

Ministry of Energy and Mines  
BC Geological Survey

Assessment Report  
Title Page and Summary

TYPE OF REPORT [type of survey(s)]: Geochemical

TOTAL COST: \$4,019.00

AUTHOR(S): Andris Kikauka

SIGNATURE(S): A. Kikauka

NOTICE OF WORK PERMIT NUMBER(S)/DATE(S): \_\_\_\_\_

YEAR OF WORK: 2019

STATEMENT OF WORK - CASH PAYMENTS EVENT NUMBER(S)/DATE(S): 5755851

PROPERTY NAME: Kola MC

CLAIM NAME(S) (on which the work was done): MC KOLA COPPER 1063671, KOLA 2 1070445

COMMODITIES SOUGHT: Cu, Au, Ag, Co

MINERAL INVENTORY MINFILE NUMBER(S), IF KNOWN: 092F 103, 092F 360, 092F 361, 092F 362, 092F 555, 092F 614, 092F 618

MINING DIVISION: Alberni

NTS/BCGS: 092F 02/W, 092F.016

LATITUDE: 49 ° 11 ' 31 " LONGITUDE: 124 ° 57 ' 11 " (at centre of work)

OWNER(S):

1) Andris Kikauka

2) John Bakus

MAILING ADDRESS:

4199 Highway 101, Powell R, BC V8A 0C7

3-1572 Lorne St, Kamloops, BC V2C 1X6

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

1) same

2) same

MAILING ADDRESS:

same

same

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

NW trending belt Upper Triassic Vancouver Grp Karmutsen Fm basalt-andesite weakly metamorphosed intruded by NW trending mid-Jurassic granodiorite-qtz diorite-qtz monzonite Island Plutonic Suite. Large scale NW trending fault associated NE extension deep seated hydrothermal activity, felsic porphyry dykes associated with quartz-carbonate-chlorite-epidote, 3 parallel NNE trend fault zones contains banded, brecciated lenses of pyrite, chalcopyrite, bornite, arsenopyrite, tetrahedrite, Co-bearing mineral(s)

REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS: 9313, 10288, 12052, 13949, 15658, 28497, 29989, 32297, 32484, 33140

TYPE OF WORK IN THIS REPORT	EXTENT OF WORK (IN METRIC UNITS)	ON WHICH CLAIMS	PROJECT COSTS APPORTIONED (incl. support)
<b>GEOLOGICAL (scale, area)</b>			
Ground, mapping			
Photo interpretation			
<b>GEOPHYSICAL (line-kilometres)</b>			
Ground			
Magnetic			
Electromagnetic			
Induced Polarization			
Radiometric			
Seismic			
Other			
Airborne			
<b>GEOCHEMICAL (number of samples analysed for...)</b>			
Soil 12 samples ME-MS41 multi-element		1063671, 1070445	2,011.48
Silt			
Rock 8 samples ME-MS41 multi-element		1063671	2,007.52
Other			
<b>DRILLING (total metres; number of holes, size)</b>			
Core			
Non-core			
<b>RELATED TECHNICAL</b>			
Sampling/assaying			
Petrographic			
Mineralographic			
Metallurgic			
<b>PROSPECTING (scale, area)</b>			
<b>PREPARATORY / PHYSICAL</b>			
Line/grid (kilometres)			
Topographic/Photogrammetric (scale, area)			
Legal surveys (scale, area)			
Road, local access (kilometres)/trail			
Trench (metres)			
Underground dev. (metres)			
Other			
<b>TOTAL COST:</b>			<b>4,019.00</b>

NTS 092F 2/W, TRIM 092F.016  
LAT. 49 11' 31" N  
LONG. 124 57' 11" W

GEOCHEMICAL  
REPORT ON MINERAL TENURES 1063671, 1070445  
(WORK PERFORMED ON 1063671, 1070445)  
KOLA MC PROJECT PRECIOUS & BASE METAL  
MINERAL OCCURRENCES  
PORT ALBERNI, B.C.

Alberni Mining Division

by

Andris Kikauka, P.Geo.  
4199 Highway 101,  
Powell River, BC V8A 0C7

October 1, 2019

38,521

## Mineral Titles Online Viewer

### Exploration and Development Work / Expiry Date Change Event Detail

<b>Event Number ID</b>	<b>5755851</b>
Recorded Date	2019/sep/18
Work Type	Technical Work (T)
Technical Items	Geochemical (C), PAC Withdrawal (up to 30% of technical work required) (W3)
Work Start Date	2019/aug/19
Work Stop Date	2019/aug/21
Total Value of Work	\$ 4019.00
Mine Permit Number	

#### Summary of the work value:

<b>Title Numbers</b>	<b>1063671</b>
Claim Name/Property	MC KOLA COPPER
Issue Date	2018/oct/08
Work Performed Index	Y
Old Good To Date	2019/oct/11
New Good To Date	2021/oct/30
Numbers of Days Forward	750
Area in Ha	42.22
Applied Work Value	\$ 657.08
Submission Fee	\$ 0.00

<b>Title Numbers</b>	<b>1070445</b>
Claim Name/Property	KOLA 2
Issue Date	2019/aug/17
Work Performed Index	Y
Old Good To Date	2020/aug/17
New Good To Date	2021/oct/30
Numbers of Days Forward	439
Area in Ha	844.21
Applied Work Value	\$ 5076.82
Submission Fee	\$ 0.00

#### Financial Summary:

Total Applied Work Value:	\$ 5733.90
PAC name	Andris Arturs Kikauka
Debited PAC amount	\$ 1714.90
Credited PAC amount	\$
Total Submission Fees	\$ 0.00



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## 1.0 SUMMARY

The Kola MC property is situated 5 km south of Sproat Lake and approximately 25 km southwest of Port Alberni, Vancouver Island. The Kola MC property is within NTS Map Sheet 92F 02/W, centred on Latitude 49°11' 31"N and Longitude 124°57' 11"W. The area is accessible from Port Alberni, by road via Highway 4 to McCoy Lake Road and along Cous Creek FSR to Forestry Road 405. The topography of the claims is moderate to steep and mountainous. The property topography ranges from 280-920 meters elevation above sea level.

The Kola MC property is within Insular Belt of western British Columbia, a belt of dominantly oceanic and arc volcanic and related rocks of Upper Paleozoic – Mesozoic age overlain by basinal sediments and of Mesozoic and Tertiary age and intruded by intermediate to felsic plutons of both Mesozoic and Tertiary age. The Insular Belt is allochthonous with respect to tectonic domains of the Canadian Cordillera to the east (interpretation suggests Vancouver Island was once at same the latitude that Costa Rica is currently at). In the Alberni map sheet area Pennsylvanian age strata, the Sicker Group, host to the massive sulphide deposits of Buttle Lake, is overlain unconformably mainly by tholeiitic marine basalt of the Upper Triassic Karmutsen Formation. Intruding the Karmutsen Formation are numerous intermediate to felsic dykes and stocks of the Upper Jurassic - Lower Cretaceous Island Intrusive Suite. A major west northwesterly-striking structure (Cous Creek fault zone), extends through the Alberni map sheet and has influenced both the preglacial and postglacial geomorphology of the region. The large-scale faults influence structure and subsidiary structures related to a number of quartz-carbonate gold occurrences and geological settings that bear similarities to Zeballos gold-silver-copper hydrothermal-intrusion related Cu<sup>+</sup>/<sup>-</sup>Ag<sup>+</sup>/<sup>-</sup>Au, Au Quartz Vein, & Au Skarn deposit types.

The Kola MC Property was explored for base and precious metals when the logging roads, constructed in late 1970's, and gave access to Kola MC and Cous prospects. Portions of the Kola (MC) Property have been periodically explored by different companies for gold, silver, copper and/or molybdenum, targeting primarily narrow quartz-sulphide vein deposits. Mineralization at Kola MC showings is exposed along a roadcut along the 405 Forestry Road at 620 meters elevation (within MTO tenure 1063671). Exposed mineralization in roadcuts are present in fault zones as quartz-carbonate-sulphide Cu-Au-Ag-Co bearing veins and breccia. In 1986 Amstar Venture Corp drilled 22 holes totalling 1,307.9 meters. Highlights of core analysis results include:

**1986 Diamond Drill Hole Intersections (Amstar Venture Corp)**

DDH #	Aimuth	Dip	Depth (m)	From (m)	To (m)	Interval (m)	Cu %	Ag g/t	Au g/t
86-1	112	55	100.3	84.1	84.7	0.6	4.66	29.6	1.51
86-2	100	50	60.9	53.3	54.2	0.9	3.21	68.9	1.78
86-3	100	60	75.9	69.8	71.0	1.2	3.01	37.9	2.54

2005-2013: Previous work by SYMC Resources Ltd and G4G Resources Ltd included airborne geophysical surveys (magnetic total field, radiometric, and electromagnetic), remote sensing (satellite imagery), prospecting, and geochemistry. In 2005, a total of 1,661 line km. magnetic, electromagnetic and radiometric airborne geophysical program was conducted by Fugro

Airborne Surveys Corp. The airborne geophysical survey provided high quality geophysical data and many new prospecting targets. In 2006, prospecting geophysical anomalies identified four Cous cluster targets which warrant detailed mapping, sampling, trenching and/or drilling. SYMC completed Kola (MC) Zone drilling and discovered two additional deeper quartz-calcite-sulphide stockwork veins adjacent to the Kola Main Zone. Precious metal grades of the Kola MC zones are considered sub-economic, however potential exists for increased thickness and grades.

In early 2012, Auracle Geospatial Science Inc. completed a remote sensing analysis including hyper spectral analysis, mineral alteration mapping and fused radar data analyses over the Macktush Property for Nahminto Resources Ltd. The analysis yielded six target areas, and the highest priority Cous/Kola MC. These targets are substantiated by a value of 725 ppb Au geochemical analysis of RGS stream sediment sample downstream from the Kola/Cous showings. Remote sensing targets generally match the anomaly clusters from the 2005 airborne geophysical survey, and require additional follow-up ground investigation.

In 2013, Geosci Data Analysis Ltd. completed geophysical interpretation and inversion of the 2005 airborne magnetic survey data over the Macktush Property for Nahminto Resources Ltd.

In 2019, the writer performed rock chip and soil sampling of mapped and unmapped mineral zones located within a 100 meter radius of the Kola MC Main Zone, except for rock sample 19KOLA-1 which was taken from an outcrop located approximately 650 meters east of the Kola MC Main Zone, and the other 7 rock samples (19KOLA-2 to 8) were taken from the Main Zone outcrop and float (Fig 4, 5, & 7). A summary of 2019 rock chip sample descriptions and select geochemical analysis results are listed below:

Sample ID	MTO tenure	Zone Name	Easting NAD 83	Northing NAD 83	Elev (m)	Lithology
19KOLA-1	1070445	Roadcut	358275	5450317	594	andesite, greenstone
19KOLA-2	1063671	Kola MC (North)	357769	5450753	614	andesite, greenstone
19KOLA-3	1063671	Kola MC(North)	357734	5450626	632	andesite, greenstone
19KOLA-4	1063671	Kola MC (Main)	357726	5450594	625	andesite, greenstone
19KOLA-5	1063671	Kola MC (Main)	357719	5450583	622	andesite, greenstone
19KOLA-6	1063671	Kola MC (Main)	357713	5450578	620	andesite, greenstone
19KOLA-7	1063671	Kola MC (Main)	357710	5450571	619	andesite, greenstone
19KOLA-8	1063671	Kola MC (NW)	357725	5450753	620	andesite, greenstone

Sample ID	Alteration	Mineralization	Strike	Dip	Width (cm)
19KOLA-1	quartz, chlorite, limonite, pyrolusite, calcite	pyrite, pyrolusite	160	78 W	35
19KOLA-2	quartz, chlorite, magnetite, limonite, hematite	pyrite, chalcopyrite, sphalerite	29	80 W	12
19KOLA-3	quartz, chlorite, limonite, pyrolusite, calcite	pyrite, pyrolusite			float
19KOLA-4	quartz, chlorite, limonite, pyrolusite, calcite	pyrite, pyrolusite			float
19KOLA-5	quartz, chlorite, limonite, pyrolusite, calcite	pyrite			float
19KOLA-6	quartz, chlorite, magnetite, limonite, hematite	pyrite, chalcopyrite, sphalerite	30	80 W	30
19KOLA-7	quartz, chlorite, magnetite, limonite, calcite	pyrite, chalcopyrite, sphalerite	30	80 W	25
19KOLA-8	quartz, chlorite, magnetite, limonite, hematite	pyrite, chalcopyrite, sphalerite			float

Sample ID	Au ppm	Ag ppm	Cu ppm	Zn ppm	Pb ppm	Co ppm	V ppm	Ni ppm	Ca %	Fe %	As ppm	Sb ppm	Bi ppm	Mn ppm
19KOLA-1	0.03	0.11	232	82	3.1	47.7	193	57.2	0.09	7.99	28.3	1.72	0.33	1600
19KOLA-2	6.4	64.7	72900	239	38.4	499	83	693	0.49	25.3	668	3.13	14.95	99
19KOLA-3	0.04	0.39	418	87	2.4	32.2	195	52.5	3.27	6.31	9.9	0.79	0.28	959
19KOLA-4	0.02	0.34	312	64	1.6	41.1	183	54.5	1.36	8.61	4.8	0.32	0.57	859
19KOLA-5	0.02	0.46	194.5	21	10.5	24.9	50	0.9	0.23	6.4	83.6	0.83	2.32	211
19KOLA-6	0.02	35.7	9760	216	15.5	1145	33	541	0.06	37.1	7630	23.8	13.65	218
19KOLA-7	0.1	38.8	14650	234	20.1	1060	25	534	8.01	28.2	2370	20.2	87	430
19KOLA-8	1.46	61.4	34500	474	53.9	278	135	73.7	0.11	21.9	1145	7.95	9.57	450

Rock chip samples 19KOLA-2, 6, & 7 from the Main Zone, and 19KOLA-8 from the NW portion of the Kola Main Zone returned relatively high Au, Ag, Cu, As, Ni, Co, Fe. Rock chip sample 19KOLA-1 from roadcut several hundred meters east on Main Zone has elevated Mn, and low base/precious metal values. Rock chip sample 19KOLA-2, 6, 7, & 8 from the Main Zone contain coarse grain aggregates and patches of fine grain magnetite, pyrite, chalcopyrite, with trace amounts of arsenopyrite, tetrahedrite, and Co bearing minerals that are notably associated with elevated Ni-As geochemical values. The cobalt-nickel-arsenic association suggests Kola Main Zone may have 'deep rooted, crustal-scale' hydrothermal plumbing.

2019 Fieldwork also included a total of 12 soil samples were taken in a 50 X 200 meter area of the Kola Main Zone to assess targets for base and precious metals. The north portion of the soil grid returned relatively high Cu-Mn-P-Fe geochemical analysis values, with isolated highs in Au-Ag-Co-As-V. The south portion of the soil grid returned relatively high Cu-Co-As-Mn-Fe geochemical analysis values, with isolated highs in Au-Ag (Fig 9-18). A description and list of geochemical analysis values for Kola Main Zone soil samples are listed below:

Sample ID	UTM E	UTM N	Depth	Colour	Au ppm	Ag ppm	Cu ppm
19Kola-31	357750	5450700	25 cm	brown	0.05	0.3	735
19Kola-32	357775	5450700	25 cm	red-brown	0.35	7.11	3520
19Kola-33	357800	5450700	25 cm	red-brown	0.08	0.97	2060
19Kola-34	357725	5450650	25 cm	brown	0.23	2.44	1225
19Kola-35	357750	5450650	25 cm	brown	<0.02	0.46	200
19Kola-36	357775	5450650	30 cm	brown	<0.02	0.19	248
19Kola-37	357700	5450600	30 cm	brown	0.03	0.23	195.5
19Kola-38	357725	5450600	25 cm	red-brown	0.07	0.77	406
19Kola-39	357750	5450600	30 cm	brown	0.15	0.34	503
19Kola-40	357675	5450550	30 cm	brown	0.04	0.4	479
19Kola-41	357700	5450550	25 cm	red-brown	0.26	3.23	3700
19Kola-42	357725	5450550	25 cm	red-brown	0.05	0.48	595

Sample ID	% Fe	% Ca	As ppm	Sb ppm	Bi ppm	Mn ppm	P ppm	Ni ppm	Co ppm	V ppm	Cr ppm
19Kola-31	9.01	1.39	21.4	0.92	0.27	9490	2260	32	59.9	244	68
19Kola-32	9.36	0.92	205	1.5	3.84	3850	1200	78.2	193.5	174	44
19Kola-33	12.7	0.76	106.5	10.65	0.94	4830	1160	77.3	89.7	290	62
19Kola-34	6.31	0.44	81	7.62	2.77	1220	1160	57.3	66.3	161	55
19Kola-35	5.71	0.12	12.9	0.52	0.43	285	700	30.5	12	168	89
19Kola-36	5.89	0.45	20.7	0.79	0.43	890	950	48.5	31.5	182	61
19Kola-37	5.17	0.8	91.2	5.16	3.49	2030	1180	18.6	49.4	88	13
19Kola-38	7.29	0.57	148.5	1.56	2.89	972	840	63.2	75.9	169	62
19Kola-39	5.86	0.88	149.5	1.38	2.27	1440	860	59.4	107.5	149	55
19Kola-40	6.45	1.01	146	1.65	1.43	1100	750	55	75.1	169	69
19Kola-41	19.3	0.3	1000	9.27	24.2	2260	820	95.8	448	310	146
19Kola-42	8.29	0.55	175	1.58	4.53	1550	710	67.6	142.5	206	82

The Kola Main Zone has been angle drilled from a short distance from the showings (e.g. drill collars approximately 25-50 meters west of the showings). Future recommendations to test the depth extension of Main Zone Cu-Au-Ag bearing quartz-sulphide veins include drilling a fence pattern of 6 inclined (-50 degrees, azimuth 240 degrees, 175 m depth, 1050 m total depth) holes collared approximately 80-120 meters east of surface trace of the Kola Main Zone. The intent of proposed drilling would be to test the Kola Main Zone and sub-parallel zones at a greater depth to approximately 150 meters below surface. 2019 soil geochemical analysis results suggest north portion of grid (soil sample 19Kola-31 to 34) and south portion of grid (soil sample 19Kola-39 to 42) represent potential drill targets. Soil geochemical data suggests drill collar at 5,450,700 N, 357,675 E (orientation -50 dip, azimuth 110, depth 200 m) to test north-grid Cu-Mn-P-Fe (Au-Ag-Co-As-V) soil anomalies, and 5,450,550 N, 357,590 E (orientation -50 dip, azimuth 110, depth 200 m) to test south-grid Cu-Co-As-Mn-Fe (Au-Ag) soil anomalies.

In addition to the Main Zone, the Cous Zone located along high relief ridge crest (potential large-scale fold hinge trap structure with coincident magnetic & EM geophysical anomalies), approximately 1,600 meters northeast of the Kola Main Zone, requires detailed mapping of veining (cross-fault structures), ground magnetometer surveys, and geochemical sampling to determine future drill targets. Budget total for completing 1,200 meters core drilling and detailed mapping, geochemical sampling would be approximately \$300,000.00.

## 2.0 INTRODUCTION

This report provides details of previous exploration work, plus geochemical fieldwork completed in Aug 19-21, 2019 on the Kola mineral claims for the purpose of outlining tenor and extent of base and precious metal mineralization and compliance with data required for filing assessment.

### 3.0 LOCATION, ACCESS, & PHYSIOGRAPHY

The Kola MC property is situated 5 km south of Sproat Lake and approximately 25 km southwest of Port Alberni, Vancouver Island. The Kola MC property is within NTS Map Sheet 92F 02/W, centred on Latitude 49°11' 31"N and Longitude 124°57' 11"W. The area is accessible from Port Alberni, by road via Highway 4 to McCoy Lake Road and thence along Cous Creek FSR to Forestry Road 405. The topography of the claims is moderate to steep and mountainous. The property topography ranges from 280-920 meters elevation above sea level. The property has all-weather gravel road access with logging roads extending to all parts of the Kola claims. The claims cover an area west and north of Cous Creek, within a partially logged area allowing vehicle access to most of the claim block. The property is located within moderate-steep hill terrain between 280-920 metres ASL. Most vegetation cover consists of mixed coniferous (fir, hemlock, cedar) forest except along watercourses where stands of poplar and alder dominate.

The climate is temperate coastal, cool and wet, with windstorms in late fall, and thick snow cover in the higher elevations from November to March, which may curtail winter exploration work locally. Temperatures range from highs of 25°C in the summer to lows of -10°C in the winter. There are typically hot dry spells in mid-summer. Port Alberni is a resource-based community of approximately 18,000 people with a sheltered deep sea port accessing the Pacific Ocean, and a paved highway accessing the rest of Vancouver Island. Various companies are actively logging portions of the property area. Forest access roads throughout the property are maintained by various logging companies, and BC Ministry of Forests, Lands and Natural Resource Operations (FLNRO).

There are two aboriginal bands based in Port Alberni with interests and unsettled land claims for traditional territories that may cover portions of the Property, including the Hupacasath and the Tseshah First Nations. The extreme southwestern portion of the Maektush Property is covered by treaty related lands of the Maa-nulth First Nations, established in 2011.

### 4.0 PROPERTY STATUS

The Kola MC Property consists of two (2) contiguous mineral claims totalling about 886.4 hectares (2,189.5 acres) situated 25 km southwest of Port Alberni, British Columbia. The Kola MC Property MTO mineral claims are registered 50% MTO Client ID 114051-Andris Kikauka, and 223385-John Bakus. The following list sourced from BC MTO online and summarizes details of property status:

Title Number	Claim Name	Owner	Title Type	Issue Date	Good To Date	Area (ha)
1063671	MC KOLA COPPER	114051 (50%)	Mineral	2018/OCT/08	2021/OCT/30	42.224
1070445	KOLA 2	114051 (50%)	Mineral	2019/AUG/17	2021/OCT/30	844.2089

The Kola (MC) Cous Property is located in NTS 092F02W, and situated in the Alberni Mining Division. The property is centred approximately 10 kilometres southwest of Port Alberni at Latitude 49° 11' 31" North, Longitude 124° 57' 11" West, or at UTM Zone 10 5450600 North 357700 East. The mineral claims that constitute the Kola property are contiguous.



## 5.0 PROPERTY HISTORY

Previous work on the Kola is documented in BC assessment report index as follows:

**Report Year Author Owner/Operator Work Program / MINFILE #s - Names**

**5650** 1974 Guppy, Walter Walter Guppy Prospecting / 092F361 – Summit

**5981** 1976 Vollo, N.B. Cous Creek Copper Mines Ltd. Geophysical / 092F360 - Cous Creek

**6393** 1977 Anderson, R.E. Bethlehem Copper Corporation Geological, Geophysical / 092F360 - Cous Creek

**6956** 1977 Nethery, R.J. Bethlehem Copper Corporation Geophysical, Drilling (Percussion) / 092F360 - Cous Creek

**9313** 1981 Timmins, W.G. and Rolston, T. Pacific Seadrift Resources Ltd. Geophysical (Airborne) / 092F103 - Kola, 092F360 - Cous Creek, 092F361 - Summit, 092F362 - Buck 1, 092F412 - Sproat Lake, 092F553 - Creek, 092F555 - Sky 2

**9356** 1981 Timmins, W.G. and Rolston, T. Missile Resources Ltd. Geophysical (Airborne) / none

**10288** 1982 Wing, B.J., Timmins, W.G. Pacific Seadrift Resources Ltd. Geological, Geochemical / 092F103 - Kola, 092F555 - Sky 2

**12052a** 1983 Riteman, L.A. Pacific Seadrift Resources Ltd. Prospecting / 092F103 – Kola, 092F555 - Sky 2

**12052b** 1983 Marks, D.G. Pacific Seadrift Resources Ltd. Geophysical / 092F103 - Kola, 092F555 - Sky 2

**12242** 1984 De La Mothe, D. Cous Creek Copper Mines Ltd. Geological / 092F360 - Cous Creek

**12872** 1985 Krueckl, G.P. Cous Creek Copper Mines Ltd. Geological / 092F360 - Cous Creek

**13949** 1985 Marks, D.G. Amstar Venture Corp. Geochemical / 092F103 - Kola, 092F553 - Creek

**15037** 1986 Royer, G.A. Triactor Resources Corporation Geological / 092F361 - Summit, 092F555 - Sky 2

**15169** 1986 Royer, G.A. Mariah Resources Ltd. Geological / 092F362 - Buck 1, 092F412 - Sproat Lake

**15658** 1986 Sookochoff, L. Amstar Venture Corp. Drilling (Core) / 092F103 - Kola

**15780** 1986 Royer, G.A. Alta Management Corporation Geological / 092F360 - Cous Creek

**15970** 1987 Poloni, J.R. Ramcor Resources Ltd. Geochemical / 092F383 – Bell

**16918** 1988 Laanela, H. Abstract Enterprises Corp. Geological, Geochemical, Geophysical / 092F360 - Cous Creek

**17441** 1987 Laanela, H. Veto Resources Ltd. Geological, Geochemical, Geophysical / 092F361 - Summit, 092F555 - Sky 2

**28497** 2006 Houle, J. SYMC Resources Ltd. Drilling (Core), Geophysical - 092F 012 - Macktush, 092F103 - Kola, 092F155 - Holk, 092F168 - Dauntless, 092F221 - Rex, 092F362 - Buck1, 092F383 - Bell, 092F412 - Sproat Lake, 092F549 - Stamp 3, 092F551 - Devils Den, 092F553 -Creek, 092F555 - Sky 2

**28727** 2006 McConnell, C. Ashworth Explorations Ltd. Geological, Geochemical - 092F360 - Cous Creek, 092F361 - Summit

**28989** 2007 Houle, J. SYMC Resources Ltd. Drilling (Core), Prospecting - 092F 012 - Macktush, 092F103 - Kola, 092F155 - Holk, 092F168 - Dauntless, 092F221 - Rex, 092F362 - Buck1, 092F383 - Bell, 092F412 - Sproat Lake, 092F549 - Stamp 3, 092F551 - Devils Den, 092F553 -Creek, 092F555 - Sky 2

**32297** 2011 Sanabria, R.O. and Hills, L. G4G Resources Ltd. Geological, Geochemical - 092F 012 - Macktush, 092F103 - Kola, 092F155 -Holk, 092F168 - Dauntless, 092F221 - Rex, 092F360 - Cous Creek, 092F361 -Summit, 092F362 - Buck1, 092F383 - Bell, 092F412 - Sproat Lake, 092F549 -Stamp 3, 092F551 - Devils Den, 092F553 - Creek, 092F555 - Sky 2

**32484** 2011 Sanabria, R.O. and Hills, L. G4G Resources Ltd. Geological, Geochemical - 092F 012 - Macktush, 092F103 - Kola, 092F155 -Holk, 092F168 - Dauntless, 092F221 - Rex, 092F360 - Cous Creek, 092F361 -Summit, 092F362 - Buck1, 092F383 - Bell, 092F412 - Sproat Lake, 092F549 -Stamp 3, 092F551 - Devils Den, 092F553 - Creek, 092F555 - Sky 2

**33140** 2012 McLelland, D. Nahminto Resources Ltd. Geophysical - 092F 012 - Macktush, 092F103 - Kola, 092F155 - Holk, 092F168 - Dauntless, 092F221 - Rex, 092F360 - Cous Creek, 092F361 - Summit, 092F362 - Buck1, 092F383 - Bell, 092F412 - Sproat Lake, 092F549 - Stamp 3, 092F551 - Devils Den, 092F553 - Creek, 092F555 - Sky 2

**33217** 2012 Houle, J. Nahminto Resources Ltd. Prospecting, Geochemical, Geological - 092F 012 - Macktush, 092F103 - Kola, 092F155 - Holk, 092F168 - Dauntless, 092F221 - Rex, 092F360 - Cous Creek, 092F361 - Summit, 092F362 - Buck1, 092F383 - Bell, 092F412 - Sproat Lake, 092F549 - Stamp 3, 092F551 - Devils Den, 092F553 - Creek, 092F555 - Sky 2

**34121** 2013 Houle, J., and Pezzot, T. Nahminto Resources Ltd. Prospecting, Geochemical, Geological, Geophysical - 092F 012 - Mactush, 092F103 - Kola, 092F155 - Holk, 092F168 - Dauntless, 092F221 - Rex, 092F360 - Cous Creek, 092F361 - Summit, 092F362 - Buck1, 092F383 - Bell, 092F412 - Sproat Lake, 092F549 - Stamp 3, 092F551 - Devils Den, 092F553 - Creek, 092F555 - Sky 2

**35129** 2014 Houle, J. Nahminto Resources Ltd. and World Organics Inc. Prospecting, Geochemical - 092F 012 - Mactush, 092F103 - Kola, 092F155 - Holk, 092F168 - Dauntless, 092F221 - Rex, 092F360 - Cous Creek, 092F361 - Summit, 092F362 - Buck1, 092F383 - Bell, 092F412 - Sproat Lake, 092F549 - Stamp 3, 092F553 - Creek, 092F555 - Sky 2, 092F614 - Foss, 092F617 - J.F., 092F618 - Fosselli Creek Road, 092F619 - Rex East, 092F629 - Rex South East

A brief description of Kola property history is listed as follows:

**1976** – Cous Creek Copper Mines completed a ground magnetic survey over 4 km. long zone of copper-magnetite skarn mineralization, the Cous Creek prospect (MINFILE 092F360) discovered in 1972 in the north-central part of the property (Vollo, N.B. 1976).

**1977** – Bethlehem Copper Corporation completed geological mapping and sampling, pulse electromagnetic surveys, and two percussion drill holes with negative results on the Cous Creek prospect (Anderson, R.E. and Nethery, R.J. 1977).

**1981** – W.G. Timmins Exploration and Development Ltd. completed airborne magnetic geophysical surveys for two companies with separate properties covering what is now the northwestern part of the property, covering several MINFILE copper occurrences Kola 092F103, Cous Creek 092F360, Summit 092F361, Buck 1 092F362, Creek 092F553 and Sky 2 092F555, plus the Sproat Lake 092F412 limestone showing (Timmins, W.G. and Rolston, T. 1981).

**1982-1983** - W.G. Timmins and subsequently Trans-Arctic Explorations Ltd. completed geological, geochemical, prospecting and ground geophysical surveys for Pacific Seadrift Resources Ltd. over the northwest part of the property including the Kola and Sky 2 occurrences. At the Kola MINFILE 092F103 prospect, trench sampling of massive sulphides yielded an average of 7.7% Cu, 124 g/t Ag and 6.5 g/t Au across 0.6 metres width along 4.5 metres length (Wing, B.J. and Timmins, W.G. 1982).

**1984-1985** – Cous Creek Copper Mines completed geological work outlining the skarn potential at the Cous Creek MINFILE 092F360 prospect (De La Mothe, D. 1984; and Krueckl, G.P. 1985).

**1985-1986** - Amstar Venture Corporation completed a 221 sample geochemistry program, and a 22 hole drill program totaling 1,308m over the MC/KOLA (MINFILE 092F103) prospect in centre of the northwest part of the property. The program was aimed at investigating and defining the series of shear related zones of massive chalcopyrite and pyrite pods and lenses which comprise the KOLA prospect, the main one of which is exposed for approximately 10m along strike. Highlights of the program include a grab sample that returned 7.27% Cu, 23 g/t Ag and 2.8 g/t Au, a 70 metre long gold anomaly in soil extending over the main sulphide zone, and definition of the main sulphide zone to a depth of 40 metres, open at depth, with returned values as high as 3.01% Cu, 37 g/t Ag, and 2.5 g/t Au (Marks, D.G. 1985; Sookochoff, L. 1986).

#### **1986 Diamond Drill Hole Intersections (Amstar Venture Corp)**

<b>DDH #</b>	<b>Azimuth</b>	<b>Dip</b>	<b>Depth (m)</b>	<b>From (m)</b>	<b>To (m)</b>	<b>Interval (m)</b>	<b>Cu %</b>	<b>Ag g/t</b>	<b>Au g/t</b>
<b>86-1</b>	<b>112</b>	<b>55</b>	<b>100.3</b>	<b>84.1</b>	<b>84.7</b>	<b>0.6</b>	<b>4.66</b>	<b>29.5</b>	<b>1.51</b>
<b>86-2</b>	<b>100</b>	<b>50</b>	<b>60.9</b>	<b>53.3</b>	<b>54.2</b>	<b>0.9</b>	<b>3.21</b>	<b>68.9</b>	<b>1.78</b>
<b>86-3</b>	<b>100</b>	<b>60</b>	<b>75.9</b>	<b>69.8</b>	<b>71.0</b>	<b>1.2</b>	<b>3.01</b>	<b>37.0</b>	<b>2.54</b>

**1986** – Trans-Arctic Explorations Ltd. completed extensive geological mapping and limited rock and/or soil geochemistry for three companies on separate adjacent properties covering five

MINFILE occurrences Cous Creek 092F360, Summit 092F361, Buck 1 092F362, Creek 092F553 and Sky 2 092F555 in the north-central part of the property (Royer, G.A. 1986).  
**1987-1988** – Ashworth Explorations Ltd. completed extensive geological mapping, rock and soil geochemistry and ground magnetic surveys for two companies on separate adjacent properties covering three MINFILE occurrences Cous Creek 092F360, Summit 092F361, and Sky 2 092F555 in the north-central part of the property (Laanela, H. 1987, 1988). The geological setting and target areas for both known and new Cu skarn mineralization were established.  
**2006** - SYMC conducted an advanced prospecting program targeting geophysical targets picked out in the 2005 Fugro airborne survey, including 288 select rock grab samples, 26 stream moss mat samples and 66 soil samples. Prospecting work returned elevated metal values in rock float and stream moss mat samples with selected highlights as follows:

- Sample 343652 from the West cluster yielded 1.37% Cu and 24.7 ppm Mo from a select grab of float sample of massive iron-copper skarn
- Sample 343856 from the Cous cluster yielded 5.55 g/t Au from a select outcrop grab of a rusty quartz-sulphide vein containing 5% pyrite. Four new targets in the Cous cluster, plus the West cluster were also identified and further prospecting mapping, sampling, trenching and/or drilling was recommended for all three targets (Houle, J. 2007).

**Drill Highlights from SYMC Resources Ltd. 2006**

Hole	Vein	Interval (m)	Length(m)	Cu %	Ag (g/t)	Au (g/t)
MC-06-01	MC2	62.5 – 79.1	16.6	0.164	2.05	0.194
		70.6 – 71.2	0.6	1.380	15.30	1.193
MC-06-02	MC1	32.5 – 32.8	0.3	1.009	24.00	0.692
MC-06-03	MC-2	70.9 – 72.6	1.7	0.306	4.00	0.218

**Kola (MC) Property Mineral Resource Estimates 2006**

Vein/Zone	Tonnes	Gold g/t	Silver g/t	Copper %	Category
MC1 Zone	21,851	0.26	6.9	0.43	Indicated
MC2 Zone	138,499	0.33	5.2	0.47	Indicated
MC3 Zone	17,618	0.38	1.0	0.05	Indicated

**2013** – Nahmintq Resources engaged Geosci Data Analysis Ltd. who completed geophysical interpretation and inversion of the 2005 airborne magnetic survey data over the Macktush Property. The analysis identified five areas on the Property which warranted detailed 3D Inversion Modeling as follows: Cous, Rex, Fred, Canal and Dauntless. The detailed inversions provided insights into the sub-surface characteristics of these known mineralized areas from the interpretation and 3D inversion (Houle, J. and Pezzot, T., 2013).

**2012 to 2014** - Nahmintq Resources completed limited prospecting, rock geochemistry, and geological mapping programs at road-accessible target areas on the MC North Zone, a 0.1 m. thick copper skarn zone sampled in a road cut yielded 9.5% copper, 90 g/t silver, 6.6 g/t gold and elevated values in cobalt, nickel and zinc.

**6.0 GENERAL GEOLOGY**

Vancouver Island consists of three tectonic terranes, the Wrangellia, Pacific Rim and Crescent. Wrangellia covers the northern 90% of the island, which also extends to the coastal mainland and the Queen Charlotte Islands. The Pacific Rim and Crescent terranes each cover about 5% of the south end of Vancouver Island and are thought to represent exotic tectonic plates, which collided with and became attached to Vancouver Island. Narrow slivers of the Pacific Rim terrane also exist along the southwest coast of the island. The terrane boundaries are marked by pronounced, east-west trending and north-dipping regional fault structures that contain major river systems on the southern island. The rocks that make up Vancouver Island range in age from Paleozoic to Pliocene and represent three major volcano-sedimentary events (Paleozoic, Triassic

and Jurassic), one major sedimentary event (Cretaceous) and four major intrusive events (Triassic, Jurassic, Eocene and Miocene/Pliocene). Major structural features consist of northwest-trending, north-south trending and north-east trending faults and folds. This includes many northwest-trending, low-angle thrust faults and fold axes. The oldest rocks are generally the most structurally disrupted, and areas of high metamorphic grades occur within and locally near the Pacific Rim terrane in the south and along the southwest coast of the island.

The Port Alberni area is mainly underlain by Triassic mafic volcanic rocks of the Karmutsen Formation Vancouver Group. These are intruded by granodiorite sills, stocks and dikes of the Jurassic Island plutonic suite. Local inliers consist of Triassic Quatsino Formation sedimentary limestones of the Vancouver Group overlain by Jurassic sediments and volcanics of the Bonanza Group, or sandstones, shales and conglomerates of the Cretaceous Nanaimo Group. The Kola property is mostly underlain by Karmutsen mafic volcanics and Island felsic intrusives, with local inliers of possible Quatsino limestone and/or Parson Bay and Bonanza sediments and volcanics. These rocks are variably block-faulted and folded, and represent ideal settings for clustered copper-gold-silver-molybdenum porphyry, skarn and epithermal vein deposits.

Wrangellia terrane in south-central Vancouver Island is surrounded by varied and structurally complex geology. Port Alberni sits between two major uplifts exposing the island's oldest Paleozoic volcano-sedimentary rocks of the Sicker and Buttle Lake Groups, the Cowichan Uplift to the southeast and the Myra Falls Uplift to the northwest. Small stocks of the Triassic Mount Hall Gabbro suite occasionally intrude the Paleozoic rocks southeast of Port Alberni. The immediate Port Alberni area is mainly underlain by Triassic mafic volcanic rocks of the Karmutsen Formation of the Vancouver Group. These are commonly intruded by large granodiorite sills, stocks and dikes of the Jurassic Island plutonic suite. Locally inliers consist of Triassic Quatsino Formation sedimentary limestones of the Vancouver Group that are overlain by Jurassic volcanics of the Bonanza Group, sandstones, shales and conglomerates of the Cretaceous Nanaimo Group. All units are occasionally intruded by small quartz diorite stocks and dikes of the Tertiary-Eocene Mount Washington plutonic suite.

## 7.0 PROPERTY GEOLOGY

The Kola (MC) Cous property hosts a series of sub-parallel, NNE striking and variably west-dipping copper-gold-silver quartz-calcite-sulphide stockwork zones. The MC/Kola zones are documented as BC MINFILE 092F103, and classified as a prospect of the copper-silver quartz vein type. This target area appears to extend northwards towards five other MINFILE copper occurrences (Sky 2 092F555, Cous Creek 092F360, Summit 092F361, Foss 092F614 and Fossilli Creek Road 092F618). The Cous Creek prospect hosts several copper skarn occurrences. Kola MC occurrence exhibits positive geochemical correlation amongst copper, silver, gold, iron and sulphur plus occasionally with molybdenum, zinc, lead, nickel, cobalt, cadmium, antimony and/or arsenic as well in vein or stockwork zone intercepts due to observed mineralogical cluster of chalcopyrite and pyrite mineralization, with lesser bornite, molybdenite, sphalerite, galena, tetrahedrite, tennantite and/or arsenopyrite. Gangue mineralogical and physical vein characteristics often include pervasive silicification including quartz as eyes in surrounding rocks and as quartz +/- calcite, chlorite, sericite, epidote alteration, and often include brecciation and/or banding within the veins and stockworks. Quartz-feldspar porphyry intrusive dikes exhibit a

positive spatial correlation with mineralized zones, but generally do not host the higher grade mineralization. Stacking of parallel veins within vein systems, and splaying and merging of thinner, intermediary veins between thicker, more consistent veins along sub-horizontal (5-30 degree plunging) splay lines. Thicker vein and higher grade copper-silver-gold intercepts occur along or near these sub-horizontal splay lines.

Lithologies present within the Kola (MC) Cous mineral claims are listed as follows:

#### LITHOLOGY LEGEND

- EMJgd** Early-Mid Jurassic  
Island Plutonic Suite  
granodiorite, qtz diorite
- IJBca** Lower Jurassic Bonanza Grp  
calc-alkaline volcanics
- uTrVK** Mid-Upper Triassic  
Vancouver Grp, Karmutsen  
Formation tholeiitic basalt
- muTrVs** Mid-Upper Triassic  
Vancouver Grp carbonate  
and clastic sediments

The host rock for the zones consists of pervasively silicified, tuffaceous to massive, intermediate to mafic volcanics which may be either part of the uppermost Karmutsen Formation or part of the lowermost Parsons Bay Formation. These are intruded by approximately 10% thin (less than 5 metre thick) feldspar porphyry dikes and/or sills of the Jurassic Island plutonic suite. Kola MC Main Veins (and parallel zones) are interpreted as narrow (0.3 to 15.0 metre thick) banded and brecciated quartz-calcite-chlorite-actinolite-sulphide stockwork vein, with an unknown strike length. It is open and untested down-dip and along strike both to the north and the south, and the zone is interpreted as a steeply west-dipping shear. The best drill intercept from SYMC 2006 drilling of the MC zone was 16.6 metres @ 0.164% copper, 0.194 g/t gold, and 2.051 g/t silver (MC-06-01), which contained three higher grade sections including a core zone of 0.6 metres @ 1.38% copper, 1.19 g/t gold and 15.3 g/t silver. An outcrop grab sample from the MC North Zone yielded 9.5% copper, 90 g/t silver, 6.6 g/t gold and elevated values in cobalt, nickel and zinc in copper skarn mineralization containing chalcopyrite, pyrrhotite, and magnetite.

## 8.0 2019 GEOCHEMICAL FIELDWORK

### 8.1 METHODS AND PROCEDURES

Navigation to fieldwork site was assisted by Garmin 60Cx GPS receiver. A total of 8 rock chip samples were collected across widths of 12-35 centimeters from bedrock (and 4 angular shaped float samples) located near areas of previous work as well as several outlying areas. Rock chip sample material was taken with a maul and rock hammer. Approximately 0.98-2.04 kilograms of acorn sized rock chips were placed in poly ore bags and site was flagged with ID #. Samples were dried and shipped to ALS Minerals, North Vancouver BC for Preparation-31, and ME-MS41 geochemical analysis by aqua regia digestion, with AES finish (Appendix A, B).

Soil samples were taken with a tree planting shovel at a consistent depth of 25-30 cm. Location was flagged and approximately 0.7 kgs of B horizon soil, located below A horizon as indicated by deeper brown (red) colour change, was placed into marked kraft envelopes. Soil samples were subjected to SCR-41 prep & ME-MS41 multi-element analysis procedure (Appendix A, B)

## 8.2 2019 KOLA MC ROCK CHIP SAMPLE GEOCHEMISTRY

In 2019, the writer performed rock chip and soil sampling of mapped and unmapped mineral zones located within a 100 meter radius of the Kola MC Main Zone, except for rock sample 19KOLA-1 which was taken from an outcrop located approximately 650 meters east of the Kola MC Main Zone, and the other 7 rock samples (19KOLA-2 to 8) were taken from the Main Zone outcrop and float (Fig 4, 5, & 7). A summary of 2019 rock chip sample descriptions and select geochemical analysis results are listed below:

Sample ID	MTO tenure	Zone Name	Easting NAD 83	Northing NAD 83	Elev (m)	Lithology
19KOLA-1	1070445	Roadcut	358275	5450317	594	andesite, greenstone
19KOLA-2	1063671	Kola MC (North)	357769	5450753	614	andesite, greenstone
19KOLA-3	1063671	Kola MC(North)	357734	5450626	632	andesite, greenstone
19KOLA-4	1063671	Kola MC (Main)	357726	5450594	625	andesite, greenstone
19KOLA-5	1063671	Kola MC (Main)	357719	5450583	622	andesite, greenstone
19KOLA-6	1063671	Kola MC (Main)	357713	5450578	620	andesite, greenstone
19KOLA-7	1063671	Kola MC (Main)	357710	5450571	619	andesite, greenstone
19KOLA-8	1063671	Kola MC (NW)	357725	5450753	620	andesite, greenstone

Sample ID	Alteration	Mineralization	Strike	Dip	Width (cm)
19KOLA-1	quartz, chlorite, limonite, pyrolusite, calcite	pyrite, pyrolusite	160	78 W	35
19KOLA-2	quartz, chlorite, magnetite, limonite, hematite	pyrite, chalcopyrite, sphalerite	29	80 W	12
19KOLA-3	quartz, chlorite, limonite, pyrolusite, calcite	pyrite, pyrolusite			float
19KOLA-4	quartz, chlorite, limonite, pyrolusite, calcite	pyrite, pyrolusite			float
19KOLA-5	quartz, chlorite, limonite, pyrolusite, calcite	pyrite			float
19KOLA-6	quartz, chlorite, magnetite, limonite, hematite	pyrite, chalcopyrite, sphalerite	30	80 W	30
19KOLA-7	quartz, chlorite, magnetite, limonite, calcite	pyrite, chalcopyrite, sphalerite	30	80 W	25
19KOLA-8	quartz, chlorite, magnetite, limonite, hematite	pyrite, chalcopyrite, sphalerite			float

Sample ID	Au ppm	Ag ppm	Cu ppm	Zn ppm	Pb ppm	Co ppm	V ppm	Ni ppm	Ca %	Fe %	As ppm	Sb ppm	Bi ppm	Mn ppm
19KOLA-1	0.03	0.11	232	82	3.1	47.7	193	57.2	0.09	7.99	28.3	1.72	0.33	1600
19KOLA-2	6.4	64.7	72900	239	38.4	499	83	693	0.49	25.3	668	3.13	14.95	99
19KOLA-3	0.04	0.39	418	87	2.4	32.2	195	52.5	3.27	6.31	9.9	0.79	0.28	959
19KOLA-4	0.02	0.34	312	64	1.6	41.1	183	54.5	1.36	8.61	4.8	0.32	0.57	859
19KOLA-5	0.02	0.46	194.5	21	10.5	24.9	50	0.9	0.23	6.4	83.6	0.83	2.32	211
19KOLA-6	0.02	35.7	9760	216	15.5	1145	33	541	0.06	37.1	7630	23.8	13.65	218
19KOLA-7	0.1	38.8	14650	234	20.1	1060	25	534	8.01	28.2	2370	20.2	87	430
19KOLA-8	1.46	61.4	34500	474	53.9	278	135	73.7	0.11	21.9	1145	7.95	9.57	450

Rock chip samples 19KOLA-2, 6, & 7 from the Main Zone, and 19KOLA-8 from the NW portion of the Kola Main Zone returned relatively high Au, Ag, Cu, As, Ni, Co, Fe. Rock chip sample 19KOLA-1 from roadcut several hundred meters east on Main Zone has elevated Mn, and low base/precious metal values. Rock chip sample 19KOLA-2, 6, 7, & 8 from the Main Zone contain coarse grain aggregates and patches of fine grain magnetite, pyrite, chalcopyrite, with trace amounts of arsenopyrite, tetrahedrite, and Co bearing minerals that are notably associated with elevated Ni-As geochemical values. The cobalt-nickel-arsenic association suggests Kola Main Zone may have 'deep rooted, crustal-scale' hydrothermal plumbing.

### 8.3 2019 KOLA MC SOIL GEOCHEMISTRY

2019 Fieldwork also included a total of 12 soil samples were taken in a 50 X 200 meter area of the Kola Main Zone to assess targets for base and precious metals. The north portion of the soil grid returned relatively high Cu-Mn-P-Fe geochemical analysis values, with isolated highs in Au-Ag-Co-As-V. The south portion of the soil grid returned relatively high Cu-Co-As-Mn-Fe geochemical analysis values, with isolated highs in Au-Ag (Fig 9-18). A description and list of geochemical analysis values for Kola Main Zone soil samples are listed below:

Sample ID	UTM E	UTM N	Depth	Colour	Au ppm	Ag ppm	Cu ppm				
19Kola-31	357750	5450700	25 cm	brown	0.05	0.3	735				
19Kola-32	357775	5450700	25 cm	red-brown	0.35	7.11	3520				
19Kola-33	357800	5450700	25 cm	red-brown	0.08	0.97	2060				
19Kola-34	357725	5450650	25 cm	brown	0.23	2.44	1225				
19Kola-35	357750	5450650	25 cm	brown	<0.02	0.46	200				
19Kola-36	357775	5450650	30 cm	brown	<0.02	0.19	248				
19Kola-37	357700	5450600	30 cm	brown	0.03	0.23	195.5				
19Kola-38	357725	5450600	25 cm	red-brown	0.07	0.77	406				
19Kola-39	357750	5450600	30 cm	brown	0.15	0.34	503				
19Kola-40	357675	5450550	30 cm	brown	0.04	0.4	479				
19Kola-41	357700	5450550	25 cm	red-brown	0.26	3.23	3700				
19Kola-42	357725	5450550	25 cm	red-brown	0.05	0.48	595				
Sample ID	% Fe	% Ca	As ppm	Sb ppm	Bi ppm	Mn ppm	P ppm	Ni ppm	Co ppm	V ppm	Cr ppm
19Kola-31	9.01	1.39	21.4	0.92	0.27	9490	2260	32	59.9	244	68
19Kola-32	9.36	0.92	205	1.5	3.84	3850	1200	78.2	193.5	174	44
19Kola-33	12.7	0.76	106.5	10.65	0.94	4830	1160	77.3	89.7	290	62
19Kola-34	6.31	0.44	81	7.62	2.77	1220	1160	57.3	66.3	161	55
19Kola-35	5.71	0.12	12.9	0.92	0.43	285	700	30.5	12	168	89
19Kola-36	5.89	0.45	20.7	0.79	0.43	890	950	48.5	31.5	182	61
19Kola-37	5.17	0.8	91.2	5.16	3.49	2030	1180	18.6	49.4	88	13
19Kola-39	7.29	0.57	148.5	1.56	2.89	972	840	63.2	75.8	169	62
19Kola-39	5.86	0.88	149.5	1.38	2.27	1440	860	59.4	107.5	149	55
19Kola-40	6.45	1.01	146	1.65	1.43	1100	750	55	75.1	169	69
19Kola-41	19.3	0.3	1000	9.27	24.2	2260	820	95.8	448	310	146
19Kola-42	8.29	0.55	175	1.58	4.53	1550	710	67.6	142.5	206	82

## 9.0 CONCLUSIONS AND RECOMMENDATIONS

The Kola Main Zone has been angle drilled from a short distance from the showings (e.g. drill collars approximately 25-50 meters west of the showings). Future recommendations to test the depth extension of Main Zone Cu-Au-Ag bearing quartz-sulphide veins include drilling a fence pattern of 6 inlined (-50 degrees, azimuth 240 degrees, 175 m depth, 1050 m total depth) holes collared approximately 80-120 meters east of surface trace of the Kola Main Zone. The intent of proposed drilling would be to test the Kola Main Zone and sub-parallel zones at a greater depth to approximately 150 meters below surface. 2019 soil geochemical analysis results suggest north portion of grid (soil sample 19Kola-31 to 34) and south portion of grid (soil sample 19Kola-39 to 42) represent potential drill targets. Soil geochemical data suggests drill collar at 5,450,700 N, 357,675 E (orientation -50 dip, azimuth 110, depth 200 m) to test north-grid Cu-Mn-P-Fe (Au-Ag-Co-As-V) soil anomalies, and 5,450,550 N, 357,590 E (orientation -50 dip, azimuth 110, depth 200 m) to test south-grid Cu-Co-As-Mn-Fe (Au-Ag) soil anomalies.

In addition to the Main Zone, the Cous Zone located along high relief ridge crest approximately 1,600 meters northeast of the Kola Main Zone has potential for large-scale fold hinge trap structures. The Cous Ridge airborne magnetic & EM geophysical anomalies (located approximately 1,600 meters northeast of the Kola Main Zone), requires detailed mapping of veining (cross-fault structures), ground magnetometer surveys, and geochemical sampling to determine future drill targets. Budget total for completing 1,200 meters core drilling and detailed mapping, geochemical sampling would be approximately \$300,000.00. Exploration fieldwork consisting of systematic prospecting, geochemistry, mapping, and drilling is suggested for the Kola Main Zone and additional prospecting, geochemistry, mapping, of the Cous, Sky, Foss, Buck 1, and Summit mineral occurrences.

## 10.0 REFERENCES

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Mineral Titles Online (<https://www.mtonline.gov.bc.ca/mtov/home.do>)  
MapPlace (<http://www.empr.gov.bc.ca/Mining/Geoscience/MapPlace/Pages/default.aspx>)  
MINFILE (<http://www.empr.gov.bc.ca/Mining/Geoscience/MINFILE/Pages/default.aspx>)  
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Houle, J. (2014) 2012 Assessment Report for Prospecting and Geochemistry on the Macktush Property for Nahminto Resources Ltd. and World Organics Ltd.; report dated December 15, 2014.

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Northisle Copper and Gold Inc. website: <http://www.northisle.ca/s/Home.asp>

Pawliuk, D.J. (2002a) Mactush Property Exploration Project Summary Report, Alberni Mining Division, British Columbia; report dated June 24, 2002.

## CERTIFICATE AND DATE

I, Andris Kikauka, of 4199 Highway, Powell River, BC am a self-employed professional geoscientist. I hereby certify that:

1. I am a graduate of Brock University, St. Catharines, Ont., with an Honours Bachelor of Science Degree in Geological Sciences, 1980.
2. I am a Fellow in good standing with the Geological Association of Canada.
3. I am registered in the Province of British Columbia as a Professional Geoscientist.
4. I have practiced my profession for thirty five years in precious and base metal exploration in the Cordillera of Western Canada, U.S.A., Mexico, Central America, and South America, as well as for three years in uranium exploration in the Canadian Shield.
5. The information, opinions, and recommendations in this report are based on fieldwork carried out in my presence on the subject property during which time a technical evaluation consisting of geochemical sampling, and geological surveying carried during August 19-21, 2019
6. I have a direct interest in the Kola MC mineral claims. The recommendations in this report are intended to serve as a guideline, and cannot be used for the purpose of public financing.
7. I am not aware of any material fact or material change with respect to the subject matter of this Technical Report that is not reflected in the Technical Report, the omission to disclose which makes the Technical Report misleading.
8. This technical work report supports requirements of BCEMPR for Exploration and Development Work/Expiry Date Change.

Andris Kikauka, P. Geo.,

*A. Kikauka*



October 1, 2019

**ITEMIZED COST STATEMENT-  
KOLA MINERAL TENURES 1063671, 1070445  
FIELDWORK PERFORMED AUG 19-21, 2019,  
WORK PERFORMED ON MINERAL TENURES 1063671, 1070445  
ALBERNI MINING DIVISION, NTS 92F 2W (TRIM 092F 016)**

**FIELD CREW:**

**A Kikauka (Geologist) 3 days (surveying, mapping, sampling) \$ 1,732.50**

**FIELD COSTS:**

<b>Mob/demob/preparation</b>	<b>295.55</b>
<b>Meals and accommodations</b>	<b>201.75</b>
<b>Truck mileage &amp; fuel</b>	<b>216.90</b>
<b>Equipment &amp; supplies</b>	<b>37.50</b>
<b>ICP AES (ALS ME-MS41) geochemical analysis geochemistry (8 rock samples)</b>	<b>328.55</b>
<b>(12 soil samples)</b>	<b>456.25</b>
<b>Report</b>	<b>750.00</b>

**Total= \$ 4,019.00**



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Appendix A - Geochemical  
Analysis Cert.

To: KIKAUKA, ANDRIS  
4199 HIGHWAY 101  
POWELL RIVER BC V8A 0C7

Page: 1  
Total # Pages: 2 (A - D)  
Plus Appendix Pages  
Finalized Date: 30-SEP-2019  
Account: KIKAND

**CERTIFICATE VA19217929**

Project: Kola

This report is for 8 Rock samples submitted to our lab in Vancouver, BC, Canada on 31-AUG-2019.

The following have access to data associated with this certificate:

ANDRIS KIKAUKA

**SAMPLE PREPARATION**

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
CRU-QC	Crushing QC Test
LOG-22	Sample login - Rcd w/o BarCode
CRU-31	Fine crushing - 70% <2mm
SPL-21	Split sample - riffle splitter
PUL-31	Pulverize split to 85% <75 um
DISP-01	Disposal of all sample fractions

**ANALYTICAL PROCEDURES**

ALS CODE	DESCRIPTION	INSTRUMENT
ME-OG46	Ore Grade Elements - AquaRegia	ICP-AES
Cu-OG46	Ore Grade Cu - Aqua Regia	
ME-MS41	Ultra Trace Aqua Regia ICP-MS	

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

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

Signature:

Saa Traxler, General Manager, North Vancouver



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 Total # Pages: 2 (A - D)  
 Plus Appendix Pages  
 Finalized Date: 30-SEP-2019  
 Account: KIKAND

Project: Kola

**CERTIFICATE OF ANALYSIS VA19217929**

Sample Description	Method Analyte Units LOD	WEI-21	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
		Recvd Wt. kg	Ag ppm	Al %	As ppm	Au ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Ce ppm	Co ppm	Cr ppm	Cs ppm
		0.02	0.01	0.01	0.1	0.02	10	10	0.05	0.01	0.01	0.01	0.02	0.1	1	0.05
19 KOLA-1		2.04	0.11	3.62	28.3	0.03	<10	10	0.33	0.33	0.09	0.09	18.35	47.7	49	0.34
19 KOLA-2		0.92	64.7	0.93	668	6.40	<10	<10	<0.05	14.95	0.49	5.70	4.11	499	3	<0.05
19 KOLA-3		1.46	0.39	3.17	9.9	0.04	10	20	0.28	0.28	3.27	0.28	10.80	32.2	76	0.38
19 KOLA-4		0.98	0.34	3.04	4.8	0.02	<10	30	0.19	0.57	1.36	0.12	7.95	41.1	71	0.24
19 KOLA-5		1.24	0.46	2.13	83.6	<0.02	<10	20	0.28	2.32	0.23	0.06	17.80	24.9	2	0.43
19 KOLA-6		1.22	35.7	0.61	7630	0.02	<10	<10	0.06	13.65	0.06	2.19	4.76	1145	12	<0.05
19 KOLA-7		1.26	38.8	0.69	2370	0.10	<10	<10	<0.05	87.0	8.01	4.38	7.27	1060	15	<0.05
19 KOLA-8		1.04	61.4	4.75	1145	1.46	<10	<10	0.12	9.57	0.11	4.69	9.05	278	127	0.08

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



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Project: Kola

**CERTIFICATE OF ANALYSIS VA19217929**

Sample Description	Method Analyte Units LOD	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	
		Cu ppm	Fe %	Ga ppm	Ge ppm	Hf ppm	Hg ppm	In ppm	K %	La ppm	Li ppm	Mg %	Mn ppm	Mo ppm	Na %	Nb ppm
		0.2	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05	0.01	0.05
19 KOLA-1		232	7.99	11.40	0.08	0.06	0.32	0.099	0.07	5.5	18.8	1.73	1600	0.80	0.01	<0.05
19 KOLA-2		>10000	25.3	11.15	0.50	<0.02	4.99	5.34	<0.01	2.2	0.9	0.62	99	0.65	0.01	<0.05
19 KOLA-3		418	6.31	10.70	0.12	0.81	0.25	0.094	0.06	4.5	10.2	2.57	959	0.51	0.10	0.25
19 KOLA-4		312	8.61	11.25	0.13	0.64	0.11	0.057	0.06	2.7	5.2	2.39	859	0.23	0.14	0.23
19 KOLA-5		194.5	6.40	7.30	0.06	0.02	0.07	0.023	0.11	8.7	7.8	1.27	211	0.41	0.05	<0.05
19 KOLA-6		>10000	37.1	4.09	0.55	<0.02	2.67	1.815	<0.01	2.6	1.6	0.23	218	1.07	0.01	<0.05
19 KOLA-7		>10000	28.2	2.77	0.50	<0.02	1.81	2.27	<0.01	4.2	1.9	0.26	430	2.04	0.01	<0.05
19 KOLA-8		>10000	21.9	8.53	0.29	0.02	4.39	5.76	0.02	5.0	9.4	2.14	450	2.19	0.01	<0.05

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 Account: KIKAND

Project: Kola

**CERTIFICATE OF ANALYSIS VA19217929**

Sample Description	Method Analyte Units LOD	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	
		Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th	Ti
		ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
		0.2	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01	0.2	0.005
19 KOLA-1		57.2	620	3.1	2.8	<0.001	0.04	1.72	20.3	0.6	0.3	1.9	<0.01	0.05	0.4	<0.005
19 KOLA-2		693	2740	38.4	0.1	0.006	>10.0	3.13	1.7	53.6	1.4	4.1	<0.01	6.83	<0.2	0.006
19 KOLA-3		52.5	550	2.4	2.3	<0.001	0.19	0.79	15.4	0.3	0.6	40.7	<0.01	0.03	0.3	0.582
19 KOLA-4		54.5	530	1.6	1.9	0.002	0.55	0.32	8.6	0.3	0.6	23.0	<0.01	0.05	0.3	0.539
19 KOLA-5		0.9	1220	10.5	3.3	<0.001	1.79	0.83	9.2	2.1	<0.2	6.3	<0.01	0.08	1.7	<0.005
19 KOLA-6		541	70	15.5	0.1	0.012	>10.0	23.8	2.0	100.5	0.3	0.6	<0.01	3.97	<0.2	<0.005
19 KOLA-7		534	60	20.1	<0.1	0.014	>10.0	20.2	1.8	108.0	0.3	27.1	<0.01	3.82	<0.2	<0.005
19 KOLA-8		73.7	430	53.9	0.6	0.003	8.61	7.95	11.3	40.9	1.0	1.3	<0.01	3.16	0.4	0.009

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 Finalized Date: 30-SEP-2019  
 Account: KIKAND

Project: Kola

**CERTIFICATE OF ANALYSIS VA19217929**

Sample Description	Method Analyte Units LOD	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	Cu-OG46
		Ti	U	V	W	Y	Zn	Zr	Cu
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
		0.02	0.05	1	0.05	0.05	2	0.5	0.001
19 KOLA-1		0.05	0.06	193	0.18	13.45	82	1.8	
19 KOLA-2		<0.02	<0.05	83	0.08	2.44	239	<0.5	7.29
19 KOLA-3		<0.02	0.14	195	0.37	18.85	87	34.7	
19 KOLA-4		0.02	0.12	183	0.05	12.10	64	25.0	
19 KOLA-5		0.02	0.07	50	<0.05	6.86	21	0.6	
19 KOLA-6		0.39	<0.05	33	0.06	4.67	216	<0.5	0.976
19 KOLA-7		0.29	<0.05	25	0.17	8.50	234	<0.5	1.465
19 KOLA-8		0.05	<0.05	135	<0.05	6.13	474	<0.5	3.45

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





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**CERTIFICATE OF ANALYSIS VA19217929**

**CERTIFICATE COMMENTS**

**ANALYTICAL COMMENTS**

Applies to Method: Gold determinations by this method are semi-quantitative due to the small sample weight used (0.5g).  
ME-MS41

**LABORATORY ADDRESSES**

Applies to Method: Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.

CRU-31	CRU-QC	Cu-OG46	DISP-01
LOG-22	ME-MS41	ME-OG46	PUL-31
SPL-21	WEI-21		



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Plus Appendix Pages  
Finalized Date: 22-SEP-2019  
This copy reported on  
23-SEP-2019  
Account: KIKAND

**CERTIFICATE VA19217930**

Project: Kola

This report is for 12 Soil samples submitted to our lab in Vancouver, BC, Canada on 31-AUG-2019.

The following have access to data associated with this certificate:

ANDRIS KIKAUKA

**SAMPLE PREPARATION**

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LOG-22	Sample login - Rcd w/o BarCode
SCR-41	Screen to -180um and save both
DISP-01	Disposal of all sample fractions

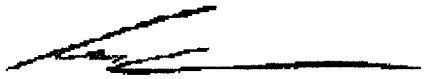
**ANALYTICAL PROCEDURES**

ALS CODE	DESCRIPTION
ME-MS41	Ultra Trace Aqua Regia ICP-MS

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

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

**Signature:**



Colin Ramshaw, Vancouver Laboratory Manager



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Project: Kola

**CERTIFICATE OF ANALYSIS VA19217930**

Sample Description	Method Analyte Units LOD	WEI-21	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
		Recvd Wt. kg	Ag ppm	Al %	As ppm	Au ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Ce ppm	Co ppm	Cr ppm	Cs ppm
		0.02	0.01	0.01	0.1	0.02	10	10	0.05	0.01	0.01	0.01	0.02	0.1	1	0.05
19KOLAS-31		0.26	0.30	8.27	21.4	0.05	<10	20	0.58	0.27	1.39	0.12	124.5	59.9	68	2.64
19KOLAS-32		0.34	7.11	4.67	205	0.35	<10	30	0.44	3.84	0.92	0.32	34.7	193.5	44	1.34
19KOLAS-33		0.40	0.97	4.29	106.5	0.08	10	60	0.65	0.94	0.76	0.27	62.6	89.7	62	1.77
19KOLAS-34		0.44	2.44	3.94	81.0	0.23	10	40	0.50	2.77	0.44	0.38	43.0	66.3	55	0.91
19KOLAS-35		0.28	0.46	6.06	12.9	<0.02	<10	30	0.28	0.43	0.12	0.10	5.70	12.0	89	0.83
19KOLAS-36		0.40	0.19	4.73	20.7	<0.02	<10	50	0.39	0.43	0.45	0.29	25.6	31.5	61	0.63
19KOLAS-37		0.42	0.23	1.93	91.2	0.03	10	40	0.64	3.49	0.80	0.17	48.2	49.4	13	1.43
19KOLAS-38		0.36	0.77	4.39	148.5	0.07	<10	40	0.62	2.89	0.57	0.29	47.7	75.9	62	1.17
19KOLAS-39		0.34	0.34	3.37	149.5	0.15	10	70	0.55	2.27	0.88	0.46	41.9	107.5	55	0.82
19KOLAS-40		0.40	0.40	4.28	146.0	0.04	<10	50	0.52	1.43	1.01	0.25	33.0	75.1	69	0.96
19KOLAS-41		0.34	3.23	4.59	1000	0.26	10	40	0.88	24.2	0.30	0.52	36.3	448	146	1.75
19KOLAS-42		0.58	0.48	4.74	175.0	0.05	<10	40	0.64	4.53	0.55	0.26	43.1	142.5	82	1.07

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



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 Account: KIKAND

Project: Kola

**CERTIFICATE OF ANALYSIS VA19217930**

Sample Description	Method Analyte Units LOD	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
		Cu ppm	Fe %	Ga ppm	Ge ppm	Hf ppm	Hg ppm	In ppm	K %	La ppm	Li ppm	Mg %	Mn ppm	Mo ppm	Na %	Nb ppm
19KOLAS-31		735	9.01	13.95	0.08	0.22	0.66	0.164	0.07	6.3	12.0	1.28	9490	2.41	<0.01	1.33
19KOLAS-32		3520	9.36	12.65	0.07	0.10	0.94	1.110	0.06	8.3	8.4	1.37	3850	1.77	0.01	0.73
19KOLAS-33		2060	12.70	11.30	0.10	0.07	0.76	0.198	0.06	18.6	10.3	1.49	4830	2.06	0.01	0.48
19KOLAS-34		1225	6.31	10.20	0.05	0.27	0.44	0.568	0.05	9.5	9.4	1.51	1220	1.48	0.01	0.56
19KOLAS-35		200	5.71	11.70	<0.05	0.12	0.18	0.098	0.03	2.4	19.9	1.63	285	1.52	<0.01	1.21
19KOLAS-36		248	5.89	10.50	0.05	0.37	0.14	0.091	0.04	6.7	10.9	1.39	890	1.20	0.01	0.92
19KOLAS-37		195.5	5.17	5.28	0.07	0.03	0.19	0.111	0.09	21.7	9.1	0.82	2030	2.02	<0.01	0.11
19KOLAS-38		406	7.29	11.20	0.07	0.11	0.21	0.104	0.07	15.1	10.6	1.11	972	2.10	0.01	1.38
19KOLAS-39		503	5.86	9.14	0.09	0.14	0.15	0.091	0.06	16.9	10.2	1.50	1440	1.14	0.01	0.89
19KOLAS-40		479	6.45	10.25	0.05	0.15	0.25	0.085	0.05	11.6	9.7	1.36	1100	1.58	0.01	1.63
19KOLAS-41		3700	19.30	12.30	0.14	0.11	1.24	0.630	0.06	22.8	10.9	1.56	2260	8.98	<0.01	0.42
19KOLAS-42		595	8.29	11.55	0.08	0.27	0.55	0.136	0.05	11.2	10.6	1.67	1550	1.84	0.01	0.97

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



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Page: 2 - C  
 Total # Pages: 2 (A - D)  
 Plus Appendix Pages  
 Finalized Date: 22-SEP-2019  
 Account: KIKAND

Project: Kola

**CERTIFICATE OF ANALYSIS VA19217930**

Sample Description	Method Analyte Units LOD	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	
		Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th	Ti
		ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
		0.2	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01	0.2	0.005
19KOLAS-31		32.0	2260	13.7	3.6	0.001	0.06	0.92	64.0	1.7	0.7	68.3	0.01	0.07	0.8	0.366
19KOLAS-32		78.2	1200	15.4	3.0	0.001	0.21	1.50	22.8	2.0	0.7	45.4	<0.01	1.22	0.5	0.231
19KOLAS-33		77.3	1160	14.4	3.8	0.001	0.03	10.65	41.3	0.6	0.6	31.0	<0.01	0.16	0.6	0.167
19KOLAS-34		57.3	1160	7.2	3.7	<0.001	0.02	7.62	21.8	0.7	0.7	12.2	0.01	0.27	1.1	0.249
19KOLAS-35		30.5	700	4.0	4.9	<0.001	0.02	0.52	7.3	0.7	0.8	5.4	<0.01	0.07	0.6	0.156
19KOLAS-36		48.5	950	5.1	4.1	0.001	0.02	0.79	17.5	0.5	0.7	13.5	0.01	0.08	0.9	0.270
19KOLAS-37		18.6	1180	3.8	4.0	0.001	0.09	5.16	16.7	0.9	0.2	11.6	<0.01	0.12	0.9	0.005
19KOLAS-38		63.2	840	9.6	5.9	<0.001	0.03	1.56	19.8	1.3	0.6	19.1	0.02	0.17	1.0	0.179
19KOLAS-39		59.4	860	6.7	3.5	0.001	0.02	1.38	21.9	0.9	0.5	23.0	0.01	0.17	1.0	0.199
19KOLAS-40		55.0	750	5.6	4.5	<0.001	0.04	1.65	19.2	1.0	0.6	27.2	0.01	0.14	0.7	0.225
19KOLAS-41		95.8	820	18.6	4.8	0.002	0.11	9.27	63.4	6.0	0.5	9.2	0.01	0.85	0.5	0.073
19KOLAS-42		67.6	710	8.3	4.2	0.001	0.03	1.58	28.3	1.3	0.6	16.2	0.01	0.20	0.9	0.273

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



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 Account: KIKAND

Project: Kola

**CERTIFICATE OF ANALYSIS VA19217930**

Sample Description	Method Analyte Units LOD	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
		Tl ppm 0.02	U ppm 0.05	V ppm 1	W ppm 0.05	Y ppm 0.05	Zn ppm 2	Zr ppm 0.5
19KOLAS-31		0.18	0.39	244	0.54	27.0	31	6.6
19KOLAS-32		0.07	0.26	174	0.09	15.65	55	3.9
19KOLAS-33		0.11	0.20	290	0.89	37.9	91	2.0
19KOLAS-34		0.08	0.51	161	0.15	15.50	77	12.0
19KOLAS-35		0.07	2.10	168	0.12	2.60	52	4.8
19KOLAS-36		0.12	0.67	182	0.14	12.45	71	15.1
19KOLAS-37		0.25	0.14	88	0.27	30.2	42	0.7
19KOLAS-38		0.08	0.53	169	0.14	23.5	64	5.4
19KOLAS-39		0.10	0.55	149	0.15	28.3	64	5.9
19KOLAS-40		0.09	0.51	169	0.46	23.4	57	6.2
19KOLAS-41		0.15	0.82	310	0.98	61.8	80	2.9
19KOLAS-42		0.10	0.55	206	0.32	26.2	57	10.6

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





Appendix B - Geochemical  
Methods & Procedures

Sample Preparation Package

PREP-31

Standard Sample Preparation: Dry, Crush, Split and Pulverize

Sample preparation is the most critical step in the entire laboratory operation. The purpose of preparation is to produce a homogeneous analytical sub-sample that is fully representative of the material submitted to the laboratory.

The sample is logged in the tracking system, weighed, dried and finely crushed to better than 70 % passing a 2 mm (Tyler 9 mesh, US Std. No.10) screen. A split of up to 250 g is taken and pulverized to better than 85 % passing a 75 micron (Tyler 200 mesh, US Std. No. 200) screen. This method is appropriate for rock chip or drill samples.

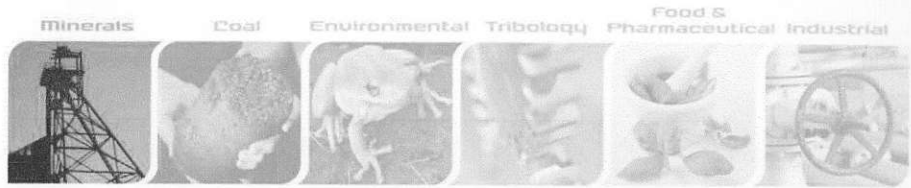
Method Code	Description
LOG-22	Sample is logged in tracking system and a bar code label is attached.
CRU-31	Fine crushing of rock chip and drill samples to better than 70 % of the sample passing 2 mm.
SPL-21	Split sample using riffle splitter.
PUL-31	A sample split of up to 250 g is pulverized to better than 85 % of the sample passing 75 microns.

Revision 03.03  
March 29, 2012

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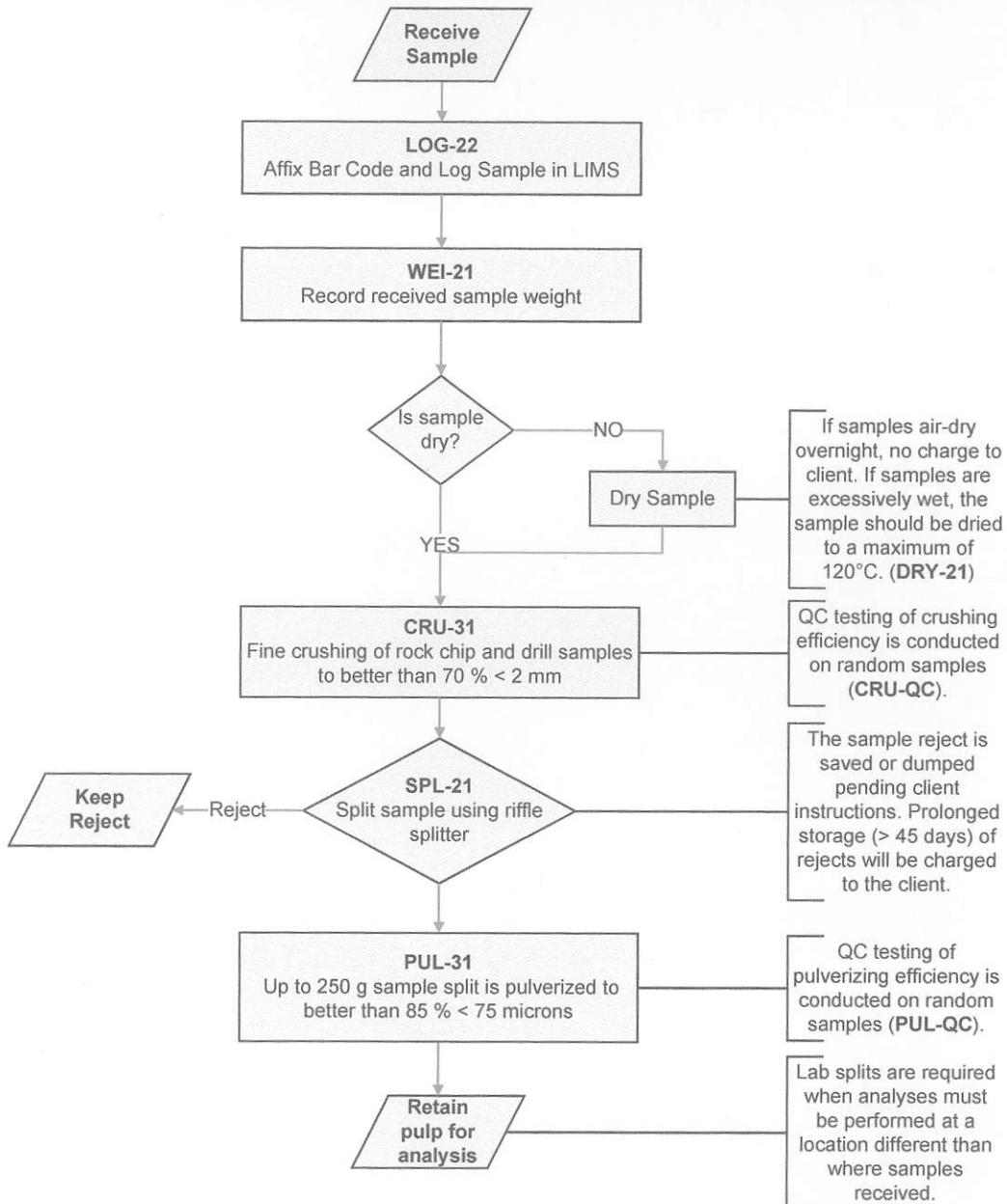




## Sample Preparation Package

### Flow Chart -

### Sample Preparation Package - PREP-31 Standard Sample Preparation: Dry, Crush, Split and Pulverize



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**GEOCHEMICAL PROCEDURE**

# ME- MS41

**ULTRA- TRACE LEVEL METHODS USING ICP- MS AND ICP- AES**
**SAMPLE DECOMPOSITION**
**Aqua Regia Digestion (GEO-AR01)**
**ANALYTICAL METHOD**
**Inductively Coupled Plasma-Atomic Emission Spectroscopy (ICP-AES)**
**Inductively Coupled Plasma - Mass Spectrometry (ICP-MS)**

A prepared sample (0.50 g) is digested with aqua regia in a graphite heating block. After cooling, the resulting solution is diluted to with deionized water, mixed and analyzed by inductively coupled plasma-atomic emission spectrometry. Following this analysis, the results are reviewed for high concentrations of bismuth, mercury, molybdenum, ment spectral interferences.

ELEMENT	SYMBOL	UNITS	LOWER LIMIT	UPPER LIMIT
Silver	Ag	ppm	0.01	100
Aluminum	Al	%	0.01	25
Arsenic	As	ppm	0.1	10 000
Gold	Au	ppm	0.2	25
Boron	B	ppm	10	10 000
Barium	Ba	ppm	10	10 000
Beryllium	Be	ppm	0.05	1 000
Bismuth	Bi	ppm	0.01	10 000
Calcium	Ca	%	0.01	25
Cadmium	Cd	ppm	0.01	1 000
Cerium	Ce	ppm	0.02	500
Cobalt	Co	ppm	0.1	10 000
Chromium	Cr	ppm	1	10 000
Cesium	Cs	ppm	0.05	500
Copper	Cu	ppm	0.2	10 000
Iron	Fe	%	0.01	50
Gallium	Ga	ppm	0.05	10 000
Germanium	Ge	ppm	0.05	500
Hafnium	Hf	ppm	0.02	500

# ME- MS41

ELEMENT	SYMBOL	UNITS	LOWER LIMIT	UPPER LIMIT
Mercury	Hg	ppm	0.01	10 000
Indium	In	ppm	0.005	500
Potassium	K	%	0.01	10
Lanthanum	La	ppm	0.2	10 000
Lithium	Li	ppm	0.1	10 000
Magnesium	Mg	%	0.01	25
Manganese	Mn	ppm	5	50 000
Molybdenum	Mo	ppm	0.05	10 000
Sodium	Na	%	0.01	10
Niobium	Nb	ppm	0.05	500
Nickel	Ni	ppm	0.2	10 000
Phosphorus	P	ppm	10	10 000
Lead	Pb	ppm	0.2	10 000
Rubidium	Rb	ppm	0.1	10 000
Rhenium	Re	ppm	0.001	50
Sulphur	S	%	0.01	10
Antimony	Sb	ppm	0.05	10 000
Scandium	Sc	ppm	0.1	10 000
Selenium	Se	ppm	0.2	1 000
Tin	Sn	ppm	0.2	500
Strontium	Sr	ppm	0.2	10 000
Tantalum	Ta	ppm	0.01	500
Tellurium	Te	ppm	0.01	500
Thorium	Th	ppm	0.2	10000
Titanium	Ti	%	0.005	10
Thallium	Tl	ppm	0.02	10 000
Uranium	U	ppm	0.05	10 000
Vanadium	V	ppm	1	10 000
Tungsten	W	ppm	0.05	10 000
Yttrium	Y	ppm	0.05	500
Zinc	Zn	ppm	2	10 000
Zirconium	Zr	ppm	0.5	500

**NOTE:** In the majority of geological matrices, data reported from an aqua regia leach should be considered as representing only the leachable portion of the particular analyte.

## Appendix C Rock Chip Sample Descriptions (2019)

Sample ID	MTO tenure	Zone Name	Easting NAD 83	Northing NAD 83	Elev (m)	Lithology
19KOLA-1	1070445	Roadcut	358275	5450317	594	andesite, greenstone
19KOLA-2	1063671	Kola MC (North)	357769	5450753	614	andesite, greenstone
19KOLA-3	1063671	Kola MC(North)	357734	5450626	632	andesite, greenstone
19KOLA-4	1063671	Kola MC (Main)	357726	5450594	625	andesite, greenstone
19KOLA-5	1063671	Kola MC (Main)	357719	5450583	622	andesite, greenstone
19KOLA-6	1063671	Kola MC (Main)	357713	5450578	620	andesite, greenstone
19KOLA-7	1063671	Kola MC (Main)	357710	5450571	619	andesite, greenstone
19KOLA-8	1063671	Kola MC (NW)	357725	5450753	620	andesite, greenstone

Sample ID	Alteration	Mineralization	Strike	Dip	Width (cm)
19KOLA-1	quartz, chlorite, limonite, pyrolusite, calcite	pyrite, pyrolusite	160	78 W	35
19KOLA-2	quartz, chlorite, magnetite, limonite, hematite	pyrite, chalcopyrite, sphalerite	29	80 W	12
19KOLA-3	quartz, chlorite, limonite, pyrolusite, calcite	pyrite, pyrolusite			float
19KOLA-4	quartz, chlorite, limonite, pyrolusite, calcite	pyrite, pyrolusite			float
19KOLA-5	quartz, chlorite, limonite, pyrolusite, calcite	pyrite			float
19KOLA-6	quartz, chlorite, magnetite, limonite, hematite	pyrite, chalcopyrite, sphalerite	30	80 W	30
19KOLA-7	quartz, chlorite, magnetite, limonite, calcite	pyrite, chalcopyrite, sphalerite	30	80 W	25
19KOLA-8	quartz, chlorite, magnetite, limonite, hematite	pyrite, chalcopyrite, sphalerite			float

Sample ID	Au ppm	Ag ppm	Cu ppm	Zn ppm	Pb ppm	Co ppm	V ppm	Ni ppm	Ca %	Fe %	As ppm	Sb ppm	Bi ppm	Mn ppm
19KOLA-1	0.03	0.11	232	82	3.1	47.7	193	57.2	0.09	7.99	28.3	1.72	0.33	1600
19KOLA-2	6.4	64.7	72900	239	38.4	499	83	693	0.49	25.3	668	3.13	14.95	99
19KOLA-3	0.04	0.99	418	87	2.4	32.2	195	52.5	3.27	6.31	9.9	0.79	0.28	959
19KOLA-4	0.02	0.34	312	64	1.6	41.1	183	54.5	1.36	8.61	4.8	0.32	0.57	859
19KOLA-5	0.02	0.46	194.5	21	10.5	24.9	50	0.9	0.23	6.4	83.6	0.83	2.32	211
19KOLA-6	0.02	35.7	9760	216	15.5	1145	33	541	0.06	37.1	7630	23.8	13.65	218
19KOLA-7	0.1	38.8	14650	234	20.1	1060	25	534	8.01	28.2	2370	20.2	87	430
19KOLA-8	1.46	61.4	34500	474	53.9	278	135	73.7	0.11	21.9	1145	7.95	9.57	450

## Appendix D Soil Sample Descriptions (2019)

Sample ID	UTM E	UTM N	Depth	Colour
19Kola-31	357750	5450700	25 cm	brown
19Kola-32	357775	5450700	25 cm	red-brown
19Kola-33	357800	5450700	25 cm	red-brown
19Kola-34	357725	5450650	25 cm	brown
19Kola-35	357750	5450650	25 cm	brown
19Kola-36	357775	5450650	30 cm	brown
19Kola-37	357700	5450600	30 cm	brown
19Kola-38	357725	5450600	25 cm	red-brown
19Kola-39	357750	5450600	30 cm	brown
19Kola-40	357675	5450550	30 cm	brown
19Kola-41	357700	5450550	25 cm	red-brown
19Kola-42	357725	5450650	25 cm	red-brown

Sample ID	Au ppm	Ag ppm	Cu ppm	% Fe	% Ca	As ppm	Sb ppm	Bi ppm
19Kola-31	0.05	0.3	735	9.01	1.39	21.4	0.92	0.27
19Kola-32	0.35	7.11	3520	9.36	0.92	205	1.5	3.84
19Kola-33	0.08	0.97	2060	12.7	0.76	106.5	10.65	0.94
19Kola-34	0.23	2.44	1225	6.31	0.44	81	7.62	2.77
19Kola-35	<0.02	0.46	200	5.71	0.12	12.9	0.52	0.43
19Kola-36	<0.02	0.19	248	5.89	0.45	20.7	0.79	0.43
19Kola-37	0.03	0.23	195.5	5.17	0.8	91.2	5.16	3.49
19Kola-38	0.07	0.77	406	7.29	0.57	148.5	1.56	2.89
19Kola-39	0.15	0.34	503	5.86	0.88	149.5	1.38	2.27
19Kola-40	0.04	0.4	479	6.45	1.01	146	1.65	1.43
19Kola-41	0.26	3.23	3700	19.3	0.3	1000	9.27	24.2
19Kola-42	0.05	0.48	595	8.29	0.55	175	1.58	4.53

Sample ID	Mn ppm	P ppm	Ni ppm	Co ppm	V ppm	Cr ppm
19Kola-31	9490	2260	32	59.9	244	68
19Kola-32	3850	1200	78.2	193.5	174	44
19Kola-33	4830	1180	77.3	89.7	290	62
19Kola-34	1220	1160	57.3	66.3	161	55
19Kola-35	285	700	30.5	12	168	89
19Kola-36	890	950	48.5	31.5	182	61
19Kola-37	2030	1180	18.6	49.4	88	13
19Kola-38	972	840	63.2	75.9	169	62
19Kola-39	1440	860	59.4	107.5	149	55
19Kola-40	1100	750	55	75.1	169	69
19Kola-41	2260	820	95.8	448	310	146
19Kola-42	1550	710	67.6	142.5	206	82

## Appendix E Minfile Descriptions

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### MINFILE Record Summary

MINFILE No 092F 103

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### SUMMARY [Summary Help](#)

**Name** KOLA, SKY, MICK, MC, LARRY 1

**Status** Prospect  
**Latitude** 049° 11' 31"  
**Longitude** 124° 57' 11"

**Commodities** Copper, Gold, Silver  
**Tectonic Belt** Insular

**NMI**  
**Mining Division** Alberni  
**BCGS Map** 092F016  
**NTS Map** 092F02W  
**UTM** 10 (NAD 83)  
**Northing** 5450630  
**Easting** 357702  
**Deposit Types** I06 : Cu+/-Ag quartz veins  
**Terrane** Wrangell

#### Capsule Geology

The Kola occurrence is located south of an easterly flowing tributary of Cous Creek, approximately 8.8 kilometres west of the creek mouth.

The area is underlain by andesite and andesite-dacite volcanic flows of the Upper Triassic Karmutsen Formation, Vancouver Group. The structures trend north and are expressed by shear zones exposed along a road cut. A section of the road has been trenched exposing the mineralized zone for 300 metres with the main section exposed for about 110 metres.

At least five zones of mineralization are evident, consisting mainly of massive pods and lenses of pyrite and chalcopyrite associated with shears in andesite. The following is a description of the zones going north:

- (1) North trending siliceous shear zones with quartz carbonate stringers, ankerite veinlets and disseminated sulphides. A 0.3 metre wide unfractured siliceous "vein" occurs at the base of the zone.
- (2) Thirty-six metres north of zone 1, a northwest trending zone of massive chalcopyrite, bornite and chalcopyrite-pyrite pods with occasional fragments of andesite, cemented together with quartz- carbonate in a matrix of volcanic debris, occurs. The zone is up to 0.6 metre wide.
- (3) Forty-five metres at 013 degrees from zone 2, is a heavily limonitized zone.
- (4) Thirty-six metres at 013 degrees from zone 3, a zone of dark and light limonitic breccia occurs.
- (5) Ninety metres along the road from zone 4, is a shear zone striking 035 degrees and dipping 70 degrees west. The zone, locally carbonatized, is 3 metres wide and contains massive sulphide pods over 1 metre in width. This zone is known as the main zone. A grab sample of the zone contained 7.27 per cent copper, 22.97 grams per tonne silver and 2.81 grams per tonne gold (Assessment Report 15658).
- (6) Seventy-six metres north along the road, outcrops exhibiting epidote and carbonate alteration on fracture planes occur. The zone contains limonite, magnetite and occasional blebs of pyrite.

In 1980 through 1983, Pacific Seadrift Resources completed programs of airborne and ground geophysical surveys, geological mapping, minor trenching and geochemical sampling on the area. A sample across 4.5 metres assayed 7.8 per cent copper, 124.2 grams per tonne silver and 6.5 grams per tonne gold over 0.6 metres (Assessment Report 10288).

In 1985 and 1986, Amstar Venture Corporation completed programs of geochemical sampling and diamond drilling, consisting of 22 holes for 1307.9 metres. The main zone was found to be limited to 10 metres along strike with values and widths decreasing substantially along strike. The main zone is continuous to a depth of 40 metres and remains open. Drill hole 86-3, at 40 metres, contained a 1.21 metre section which assayed 3.01 per cent copper, 37.03 grams per tonne silver and 2.56 grams per tonne gold (Assessment Report 15658). A 272.7 kilogram bulk sample of mineralized material assayed 4.73 per cent copper, 93.3 grams per tonne silver and 2.5 grams per tonne gold (Assessment Report 15658).

In 1996 through 2006, SYMC Resources Limited completed programs of prospecting, trenching, geochemical sampling and diamond drilling on the area as the MC claim group, apart of their Dauntless (Macktush) property. This work indicated that the MC zones consist of three or more sub-parallel, banded, brecciated and sheared veins and/or vein stockwork zones instead of a single, narrow, replacement copper skarn zone. The sulphides in the MC1, MC2 and MC3 zones are comprised mainly of pyrite and chalcopyrite with minor pyrrhotite, arsenopyrite and/or tetrahedrite/tennantite. The host rock for the zones consists of pervasively silicified, tuffaceous to massive, intermediate to mafic volcanics which may be either part of the upper-most Karmutsen Formation or part of the lower-most Parsons Bay Formation. These are intruded by approximately 10 per cent, thin (less than 5 metre thick) feldspar porphyry dikes and/or sills of the Jurassic Island plutonic suite. An indicated mineral inventory estimate for the MC1-3 zones was released in 2007:

Vein/Zone Tonnes Gold Silver Copper

(grams per tonne) (grams per tonne) (per cent)

MC1 21,851 0.26 6.9 0.43

MC2 138,499 0.33 5.2 0.47

MC3 17,618 0.38 1.0 0.05

MC1-3 177,967 0.32 5.0 0.16

(Assessment Report 28989)

In 2009 through 2011, G4G Resources completed programs of geological mapping and rock and soil sampling on the area as the Macktush Copper property. In 2012, Nahmint Resources completed a satellite remote sensing survey and analysis on the Macktush

group.

- Bibliography** EM EXPL 1998-53; 1999-25-32  
EMPR ASS RPT [9313](#), [10288](#), [12052](#), \*[13949](#), \*[15658](#), [28497](#), \*[28989](#), [32297](#), [32484](#), [33140](#)  
EMPR FIELDWORK 1988, pp. 61-74  
GSC MAP 49-1963, 17-1968; 1386A  
GSC OF 463; 1272  
GSC P 68-50; 72-44  
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With  
Emphasis on the Relationships of Mineral Deposits to Plutonic  
Rocks, Unpublished Ph.D. Thesis, Carleton University



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Last Edit: 26-Jul-2013 by Karl A. Flower (KAF)

**SUMMARY** [Summary Help](#) 

<b>Name</b>	COUS CREEK, SKARN A, SKARN, A, VEZINA, OTTER, AL, PORT, FOSS, ARROW	<b>NMI Mining Division</b>	Alberni
<b>Status</b>	Prospect	<b>BCGS Map</b>	092F026
<b>Latitude</b>	049° 12' 17"	<b>NTS Map</b>	092F02W
<b>Longitude</b>	124° 54' 59"	<b>UTM</b>	10 (NAD 83)
<b>Commodities</b>	Copper, Gold, Silver, Iron	<b>Northing</b>	5451982
<b>Tectonic Belt</b>	Insular	<b>Easting</b>	360410
		<b>Deposit Types</b>	
		<b>Terrane</b>	Wrangell

**Capsule  
Geology**

The Cous Creek prospect is located 9.4 kilometres southwest of Port Alberni, 4.6 kilometres south of the east end of Stirling Arm on Sproat Lake.

The area is underlain by a narrow band of limestone of the Upper Triassic Quatsino Formation (Vancouver Group) which strikes north west under a saddle, between Karmutsen Formation (Vancouver Group) andesite on the north east and Bonanza Group volcanics on the south west. A few exposures of Parson Bay (Vancouver Group) sedimentary rocks occur between the Quatsino and Bonanza rocks. Dioritic to granodioritic intrusions of the Jurassic Island Intrusions are exposed to the north and east.

Locally, the limestone is intruded by irregular bodies of andesite which has been locally altered to garnet-epidote skarn. Several types of mineralization occur within Karmutsen volcanics irregular alteration to skarn and irregular mineralization consisting of chalcocopyrite, lesser bornite and superficial malachite and azurite. Pockets and disseminations of chalcocopyrite and bornite occur in skarn and limestone in an area where the limestone is intruded by andesite. Massive magnetite appears, midway along the ridge flank, containing bands and pockets of pyrrhotite with some chalcocopyrite. The most common are veins, pods or lenses of massive sulphides, up to 1 metre wide and at least 6 metres in length, containing mainly massive pyrrhotite and pyrite, with lesser amounts of chalcocopyrite and bornite.

Assay values from these range from 0.01 to 3.95 per cent copper and 1.36 to 55.20 grams per tonne silver (George Cross News Letter).

In 1976, Cous Creek Copper Mines Limited completed a ground magnetometer survey on the area as the Fosselli Creek Group. In 1977 and 1978, Bethlehem Copper completed programs of ground electromagnetic surveys, geological mapping, geochemical sampling and 2 percussion drill holes, totalling 213.4 metres, on the area as the Cous Creek property. A sample (4M1-278K) assayed 12 grams per tonne silver, 3.58 per cent copper and 0.06 per cent zinc (Assessment Report 6393).

In 1984, Cous Creek Copper completed a prospecting program on the A, B and D claims. In 1986 and 1987, Alta Management completed programs of geological mapping, a ground magnetometer survey, trenching and geochemical sampling on the Skarn claim. A sample (R-20) of sulphide rich material from a trench assayed 17.2 grams per tonne silver and 7.78 per cent copper, other samples assayed up to 1.2 grams per tonne gold (Assessment Report 16918).

In late 1987 and 1988, Veto Resources completed a program of rock and soil sampling, geological mapping and a ground magnetometer survey on the area. In 1989 and 1990, Simplot Resources completed a program of rock sampling and geological mapping on the Foss 1-2 claims. A 1.2 metre chip sample (R238) from trench 6 yielded 23.7 grams per tonne silver and 5.44 per cent copper, other select samples assayed greater than 10 per cent copper (Assessment Report 20303).

Aquila Energy Corp. entered into a 4-year, 70 per cent interest option agreement in May 2002.

In 2006, Ashworth Explorations prospected the area as the Arrow claim group. In 2009 through 2011, G4G Resources completed programs of geological mapping and rock and soil sampling on the area as the Macktush Copper property. In 2012, Nahminto Resources completed a satellite remote sensing survey and analysis on the Macktush group.

**Bibliography** [EMPR ASS RPT 5981](#), [\\*6393](#), [6956](#), [12242](#), [12872](#), [15037](#), [15780](#), [\\*16918](#), [17441](#), [\\*20303](#), [28497](#), [28727](#), [28989](#), [32297](#), [33140](#)  
EMPR BULL 3, 1917  
EMPR FIELDWORK 1976-31, 1988, pp. 61-74  
EMPR GEM \*1974-173, 1976-E112 1977-E110  
EMPR OF 1988-28  
EMPR P 1989-3  
EMPR PF (\*Two reports by G.E.P. Eastwood of the B.C. Geological Survey, 1974; Property summary (c. 1985) for M.P. Vezina Mining and Power Corporation; Cartwright, P.A. and Hallof, P.G. (1983): Report on the Geophysical and Geochemical Surveys on the A5-8, B2, B5-8, D10, D12, D14 Claims for Cous Creek Copper Mines Limited (2 copies))  
GSC BULL 172  
GSC EC GEOL 3, Vol.1, pp. 226-228  
GSC MAP 49-1963; 17-1968; 1386A  
GSC OF 463; 1272




[MINFILE Home page](#) [ARIS Home page](#) [MINFILE Search page](#) [Property File Search](#)

**MINFILE Record Summary**  
**MINFILE No 092F 361**

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File Created: 23-Apr-1990 by Garry J. Payie (GJP)  
Last Edit: 26-Jul-2013 by Karl A. Flower (KAF)

**SUMMARY** [Summary Help](#) 

<b>Name</b>	SUMMIT, OTTER, FOSS 1-2	<b>NMI</b>	
<b>Status</b>	Showing	<b>Mining Division</b>	Alberni
<b>Latitude</b>	<u>049° 13' 17"</u>	<b>BCGS Map</b>	092F026
<b>Longitude</b>	<u>124° 55' 36"</u>	<b>NTS Map</b>	092F02W
<b>Commodities</b>	Copper	<b>UTM</b>	10 (NAD 83)
<b>Tectonic Belt</b>	Insular	<b>Northing</b>	5453853
		<b>Easting</b>	359708
		<b>Deposit Types</b>	
		<b>Terrane</b>	Wrangell

**Capsule  
Geology**

The Summit occurrence is located in the head waters of Fossil Creek, approximately 2.8 kilometres south of the creek mouth.

The area is underlain by Lower Jurassic Bonanza Group volcanics and limestone of the Upper Triassic Quatsino Formation, Vancouver Group.

Locally, a pyrite stained outcrop consisting of a mixture of soft brown volcanic rock and quartz, and mineralized in a narrow zone with malachite and azurite, is thought to be a breccia. A few hundred metres to the north mineralized volcanic is reported to contain 0.02 per cent copper (Assessment Report 5650). Float containing chalcopyrite was also reported.

In 1974, W. Guppy completed a program of prospecting including rock and soil sampling on the area as the Summit claim. In early 1987, the area was prospected by Triactor Resources. In late 1987 and 1988, Veto Resources completed a program of rock and soil sampling, geological mapping and a ground magnetometer survey on the area. In 1989 and 1990, Simplon Resources completed a program of rock sampling and geological mapping on the Foss 1-2 claims. SYMC Resources Limited explored the area in 1998 to 2006 as part of their Dauntless (Macktush) property. In 2009 through 2011, G4G Resources completed programs of geological mapping and rock and soil sampling on the area as the Macktush Copper property. In 2012, Nahminto Resources completed a satellite remote sensing survey and analysis on the Macktush group.

**Bibliography** [EMPR ASS RPT \\*5650](#), [12242](#), [15037](#), [15137](#), [17441](#), [20303](#), [28497](#), [28989](#), [32297](#), [32484](#), [33140](#)  
GSC MAP 17-1968; 1386A  
GSC OF 463; 1272  
GSC P 68-50; 72-44

[MINFILE Home page](#) [ARIS Home page](#) [MINFILE Search page](#) [Property File Search](#)

**MINFILE Record Summary**  
MINFILE No 092F 362

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File Created: 24-Apr-1990 by Garry J. Payie (GJP)  
Last Edit: 26-Jul-2013 by Karl A. Flower (KAF)

**SUMMARY** [Summary Help](#) 

**Name** BUCK 1, KOLA  
**Status** Showing  
**Latitude** 049° 12' 21"  
**Longitude** 124° 58' 05"  
**Commodities** Copper, Gold  
**Tectonic Belt** Insular

**NMI**  
**Mining Division** Alberni  
**BCGS Map** 092F026  
**NTS Map** 092F02W  
**UTM** 10 (NAD 83)  
**Northing** 5452202  
**Easting** 356650  
**Deposit Types**  
**Terrane** Wrangell

**Capsule  
Geology**

The Buck 1 occurrence is located in the head waters of a easterly flowing tributary of Cous Creek, approximately 10 kilometres west-north west of the creek mouth.

The area is underlain by basaltic volcanic rocks of the Upper Triassic Karmutsen Formation, Vancouver Group. To the north calc-alkaline volcanic rocks of the Lower Jurassic Bonanza Group outcrop.

Locally, chalcopyrite is hosted by a pyritic, slightly kaolinized, volcanic rocks of the Karmutsen Formation. A 30 centimetre wide dacitic dike intrudes volcanic porphyry about 100 metres to the west of the occurrence and strikes 045 degrees with a dip of 80 degrees to the west. The dike and the country rock contain about 2 to 3 per cent pyrite.

In 1980 through 1983, Pacific Seadrift Resources completed programs of airborne and ground geophysical surveys, geological mapping and geochemical sampling on the area. In 1985 and 1986, Amstar Venture Corporation completed programs of geochemical sampling on the Kola claims. In 1986, Mariah Resources completed a program of geological mapping and minor trenching on the Buck 1-3 claims. In 1987, Stonewall Resources completed a program of ground geophysical surveys, geological mapping and geochemical sampling on the Buck claim group. A 30 centimetre wide sample of the pyritic volcanic outcrop contained 0.25 per cent copper, while a 30 centimetre chip sample of the dacitic dike assayed 0.62 grams per tonne gold and 0.1 per cent arsenic (Assessment Report 17152).

SYMC Resources Limited explored the area in 1998 to 2006 as part of their Dauntless (Macktush) property. In 2009 through 2011, G4G Resources completed programs of geological mapping and rock and soil sampling on the area as the Macktush Copper property. In 2012, Nahminto Resources completed a satellite remote sensing survey and analysis on the Macktush group.

**Bibliography**

EMPR ASS RPT [9313](#), [10288](#), [12052](#), [13949](#), [15169](#), [15658](#), [\\*17152](#), [28497](#), [28989](#), [32297](#), [32484](#), [33140](#)  
EMPR PF (Prospectus: Stonewall Resources Inc., Aug. 12, 1988)  
GSC MAP 17-1968; 1386A  
GSC OF 463; 1272  
GSC P 68-50; 72-44

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**MINFILE Record Summary**  
**MINFILE No 092F 555**

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File Created: 23-Apr-1990 by Garry J. Payie (GJP)  
Last Edit: 26-Jul-2013 by Karl A. Flower (KAF)

**SUMMARY** [Summary Help](#) 

<b>Name</b>	SKY 2, OTTER, KOLA, ALDER 2	<b>NMI</b>	
<b>Status</b>	Showing	<b>Mining Division</b>	Alberni
<b>Latitude</b>	049° 11' 45"	<b>BCGS Map</b>	092F016
<b>Longitude</b>	124° 56' 12"	<b>NTS Map</b>	092F02W
<b>Commodities</b>	Copper	<b>UTM</b>	10 (NAD 83)
<b>Tectonic Belt</b>	Insular	<b>Northing</b>	5451031
		<b>Easting</b>	358907
		<b>Deposit Types</b>	
		<b>Terrane</b>	Wrangell

**Capsule  
Geology**

The Sky 2 occurrence is located on a easterly flowing tributary of Cous Creek, approximately 7.5 kilometres west- north west of the creek mouth.

The area is underlain by limestone and shale of the Upper Triassic Quatsino Formation (Vancouver Group). This is overlain locally by volcanic rocks of the Lower Jurassic Bonanza Group.

Locally, outcrops of shale and limestone along the creek are reported to show copper mineralization; malachite is the only mineral described. A quartz vein up to 30 centimetres in width was observed but contained no obvious sulphides.

In 1980 through 1983, Pacific Seadrift Resources completed programs of airborne and ground geophysical surveys, geological mapping and geochemical sampling on the area. In 1985 and 1986, Amstar Venture Corporation completed programs of geochemical sampling on the Kola claims.

In 1986 and early 1987, the area was prospected by Triactor Resources as the Alder 2 claim. A sample (55633) assayed 0.753 per cent copper and 3.3 grams per tonne silver (Assessment Report 15037).

In late 1987 and 1988, Veto Resources completed a program of rock and soil sampling, geological mapping and a ground magnetometer survey on the area. A sample of shale with copper staining assayed 3.2 grams per tonne silver and 0.58 per cent copper (Assessment Report 17411).

In 1996 through 2006, SYMC resources prospected the area as apart of the of the Macktush Property along the west side of the Alberni Inlet, now called the Dauntless property. In 2009 through 2011, G4G Resources completed programs of geological mapping and rock and soil sampling on the area as the Macktush Copper property. In 2012, Nahminto Resources completed a satellite remote sensing survey and analysis on the Macktush group.

**Bibliography** EMPR ASS RPT [9313](#), [10288](#), [12052](#), [13949](#), [\\*15037](#), [15658](#), [15970](#), [\\*17441](#), [28497](#), [28989](#), [32297](#), [32484](#), [33140](#)  
GSC MAP 17-1968; 1386A  
GSC OF 463; 1272  
GSC P 68-50; 72-44

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**MINFILE Record Summary**

MINFILE No 092F 614

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File Created: 24-Jul-2013 by Nicole Barlow (NB)  
Last Edit: 29-Jul-2013 by Nicole Barlow (NB)

**SUMMARY** [Summary Help](#) ?

<b>Name</b>	FOSS	<b>NMI</b>	
<b>Status</b>	Showing	<b>Mining Division</b>	Alberni
<b>Latitude</b>	049° 12' 46"	<b>BCGS Map</b>	092F026
<b>Longitude</b>	124° 55' 26"	<b>NTS Map</b>	092F02W
<b>Commodities</b>	Copper, Silver	<b>UTM</b>	10 (NAD 83)
<b>Tectonic Belt</b>	Insular	<b>Northing</b>	5452884
		<b>Easting</b>	359881
		<b>Deposit Types</b>	K01 : Cu skarn
		<b>Terrane</b>	Wrangell

**Capsule  
Geology**

The Foss showing is located approximately 9 kilometres west of Port Alberni and 4 kilometres south of Sprout Lake.

Regionally, the area is underlain by Lower Jurassic Bonanza Group volcanics, limestone of the Upper Triassic Quatsino Formation and basalts of the Karmutsen Formation (Vancouver Group) and the intrusive Island Plutonic Suite.

Mineralization occurs as skarn type deposits with pyrite, chalcopyrite, pyrrotite, magnetite and bornite at the contact between the Karmutsen volcanics and Quatsino limestone.

In 1985, Robert W. Shaw staked the claim group.

In 1986, Triactor Resources Corp. completed geological mapping and prospecting.

In 1987, Ashworth Explorations Ltd. completed an exploration program on behalf of Veto Resources Ltd. consisting of geological mapping, prospecting, soil sampling and magnetic geophysical surveying. Highlights include sample R27, which assayed 8.64 per cent copper and 11.1 grams per tonne silver (Assessment Report 17441).

In 1990, Simplon Resources Inc. completed geological mapping and geochemical rock sampling. Highlights include rock sample VWF90-R4, which assayed 3.61 per cent copper, and VWF90-R6, which assayed 4.45 per cent copper (Assessment Report 20303).

**Bibliography** EMPR ASS RPT [15037](#), [\\*17441](#), [\\*20303](#)

[MINFILE Home page](#) [ARIS Home page](#) [MINFILE Search page](#) [Property File Search](#)

**MINFILE Record Summary**

**MINFILE No 092F 618**

[XML Extract](#) / [Inventory Report](#)

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File Created: 01-Aug-2013 by Karl A. Flower (KAF)  
Last Edit: 08-Aug-2013 by Karl A. Flower (KAF)

**SUMMARY** [Summary Help](#) ?

**Name** FOSSELLI CREEK ROAD, FOSS 1-2

**Status** Showing  
**Latitude** 049° 13' 24"  
**Longitude** 124° 55' 13"

**Commodities** Copper, Gold  
**Tectonic Belt** Insular

**NMI**  
**Mining Division** Alberni  
**BCGS Map** 092F026  
**NTS Map** 092F02W  
**UTM** 10 (NAD 83)  
**Northing** 5454058  
**Easting** 360179  
**Deposit Types**  
**Terrane** Wrangell

**Capsule  
Geology**

The Fosselli Creek Road occurrence is located on the Fosselli Creek Road approximately 2.6 kilometres south of the creek mouth, at an elevation of 650 metres.

The area is underlain by a narrow band of limestone of the Upper Triassic Quatsino Formation (Vancouver Group) which strikes northwest under a saddle, between Karmutsen Formation (Vancouver Group) andesite on the north east and Bonanza Group volcanics on the south west. A few exposures of Parson Bay (Vancouver Group) sedimentary rocks occur between the Quatsino and Bonanza rocks. Dioritic to granodioritic intrusions of the Jurassic Island Intrusions are exposed to the north and east.

Locally, a 30 centimetre shear zone, striking 220 degrees and dipping 80 degrees northwest, hosts semi-massive pyrite and chalcopyrite.

In 1989 and 1990, Simplon Resources completed a program of rock sampling and geological mapping on the Foss 1-2 claims. A select chip sample of the sulphide band assayed 1.4 per cent copper and 0.26 gram per tonne gold (Assessment Report 20303).

In 1996 through 2006, SYMC resources prospected the area as part of the Macktush property along the west side of the Alberni Inlet, now called the Dauntless property. In 2009 through 2011, G4G Resources completed programs of geological mapping and rock and soil sampling on the area as the Macktush Copper property. In 2012, Nahminto Resources completed a satellite remote sensing survey and analysis on the Macktush group.

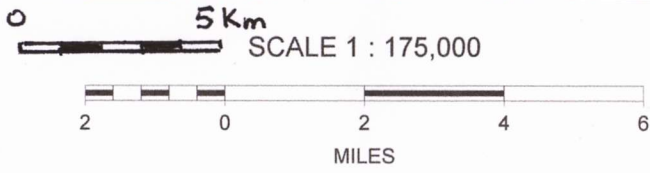
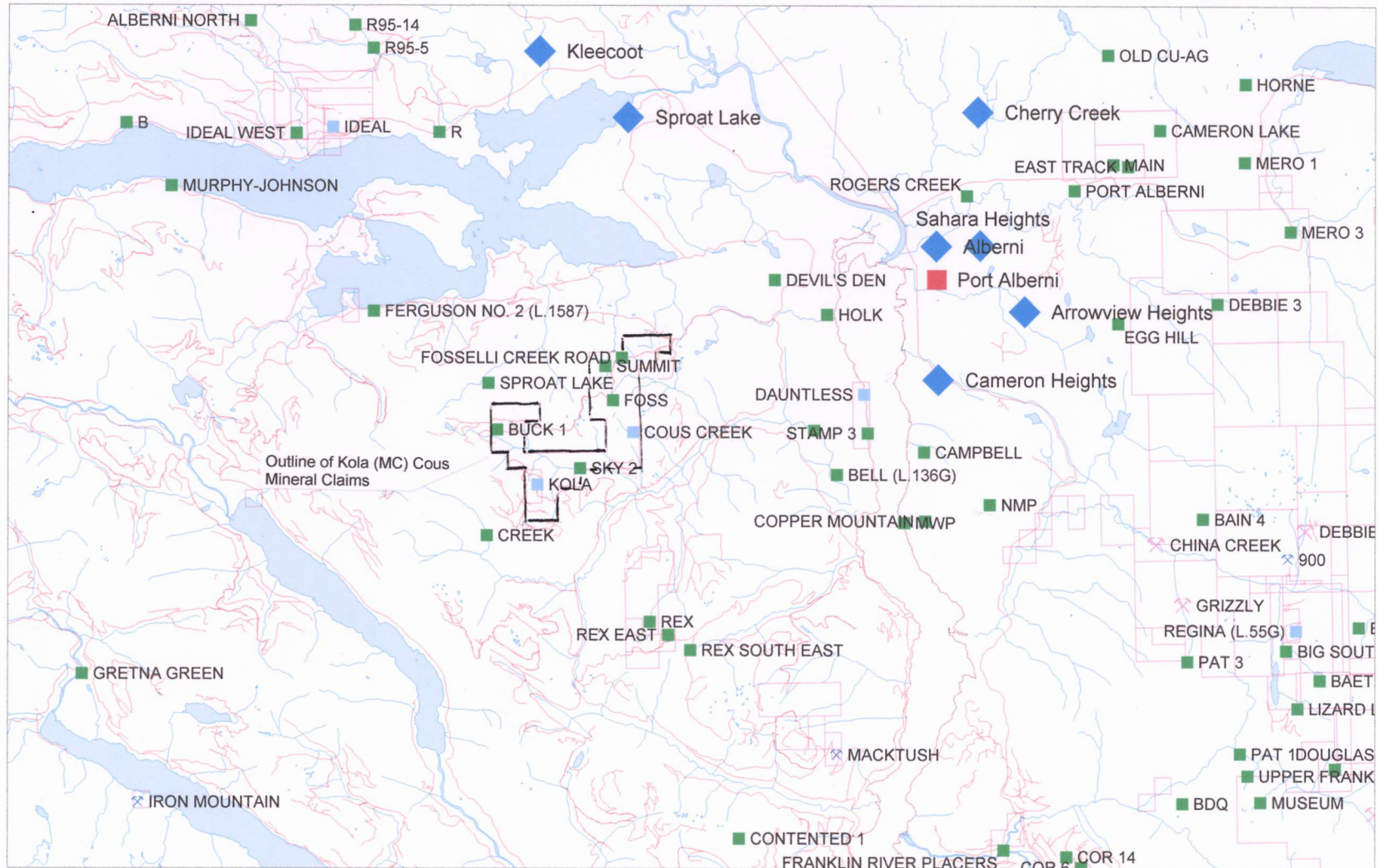
**Bibliography** EMPR ASS RPT \*[20303](#), [28497](#), [28989](#), [32297](#), [32484](#), [33140](#)  
GSC MAP 17-1968; 1386A  
GSC OF 463; 1272  
GSC P 68-50; 72-44

## Appendix F Vancouver Island Mineral Deposits

Name	Deposit Type	Tonnes	Au g/t	Ag g/t	Mo %	Cu %	Pb %	Zn %
Valentine Mtn. C Vein	Au-quartz vein	30,660	14.70					
Lara	Nor./Kur. VMS	528,839	4.73	100.09		1.01	1.22	8.87
Macktush Fred Vein*	Por.Cu-Mo-Au or Epithermal Au vein	66,350	13.75	47.78		0.59		
Macktush Zinc Vein*	Por.Cu-Mo-Au or Epithermal Au vein	35,710	8.97	44.50		0.57		
Macktush David Vein*	Por.Cu-Mo-Au or Epithermal Au vein	16,278	5.65	25.57		0.31		
Dauntless North Veins*	Cu-Ag Quartz vein	14,171	0.56	6.16		2.06		
Dauntless Herbert Jr.*	Cu-Ag Quartz vein	8,479	0.12	6.66		5.16		
Dauntless Tasha Zone*	Cu-Ag Quartz vein or Redbed Cu-Ag	20,423		0.56		0.16		
MC Zones 1-3*	Cu-Ag Quartz vein	177,967	0.32	5.01		0.42		
Fandora	Cu-Ag Quartz vein	181,434	12.74					
Shack	Cu-Ag Quartz vein	37,920	19.20					
Bear	Cu-Ag Quartz vein	160,000	17.40					
Debbie	Au-quartz vein	471,956	6.23					
Domineer	Epith.Au-Ag-Cu	550,298	6.75	32.23				
Catface	Por.Cu-Mo-Au	188,000,000			0.01	0.42		
900 (Debbie)	Au-quartz vein	28,285	11.65					
Villalta	Gossan Au-Ag	22,677	4.11					
Privateer	Au-quartz vein	122,470	17.00					
Pilgrim	Pb-Zn skarn	96,162	0.03	32.64				8.86
Caledonia	Pb-Zn skarn	68,000	0.34	704.2			0.60	7.45
Uebell	Cu skarn	146,042				2.00		
Red Dog	Por.Cu-Mo-Au	25,000,000	0.44		0.01	0.35		
Smith Copper	Pb-Zn skarn	83,906		64.40		1.69	3.70	12.5
Hushamu	Por.Cu-Mo-Au	230,900,000	0.309		0.01	0.28		

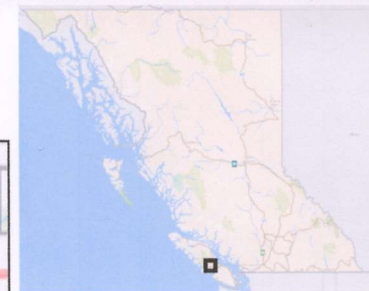
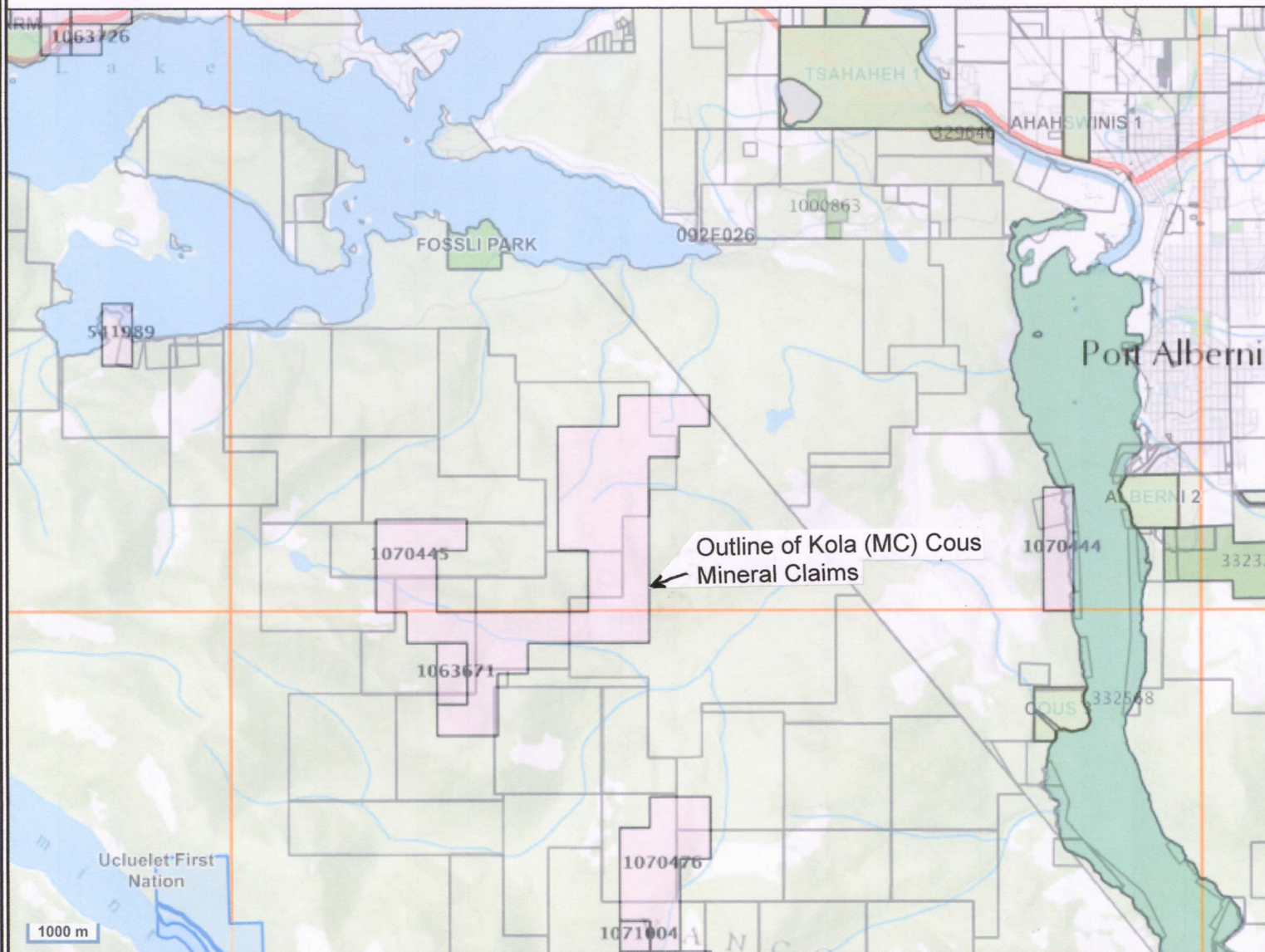


# Fig 1 Kola (MC) Cous Mineral Claims General Location





# Fig 2 Kola (MC) Mineral Claims



## Legend

- Mineral Titles (MTO)**
- MTO Grid
- Title (current)
  - LEASE
  - CLAIM
- Reserves
  - No Registration
  - Conditional
- Heritage/Historic Site
- Other Mining Layers**
- Mineral Occurrences (MINFILE)
  - Producer
  - Past Producer
  - Developed Prospect
  - Other
- Crown Land Layers (Tantalis)**
- Land Act Survey Parcels - Tantalis - Legal Descriptions
  - Label Text
  - Land Act Survey Parcels - Tantalis - Outlined
- Administrative Boundaries**
- Federal Transfer Lands - Outlined
- Federal Transfer Lands - Colour Filled
- National Parks - Outlined
- National Park
- National Parks - Colour Filled
- Conservancy Areas - Tantalis - Colour Filled
- Conservancy Areas
- Ecological Reserves - Tantalis - Colour

Outline of Kola (MC) Cous Mineral Claims

1000 m

*This map is a user generated static output from an Internet mapping site and is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.*  
**THIS MAP IS NOT TO BE USED FOR NAVIGATION.**

Printed using the Mineral Titles Online (MTO) application. BCGS 092F.016, 092F.026 Alberni MD

**Center:** 49° 13'2", -124° 54'54"  
**Scale:** 1 : 135420  
**SRS:** EPSG:3857  
**UTM Zone:** 10

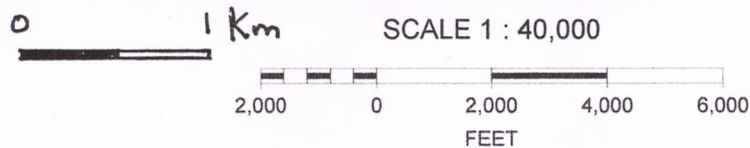
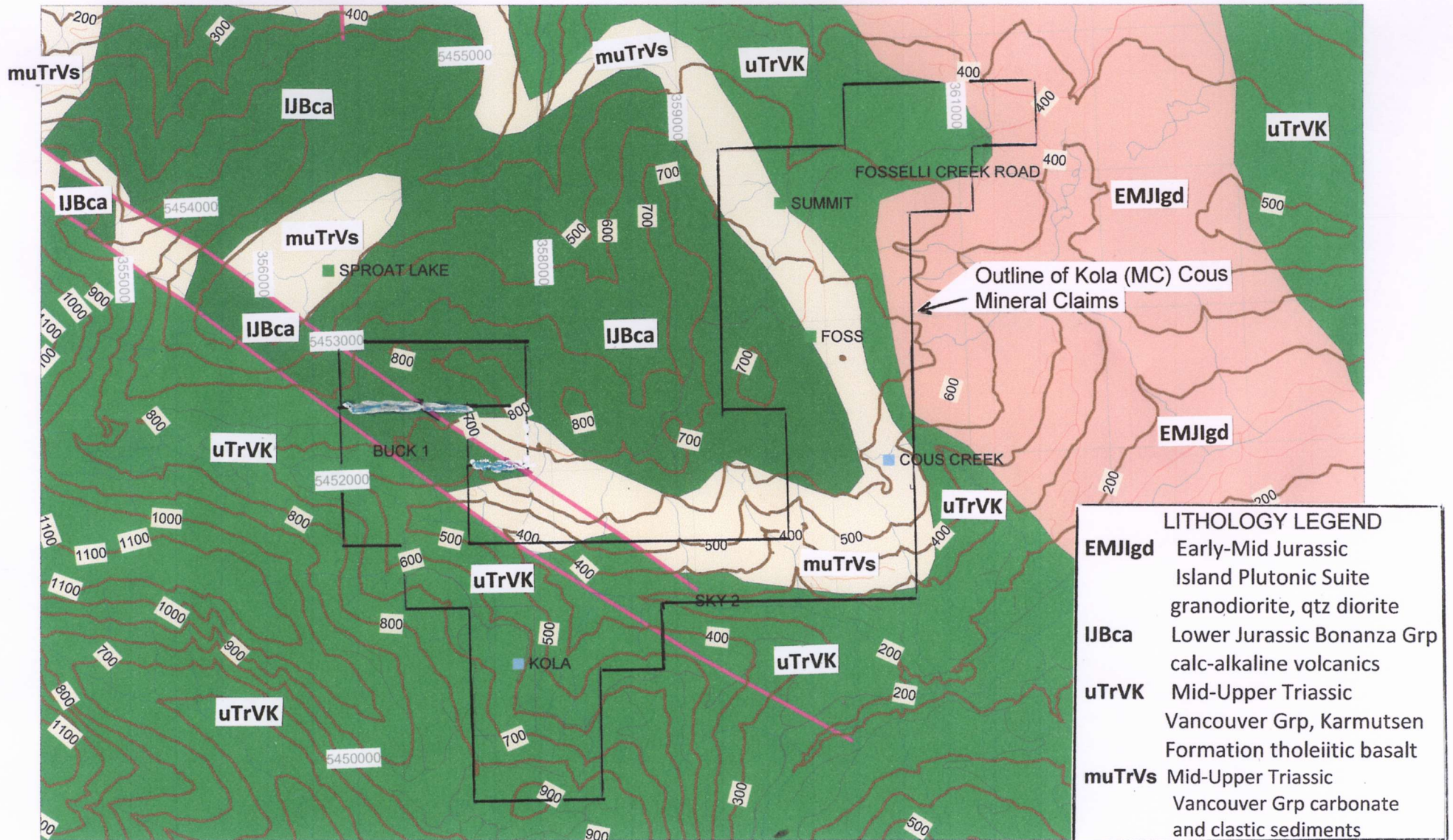




# Fig 3 Kola (MC) Cous Mineral Claims General Geology

NTS 092F 2/W, BCGS 092F.016, Alberni Mining Division

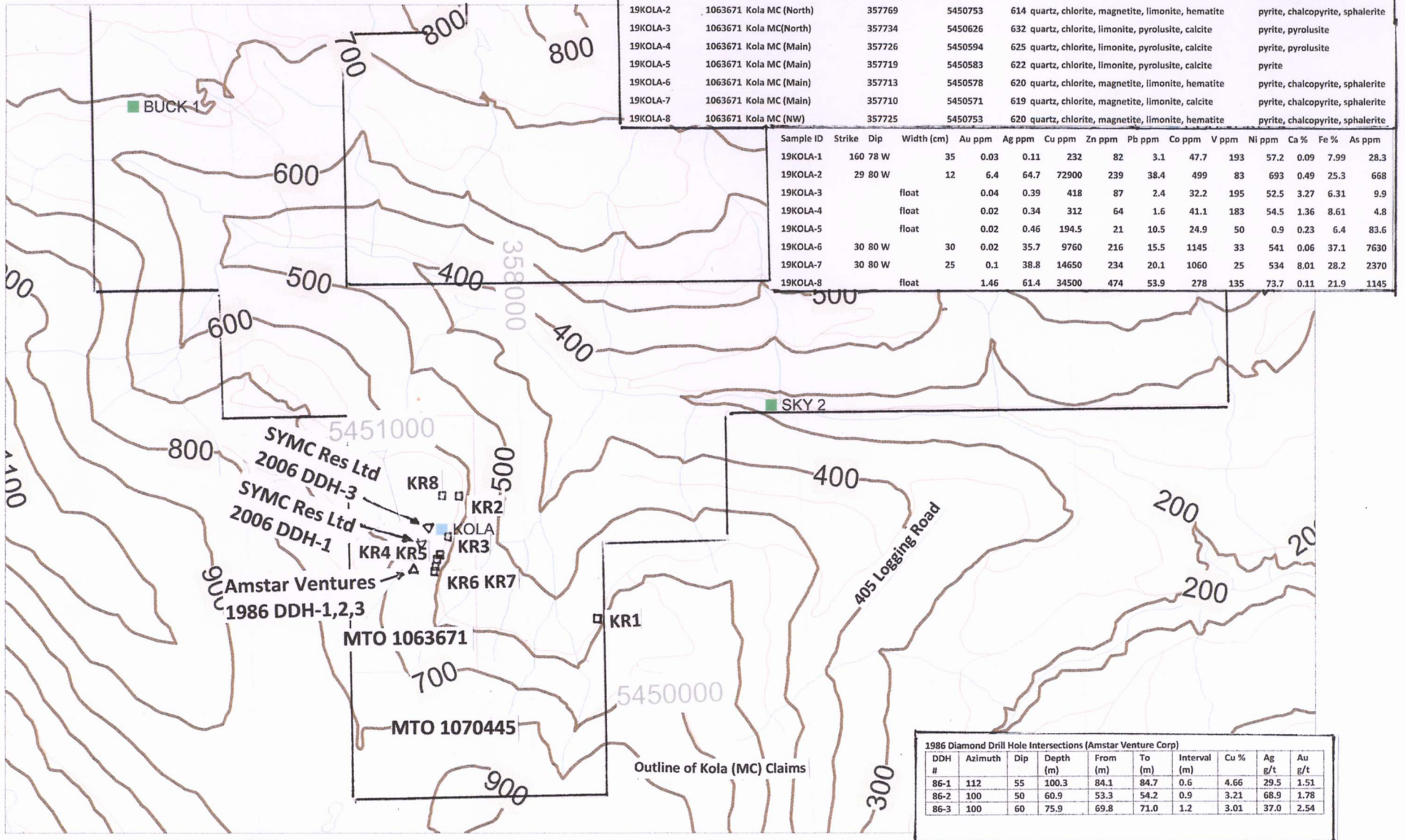
RED LINE = FAULT    SQUARES = MINFILE OCCURRENCE





# Fig 4 Kola (MC) 2019 Rock Chip Samples

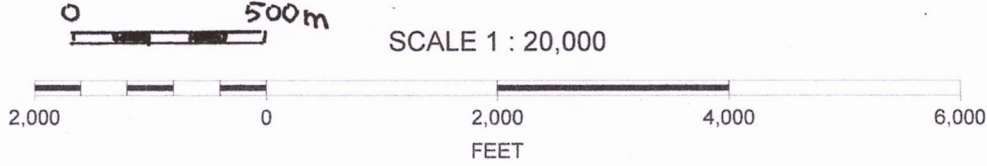
NTS 092F 2/W, BCGS 092F.016, Alberni Mining Division



Sample ID	MTO tenure	Zone Name	Easting NAD 83	Northing NAD 83	Elev (m)	Alteration	Mineralization
19KOLA-1	1070445	Roadcut	358275	5450317		594 quartz, chlorite, limonite, pyrolusite, calcite	pyrite, pyrolusite
19KOLA-2	1063671	Kola MC (North)	357769	5450753	614	quartz, chlorite, magnetite, limonite, hematite	pyrite, chalcocopyrite, sphalerite
19KOLA-3	1063671	Kola MC (North)	357734	5450626	632	quartz, chlorite, limonite, pyrolusite, calcite	pyrite, pyrolusite
19KOLA-4	1063671	Kola MC (Main)	357726	5450594	625	quartz, chlorite, limonite, pyrolusite, calcite	pyrite, pyrolusite
19KOLA-5	1063671	Kola MC (Main)	357719	5450583	622	quartz, chlorite, limonite, pyrolusite, calcite	pyrite
19KOLA-6	1063671	Kola MC (Main)	357713	5450578	620	quartz, chlorite, magnetite, limonite, hematite	pyrite, chalcocopyrite, sphalerite
19KOLA-7	1063671	Kola MC (Main)	357710	5450571	619	quartz, chlorite, magnetite, limonite, calcite	pyrite, chalcocopyrite, sphalerite
19KOLA-8	1063671	Kola MC (NW)	357725	5450753	620	quartz, chlorite, magnetite, limonite, hematite	pyrite, chalcocopyrite, sphalerite

Sample ID	Strike	Dip	Width (cm)	Au ppm	Ag ppm	Cu ppm	Zn ppm	Pb ppm	Co ppm	V ppm	Ni ppm	Ca %	Fe %	As ppm
19KOLA-1	160	78 W	35	0.03	0.11	232	82	3.1	47.7	193	57.2	0.09	7.99	28.3
19KOLA-2	29	80 W	12	6.4	64.7	72900	239	38.4	499	83	693	0.49	25.3	668
19KOLA-3			float	0.04	0.39	418	87	2.4	32.2	195	52.5	3.27	6.31	9.9
19KOLA-4			float	0.02	0.34	312	64	1.6	41.1	183	54.5	1.36	8.61	4.8
19KOLA-5			float	0.02	0.46	194.5	21	10.5	24.9	50	0.9	0.23	6.4	83.6
19KOLA-6	30	80 W	30	0.02	35.7	9760	216	15.5	1145	33	541	0.06	37.1	7630
19KOLA-7	30	80 W	25	0.1	38.8	14650	234	20.1	1060	25	534	8.01	28.2	2370
19KOLA-8			float	1.46	61.4	34500	474	53.9	278	135	73.7	0.11	21.9	1145

1986 Diamond Drill Hole Intersections (Amstar Venture Corp)									
DDH #	Azimuth	Dip	Depth (m)	From (m)	To (m)	Interval (m)	Cu %	Ag g/t	Au g/t
86-1	112	55	100.3	84.1	84.7	0.6	4.66	29.5	1.51
86-2	100	50	60.9	53.3	54.2	0.9	3.21	68.9	1.78
86-3	100	60	75.9	69.8	71.0	1.2	3.01	37.0	2.54



- ▲ Amstar Ventures 1986 DDH
- ▼ SYMC Res Ltd
- 2006 DDH
- Rock Chip Sample



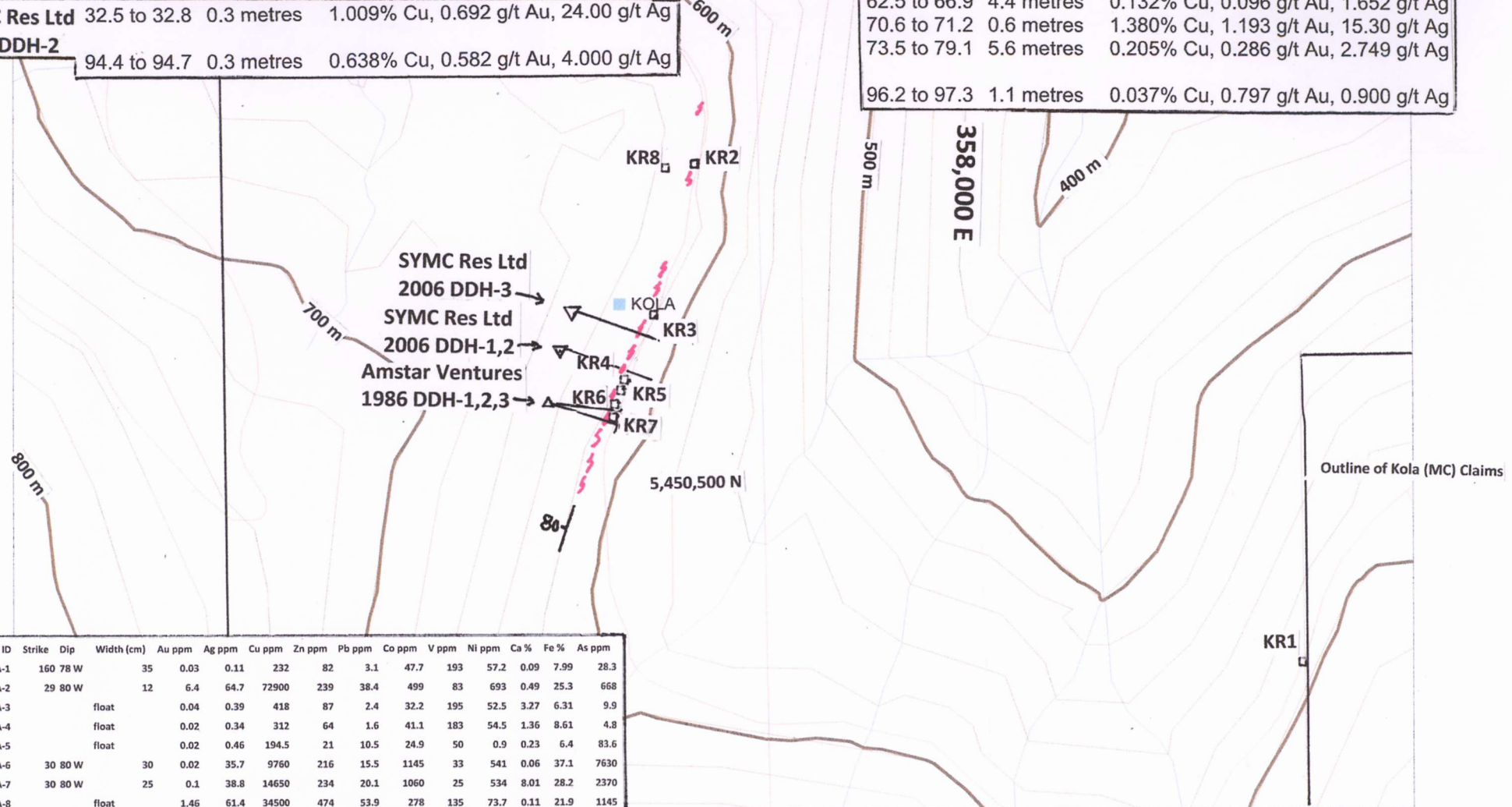
# Fig 5 Kola (MC) 2019 Rock Chip Samples (Detail)

1986 Diamond Drill Hole Intersections (Amstar Venture Corp)

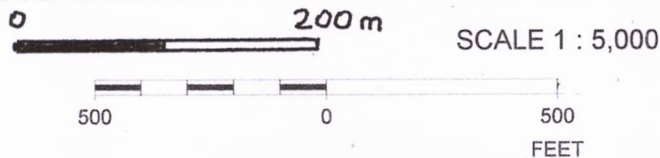
DDH #	Azimuth	Dip	Depth (m)	From (m)	To (m)	Interval (m)	Cu %	Ag g/t	Au g/t
86-1	112	55	100.3	84.1	84.7	0.6	4.66	29.5	1.51
86-2	100	50	60.9	53.3	54.2	0.9	3.21	68.9	1.78
86-3	100	60	75.9	69.8	71.0	1.2	3.01	37.0	2.54

**SYMC Res Ltd 2006 DDH-2**  
 32.5 to 32.8 0.3 metres 1.009% Cu, 0.692 g/t Au, 24.00 g/t Ag  
 94.4 to 94.7 0.3 metres 0.638% Cu, 0.582 g/t Au, 4.000 g/t Ag

**SYMC Res Ltd 2006 DDH-1**  
 31.1 to 35.1 4.0 metres 0.058% Cu, 0.081 g/t Au, 0.669 g/t Ag  
 31.1 to 31.7 0.6 metres 0.152% Cu, 0.045 g/t Au, 2.000 g/t Ag  
 33.2 to 35.1 1.9 metres 0.068% Cu, 0.156 g/t Au, 0.700 g/t Ag  
 62.5 to 79.1 16.6 metres 0.164% Cu, 0.194 g/t Au, 2.051 g/t Ag  
 62.5 to 66.9 4.4 metres 0.132% Cu, 0.096 g/t Au, 1.652 g/t Ag  
 70.6 to 71.2 0.6 metres 1.380% Cu, 1.193 g/t Au, 15.30 g/t Ag  
 73.5 to 79.1 5.6 metres 0.205% Cu, 0.286 g/t Au, 2.749 g/t Ag  
 96.2 to 97.3 1.1 metres 0.037% Cu, 0.797 g/t Au, 0.900 g/t Ag



Sample ID	Strike	Dip	Width (cm)	Au ppm	Ag ppm	Cu ppm	Zn ppm	Pb ppm	Co ppm	V ppm	Ni ppm	Ca %	Fe %	As ppm
19KOLA-1	160	78 W	35	0.03	0.11	232	82	3.1	47.7	193	57.2	0.09	7.99	28.3
19KOLA-2	29	80 W	12	6.4	64.7	72900	239	38.4	499	83	693	0.49	25.3	668
19KOLA-3			float	0.04	0.39	418	87	2.4	32.2	195	52.5	3.27	6.31	9.9
19KOLA-4			float	0.02	0.34	312	64	1.6	41.1	183	54.5	1.36	8.61	4.8
19KOLA-5			float	0.02	0.46	194.5	21	10.5	24.9	50	0.9	0.23	6.4	83.6
19KOLA-6	30	80 W	30	0.02	35.7	9760	216	15.5	1145	33	541	0.06	37.1	7630
19KOLA-7	30	80 W	25	0.1	38.8	14650	234	20.1	1060	25	534	8.01	28.2	2370
19KOLA-8			float	1.46	61.4	34500	474	53.9	278	135	73.7	0.11	21.9	1145



NTS 092F 2/W, BCGS 092F.016, Alberni Mining Division

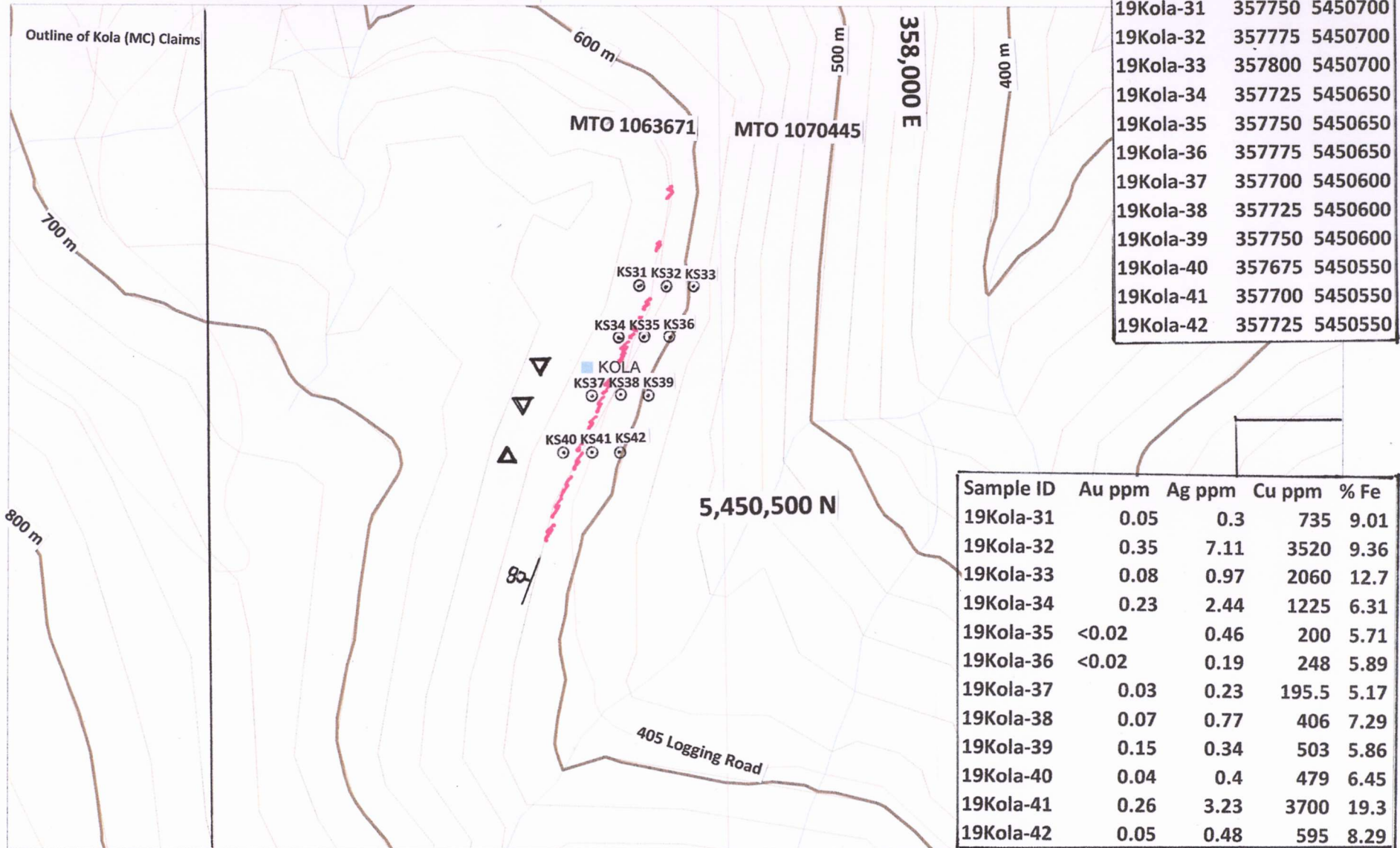
- Strike & Dip
- - - Qtz-Carb Sulphide Vein Zone (banded/breccia)
- △ Amstar Ventures 1986 DDH
- ▽ SYMC Res Ltd 2006 DDH
- 2019 Rock Chip Sample





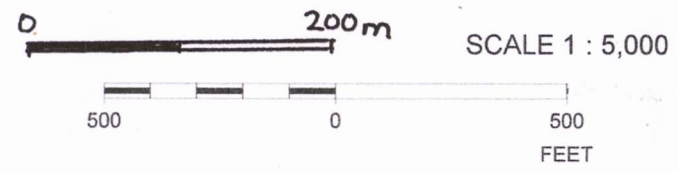
# Fig 6 Kola (MC) 2019 Soil B Horizon Samples

NTS 092F 2/W, BCGS 092F.016, Alberni Mining Division



Sample ID	UTM E	UTM N
19Kola-31	357750	5450700
19Kola-32	357775	5450700
19Kola-33	357800	5450700
19Kola-34	357725	5450650
19Kola-35	357750	5450650
19Kola-36	357775	5450650
19Kola-37	357700	5450600
19Kola-38	357725	5450600
19Kola-39	357750	5450600
19Kola-40	357675	5450550
19Kola-41	357700	5450550
19Kola-42	357725	5450550

Sample ID	Au ppm	Ag ppm	Cu ppm	% Fe
19Kola-31	0.05	0.3	735	9.01
19Kola-32	0.35	7.11	3520	9.36
19Kola-33	0.08	0.97	2060	12.7
19Kola-34	0.23	2.44	1225	6.31
19Kola-35	<0.02	0.46	200	5.71
19Kola-36	<0.02	0.19	248	5.89
19Kola-37	0.03	0.23	195.5	5.17
19Kola-38	0.07	0.77	406	7.29
19Kola-39	0.15	0.34	503	5.86
19Kola-40	0.04	0.4	479	6.45
19Kola-41	0.26	3.23	3700	19.3
19Kola-42	0.05	0.48	595	8.29



- ▲ Amstar Ventures 1986 DDH
- ▼ SYMC Res Ltd 2006 DDH
- 2019 ○ SOIL Sample
- Strike & Dip
- Qtz-Carb Sulphide Vein Zone (banded/breccia)






# Fig 7 Kola(MC) 2019 Rock Chip Samples

MTO Mineral Claims 1063671 & 1070445 Access via 405 Logging Road

## Legend

 Rock Chip Sample

Sample ID	MTO tenure	Zone Name	Easting NAD 83	Northing NAD 83	Elev (m)	Alteration	Mineralization
19KOLA-1	1070445	Roadcut	358275	5450317	594	quartz, chlorite, limonite, pyrolusite, calcite	pyrite, pyrolusite
19KOLA-2	1063671	Kola MC (North)	357769	5450753	614	quartz, chlorite, magnetite, limonite, hematite	pyrite, chalcocopyrite, sphalerite
19KOLA-3	1063671	Kola MC(North)	357734	5450626	632	quartz, chlorite, limonite, pyrolusite, calcite	pyrite, pyrolusite
19KOLA-4	1063671	Kola MC (Main)	357726	5450594	625	quartz, chlorite, limonite, pyrolusite, calcite	pyrite, pyrolusite
19KOLA-5	1063671	Kola MC (Main)	357719	5450583	622	quartz, chlorite, limonite, pyrolusite, calcite	pyrite
19KOLA-6	1063671	Kola MC (Main)	357713	5450578	620	quartz, chlorite, magnetite, limonite, hematite	pyrite, chalcocopyrite, sphalerite
19KOLA-7	1063671	Kola MC (Main)	357710	5450571	619	quartz, chlorite, magnetite, limonite, calcite	pyrite, chalcocopyrite, sphalerite
19KOLA-8	1063671	Kola MC (NW)	357725	5450753	620	quartz, chlorite, magnetite, limonite, hematite	pyrite, chalcocopyrite, sphalerite

Sample ID	Strike	Dip	Width (cm)	Au ppm	Ag ppm	Cu ppm	Zn ppm	Pb ppm	Co ppm	V ppm	Ni ppm	Ca %	Fe %	As ppm
19KOLA-1	160	78 W	35	0.03	0.11	232	82	3.1	47.7	193	57.2	0.09	7.99	28.3
19KOLA-2	29	80 W	12	6.4	64.7	72900	239	38.4	499	83	693	0.49	25.3	668
19KOLA-3			float	0.04	0.39	418	87	2.4	32.2	195	52.5	3.27	6.31	9.9
19KOLA-4			float	0.02	0.34	312	64	1.6	41.1	183	54.5	1.36	8.61	4.8
19KOLA-5			float	0.02	0.46	194.5	21	10.5	24.9	50	0.9	0.23	6.4	83.6
19KOLA-6	30	80 W	30	0.02	35.7	9760	216	15.5	1145	33	541	0.06	37.1	7630
19KOLA-7	30	80 W	25	0.1	38.8	14650	234	20.1	1060	25	534	8.01	28.2	2370
19KOLA-8			float	1.46	61.4	34500	474	53.9	278	135	73.7	0.11	21.9	1145

K-8 K-2  
K-3  
K-5  
K-6 K-7


K-1



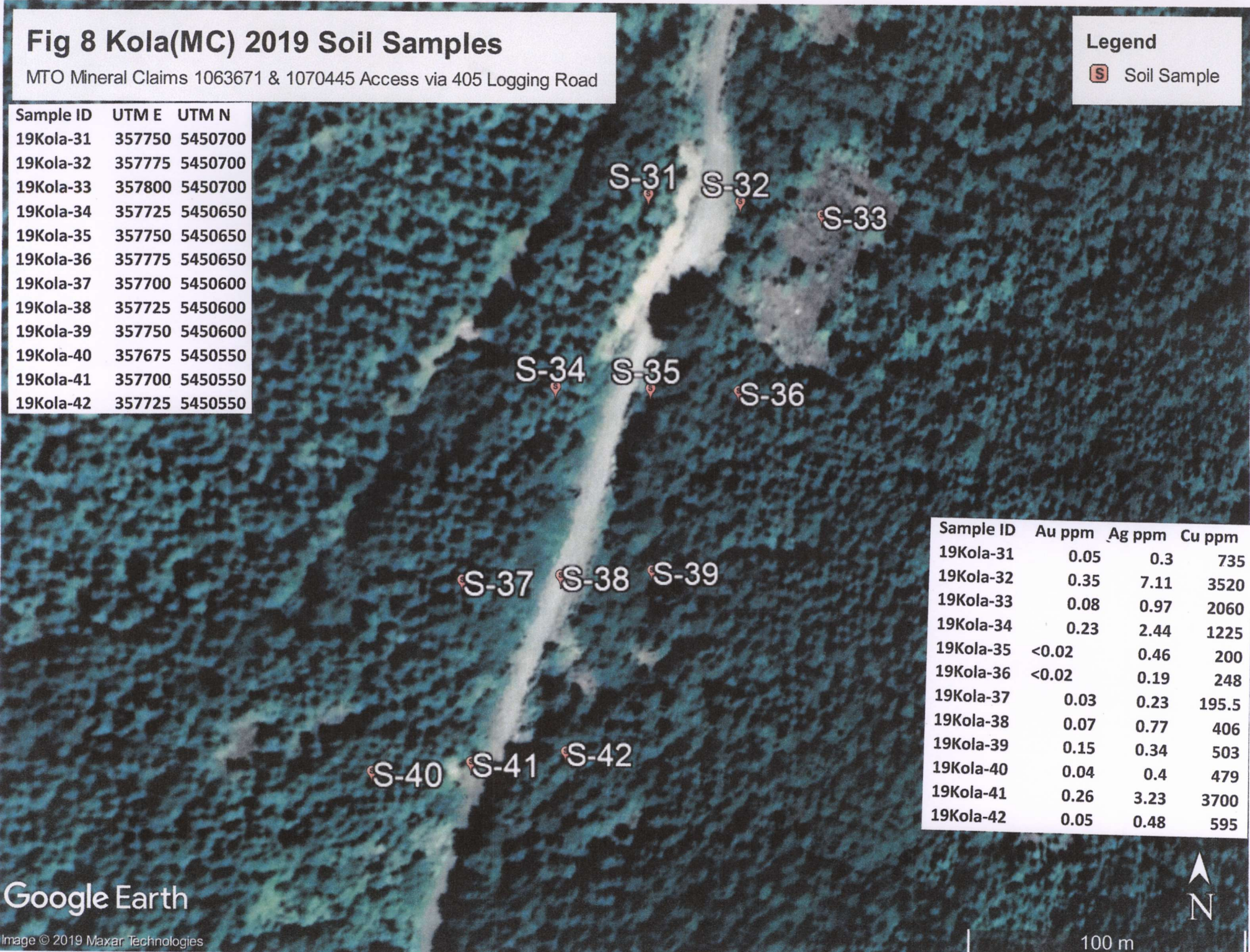


# Fig 8 Kola(MC) 2019 Soil Samples

MTO Mineral Claims 1063671 & 1070445 Access via 405 Logging Road

**Legend**  
 Soil Sample

Sample ID	UTM E	UTM N
19Kola-31	357750	5450700
19Kola-32	357775	5450700
19Kola-33	357800	5450700
19Kola-34	357725	5450650
19Kola-35	357750	5450650
19Kola-36	357775	5450650
19Kola-37	357700	5450600
19Kola-38	357725	5450600
19Kola-39	357750	5450600
19Kola-40	357675	5450550
19Kola-41	357700	5450550
19Kola-42	357725	5450550



Sample ID	Au ppm	Ag ppm	Cu ppm
19Kola-31	0.05	0.3	735
19Kola-32	0.35	7.11	3520
19Kola-33	0.08	0.97	2060
19Kola-34	0.23	2.44	1225
19Kola-35	<0.02	0.46	200
19Kola-36	<0.02	0.19	248
19Kola-37	0.03	0.23	195.5
19Kola-38	0.07	0.77	406
19Kola-39	0.15	0.34	503
19Kola-40	0.04	0.4	479
19Kola-41	0.26	3.23	3700
19Kola-42	0.05	0.48	595

Google Earth

Image © 2019 Maxar Technologies

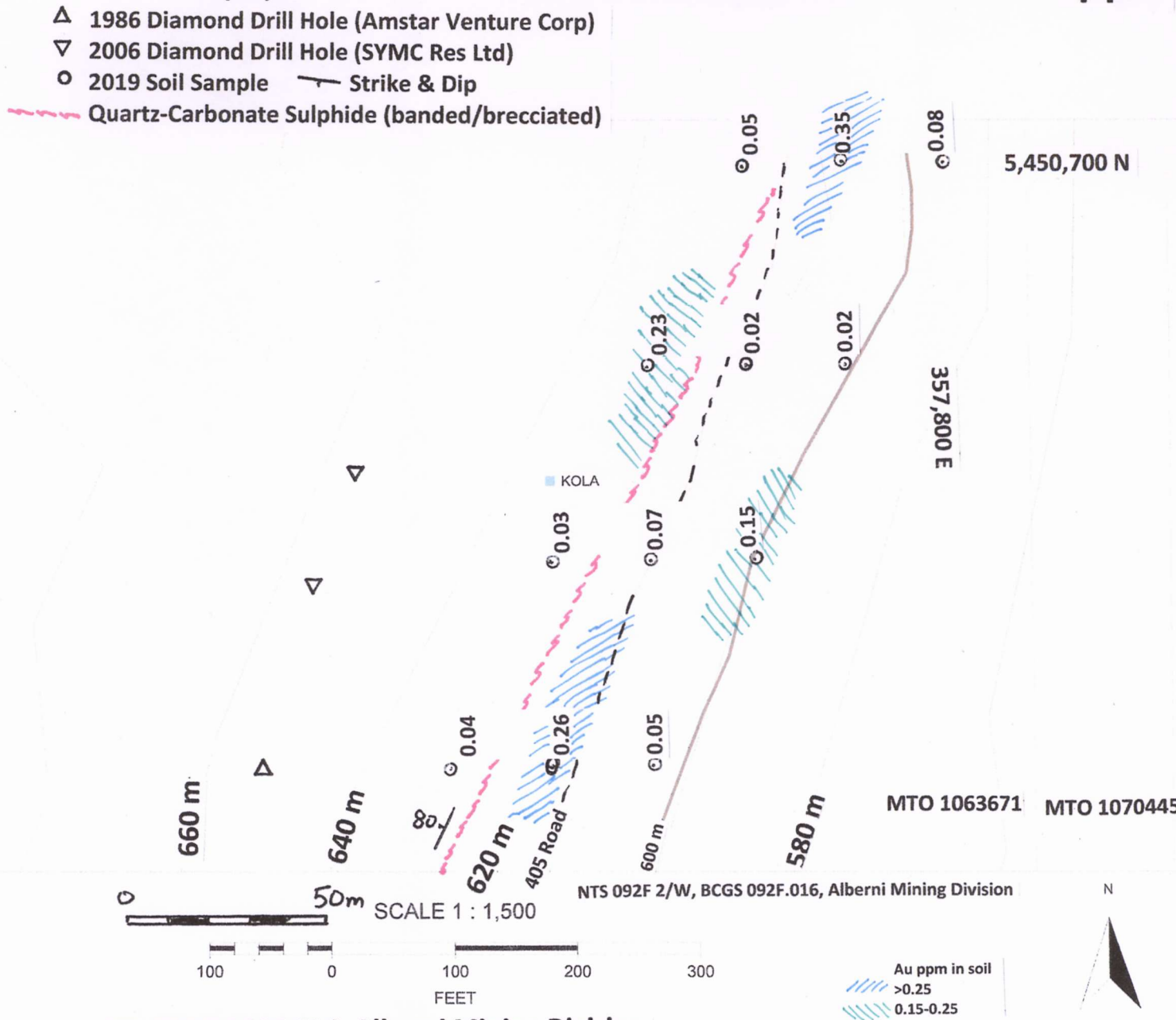


100 m



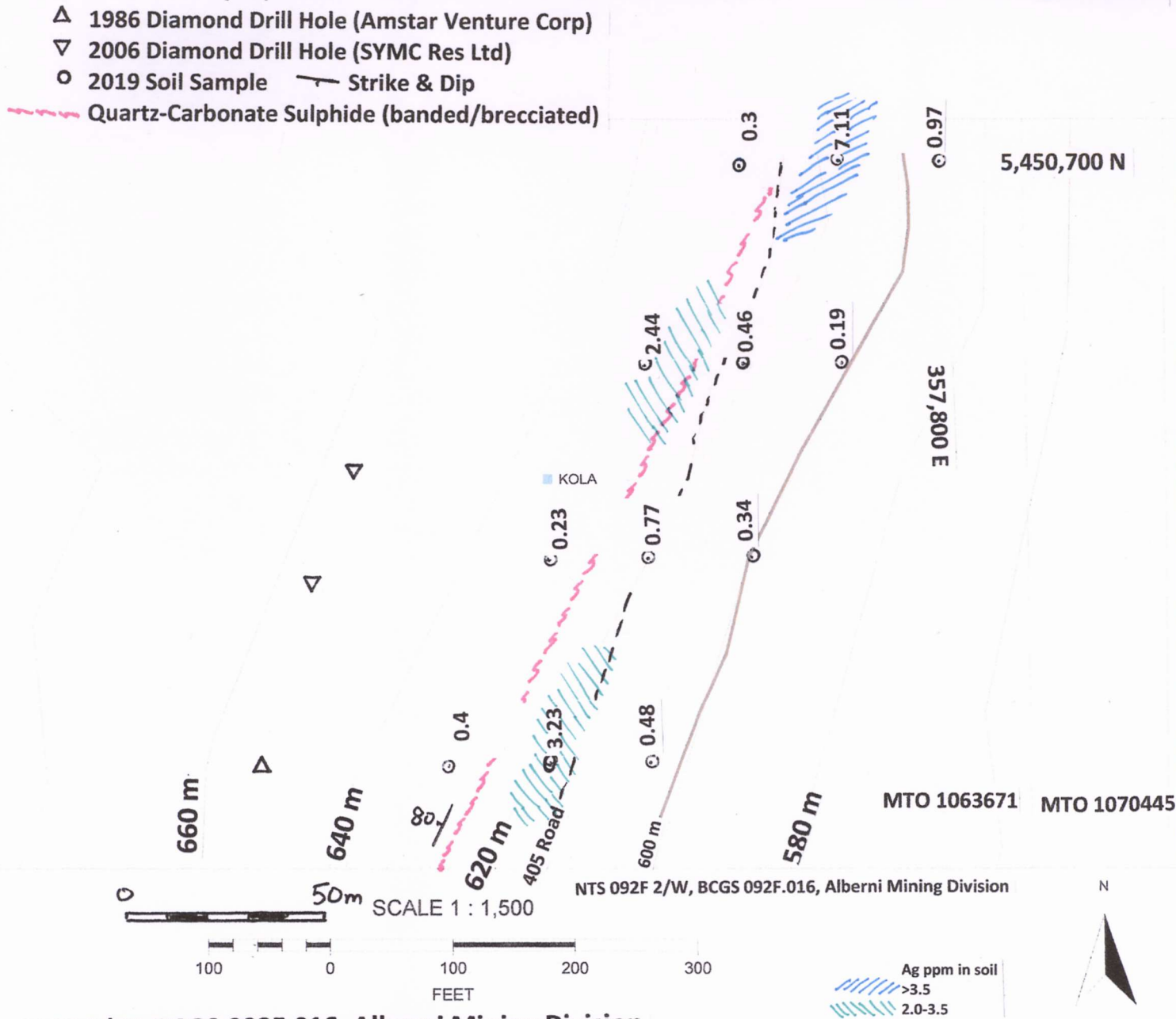
# Fig 9 Kola MC Soil Grid 2019

Au ppm



NTS 092F 2/W, BCGS 092F.016, Alberni Mining Division

# Fig 10 Kola.MC Soil Grid 2019 Ag ppm



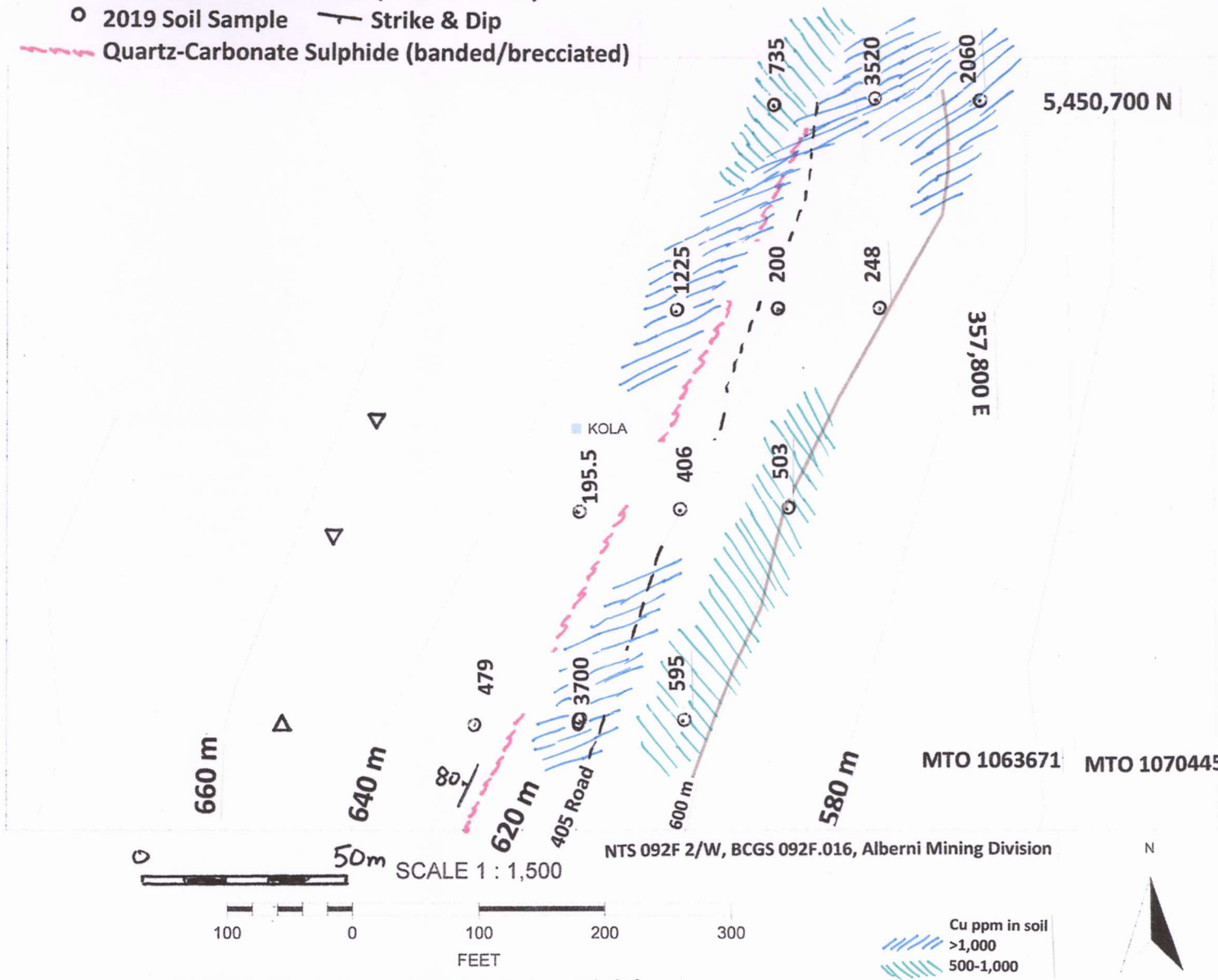
NTS 092F 2/W, BCGS 092F.016, Alberni Mining Division



# Fig 11 Kola MC Soil Grid 2019

Cu ppm

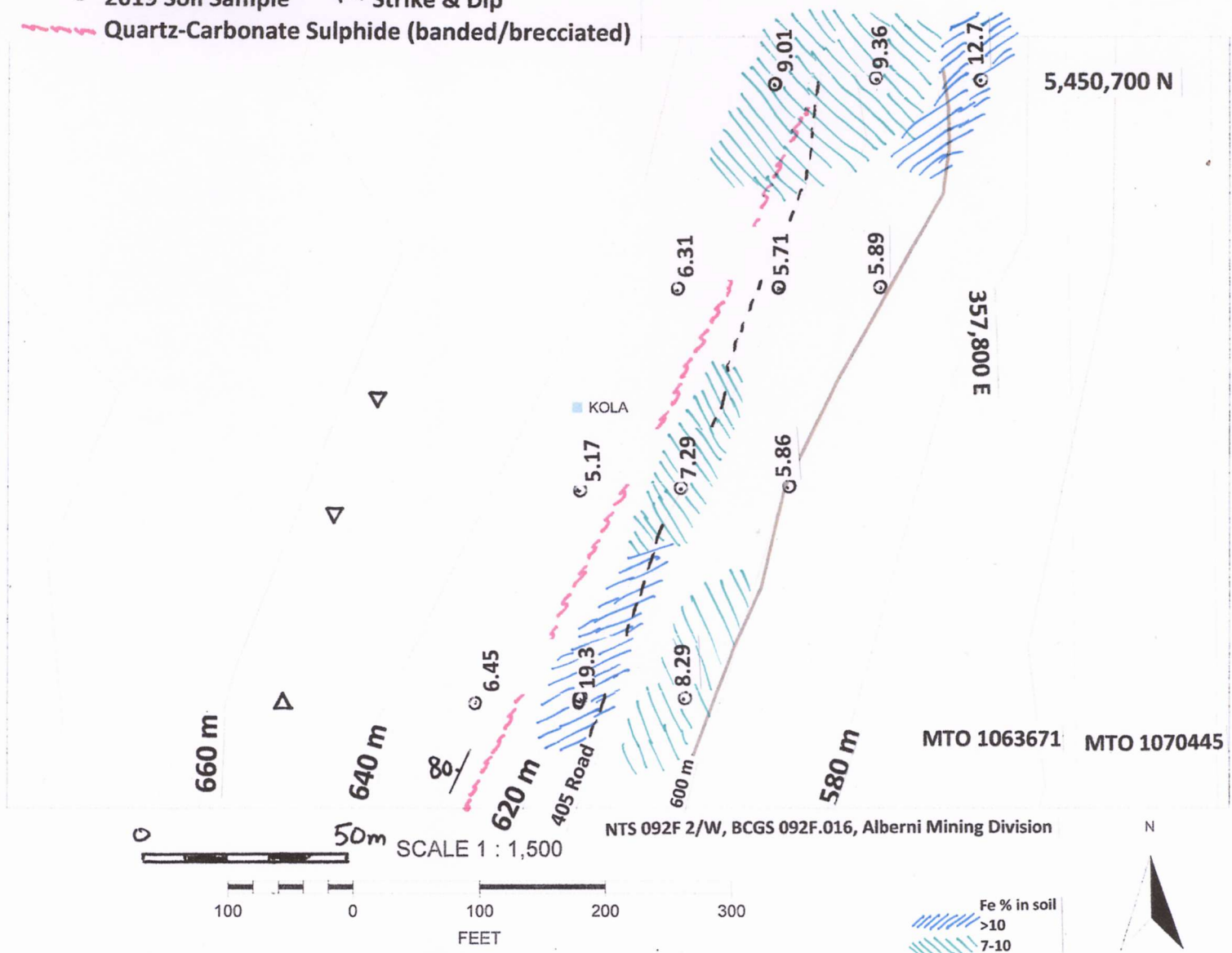
- △ 1986 Diamond Drill Hole (Amstar Venture Corp)
- ▽ 2006 Diamond Drill Hole (SYMC Res Ltd)
- 2019 Soil Sample
- ↘ Strike & Dip
- Quartz-Carbonate Sulphide (banded/brecciated)



NTS 092F 2/W, BCGS 092F.016, Alberni Mining Division

# Fig 12 Kola MC Soil Grid 2019 Fe %

- △ 1986 Diamond Drill Hole (Amstar Venture Corp)
- ▽ 2006 Diamond Drill Hole (SYMC Res Ltd)
- 2019 Soil Sample
- ↖ Strike & Dip
- Quartz-Carbonate Sulphide (banded/brecciated)

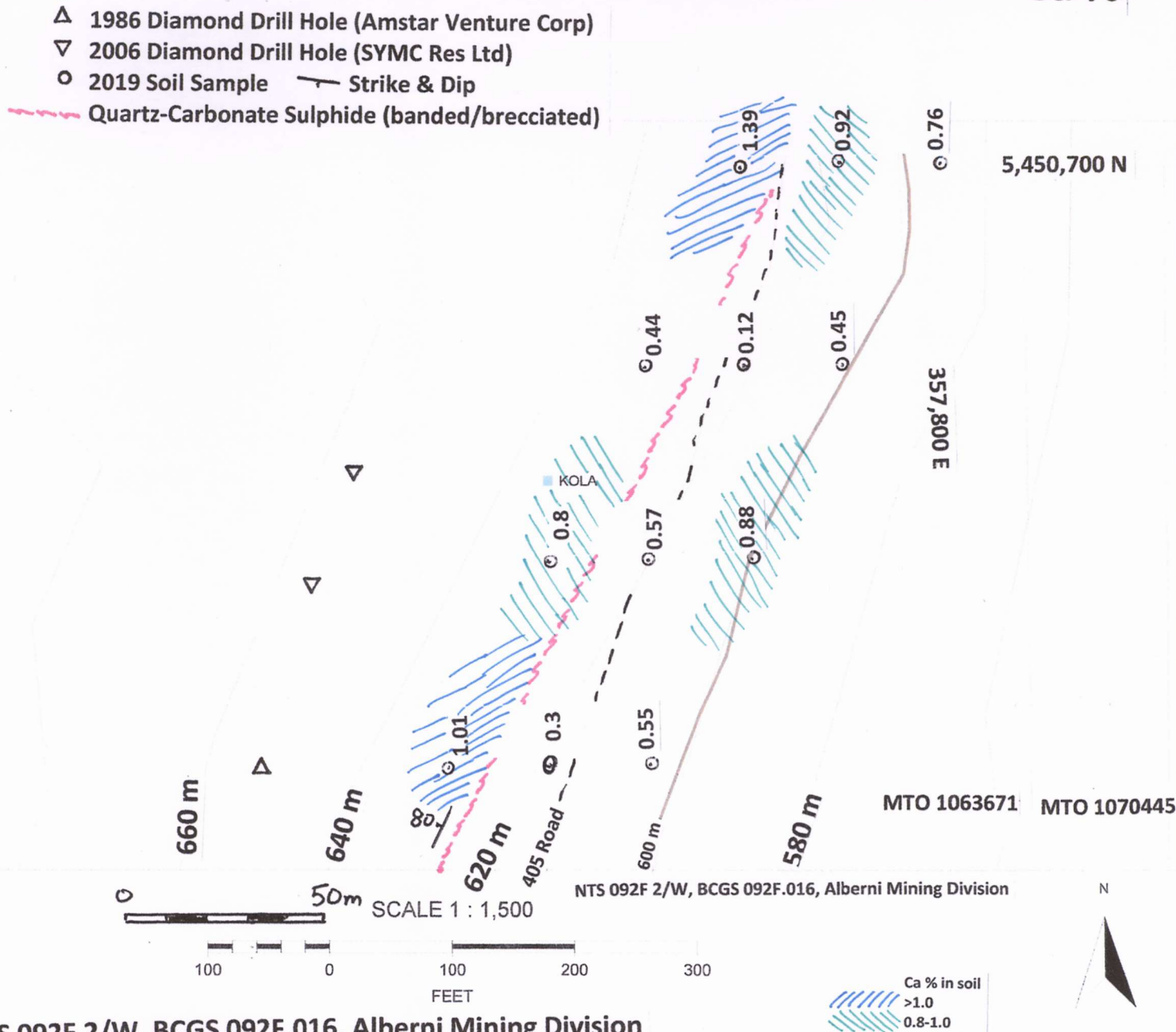


NTS 092F 2/W, BCGS 092F.016, Alberni Mining Division

Fe % in soil  
 >10  
 7-10

# Fig 13 Kola MC Soil Grid 2019

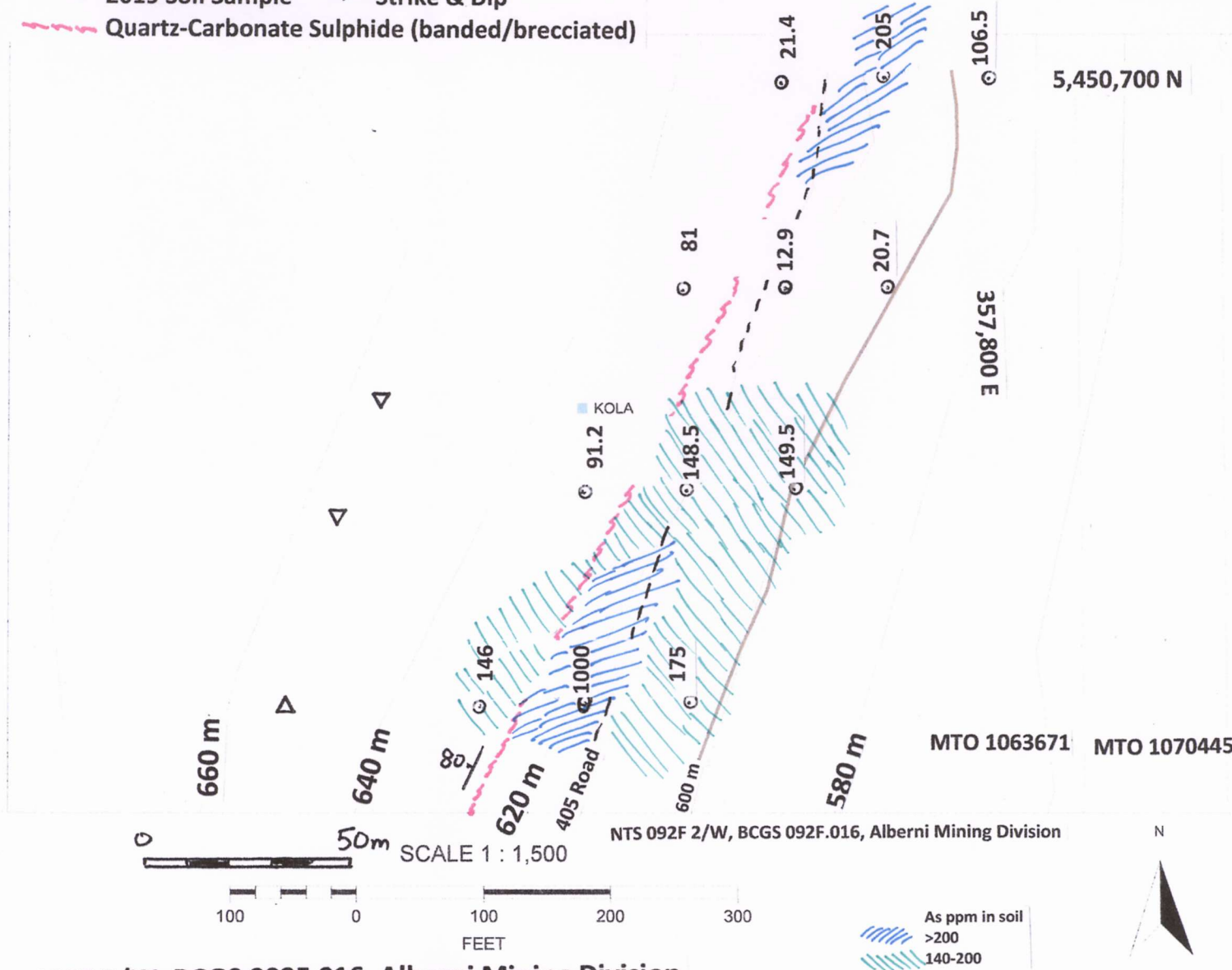
Ca %



NTS 092F 2/W, BCGS 092F.016, Alberni Mining Division

# Fig 14 Kola MC Soil Grid 2019 As ppm

- △ 1986 Diamond Drill Hole (Amstar Venture Corp)
- ▽ 2006 Diamond Drill Hole (SYMC Res Ltd)
- 2019 Soil Sample
- Strike & Dip
- Quartz-Carbonate Sulphide (banded/brecciated)



NTS 092F 2/W, BCGS 092F.016, Alberni Mining Division



# Fig 15 Kola MC Soil Grid 2019

Mn ppm

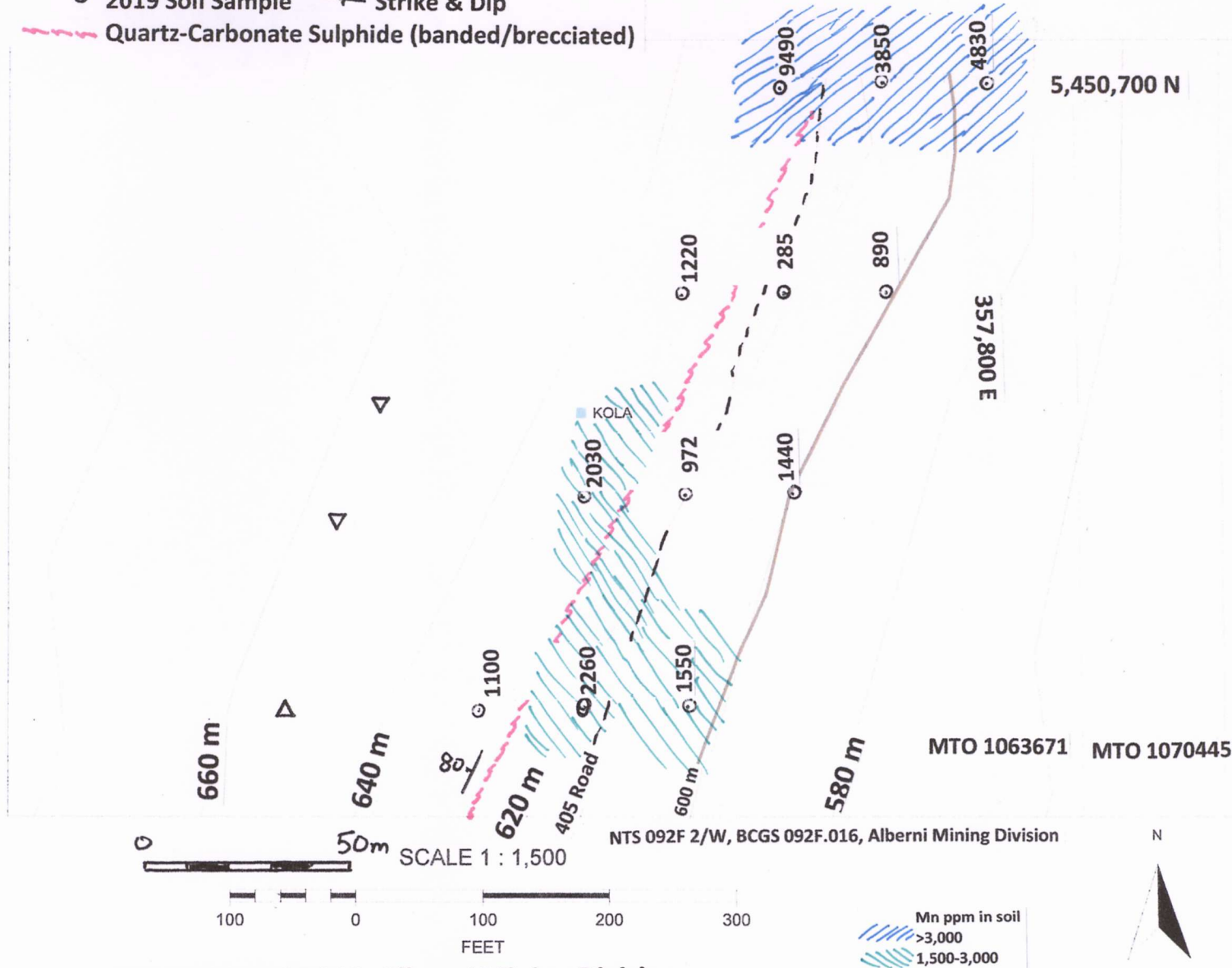
△ 1986 Diamond Drill Hole (Amstar Venture Corp)

▽ 2006 Diamond Drill Hole (SYMC Res Ltd)

○ 2019 Soil Sample

— Strike & Dip

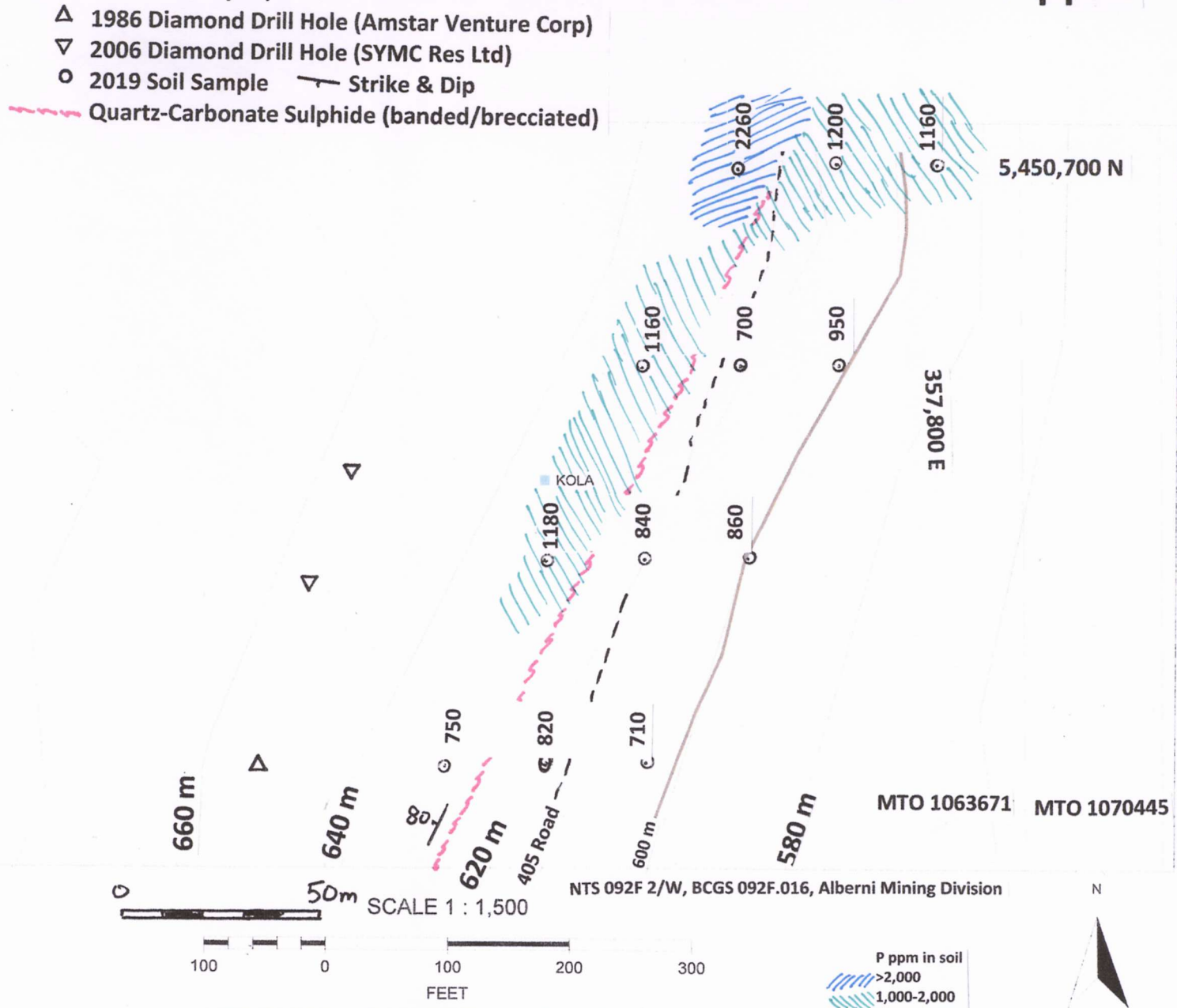
--- Quartz-Carbonate Sulphide (banded/brecciated)



NTS 092F 2/W, BCGS 092F.016, Alberni Mining Division

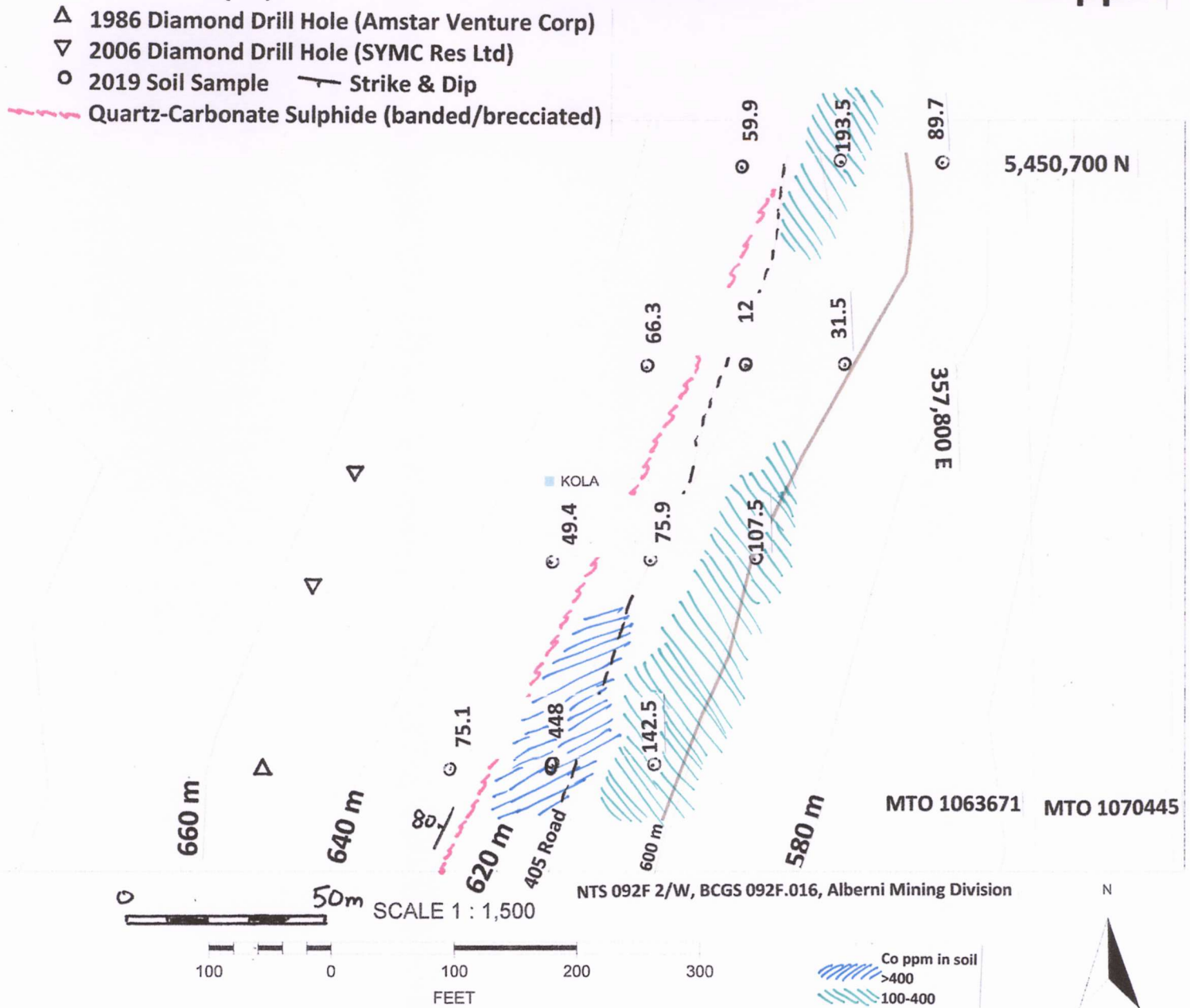
Mn ppm in soil  
 >3,000  
 1,500-3,000

# Fig 16 Kola.MC Soil Grid 2019 P ppm



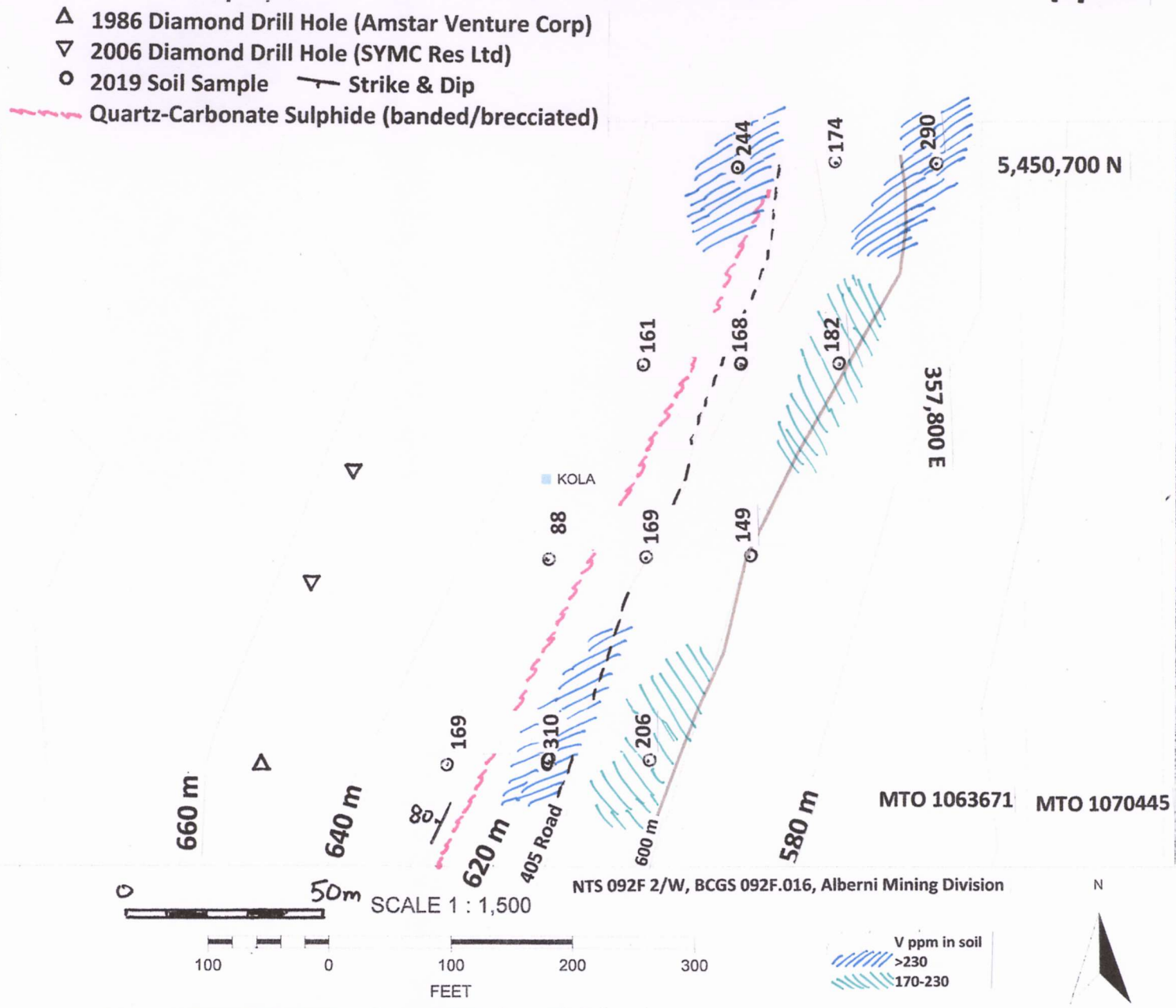
NTS 092F 2/W, BCGS 092F.016, Alberni Mining Division

# Fig 17 Kola MC Soil Grid 2019 Co ppm



NTS 092F 2/W, BCGS 092F.016, Alberni Mining Division

# Fig 18 Kola MC Soil Grid 2019 V ppm



NTS 092F 2/W, BCGS 092F.016, Alberni Mining Division