTM WGS 84 Zone 8V			
Sample	East	North	Type	Description
65707	505150	6808457	float	Chips of cobbles from pit dug at site of rusty cobble on surface. Limonite-rich rock after sulphides. Some c.g. white marble. Non-magnetic.
65708	505154	6808458	float	Chips of cobbles from old prospecting pit 5m downslope from 65707 under root of large tree. 50cm x 15cm x 20cm deep. Some red-brown garnets and dark grey-green skarn. Some biotite-quartz endoskarn (?). Non-magnetic.
65709	505156	6808465	float	Chips of cobbles from old prospecting pit 50cm wide x 75cm high dug into bank. 2 rock types: (A) dark red-brown garnet skarn, non-magnetic. (B) Light orange-brown to light grey endoskarn. Biotite-quartz- rich w/ dissem. F.g. sulphides. No fresh surfaces seen, breaks on rusty fractures. One cobble with green malachite stain.
65710	505204	6806723	outcrop	Chips of skarn-altered (?) crystal tuff. Trace f.g. sulphide. From OC36. Non-magnetic, variably calcareous. NOT rusty

				weathering. Dark grey-green c.g. rock w/ c.g. hornblende.
65711	506167	6806323	outcrop	Chips from outcrop and rubble from steep hillside proximal to recessive linear. Rock is rusty w/ Quartz vugs. Protolith indistinct, hard to get a fresh surface.
65712	505132	6808538	outcrop	Panel Chip of 3m x 3m outcrop (OC10). Fine-grained pyritic hornfels, very rusty. Rock breaks on rusty fractures, so hard to examine. No skarn minerals observed. Boxwork limonitic pockets up to 10cm after sulphides.
72866	505034	6807753	outcrop	South facing exposure on steep cliff overlooking creek. Lapilli bomb tuff – rounded pebbles up to 4 cm, large feldspar crystals, calcite. Non-magnetic.

Petrography

Most exposures in the CDL project area tend to be homogenous in appearance, with diffuse textures and can be challenging to identify. Six rock slabs from 2019 were sent to Van Petro for thin section preparation and potassium staining with cobaltinitrite. These thin sections along with fourteen thin sections and two polished mounts from the 1997 JAVA program were examined and are described by Dr. T. Liverton, along with photomicrographs in Appendix D. The precise locations of the 1997 rocks are not known, but are plotted on Figure 5 from Ouellette's 1997 report. The 2019 sample locations and rock descriptions are presented in Table 3. An example of the effectivness of thin section analysis is shown in Figure 9.

Table 3 CDL Thin Section Locations and Rock Descriptions

		UTM WGS 84 Zone 8V		
Section	Rock #	East	North	Description
C1	R 2	505195	6808497	Biotite-granite boulder, non-magnetic. 3m from anomalous soil #1961167.
C2	OC 3	504852	6807208	Black hornfels? w/ hard black matrix, 1mm white fspar, minor Q eyes, possible crystal tuff, f.g. pyrite, possible trace chalcopyrite. Non-magnetic. Some black "shale" layers with no sulphides or c.g. fspar or Qtz. Ridge crest runs 090 degrees.
C3	OC 7	505465	6807862	1m diameter outcrop orange- weathering monzonite. No quartz noted. White fspar with black non-aligned hornblende to 5mm. Non-magnetic. Similar but larger outcrop 10m NW.
C4	OC 29	504769	6806108	15 x 3m sloping outcrop & float monzonite. Coarse-grained feldspars, <5% Qtz, biotite & hornblende. Non-magnetic.
C5	OC 30	504709	6806153	40 x 10m slope outcrop monzonite. Hornblende & biotite, magnetic. 30m upslope is huge monzonite outcrop w/ 20m cliffs x 100+m.

C6	65708	505154	6808458	Cobble from old prospecting pit 5m downslope from 65707 under root of large tree. 50cm x 15cm x 20cm deep. Dark grey-green skarn (?). Proximal to garnet skarn and biotite-quartz endoskarn. Non-magnetic.
C7	OC 28	505272	6806709	10 x 2m cliff outcrop. Bomb tuff, crystalline matrix, non-magnetic, with patches hematitic & limonitic boxwork after sulphides.

Figure 9 Latite Tuff - thought to be a monzonite in the field

INTERPRETATION AND CONCLUSIONS

Surface evaluation of the CDL project is significantly hampered by a combination of dense vegetation, few rock exposures, and glacial till. Soil sample results were muted, as other geologists and prospectors in the area have noted.

The JAVA skarn area first discovered in 1996 was located and sampled. Rock samples 65707, 65709, 65709 and 65712 returned copper values of 272.4 to 2772.2 ppm. Sample 65707 contained anomalous lead (336 ppm), silver (6.5 ppm), gold (82.6 ppb), and bismuth (160.8 ppm). This skarn target is limited by the narrow width of host limestone observed in this area, which has tapered from more than 500 m to 1 km to the north to less than 100 m (?) at the skarn. The skarn is located at the southern termination of the limestone where it pinches out. It also appears to be associated with a biotite granite, therefore not alkalic. The abundance of various metals at the skarn including zinc, is also not indicative of an alkali copper-gold porphyry. This target appears to have limited size potential and is low in copper and gold.

Two rock samples collected on the south slope of the property overlooking Little Miller Lake returned 82.0 ppm and 50.6 ppm copper respectively. Previously, Ouellette (1997) noted two rock samples from the south slope that returned 721 ppm and 481 ppm copper (93 ppm bismuth and 76 ppb gold). The soil geochemical results from 2019 show elevated copper in this same area. This area also corresponds with anomalous bark samples (Kreft, 2013) and a favorable underlying magnetic and potassic airborne geophysical signature indicative of an alkali copper-gold porphyry.

RECOMMENDATIONS

The primary focus of further work should be on the intrusive body underlying the southern third of the claims which is highly magnetic and highly potassic, as seen in the airborne survey (Kreft, 2015). This body is thought to have the highest potential for an alkalic copper-gold porphyry.

A camp could be located in or near the southern area of the claims. From this base, reports of limestone, skarn mineralization and copper-rich rocks (Ouellette, 1997) could be verified and re-interpreted in light of the more detailed airborne geophysical survey information and petrographic analysis available. Some of the stronger biogeochemical anomalies in this area reported by Kreft (2013) could be prospected, with soil geochemistry to confirm. The existing historical cutline could be cleared and extended one km north to provide for better access through the dense vegetation. Specialized soil geochemical analytical techniques are recommended for the CDL project area to test their effectiveness in penetrating the till blanket.

The limestone at the north end of the claims should be examined for large-scale skarn mineralization. The ridge immediately north of the claims should be prospected to the west where another strong magnetic anomaly is present. This ridge should also be followed to the west, where relatively abundant outcrop is present.

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APPENDIX A

BUREAU VERITAS MINERAL LABORATORIES
Canada

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Client: **Bill Mann**
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Submitted By:	Bill Mann
Receiving Lab:	Canada-Whitehorse
Received:	September 09, 2019
Report Date:	September 27, 2019
Page:	1 of 5

CERTIFICATE OF ANALYSIS WHI19000534.1

CLIENT JOB INFORMATION

Project:	CDL
Shipment ID:	
P.O. Number	
Number of Samples:	94

SAMPLE DISPOSAL

DISP-PLP	Dispose of Pulp After 90 days
DISP-RJT-SOIL	Immediate Disposal of Soil Reject

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
DY060	94	Dry at 60C			WHI
SS80	94	Dry at 60C sieve 100g to -80 mesh			WHI
AQ201	94	1:1:1 Aqua Regia digestion ICP-MS analysis	15	Completed	VAN
DISPL	94	Disposal of pulps			VAN
SHP01	94	Per sample shipping charges for branch shipments			VAN

ADDITIONAL COMMENTS

Invoice To: Bill Mann
19 Hayes Cres.
Whitehorse Yukon Y1A 0E1
Canada

CC: Lori Walton

MAY LAI
Data Validation Specialist

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.
All results are considered the confidential property of the client. Bureau Veritas assumes the liabilities for actual cost of analysis only. Results apply to samples as submitted.
"*" asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.

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19 Hayes Cres.
Whitehorse Yukon Y1A 0E1 Canada

Project: CDL
Report Date: September 27, 2019

CERTIFICATE OF ANALYSIS WHI19000534.1

	Method	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201
	Analyte	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te
	Unit	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
	MDL	1	0.01	1	0.001	1	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2
1961053	Soil	9	0.13	39	0.012	<1	0.33	0.010	0.04	34.1	0.06	1.9	0.1	0.26	6	6.4	0.3
1961054	Soil	34	0.52	175	0.033	1	1.77	0.017	0.16	0.1	<0.01	7.8	0.2	0.06	5	<0.5	<0.2
1961055	Soil	38	0.74	93	0.076	3	2.77	0.068	0.18	0.3	0.01	7.1	0.7	0.07	9	3.3	<0.2
1961056	Soil	27	0.36	199	0.049	1	1.63	0.012	0.07	0.2	<0.01	2.5	<0.1	<0.05	6	<0.5	<0.2
1961057	Soil	35	0.53	218	0.060	<1	1.27	0.015	0.07	0.2	0.02	4.9	0.1	<0.05	4	<0.5	<0.2
1961151	Soil	33	0.48	181	0.058	<1	1.56	0.010	0.05	0.2	<0.01	3.1	0.2	<0.05	5	<0.5	<0.2
1961152	Soil	33	0.57	169	0.060	2	2.02	0.014	0.09	0.2	0.01	4.6	0.3	<0.05	5	<0.5	<0.2
1961153	Soil	35	0.63	140	0.065	<1	1.89	0.038	0.09	0.2	0.04	6.0	0.3	0.08	6	1.7	<0.2
1961154	Soil	32	0.49	167	0.064	1	1.65	0.011	0.06	0.2	<0.01	3.6	0.2	<0.05	5	<0.5	<0.2
1961155	Soil	31	0.50	236	0.034	1	1.80	0.015	0.06	0.2	<0.01	3.8	0.3	<0.05	5	<0.5	<0.2
1961156	Soil	36	0.50	141	0.028	2	1.87	0.013	0.06	0.2	0.01	5.0	0.2	<0.05	5	0.6	<0.2
1961157	Soil	27	0.44	185	0.040	2	1.38	0.025	0.07	0.2	0.03	4.1	0.2	0.05	4	1.0	<0.2
1961158	Soil	35	0.64	243	0.051	2	1.64	0.022	0.08	0.2	0.03	6.4	0.2	<0.05	5	<0.5	<0.2
1961159	Soil	30	0.58	156	0.043	2	1.42	0.019	0.07	0.2	<0.01	4.0	0.2	<0.05	5	<0.5	<0.2
1961160	Soil	39	0.58	319	0.048	2	1.64	0.015	0.07	0.2	0.05	6.2	0.2	<0.05	5	<0.5	<0.2
1961161	Soil	36	0.63	200	0.036	2	1.79	0.017	0.07	0.2	0.01	5.2	0.3	<0.05	5	0.5	<0.2
1961162	Soil	35	0.53	179	0.079	<1	1.75	0.036	0.06	0.2	<0.01	4.9	0.3	<0.05	7	0.5	<0.2
1961163	Soil	36	0.60	240	0.048	2	1.79	0.019	0.09	0.2	0.02	6.0	0.2	<0.05	6	<0.5	<0.2
1961164	Soil	34	0.62	226	0.046	2	1.86	0.019	0.07	0.2	0.02	4.7	0.3	<0.05	5	<0.5	<0.2
1961165	Soil	30	0.46	248	0.039	1	1.65	0.013	0.04	0.2	0.01	4.2	0.2	<0.05	5	<0.5	<0.2
1961166	Soil	27	0.43	205	0.034	<1	1.27	0.021	0.07	0.2	0.02	4.2	0.2	<0.05	4	<0.5	<0.2
1961167	Soil	31	0.49	134	0.053	2	1.41	0.020	0.07	0.5	0.02	4.3	0.2	<0.05	5	0.6	<0.2
1961168	Soil	34	0.56	281	0.033	2	1.34	0.018	0.06	0.2	0.05	5.6	0.2	0.09	4	0.7	<0.2
1961169	Soil	31	0.52	167	0.049	2	1.14	0.020	0.07	0.2	0.02	4.9	0.2	<0.05	4	<0.5	<0.2
1961170	Soil	39	0.63	219	0.062	2	1.39	0.018	0.07	0.2	0.05	6.1	0.2	<0.05	5	<0.5	<0.2
1961171	Soil	30	0.43	166	0.050	<1	1.17	0.018	0.05	0.2	0.04	3.7	0.1	<0.05	4	<0.5	<0.2
1961172	Soil	33	0.46	166	0.056	<1	1.23	0.015	0.05	0.2	0.03	3.4	0.1	<0.05	4	<0.5	<0.2
1961173	Soil	34	0.51	111	0.066	<1	1.49	0.010	0.04	0.3	0.01	3.0	<0.1	<0.05	4	<0.5	<0.2
1961174	Soil	39	0.62	209	0.060	<1	1.94	0.012	0.06	0.2	0.02	4.2	0.2	<0.05	5	<0.5	<0.2
1961175	Soil	38	0.66	132	0.066	<1	1.43	0.010	0.05	0.2	<0.01	3.5	0.1	<0.05	4	<0.5	<0.2

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Project: CDL
Report Date: September 27, 2019

CERTIFICATE OF ANALYSIS WHI19000534.1

	Method	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201
	Analyte	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te
	Unit	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
	MDL	1	0.01	1	0.001	1	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2
1961176	Soil	39	0.59	152	0.066	1	1.68	0.011	0.05	0.2	<0.01	3.9	0.1	<0.05	5	<0.5	<0.2
1961177	Soil	33	0.50	171	0.060	<1	1.35	0.011	0.03	0.2	0.02	3.4	0.1	<0.05	5	<0.5	<0.2
1961178	Soil	31	0.55	112	0.067	1	1.28	0.010	0.08	0.4	0.02	3.2	0.1	<0.05	5	<0.5	<0.2
1961179	Soil	36	0.52	208	0.062	1	1.03	0.027	0.04	0.2	0.01	4.0	<0.1	<0.05	4	<0.5	<0.2
1961180	Soil	32	0.61	201	0.040	<1	1.44	0.015	0.06	0.2	0.01	4.9	0.2	0.06	5	<0.5	<0.2
1961181	Soil	38	0.61	216	0.070	1	1.24	0.017	0.06	0.3	0.01	4.4	0.1	<0.05	5	<0.5	<0.2
1961182	Soil	35	0.52	248	0.055	<1	1.61	0.012	0.05	0.2	0.02	5.9	0.2	<0.05	5	<0.5	<0.2
1961183	Soil	32	0.58	194	0.040	2	1.44	0.015	0.05	0.1	<0.01	3.9	0.2	<0.05	5	<0.5	<0.2
1961184	Soil	31	0.44	180	0.049	<1	1.59	0.012	0.05	0.2	<0.01	3.8	0.2	<0.05	6	<0.5	<0.2
1961185	Soil	32	0.48	243	0.040	1	1.51	0.020	0.06	0.2	<0.01	4.2	0.2	<0.05	5	<0.5	<0.2
1961186	Soil	31	0.55	221	0.055	<1	1.53	0.018	0.07	0.1	0.02	4.4	0.1	<0.05	5	0.7	<0.2
1961187	Soil	33	0.55	110	0.074	1	1.45	0.011	0.05	0.2	0.01	3.6	0.1	<0.05	5	<0.5	<0.2
1961188	Soil	31	0.50	180	0.066	1	1.53	0.012	0.05	0.2	<0.01	3.1	0.1	<0.05	6	<0.5	<0.2
1961189	Soil	30	0.51	223	0.041	3	1.13	0.016	0.05	0.2	0.04	3.9	0.1	0.09	4	0.6	<0.2
1961190	Soil	34	0.53	200	0.063	1	1.14	0.017	0.05	0.2	0.02	4.8	<0.1	0.06	4	<0.5	<0.2
1961191	Soil	32	0.55	155	0.039	4	1.46	0.011	0.06	0.1	<0.01	3.8	0.2	<0.05	5	<0.5	<0.2
1961192	Soil	40	0.61	149	0.076	2	1.54	0.013	0.07	0.2	0.01	3.7	0.1	<0.05	5	<0.5	<0.2
1961193	Soil	37	0.59	127	0.064	2	1.49	0.011	0.05	0.2	0.02	3.7	0.1	<0.05	5	<0.5	<0.2
1961194	Soil	30	0.51	210	0.020	1	1.71	0.013	0.05	0.1	0.02	5.0	0.3	<0.05	5	<0.5	<0.2
1961195	Soil	29	0.51	161	0.041	2	1.41	0.012	0.06	0.2	<0.01	3.8	0.2	0.07	5	<0.5	<0.2
1961196	Soil	34	0.61	227	0.037	2	1.47	0.022	0.07	0.2	0.05	7.7	0.2	<0.05	4	<0.5	<0.2
1961197	Soil	12	0.21	192	0.021	2	0.64	0.029	0.02	<0.1	0.02	1.5	<0.1	0.16	2	0.8	<0.2
1961198	Soil	33	0.54	147	0.076	2	0.95	0.018	0.05	0.2	0.01	3.8	<0.1	<0.05	4	<0.5	<0.2
1961199	Soil	27	0.41	185	0.040	<1	1.08	0.014	0.05	0.1	0.02	5.2	0.1	<0.05	4	<0.5	<0.2
1961200	Soil	36	0.57	180	0.061	2	1.69	0.012	0.06	0.2	<0.01	3.9	0.2	0.05	5	<0.5	<0.2
1961201	Soil	18	0.32	123	0.035	2	0.87	0.029	0.05	0.1	0.01	3.4	0.1	0.07	3	<0.5	<0.2
1961202	Soil	34	0.53	232	0.057	3	1.33	0.019	0.07	0.2	0.03	5.3	0.1	0.07	5	0.6	<0.2
1961203	Soil	44	0.77	221	0.070	4	2.09	0.022	0.12	0.2	0.03	9.5	0.3	0.10	6	<0.5	<0.2
1961204	Soil	30	0.58	155	0.041	1	1.43	0.020	0.08	0.1	0.02	5.0	0.2	<0.05	4	<0.5	<0.2
1961205	Soil	35	0.67	198	0.042	1	1.55	0.020	0.09	0.2	0.01	5.1	0.2	<0.05	5	<0.5	<0.2

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	Method	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201
	Analyte	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te
	Unit	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
	MDL	1	0.01	1	0.001	1	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2
1961206	Soil	31	0.64	123	0.049	3	1.17	0.030	0.10	0.2	0.03	5.6	0.2	0.09	4	<0.5	<0.2
1961207	Soil	30	0.60	163	0.049	2	1.41	0.034	0.10	0.2	0.02	6.2	0.2	0.08	4	<0.5	<0.2
1961208	Soil	25	0.39	325	0.017	3	1.17	0.021	0.05	0.1	0.04	3.3	0.1	0.16	3	2.2	<0.2
1961209	Soil	31	0.54	167	0.054	5	1.17	0.019	0.08	0.2	0.03	5.0	<0.1	0.10	4	<0.5	<0.2
1961210	Soil	29	0.41	118	0.078	3	1.03	0.014	0.12	0.1	<0.01	3.6	<0.1	<0.05	3	<0.5	<0.2
1961211	Soil	33	0.41	164	0.074	2	1.24	0.017	0.13	0.2	<0.01	4.1	0.1	<0.05	4	<0.5	<0.2
1961212	Soil	35	0.50	145	0.056	3	1.22	0.013	0.08	0.2	0.01	6.3	0.1	<0.05	4	0.6	<0.2
1961213	Soil	31	0.39	148	0.051	2	1.07	0.011	0.05	0.2	0.01	3.2	<0.1	<0.05	4	<0.5	<0.2
1961214	Soil	33	0.42	130	0.047	2	1.18	0.013	0.05	0.2	0.01	4.5	0.1	<0.05	4	0.7	<0.2
1961215	Soil	34	0.49	134	0.058	2	1.27	0.015	0.07	0.2	0.01	5.1	0.1	<0.05	4	<0.5	<0.2
1961216	Soil	29	0.58	128	0.040	5	0.95	0.021	0.08	0.2	0.03	6.0	0.2	0.06	4	0.6	<0.2
1961217	Soil	30	0.46	109	0.067	2	0.94	0.015	0.07	0.2	<0.01	3.4	<0.1	<0.05	3	<0.5	<0.2
1961218	Soil	31	0.50	145	0.060	2	1.10	0.015	0.06	0.2	0.03	4.7	<0.1	<0.05	4	0.5	<0.2
1961219	Soil	38	0.66	163	0.075	2	1.26	0.021	0.08	0.3	0.02	4.9	<0.1	<0.05	4	<0.5	<0.2
1961220	Soil	38	0.74	152	0.069	4	1.36	0.022	0.10	0.2	0.02	6.1	0.1	0.06	4	0.8	<0.2
1961221	Soil	29	0.50	133	0.046	4	1.08	0.018	0.08	0.2	0.02	5.2	0.2	0.05	4	0.6	<0.2
1961228	Soil	34	0.61	126	0.071	2	1.33	0.016	0.08	0.2	<0.01	4.9	0.1	<0.05	5	<0.5	<0.2
1961229	Soil	32	0.52	148	0.022	3	1.54	0.014	0.06	0.1	0.02	5.9	0.2	<0.05	5	0.6	<0.2
1961230	Soil	30	0.45	140	0.044	3	1.16	0.018	0.06	0.1	0.02	5.5	0.1	0.05	4	0.7	<0.2
1961231	Soil	33	0.49	207	0.062	2	1.28	0.017	0.07	0.2	0.01	3.8	0.1	0.07	5	<0.5	<0.2
1961232	Soil	34	0.45	132	0.071	3	1.46	0.014	0.11	0.2	<0.01	3.4	0.1	0.06	5	<0.5	<0.2
1961233	Soil	33	0.47	166	0.058	3	1.33	0.013	0.15	0.2	<0.01	3.5	0.1	<0.05	5	<0.5	<0.2
1961234	Soil	28	0.44	136	0.038	2	1.14	0.015	0.08	0.1	<0.01	3.3	0.1	<0.05	5	<0.5	<0.2
1961235	Soil	33	0.52	158	0.068	1	1.53	0.011	0.08	0.2	<0.01	3.7	0.1	0.06	5	<0.5	<0.2
1961236	Soil	35	0.60	190	0.069	2	1.37	0.016	0.07	0.3	0.01	5.5	0.1	0.08	5	<0.5	<0.2
1961237	Soil	38	0.53	206	0.067	1	1.32	0.017	0.08	0.2	0.01	5.2	<0.1	0.07	5	<0.5	<0.2
1961238	Soil	35	0.54	230	0.032	2	1.36	0.022	0.08	0.2	0.02	8.0	0.2	0.08	4	0.6	<0.2
1961239	Soil	35	0.51	189	0.041	1	1.55	0.011	0.09	0.2	<0.01	4.1	0.1	0.06	6	<0.5	<0.2
1961240	Soil	31	0.46	169	0.028	3	1.48	0.014	0.05	0.2	<0.01	5.0	0.2	<0.05	6	<0.5	<0.2
1961241	Soil	31	0.50	217	0.035	2	1.48	0.013	0.04	0.2	<0.01	3.7	0.2	<0.05	5	<0.5	<0.2

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Client: **Bill Mann**
19 Hayes Cres.
Whitehorse Yukon Y1A 0E1 Canada

Project: CDL
Report Date: September 27, 2019

CERTIFICATE OF ANALYSIS WHI19000534.1

	Method	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201
	Analyte	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te
	Unit	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
	MDL	1	0.01	1	0.001	1	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2
1961242	Soil	42	0.49	349	0.047	2	1.56	0.020	0.05	0.2	0.03	6.2	<0.1	0.10	5	<0.5	<0.2
1961243	Soil	33	0.56	188	0.051	1	1.38	0.015	0.06	0.2	0.02	4.6	0.2	0.06	5	<0.5	<0.2
1961244	Soil	39	0.66	259	0.042	2	1.58	0.029	0.08	0.2	0.04	8.7	0.2	0.05	5	0.7	<0.2
72910	Soil	15	0.43	96	0.038	2	3.05	0.019	0.12	<0.1	0.01	5.8	0.1	<0.05	8	<0.5	<0.2

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Whitehorse Yukon Y1A 0E1 Canada

Project: CDL
Report Date: September 27, 2019

QUALITY CONTROL REPORT WHI19000534.1

	Method	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201
	Analyte	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te
	Unit	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
	MDL	1	0.01	1	0.001	1	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2
Pulp Duplicates																	
1961055	Soil	38	0.74	93	0.076	3	2.77	0.068	0.18	0.3	0.01	7.1	0.7	0.07	9	3.3	<0.2
REP 1961055	QC	36	0.71	91	0.076	3	2.60	0.063	0.18	0.3	0.02	6.7	0.7	0.07	9	2.9	<0.2
1961164	Soil	34	0.62	226	0.046	2	1.86	0.019	0.07	0.2	0.02	4.7	0.3	<0.05	5	<0.5	<0.2
REP 1961164	QC	34	0.59	227	0.050	2	1.82	0.022	0.07	0.2	0.02	5.1	0.3	<0.05	6	<0.5	<0.2
1961200	Soil	36	0.57	180	0.061	2	1.69	0.012	0.06	0.2	<0.01	3.9	0.2	0.05	5	<0.5	<0.2
REP 1961200	QC	35	0.55	182	0.064	1	1.62	0.010	0.07	0.2	0.01	3.7	0.1	<0.05	5	<0.5	<0.2
1961236	Soil	35	0.60	190	0.069	2	1.37	0.016	0.07	0.3	0.01	5.5	0.1	0.08	5	<0.5	<0.2
REP 1961236	QC	35	0.59	202	0.069	2	1.39	0.016	0.07	0.3	0.01	5.1	0.1	0.06	5	<0.5	<0.2
72910	Soil	15	0.43	96	0.038	2	3.05	0.019	0.12	<0.1	0.01	5.8	0.1	<0.05	8	<0.5	<0.2
REP 72910	QC	16	0.47	102	0.040	3	3.05	0.021	0.13	<0.1	0.02	6.6	0.1	<0.05	8	<0.5	<0.2
Reference Materials																	
STD BVGEO01	Standard	182	1.27	260	0.220	2	2.14	0.197	0.84	5.3	0.10	6.0	0.6	0.68	8	5.1	1.1
STD DS11	Standard	58	0.84	402	0.096	7	1.20	0.078	0.43	3.2	0.27	3.5	4.9	0.35	5	1.7	4.7
STD DS11	Standard	61	0.83	378	0.091	9	1.11	0.080	0.38	3.4	0.27	3.8	5.0	0.33	5	2.9	4.7
STD DS11	Standard	61	0.91	372	0.095	5	1.20	0.078	0.40	2.8	0.26	3.7	5.1	0.26	5	2.6	4.4
STD DS11	Standard	57	0.83	380	0.095	7	1.15	0.073	0.40	3.2	0.25	3.5	5.1	0.24	5	2.1	4.8
STD OREAS262	Standard	44	1.25	244	0.003	3	1.36	0.067	0.31	0.2	0.16	3.2	0.4	0.33	4	<0.5	0.2
STD OREAS262	Standard	43	1.12	246	0.003	4	1.16	0.065	0.30	0.2	0.14	3.6	0.5	0.31	4	<0.5	<0.2
STD OREAS262	Standard	40	1.17	234	0.002	2	1.22	0.069	0.31	0.2	0.16	3.1	0.4	0.31	4	<0.5	0.3
STD OREAS262	Standard	43	1.07	257	0.003	5	1.26	0.063	0.28	0.2	0.16	3.7	0.5	0.22	4	<0.5	0.2
STD OREAS262	Standard	43	1.16	259	0.002	3	1.31	0.068	0.32	0.3	0.15	3.4	0.5	0.25	4	<0.5	0.2
STD BVGEO01 Expected		187	1.2963	260	0.233	3.8	2.347	0.1924	0.89	5.3	0.1	5.97	0.62	0.6655	7.37	4.84	1.02
STD DS11 Expected		61.5	0.85	385	0.0976		1.1795	0.0762	0.4	2.9	0.26	3.4	4.9	0.2835	5.1	2.2	4.56
STD OREAS262 Expected		41.7	1.17	248	0.0027	4	1.3	0.071	0.312	0.2	0.17	3.24	0.47	0.253	3.73	0.4	0.23
BLK	Blank	<1	<0.01	<1	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	<0.2
BLK	Blank	1	<0.01	<1	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	0.05	<1	<0.5	<0.2
BLK	Blank	<1	<0.01	<1	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	<0.2
BLK	Blank	<1	<0.01	<1	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	<0.2

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Client: **Bill Mann**
19 Hayes Cres.
Whitehorse Yukon Y1A 0E1 Canada

Project: CDL

Report Date: September 27, 2019

QUALITY CONTROL REPORT WHI19000534.1

		AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201
		Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te
		ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
		1	0.01	1	0.001	1	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2
BLK	Blank	<1	<0.01	<1	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	<0.2

APPENDIX B

BUREAU VERITAS MINERAL LABORATORIES Canada

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Bureau Veritas Commodities Canada Ltd.
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Client: **Bill Mann**
19 Hayes Cres.
Whitehorse Yukon Y1A 0E1 Canada

Submitted By:	Bill Mann
Receiving Lab:	Canada-Whitehorse
Received:	September 09, 2019
Report Date:	September 27, 2019
Page:	1 of 2

CERTIFICATE OF ANALYSIS WHI19000535.1

CLIENT JOB INFORMATION

Project:	CDL
Shipment ID:	
P.O. Number	
Number of Samples:	7

SAMPLE DISPOSAL

DISP-PLP	Dispose of Pulp After 90 days
DISP-RJT	Dispose of Reject After 60 days

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	7	Crush, split and pulverize 250 g rock to 200 mesh			WHI
AQ201	7	1:1:1 Aqua Regia digestion ICP-MS analysis	15	Completed	VAN
SHP01	7	Per sample shipping charges for branch shipments			VAN

ADDITIONAL COMMENTS

Invoice To: Bill Mann
19 Hayes Cres.
Whitehorse Yukon Y1A 0E1
Canada

CC: Lori Walton

KERRY JAY
Geochem Project Specialist

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Client: **Bill Mann**
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Report Date: September 27, 2019

CERTIFICATE OF ANALYSIS WHI19000535.1

	Method	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201
	Analyte	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te
	Unit	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
	MDL	1	1	0.01	1	0.001	1	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2
65707	Rock	7	16	0.50	28	0.075	2	0.91	0.002	0.09	5.3	<0.01	2.8	<0.1	0.06	5	2.7	0.7
65708	Rock	21	43	1.36	233	0.213	<1	3.52	0.384	0.33	0.7	<0.01	1.8	0.4	0.34	8	<0.5	<0.2
65709	Rock	11	7	0.28	129	0.032	4	2.96	0.066	0.13	0.6	<0.01	3.7	0.1	0.99	6	1.9	1.3
65710	Rock	19	10	1.66	234	0.141	3	2.02	0.094	0.14	0.2	<0.01	6.3	0.1	0.06	10	<0.5	<0.2
65711	Rock	5	33	0.80	56	0.143	<1	1.57	0.040	0.17	0.2	<0.01	9.3	<0.1	<0.05	8	1.4	<0.2
65712	Rock	3	2	0.05	8	0.002	1	0.28	0.002	<0.01	18.7	<0.01	0.9	<0.1	0.18	10	1.8	<0.2
72866	Rock	1	3	0.14	18	0.073	<1	1.60	0.651	0.05	0.1	<0.01	1.2	<0.1	<0.05	3	<0.5	<0.2

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Client: **Bill Mann**
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Whitehorse Yukon Y1A 0E1 Canada

Project: CDL
Report Date: September 27, 2019

QUALITY CONTROL REPORT   WHI19000535.1

	Method	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201
	Analyte	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te
	Unit	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
	MDL	1	1	0.01	1	0.001	1	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2
Reference Materials																		
STD DS11	Standard	17	55	0.79	361	0.082	5	1.10	0.066	0.38	2.9	0.25	3.0	5.0	0.26	5	1.7	4.5
STD OREAS262	Standard	14	38	1.08	230	0.002	2	1.12	0.065	0.28	0.2	0.14	3.0	0.4	0.24	4	0.6	<0.2
STD DS11 Expected		18.6	61.5	0.85	385	0.0976		1.1795	0.0762	0.4	2.9	0.26	3.4	4.9	0.2835	5.1	2.2	4.56
STD OREAS262 Expected		15.9	41.7	1.17	248	0.0027	4	1.3	0.071	0.312	0.2	0.17	3.24	0.47	0.253	3.73	0.4	0.23
BLK	Blank	<1	<1	<0.01	<1	<0.001	<1	<0.01	<0.001	<0.01	<0.1	0.01	<0.1	<0.1	<0.05	<1	<0.5	<0.2
Prep Wash																		
ROCK-WHI	Prep Blank	6	3	0.47	59	0.063	<1	0.82	0.079	0.09	<0.1	<0.01	2.5	<0.1	<0.05	3	<0.5	<0.2

APPENDIX C

XRF READING 2019 CDL PROJECT			NITON XL3T 2 SIGMA SOIL MODE								
SAMPLE	Reading No	Duration	Mo	Mo Error	Zr	Zr Error	Sr	Sr Error	U	U Error	Rb
1961151	1191	30.14	< LOD	6.41	120.19	8.46	189.49	8.19	< LOD	10.25	31.08
1961152	1192	30.13	< LOD	6.59	98.05	8.36	233.92	9.23	< LOD	11.63	31.8
1961153	1193	30.14	21.46	6.64	50.7	8.95	72.87	7.5	< LOD	13.12	9.17
1961154	1194	30.13	< LOD	6.95	128.83	9.3	179.61	8.63	< LOD	10.93	30.83
1961156	1195	30.14	< LOD	6.59	147.83	9.06	208.99	8.55	< LOD	10.92	32.55
1961155	1196	30.13	6.74	4.27	107	8.48	299.61	9.98	< LOD	11.45	34.76
OC 3	1197	30.15	< LOD	7.38	113.61	10.63	466.39	14.21	< LOD	14.93	51.43
OC 3	1198	30.12	< LOD	9.25	91.15	12.11	337.95	15.34	< LOD	15.96	38.89
OC 4	1199	30.13	< LOD	6.83	48.91	8.52	359.15	12.36	< LOD	14.39	54.7
LW HORN	1200	30.14	< LOD	10.86	462.15	21.31	295.59	15.24	< LOD	14.81	8.65
LW CHERT	1201	30.13	< LOD	8.76	112.77	13.34	589.79	19.06	< LOD	18.54	48.66
OC 5	1202	30.12	< LOD	8.33	223.95	16.48	1043.15	23.75	< LOD	19.3	52.5
OC 5	1203	30.15	< LOD	9.31	188.6	16.95	812.56	23.65	< LOD	20.43	50.19
1961053	1204	30.13	14.45	5.62	43.82	8.04	102.99	7.72	< LOD	11.6	11.49
OC 8	1205	30.12	< LOD	8.24	251.48	15.86	945.62	21.6	< LOD	19.03	48.91
OC 8	1206	30.13	< LOD	7.8	268.5	15.19	921.92	20.2	< LOD	18.11	88.87
OC 10	1207	30.13	< LOD	11.29	< LOD	11.64	8.57	4.44	< LOD	16.09	< LOD
OC 10	1208	30.15	11.94	7.92	< LOD	15.16	< LOD	5.65	< LOD	18.6	24.7
LW 01	1209	30.14	< LOD	8.13	262.63	16.9	1298.49	24.88	< LOD	19	60.05
LW 01b	1210	30.12	< LOD	9.54	257.03	18.88	1057.61	26.38	< LOD	22.89	50.87
LW 02	1211	30.13	< LOD	6.77	127.3	10.44	482.44	13.77	< LOD	14.27	58.31
1961157	1212	30.13	11.16	6.19	77.63	10.74	235.75	12.52	< LOD	14.54	17.97
1961158	1213	30.14	< LOD	6.44	113.49	8.66	274.48	9.75	< LOD	11.16	32.41
1961159	1214	30.11	< LOD	6.3	98.09	8.17	220.01	8.85	< LOD	11.01	41.05
1961160	1215	30.15	< LOD	6.58	141.14	8.91	192.05	8.23	< LOD	10.85	30.78
1961161	1216	30.07	< LOD	6.4	103.89	8.55	293.08	10.08	< LOD	11.09	31.08
1961162	1217	30.12	< LOD	6.5	104.75	8.92	361.39	11.24	< LOD	12.55	43.9
1961163	1218	30.13	< LOD	6.71	103.24	8.46	214.32	8.93	< LOD	11.09	31.57
1961164	1219	30.12	< LOD	6.15	107.86	7.94	209.29	8.23	< LOD	10.18	28.28
1961165	1220	30.13	< LOD	6.11	105.85	8.16	241.97	8.95	< LOD	9.41	25.01
1961166	1221	30.11	< LOD	6.46	107.56	8.7	253.27	9.64	< LOD	11.61	37.44
1961167	1222	30.15	< LOD	6.31	154.32	9.28	274.92	9.57	< LOD	10.47	24.11
1961168	1223	30.13	< LOD	5.44	78.13	6.1	116.9	5.56	< LOD	7.65	13.45
1961169	1224	30.12	< LOD	6.97	93.96	8.71	242.71	9.87	< LOD	11.05	25.96
1961170	1225	30.07	< LOD	6.41	131.02	8.66	209.73	8.48	< LOD	10.42	27.3
1961171	1226	30.14	< LOD	6.34	132.38	8.64	191.56	8.15	< LOD	10.55	29.5
1961172	1227	30.15	< LOD	6.05	169.99	8.61	150.78	6.81	< LOD	9.25	19.17
1961173	1228	30.07	< LOD	6.23	124	8.15	154.84	7.23	< LOD	9.6	22.07
1961174	1229	30.14	< LOD	6.45	130.26	9	258.98	9.53	< LOD	11.23	31.59
1961175	1230	30.12	< LOD	6.18	128.12	8.44	197.32	8.13	< LOD	9.98	26.97
1961176	1231	30.15	< LOD	6.55	148.91	9.21	178.69	8.15	< LOD	10.61	28.05
1961177	1232	30.15	< LOD	6.84	144.03	9.43	167.92	8.24	< LOD	11.76	27.24
1961178	1233	30.11	< LOD	6.6	175.24	9.99	252.34	9.59	< LOD	11.99	47.48
1961179	1234	30.12	< LOD	6.32	148.27	9.24	223.83	8.93	< LOD	10.79	32.79
1961180	1235	30.12	< LOD	6.48	104.71	8.46	260.41	9.55	< LOD	11.56	35.61
1961181	1236	30.09	< LOD	6.48	108.8	8.21	167.57	7.79	< LOD	9.71	29.4
1961182	1237	30.12	9.8	5.01	118.36	9.35	172.55	8.75	13.72	8.54	25.99
1961183	1238	30.14	< LOD	6.41	118.19	8.94	273.22	9.94	< LOD	11.66	38.88

XRF READING 2019 CDL PROJECT			NITON XL3T 2 SIGMA SOIL MODE								
SAMPLE	Reading No	Duration	Mo	Mo Error	Zr	Zr Error	Sr	Sr Error	U	U Error	Rb
	1287	30.42	< LOD	6.91	180.65	10.32	245.54	9.71	< LOD	11.68	39.36
	1288	30.51	< LOD	7	107.37	9.37	311.42	11.17	< LOD	12.82	33.7
	1289	30.46	< LOD	6.59	145.26	9.41	231.83	9.27	< LOD	11.85	36.06
	1290	30.52	8.44	4.64	311.74	11.89	229.58	8.95	< LOD	10.04	26.01
	1291	30.5	< LOD	6.85	296.24	11.69	214.63	8.74	< LOD	10.57	23.34
	1292	30.52	< LOD	6.07	165.19	8.64	154.96	6.98	< LOD	9.4	18.93
	1293	30.44	< LOD	6.95	217.86	10.85	196.47	8.77	< LOD	10.83	30.23
	1294	30.81	7.45	4.54	216.3	10.53	254.34	9.47	< LOD	10.84	33
	1295	30.75	< LOD	6.48	139.44	8.77	191.86	8.16	< LOD	10.41	29.38
	1296	30.4	< LOD	7.14	367.71	13.12	296.41	10.33	< LOD	11.11	31.62
	1297	30.43	10.22	5.91	54.16	9.42	156.48	9.98	< LOD	13.33	16.17
	1298	30.46	< LOD	9.23	171.02	14.83	468.32	17.92	< LOD	18.43	34.83
	1299	30.44	< LOD	7.93	130.48	12.83	673.67	18.5	< LOD	17.14	37.63
	1300	30.47	< LOD	7.78	78.02	13.93	1209.75	24.64	< LOD	17.63	29.79
	1301	180	< LOD	5.59	146.46	7.99	292.9	8.41	48.62	9.83	89.89
	1302	180	25.43	4.1	132.42	7.6	223.62	7.47	< LOD	12.6	95.94
	1303	180	< LOD	5.59	150.86	8.52	411.59	10.15	< LOD	11.99	72.6
	1304	180	< LOD	5.02	128.27	7.15	261.53	7.63	< LOD	9.52	50.02
	1305	30.44	11.06	6.11	239.92	15.6	587.19	18.35	< LOD	20.21	88.59
	1306	30.46	< LOD	8.75	258.44	17.89	1244.42	26.13	< LOD	20.54	54.18
	1307	30.49	< LOD	7.11	121.07	9.96	328.91	11.69	< LOD	16.26	110.59
	1308	30.41	< LOD	7.04	123.42	9.99	298.21	11.25	< LOD	15.79	104.94
	1309	30.52	< LOD	8.18	293.06	15.06	513.59	15.96	< LOD	16.58	66.7
	1310	180	< LOD	5.36	276.63	10.06	596.54	11.47	12.37	7.98	57.39
	1311	30.44	< LOD	8.59	279.19	15.41	506.45	16.5	< LOD	16.84	57.73
	1312	30.8	10.66	6.32	234.92	15.47	448.23	16.7	< LOD	17.64	38.71
	1313	30.5	< LOD	7.45	271.36	14.83	784.5	18.68	< LOD	15.28	41.74
	1314	30.81	< LOD	8.14	< LOD	11.88	265.26	12.82	< LOD	11.5	< LOD
65711	1315	180	6.12	3.67	96.97	6.71	191.82	6.91	< LOD	8.54	28.23
65711	1316	30.43	< LOD	6.68	78.65	7.86	184.08	8.43	< LOD	10.19	16.87
65711	1317	30.07	< LOD	7.78	75.56	9.32	210.22	10.53	< LOD	12.52	21.9
65711	1318	30.13	18.19	6.09	120.21	11.39	249.55	12.13	< LOD	15.79	46.29
65710	1319	30.14	< LOD	8.17	208.66	14.52	767.35	19.48	< LOD	17.54	38.68
CO BROWN	1320	30.13	< LOD	7.89	94.78	11.69	579.64	17.2	< LOD	15.38	39.22
CO BROWN	1321	30.14	< LOD	7.33	111.19	9.68	187.58	9.47	< LOD	18.3	112.07
CO 206	1322	30.12	< LOD	8.09	128.29	11.72	431.22	14.85	< LOD	14.75	45.38
1961202	1323	30.11	< LOD	6.2	121.84	8.29	207.51	8.27	< LOD	9.61	28.09
1961203	1324	30.13	< LOD	6.62	110.82	9.04	248.99	9.89	< LOD	11.78	38.75
1961204	1325	30.11	< LOD	6.58	151.21	9.7	268.39	9.98	< LOD	11.59	34.17
1961205	1326	30.13	< LOD	6.89	102.84	9.18	311.82	11.08	< LOD	11.95	40.53
1961206	1327	30.12	< LOD	6.72	130.26	9.61	333.14	11.16	< LOD	11.63	46.04
1961207	1328	30.15	< LOD	6.67	155.31	9.69	267.94	9.9	< LOD	11.22	36.39
1961208	1329	30.14	6.89	4.11	65.8	7.07	223.95	8.46	< LOD	9.96	16.97
1961209	1330	30.07	< LOD	6.39	129.41	9.03	280.27	9.88	< LOD	10.61	33.25
1961210	1331	30.13	< LOD	6.84	169.45	10.43	297.05	10.76	< LOD	12.38	50.07
1961211	1332	30.13	< LOD	6.92	148.23	9.97	297.73	10.72	< LOD	12.33	40.95
1961212	1333	30.14	< LOD	7.04	134.31	9.6	223.8	9.56	< LOD	11.38	46.18
1961213	1334	30.12	< LOD	7.03	190.05	10.73	249.21	9.98	< LOD	12.33	38.33

XRF READING											
SAMPLE	Rb Error	Th	Th Error	Pb	Pb Error	Se	Se Error	As	As Error	Hg	Hg Error
1961151	4.09	< LOD	6.58	< LOD	8.91	< LOD	3.79	8.45	5.11	< LOD	8.83
1961152	4.35	< LOD	7.25	< LOD	9.84	< LOD	4.57	< LOD	7.99	< LOD	9.46
1961153	4.05	< LOD	11.05	< LOD	12.03	< LOD	7.41	< LOD	9.25	< LOD	18
1961154	4.4	< LOD	7.43	< LOD	10.14	< LOD	4.3	< LOD	7.61	< LOD	9.93
1961156	4.22	< LOD	6.4	< LOD	8.19	< LOD	3.76	7.23	4.69	< LOD	9.51
1961155	4.32	< LOD	7.25	11.26	6.47	< LOD	3.98	9.92	5.52	< LOD	8.94
OC 3	5.84	< LOD	8.44	11.91	7.6	< LOD	4.62	< LOD	7.96	< LOD	10.87
OC 3	6.42	< LOD	10.15	15.59	10.1	< LOD	6.63	< LOD	12.16	< LOD	15.56
OC 4	5.86	< LOD	7.98	22.97	8.63	< LOD	4.48	< LOD	10.13	< LOD	9.79
LW HORN	4.58	< LOD	12.35	< LOD	15.3	< LOD	6.29	< LOD	11.21	< LOD	16.37
LW CHERT	6.93	< LOD	10.3	< LOD	13.49	< LOD	6.31	< LOD	10.75	< LOD	14.29
OC 5	6.86	< LOD	10.41	36.91	11.47	< LOD	5.37	31	10.77	< LOD	14.5
OC 5	7.5	< LOD	12.66	29.93	12.17	< LOD	5.93	< LOD	13.49	< LOD	15.39
1961053	3.84	41.97	9.84	< LOD	13.25	8.56	4.81	16.49	7.84	< LOD	14.35
OC 8	6.52	< LOD	9.87	21.55	9.44	< LOD	4.97	< LOD	9.87	< LOD	11.89
OC 8	7.5	< LOD	9.94	< LOD	12.04	< LOD	4.87	< LOD	9.55	< LOD	11.89
OC 10	6.78	< LOD	15.54	28.5	14	< LOD	9.14	< LOD	17.14	< LOD	23.82
OC 10	7.65	566.7	44.37	< LOD	35.53	25.08	11.67	117.29	23.27	30.85	18.18
LW 01	6.81	12.09	7.33	< LOD	12.77	< LOD	5.05	< LOD	10.33	< LOD	11.44
LW 01b	7.73	< LOD	12.84	22.68	11.32	< LOD	6.21	< LOD	13.54	< LOD	13.19
LW 02	5.81	< LOD	6.87	< LOD	8.7	< LOD	4.07	< LOD	6.66	< LOD	9.54
1961157	4.85	< LOD	10.7	15.62	9.83	< LOD	6.24	< LOD	11.12	< LOD	15.49
1961158	4.25	< LOD	7.34	13.25	6.78	< LOD	4.07	< LOD	8.18	< LOD	9
1961159	4.61	< LOD	6.82	11.21	6.47	< LOD	3.54	12.12	5.78	< LOD	8.76
1961160	4.16	8.54	5.17	< LOD	9.55	< LOD	4.06	< LOD	7.71	< LOD	8.93
1961161	4.18	< LOD	6.57	< LOD	9.04	< LOD	3.67	< LOD	7.52	< LOD	8.99
1961162	4.88	< LOD	7.32	< LOD	9.17	< LOD	3.76	9.28	5.28	< LOD	8.91
1961163	4.3	< LOD	7.3	< LOD	8.93	< LOD	4.13	< LOD	7.49	< LOD	9.21
1961164	3.85	< LOD	5.96	9.13	5.92	< LOD	3.59	8.01	5.03	< LOD	8.79
1961165	3.64	< LOD	6.76	< LOD	7.79	< LOD	3.49	8.34	4.58	< LOD	9.04
1961166	4.59	< LOD	7.65	14.94	7.09	< LOD	3.82	< LOD	8.33	< LOD	8.92
1961167	3.74	8.03	5.02	11.05	6.36	< LOD	3.34	< LOD	7.53	< LOD	8.83
1961168	2.62	< LOD	5.3	8.5	5.21	< LOD	3.18	< LOD	5.49	< LOD	6.76
1961169	4.14	< LOD	7.03	< LOD	9.66	< LOD	4.11	< LOD	7.99	< LOD	9.9
1961170	3.91	< LOD	6.88	11.94	6.52	< LOD	3.88	< LOD	7.68	< LOD	8.87
1961171	4.04	< LOD	7.1	< LOD	8.49	< LOD	4.13	< LOD	6.72	< LOD	8.55
1961172	3.26	< LOD	6.62	< LOD	7.67	< LOD	3.69	< LOD	6.22	< LOD	7.69
1961173	3.54	< LOD	6.39	< LOD	9	< LOD	3.76	< LOD	6.63	< LOD	8.35
1961174	4.24	10.49	5.38	< LOD	8.95	< LOD	3.74	< LOD	7.43	< LOD	8.65
1961175	3.82	< LOD	6.85	< LOD	8.43	< LOD	3.87	< LOD	6.86	< LOD	8.27
1961176	4.07	< LOD	6.95	< LOD	9.62	< LOD	3.63	< LOD	7.52	< LOD	9.08
1961177	4.29	< LOD	7.06	< LOD	9.52	< LOD	4.31	< LOD	8.03	< LOD	9.85
1961178	5	7.93	5.27	< LOD	8.34	< LOD	4.27	11.61	5.08	< LOD	9.3
1961179	4.25	< LOD	7.4	< LOD	8.05	< LOD	3.91	13.65	5.16	< LOD	8.93
1961180	4.44	< LOD	7.38	12.33	6.7	< LOD	3.9	< LOD	8.29	< LOD	9.31
1961181	3.99	< LOD	7.36	< LOD	9.24	< LOD	4.06	< LOD	7.27	< LOD	9.03
1961182	4.5	< LOD	8.33	< LOD	10.21	< LOD	4.73	< LOD	7.83	< LOD	10.92
1961183	4.63	< LOD	7.15	15.55	7.08	< LOD	3.91	< LOD	8.31	< LOD	9.97

XRF READING											
SAMPLE	Rb Error	Th	Th Error	Pb	Pb Error	Se	Se Error	As	As Error	Hg	Hg Error
	4.75	< LOD	7.64	< LOD	9.47	< LOD	4.52	< LOD	7.45	< LOD	10.06
	4.72	< LOD	7.06	< LOD	10.22	< LOD	4.7	< LOD	8.47	< LOD	10.25
	4.58	< LOD	7.6	< LOD	9.78	< LOD	3.91	< LOD	7.87	< LOD	9.29
	3.83	< LOD	7.45	< LOD	9.29	< LOD	3.82	< LOD	7.12	< LOD	9.56
	3.79	< LOD	6.81	< LOD	8.29	< LOD	4.11	8.27	4.8	< LOD	9.57
	3.28	9.04	4.76	< LOD	8.05	< LOD	3.16	< LOD	5.99	< LOD	8.26
	4.27	< LOD	6.59	< LOD	9.36	< LOD	4.24	< LOD	7.27	< LOD	9.61
	4.25	< LOD	6.81	< LOD	8.18	< LOD	3.72	8.72	4.83	< LOD	9.48
	4.02	< LOD	6.63	10.91	6.36	< LOD	3.7	< LOD	7.42	< LOD	8.86
	4.26	< LOD	6.32	< LOD	8.79	< LOD	3.92	< LOD	7.41	< LOD	9.24
	4.6	58.85	12.04	17.81	10.46	< LOD	6.62	15.46	9	< LOD	15.14
	6.47	< LOD	9.36	< LOD	13.8	< LOD	6.38	< LOD	11.09	< LOD	15.62
	5.85	< LOD	8.83	24.41	9.71	< LOD	4.9	< LOD	11.69	< LOD	11.74
	5.47	< LOD	9.49	< LOD	11.69	< LOD	5.47	< LOD	9.86	< LOD	12.3
	5.76	36.32	6.59	33.29	7.58	< LOD	4.24	< LOD	8.86	< LOD	13.4
	5.69	49.21	7.47	48.94	8.69	< LOD	4.13	< LOD	9.74	< LOD	8.93
	5.11	13.23	5.22	16.55	6.32	< LOD	3.88	< LOD	7.07	< LOD	9.04
	4.01	< LOD	5.61	17.09	5.7	< LOD	3.19	78.17	7.81	< LOD	8.17
	8.56	30.12	10.26	67.8	14.98	9.36	4.92	< LOD	17.57	< LOD	12.57
	7.1	12.07	7.79	< LOD	13.32	< LOD	5.36	< LOD	10.2	< LOD	12.66
	7.75	13.28	6.79	19.18	8.44	< LOD	4.8	< LOD	9.03	< LOD	9.92
	7.61	18.19	7.25	17.28	8.21	< LOD	4.29	< LOD	9.44	< LOD	11.18
	6.93	< LOD	10.52	28.84	10.2	< LOD	5.23	< LOD	12.38	< LOD	11.19
	4.48	9.55	4.48	< LOD	6.95	< LOD	3.43	< LOD	5.4	< LOD	7.58
	6.83	< LOD	10.64	29.63	10.82	< LOD	6.84	< LOD	12.51	< LOD	13.35
	6.44	< LOD	12.1	27.39	11.02	< LOD	5.63	< LOD	13.98	< LOD	14.45
	5.53	< LOD	9.66	14.04	8.08	< LOD	4.32	< LOD	8.83	< LOD	11.43
	4.51	< LOD	7.67	< LOD	12.81	< LOD	6.23	< LOD	9.44	< LOD	14.19
65711	3.36	< LOD	6.35	93.69	10.48	< LOD	3.67	37.68	9.25	< LOD	8.38
65711	3.51	< LOD	6.87	< LOD	7.72	< LOD	3.73	< LOD	6.66	< LOD	9.29
65711	4.53	< LOD	8.54	< LOD	10.83	< LOD	5.46	56.56	10.08	< LOD	11.72
65711	6.39	< LOD	11.22	65.27	14.26	< LOD	5.97	23.17	12.17	< LOD	12.98
65710	5.88	< LOD	10.22	< LOD	11.86	< LOD	5.48	< LOD	9.7	< LOD	13.11
CO BROWN	5.73	< LOD	9.26	< LOD	11.83	< LOD	5.36	< LOD	9.13	< LOD	12.57
CO BROWN	8.38	19.27	7.75	20.7	9.17	< LOD	5.34	< LOD	10.39	< LOD	11.31
CO 206	5.93	< LOD	8.77	< LOD	11.64	< LOD	4.79	< LOD	9.1	< LOD	13.01
1961202	3.8	< LOD	6.47	< LOD	8.29	< LOD	3.56	< LOD	6.79	< LOD	8.48
1961203	4.78	< LOD	7.48	< LOD	8.91	< LOD	3.82	12.33	5.55	< LOD	9.21
1961204	4.48	< LOD	6.87	< LOD	8.93	< LOD	4.14	< LOD	7.45	< LOD	9.28
1961205	4.88	< LOD	6.41	12.18	7.14	< LOD	4.74	< LOD	8.57	< LOD	9.6
1961206	4.97	< LOD	7.43	14.68	7.25	< LOD	4.38	< LOD	8.48	< LOD	10.04
1961207	4.5	< LOD	6.25	11.62	6.63	< LOD	3.87	< LOD	8.11	< LOD	9.49
1961208	3.3	< LOD	6.44	< LOD	8.63	4.33	2.79	< LOD	6.82	< LOD	8
1961209	4.21	< LOD	7.21	< LOD	8.51	< LOD	4.03	9.33	4.96	< LOD	9
1961210	5.29	< LOD	8.08	11.43	6.95	< LOD	3.96	< LOD	8.48	< LOD	10.21
1961211	4.9	< LOD	7.76	16.85	7.61	< LOD	4.4	< LOD	8.44	< LOD	9.59
1961212	5.11	< LOD	7.51	< LOD	10.17	< LOD	4.48	< LOD	8.22	< LOD	9.71
1961213	4.85	< LOD	8.05	< LOD	9.46	< LOD	4.18	9.84	5.55	< LOD	10.77

XRF READING										
SAMPLE	Zn	Zn Error	W	W Error	Cu	Cu Error	Ni	Ni Error	Co	Co Error
1961151	64.86	14.67	< LOD	59.54	< LOD	26.26	< LOD	52.6	147.55	90.04
1961152	101.31	17.65	< LOD	65.74	< LOD	25.96	< LOD	53.6	171.74	95.25
1961153	194.97	32.36	< LOD	123.29	60.19	34.54	< LOD	83.39	< LOD	94.62
1961154	74.83	16.73	< LOD	69.45	42.88	21.38	< LOD	59.44	133.84	87.92
1961156	68.33	14.85	< LOD	61.83	40.79	18.67	< LOD	51.5	190.45	78.48
1961155	83.99	15.74	< LOD	60.85	37.29	17.85	< LOD	50.56	229.97	87.16
OC 3	65.74	17.31	< LOD	78.01	< LOD	32.65	< LOD	62.96	< LOD	169.04
OC 3	47.59	21.42	< LOD	113.26	< LOD	48.51	< LOD	90.74	< LOD	251.55
OC 4	44.11	14.38	< LOD	68.43	< LOD	28.12	< LOD	60.8	< LOD	120.27
LW HORN	< LOD	34.75	< LOD	115.15	< LOD	52.1	207.16	81.89	< LOD	725.76
LW CHERT	< LOD	24.6	< LOD	96.25	< LOD	44.6	< LOD	82.71	< LOD	266.24
OC 5	47.9	19.76	< LOD	101.25	58.28	28.42	< LOD	80.5	< LOD	271.73
OC 5	88.65	25.82	< LOD	102.81	< LOD	48.49	< LOD	93.76	< LOD	325.49
1961053	< LOD	24.43	< LOD	94.41	489.29	51.34	< LOD	82.56	618.9	264.21
OC 8	41.36	19.29	< LOD	77.87	< LOD	34.8	< LOD	76.06	< LOD	350.08
OC 8	23.71	13.59	< LOD	80.1	< LOD	29.69	< LOD	61.68	< LOD	134.17
OC 10	< LOD	54.39	< LOD	165.85	1394.28	114.23	< LOD	146.49	< LOD	869.25
OC 10	< LOD	48.93	< LOD	159.27	1204.15	110.83	< LOD	192.6	< LOD	1312.22
LW 01	157.09	25.29	< LOD	78.01	49.08	25	< LOD	71.95	< LOD	243.54
LW 01b	76.63	23.22	< LOD	100	< LOD	46.92	< LOD	86.04	< LOD	239.91
LW 02	< LOD	16.44	< LOD	66.14	< LOD	26.35	< LOD	54.84	< LOD	93.91
1961157	162.84	28.95	< LOD	104.68	< LOD	45.58	< LOD	80.14	< LOD	143.22
1961158	78.25	15.68	< LOD	61.26	34.94	18.24	< LOD	53.83	174.8	92
1961159	20.95	11.14	< LOD	62.41	< LOD	25.52	< LOD	54.62	196.64	88.95
1961160	34.94	12.5	< LOD	62.57	36.45	18.27	< LOD	48.22	< LOD	132.9
1961161	43.65	13.17	< LOD	62.5	< LOD	25.36	< LOD	52.16	213.93	91.8
1961162	125.6	18.74	< LOD	63.36	< LOD	26.89	< LOD	55.27	< LOD	131.58
1961163	35.44	12.93	< LOD	62.09	43.52	19.76	< LOD	55.24	< LOD	147.82
1961164	35.13	12.02	71.11	42.77	< LOD	23.76	< LOD	46.9	< LOD	117.53
1961165	52.44	13.5	< LOD	62.04	31.21	17.2	< LOD	47.17	< LOD	120.8
1961166	41.44	13.33	< LOD	65.25	42.4	19.59	< LOD	53.08	< LOD	128.51
1961167	244.77	24.32	< LOD	61.17	465.19	38.05	< LOD	48	163.23	67.61
1961168	25.59	8.94	< LOD	44.97	22.64	13.38	< LOD	39.53	80.28	43.13
1961169	26.46	12.57	< LOD	70.62	38.49	20.73	< LOD	59.15	< LOD	127.1
1961170	40.83	12.62	< LOD	60.05	27.66	17.28	< LOD	48.54	178.32	82.82
1961171	24.36	10.97	< LOD	57.92	< LOD	24.78	< LOD	50.18	115.45	76.12
1961172	19.76	9.43	< LOD	55	< LOD	21.48	< LOD	45.78	82.92	45.11
1961173	17.16	10.07	< LOD	58.3	< LOD	23.61	< LOD	51.15	187.23	75.9
1961174	48.99	13.59	< LOD	60.89	36.35	18.44	< LOD	52.28	< LOD	133.69
1961175	20.37	10.68	< LOD	58.89	29.91	17.18	< LOD	49.76	< LOD	124.32
1961176	41.05	13.18	< LOD	63.37	< LOD	27.44	77.14	40.13	158.1	93.15
1961177	30.99	12.74	< LOD	67.88	< LOD	28.74	< LOD	55.23	< LOD	119.58
1961178	62.1	14.79	< LOD	61.36	< LOD	26.55	< LOD	55.31	< LOD	136.39
1961179	28.93	11.8	< LOD	57.83	< LOD	25.97	< LOD	51.95	< LOD	134.56
1961180	67.82	15.03	< LOD	61.44	33.41	18.22	< LOD	52.75	140.74	91.55
1961181	55	13.99	< LOD	64.58	< LOD	26.56	< LOD	51.72	139.1	73.4
1961182	86.74	18.23	< LOD	72.24	42.78	22.23	< LOD	56.32	195.78	89.86
1961183	67.29	15.45	< LOD	67.97	28.01	18.39	< LOD	54.76	149.56	92.76

XRF READING										
SAMPLE	Zn	Zn Error	W	W Error	Cu	Cu Error	Ni	Ni Error	Co	Co Error
	63.46	15.46	< LOD	68.75	< LOD	26.7	< LOD	57.89	167.99	92.11
	32.52	13.66	< LOD	71.53	39.05	20.91	< LOD	60.82	< LOD	163.51
	63.27	15	< LOD	60.51	< LOD	25.59	< LOD	55.67	170.38	97.8
	28.12	11.79	< LOD	66.02	36.46	18.47	< LOD	52.81	223.07	76.95
	37.97	12.43	< LOD	62	36.03	18.56	< LOD	51.94	204.25	68.03
	73.72	13.96	< LOD	52.03	34.14	16.53	< LOD	46.67	137.58	64.33
	38.09	13.05	< LOD	65.4	< LOD	28.42	< LOD	54.96	207.36	74.25
	66.65	14.93	< LOD	67.05	50.51	19.73	< LOD	54.67	169.15	72.25
	35.72	12.24	< LOD	61.54	< LOD	25.61	< LOD	52.02	< LOD	119.91
	66.84	15.2	< LOD	67.88	65.47	21.1	< LOD	53.66	217.63	74.78
	< LOD	32.48	< LOD	105.78	663.74	62.58	< LOD	95.39	550.75	312
	41.93	20.74	< LOD	109.54	< LOD	44.33	< LOD	85.46	< LOD	268.34
	67.51	19.05	< LOD	78.16	< LOD	33.73	< LOD	70.99	< LOD	211.76
	36.69	17.21	< LOD	92.17	< LOD	34.69	< LOD	74.12	299.31	154.74
	3218.69	76.44	< LOD	124.26	24617.22	216.16	< LOD	55.96	< LOD	151.75
	274.35	25.59	< LOD	68.3	3824.64	87.79	< LOD	49.61	< LOD	144.69
	90.27	16.5	< LOD	58.59	144.8	23.35	109.38	39.07	< LOD	256.35
	121.79	16.14	< LOD	52.61	122.04	20.16	65.07	32.72	< LOD	204.01
	88.99	28.22	< LOD	91.37	1182.08	77.99	228.03	63.05	< LOD	446.06
	30.77	16.89	< LOD	91.41	< LOD	35.99	< LOD	76.6	< LOD	205.06
	88.35	18.05	< LOD	70.25	215.09	32.26	< LOD	58.61	< LOD	91.05
	92.81	18.91	< LOD	77	218.03	32.91	66.26	41.8	< LOD	112.49
	34.1	18.67	< LOD	72.95	336.15	42.2	< LOD	74.13	< LOD	339.32
	57.2	12.11	< LOD	49.17	< LOD	22.39	< LOD	47.45	< LOD	156
	< LOD	29.5	< LOD	89.31	269.62	40.96	< LOD	76.79	< LOD	369.18
	< LOD	36.95	< LOD	100.72	641.95	62.39	115.87	67.35	< LOD	498.3
	40.45	15.69	< LOD	80.45	< LOD	31.64	< LOD	64.83	< LOD	178.01
	< LOD	22	< LOD	94.37	< LOD	38.37	< LOD	74.13	< LOD	52.9
65711	269.97	22.66	< LOD	61.2	186.61	24.35	68.69	36.92	< LOD	217.87
65711	30.33	12.15	< LOD	65.3	< LOD	27.08	< LOD	53.33	< LOD	95.93
65711	53.77	19.72	< LOD	76.46	< LOD	35.37	< LOD	77.99	< LOD	328.23
65711	177.45	29.56	< LOD	87.04	119.75	33.76	< LOD	73.53	< LOD	309.21
65710	45.5	16.97	< LOD	79.2	46.16	25.39	< LOD	70.14	< LOD	194.93
CO BROWN	55.55	20.33	< LOD	86.48	< LOD	34.12	120.36	53.71	< LOD	328.83
CO BROWN	20.11	12.57	< LOD	74.92	< LOD	29.91	< LOD	57.74	< LOD	97.32
CO 206	87.91	21.57	< LOD	86.5	< LOD	31.96	< LOD	76.58	< LOD	269.93
1961202	70.57	14.57	< LOD	55.99	40.81	17.75	< LOD	48.09	181.97	87.21
1961203	78.02	16.91	< LOD	66	43.71	20.81	< LOD	62.16	203.86	113.5
1961204	53.45	14.33	< LOD	67.55	28.36	18.72	< LOD	54.28	191.35	79.43
1961205	43.27	14.3	< LOD	69.3	< LOD	29.32	< LOD	60.63	< LOD	158.16
1961206	72.04	16.21	< LOD	68.49	41.21	19.98	< LOD	59.3	174.73	103.24
1961207	61.31	14.89	< LOD	69.57	33.69	18.97	< LOD	53.76	162.66	74.8
1961208	37.63	11.79	< LOD	55.64	48.65	18.03	< LOD	48.68	143.8	76.38
1961209	22.8	11.37	< LOD	63.67	41.17	18.77	< LOD	52.82	169.04	85.45
1961210	50.56	14.98	< LOD	74.43	< LOD	28.61	< LOD	55.57	185.56	99.29
1961211	43.05	13.82	< LOD	63.94	< LOD	29.06	< LOD	56.95	144.49	95.89
1961212	36.5	14.09	< LOD	70.41	35.37	20.67	< LOD	59.74	< LOD	171.3
1961213	72.25	16.75	< LOD	73.8	< LOD	27.63	< LOD	61.12	< LOD	158.12

XRF READING											
SAMPLE	Fe	Fe Error	Mn	Mn Error	Cr	Cr Error	V	V Error	Ti	Ti Error	Sc
1961151	13826	310.41	200.04	63.7							
1961152	14785.97	327.38	256.26	69.4							
1961153	2576.21	195.27	199.15	84.38							
1961154	11072.93	300.68	153.01	62.18							
1961156	9792.85	260.94	182.32	59.85							
1961155	12775.62	292.1	194.83	61.11							
OC 3	18996.96	408.25	488.99	96.52							
OC 3	28361.87	628.54	192.75	98.68							
OC 4	9832.98	291.35	317.67	79.45							
LW HORN	214010.6	1822.04	1173.57	238.81							
LW CHERT	32656.06	638.16	403.06	114.73							
OC 5	37014.61	639.53	1165.71	158.55							
OC 5	44241.1	787.23	1108.35	177.88							
1961053	79701.84	928.4	506.89	129.32							
OC 8	75758.5	871.07	519.82	124.81							
OC 8	10940.69	315.87	375.29	87.83							
OC 10	231207.8	2167.65	1599.69	300.47							
OC 10	466784.5	3180.53	2010.84	386.32							
LW 01	35439.12	588.51	1447.3	161.87							
LW 01b	24598.29	576.61	1292.44	178.5							
LW 02	5848.45	217.58	127.11	57.25							
1961157	8331.53	333.47	280.8	93.29							
1961158	14370.21	315.51	269.44	69.13							
1961159	12822.35	301.07	207.77	64.03							
1961160	13935.36	311.53	307.49	72.09							
1961161	13894.33	310.93	285.5	69.79							
1961162	13025.74	303.19	223.27	65.03							
1961163	15958.97	343.07	307.12	75.21							
1961164	11671.29	273.92	213.16	61.04							
1961165	12329.88	285.52	289.44	68.56							
1961166	12287.79	300.23	200.86	64.46							
1961167	7292.24	221.7	256.98	63.59							
1961168	3780.07	140.44	258.3	53.94							
1961169	10592.75	291.64	270.62	72.59							
1961170	11501.08	279.74	114.58	54.17							
1961171	9881.25	260.46	163.54	58.05							
1961172	3382.63	144.54	121.3	46.88							
1961173	9619.7	252.31	168.1	57.03							
1961174	14018.42	313.3	249.56	67.42							
1961175	12773.53	291.07	328	71.09							
1961176	14064.9	320.56	309.06	74.39							
1961177	9621.62	276.42	158.22	60.52							
1961178	13675.42	315.32	245.01	69.25							
1961179	13860.07	313.25	304.54	72.36							
1961180	14363.34	316.81	241.14	67.53							
1961181	8481.57	246.31	177.84	59.36							
1961182	10264.9	299.34	244.71	73.59							
1961183	14156.72	320	232.23	67.28							

XRF READING											
SAMPLE	Fe	Fe Error	Mn	Mn Error	Cr	Cr Error	V	V Error	Ti	Ti Error	Sc
	12919.72	315.07	675.47	99.5	< LOD	118.74	< LOD	26.17	< LOD	312.49	< LOD
	17939.12	379.82	366.56	83.71	< LOD	130.9	< LOD	20.35	< LOD	240.45	< LOD
	15425.79	337.04	275.94	72.12	< LOD	156.81	< LOD	199.32	< LOD	606.56	< LOD
	9025.38	250.97	221.06	62.11	< LOD	95.64	< LOD	166.8	< LOD	504.81	< LOD
	6565.46	216.4	258.75	65.6	< LOD	95.71	< LOD	261.34	< LOD	648.22	< LOD
	7399.61	214.05	321.83	65.77	< LOD	130.86	< LOD	3.88	< LOD	24.47	< LOD
	7295.16	238.49	209.29	63.71	< LOD	32.93	< LOD	8.68	< LOD	70.55	< LOD
	8005.67	238.26	237.03	64.15	< LOD	103.44	< LOD	142.7	< LOD	205.59	< LOD
	11418.43	279.92	290.48	69.75	< LOD	53.09	< LOD	141.32	< LOD	417.67	< LOD
	8009.51	241.67	332.35	72.69	< LOD	201.94	< LOD	9.64	< LOD	66.93	< LOD
	99939.56	1106.78	504.78	145.98	< LOD	123.14	< LOD	446.22	< LOD	1016.4	< LOD
	29389.25	637.87	709.1	144.33	< LOD	170.24	< LOD	461.5	< LOD	981.71	< LOD
	24668.54	505.11	685.43	120.7	< LOD	31.17	< LOD	386.11	< LOD	1160.84	< LOD
	27941.52	536.1	775.71	127.37	< LOD	13.19	< LOD	28.34	< LOD	342.96	< LOD
	27132.92	363.37	5168.8	200.5	67.31	24.58	197.12	58.11	1436.97	134.59	< LOD
	26564.87	361.14	212.41	59.33	< LOD	29.39	164.86	46.92	1829.9	113.46	< LOD
	79829.79	633.35	1755.2	132.78	< LOD	34.59	115.17	44.19	1019.87	103.38	81.34
	57755.04	503.88	571.26	81.29	< LOD	36.25	149.59	59.95	1539.22	141.41	< LOD
	112713.6	1140.79	195.28	124.91	< LOD	165.83	< LOD	49.14	< LOD	594.67	< LOD
	23457.24	513.46	380.29	103.97	< LOD	33.15	< LOD	201.24	< LOD	722.79	< LOD
	5771.26	221.15	137.78	60.27	< LOD	91.29	< LOD	249.95	< LOD	277.5	< LOD
	9287.62	282.09	295.86	77.13	< LOD	5.41	< LOD	35.64	< LOD	430.43	< LOD
	65931.87	811.09	602.79	127.78	< LOD	189.83	< LOD	174.57	< LOD	749.18	< LOD
	32000.6	378.15	699.65	82.16	41.95	26.39	189.64	90.94	6137.28	234.36	< LOD
	72899.37	887.82	518.81	129.49	< LOD	121.14	< LOD	320.75	< LOD	948.18	< LOD
	119518.8	1221.75	2150.76	235.52	< LOD	94.32	< LOD	310.5	< LOD	760.02	< LOD
	20113.04	428.11	971.03	128.67	< LOD	162.41	< LOD	387.36	< LOD	949.14	< LOD
	852.7	111.04	< LOD	93.9	< LOD	53.79	< LOD	23.66	< LOD	284.27	< LOD
65711	57010.96	525.99	1030.14	103.42	150.81	26.54	181.85	48.06	1118.88	107.53	37.67
65711	6319.52	220.45	< LOD	74.88	< LOD	32.89	< LOD	6	< LOD	10.02	< LOD
65711	63548.88	810.94	1318.55	166.89							
65711	50152.11	763.81	692.07	138.95							
65710	20916.85	459.4	495.96	105.85							
CO BROWN	65805.94	825.99	3804.7	259.71							
CO BROWN	6107.11	240.87	130.92	63.48							
CO 206	39653.75	639.56	1462.69	167.96							
1961202	13539.5	297.55	309.63	69.84							
1961203	19765.29	392.96	329.47	80.04							
1961204	9238.58	262.68	165.88	60.77							
1961205	16983.8	366.52	352.35	81.37							
1961206	16974.96	357.08	300.01	76.07							
1961207	8367.34	248.16	153.12	58.31							
1961208	10587.2	260.1	468.25	77.92							
1961209	12086.48	290.53	211.39	63.15							
1961210	14784.4	340.17	394.24	84.12							
1961211	14173.07	331.33	313.86	76.86							
1961212	19962.41	402.02	273.22	78.85							
1961213	16967.39	367.27	381.96	84.47							

XRF READING										
SAMPLE	Sc Error	Ca	Ca Error	K	K Error	S	S Error	Ba	Ba Error	Cs
1961151										
1961152										
1961153										
1961154										
1961156										
1961155										
OC 3										
OC 3										
OC 4										
LW HORN										
LW CHERT										
OC 5										
OC 5										
1961053										
OC 8										
OC 8										
OC 10										
OC 10										
LW 01										
LW 01b										
LW 02										
1961157										
1961158										
1961159										
1961160										
1961161										
1961162										
1961163										
1961164										
1961165										
1961166										
1961167										
1961168										
1961169										
1961170										
1961171										
1961172										
1961173										
1961174										
1961175										
1961176										
1961177										
1961178										
1961179										
1961180										
1961181										
1961182										
1961183										

XRF READING										
SAMPLE	Sc Error	Ca	Ca Error	K	K Error	S	S Error	Ba	Ba Error	Cs
	112.23	< LOD	1509.41	< LOD	1245.31	< LOD	1230.07			
	87.28	< LOD	1173.53	< LOD	969.04	< LOD	975.44			
	106.77	< LOD	1720.26	< LOD	39.65	< LOD	1088.18			
	25.53	< LOD	1174.25	< LOD	969.26	< LOD	955.88			
	124.68	1916.28	1234.02	< LOD	44.67	< LOD	1208.27			
	39.82	1896.32	1235.05	< LOD	969.11	< LOD	1256.66			
	112.2	< LOD	1505.58	< LOD	62.6	< LOD	963.35			
	67.64	< LOD	794.06	< LOD	32.23	< LOD	534.85			
	15.98	< LOD	736.25	< LOD	17.79	< LOD	511.56			
	107.2	< LOD	1258.74	< LOD	76.27	< LOD	860.98			
	33.23	< LOD	1510.19	< LOD	1245.31	< LOD	1300.82			
	219.99	< LOD	2182.64	< LOD	2488.28	< LOD	2097.67			
	280.13	8615.78	2970.79	< LOD	1762.24	< LOD	2940.34			
	172.46	4074.97	1782.12	< LOD	943.34	< LOD	1740.32			
	30.99	11298.2	342.26	15224.08	479.69	47137.35	13725.61	1336.42	36.83	203.44
	25.72	8345.93	275.73	11501.62	391.55	< LOD	14160.68	1257.77	36.85	189.59
	29.96	22011.48	465	5618.81	317.73	30244.67	13334.87	807.37	32.37	121.74
	17.69	473.81	159.9	8319.59	365.51	< LOD	16021.53	1336.87	35.19	169.44
	111.06	< LOD	1308.71	< LOD	1244.99	< LOD	180222.91			
	34.35	< LOD	1584.08	< LOD	2324.2	< LOD	1745.4			
	84.11	< LOD	1003.26	< LOD	2105.96	< LOD	1423.18			
	33.09	< LOD	1539.54	< LOD	3734.25	< LOD	2444.59			
	127.44	< LOD	1814.02	< LOD	1992.3	< LOD	1727.55			
	28.78	9374.37	328.29	22162.17	565.13	< LOD	18471.2	3216.01	44.86	172.43
	33.25	< LOD	1529.95	< LOD	3125.9	< LOD	2183.76			
	125.06	2868.92	1202.33	< LOD	1487.71	< LOD	80677.52			
	26.21	< LOD	1178.75	< LOD	1546.81	< LOD	1252.42			
	400.73	50756.33	4766.23	< LOD	1113.54	< LOD	78186.57			
65711	18.39	6806.25	269.66	3265.86	244.42	< LOD	14807.98	914.63	31.19	82.97
65711	16.19	< LOD	752.89	< LOD	56.29	< LOD	541.79			
65711										
65711										
65710										
CO BROWN										
CO BROWN										
CO 206										
1961202										
1961203										
1961204										
1961205										
1961206										
1961207										
1961208										
1961209										
1961210										
1961211										
1961212										
1961213										

XRF READING													
SAMPLE	Cs Error	Te	Te Error	Sb	Sb Error	Sn	Sn Error	Cd	Cd Error	Ag	Ag Error	Pd
1961151												
1961152												
1961153												
1961154												
1961156												
1961155												
OC 3												
OC 3												
OC 4												
LW HORN												
LW CHERT												
OC 5												
OC 5												
1961053												
OC 8												
OC 8												
OC 10												
OC 10												
LW 01												
LW 01b												
LW 02												
1961157												
1961158												
1961159												
1961160												
1961161												
1961162												
1961163												
1961164												
1961165												
1961166												
1961167												
1961168												
1961169												
1961170												
1961171												
1961172												
1961173												
1961174												
1961175												
1961176												
1961177												
1961178												
1961179												
1961180												
1961181												
1961182												
1961183												

XRF READING												
SAMPLE	Cs Error	Te	Te Error	Sb	Sb Error	Sn	Sn Error	Cd	Cd Error	Ag	Ag Error	Pd
	10.25	392.32	33.99	101.43	12.43	90.87	10.84	31.74	7.63	15.28	5.56	16.35
	10.34	371.98	34.29	113.22	12.72	82.88	10.89	28.7	7.67	24.01	5.82	< LOD
	9.46	157.97	30.71	45.41	11.34	58.47	9.96	< LOD	10.13	< LOD	7.37	< LOD
	9.67	317.4	31.9	164.79	12.46	74.37	10.18	19.91	7.08	9.53	5.17	11.95
	9.82	272.18	32.01	64.92	11.66	63.93	10.34	< LOD	10.47	< LOD	7.68	< LOD
65711	8.77	106.72	28.57	25.49	10.49	23.04	9.03	< LOD	9.23	< LOD	6.79	< LOD
65711												
65711												
65711												
65710												
CO BROWN												
CO BROWN												
CO 206												
1961202												
1961203												
1961204												
1961205												
1961206												
1961207												
1961208												
1961209												
1961210												
1961211												
1961212												
1961213												

XRF READING	
SAMPLE	Pd Error
1961151	
1961152	
1961153	
1961154	
1961156	
1961155	
OC 3	
OC 3	
OC 4	
LW HORN	
LW CHERT	
OC 5	
OC 5	
1961053	
OC 8	
OC 8	
OC 10	
OC 10	
LW 01	
LW 01b	
LW 02	
1961157	
1961158	
1961159	
1961160	
1961161	
1961162	
1961163	
1961164	
1961165	
1961166	
1961167	
1961168	
1961169	
1961170	
1961171	
1961172	
1961173	
1961174	
1961175	
1961176	
1961177	
1961178	
1961179	
1961180	
1961181	
1961182	
1961183	

XRF READING	
SAMPLE	Pd Error
	7.57
	11.18
	9.91
	7.09
	10.39
65711	9.25
65711	
65711	
65711	
65710	
CO BROWN	
CO BROWN	
CO 206	
1961202	
1961203	
1961204	
1961205	
1961206	
1961207	
1961208	
1961209	
1961210	
1961211	
1961212	
1961213	

APPENDIX D

2019 Rock Samples – Petrography completed by T. Liverton, Ph.D.

C1

This is a biotite hornblende quartz monzonite. Plagioclase and orthoclase are are in roughly equal proportion and the texture is even-grained. Plagioclase forms subhedral phenocrysts to 4mm long, but most are around 2mm. Orthoclase is anhedral, about 2mm with only very occasional perthite. Quartz is finer grained and at about 10% of the volume. Biotite is deep red-brown to yellow in ragged `flakes`` to 1.5mm long. It contains a few monazite inclusions that produce pleichroic halos – about 10% volume. Amphibole is the only altered mineral. It is mostly euhedral and up to 2mm, but altered to about 50% (?) sericite. Only a few 0.3mm grains of apatite were noted, but no zircon.

Cobaltnitrite Stained Slab

C1 K feldspar is finer-grained than plagioclase, roughly equal proportions

C2

The mineral components of this rock are granitic. There is much quartz, feldspars. It is a pyroclastic. K-feldspars are up to 1.5mm with sharply angular quartz clasts to 3mm long. Plagioclase, which tends to be the smaller clasts is subordinate to K-feldspar. Both feldspars are a little clay altered. The fine-grained matrix (0.04mm) varies from 30 to 50% volume across the slide, this contains 10% opaques, but only a few are pyrite. Ferromagnesians are not obvious.

The central portion of the section is somewhat finer-grained than the rest: bedding in the tuff?

One corner of the slide is of distinctly coarser material, with only about 10% matrix: may be a lapillus.

Cobaltnitrite Stained Slab

C2 Orthoclase tends to cluster, about equal content to plagioclase. One corner of the slab may be a lapillus, as well as the central portion.

C3

This rock is composed of orthoclase and plagioclase in equal proportion as euhedral to subhedral forms. Lesser amounts of pale green pyroxene and light brown amphibole are found with very chloritized mica. Both feldspars are up to 2mm long, the pyroxene to 0.6mm (subhedral) and amphibole (subhedral to euhedral) to 1mm. The groundmass amounts to only about 15% volume. None of the crystals impinge upon their neighbours, so this is likely a crystal tuff. Quartz may be present in the groundmass, but it is not obvious. Without point-counting a guess as to composition is a latite.

Cobaltnitrite Stained Slab

C3 Nearly all the groundmass is stained. K feldspar predominates over plagioclase phenocrysts.

C4

This is similar in mineralogy to C3. Pyroxene and biotite (deep brown) are unaltered. Feldspars are somewhat clay altered (especially the plagioclase) and up to 2mm long. Groundmass amounts to 40%. Amphibole is absent. The groundmass is of 0.04mm anhedral, equant feldspar grains. A latite tuff.

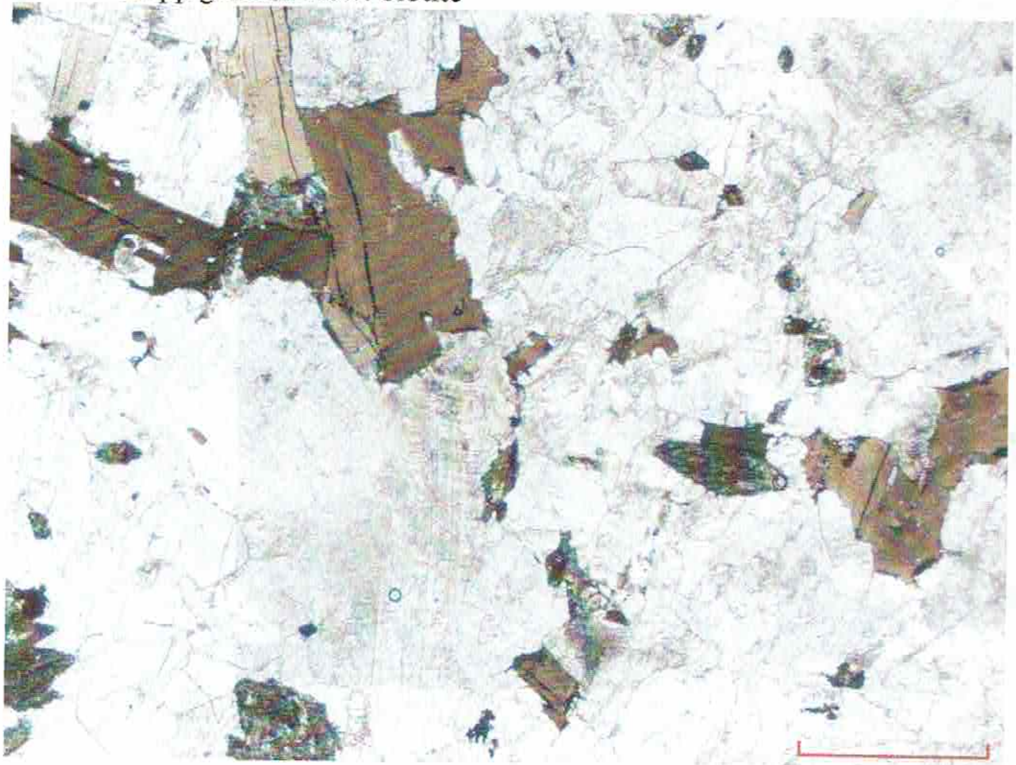
C5

Latite lapilli tuff. This rock is an undisputable pyroclastic: it contains a lapillus of the lava.

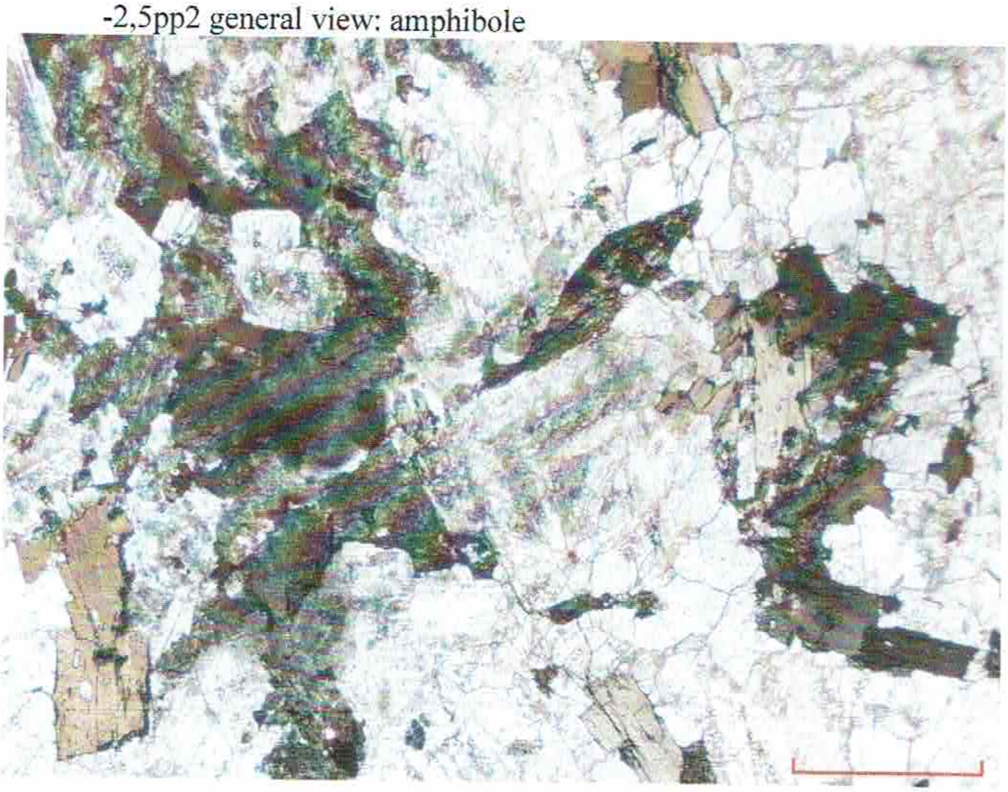
The lapillus is ovoid shaped, 10mm long with distinct margins. It is of similar mineralogy to the tuff, but finer grained and its texture is that of a lava. Plagioclase is to 2mm, pyroxene to 1mm. The lapillus has biotite (golden yellow to brown) at 5%. Pyrite is common here as 0.12mm subhedral forms, some oxidized to limonite.

PHOTOMICROGRAPHS

C1 -2.5pp general view: biotite

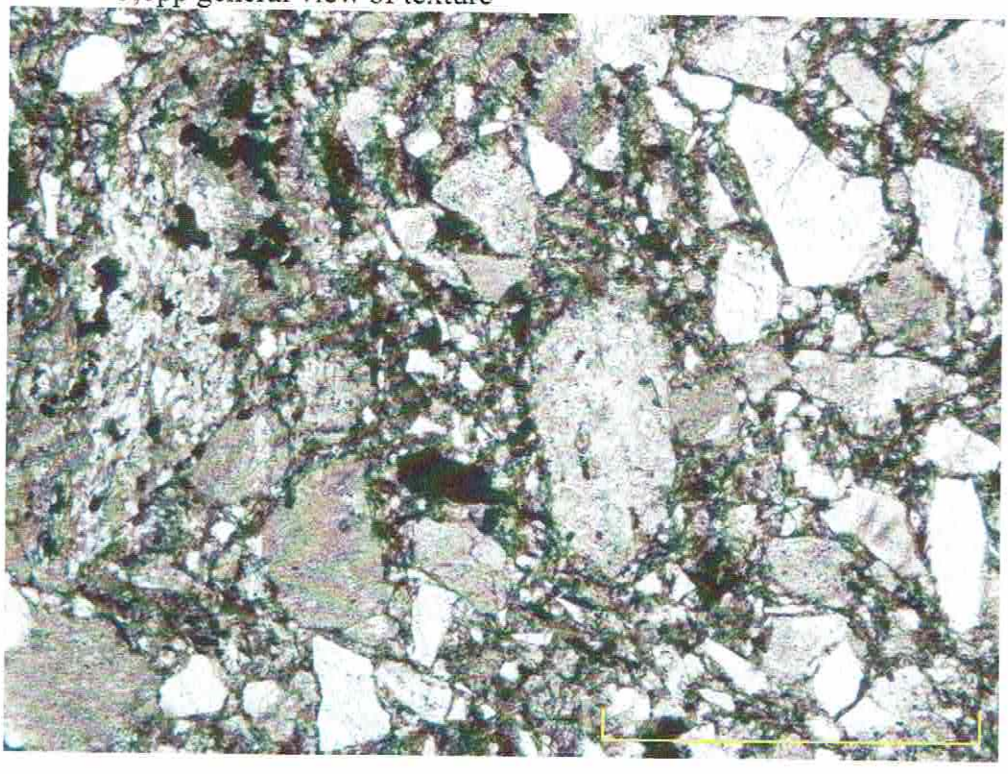


-2,5pp2 general view: amphibole

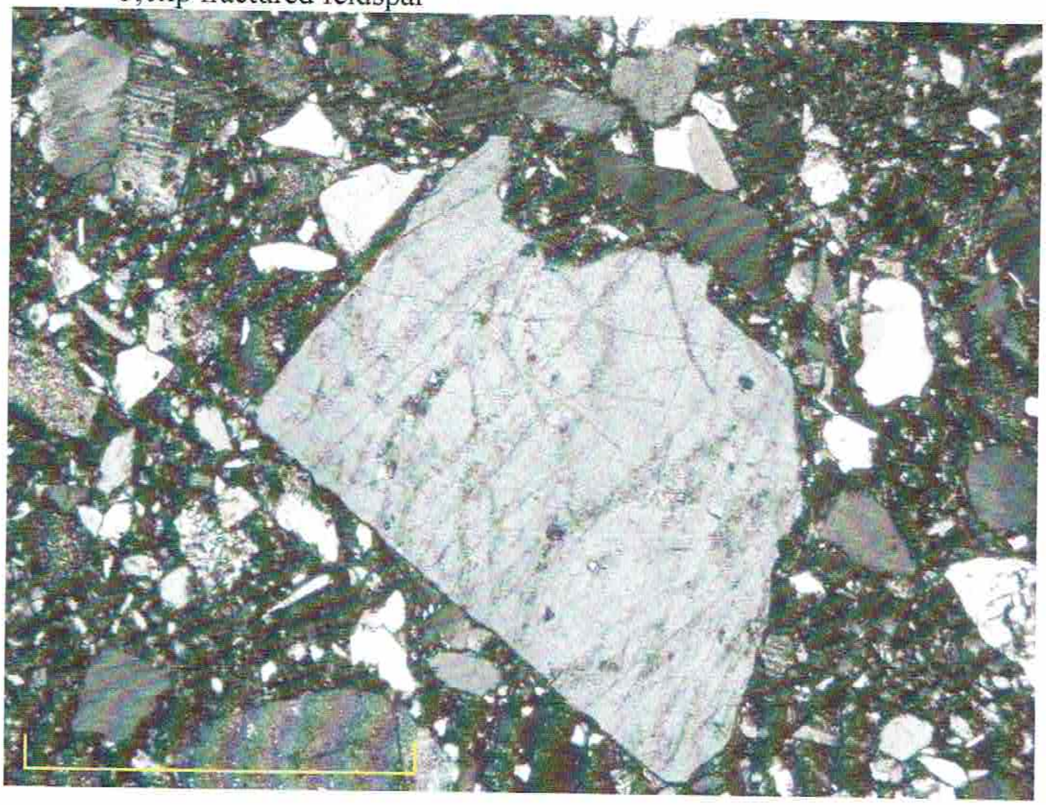


C2 -2,5xp general view of texture

-5,0pp general view of texture

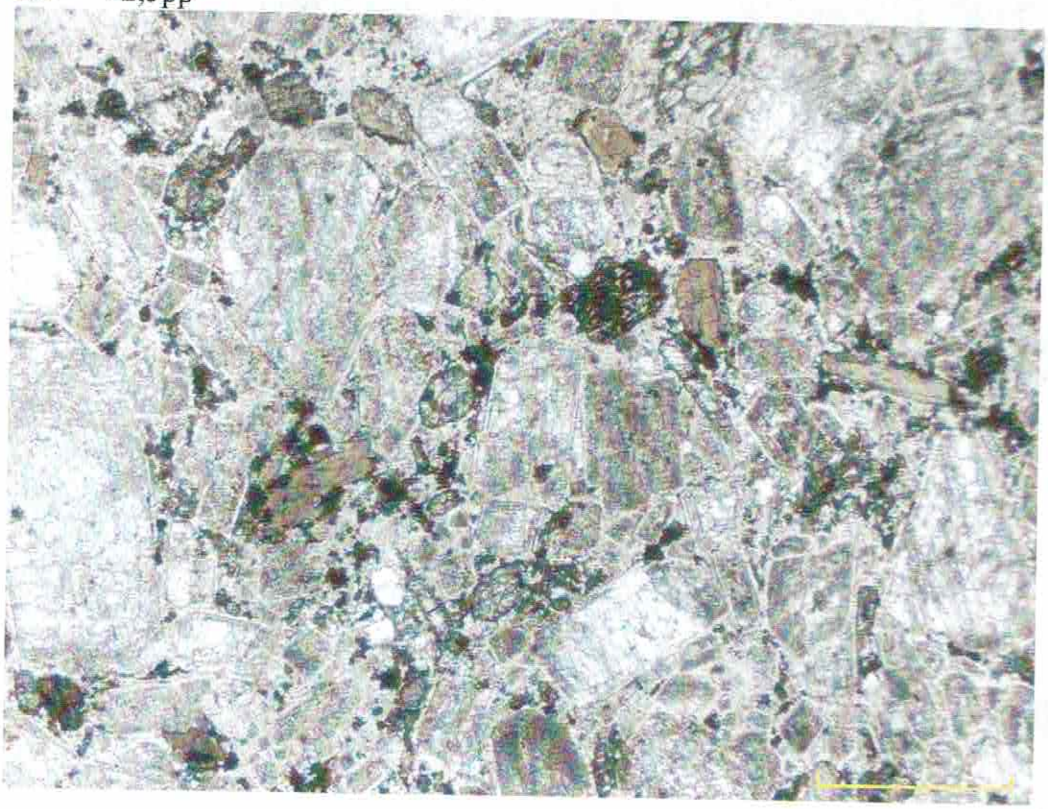


-5,0xp fractured feldspar **

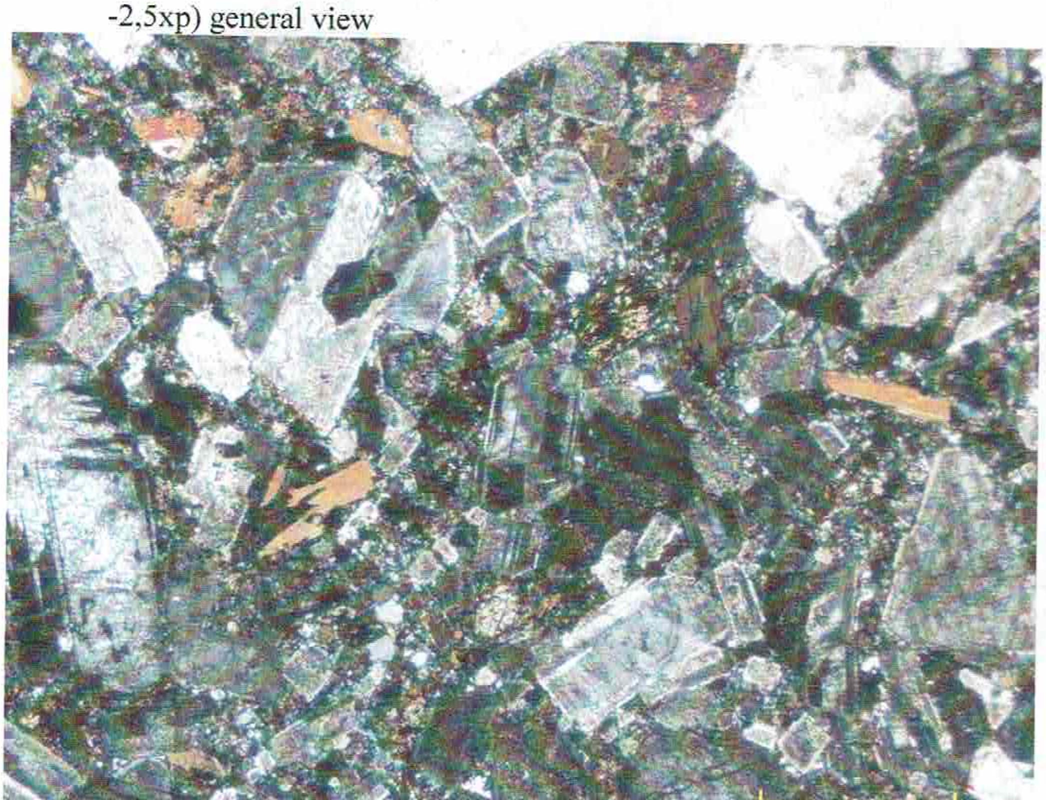


-10xp altered feldspar and pyrite

C3 -2,5pp



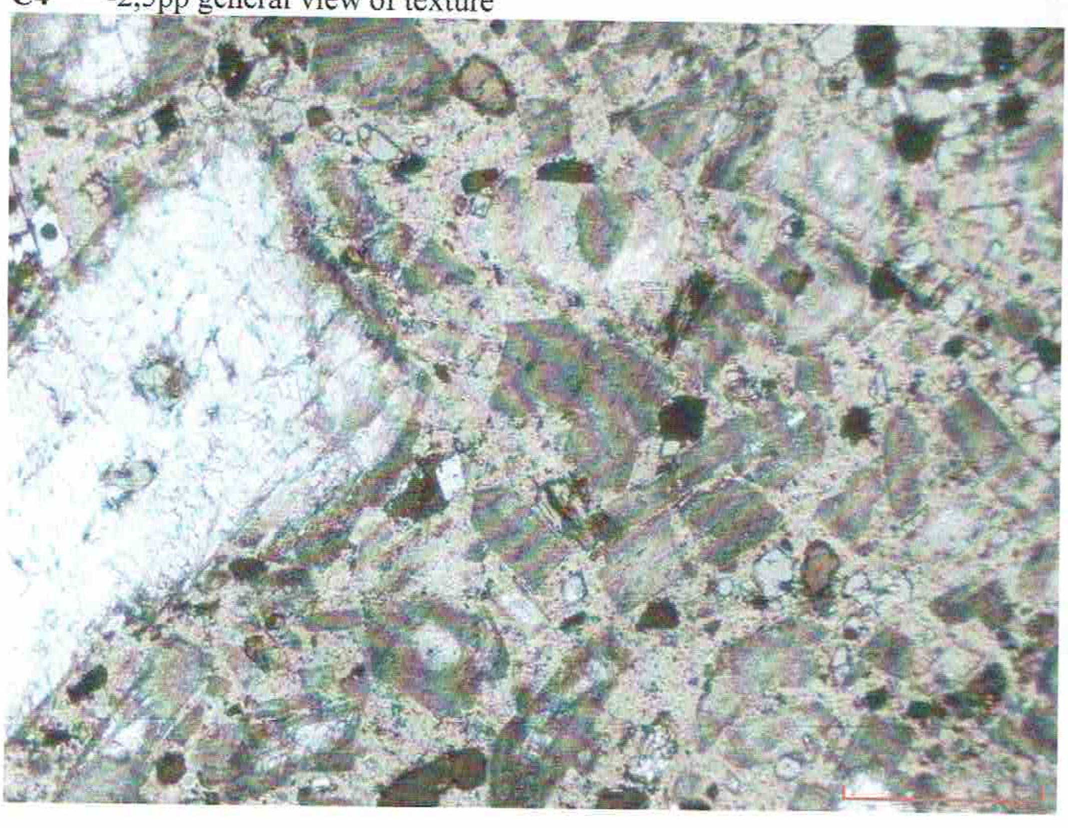
-2,5xp) general view



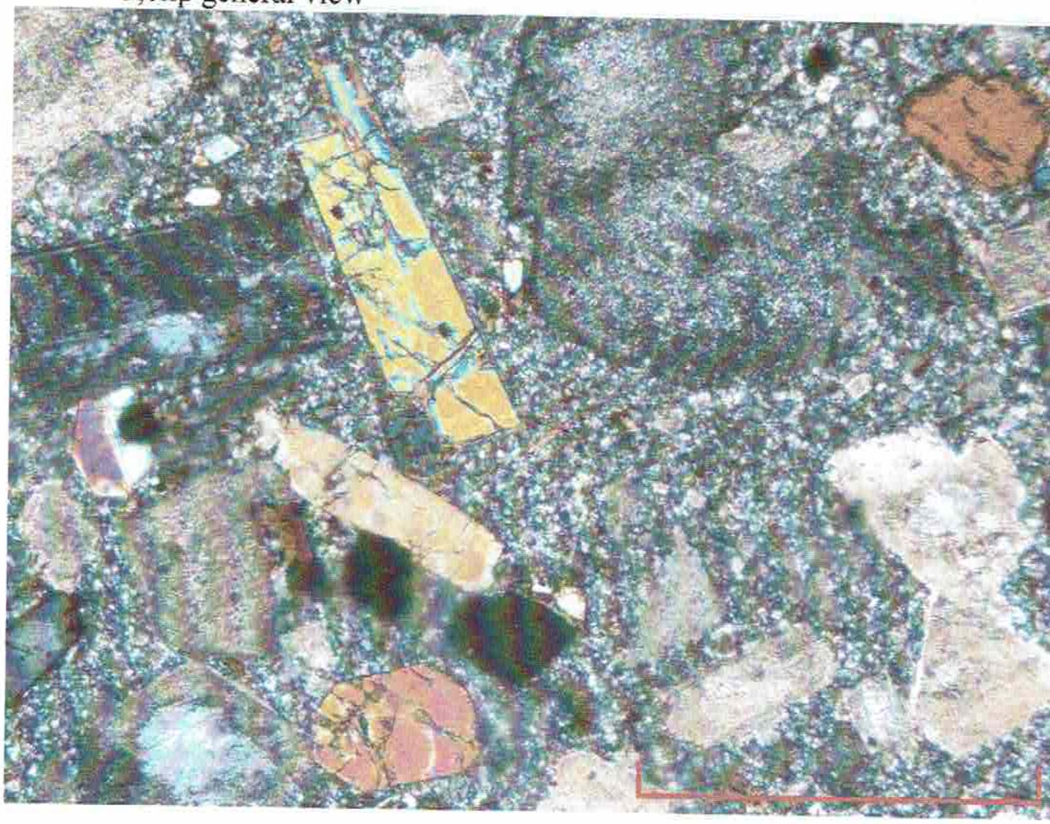
-5,0xp euhedral feldspar

-20xp

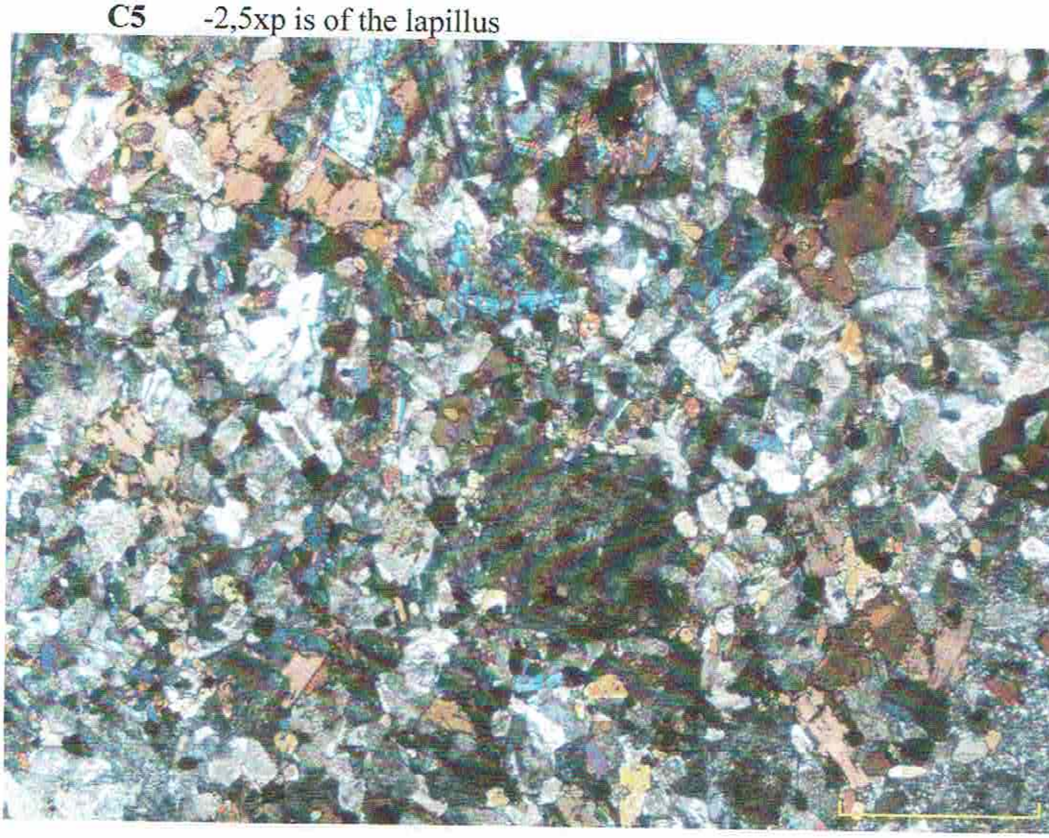
C4 -2,5pp general view of texture



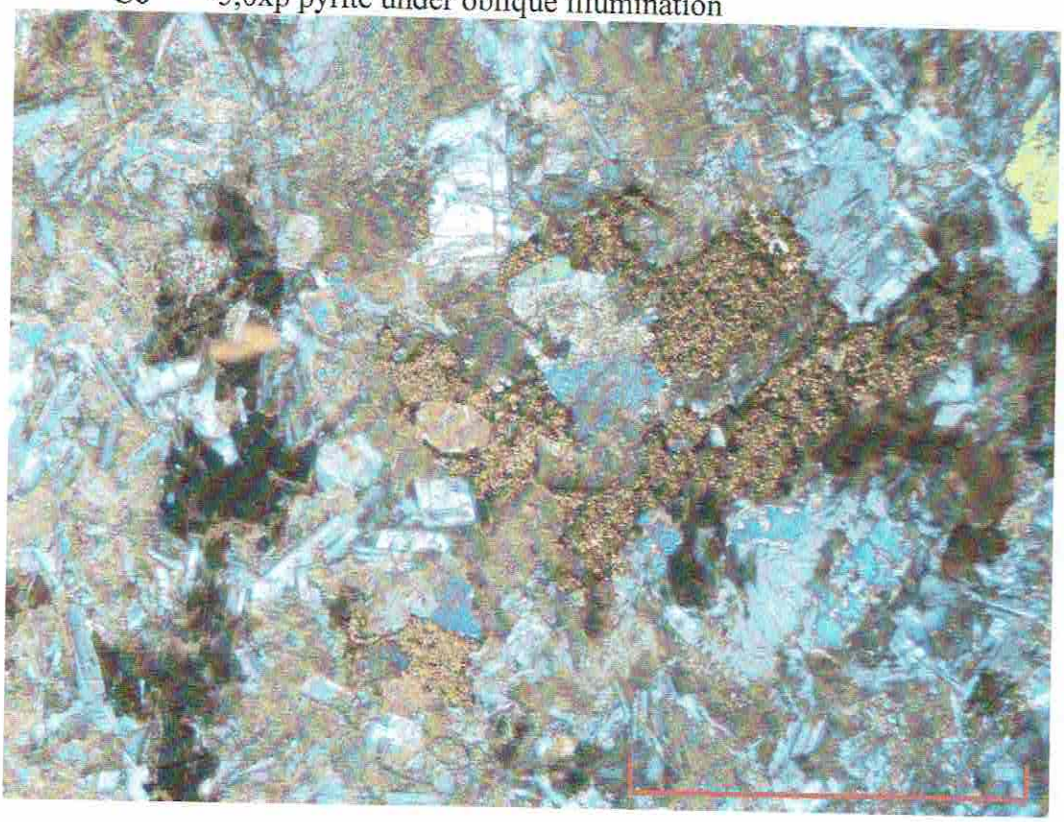
-5,0xp general view



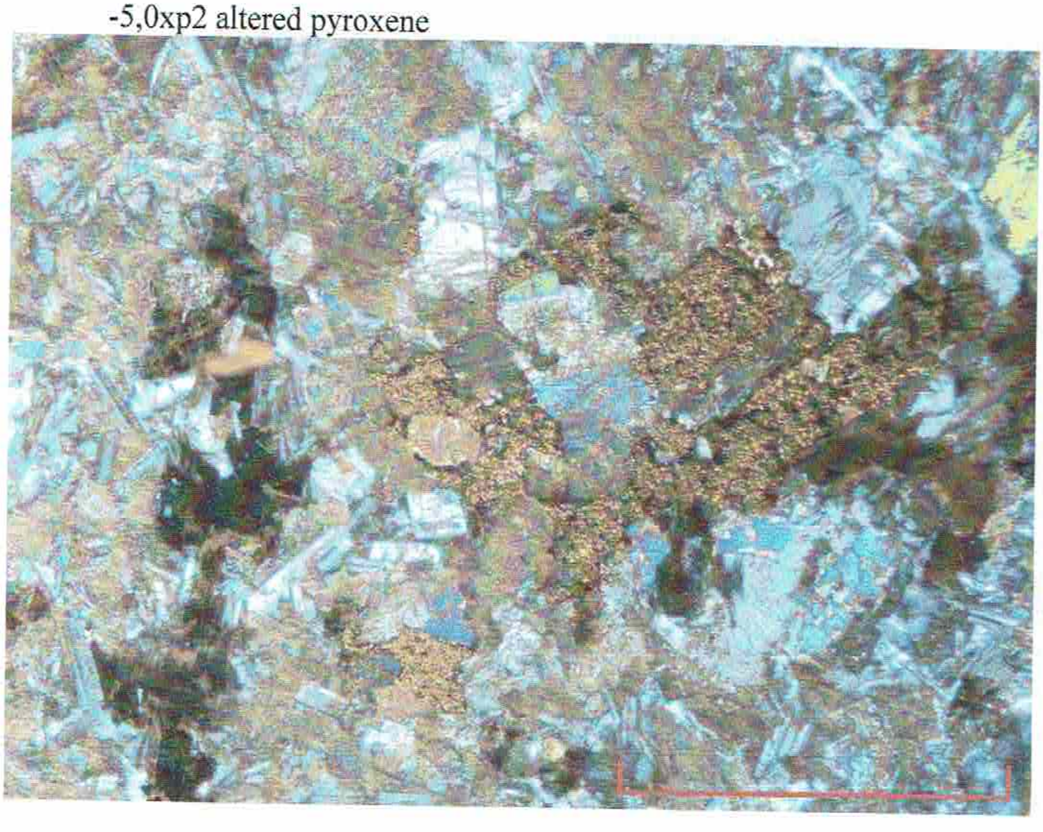
C5 -2,5xp is of the lapillus



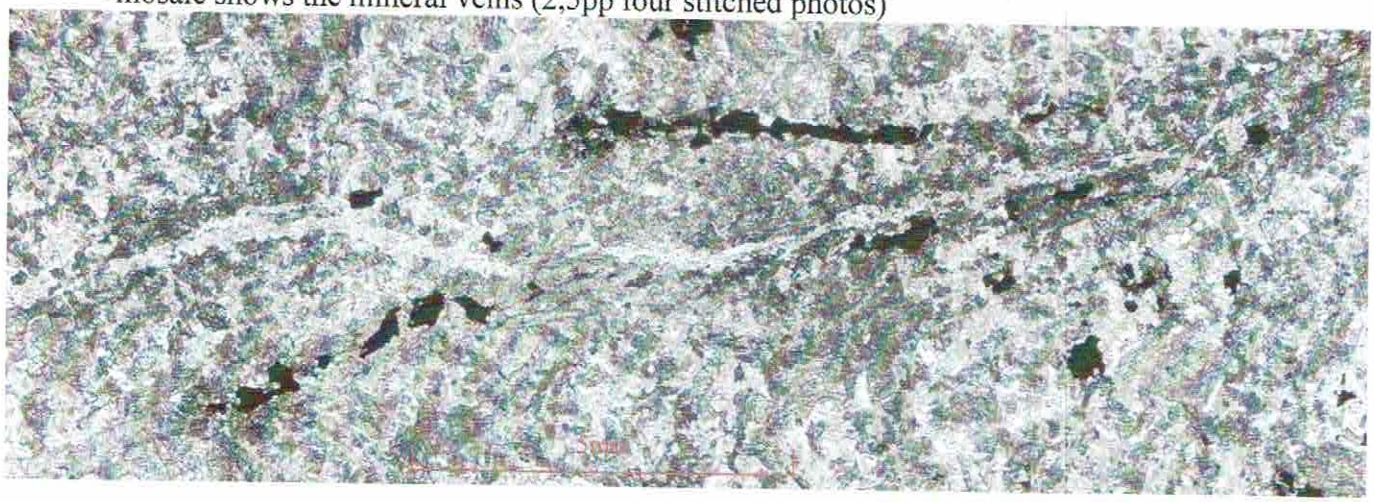
C6 -5,0xp pyrite under oblique illumination



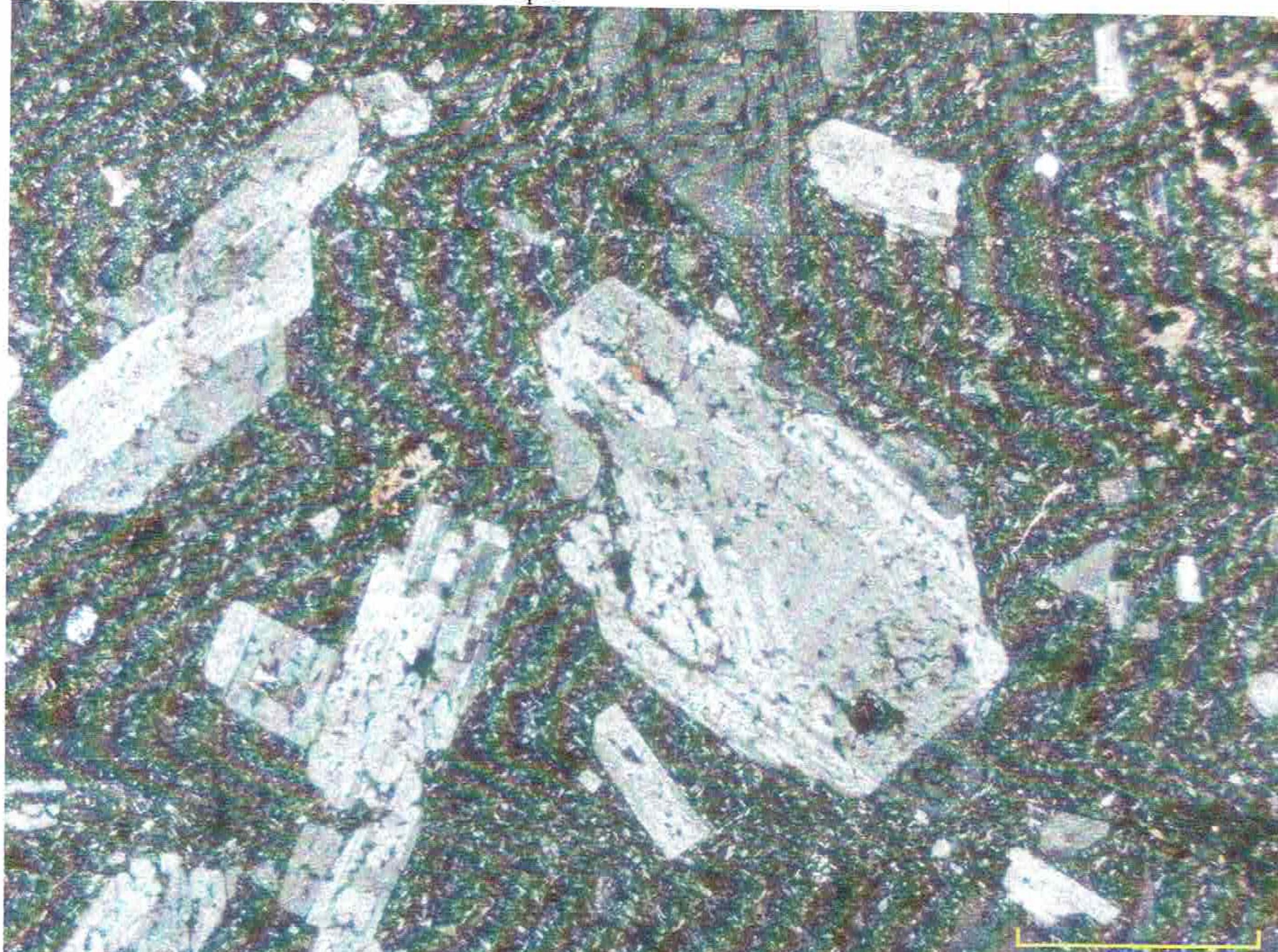
-5,0xp2 altered pyroxene

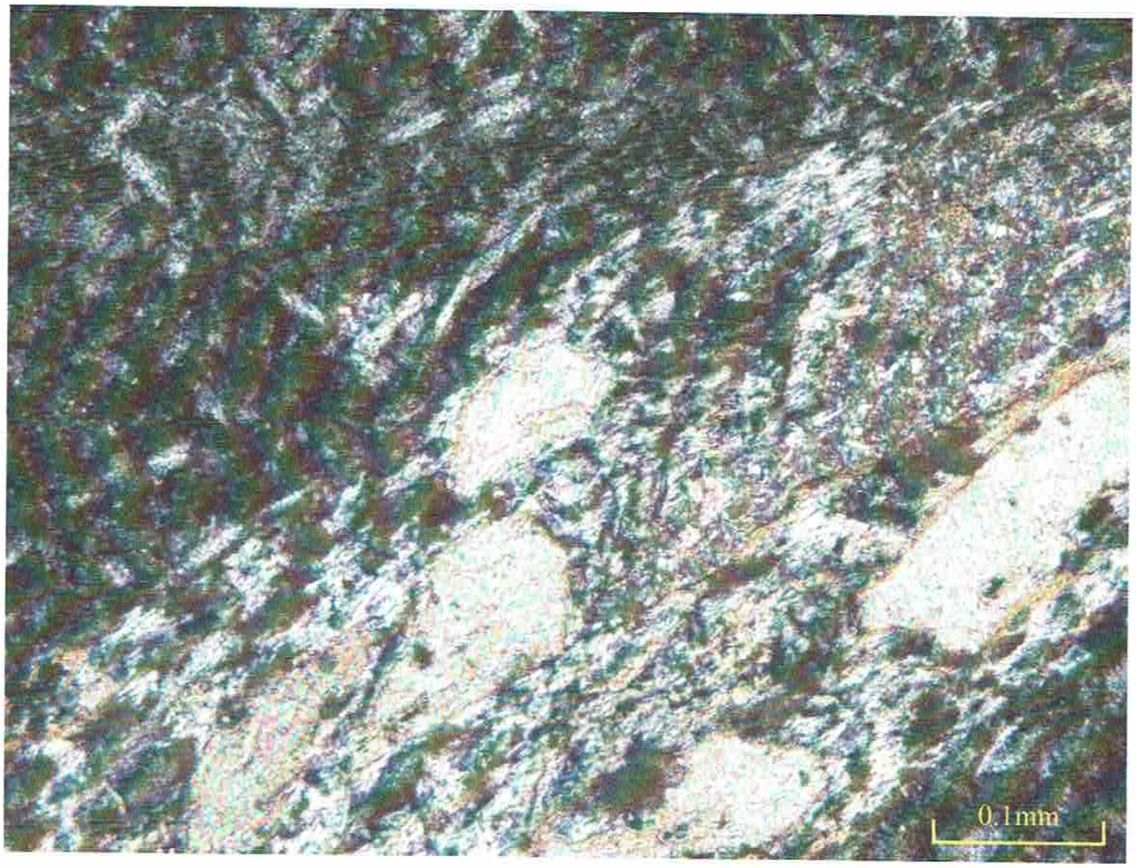


-mosaic shows the mineral veins (2,5pp four stitched photos)



C7 -2,5xp general view; euhedral feldspar




0.1mm

POLISHED BLOCK (PB) and THIN SECTION DESCRIPTIONS of ROCKS (pre-2019 exploration)[1]

DESCRIPTIONS, COMMENTS

*97R010 PB

This block is massive magnetite with frequent irregular fractures (maximum 'clast' size 8mm). These fractures are filled with a grey, low reflective mineral that shows red-brown internal reflections under crossed polarizers, but without the typical anisotropy of lepidocrocite or goethite. Reflections are too brown for cuprite. Some pyrite is preserved in the core of this fracture filling, which is probably an iron oxide.

*DO87ROO8 PB

This block is mostly silicate 'gangue'. One edge of the specimen has a 3mm+ wide vein of pyrite that contains many subhedral rectangular outline silicate inclusions. Small fractures, 0.08-0.12mm wide with irregular boundaries radiate out from the main vein for about 10mm length. These are pyrite filled. A few irregular 0.6mm pyrite masses are found further from the vein.

*BC97R002

A monzonite. Feldspars are only very slightly clay altered. Pyroxene occupies ≈ 20% volume. It is subhedral and slightly altered: some biotite replacement and cleavages and cracks are outlined, presumably by carbonate. 0.2-1.5mm granisize plagioclase is subhedral, albite-twinned. None is poikilitically enclose in pyroxene. Biotite (yellow to red-brown) is prominent as rather 'ragged' grains up to 2mm long. It constitutes ≈ 15% of the volume. A little (10%) untwinned feldspar or feldspathoid is interstitial to the plagioclase. (The rock is too fine-grained for confident recognition of, say, nepheline). Acicular apatite crystals are prominent inclusions in feldspar – up to 0.7mm long and < 0.5% of the volume. No zircon was noted and only very rare monazite forms inclusions in the biotite. Sulphide mineralization is present, forming a network of grains interstitial to the feldspars.

Under the stereo microscope, the cobaltinitrite stained offcut shows irregular patches of K-feldspar, although some border 0.3mm wide veins. This veining and probable alteration is quite cryptic.

*BC97R066

Andesite. Rather clay-altered feldspars (mostly euhedral) are from 0.5-2mm grainsize. Any orthoclase is impossible to recognize. A few (<<1%) 0.25mm euhedral quartz crystals are present as well as some apatite. Groundmass is ≈ 40% volume. Biotite is in subhedral forms to 0.8mm long, pleichroic from golden yellow to deep brown. It is mostly unaltered. 0.2mm subhedral pyrite crystals are disseminated (<0.5%). Some other euhedral crystals, mostly of 1-

[1] See Ouellette (1997) Figure 5 for sample locations and rock descriptions

An unlabelled stained offcut that matches the slide indicates that the coarser layer contains 30% K feldspar.

*DO97R024

This plutonic rock is an alkali feldspar (micro) granite *sensu stricto*. This implies that the plagioclase is Ab ≥95%, which is considered an alkali feldspar. Alaskites have been included in this classification. This does not necessarily imply alkalic affinity. Local examples are the Li-mica leucogranites of the Thirtymile Range and the STQ stock, satellite to the Seagull batholith.

K-feldspar probably is more abundant than plagioclase, judging by twinning (no stained slab was available). The feldspars are of 1-1.5mm grainsize and the rock is quartz-rich: 30% in 1-2mm anhedral grains. Biotite, which is almost completely chloritized is from 0.25-0.8mm grainsize and forms 2% of the bulk. No other ferromagnesians were noted. Sphene is fairly common , but < 1% total. It forms 0.2-0.4mm sized crystals, some euhedral. All feldspars are fairly clay altered.

*DO97R032

Andesite. Contains slightly more groundmass and biotite than the others, with less pyroxene. Feldspars are clay altered and biotite is mostly fresh. Groundmass ≈30%, pyroxene 5%, biotite 5%. A few small patches of chlorite are up to 0.16mm across. K feldspar is to 3.5mm long, plagioclase to 3mm (euhedral). Very few euhedral quartz crystals are present to 0.8mm. Pyroxene is up to 2mm long. Under the stereo microscope the stained offcut indicates a strongly potassic groundmass.

*DO97R031

This andesite has little groundmass – about 10%. Feldspars are still euhedral, but generally around 0.6mm grainsize. They are fairly clay altered. There is also some chlorite alteration of pyroxene along cracks in the crystals. Pyroxenes are up to 2.5mm long and are about 10% of the bulk. Biotite is scarce (<2%), highly chloritized and up to 0.8mm long. A few 0.5mm chloritic masses are found in the groundmass. Opaques (probably pyrite) are subhedral and up to 0.3mm. These are found mostly in the groundmass, but also occasionally replace pyroxene. Total ≈1%. In the offcut the groundmass is strongly stained.

*DO97R044

An andesite. Has mostly euhedral plagioclase which is carlsbad-albite twinned and zoned. Orthoclase is subordinate. Feldspars are1-4mm granisize. Occasional quartz as 0.2mm subhedral crystals is seen (<2% vol.). Green augite is mainly euhedral and 0.2-1.2mm size. Some euhedral 8mm crystals are present: total pyroxene ≈5%. Biotite is almost completely chloritized (<5%). Feldpsars are slightly clay altered. Some carbonate accompanies the chlorite. The stained offcut indicates a potassic groundmass, with a few zones within coarse plagioclase (antiperthite?)

*LWSKARN06 PTS

COMMENTS

These thin and polished sections, plus two polished blocks, show a variety of rock types: mostly volcanics of andesitic composition, but also an alkali feldspar granite, a monzonite and quartzites.

I am informed by Bill Mann that the andesitic volcanics have been mapped as tuffs (Nordenskïold). All show mostly euhedral plagioclase phenocrysts and pyroxenes in a very fine-grained groundmass. There are no lithic clasts or broken phenocrysts and no sign of bedding, so without field data to the contrary I have described them as volcanic flows. I have noted varying degrees of 'clay alteration' in the feldspars. How much of this is due to weathering is uncertain. There may well be genuine kaolin alteration. Some of these volcanics do have slight potassic (biotite), chlorite and carbonate alteration and others some pyrite mineralization. The spatial relationship of these might be instructive. Although some of the biotite is chlorite altered, the predominance of alteration within pyroxenes over micas in interesting but perplexing; a magmatic feature perhaps.

The plutonic rocks might deserve further attention. An alkali feldspar granite is always a potential happy hunting ground for HFSE mineralization and monzonites cannot be ignored. Age relationships between the volcanics, intrusives and sediments need to be deduced (if exposure permits!) The quartzites might be derived from the granite.

In prospecting potential sulphide mineralization in the volcanics, provided fresh rock can be obtained (albeit felsenmeer), lithogeochemistry may be quite useful. Use of calculated alteration indices such as the Ross Large box plot sometimes works to identify the more altered and hopefully mineralized material. Also, perhaps lay out a few strips of bacon and wait for the grizzly bear to create exposure.