ASSESSMENT REPORT

describing

2017 SOIL SAMPLING and PROSPECTING

at the

FA/ GLADMAN PROJECT
YMEP FOCUSED REGIONAL 17-048

FA 1 – 48, YF30417 – YF30464

located at
NTS 116C/10

Latitude 64°34'N; Longitude 140°54'W
Dawson Mining District
Yukon, CANADA

prepared by claim owner
William D. Mann, M.Sc., P.Geo.
January, 2018

Field Work Performed September 2 - 8, 2017

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INTRODUCTION

The Gladman project was designed to evaluate a focused regional area known to host an extensive polymetallic silt and soil anomaly that is coincident with a magnetic high anomaly. The FA claims were staked to cover the favourable silver- lead- zinc- copper anomalies and probable extensions. The coincident multi-element anomaly was known to extend across more than 3 kilometres in soil and stream sediments, and this has been extended to about 5 kilometres. Most of the property is overburden covered, so the bedrock geology is just starting to be understood.

Work in 2017 was also successful in identifying a new target called Border Hill, located about 2km west of the FA claims adjacent to the Alaska border. This new target comprises a string of anomalous polymetallic soil anomalies underlain by felsic bomb tuffs cut by Cretaceous felsic dykes. Petrographic work indicates that volcanic rocks in the key target area not foliated or significantly metamorphosed, and are therefore likely related to the Cretaceous intrusion.

The project area is located in Yukon Tanana Terrane adjacent to the Fanning pluton, within the Tintina Gold Belt, just south of the Tintina Fault and Yukon River in westernmost Yukon Territory, adjacent to the Alaska border. The property comprises 48 FA claims staked in June 2017.

This report describes a program of soil sampling, prospecting, mapping and petrography performed by the author and crew between September 2nd and 8th, 2017. The author designed and supervised the program and participated in the work.

PROPERTY LOCATION, CLAIM DATA AND ACCESS

The FA claims consist of 48 contiguous Quartz claims located in western Yukon at latitude 64°34' north and longitude 140°51' west on NTS map sheets 116C/10 (Figure 2). The claims are registered in the name of William Mann who owns the claims. The claims are all registered with the Dawson Mining Recorder. Claim data are listed below while the locations of individual claims are shown in Figure 2.

Claim Name	Grant Number	Expiry Date	Number
FA 1 – 48	YF30417 – YF30464	2018 – 06 – 05	48

* Expiry date excludes 2017 work which will be filed for assessment credit.

The property lies about 87km northwest of Dawson City, south of the Yukon river and near the border with Alaska. The claims cover a north facing slope which drains into Fanning creek, which flows northeast into the Yukon River.

Access is by helicopter either from Dawson City or from the road to the past producing Clinton Creek asbestos mine located 15km south of the FA property. The Clinton Creek mine can be accessed in two wheel drive from the Fortymile road, which forks to the north from the Top of the World Highway from Dawson City to Alaska.

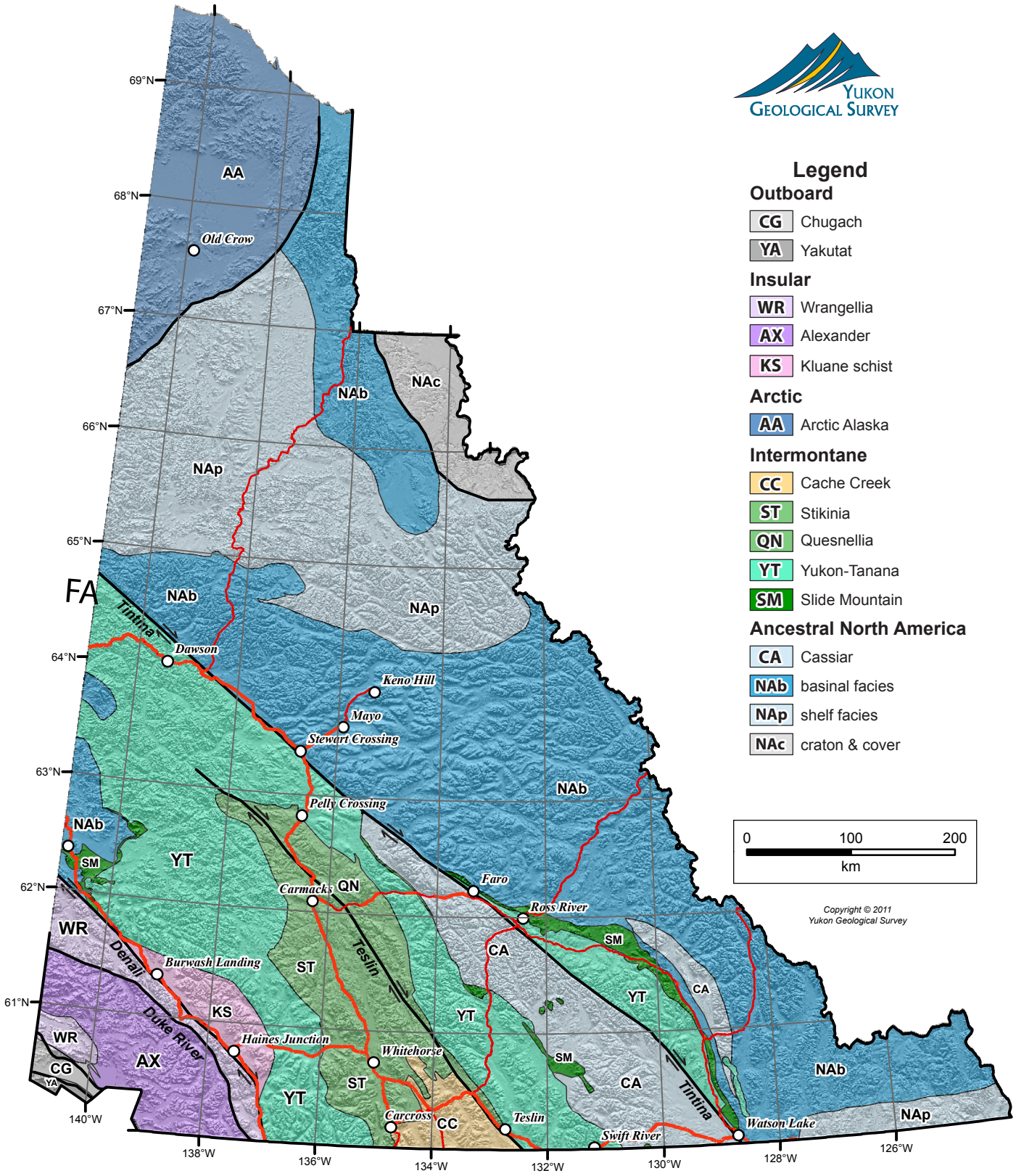
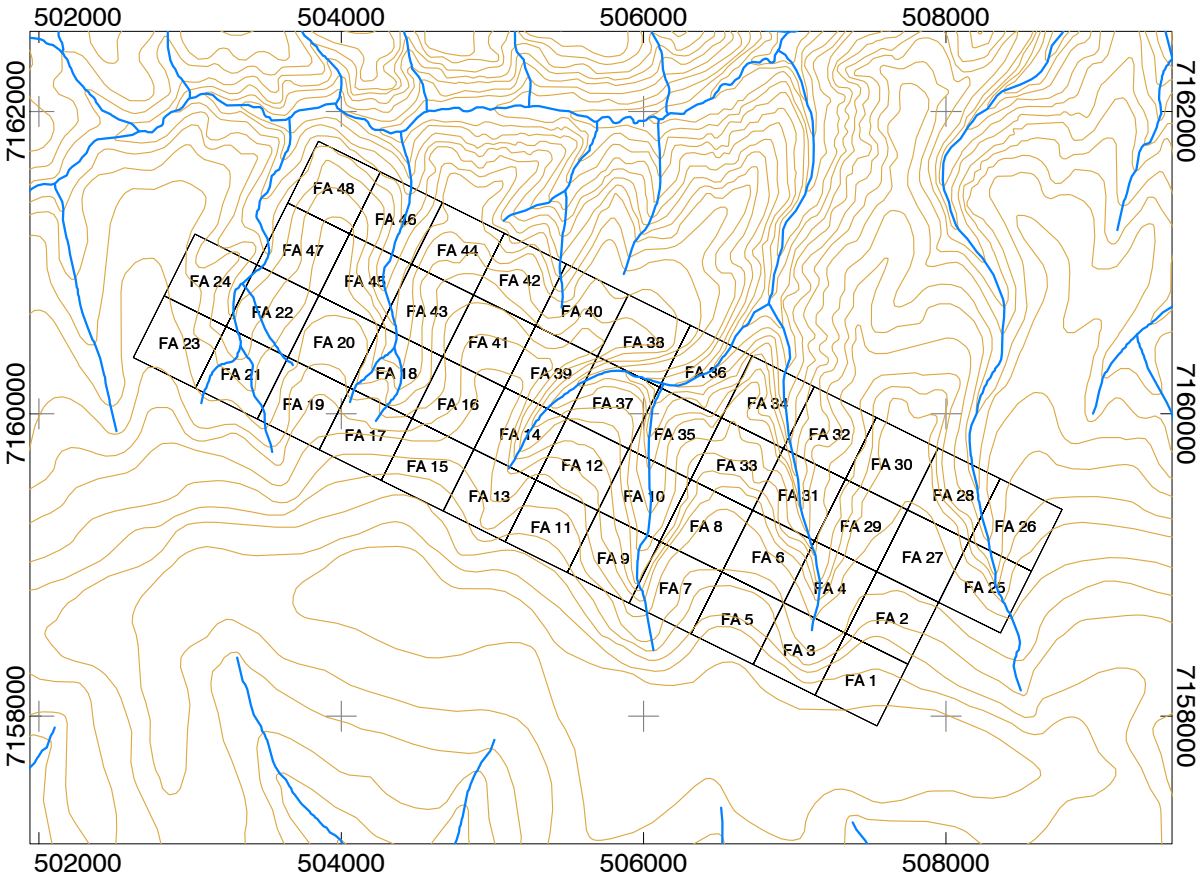


Figure 1. Location and Bedrock Terranes - FA Claims



Scale 1:50000

500 0 500 1000

(metres)

NAD83 / UTM zone 7N

Gladman Project, YMEP 17-048

Claim Location Map

NTS: 116C10
November 17, 2017

Claim Owner W.D. Mann, P.Geo.

PREVIOUS WORK

1961 Regional geological mapping conducted at 1:250,000 scale by the Geological Survey of Canada (Green, 1972).

1966 Airborne magnetic survey flown by the Geological Survey of Canada.

1977 Regional stream sediment survey was conducted by the Geological Survey of Canada in the project area (RGS Open File 2365). This work did not identify significant anomalies in streams draining the property, however only a few samples were collected from the Fanning creek drainage, several kilometres downstream.

1979 Cominco performed confidential regional stream sediment geochemical surveys in the area. This program identified anomalies on Fanning creek that led to staking of the FAN claims in 1995.

1995 195 "FAN" claims were staked in the area. 192 contour and stream bank soil and silt samples were collected, and analyzed for Zn, Pb, Ag & Cu. Two significant geochemical anomalies were detected by Cominco during work on this occurrence. Anomaly 'A' is 900 metres long and comprises stream bank soil samples with maximum values up to 373 ppm Zn, 146 ppm Pb, 114 ppm Cu and 1.0 ppm Ag. Anomaly 'B' is 600 metres long and comprises stream silt and bank samples with maximum values up to 906 ppm Zn, 500 ppm Pb, 80 ppm Cu and 3.2 ppm Ag (Pride, 1996). It is reported by Ross that Cominco flew an airborne geophysical survey at this time but did not file the work for assessment.

1996 Surficial geological mapping at 1:250,000 scale by Geological Survey of Canada (Duk-Rodkin, 1996).

2004 16 Rhea claims staked by J.P. Ross. 7 float rock samples collected (Ross, 2004).

2007 32 additional Rhea claims staked by Ross. 76 soil samples and 4 float rock samples collected (Ross, 2007). Two soil lines were sampled to the west of anomaly B, and analyzed by multi-element ICP. Soil samples were collected by shovel.

2011 The Rhea claims were optioned by Zinccorp Resources Inc., and an additional 95 RH claims were staked. 259 soils, 2 silts and 7 rocks were collected for analysis (Mann, 2011). Soil samples were collected as deep as possible by auger. Work focused between and proximal to Cominco anomalies A & B.

2014 Airborne magnetic survey flown at 400m line spacing, 125m above terrain by Goldak Airborne Surveys for the Geological Survey of Canada (Kiss & Coyle, 2014). Much higher precision, accuracy and resolution was achieved compared to the 1966 survey. A prominent linear FVD magnetic high is seen to occur proximal to the polymetallic soil anomaly.

2016 Enhanced interpretation of existing RGS stream sediment geochemical data for NTS map sheet 116C. Yukon Geological Survey, Open File 2016-32, scale 1:250,000. Still no anomalies in project area due to distant sampling.

GEOMORPHOLOGY AND VEGETATION

The FA/ Gladman project is situated in the Yukon Plateau ecoregion, part of the Boreal Cordillera ecozone (Smith et al, 2004). The property lies about 7 km southwest of the Tintina Trench. The area features rounded ridges and low peaks which represent the top of an ancient peneplane that has been incised by dendritic drainages. Glaciation has not affected the property. The property is drained by Fanning creek that flows north- eastward into the Yukon River.

Local elevations range from about 2000 feet along Fanning creek to 3477 feet at a hilltop on the south side of the claims. Rock is rare in float and outcrop, and is mostly confined to steep slopes near creeks. Soil development is poor, and consists of a colluvium veneer of silt, sand and mixed fragments (Duk-Rodkin, 1996). The project lies within the zone of extensive discontinuous permafrost, with north and east facing slopes that are often moss covered and permanently frozen. This presents an obstacle to soil sampling, trenching and road construction. Soil sampling is most effective if conducted in late summer. A thin blanket of loess is present on the north-facing slope near treeline. Solifluction is apparent on slopes above treeline, and loess mixed with local soil extends downslope from high on the ridge. Loess is noted to dilute metal anomalies in some shallow soils.

Vegetation varies from mature spruce, poplar and birch forests on the lower slopes, thick stunted spruce and buckbrush near tree line, and open mossy grassland on the ridge top. Precipitation totals less than 400mm per year. Temperatures are extreme, with long very cold winters (-30C) and summers that can be hot (+30C).

Figure 3. Geomorphology of the FA claims. The claims are well forested with rare outcrop.

GEOLOGY

Geology in the vicinity of the project has not been recently mapped, and is based mostly on field work from 1961 (Green, 1972). The geological setting has been put into broader context by Dusel-Bacon et. al. (1998), Gordey and Makepeace (1999) and Colpron (2006).

The property lies in the Yukon Tanana Terrane, southwest of the Tintina Fault. The area lies within the Tintina Gold Belt. The Yukon-Tanana Terrane (YTT) is a terrane of pericratonic affinity which occupies an intermediate position between continental margin rocks of Ancestral North America (Cassiar Terrane, Selwyn Basin) to the east and arc and oceanic terranes accreted in Mesozoic time to the west (Quesnellia, Stikinia and Cache Creek). It consists of polydeformed and metamorphosed Paleozoic metasedimentary and meta-igneous rocks (Colpron, 2006). The Yukon-Tanana comprises thrust sheets that are overlain by klippen of weakly metamorphosed oceanic rocks of the Slide Mountain terrane (which hosts asbestos at Clinton Creek).

At the FA project these rocks are intruded by the Fanning Creek Pluton, a post-kinematic mid Cretaceous granitic unit of the Whitehorse suite. This pluton is described by Green as fine to coarse grained, uneven textured biotite granodiorite and biotite quartz monzonite.

A northeast trending fault along lower Fanning creek cuts the pluton and extends southwest across the west end of the claims. This fault appears to terminate or offset the soil geochemical anomaly and a linear magnetic high anomaly. If this fault is extended to the southwest it would pass adjacent to the Border Hill target area, and a newly discovered outcrop of granitic rock. At Border Hill Green mapped a "Tertiary" quartz porphyry described as sugary aplitic rock with grains of quartz, potash, and plagioclase feldspar to 0.5 mm and finer grained porphyry with scattered quartz phenocrysts. This unit is present in narrow dykes (less than 50 feet wide), and therefore not shown on more recent maps. Northeast trending faults are spatially related to mineralization at the Fortymile Pb-Zn-Ag district in nearby Alaska.

The YTT is host to significant base metal occurrences, including the Wolverine and Kudz Ze Kayah VMS deposits in the Finlayson Lake district, in the part of the terrane which lies northeast of Tintina Fault. Restoration of the offset of the Tintina Fault would place the FA property in proximity to the Finlayson district. Several minor VMS occurrences are found to the southeast of FA (eg. Mickey, Mort, Clip).

According to government mapping as recently interpreted, the FA property is underlain by Upper Devonian to Lower Mississippian Finlayson assemblage rocks of the YTT (Colpron, 2006). This assemblage consists of mafic to felsic metavolcanic rocks of arc and back-arc affinities; carbonaceous pelite, metachert, minor quartzite; metavolcaniclastic rocks and marble. Undivided metasediments are indicated for the property area. This assemblage was formerly known as the Nasina assemblage in Stewart River-Dawson area, which is dominated by carbonaceous quartzites, muscovite-quartz rich schist with interspersed marble.

Preliminary geological mapping by Cominco determined that the claims are underlain by the Nasina Assemblage, consisting of Devonian-Mississippian black meta-pelites, quartzites and thin felsic meta-tuffs. These lithologies have been hornfelsed by the Cretaceous Fanning Creek Pluton located to the north. Contour soil sampling detected two areas anomalous in Cu/Zn/Pb/Ag (anomalies A & B) underlain by black phyllite and carbonaceous siltstone (Pride, 1996).

Work by the author in 2011 and 2017 has led to a change in interpretation of the property geology. A significant amount of younger (non-foliated) felsic volcanic flow and pyroclastic rocks are present in the anomalous areas, along with rhyolite dykes. The intrusive pluton was found to extend further to the south than shown on the government maps. A revised description of the property geology is presented below in the 2017 Exploration section.

A government regional airborne magnetic survey was conducted in 2014 over the project area (Kiss & Coyle, 2014). Much higher precision, accuracy and resolution was achieved compared to the 1966 survey. A prominent linear FVD magnetic high is seen coincident with the polymetallic soil anomaly at the FA claims, however the Border Hill area lies within a magnetic low (see figure 9).

DEPOSIT TYPES

This area was explored by Cominco in the search for VMS mineralization after their discovery of the Kudz Ze Kayah VMS deposit. If the Tintina fault offset is restored, the project area lies proximal to the Finlayson VMS camp where the KZK, Fyre Lake and Wolverine deposits are located. Several minor VMS occurrences are found to the southeast of FA (eg. Mickey, Mort, Clip) and in nearby Alaska (Dusel-Bacon, 1998). VMS remains a possible target for the area, though Finlayson group metavolcanics are no longer thought to be present in the anomalous areas.

Two significant geochemical anomalies were detected by Cominco during work in the project area in 1995. Anomaly 'A' is 900 metres long and comprises contour soil samples with maximum values up to 373 ppm Zn, 146 ppm Pb, 114 ppm Cu and 1.0 ppm Ag (Fig. 5). Anomaly 'B' is 600 metres long and comprises stream silt and bank samples with maximum values up to 906 ppm Zn, 500 ppm Pb, 80 ppm Cu and 3.2 ppm Ag. These anomalies were considered worthy of followup, however Cominco let the FAN claims expire.

The possibility that the anomalies are related to high temperature carbonate replacement deposits (CRD) was considered by prospector J.P. Ross who staked the RHEA claims to cover the Cominco anomalies. The presence of this deposit type is known in the nearby 40 Mile district of Alaska (Dusel-Bacon et. al. 2015). This district has had a series of CRD discoveries, with elevated values for Zn, Ag, Pb, Cu and In. Some of the occurrences are noted to be skarns, while most are mantos. The occurrences are hosted in carbonates, and are spatially associated with intrusive rocks (often immediately adjacent to felsic dykes) and northeast trending faults. The nearest of these occurrences is Lead Creek, located approximately 25km to the west of FA in Alaska, which has returned drill intersections of 15.4m of 370 g/t Ag and 5.5% Pb and 9.6m of 725 g/t Ag and 6.4% Pb.

Work on the property has revealed small patches of subcrop and float that containing coarse epidote replacing limestone, with weak mineralization. Carbonate replacement appears to be the most likely deposit type on the FA claims. Following the limestone beds using outcrops and Ca in soils is thought to be an important exploration criteria. The best soil anomaly cluster occurs where the limestone unit is thought to overlie the magnetic high anomaly.

Prospecting at the Border Hill target in 2017 revealed narrow vuggy quartz veins bearing arsenopyrite and trace galena. These veins are highly anomalous in Ag, As, Pb, Zn, Mo, Cu and potential pathfinder elements. They cut felsic bomb tuff in proximity to rhyolite dykes, and are considered to be epithermal veins. These epithermal veins may be peripheral to a porphyry target, and further work is recommended.

2017 EXPLORATION PROGRAM

The 2017 field program was conducted by the author, senior field technician Max Mikhailytchev and assistant Robyn Warren. The field program was conducted between September 2nd to 8th, after the staking and recording of the FA claims in June. The property was accessed by truck to the Clinton Creek mine, then by helicopter to the property. A temporary tent camp was established, with sampling and prospecting traverses on foot. 171 soil samples were collected. 11 rocks samples were sent for assay. Eight rock specimens were selected by the author for thin section and polished thin section examination by Dr. Timothy Liverton. A hand-held XRF device was used to help focus soil sampling and evaluate rocks before assay.

2017 Soil Geochemistry

Soil sampling has been established as the best method for testing the ground near anomalies "A & B", and for extending the anomalies along trend. A total of 171 soil samples were collected in 2017 on 5 north-south and 1 east-west oriented grid lines based on UTM NAD83 zone 7N. Two recce non-grid lines were also sampled to examine regional potential. Samples were generally spaced 50m apart, but extended to about 100m for reconnaissance lines. The lines were spotted based on proximity to the known geochemical anomalies, location along the magnetic high trend and the desire to extend sampling into unknown areas. The presence of a "Tertiary intrusion" shown on Green's map but excluded from recent YGS maps was considered a favourable indicator and a line of wide spaced soils was collected in that area proximal to the Alaska border, herein called "Border Hill".

The 2017 soil samples were located using handheld GPS units, with supplemental navigation by compass. The sites are marked by flagging tape marked with the sample number. Soil samples were collected using Dutch soil augers. They were placed into Kraft paper bags along with an analytical sample tag. Soil descriptions were recorded in a notebook. Samples were collected as deep as possible, typically between 40cm and 60cm deep, occasionally to 90cm, but sometimes much shallower where very rocky soil and permafrost limited sampling depth. Sample material and sample sites were documented with photographs.

Soil sample locations from 2017 and 2011 are shown in Figure 4, and maps with Pb, Ag, Zn & Cu values in ppm are shown in Figures 5, 6, 7 & 8 respectively (in pocket). Certificates of Analysis for soil samples are in Appendix III.

The 2017 geochemical sampling program was very successful, as the strong multi-element anomaly was shown to continue on trend beyond the known anomaly in both directions over a total distance of about 5km. In addition, the samples collected near "Border Hill" were significantly anomalous in multiple elements (Cu, Pb, Ag, Mo, Zn and local Bi, W & Au).

The most significant results were from a cluster of about 30 samples in an area roughly 500m diameter on claims FA 16, 18, 41 & 43. This area returned values up to 2571 ppm Zn (the highest value on the property), 963 ppm Cu, 4.6 ppm Ag and 77ppm Pb. Soils in this area are also high in Ca (above 0.5% and locally over 2%), suggesting the presence of limestone,

potentially a host rock. The anomalous soil cluster also overlies the magnetic high anomaly, which may indicate a feeder structure.

Lead, zinc, copper and silver are moderately correlated with one another in soil samples, and the general pattern of distribution is similar for all four elements. Lead values are strongest on the east side of the claims, and less abundant in the anomalous cluster discussed above. Gold correlates weakly with copper and mercury, however values are generally too low to be of interest with a maximum value of 107 ppb on the property.

Potassium in soils is thought to indicate the presence of granitic rocks. Values of K above approximately 0.3% (and locally over 0.6%) coincide with known granitic rocks, while most soils underlain by other lithologies contain less than 0.1% K.

One sample, #17571 was too small, with insufficient material sent to the laboratory for analysis. Too bad, as this sample location is near the centre of the best anomaly cluster.

2017 Prospecting and Mapping

Three days were dedicated by the author to prospecting and mapping, along with examination of rocks encountered during test pit and soil traverses. Assay samples, thin section locations, test pit locations and geological locations are shown in figure 9. One day was spent examining the cliffs adjacent to Cominco anomaly "A", one day spent at Border Hill, and one day on the rusty cliffs on claim FA 18.

Eleven rocks were submitted for assay (see Table 1 below). The highest Pb (3061 ppm) and Zn (1311 ppm) values were returned in sample 64695 from a cobble found in the creek near Anomaly A. This rock contained trace galena, calcite and epidote and is likely a skarn.
Three samples of narrow epithermal vuggy quartz veins were collected at Border Hill. All contained over 1000 ppm As, up to 41.9 ppm Ag, 35.7 ppb Au, and anomalous Mo, Pb, Zn, Cu, Sb and Bi.

Locations of rock assays, thin sections, test pits and outcrops are presented in figure 9 (in pocket). This map also shows regional geological map unit outlines including the Fanning pluton and the major fault. A colour underlay of airborne First Vertical Derivative Magnetics is also shown in this figure. Rock assay certificates with complete analyses are presented in Appendix IV.

The author examined the rocky area on the north side of the western creek fork where Cominco's anomaly "A" is located, which is the largest area of outcrop and float rock on the property. This area is seen in the mid distance in figure 3. The pale rocks present include marble, felsic metatuff and rhyolite flows and dykes. Subcrops of microgranite were found on the northeast end of this trend. The cliff units tend to be massive, with a similar appearance at a distance. The felsic metatuff and limestone are found in contact, and both units are (bleached?) white, weakly thin-bedded and blocky to rubbly weathering with little actual outcrop. Rhyolite flows are both white to light grey and dark grey and are often cliff-forming. The dark grey rhyolites contain secondary

pyrrhotite and pyrite, and occur at the location of the first vertical derivative magnetic high. The grey pyrrhotite bearing rhyolites have a field appearance similar to a pyrrhotite hornfels: very hard, weakly magnetic and massive. The bedded rocks near anomaly "A" have an orientation of about 110° azimuth, with a 45° dip to the south.

Rocks at Border Hill are common as felsenmeer or subcrop, with no actual outcrop. The bulk of rock is a felsic bomb tuff with white bombs within a grey unfoliated matrix. Similar rocks are found on the FA claims near the soil anomaly. Felsic dykes are common, but thought mostly to be meter scale or smaller, and are located across the hill to approximately 5% of total rock. Dyke abundance increases within about 300m of the border. A recessive weathering zone of biotite granite grus is present on the flank just southeast of Border Hill. This granite lies approximately on the trend of the major northeast trending fault that cuts the Fanning pluton.

Metamorphic rocks of the Yukon Tanana Terrane are present on the ridge crest immediately south of the FA claims. Various phyllites and quartzites are seen in subcrop. Felsic flows and tuffs with interbedded limestone (figure 14) are present in outcrop in the central part of the FA claims. It is unclear what age these rocks are, however they do not have a foliation. The volcanics formed in a subaerial environment. The limestone is locally marbleized, and therefore older than the mid Cretaceous Fanning pluton. A felsic bomb tuff (figure 12) is also seen in float in the central FA area, and this unit is the dominant rock type at Border Hill.

The bulk of the Fanning pluton north of the claims is indicated to be a biotite granodiorite or quartz monzonite, however the 1961 mapping noted strong weathering and sparse outcrop of the unit. Intrusive rocks seen in the project area extend south of the pluton boundary shown on the map, and are biotite granite (figure 10) and microgranite. The large feldspar phenocrysts in figure 10 display Rapakivi texture, indicating rapid change in pressure on the magma and relatively shallow depth of emplacement. Rapakivi texture is also associated with tin granites. It is not certain that these intrusive rocks are part of the greater Fanning pluton, now mapped as mid Cretaceous Whitehorse Suite (105 to 112ma). Rhyolite dykes (figures 11, 13) are seen at the central FA claim area as well as being abundant at Border Hill. The dyke in figure 11 is anomalous in ore metals, as indicated by XRF.

Table 1. **2017 Rock Assays FA/ Gladman project** WHI17001018

Bureau Veritas Commodities Canada Ltd. Method AQ201

Sample	Location		Description	Cu PPM	Pb PPM	Zn PPM	Ag PPM	Au PPB
64693	505296	7159961	6m panel chip on cliff, black, siliceous rock w/ po.	89.3	21.0	62	0.4	4.1
64694	505429	7160182	30cm chip across rusty vein fault at contact between black shale and pale rhyolite	128.0	7.5	16	0.9	2.3
64695	505955	7160258	cobble in creek, tr. Galena & pits after sulphides, calcite, epidote (skarn?)	6.8	**3061.0**	**1311**	8.2	2.9
64696	500023	7159656	Grey & white vuggy Qtz vein float, 2 - 4cm width, minor arsenopyrite & scorodite	43.3	150.9	18	**41.9**	**35.7**
64697	500022	7159651	vuggy, rusty breccia subcrop	242.4	73.3	106	14.3	3.8
64698	500212	7159540	boulder rusty 3cm vuggy Qtz vein w/ 3cm bleached rusty wallrock, tr aspy.	133.5	592.2	300	7.4	21.0
64699	504369	7160182	10m grab rusty black siliceous pebbles at base of cliff, py & po.	79.0	35.1	195	0.5	<0.5
64700	507383	7158320	boulder quartz breccia vein w/ limonite & MnOx	104.9	38.1	14	<0.1	1.0
65951	507800	7159500	Pit #2, angular rusty pebbles, orange, red, black oxides coating	**1228.7**	1871.5	699	3.6	1.6
65952	505000	7160500	Pit #3, boulders of felsic bomb tuff	75.9	34.6	146	2.3	2.6
65953	507600	7159100	Pit #1, angular pebbles, polylithic	105.6	149.8	206	1.6	0.8

UTM NAD 83 Zone 7N

Figure 10. Megacrystic granite with Rapakivi texture.

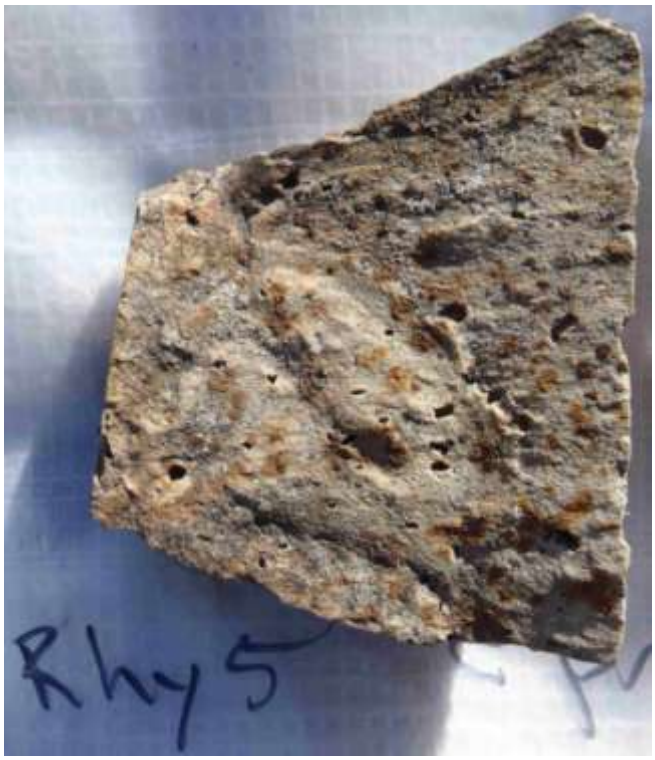


Figure 11. Rhyolite dyke with rusty pits after sulphide.

Figure 12. Undeformed felsic bomb tuff.

Figure 13. Felsic bomb tuff cut by rhyolite dyke.

Figure 14. Limestone outcrop, bleached, weak banding.

2017 Petrography

Eight samples were selected for thin section or polished thin section examination. Rock slabs were sent to Vancouver Petrographics Ltd. for section preparation. The completed sections were sent to Dr. Timothy Liverton for microscopic examination and description. Liverton's report is presented in Appendix V.

The results from petrographic microscopy were surprising. Rocks interpreted in the field to be hornfelsed Yukon Tanana metasediments or metavolcanics were found to be undeformed rhyolitic volcanics. Only one sample had any foliation evident under the microscope, and this foliation is most likely a primary volcanic texture. The geological environment was previously thought to be Finlayson group metavolcanics of the Yukon Tanana Terrane, however now most of the rocks seen are probably Cretaceous volcanics related to the Fanning pluton located immediately north of the property. Sample locations and hand sample descriptions are provided in Table 2 below.

Table 2. 2017 FA Thin Section Locations & Descriptions

			Hand Specimen Descriptions
FA 1	506295	7160470	Fine-grained quartz-feldspar-biotite microgranite ridge subcrop
FA 2	505000	7160500	Pit #3 boulder, Bomb tuff, white rhyolitic bombs in grey matrix
FA 3	505294	7159961	Fine-grained hard, black outcrop with pyrrhotite and pyrite ("hornfels")
FA 4	504837	7160500	Boulder, bleached siliceous rock, possible "calc-silicate hornfels"
FA 5	505855	7160325	Laminated rhyolite, white, subcrop
FA 6	505962	7160317	Coarse-grained, siliceous "calc-silicate hornfels" subcrop
FA 7	505962	7160317	Coarse-grained, siliceous "calc-silicate hornfels" subcrop
FA 8	505294	7159984	Fine-grained hard, black outcrop with pyrrhotite and pyrite ("hornfels")

UTM NAD 83 Zone 7N

2017 Test Pits

Three test pits were dug with pick and shovel at soil sample sites with strong polymetallic anomalies from 2011, with data presented in Table 3 below. Photos of each pit are also shown below. In all cases flagging tape from 2011 sampling was still present to confirm the site locations. The pit depths ranged from 65cm to 100cm, with depth partly limited by permafrost. Bedrock was not reached in any of the pits, though Pit #2 was successful in reaching weakly mineralized and oxidized pebbles. Digging in Pit #3 was limited by the presence of large boulders. Pit #1 is considered to be the least successful test, with polylithic pebbles encountered suggesting mixed colluvium from upslope. Pit #3 encountered boulders of only one rock type (bomb tuff), suggesting a local source. The rock sample geochemistry was similar to the soil geochemistry for Pits #1 & 3, with no mineralized rocks encountered.
Pit #2 rocks returned significantly enriched metal values relative to soils. Oxidized pebbles returned 1871 ppm Pb, 699 ppm Zn, 3.6 ppm Ag, 1229 ppm Cu along with highly anomalous Fe, Mn, As, Cd, Sb, Bi, Ga and Se. All pits were backfilled after photography, description and sampling.

Table 3. **FA Claims 2017 Test Pit Data**

Pit 1	Location	507600E	7159100N	UTM NAD 83 Zone 7N
	Pit Size	80 cm x 60 cm	70 cm deep	
	Strata:	A horizon	15 to 20 cm	Moss, grass, roots, humus
		Ash	1 cm	below humus, probably White River Ash
		Loess	20 to 30 cm	clay, silt, fine sand, minor pebbles, dark grey-brown
		C horizon	to depth	light grey-brown, angular rock ~50%, frost
	Rock			several rock types, largest cobble 11cm
	Samples	Rock	**65953**	150 ppm Pb, 206 ppm Zn, 1.6 ppm Ag, 105 ppm Cu
		Soil	5286679	288 ppm Pb, 101 ppm Zn, 2.2 ppm Ag, 44 ppm Cu (2011)

Pit 2	Location	507800E	7159500N	UTM NAD 83 Zone 7N
	Pit Size	80 cm x 90 cm	65 cm deep	
	Strata:	A horizon	7 to 11 cm	thin layer of moss and lichen, roots, humus
		Ash	1 to 5 cm	below humus, probably White River Ash
		Loess	20 cm	orange, silty mineral soil
		C horizon		~60% rusty angular pebbles, frost
	Rock			pebbles, max 11cm, orange, red, black MnOx stained
	Samples	Rock	**65951**	1871 ppm Pb, 699 ppm Zn, 3.6 ppm Ag, 1229 ppm Cu, 1129 ppm As
		Soil	5286945	658 ppm Pb, 205 ppm Zn, 0.7 ppm Ag, 186 ppm Cu, 176 ppm As (2011)

Pit 3	Location	505000E	7160500N	UTM NAD 83 Zone 7N
	Pit Size	120 cm x 100 cm	100 cm deep	
	Strata:	A horizon	10 to 20 cm	moss, humus, roots
		Ash	nil	
		Loess	nil	
		C horizon	to depth	angular boulders 50%, silty soil 50%
	Rock			rusty lapilli bomb tuff, felsic bombs, grey matrix
	Samples	Rock	**65952**	35 ppm Pb, 146 ppm Zn, 2.3 ppm Ag, 76 ppm Cu
		Soil	5286714	65 ppm Pb, 429 ppm Zn, 2.2 ppm Ag, 79 ppm Cu (2011)

Figure 15. Pit #1

Figure 16. Pit #2

Figure 17. Pit #2 rocks, sample 65951.

Figure 18. Pit #3.

2017 Portable XRF Utilization

A Niton XL3t portable hand-held XRF was used in the field to provide rapid evaluation of soils and rocks. The information provided by the XRF was useful in adjusting soil line locations to maximize data in anomalous areas. For example, the samples collected on line 504800E were added based on highly anomalous XRF values for Pb, Zn and Cu in soils from line 504600E. This area appears to be the most highly mineralized part of the claims discovered to date. Low metal values on the north end of line 504600E were reason not to extend line 505000E to the north, as originally planned.

XRF readings were taken for 30 seconds through the soil sample bags, and high values of Pb, Zn, Cu (and sometimes 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.

SAMPLE PREPARATION, ANALYSES AND SECURITY

The 2017 samples were placed into rice bags in the field by the author, sealed with zip ties and secured. The samples were transported and delivered directly by the author to the Whitehorse preparation facility of Bureau Veritas Minerals (Acmelab). The samples were shipped by BVM to their Vancouver laboratory. Bureau Veritas Mineral Laboratories is accredited and certified to the International Organization for Standardization for Quality ISO9001:2008, Environmental Management: ISO14001 and Safety Management OH SAS 18001 and AS4801.

At the laboratory samples were dried at 60°C. Soil samples were sieved to -80 mesh. Rocks were crushed, then a 250g split was pulverized to 200 mesh. The samples were analyzed by BVM method AQ201 for 36 elements by ICP-MS after digestion of 15g by 1:1:1 aqua regia.

Quality control procedures were implemented at the laboratory, involving the regular insertion of blanks and standards and repeat analyses on the samples. Quality Assurance data is provided for each batch of samples and included with each analytical certificate (Appendices 3 & 4).

There was no evidence of any tampering with the samples during collection or shipping. All sample preparation was conducted by the laboratory.

INTERPRETATION AND CONCLUSIONS

The geology of the Gladman area and FA property is still poorly understood due to scarce outcrop and limited mapping, however significant progress has been made in 2017. The regional northeast trending fault may be an important control of mineralization, similar to the Fortymile CRD district in nearby Alaska. The southeast trending FVD magnetic high anomaly may reflect a splay structure off this fault. Epigenetic pyrrhotite-pyrite mineralization is thought to be the source of the magnetic high. Rocks found to the north of the FVD magnetic high structure are undeformed subaerial volcanics with a band of limestone, and the strong polymetallic soil geochemical anomaly coincides with this package of rocks. The location where the limestone overlies the magnetic high is currently thought to be the best target, with an area roughly 500m in diameter returning some of the highest Zn, Cu and Ag values from a cluster of about 30 samples.

High temperature carbonate replacement deposit or skarn, along with epithermal veins appear to be the most likely targets to explain the polymetallic anomaly. High arsenic values might suggest undiscovered gold potential.

The Border Hill target was investigated due to the presence of a small Tertiary intrusion on Green's original geological map of the area that is absent on more recent maps. The hill is underlain by undeformed felsic bomb tuff cut by rhyolite dykes. A small recessive weathered granite subcrop was observed just southeast of the hill, approximately on trend with the northeasterly regional fault. The granite, dykes and volcanics might all be mid Cretaceous and related to the Fanning pluton, though the area is mapped as Finlayson group metavolcanics. If the granite is related to the pluton, the southern margin of the pluton extends considerably beyond the current map. It is interesting/ puzzling that Border Hill lies within a broad magnetic low, while similarly anomalous geochemistry on the FA claims correlates well with a linear magnetic high anomaly.

RECOMMENDATIONS

The Gladman area and FA property covers a large Pb- Zn- Ag- Cu anomaly in soils and stream sediments that is open to further expansion. The nature of the target is unknown, but is likely a CRD, skarn or epithermal deposit. The length, width and continuity of the soil anomaly is encouraging, and may lead to a significant discovery.

Soil geochemistry appears to be a very effective exploration method for this property. Additional soil lines should be sampled to the southeast along the anomalous trend, and also to infill gaps in the existing sample pattern. Particular focus should be on the roughly 500m diameter area of highly anomalous soils where favourable limestone host rocks are interpreted to overlie the magnetic high anomaly centered near 504600E, 7160400N. The highest Zn, Cu and Ag values on the claims lie within this cluster. Test pitting should also be conducted in this area. Soil sampling should be tightened up to 100m by 50m spacing.

Geological mapping and prospecting should be continued along the anomalous trend and across the entire area.

The Border Hill area seems very promising based on 2017 work, with a string of consistently elevated soil values and the presence of narrow epithermal veins with elevated Ag, Au, As, Pb, Mo & Cu. This area also returned local elevated Zn, Sb and Bi values. Staking is recommended. Further prospecting and soil sampling is recommended for this area.

The property has reasonable logistics, with roads within 10 or 15km to the southeast at Clinton Creek or across the border to the west in Alaska. The terrain is moderate, so construction of trails would be reasonably easy if exploration is successful, with no stream crossings necessary.

Respectfully submitted,

William D. Mann, M.Sc., P.Geo.

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STATEMENT OF QUALIFICATIONS

WILLIAM D. MANN, M.Sc., P.Geo.

19 HAYES CRESCENT, WHITEHORSE, YUKON Y1A 0E1

1. I am a member in good standing of the Association of Professional Engineers and Geoscientists of BC, Licence #31907.

2. I am a Graduate of Queen's University, 1986, with a Master of Science Degree in Mineral Exploration Geology.

3. I am a Graduate of the University of British Columbia, 1983, with a Bachelor of Science Degree in Geology.

4. I have worked in mineral exploration and mining continuously since 1979.

5. I participated in the work program on the Gladman Project (FA claims) in 2017.

6. I am the owner of the FA claims.

January 15, 2018

William D. Mann, M.Sc., P.Geo.

Gladman/ FA Project YMEP Expenditures 2017
W.D. Mann

		Activity	Units	Rate	Total
	PHASE 1 - Staking	**June 2 - 4, 2017**			
Labour	W.D. Mann, P.Geo.	Staking FA claims	3	500	$1,500.00
	Max Mikhailytchev	Staking FA claims	3	350	$1,050.00
Field Costs	$100 per worker-day		6	100	$600.00
Helicopter	#61566, 61570	Trans North	2.8		$3,449.21
Truck	$.60 per km	Whitehorse to Clinton Creek return	1205	0.6	$723.00
		Phase 1 subtotal			$7,322.21
	PHASE 2 - Exploration	**Sept. 2 - 8, 2017**			
Labour	W.D. Mann, P.Geo.	Prospecting/ Mapping	7	500	$3,500.00
	Max Mikhailytchev	Soil Sampling, pitting	7	350	$2,450.00
	R. Warren	Soil Sampling etc.	6	225	$1,350.00
Field Costs	$100 per worker-day		20	100	$2,000.00
Helicopter	#63486, 63498	Trans North	3.4		$4,456.08
Truck	$.60 per km	Whitehorse to Clinton Creek return	1208	0.6	$724.80
Assays	#VANI281834	soils - Bureau Veritas	171		$4,333.14
	#VANI287390	rocks - Bureau Veritas	11		$382.83
XRF	$110 per day of use	Niton XL3t analyzer	5	110	$550.00
Thin Sections	170732	VanPetro preparation	8		$388.50
		T. Liverton Report			$1,050.00
Mapping	2017-WDMann-01	Stewart Basin Exploration GIS	1.5		$630.00
	#111747	Integraphics Plotting			$245.70
Report	W.D. Mann, P.Geo.		4		$2,000.00
		Phase 2 subtotal			$24,061.05
		TOTAL			**$31,383.26**

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Canada

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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 11, 2017
Report Date: October 05, 2017

CERTIFICATE OF ANALYSIS WHI17000824.1

CLIENT JOB INFORMATION

Project: GLADMAN FA
Shipment ID:
P.O. Number
Number of Samples: 171

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	171	Dry at 60C			WHI
SS80	171	Dry at 60C sieve 100g to -80 mesh			WHI
AQ201	170	1:1:1 Aqua Regia digestion ICP-MS analysis	15	Completed	VAN
SHP01	171	Per sample shipping charges for branch shipments			VAN

ADDITIONAL COMMENTS

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

CC:

BRITISH COLUMBIA CERTIFIED ASSAYER
Marcus Lau
MARCUS LAU
Production Manager

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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Project: GLADMAN FA
Report Date: October 05, 2017

CERTIFICATE OF ANALYSIS WHI17000824.1

	Method	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201
	Analyte	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La
	Unit	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm
	MDL	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001	1
17501	Soil	1.5	8.4	20.4	59	<0.1	7.7	7.3	687	3.11	3.6	3.7	21.5	21	<0.1	0.3	0.5	38	0.16	0.039	25
17502	Soil	4.9	7.5	20.2	52	0.1	8.3	4.0	216	1.89	12.3	1.9	8.7	16	0.2	0.4	0.4	34	0.21	0.049	19
17503	Soil	0.6	0.7	8.4	37	<0.1	1.1	2.6	695	1.94	<0.5	1.1	22.9	30	<0.1	<0.1	0.1	20	0.35	0.047	25
17504	Soil	1.0	2.5	18.1	65	<0.1	1.8	5.6	1332	2.69	1.3	1.3	19.8	7	<0.1	0.1	0.2	30	0.11	0.067	29
17505	Soil	0.5	2.6	12.4	47	<0.1	2.2	3.1	598	2.42	<0.5	1.1	31.4	30	<0.1	0.1	<0.1	23	0.44	0.058	35
17506	Soil	0.6	4.7	14.2	62	<0.1	3.0	5.0	812	3.22	1.6	1.9	36.3	22	<0.1	<0.1	0.6	32	0.39	0.090	44
17507	Soil	0.7	7.4	15.2	70	<0.1	1.2	3.2	706	2.38	0.6	1.3	29.7	16	<0.1	<0.1	2.6	25	0.29	0.057	34
17508	Soil	1.7	29.3	22.6	76	0.2	15.5	6.3	254	1.85	10.3	2.3	2.6	16	0.4	0.6	0.8	40	0.18	0.042	14
17509	Soil	1.3	26.8	20.1	88	0.2	16.6	6.2	272	1.84	7.9	5.4	3.1	17	0.4	0.5	0.4	37	0.19	0.039	16
17510	Soil	1.0	21.2	24.9	70	0.2	15.5	6.4	194	1.76	6.4	1.8	2.4	17	0.3	0.5	0.3	39	0.20	0.045	14
17511	Soil	1.0	26.6	42.6	70	0.2	15.6	5.0	142	1.54	6.1	3.8	1.2	15	1.1	0.5	0.3	35	0.14	0.044	13
17512	Soil	0.8	19.8	12.1	61	0.2	16.5	5.6	173	1.74	6.9	2.1	2.4	18	0.3	0.5	0.3	40	0.20	0.044	14
17513	Soil	0.9	16.8	9.8	53	0.2	15.2	5.8	180	1.67	5.7	1.7	2.0	19	0.4	0.5	0.3	39	0.23	0.044	13
17514	Soil	0.7	22.1	12.4	69	0.2	17.0	5.2	183	1.72	7.0	2.5	3.5	22	0.3	0.5	0.4	42	0.29	0.048	14
17515	Soil	1.2	30.0	25.6	87	0.3	18.6	5.9	200	1.95	9.4	3.8	3.0	21	0.6	0.5	0.6	45	0.25	0.045	15
17516	Soil	1.2	40.1	70.5	98	0.5	14.5	5.0	199	1.82	28.4	4.2	3.8	23	0.5	1.0	1.8	40	0.33	0.046	14
17517	Soil	0.9	38.7	41.7	253	1.1	10.8	3.5	356	1.43	7.1	2.5	1.6	24	2.2	0.4	1.6	34	0.38	0.038	9
17518	Soil	0.5	81.7	60.1	739	1.5	28.0	4.6	636	1.72	7.5	4.0	2.0	64	6.2	0.8	2.3	43	1.32	0.087	14
17519	Soil	0.3	31.8	32.6	234	0.6	22.6	5.9	857	1.45	7.9	3.7	1.7	72	2.3	1.0	1.9	35	1.83	0.090	11
17520	Soil	0.4	42.7	49.5	1044	1.5	35.3	6.6	1208	1.56	16.5	3.9	1.4	104	13.7	1.1	1.9	37	2.45	0.155	11
17521	Soil	0.8	48.2	76.5	286	1.9	23.6	4.7	2080	1.41	66.7	2.2	1.4	79	3.8	2.3	3.0	31	2.47	0.153	10
17522	Soil	0.4	129.5	27.4	713	0.9	29.4	5.2	506	1.43	15.8	7.6	2.4	117	5.5	1.2	3.9	32	1.42	0.102	13
17523	Soil	0.4	290.2	22.0	1140	0.9	28.9	3.9	474	1.52	8.1	6.9	1.5	38	7.1	0.6	2.9	28	1.39	0.075	10
17524	Soil	0.5	176.0	21.7	801	1.4	25.5	3.5	398	1.41	6.9	4.0	1.3	72	8.6	0.7	2.5	28	2.22	0.138	11
17525	Soil	1.7	113.2	22.9	216	1.1	26.9	8.1	542	1.82	16.7	10.8	1.3	44	2.5	1.6	1.7	47	0.55	0.088	15
17526	Soil	5.7	53.1	57.0	199	1.4	28.1	7.5	186	3.20	30.0	3.6	2.8	22	0.5	1.8	2.5	65	0.17	0.058	16
17527	Soil	10.4	117.9	28.9	330	0.7	92.3	19.1	586	3.90	40.1	8.3	4.7	56	1.6	2.4	0.8	91	0.48	0.071	18
17528	Soil	5.1	23.7	26.7	85	1.1	20.6	3.8	119	1.79	11.2	2.3	1.0	22	0.3	1.1	0.3	32	0.15	0.073	17
17529	Soil	1.6	25.1	20.3	88	1.2	26.3	5.3	162	1.64	11.3	3.6	0.7	21	0.5	0.8	0.2	38	0.19	0.073	16
17530	Soil	3.9	35.5	18.6	114	0.6	31.2	13.2	870	2.09	15.7	4.0	1.0	17	0.7	1.6	0.2	37	0.15	0.073	18

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.

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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
17501	Soil	15	0.50	222	0.032	<1	1.83	0.009	0.12	0.2	0.02	5.3	0.1	<0.05	8	<0.5	<0.2
17502	Soil	13	0.25	139	0.029	1	0.85	0.009	0.06	0.8	0.03	2.1	0.1	<0.05	3	<0.5	<0.2
17503	Soil	2	0.37	352	0.030	<1	1.03	0.007	0.24	<0.1	<0.01	3.1	0.1	<0.05	5	<0.5	<0.2
17504	Soil	5	0.38	337	0.060	<1	1.49	0.010	0.38	0.7	0.01	5.3	0.3	<0.05	8	<0.5	<0.2
17505	Soil	5	0.46	424	0.034	<1	1.67	0.010	0.33	0.1	0.03	5.4	0.2	<0.05	7	<0.5	<0.2
17506	Soil	6	0.48	609	0.096	<1	1.74	0.013	0.48	0.3	0.01	6.8	0.4	<0.05	8	<0.5	<0.2
17507	Soil	3	0.38	395	0.055	<1	1.24	0.009	0.40	0.1	<0.01	5.1	0.2	<0.05	7	<0.5	<0.2
17508	Soil	23	0.34	184	0.028	<1	1.20	0.007	0.04	0.3	0.04	2.5	0.2	<0.05	3	<0.5	<0.2
17509	Soil	22	0.29	241	0.027	<1	1.11	0.007	0.06	0.3	0.03	2.8	0.2	<0.05	4	<0.5	<0.2
17510	Soil	23	0.31	198	0.032	<1	1.12	0.008	0.04	0.3	0.04	2.8	0.2	<0.05	3	<0.5	<0.2
17511	Soil	21	0.28	198	0.024	1	1.17	0.009	0.04	0.2	0.03	2.0	0.2	<0.05	4	<0.5	<0.2
17512	Soil	23	0.35	222	0.035	<1	1.20	0.008	0.04	0.3	0.03	2.9	0.1	<0.05	4	<0.5	<0.2
17513	Soil	22	0.34	204	0.034	<1	1.09	0.009	0.04	0.3	0.03	2.5	0.1	<0.05	3	<0.5	<0.2
17514	Soil	24	0.37	247	0.042	<1	1.13	0.009	0.04	0.4	0.03	3.2	0.1	<0.05	3	<0.5	<0.2
17515	Soil	28	0.40	258	0.041	<1	1.33	0.009	0.05	0.3	0.03	2.9	0.2	<0.05	4	<0.5	<0.2
17516	Soil	23	0.35	236	0.036	<1	1.15	0.009	0.05	0.5	0.04	2.5	0.2	<0.05	3	0.6	<0.2
17517	Soil	16	0.22	238	0.032	<1	0.98	0.016	0.04	0.9	0.04	2.1	0.2	<0.05	4	<0.5	<0.2
17518	Soil	26	0.43	334	0.034	1	1.31	0.018	0.03	0.4	0.04	3.7	0.2	0.10	3	0.7	<0.2
17519	Soil	21	0.33	230	0.029	2	0.98	0.017	0.03	0.5	0.05	2.6	<0.1	0.06	3	<0.5	<0.2
17520	Soil	23	0.37	218	0.026	6	1.02	0.016	0.03	0.9	0.05	2.5	0.1	0.05	3	1.3	<0.2
17521	Soil	21	0.35	145	0.020	5	0.98	0.015	0.04	30.3	0.03	2.3	0.2	0.06	3	1.1	<0.2
17522	Soil	25	0.35	184	0.032	2	1.02	0.020	0.03	0.2	0.04	2.7	0.1	<0.05	3	1.3	<0.2
17523	Soil	21	0.28	233	0.030	2	1.09	0.013	0.02	0.3	0.04	2.5	0.2	0.06	3	0.7	<0.2
17524	Soil	22	0.35	306	0.027	4	1.23	0.014	0.03	0.2	0.05	2.9	0.1	0.06	3	<0.5	<0.2
17525	Soil	28	0.35	349	0.019	<1	1.27	0.010	0.04	0.3	0.05	3.5	0.5	0.06	4	0.9	<0.2
17526	Soil	39	0.62	191	0.021	1	1.60	0.007	0.07	0.2	0.08	3.3	0.3	<0.05	5	3.1	<0.2
17527	Soil	54	1.01	316	0.027	<1	2.25	0.012	0.10	0.2	0.07	5.8	0.4	<0.05	6	5.6	<0.2
17528	Soil	26	0.46	235	0.009	1	1.20	0.006	0.07	<0.1	0.15	1.7	0.2	<0.05	4	0.8	<0.2
17529	Soil	30	0.42	345	0.013	1	1.43	0.009	0.07	0.1	0.15	2.4	0.2	<0.05	4	0.7	<0.2
17530	Soil	23	0.40	260	0.017	<1	1.18	0.009	0.07	<0.1	0.07	2.2	0.2	<0.05	4	0.8	<0.2

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Client: **Bill Mann**
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Project: GLADMAN FA
Report Date: October 05, 2017

CERTIFICATE OF ANALYSIS WHI17000824.1

	Method	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201
	Analyte	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La
	Unit	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm
	MDL	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001	1
17531	Soil	4.6	25.6	18.9	87	0.1	9.3	7.3	607	3.60	8.8	1.8	11.3	37	0.1	0.4	0.7	54	0.32	0.181	15
17532	Soil	4.0	38.6	15.6	92	0.2	3.2	4.3	717	3.51	6.8	1.4	17.1	21	0.3	0.2	0.7	34	0.28	0.061	31
17533	Soil	7.1	27.1	15.9	84	<0.1	2.7	4.2	547	3.00	8.4	1.0	10.1	15	0.3	0.2	0.7	41	0.08	0.072	15
17534	Soil	8.7	23.7	16.1	60	<0.1	7.8	8.2	647	2.78	10.6	0.5	3.8	9	0.3	0.5	1.1	44	0.08	0.064	17
17535	Soil	2.4	18.6	10.5	62	<0.1	5.5	4.2	438	2.57	16.2	2.0	16.5	16	0.3	0.4	1.1	32	0.27	0.060	28
17536	Soil	1.6	15.5	17.2	49	<0.1	18.6	8.5	340	2.20	12.1	3.8	3.1	18	0.2	0.6	1.0	48	0.19	0.027	14
17537	Soil	1.1	8.9	12.2	36	<0.1	12.4	6.1	197	2.24	10.2	1.5	0.7	13	0.7	0.4	0.6	50	0.11	0.029	10
17538	Soil	6.6	43.2	7.5	48	0.2	30.0	6.7	161	2.43	8.3	1.2	3.0	36	0.1	0.3	0.2	100	0.30	0.026	15
17539	Soil	17.8	108.1	12.1	81	<0.1	49.2	10.0	184	3.51	23.4	5.9	6.2	68	0.4	0.8	0.7	142	0.45	0.034	19
17540	Soil	1.4	55.6	20.3	61	0.6	30.6	5.5	126	2.13	12.7	8.6	0.8	17	0.1	0.5	1.6	67	0.14	0.058	14
17541	Soil	1.2	51.7	298.5	347	0.9	24.6	9.2	466	2.18	8.5	10.6	3.0	34	1.6	0.7	0.7	61	0.31	0.056	17
17542	Soil	1.0	25.5	128.0	140	0.2	18.5	6.6	275	2.17	8.6	2.4	4.4	22	0.8	0.6	0.2	50	0.22	0.029	13
17543	Soil	1.2	28.5	74.6	93	0.4	15.0	5.2	194	1.95	19.7	2.1	5.5	18	0.3	0.8	0.2	46	0.17	0.026	13
17544	Soil	0.9	14.1	29.4	76	<0.1	12.1	5.9	296	1.71	9.9	0.9	4.0	18	0.5	0.6	0.2	39	0.20	0.045	17
17545	Soil	1.2	25.4	12.1	62	0.1	21.6	6.8	257	2.07	17.9	10.5	3.6	15	0.1	1.4	0.1	42	0.13	0.036	18
17546	Soil	1.9	18.0	17.4	62	0.2	17.0	5.8	238	2.21	9.7	2.2	1.4	11	0.6	0.7	0.4	61	0.11	0.078	14
17547	Soil	1.1	29.5	90.0	65	0.2	18.3	6.0	286	2.19	12.0	3.6	4.7	11	0.1	0.7	0.7	37	0.10	0.043	22
17548	Soil	1.5	51.4	32.2	71	0.3	24.7	22.4	1504	3.56	29.2	1.7	4.8	18	0.2	1.0	0.3	34	0.06	0.106	27
17549	Soil	1.4	65.6	13.2	62	0.3	22.3	6.4	481	2.35	27.5	2.1	11.2	23	<0.1	1.1	2.2	36	0.23	0.016	25
17550	Soil	2.8	144.9	14.7	230	0.3	34.7	7.8	1556	4.95	30.4	3.9	7.2	67	0.4	1.9	3.8	82	0.81	0.112	16
17551	Soil	1.5	59.5	17.1	216	0.4	28.3	10.6	879	2.93	11.5	3.2	4.2	47	1.1	0.8	2.0	64	0.67	0.046	16
17552	Soil	1.3	44.2	25.4	161	0.3	33.7	11.5	790	2.54	11.9	2.6	3.6	83	1.2	1.0	1.0	58	1.01	0.078	16
17553	Soil	0.2	28.2	14.6	91	0.2	17.7	6.1	741	1.68	4.9	1.1	2.0	109	1.0	0.6	0.4	40	1.43	0.067	12
17554	Soil	0.3	38.0	21.6	121	0.2	23.1	7.4	655	1.92	6.6	3.6	3.4	92	0.6	0.7	0.5	47	1.16	0.089	14
17555	Soil	0.9	37.3	18.8	93	0.2	26.9	8.8	513	2.08	12.0	2.2	3.9	80	0.9	1.1	0.5	48	1.92	0.075	14
17556	Soil	0.6	53.0	44.7	206	0.3	26.7	7.6	629	2.13	12.3	3.9	10.5	47	1.0	1.1	1.1	56	0.57	0.071	16
17557	Soil	1.5	7.6	34.8	108	<0.1	18.4	5.7	528	2.03	2.2	<0.5	12.3	10	0.5	0.2	0.2	47	0.20	0.016	25
17558	Soil	15.2	13.4	60.2	82	0.2	17.0	4.5	312	1.93	17.3	1.8	11.7	12	0.2	0.5	1.8	38	0.25	0.018	26
17559	Soil	7.9	20.6	33.2	150	0.3	14.7	4.9	368	1.74	9.9	1.6	6.1	21	0.4	0.6	1.0	35	0.35	0.037	23
17560	Soil	3.8	40.6	65.2	114	0.5	23.2	11.1	656	2.27	14.1	2.9	5.6	28	0.5	1.1	1.1	54	0.23	0.049	20

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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
17531	Soil		17	0.50	322	0.094	<1	1.77	0.010	0.32	1.2	0.02	4.1	0.4	<0.05	8	<0.5	<0.2
17532	Soil		5	0.50	514	0.121	<1	1.83	0.010	0.62	1.6	0.02	5.9	0.6	<0.05	9	<0.5	<0.2
17533	Soil		8	0.35	221	0.106	<1	1.86	0.007	0.35	2.7	0.01	4.0	0.4	<0.05	9	<0.5	<0.2
17534	Soil		17	0.27	140	0.026	<1	1.48	0.005	0.09	8.0	0.02	2.3	0.2	<0.05	6	<0.5	<0.2
17535	Soil		8	0.33	268	0.068	<1	1.44	0.008	0.32	1.3	0.01	5.5	0.3	<0.05	7	<0.5	<0.2
17536	Soil		28	0.33	194	0.028	<1	1.52	0.008	0.07	0.3	0.01	3.1	0.2	<0.05	5	<0.5	<0.2
17537	Soil		20	0.27	136	0.020	<1	1.36	0.007	0.05	0.3	0.02	1.3	0.1	<0.05	4	<0.5	<0.2
17538	Soil		42	0.62	132	0.063	1	2.64	0.008	0.12	0.1	0.02	4.0	0.3	<0.05	9	1.5	<0.2
17539	Soil		73	0.86	196	0.087	<1	2.67	0.021	0.08	0.2	0.02	8.7	0.6	<0.05	8	3.6	<0.2
17540	Soil		50	0.42	267	0.039	1	1.82	0.014	0.06	0.1	0.03	3.1	0.3	<0.05	6	1.0	0.3
17541	Soil		40	0.58	257	0.045	1	1.71	0.008	0.06	0.3	0.04	3.9	0.3	<0.05	5	0.8	<0.2
17542	Soil		30	0.45	168	0.045	1	1.41	0.007	0.04	0.2	0.04	2.8	0.2	<0.05	4	<0.5	<0.2
17543	Soil		27	0.39	168	0.043	<1	1.34	0.006	0.06	0.2	0.02	2.7	0.2	<0.05	4	<0.5	<0.2
17544	Soil		20	0.37	186	0.050	1	1.13	0.006	0.08	0.2	0.01	1.9	0.2	<0.05	4	<0.5	<0.2
17545	Soil		25	0.43	235	0.036	<1	1.21	0.007	0.05	0.1	0.04	2.7	0.1	<0.05	3	<0.5	<0.2
17546	Soil		23	0.27	209	0.026	<1	1.39	0.007	0.05	0.2	0.03	1.9	0.2	<0.05	6	<0.5	<0.2
17547	Soil		24	0.24	189	0.022	<1	1.05	0.005	0.05	0.1	0.06	2.5	0.1	<0.05	3	0.5	<0.2
17548	Soil		23	0.20	191	0.020	<1	1.09	0.004	0.09	<0.1	0.05	3.7	0.3	<0.05	3	<0.5	<0.2
17549	Soil		26	0.26	174	0.013	<1	1.47	0.007	0.11	1.2	0.03	4.1	0.4	<0.05	4	<0.5	<0.2
17550	Soil		51	0.45	220	0.017	<1	2.12	0.016	0.03	3.7	0.04	5.5	0.3	<0.05	7	<0.5	<0.2
17551	Soil		36	0.50	324	0.046	1	1.77	0.020	0.05	2.0	0.06	5.2	0.1	<0.05	5	<0.5	<0.2
17552	Soil		31	0.58	251	0.049	2	1.47	0.032	0.07	0.6	0.04	4.2	0.1	<0.05	4	0.5	<0.2
17553	Soil		21	0.36	222	0.039	2	1.23	0.028	0.03	0.3	0.04	2.9	<0.1	0.07	3	<0.5	<0.2
17554	Soil		27	0.48	251	0.046	2	1.46	0.027	0.05	0.3	0.04	3.7	0.2	0.05	4	<0.5	<0.2
17555	Soil		26	0.53	237	0.046	2	1.11	0.024	0.06	0.2	0.02	3.4	0.2	<0.05	3	<0.5	<0.2
17556	Soil		34	0.44	290	0.039	1	1.61	0.017	0.09	0.4	0.05	4.6	0.4	<0.05	5	<0.5	<0.2
17557	Soil		31	0.28	154	0.037	<1	1.08	0.005	0.24	0.2	0.02	5.1	0.2	<0.05	5	<0.5	<0.2
17558	Soil		24	0.21	80	0.015	<1	0.96	0.005	0.14	0.2	<0.01	3.3	0.2	<0.05	4	<0.5	<0.2
17559	Soil		22	0.24	105	0.012	1	1.04	0.006	0.07	0.2	0.03	2.7	0.2	<0.05	3	0.7	<0.2
17560	Soil		31	0.38	204	0.036	<1	1.46	0.009	0.07	0.2	0.04	3.3	0.4	<0.05	5	1.1	<0.2

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	Analyte	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La
	Unit	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm
	MDL	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001	1
17561	Soil	2.8	33.2	33.5	97	0.3	24.8	9.7	477	2.27	15.0	18.0	5.2	30	0.6	0.8	0.7	53	0.36	0.046	20
17562	Soil	6.6	27.2	37.3	91	0.2	18.5	4.3	314	1.89	20.0	2.3	7.3	51	0.2	1.0	0.8	35	0.37	0.043	23
17563	Soil	1.1	51.4	40.5	141	0.3	19.9	5.7	363	2.09	30.3	1.3	5.8	58	0.6	0.8	1.7	44	0.42	0.049	18
17564	Soil	1.6	74.3	35.4	118	0.6	23.5	6.8	384	2.33	103.2	14.1	5.5	33	0.8	1.2	2.4	48	0.49	0.057	17
17565	Soil	1.7	91.7	42.8	150	0.7	21.3	6.5	517	2.41	32.1	5.4	5.2	41	1.4	1.2	2.2	43	0.57	0.059	20
17566	Soil	1.5	119.2	52.4	362	1.6	26.8	9.2	589	2.82	31.9	4.4	4.2	35	2.3	1.1	2.4	58	0.75	0.067	19
17567	Soil	1.9	98.7	55.2	274	1.0	27.9	7.7	523	2.77	31.4	7.6	5.4	34	1.3	1.1	4.6	50	0.72	0.078	17
17568	Soil	1.2	235.7	34.5	378	0.7	21.7	6.6	562	2.59	65.1	5.8	4.2	39	2.3	0.8	3.2	50	0.48	0.063	17
17569	Soil	1.1	537.8	71.6	927	4.6	26.0	6.7	1508	4.23	418.5	37.8	2.7	77	7.4	2.2	14.4	40	1.25	0.152	14
17570	Soil	0.5	82.4	26.9	321	0.9	34.5	9.4	1261	2.27	18.6	3.1	3.8	59	4.0	1.1	2.2	55	1.03	0.092	15
17571	Soil	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.
17572	Soil	0.8	21.5	18.1	107	0.4	18.6	6.1	894	1.86	16.8	2.0	2.8	41	1.4	0.5	0.8	49	0.67	0.059	13
17573	Soil	3.6	34.8	33.1	187	0.7	26.9	8.1	3808	2.40	60.2	3.4	2.8	49	1.7	2.4	1.5	49	1.31	0.146	15
17574	Soil	0.5	9.5	19.1	147	0.2	6.8	3.7	1869	0.79	3.8	<0.5	0.3	102	2.6	0.3	1.5	17	1.01	0.101	7
17575	Soil	0.4	33.0	53.4	1116	1.8	20.4	5.7	740	1.83	9.0	3.6	1.9	56	18.1	0.5	3.2	40	1.34	0.148	12
17576	Soil	0.3	963.1	44.7	2571	1.5	50.8	4.0	1459	1.42	8.4	6.2	3.5	201	18.1	1.1	8.4	27	2.66	0.965	19
17577	Soil	1.2	876.6	45.3	840	0.8	42.0	6.7	1511	2.33	21.1	6.5	4.1	61	6.6	2.2	21.5	57	0.71	0.280	28
17578	Soil	2.9	39.0	16.9	127	0.3	27.8	6.9	257	2.29	17.4	2.3	4.9	29	1.2	1.2	0.8	49	0.34	0.071	17
17579	Soil	3.2	35.3	32.0	73	0.3	27.2	9.7	438	2.91	20.5	6.2	4.3	25	0.1	1.7	0.4	57	0.10	0.062	18
65801	Soil	1.7	3.3	20.4	31	<0.1	2.0	2.6	458	1.65	18.2	0.9	10.9	5	<0.1	0.3	0.1	14	0.03	0.023	34
65802	Soil	0.3	4.9	16.1	40	<0.1	5.7	5.7	589	2.28	3.2	<0.5	22.3	27	<0.1	0.2	0.1	28	0.34	0.030	23
65803	Soil	1.1	8.5	15.1	84	<0.1	8.6	7.2	1289	3.78	2.3	<0.5	24.4	36	<0.1	0.3	0.2	38	0.44	0.101	32
65804	Soil	1.2	30.2	11.9	65	<0.1	23.5	8.9	292	2.20	9.2	1.9	4.8	28	0.4	1.0	0.2	43	0.38	0.083	16
65805	Soil	1.7	30.5	14.7	79	0.2	28.1	9.7	294	2.56	11.8	4.6	5.5	27	0.4	1.2	0.3	52	0.40	0.070	20
65806	Soil	2.2	29.3	29.6	82	0.1	29.2	9.2	353	2.93	15.5	2.7	8.1	18	0.3	1.4	0.2	38	0.23	0.047	27
65807	Soil	2.1	29.2	22.7	74	0.1	29.4	8.9	196	2.84	18.6	2.2	7.1	22	0.1	1.3	0.3	49	0.27	0.049	24
65808	Soil	1.6	32.0	23.0	86	0.2	31.0	10.1	268	3.00	15.6	2.4	7.5	27	0.2	1.1	0.3	49	0.33	0.058	23
65809	Soil	1.8	25.1	23.7	69	0.1	24.6	6.7	174	2.71	17.8	1.8	8.9	20	0.1	1.0	0.2	37	0.23	0.045	29
65810	Soil	2.1	33.5	27.2	85	0.1	34.3	11.2	245	3.01	16.3	2.5	8.3	24	0.4	1.4	0.3	48	0.27	0.052	26
65811	Soil	2.4	30.1	26.7	84	0.1	26.6	7.0	216	2.36	9.6	1.2	9.1	22	0.2	1.3	0.3	41	0.23	0.028	30

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Project: GLADMAN FA
Report Date: October 05, 2017

CERTIFICATE OF ANALYSIS WHI17000824.1

	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
17561	Soil	31	0.43	243	0.035	<1	1.55	0.010	0.06	0.3	0.03	4.0	0.2	<0.05	4	0.7	<0.2
17562	Soil	21	0.28	151	0.024	<1	1.00	0.010	0.06	0.2	0.02	2.7	0.2	<0.05	3	<0.5	<0.2
17563	Soil	27	0.39	218	0.036	<1	1.30	0.013	0.08	0.4	0.02	3.3	0.2	<0.05	4	<0.5	<0.2
17564	Soil	31	0.38	220	0.032	<1	1.47	0.010	0.11	0.6	0.04	3.5	0.5	<0.05	5	0.6	<0.2
17565	Soil	27	0.35	244	0.029	<1	1.35	0.011	0.06	1.5	0.04	3.8	0.3	<0.05	4	0.6	<0.2
17566	Soil	35	0.42	304	0.033	1	1.91	0.012	0.07	1.1	0.09	4.3	0.5	<0.05	5	0.7	<0.2
17567	Soil	32	0.41	234	0.052	1	1.39	0.013	0.11	2.3	0.05	4.1	0.3	<0.05	4	0.7	<0.2
17568	Soil	29	0.44	331	0.039	<1	1.44	0.012	0.05	1.1	0.03	4.0	0.2	<0.05	4	0.5	<0.2
17569	Soil	28	0.49	570	0.034	2	1.29	0.016	0.06	24.3	0.04	3.4	0.4	0.07	5	3.0	1.8
17570	Soil	31	0.56	325	0.044	2	1.49	0.022	0.05	2.5	0.04	4.6	0.2	0.08	4	0.6	<0.2
17571	Soil	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.	I.S.
17572	Soil	25	0.40	254	0.037	1	1.40	0.016	0.04	1.1	0.03	3.7	0.1	<0.05	4	0.6	<0.2
17573	Soil	28	0.56	332	0.031	2	1.52	0.012	0.04	16.6	0.04	4.1	0.2	<0.05	4	<0.5	<0.2
17574	Soil	10	0.27	253	0.017	2	0.78	0.014	0.03	0.3	0.03	0.9	0.2	<0.05	3	<0.5	<0.2
17575	Soil	24	0.44	272	0.032	1	1.31	0.017	0.03	0.2	0.05	3.2	0.1	<0.05	4	<0.5	0.3
17576	Soil	31	0.26	309	0.040	2	1.19	0.005	0.04	1.1	0.02	4.4	0.3	<0.05	3	<0.5	0.6
17577	Soil	41	0.35	485	0.051	1	1.62	0.006	0.04	0.4	0.05	5.8	0.8	<0.05	5	<0.5	1.1
17578	Soil	30	0.49	285	0.036	<1	1.14	0.009	0.05	0.2	0.02	3.7	0.2	<0.05	4	0.9	<0.2
17579	Soil	41	0.45	238	0.032	1	1.59	0.006	0.06	0.2	0.04	3.2	0.2	<0.05	4	1.4	<0.2
65801	Soil	4	0.04	60	0.002	<1	0.75	0.004	0.11	0.3	<0.01	0.8	0.3	<0.05	2	<0.5	<0.2
65802	Soil	9	0.46	200	0.012	<1	1.79	0.007	0.06	<0.1	<0.01	3.2	0.1	<0.05	6	<0.5	<0.2
65803	Soil	7	0.55	685	0.052	<1	1.74	0.011	0.32	0.8	<0.01	6.7	0.3	<0.05	9	<0.5	<0.2
65804	Soil	26	0.40	237	0.041	1	0.98	0.014	0.06	0.3	0.03	3.7	0.1	<0.05	3	<0.5	<0.2
65805	Soil	33	0.43	313	0.048	1	1.29	0.013	0.07	0.2	0.03	4.2	<0.1	<0.05	4	<0.5	<0.2
65806	Soil	30	0.28	305	0.026	<1	1.11	0.006	0.08	<0.1	0.05	2.7	<0.1	<0.05	3	<0.5	<0.2
65807	Soil	35	0.36	364	0.032	<1	1.42	0.007	0.07	0.1	0.04	4.3	0.1	<0.05	4	<0.5	<0.2
65808	Soil	35	0.40	363	0.042	<1	1.40	0.011	0.08	<0.1	0.05	4.3	0.1	<0.05	4	<0.5	<0.2
65809	Soil	29	0.29	304	0.023	<1	1.18	0.006	0.07	0.1	0.04	3.2	0.1	<0.05	3	<0.5	<0.2
65810	Soil	35	0.34	309	0.033	<1	1.30	0.007	0.07	<0.1	0.03	4.1	<0.1	<0.05	4	<0.5	<0.2
65811	Soil	34	0.34	286	0.026	1	1.35	0.005	0.08	<0.1	0.04	3.3	0.1	<0.05	4	<0.5	<0.2

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Project: GLADMAN FA
Report Date: October 05, 2017

CERTIFICATE OF ANALYSIS WHI17000824.1

	Method	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201
	Analyte	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La
	Unit	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm
	MDL	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001	1
65812	Soil	2.6	34.3	25.8	90	0.2	30.0	9.0	168	2.89	17.2	5.3	6.3	26	0.3	1.3	0.3	49	0.29	0.051	27
65813	Soil	2.1	33.7	22.0	84	0.2	31.9	9.6	273	2.61	12.8	4.0	5.9	30	0.3	1.3	0.3	48	0.35	0.059	23
65814	Soil	1.4	22.9	15.7	61	0.1	21.5	6.1	143	2.13	10.2	2.0	3.3	35	0.2	1.1	0.3	48	0.33	0.047	17
65815	Soil	1.4	26.9	16.4	70	0.1	25.1	8.9	211	2.25	11.8	3.9	3.7	45	0.3	0.9	0.4	53	0.41	0.061	16
65816	Soil	1.2	32.9	44.0	90	0.2	23.1	7.2	248	2.14	22.2	3.9	3.3	34	0.6	1.3	0.8	50	0.33	0.055	15
65817	Soil	1.6	81.0	268.0	412	0.2	43.4	3.3	155	2.77	108.3	2.5	4.0	54	1.8	3.3	1.3	31	0.12	0.082	19
65818	Soil	0.7	12.3	139.2	48	<0.1	9.9	2.7	77	0.70	4.8	1.4	2.3	37	0.1	1.0	6.1	18	0.08	0.032	24
65819	Soil	4.1	42.3	65.4	143	0.9	35.4	6.4	156	2.86	36.3	2.7	2.9	25	0.6	2.6	1.1	54	0.26	0.062	25
65820	Soil	7.6	38.2	16.3	132	0.5	35.4	8.0	242	3.24	27.2	3.1	7.3	30	0.7	2.5	1.7	48	0.23	0.055	25
65821	Soil	3.8	24.9	8.9	88	0.2	25.3	9.8	285	2.24	9.1	1.1	3.6	19	0.4	1.3	0.2	47	0.21	0.058	17
65822	Soil	7.6	51.7	8.6	222	0.2	68.9	28.3	673	4.11	17.5	2.7	9.1	23	1.7	3.2	0.5	57	0.25	0.075	26
65823	Soil	8.2	41.8	12.3	109	0.3	36.3	9.6	275	2.94	14.3	3.1	6.1	34	0.9	4.4	0.4	63	0.32	0.073	24
65824	Soil	3.0	24.6	11.2	76	0.1	26.3	9.4	376	2.70	11.1	3.5	4.2	18	0.2	1.3	0.2	55	0.18	0.051	18
65825	Soil	20.4	54.0	32.9	238	0.9	52.2	8.2	319	4.46	45.5	4.7	9.0	100	0.5	6.1	0.4	61	0.21	0.099	31
65826	Soil	2.4	21.4	25.7	64	0.3	20.8	5.7	156	2.08	10.7	1.6	3.3	16	0.2	1.4	0.3	45	0.14	0.046	18
65827	Soil	3.3	22.0	20.1	66	0.2	18.0	9.2	360	2.25	11.0	3.6	3.0	14	0.2	1.1	0.2	52	0.13	0.030	18
65828	Soil	3.5	33.5	17.1	75	0.4	22.9	7.6	178	2.02	7.9	2.2	3.5	21	0.3	1.3	0.2	41	0.22	0.053	19
65829	Soil	2.4	23.8	13.4	71	0.3	20.4	6.7	198	2.17	8.5	3.0	1.1	16	0.3	1.0	0.2	43	0.17	0.059	17
65830	Soil	2.6	21.7	11.9	78	0.3	21.7	9.9	268	2.21	7.0	5.7	3.5	17	0.4	0.9	0.2	44	0.20	0.051	17
65831	Soil	2.5	22.6	14.3	77	0.3	23.4	7.9	215	2.25	9.0	5.4	4.5	19	0.3	1.0	0.2	47	0.20	0.057	19
65832	Soil	0.8	19.4	13.2	71	0.1	21.6	8.9	225	2.22	7.6	3.2	3.7	16	0.2	0.5	0.2	44	0.20	0.049	18
65833	Soil	1.3	20.9	13.7	68	0.1	19.0	6.9	190	2.49	10.7	4.3	4.0	19	0.2	0.7	0.2	39	0.24	0.057	18
65834	Soil	1.6	27.0	23.5	65	0.1	25.3	9.4	252	2.55	11.2	4.9	7.6	23	0.2	0.9	0.3	41	0.26	0.055	25
65835	Soil	1.1	23.2	16.9	56	0.1	21.6	7.7	209	2.14	8.8	2.8	3.2	25	0.3	0.7	0.2	41	0.33	0.053	22
65836	Soil	1.3	24.5	20.9	62	0.1	21.9	7.5	206	2.35	10.3	5.0	6.5	23	0.2	0.9	0.2	40	0.26	0.048	25
65837	Soil	1.0	24.0	16.6	57	0.1	20.3	6.9	182	2.07	9.3	5.1	7.0	23	0.1	0.7	0.2	39	0.29	0.055	23
65838	Soil	0.7	18.8	9.9	46	0.1	16.1	6.9	161	1.79	8.4	6.1	2.1	24	0.3	0.6	0.2	49	0.33	0.057	15
65839	Soil	0.9	9.2	11.7	60	<0.1	10.6	8.2	461	2.39	5.7	5.4	21.8	16	0.1	0.4	0.1	50	0.24	0.062	23
65840	Soil	1.1	19.0	10.1	51	0.1	17.6	7.6	237	2.21	10.2	2.5	2.7	26	0.2	0.6	0.1	54	0.33	0.062	15
65841	Soil	0.7	18.0	8.8	50	<0.1	17.0	6.9	150	2.11	7.3	3.0	1.8	21	0.2	0.5	0.2	51	0.26	0.058	15

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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
65812	Soil	39	0.40	316	0.038	<1	1.59	0.008	0.08	<0.1	0.07	4.4	0.1	<0.05	5	<0.5	<0.2
65813	Soil	35	0.44	297	0.044	1	1.40	0.012	0.08	0.1	0.04	4.4	<0.1	<0.05	4	<0.5	<0.2
65814	Soil	28	0.42	246	0.037	<1	1.27	0.009	0.04	<0.1	0.04	3.2	<0.1	<0.05	4	<0.5	<0.2
65815	Soil	30	0.42	240	0.048	1	1.22	0.012	0.05	0.2	0.02	3.9	0.1	<0.05	4	1.3	<0.2
65816	Soil	28	0.39	223	0.049	<1	1.14	0.011	0.04	0.3	0.04	4.4	0.2	<0.05	3	<0.5	<0.2
65817	Soil	27	0.12	307	0.023	<1	1.11	0.003	0.03	0.2	0.02	4.9	0.2	<0.05	3	<0.5	<0.2
65818	Soil	12	0.11	214	0.010	<1	0.61	0.002	0.02	0.1	0.01	2.2	<0.1	<0.05	2	<0.5	<0.2
65819	Soil	33	0.45	223	0.026	<1	1.64	0.013	0.05	<0.1	0.06	4.0	0.2	<0.05	5	1.3	<0.2
65820	Soil	30	0.60	188	0.026	<1	1.47	0.007	0.05	0.1	0.02	3.6	0.2	<0.05	4	6.6	<0.2
65821	Soil	29	0.48	163	0.045	<1	1.29	0.007	0.04	0.1	0.02	3.5	0.1	<0.05	4	0.9	<0.2
65822	Soil	43	0.97	247	0.040	<1	2.50	0.005	0.07	<0.1	0.02	3.5	0.2	<0.05	7	2.7	<0.2
65823	Soil	39	0.65	283	0.069	<1	1.60	0.008	0.05	0.1	0.04	5.4	0.1	<0.05	5	2.4	<0.2
65824	Soil	32	0.55	190	0.038	<1	1.65	0.008	0.05	<0.1	0.02	3.5	0.1	<0.05	4	<0.5	<0.2
65825	Soil	40	0.87	315	0.008	<1	1.98	0.009	0.07	<0.1	0.04	4.4	0.7	0.08	5	2.9	<0.2
65826	Soil	28	0.46	158	0.035	<1	1.32	0.007	0.04	0.2	0.05	2.6	0.1	<0.05	4	<0.5	<0.2
65827	Soil	27	0.37	192	0.035	<1	1.36	0.007	0.04	0.2	0.02	2.8	0.2	<0.05	4	<0.5	<0.2
65828	Soil	27	0.47	262	0.034	<1	1.22	0.009	0.04	0.1	0.06	3.2	0.1	<0.05	4	0.9	<0.2
65829	Soil	27	0.46	224	0.027	<1	1.39	0.008	0.05	0.1	0.06	2.5	0.1	<0.05	5	0.5	<0.2
65830	Soil	27	0.47	237	0.036	2	1.36	0.007	0.05	0.1	0.04	3.3	0.1	<0.05	4	<0.5	<0.2
65831	Soil	28	0.46	289	0.037	<1	1.34	0.007	0.05	0.2	0.06	3.6	<0.1	<0.05	4	0.6	<0.2
65832	Soil	29	0.47	267	0.030	<1	1.40	0.006	0.05	0.2	0.04	3.0	<0.1	<0.05	4	0.6	<0.2
65833	Soil	24	0.40	685	0.027	1	1.19	0.006	0.09	0.1	0.04	2.6	0.1	<0.05	4	<0.5	<0.2
65834	Soil	29	0.32	308	0.028	<1	1.31	0.007	0.07	<0.1	0.06	3.8	<0.1	<0.05	4	<0.5	<0.2
65835	Soil	27	0.32	290	0.030	1	1.24	0.011	0.06	0.1	0.04	3.4	<0.1	<0.05	4	<0.5	<0.2
65836	Soil	28	0.33	270	0.031	1	1.20	0.007	0.08	<0.1	0.05	3.5	<0.1	<0.05	4	<0.5	<0.2
65837	Soil	26	0.33	261	0.038	1	1.04	0.008	0.07	<0.1	0.04	3.3	<0.1	<0.05	3	<0.5	<0.2
65838	Soil	24	0.36	206	0.041	1	1.12	0.012	0.04	0.2	0.03	2.9	<0.1	0.06	3	<0.5	<0.2
65839	Soil	18	0.39	183	0.094	1	1.49	0.010	0.25	0.2	0.01	4.3	0.2	<0.05	6	<0.5	<0.2
65840	Soil	26	0.38	224	0.041	2	1.26	0.012	0.05	0.2	0.04	3.2	<0.1	<0.05	4	<0.5	<0.2
65841	Soil	26	0.38	215	0.042	<1	1.40	0.011	0.04	0.2	0.03	2.9	0.1	<0.05	4	<0.5	<0.2

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

Project: GLADMAN FA
Report Date: October 05, 2017

CERTIFICATE OF ANALYSIS WHI17000824.1

	Method	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201
	Analyte	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La
	Unit	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm
	MDL	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001	1
65842	Soil	0.7	2.5	13.0	60	<0.1	3.9	5.0	643	3.41	3.5	2.0	29.9	20	<0.1	0.1	<0.1	30	0.33	0.063	27
65843	Soil	0.4	4.9	15.6	100	<0.1	5.6	8.5	759	2.95	1.8	1.0	32.3	17	<0.1	0.2	<0.1	33	0.18	0.008	30
65844	Soil	0.7	20.0	11.7	55	<0.1	17.3	6.7	216	2.08	7.6	5.0	6.9	21	0.1	0.6	0.1	46	0.25	0.042	19
65845	Soil	0.4	15.0	17.8	69	<0.1	12.3	5.2	203	1.81	3.6	2.2	27.8	21	<0.1	0.4	0.1	31	0.24	0.020	48
65846	Soil	0.7	6.4	22.2	86	<0.1	10.5	6.4	509	3.24	3.5	2.6	29.4	17	0.1	0.3	<0.1	42	0.16	0.017	35
65847	Soil	1.1	18.3	13.6	60	0.1	17.6	7.5	232	2.27	8.1	3.7	5.7	19	0.3	0.7	0.2	51	0.23	0.054	19
65848	Soil	0.8	5.6	15.0	59	<0.1	7.8	6.7	880	3.09	4.7	<0.5	34.8	18	<0.1	0.1	<0.1	36	0.22	0.047	35
65849	Soil	0.8	4.3	20.6	74	<0.1	2.7	5.5	913	3.29	2.1	1.1	32.4	42	<0.1	<0.1	0.2	31	0.28	0.045	34
65850	Soil	1.1	19.7	12.2	55	<0.1	18.2	7.4	211	2.50	9.0	4.4	4.1	20	0.1	0.5	0.2	58	0.22	0.056	19
65851	Soil	1.6	16.7	13.4	58	0.1	16.9	6.3	238	2.86	9.1	3.5	4.4	23	0.2	0.5	0.2	51	0.26	0.056	20
65852	Soil	0.7	5.8	19.1	70	<0.1	5.3	8.7	886	3.62	4.4	2.1	33.1	25	0.1	0.2	<0.1	39	0.36	0.084	34
65853	Soil	0.8	3.9	17.8	60	<0.1	5.3	8.0	1080	2.87	2.0	1.4	38.7	19	0.3	0.2	<0.1	33	0.30	0.081	55
65854	Soil	8.0	4.3	8.3	69	<0.1	2.0	5.1	962	3.78	2.4	1.8	28.8	14	<0.1	0.1	0.1	28	0.25	0.065	15
65855	Soil	2.7	26.0	16.5	69	0.3	23.5	12.1	1010	2.46	22.1	4.0	0.5	16	0.6	1.1	0.7	44	0.14	0.048	16
65856	Soil	2.0	104.3	14.9	335	0.3	41.8	12.8	907	5.41	37.6	35.3	7.7	18	1.1	2.6	0.6	84	0.23	0.064	20
65857	Soil	1.0	23.8	12.8	54	0.1	17.0	8.2	307	2.09	9.2	5.2	3.1	16	0.1	0.7	0.2	47	0.17	0.039	16
65858	Soil	1.5	31.1	23.4	90	1.1	26.9	15.9	723	2.49	9.8	6.8	2.0	21	0.4	1.3	0.2	48	0.24	0.071	18
65859	Soil	1.1	18.7	19.1	70	0.1	18.3	18.9	871	2.51	11.1	2.4	3.7	15	0.3	1.2	0.2	48	0.15	0.046	18
65860	Soil	0.8	18.9	29.0	70	0.2	18.7	7.5	296	2.15	9.7	9.8	7.1	17	0.2	1.9	0.2	41	0.19	0.059	23
65861	Soil	0.8	26.0	19.0	81	0.1	24.1	7.2	248	2.19	7.6	7.8	8.5	23	0.3	1.6	0.2	45	0.27	0.059	25
65862	Soil	0.9	18.4	19.0	60	0.2	20.5	7.7	172	2.17	6.7	6.2	1.5	18	0.2	0.5	0.2	52	0.21	0.053	20
65863	Soil	0.7	16.9	16.2	63	0.1	19.4	9.0	225	2.24	7.1	3.7	4.1	17	0.3	0.6	0.2	49	0.21	0.057	19
65864	Soil	1.1	23.7	13.3	74	<0.1	25.0	11.8	374	2.69	9.0	9.0	5.7	21	0.2	0.6	0.2	56	0.27	0.070	21
65865	Soil	1.1	12.2	24.4	62	<0.1	6.9	3.8	408	1.69	1.0	3.1	23.0	11	0.1	0.2	0.3	26	0.12	0.012	32
65866	Soil	1.2	6.1	23.5	25	<0.1	3.1	2.2	57	0.46	1.4	0.8	10.9	8	<0.1	0.1	0.5	11	0.05	0.008	26
65867	Soil	0.5	8.8	37.1	79	<0.1	13.1	31.5	1290	1.17	<0.5	1.1	49.4	18	0.6	0.2	0.1	15	0.27	0.012	61
65868	Soil	0.5	5.5	14.1	29	<0.1	4.3	3.5	221	1.29	<0.5	1.7	46.8	16	<0.1	<0.1	<0.1	21	0.16	0.009	36
65869	Soil	1.1	15.3	15.2	62	<0.1	20.0	11.0	457	2.66	8.2	2.9	16.2	15	0.3	0.4	0.2	53	0.14	0.034	20
65870	Soil	0.8	34.3	26.6	79	<0.1	4.3	3.3	675	1.94	0.8	1.3	25.5	25	0.1	0.1	1.6	25	0.21	0.013	52
65871	Soil	6.5	8.2	12.6	56	<0.1	8.4	7.8	565	2.54	4.0	1.8	14.3	17	<0.1	0.2	0.2	43	0.17	0.041	24

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	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
65842	Soil	5	0.48	413	0.097	<1	1.63	0.011	0.58	<0.1	<0.01	6.0	0.3	<0.05	9	<0.5	<0.2
65843	Soil	7	0.60	459	0.187	<1	2.11	0.012	0.88	<0.1	0.01	9.0	0.5	<0.05	10	<0.5	<0.2
65844	Soil	27	0.40	214	0.059	1	1.32	0.009	0.10	<0.1	0.04	3.7	0.2	0.08	4	<0.5	<0.2
65845	Soil	16	0.28	225	0.017	<1	1.60	0.007	0.17	<0.1	0.02	4.8	0.2	0.06	5	<0.5	<0.2
65846	Soil	12	0.42	259	0.050	<1	1.77	0.010	0.46	0.2	<0.01	4.9	0.3	0.06	8	<0.5	<0.2
65847	Soil	27	0.38	210	0.043	1	1.30	0.009	0.06	0.2	0.05	3.2	<0.1	0.07	4	<0.5	<0.2
65848	Soil	11	0.49	295	0.095	<1	2.13	0.011	0.48	<0.1	0.01	6.1	0.3	0.05	8	<0.5	<0.2
65849	Soil	5	0.44	405	0.026	<1	1.54	0.011	0.46	<0.1	<0.01	4.2	0.1	0.06	9	<0.5	<0.2
65850	Soil	30	0.41	256	0.047	1	1.62	0.010	0.06	0.2	0.05	3.8	0.1	0.06	5	<0.5	<0.2
65851	Soil	25	0.36	275	0.035	1	1.55	0.009	0.07	0.1	0.06	3.4	0.2	0.06	5	0.6	<0.2
65852	Soil	9	0.55	481	0.108	<1	1.83	0.011	0.60	<0.1	<0.01	7.2	0.4	0.07	9	<0.5	<0.2
65853	Soil	5	0.35	412	0.048	<1	1.30	0.008	0.31	0.1	<0.01	4.8	0.4	0.06	6	<0.5	<0.2
65854	Soil	4	0.45	489	0.155	<1	1.61	0.009	0.60	<0.1	0.02	5.9	0.9	0.06	7	<0.5	<0.2
65855	Soil	23	0.24	217	0.018	1	0.93	0.009	0.06	0.3	0.03	1.1	0.2	<0.05	3	<0.5	<0.2
65856	Soil	38	0.83	397	0.065	<1	2.16	0.007	0.52	0.2	0.04	14.0	0.9	<0.05	7	1.6	<0.2
65857	Soil	26	0.37	187	0.036	<1	1.28	0.008	0.05	0.2	0.04	2.5	0.1	<0.05	4	<0.5	<0.2
65858	Soil	33	0.54	360	0.027	<1	1.68	0.010	0.18	0.2	0.20	3.4	0.2	<0.05	5	<0.5	<0.2
65859	Soil	28	0.45	198	0.037	1	1.34	0.007	0.07	0.2	0.08	2.4	0.1	<0.05	4	<0.5	<0.2
65860	Soil	31	0.50	191	0.035	<1	1.27	0.007	0.04	0.2	0.20	2.7	0.1	<0.05	3	<0.5	<0.2
65861	Soil	33	0.60	197	0.039	<1	1.24	0.007	0.05	0.3	0.15	2.8	<0.1	0.05	4	<0.5	<0.2
65862	Soil	49	0.47	247	0.032	1	1.56	0.011	0.06	0.2	0.09	2.9	0.1	<0.05	5	<0.5	<0.2
65863	Soil	41	0.44	204	0.036	1	1.35	0.008	0.06	0.2	0.03	2.8	0.1	0.05	4	<0.5	<0.2
65864	Soil	52	0.55	258	0.051	<1	1.38	0.009	0.05	0.2	0.02	4.0	<0.1	<0.05	4	<0.5	<0.2
65865	Soil	13	0.31	290	0.087	<1	1.29	0.006	0.30	0.4	<0.01	5.2	0.5	<0.05	6	<0.5	<0.2
65866	Soil	5	0.04	135	0.006	<1	0.43	0.002	0.04	0.4	<0.01	1.2	0.2	<0.05	2	<0.5	<0.2
65867	Soil	5	0.20	382	0.008	<1	0.79	0.006	0.09	<0.1	0.04	3.9	0.6	<0.05	3	<0.5	<0.2
65868	Soil	7	0.19	161	0.024	<1	1.08	0.006	0.13	0.5	<0.01	5.1	0.2	<0.05	4	<0.5	<0.2
65869	Soil	29	0.42	175	0.058	<1	1.73	0.010	0.11	0.4	0.01	4.4	0.2	<0.05	5	<0.5	<0.2
65870	Soil	5	0.28	492	0.064	<1	1.24	0.009	0.22	<0.1	<0.01	4.8	0.5	<0.05	5	<0.5	<0.2
65871	Soil	15	0.38	252	0.066	<1	1.65	0.007	0.20	0.3	0.01	4.2	0.3	<0.05	6	<0.5	<0.2

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	Analyte	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La
	Unit	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm
	MDL	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001	1
65872	Soil	2.4	5.9	22.7	37	<0.1	5.0	5.0	378	2.71	3.7	1.2	27.5	9	<0.1	0.2	0.1	34	0.06	0.033	37
65873	Soil	0.6	5.0	16.5	50	<0.1	6.5	8.3	720	2.74	3.1	1.6	26.8	40	<0.1	0.2	<0.1	39	0.24	0.070	38
65874	Soil	0.5	3.8	18.4	51	<0.1	2.5	4.3	387	2.66	0.7	<0.5	36.3	19	<0.1	<0.1	0.3	27	0.29	0.072	42
65875	Soil	0.8	10.9	24.9	69	<0.1	2.8	3.9	460	2.30	1.3	0.6	37.8	25	0.3	<0.1	4.9	20	0.33	0.014	52
65876	Soil	0.9	15.1	26.9	52	<0.1	2.3	3.5	478	2.54	2.0	0.8	41.9	15	0.2	0.1	0.6	28	0.16	0.012	41
65877	Soil	1.5	34.0	24.8	65	<0.1	23.6	7.8	210	2.20	7.4	4.0	8.2	11	0.2	1.1	0.4	60	0.11	0.030	31
65878	Soil	1.5	22.2	21.5	53	<0.1	20.2	7.5	197	2.31	10.6	1.2	4.3	14	0.2	0.8	0.3	61	0.12	0.021	15
65879	Soil	1.2	28.4	18.7	56	<0.1	21.8	9.9	276	2.41	8.7	3.1	6.4	17	<0.1	0.7	0.2	63	0.16	0.022	20
65880	Soil	1.9	12.3	28.9	125	<0.1	10.7	8.1	575	3.00	1.9	2.1	43.8	19	<0.1	0.5	0.2	41	0.23	0.038	49
65881	Soil	21.3	1726.8	192.8	575	3.5	43.0	32.8	2831	9.62	35.0	23.7	4.2	43	5.5	1.4	36.4	68	1.10	0.125	17
65882	Soil	2.7	141.9	20.4	84	3.7	27.9	10.0	454	2.94	29.9	3.9	4.0	12	0.4	0.8	2.3	63	0.10	0.035	12
65883	Soil	1.4	14.8	6.5	26	1.4	2.9	2.5	114	1.01	19.0	1.0	<0.1	10	0.2	0.3	1.2	29	0.07	0.019	2
65884	Soil	8.8	159.3	28.7	105	1.2	31.6	12.6	2022	2.74	28.2	6.2	5.9	20	1.2	1.2	2.9	57	0.18	0.042	20
65885	Soil	10.3	197.9	42.9	182	1.6	32.0	10.9	746	2.80	45.4	5.0	4.4	15	0.6	1.0	3.1	60	0.16	0.041	16
65886	Soil	11.7	53.0	44.9	147	0.3	23.7	12.5	1193	2.87	106.1	7.3	5.6	22	0.5	1.3	1.7	63	0.17	0.050	19
65887	Soil	26.9	36.2	92.1	239	1.7	21.9	9.4	1230	2.74	22.0	3.5	4.6	19	1.2	0.9	1.5	57	0.15	0.052	15
65888	Soil	2.7	7.8	9.4	17	0.7	2.8	1.3	36	0.69	1.3	1.1	0.6	6	0.5	<0.1	0.1	21	0.03	0.020	3
65889	Soil	27.5	32.1	99.5	237	0.5	21.5	8.6	1004	2.42	51.0	3.7	5.9	23	1.2	0.8	1.1	53	0.16	0.043	20
65890	Soil	31.6	27.7	119.2	147	1.4	13.4	6.8	794	2.28	32.2	0.9	4.3	11	0.6	0.7	1.8	51	0.09	0.029	16
65891	Soil	29.1	36.6	158.0	170	0.2	18.8	7.0	910	2.26	19.6	4.0	7.4	13	1.2	1.0	0.8	43	0.10	0.026	20
65892	Soil	32.9	24.7	94.9	152	0.8	18.8	8.6	792	2.31	21.3	<0.5	4.2	23	1.1	0.7	0.6	53	0.14	0.028	16

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		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
65872	Soil		11	0.16	131	0.023	<1	1.24	0.007	0.10	0.1	<0.01	3.5	0.2	<0.05	5	<0.5	<0.2
65873	Soil		12	0.38	431	0.066	<1	1.54	0.009	0.28	0.3	0.01	5.1	0.3	<0.05	6	<0.5	<0.2
65874	Soil		5	0.35	403	0.053	<1	1.47	0.009	0.31	0.3	<0.01	4.9	0.2	<0.05	6	<0.5	<0.2
65875	Soil		3	0.25	361	0.011	<1	1.49	0.009	0.18	<0.1	<0.01	5.0	0.2	<0.05	5	<0.5	<0.2
65876	Soil		3	0.32	411	0.073	<1	1.32	0.010	0.39	0.4	0.01	6.2	0.3	<0.05	7	<0.5	<0.2
65877	Soil		32	0.31	179	0.033	<1	1.23	0.005	0.06	0.4	0.02	4.3	0.1	<0.05	3	<0.5	<0.2
65878	Soil		35	0.36	202	0.035	<1	1.55	0.007	0.05	0.2	0.03	3.4	0.1	<0.05	5	0.5	<0.2
65879	Soil		35	0.38	293	0.047	<1	1.63	0.007	0.05	0.2	0.03	5.5	0.1	<0.05	5	0.6	<0.2
65880	Soil		12	0.43	400	0.166	<1	1.99	0.010	0.63	0.2	<0.01	9.8	1.1	0.06	9	<0.5	<0.2
65881	Soil		40	0.32	130	0.050	<1	1.47	0.015	0.05	8.8	0.04	4.1	0.2	0.12	5	10.0	5.0
65882	Soil		33	0.39	151	0.046	1	2.05	0.008	0.05	0.3	0.10	3.1	0.2	<0.05	5	<0.5	<0.2
65883	Soil		5	0.04	42	0.028	<1	0.38	0.023	0.02	<0.1	0.03	0.2	<0.1	<0.05	3	<0.5	<0.2
65884	Soil		33	0.40	227	0.056	1	1.55	0.009	0.06	0.7	0.08	4.3	0.2	<0.05	4	<0.5	<0.2
65885	Soil		34	0.40	188	0.043	1	1.83	0.008	0.07	0.5	0.08	3.4	0.3	<0.05	4	0.7	<0.2
65886	Soil		31	0.38	125	0.063	1	1.52	0.011	0.08	0.3	0.02	2.7	0.2	<0.05	5	0.6	0.3
65887	Soil		30	0.37	128	0.046	<1	1.51	0.008	0.07	0.7	0.05	2.9	0.2	<0.05	5	0.6	<0.2
65888	Soil		6	0.03	38	0.031	<1	0.46	0.019	0.02	<0.1	0.04	0.6	<0.1	<0.05	2	<0.5	<0.2
65889	Soil		30	0.37	138	0.045	<1	1.44	0.008	0.09	0.5	0.04	3.4	0.2	<0.05	4	0.8	<0.2
65890	Soil		24	0.24	88	0.041	<1	1.27	0.008	0.05	0.2	0.05	2.2	0.2	<0.05	4	<0.5	<0.2
65891	Soil		25	0.27	109	0.049	<1	0.88	0.006	0.07	0.3	0.01	2.5	0.2	<0.05	3	0.6	<0.2
65892	Soil		29	0.34	168	0.050	<1	1.52	0.009	0.09	0.3	0.03	2.8	0.2	<0.05	5	<0.5	<0.2

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BUREAU VERITAS
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Canada

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Bureau Veritas Commodities Canada Ltd.
9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada
PHONE (604) 253-3158

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

Project: GLADMAN FA
Report Date: October 05, 2017

QUALITY CONTROL REPORT WHI17000824.1

	Method	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201
	Analyte	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La
	Unit	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm
	MDL	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001	1
Pulp Duplicates																					
17535	Soil	2.4	18.6	10.5	62	<0.1	5.5	4.2	438	2.57	16.2	2.0	16.5	16	0.3	0.4	1.1	32	0.27	0.060	28
REP 17535	QC	2.1	18.5	10.7	60	<0.1	5.2	4.3	427	2.65	16.3	1.1	16.0	15	0.3	0.4	1.1	32	0.26	0.059	27
65828	Soil	3.5	33.5	17.1	75	0.4	22.9	7.6	178	2.02	7.9	2.2	3.5	21	0.3	1.3	0.2	41	0.22	0.053	19
REP 65828	QC	3.2	31.8	16.7	72	0.4	21.3	6.9	168	1.87	6.4	3.4	3.4	20	0.2	1.3	0.2	40	0.21	0.054	18
65864	Soil	1.1	23.7	13.3	74	<0.1	25.0	11.8	374	2.69	9.0	9.0	5.7	21	0.2	0.6	0.2	56	0.27	0.070	21
REP 65864	QC	1.1	24.7	13.6	76	<0.1	24.5	11.5	368	2.73	9.1	7.3	5.6	22	0.4	0.7	0.2	56	0.26	0.073	22
65892	Soil	32.9	24.7	94.9	152	0.8	18.8	8.6	792	2.31	21.3	<0.5	4.2	23	1.1	0.7	0.6	53	0.14	0.028	16
REP 65892	QC	32.2	24.3	95.2	150	0.8	18.3	8.7	800	2.32	21.0	0.9	3.8	22	1.1	0.7	0.6	52	0.13	0.025	15
Reference Materials																					
STD DS11	Standard	14.9	156.3	138.1	334	1.6	82.8	14.3	1022	3.07	42.0	79.5	7.6	64	2.5	8.9	11.7	56	1.02	0.067	19
STD DS11	Standard	15.8	159.6	140.9	343	1.7	80.0	14.6	1027	3.13	40.2	84.5	7.6	65	2.5	9.2	11.9	53	1.05	0.069	19
STD DS11	Standard	15.2	160.5	145.0	351	1.6	86.3	15.4	1040	3.18	41.8	81.0	8.0	63	2.3	7.9	11.8	60	1.03	0.067	20
STD DS11	Standard	14.4	153.6	138.8	345	1.7	81.7	13.9	1025	3.13	41.7	91.7	7.6	64	2.2	8.4	11.6	51	1.02	0.068	18
STD DS11	Standard	14.1	147.4	142.8	343	1.7	79.0	14.3	999	3.17	42.5	93.6	7.6	65	2.3	8.4	11.9	49	1.03	0.068	17
STD DS11	Standard	13.9	146.3	134.7	338	1.7	76.0	13.5	995	3.11	42.6	111.5	7.3	63	2.5	8.5	11.6	49	1.03	0.071	18
STD OXC129	Standard	1.2	29.8	6.1	43	<0.1	87.3	21.6	434	3.10	<0.5	194.1	1.8	176	<0.1	<0.1	<0.1	59	0.66	0.099	13
STD OXC129	Standard	1.3	28.9	5.8	45	<0.1	81.6	21.3	426	3.19	<0.5	197.3	1.6	180	<0.1	<0.1	<0.1	58	0.65	0.102	12
STD OXC129	Standard	1.4	31.6	6.4	46	<0.1	90.6	23.3	445	3.25	0.5	199.7	1.9	185	<0.1	<0.1	<0.1	58	0.72	0.103	13
STD OXC129	Standard	1.3	29.5	6.2	44	<0.1	86.1	22.5	431	3.16	0.5	203.4	1.8	187	<0.1	<0.1	<0.1	58	0.71	0.104	13
STD OXC129	Standard	1.2	30.0	6.3	45	<0.1	89.0	22.5	455	3.33	<0.5	213.6	1.7	192	<0.1	<0.1	<0.1	62	0.65	0.107	13
STD OXC129	Standard	1.2	24.9	6.0	39	<0.1	75.7	20.2	401	3.03	0.6	198.0	1.7	187	<0.1	<0.1	<0.1	50	0.64	0.099	12
STD OXC129 Expected		1.3	28	6.3	42.9		79.5	20.3	421	3.065	0.6	195	1.9					51	0.665	0.102	13
STD DS11 Expected		14.6	156	138	345	1.71	81.9	14.2	1055	3.2082	42.8	79	7.65	67.3	2.37	8.74	12.2	50	1.063	0.0701	18.6
BLK	Blank	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1	<0.1	<2	<0.01	<0.001	<1
BLK	Blank	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1	<0.1	3	<0.01	<0.001	<1
BLK	Blank	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1	<0.1	3	<0.01	<0.001	<1
BLK	Blank	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1	<0.1	<2	<0.01	<0.001	<1
BLK	Blank	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1	<0.1	<2	<0.01	<0.001	<1

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PHONE (604) 253-3158

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

Project: GLADMAN FA
Report Date: October 05, 2017

QUALITY CONTROL REPORT WHI17000824.1

	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																	
17535	Soil	8	0.33	268	0.068	<1	1.44	0.008	0.32	1.3	0.01	5.5	0.3	<0.05	7	<0.5	<0.2
REP 17535	QC	8	0.32	266	0.070	<1	1.51	0.008	0.32	1.5	<0.01	5.6	0.3	<0.05	7	<0.5	<0.2
65828	Soil	27	0.47	262	0.034	<1	1.22	0.009	0.04	0.1	0.06	3.2	0.1	<0.05	4	0.9	<0.2
REP 65828	QC	26	0.47	247	0.031	<1	1.22	0.007	0.04	0.1	0.05	3.1	0.1	<0.05	3	0.9	<0.2
65864	Soil	52	0.55	258	0.051	<1	1.38	0.009	0.05	0.2	0.02	4.0	<0.1	<0.05	4	<0.5	<0.2
REP 65864	QC	51	0.56	263	0.053	<1	1.45	0.010	0.06	0.2	0.04	4.0	<0.1	<0.05	4	<0.5	<0.2
65892	Soil	29	0.34	168	0.050	<1	1.52	0.009	0.09	0.3	0.03	2.8	0.2	<0.05	5	<0.5	<0.2
REP 65892	QC	27	0.33	155	0.044	<1	1.38	0.008	0.09	0.2	0.03	2.8	0.2	<0.05	4	0.5	<0.2
Reference Materials																	
STD DS11	Standard	63	0.82	366	0.098	8	1.09	0.067	0.39	3.1	0.26	3.1	4.8	0.31	5	2.2	5.3
STD DS11	Standard	63	0.85	367	0.097	7	1.15	0.069	0.38	3.0	0.24	3.2	5.0	0.30	5	1.8	4.8
STD DS11	Standard	65	0.83	362	0.102	6	1.13	0.070	0.37	3.0	0.22	3.3	4.8	0.28	5	2.3	4.6
STD DS11	Standard	61	0.85	363	0.091	8	1.10	0.070	0.38	3.0	0.23	3.0	4.9	0.31	5	1.7	5.1
STD DS11	Standard	59	0.85	358	0.091	8	1.12	0.070	0.39	3.1	0.22	3.0	5.2	0.28	5	2.1	4.4
STD DS11	Standard	58	0.84	363	0.083	7	1.12	0.073	0.39	3.0	0.28	3.1	4.8	0.27	5	1.7	4.4
STD OXC129	Standard	57	1.54	48	0.422	1	1.50	0.532	0.35	<0.1	<0.01	0.9	<0.1	<0.05	5	<0.5	<0.2
STD OXC129	Standard	54	1.55	45	0.421	2	1.55	0.574	0.38	<0.1	<0.01	1.0	<0.1	<0.05	5	<0.5	<0.2
STD OXC129	Standard	61	1.68	48	0.471	1	1.65	0.618	0.34	<0.1	<0.01	1.1	<0.1	0.05	6	<0.5	<0.2
STD OXC129	Standard	60	1.64	48	0.431	1	1.60	0.596	0.35	<0.1	<0.01	1.0	<0.1	0.05	6	<0.5	<0.2
STD OXC129	Standard	58	1.65	52	0.432	1	1.56	0.607	0.37	<0.1	<0.01	0.8	<0.1	<0.05	6	<0.5	<0.2
STD OXC129	Standard	50	1.49	50	0.384	<1	1.47	0.575	0.36	<0.1	<0.01	0.8	<0.1	<0.05	5	<0.5	<0.2
STD OXC129 Expected		52	1.545	50	0.4	1	1.58	0.6	0.37			1.1			5.6		
STD DS11 Expected		61.5	0.85	385	0.0976		1.1795	0.0762	0.4	2.9	0.3	3.4	4.9	0.2835	5.1	1.9	4.56
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
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: GLADMAN FA
Report Date: October 05, 2017

QUALITY CONTROL REPORT WHI17000824.1

		AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201
		Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm
		0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001	1
BLK	Blank	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1	<0.1	<2	<0.01	<0.001	<1

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Project: GLADMAN FA
Report Date: October 05, 2017

QUALITY CONTROL REPORT WHI17000824.1

		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

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

Submitted By: Bill Mann
Receiving Lab: Canada-Whitehorse
Received: October 05, 2017
Report Date: December 07, 2017

CERTIFICATE OF ANALYSIS WHI17001018.1

CLIENT JOB INFORMATION

Project: GLADMAN FA
Shipment ID:
P.O. Number
Number of Samples: 11

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	11	Crush, split and pulverize 250 g rock to 200 mesh			WHI
AQ201	11	1:1:1 Aqua Regia digestion ICP-MS analysis	15	Completed	VAN
BAT01	11	Batch charge of <20 samples			VAN
SHP01	11	Per sample shipping charges for branch shipments			VAN

ADDITIONAL COMMENTS

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

CC:

BRITISH COLUMBIA CERTIFIED ASSAYER
Marcus Lau
MARCUS LAU
Production Manager

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

Project: GLADMAN FA
Report Date: December 07, 2017

CERTIFICATE OF ANALYSIS WHI17001018.1

	Method	WGHT	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201
	Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
	Unit	kg	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%
	MDL	0.01	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001
64693	Rock	0.92	16.6	89.3	21.0	62	0.4	65.7	15.0	151	3.07	7.1	4.1	7.2	248	0.6	0.5	3.9	151	2.31	0.125
64694	Rock	0.57	2.5	128.0	7.5	16	0.9	8.3	3.5	128	1.91	9.1	2.3	5.2	329	0.2	0.4	10.9	13	2.81	0.079
64695	Rock	0.56	0.8	6.8	3061.0	1311	8.2	7.7	1.0	7147	0.96	19.7	2.9	0.2	100	4.7	5.3	8.5	11	9.88	0.016
64696	Rock	0.94	9.0	43.3	150.9	18	41.9	1.1	0.5	216	0.93	1644.3	35.7	2.2	4	0.2	14.4	57.0	<2	0.03	0.009
64697	Rock	0.50	57.1	242.4	73.3	106	14.3	6.7	2.3	250	6.10	1435.3	3.8	5.7	7	0.6	14.9	23.1	9	0.03	0.029
64698	Rock	0.55	91.2	133.5	592.2	300	7.4	3.4	1.9	302	5.43	1148.0	21.0	4.6	28	4.6	24.2	20.5	6	0.04	0.039
64699	Rock	0.70	20.2	79.0	35.1	195	0.5	58.6	11.4	207	2.99	26.9	<0.5	7.4	315	2.5	1.0	1.0	123	2.91	0.099
64700	Rock	0.69	0.8	104.9	38.1	14	<0.1	3.1	3.6	40	4.96	129.5	1.0	1.1	2	<0.1	1.6	0.2	16	<0.01	0.084
65951	Rock	0.19	1.5	1228.7	1871.5	699	3.6	35.6	16.7	1229	5.45	1129.3	1.6	3.6	8	5.2	3.5	3.0	62	0.07	0.072
65952	Rock	0.42	1.8	75.9	34.6	146	2.3	18.0	5.8	541	2.07	151.3	2.6	11.4	13	1.4	1.0	22.9	9	0.12	0.016
65953	Rock	0.75	0.4	105.6	149.8	206	1.6	7.0	5.0	322	1.19	194.0	0.8	18.1	5	1.3	5.3	0.2	7	0.10	0.045

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

Project: GLADMAN FA
Report Date: December 07, 2017

CERTIFICATE OF ANALYSIS WHI17001018.1

	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
64693	Rock	10	104	1.02	83	0.152	1	4.21	0.436	0.30	0.3	<0.01	7.3	0.5	0.92	12	12.5	0.2
64694	Rock	11	12	0.15	20	0.108	1	3.41	0.290	0.03	0.3	<0.01	1.8	<0.1	0.44	7	65.8	2.1
64695	Rock	3	3	0.06	56	<0.001	1	0.25	<0.001	0.03	0.4	0.02	1.1	<0.1	<0.05	<1	13.2	0.6
64696	Rock	4	3	<0.01	53	<0.001	<1	0.11	0.002	0.08	0.5	0.13	0.4	1.5	0.06	<1	1.1	0.9
64697	Rock	7	5	<0.01	84	0.001	<1	0.25	0.004	0.18	2.4	0.39	1.5	4.5	0.10	<1	3.0	0.2
64698	Rock	6	5	0.01	53	0.001	<1	0.25	0.005	0.14	0.8	0.04	1.0	0.5	0.05	<1	1.1	0.6
64699	Rock	12	74	0.79	116	0.178	2	5.52	0.490	0.25	0.4	<0.01	6.8	0.4	0.43	15	21.5	<0.2
64700	Rock	2	14	0.01	328	0.002	<1	0.29	<0.001	0.08	<0.1	<0.01	2.7	<0.1	<0.05	<1	0.8	<0.2
65951	Rock	12	126	0.38	200	0.070	<1	1.51	0.002	0.06	<0.1	0.01	4.5	0.2	<0.05	6	8.2	<0.2
65952	Rock	19	10	0.10	204	0.009	<1	0.92	0.017	0.20	0.9	<0.01	1.3	0.3	0.06	3	2.6	<0.2
65953	Rock	44	7	0.19	168	0.004	2	1.08	0.004	0.47	<0.1	<0.01	1.7	0.3	<0.05	2	<0.5	<0.2

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

Project: GLADMAN FA
Report Date: December 07, 2017

QUALITY CONTROL REPORT WHI17001018.1

	Method	WGHT	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201	AQ201
	Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
	Unit	kg	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%
	MDL	0.01	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001
Reference Materials																					
STD DS11	Standard		14.1	160.6	130.0	354	1.7	81.9	16.3	976	3.20	45.1	71.5	7.2	69	2.7	8.9	12.6	49	1.07	0.074
STD OXC129	Standard		1.4	29.7	6.4	50	<0.1	88.4	23.8	431	3.07	0.7	192.7	1.8	201	<0.1	<0.1	<0.1	51	0.72	0.109
STD OXC129 Expected			1.3	28	6.2	42.9		79.5	20.3	421	3.065	0.6	195	1.9					51	0.684	0.102
STD DS11 Expected			14.6	149	138	345	1.71	77.7	14.2	1055	3.1	42.8	79	7.65	67.3	2.37	8.74	12.2	50	1.063	0.0701
BLK	Blank		<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.5	<0.1	<1	<0.1	<0.1	<0.1	<2	<0.01	<0.001
Prep Wash																					
ROCK-WHI	Prep Blank		0.5	4.2	3.5	37	<0.1	1.1	4.2	576	1.71	12.6	5.0	2.4	25	<0.1	0.3	1.0	21	0.63	0.047
ROCK-WHI	Prep Blank		0.9	6.3	1.3	38	<0.1	2.0	4.7	653	1.94	4.1	0.9	2.5	26	<0.1	0.1	0.3	25	0.73	0.045

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Project: GLADMAN FA
Report Date: December 07, 2017

QUALITY CONTROL REPORT WHI17001018.1

	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	19	67	0.85	349	0.099	7	1.15	0.071	0.40	2.8	0.25	3.6	4.8	0.28	5	2.5	4.7
STD OXC129	Standard	13	60	1.56	52	0.433	<1	1.60	0.574	0.35	<0.1	<0.01	1.2	<0.1	<0.05	5	<0.5	<0.2
STD OXC129 Expected		12.5	52	1.545	50	0.4	1	1.58	0.59	0.3655			1.1			5.5		
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
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	0.48	49	0.084	1	0.85	0.058	0.07	0.1	<0.01	3.4	<0.1	<0.05	3	<0.5	<0.2
ROCK-WHI	Prep Blank	6	3	0.56	61	0.100	3	1.05	0.087	0.09	<0.1	<0.01	3.5	<0.1	0.09	4	<0.5	<0.2

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FA CLAIMS: PETROGRAPHY

FA1

This rock is a microgranite, most likely an alkali-feldspar granite. Cobaltinitrite staining of the feldspars would be needed for a certain identification.

It has subhedral plagioclase phenocrysts mostly to 0.7mm long, although there are a few 2mm 'megacrysts'. Albite and carlsbad-albite twinning is common, but few twins are particularly 'sharp'. Michel-Levy extinction angles indicate a composition of about 5% An (R.I. < quartz), indicating an alkali-feldspar granite. Orthoclase is of similar size and is anhedral, but quantitative identification difficult. Quartz is interstitial and occupies 15-20% of the volume of the rock. Biotite is the only ferromagnesian present in flakes to 1.5mm long. It is a golden brown with a greenish tint i.e., indicating a not particularly reduced magma. No zircon is included in the mica. A few pyrite crystals are included in the biotite.

Accessory minerals are very occasional zircon, included in quartz or feldspar and rarer apatite. One grain of epidote was noted and one patch of myrrmekite < 2mm across. No monazite was noted.

This is likely to be a fairly fractionated granite at the apex of a batholith, but it is not obviously of high fluorine content (hence zircon has crystallized: the magma was above the saturation temperature). It could be the subvolcanic intrusion related to the rhyolites.

Future collection of fresh rock and chemical analysis could be instructive.

Photomicrographs:

FA1-2,5xp Shows the general texture: hypidiomorphic granular

FA1-2,5xp2 Shows a large plagioclase phenocryst

FA1-10pp Shows slight chlorite alteration of biotite

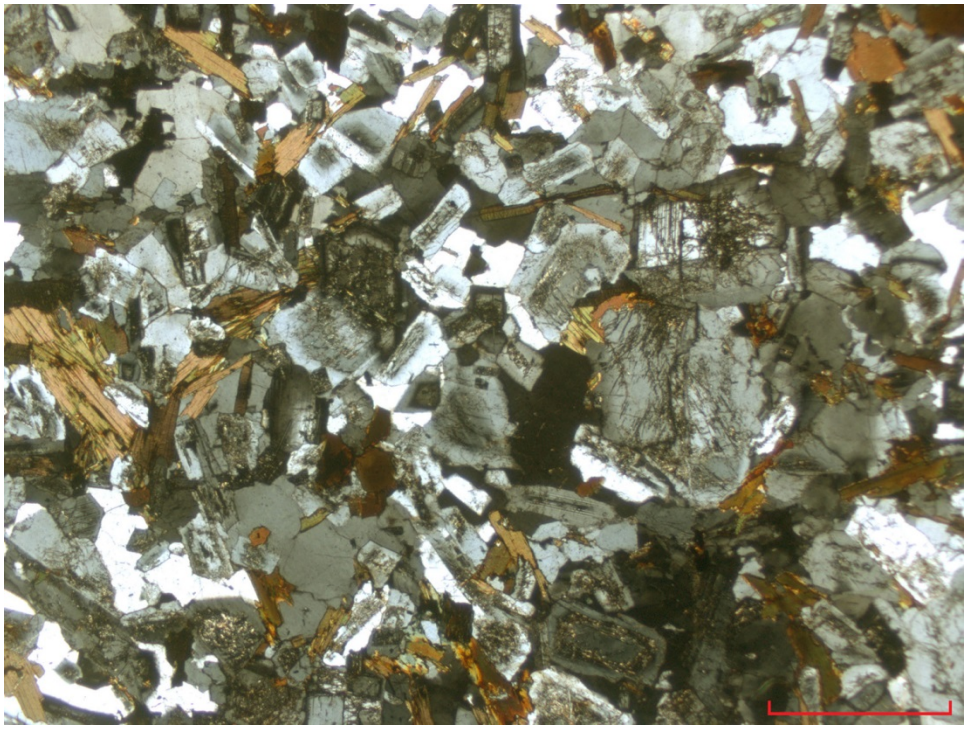
FA1-20xp Shows a zircon in quartz

FA1-20xp2 Shows apatite in quartz

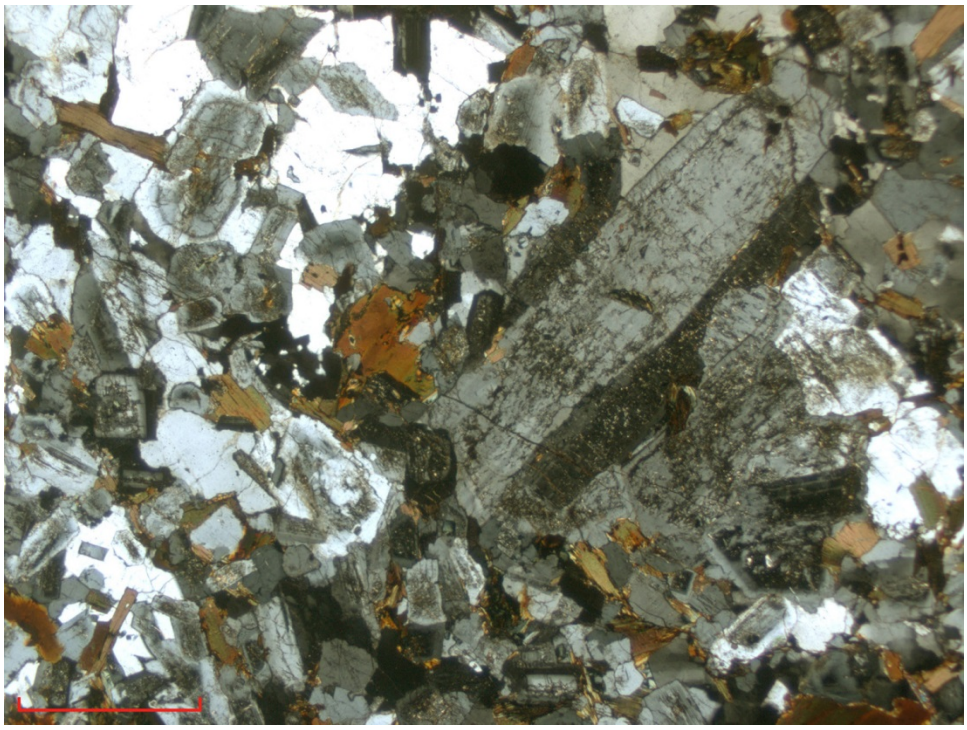
FA1-20pp Shows two zircons in quartz as well as apatite ‘needles’

FA1-20pp2 Shows epidote

FA1-20pp3 Shows biotite with a pyrite inclusion, apatite crystals alongside



FA1-2,5xp



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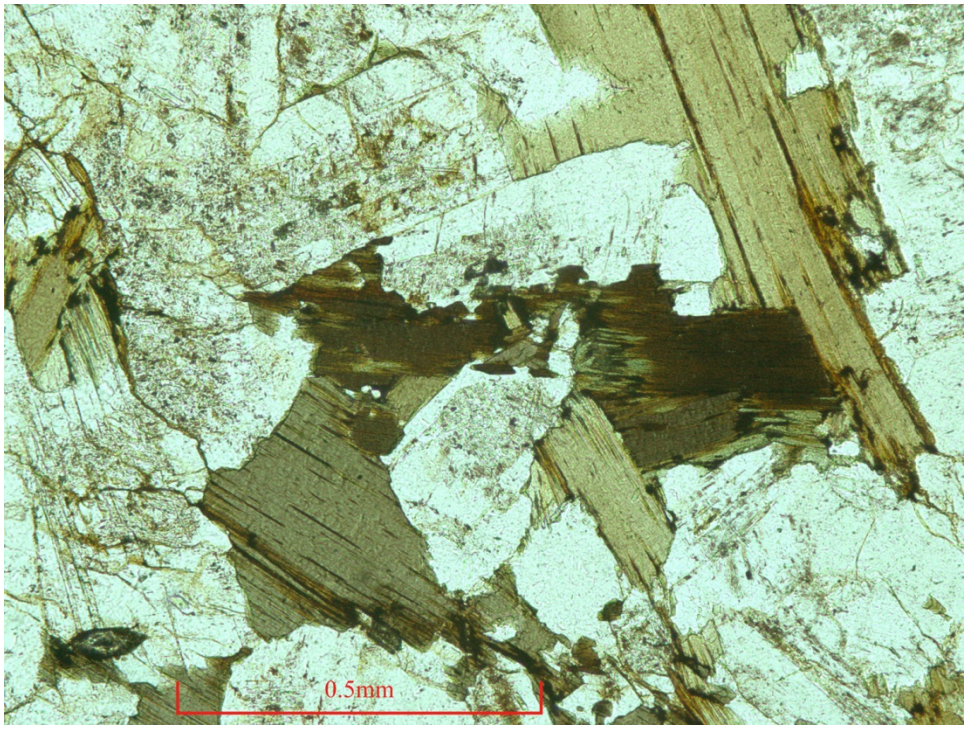
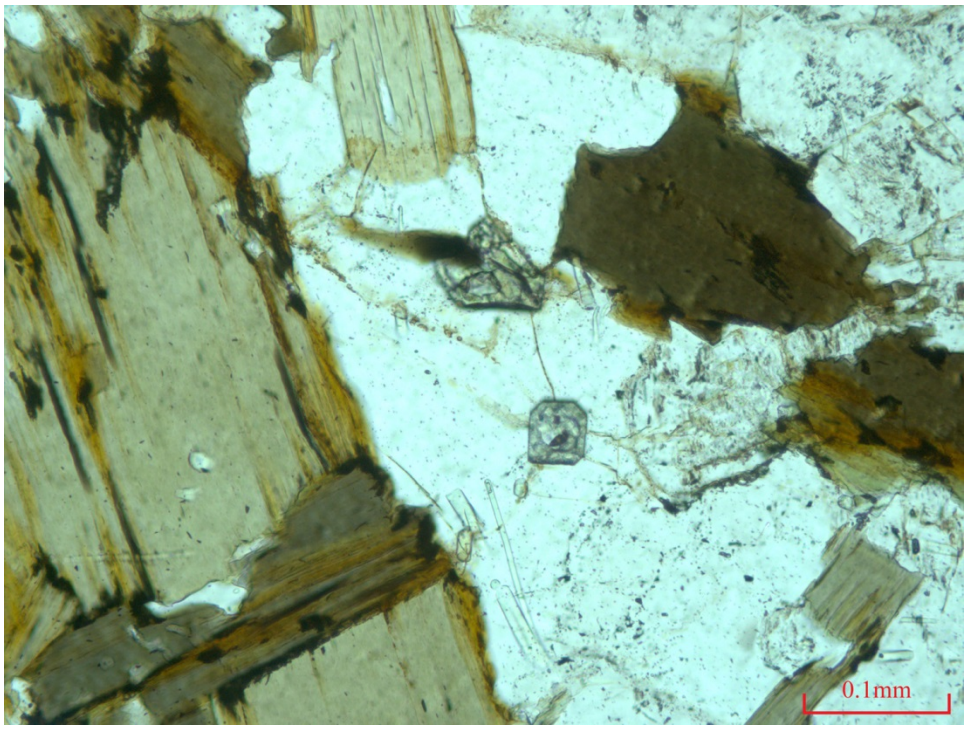


FA1-10pp



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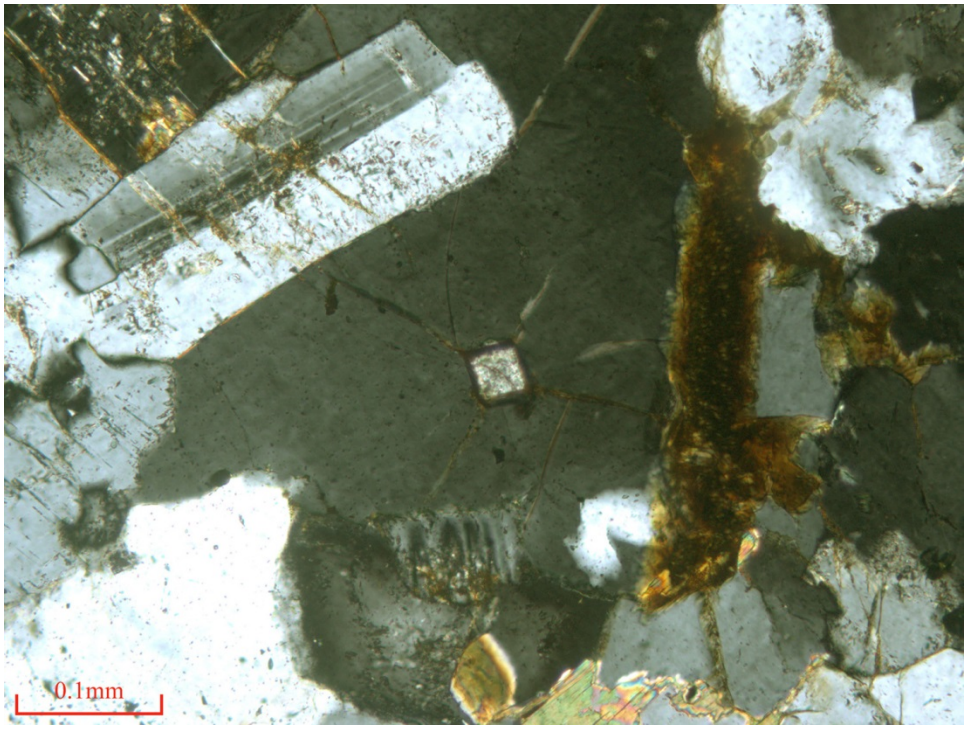

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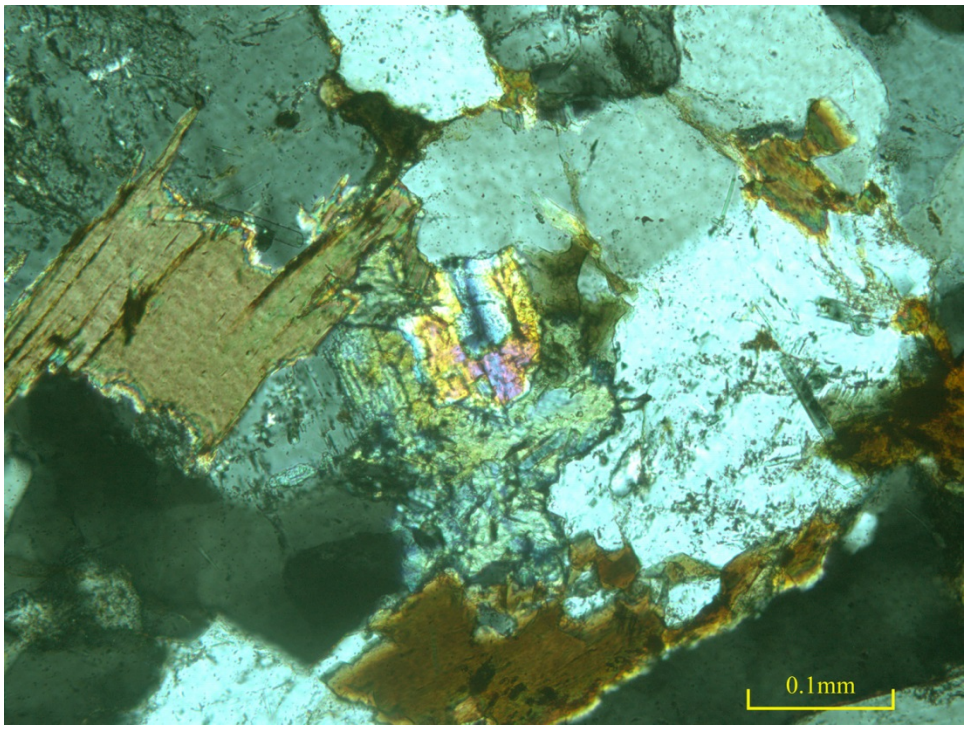
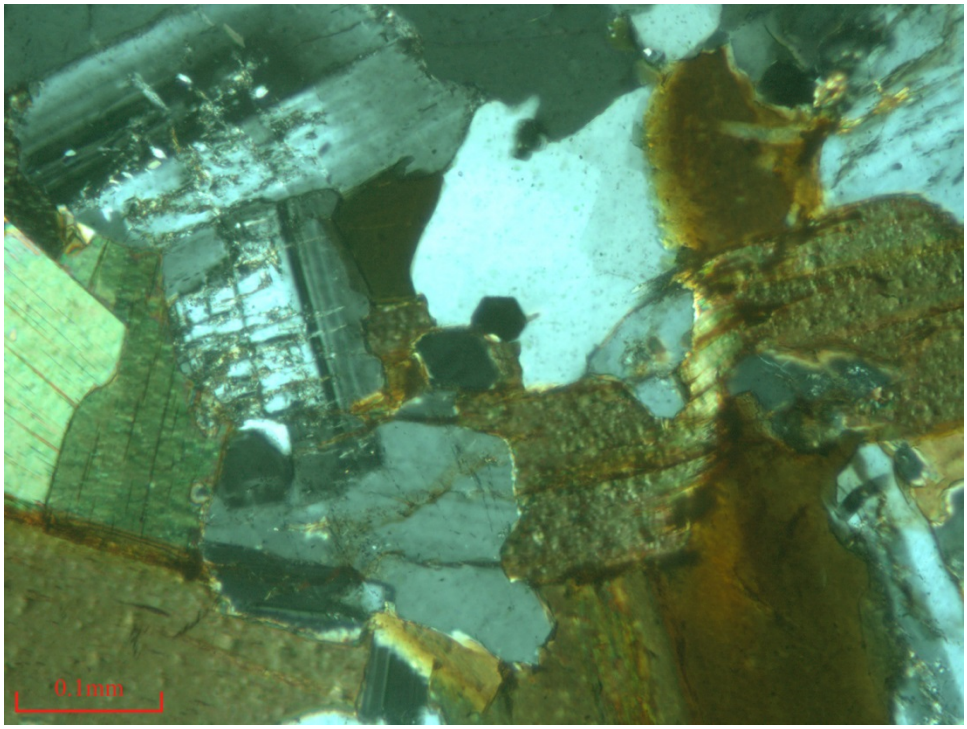


FA1-20pp2



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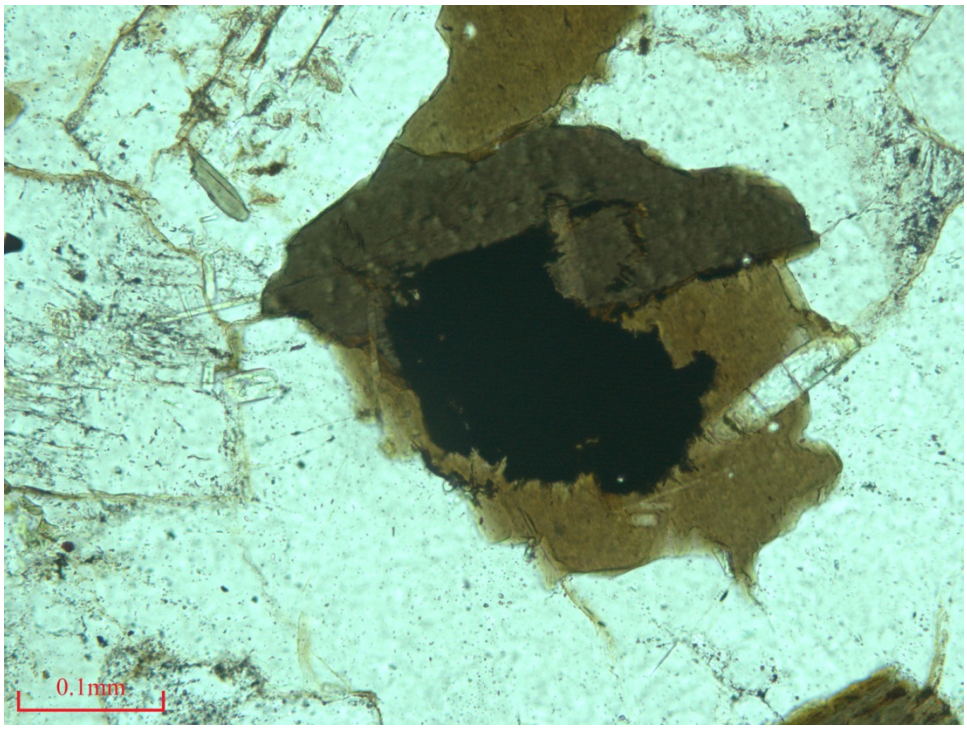


FA1-20pp3

FA CLAIMS: PETROGRAPHY

FA2

This rock is a devitrified rhyolite. A few phenocrysts of feldspars are visible: plagioclase and orthoclase. Plagioclase is up to 1mm, anhedral and with very 'ragged' margins; orthoclase (?) to 2mm, is subhedral and often embayed with reaction rims. Quartz is finer grained and angular. The groundmass is now of quartz, muscovite and either biotite or iron-stained smectite. Scarce epidote appears as an alteration product in plagioclase. No sulphides were seen. A few tiny quartz veins cut the rock.

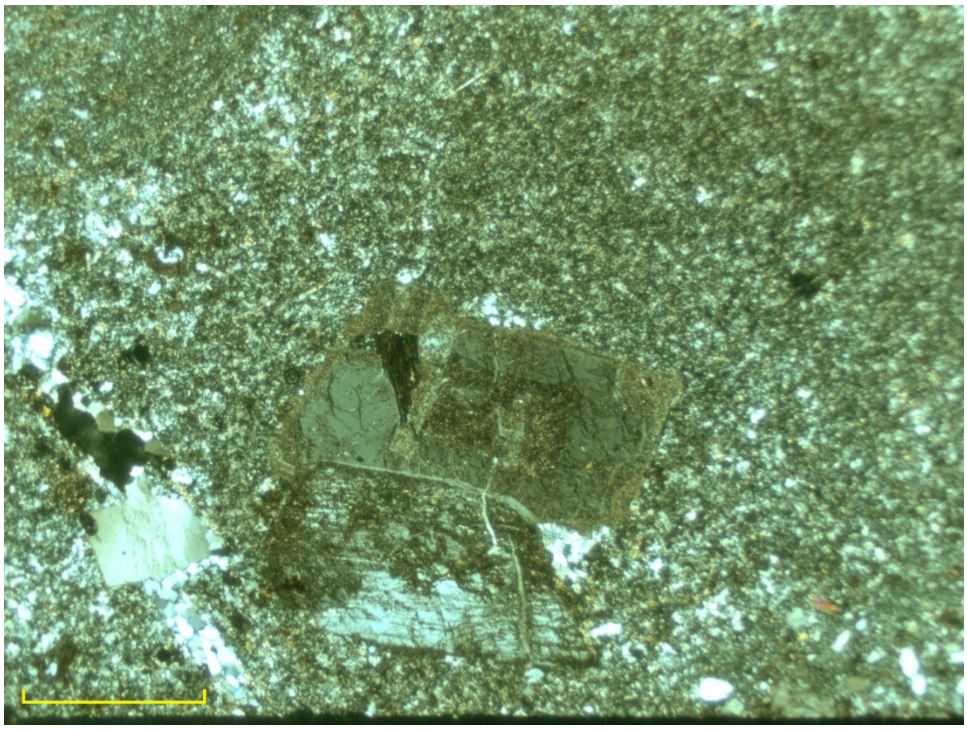
FA2-2,5xp shows a large plagioclase

FA2-5,0xp shows anhedral K-feldspar

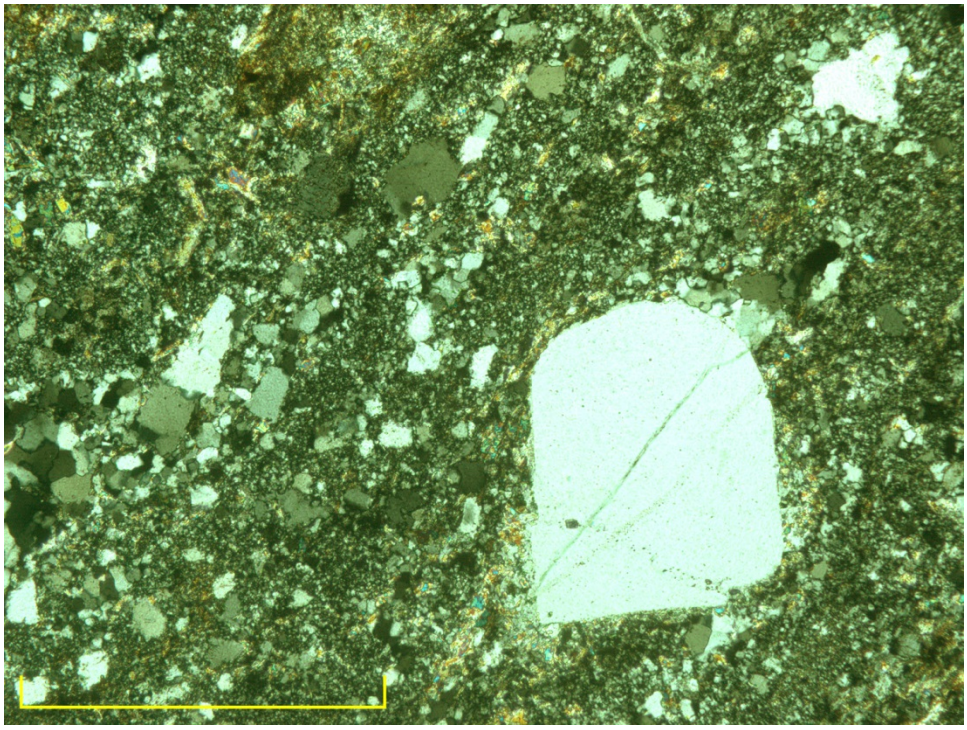
FA2-10xp shows ragged (?) plagioclase

FA2-10xp2 shows K-feldspar with a reaction rim

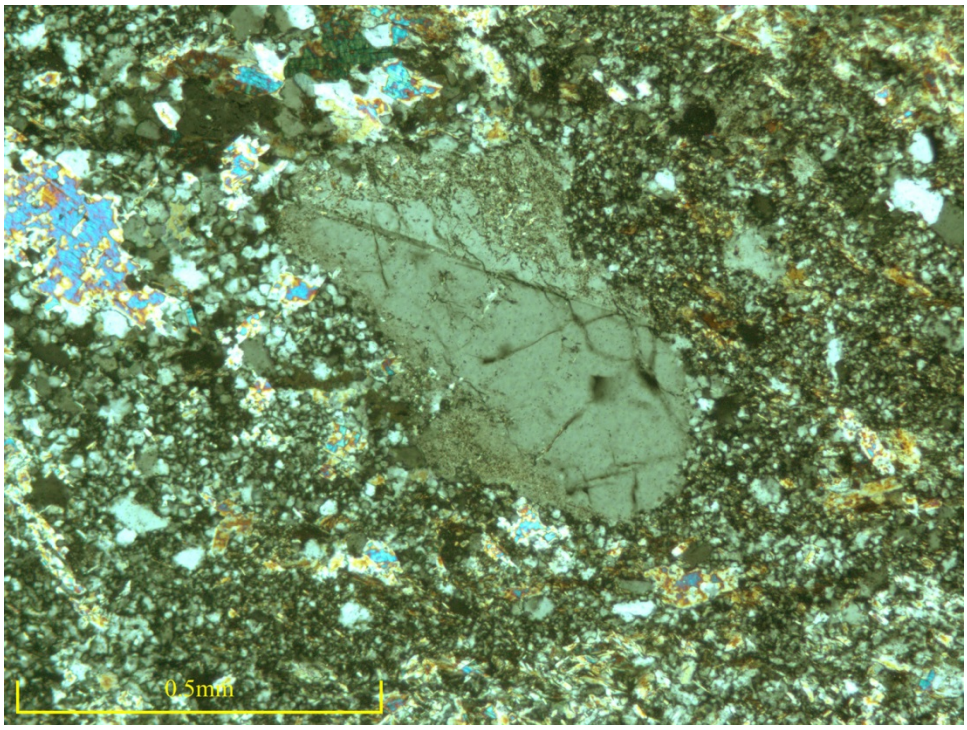
FA2-50pp shows the groundmass



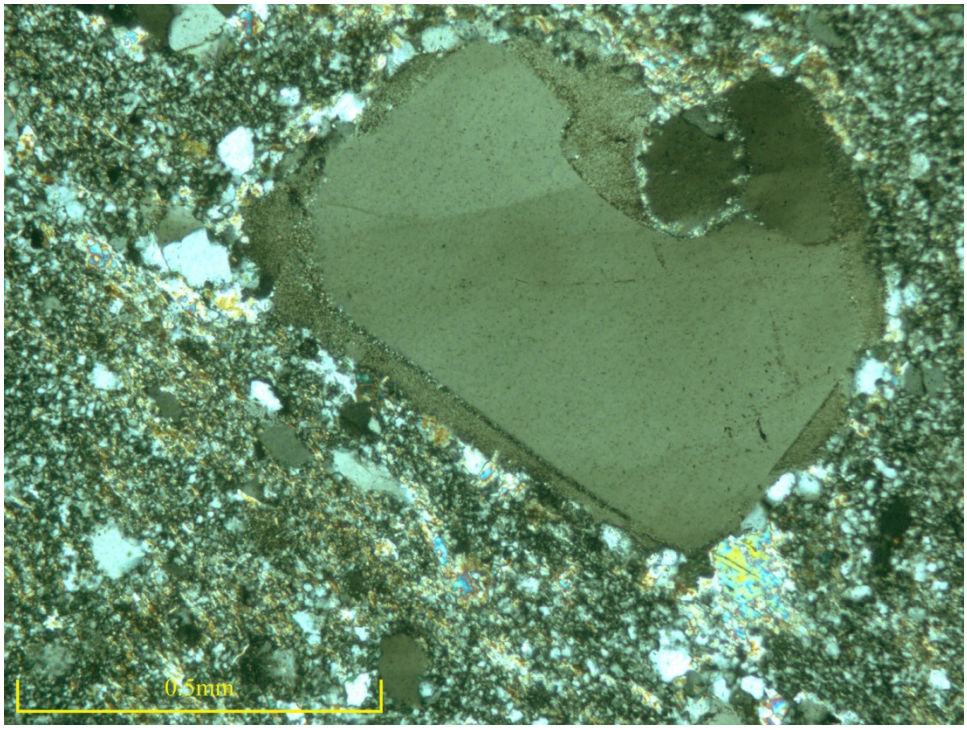
FA2-2,5xp



FA2-5,0xp



FA2-10xp



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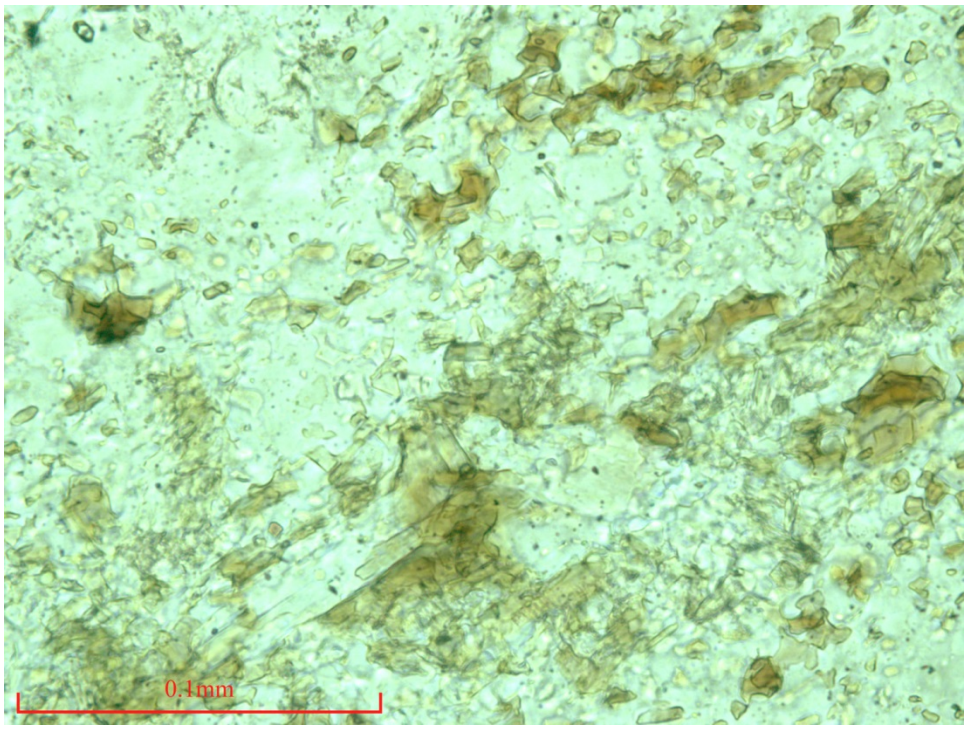
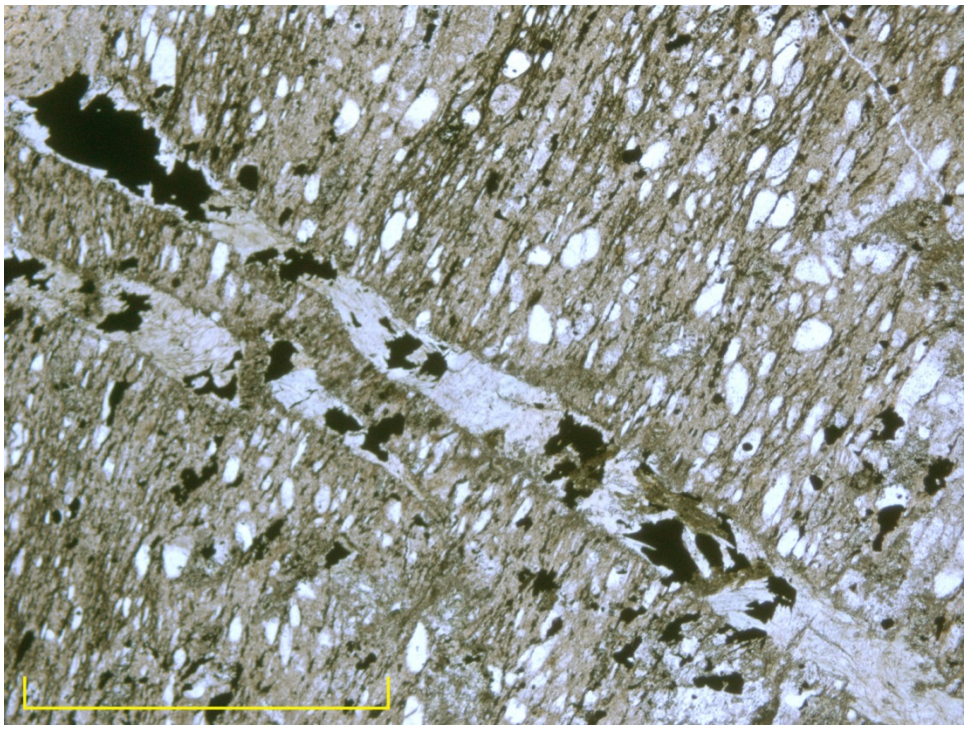


FA2-50pp

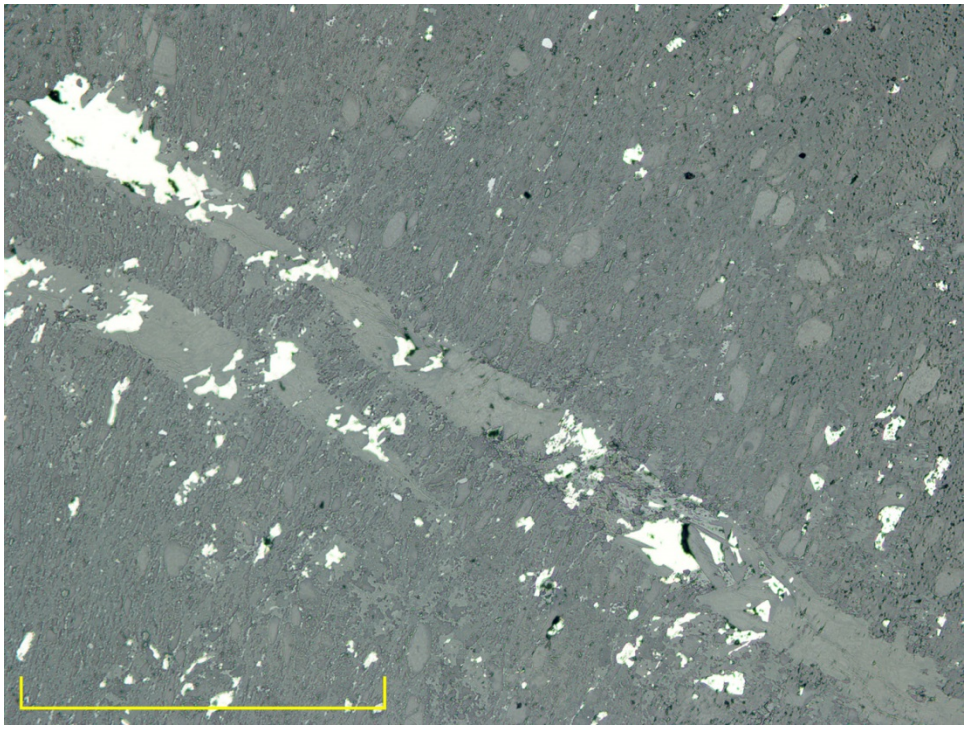
FA3 PTS

This rock is likely a devitrified densely-welded ignimbrite. It is obviously foliated and has subround grains of quartz and feldspars to 0.2mm long, with some finer grained opaques in an aphanitic groundmass. Planar extension fractures are common perpendicular to the foliation. These are filled with chlorite and sulphide. A few irregular-shaped patches of pyrrhotite, to 2mm thick, follow the foliation. Some 1-2mm wide, foliation-parallel layers have an anastomosing fabric; these may be C-S structures due to shearing. Besides the obvious pyrrhotite bearing layer, some euhedral pyrite cubes, 0.25mm across are contained within the finer-grained groundmass. No pressure shadows are developed around these. Pyrrhotite also pseudomorphs pyrite in some individual cubes. One grain of chalcopyrite was noted.

FA3-5,0pp2	shows the foliated fabric of the rock and chlorite-pyrite filled extension veins
FA3-5,0ppin	is in reflected p.p. light, highlighting the sulphide
FA3-5,0ppin2	shows another vein where the filling is likely white mica with pyrite
FA3-10pp	shows a layer with anastomosing fabric
FA3-5,0xpin	shows the bireflectance of the pyrrhotite (polarizers at 85°)
FA3-5,0ppin	is the same field in reflected p.p. light
FA3-20xpin	shows a cube of pyrrhotite pseudomorphing pyrite (bireflectance, polarizers at 85°)



FA3-5,0pp2



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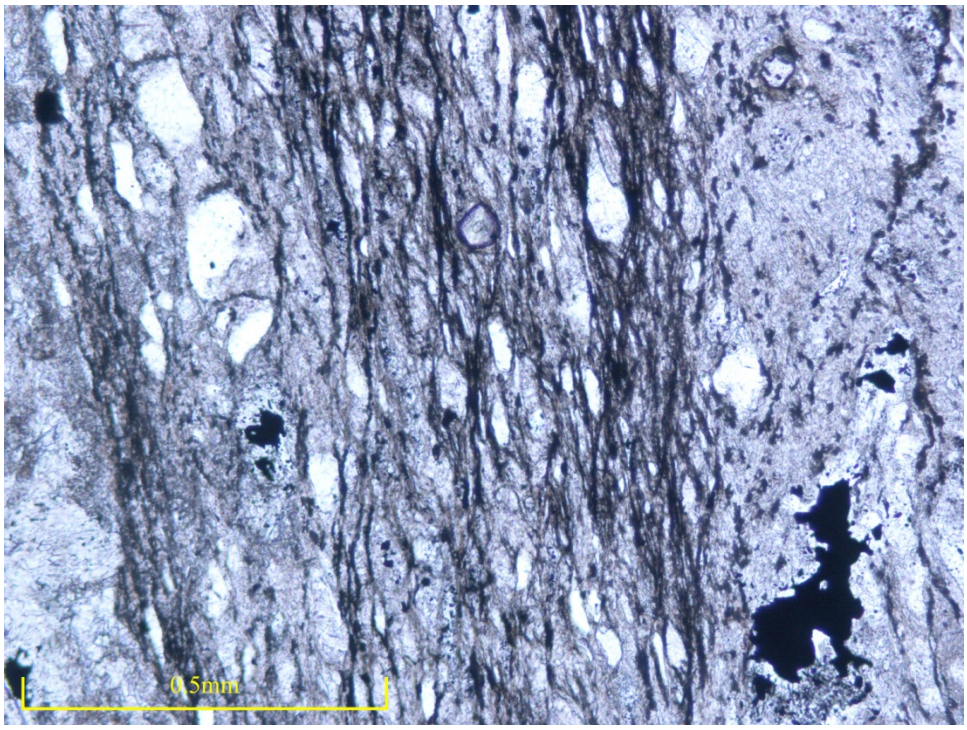
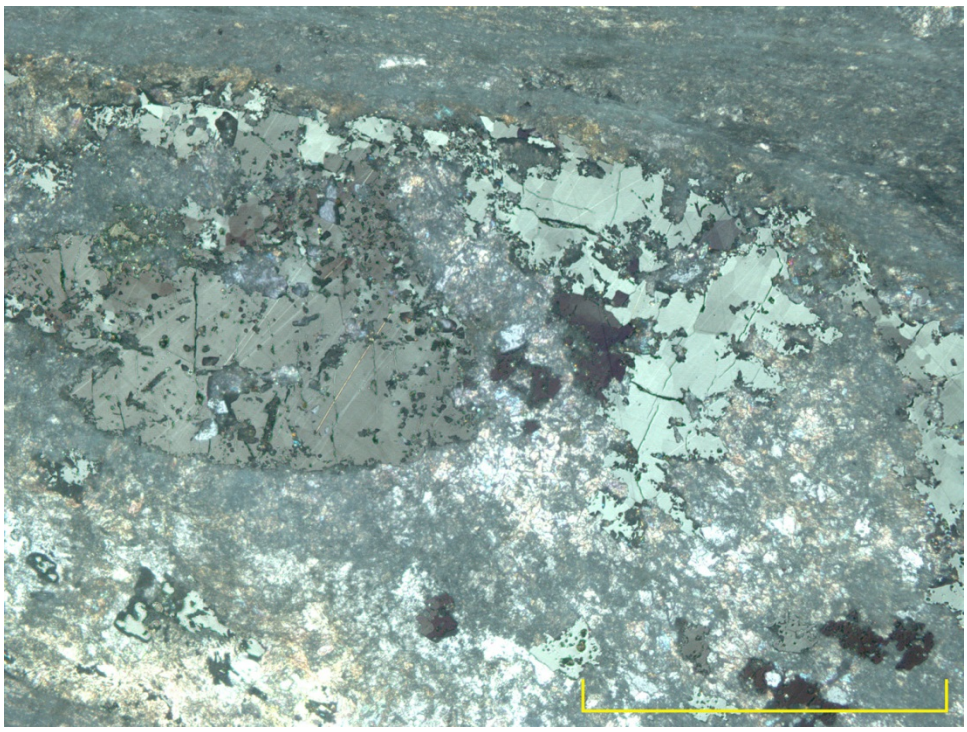


FA3-10pp



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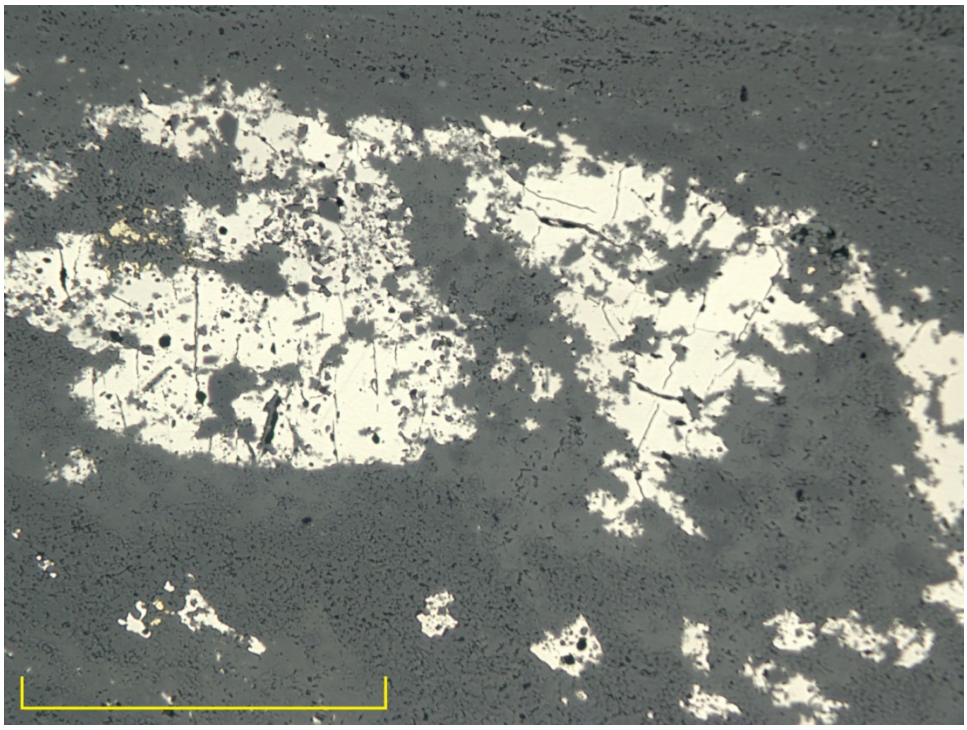
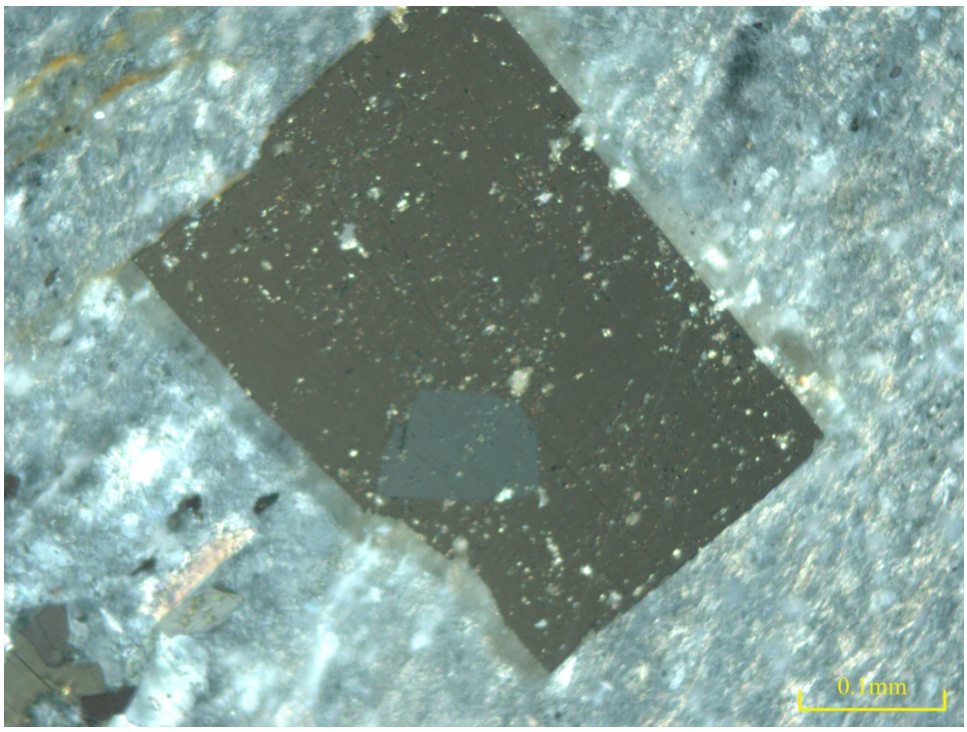


FA3-5,0ppin



FA3-20xpin

FA4

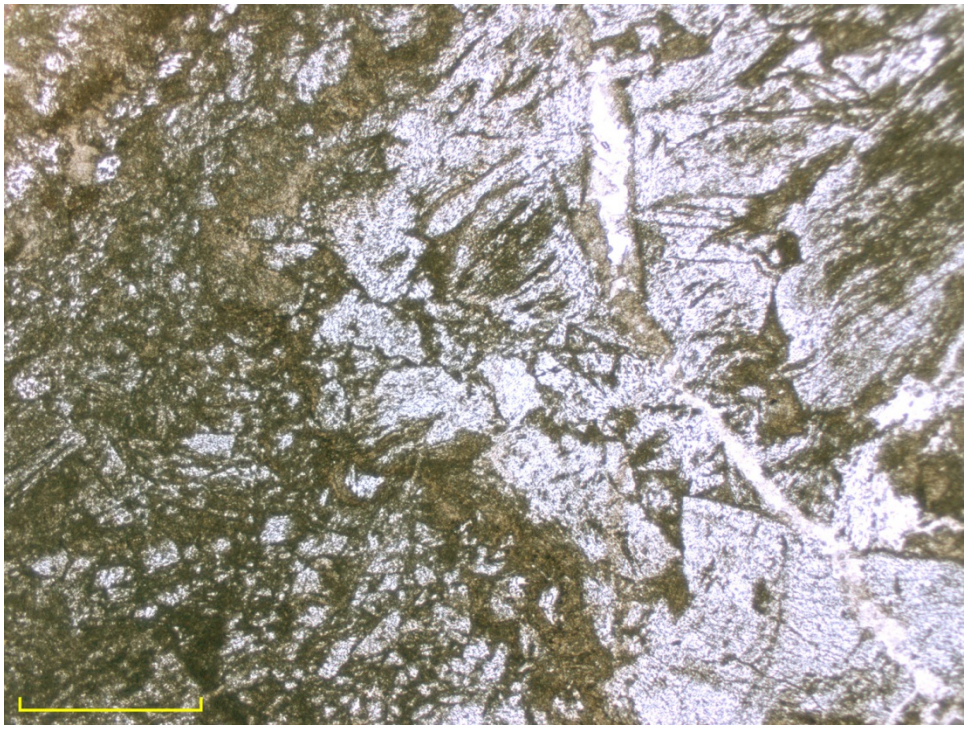
This is a devitrified, welded glassy rhyolitic pyroclastic. No phenocrysts are visible, but many of the clasts show flow-banding. Irregular 0.25mm wide veins cut the rock. These are filled with feldspar and possibly scapolite (if so, likely near the meionite end member). Some larger masses of that mineral are also seen.

FA4-2,5pp shows clasts

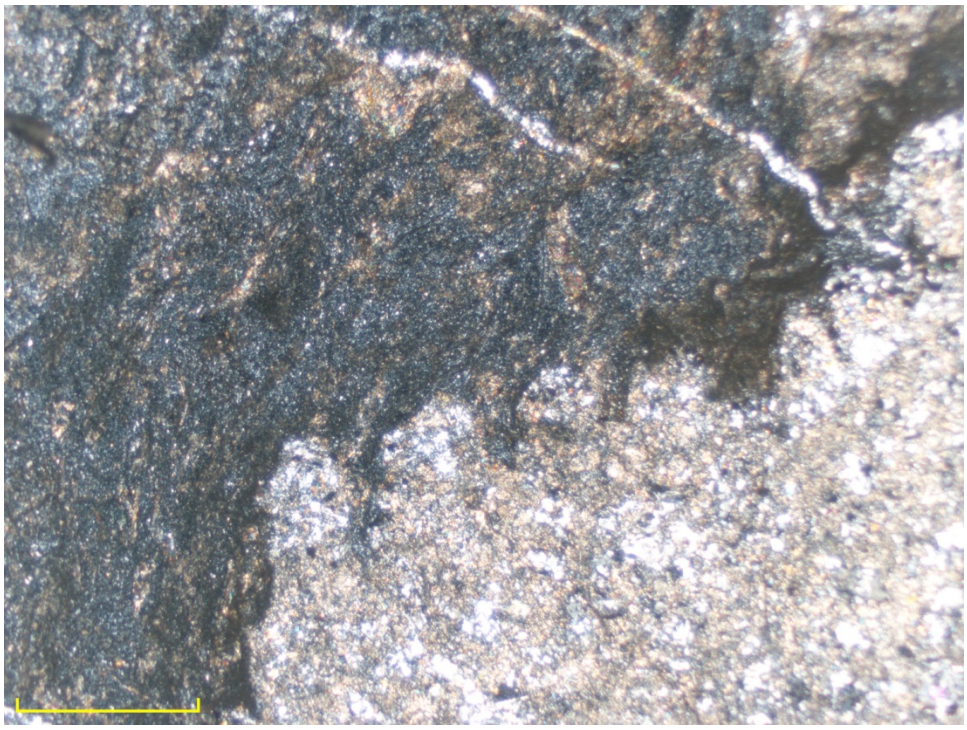
FA4-2,5xp shows the texture of the rock

FA4-5,0xp shows a larger mass of possible scapolite and the flow-banding

FA4-10xp shows a vein of feldspar and (?) scapolite



FA4-2,5pp



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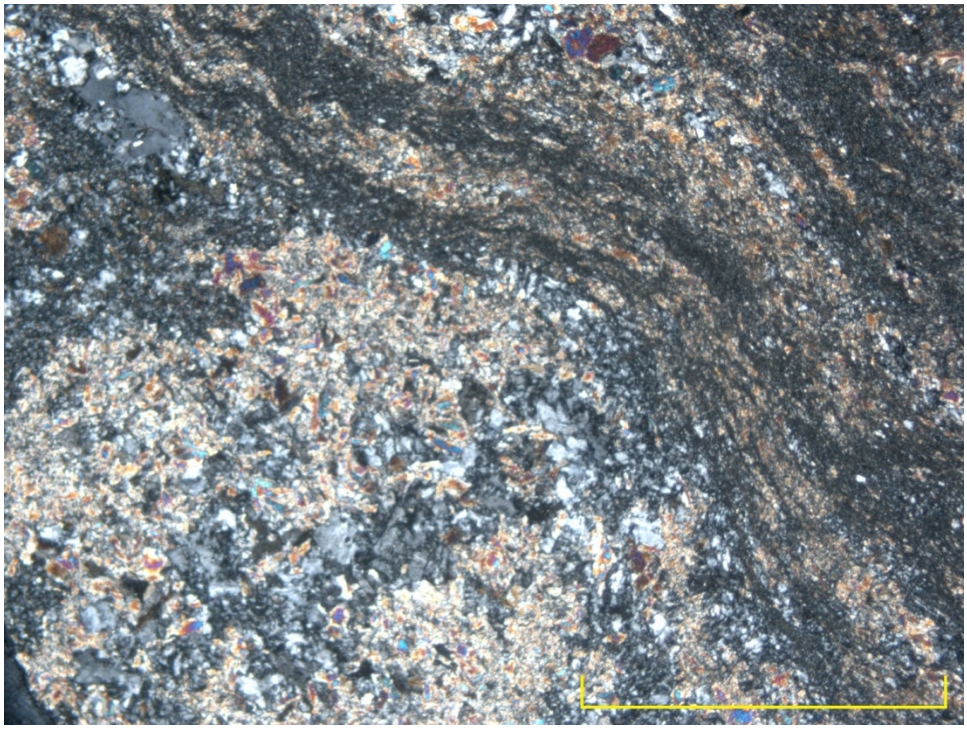
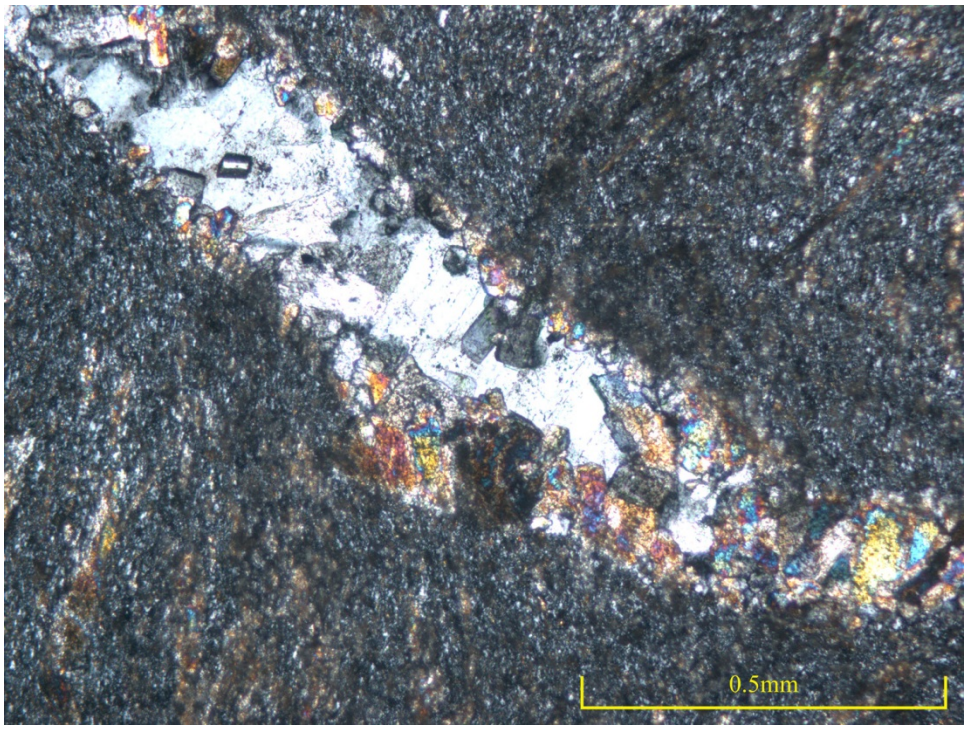


FA4-5,0xp



FA4-10xp

FA5

This is likely a devitrified glass. There is as much to be learned from the slab as from the thin section. The slab shows layering - a central 8mm thick layer of 0.25mm grainsize rock in a more aphanitic pink and green banded material.

It is a quite equigranular (0.1mm typical grainsize) aggregate of anhedral, often angular feldspar and quartz grains in an aphanitic groundmass that contains 0.003mm brown, anhedral minerals. These may be biotite or perhaps iron-stained smectite. Some very irregular veins cut the rock and are likely of smectite and scapolite. No sulphides were noted.

FA5-10xp shows the texture

FA5-20xp shows detail

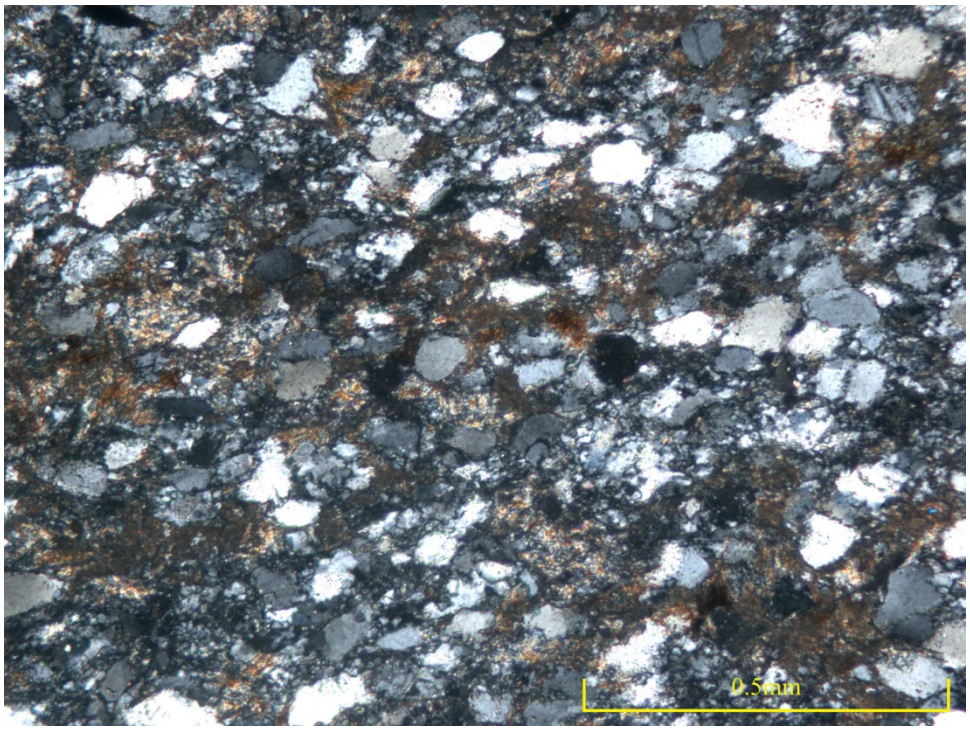
FA5-20pp shows the biotite or smectite

FA5-20xp2 shows the probable smectite and one grain of microcline

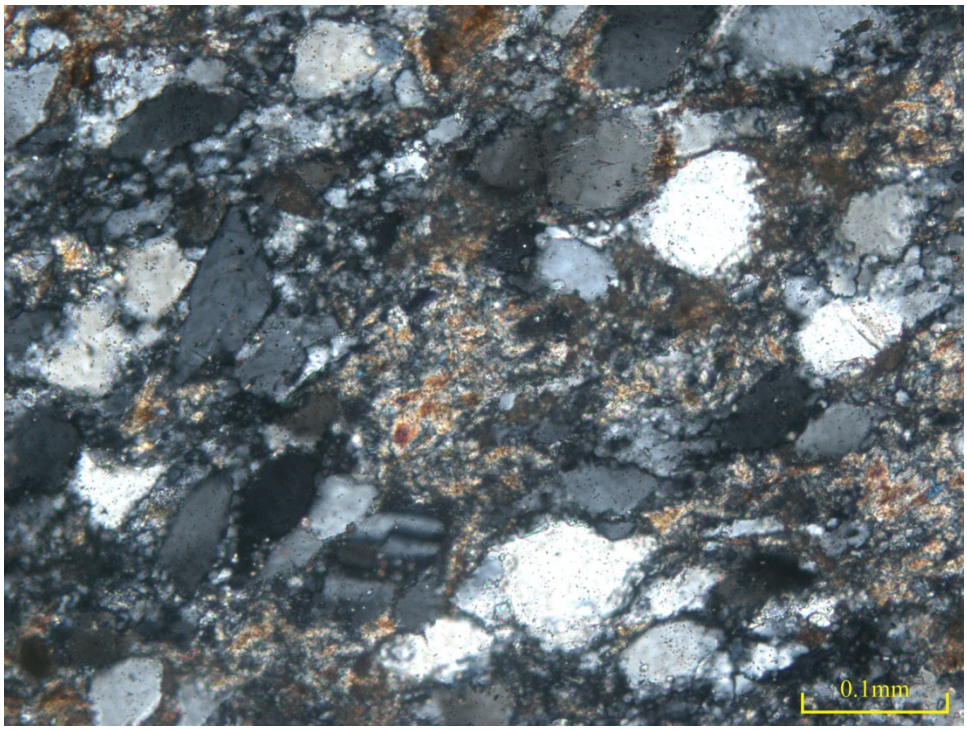
FA5-20pp3 in p.p. light, shows the same field

FA5-10pp2 shows a vein of smectite with possible scapolite

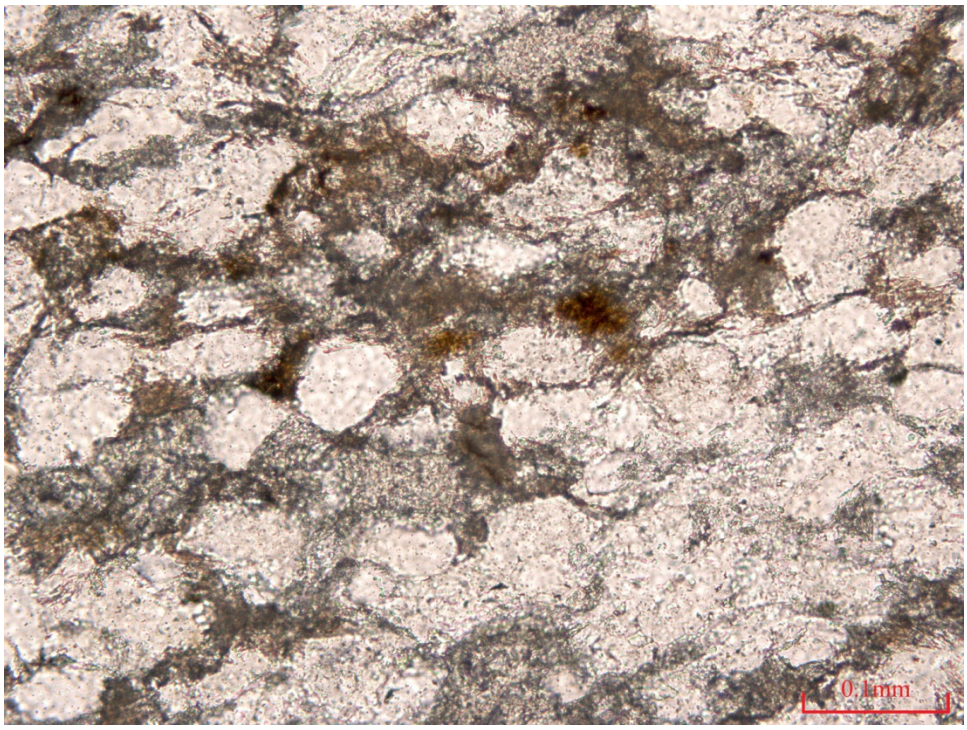
FA5-20pp2 shows vein minerals and apatite crystals in feldspar



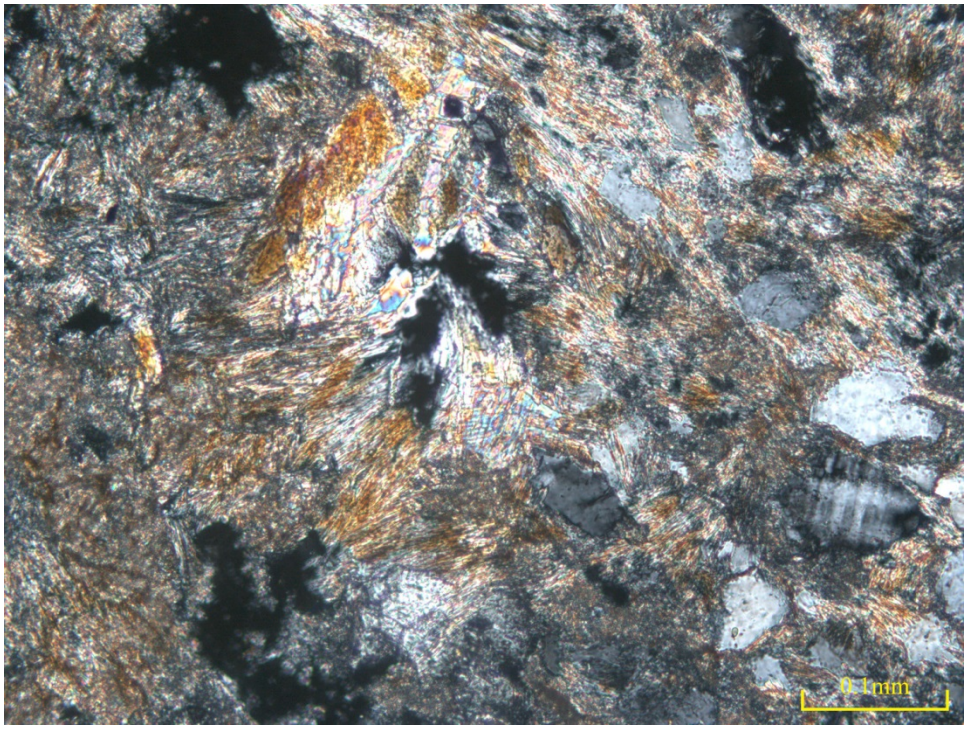
FA5-10xp



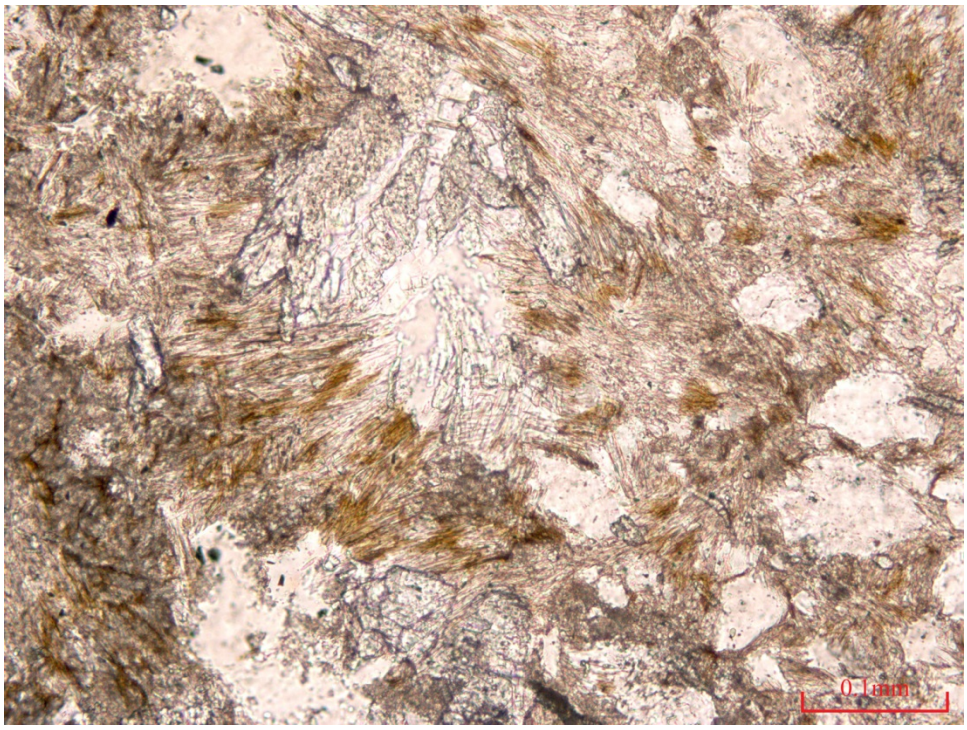
FA5-20xp



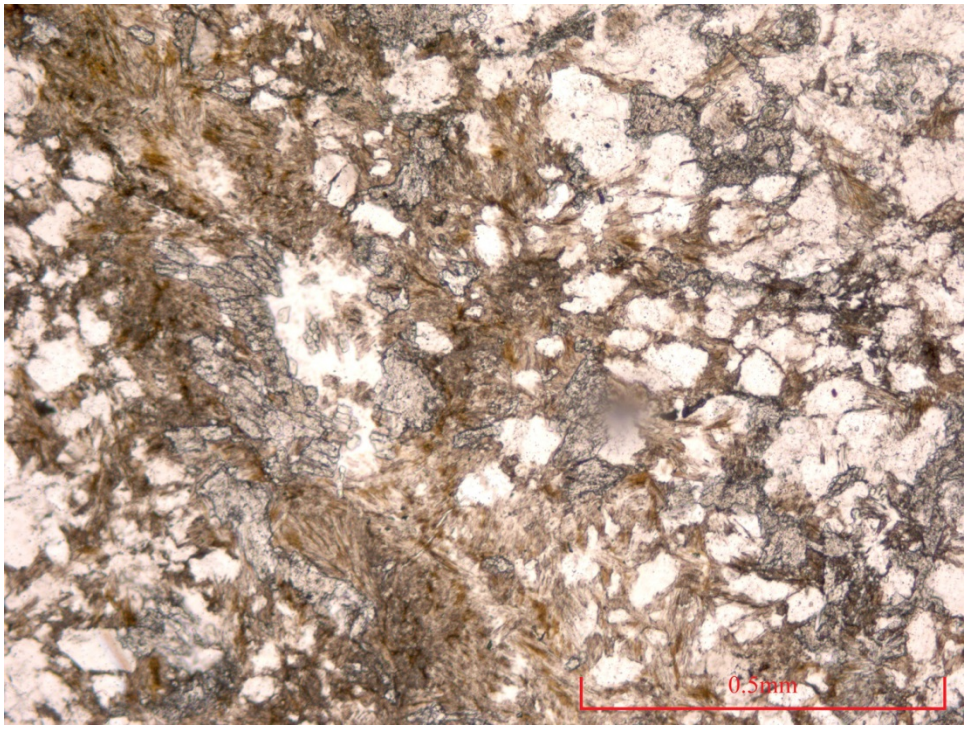
FA5-20pp



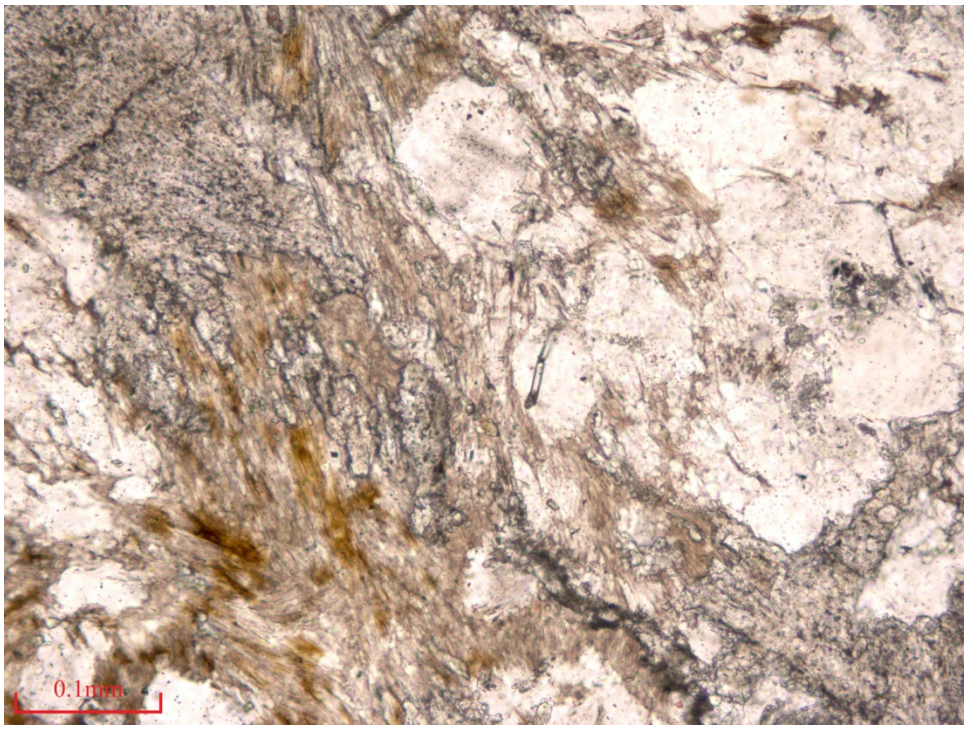
FA5-20xp2



FA5-20pp3



FA5-10pp2



FA5-20pp2

FA6

A devitrified glass. Consists of irregular-shaped patches of aphanitic first-order grey interference colour minerals – probably feldspar and quartz with phyllosilicates between, either sericite or smectites. Mostly planar veins from 0.02-0.1mm thickness cut the rock at various angles. These are filled with epidote and a prismatic, low-refringence mineral that could be scapolite (if so, then close to the Marialite end-member) or perhaps analcime or zeolite. Optical identification is not possible.

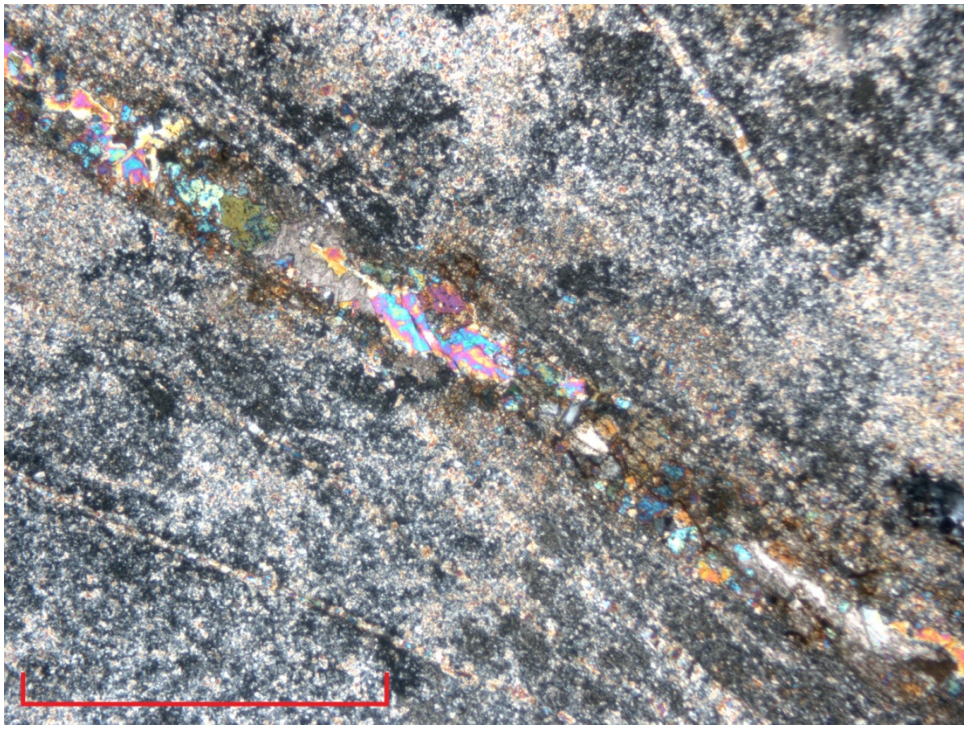
FA6-5,0xp shows a general view: the fine-grained groundmass and across-cutting epidote-(?) scapolite / zeolite vein.

FA6-10xp3 gives another general view.

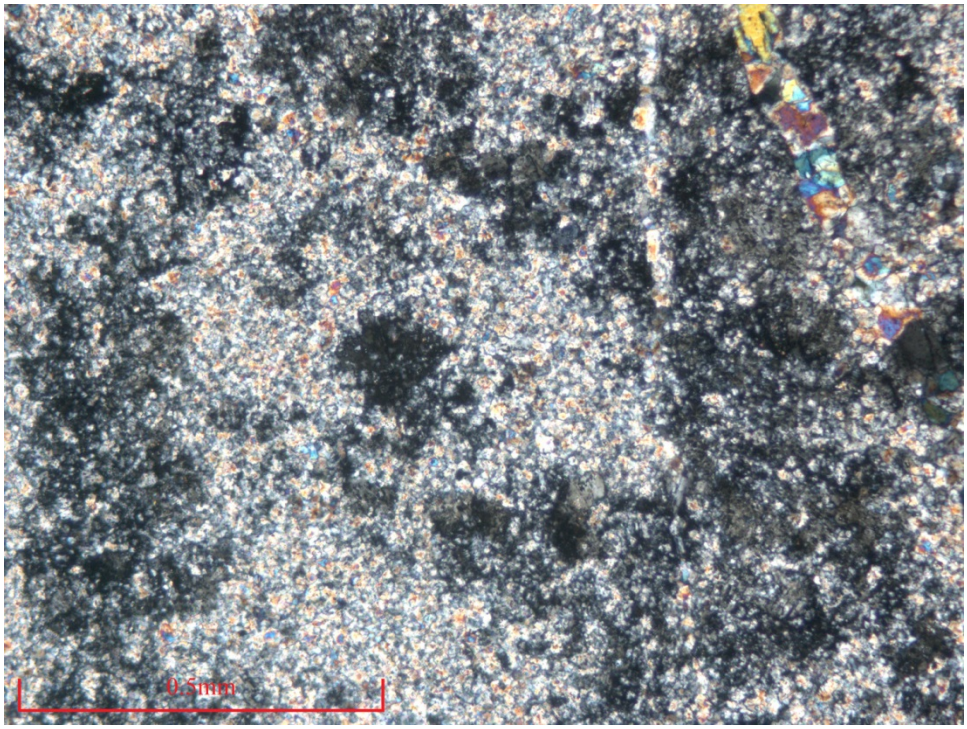
FA6-10xp shows detail of the epidote vein with the prismatic, low refringence mineral.

FA6-10xp2 shows another portion of the same vein.

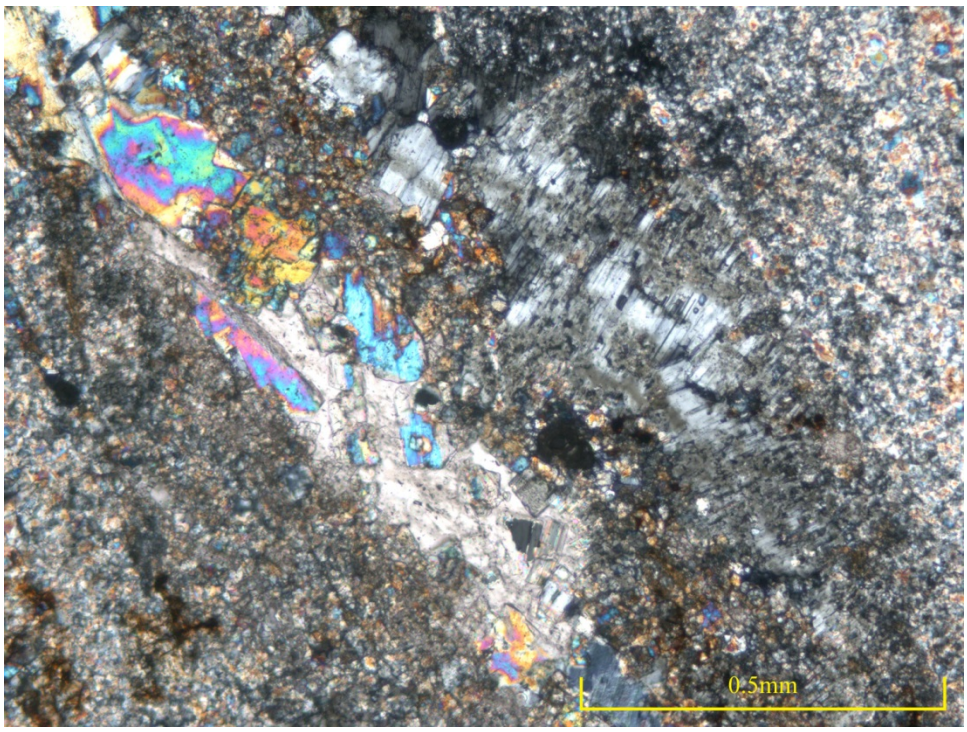
FA6-20xp shows an enlargement of the vein minerals.



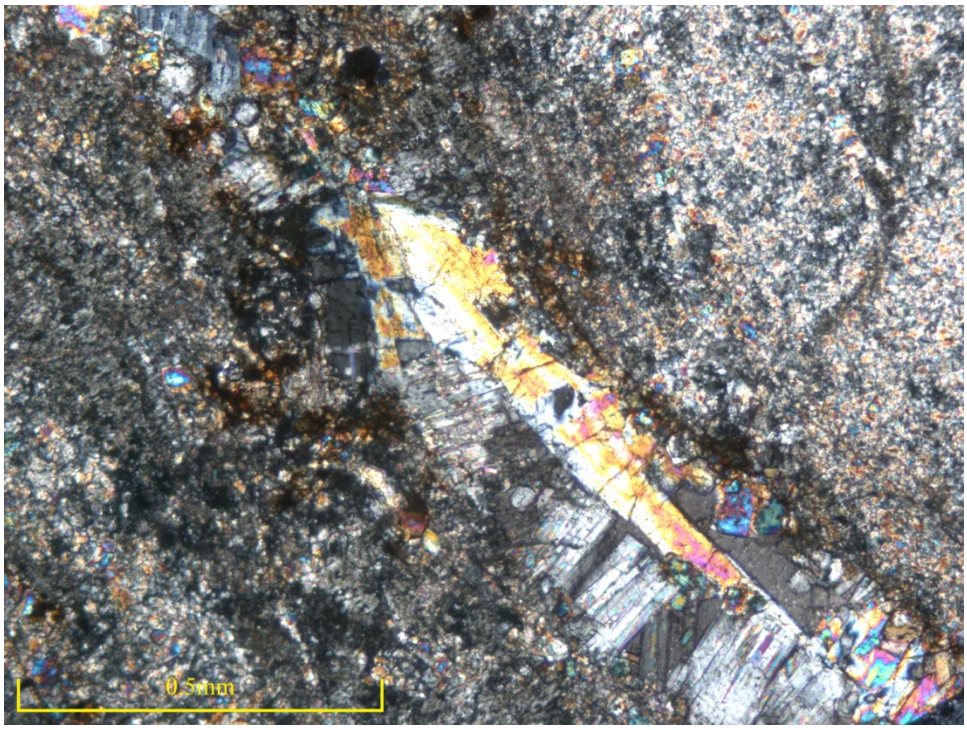
Picture above: FA6-5,0xp



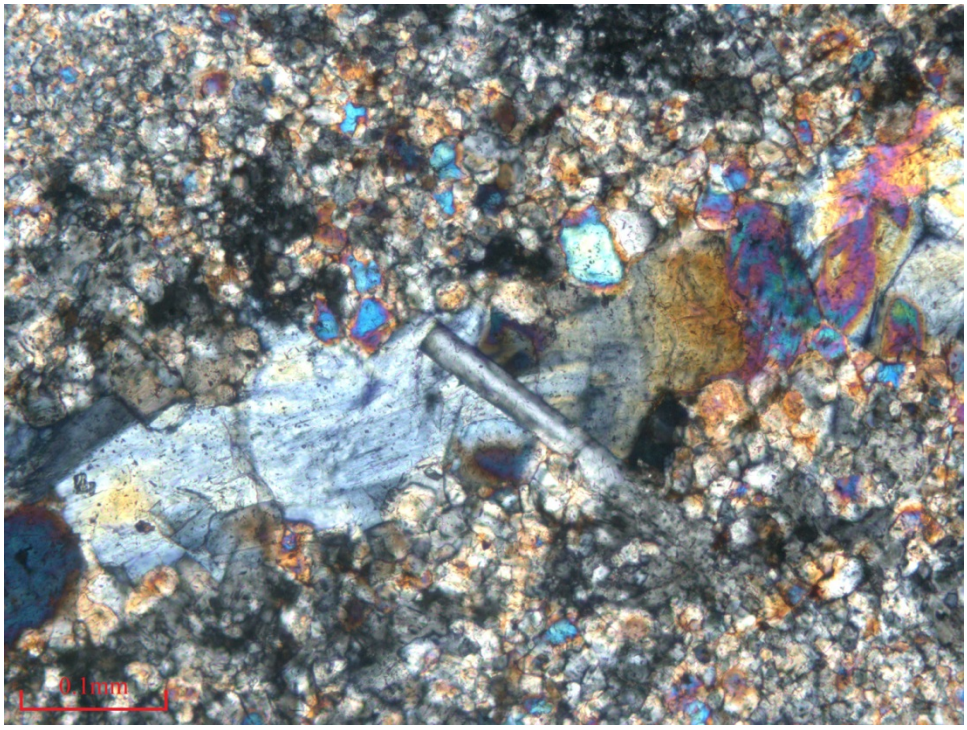
FA6-10xp3



FA6-10xp



FA6-10xp2



FA6-20xp

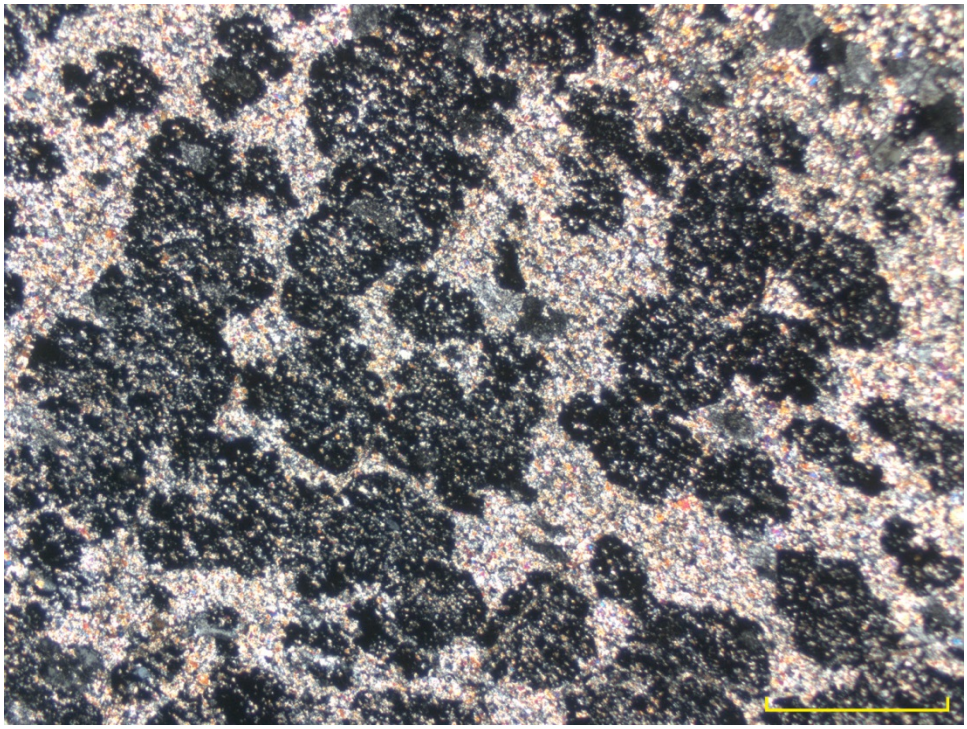
FA7

This rock shows equant, 0.5-0.7mm patches of feldspar in quartz and probably just coarser feldspar in a groundmass of 0.05mm grains of perhaps either sericite or smectite. An irregular vein, 0.25mm wide, is of feldspar. Slightly undulatory, but sub-parallel cracks traverse the rock, 1-2mm apart (no filling was recognisable). This may be a rhyolite with micropoikilitic texture.

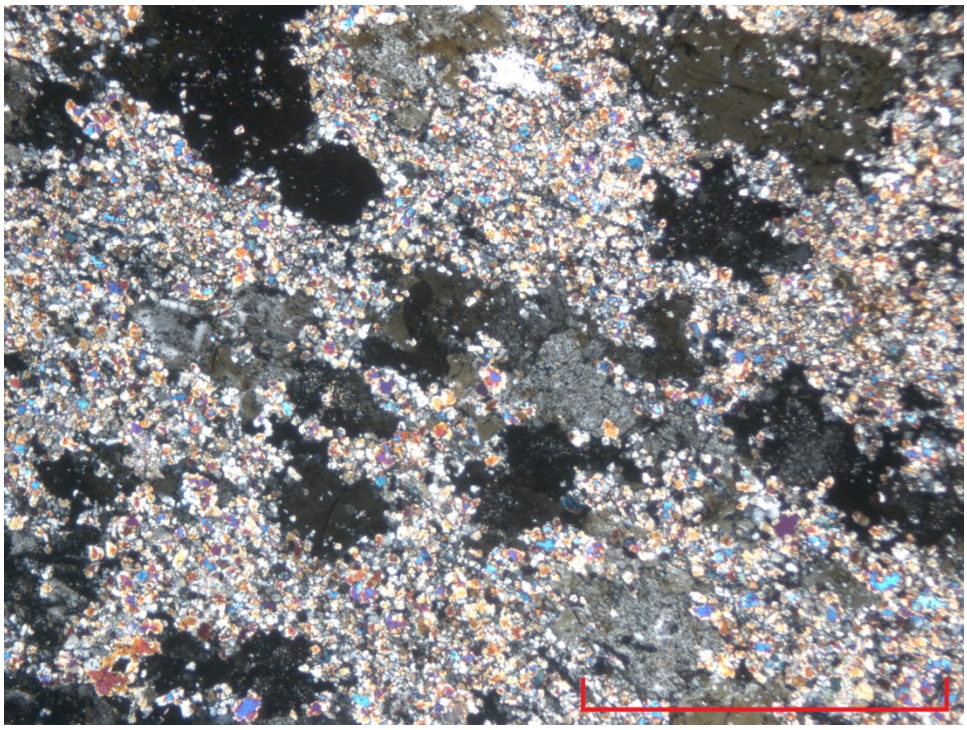
FA7-2,5xp shows a general view – probably micropoikilitic texture

FA7-5,0xp shows slightly finer-grained material

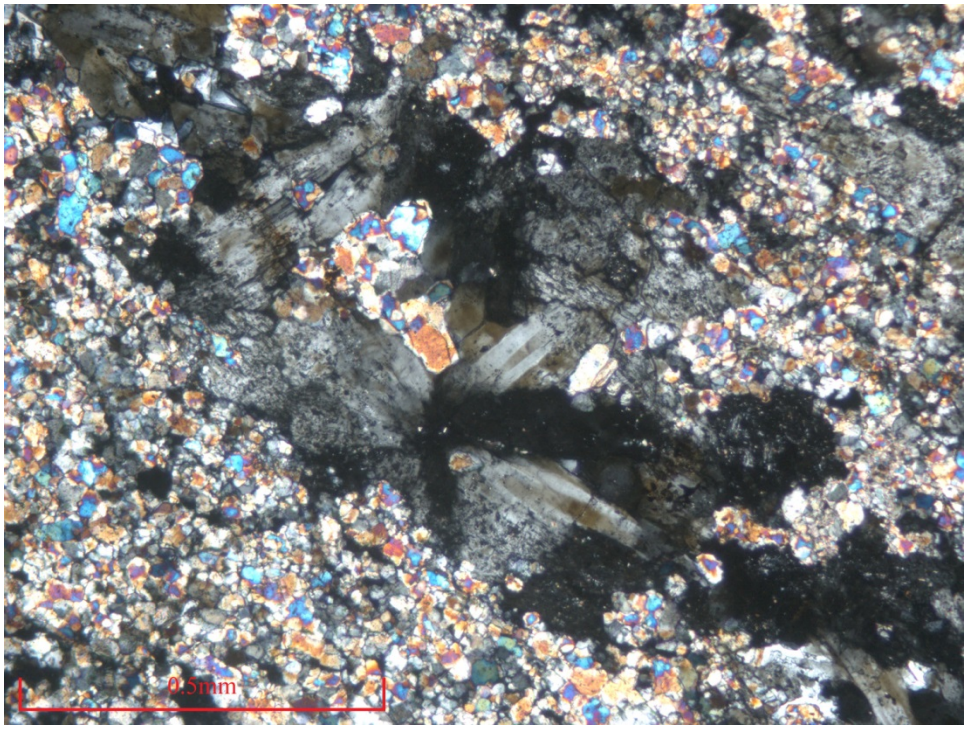
FA7-10xp shows a vein filled with feldspar (probably plagioclase)



FA7-2,5xp



FA7-5,0xp

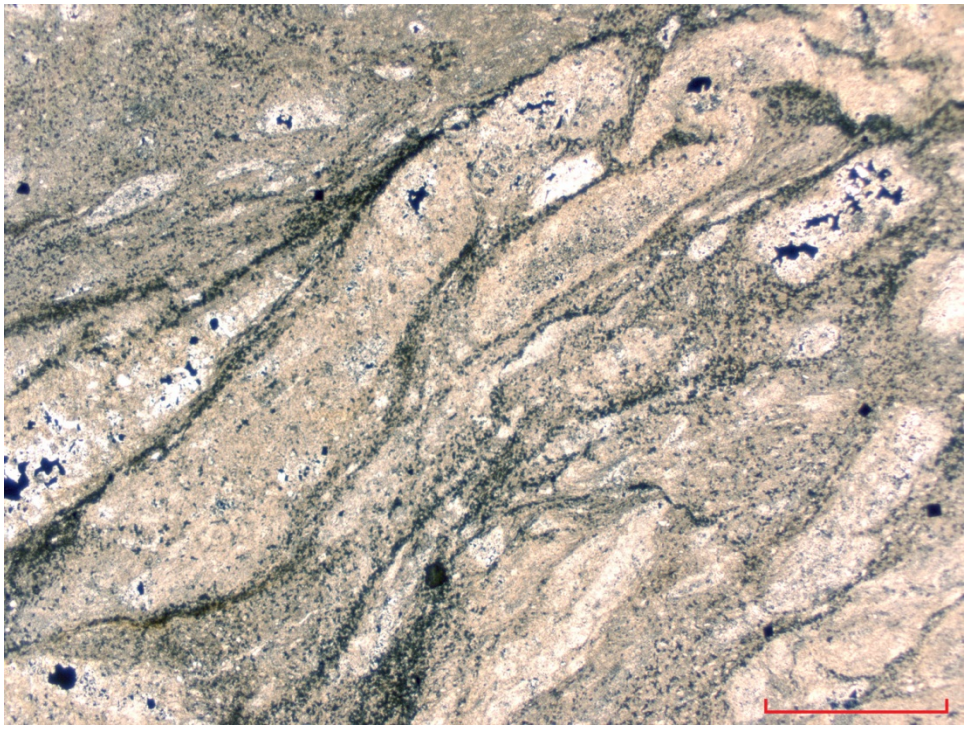


FA7-10xp

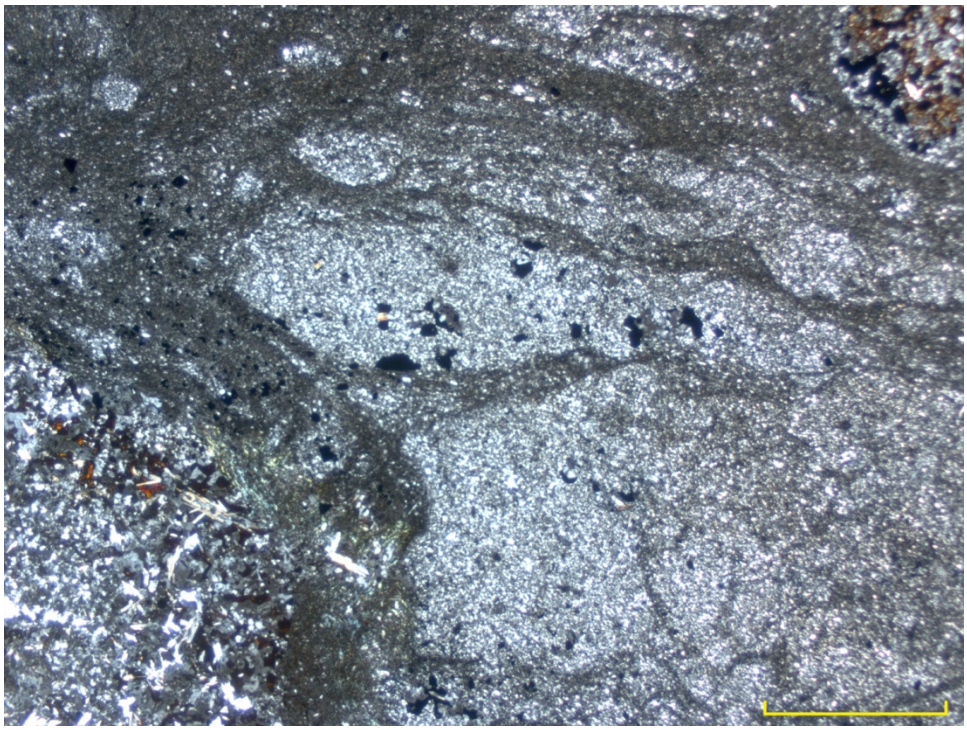
FA8

This rock is a rhyolite, perhaps a perlite. The first photomicrograph shows clasts reminiscent of these fractures. Other clasts in the rock are more equigranular feldspar-quartz-phyllosilicate, some with pyrite mineralization. Pyrrhotite pseudomorphs of pyrite are scarcer. A quartz vein, 0.5mm wide cuts the rock. One 7mm mass of coarse white mica with pyrite is obvious mineralization. Later fractures through the rock are filled with lepidocrocite (‘limonite’). It is possible that the mica-pyrrhotite masses are mineralized dissolution vughs.

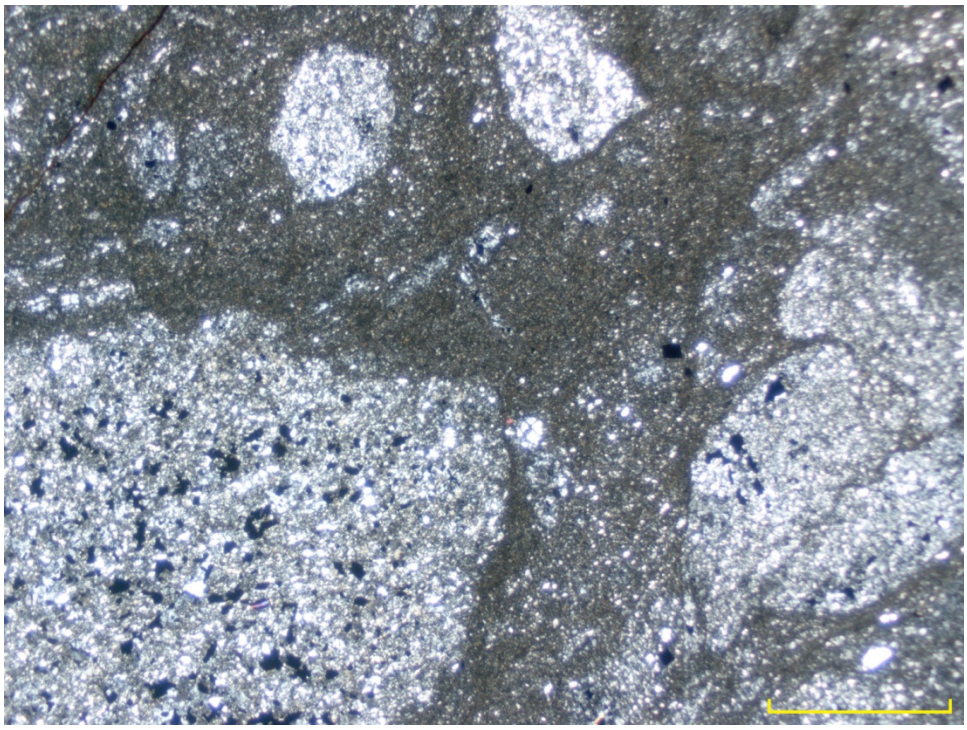
FA8-2,5pp	shows the possible perlitic texture
FA8-2,5xp	gives a different field, with the SW corner showing an agregate of feldspar and pyrrhotite
FA8-2,5xp2	is another view
FA8-2,5ppin	is the same field (reflected light) showing the pyrrhotite
FA8-5,0xp	pyrrhotite in feldspar
FA8-5,0xp2	quartz vein
FA8-10xp	shows coarse white mica and pyrrhotite
FA8-10ppin	is the same field in reflected light. The lighter grey is lepidocrocite.



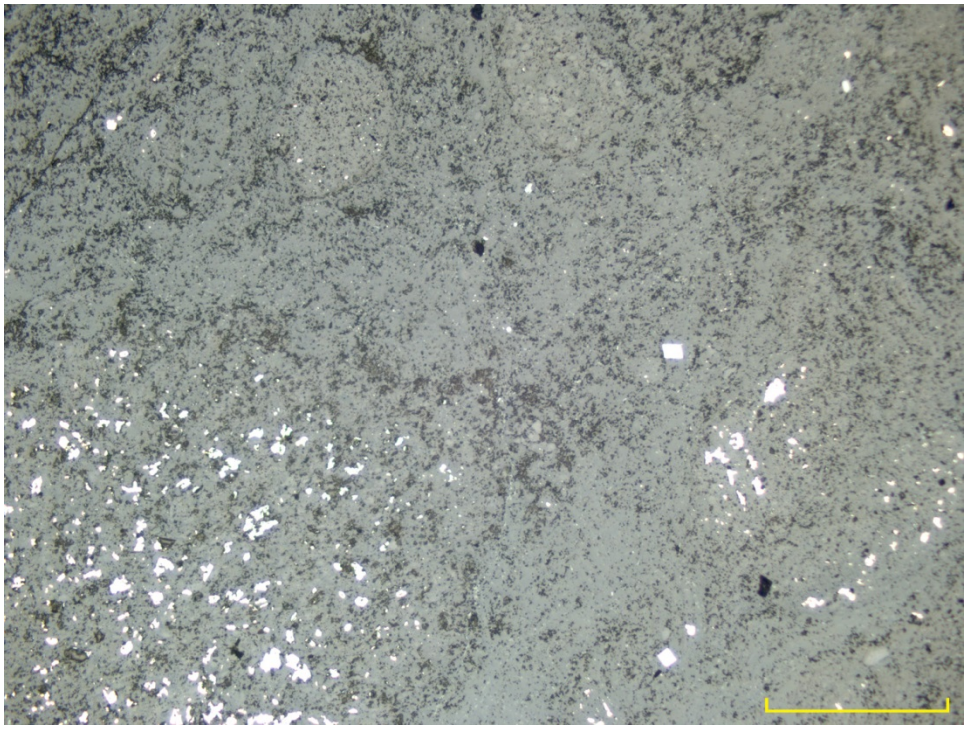
FA8-2,5pp



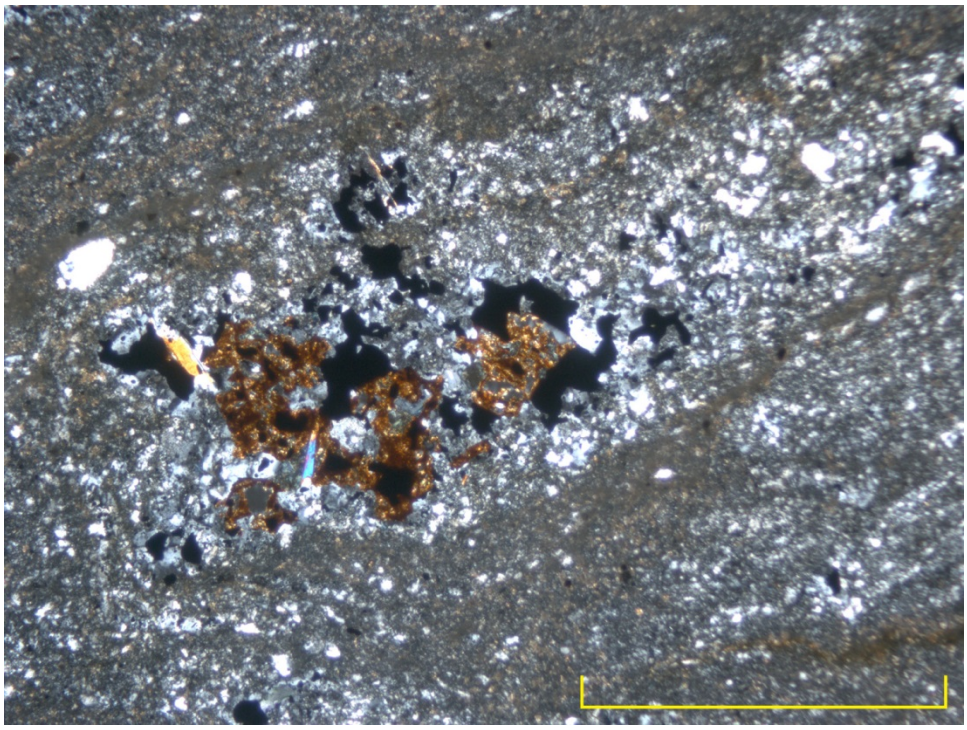
FA8-2,5xp



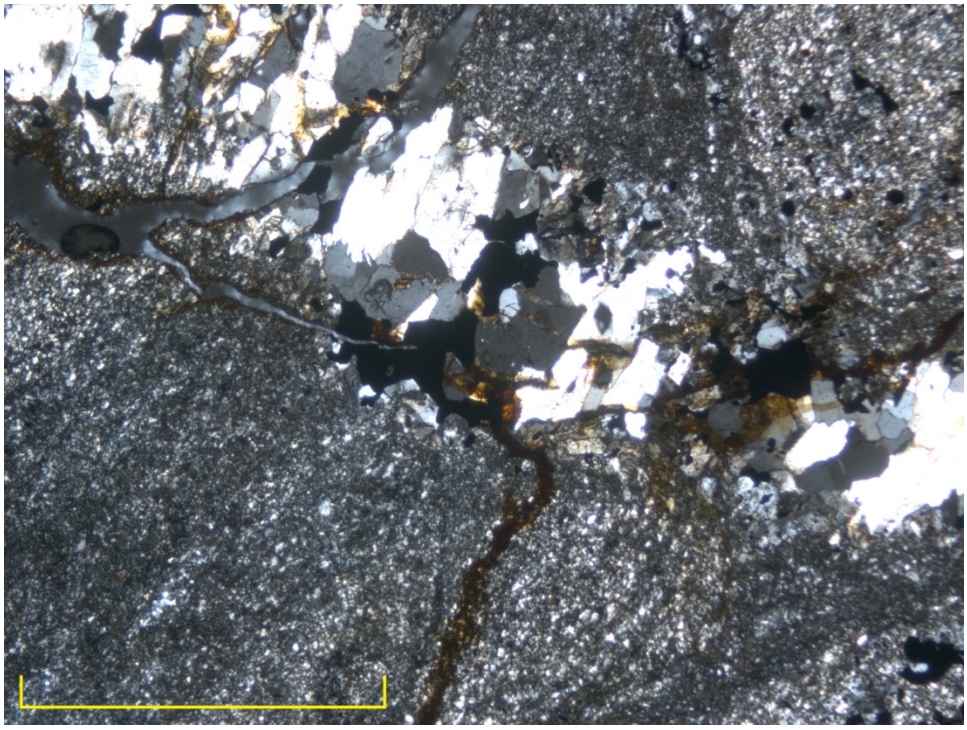
FA8-2,5xp2



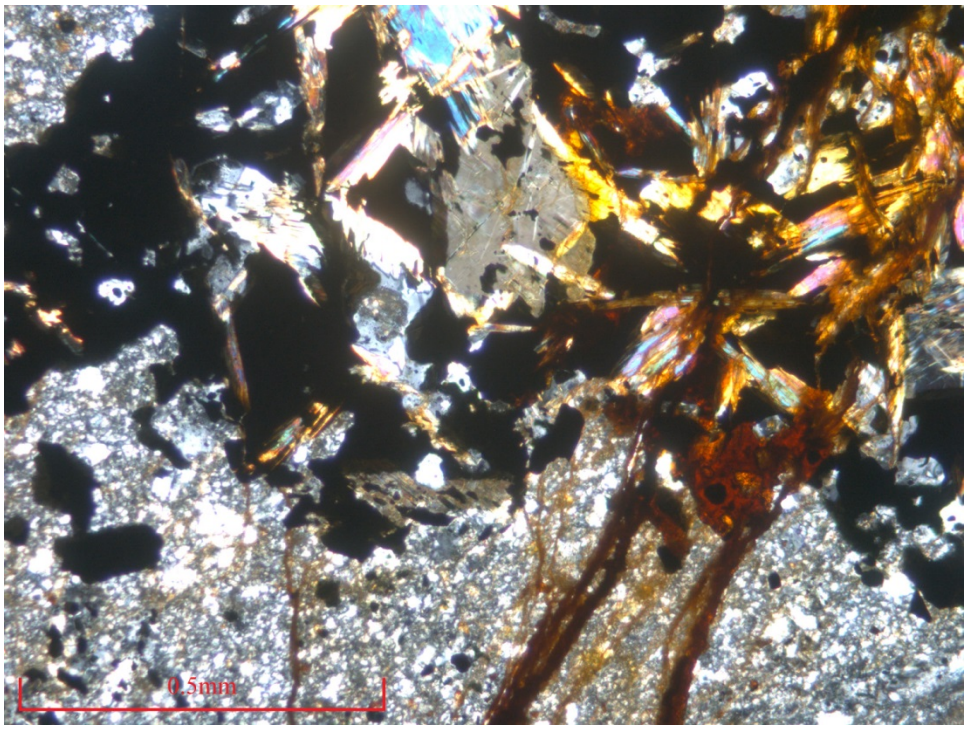
FA8-2,5ppin



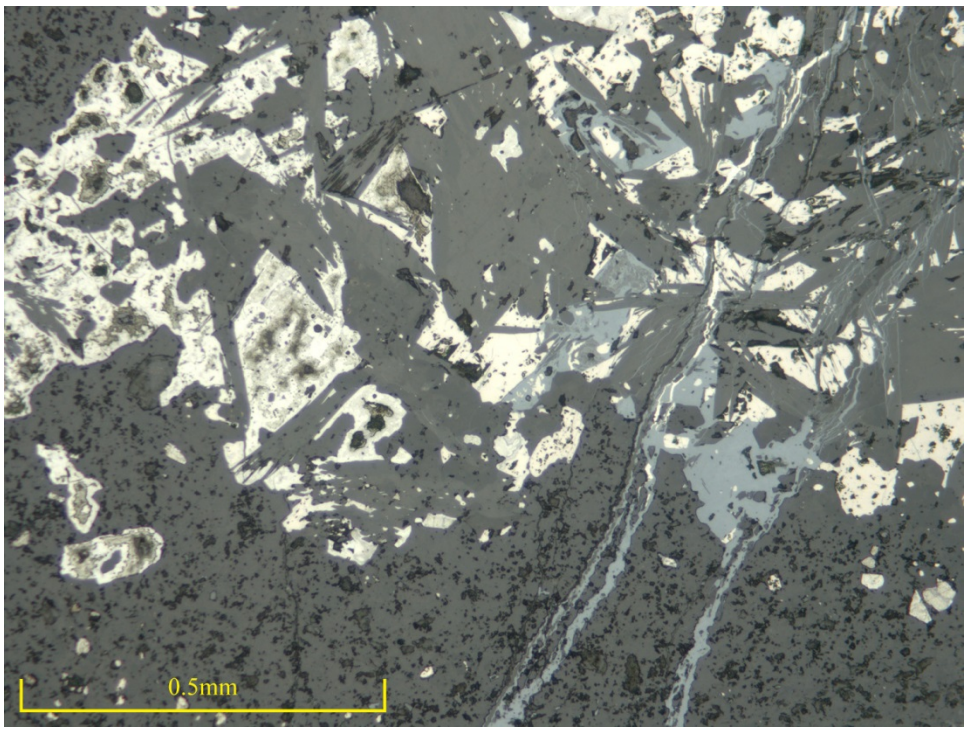
FA8-5,0xp



FA8-5,0xp2



FA8-10xp



FA8-10ppin

COMMENTS

These rhyolitic volcanics are flow and pyroclastic deposits. Perlitic textures are indicative of expansion of the rock upon hydration of rhyolitic glass – not necessarily of subaqueous environment. No fiamme were seen or other indications of pumice. It is likely that these rocks were entirely subaerial. Mineral identification in these volcanics is difficult. Certainly proportions of potash and plagioclase feldspar cannot be reliably estimated. Even tentative identification of smectite or of the colourless prismatic mineral seen in veins (scapolite or analcime / zeolite) is guesswork. In general, identification of the setting of volcanic sequences is best done by good field observation at outcrop scale.

Hi Tim

I hope you can beef up the comments a bit as follows:
1. The volcanics are mapped as being Finlayson group volcanics of the Yukon Tanana Terrane. Is there evidence in thin section that supports this? For example you note good cleavage in FA3. What about regional metamorphism producing certain mineralogy? There are phyllites in the area that seem right for YTT rocks, so I believe the mapping to that extent.

2. The granitic rocks and dykes are not foliated, and come in contact with the volcanics. The field terms I used for the hornfels seem to be wrong, as I called FA3 & FA8 biotite hornfels based on the colour of hand specimens. Obviously there is little or no biotite, just white micas, but the rocks have added pyrite + pyrrhotite and seem very hard like a hornfels. Is the py and po secondary, which would be consistent with the linear magnetic high anomaly?
The term calc-silicate hornfels was used for FA4 & FA6 & FA7 which might be OK, since there is epidote and maybe scapolite present? And the poikilitic texture might be consistent with contact metamorphism, I think. I was hoping for garnets.... Anyways, if you could comment on mineralogy &/or textures consistent with contact metamorphism or hornfels it would help me to tell the story.

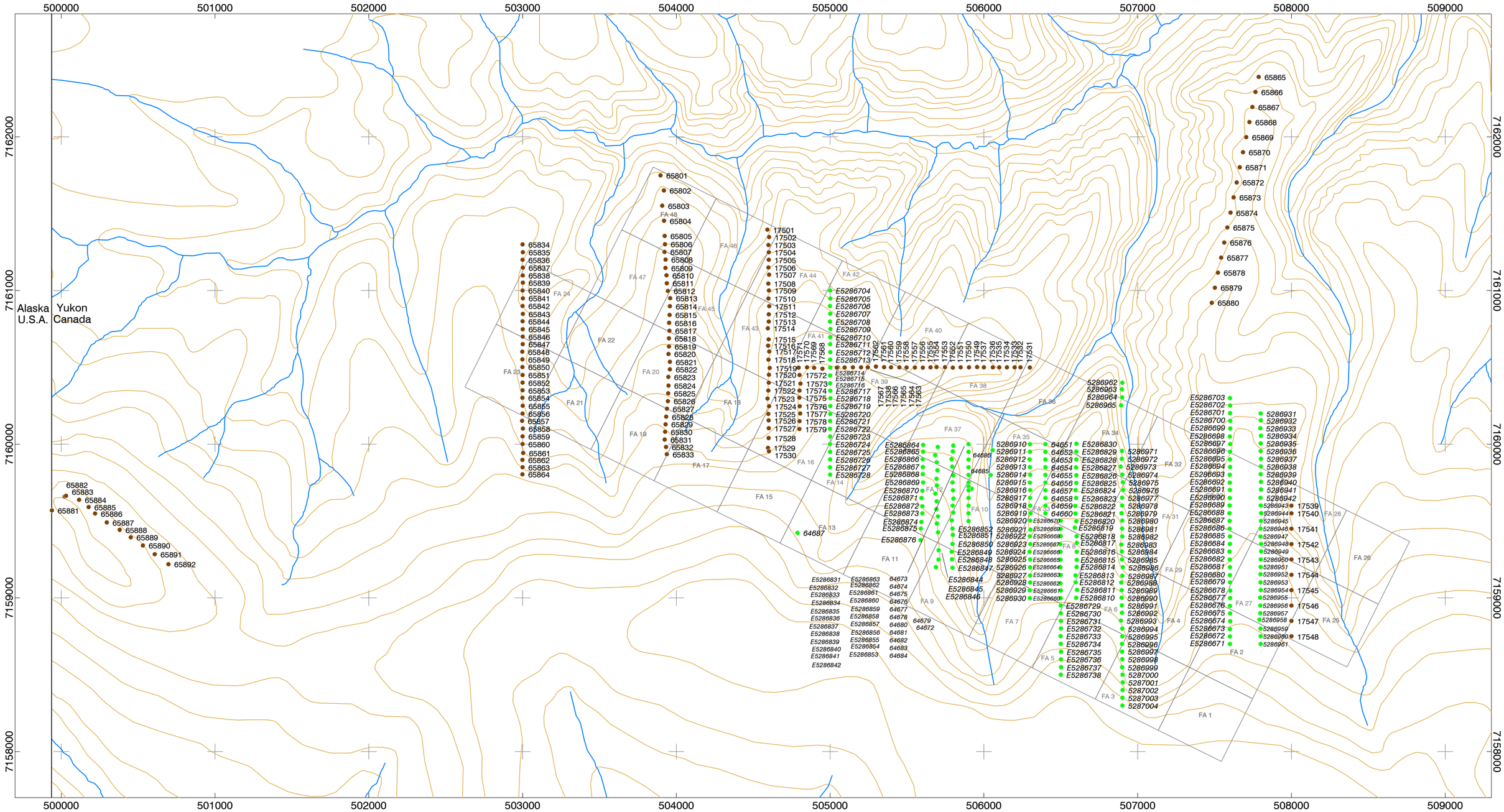
Cheers, Bill

REPLY:

Seven of these specimens are undeformed. The foliation seen in FA3 is equivocal in nature. If, as I suspect this rock was a pyroclastic, then the foliation and preferred orientation of minerals simply reflects bedding. The one layer of anastomosing structures shown in (FA3-10pp) is only 1mm thick. This might represent a microscopic shear zone, but the fabric is equivocal. No other potential deformation is seen in these rocks. The volcanics are subaerial as no indication of pumice was seen. It is quite likely that pyrite and pyrrhotite were introduced soon after deposition of these volcanics. For pyrite to revert to pyrrhotite does require an elevated temperature, but that could well be developed in a volcanic pile. It does not necessarily indicate contact metamorphism. With prograde metamorphism chlorite and zeolites (a check on crystal form indicates that zeolite is more likely to be the mineral in the veins rather than scapolite) that are found in the veins would form calc-silicate (amphibole) and feldspar. Epidote in the veins is still consistent with low metamorphic grade. Considering the chemistry of a rhyolite, however, it may be noted that there are low Mg, Fe and Ca contents, so there is not a lot of material to form calc-silicates. These rocks could be close to greenschist facies without knowing it (but bear in mind the preserved zeolite if it is that). Micrpoikilitic texture is consistent with felsic volcanics.

I don’t think that there is sufficient pyrrhotite in these rocks to appreciably alter their magnetic susceptibility. You need a different explantion for your magnetics.

Unfortunately to really recognise the nature of volcanics requires good exposure. Field observation is more useful than petrography. Mapping would indicate the relationship of the volcanics to the granite. If, as I suspect the microgranite is an alkali feldspar granite sensu stricto, then it is a good candidate for the subvolcanic intrusion to the rhyolites. There might be potential to prospect for Sn and Be. Collection of fresh specimens of granite and the volcanics next year would allow some chemical analysis (fusion/whole-rock and HF-perchloric traces) that would help to at least indicate whether these are an ‘evolved’ igneous suite. There are zircons in the granite, so U/Pb geochronology would be possible. A closer look at the limestone might also tell as story (how recrystallised is it? Does it contain any calc-silicate mineral assemblages? Any fossils?).



Scale 1:20000

250 0 250 500 750 1000 1250 1500

(metres)

NAD83 / UTM zone 7N

E5286704 2011 Soil Sample

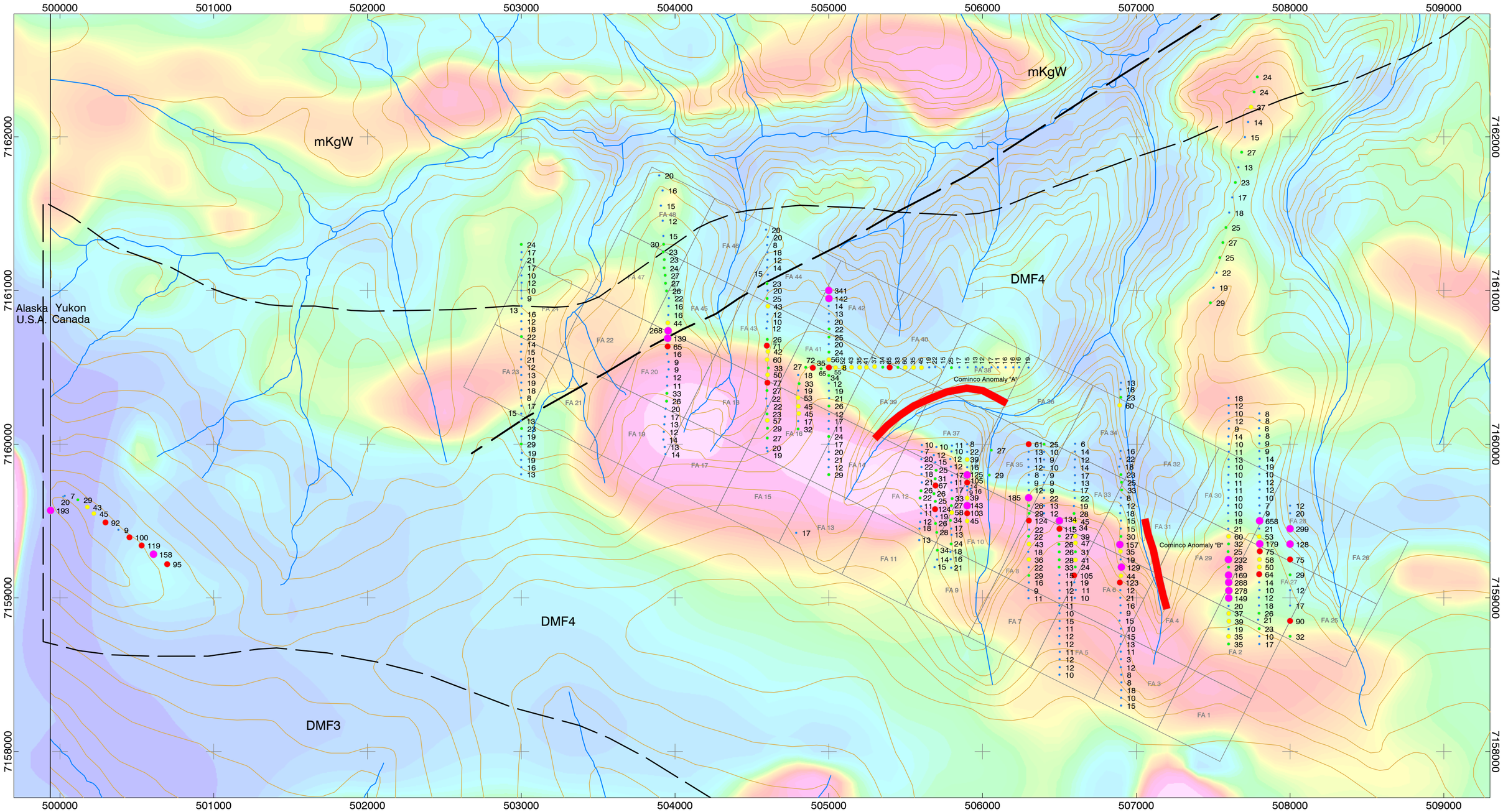
17501 2017 Soil Sample

Gladman Project, YMEP 17-048

2017 Soil Geochemistry Compilation
Sample Location Map

NTS: 116C10
November 14, 2017

Claim Owner W.D. Mann, P.Geo.



Scale 1:20000

250 0 250 500 750 1000 1250 1500

(metres)

NAD83 / UTM zone 7N

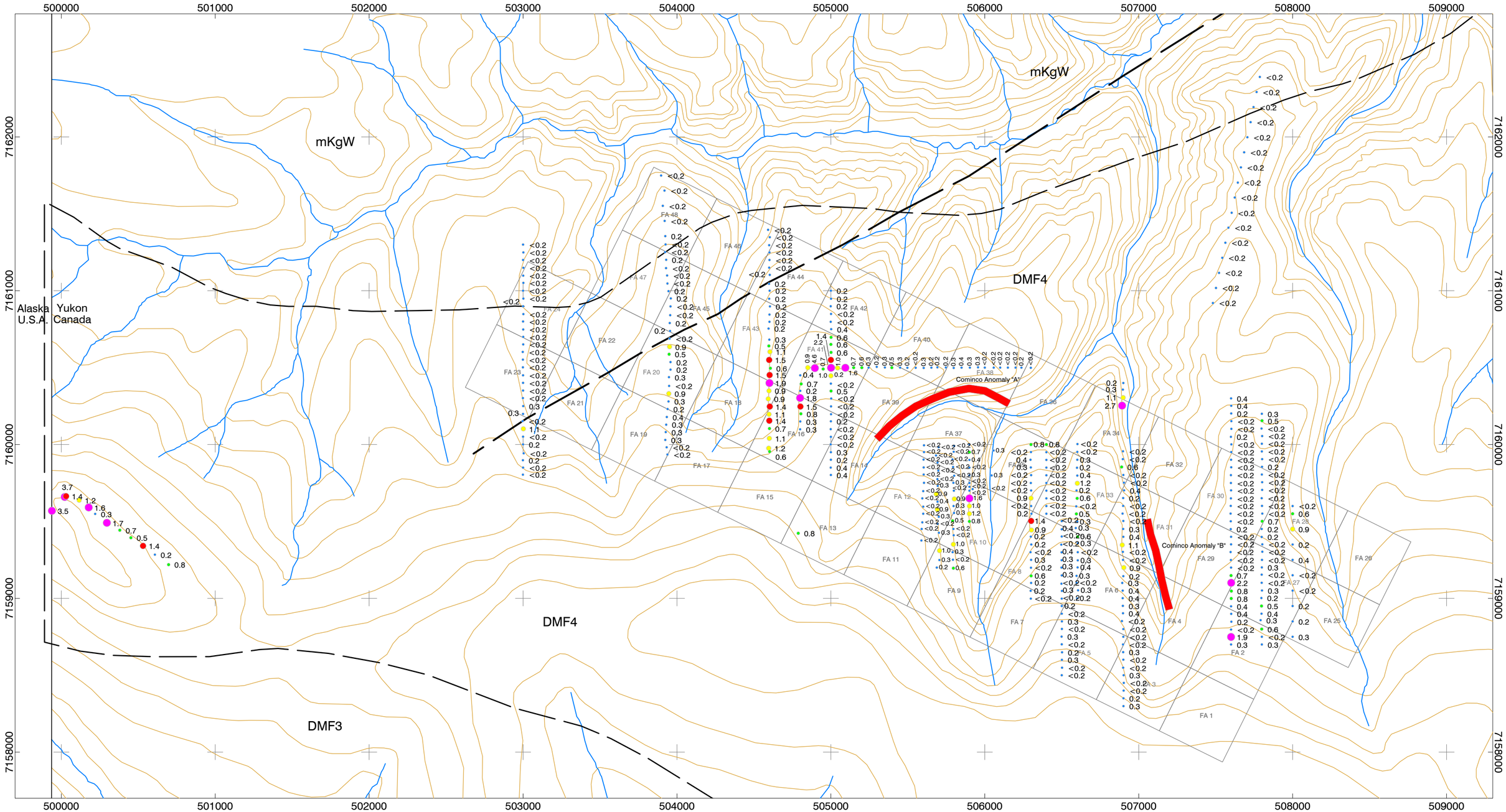
Percentile		Pb (ppm)
> 95	●	> 124
90 - 95	●	60.9 - 124
80 - 90	●	34.6 - 60.9
60 - 80	●	22.1 - 34.6
< 60	●	< 22.1

Gladman Project, YMEP 17-048

2017 Soil Geochemistry Compilation
Pb ppm
Dawson - 100m - MAG - Enhanced - 1st Vertical Derivative

NTS: 116C10
November 14, 2017

Claim Owner W.D. Mann, P.Geo.



Scale 1:20000

250 0 250 500 750 1000 1250 1500

(metres)

NAD83 / UTM zone 7N

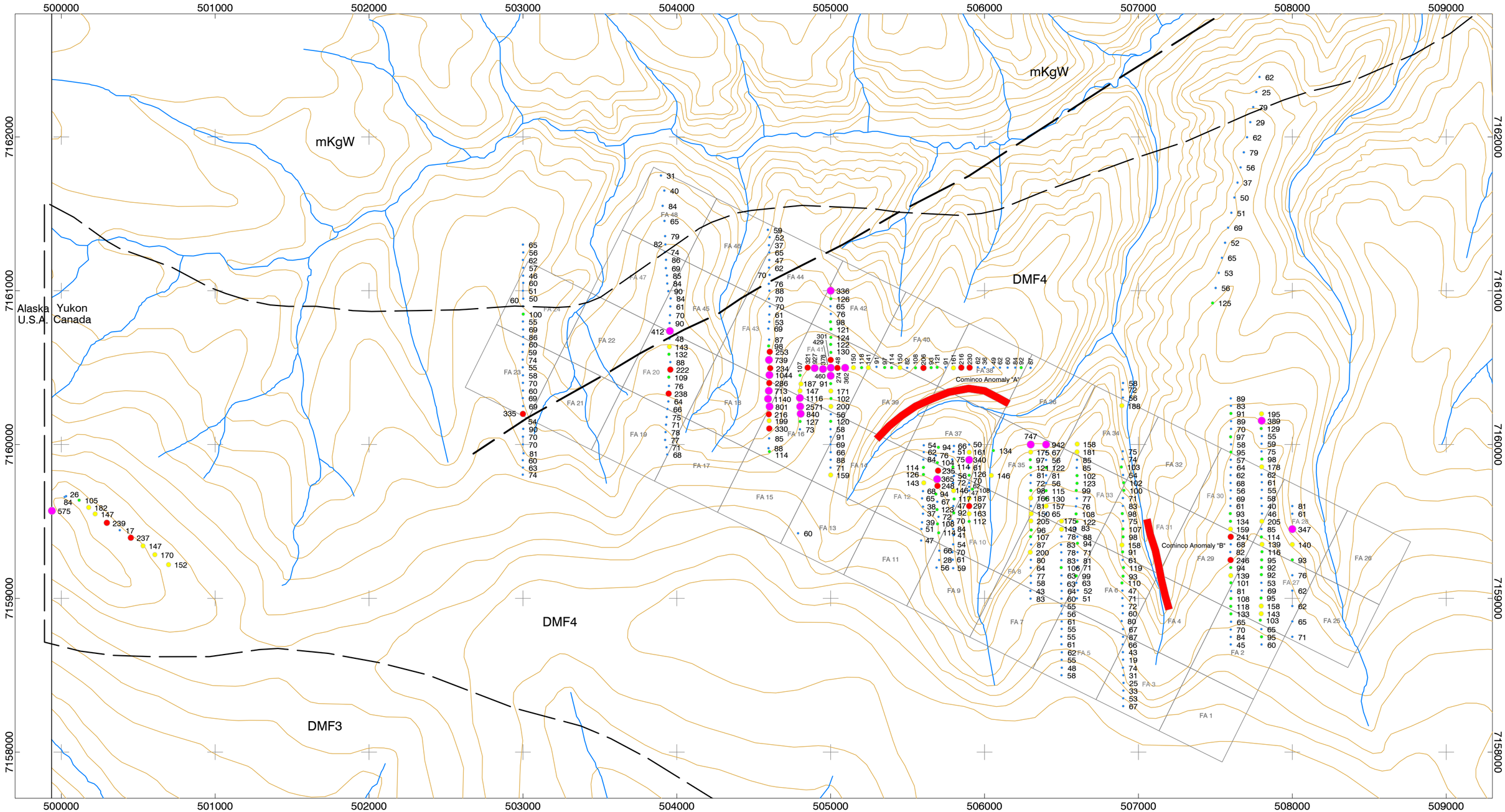
Percentile	Ag (ppm)
> 95	> 1.5
90 - 95	1.2 - 1.5
80 - 90	0.8 - 1.2
60 - 80	0.4 - 0.8
< 60	< 0.4

Gladman Project, YMEP 17-048

2017 Soil Geochemistry Compilation
Ag ppm

NTS: 116C10
November 14, 2017

Claim Owner W.D. Mann, P.Geo.



Scale 1:20000

250 0 250 500 750 1000 1250 1500

(metres)

NAD83 / UTM zone 7N

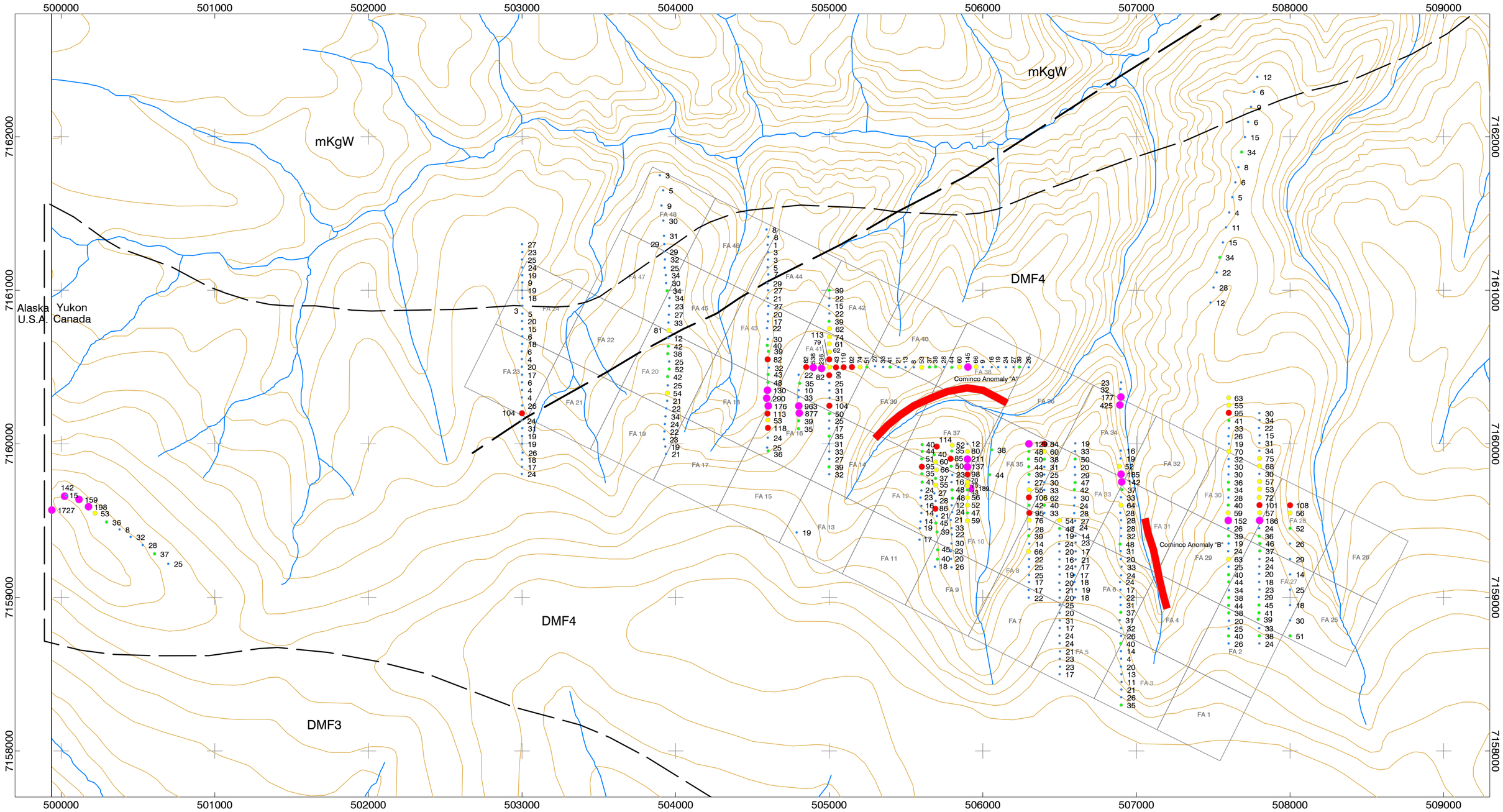
Percentile	Zn (ppm)
> 95	> 335.5
90 - 95	205 - 335.5
80 - 90	134 - 205
60 - 80	91.2 - 134
< 60	< 91.2

Gladman Project, YMEP 17-048

2017 Soil Geochemistry Compilation
Zn ppm

NTS: 116C10
November 14, 2017

Claim Owner W.D. Mann, P.Geo.



Scale 1:20000

250 0 250 500 750 1000 1250 1500

(metres)

NAD83 / UTM zone 7N

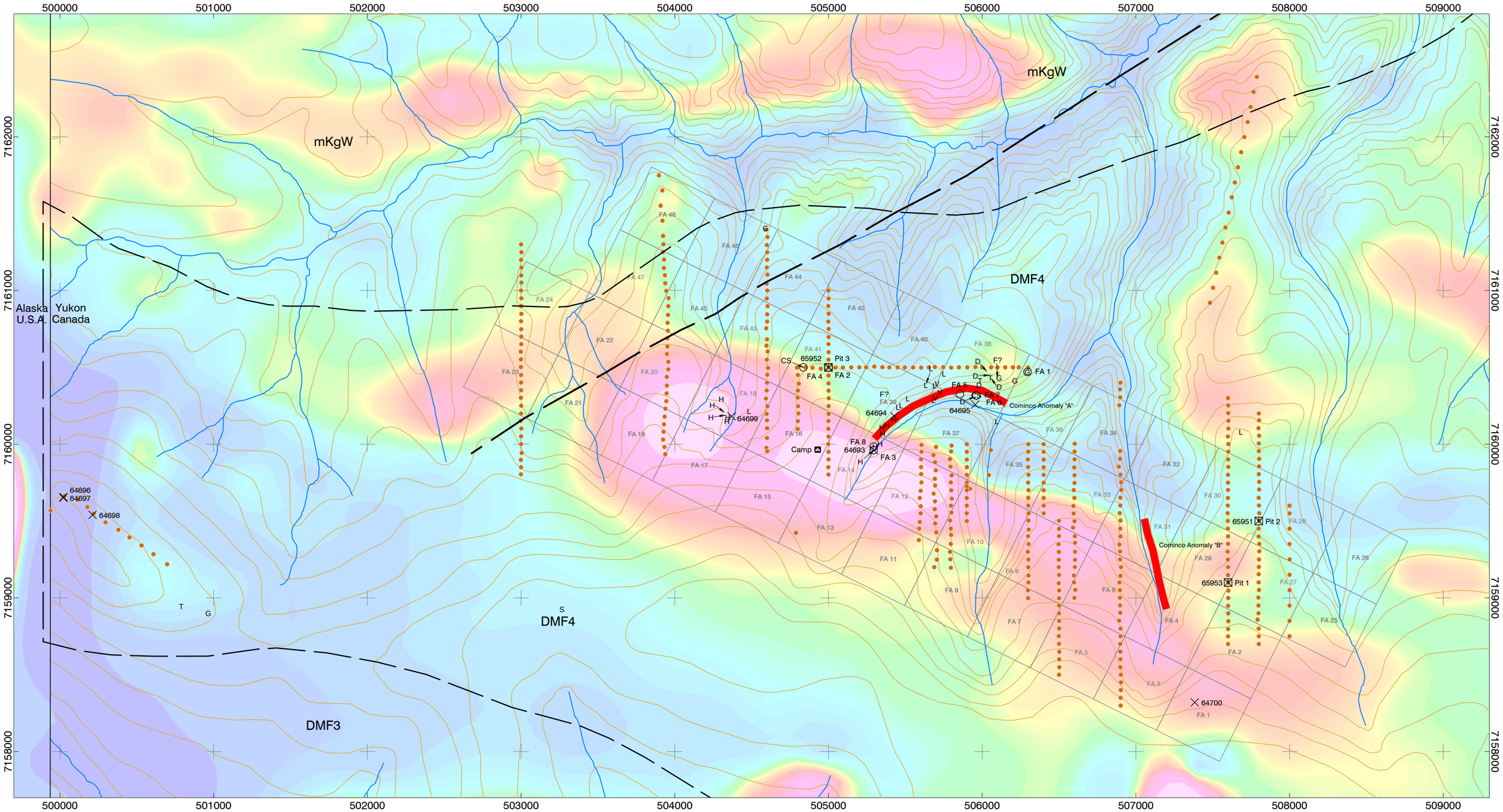
Percentile		Cu (ppm)
> 95		> 123.6
90 - 95		81.6 - 123.6
80 - 90		51.9 - 81.6
60 - 80		33.8 - 51.9
< 60		< 33.8

Gladman Project, YMEP 17-048

2017 Soil Geochemistry Compilation
Cu ppm

NTS: 116C10
November 14, 2017

Claim Owner W.D. Mann, P.Geo.



LEGEND

L = Limestone
CS = Calc-silicate hornfels
H = Biotite- pyrrhotite- pyrite Hornfels
V = Felsic metavolcanic
T = Metavolcanic bomb Tuff
G = Granite
D = Felsic Dyke
S = Silicification
F = Fault

○ FA 1 - 8 = Thin Section Location
× 64693 = 2017 Rock Assay Location
⊡ Pit 1 = Hand Test Pit Location
● 2017 Soil Sample Location

Scale 1:20000

250 0 250 500 750 1000 1250 1500

(metres)

NAD83 / UTM zone 7N

Gladman Project, YMEP 17-048

2017 Locations of Test Pits, Thin Sections, Rock Assays and Rock Mapping
Dawson - 100m - MAG - Enhanced - 1st Vertical Derivative

NTS: 116C10
December 08, 2017

Claim Owner W.D. Mann, P.Geo.