ASSESSMENT REPORT TITLE PAGE AND SUMMARY

TITLE OF REPORT: Geological and Geochemical Report on the Hawk Property

TOTAL COST: $ 1,800.00

Revised February 25, 2020

AUTHOR(S): RM (Rudi) Durfeld, P.Geo.
SIGNATURE(S):

NOTICE OF WORK PERMIT NUMBER(S)/DATE(S):
STATEMENT OF WORK EVENT NUMBER(S)/DATE(S): 5765989, December 2, 2019

YEAR OF WORK: 2019

PROPERTY NAME: Hawk

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

1066327

COMMODITIES SOUGHT: Copper, Gold

MINERAL INVENTORY MINFILE NUMBER(S),IF KNOWN: 94C 138, 94C 139, 94C 140, 94C 171

MINING DIVISION: OMINECA

LATITUDE: 56° 01’ 16" north
LONGITUDE: 125° 42’ 40" west
UTM Zone: 10V EASTING: 331026 mE NORTHING: 6211746 mN

OWNER(S): RM (Rudi) Durfeld

MAILING ADDRESS:
PO Box 4438
Williams Lake, BC
V2G 2V5

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

MAILING ADDRESS:
Suite 615, 800 West Pender Street,
Vancouver, BC
V6C2V6

REPORT KEYWORDS (lithology, age, stratigraphy, structure, alteration, mineralization, size and attitude. **Do not use abbreviations or codes**)

The geology is dominated by the east-west contact between the Early Jurassic Duckling Creek

Syenite to the south and the Early to Mid Cretaceous Osilinka Granites to the north. Copper and gold mineralization occurs as disseminated sulphide mineralization (copper / gold) in the Duckling Creek intusive lithologies. And younger east-west, cross-cutting gold rich quartz veins.

REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS: 21412, 21713, 24378, 31666,32441,33084

TYPE OF WORK IN THIS REPORT	EXTENT OF WORK (in metric units)	ON WHICH CLAIMS	PROJECT COSTS APPORTIONED (incl. support)
GEOLOGICAL (scale, area)			
Ground, mapping	1:5000, .5 SQ KM	1066327	$ 300.00
Photo interpretation			
GEOPHYSICAL (line-kilometres)			
Ground			
Magnetic			
Electromagnetic			
Induced Polarization			
Radiometric			
Seismic			
Other			
Airborne			
GEOCHEMICAL (number of samples analysed for …)		1066327	
Soil			
Rock	4 for gold and ICP		$ 1,500.00
Other			
DRILLING (total metres, number of holes, size, storage location)			
Core			
Non-core			
RELATED TECHNICAL			
Sampling / Assaying			
Petrographic			
Mineralographic			
Metallurgic			
PROSPECTING (scale/area)			
PREPATORY / PHYSICAL			
Line/grid (km)			
Topo/Photogrammetric (scale, area)			

Legal Surveys (scale, area)		
Road, local access (km)/trail		
Trench (number/metres)		
Underground development (metres)		
Other Reporting		
	TOTAL COST	$ 1,800.00

GEOLOGICAL AND GECHEMICAL REPORT

ON THE

HAWK PROPERTY

OMINECA MINING DIVISION

NTS: 093N and 094C
Latitude 56° 01' 16"N Longitude 125° 42' 40"W
(UTM NAD 83 10V 331026mE, 6211746mN)

Prepared by:
RM (Rudi) Durfeld, P. Geo.
P.O. Box 4438
Williams Lake, B.C.
V2G 2V5

For

Alton Resource Corp

Effective Date: November 15th, 2019

Revised February 25, 2020

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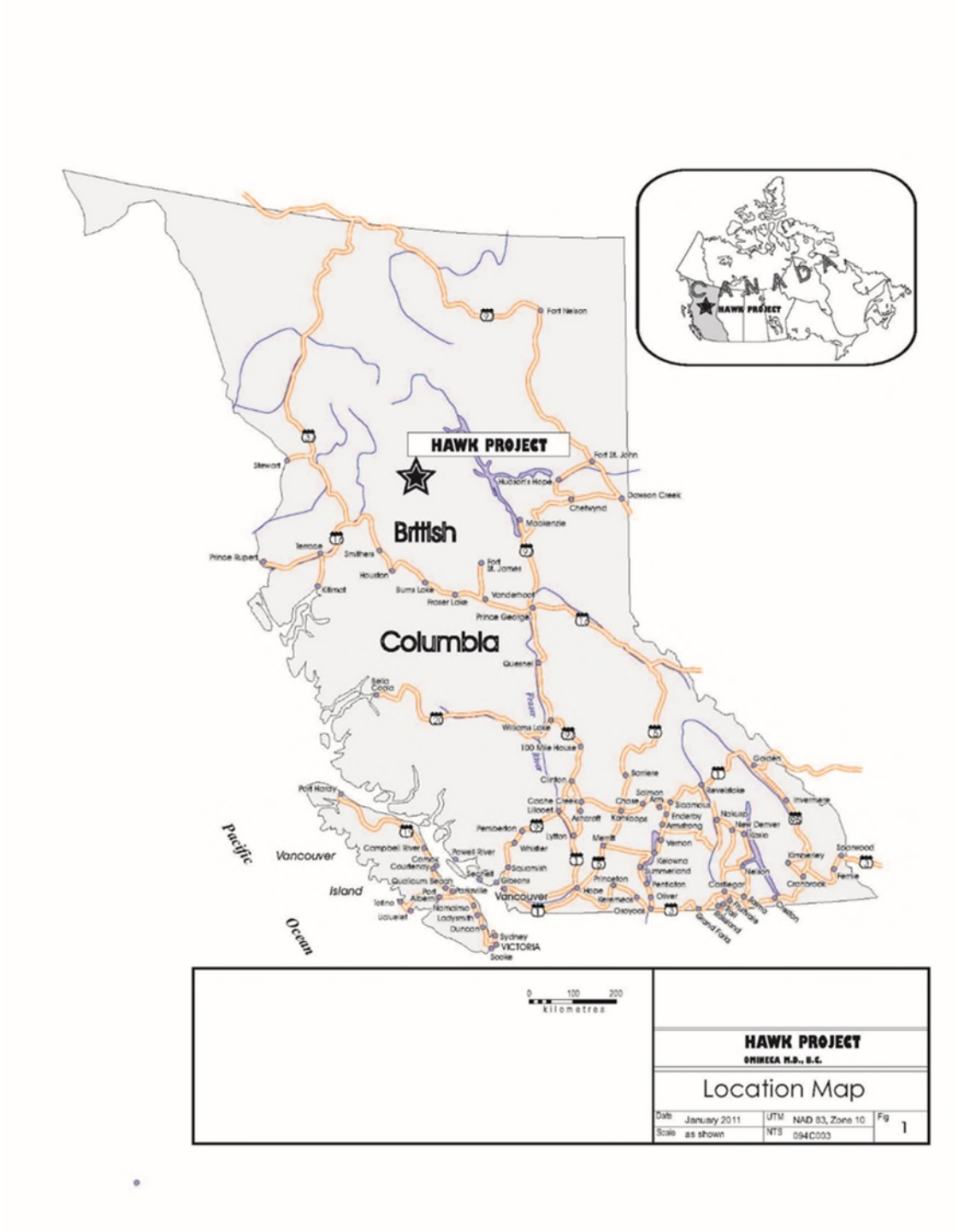

CANADA
HAWK PROJECT
HAWK PROJECT
British
Columbia
Fort Nelson
Stewart
Fort St. John
Hudson's Hope
Dawson Creek
Chetwynd
Mackenzie
Prince Rupert
Terrace
Smithers
Houston
Fort St. James
Kitimat
Burns Lake
Fraser Lake
Vanderhoof
Prince George
Quesnel
Bella Coola
Williams Lake
100 Mile House
Fraser
Clinton
Revelstoke
Golden
Invermere
Port Hardy
Cache Creek
Ashcroft
Kamloops
Chase
Salmon Arm
Sicamous
Enderby
Armstrong
Vernon
Lytton
Merritt
Pemberton
Whistler
Powell River
Campbell River
Comox
Courtenay
Quadra Island
Sechelt
Squamish
Gibsons
Port Alberni
Parksville
Ucluelet
Tofino
Nanaimo
Ladysmith
Duncan
Sidney
VICTORIA
Sooke
Vancouver
Hope
Princeton
Kelowna
Summerland
Penticton
Oliver
Osoyoos
Castlegar
Nelson
Kimberley
Cranbrook
Fernie
Creston
Grand Forks
Trail
Rossland
Salmo
Nakusp
New Denver
Silverton
Slocan
Pacific
Ocean
Vancouver
Island
0 100 200
kilometres
HAWK PROJECT
OMINECA M.D., B.C.
Location Map
Date January 2011
Scale as shown
UTM NAD 83, Zone 10
NTS 094C003
Fig 1

Item 3: Introduction

Latitude 56° 01' 16"N Longitude 125° 42' 40"W
(UTM NAD 83 10V 331026mE, 6211746mN)

The Hawk Copper/Gold Project, owned by Alton Resource Corp, is centred on (UTM NAD 83 10V 331026mE, 6211746mN) and is located in the Omenica Mining Division. During the 2019 field season Alton Resource Corp conducted field programs of Geology (Petrological studies and field mapping) and Geochem (rock, silt and soil sampling and analyses). This report documents the surveys and results.

Item 4: Property Description and Location

The Hawk property, comprised of 16 tenures, covers some 6453 hectares of mineral tenure, in the Omineca Mining Division. The project is located 275 kilometres northwest of Mackenzie and 70 kilometres northwest of Germansen Landing.

Title Number	Owner	Title Type	Issue Date	Good To Date	Status	Area (ha)
728342	107306 (100%)	Mineral	2010/MAR/15	2020/JAN/01	GOOD	741.07
728382	107306 (100%)	Mineral	2010/MAR/15	2020/JUL/01	GOOD	54.22
728402	107306 (100%)	Mineral	2010/MAR/15	2020/JUL/27	GOOD	36.15
728422	107306 (100%)	Mineral	2010/MAR/15	2020/JUL/01	GOOD	614.31
728442	107306 (100%)	Mineral	2010/MAR/15	2020/JAN/01	GOOD	470.22
728463	107306 (100%)	Mineral	2010/MAR/15	2020/JUL/01	GOOD	433.85
728482	107306 (100%)	Mineral	2010/MAR/15	2020/JAN/01	GOOD	253.15
895680	107306 (100%)	Mineral	2011/AUG/31	2020/JAN/01	GOOD	433.86
895709	107306 (100%)	Mineral	2011/AUG/31	2020/JAN/01	GOOD	451.70
1063805	107306 (100%)	Mineral	2018/OCT/16	2020/JAN/16	GOOD	216.85
1066265	107306 (100%)	Mineral	2019/FEB/02	2020/FEB/02	GOOD	885.27
1066327	107306 (100%)	Mineral	2019/FEB/05	2020/FEB/05	GOOD	289.61
1067098	107306 (100%)	Mineral	2019/MAR/08	2020/MAR/08	GOOD	759.69
1068686	107306 (100%)	Mineral	2019/MAY/24	2020/MAY/24	GOOD	812.75
				TOTAL AREA		**6452.72**

The previous table lists the detailed tenure information (tenure number, owner, type, issue date, good to date and area). The good to date reflects the statements of work filed on

August 23rd, 2019 (event ID =5752601). This report documents the exploration work filed in this statements of work.

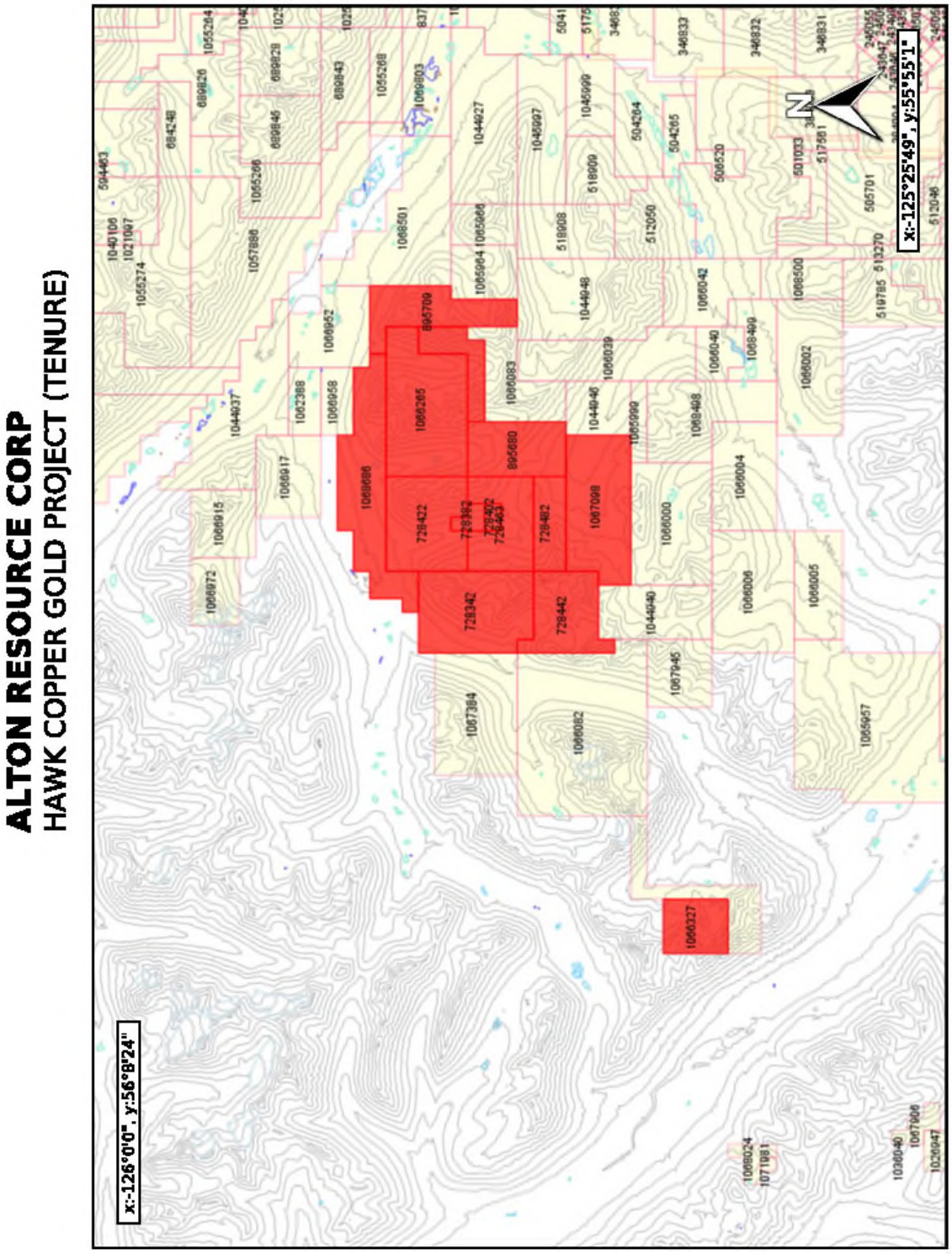


Figure 2: Hawk Claim Map

The previous table lists the detailed tenure information (tenure number, owner, type, issue date, good to date and area). The good to date reflects the statements of work filed on August 23rd, 2019 (event ID =5752601). This report documents the exploration work filed in this statements of work. The relative claim locations are shown on the Claim Map (Figure 2).

Item 5: Accessibility, Climate, Local Resources, Infrastructure and Physiography

The Hawk property is located in the Omineca Mountains of north central British Columbia. The lower elevations are easily accessed from Mackenzie or Fort St. James by vehicle on all-weather logging roads. Total travel time from either town is approximately 4.5 hours, and numerous logging roads throughout the area facilitate travel. The ground assessed by 2019 program was not road accessible and was accessed by helicopter from the community of MacKenzie and Silver Camp..

Mean annual precipitation in the area is roughly 1000 millimetres, and elevations range from 1150 to 2160 metres above sea level. The mean winter temperature ranges from -10°C to -7°C, and the mean summer temperature is 12°C. The snow-free period at lower elevations on the property can extend from April to November but may be as short as July to October, and snow at higher elevations persists much longer into the summer.

The Hawk property is characterized by barren steep slopes at the highest elevations followed by alpine meadows and forested slopes towards the valley bottoms. The Omineca Mountains occur predominantly in the Engelmann Spruce - Subalpine Fir biogeoclimatic zone, and relatively long harsh winters and cool short summers are the norm. Spruce and balsam are common throughout the area.

Item 6: 2019 Work Program

The 2019 office studies identified individual samples on the Hawk Property showing anomalous concentrations in copper and gold. On August 17th, 2019 four of these sites were accessed by helicopter from MacKenzie and 12 rock samples were collected. All

the rock samples were submitted for geochemical analysis and 11 samples were sent to Vancouver Petrographics Ltd for pretrographic examination. Based on the August program an additional 3 areas were identified as the focus for the September 7th to 12th, 2019 field program. An additional 42 rock, 13 silt and 41 soil samples were collected. Results of these surveys are documented in this report.

Item 7: History

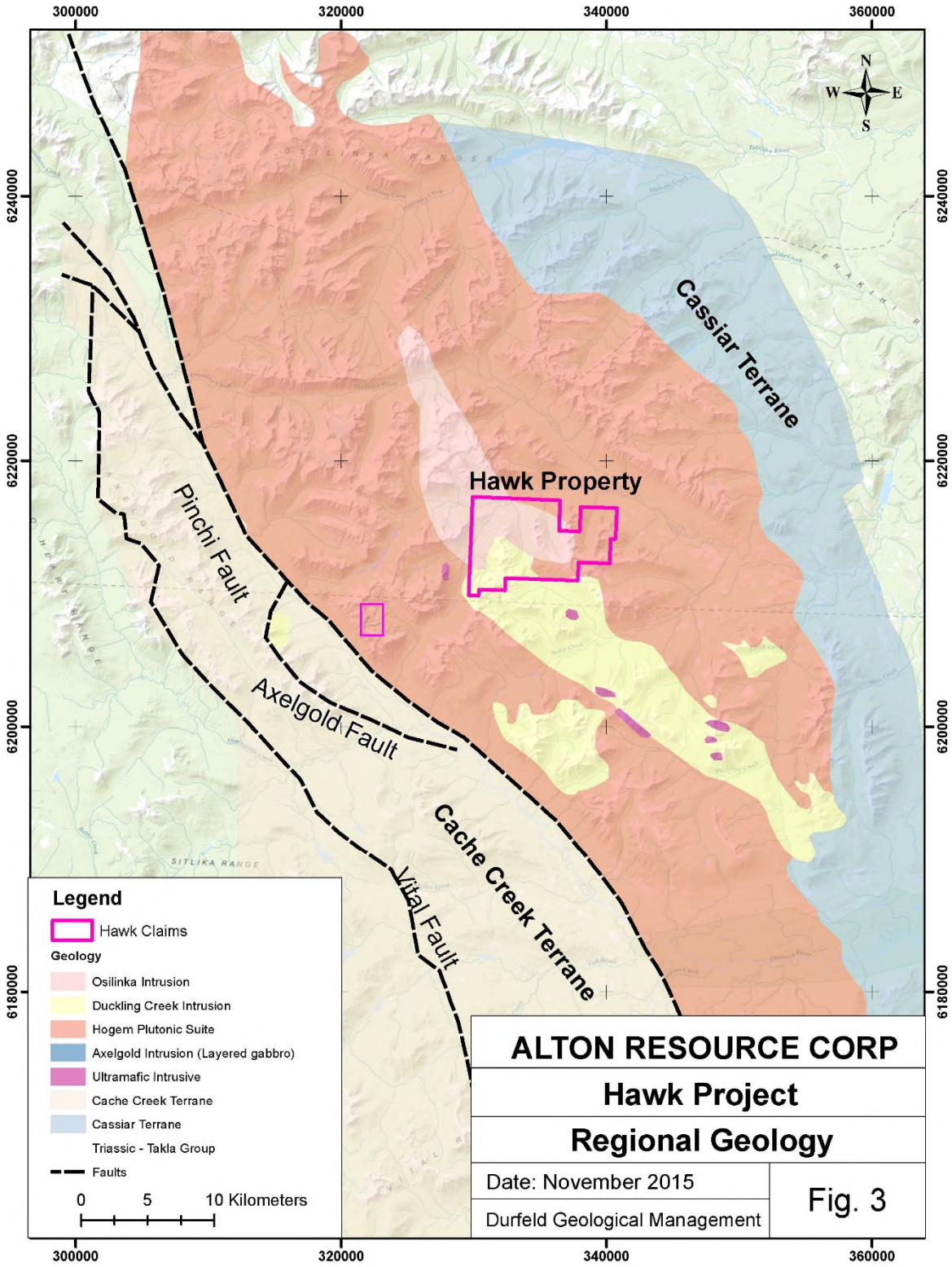
In the early 1970's, numerous mining companies conducted exploration programs in the area of the Hawk property. The Hogem Batholith was of interest for porphyry copper-molybdenum deposits, and the first detailed recorded work on the property was conducted in 1971 by Amoco Canada, as regional Geochem sampling. Based on favorable results the Hawk property area was staked. From 1972 to 1974 Amoco conducted surface exploration as geological mapping and soil sampling. Late in 1974, Amco Canada conducted a 750 metre diamond drill program drill program in 4 holes. Not all core was analyzed. The best results howed 0.39% copper over 36.2 metres and 0.76% copper over 15.2 metres. After the 1974 drilling program no further work was conducted on the property and the claims were permitted to lapse.

Ongoing exploration is documented as Item 17 References.

Item 8: Geology

8.1 Regional Geology

The Regional Geology of the Hawk project area is presented as Figure 3. The Hawk project area is underlain by the Hogem Batholith that has intruded Mesozoic arc-related strata of Quesnellia. The Hogem Batholith presents a highly variable Early Jurassic suite of plutonic rocks ranging in age from 206 to 171 Ma. The Early Jurassic phases tend to mildly alkalic, shoshonitic compositions, equivalent to coeval volcanic units of the


300000
320000
340000
360000
6240000
6220000
6200000
6180000
N
W
E
S
Cassiar Terrane
Hawk Property
Pinchi Fault
Axelgold Fault
Cache Creek Terrane
Vital Fault
SITLIKA RANGE
Legend
Hawk Claims
Geology
Osilinka Intrusion
Duckling Creek Intrusion
Hogem Plutonic Suite
Axelgold Intrusion (Layered gabbro)
Ultramafic Intrusive
Cache Creek Terrane
Cassiar Terrane
Triassic - Takla Group
Faults
0
5
10 Kilometers
ALTON RESOURCE CORP
Hawk Project
Regional Geology
Date: November 2015
Durfeld Geological Management
Fig. 3

Quesnellia arc (Nelson and Bellefontaine, 1996). The Lorraine porphyry copper-gold deposit is hosted by one of the youngest Jurassic phases, the Duckling Creek syenite. The southern portion of the Hawk property is underlain by the western extent of the Duckling Creek syenite some twenty kilometres west of the Lorraine deposit. The Hawk property covers the east-west trending intrusive contact between the Early Jurassic Duckling Creek Syenite to the south and the Early to Mid Cretaceous Osilinka Granites to the north (Figure 3). The government airborne magnetic surveys map the Osilinka Granites as a magnetic low feature in contrast with the strong magnetic high feature of the Duckling Creek Syenite.

8.2 Property Geology

The 2019 mapping program evaluated the south central property area predominantly underlain by the Duckling Creek Syenite. The Duckling Creek Syenite contains numerous rafts of foliated biotite and lesser muscovite diorite to gabbro with a strong foliation. These mafic inclusions range from a few metres to several tens of meters wide. Geological mapping identified biotite migmatite/gneiss (unit 1) as west northwest trending inliers to a mesocratic granite. All lithologies are cut by later east west quartz veins. These rocks are often gossanous (limonitic from oxidized biotite) with disseminated pyrite and chalcopyrite with minor specularite and malachite. Discontinuous intermediate to mafic dykes or xenoliths composed of andesite, diabase, or fine grained diorite are found most frequently in the leucocratic and mesocratic syenite units, but may also occur in the calc-alkaline granites. These dykes have widths up to five metres with no preferred orientation and they contain varying amounts of pyrite and magnetite along with minor copper sulphides and oxides. Alteration consists of weak to strong limonite and disseminated mineralization within the rocks is typically absent. Both the Duckling Creek syenite and the Osilinka granites host the gold-bearing quartz veins and the quartz stockworking typical of the AD Zone.

The calc-alkali granites typically depict very blocky weathering and are generally massive, fine to coarse-grained, light whitish pink, and weak to moderately gossanous. Mafics include hornblende and biotite, while the dominant feldspars are primarily orthoclase and/or microcline.

Item 12: Sampling Method and Approach

The 2019 rock samples were collected as random chips from bedrock and rubble. Soil samples were collected from a well developed rusty b-horizon at a an average depth of .2 metres. Silt samples were taken as fine sediment from the active stream bed.

All samples were given a unique number and a description including the UTM co-ordinates and sample type were added. All data was entered into an XL spreadsheet that was merged with the results.

Item 13: Sample Preparation, Analyses and Reporting

Sample preparation and analytical procedures were conducted by MSALabs in Langley. Analytical results are given as Appendix V, the sample description and compiled results for rock, soil, and silt as Appendices I, III and IV.

The compiled results were used to generate plots for sample location, sample type, and geochemical results for copper and gold as figures 3 through 6 attached to this report.

Item 11: Exploration Results 2019 Program

11.1 Rock Sampling

Appendix I: 2019 rock sample description and attached figures compiled the results of the 2019 rock sampling. The initial samples were sent to Vancouver Petrographics for petrographic examination that is documented as appendix II with locations plotted as figure 3A. This work highlights sample 39370 (334464 east, 6212178 north) collected during the initial sampling and showing 2224.6 ppm copper and 206 ppb gold. The

petrographic description of this sample by Vancouver Petrographic is *a Metamorphosed Hypabyssal Biotite-Muscovite Syenite and sulphides: Chalcopyrite.* Three and a half kilometres west southwest, rock sample 328337 (330715 east, 6210845 north) shows 2664 ppm copper in an area with silts anomalous in copper and gold. Limited historic soil sampling shows anomalous copper and gold between these two samples. These encouraging results define a target for ongoing exploration.

Item 14: Interpretation

The area of the Hawk property is underlain by phases of the Hogem Batholith, of which the Duckling Creek Syenite occurs in the southern property area. The property hosts two styles of mineralization. First, copper and gold mineralization occurs with disseminated sulphides and quartz veins and stockworks hosted in altered Duckling Creek Syenite and Hogem Granodiorite in the southern property area. Second, east-west, younger structurally controlled auriferous quartz veins intrude the Duckling Creek Syenite and younger Osilinka Granite in the west-central property area.

Mineralization in the Duckling Creek occurs as magnetite, bornite and chalcopyrite in the chloritic matrix of a coarse feldspar porphyry granodiorite mapped as. There is no pyrite associated with this mineralization. The areas around the strongly anomalous rock samples should be evaluated by ongoing exploration consisting of detailed geological mapping and geochemical sampling (rock, silt and soil).

Item 16: Cost Statements

Project Name:	**HAWK**				
From:	**01-Jul-19**				
To:	**15-Nov-19**				
Exploration Work type	**Comment**	**Days**			**Totals**

Personnel (Name)* / Position	**Field Days (list actual days)**	**Hours**	**Rate**	**Subtotal***	
RM Durfeld, P.Geo. / Geologist Project Manager	Aug 16, 17, 2019	3.0	$100.00	$ 300.00	
Benedict Kerssenbrock	Aug 16, 17, 2019			$ 0.00	
Fransiska Kerssenbrock	Aug 16, 17, 2019			$ 0.00	
				$ 300.00	**$ 300.00**
Office Studies	**List Personnel (note - Office only, do not include field days**				
Literature search			$0.00	$0.00	
Database compilation	RM Durfeld		$100.00	$0.00	
Computer modelling			$0.00	$0.00	
Reprocessing of data			$0.00	$0.00	
General research			$0.00	$0.00	
Report preparation			$0.00	$0.00	
Other (specify)	RM Durfeld, Reporting (Aug 18-19)		$0.00	$0.00	
				$0.00	**$0.00**
Airborne Exploration Surveys	**Line Kilometres / Enter total invoiced amount**				
Aeromagnetics			$0.00	$0.00	
Radiometrics			$0.00	$0.00	
Electromagnetics			$0.00	$0.00	
Gravity			$0.00	$0.00	
Digital terrain modelling			$0.00	$0.00	
Other (specify)			$0.00	$0.00	
				$0.00	**$0.00**
Remote Sensing	**Area in Hectares / Enter total invoiced amount or list personnel**				
Aerial photography			$0.00	$0.00	
LANDSAT			$0.00	$0.00	
Other (specify)			$0.00	$0.00	
				$0.00	**$0.00**
Ground Exploration Surveys	**Area in Hectares/List Personnel**				
Geological mapping					
Regional					
Reconnaissance					
Prospect					
Underground	Define by length and width				
Trenches	Define by length and width			$0.00	**$0.00**
Ground geophysics	**Line Kilometres / Enter total amount invoiced list personnel**				
Radiometrics					
Magnetics					
Gravity					

Digital terrain modelling					
Electromagnetics	*note: expenditures for your crew in the field*				
SP/AP/EP	*should be captured above in Personnel*				
IP	*field expenditures above*				
AMT/CSAMT					
Resistivity					
Complex resistivity					
Seismic reflection					
Seismic refraction					
Well logging	Define by total length				
Geophysical interpretation					
Petrophysics					
Other (specify)					
				$0.00	**$0.00**
Geochemical Surveying	**Number of Samples**	**No.**	**Rate**	**Subtotal**	
Drill (cuttings, core, etc.)			$0.00	$0.00	
Stream sediment			$0.00	$0.00	
Soil	*note: This is for assays or*		$0.00	$0.00	
Rock	*laboratory costs*	4.0	$38.89	$155.56	
Water			$0.00	$0.00	
Biogeochemistry			$0.00	$0.00	
Whole rock			$0.00	$0.00	
Petrology	11 Samples		$ 0.00	$0.00	
Other (specify)	Mark-up		$0.00	$0.00	
				$ 155.56	**$ 155.56**
Drilling	**No. of Holes, Size of Core and Metres**	**No.**	**Rate**	**Subtotal**	
Diamond			$0.00	$0.00	
Reverse circulation (RC)			$0.00	$0.00	
Rotary air blast (RAB)			$0.00	$0.00	
Other (specify)			$0.00	$0.00	
				$0.00	**$0.00**
Other Operations	**Clarify**	**No.**	**Rate**	**Subtotal**	
Trenching			$0.00	$0.00	
Bulk sampling			$0.00	$0.00	
Underground development			$0.00	$0.00	
Other (specify)			$0.00	$0.00	
				$0.00	**$0.00**
Reclamation	**Clarify**	**No.**	**Rate**	**Subtotal**	
After drilling			$0.00	$0.00	
Monitoring			$0.00	$0.00	
Other (specify)			$0.00	$0.00	
Transportation		**No.**	**Rate**	**Subtotal**	

Airfare			$0.00	$0.00	
Taxi			$0.00	$0.00	
truck rental			$0.00	$0.00	
kilometers	WL -MacKenzie Return		$1.00	$0.00	
ATV			$0.00	$0.00	
fuel			$0.00	$0.00	
Helicopter (hours)		0.9	$1,497.92	$1348.13	
Fuel (litres/hour)			$0.00	$0.00	
Other					
				$1,348.13	**$1,348.13**
Accommodation & Food	**Rates per day**				
Hotel			$259.90	$0.00	
Camp			$0.00	$0.00	
Meals	day rate or actual costs-specify		$60.00	$0.00	
				$ 0.00	
Miscellaneous					
Telephone			$0.00	$0.00	
Other (Specify)					
				$0.00	**$0.00**
Equipment Rentals					
Field Gear (Specify)			$0.00	$0.00	
Other (Specify)					
				$0.00	**$0.00**
Freight, rock samples					
			$0.00	$0.00	
			$0.00	$0.00	
				$0.00	**$0.00**
TOTAL Expenditures	**01-Jul-19**				**$ 1,803.69**
	20-Aug-19				

From:	**01-Sep-19**				
To:	**15-Nov-19**				
Exploration Work type	**Comment**	**Days**			**Totals**
Personnel (Name)* / Position	**Field Days (list actual days)**	**Days**	**Rate**	**Subtotal***	
RM Durfeld / Geologist P.Geo	September 8, 9, 10, 11	0.00	$800.00	$ 0.00	
Richard / Sampler	September 8, 9, 10, 11	0.0	$450.00	$00.00	
Crey Ackerson / Geologist	September 7, 8, 9, 10, 11	0.00	$525.00	$ 0.00	

			$0.00	$0.00	
			$0.00	$0.00	
			$0.00	$0.00	
				$ 0.00	**$ 0.00**
Office Studies	**List Personnel (note - Office only, do not include field days**				
Literature search			$0.00	$0.00	
Database compilation			$800.00	$0.00	
Computer modelling			$0.00	$0.00	
Reprocessing of data			$0.00	$0.00	
General research			$0.00	$0.00	
Report preparation			$800.00	$0.00	
Other (specify)			$0.00	$0.00	
				$0.00	**$ 0.00**
Airborne Exploration Surveys	**Line Kilometres / Enter total invoiced amount**				
Aeromagnetics			$0.00	$0.00	
Radiometrics			$0.00	$0.00	
Electromagnetics			$0.00	$0.00	
Gravity			$0.00	$0.00	
Digital terrain modelling			$0.00	$0.00	
Other (specify)			$0.00	$0.00	
				$0.00	**$0.00**
Remote Sensing	**Area in Hectares / Enter total invoiced amount or list personnel**				
Aerial photography			$0.00	$0.00	
LANDSAT			$0.00	$0.00	
Other (specify)			$0.00	$0.00	
				$0.00	**$0.00**
Ground Exploration Surveys	**Area in Hectares/List Personnel**				
Geological mapping					
Regional		*note: expenditures here*			
Reconnaissance		*should be captured in Personnel*			

Prospect		*field expenditures above*			
Underground	Define by length and width				
Trenches	Define by length and width			$0.00	**$0.00**
Ground geophysics	**Line Kilometres / Enter total amount invoiced list personnel**				
Radiometrics					
Magnetics					
Gravity					
Digital terrain modelling					
Electromagnetics	*note: expenditures for your crew in the field*				
SP/AP/EP	*should be captured above in Personnel*				
IP	*field expenditures above*				
AMT/CSAMT					
Resistivity					
Complex resistivity					
Seismic reflection					
Seismic refraction					
Well logging	Define by total length				
Geophysical interpretation					
Petrophysics					
Other (specify)					
				$0.00	**$0.00**
Geochemical Surveying	**Number of Samples**	**No.**	**Rate**	**Subtotal**	
Drill (cuttings, core, etc.)			$0.00	$0.00	
Stream sediment		0.00	$30.00	$0.00	
Soil	*note: This is for assays or*	0.00	$30.00	$0.00	
Rock	*laboratory costs*	0.00	$30.00	$0.00	
Water			$0.00	$0.00	
Biogeochemistry			$0.00	$0.00	
Whole rock			$0.00	$0.00	
Petrology		0.00	$250.00	$0.00	
Other (specify)			$0.00	$0.00	
				$ 0.00	**$ 0.00**
Drilling	**No. of Holes, Size of Core and Metres**	**No.**	**Rate**	**Subtotal**	
Diamond			$0.00	$0.00	
Reverse circulation (RC)			$0.00	$0.00	

Rotary air blast (RAB)			$0.00	$0.00	
Other (specify)			$0.00	$0.00	
				$0.00	**$0.00**
Other Operations	**Clarify**	**No.**	**Rate**	**Subtotal**	
Trenching			$0.00	$0.00	
Bulk sampling			$0.00	$0.00	
Underground development			$0.00	$0.00	
Other (specify)			$0.00	$0.00	
				$0.00	**$0.00**
Reclamation	**Clarify**	**No.**	**Rate**	**Subtotal**	
After drilling			$0.00	$0.00	
Monitoring			$0.00	$0.00	
Other (specify)			$0.00	$0.00	
Transportation		**No.**	**Rate**	**Subtotal**	
Airfare	Crey Ackerson	.00	$400.00	$0.00	
Taxi			$0.00	$0.00	
truck rental			$0.00	$0.00	
kilometers			$0.00	$0.00	
ATV			$0.00	$0.00	
fuel			$0.00	$0.00	
Helicopter (hours)	With markup of 10%	0.00	$2,779.41	$0.00	
Fuel (litres/hour)			$0.00	$0.00	
Other					
				$ 0.00	**$ 0.00**
Accommodation & Food	**Rates per day**				
Hotel			$0.00	$0.00	
Camp		0.00	$125.00	$0.00	
Meals	day rate or actual costs-specify		$0.00	$0.00	
				$ 0.00	**$ 0.00**
Miscellaneous					
Telephone			$0.00	$0.00	
Other (Specify)					
				$0.00	**$0.00**
Equipment Rentals					
Field Gear (Specify)			$0.00	$0.00	
Other (Specify)					
				$0.00	**$0.00**
Freight, rock samples					
		0.00	$200.00	$200.00	
			$0.00	$0.00	
				$ 0.00	**$ 0.00**
	01-Sep-19				
Expenditure	***Sep 1 to Nov 15,2019***				**$ 0.00**
Expenditure	***Jul 1 to Au 20, 2019***				**$ 1,803.69**

Total Expenditure	***Jul 1 to Nov 15, 2019***				**$ 1,803.69**

Dated at Williams Lake, British Columbia this 15th day of November 2019.

Revised February 25, 2020

R.M. Durfeld, B.Sc., P.Geo

Item 17: References

Carmichael, R.G. (2003). Geological, Geochemical, and Diamond Drilling Report on the Hawk Property, Assessment Report 27113.

Game, B.D. (1996). Geological, Geochemical, and Geophysical Report on the Hawk Gold Property, Assessment Report 24378.

Kahlert, B.H. (1992). Geochemical Assessment Report on the Haw Claim Group, Assessment Report 22605.

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Nelson J, Carmichael B, and Gray M (2002) Innovative Gold Targets in the Pinchi Fault/Hogem Batholith Area, Geological Fieldwork 2002, Paper 2003-1

Redcorp Ventures Ltd. (2002). Hawk Property Summary.

Stevenson, D.B. (1991). A Geological, Geochemical, Geophysical and Diamond Drilling Report on the Hawk Property, Assessment Report 21412.

Item 18: Certificate of Author, Rudi M. Durfeld

I, Rudolf M. Durfeld, P.Geo. do hereby certify that:

1. I am currently employed as a consulting geologist by Durfeld Geological Management Ltd.

2. I am a graduate of the University of British Columbia, B.Sc. Geology 1972.

3. I am a member of the Canadian Institute of Mining and Metallurgy. That I am registered as a Professional Geoscientist by the Association of Engineers and Geoscientists of B.C. (No. 18241).

4. I have worked as a geologist for some 40 years since my graduation from university.

5. I am the author of this report which is based on:
    a. my supervision, observations and participation in the 2019 Hawk Exploration Project.
    b. compilation of the 2019 results with all the previous data.
    c. my personal knowledge of the property area and a review of available government maps and assessment reports.

Dated at Williams Lake, British Columbia this 15th day of November 2019.

R.M. Durfeld, B.Sc., P.Geo.

Item 19: Illustrations

Figure 1: Hawk Project Location Map
Figure 2: Hawk Claim Map

Figure 3: Regional Geology
Figure 3a: Property Geology with 2019 Petrographic Sample Locations
Figure 3b: Property Geology West with 2019 Lithology Code
Figure 3c: Property Geology East with 2019 Lithology Code

Figure 4b: Geochemical Plan West 2019 Rock Sample Locations.
Figure 4c: Geochemical Plan East 2019 Rock Sample Locations / Numbers.
Figure 5 I b: Geochemical Plan West Rock Copper (ppm)
Figure 5 I c: Geochemical Plan East Rock Copper (ppm)
Figure 5 II c: Geochemical Plan East Soil Copper (ppm)
Figure 5 III c: Geochemical Plan East Silt Copper (ppm)

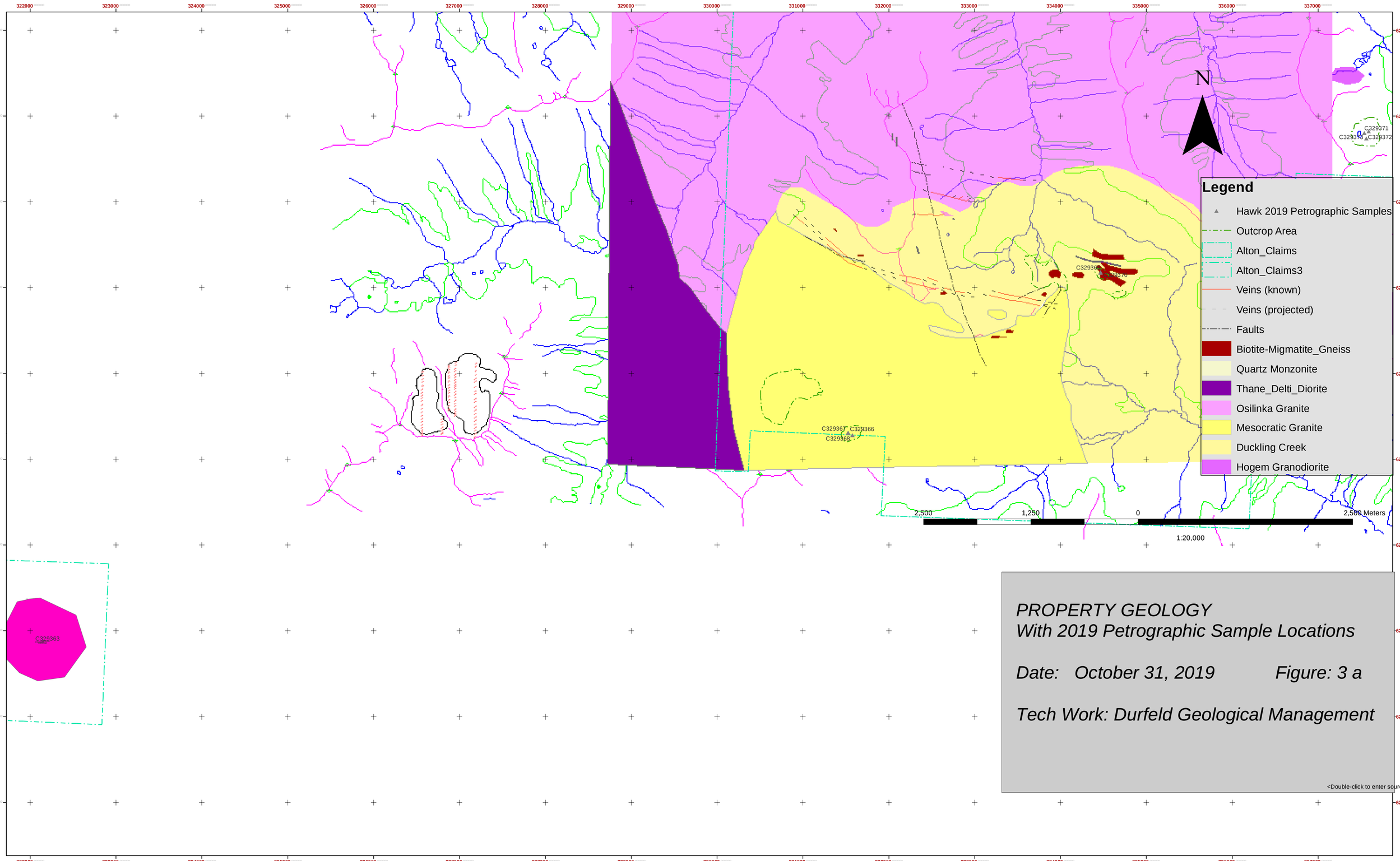
Figure 6 I b: Geochemical Plan West Rock Gold (ppb
Figure 6 I c: Geochemical Plan East Rock Gold (ppb)
Figure 6 II c: Geochemical Plan East Soil Gold (ppb)
Figure 6 III c: Geochemical Plan East Silt Gold (ppb)

APPENDICES

Appendix I: 2019 HAWK ROCK SAMPLE DESCRIPTIONS / RESULTS.
Appendix II: 2019 HAWK PRTROGRAPHIC DESCRIPITONS
Appendix III: 2019 HAWK SOIL SAMPLE DESCRIPTIONS / RESULTS
Appendix IV: 2019 HAWK SILT SAMPLE DESCRIPTIONS / RESULTS
Appendix V: 2019 HAWK ANALYTICAL REPORT ORIGINALS

ALTON RESOURCE CORP - HAWK COPPER / GOLD PROJECT

Omenica Mining Division (NTS: 093N and 094C)



PROPERTY GEOLOGY
With 2019 Petrographic Sample Locations

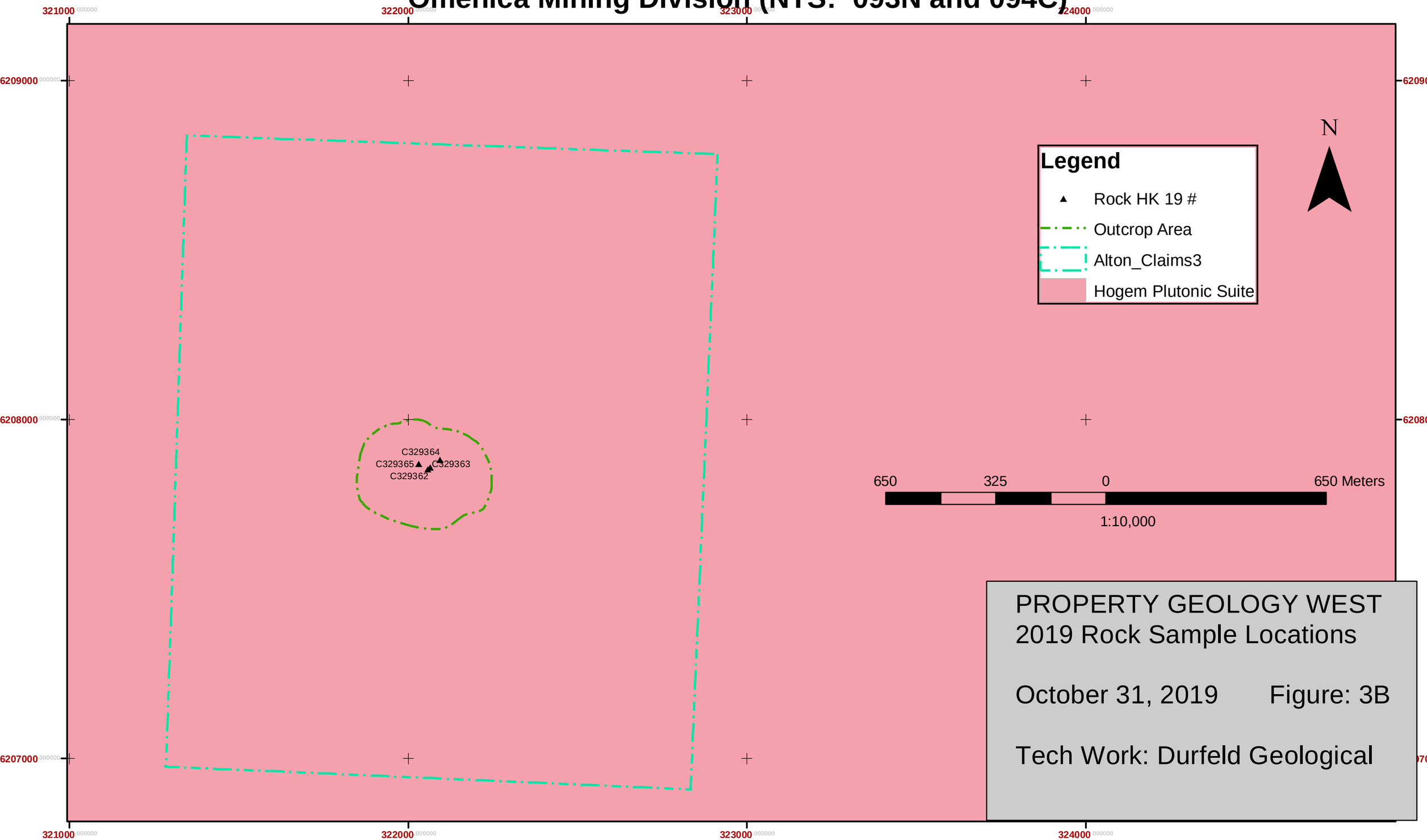
Date: October 31, 2019 *Figure: 3 a*

Tech Work: Durfeld Geological Management

<Double-click to enter source inform

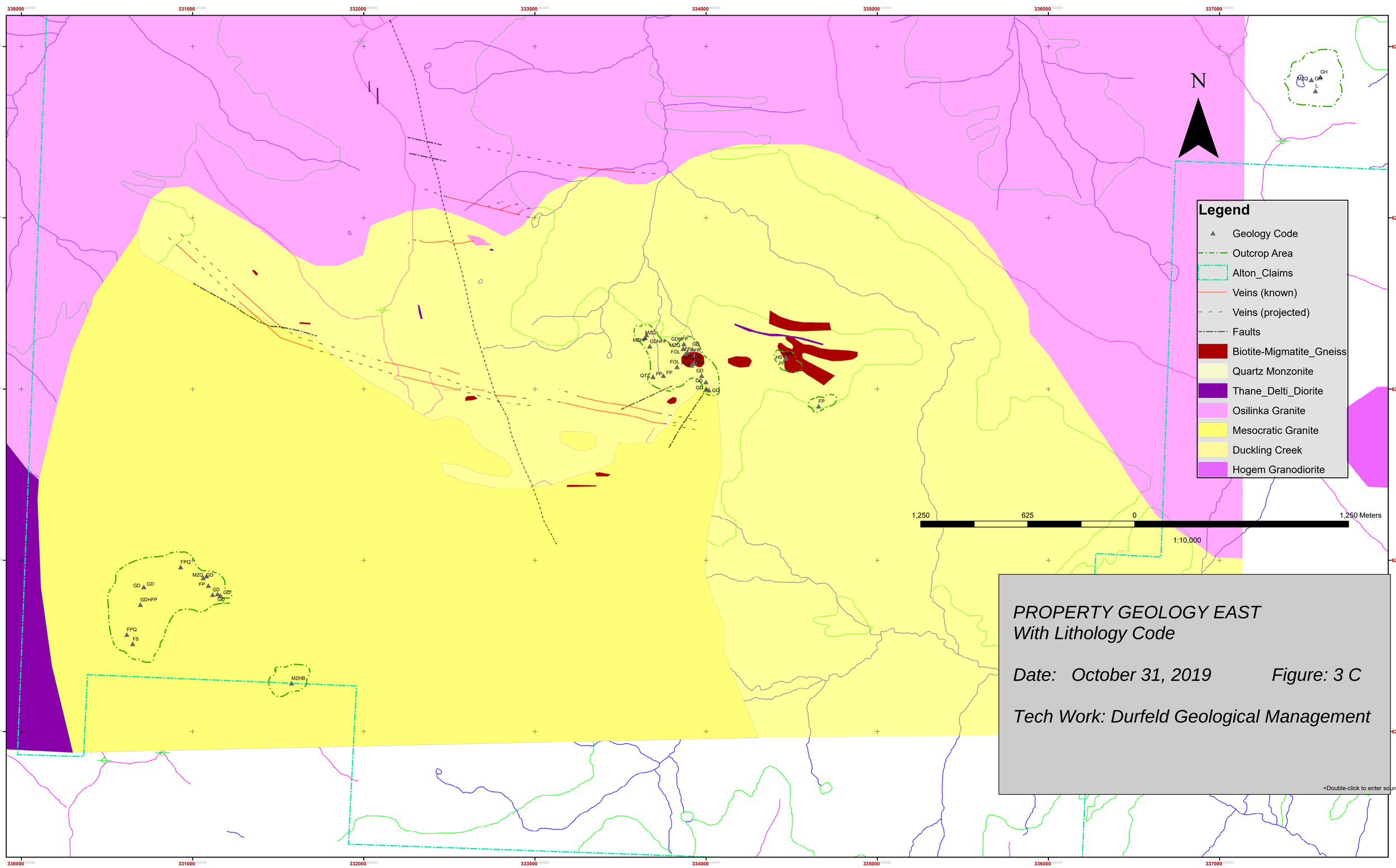
ALTON RESOURCE CORP - HAWK COPPER / GOLD PROJECT

Omenica Mining Division (NTS: 093N and 094C)



ALTON RESOURCE CORP - HAWK COPPER / GOLD PROJECT

Omenica Mining Division (NTS: 093N and 094C)



PROPERTY GEOLOGY EAST
With Lithology Code

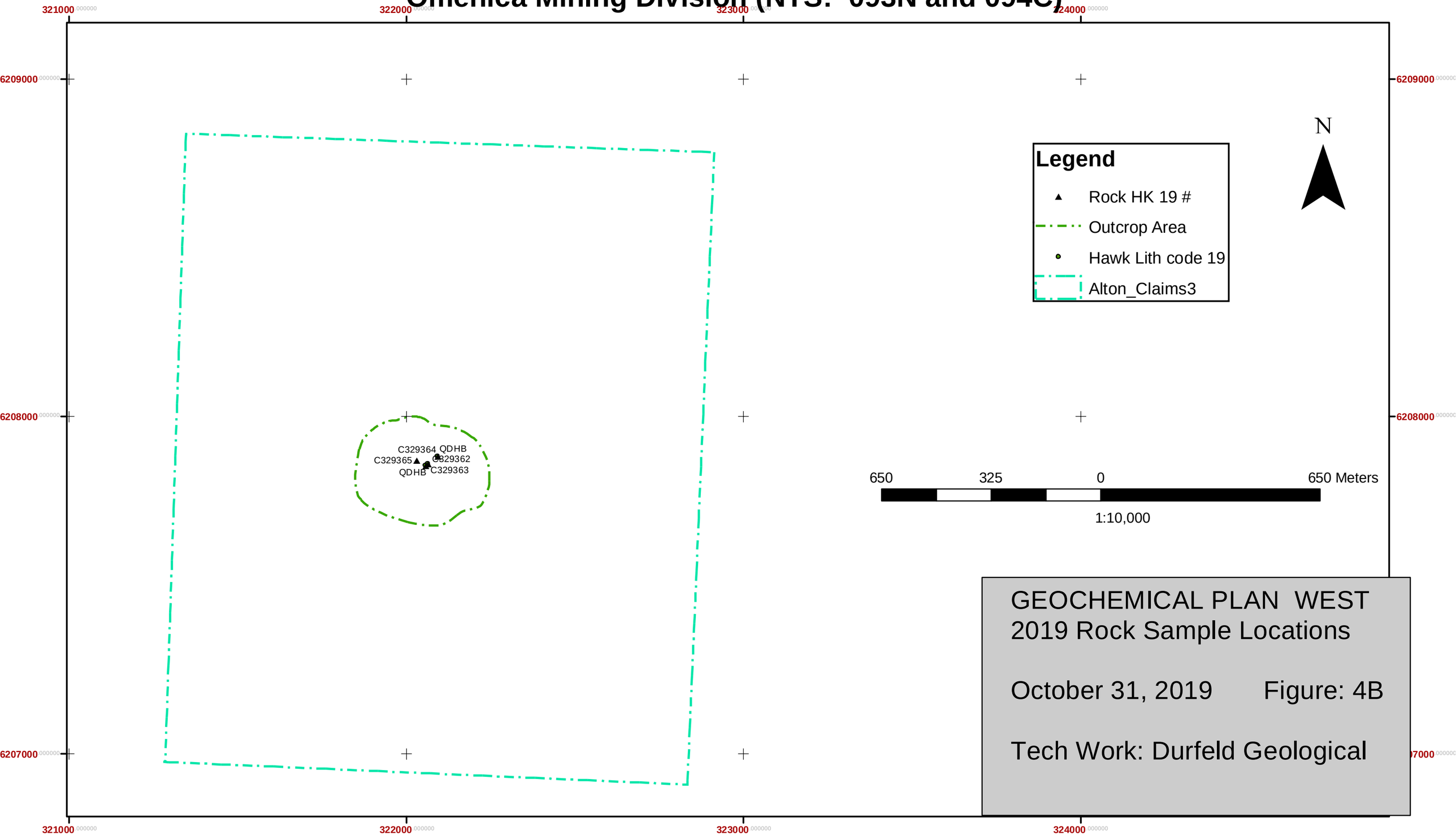
Date: October 31, 2019 *Figure: 3 C*

Tech Work: Durfeld Geological Management

<Double-click to enter source inform

ALTON RESOURCE CORP - HAWK COPPER / GOLD PROJECT

Omenica Mining Division (NTS: 093N and 094C)



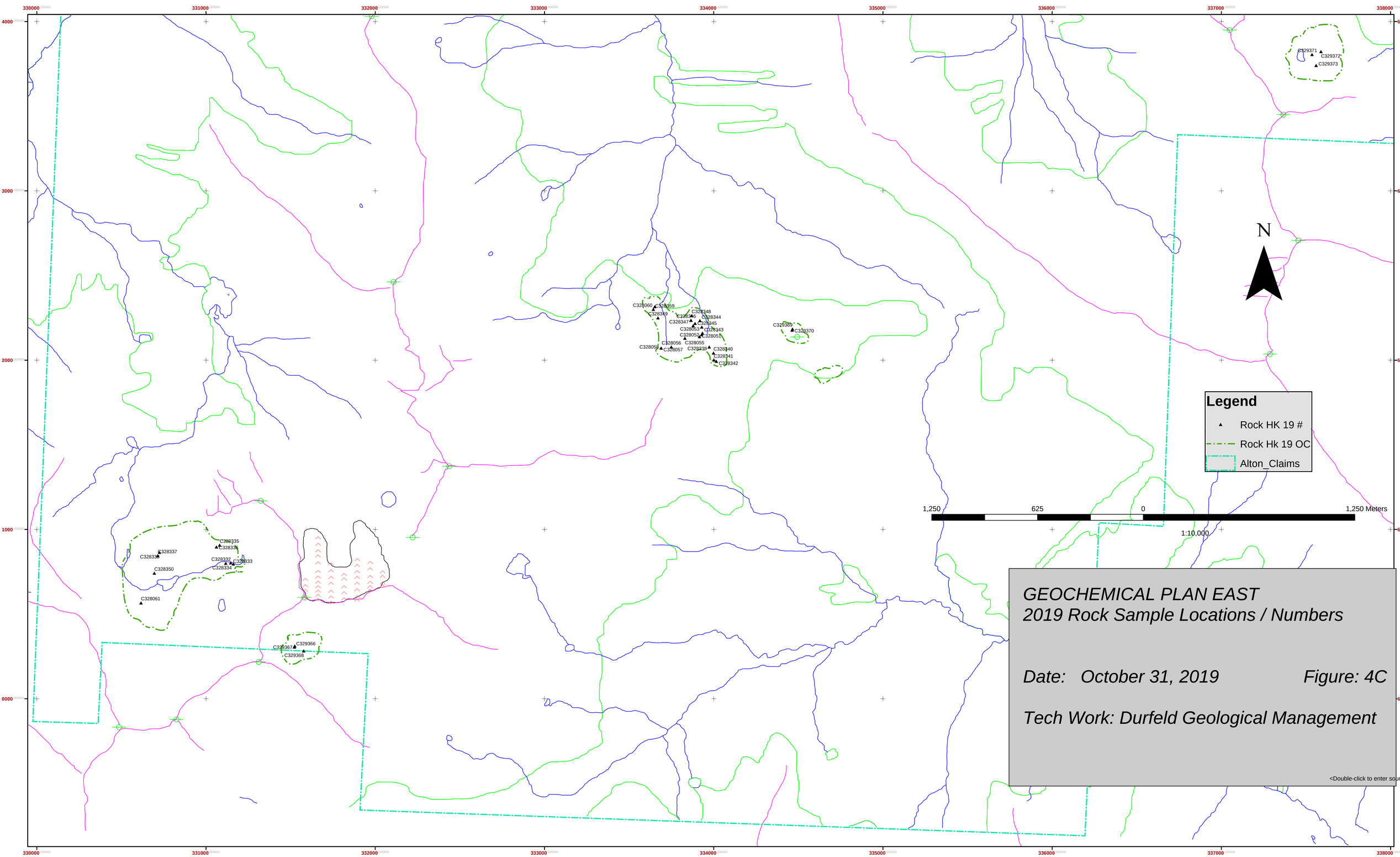
GEOCHEMICAL PLAN WEST
2019 Rock Sample Locations

October 31, 2019 Figure: 4B

Tech Work: Durfeld Geological

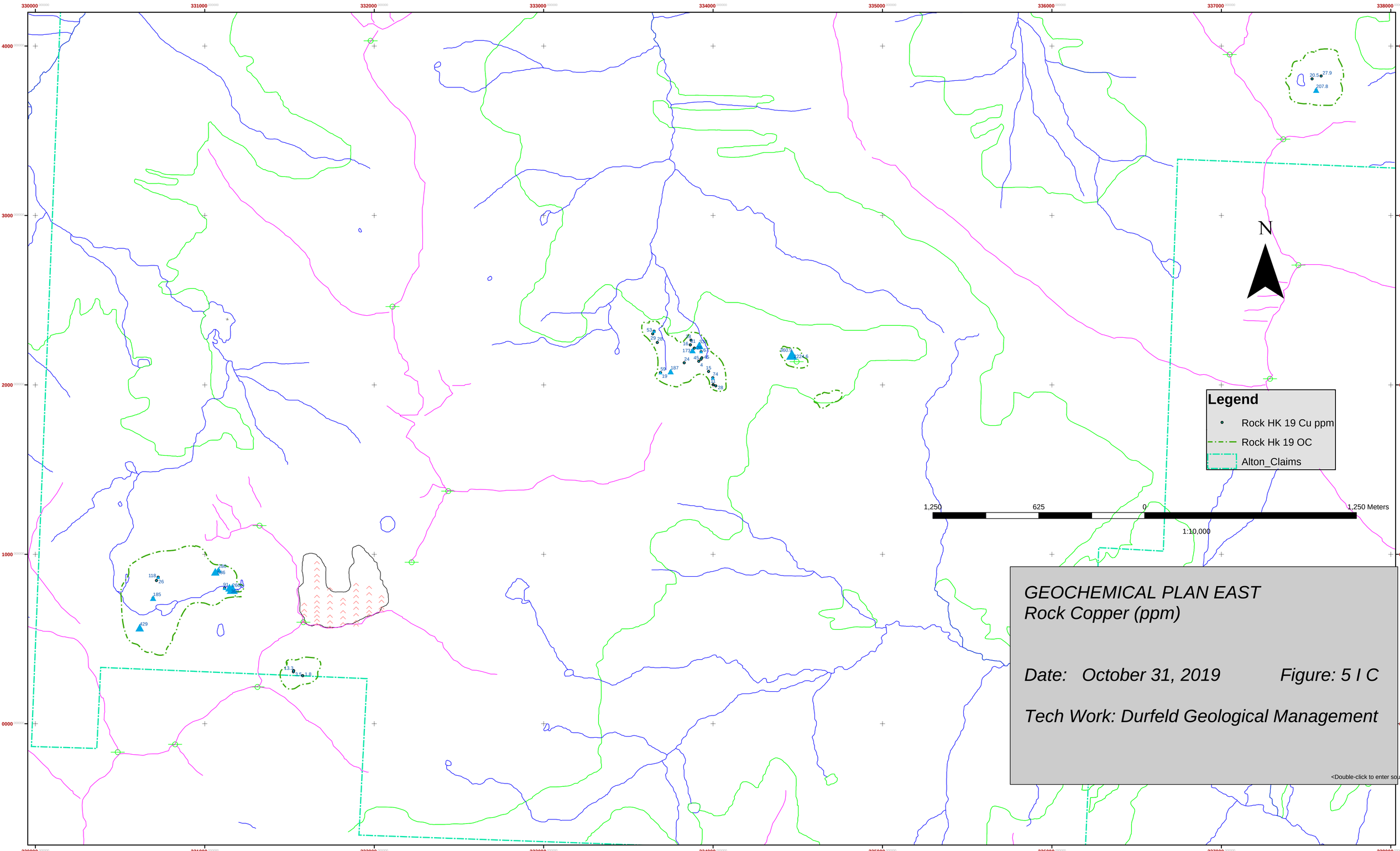
ALTON RESOURCE CORP - HAWK COPPER / GOLD PROJECT

Omenica Mining Division (NTS: 093N and 094C)



ALTON RESOURCE CORP - HAWK COPPER / GOLD PROJECT

Omenica Mining Division (NTS: 093N and 094C)



ALTON RESOURCE CORP - HAWK COPPER / GOLD PROJECT

Omenica Mining Division (NTS: 093N and 094C)

N

Legend

Rock Hk 19 OC

Soil Hk 19 Sym Cu

Cu

- 6 - 25
- 26 - 58
- 59 - 122
- 123 - 282
- 283 - 560

Soil Hk 19 Cu ppm

Alton_Claims

1,250 625 0 1,250 Meters

1:10,000

GEOCHEMICAL PLAN EAST
Soil Copper (ppm)

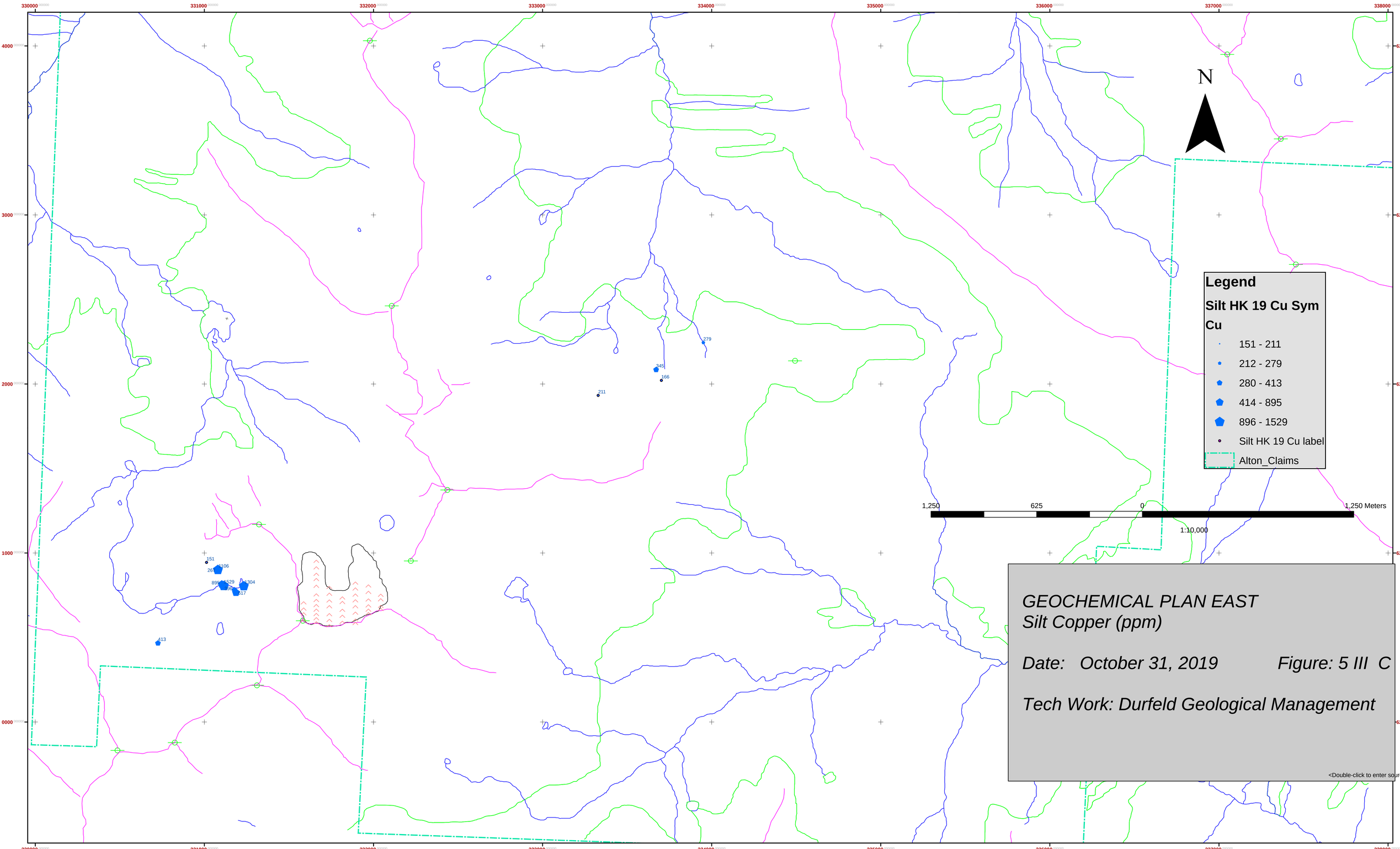
Date: October 31, 2019 *Figure: 5 II C*

Tech Work: Durfeld Geological Management

<Double-click to enter source inform

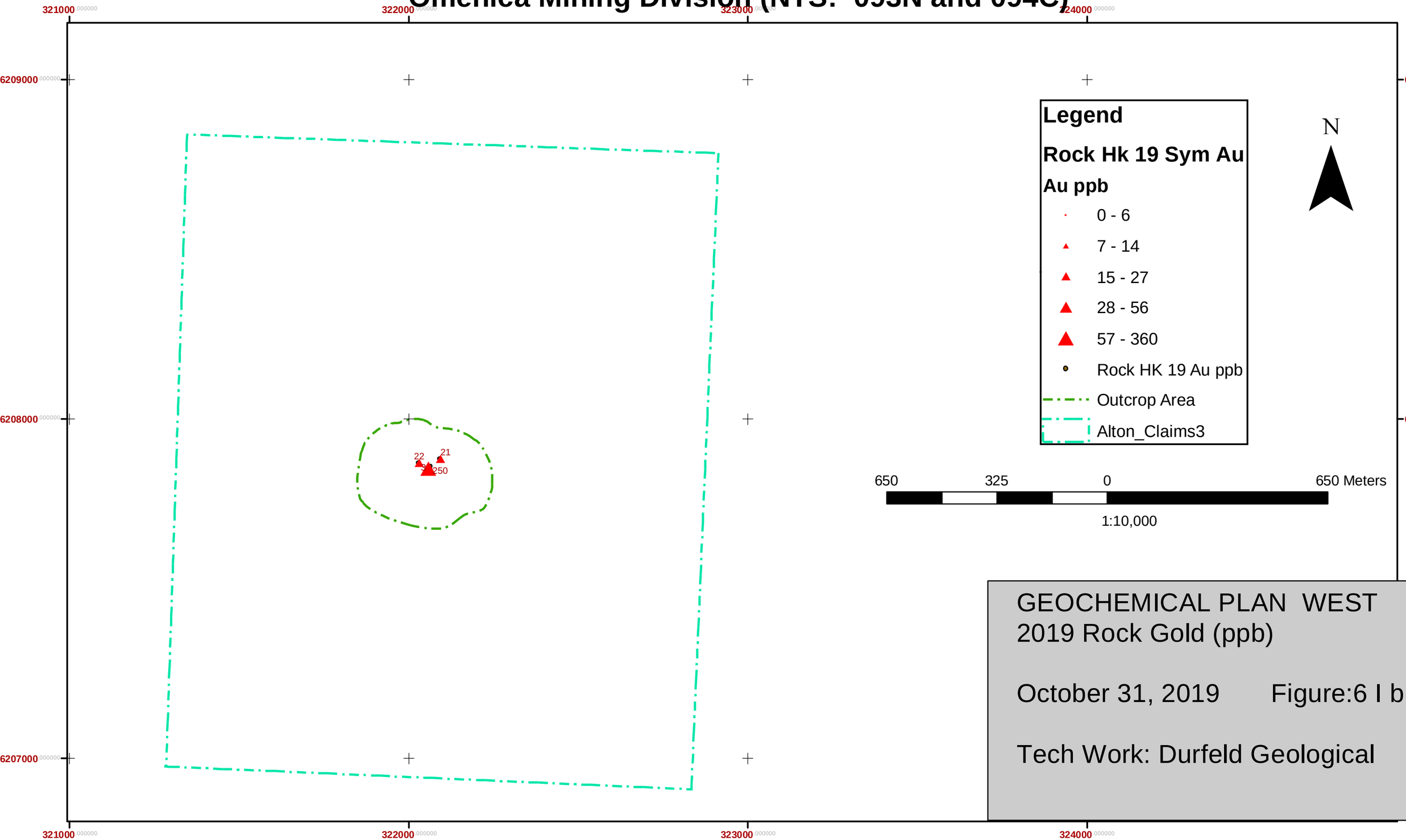
ALTON RESOURCE CORP - HAWK COPPER / GOLD PROJECT

Omenica Mining Division (NTS: 093N and 094C)



ALTON RESOURCE CORP - HAWK COPPER / GOLD PROJECT

Omenica Mining Division (NTS: 093N and 094C)



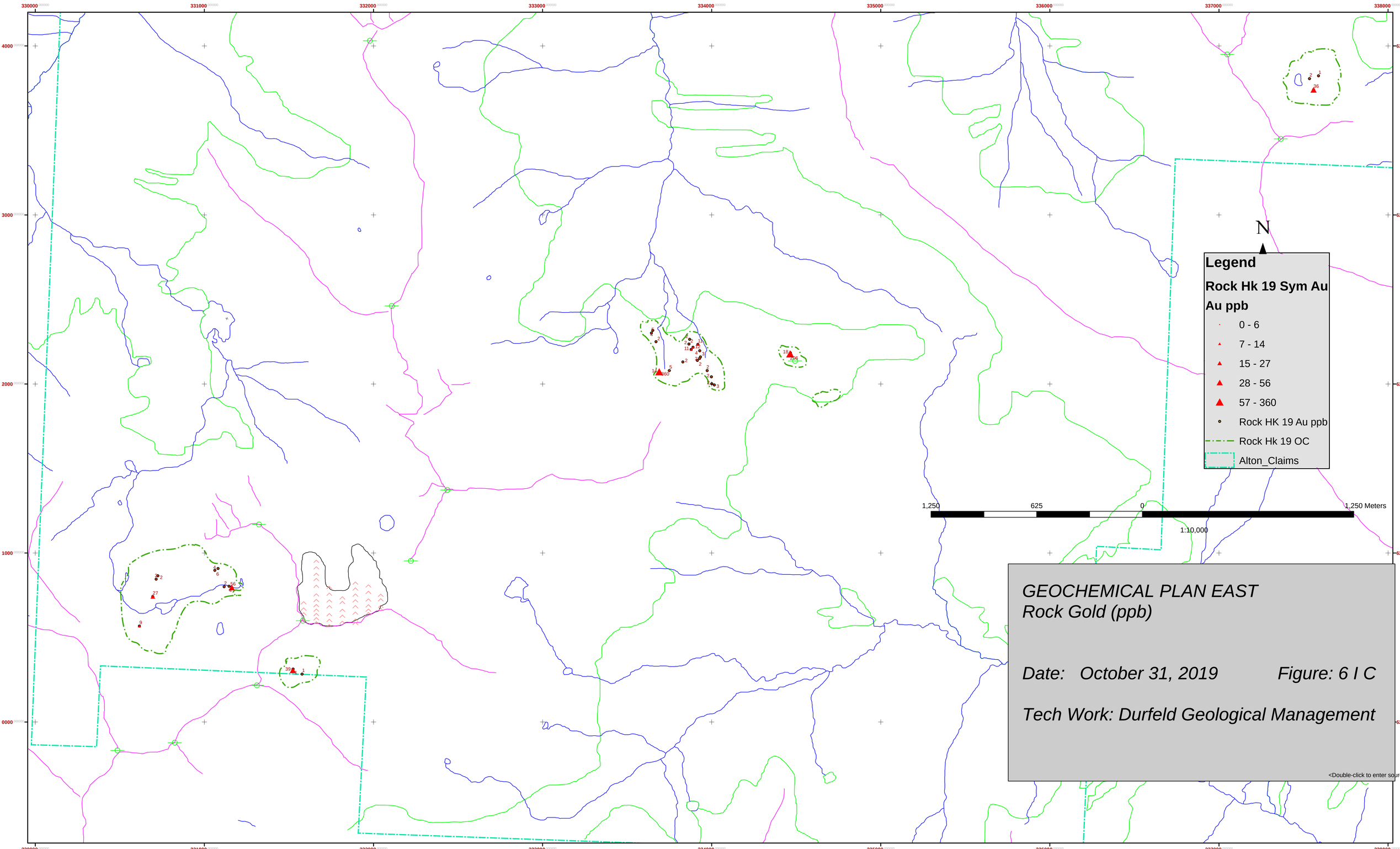
GEOCHEMICAL PLAN WEST
2019 Rock Gold (ppb)

October 31, 2019 Figure:6 I b

Tech Work: Durfeld Geological

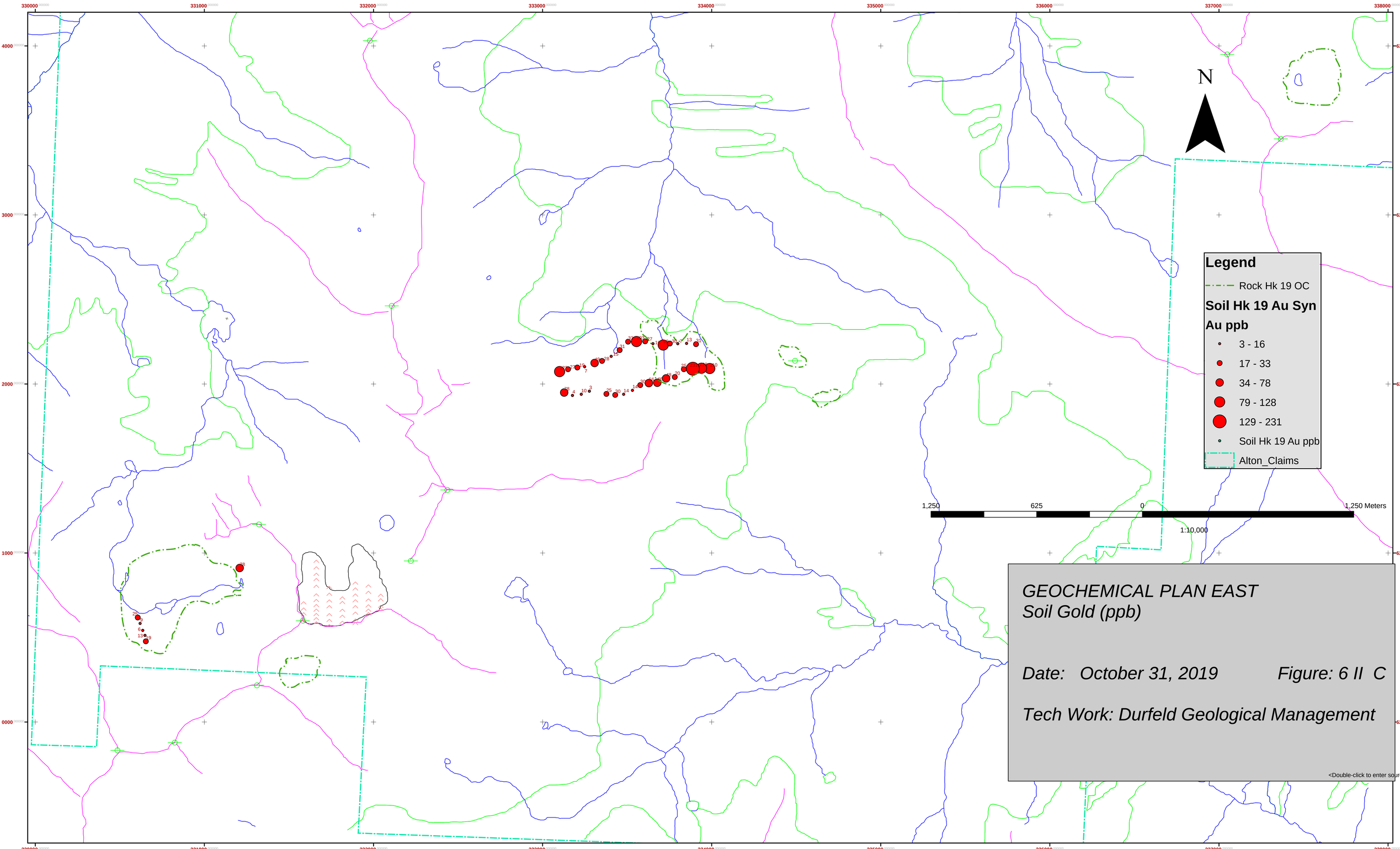
ALTON RESOURCE CORP - HAWK COPPER / GOLD PROJECT

Omenica Mining Division (NTS: 093N and 094C)



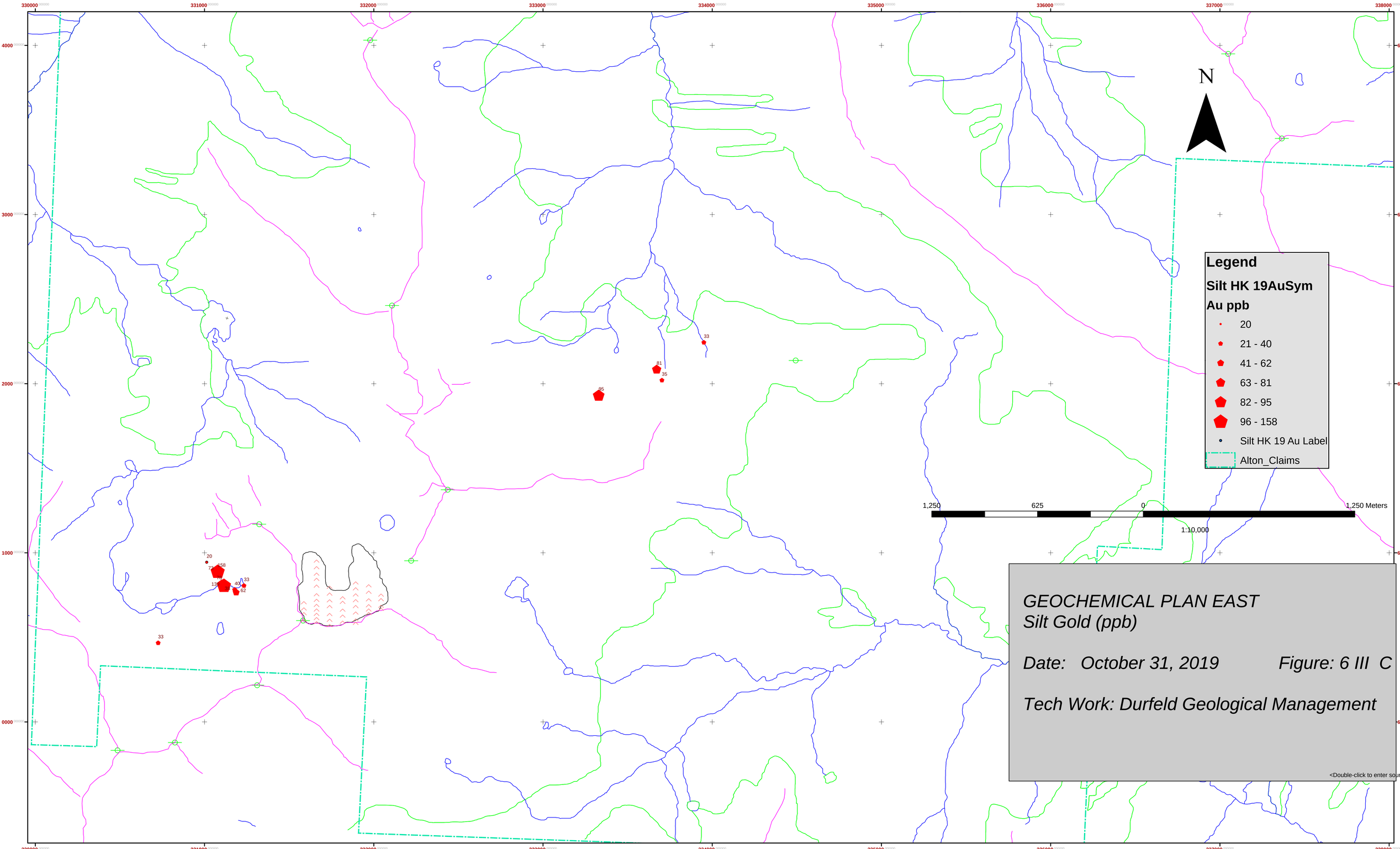
ALTON RESOURCE CORP - HAWK COPPER / GOLD PROJECT

Omenica Mining Division (NTS: 093N and 094C)



ALTON RESOURCE CORP - HAWK COPPER / GOLD PROJECT

Omenica Mining Division (NTS: 093N and 094C)



2019 HAWK ROCK SAMPLE DESCRIPTIONS

Rock Samp	LOCATION						Analytical Results						Alteration/Accessary									
name	east	north	elevation	Lithology	Lithology Code	DESCRIPTION	Au (ppm)	Cu (ppm)	magnetic	mineral	accessary		Hornblend	K-sapr	Biotite	Chlorite	Epidote	Quartz	Pyrite	Chalcopyri	Bornite	Malachite
						(Samples collected August 14, 2019																
C329362	322063	6207859	1	Quartz Diorite	DiQ	Rock sample of footwall to quartz vein- foliated silicious mafic intrusion	0.003	52	non													
C329363	322056	6207855	1	Quartz vein	QV	Sheeted quartz vein over 3 metres - on 130/40 southwest trend, Quartz vein, soda syenite.	0.25	155.4	non													
C329364	322093	6207881	1	Quartz Diorite	DiQ	Massive GD intrusive large Oc IN basin with qtz vein from 1cm to 3 M.	0.021	30.2	weak													
C329365	322030	6207870	1	Quartz	QV	Quartz with fine dark mineral	0.022	42.9														
C329366	331523	6210306	1	Quartz Granite	Mz	66-67 represent large area - silicious felsic with dark sulphide, magnetite with bornite	0.039	13.3	weak													
C329367	331525	6210313	1	"	Mz	Felsic with fine dark metallic - mag with bn	<0.001	3.5	moderate													
C329368	331578	6210283	1	"	Mz	" < 3% mafic - magnetite with tr bornite. Bleached felsic, silicious	0.001	1.8	moderate													
C329369	334466	6212184	1	FOLIATE,Biotite quartz foliate, cpy	Fol/sy	Silicious foliate with brown biotite, magnetite-bornite-chalcopyrite	0.018	360.9	weak													
C329370	334464	6212178	1	FOLIATE, Biotite quartz foliate, cpy	Fol/sy	K-feldspar breccia with a magnetic mafic overprint	0.206	2224.6	strong													
C329371	337536	6213806	1	Granodiorite, foliate with mafic inclusions	Gd	Foliated Granodiorite with mafic inclusions. Minor quartz vein, trace sulphide	0.002	20.5														
C329372	337589	6213823	1	Granodiorite	Gd	Granodiorite in rocky basin	0.001	27.9														
C329373	337560	6213741	1	Granodiorite - py	GD	Pyrite veins in granodiorite	0.036	207.8														
						(Samples Collected September 10, 11 and 12)																
C328332	331117	6210800	1834	Granodiorite	GD	Strong magnetic hornblende feldspar porphyry granodiorite, wk foliate, 2ndary brown biotite.	0.002	1	strong		hbl	2										
C328333	331146	6210803	1842	Fine Granodiorite	GD	Fine light green mottled felsic with <2% dis py /cpy/bn	0.004	26	moderate													
C328334	331162	6210796	1844	Granodiorite	GD	Sugary medium grained hornblende and feldspar foliate, malachite on weathered surface and matrix	0.056	6	strong	malachite											2	
C328335	331081	6210908	1833	Quartz Monzonite	MZQ	Fine sugary textured quartz monzonite with 5% sulphide	0.004	91		py, cpy, bn								2	1	1		
C328336	331062	6210897	1843	Granodiorite	GD	Fine grained grampdiorite with strong pyrite and chalcopyrite, brown biotite	0.006	369	non	py, cpy	hbl, bio	2		2				2	1			
C328337	330715	6210845	1758	Granodiorite	GD	Anhedral feldspar crystals to 3 centimetres crowded in a hornblende-chloritic-brown biotite magneitic matrix	0.002	2664	strong													
C328338				"	GD	"	0.002	280	"													
C328339	333974	6212079	1603	Granodiorite	GD	Banded foliate of hornblende biotite diorite,	<0.002	586			minor epidote					1						
C328340	333999	6212042	1623	granodiorite	GD	Silicious sugary banded weak foliate, biotite, with chalcopyrite and bornite	0.002	26			2nd biotite			2								
C328341	334001	6212001	1626	Granodiorite	GD	Sugary hornblende and biotite with quartz, with light grey metallic sulphide, vuggy	<0.002	118	weak													
C328342	334016	6211994	1629	Granodiorite	GD	Moderate magnetic mafic foliate with parallel k-spary banding and veins	0.003	129	moderate													
C328343	333934	6212160	1620	Granodiorite	GD	Sugary granodiorite with brown biotite and epidote, slight trachytic	0.003	15			epidote, biotite			2		2						
C328344	333919	6212234	1609	Monzonite	GD	Anhedral feldspar crystals to 1.5 centimetres crowded in a chloritic -biotite, strong magneitic matrix	0.011	74	strong		chlorite biotite		2		2							
C328345	333890	6212217	1607	Qtz Monzonite	MZQ	Banded magnetic quartz monzonite, magnetite with bornite and chalcopyrite	0.012	11	moderate		hornblende, chlorite	2			2							
C328346	333866	6212236	1587	Qtz Monzonite	MZQ	fine sugary textured quartz monzonite with minor grey sulphide	<0.002	28	moderate		hornblende, chlorite, birtite	2		2	2							
C328347	333866	6212236	1587	FOLIATE,Fine Silicous	FOL	Fine sugary texture biotite and felsic foliate	<0.002	45	moderate													
C328348	333870	6212264	1587	Feldspar Hornblende Porphyry	Gd	Feldsapr and Hornblende crystals to 1 centimetre in silicous-felsic matrix. Chlorite and epidote alteration. - vuggy	<0.002	330	weak	minor bornite										1		
C328349	333671	6212250	1527	"	Gd	"	0.002	28	moderate		hornblende and chlorite	2			2							
C328350	330695	6210742	1724	Feldspar Porphyry Granodiorite	Gd	Anhedral feldspar grains to 2 cm crowded in hornblende to chlorite matrix	0.027	31	strong		hornblende and chlorite	2			2							
C328051	333916	6212139	1628	FOLIATE Silicious	FOL	Banded Silicious foliate with feldspar bands.	<0.002	16														
C328052	333929	6212151	1624	FOLIATE Mafic	FOL	Mafic foliate with porphyritic k-feldspar overprint	<0.002	28	mod													
C328053	333930	6212196	1613	Crowded Feldspar Porphyry	FP	Anhedral feldspar grains 1 to 2 cm aligned in a chloritic-epidote matrix	0.004	28	mod													

C328054	333879	6212204	1602	"	FP	"	0.011	185	strong		chlorite-epidote				2	2							
C328055	333830	6212130	1606	FOLIATE Felsic/ Mafic banded	FOL	Felsic/ Mafic banded foliate - note biotite and fine sulphide.	0.002	4															
C328056	333750	6212079	1602	Feldspar Porphyry	FP	Medium to coarse (1 cm) anhedral feldspar grains in magnetic mafic matrix (chlorite and hornblende, with 2 cm bannded qtz -feldspar vein.	0.005	45	strong														
C328057	333690	6212072	1602	Fine Quartz Feldspar Porphyry	FP	Light brown , dis dark sulphide with malachite, local gossanous vugs.	0.014	67	strong														
C328058	333690	6212072	1602	Quartz Stockwork	QV	Quartz stockwork of 1 cm veins in beige felsic matris. Trace chalcopyrite	0.36	173															
C328059	333644	6212301	1515	Kspar vein Qtz Monzonite	MZQ	K- spar vein to 2 cm with epidote fragment in fine quartz monzonite.	0.005	24															
C328060	333652	6212317	1514	Hornblende Porphyry Qtz Monzonite	MZQ	Hornblende Porphyry quartz monzonite. Hornblende to chlorite	0.004	187	trace chalcopyrite										1				
C328061	330616	6210567	1718	Quartz Feldsapr porphyry	FPQ	Bladed anhedral feldspar to 2 cm in hornblende matrix	0.009	59	dark sulphide											1			
332	334657	6211900	1644		FP			non			2												
529	331092	6210853		Feldspar Porphyry	FP	anhedral feldspar to 3 cm, and fresh hornblende, with quartz, with bands of migmatite.		non															
540	330930	6210961		Quartz feldspar porphyry	FPQ	anhedral feldspar to 2 cm, and fresh hornblende, with quartz		weak											529				
RH	330650	6210512		Felsic	F	Fine felsic moderate magnetic		weak															
								mod															
								mod															

Lithology C	Lithology
DiQ	Quartz Diorite
F	Felsic
FOL	Foliate
Fol/sy	Foliate/Syenitic
FP	Feldspar Porphyry
FPQ	Feldspar Porphyry Quartz
FPQ	
Gd	Granodiorite
Gd	
Mz	Monzonite
MZQ	Monzonite Quartz
Q	Quartz
QV	Quartz Vein

APPENDIX II 2019 HAWK PETROGRAPHIC DESCRIPTIONS (VANCOUVER PETROGRAPHICS)

Report for:
Rick Mazur, Rudi Durfeld
Alton Resources Corp.,
Suite 615, 800 West Pender Street,
Vancouver, BC, V6C 2V6 **September, 2019**
mazur@forumenergymetals.com; durfeld_geo@shaw.ca
Tel: 604-630-1585

Samples: 362, 363, 364, 368, 369, 370, 370A, 371, 371A, 372, 373

Summary:

Sample 362 is of slightly foliated, slightly porphyritic quartz diorite with plagioclase megacrysts (altered slightly to moderately to sericite and/or epidote) in a groundmass of plagioclase-quartz with mafic clusters dominated by secondary biotite-epidote, some of which have cores of primary hornblende, with minor to locally accessory sphene, and minor chalcopyrite/hematite and apatite. Some quartz-plagioclase lenses are elongated parallel to a weak to moderate foliation.

Sample 363 is of cataclastically deformed soda syenite(?) that contains scattered patches up to several mm across of medium grained plagioclase that was in places cataclastically deformed and recrystallized to much finer subgrain aggregates. The sample is dominated by coarse grained vein quartz that was slightly to moderately strained and locally recrystallized to much finer subgrain aggregates. A few patches consist of very fine grained quartz with accessory to abundant disseminated biotite. Late seams and patches are of limonite/jarosite.

Sample 364 is of medium to coarse grained quartz-bearing diorite that is dominated by plagioclase (altered slightly to strongly to epidote and slightly to locally moderately to sericite), with mafic clusters dominated by biotite (mainly altered completely to pseudomorphic chlorite-leucoxene) and much less abundant hornblende (partly replaced by biotite/chlorite), and interstitial grains and clusters of quartz. One replacement patch is of epidote-calcite-chlorite. A veinlet is of calcite-chlorite-(limonite). A series of veinlets is of calcite with common lenses of hematite/limonite in cores of veins.

Sample 368 contains zones of primary host rock consisting of plagioclase and scattered mafic clusters dominated by hornblende (fresh to altered completely to epidote-chlorite or locally to tremolite/actinolite), sphene, and opaque. The rock was replaced strongly by K-feldspar, much of which is perthitic with irregular intergrowths of plagioclase that are in optical continuity within single perthite grains.

Sample 369 is of metamorphosed felsite or hypabyssal syenite that is dominated by K-feldspar with lesser plagioclase, muscovite, quartz, biotite, and limonite-rich patches of probable multiple origins. Trace sulphides are chalcopyrite and bornite.

Sample 370 is of metamorphosed hypabyssal biotite-muscovite syenite. It is compositionally banded, with one band of K-feldspar-biotite-plagioclase and another of K-feldspar-plagioclase-(biotite). Muscovite is concentrated in stubby lenses parallel to a weak foliation. A coarser grained, discontinuous band is of biotite, chalcopyrite, and magnetite, with lesser muscovite and ilmenite.

Sample 370A is of metamorphosed syenite that is dominated by unoriented K-feldspar, with accessory plagioclase, and minor garnet, hornblende (altered completely to secondary amphibole-calcite-limonite), quartz, and sphene. A discontinuous veinlet is of calcite.

Sample 371 is of slightly metasomatized hornblende-granodiorite that is dominated by plagioclase (altered slightly to strongly to sericite and locally to epidote) with lesser hornblende (mainly fresh), with interstitial and locally replacement patches of K-feldspar and lesser ones of quartz. Accessory minerals include sphene, opaque (magnetite) and apatite. Minor myrmekite suggests a metasomatic history.

Sample 371A is of slightly metasomatized quartz monzonite/granite dominated by K-feldspar with lesser quartz and plagioclase (fresh to altered slightly to sericite), with scattered patches of graphic intergrowths of K-feldspar and quartz in two main size ranges, and local graphic intergrowths of plagioclase-quartz. Minor minerals are biotite (in part altered to muscovite and chlorite) and opaque (magnetite). A few patches of myrmekite occur in plagioclase adjacent to K-feldspar.

Sample 372 contains two zones. Zone A is of hornblende granodiorite that is dominated by plagioclase with disseminated lusters of hornblende, lesser interstitial quartz and K-feldspar, and minor opaque (magnetite) and apatite. Zone B is of a mafic inclusion consisting of much finer grained plagioclase and lesser hornblende, with minor opaque, diopside, biotite/chlorite, and K-feldspar.

Sample 373 is of meta-latite that contains scattered phenocrysts(?) of plagioclase (altered slightly to moderately to sericite) in a groundmass of extremely fine grained plagioclase (fresh to altered moderately to sericite and/or epidote), with scattered patches and seams of biotite, and minor patches of sphene-(ilmenite). K-feldspar forms replacement megacrysts and also, commonly with quartz, forms very fine grained replacement patches intergrown with groundmass plagioclase. Epidote forms scattered replacement patches. Pyrite forms replacement patches that are concentrated strongly in one planar zone. A vein is of epidote-pyrite-quartz. A second vein is of quartz with a local concentration of epidote. A few veinlets are of K-feldspar-(hematite).

Photographic Notes:

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

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Sample 362 **Metamorphosed Hornblende/Biotite Quartz Diorite**
Alteration: Sericite-Epidote-(Chlorite-Calcite-Chalcopyrite)

The sample is of slightly foliated, slightly porphyritic quartz diorite with plagioclase megacrysts (altered slightly to moderately to sericite and/or epidote) in a groundmass of plagioclase-quartz with mafic clusters dominated by secondary biotite-epidote, some of which have cores of primary hornblende, with minor to locally accessory sphene, and minor chalcopyrite/hematite and apatite. Some quartz-plagioclase lenses are elongated parallel to a weak to moderate foliation.

mineral	**percentage**	**main grain size range (mm)**	
phenocrysts			
plagioclase	7- 8%	1-2	
groundmass			
plagioclase	60-65	0.3-0.7	
quartz	8-10	0.3-0.7	(one grain 1.5 mm across)
biotite	8-10	0.1-0.3	
epidote	5- 7	0.05-0.3	
hornblende	3- 4	0.3-0.8	(a few from 1.2-1.7 mm long)
sphene	0.2	0.07-0.12	(a few from 0.15-0.5 mm long)
opaque (chalcopyrite)	minor	0.05-0.15	
calcite	minor	0.03-0.05	
apatite	trace	0.05-0.08	(one 0.15 mm long)

Plagioclase forms stubby prismatic megacrysts/phenocrysts, many of which were altered moderately to sericite/muscovite that is mainly aligned parallel to the c-axis of plagioclase. Some grains are altered strongly to very fine grained epidote, with or without sericite (as above), and some were replaced moderately to strongly by coarser grained epidote. Some grains have very fine, discontinuous albite twins; most of these are relatively fresh or altered slightly to patches of epidote.

In the groundmass, plagioclase forms anhedral grains that were altered slightly to moderately to epidote. Some very fine grained patches of plagioclase (0.03-0.07 mm) are relatively fresh, suggesting that they represent a late-magmatic more-sodic plagioclase than the rest of the plagioclase.

Quartz forms anhedral grains interstitial to plagioclase. Some quartz grains show strained extinction. Some, possibly late segregation lenses of quartz-plagioclase up to 1 mm wide are aligned parallel to a weak to moderate foliation; in these plagioclase is relatively fresh.

Biotite occurs in ragged clusters of grains, in part surrounding actinolite, and probably formed from primary actinolite/hornblende. Biotite is pleochroic from pale to medium slightly greenish brown.

Epidote forms disseminated grains, mainly secondary after plagioclase, but also as discrete interstitial clusters of anhedral grains intergrown coarsely with lesser quartz.

Hornblende forms ragged equant to prismatic grains with pleochroism from light to medium, slightly brownish green. It generally is surrounded by clusters of secondary biotite flakes.

Sphene forms scattered, mainly elongate grains, most of which are associated with clusters of biotite or biotite-actinolite.

Opaque (probably chalcopyrite) forms scattered equant grains, most of which are enclosed in aggregates of epidote.

Chlorite occurs in a few clusters with epidote; chlorite is slightly pleochroic from pale to light green, with an anomalous brown interference colour.

Calcite forms a few grains, associated with quartz and plagioclase or with mafic clusters.

Apatite forms scattered anhedral grains.

Sample 363 Cataclastically Deformed Soda Syenite(?)
Slightly Deformed Quartz Vein; Limonite/Jarosite Seams, Patches

The sample contains scattered patches up to several mm across of medium grained plagioclase that was in places cataclastically deformed and recrystallized to much finer subgrain aggregates. The sample is dominated by coarse grained vein quartz that was slightly to moderately strained and locally recrystallized to much finer subgrain aggregates. A few patches consist of very fine grained quartz with accessory to abundant disseminated biotite. Late seams and patches are of limonite/jarosite.

mineral	**percentage**	**main grain size range (mm)**
plagioclase	7- 8%	0.3-1 (in part recrystallized to 0.03-0.2)
biotite	2- 3	0.02-0.05
vein/replacement		
quartz	85-90	2-15 (in part recrystallized to 0.03-0.5)
veinlets		
limonite/jarosite	0.5	0.01-0.02

Plagioclase forms patches up to several mm across of anhedral grains, some of which have albite twins. Some of these were recrystallized along their margins (or for smaller patches, recrystallized throughout) to subgrains of mainly untwinned plagioclase, whose texture suggests that it was formed by granulation and recrystallized of coarser grains during moderate cataclastic deformation. Some of these recrystallized patches contain a few to several, generally slightly coarser (relic?) plagioclase grains that have albite twins.

The sample is dominated by vein quartz grains, many of which were strained slightly to moderately, and a few of which were recrystallized to much finer subgrain aggregates.

A few patches up to 1.5 cm across consist of aggregates of replacement quartz with accessory to abundant disseminated, very fine grained ragged flakes of biotite (pleochroic from pale to light/medium slightly greenish brown) and minor to accessory grains of opaque. Some of these contain moderately abundant patches and seams of limonite. Some of these also contain scattered grains of plagioclase. These patches represent strongly replaced host rock of uncertain composition and texture. Near the margins of the largest patch, quartz with accessory disseminated biotite is intergrown coarsely with rectangular patches of quartz without biotite inclusions.

Limonite/jarosite forms several late patches up to 0.5 mm across and several irregular seams and veinlets, mainly associated with patches of replaced host rock.

Sample 364 Biotite-(Hornblende) Quartz-Bearing Diorite
Alteration: Epidote-Sericite-Chlorite-Calcite
Veinlets: Calcite-Chlorite; Calcite-Hematite/Limonite

The sample is of medium to coarse grained quartz-bearing diorite that is dominated by plagioclase (altered slightly to strongly to epidote and slightly to locally moderately to sericite), with mafic clusters dominated by biotite (mainly altered completely to pseudomorphic chlorite-leucoxene) and much less abundant hornblende (partly replaced by biotite/chlorite), and interstitial grains and clusters of quartz. One replacement patch is of epidote-calcite-chlorite. A veinlet is of calcite-chlorite-(limonite). A series of veinlets is of calcite with common lenses of hematite/limonite in cores of veins.

mineral	**percentage**	**main grain size range (mm)**
plagioclase	55-60	1-2
epidote	17-20	0.05-0.3
quartz	8-10	0.2-0.5
biotite/chlorite	5- 7	0.2-1
hornblende	1- 2	0.5-0.7
calcite	1- 2	0.05-0.2
ilmenite	minor	0.1-0.3
apatite	minor	0.05-0.08
tourmaline	trace	0.1-0.25
veinlets		
1) calcite-chlorite-limonite	2- 3	0.1-0.3 (ct), 0.03-0.07 (cl), 0.02-0.05 (li)
2) calcite-hematite/limonite	1- 2	0.03-0.07

Plagioclase forms anhedral prismatic grains that were altered moderately to locally strongly to epidote and slightly to locally moderately to sericite. Sericite commonly is oriented parallel to the c-axes of plagioclase grains.

Numerous patches up to 2 mm in size are of biotite (altered strongly to completely to pseudomorphic chlorite and accessory patches and lenses of opaque/leucoxene(?). Biotite is pleochroic from pale to medium slightly greenish brown, and chlorite is pleochroic from pale to light green and has a brown interference colour.

Quartz forms anhedral grains interstitial to plagioclase and in some mafic clusters. A few quartz patches and parts of some coarse grains contain abundant tiny inclusions of biotite.

One large patch a few mm across of epidote, chlorite, and calcite probably is secondary after hornblende (and possibly biotite). Some coarser grained patches of epidote have a thin rim of opaque.

Ilmenite (probably altered in part at least to Ti-oxide/leucoxene) forms scattered grains associated with epidote-chlorite patches. Other smaller opaque grains probably are of the same mineral.

Apatite forms anhedral slightly prismatic grains, mainly associated with mafic clusters.

Tourmaline forms a prismatic grain with pleochroism from neutral to deep greenish blue.

A veinlike zone 0.5 mm wide is in places dominated by chlorite with lesser limonite and in places dominated by calcite, mainly in the core, with minor to moderately abundant chlorite, mainly along the margins. A set of intersecting smaller veinlets is of calcite, commonly with stubby lenses of hematite/limonite along centrelines.

Sample 368 **Hornblende Monzonite**
Replacement: K-feldspar
Alteration: Chlorite-Epidote

The host rock is represented by plagioclase and scattered mafic clusters dominated by hornblende (fresh to altered completely to epidote-chlorite or locally to tremolite/actinolite), sphene, and opaque. The rock was replaced strongly by K-feldspar, much of which is perthitic with irregular intergrowths of plagioclase that are in optical continuity within single perthite grains.

mineral	**percentage**	**main grain size range (mm)**	
K-feldspar	60-65	0.5-2	
plagioclase	30-33	0.2-0.7	(a few from 1.5-2.5 mm long)
hornblende	2- 3	0.5-1	
sphene	0.5	0.07-0.2	(one grain 1.5 mm long)
opaque	0.4	0.05-0.5	
apatite	minor	0.1-0.3	

K-feldspar forms anhedral to locally subhedral grains, many of which have cross-hatched twins, and many of which contain anhedral inclusions of plagioclase that suggest that K-feldspar formed in large part by replacement of plagioclase. Some grains are perthitic, with 10-30% disseminated irregular inclusions plagioclase in optical continuity within perthite grains.

Plagioclase forms scattered coarse subhedral prismatic grains, some of which are growth-zoned from broad, more-calcic cores to narrow, more-sodic rims. Most cores contain moderately abundant to abundant dusty opaque (hematite?) and some contain minor scattered patches of epidote and/or sericite. Muscovite forms one grain 0.4 mm in size as a replacement/alteration of plagioclase. Plagioclase also forms smaller anhedral grains, commonly with rounded margins against K-feldspar grains; these generally contain only minor dusty opaque inclusions. Some grains are partly skeletal and partly replaced by K-feldspar.

Mafic clusters up to a few mm in size contain one or more of hornblende (in some clusters altered completely to chlorite-[epidote]), sphene, and opaque. Some clusters are open and intergrown with plagioclase and K-feldspar. One hornblende grain was replaced mainly by pseudomorphic tremolite/actinolite. In a few clusters, chlorite-epidote patches appear not to have been formed by replacement of hornblende or biotite. A few coarse sphene grains are subhedral and tabular with simple “Carlsbad-style” twining parallel to their length.

Apatite forms disseminated subhedral prismatic grains.

Sample 369 **Metamorphosed Felsite/Hypabyssal Syenite**
Sulphides: (Chalcopyrite, Bornite)

The sample is of metamorphosed felsite or hypabyssal syenite that is dominated by K-feldspar with lesser plagioclase, muscovite, quartz, biotite, and limonite-rich patches of probable multiple origins. Trace sulphides are chalcopyrite and bornite.

mineral	**percentage**	**main grain size range (mm)**	
K-feldspar	70-75%	0.1-0.5	(locally up to 1 mm)
plagioclase	15-17	0.1-0.5	(a few from 0.7-1.5 mm long)
muscovite	7- 8	0.1-0.3	
quartz	3- 4	0.2-0.3	
biotite	2- 3	0.1-0.3	
ilmenite	1- 2	0.05-0.2	
limonite	2- 3	patches 0.1-0.5 mm across	
calcite	0.2	0.05-0.2	
apatite	0.2	0.05-0.12	(one grain 0.9 mm long)
chalcopyrite	trace	0.03-0.1	
bornite	trace	0.03-0.05	(one grain 0.2 mm long)

K-feldspar forms anhedral, equant to slightly elongate grains, many of which contain minor dusty opaque inclusions.

Plagioclase forms anhedral to subhedral prismatic grains, some of which have broad albite twins. Untwinned grains are difficult to distinguish optically from K-feldspar. The strong yellow colour of the stained block indicates that much of the feldspar is K-feldspar. Most grains are relatively fresh with low relief, suggesting a composition of albite.

Muscovite is concentrated moderately in lenses and seams parallel to foliation as clusters of anhedral grains.

Quartz forms disseminated, equant grains, a few of which show slightly strained extinction.

Biotite forms disseminated grains that commonly are associated with muscovite. Pleochroism is from pale to light brown.

Ilmenite forms disseminated grains and clusters of a few grains, commonly associated with biotite.

A few patches up to a few mm across are of intimate intergrowths of biotite and ilmenite, and some also contain abundant limonite.

Limonite forms disseminated patches, in part with cubic outlines, suggesting replacement of pyrite, and in part with relic carbonate, suggesting replacement of Fe-bearing carbonate, and in part with secondary silicate, suggesting replacement of hornblende.

Apatite forms disseminated subhedral, stubby prismatic grains, and a few anhedral grains from 0.4-0.9 mm long.

Calcite forms disseminated, in part skeletal patches up to 0.3 mm across. It is concentrated strongly in a lens 1.5 mm long withy K-feldspar, ilmenite, and lesser limonite.

Chalcopyrite forms scattered grains, most of which were altered moderately inwards from their margins to deep red-brown hematite.

Bornite occurs as several proximal grains and as one elongate patch (altered slightly along its margin to hematite[?]) adjacent to a grain of ilmenite.

Sample 370 **Metamorphosed Hypabyssal Biotite-Muscovite Syenite**
Sulphides: Chalcopyrite

The sample is compositionally banded, with one band of K-feldspar-biotite-plagioclase and another of K-feldspar-plagioclase-(biotite). Muscovite is concentrated in stubby lenses parallel to a weak foliation. A coarser grained, discontinuous band is of biotite, chalcopyrite, and magnetite, with lesser muscovite and ilmenite.

mineral	**percentage**	**main grain size range (mm)**	
K-feldspar	65-70%	0.2-0.5	
plagioclase	10-12	0.3-0.8	(locally up to 1.5 mm)
biotite	8- 10	0.1-0.5	(locally up to 1 mm)
muscovite	4- 5	0.1-0.2	
magnetite	2- 3	0.2-0.5	
chalcopyrite	1- 2	0.05-0.2	(locally up to 0.4 mm)
quartz	1- 2	0.1-0.3	
limonite	0.3	0.1-0.5	
ilmenite	0.2	0.03-0.3	

K-feldspar forms anhedral, equant grains, commonly with patches containing moderately abundant dusty inclusions, some of which may be secondary after plagioclase.

Plagioclase forms disseminated, prismatic grains, commonly with broad albite twins; they are mainly fresh and have low relief, suggesting albite composition. A few coarse plagioclase grains with discontinuous albite twins were replaced moderately and irregularly by K-feldspar.

Biotite is concentrated moderately in a broad band on one side of the section; it forms disseminated grains with pleochroism from light to medium/dark brown.

Muscovite is concentrated in patches and lenses up to 2 mm long and 1.5 mm wide parallel to foliation; some lenses contain patches of chalcopyrite.

Magnetite forms disseminated, equant anhedral grains.

Chalcopyrite forms disseminated equant anhedral patches, and is concentrated moderately in a few muscovite-rich clusters and in a discontinuous train of coarser grained aggregates of biotite-magnetite.

A diffuse discontinuous band up to 2 mm wide contains coarser grained aggregates dominated by biotite, magnetite, and chalcopyrite, with locally abundant muscovite and ilmenite.

Quartz forms disseminated anhedral grains.

Limonite-rich patches up to 0.5 mm in size may be secondary after hornblende.

Ilmenite forms anhedral grains and clusters of a few grains.

Sample 370A Metamorphosed Syenite

The sample is dominated by unoriented K-feldspar, with accessory plagioclase, and minor garnet, hornblende (altered completely to secondary amphibole-calcite-limonite), quartz, and sphene. A discontinuous veinlet is of calcite.

mineral	**percentage**	**main grain size range (mm)**	
K-feldspar	80-85%	0.2-0.7	(a few from 1-1.7 mm long)
plagioclase	5- 7	0.1-0.3	
garnet	1- 2	0.5-1	
hornblende(?)	1- 2	0.1-0.5	
quartz	0.3	0.2-0.3	
sphene	0.1	0.07-0.12	
veinlet			
1) calcite	minor	0.05-0.2	

K-feldspar forms anhedral grains, some of which have cross-hatched twins and some of which contain minor to accessory wispy perthitic lenses of sodic plagioclase.

Plagioclase forms disseminated stubby prismatic grains with well developed albite twins.

Garnet forms anhedral, in part skeletal grains with irregular curved outlines; garnet is pale orange in colour.

Hornblende(?) forms disseminated grains that were altered completely to secondary amphibole-calcite-limonite.

Sphene forms rhombic grains that commonly are associated with hornblende.

Quartz forms scattered grains interstitial to K-feldspar; some have slightly wavy extinction.

A discontinuous veinlet up to 0.05 mm wide is of calcite.

Sample 371 Metasomatic Hornblende-Granodiorite

The sample is of slightly metamorphosed hornblende granodiorite dominated by plagioclase (altered slightly to strongly to sericite and locally to epidote) with lesser hornblende (mainly fresh), with interstitial and locally replacement patches of K-feldspar and lesser ones of quartz. Accessory minerals include sphene, opaque (magnetite) and apatite. Minor myrmekite suggests a metasomatic history.

mineral	percentage	main grain size range (mm)	
plagioclase	40-45%	0.7-1.5	
hornblende	20-25	0.5-2	
K-feldspar	12-15	0.5-3	
quartz	4- 5	0.5-1	
sphene	1- 2	0.2-0.7	
apatite	0.3	0.1-0.2	(one grain 0.4 mm long)
opaque (magnetite)	0.7-1	0.1-0.3	
myrmekite	minor	0.05-0.2	

Plagioclase forms anhedral to subhedral prismatic grains that range from fresh to altered moderately in patches to sericite. Most grains are cut by a network of irregular wispy fractures along which weak sericite-limonite alteration is common. One grain was altered strongly in a broad patch to sericite with a core of a single irregular epidote grain 0.7 mm across. Locally against K-feldspar grains, plagioclase contains patches of myrmekitic with tiny quartz inclusions. Myrmekite also forms patches up to 0.2 mm across along (K-feldspar)-(K-feldspar) grain contacts.

Hornblende forms anhedral grain with pleochroism from light brownish green to medium/dark green. Some grains are interstitial to subhedral plagioclase. A few grains were altered slightly to moderately to patches of epidote and a few small patches of epidote-chlorite may be secondary after hornblende.

K-feldspar forms anhedral, commonly large interstitial grains, some of which contain up to several inclusions of plagioclase.

Quartz forms anhedral, interstitial grains and aggregates of finer grains, many of the larger grains have moderately strained extinction.

Sphene forms disseminated anhedral grains and a curved train of grains. One patch of sphene is interstitial to subhedral to euhedral plagioclase grains.

Opaque (magnetite) forms equant anhedral to euhedral grains and clusters of a few grains, most of which are concentrated in and near hornblende.

Apatite forms disseminated equant anhedral grains and several subhedral to euhedral prismatic grains.

Sample 371A Metasomatic Quartz Monzonite/Granite

The sample is of slightly metasomatized quartz monzonite/granite dominated by K-feldspar with lesser quartz and plagioclase (fresh to altered slightly to sericite), with scattered patches of graphic intergrowths of K-feldspar and quartz in two main size ranges, and local graphic intergrowths of plagioclase-quartz. Minor minerals are biotite (in part altered to muscovite and chlorite) and opaque (magnetite). A few patches of myrmekite occur in plagioclase adjacent to K-feldspar.

mineral	**percentage**	**main grain size range (mm)**	
K-feldspar	60-65%	0.5-1.5	
quartz	17-20	0.2-0.7	
plagioclase	12-15	0.3-0.7	(a few up to 1.5 mm)
biotite	minor	0.3-0.7	
opaque (magnetite)	minor	0.1-0.15	
myrmekite	0.3	0.05-0.2	

K-feldspar forms anhedral grains commonly with dusty semi-opaque inclusions.

Plagioclase forms anhedral stubby prismatic grains that are relatively fresh to altered slightly to sericite and dusty semi-opaque. A few are intergrown graphically with quartz.

Quartz forms anhedral grains and local graphic intergrowths with K-feldspar.

Patches up to a few mm across consist of relatively coarse graphic intergrowths of K-feldspar-quartz and plagioclase-quartz, both with similar textures and size of quartz lenses. In one corner pf the section, a patch a few mm across is of very fine grained K-feldspar, quartz, and lesser plagioclase, with moderately abundant very fine graphic intergrowths of K-feldspar-quartz in which quartz generally forms disseminated equant blebs in K-feldspar grains.

Myrmekite forms scattered patches bordering some plagioclase grains against K-feldspar and along some (K-feldspar)-(K-feldspar) grain contacts.

Biotite forms disseminated slender subhedral flakes with pleochroism from light to dark orangish brown. Some flakes were altered strongly to completely to muscovite-chlorite.

Opaque (probably magnetite) forms disseminated equant anhedral to subhedral grains.

Sample 372 Hornblende Granodiorite/Mafic Inclusion

The sample contains two zones. Zone A is of hornblende granodiorite that is dominated by plagioclase with disseminated lusters of hornblende, lesser interstitial quartz and K-feldspar, and minor opaque (magnetite) and apatite. Zone B is of a mafic inclusion consisting of much finer grained plagioclase and lesser hornblende, with minor opaque, diopside, biotite/chlorite, and K-feldspar.

Zone A

mineral	**percentage**	**main grain size range (mm)**	
plagioclase	60-65%	0.5-1.5	(locally up to 2 mm long)
hornblende	15-17	0.3-1	
quartz	8-10	0.2-0.5	
K-feldspar	7- 8	1-3	
opaque (magnetite)	1- 2	0.07-0.2	
apatite	0.3	0.05-0.15	(one 0.3 mm long)
sphene	minor	0.1-0.2	
myrmekite	minor	0.1-0.2	

Plagioclase forms anhedral to subhedral, slightly to moderately prismatic grains, many of which show slight to moderate compositional growth zoning from more-calcic cores to more-sodic rims. It was altered slightly to locally strongly to sericite and locally slightly to moderately to patches of epidote.

Hornblende forms anhedral to subhedral grains in part interstitial to plagioclase. It is pleochroic from light to medium green. A few grains were altered slightly to epidote or chlorite.

Quartz forms anhedral grains and clusters of grains interstitial to plagioclase.

K-feldspar forms scattered megacrysts interstitial to plagioclase; several contain up to several inclusions of plagioclase. Locally bordering K-feldspar grains, plagioclase contains zones of myrmekitic quartz inclusions. K-feldspar contains a few ragged patches of epidote

Magnetite forms anhedral to subhedral grains, commonly associated with hornblende.

Apatite forms disseminated anhedral to locally euhedral grains, commonly associated with hornblende.

Sphene forms anhedral grains associated with hornblende.

Zone B

mineral	**percentage**	**main grain size range (mm)**	
plagioclase	60-65	0.2-0.5	
hornblende	20-25	0.2-0.5	(locally up to 0.7 mm)
opaque	1- 2	0.05-0.2	(locally up to 0.4 mm)
biotite/chlorite	0.7	0.1-0.2	(one grain 1 mm across)
diopside	0.3	0.7-1	
K-feldspar	0.3	0.2-0.5	
quartz	0.1	0.1-0.2	
apatite	0.1	0.03-0.06	
sphene	0.1	0.1-0.4	

Plagioclase forms anhedral equant to stubby prismatic grain that vary in patches from relatively fresh to altered moderately to sericite-(epidote).

Hornblende forms anhedral equant to prismatic grains as in Zone A.

Opaque (magnetite-ilmenite) forms disseminated anhedral grains. Several grains have a thin rim of sphene, suggesting that they are ilmenite.

Biotite forms disseminated flakes with pleochroism from pale to light/medium brown; some grains were altered strongly to completely to pseudomorphic pale/light green chlorite. One large biotite flake (altered completely to pseudomorphic chlorite-[sphene]) is enclosed in a variable intergrowth of plagioclase (altered moderately to strongly to epidote or slightly to moderately to sericite), hornblende, and epidote.

Diopside (colourless) forms a large prismatic grains with a moderate reaction rims/overgrowth of hornblende.

K-feldspar forms a few interstitial patches.

Quartz forms scattered interstitial patches.

Apatite forms disseminated equant grains.

Sphene forms anhedral equant grains, a few of the larger ones of which contain a core or a few lenses of opaque (probably ilmenite).

Sample 373 Meta-Latite
Replacement/Alteration: K-feldspar-Epidote-Pyrite-Quartz
Veins, Veinlets: Epidote-Pyrite-Quartz; K-feldspar-Hematite

The meta-latite contains scattered phenocrysts(?) of plagioclase (altered slightly to moderately to sericite) in a groundmass of extremely fine grained plagioclase (fresh to altered moderately to sericite and/or epidote), with scattered patches and seams of biotite, and minor patches of sphene-(ilmenite). K-feldspar forms replacement megacrysts and also, commonly with quartz, forms very fine grained replacement patches intergrown with groundmass plagioclase. Epidote forms scattered replacement patches. Pyrite forms replacement patches that are concentrated strongly in one planar zone. A vein is of epidote-pyrite-quartz. A second vein is of quartz with a local concentration of epidote. A few veinlets are of K-feldspar-(hematite).

mineral	**percentage**	**main grain size range (mm)**	
phenocrysts(?)			
plagioclase	4- 5%	0.3-0.7	(a few up to 1.5 mm across)
groundmass			
plagioclase	60-65	0.02-0.03	
biotite	3- 4	0.02-0.05	
sphene	0.5	0.01-0.03	
opaque (ilmenite)	minor	0.01-0.03	
replacement			
K-feldspar	5- 7	0.4-0.7	
pyrite	5- 7	0.05-0.15	
epidote	2- 3	0.01-0.03	(locally 0.3-0.7 mm)
quartz	3- 4	0.05-0.5	
veins, veinlets			
1) quaraz-epidote	3- 4	0.1-0.3	
2) K-feldspar-hematite	0.3	0.05-0.2	

Plagioclase forms scattered anhedral phenocrysts(?) that were altered slightly to locally moderately to sericite.

In the groundmass, plagioclase forms aggregates of anhedral grains that range from fresh to altered moderately to strongly to epidote or sericite.

Biotite is concentrated moderately in seams and patches as aggregates of equant grains with pleochroism from pale to light brown.

Sphene forms a few patches up to 0.7 mm in size of extremely fine grains with a few relic cores of opaque (probably ilmenite).

K-feldspar forms scattered megacrysts that probably are of replacement origin. K-feldspar and quartz commonly occur together as very fine to fine grained aggregates, probably in large part of replacement origin, that are intergrown irregularly with groundmass plagioclase.

Pyrite is concentrated moderately to strongly in a band of lenses and clusters of grains up to several mm in size; much of this zone was lost during sample preparation. Pyrite also forms disseminated subhedral equant grains, a few of which were altered slightly to moderately inwards from grain borders to orange-brown limonite.

A few epidote-patches up to 1 mm across consist of anhedral grains 0.3-0.7 mm in size.

Quartz forms disseminated interstitial grains and patches, the latter up to 1.5 mm across.

(continued on page 2)

A vein up to 0.6 mm wide contains patches of quartz with minor epidote, biotite, and sphene, and contains a patch 4 mm long of epidote.

A vein up to 1 mm wide is of epidote, pyrite, and quartz; it has a diffuse envelope up to 1 mm wide containing patches of epidote and quartz, and grains of pyrite.

A few veinlets up to 0.2 mm wide are of K-feldspar with scattered patches of hematite (after pyrite).

Hematite (after sulphides) occurs in a discontinuous veinlet up to 0.1 mm wide along one side of the section.

List of Photos

Photo	Sample	Description
01	362	coarse plagioclase grains (altered moderately to strongly to sericite [oriented parallel to c-axis of plagioclase] and ragged patches of epidote); interstitial patches of epidote, biotite (fresh to altered completely to chlorite), quartz, and calcite; minor apatite.
02	362	to left and right: plagioclase (altered moderately to strongly to sericite [oriented parallel to c-axes of plagioclase] and ragged patches of epidote) with bands and patches of biotite-epidote and patches of epidote; minor patches of quartz; in the middle: late, possibly recrystallized band of relatively fresh plagioclase and quartz.
03	362	hornblende megacrysts rimmed by and replaced slightly by aggregates of secondary biotite; associated with hornblende are grains of apatite and patches of opaque (some at least probably chalcopyrite, in part altered to hematite), with a few inclusions of plagioclase (partly altered to epidote) and one of calcite; surrounded by plagioclase (altered moderately to strongly to epidote and minor sericite) and accessory quartz.
04	363	to the left: recrystallized plagioclase, some strained grains, patches and seams of limonite/jarosite; to the right: coarse grained, slightly strained quartz.
05	363	to the left: quartz vein, slightly strained; to the right: replacement intergrowth of quartz with abundant disseminated biotite flakes, a few patches of opaque, and wispy seams and patches of limonite.
06	363	discrete rectangular patches of quartz intergrown with patches of much finer grained quartz with abundant inclusions of biotite and of limonite; all quartz is in approximately the same optical orientation; late veinlet of limonite.
07	363	to the left and centre; aggregate of plagioclase (partly moderately to strongly granulated), cut by an irregular veinlike zone of limonite; to the right and top: vein quartz, slightly strained; minor opaque along the margin.
08	364	to the left: coarse plagioclase (altered slightly to locally moderately to epidote and/or sericite); to the right: finer grained plagioclase (altered moderately to strongly to epidote-(sericite); intergrown with clusters of biotite (fresh to mainly altered strongly to completely to pseudomorphic chlorite) with patches of epidote, accessory interstitial quartz.
09	364	mafic cluster (possibly mainly after hornblende): epidote (a few coarser grained patches commonly outlined by thin opaque selvage), central patch of calcite-chlorite; a few patches of quartz, one large grain of opaque and a few anhedral grains of apatite; some finer grained patches of epidote may represent strongly altered plagioclase.

List of Photos

Photo	Sample	Description
10	364	anhedral plagioclase (altered slightly to moderately to epidote and/or sericite) with interstitial quartz and a grain of opaque (ilmenite?); veinlet of calcite-chlorite (chlorite is concentrated towards the margins and calcite in the interior).
11	364	plagioclase (altered slightly to moderately to epidote and/or sericite) with patches of quartz and one patch of biotite (partly altered to pseudomorphic chlorite); network of intersecting veinlets of calcite with patches of hematite/limonite, mainly in the core of the largest veinlet.
12	368	intergrowth of K-feldspar and plagioclase: to left and bottom: coarse perthitic K-feldspar and irregular patches of plagioclase in optical continuity, plus several anhedral plagioclase grains; far right: plagioclase grains with dusty opaque inclusions and minor patches of epidote; top centre: plagioclase grains partly replaced by irregular patches of K-feldspar.
13	368	euhedral prismatic plagioclase grains with broad, more-calcic cores (containing moderately abundant dusty opaque inclusions and dusty sericite alteration; one contains a patch of secondary epidote) and narrow more-sodic rims relatively free of dusty inclusions and alteration) enclosed in a very coarse perthite grain of K-feldspar with slightly less disseminated plagioclase in optical continuity throughout the grain.
14	368	cluster of hornblende grains (in part altered to chlorite-epidote and in part plucked from the section during sample preparation) with several grains of opaque and a few of sphene; surrounded by plagioclase (with local patches of secondary epidote) and K-feldspar, with one elongated twinned grain of sphene.
15	369	intergrowth of K-feldspar, muscovite, biotite, ilmenite, and quartz, with patches of limonite (after sulphides?); unlabelled grains with low birefringence cannot be distinguished optically between K-feldspar and plagioclase.
16	369	cluster of biotite and ilmenite with lesser K-feldspar and plagioclase, and one grain of chalcopyrite; surrounded by K-feldspar with lesser biotite, muscovite, and quartz and minor chalcopyrite; unlabelled grains with low birefringence cannot be distinguished optically between K-feldspar and plagioclase.
17	369	open cluster of bornite grains associated with one of two ragged extremely fine grained patches of calcite-magnetite-K-feldspar that are enclosed in K-feldspar and lesser plagioclase, with minor calcite and muscovite; one plagioclase grain is fresh with albite twins; other patches of plagioclase (?) with dusty semi-opaque and sericite inclusions were replaced completely by K-feldspar.
18	369	cluster of biotite-ilmenite with lesser muscovite, limonite-silicate (possibly after hornblende), and plagioclase, one small grain of chalcopyrite, and bordering the cluster, a large grain of K-feldspar.

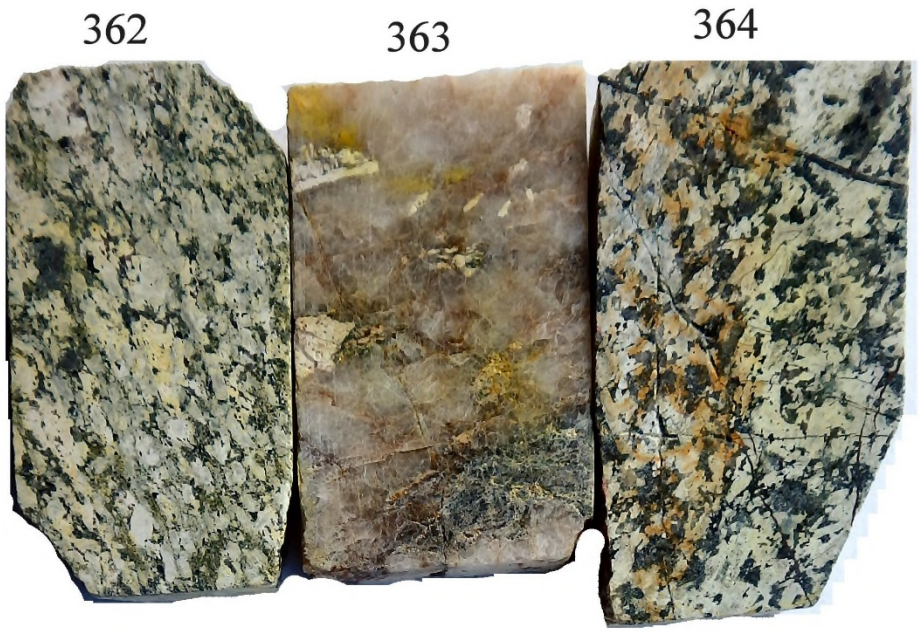
List of Photos

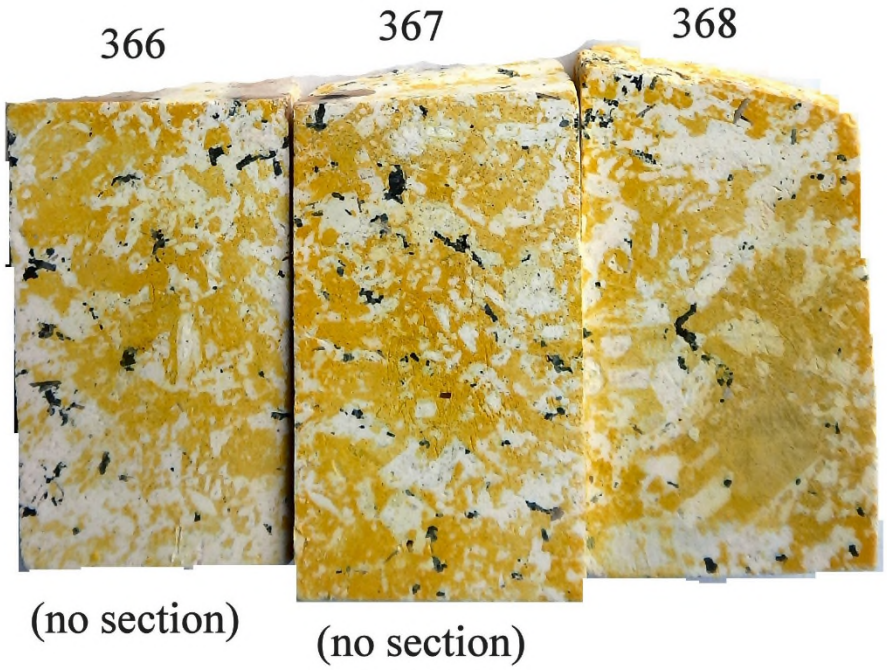
Photo	Sample	Description
19	370	upper left: aggregate of K-feldspar with disseminated biotite flakes, patches of magnetite, and grains of quartz; lower right: cluster of muscovite with accessory biotite and minor K-feldspar.
20	370	cluster of coarser grained biotite, magnetite, and chalcopyrite (altered slightly to moderately inwards from margins to red-brown hematite) and finer grained ilmenite, and muscovite; enclosed in a finer grained aggregate of K-feldspar, biotite, and lesser quartz.
21	370	mafic-rich zone: intergrowth of K-feldspar and biotite, with lesser plagioclase (showing albite twins), hornblende(?; altered completely to extremely fine grained silicate [possibly tremolite/actinolite] and limonite-magnetite), and quartz, and scattered small grains of magnetite and of apatite.
22	370	upper left: muscovite-rich patch with abundant chalcopyrite (altered slightly to moderately inwards from grain margins to red-brown hematite), one grain of magnetite and one patch of hornblende(?: altered completely to limonite); lower right: intergrowth of K-feldspar and plagioclase with minor biotite, muscovite, magnetite, quartz, and chalcopyrite.
23	370A	anhedral K-feldspar with disseminated subhedral plagioclase grains (the largest plagioclase grain was replaced moderately by K-feldspar), two anhedral grains of hornblende (altered completely to unknown mineral[s]) and a grain of quartz.
24	370A	skeletal grain of garnet intergrown with K-feldspar and accessory plagioclase.
25	370A	hornblende grain (altered completely to unknown mineral) enclosed in K-feldspar with accessory plagioclase and minor, commonly euhedral sphene.
26	371	anhedral to subhedral hornblende and plagioclase (fresh to altered moderately to sericite) and minor opaque and apatite; interstitial K-feldspar with inclusions of plagioclase and one of hornblende; patch of myrmekite along a (K-feldspar)-(K-feldspar) grain contact.
27	371	subhedral plagioclase grains (fresh to altered strongly to sericite, with the largest grain also having a patch of a secondary anhedral epidote grain); cluster of subhedral to anhedral hornblende, three irregular grains of sphene bordering plagioclase; interstitial large grain of K-feldspar with inclusions of plagioclase and an interstitial patch of fine grained quartz.
28	371	to the left: subhedral to euhedral plagioclase grains with interstitial sphene and locally quartz; to the right: interstitial K-feldspar grain with a lensy inclusion of epidote-chlorite (possibly after hornblende) and a patch of opaque-epidote.

List of Photos

Photo	Sample	Description
29	371A	graphic intergrowths of K-feldspar-quartz and plagioclase-quartz; minor elongate flakes of biotite (altered to muscovite and uncertain mineral(s).
30	371A	intergrowth of anhedral K-feldspar, plagioclase, and quartz, with a few patches of myrmekite and trace muscovite in plagioclase along grain contacts with K-feldspar.
31	371A	very fine grained intergrowth of K-feldspar, quartz, and lesser plagioclase, with moderately abundant patches of graphic K-feldspar-quartz intergrowths; trace muscovite (probably after biotite).
32	372	Zone A: intergrowth of anhedral to subhedral plagioclase (fresh to altered slightly to sericite) and hornblende, with disseminated opaque (magnetite) and trace apatite; interstitial patches of K-feldspar (locally with disseminated epidote) and minor quartz.
33	372	Zone A: anhedral to subhedral plagioclase (fresh to altered slightly to locally strongly to sericite) and minor hornblende, opaque, and apatite enclosed in an interstitial megacryst of K-feldspar with finer grained interstitial patches of quartz and a grain of K-feldspar; minor epidote (possibly after plagioclase) in the K-feldspar megacryst.
34	372	Zone B: diopside megacrysts rimmed by hornblende; enclosed in intergrowth of Plagioclase (fresh to altered moderately to sericite-epidote)-hornblende with minor quartz, biotite, and opaque, and trace apatite.
35	372	Zone B: large grain of biotite (altered completely to chlorite-(sphene) surrounded by a variable intergrowth of hornblende, plagioclase (altered slightly to strongly to epidote and slightly to moderately to sericite), and epidote, with minor sphene and opaque (probably mainly ilmenite).
36	373	plagioclase megacrysts (altered moderately to sericite) in a variable groundmass of plagioclase (altered to sericite) and minor to abundant K-feldspar, muscovite, and/or epidote; replacement patches of K-feldspar-quartz including one K-feldspar megacryst; disseminated opaque (probably magnetite).
37	373	top left: plagioclase (altered slightly to sericite) with a large grain of K-feldspar; middle: coarse K-feldspar grains with scattered grains and clusters of biotite (in part altered to pseudomorphic chlorite) and a few patches of epidote, lesser very fine grained quartz; lower right: pyrite-epidote band; bottom right: plagioclase-K-feldspar-epidote-pyrite.
38	373	to the left: altered host rock: plagioclase-K-feldspar with coarser grained patches of K-feldspar and of quartz and a grain of pyrite; in the middle: vein of epidote-pyrite (altered slightly on fractures to hematite)-quartz; to the right: cavity in the core of the vein.

190401 alton blocks (1)





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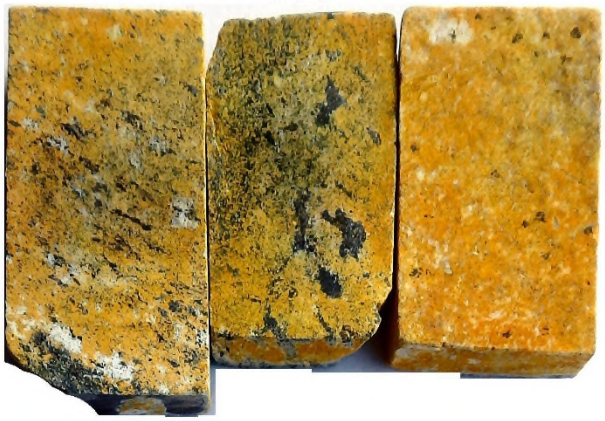

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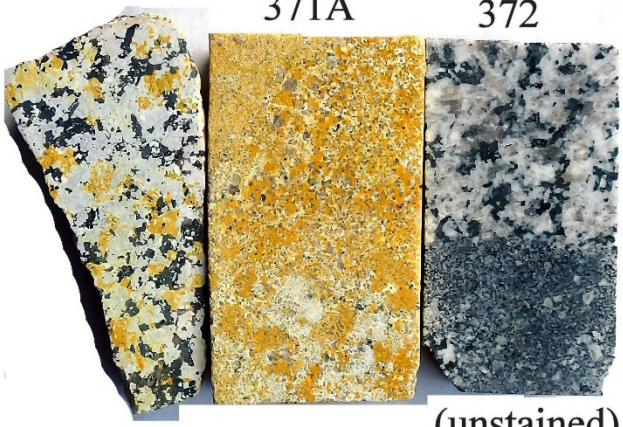

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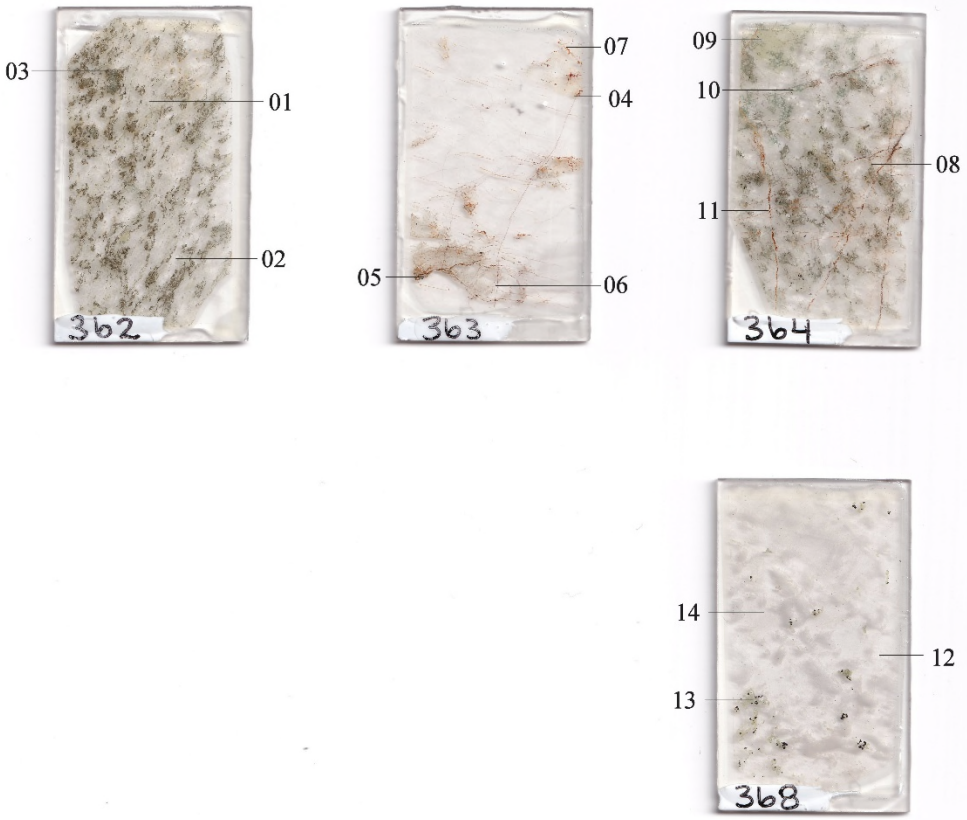

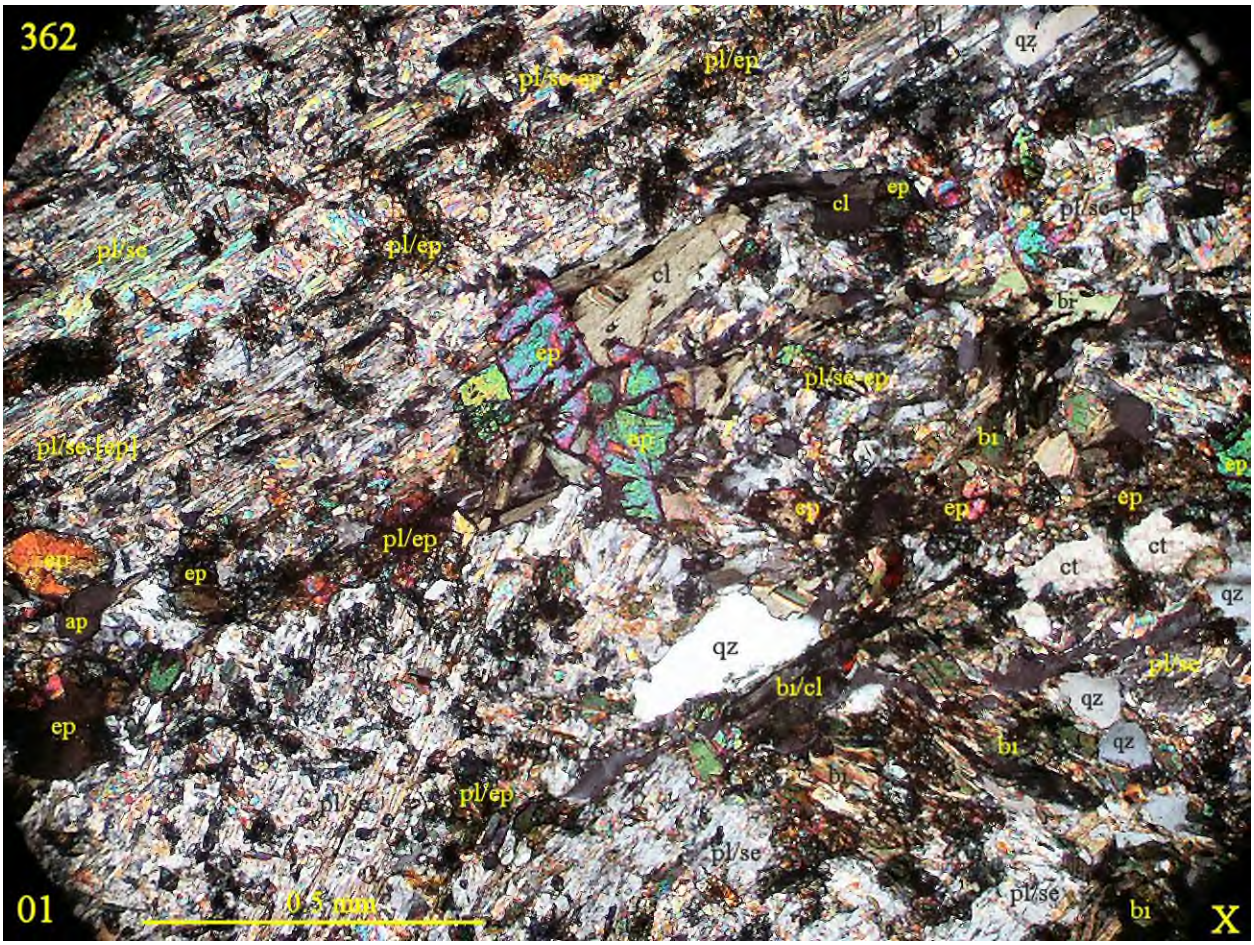
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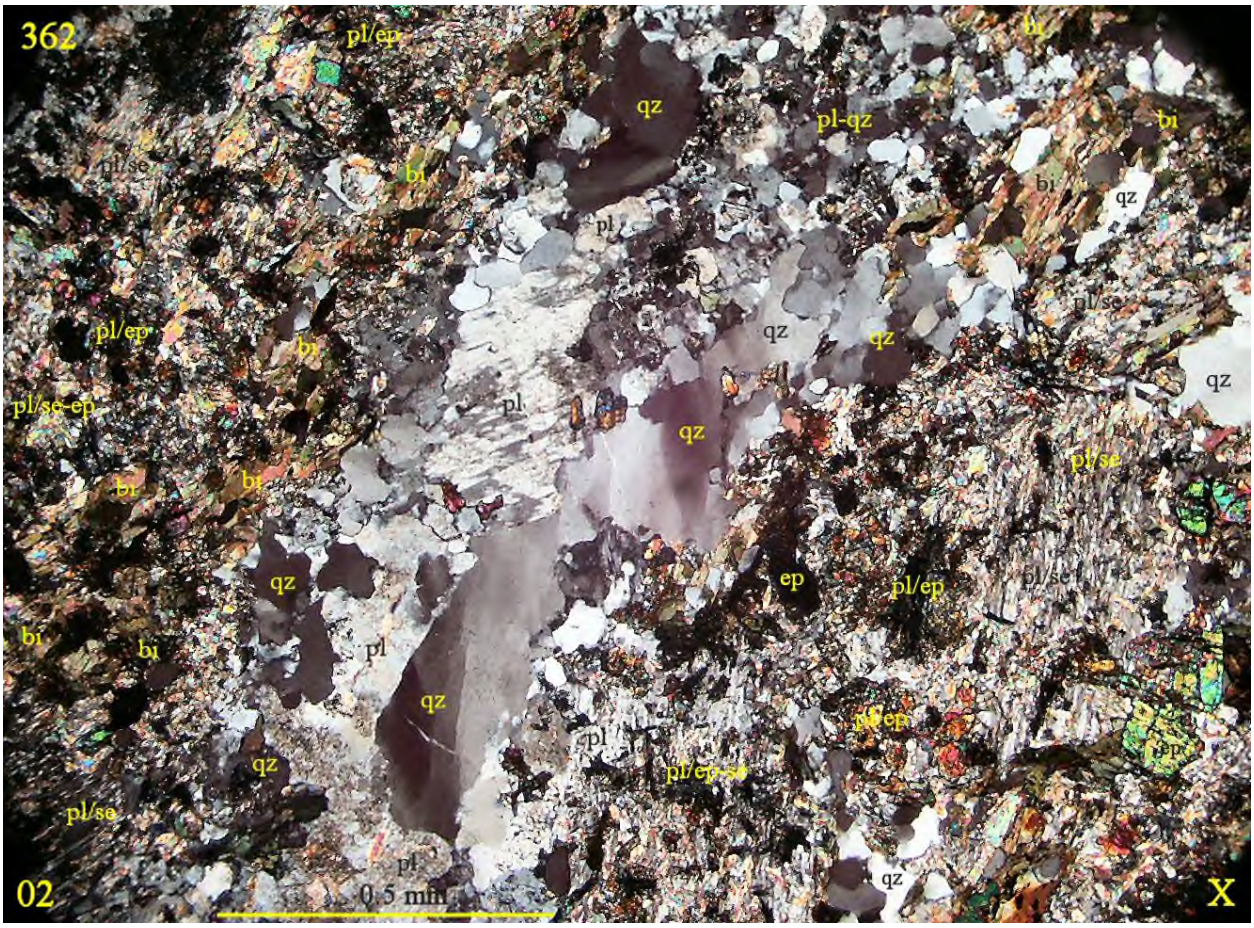
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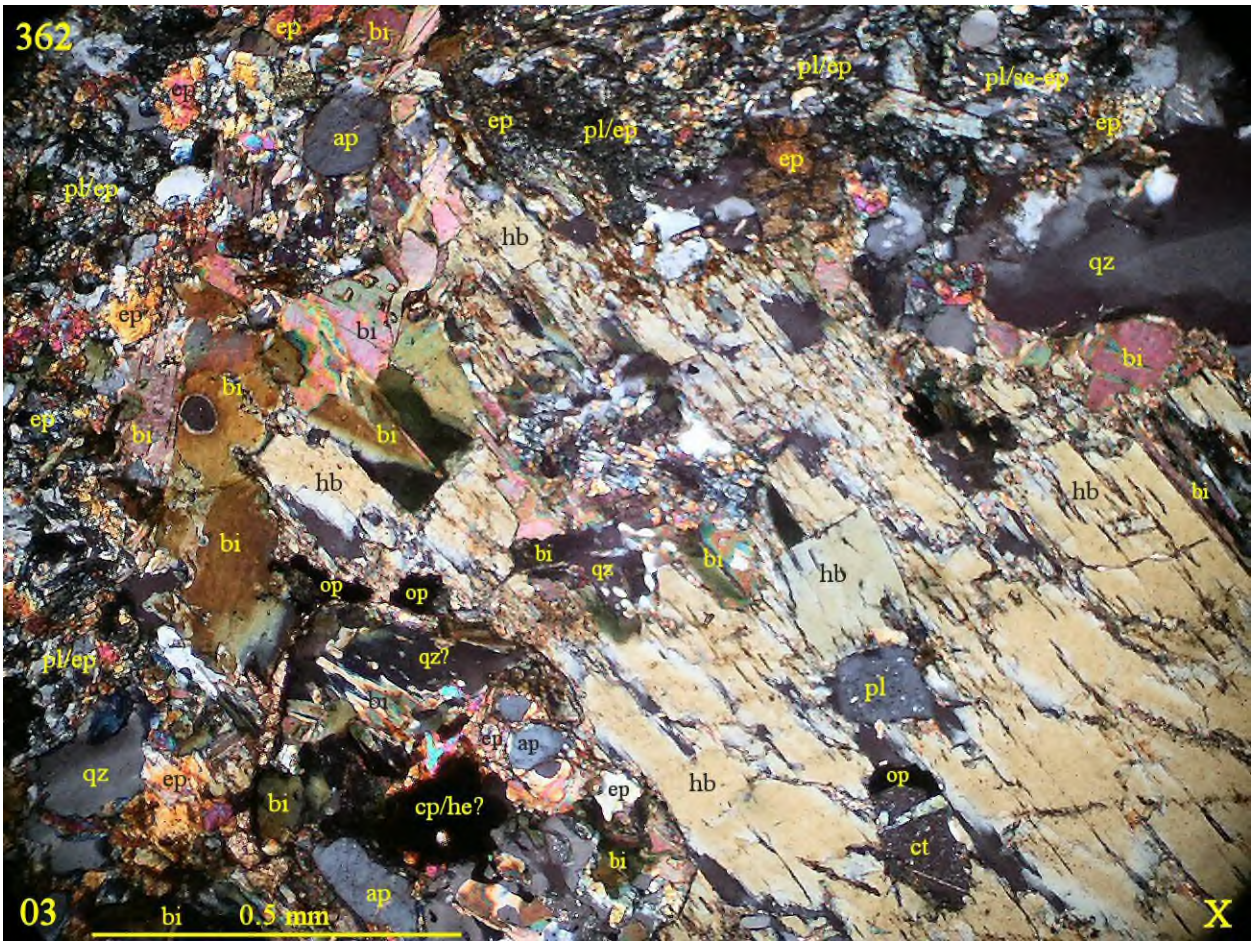
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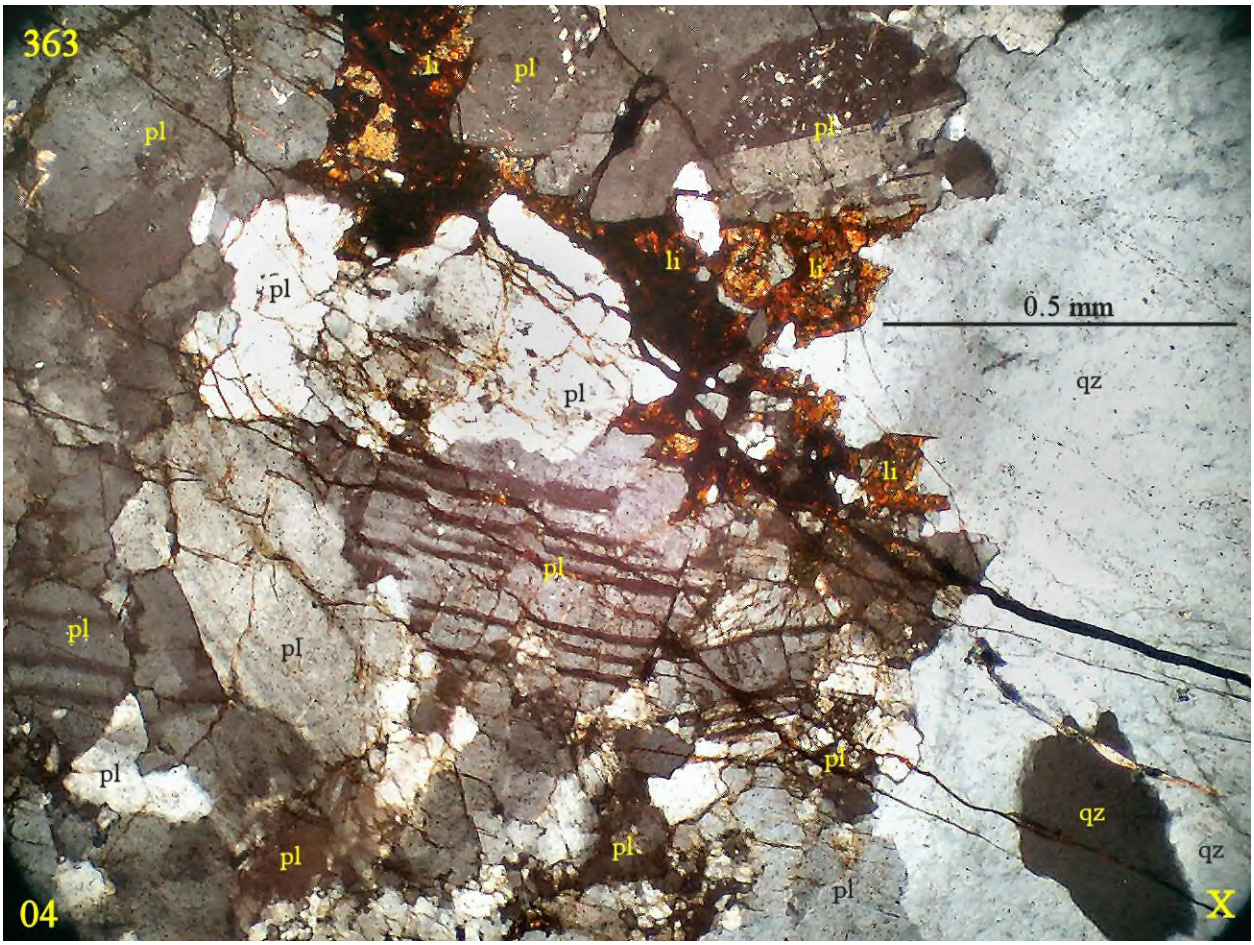
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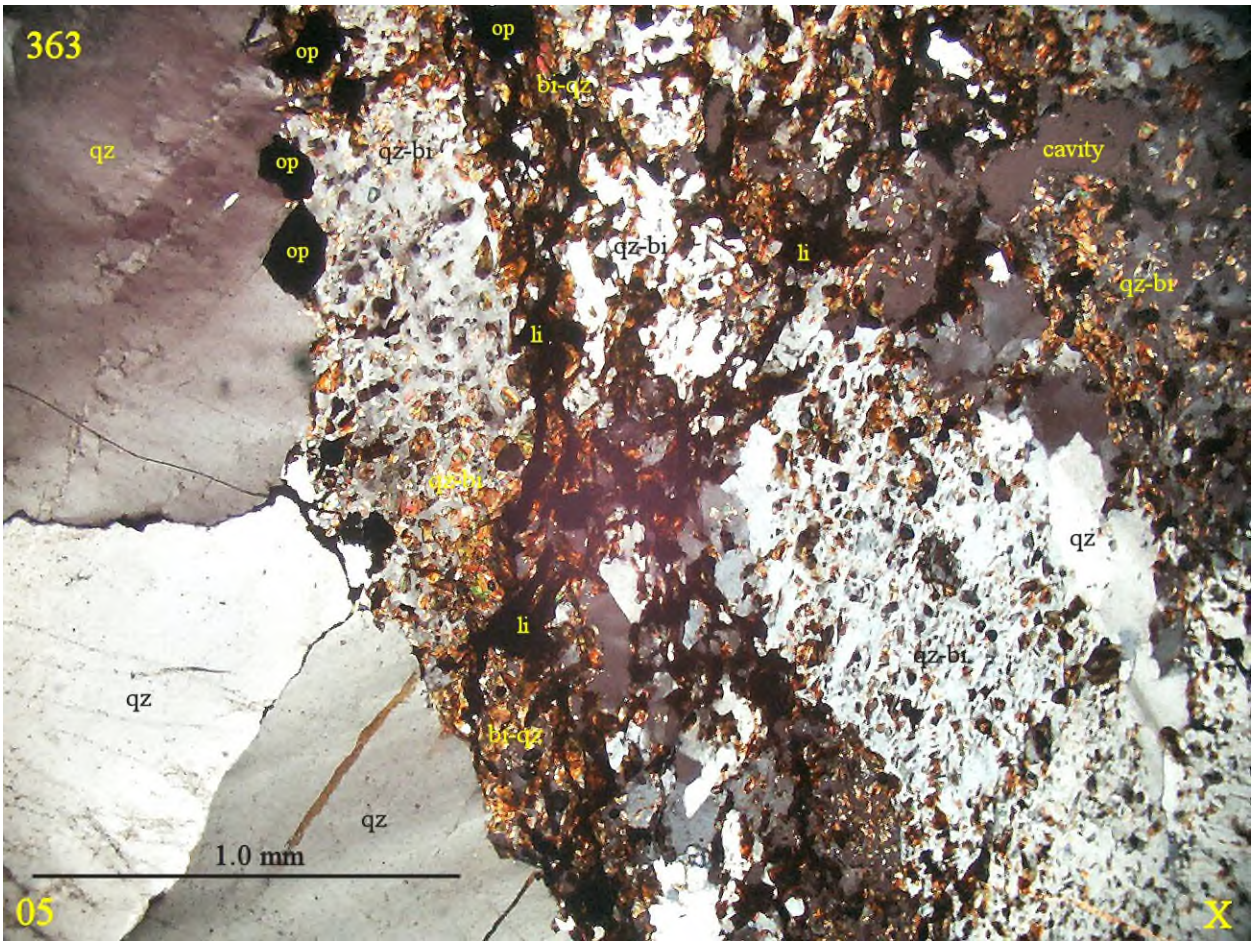
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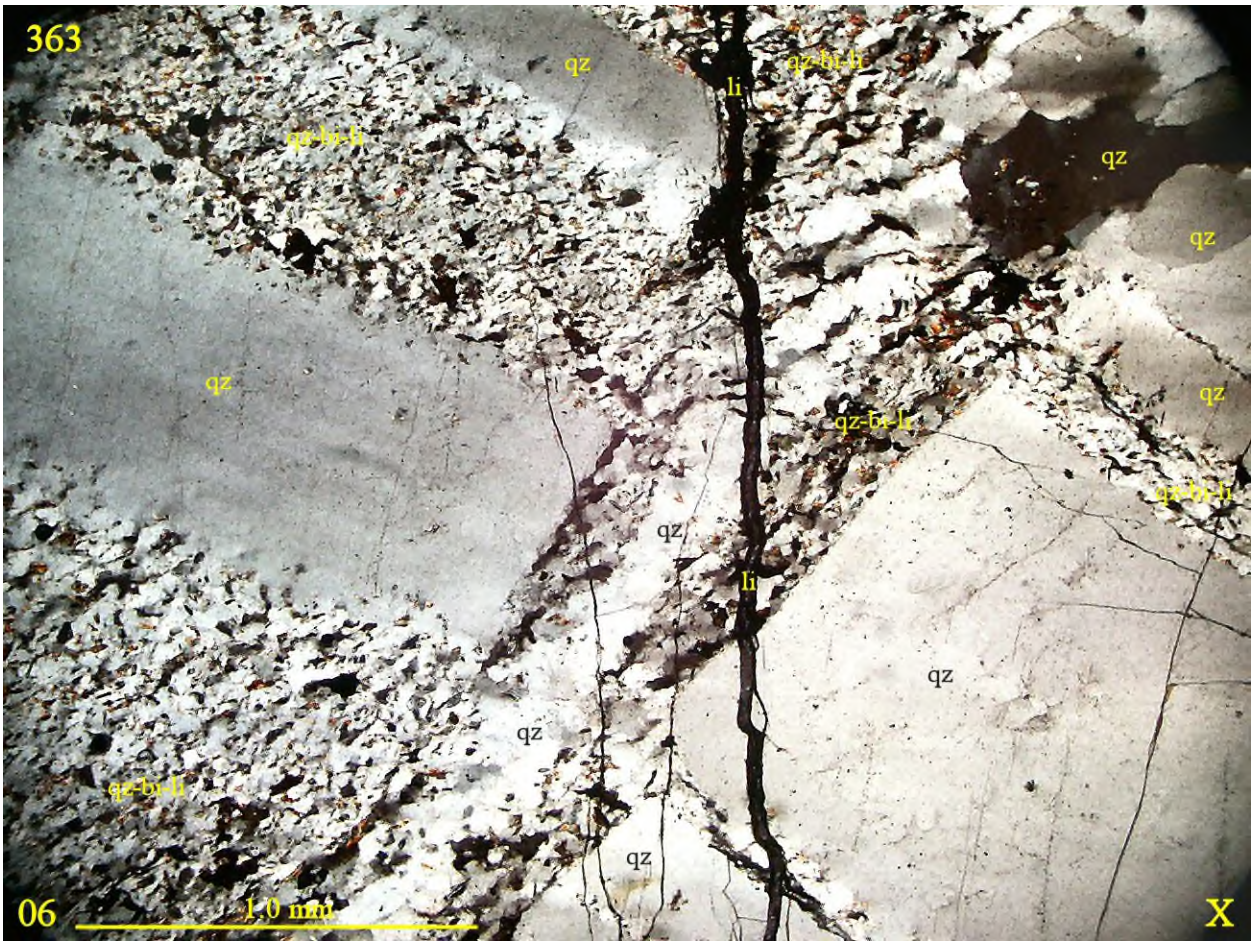
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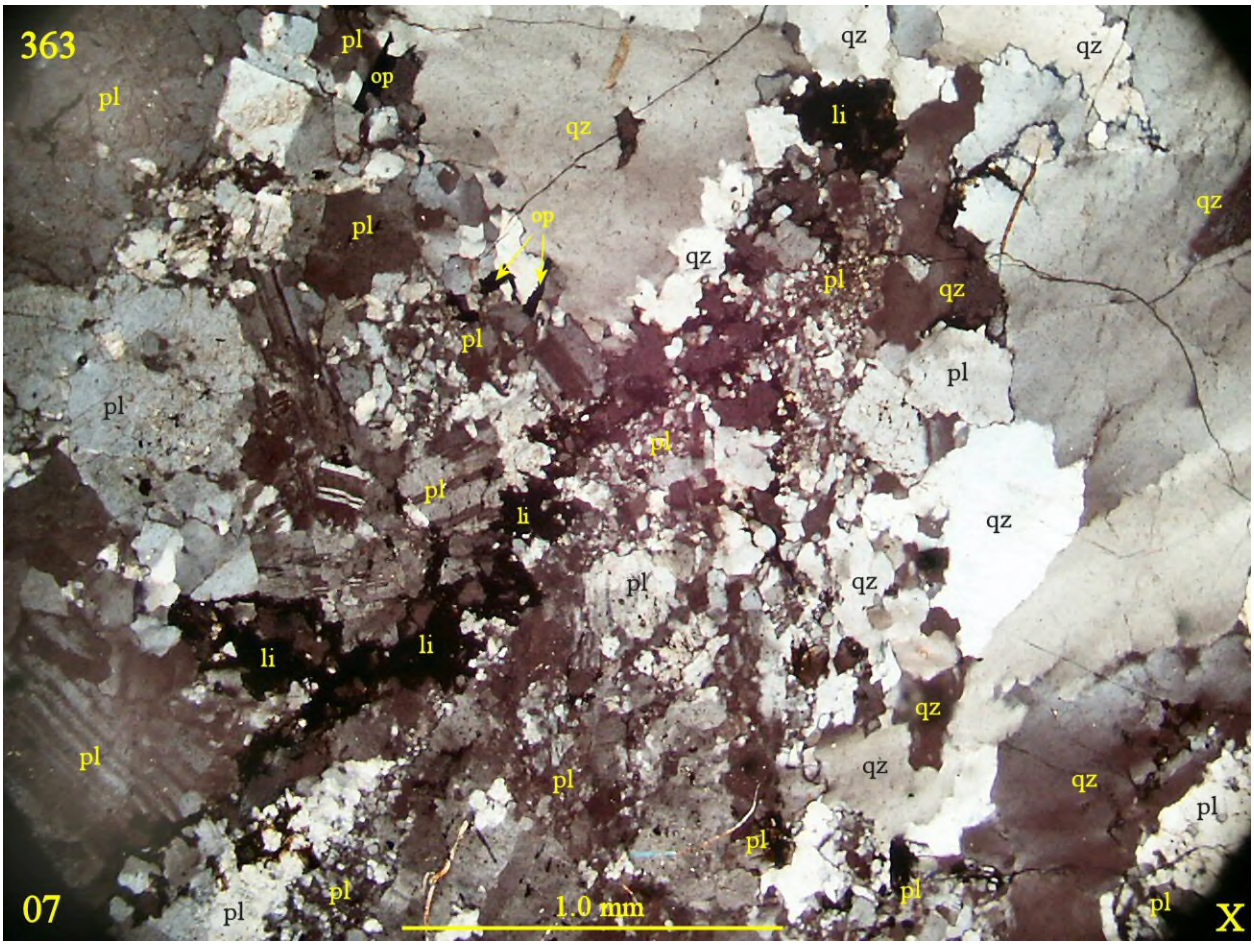
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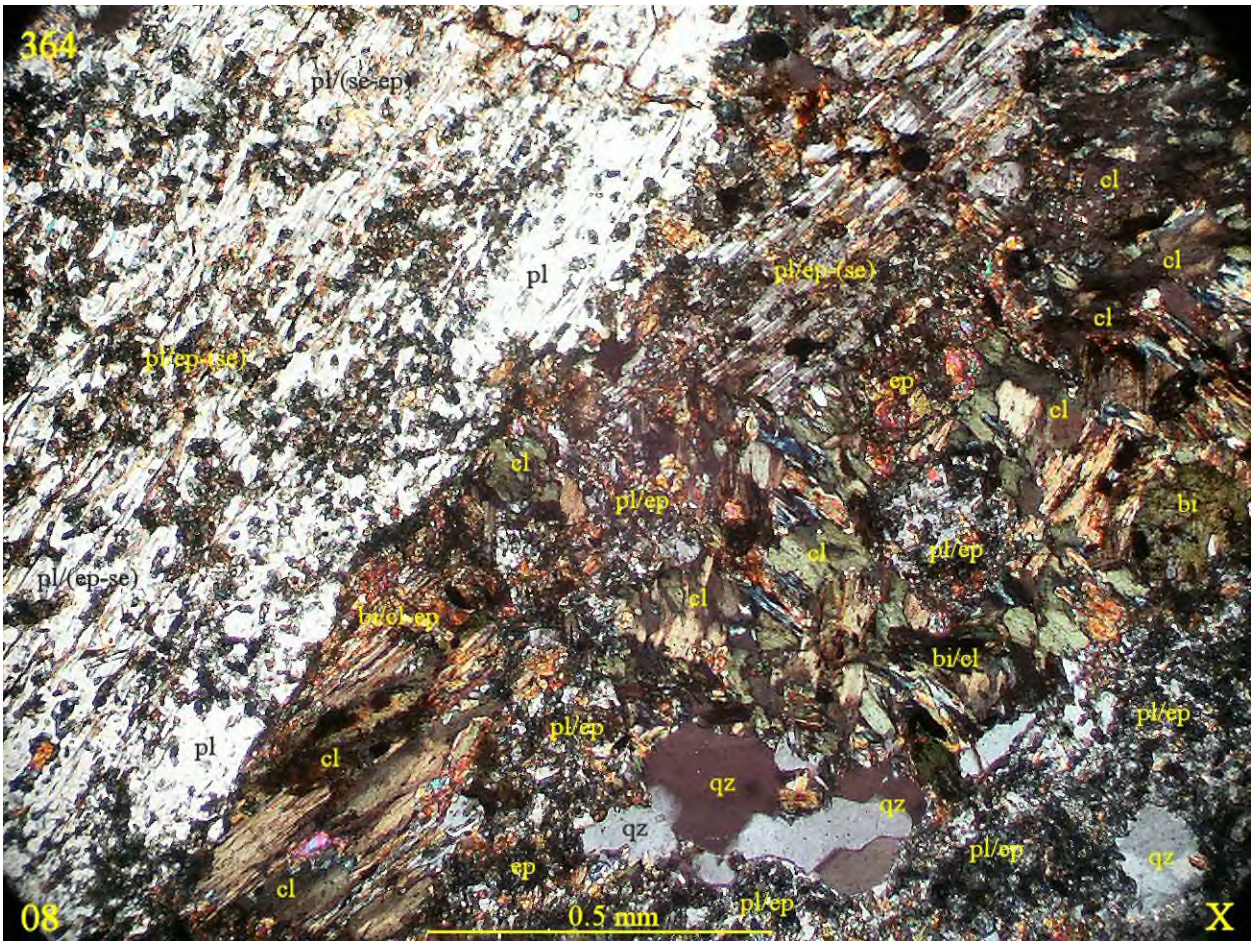
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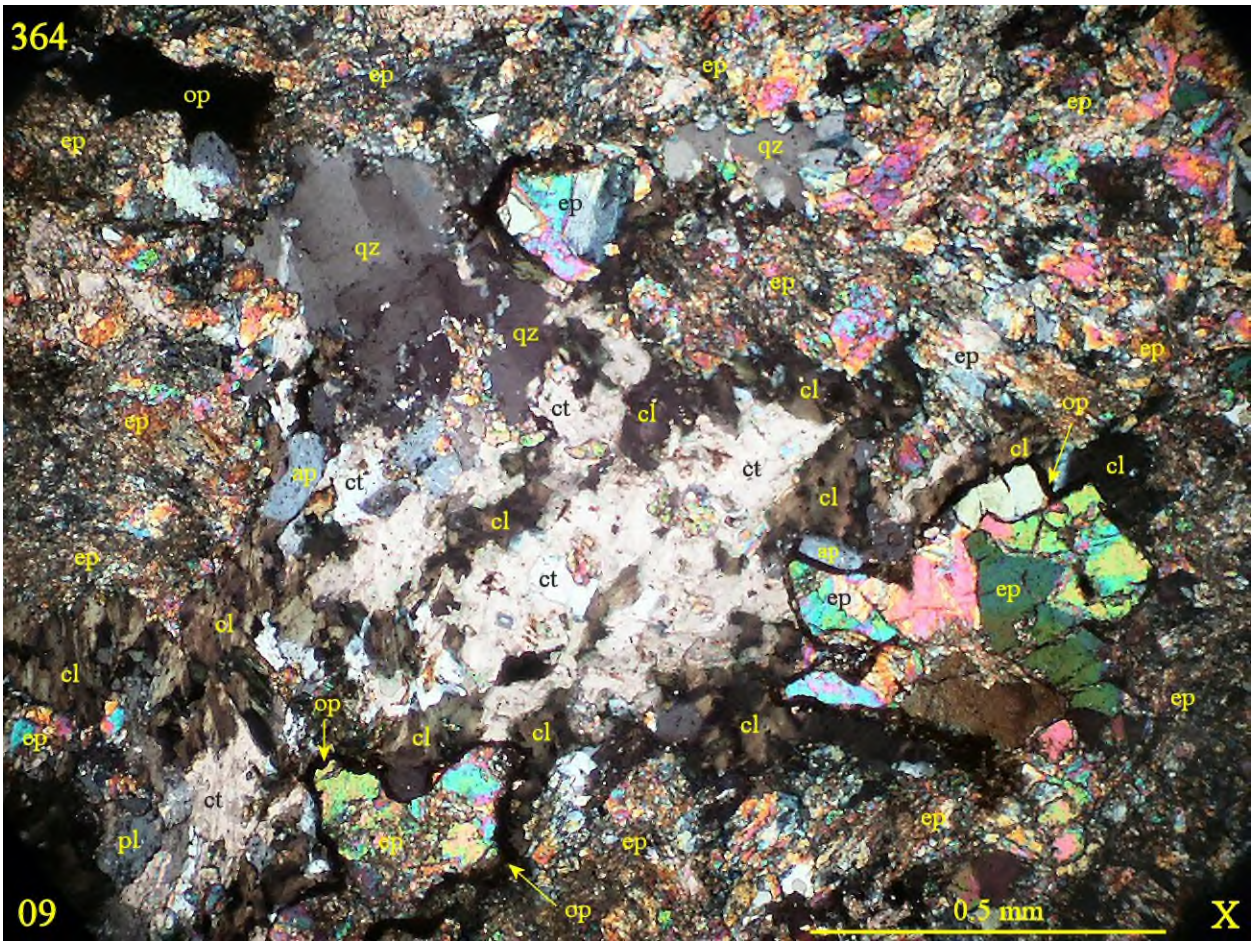
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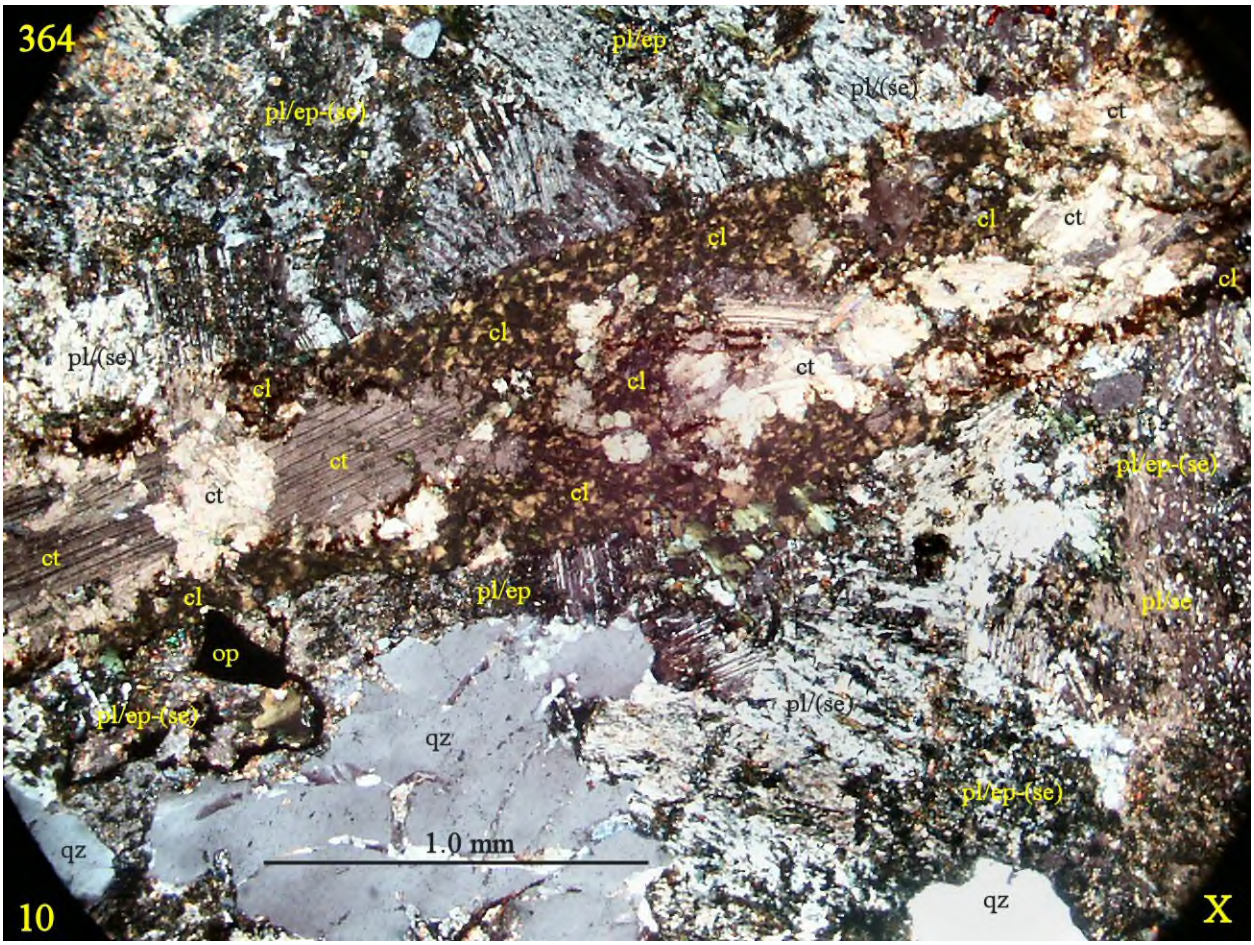
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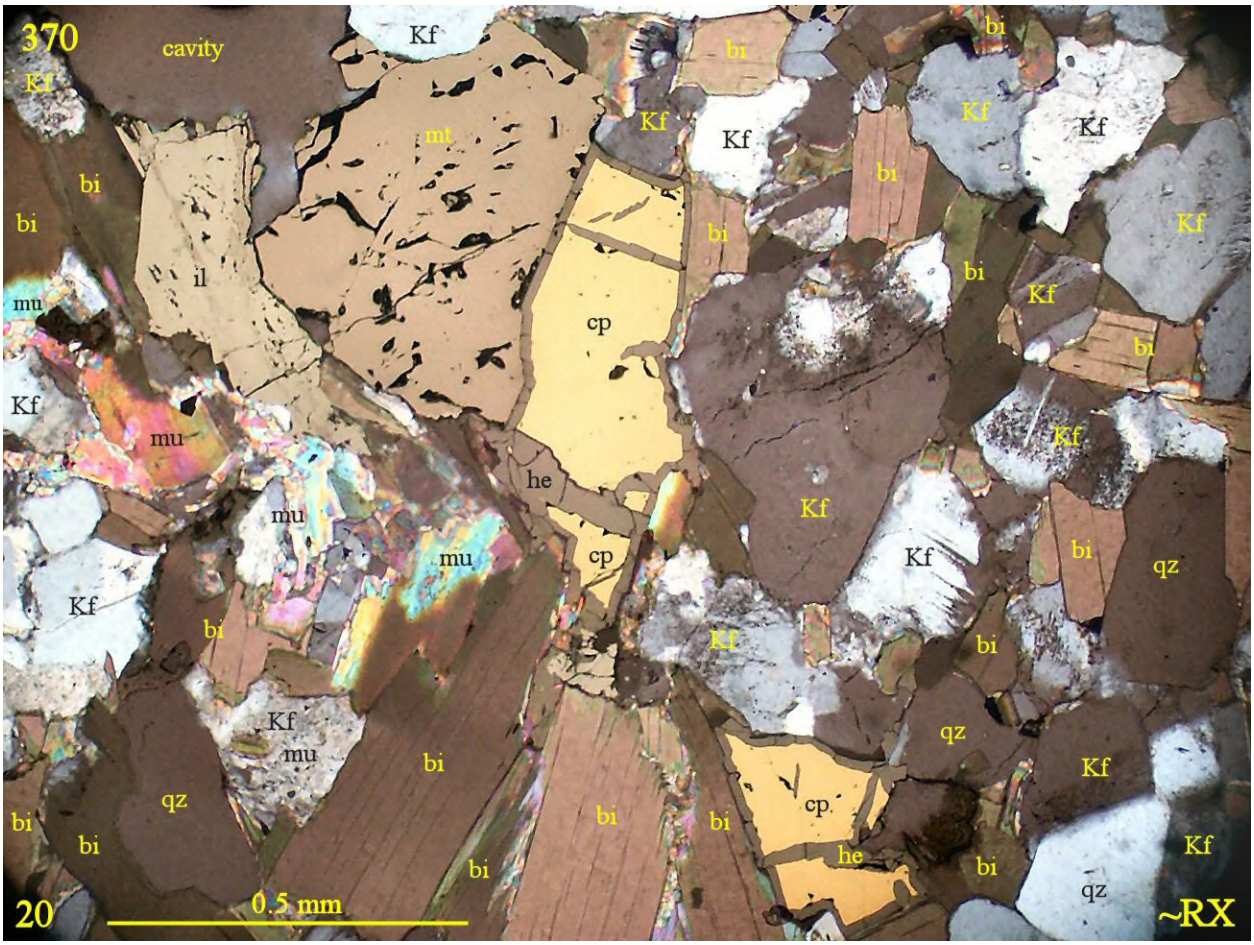
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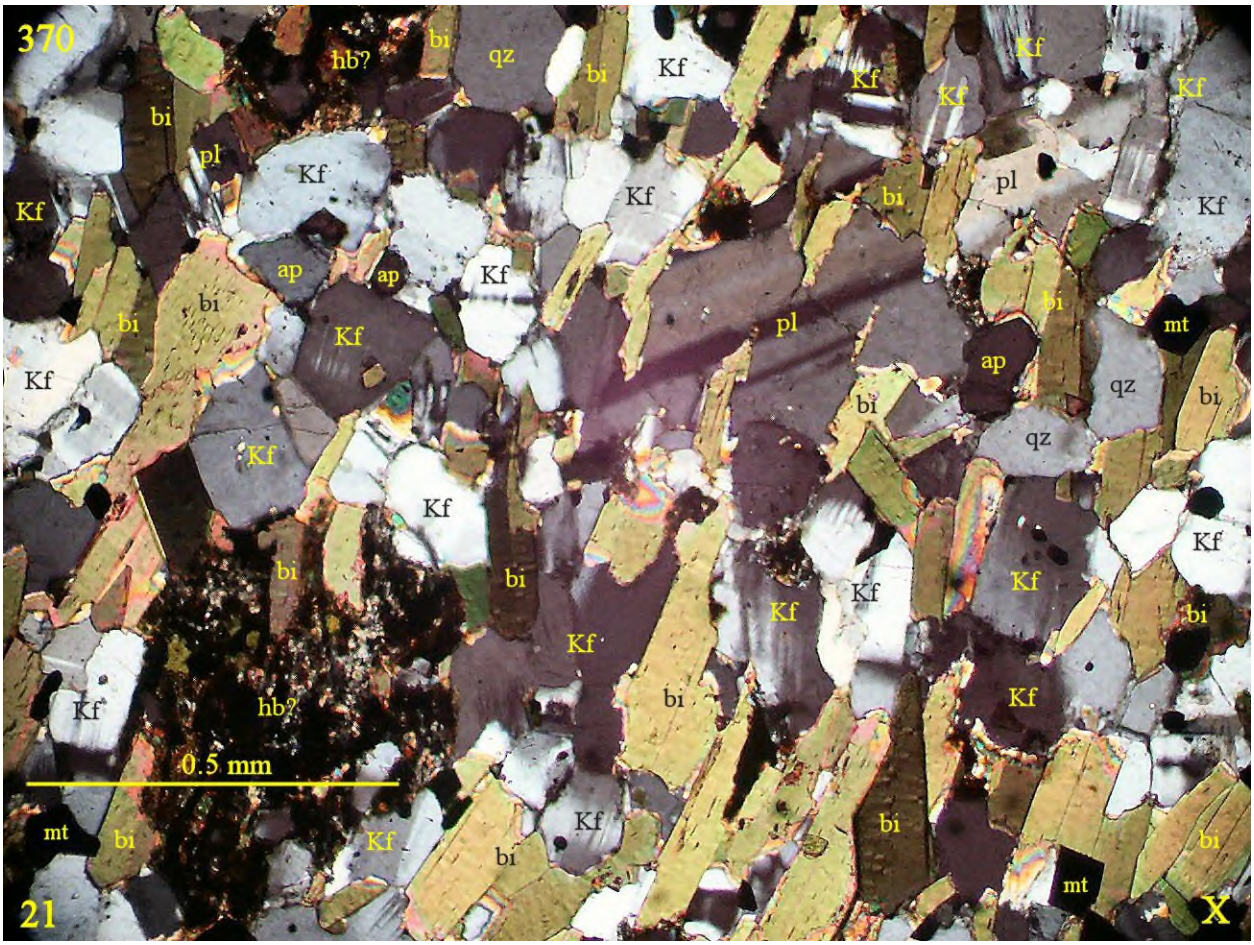
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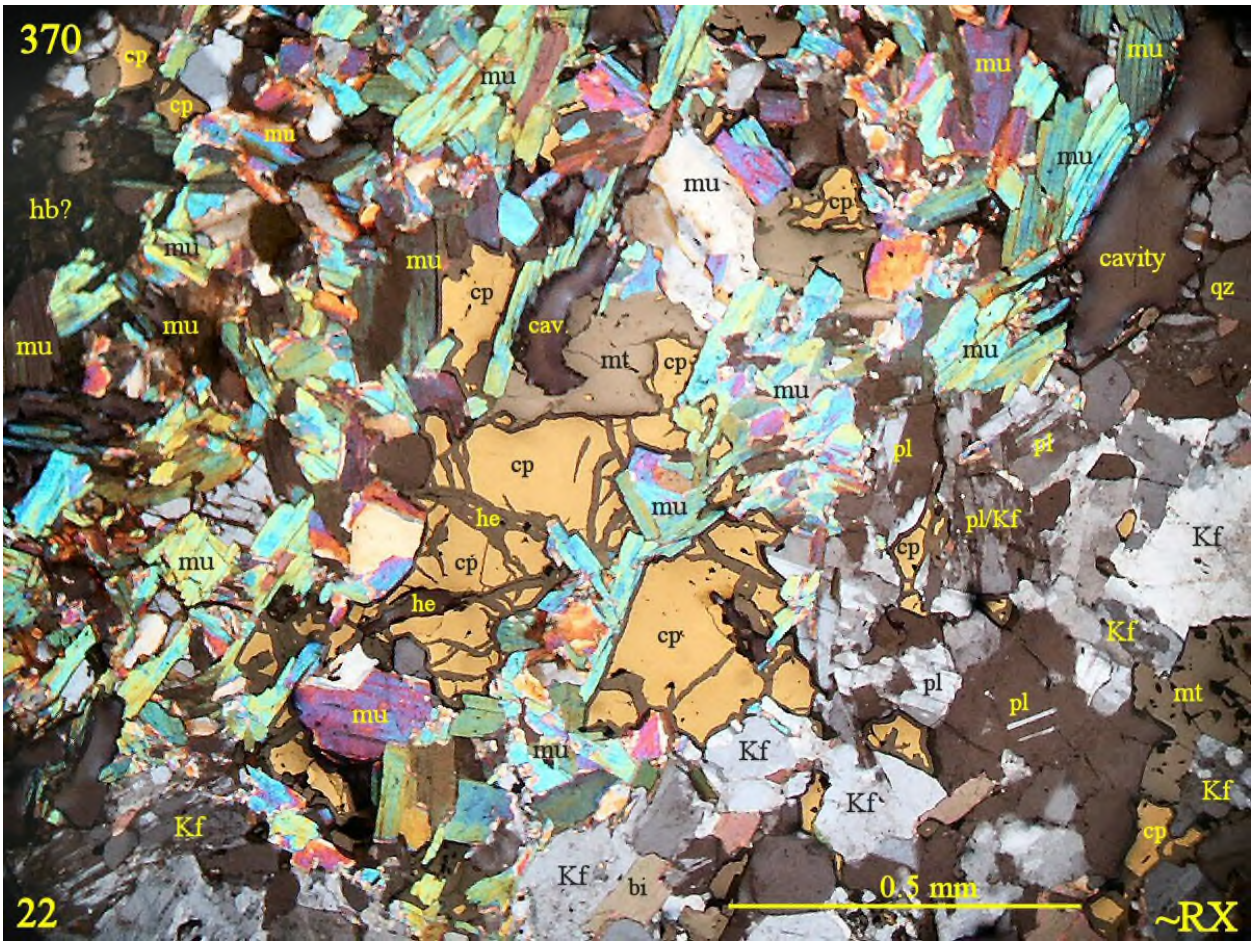
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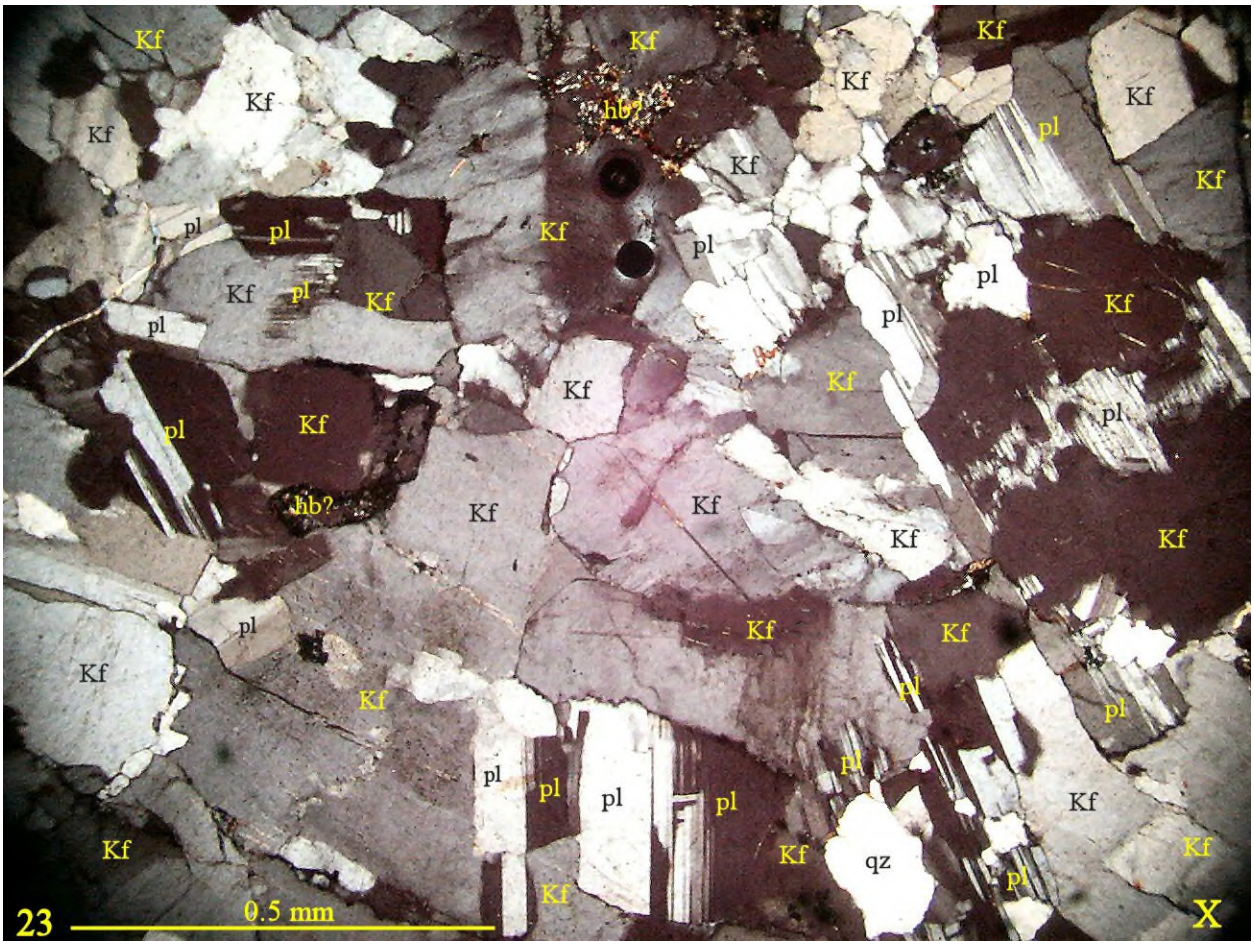
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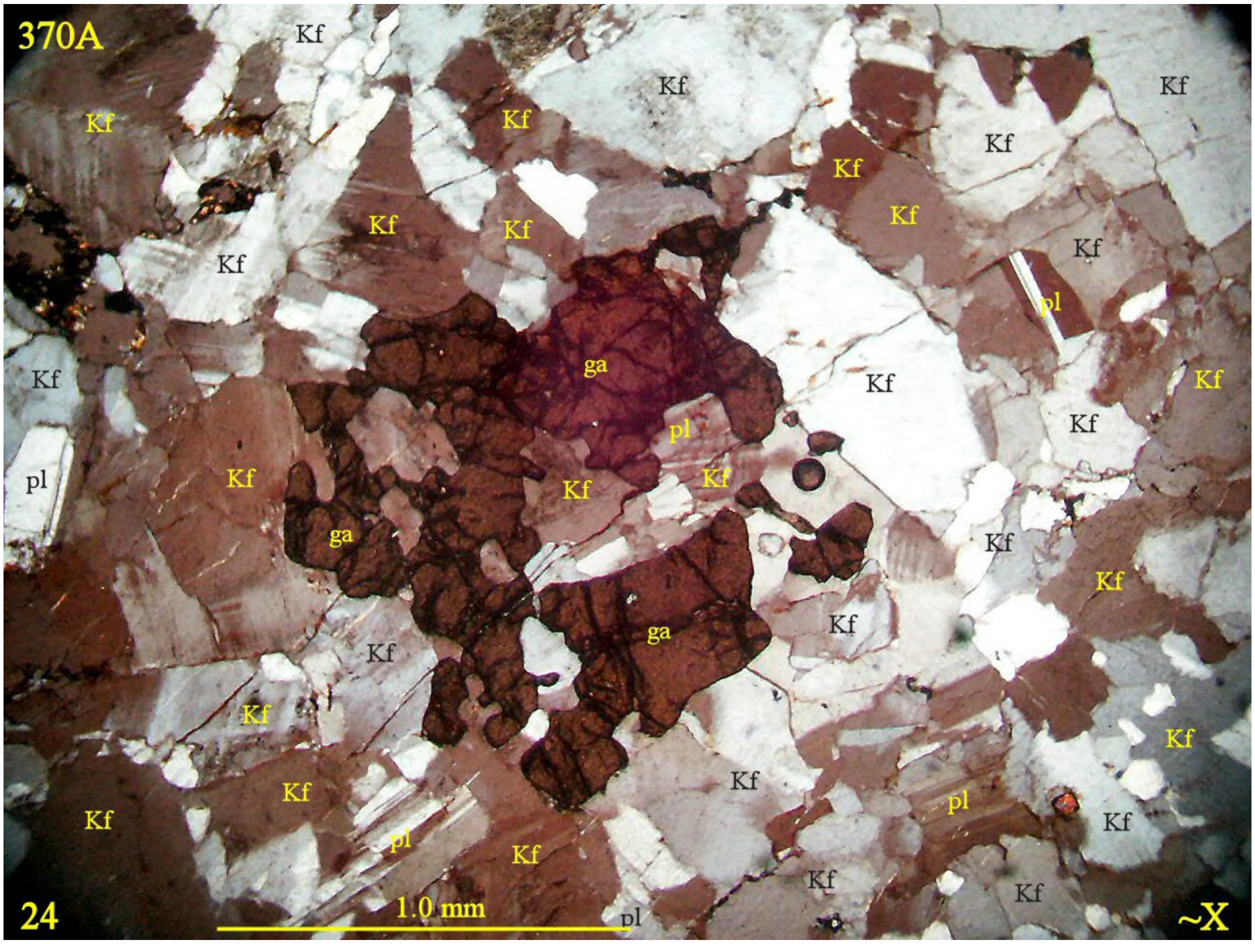
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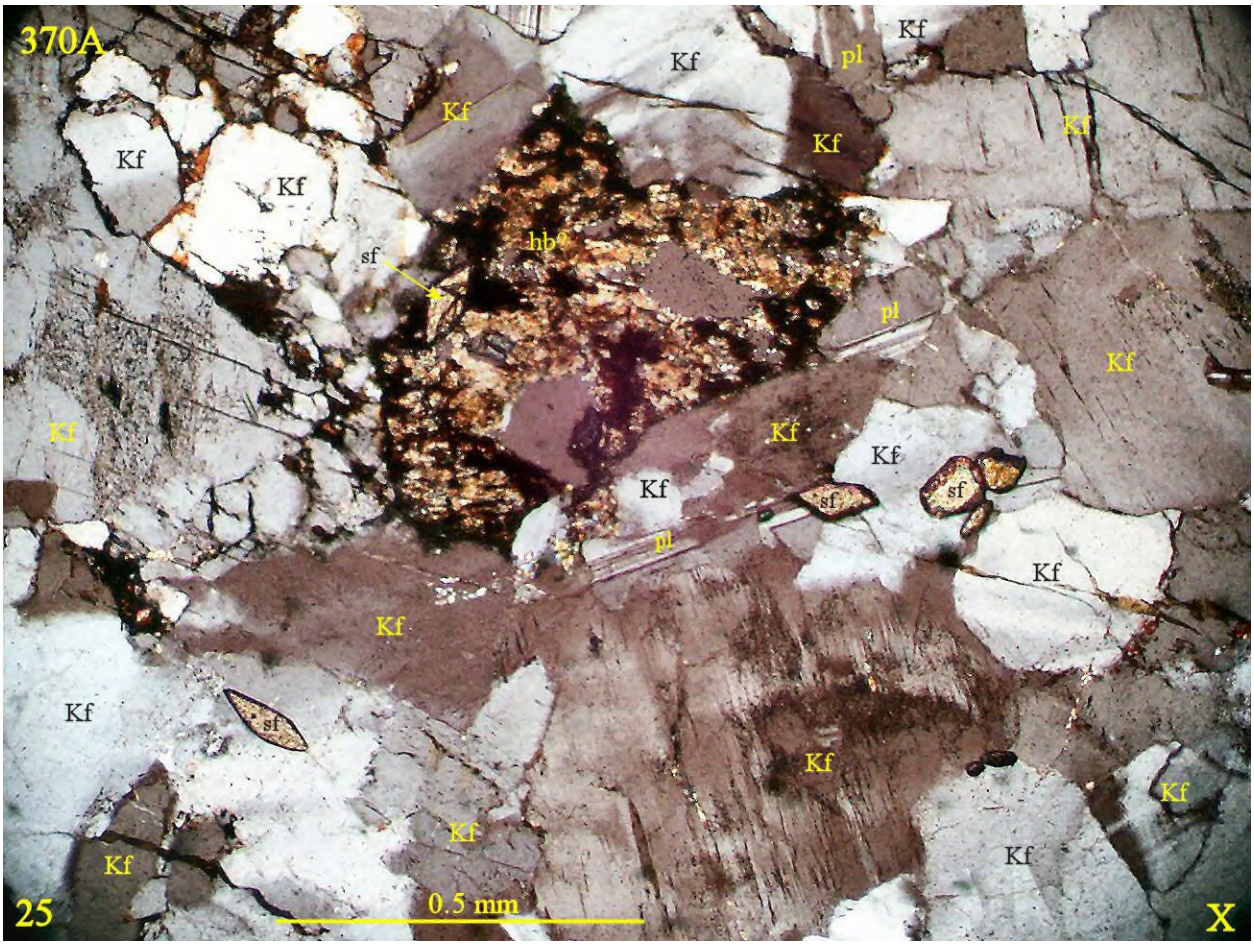
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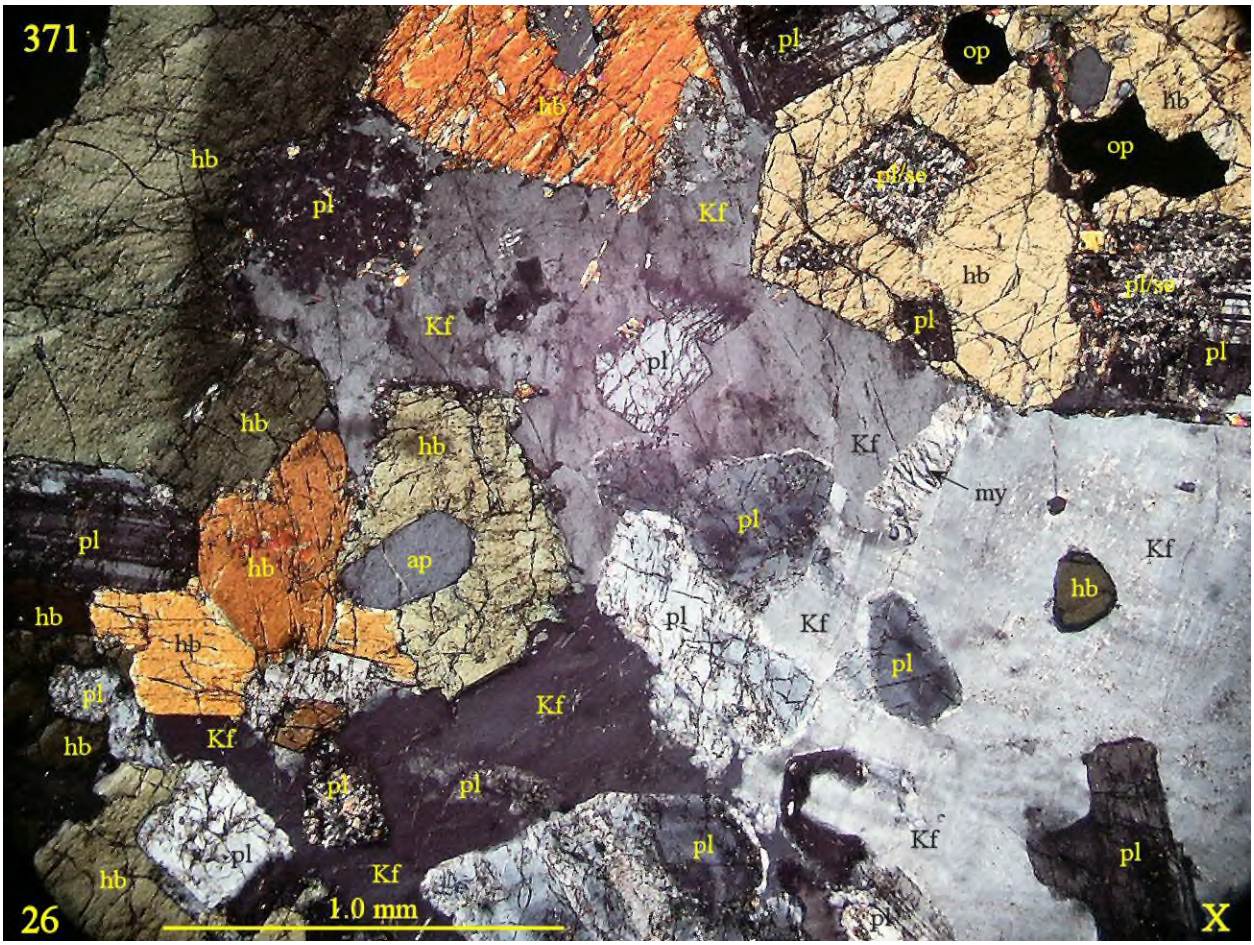
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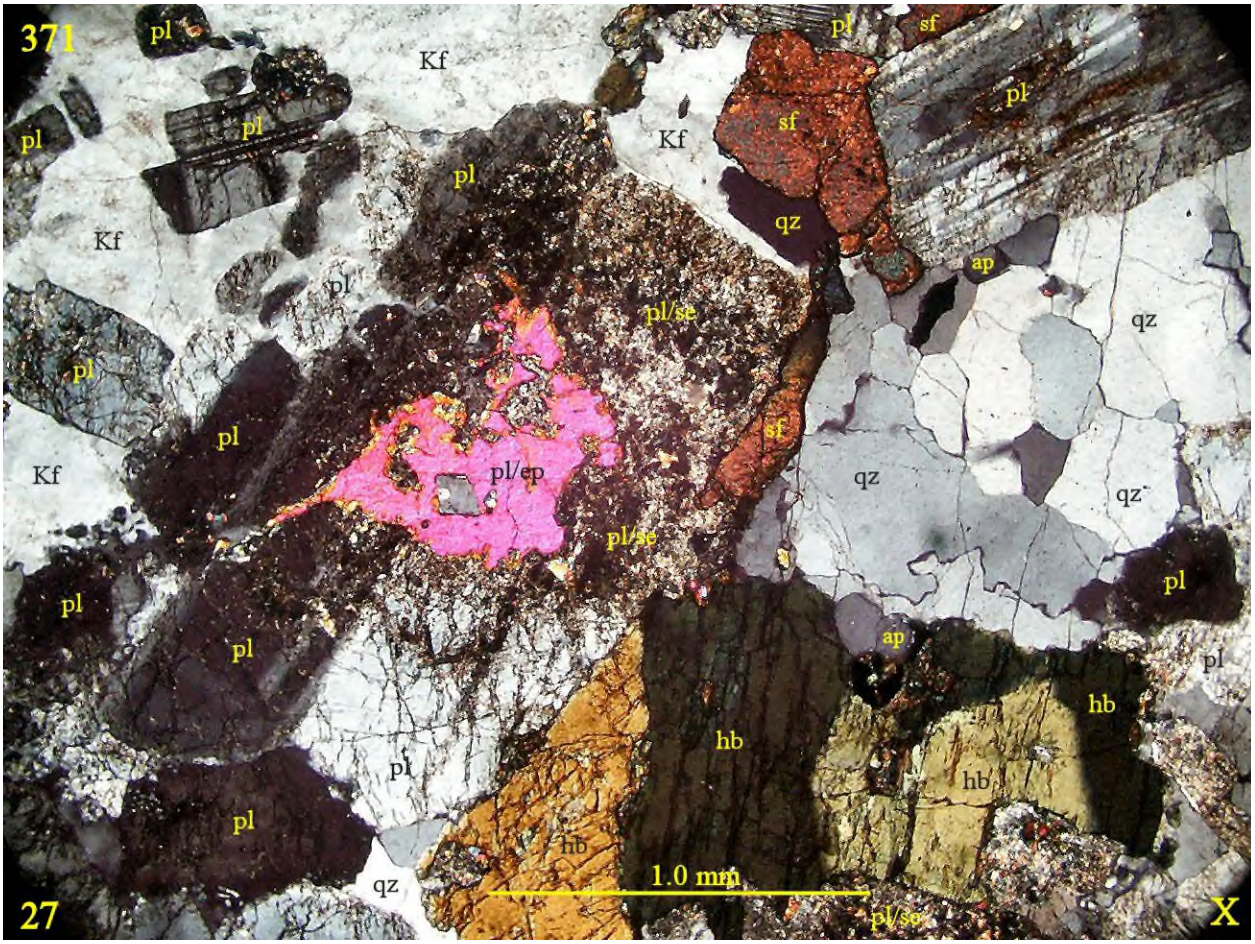
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pl
sf
Kf
pl/ep
qz
qz
pl/se
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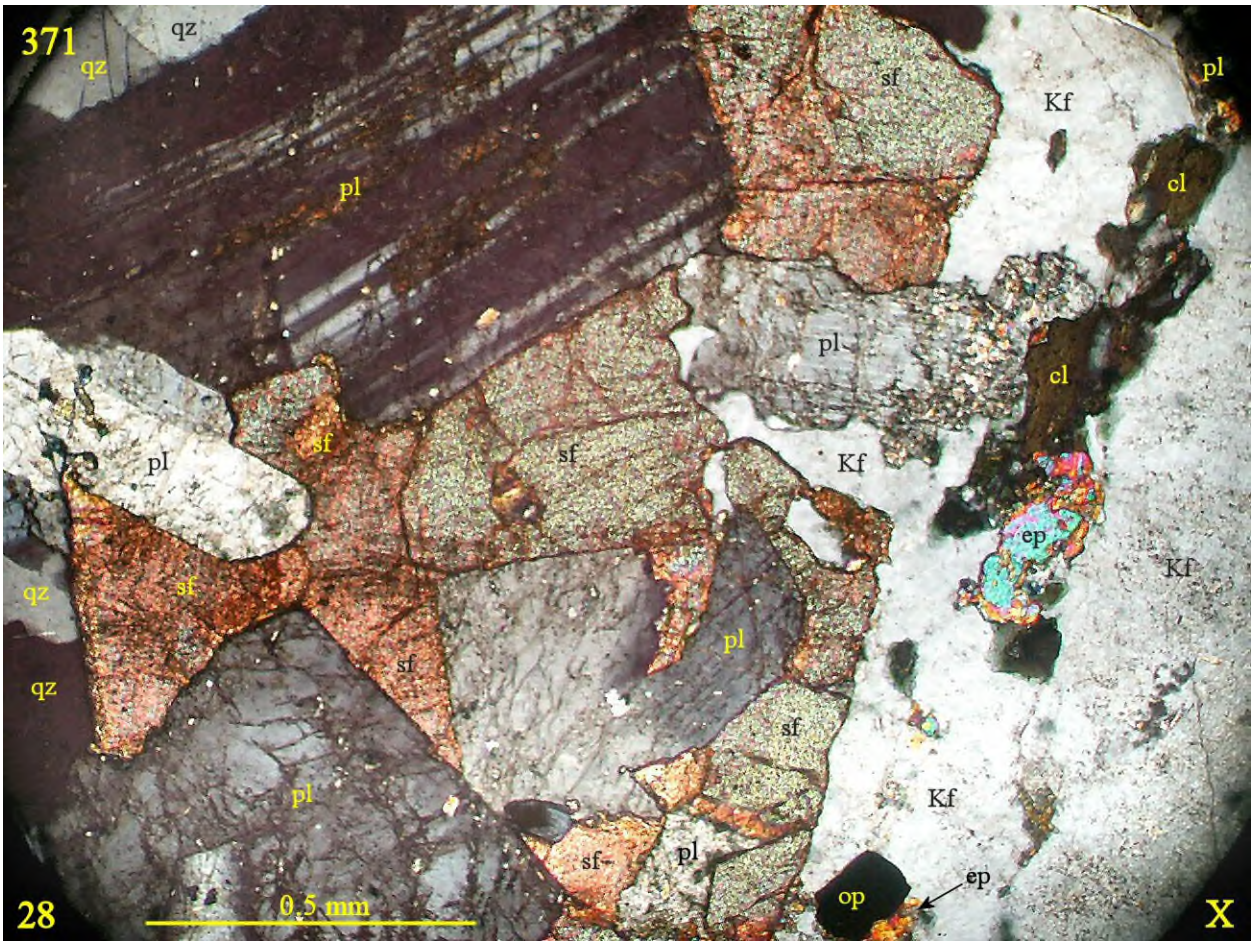
pl
pl
ap
pl
hb
hb
hb
pl
pl
hb
qz
1.0 mm
27
pl/se
X


371
qz
qz
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sf
Kf
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sf
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Kf
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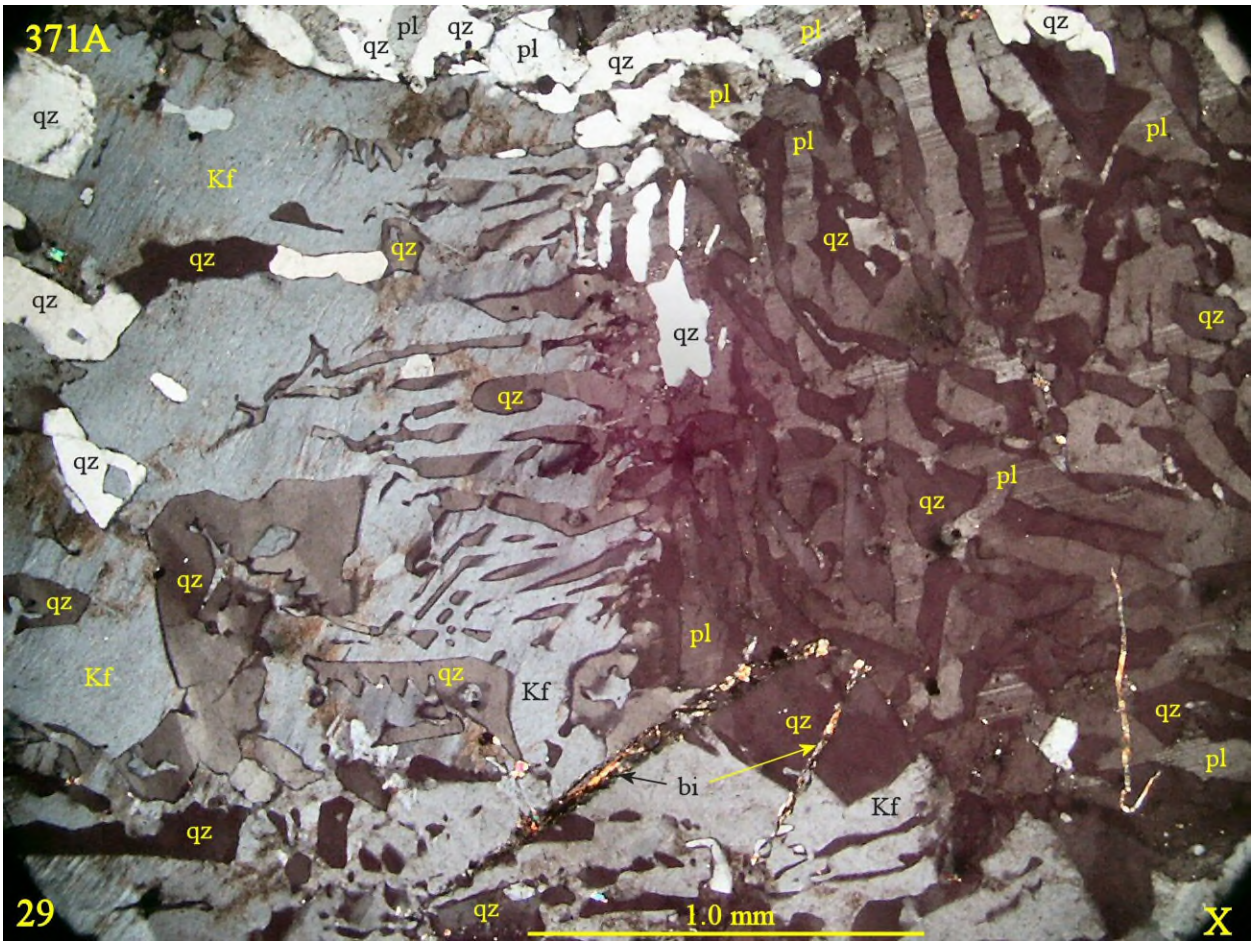
qz
sf
sf
pl
Kf
sf
pl
ep
op
28
0.5 mm
X


371A
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Kf
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qz
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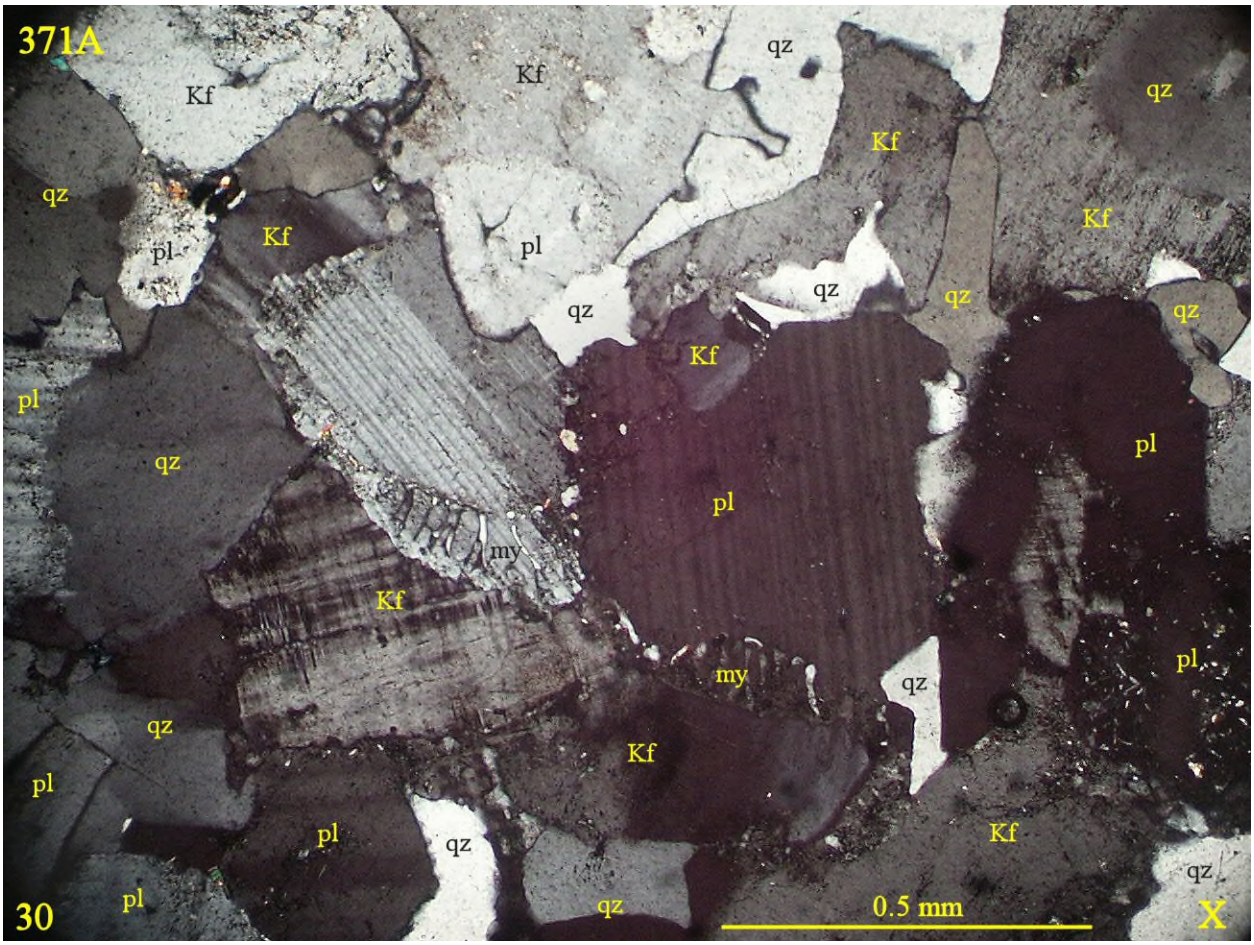
qz
qz
qz
pl
qz
qz
qz
pl
Kf
qz
Kf
qz
pl
qz
bi
Kf
qz
pl
qz
29
1.0 mm
X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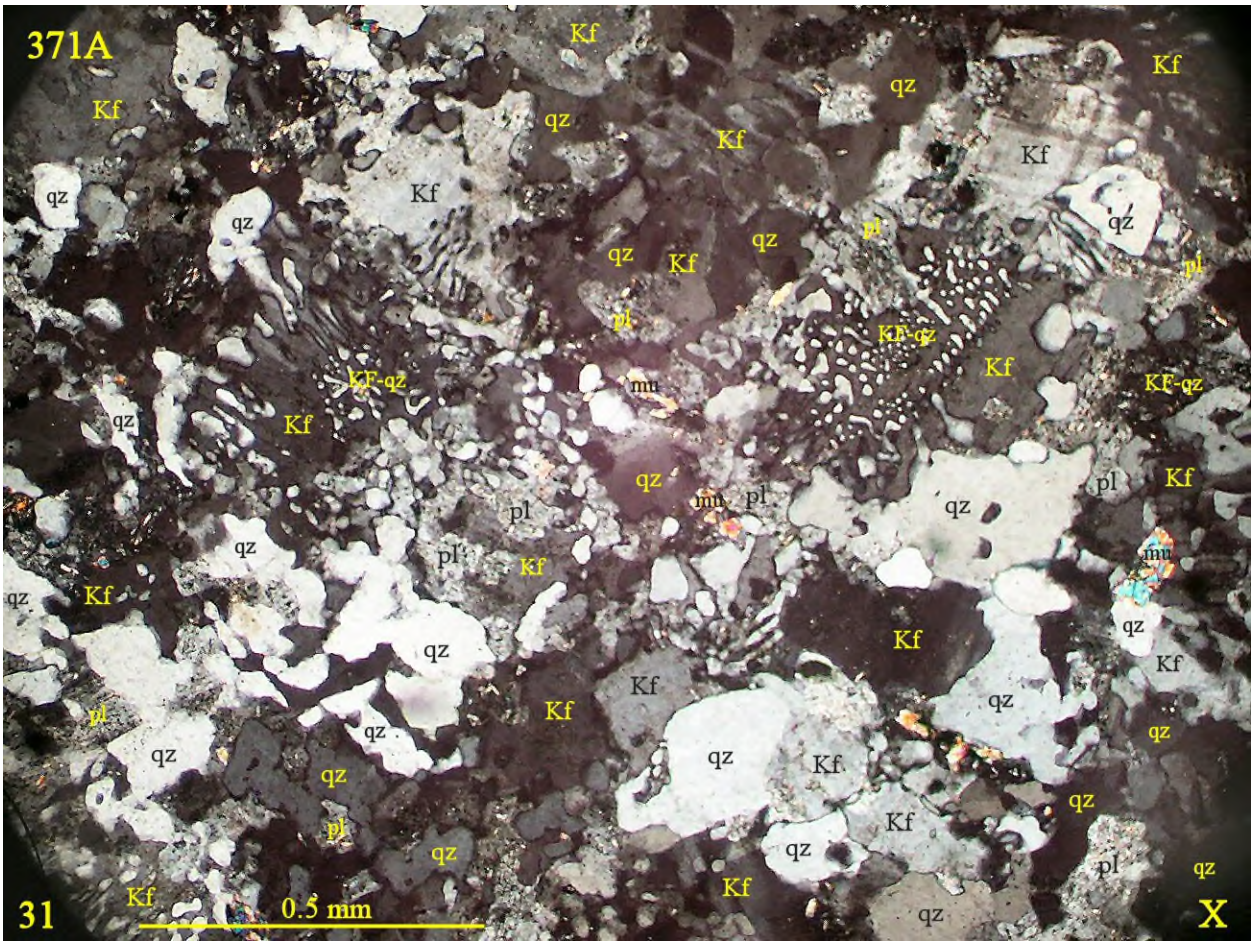
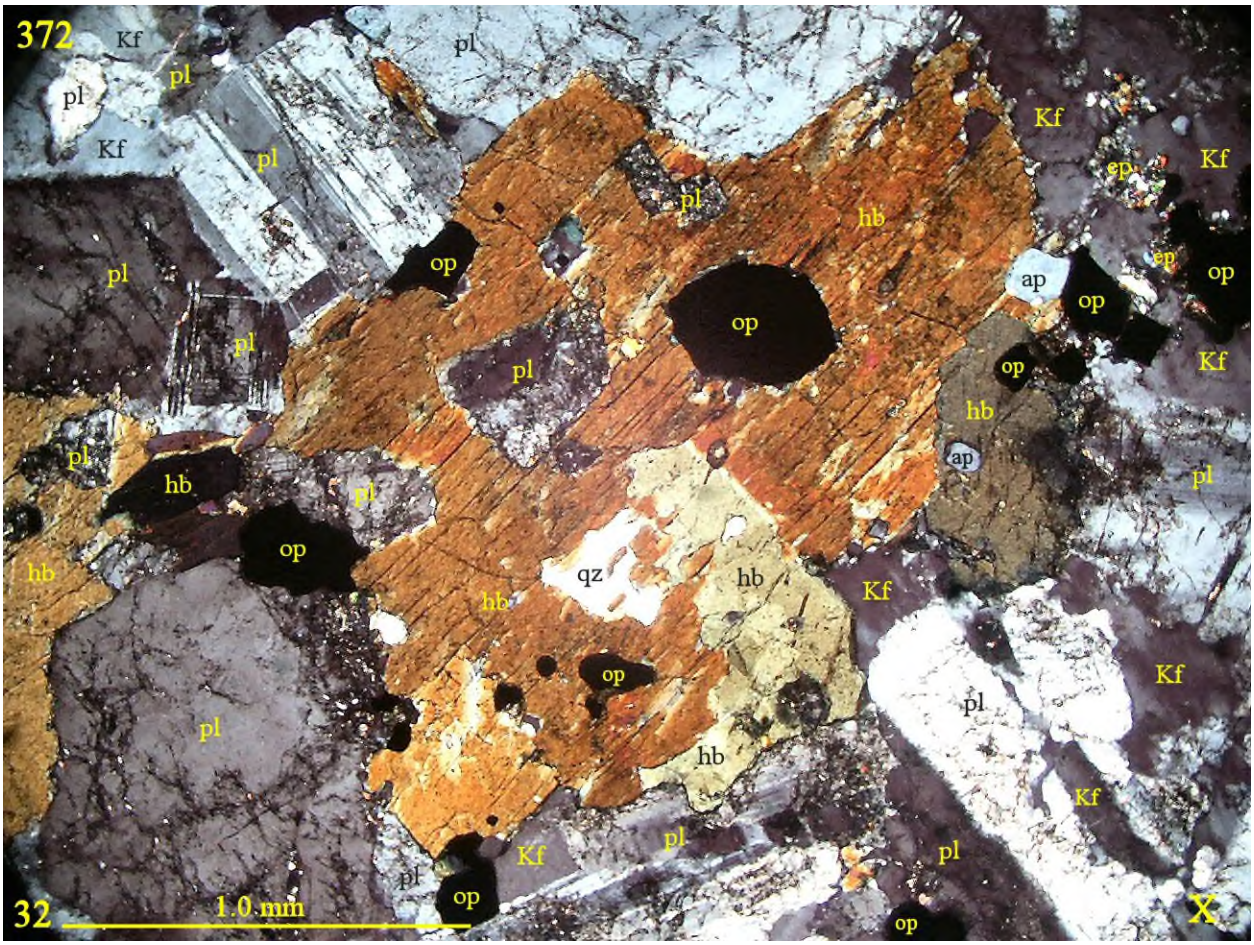
Kf
pl
qz
pl
my
Kf
pl
my
qz
pl
qz
Kf
pl
pl
qz
Kf
qz
30
0.5 mm
X


371A
Kf
qz
pl
mu
Kf-qz
31
0.5 mm
X


372
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Kf
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op
qz
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op
pl
pl
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Kf
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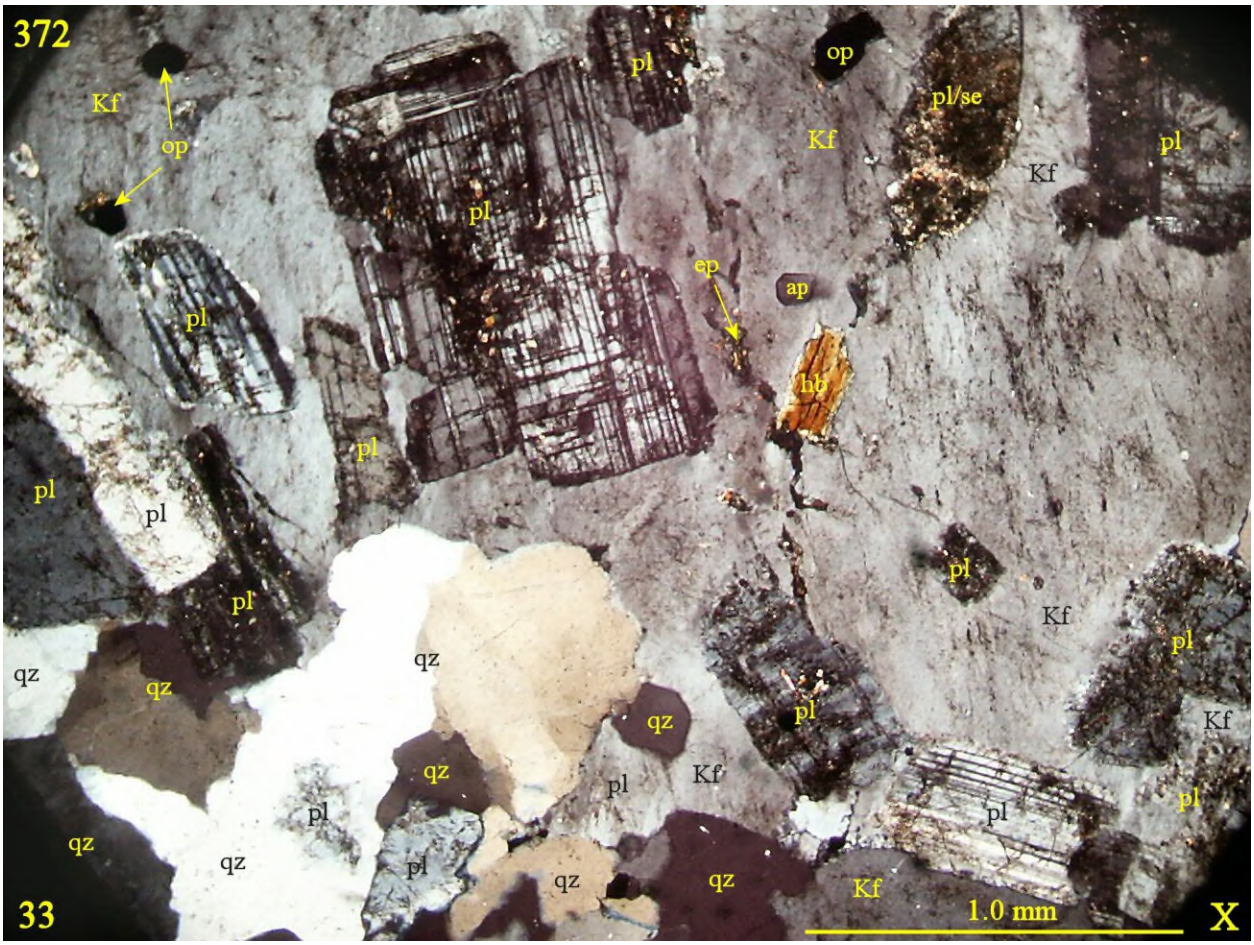
ep
op
ap
op
op
Kf
hb
ap
pl
Kf
Kf
pl
hb
Kf
pl
pl
op
1.0 mm
32
X


372
Kf
op
pl
op
pl/se
Kf
pl
Kf
pl
ep
ap
pl
hb
pl
pl
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Kf
pl
qz
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pl
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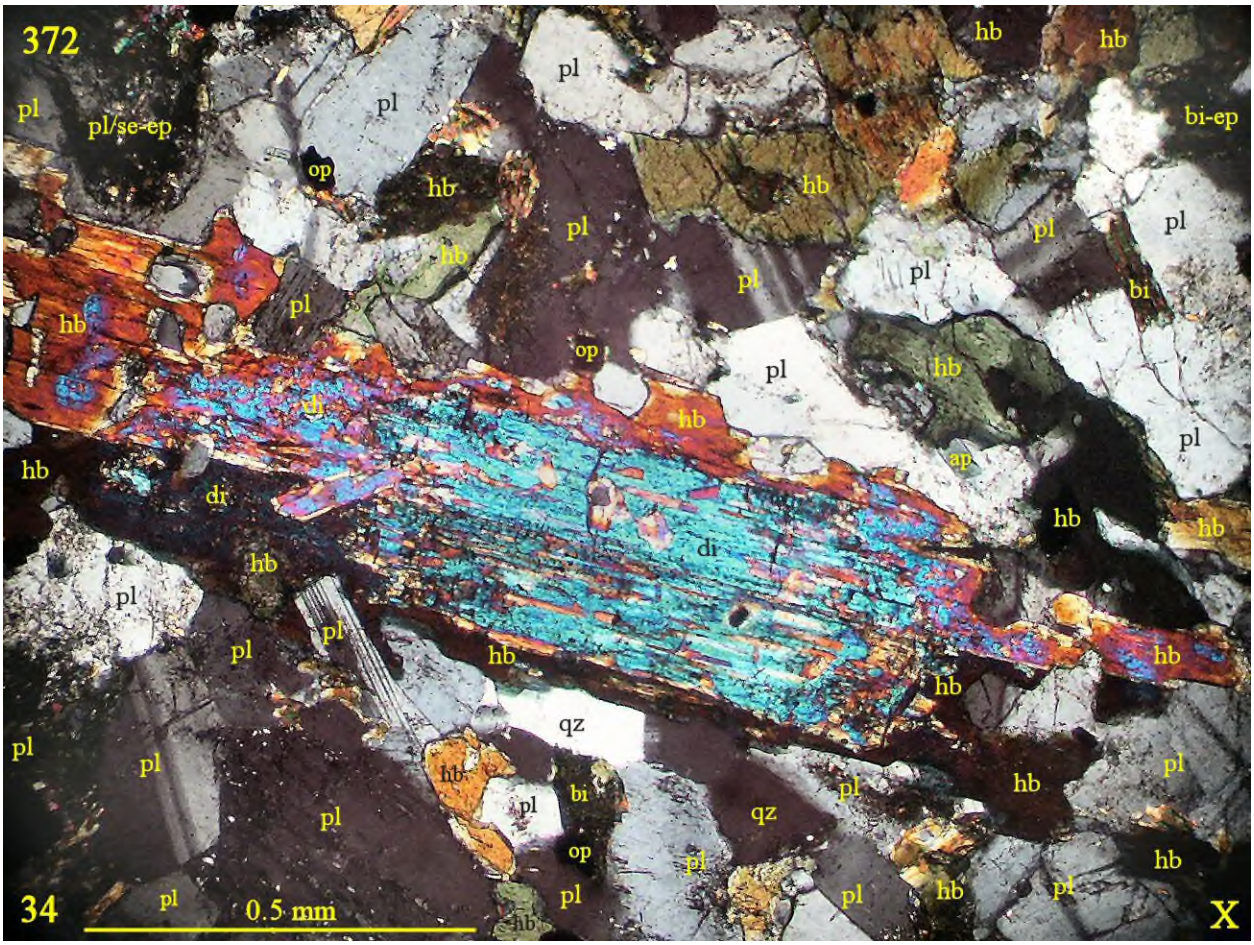
qz
qz
Kf
1.0 mm
33
X


372
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bi-ep
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op
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qz
pl
pl
hb
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bi
qz
pl
hb
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hb
pl
pl
pl
hb
pl
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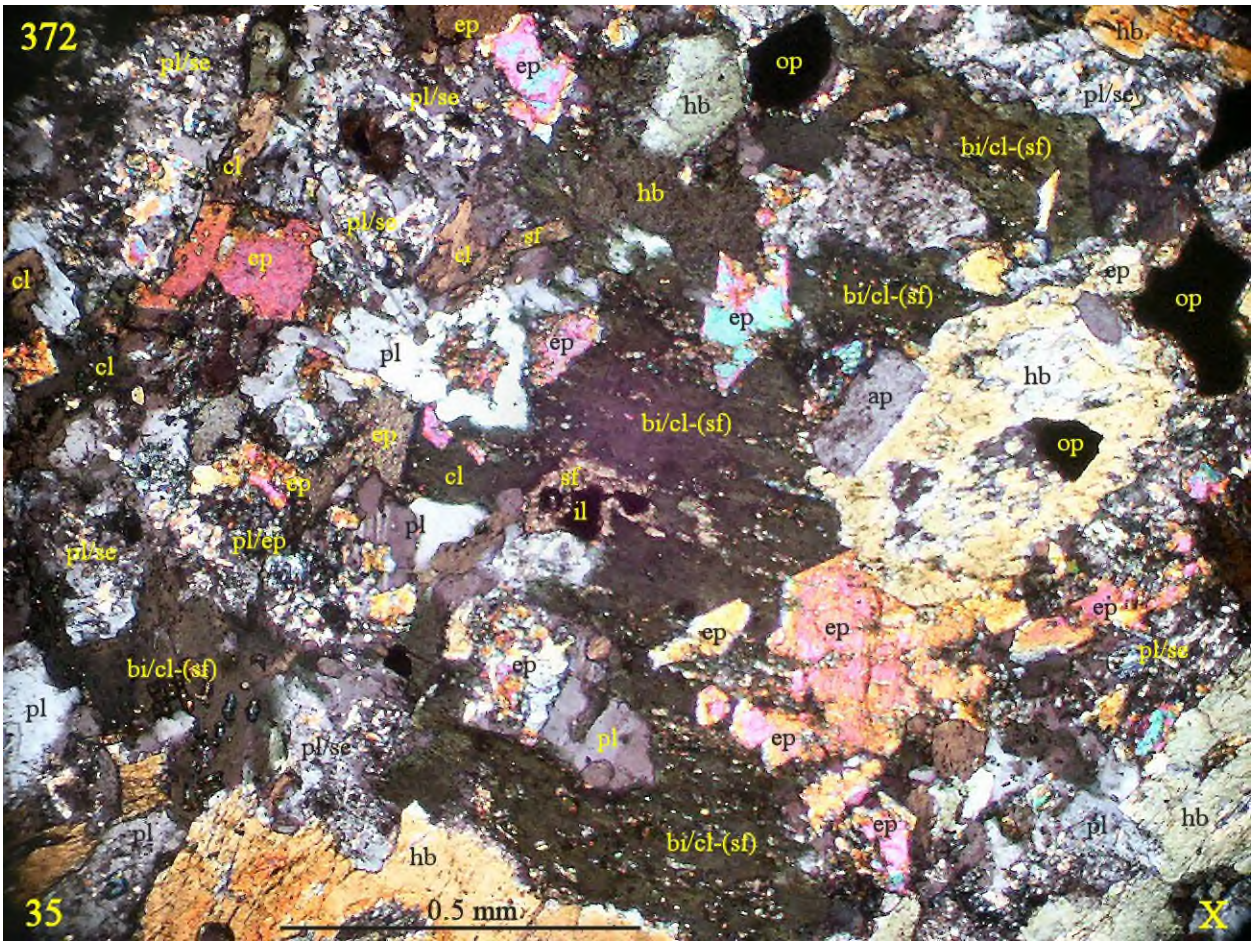
hb
34
0.5 mm
X


372
ep
pl/se
ep
pl/se
hb
op
hb
pl/se
bi/cl-(sf)
cl
hb
pl/se
cl
sf
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cl
ep
bi/cl-(sf)
ep
op
ep
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cl
ap
hb
ep
bi/cl-(sf)
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sf
il
pl
pl/ep
pl/se
ep
ep
ep
pl/se
bi/cl-(sf)
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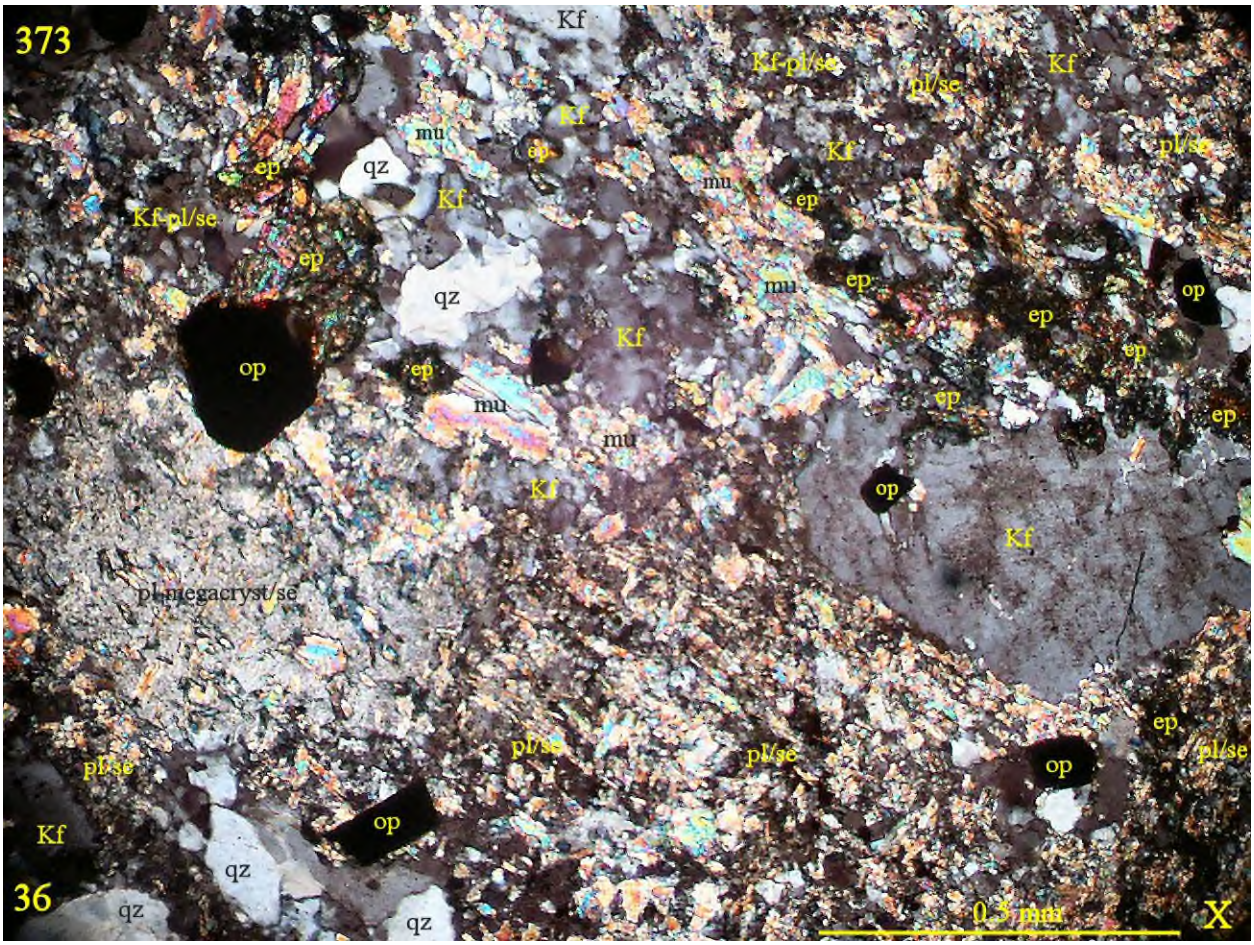
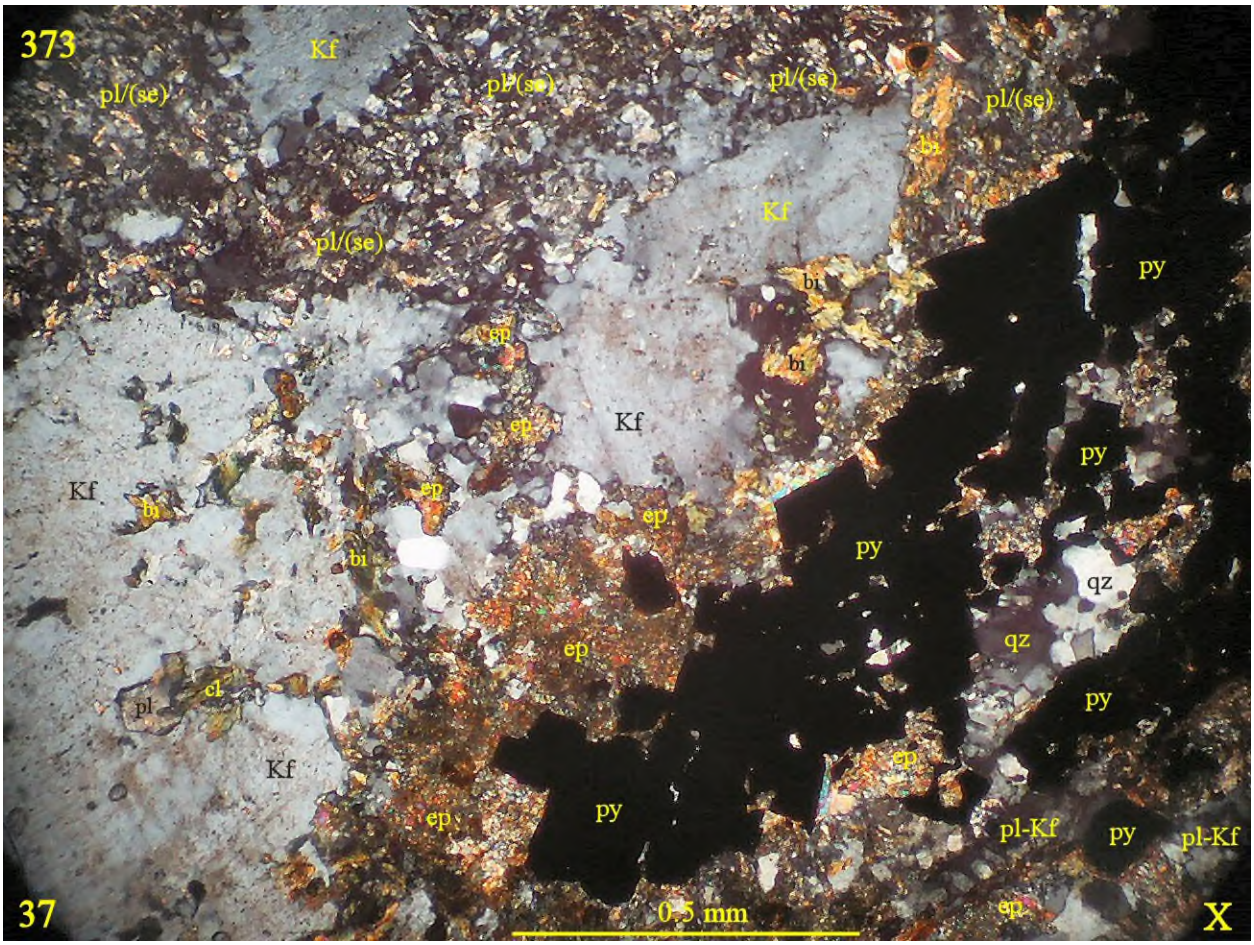
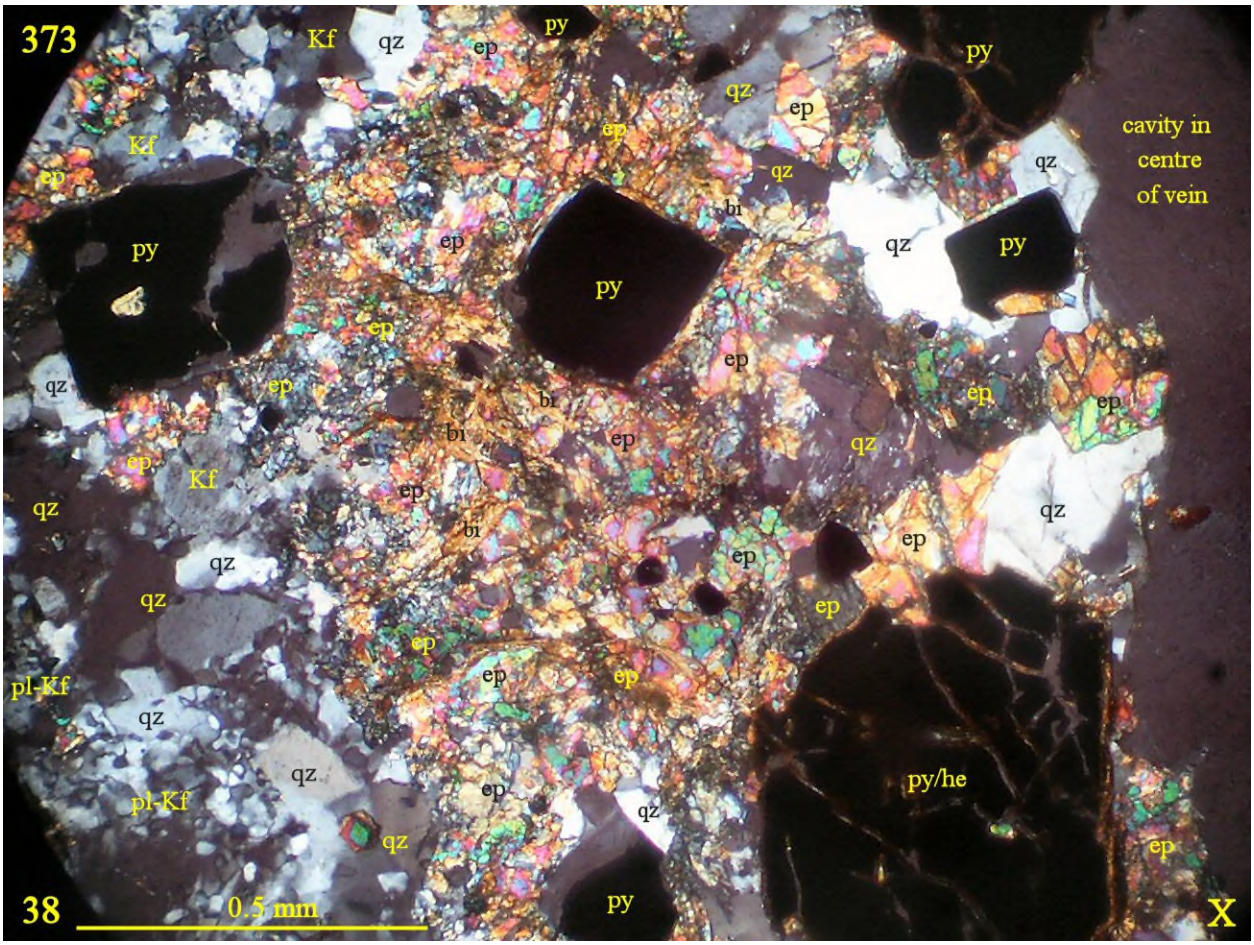
pl
pl
pl/se
ep
pl
hb
ep
pl
hb
bi/cl-(sf)
35
0.5 mm
X


373
Kf
Kf-pl/se
pl/se
Kf
mu
Kf
ep
qz
ep
Kf
mu
ep
pl/se
Kf-pl/se
ep
mu
ep
op
qz
ep
ep
Kf
op
ep
mu
ep
ep
mu
ep
Kf
op
Kf
pl megacryst/se
pl/se
pl/se
ep
pl/se
pl/se
op
op
Kf
qz
36
qz
qz
0.5 mm
X


373
Kf
pl/(se)
pl/(se)
pl/(se)
pl/(se)
bi
Kf
pl/(se)
py
bi
ep
bi
ep
Kf
py
Kf
bi
ep
ep
bi
py
qz
ep
qz
cl
pl
py
Kf
ep
py
ep
pl-Kf
py
pl-Kf
ep
37
0.5 mm
X


373
Kf
qz
ep
py
cavity in
centre
of vein
bi
pl-Kf
py/he
38
0.5 mm
X

name	East	North	Elevation	Type	Rec. Wt.	Analyte	Au	Au ppb	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
RC99 6	331209	6210911	1838.271	Soil	0.49		0.078	78	0.3	1.81	<2	17	171	0.7	<2	1	<0.5
RC99 10	330654	6210477	1730.54	Soil	0.49		0.019	19	<0.2	1.3	<2	14	139	1	<2	1.84	<0.5
RC99 11	330649	6210512	1725.362	Soil	0.61		0.013	13	<0.2	1	<2	17	665	1.6	3	1.61	<0.5
RC99 12	330636	6210542	1723.081	Soil	0.44		0.006	6	<0.2	0.87	<2	15	674	1.5	2	1.54	<0.5
RC99 13	330620	6210583	1714.601	Soil	0.52		0.009	9	<0.2	0.79	<2	14	661	1.3	<2	1.35	<0.5
RC99 14	330606	6210618	1709.278	Soil	0.58		0.025	25	<0.2	0.99	<2	15	610	1.4	3	1.44	<0.5
RC910 1	333989	6212091	1618.724	Soil	0.51		0.11	110	0.3	1.49	3	22	477	<0.5	3	0.48	<0.5
RC910 2	333940	6212098	1621.368	Soil	0.46		0.128	128	0.4	0.88	<2	<10	388	<0.5	<2	0.53	<0.5
RC910 3	333889	6212090	1634.988	Soil	0.45		0.231	231	0.6	1.55	6	17	407	<0.5	<2	0.38	<0.5
RC910 4	333836	6212087	1635.001	Soil	0.41		0.025	25	1.1	0.88	<2	<10	333	<0.5	<2	0.26	<0.5
RC910 5	333782	6212041	1640.899	Soil	0.42		0.02	20	<0.2	0.5	<2	<10	90	<0.5	<2	0.45	<0.5
RC910 6	333731	6212033	1639.842	Soil	0.43		0.048	48	0.4	0.88	<2	18	351	<0.5	<2	0.41	<0.5
RC910 8	333679	6212007	1647.095	Soil	0.49		0.046	46	0.2	1.42	<2	11	541	<0.5	<2	0.53	<0.5
RC910 9	333629	6212005	1649.938	Soil	0.46		0.056	56	<0.2	2.24	<2	13	451	0.6	2	0.64	<0.5
RC910 10	333578	6211993	1649.019	Soil	0.36		0.03	30	<0.2	1.48	<2	24	361	<0.5	<2	0.6	<0.5
RC910 11	333532	6211962	1643.331	Soil	0.56		0.014	14	<0.2	1.21	<2	14	33	0.6	4	0.96	<0.5
RC910 12	333480	6211939	1628.496	Soil	0.43		0.014	14	0.2	1.61	<2	13	304	1.4	<2	0.72	<0.5
RC910 13	333430	6211935	1610.164	Soil	0.42		0.03	30	0.3	0.67	5	<10	80	<0.5	2	0.29	<0.5
RC910 14	333378	6211941	1596.208	Soil	0.38		0.025	25	<0.2	0.44	<2	<10	28	<0.5	<2	0.17	<0.5
RC910 16	333277	6211957	1579.07	Soil	0.44		0.003	3	0.2	2.2	<2	<10	28	1.5	2	0.86	<0.5
RC910 17	333229	6211939	1577.902	Soil	0.54		0.01	10	0.2	2.32	<2	14	99	0.9	<2	0.82	<0.5
RC910 18	333177	6211932	1579.788	Soil	0.45		0.004	4	0.2	2.53	<2	11	53	0.9	<2	2.05	<0.5
RC910 19	333128	6211949	1577.747	Soil	0.61		0.078	78	0.3	1.95	3	17	367	1.6	<2	1.94	<0.5
RC910 20	333101	6212073	1563.644	Soil	0.41		0.122	122	0.2	2.17	<2	16	203	1.6	3	1.28	<0.5
RC910 21	333151	6212087	1556.639	Soil	0.42		0.027	27	0.7	2.14	<2	14	37	1.1	<2	1.06	<0.5
RC910 22	333206	6212097	1552.525	Soil	0.49		0.019	19	<0.2	0.28	<2	<10	20	<0.5	<2	0.09	<0.5
RC910 23	333249	6212102	1544.903	Soil	0.42		0.007	7	0.2	2	<2	14	88	0.9	<2	0.89	<0.5
RC910 24	333308	6212124	1535.932	Soil	0.44		0.049	49	<0.2	1.76	<2	16	341	<0.5	<2	0.36	<0.5
RC910 25	333352	6212136	1529.059	Soil	0.39		0.028	28	<0.2	1.5	<2	12	322	1.1	3	1.06	<0.5
RC910 26	333406	6212163	1524.005	Soil	0.54		0.015	15	<0.2	1.72	2	14	244	1.3	<2	1.89	<0.5
RC910 27	333456	6212200	1521.883	Soil	0.41		0.031	31	<0.2	0.84	<2	35	57	<0.5	<2	1.12	<0.5
RC910 28	333506	6212250	1525.212	Soil	0.46		0.033	33	0.2	1.07	2	34	39	<0.5	<2	0.41	<0.5
RC910 29	333556	6212251	1533.085	Soil	0.51		0.103	103	0.3	0.61	<2	33	36	<0.5	<2	1.14	<0.5
RC910 30	333607	6212252	1536.596	Soil	0.41		0.027	27	0.3	2.07	<2	34	254	1.2	<2	0.86	<0.5
RC910 31	333653	6212238	1531.513	Soil	0.52		0.016	16	0.6	1.23	<2	34	42	<0.5	<2	0.38	<0.5
RC910 32	333714	6212230	1527.251	Soil	0.55		0.092	92	0.5	1.82	2	<10	199	1.4	<2	1.04	<0.5
RC910 33	333753	6212239	1531.176	Soil	0.43		0.03	30	0.3	0.92	<2	<10	230	0.8	3	1.32	<0.5
RC910 34	333800	6212238	1550.068	Soil	0.53		0.007	7	0.6	1.5	<2	<10	40	<0.5	5	1.41	<0.5
RC910 35	333852	6212240	1570.713	Soil	0.4		0.013	13	0.5	1.07	<2	<10	74	<0.5	3	1.07	<0.5
CA-09-02	333908	6212235	1605.112	Soil	0.17		0.031	31	0.5	0.43	<2	<10	41	<0.5	<2	0.69	<0.5

name	Co	Cr	Cu	Fe	Ga	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc	Sr	Th	Ti	Tl	V	W	Zn	Zr
RC99 6	11	8	216	3.59	<10	<1	0.07	<10	0.41	620	<1	0.04	6	1974	5	0.02	<2	4	368	<8	0.04	<10	129	<10	66	<5
RC99 10	20	9	276	5.76	11	<1	0.19	13	1	1103	<1	0.06	6	4144	6	0.02	<2	5	173	<8	0.08	<10	222	<10	117	6
RC99 11	24	11	204	7.17	13	<1	0.03	11	0.65	1618	<1	0.06	8	4624	5	0.01	<2	8	509	<8	0.06	<10	285	<10	113	9
RC99 12	24	10	200	6.9	10	<1	0.03	11	0.49	1585	<1	0.06	8	4523	4	0.01	<2	8	426	<8	0.06	<10	271	<10	105	11
RC99 13	22	9	191	6.28	<10	<1	0.03	10	0.46	1535	<1	0.05	7	4262	4	0.01	<2	7	357	<8	0.05	<10	250	<10	95	9
RC99 14	23	10	182	6.63	13	<1	0.03	10	0.61	1574	<1	0.05	7	4502	5	0.01	<2	7	389	<8	0.06	<10	261	<10	104	7
RC910 1	12	10	46	5.23	15	<1	0.06	<10	0.65	772	4	0.02	5	RC910 1	1285	16	0.04	<2	2	69	<8	0.09	<10	154	<10	80	<5
RC910 2	3	5	17	2.07	12	<1	0.03	<10	0.2	346	1	0.02	1	RC910 2	679	6	0.02	<2	<2	47	<8	0.09	<10	114	<10	24	<5
RC910 3	14	9	86	5.7	13	<1	0.07	<10	0.4	1116	1	0.01	5	RC910 3	1492	9	0.03	4	3	177	<8	0.05	<10	132	<10	62	<5
RC910 4	4	6	25	2.74	10	<1	0.03	<10	0.16	220	<1	0.02	2	RC910 4	411	5	0.02	3	<2	40	<8	0.11	<10	110	<10	17	<5
RC910 5	7	7	39	3.31	<10	<1	0.05	<10	0.19	446	<1	0.03	2	RC910 5	1123	2	0.04	<2	<2	45	<8	0.04	<10	172	<10	39	<5
RC910 6	4	6	31	3.2	11	1	0.03	<10	0.15	295	1	0.02	3	RC910 6	521	6	0.04	<2	<2	38	<8	0.07	<10	136	<10	24	<5
RC910 8	10	10	79	5.64	15	<1	0.04	<10	0.52	501	<1	0.03	7	RC910 8	2017	6	0.02	<2	2	58	<8	0.1	<10	228	<10	64	<5
RC910 9	13	12	160	4.4	15	<1	0.06	<10	0.87	725	2	0.03	9	RC910 9	2078	9	0.04	<2	<2	55	<8	0.07	<10	153	<10	93	<5
RC910 10	13	13	47	4.35	14	1	0.12	<10	0.88	657	<1	0.04	8	RC910 10	1156	8	0.02	<2	3	39	<8	0.14	<10	157	<10	97	<5
RC910 11	17	7	79	5.62	14	<1	0.11	<10	0.56	1374	<1	0.09	4	RC910 11	2514	12	0.03	<2	<2	47	<8	0.06	<10	242	<10	85	<5
RC910 12	12	9	152	3.64	<10	<1	0.05	13	0.47	821	16	0.03	5	RC910 12	2148	9	0.1	<2	<2	219	<8	0.02	<10	141	<10	121	<5
RC910 13	4	5	42	2.9	<10	<1	0.04	<10	0.11	280	8	0.02	2	RC910 13	572	4	0.02	<2	<2	46	<8	0.05	<10	162	<10	52	<5
RC910 14	<1	3	6	0.65	<10	<1	0.02	<10	0.03	79	1	0.01	<1	RC910 14	157	8	<0.01	<2	<2	42	<8	0.19	<10	62	<10	8	<5
RC910 16	14	6	82	5.48	15	<1	0.06	<10	0.73	805	4	0.06	4	RC910 16	1435	<2	0.03	<2	<2	37	<8	0.05	<10	187	<10	88	<5
RC910 17	16	10	176	4.48	14	<1	0.07	<10	1.03	758	6	0.04	7	RC910 17	1941	11	0.04	<2	<2	113	<8	0.08	<10	181	<10	122	<5
RC910 18	21	5	58	5.3	19	<1	0.18	<10	1.47	1165	1	0.03	2	RC910 18	1561	4	0.05	<2	3	52	<8	0.09	<10	212	<10	118	<5
RC910 19	29	7	282	6.31	18	<1	0.31	11	1.56	1940	6	0.07	6	RC910 19	3386	10	0.02	2	7	373	<8	0.13	<10	220	<10	167	8
RC910 20	24	9	398	5.45	16	<1	0.15	<10	1.28	1791	10	0.05	6	RC910 20	2140	12	0.04	<2	3	221	<8	0.09	<10	204	<10	144	5
RC910 21	18	14	447	5.13	14	<1	0.22	<10	0.97	1866	2	0.03	7	RC910 21	1925	11	0.04	<2	3	42	<8	0.07	<10	217	<10	172	<5
RC910 22	<1	2	6	0.24	<10	<1	0.02	<10	0.02	37	<1	0.01	<1	RC910 22	117	2	<0.01	<2	<2	24	<8	0.07	<10	27	<10	4	<5
RC910 23	14	9	122	4.9	17	<1	0.28	<10	1.08	1064	3	0.06	6	RC910 23	1437	5	0.06	<2	3	45	<8	0.12	<10	184	<10	99	<5
RC910 24	15	6	48	5.12	15	1	0.07	<10	1.02	722	<1	0.02	5	RC910 24	1167	6	0.02	<2	<2	37	<8	0.09	<10	144	<10	84	<5
RC910 25	12	10	167	3.94	11	<1	0.06	<10	0.84	1056	7	0.04	6	RC910 25	998	7	0.03	<2	3	173	<8	0.1	<10	144	<10	148	<5
RC910 26	24	6	560	7	14	<1	0.11	11	1	1315	7	0.06	5	RC910 26	4100	7	0.03	<2	5	219	<8	0.07	<10	270	<10	142	<5
RC910 27	10	4	38	3.73	11	1	0.04	<10	0.53	835	10	0.03	3	RC910 27	813	<2	0.02	<2	4	98	<8	0.11	<10	174	<10	61	<5
RC910 28	7	8	43	2.86	<10	<1	0.04	<10	0.34	594	1	0.03	4	RC910 28	892	4	0.03	<2	<2	51	<8	0.04	<10	116	<10	48	<5
RC910 29	10	6	17	5.15	13	<1	0.05	<10	0.18	1668	<1	0.04	3	RC910 29	839	4	0.02	<2	3	44	<8	0.15	<10	262	<10	32	5
RC910 30	10	13	151	3.96	12	1	0.07	<10	0.66	780	50	0.04	9	RC910 30	2421	6	0.09	<2	<2	186	<8	0.02	<10	113	<10	120	<5
RC910 31	7	5	101	2.73	<10	<1	0.05	<10	0.29	402	10	0.03	3	RC910 31	891	4	0.04	<2	<2	62	<8	0.04	<10	101	<10	47	<5
RC910 32	13	9	434	4.57	16	<1	0.07	10	0.81	767	8	0.03	6	RC910 32	1300	15	0.05	<2	4	176	<8	0.09	<10	157	<10	149	<5
RC910 33	13	6	45	5.18	15	<1	0.05	<10	0.13	1025	7	0.02	2	RC910 33	700	16	0.04	<2	3	180	<8	0.14	<10	253	<10	43	<5
RC910 34	11	10	24	6.48	20	<1	0.08	<10	0.62	940	<1	0.03	5	RC910 34	1136	10	0.02	<2	4	90	<8	0.15	<10	249	<10	62	6
RC910 35	14	12	57	6.93	17	<1	0.14	<10	0.39	2667	5	0.02	5	RC910 35	1823	7	0.05	3	4	36	<8	0.14	<10	200	<10	57	<5
CA-09-02	2	3	12	2.21	<10	<1	0.03	<10	0.1	400	<1	0.01	<1	CA-09-02	303	5	0.01	3	<2	93	<8	0.11	<10	132	<10	16	<5

2019 HAWK SILT SAMPLE DESCRIPTIONS / RESULTS

	Sample	East	Noerh	Elevation	Au	Au ppb	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg	K	La	Mg	Mn	Mo	Na	Ni		P	Pb	S	Sb	Sc	Sr	Th	Ti	Tl	V	W	Zn	Zr
RC99 1S	RC99 1S	331115	6210808	1832.217	0.139	139	0.5	2.76	<2	<10	337	1.4	<2	0.81	<0.5	19	32	1529	5.06	18	<1	0.24	<10	1	1642	1	0.03	15	RC99 1S	3410	26	0.15	<2	4	286	<8	0.1	<10	164	<10	154	<5
RC99 2S	RC99 2S	331103	6210817	1828.787	0.078	78	0.6	2.04	<2	<10	355	1	5	0.68	<0.5	17	22	895	4.24	14	<1	0.14	<10	0.65	1289	2	0.03	12	RC99 2S	2628	31	0.1	<2	2	318	<8	0.08	<10	158	<10	112	<5
RC99 3S	RC99 3S	331178	6210783	1838.743	0.04	40	0.3	1.43	<2	<10	337	0.7	<2	0.6	<0.5	11	8	396	3.53	<10	<1	0.12	<10	0.71	700	<1	0.03	7	RC99 3S	1700	78	0.03	<2	3	199	<8	0.08	<10	140	<10	85	<5
RC99 4S	RC99 4S	331187	6210768	1838.901	0.062	62	0.4	1.9	3	<10	328	1.1	2	0.51	<0.5	13	14	617	3.66	13	<1	0.15	<10	0.69	855	<1	0.03	10	RC99 4S	2413	16	0.1	<2	2	413	<8	0.06	<10	132	<10	89	<5
RC99 5S	RC99 5S	331233	6210807	1839.248	0.033	33	0.3	2.81	3	<10	275	1.6	6	0.89	<0.5	30	10	1304	6.27	22	<1	0.49	<10	1.69	1629	<1	0.07	7	RC99 5S	2333	13	0.07	<2	7	356	<8	0.27	<10	227	<10	173	<5
RC99 7S	RC99 7S	331078	6210891	1833.237	0.158	158	0.4	1.96	3	<10	83	0.5	5	0.27	<0.5	5	13	267	4.72	16	<1	0.49	<10	1.08	854	4	0.03	5	RC99 7S	1705	23	0.06	2	4	51	<8	0.16	<10	157	<10	100	<5
RC99 8S	RC99 8S	331013	6210944	1828.718	0.02	20	<0.2	1.96	<2	<10	233	0.7	<2	0.37	<0.5	6	19	151	2.7	13	<1	0.09	<10	0.56	314	<1	0.02	11	RC99 8S	2989	25	0.11	<2	<2	111	<8	0.05	<10	85	<10	73	<5
RC99 9S	RC99 9S	330726	6210468	1733.115	0.033	33	0.4	2.05	<2	<10	251	1.3	5	2.89	<0.5	25	9	413	6.91	19	<1	0.26	11	1.46	1464	<1	0.08	8	RC99 9S	4206	11	0.02	<2	9	353	<8	0.14	<10	297	<10	142	6
RC910 7S	RC910 7S	333703	6212021	1643.905	0.035	35	0.5	1.26	<2	<10	318	1.1	3	1.61	<0.5	24	14	166	8.12	17	<1	0.14	<10	0.7	1496	4	0.07	8	RC910 7S	3542	22	0.06	<2	3	275	<8	0.08	<10	342	<10	120	<5
RC910 15S	RC910 15S	333329	6211932	1584.697	0.095	95	0.4	1.64	4	<10	573	1.7	4	1.51	<0.5	12	7	211	3.37	14	<1	0.12	14	0.7	840	11	0.04	3	RC910 15S	2054	13	0.12	<2	<2	358	<8	0.05	<10	157	<10	108	<5
R09 01 SILT		333672	6212086	1603	0.081	81	1.2	1.15	<2	<10	376	1.2	<2	1.8	<0.5	17	12	345	5.53	13	<1	0.21	<10	0.73	2356	10	0.04	6	R09 01 SILT	2517	14	0.03	<2	6	197	<8	0.09	<10	215	<10	93	<5
CA-09-01	c0901	333951	6212245	1606	0.033	33	1	1.47	6	<10	453	2.7	<2	1.16	4.9	14	15	279	3.04	<10	<1	0.11	12	0.52	3139	16	0.02	13	CA-09-01	3126	48	0.18	<2	3	299	<8	0.02	<10	109	<10	289	<5
CA-09-03	hk190103	331080	6210903	1847	0.073	73	0.5	2.36	5	<10	409	2.9	2	1.23	0.9	21	12	1106	5.1	14	<1	0.08	27	0.76	2032	7	0.03	10	CA-09-03	2968	33	0.12	<2	8	304	<8	0.04	<10	185	<10	224	<5
DUP RC99	RC99 3S	331178	6210783	1838.743	0.038	38																							DUP RC99 3S													

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Phone: +1-604-888-0875

To: **Durfeld Geological Management Ltd**
PO Box 4438
Williams Lake, BC, V2G 2V5
Canada

TEST REPORT:	**YVR1910627A**

Project Name:	HAWK
Job Received Date:	19-Sep-2019
Job Report Date:	22-Oct-2019
Number of Samples:	13
Report Version:	Final

COMMENTS:

Test results reported relate to the tested samples only on an "as received" basis. Unless otherwise stated above, sufficient sample was received for the methods requested and all samples were received in acceptable condition. Analytical results in unsigned reports marked "provisional" are subject to change, pending final QC review and approval. The customer has not provided any information than can affect the validity of the test results. Please refer to MSALABS' Schedule of Services and Fees for our complete Terms and Conditions. Preliminary results are applicable when a portion of samples in a job is 100% completed and reported or 1 of a number of methods on the same job have been completed 100%. Results cannot change, but additional results or results for additional methods can be added.

SAMPLE PREPARATION	
METHOD CODE	DESCRIPTION
PRP-757	Dry, Screen to 80 mesh, discard plus fraction

ANALYTICAL METHODS	
METHOD CODE	DESCRIPTION
FAS-114	Au, Fire Assay, 30g fusion, ICP-AES, Trace Level
ICP-130	Multi-Element, 0.5g, 3:1 Aqua Regia, ICP-AES, Trace Level

Signature:

Yvette Hsi, BSc.
Laboratory Manager
MSALABS

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Phone: +1-604-888-0875

To: **Durfeld Geological Management Ltd**
PO Box 4438
Williams Lake, BC, V2G 2V5
Canada

TEST REPORT: YVR1910627A

Project Name: HAWK
Job Received Date: 19-Sep-2019
Job Report Date: 22-Oct-2019
Report Version: Final

Sample ID	Sample Type	PWE-100 Rec. Wt. kg 0.01	Method Analyte Units LOR	FAS-114 Au ppm 0.002	ICP-130 Ag ppm 0.2	ICP-130 Al % 0.01	ICP-130 As ppm 2	ICP-130 B ppm 10	ICP-130 Ba ppm 10	ICP-130 Be ppm 0.5	ICP-130 Bi ppm 2	ICP-130 Ca % 0.01	ICP-130 Cd ppm 0.5
RC99 1S	Silt	0.50		0.139	0.5	2.76	<2	<10	337	1.4	<2	0.81	<0.5
RC99 2S	Silt	0.57		0.078	0.6	2.04	<2	<10	355	1.0	5	0.68	<0.5
RC99 3S	Silt	0.80		0.040	0.3	1.43	<2	<10	337	0.7	<2	0.60	<0.5
RC99 4S	Silt	0.57		0.062	0.4	1.90	3	<10	328	1.1	2	0.51	<0.5
RC99 5S	Silt	0.46		0.033	0.3	2.81	3	<10	275	1.6	6	0.89	<0.5
RC99 7S	Silt	0.53		0.158	0.4	1.96	3	<10	83	0.5	5	0.27	<0.5
RC99 8S	Silt	0.25		0.020	<0.2	1.96	<2	<10	233	0.7	<2	0.37	<0.5
RC99 9S	Silt	0.77		0.033	0.4	2.05	<2	<10	251	1.3	5	2.89	<0.5
RC910 7S	Silt	0.65		0.035	0.5	1.26	<2	<10	318	1.1	3	1.61	<0.5
RC910 15S	Silt	0.35		0.095	0.4	1.64	4	<10	573	1.7	4	1.51	<0.5
R09 01 SILT	Silt	0.62		0.081	1.2	1.15	<2	<10	376	1.2	<2	1.80	<0.5
CA-09-01	Silt	0.44		0.033	1.0	1.47	6	<10	453	2.7	<2	1.16	4.9
CA-09-03	Silt	0.34		0.073	0.5	2.36	5	<10	409	2.9	2	1.23	0.9
DUP RC99 3S				0.038									
DUP RC99 8S					<0.2	1.88	<2	<10	230	0.7	<2	0.34	<0.5
STD BLANK				<0.002									
STD BLANK					<0.2	<0.01	<2	<10	<10	<0.5	<2	<0.01	<0.5
STD OxG124				0.908									
STD OREAS 601					49.1	0.87	320	<10	203	0.6	22	1.07	8.0

***Please refer to the cover page for comments regarding this test report. ***

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Phone: +1-604-888-0875

To: **Durfeld Geological Management Ltd**
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Canada

TEST REPORT: YVR1910627A

Project Name: HAWK
Job Received Date: 19-Sep-2019
Job Report Date: 22-Oct-2019
Report Version: Final

Sample ID	ICP-130 Co ppm 1	ICP-130 Cr ppm 1	ICP-130 Cu ppm 1	ICP-130 Fe % 0.01	ICP-130 Ga ppm 10	ICP-130 Hg ppm 1	ICP-130 K % 0.01	ICP-130 La ppm 10	ICP-130 Mg % 0.01	ICP-130 Mn ppm 5	ICP-130 Mo ppm 1	ICP-130 Na % 0.01	ICP-130 Ni ppm 1
RC99 1S	19	32	1529	5.06	18	<1	0.24	<10	1.00	1642	1	0.03	15
RC99 2S	17	22	895	4.24	14	<1	0.14	<10	0.65	1289	2	0.03	12
RC99 3S	11	8	396	3.53	<10	<1	0.12	<10	0.71	700	<1	0.03	7
RC99 4S	13	14	617	3.66	13	<1	0.15	<10	0.69	855	<1	0.03	10
RC99 5S	30	10	1304	6.27	22	<1	0.49	<10	1.69	1629	<1	0.07	7
RC99 7S	5	13	267	4.72	16	<1	0.49	<10	1.08	854	4	0.03	5
RC99 8S	6	19	151	2.70	13	<1	0.09	<10	0.56	314	<1	0.02	11
RC99 9S	25	9	413	6.91	19	<1	0.26	11	1.46	1464	<1	0.08	8
RC910 7S	24	14	166	8.12	17	<1	0.14	<10	0.70	1496	4	0.07	8
RC910 15S	12	7	211	3.37	14	<1	0.12	14	0.70	840	11	0.04	3
R09 01 SILT	17	12	345	5.53	13	<1	0.21	<10	0.73	2356	10	0.04	6
CA-09-01	14	15	279	3.04	<10	<1	0.11	12	0.52	3139	16	0.02	13
CA-09-03	21	12	1106	5.10	14	<1	0.08	27	0.76	2032	7	0.03	10
DUP RC99 3S													
DUP RC99 8S	6	18	151	2.64	11	<1	0.08	<10	0.54	303	<1	0.02	11
STD BLANK													
STD BLANK	<1	<1	<1	<0.01	<10	<1	<0.01	<10	<0.01	<5	<1	<0.01	<1
STD OxG124													
STD OREAS 601	4	44	1028	2.22	<10	<1	0.27	12	0.20	410	4	0.08	23

***Please refer to the cover page for comments regarding this test report. ***

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To: **Durfeld Geological Management Ltd**
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Canada

TEST REPORT: YVR1910627A

Project Name: HAWK
Job Received Date: 19-Sep-2019
Job Report Date: 22-Oct-2019
Report Version: Final

Sample ID	ICP-130 P ppm 10	ICP-130 Pb ppm 2	ICP-130 S % 0.01	ICP-130 Sb ppm 2	ICP-130 Sc ppm 2	ICP-130 Sr ppm 1	ICP-130 Th ppm 8	ICP-130 Ti % 0.01	ICP-130 Tl ppm 10	ICP-130 V ppm 1	ICP-130 W ppm 10	ICP-130 Zn ppm 1	ICP-130 Zr ppm 5
RC99 1S	3410	26	0.15	<2	4	286	<8	0.10	<10	164	<10	154	<5
RC99 2S	2628	31	0.10	<2	2	318	<8	0.08	<10	158	<10	112	<5
RC99 3S	1700	78	0.03	<2	3	199	<8	0.08	<10	140	<10	85	<5
RC99 4S	2413	16	0.10	<2	2	413	<8	0.06	<10	132	<10	89	<5
RC99 5S	2333	13	0.07	<2	7	356	<8	0.27	<10	227	<10	173	<5
RC99 7S	1705	23	0.06	2	4	51	<8	0.16	<10	157	<10	100	<5
RC99 8S	2989	25	0.11	<2	<2	111	<8	0.05	<10	85	<10	73	<5
RC99 9S	4206	11	0.02	<2	9	353	<8	0.14	<10	297	<10	142	6
RC910 7S	3542	22	0.06	<2	3	275	<8	0.08	<10	342	<10	120	<5
RC910 15S	2054	13	0.12	<2	<2	358	<8	0.05	<10	157	<10	108	<5
R09 01 SILT	2517	14	0.03	<2	6	197	<8	0.09	<10	215	<10	93	<5
CA-09-01	3126	48	0.18	<2	3	299	<8	0.02	<10	109	<10	289	<5
CA-09-03	2968	33	0.12	<2	8	304	<8	0.04	<10	185	<10	224	<5
DUP RC99 3S													
DUP RC99 8S	2990	23	0.11	3	<2	104	<8	0.04	<10	81	<10	71	<5
STD BLANK													
STD BLANK	<10	<2	<0.01	<2	<2	<1	<8	<0.01	<10	<1	<10	<1	<5
STD OxG124													
STD OREAS 601	375	287	1.05	20	<2	37	<8	0.01	<10	10	<10	1277	25

***Please refer to the cover page for comments regarding this test report. ***

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Canada

TEST REPORT:	**YVR1910617**

Project Name:	HAWK
Job Received Date:	12-Sep-2019
Job Report Date:	22-Oct-2019
Number of Samples:	13
Report Version:	Final

COMMENTS:

Test results reported relate to the tested samples only on an "as received" basis. Unless otherwise stated above, sufficient sample was received for the methods requested and all samples were received in acceptable condition. Analytical results in unsigned reports marked "provisional" are subject to change, pending final QC review and approval. The customer has not provided any information than can affect the validity of the test results. Please refer to MSALABS' Schedule of Services and Fees for our complete Terms and Conditions. Preliminary results are applicable when a portion of samples in a job is 100% completed and reported or 1 of a number of methods on the same job have been completed 100%. Results cannot change, but additional results or results for additional methods can be added.

SAMPLE PREPARATION	
METHOD CODE	DESCRIPTION
PRP-910	Dry, Crush to 70% passing 2mm, Split 250g, Pulverize to 85% passing 75µm

ANALYTICAL METHODS	
METHOD CODE	DESCRIPTION
IMS-128	Multi-Element (39 elements), 20g, 3:1 Aqua Regia, ICP-AES/MS, Ultra Trace Level

Signature:

Yvette Hsi, BSc.
Laboratory Manager
MSALABS

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Phone: +1-604-888-0875

To: **Alton Resources Corp.**
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Canada

TEST REPORT: YVR1910617

Project Name: HAWK
Job Received Date: 12-Sep-2019
Job Report Date: 22-Oct-2019
Report Version: Final

Sample ID	Sample Type	PWE-100 Rec. Wt. kg 0.01	Method Analyte Units LOR	IMS-128 Ag ppm 0.05	IMS-128 Al % 0.01	IMS-128 As ppm 0.2	IMS-128 Au ppm 0.001	IMS-128 B ppm 10	IMS-128 Ba ppm 10	IMS-128 Bi ppm 0.05	IMS-128 Ca % 0.01	IMS-128 Cd ppm 0.05	IMS-128 Co ppm 0.1	IMS-128 Cr ppm 1
Granite Blank	QC-P-BK	--		<0.05	0.80	1.0	0.001	<10	77	<0.05	0.73	<0.05	4.0	72
C329362	Rock	1.27		0.06	2.08	1.4	0.003	11	890	<0.05	1.29	0.07	15.0	39
C329363	Rock	1.89		1.59	0.41	1.0	0.250	<10	536	0.13	0.51	0.12	6.2	134
C329364	Rock	0.90		0.15	1.53	1.6	0.021	10	1199	<0.05	0.96	0.07	11.9	93
C329365	Rock	3.22		0.15	0.11	4.5	0.022	<10	264	<0.05	0.55	0.09	4.2	177
C329365PD	QC-PD	--		0.11	0.08	3.8	0.018	<10	190	<0.05	0.43	0.08	3.7	171
C329366	Rock	1.64		0.10	0.40	0.5	0.039	<10	130	<0.05	0.36	0.05	3.3	36
C329367	Rock	1.72		<0.05	0.31	0.3	<0.001	<10	119	<0.05	0.23	<0.05	2.2	31
C329368	Rock	1.86		<0.05	0.39	0.3	0.001	<10	144	<0.05	0.32	<0.05	2.1	30
C329369	Rock	0.51		1.00	1.98	3.4	0.018	13	604	0.10	1.09	0.34	30.8	39
C329370	Rock	1.67		5.30	1.67	2.3	0.206	<10	827	0.08	0.55	1.82	42.2	35
C329371	Rock	1.13		0.09	0.97	0.6	0.002	<10	86	<0.05	1.01	<0.05	7.7	41
C329372	Rock	0.83		<0.05	0.82	0.4	0.001	<10	79	<0.05	1.03	<0.05	6.8	36
C329373	Rock	0.55		0.56	1.01	4.7	0.036	12	31	0.77	0.30	<0.05	325.6	48
Harrison	Rock	0.64		0.10	1.63	2.6	0.002	<10	25	0.16	2.14	1.81	8.6	64
DUP C329373				0.57	1.05	4.7	0.035	14	30	0.78	0.31	<0.05	322.5	53
STD BLANK				<0.05	<0.01	<0.2	<0.001	<10	<10	<0.05	<0.01	<0.05	<0.1	<1
STD OREAS 600				24.99	1.07	88.2	0.201	<10	70	6.53	1.84	3.52	6.8	24

***Please refer to the cover page for comments regarding this test report. ***

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To: **Alton Resources Corp.**
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Canada

TEST REPORT: YVR1910617

Project Name: HAWK
Job Received Date: 12-Sep-2019
Job Report Date: 22-Oct-2019
Report Version: Final

Sample ID	IMS-128 Cu ppm 0.2	IMS-128 Fe % 0.01	IMS-128 Ga ppm 0.1	IMS-128 Hg ppm 0.01	IMS-128 K % 0.01	IMS-128 La ppm 0.5	IMS-128 Mg % 0.01	IMS-128 Mn ppm 5	IMS-128 Mo ppm 0.05	IMS-128 Na % 0.01	IMS-128 Ni ppm 0.1	IMS-128 P ppm 10	IMS-128 Pb ppm 0.2	IMS-128 Re ppm 0.005
Granite Blank	8.5	1.86	4.2	<0.01	0.11	6.5	0.50	519	2.94	0.11	3.7	444	2.6	<0.005
C329362	52.0	3.42	7.3	<0.01	0.94	8.0	1.49	788	1.72	0.10	6.4	1342	2.3	<0.005
C329363	155.4	1.55	2.3	0.01	0.19	3.0	0.34	319	4.25	0.09	6.6	426	9.3	<0.005
C329364	30.2	2.55	5.2	<0.01	0.45	4.9	1.13	611	3.20	0.11	7.6	1009	1.9	<0.005
C329365	42.9	1.21	0.6	<0.01	0.04	2.0	0.07	314	5.42	0.05	7.1	268	2.0	<0.005
C329365PD	33.9	1.03	0.5	<0.01	0.04	1.7	0.05	259	5.39	0.04	7.1	210	1.7	<0.005
C329366	13.3	1.41	2.3	<0.01	0.19	5.2	0.16	436	1.21	0.08	2.0	386	2.1	<0.005
C329367	3.5	1.18	1.7	<0.01	0.15	4.8	0.07	183	0.98	0.10	1.6	258	1.7	<0.005
C329368	1.8	1.00	1.7	<0.01	0.16	4.7	0.13	257	0.93	0.11	1.4	199	2.0	<0.005
C329369	360.9	7.84	14.4	<0.01	2.23	11.4	2.15	1841	0.92	0.08	9.4	2269	1.0	<0.005
C329370	2224.6	6.54	11.5	0.03	1.85	10.4	1.51	1201	8.00	0.09	36.1	2756	1.4	<0.005
C329371	20.5	2.07	4.7	<0.01	0.16	8.0	0.56	364	1.55	0.09	3.7	1172	2.2	<0.005
C329372	27.9	2.47	4.3	<0.01	0.16	7.8	0.49	360	1.31	0.13	3.3	1389	1.4	<0.005
C329373	207.8	10.46	4.6	0.02	0.38	5.8	0.44	242	4.12	0.03	11.9	990	4.7	<0.005
Harrison	7.4	2.40	5.9	0.01	0.16	4.6	0.27	698	1.94	<0.01	7.1	1073	1.8	<0.005
DUP C329373	207.9	10.49	4.8	0.02	0.40	5.9	0.45	244	4.21	0.03	11.9	1013	4.9	<0.005
STD BLANK	<0.2	<0.01	<0.1	<0.01	<0.01	<0.5	<0.01	<5	<0.05	<0.01	<0.1	<10	<0.2	<0.005
STD OREAS 600	504.0	2.31	4.2	0.27	0.22	18.7	0.37	710	1.98	0.05	15.9	536	166.2	<0.005

***Please refer to the cover page for comments regarding this test report. ***

MSALABS
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Langley, BC V1M 4B4
Phone: +1-604-888-0875

To: **Alton Resources Corp.**
615-800 West Pender St.
Vancouver, BC, V6C 2V6
Canada

TEST REPORT: YVR1910617

Project Name: HAWK
Job Received Date: 12-Sep-2019
Job Report Date: 22-Oct-2019
Report Version: Final

	IMS-128 S	IMS-128 Sb	IMS-128 Sc	IMS-128 Se	IMS-128 Sr	IMS-128 Te	IMS-128 Th	IMS-128 Ti	IMS-128 Tl	IMS-128 U	IMS-128 V	IMS-128 W	IMS-128 Y	IMS-128 Zn
	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm
Sample ID	0.01	0.05	0.1	0.2	0.5	0.05	0.2	0.005	0.05	0.05	1	0.05	0.5	2
Granite Blank	0.05	0.06	3.2	<0.2	27.5	<0.05	2.3	0.102	<0.05	0.50	26	0.89	9.4	33
C329362	<0.01	0.21	6.0	<0.2	134.2	<0.05	3.7	0.194	0.12	0.91	82	0.37	7.7	79
C329363	0.17	0.07	2.8	<0.2	30.1	0.70	0.7	0.032	0.06	0.29	41	1.56	3.1	24
C329364	0.03	0.21	4.1	<0.2	128.2	0.06	1.3	0.202	0.06	0.43	60	1.21	4.6	59
C329365	0.05	0.08	1.4	<0.2	21.2	0.08	0.5	0.007	<0.05	0.23	31	2.27	1.4	8
C329365PD	0.04	0.07	1.1	<0.2	15.8	0.06	0.4	<0.005	<0.05	0.18	25	2.28	1.1	6
C329366	<0.01	0.06	1.1	<0.2	142.7	0.33	0.9	0.062	<0.05	0.17	48	0.99	4.7	30
C329367	<0.01	0.05	0.6	<0.2	150.3	<0.05	1.1	0.068	<0.05	0.18	43	0.50	4.3	20
C329368	<0.01	0.06	0.6	<0.2	258.0	<0.05	0.5	0.068	<0.05	0.18	33	0.62	4.2	19
C329369	0.03	0.10	10.6	0.3	126.1	<0.05	3.1	0.286	0.20	0.70	304	0.31	11.7	354
C329370	0.12	0.08	7.2	1.4	124.0	0.18	2.9	0.218	0.16	0.52	228	0.28	7.0	372
C329371	<0.01	0.10	2.6	<0.2	135.7	<0.05	3.5	0.147	<0.05	1.34	56	0.63	6.2	27
C329372	<0.01	0.07	3.0	<0.2	115.8	<0.05	2.7	0.159	<0.05	1.39	79	0.58	5.6	25
C329373	6.60	0.22	1.9	5.4	30.7	0.57	2.9	0.119	0.08	1.48	35	1.04	4.9	26
Harrison	0.44	0.18	4.4	0.4	157.9	0.32	0.9	0.227	<0.05	0.47	48	0.87	6.2	155
DUP C329373	6.53	0.22	2.0	5.4	32.0	0.76	2.9	0.125	0.09	1.52	36	1.06	5.0	27
STD BLANK	<0.01	<0.05	<0.1	<0.2	<0.5	<0.05	<0.2	<0.005	<0.05	<0.05	<1	<0.05	<0.5	<2
STD OREAS 600	1.79	9.09	2.2	7.1	38.9	6.33	5.1	<0.005	0.59	1.07	14	0.60	6.4	620

***Please refer to the cover page for comments regarding this test report. ***

MSALABS
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Phone: +1-604-888-0875

To: **Durfeld Geological Management Ltd**
PO Box 4438
Williams Lake, BC, V2G 2V5
Canada

TEST REPORT:	**YVR1910627**

Project Name:	HAWK
Job Received Date:	19-Sep-2019
Job Report Date:	22-Oct-2019
Number of Samples:	40
Report Version:	Final

COMMENTS:

Test results reported relate to the tested samples only on an "as received" basis. Unless otherwise stated above, sufficient sample was received for the methods requested and all samples were received in acceptable condition. Analytical results in unsigned reports marked "provisional" are subject to change, pending final QC review and approval. The customer has not provided any information than can affect the validity of the test results. Please refer to MSALABS' Schedule of Services and Fees for our complete Terms and Conditions. Preliminary results are applicable when a portion of samples in a job is 100% completed and reported or 1 of a number of methods on the same job have been completed 100%. Results cannot change, but additional results or results for additional methods can be added.

SAMPLE PREPARATION	
METHOD CODE	DESCRIPTION
PRP-757	Dry, Screen to 80 mesh, discard plus fraction

ANALYTICAL METHODS	
METHOD CODE	DESCRIPTION
FAS-114	Au, Fire Assay, 30g fusion, ICP-AES, Trace Level
ICP-130	Multi-Element, 0.5g, 3:1 Aqua Regia, ICP-AES, Trace Level

Signature:

Yvette Hsi, BSc.
Laboratory Manager
MSALABS

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To: **Durfeld Geological Management Ltd**
PO Box 4438
Williams Lake, BC, V2G 2V5
Canada

TEST REPORT: YVR1910627

Project Name: HAWK
Job Received Date: 19-Sep-2019
Job Report Date: 22-Oct-2019
Report Version: Final

Sample ID	Sample Type	PWE-100 Rec. Wt. kg 0.01	Method Analyte Units LOR	FAS-114 Au ppm 0.002	ICP-130 Ag ppm 0.2	ICP-130 Al % 0.01	ICP-130 As ppm 2	ICP-130 B ppm 10	ICP-130 Ba ppm 10	ICP-130 Be ppm 0.5	ICP-130 Bi ppm 2	ICP-130 Ca % 0.01	ICP-130 Cd ppm 0.5
RC99 6	Soil	0.49		0.078	0.3	1.81	<2	17	171	0.7	<2	1.00	<0.5
RC99 10	Soil	0.49		0.019	<0.2	1.30	<2	14	139	1.0	<2	1.84	<0.5
RC99 11	Soil	0.61		0.013	<0.2	1.00	<2	17	665	1.6	3	1.61	<0.5
RC99 12	Soil	0.44		0.006	<0.2	0.87	<2	15	674	1.5	2	1.54	<0.5
RC99 13	Soil	0.52		0.009	<0.2	0.79	<2	14	661	1.3	<2	1.35	<0.5
RC99 14	Soil	0.58		0.025	<0.2	0.99	<2	15	610	1.4	3	1.44	<0.5
RC910 1	Soil	0.51		0.110	0.3	1.49	3	22	47	<0.5	3	0.48	<0.5
RC910 2	Soil	0.46		0.128	0.4	0.88	<2	<10	38	<0.5	<2	0.53	<0.5
RC910 3	Soil	0.45		0.231	0.6	1.55	6	17	40	<0.5	<2	0.38	<0.5
RC910 4	Soil	0.41		0.025	1.1	0.88	<2	<10	33	<0.5	<2	0.26	<0.5
RC910 5	Soil	0.42		0.020	<0.2	0.50	<2	<10	90	<0.5	<2	0.45	<0.5
RC910 6	Soil	0.43		0.048	0.4	0.88	<2	18	35	<0.5	<2	0.41	<0.5
RC910 8	Soil	0.49		0.046	0.2	1.42	<2	11	54	<0.5	<2	0.53	<0.5
RC910 9	Soil	0.46		0.056	<0.2	2.24	<2	13	45	0.6	2	0.64	<0.5
RC910 10	Soil	0.36		0.030	<0.2	1.48	<2	24	36	<0.5	<2	0.60	<0.5
RC910 11	Soil	0.56		0.014	<0.2	1.21	<2	14	33	0.6	4	0.96	<0.5
RC910 12	Soil	0.43		0.014	0.2	1.61	<2	13	304	1.4	<2	0.72	<0.5
RC910 13	Soil	0.42		0.030	0.3	0.67	5	<10	80	<0.5	2	0.29	<0.5
RC910 14	Soil	0.38		0.025	<0.2	0.44	<2	<10	28	<0.5	<2	0.17	<0.5
RC910 16	Soil	0.44		0.003	0.2	2.20	<2	<10	28	1.5	2	0.86	<0.5
RC910 17	Soil	0.54		0.010	0.2	2.32	<2	14	99	0.9	<2	0.82	<0.5
RC910 18	Soil	0.45		0.004	0.2	2.53	<2	11	53	0.9	<2	2.05	<0.5
RC910 19	Soil	0.61		0.078	0.3	1.95	3	17	367	1.6	<2	1.94	<0.5
RC910 20	Soil	0.41		0.122	0.2	2.17	<2	16	203	1.6	3	1.28	<0.5
RC910 21	Soil	0.42		0.027	0.7	2.14	<2	14	37	1.1	<2	1.06	<0.5

***Please refer to the cover page for comments regarding this test report. ***

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To: **Durfeld Geological Management Ltd**
PO Box 4438
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Canada

TEST REPORT: YVR1910627

Project Name: HAWK
Job Received Date: 19-Sep-2019
Job Report Date: 22-Oct-2019
Report Version: Final

Sample ID	Sample Type	PWE-100 Rec. Wt. kg 0.01	Method Analyte Units LOR	FAS-114 Au ppm 0.002	ICP-130 Ag ppm 0.2	ICP-130 Al % 0.01	ICP-130 As ppm 2	ICP-130 B ppm 10	ICP-130 Ba ppm 10	ICP-130 Be ppm 0.5	ICP-130 Bi ppm 2	ICP-130 Ca % 0.01	ICP-130 Cd ppm 0.5
RC910 22	Soil	0.49		0.019	<0.2	0.28	<2	<10	20	<0.5	<2	0.09	<0.5
RC910 23	Soil	0.42		0.007	0.2	2.00	<2	14	88	0.9	<2	0.89	<0.5
RC910 24	Soil	0.44		0.049	<0.2	1.76	<2	16	34	<0.5	<2	0.36	<0.5
RC910 25	Soil	0.39		0.028	<0.2	1.50	<2	12	322	1.0	3	1.06	<0.5
RC910 26	Soil	0.54		0.015	<0.2	1.72	2	14	244	1.3	<2	1.89	<0.5
RC910 27	Soil	0.41		0.031	<0.2	0.84	<2	35	57	<0.5	<2	1.12	<0.5
RC910 28	Soil	0.46		0.033	0.2	1.07	2	34	39	<0.5	<2	0.41	<0.5
RC910 29	Soil	0.51		0.103	0.3	0.61	<2	33	36	<0.5	<2	1.14	<0.5
RC910 30	Soil	0.41		0.027	0.3	2.07	<2	34	254	1.2	<2	0.86	<0.5
RC910 31	Soil	0.52		0.016	0.6	1.23	<2	34	42	<0.5	<2	0.38	<0.5
RC910 32	Soil	0.55		0.092	0.5	1.82	2	<10	199	1.4	<2	1.04	<0.5
RC910 33	Soil	0.43		0.030	0.3	0.92	<2	<10	230	0.8	3	1.32	<0.5
RC910 34	Soil	0.53		0.007	0.6	1.50	<2	<10	40	<0.5	5	1.41	<0.5
RC910 35	Soil	0.40		0.013	0.5	1.07	<2	<10	74	<0.5	3	1.07	<0.5
CA-09-02	Soil	0.17		0.031	0.5	0.43	<2	<10	41	<0.5	<2	0.69	<0.5
DUP RC910 18				0.008									
DUP RC910 3					0.6	1.49	6	17	41	<0.5	3	0.37	<0.5
STD BLANK				<0.002									
STD BLANK					<0.2	<0.01	<2	<10	<10	<0.5	<2	<0.01	<0.5
STD OxA131				0.077									
STD OREAS 24b					<0.2	3.16	4	25	140	1.4	<2	0.45	<0.5

***Please refer to the cover page for comments regarding this test report. ***

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To: **Durfeld Geological Management Ltd**
PO Box 4438
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Canada

TEST REPORT: YVR1910627

Project Name: HAWK
Job Received Date: 19-Sep-2019
Job Report Date: 22-Oct-2019
Report Version: Final

Sample ID	ICP-130 Co ppm 1	ICP-130 Cr ppm 1	ICP-130 Cu ppm 1	ICP-130 Fe % 0.01	ICP-130 Ga ppm 10	ICP-130 Hg ppm 1	ICP-130 K % 0.01	ICP-130 La ppm 10	ICP-130 Mg % 0.01	ICP-130 Mn ppm 5	ICP-130 Mo ppm 1	ICP-130 Na % 0.01	ICP-130 Ni ppm 1
RC99 6	11	8	216	3.59	<10	<1	0.07	<10	0.41	620	<1	0.04	6
RC99 10	20	9	276	5.76	11	<1	0.19	13	1.00	1103	<1	0.06	6
RC99 11	24	11	204	7.17	13	<1	0.03	11	0.65	1618	<1	0.06	8
RC99 12	24	10	200	6.90	10	<1	0.03	11	0.49	1585	<1	0.06	8
RC99 13	22	9	191	6.28	<10	<1	0.03	10	0.46	1535	<1	0.05	7
RC99 14	23	10	182	6.63	13	<1	0.03	10	0.61	1574	<1	0.05	7
RC910 1	12	10	46	5.23	15	<1	0.06	<10	0.65	772	4	0.02	5
RC910 2	3	5	17	2.07	12	<1	0.03	<10	0.20	346	1	0.02	1
RC910 3	14	9	86	5.70	13	<1	0.07	<10	0.40	1116	1	0.01	5
RC910 4	4	6	25	2.74	10	<1	0.03	<10	0.16	220	<1	0.02	2
RC910 5	7	7	39	3.31	<10	<1	0.05	<10	0.19	446	<1	0.03	2
RC910 6	4	6	31	3.20	11	1	0.03	<10	0.15	295	1	0.02	3
RC910 8	10	10	79	5.64	15	<1	0.04	<10	0.52	501	<1	0.03	7
RC910 9	13	12	160	4.40	15	<1	0.06	<10	0.87	725	2	0.03	9
RC910 10	13	13	47	4.35	14	1	0.12	<10	0.88	657	<1	0.04	8
RC910 11	17	7	79	5.62	14	<1	0.11	<10	0.56	1374	<1	0.09	4
RC910 12	12	9	152	3.64	<10	<1	0.05	13	0.47	821	16	0.03	5
RC910 13	4	5	42	2.90	<10	<1	0.04	<10	0.11	280	8	0.02	2
RC910 14	<1	3	6	0.65	<10	<1	0.02	<10	0.03	79	1	0.01	<1
RC910 16	14	6	82	5.48	15	<1	0.06	<10	0.73	805	4	0.06	4
RC910 17	16	10	176	4.48	14	<1	0.07	<10	1.03	758	6	0.04	7
RC910 18	21	5	58	5.30	19	<1	0.18	<10	1.47	1165	1	0.03	2
RC910 19	29	7	282	6.31	18	<1	0.31	11	1.56	1940	6	0.07	6
RC910 20	24	9	398	5.45	16	<1	0.15	<10	1.28	1791	10	0.05	6
RC910 21	18	14	447	5.13	14	<1	0.22	<10	0.97	1866	2	0.03	7

***Please refer to the cover page for comments regarding this test report. ***

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To: **Durfeld Geological Management Ltd**
PO Box 4438
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Canada

TEST REPORT: YVR1910627

Project Name: HAWK
Job Received Date: 19-Sep-2019
Job Report Date: 22-Oct-2019
Report Version: Final

Sample ID	ICP-130 Co ppm 1	ICP-130 Cr ppm 1	ICP-130 Cu ppm 1	ICP-130 Fe % 0.01	ICP-130 Ga ppm 10	ICP-130 Hg ppm 1	ICP-130 K % 0.01	ICP-130 La ppm 10	ICP-130 Mg % 0.01	ICP-130 Mn ppm 5	ICP-130 Mo ppm 1	ICP-130 Na % 0.01	ICP-130 Ni ppm 1
RC910 22	<1	2	6	0.24	<10	<1	0.02	<10	0.02	37	<1	0.01	<1
RC910 23	14	9	122	4.90	17	<1	0.28	<10	1.08	1064	3	0.06	6
RC910 24	15	6	48	5.12	15	1	0.07	<10	1.02	722	<1	0.02	5
RC910 25	12	10	167	3.94	11	<1	0.06	<10	0.84	1056	7	0.04	6
RC910 26	24	6	560	7.00	14	<1	0.11	11	1.00	1315	7	0.06	5
RC910 27	10	4	38	3.73	11	1	0.04	<10	0.53	835	10	0.03	3
RC910 28	7	8	43	2.86	<10	<1	0.04	<10	0.34	594	1	0.03	4
RC910 29	10	6	17	5.15	13	<1	0.05	<10	0.18	1668	<1	0.04	3
RC910 30	10	13	151	3.96	12	1	0.07	<10	0.66	780	50	0.04	9
RC910 31	7	5	101	2.73	<10	<1	0.05	<10	0.29	402	10	0.03	3
RC910 32	13	9	434	4.57	16	<1	0.07	10	0.81	767	8	0.03	6
RC910 33	13	6	45	5.18	15	<1	0.05	<10	0.13	1025	7	0.02	2
RC910 34	11	10	24	6.48	20	<1	0.08	<10	0.62	940	<1	0.03	5
RC910 35	14	12	57	6.93	17	<1	0.14	<10	0.39	2667	5	0.02	5
CA-09-02	2	3	12	2.21	<10	<1	0.03	<10	0.10	400	<1	0.01	<1
DUP RC910 18													
DUP RC910 3	14	9	84	5.59	11	<1	0.07	<10	0.39	1095	1	0.01	5
STD BLANK													
STD BLANK	<1	<1	<1	<0.01	<10	<1	<0.01	<10	<0.01	<5	<1	<0.01	<1
STD OxA131													
STD OREAS 24b	15	105	37	3.99	15	<1	1.17	13	1.39	329	3	0.10	53

***Please refer to the cover page for comments regarding this test report. ***

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To: **Durfeld Geological Management Ltd**
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TEST REPORT: YVR1910627

Project Name: HAWK
Job Received Date: 19-Sep-2019
Job Report Date: 22-Oct-2019
Report Version: Final

Sample ID	ICP-130 P ppm 10	ICP-130 Pb ppm 2	ICP-130 S % 0.01	ICP-130 Sb ppm 2	ICP-130 Sc ppm 2	ICP-130 Sr ppm 1	ICP-130 Th ppm 8	ICP-130 Ti % 0.01	ICP-130 Tl ppm 10	ICP-130 V ppm 1	ICP-130 W ppm 10	ICP-130 Zn ppm 1	ICP-130 Zr ppm 5
RC99 6	1974	5	0.02	<2	4	368	<8	0.04	<10	129	<10	66	<5
RC99 10	4144	6	0.02	<2	5	173	<8	0.08	<10	222	<10	117	6
RC99 11	4624	5	0.01	<2	8	509	<8	0.06	<10	285	<10	113	9
RC99 12	4523	4	0.01	<2	8	426	<8	0.06	<10	271	<10	105	11
RC99 13	4262	4	0.01	<2	7	357	<8	0.05	<10	250	<10	95	9
RC99 14	4502	5	0.01	<2	7	389	<8	0.06	<10	261	<10	104	7
RC910 1	1285	16	0.04	<2	2	69	<8	0.09	<10	154	<10	80	<5
RC910 2	679	6	0.02	<2	<2	47	<8	0.09	<10	114	<10	24	<5
RC910 3	1492	9	0.03	4	3	17	<8	0.05	<10	132	<10	62	<5
RC910 4	411	5	0.02	3	<2	40	<8	0.11	<10	110	<10	17	<5
RC910 5	1123	2	0.04	<2	<2	45	<8	0.04	<10	172	<10	39	<5
RC910 6	521	6	0.04	<2	<2	38	<8	0.07	<10	136	<10	24	<5
RC910 8	2017	6	0.02	<2	2	58	<8	0.10	<10	228	<10	64	<5
RC910 9	2078	9	0.04	<2	<2	55	<8	0.07	<10	153	<10	93	<5
RC910 10	1156	8	0.02	<2	3	39	<8	0.14	<10	157	<10	97	<5
RC910 11	2514	12	0.03	<2	<2	47	<8	0.06	<10	242	<10	85	<5
RC910 12	2148	9	0.10	<2	<2	219	<8	0.02	<10	141	<10	121	<5
RC910 13	572	4	0.02	<2	<2	46	<8	0.05	<10	162	<10	52	<5
RC910 14	157	8	<0.01	<2	<2	42	<8	0.19	<10	62	<10	8	<5
RC910 16	1435	<2	0.03	<2	<2	37	<8	0.05	<10	187	<10	88	<5
RC910 17	1941	11	0.04	<2	<2	113	<8	0.08	<10	181	<10	122	<5
RC910 18	1561	4	0.05	<2	3	52	<8	0.09	<10	212	<10	118	<5
RC910 19	3386	10	0.02	2	7	373	<8	0.13	<10	220	<10	167	8
RC910 20	2140	12	0.04	<2	3	221	<8	0.09	<10	204	<10	144	5
RC910 21	1925	11	0.04	<2	3	42	<8	0.07	<10	217	<10	172	<5

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To: **Durfeld Geological Management Ltd**
PO Box 4438
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Canada

TEST REPORT: YVR1910627

Project Name: HAWK
Job Received Date: 19-Sep-2019
Job Report Date: 22-Oct-2019
Report Version: Final

Sample ID	ICP-130 P ppm 10	ICP-130 Pb ppm 2	ICP-130 S % 0.01	ICP-130 Sb ppm 2	ICP-130 Sc ppm 2	ICP-130 Sr ppm 1	ICP-130 Th ppm 8	ICP-130 Ti % 0.01	ICP-130 Tl ppm 10	ICP-130 V ppm 1	ICP-130 W ppm 10	ICP-130 Zn ppm 1	ICP-130 Zr ppm 5
RC910 22	117	2	<0.01	<2	<2	24	<8	0.07	<10	27	<10	4	<5
RC910 23	1437	5	0.06	<2	3	45	<8	0.12	<10	184	<10	99	<5
RC910 24	1167	6	0.02	<2	<2	37	<8	0.09	<10	144	<10	84	<5
RC910 25	998	7	0.03	<2	3	173	<8	0.10	<10	144	<10	148	<5
RC910 26	4100	7	0.03	<2	5	219	<8	0.07	<10	270	<10	142	<5
RC910 27	813	<2	0.02	<2	4	98	<8	0.11	<10	174	<10	61	<5
RC910 28	892	4	0.03	<2	<2	51	<8	0.04	<10	116	<10	48	<5
RC910 29	839	4	0.02	<2	3	44	<8	0.15	<10	262	<10	32	5
RC910 30	2421	6	0.09	<2	<2	186	<8	0.02	<10	113	<10	120	<5
RC910 31	891	4	0.04	<2	<2	62	<8	0.04	<10	101	<10	47	<5
RC910 32	1300	15	0.05	<2	4	176	<8	0.09	<10	157	<10	149	<5
RC910 33	700	16	0.04	<2	3	180	<8	0.14	<10	253	<10	43	<5
RC910 34	1136	10	0.02	<2	4	90	<8	0.15	<10	249	<10	62	6
RC910 35	1823	7	0.05	3	4	36	<8	0.14	<10	200	<10	57	<5
CA-09-02	303	5	0.01	3	<2	93	<8	0.11	<10	132	<10	16	<5
DUP RC910 18													
DUP RC910 3	1484	7	0.03	<2	2	16	<8	0.04	<10	130	<10	59	<5
STD BLANK													
STD BLANK	<10	<2	<0.01	<2	<2	<1	<8	<0.01	<10	<1	<10	<1	<5
STD OxA131													
STD OREAS 24b	620	12	0.19	<2	10	28	10	0.20	<10	82	<10	92	24

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To: **Durfeld Geological Management Ltd**
PO Box 4438
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Canada

TEST REPORT:	**YVR1910627B**

Project Name:	HAWK
Job Received Date:	19-Sep-2019
Job Report Date:	22-Oct-2019
Number of Samples:	30
Report Version:	Final

COMMENTS:

Test results reported relate to the tested samples only on an "as received" basis. Unless otherwise stated above, sufficient sample was received for the methods requested and all samples were received in acceptable condition. Analytical results in unsigned reports marked "provisional" are subject to change, pending final QC review and approval. The customer has not provided any information than can affect the validity of the test results. Please refer to MSALABS' Schedule of Services and Fees for our complete Terms and Conditions. Preliminary results are applicable when a portion of samples in a job is 100% completed and reported or 1 of a number of methods on the same job have been completed 100%. Results cannot change, but additional results or results for additional methods can be added.

SAMPLE PREPARATION	
METHOD CODE	DESCRIPTION
PRP-915	Dry, Crush to 70% passing 2mm, Split 500g, Pulverize to 85% passing 75µm

ANALYTICAL METHODS	
METHOD CODE	DESCRIPTION
FAS-114	Au, Fire Assay, 30g fusion, ICP-AES, Trace Level
ICP-130	Multi-Element, 0.5g, 3:1 Aqua Regia, ICP-AES, Trace Level

Signature:

Yvette Hsi, BSc.
Laboratory Manager
MSALABS

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TEST REPORT: YVR1910627B

Project Name: HAWK
Job Received Date: 19-Sep-2019
Job Report Date: 22-Oct-2019
Report Version: Final

Sample ID	Sample Type	PWE-100 Rec. Wt. kg 0.01	Method Analyte Units LOR	FAS-114 Au ppm 0.002	ICP-130 Ag ppm 0.2	ICP-130 Al % 0.01	ICP-130 As ppm 2	ICP-130 B ppm 10	ICP-130 Ba ppm 10	ICP-130 Be ppm 0.5	ICP-130 Bi ppm 2	ICP-130 Ca % 0.01	ICP-130 Cd ppm 0.5
Granite Blank	QC-P-BK	--		0.021	<0.2	0.91	11	<10	80	<0.5	<2	0.66	<0.5
Granite Blank	QC-P-BK	--		0.004	<0.2	0.88	3	<10	72	<0.5	<2	0.63	<0.5
C328332	Rock	0.70		0.002	<0.2	0.51	3	<10	119	<0.5	<2	0.61	<0.5
C328333	Rock	1.62		0.004	0.9	0.36	3	<10	52	<0.5	<2	0.92	<0.5
C328334	Rock	1.59		0.056	1.4	0.77	3	<10	107	1.3	<2	1.18	<0.5
C328335	Rock	1.80		0.004	0.3	1.06	<2	<10	91	<0.5	<2	0.23	<0.5
C328336	Rock	0.90		0.006	0.3	1.13	<2	<10	96	<0.5	<2	0.31	<0.5
C328337	Rock	1.52		0.002	<0.2	0.42	<2	<10	116	<0.5	<2	0.57	<0.5
C328338	Rock	5.00		0.002	<0.2	0.80	<2	<10	231	<0.5	<2	1.29	<0.5
C328338PD	QC-PD	--		0.003	<0.2	0.91	<2	11	200	0.6	<2	1.72	<0.5
C328339	Rock	1.42		<0.002	0.2	1.32	5	14	109	0.9	<2	1.61	<0.5
C328340	Rock	1.01		0.002	<0.2	0.47	11	<10	142	<0.5	<2	0.48	<0.5
C328341	Rock	0.90		<0.002	<0.2	0.35	3	<10	114	<0.5	<2	0.22	<0.5
C328342	Rock	2.67		0.003	0.3	1.13	5	<10	98	<0.5	<2	1.75	<0.5
C328343	Rock	1.30		0.003	0.2	0.35	<2	<10	61	<0.5	<2	0.79	<0.5
C328344	Rock	1.77		0.011	0.5	0.91	4	<10	215	0.5	2	1.86	<0.5
C328345	Rock	2.18		0.012	<0.2	0.38	<2	<10	46	<0.5	<2	0.37	<0.5
C328346	Rock	0.64		<0.002	<0.2	0.33	<2	<10	26	<0.5	<2	0.35	<0.5
C328347	Rock	0.86		<0.002	<0.2	0.89	<2	12	468	0.7	<2	1.56	<0.5
C328348	Rock	0.91		<0.002	<0.2	1.62	<2	<10	107	0.9	<2	1.86	<0.5
C328349	Rock	1.16		0.002	<0.2	0.48	<2	<10	119	<0.5	<2	0.63	<0.5
C328350	Rock	1.87		0.027	0.3	0.55	<2	<10	127	<0.5	2	1.03	<0.5
C328351	Rock	3.31		<0.002	<0.2	0.40	8	11	75	<0.5	<2	0.44	<0.5
C328352	Rock	2.75		<0.002	<0.2	0.75	10	13	57	<0.5	<2	0.70	<0.5
C328353	Rock	2.78		0.004	<0.2	0.59	3	10	232	<0.5	<2	1.04	<0.5

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Canada

TEST REPORT: YVR1910627B

Project Name: HAWK
Job Received Date: 19-Sep-2019
Job Report Date: 22-Oct-2019
Report Version: Final

Sample ID	Sample Type	PWE-100 Rec. Wt. kg 0.01	Method Analyte Units LOR	FAS-114 Au ppm 0.002	ICP-130 Ag ppm 0.2	ICP-130 Al % 0.01	ICP-130 As ppm 2	ICP-130 B ppm 10	ICP-130 Ba ppm 10	ICP-130 Be ppm 0.5	ICP-130 Bi ppm 2	ICP-130 Ca % 0.01	ICP-130 Cd ppm 0.5
C328354	Rock	2.17		0.011	0.3	0.65	<2	<10	859	0.6	<2	2.29	<0.5
C328355	Rock	1.97		0.002	<0.2	0.41	6	<10	134	<0.5	<2	0.61	<0.5
C328356	Rock	2.33		0.005	0.3	0.33	<2	<10	162	<0.5	<2	1.17	<0.5
C328357	Rock	1.88		0.014	<0.2	0.26	<2	<10	267	<0.5	<2	1.05	<0.5
C328358	Rock	2.65		0.360	0.7	0.16	<2	<10	497	<0.5	<2	0.06	<0.5
C328359	Rock	1.12		0.005	<0.2	0.27	<2	<10	142	<0.5	<2	0.26	<0.5
C328360	Rock	0.41		0.004	<0.2	0.47	<2	<10	154	<0.5	<2	0.46	<0.5
C328361	Rock	3.04		0.009	0.6	0.96	<2	<10	274	0.8	<2	2.68	<0.5
DUP C328333				0.004									
DUP C328339					<0.2	1.29	4	12	107	0.9	<2	1.58	<0.5
STD BLANK				<0.002									
STD BLANK					<0.2	<0.01	<2	<10	<10	<0.5	<2	<0.01	<0.5
STD OxD127				0.457									
STD OREAS 24b					<0.2	3.34	8	<10	150	1.6	3	0.47	<0.5

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TEST REPORT: YVR1910627B

Project Name: HAWK
Job Received Date: 19-Sep-2019
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Sample ID	ICP-130 Co ppm 1	ICP-130 Cr ppm 1	ICP-130 Cu ppm 1	ICP-130 Fe % 0.01	ICP-130 Ga ppm 10	ICP-130 Hg ppm 1	ICP-130 K % 0.01	ICP-130 La ppm 10	ICP-130 Mg % 0.01	ICP-130 Mn ppm 5	ICP-130 Mo ppm 1	ICP-130 Na % 0.01	ICP-130 Ni ppm 1
Granite Blank	4	77	26	1.91	<10	1	0.12	<10	0.44	482	3	0.11	4
Granite Blank	3	67	6	1.69	<10	<1	0.10	<10	0.44	486	2	0.11	3
C328332	7	29	91	3.26	<10	<1	0.19	<10	0.17	392	<1	0.10	3
C328333	18	42	369	3.79	<10	<1	0.15	<10	0.10	119	7	0.09	108
C328334	19	22	2664	2.60	<10	<1	0.21	<10	0.26	743	<1	0.11	3
C328335	9	31	280	3.53	<10	<1	0.26	<10	0.43	283	1	0.05	2
C328336	10	34	586	3.80	<10	<1	0.55	<10	0.49	539	<1	0.07	4
C328337	5	26	26	2.14	<10	<1	0.22	<10	0.13	225	1	0.10	2
C328338	11	31	118	4.19	<10	<1	0.32	<10	0.43	604	<1	0.18	4
C328338PD	14	30	129	5.47	12	<1	0.31	<10	0.54	745	<1	0.21	4
C328339	19	22	15	5.20	13	<1	0.52	<10	0.83	866	<1	0.34	5
C328340	19	29	74	1.11	<10	<1	0.22	<10	0.20	293	1	0.13	3
C328341	2	25	11	0.93	<10	<1	0.30	<10	0.01	511	1	0.06	<1
C328342	11	27	28	3.05	<10	<1	0.41	<10	0.70	777	<1	0.18	6
C328343	4	22	45	1.52	<10	<1	0.22	<10	0.10	543	<1	0.07	2
C328344	13	25	330	3.77	11	<1	0.50	<10	0.64	877	1	0.15	4
C328345	4	25	28	1.40	<10	<1	0.28	<10	0.14	397	1	0.05	2
C328346	4	24	31	1.66	<10	<1	0.27	<10	0.10	330	<1	0.05	1
C328347	11	24	16	2.90	<10	<1	0.74	<10	0.45	1364	<1	0.06	5
C328348	19	24	28	4.22	13	<1	0.96	<10	1.20	1343	<1	0.13	6
C328349	6	22	28	2.16	<10	<1	0.20	<10	0.19	510	<1	0.09	2
C328350	12	24	185	5.02	<10	<1	0.20	<10	0.28	542	<1	0.13	4
C328351	8	30	4	5.96	11	<1	0.15	<10	0.15	569	<1	0.08	8
C328352	9	27	45	3.10	<10	<1	0.44	<10	0.52	1932	<1	0.16	9
C328353	11	24	67	3.49	<10	<1	0.31	<10	0.38	810	<1	0.17	4

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TEST REPORT: YVR1910627B

Project Name: HAWK
Job Received Date: 19-Sep-2019
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Sample ID	ICP-130 Co ppm 1	ICP-130 Cr ppm 1	ICP-130 Cu ppm 1	ICP-130 Fe % 0.01	ICP-130 Ga ppm 10	ICP-130 Hg ppm 1	ICP-130 K % 0.01	ICP-130 La ppm 10	ICP-130 Mg % 0.01	ICP-130 Mn ppm 5	ICP-130 Mo ppm 1	ICP-130 Na % 0.01	ICP-130 Ni ppm 1
C328354	19	26	173	5.23	11	<1	0.32	<10	0.51	1123	<1	0.17	6
C328355	6	35	24	3.86	<10	<1	0.13	<10	0.13	768	<1	0.11	6
C328356	16	23	187	5.49	11	<1	0.18	12	0.37	727	<1	0.11	4
C328357	4	23	59	1.39	<10	<1	0.15	<10	0.06	449	<1	0.08	<1
C328358	13	104	19	1.65	<10	<1	0.15	<10	<0.01	567	33	0.05	5
C328359	2	29	29	1.06	<10	<1	0.18	<10	0.06	202	1	0.08	2
C328360	3	30	53	1.20	<10	<1	0.22	<10	0.17	346	<1	0.12	2
C328361	20	30	429	7.52	15	<1	0.19	<10	0.86	967	<1	0.15	6
DUP C328333													
DUP C328339	19	21	14	5.08	13	<1	0.51	<10	0.82	850	<1	0.32	5
STD BLANK													
STD BLANK	<1	<1	<1	<0.01	<10	<1	<0.01	<10	<0.01	<5	<1	<0.01	<1
STD OxD127													
STD OREAS 24b	15	108	38	3.94	16	<1	1.20	15	1.34	356	3	0.11	56

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Job Received Date: 19-Sep-2019
Job Report Date: 22-Oct-2019
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Sample ID	ICP-130 P ppm 10	ICP-130 Pb ppm 2	ICP-130 S % 0.01	ICP-130 Sb ppm 2	ICP-130 Sc ppm 2	ICP-130 Sr ppm 1	ICP-130 Th ppm 8	ICP-130 Ti % 0.01	ICP-130 Tl ppm 10	ICP-130 V ppm 1	ICP-130 W ppm 10	ICP-130 Zn ppm 1	ICP-130 Zr ppm 5
Granite Blank	457	11	0.23	<2	3	26	<8	0.09	<10	26	<10	42	<5
Granite Blank	418	<2	0.03	<2	3	26	<8	0.09	<10	24	<10	28	<5
C328332	1297	3	0.05	2	<2	254	<8	0.11	<10	127	<10	39	10
C328333	2557	11	2.67	<2	<2	100	<8	0.13	<10	52	<10	25	17
C328334	1849	8	0.17	<2	<2	243	<8	0.15	<10	110	<10	47	12
C328335	745	<2	0.49	<2	2	101	<8	0.17	<10	70	<10	35	11
C328336	679	4	1.28	<2	2	104	<8	0.15	<10	73	<10	46	11
C328337	1043	3	0.01	<2	<2	133	<8	0.12	<10	86	<10	22	9
C328338	1319	4	<0.01	2	4	260	<8	0.18	<10	185	<10	56	15
C328338PD	2001	4	<0.01	4	5	255	<8	0.21	<10	242	<10	64	16
C328339	1621	5	<0.01	<2	5	77	<8	0.16	<10	122	<10	21	25
C328340	1010	4	0.13	3	<2	44	<8	0.15	<10	45	<10	47	15
C328341	203	2	0.01	<2	<2	72	<8	<0.01	<10	23	<10	24	<5
C328342	1532	3	<0.01	4	4	168	<8	0.14	<10	112	<10	76	15
C328343	341	3	<0.01	<2	<2	62	<8	0.08	<10	93	<10	36	15
C328344	1673	<2	0.08	<2	5	2306	<8	0.16	<10	155	<10	67	19
C328345	197	<2	0.02	<2	<2	113	<8	0.07	<10	70	<10	25	9
C328346	163	<2	<0.01	<2	<2	59	<8	0.09	<10	106	<10	23	12
C328347	989	<2	<0.01	<2	2	121	<8	0.08	<10	64	<10	82	7
C328348	2008	4	<0.01	<2	7	156	<8	0.19	<10	145	<10	103	18
C328349	708	<2	<0.01	<2	<2	115	<8	0.08	<10	97	<10	35	10
C328350	1513	3	<0.01	4	2	172	<8	0.20	<10	250	<10	58	15
C328351	957	5	<0.01	<2	<2	59	<8	0.12	<10	147	<10	67	12
C328352	1350	4	0.01	3	3	45	<8	0.15	<10	98	<10	72	12
C328353	1881	<2	<0.01	<2	3	139	<8	0.12	<10	149	<10	56	11

***Please refer to the cover page for comments regarding this test report. ***

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To: **Durfeld Geological Management Ltd**
PO Box 4438
Williams Lake, BC, V2G 2V5
Canada

TEST REPORT: YVR1910627B

Project Name: HAWK
Job Received Date: 19-Sep-2019
Job Report Date: 22-Oct-2019
Report Version: Final

Sample ID	ICP-130 P ppm 10	ICP-130 Pb ppm 2	ICP-130 S % 0.01	ICP-130 Sb ppm 2	ICP-130 Sc ppm 2	ICP-130 Sr ppm 1	ICP-130 Th ppm 8	ICP-130 Ti % 0.01	ICP-130 Tl ppm 10	ICP-130 V ppm 1	ICP-130 W ppm 10	ICP-130 Zn ppm 1	ICP-130 Zr ppm 5
C328354	2786	<2	0.04	<2	6	264	<8	0.11	<10	221	<10	78	10
C328355	1259	4	0.02	<2	3	62	<8	0.13	<10	122	<10	69	13
C328356	2977	5	<0.01	<2	3	131	<8	0.15	<10	260	<10	74	16
C328357	422	<2	0.08	<2	<2	96	<8	0.04	<10	52	<10	25	9
C328358	165	3	0.34	<2	<2	62	<8	<0.01	<10	9	<10	16	<5
C328359	305	3	<0.01	<2	<2	110	<8	0.06	<10	40	<10	20	6
C328360	348	<2	<0.01	<2	<2	99	<8	0.07	<10	49	<10	25	10
C328361	2511	5	0.02	<2	5	351	<8	0.19	<10	313	<10	84	13
DUP C328333													
DUP C328339	1612	3	<0.01	<2	5	74	<8	0.16	<10	121	<10	21	24
STD BLANK													
STD BLANK	<10	<2	<0.01	<2	<2	<1	<8	<0.01	<10	<1	<10	<1	<5
STD OxD127													
STD OREAS 24b	676	11	0.19	<2	10	30	11	0.20	<10	78	<10	98	25

***Please refer to the cover page for comments regarding this test report. ***

MSA LABS

SAMPLE PROCEDURE

Rocks and drill core

Rocks and drill core samples are crushed to 70% passing 2mm, then a representative split is taken and pulverized to 85% passing 75µm.

Soil and sediment

Soil and sediment samples are dried and then screened to the desired mesh size. The undersized (-) fraction is analyzed and the oversized (+) fraction is discarded unless otherwise specified.

Vegetation

Depending on requirements, vegetation samples are either dried and macerated to 1mm, OR, dried then ashed at 475°C, prior to analysis.

Other

We include the following sample preparation methods, together with a range of miscellaneous options:

- Core sawing
- Composite preparation
- Specific gravity

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To: **Durfeld Geological Management Ltd**
PO Box 4438
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Canada

TEST REPORT:	**YVR1910627A**

Project Name:	HAWK
Job Received Date:	19-Sep-2019
Job Report Date:	22-Oct-2019
Number of Samples:	13
Report Version:	Final

COMMENTS:

Test results reported relate to the tested samples only on an “as received” basis. Unless otherwise stated above, sufficient sample was received for the methods requested and all samples were received in acceptable condition. Analytical results in unsigned reports marked "provisional" are subject to change, pending final QC review and approval. The customer has not provided any information than can affect the validity of the test results. Please refer to MSALABS' Schedule of Services and Fees for our complete Terms and Conditions. Preliminary results are applicable when a portion of samples in a job is 100% completed and reported or 1 of a number of methods on the same job have been completed 100%. Results cannot change, but additional results or results for additional methods can be added.

SAMPLE PREPARATION	
METHOD CODE	DESCRIPTION
PRP-757	Dry, Screen to 80 mesh, discard plus fraction

ANALYTICAL METHODS	
METHOD CODE	DESCRIPTION
FAS-114	Au, Fire Assay, 30g fusion, ICP-AES, Trace Level
ICP-130	Multi-Element, 0.5g, 3:1 Aqua Regia, ICP-AES, Trace Level

Signature:

Yvette Hsi, BSc.
Laboratory Manager
MSALABS

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To: **Durfeld Geological Management Ltd**
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TEST REPORT:	**YVR1910627**

Project Name:	HAWK
Job Received Date:	19-Sep-2019
Job Report Date:	22-Oct-2019
Number of Samples:	40
Report Version:	Final

COMMENTS:

Test results reported relate to the tested samples only on an “as received” basis. Unless otherwise stated above, sufficient sample was received for the methods requested and all samples were received in acceptable condition. Analytical results in unsigned reports marked "provisional" are subject to change, pending final QC review and approval. The customer has not provided any information than can affect the validity of the test results. Please refer to MSALABS' Schedule of Services and Fees for our complete Terms and Conditions. Preliminary results are applicable when a portion of samples in a job is 100% completed and reported or 1 of a number of methods on the same job have been completed 100%. Results cannot change, but additional results or results for additional methods can be added.

SAMPLE PREPARATION	
METHOD CODE	DESCRIPTION
PRP-757	Dry, Screen to 80 mesh, discard plus fraction

ANALYTICAL METHODS	
METHOD CODE	DESCRIPTION
FAS-114	Au, Fire Assay, 30g fusion, ICP-AES, Trace Level
ICP-130	Multi-Element, 0.5g, 3:1 Aqua Regia, ICP-AES, Trace Level

Signature:

Yvette Hsi, BSc.
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To: **Durfeld Geological Management Ltd**
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TEST REPORT:	**YVR1910627B**

Project Name: HAWK
Job Received Date: 19-Sep-2019
Job Report Date: 22-Oct-2019
Number of Samples: 30
Report Version: Final

COMMENTS:

Test results reported relate to the tested samples only on an "as received" basis. Unless otherwise stated above, sufficient sample was received for the methods requested and all samples were received in acceptable condition. Analytical results in unsigned reports marked "provisional" are subject to change, pending final QC review and approval. The customer has not provided any information than can affect the validity of the test results. Please refer to MSALABS' Schedule of Services and Fees for our complete Terms and Conditions. Preliminary results are applicable when a portion of samples in a job is 100% completed and reported or 1 of a number of methods on the same job have been completed 100%. Results cannot change, but additional results or results for additional methods can be added.

SAMPLE PREPARATION	
METHOD CODE	DESCRIPTION
PRP-915	Dry, Crush to 70% passing 2mm, Split 500g, Pulverize to 85% passing 75µm

ANALYTICAL METHODS	
METHOD CODE	DESCRIPTION
FAS-114	Au, Fire Assay, 30g fusion, ICP-AES, Trace Level
ICP-130	Multi-Element, 0.5g, 3:1 Aqua Regia, ICP-AES, Trace Level

Signature:

Yvette Hsi, BSc.
Laboratory Manager
MSALABS