BC Geological Survey
Assessment Report
38600

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Assessment Report
Title Page and Summary

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

TOTAL COST: $3,757.92

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): 5755849

PROPERTY NAME: Macktush

CLAIM NAME(S) (on which the work was done): Mactush Gold Deposit East 1054917, Mactush Gold Deposit 1054918

COMMODITIES SOUGHT: Au, Ag (Cu, Mo, Zn)

MINERAL INVENTORY MINFILE NUMBER(S), IF KNOWN: 092F 012

MINING DIVISION: Nanaimo NTS/BCGS: 092F 02/W, 092F.016

LATITUDE: 49 ° 07 '40 " LONGITUDE: 124 ° 50 '44 " (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):

Triassic mafic volcanic tholeiitic basalt Karmutsen Formation are intruded by granodiorite/quartz diorite stocks and sills/dykes block-faulted and folded, and intrusive related hydrothermal activity has led to copper-gold-silver-molybdenum mineralization low-sulphidation epithermal banded, vuggy quartz-sulphide veins that trend ENE to NNE, dip 60-88 degrees SE, 0.2-4.0 m wide quartz +/- calcite, chlorite, sericite, epidote alteration, pyrite, chalcopyrite, bornite, sphalerite, molybdenite, & tetrahedrite mineral

REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS: 21512, 28497, 28989, 32297, 33140

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TYPE OF WORK IN THIS REPORT	EXTENT OF WORK (IN METRIC UNITS)	ON WHICH CLAIMS	PROJECT COSTS APPORTIONED (incl. support)
GEOLOGICAL (scale, area)			
Ground, mapping			
Photo interpretation			
GEOPHYSICAL (line-kilometres)			
Ground			
Magnetic			
Electromagnetic			
Induced Polarization			
Radiometric			
Seismic			
Other			
Airborne			
GEOCHEMICAL (number of samples analysed for...)			
Soil			
Silt			
Rock	12 samples prep-31, ME-MS41 multi-ICP, & Au	1054917, 1054918	3,757.92
Other			
DRILLING (total metres; number of holes, size)			
Core			
Non-core			
RELATED TECHNICAL			
Sampling/assaying			
Petrographic			
Mineralographic			
Metallurgic			
PROSPECTING (scale, area)			
PREPARATORY / PHYSICAL			
Line/grid (kilometres)			
Topographic/Photogrammetric (scale, area)			
Legal surveys (scale, area)			
Road, local access (kilometres)/trail			
Trench (metres)			
Underground dev. (metres)			
Other			
		TOTAL COST:	3,757.92

NTS 092F 2/W, TRIM 092F.016
LAT. 49 07' 40" N
LONG. 124 50' 44" W

GEOCHEMICAL REPORT ON MINERAL TENURES 1054831, 1054917, 1054918, 1059982, 1070697 (WORK PERFORMED ON 1054917, 1054918) MACKTUSH PROJECT PRECIOUS & BASE METAL MINERAL OCCURRENCES PORT ALBERNI, B.C.

Nanaimo Mining Division

by

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

November 5, 2019

38,600

Mineral Titles Online

Mineral Claim Exploration and Development Work/Expiry Date Change

Confirmation

Recorder: KIKAUKA, ANDRIS ARTURS (114051)
Submitter: KIKAUKA, ANDRIS ARTURS (114051)
Recorded: 2019/SEP/18
Effective: 2019/SEP/18
D/E Date: 2019/SEP/18

Mineral Claim Exploration and Development Work/Expiry Date Change

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Confirmation

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Event Number: **5755849**

Work Type: Technical Work
Technical Items: Geochemical, PAC Withdrawal (up to 30% of technical work required)

Work Start Date: 2019/SEP/08
Work Stop Date: 2019/SEP/10
Total Value of Work: $ 3757.92
Mine Permit No:

Summary of the work value:

Title Number	Claim Name/Property	Issue Date	Good To Date	New Good To Date	# of Days For-ward	Area in Ha	Applied Work Value	Sub-mission Fee
1054831	MACTUSH NORTH	2017/SEP/12	2021/SEP/01	2022/dec/10	465	211.35	$ 2950.15	$ 0.00
1054917	Mactush Gold Deposit East	2016/OCT/09	2021/SEP/01	2022/dec/10	465	84.55	$ 1571.76	$ 0.00
1054918	Mactush Gold Deposit	2016/OCT/09	2027/OCT/09	2027/OCT/09	0	42.28	$ 0.00	$ 0.00
1059982		2018/APR/11	2019/OCT/11	2022/dec/10	1156	21.14	$ 510.71	$ 0.00
1070697	MACTUSH 5	2019/AUG/29	2020/AUG/29	2022/dec/10	833	21.14	$ 271.04	$ 0.00

Financial Summary:

Total applied work value: $ 5303.66

PAC name: Andris Arturs Kikauka
Debited PAC amount: $ 1545.74
Credited PAC amount: $ 0

Total Submission Fees: $ 0.0

Total Paid: **$ 0.0**

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1.0 SUMMARY

The Macktush mineral claims are comprised of 5 contiguous MTO mineral tenures:

MTO ID	CLAIM NAME
1054831	MACTUSH NORTH
1054917	Mactush Gold Deposit East
1054918	Mactush Gold Deposit
1059982	
1070697	MACTUSH 5

The Macktush Property is located approximately 35 kilometers south-southwest of Port Alberni an ice-free, deep water sea port (Fig 1). All weather gravel roads (maintained by logging companies) offers year-round access to the claims. The property is well situated with respect to logistics and infrastructure for possible future development and exploitation.

The area of the Macktush mineral claims are mainly underlain by Triassic mafic volcanic rocks of the Karmutsen Formation of the Vancouver Group that are intruded by granodierite/quartz diorite stocks (0.5-8 km wide, elongated NNW) and late-stage differentiate sills/dykes of the Jurassic Island plutonic suite. These intrusive, and volcanic rocks are variably block-faulted and folded. Intrusive related hydrothermal activity has led to copper-gold-silver-molybdenum porphyry, skarn and epithermal vein deposit types present in the general area of the Macktush Property. The Macktush claims feature low sulphidation epithermal (banded, vuggy) quartz-sulphide fissure veins that trend ENE to NNE, and dip 60-88 degrees SE. Macktush veins of economic importance are typically 0.2-4.0 m width, with precious metal content of approximately 2-20 g/t Au, 1-50 g/t Ag, base metal values of 0.1-0.6% Cu, with minor Mo or Zn.

Portions of the Property have been periodically explored by different companies for gold, silver, copper and/or molybdenum bearing quartz-sulphide veins. Previous work on Macktush by SYMC Resources Ltd, G4G Resources Ltd, and Nahminto Resources Ltd includes testing several vein targets by diamond drilling, airborne geophysical surveys, remote sensing, prospecting and geochemistry.

In 2005, SYMC completed 2,136 m. in 35 holes of diamond drilling on four target areas: 20 holes on the David Vein, 3 holes on each of the Herb Jr. Vein and the Tasha Zone and 9 holes on the Dauntless North Veins. Detailed geological mapping was conducted in each of the four target areas by the author prior to drilling each area. In 2006, SYMC completed 982 m. in 11 holes of diamond drilling on five target areas: 3 holes each on the MC Zone and the Zinc Vein, 2 holes each on the Moly Vein and the Jack Vein, and one hole on the Sara Vein. The Sara and MC Zones are not part of the Macktush Property.

Historical mineral resources for the Macktush David Vein were revised and reclassified as indicated resources as a result of the 2005 SYMC drilling program. Resource grade and tonnage estimates for the Macktush claims quartz-calcite-sulphide veins (Houle, 2015):

Vein/Zone	Tonnes	Gold g/t	Silver g/t	Copper %	Category
David Vein	16,278	5.65	25.6	0.310	Indicated
Fred Vein	65,475	13.91	48.1	0.59	Indicated
Zinc Vein	35,710	8.97	44.5	0.57	Indicated
Jack Vein	13,994	2.00	0.8	0.02	Indicated
Moly Vein	504	4.27	1.5	0.01	Indicated

Approximately 1,661 line km of magnetic, electromagnetic and radiometric airborne geophysical surveys were conducted by Fugro Airborne Surveys Corp in 2005. The airborne geophysical survey provided high quality geophysical data and many new prospecting targets.

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 several targets in the area of the Macktush Veins, notably the Fred Vein.

Fieldwork in 2019 consisted of rock chip sampling known veins, vein extensions and new undesignated Au-Ag bearing mineral zones. A total of twelve rock chip samples were taken, 4 outcrop, and 8 angular float samples. Rock chip samples were shipped to ALS Canada Ltd, Vancouver for prep-31 and ME-MS41 (ultra-trace multi-element ICP And Au geochemical analysis). Sample descriptions and geochemical analysis results from rock chips are listed as follows:

Sample ID	MTO tenure	Zone Name	Easting NAD 83	Northing NAD 83	Elev (m)	Sample Type	Lithology
19MACK-1	1054918	Jack	364915	5443299	660	outcrop	qtz diorite, porphyritic
19MACK-2	1054917	Fred	364772	5443497	667	outcrop	qtz diorite, porphyritic
19MACK-3	1054917	Moly	364646	5443775	667	float (angular)	qtz diorite, porphyritic
19MACK-4	1054917	Zinc	364703	5443406	715	outcrop	qtz diorite, porphyritic
19MACK-5	1054917	Moly	364564	5443536	707	float (angular)	qtz diorite, porphyritic
19MACK-6	1054917	Moly	364536	5443434	717	float (angular)	qtz diorite, porphyritic
19MACK-7	1054917	Moly	364425	5443280	659	outcrop	tholeiitic basalt
19MACK-8	1054917	Jack	364815	5443137	637	float (angular)	tholeiitic basalt
19MACK-9	1054917	Jack	364801	5443129	648	float (angular)	tholeiitic basalt
19MACK-10	1054918	Fred	364915	5443561	530	float (angular)	qtz diorite, porphyritic
19MACK-11	1054917	Fred	364833	5443557	607	float (angular)	qtz diorite, porphyritic
19MACK-12	1054917	Fred	364793	5443528	633	float (angular)	qtz diorite, porphyritic

Sample ID	Alteration	Mineralization	Strike	Dip	Width	Cu ppm	Pb ppm
19MACK-1	quartz, chlorite, kaolinite, limonite, k-feldspar	pyrite	44	77 SE	15 cm	41.2	9
19MACK-2	quartz, chlorite, kaolinite, limonite, hematite	pyrite	35	88 SE	30 cm	15.6	7.4
19MACK-3	quartz, chlorite, kaolinite, limonite, pyrolusite ,calcite	pyrite				55.1	0.8
19MACK-4	quartz, chlorite, kaolinite, limonite, pyrolusite ,calcite	pyrite	58		30 cm	16.7	3.5
19MACK-5	quartz, chlorite, kaolinKe, limonite, hematite	pyrite				39.1	4.1
19MACK-6	quartz, chlorite, kaolinite, limonite, pyrolusite ,calcite	pyrite, chalcopyrite				147	2
19MACK-7	quartz, chlorite, kaolinite, limonite, pyrolusite	pyrite			30 cm	46.2	6.4
19MACK-8	quartz, chlorite, kaolinite, limonite, hematite	pyrite, arsenopyrite				13.3	6.1
19MACK-9	quartz, chlorite, kaolinite, limonite, hematite	pyrite, arsenopyrite				11.7	6
19MACK-10	quartz, chlorite, kaolinite, limonite, hematite	pyrite, arsenopyrite				17	4.8
19MACK-11	quartz, chlorite, kaolinite, limonite, hematite	pyrite				109.5	3
19MACK-12	quartz, chlorite, kaolinite, limonite, hematite	pyrite				97.2	4.6

Sample ID	Zn ppm	Ag ppm	Au ppm	Mo ppm	Fe %	S %	As ppm	Ca %	Mn ppm	K %	Ag / Au
19MACK-1	17	0.5	1.04	26.6	2.25	0.27	11	0.09	120	0.28	0.48
19MACK-2	26	0.37	0.09	30.1	1.82	1.63	49.5	0.05	217	0.12	4.1
19MACK-3	19	0.04	<0.02	0.43	1.51	0.08	1.1	2.44	638	0.01	2
19MACK-4	65	0.06	0.03	5.27	3.02	0.54	6	0.8	505	0.15	2
19MACK-5	6	0.29	0.42	37.6	1.95	0.36	11.7	0.04	77	0.09	0.69
19MACK-6	55	0.12	<0.02	0.67	4.68	<0.05	1.8	3.31	486	0.02	0.69
19MACK-7	22	1	0.03	12	2.43	1.79	76.7	0.04	537	0.08	33.3
19MACK-8	46	0.33	0.08	3.13	3.14	2.52	338	0.11	182	0.18	4.13
19MACK-9	49	0.28	0.08	1.55	2.61	2.69	350	0.18	293	0.2	3.5
19MACK-10	29	0.17	0.09	2.33	1.83	7.77	802	0.05	443	0.12	1.89
19MACK-11	27	0.27	0.14	7.57	1.98	1.34	54.2	0.06	156	0.16	1.93
19MACK-12	36	0.56	0.33	9.35	2.4	1.87	106.5	0.05	167	0.17	1.7

Source: ALS Certificate VA19240358

Rock samples 19Mack-2, 10, 11, & 12 were taken in close proximity to Fred Vein but may actually be the northeast extension of the Zinc Vein (there is an offset displacement of trends of veins between the Fred and Zinc Veins). Rock samples 19Mack-2, 10, 11, & 12 consist of sparsely mineralized quartz that exist as parallel veins to the Au-Ag bearing veins (Fig 4, 5, & 6). Drill hole data from the Fred and David Veins indicates there are numerous parallel quartz veins that are sparsely mineralized and are sub-economic (<1 g/t Au), and is likely that rock samples 19Mack-2, 10, 11, & 12 (0.09-0.33 g/t Au) were part of a parallel vein that carries anomalous, sub-economic grades < 1 g/t Au. Rock sample 19Mack-1, 8, & 9 appear to be part of a new fissure vein system located approximately 250 meters east of the Zinc/Fred/David vein system. Out of a total of 12 samples, rock chip19Mack-1 returned the highest Au value (1.04 g/t Au) and correlates with the highest K % values. This suggests that K-feldspar alteration is an important vector for locating high grade Au-Ag. The 2011 Fugro airborne cps potassium survey would be useful data to generate specific targets (in collaboration with EM and resistivity anomalies). Ag/Au ratios from 2019 rock samples range from 0.5-33.3 and average 4.7. Ag/Au ratios of ore grade precious metal samples from Macktush are typically around 1-3.

Also, satellite and radar data by Auracle Geospatial Inc (2012 report), offers optical imagery fused with radar technology to detect indicators of surface minerals and differentiate rock and formation types is additional data important for locating high grade Au-Ag. Previous work suggests the Fred/David/Zinc Veins (which are part of the same trending structure) contain the strongest Au-Ag bearing mineral indicators, and the offsets between Fred and Zinc Vein Zone requires additional drilling to test vein flexure & cross-structures.

A two-phase program consisting of systematic geochemical sampling, geological mapping, trenching and drilling is proposed for the Property. The Fred/David/Zinc Veins (which are part of the same trending structure) are the proposed target for deeper drilling and drilling to extend strike length. The objective of the drilling would be to increase indicated resource of the Fred/David/Zinc Veins.

2.0 INTRODUCTION

This report was prepared by Andris Kikauka, P.Geo, to describe and evaluate the results of geochemical surveys, and prior mineral exploration work by other companies (1971 to 2018) on the Macktush mineral property. In preparing this report, the writer has reviewed the geological, geophysical and geochemical reports, maps and miscellaneous papers listed in references section. Numerous sources of information have been cited in this report and all sources are listed in References. Cited reports are usually found in public websites of the Energy, Mines & Petroleum Resources British Columbia (EMPR). Specific website names accessed include Minfile, Aris, Property File, Publications EMPR Bulletins, Mineral Geology (EMPR Fieldwork), Mineral Deposits Profile, Mapplace, Metallic Minerals, Mineral Exploration and Mining, Mineral Statistics, and Mineral Titles. Reports that were examined include assessment reports and various other publications containing technical data regarding geology, geophysics and geochemistry on or in close proximity to Macktush.

3.0 ACCESS, PHYSIOGRAPHY, CLIMATE, & INFRASTRUCTURE

The Macktush property is easily accessed by a series of paved and gravel roads branching from the Pacific Rim Highway (Provincial Highway No. 4 also known as River Road) that runs west from Port Alberni past Sproat Lake to the west coast of Vancouver Island. An extensive network of active and deactivated forest access and logging roads exist within the Property, and provide excellent access to many portions of the Property. The terrain consists of steep to moderate sloping mountains with gentler topography in river valleys and areas of relatively flat benches in the southwest portion of the Property. Elevations range from 380 to 760 metres. The property is covered by a mixed forest of coniferous prime timber interspersed with second growth forests and scattered clear-cut logged areas, with abundant streams and creeks in valleys. The climate is temperate coastal, cool and wet, with windstorms in late fall, and thick intermittent snow cover in the higher elevations from November to March. Temperatures range from highs of 25°C in the summer to lows of -10°C in the winter.

Port Alberni is a resource-based commmnity of approximately 20,000 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. Main haul roads and forest access roads throughout the property are maintained by various logging companies and the BC Ministry of Forests, Lands and Natural Resource Operations. 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 Tseshaht First Nations.

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4.0 PROPERTY STATUS

The Macktush Property consists of 5 contiguous mineral tenures (Fig. 2) and covers an area of 380.45 hectares (939.7 acres). The Macktush group of mineral tenures are within the Alberni

Mining Division and registered owners of the mineral tenures are Andris Kikauka (50%) and John Bakus (50%). The mineral claims have not been legally surveyed as they are BC Government established mineral title cell claims. Tenure data for each claim are listed below

Title No.	Claim Name	Owner	Title Type	Title Type	Issue Date	Good To Date	Area (ha)
1054831	MACTUSH NORTH	114051 (50%)	Mineral	Claim	2017/SEP/12	2022/DEC/10	211.3452
1054917	Mactush Gold Deposit East	114051 (50%)	Mineral	Claim	2016/OCT/09	2022/DEC/10	84.553
1054918	Mactush Gold Deposit	114051 (50%)	Mineral	Claim	2016/OCT/09	2027/OCT/09	42.2761
1059982		114051 (50%)	Mineral	Claim	2018/APR/11	2022/DEC/10	21.1408
1070697	MACTUSH 5	114051 (50%)	Mineral	Claim	2019/AUG/29	2022/DEC/10	21.1389

The author undertook a search of the tenure data on the British Columbia government's Mineral Titles Online (MTO) web site which confirms the geospatial locations of the claims boundaries. Details of the status of tenure ownership for the Macktush property were obtained from the Mineral-Titles-Online (MTO) electronic staking system managed by the Mineral Titles Branch of the Province of British Columbia. The mineral tenures comprising the Mactush property shown in Figure 2 were generated from GIS spatial data downloaded from the Government of BC GeoBC website. Spatial layers are generated by Mineral-Titles-Online (MTO) electronic staking system used to record mineral tenures in British Columbia. Proposed fieldwork on the Macktush property that involves surface disturbance, such as drilling or temporary access roads requires Notice of Work Applications submitted to Front Counter BC and an MX permit number must be issued before disturbance proceeds. MX permits issued are subject to concerns that affect numerous stakeholders including First Nations, and other mining projects in the area. At this time, MX permit applications have not been filed with respect to future development work on the Macktush property.

5.0 PROPERTY HISTORY

The most advanced target on the Macktush property consists of a cluster of at least seven known sub-parallel, NE-striking and SE-dipping gold-silver-copper-bearing quartz-calcite sulphide veins which have been prospected, trenched and sampled: the Fred, David, Upper David, Zinc, Jack, and Moly veins (Macktush Veins). The Fred, David, Zinc, Jack and Moly Veins have also been tested by diamond drilling. Based on field work completed in 2003 to 2006, and compilation of historic data, indicated mineral resource estimates to the standards and guidelines of National Instrument 43-101 and the Canadian Institute of Mining have been made for the Fred, Zinc, David, Jack, and Moly veins (Houle, 2015).

SYMC Resources Ltd. purchased the 'Macktush' property from Herbert McMaster and Sylvester Tresierra (SYMC Resources Limited 1998 Prospectus). Work included some photo-lineament interpretation, extensive trenching and rehabilitation, and sampling on a series of northeast trending quartz-calcite-sulphide veins in the southern part of the Macktush property known as the Fred, David, Sy and Jack Veins (Wilson, J.R. 1991). Ten short holes were drilled on the

Fred Vein as well, three of which totaling 279.5m depth.This work occurred in the southeast part of the property. Highlights of the drill program are displayed below:

Hole	Interval (m)	Length(m)	Au (g/t)	Ag (g/t)	Cu (%)
DDH87-01	109.58-110.72	1.14	5.97	2.06	0.03
DDH87-03	33.50-34.29	0.79	3.84	16.46	0.80
DDH87-03	36.59-40.39	3.81	44.23	172.80	0.95
DDH87-08	71.63-72.88	1.25	9.94	1.71	0.03
DDH88-05	47.22-48.80	1.58	0.21	3.09	0.02

2000 - SYMC drilled four short holes to test the down-dip continuity of the Fred Vein. The holes were drilled northeast along the strike of Fred Vein from the 1987-88 holes. Core samples from these holes were destroyed during analyses, and no re-sampling was possible. Core log records however, suggest down-dip continuity of the Fred Vein structure.

2001 - SYMC conducted a moderate exploration program in the southwest portion of the property and discovered an extension of the Fred Vein. This extended the total known strike length of the Fred Vein to 1000m, leaving it open at both ends. In 2001 a representative sample of Fred Vein material was metallurgically tested by CEMI. The sample returned a head grade of 14.57 g/t gold, 59.66 g/t silver, 0.05% copper, and 3.134% zinc. It produced a flotation concentrate grading 131.31 g/t gold, 349.29 g/t silver, 0.36% copper and 28.50% zinc. It was determined by CEMI that this mineralized vein material would be relatively simple to process (SYMC news release June 7, 2001).

2002 - SYMC took samples of hanging wall and footwall material from the Dauntless North and Fred Vein and contracted CEMI to perform acid-base accounting on them. Acid-base accounting returned neutralizing to acid potential ratios of 4.2 and 4.8, respectively on the material taken from the Dauntless North Vein, indicating that the material sampled had contained neutralizing potential and is not acid generating. Acid-base accounting completed in 2002 on hanging wall and footwall material from the Fred Vein yielded neutralizing to acid potential ratios of 47.6 and undefined, respectively. The undefined value was due to the sulphur content of the sample being less than the analytical detection limit of 0.01%. These results indicated that the material sampled contained strong neutralizing potential and was not acid generating.

The indicated mineral resource used 1g/t gold block cut-off grades for four of the veins. The tonnages for each mineral resource block on the four Macktush area veins were calculated using the horizontally projected area of each polygon multiplied by the intercept length of each data point multiplied by a density factor for each zone. Density factors were assumed to be 2.8 grams per cubic metre for all four veins, corresponding to the average density for the host rock, being generally quartz diorite. The grades for each block were assigned from the respective drill or trench intercept of each corresponding data point. Therefore, each indicated mineral resource is un-cut, un-diluted and in-situ. No minimum thickness was applied to any block, other than the sampling lengths established when logging core or sampling trenched outcrops or adits. For each of the four Macktush area veins, variable block cut-off grades using three arbitrary threshold values of the primary metal of interest for each zone, being gold, for consistency with the David Vein resource estimate (Houle, 2006). Block cut-off grades of 0, 1 and 10 grams per tonne were used, and the mid-point threshold value of 1 g/t gold was selected for reporting the mineral resources. In 2015, World Organics Inc the data from drilling was evaluated and a filed NI 43-101 compliant resource estimate:

Macktush mineral resource estimate for SYMC Resources

Vein/Zone	Tonnes	Gold g/t	Silver g/t	Copper %	Category
David Vein	16,278	5.65	25.6	0.310	Indicated
Fred Vein	65,475	13.91	48.1	0.59	Indicated
Zinc Vein	35,710	8.97	44.5	0.57	Indicated
Jack Vein	13,994	2.00	0.8	0.02	Indicated
Moly Vein	504	4.27	1.5	0.01	Indicated

Reported in: 2015 Technical Report Macktush Property for World Organics Inc (Houle, 2015).

Other previous work on Mactush from 1991-2014 is summarized in bullet form as follows:

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

21512 1991 Wilson, J.R. SYMC Resources
Ltd. Geological, Drilling (Core) -092F012 - Macktush

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 - Mecktush, 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 - 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

35129 2014 Houle, J.
Nahminto Resources Ltd.
and World Organics Inc. Prospecting, Geochemical - 092F 012 - Macktush, 092F103 - Kola, 092F155 - Holk, 092F168 - Dauntless, 092F221 - Rex, 092F360 - Ceus Creek, 092F361 - Summit, 092F362 - Buck1, 092F383 - Bell, 092F412 - Sproat Lake, 092F549 -

6.0 GENERAL GEOLOGY

Vancouver Island consists of three tectonic terranes, the Wrangellia, Pacific Rim and Crescent. Wrangellia covers the northern part 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.

Port Alberni is located in Wrangellia in south-central Vancouver Island and is surrounded by some of the most varied and structurally complex geology on the island. Port Alberni also 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 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.

Lithologies present within the Macktush mineral claims are listed as follows:

LITHOLOGY LEGEND

EMJlgd Early-Mid Jurassic
Island Plutonic Suite
granodiorite, qtz diorite

uTrVK Mid-Upper Triassic
Vancouver Grp, Karmutsen
Formation tholeiitic basalt

7.0 PROPERTY GEOLOGY

The most advanced target on the Macktush property consists of a cluster of at least seven known sub-parallel, NE-striking and SE-dipping gold-silver-copper-bearing quartz-calcite sulphide fissure veins which have been prospected, trenched and sampled: the Fred, David, Upper David, & Zinc Veins, as well as the sub-parallel Jack & Moly Veins. The Fred, David, Zinc, Jack and Moly Veins have also been tested by diamond drilling. The Macktush veins are documented in BC MINFILE 092F012, and are interpreted as low sulphidation epithermal gold-silver-copper veins that are proximal to porphyry copper-molybdenum-gold deposit types.

Common geological characteristics of the Macktush Veins are described as follows:
- Consistently positive geochemical correlation of copper, silver, gold, iron and sulphur, occasionally with molybdenum, zinc, lead, nickel, cobalt, cadmium, antimony and/or Arsenic bearing-minerals as well as in vein or stockwork zones. Mineralogical clusters 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 higher grade mineralization.
- Consistent structural predictability of quartz-calcite-sulphide veins and zones both along strike and down-dip from surface exposures.
- 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.

The individual characteristics of Macktush vein zones tested by drilling are:

Macktush David Vein (Au-Ag-Cu)
The gold-silver-copper bearing David Vein is centred at UTM Zone 10 5443725N, 365050E and outcrops at approximately 550 metres above sea level. It is oriented at 035 degrees Azimuth and dips 65 degrees southeast. It was exposed and sampled in 14 tronches along the west side of the Macktush 100 (M100) road over a strike length of 250 metres, and confirmed by drilling over a strike length of 175 metres and to a depth of about 50 metres from surface, or 500 metres above sea level. The (main) David Vein consists of a 1.5 metre thick fractured, vuggy, banded and brecciated, sericitic or chloritic, quartz-calcite-sulphide vein. On the surface the vein appears to trend in a straight line with little or no curve, however the drill data suggests the vein dips steeper in the southwest portion and dip flattens slightly to the northeast. Splaying from the footwall (northwest) side of the David Vein are two or more sub-parallel striking but more steeply-dipping (80 degree southeast to northwest) splay veins, which meet the David Vein at intervals of approximately 20 metres vertically, and form splay lines plunging at 5 degrees to the southwest. Sections of higher-grade gold, silver and copper in the David Vein and the footwall splay veins appear to be closest to these sub-horizontal splay lines. The grades of gold, silver and copper in surface trenches are much higher than those in the drill intercepts, and generally increase to the southwest in the drill intercepts. Sulphide mineralogy in the vein consists of pyrite, chalcopyrite, tetrahedrite and bornite totaling about 5% of the vein. Gangue mineralogy is primarily quartz with variable amounts of calcite, sericite and/or chlorite. The host

rock of the David Vein is sheared granodiorite of the Jurassic island plutonic suite, which occasionally contains altered xenoliths of volcanic and carbonate.

Macktush Jack Vein (Au-Ag-Cu-Mo-Zn)
The gold-silver-copper-zinc-molybdenum bearing Jack Vein is centred at UTM Zone 10N 5443300N, 364700E and outcrops in a single trench at 750 metres above sea level in the Macktush Veins area. It strikes at 020 degrees Azimuth and dips vertically, and is 0.3 to 2.3 metres thick, and lies in the structural footwall to the southeast of the Zinc Vein, and may converge with the Zinc Vein to the northeast. Drilling in 2006 established a strike length for the Jack Vein of approximately 200 metres. The Jack Vein is a banded and brecciated vein with sulphide mineralogy consisting of pyrite, chalcopyrite, bornite, sphalerite and minor molybdenite comprising 3 to 8% of the vein. Gangue mineralogy of the vein is mainly quartz with minor amounts of calcite, chlorite, sericite, magnetite, hematite and/or rhodonite. The host rock of the Jack Vein is sheared granodiorite or quartz feldspar porphyry of the Jurassic island plutonic suite. The only available trench site mapped and chip sampled by the author in 2006 displayed two parallel veins 1.15 metres apart, the best which yielded 0.4 metres @ 1.82 g/t gold, 0.6 g/t silver, 0.01% copper and 0.001% molybdenum. Three diamond drill holes tested the Jack Vein in 2006 and yielded similar low values in gold, silver, copper molybdenum and zinc. The best drill intercept was 0.6 metres @ 2.161 g/t gold, 0.9 g/t silver, 0.02% copper, 0.26% zinc and 0.007% molybdenum in MJ-06-02.

Macktush Zinc Vein (Au-Ag-Cu-Zn-Mo)
The gold-silver-copper-zinc-molybdenum bearing Zinc Vein is centred at UTM Zone 10N 5443350N, 364650E and outcrops along a slope ranging between 650 and 750 metres above sea level in the Macktush Veins area. It curves along strike from 020 to 070 degrees Azimuth and dips approximately 75 degrees to the southeast, and is 0.5 to 4.5 metres thick. The Zinc Vein is a banded and brecciated vein with sulphide mineralogy consisting of pyrite, chalcopyrite, sphalerite and minor molybdenite comprising 2 to 10% of the vein. Gangue mineralogy of the vein is mainly quartz with minor amounts of calcite and chlorite. The host rock of the Zinc Vein is sheared granodiorite or quartz feldspar porphyry of the Jurassic island plutonic suite. It is currently exposed in at least three trenches and at one time was exposed in fourteen trenches over a strike length of 300 metres from above the M160 road in the northeast to above and southwest of the M180 south road. It was originally considered to be part of the Fred Vein, and has been referred to as the Upper Fred Vein in historical documentation. Detailed sampling and mapping in 2006 suggests that the Fred and Zinc Veins are offset by approximately 50 metres horizontally, and are therefore probably separate structures.

Macktush Moly Vein (Au-Ag-Cu-Mo)
The gold-silver-copper-molybdenum bearing Moly Vein is centred at UTM Zone 10N 5443550N, 364575E and outcrops at approximately 700 metres above sea level in the Macktush Veins area. It is oriented at 040 to 060 degrees Azimuth and dips vertically to 60 degrees southeast, and is 0.5 to 1 metre thick. The Moly Vein is a banded and brecciated vein with sulphide mineralogy consisting of pyrite, chalcopyrite and molybdenite comprising 1.5 to 5% of the vein. Gangue mineralogy of the vein is primarily quartz with variable amounts of calcite and chlorite. The host rock of the Moly Vein is sheared granodiorite of the Jurassic island plutonic suite, which occasionally contains altered xenoliths of presumably Triassic Karmutsen volcanics. It was exposed and sampled in 2 trenches 300 metres apart, one along the M160 road and the other along the Waterhole trail near the junction with the M180 south road. The Moly Vein yielded significant values in gold and molybdenum, 0.3 m. @ 4.27 g/t gold and 0.006% molybdenum in sample 312708. The best drill intercept from the two holes drilled in 2006 on the Moly Vein was 0.5 m. @ 0.600 g/t gold and 0.006% molybdenum in MM-06-01.

8.0 2019 FIELDWORK & ROCK SAMPLE GEOCHEMISTRY

8.1 METHODS AND PROCEDURES

Rock samples, ranging from 0.8-1.5 kilograms in weight, of acorn sized rock chips were taken with rock hammer and moil, and placed in marked poly bags and shipped to ALS Chemex Labs Ltd, North Vancouver, BC for Prep-31 & ME-MS41 ICP multi-element ultra-trace geochemical analysis, (Appendix A). Location was aided by maps from www.Mapplace and Google Earth. Locations were marked by waypoints generated by Garmin 60Cx GPS receiver and considered accurate to within 3-5 meter accuracy for northing and easting (elevations are considered rough estimates, and can not be relied upon). Geological descriptions of samples were noted.

8.2 ROCK GEOCHEMISTRY

Fieldwork in 2019 consisted of rock chip sampling known veins, vein extensions and new undesignated Au-Ag bearing mineral zones. A total of twelve rock chip samples were taken, 4 outcrop, and 8 angular float. Samples were shipped to ALS Canada Ltd, Vancouver for prep-31 and ME-MS41 (ultra-trace multi-element ICP And Au geochemical analysis). Sample descriptions and geochemical analysis results from rock chips are listed as follows:

Sample ID	MTO tenure	Zone Name	Easting NAD 83	Northing NAD 83	Elev (m)	Sample Type	Lithology
19MACK-1	1054918	Jack	364915	5443299	660	outcrop	qtz diorite, porphyritic
19MACK-2	1054917	Fred	364772	5443497	667	outcrop	qtz diorite, porphyritic
19MACK-3	1054917	Moly	364646	5443775	667	float (angular)	qtz diorite, porphyritic
19MACK-4	1054917	Zinc	364703	5443406	715	outcrop	qtz diorite, porphyritic
19MACK-5	1054917	Moly	364564	5443536	707	float (angular)	qtz diorite, porphyritic
19MACK-6	1054917	Moly	364536	5443434	717	float (angular)	qtz diorite, porphyritic
19MACK-7	1054917	Moly	364425	5443280	659	outcrop	tholeiitic basalt
19MACK-8	1054917	Jack	364815	5443137	637	float (angular)	tholeiitic basalt
19MACK-9	1054917	Jack	364801	5443129	648	float (angular)	tholeiitic basalt
19MACK-10	1054918	Fred	364915	5443561	530	float (angular)	qtz diorite, porphyritic
19MACK-11	1054917	Fred	364833	5443557	607	float (angular)	qtz diorite, porphyritic
19MACK-12	1054917	Fred	364793	5443528	633	float (angular)	qtz diorite, porphyritic

Sample ID	Alteration	Mineralization	Strike	Dip	Width	Cu ppm	Pb ppm
19MACK-1	quartz, chlorite, kaolinite, limonite, k-feldspar	pyrite	44	77 SE	15 cm	41.2	9
19MACK-2	quartz, chlorite, kaolinite, limonite, hematite	pyrite	35	88 SE	30 cm	15.6	7.4
19MACK-3	quartz, chlorite, kaolinite, limonite, pyrolusite ,calcite	pyrite				55.1	0.8
19MACK-4	quartz, chlorite, kaolinite, limonite, pyrolusite ,calcite	pyrite	58		30 cm	16.7	3.5
19MACK-5	quartz, chlorite, kaolinite, limonite, hematite	pyrite				39.1	4.1
19MACK-6	quartz, chlorite, kaolinite, limonite, pyrolusite ,calcite	pyrite, chalcopyrite				147	2
19MACK-7	quartz, chlorite, kaolinite, limonite, pyrolusite	pyrite			30 cm	46.2	6.4
19MACK-8	quartz, chlorite, kaolinite, limonite, hematite	pyrite, arsenopyrite				13.3	6.1
19MACK-9	quartz, chlorite, kaolinite, limonite, hematite	pyrite, arsenopyrite				11.7	6
19MACK-10	quartz, chlorite, kaolinite, limonite, hematite	pyrite, arsenopyrite				17	4.8
19MACK-11	quartz, chlorite, kaolinite, limonite, hematite	pyrite				109.5	3
19MACK-12	quartz, chlorite, kaolinite, limonite, hematite	pyrite				97.2	4.6

Sample ID	Zn ppm	Ag ppm	Au ppm	Mo ppm	Fe %	S %	As ppm	Ca %	Mn ppm	K %	Ag / Au
19MACK-1	17	0.5	1.04	26.6	2.25	0.27	11	0.09	120	0.28	0.48
19MACK-2	26	0.37	0.09	30.1	1.82	1.63	49.5	0.05	217	0.12	4.1
19MACK-3	19	0.04	<0.02	0.43	1.51	0.08	1.1	2.44	638	0.01	2
19MACK-4	65	0.06	0.03	5.27	3.02	0.54	6	0.8	505	0.15	2
19MACK-5	6	0.29	0.42	37.6	1.95	0.36	11.7	0.04	77	0.09	0.69
19MACK-6	55	0.12	<0.02	0.67	4.68	<0.05	1.8	3.31	486	0.02	0.69
19MACK-7	22	1	0.03	12	2.43	1.79	76.7	0.04	537	0.08	33.3
19MACK-8	46	0.33	0.08	3.13	3.14	2.52	338	0.11	182	0.18	4.13
19MACK-9	49	0.28	0.08	1.55	2.61	2.69	350	0.18	293	0.2	3.5
19MACK-10	29	0.17	0.09	2.33	1.83	7.77	802	0.05	443	0.12	1.89
19MACK-11	27	0.27	0.14	7.57	1.98	1.34	54.2	0.06	158	0.16	1.93
19MACK-12	36	0.56	0.33	9.35	2.4	1.87	106.5	0.05	167	0.17	1.7

Source: ALS Certificate VA19240358

9.0 DISCUSSION OF RESULTS

Macktush mineralization is associated with Late Jurassic Calc-alkaline porphyry Cu+/-Mo+/-Au, and is classified as an epithermal Au-Ag low sulphidation type (probably Late Jurassic age). The Macktush high grade Au-Ag values occur in 1-4 meter wide quartz-sulphide fissure-veins that are emplaced proximal to porphyry Cu-Mo-Au (Rex?) type mineralization. Low sulphidation epithermal fissure veins can be strongly zoned along strike and vertically. Deposits are commonly zoned vertically over 250 to 350 m from a base metal poor, Au-Ag-rich top to a relatively Ag-rich base metal zone and an underlying base metal rich zone grading at depth into a sparse base metal, pyritic zone. From surface to depth, metal zones contain: Au-Ag-As-Sb-Hg, Au-Ag-Zn-Cu, Ag- Pb-Zn.

Satellite and radar data by Auracle Geospatial Inc (2012 report), offers optical imagery fused with radar technology to detect indicators of surface minerals and differentiate rock and formation types. This is additional data that may be important for locating high grade Au-Ag. Previous work suggests the Fred/David/Zinc Veins (which are part of the same trending structure) contain the strongest Au-Ag bearing mineral indicators, and the offsets between Fred and Zinc Vein Zone requires additional drilling to test vein flexure & cross-structures.

10.0 CONCLUSIONS AND RECOMMENDATIONS

Rock samples 19Mack-2, 10, 11, & 12 were taken in close proximity to Fred Vein but may actually be the northeast extension of the Zinc Vein, and consist of sparsely mineralized quartz that exist as parallel veins to the Au-Ag bearing veins (Fig 4, 5, & 6). Drill hole data from the Fred and David Veins indicates there are numerous parallel quartz veins that are sparsely mineralized and are sub-economic (<1 g/t Au), and is likely that rock samples 19Mack-2, 10, 11, & 12 (0.09-0.33 g/t Au) were part of a parallel vein that carries anomalous, sub-economic grades < 1 g/t Au. Rock sample 19Mack-1, 8, & 9 appear to be part of a new fissure vein system located approximately 250 meters east of the Zinc/Fred/David vein system. Out of a total of 12 samples, rock chip19Mack-1 returned the highest Au value (1.04 g/t Au) and correlates with the highest K % values. This suggests that K-feldspar alteration is an important vector for locating high grade Au-Ag. The 2011 Fugro airborne cps potassium survey would be useful data to generate specific targets (in collaboration with EM and resistivity anomalies).

It is possibla that the Macktush Veins grade into wider, multiple (sheeted, stacked) vein, and/or vein splay systems. Deeper drilling of the Fred, David and Zinc Veins is recommended. A two-phase program consisting of systematic geochemical sampling, geological mapping, trenching and drilling is proposed for the Property. The Fred, David, and Zinc Veins (which are part of the same general trending structure that appears to offset in places) are the proposed target for deeper drilling and drilling to extend strike length. The objective of the drilling would be to increase indicated resource of the Fred, David, and Zinc Veins at depth and along strike.

11.0 REFERENCES

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SYMC Resources Limited news releases dated between December 7, 1998 and June 18, 2007.

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 Sept 8-10, 2019
6. I have a direct interest in the Macktush Property. 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

November 5, 2019

ITEMIZED COST STATEMENT-
MACKTUSH MINERAL TENURES 1054831, 1054917, 1054918, 1059982, 1070697
FIELDWORK PERFORMED SEPTEMBER 8-10, 2019,
WORK PERFORMED ON MINERAL TENURES 1054917, 1054918
ALBERNI MINING DIVISION, NTS 92F 2W (TRIM 092F 016)

FIELD CREW:

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

FIELD COSTS:

Mob/demob/preparation	**309.77**
Meals and accommodations	**217.05**
Truck mileage & fuel	**225.78**
Equipment & supplies	**30.27**
ICP AES (ALS ME-MS41)	
geochemical analysis geochemistry (12 rock samples)	**492.55**
Report	**750.00**
Total=	**$ 3,757.92**

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www.alsglobal.com/geochemistry

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

Finalized Date: 25-OCT-2019
Account: KIKAND

Appendix A - ALS geochimical analysis certificate

CERTIFICATE VA19240358

Project: MACK TUSH

This report is for 12 Rock samples submitted to our lab in Vancouver, BC, Canada on 24-SEP-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
CRU-31	Fine crushing - 70% <2mm
SPL-21	Split sample - riffle splitter
PUL-31	Pulverize up to 250g 85% <75 um
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:

Saa Traxler, General Manager, North Vancouver

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

Finalized Date: 25-OCT-2019
Account: KIKAND

Project: MACK TUSH

CERTIFICATE OF ANALYSIS VA19240358

Sample Description	Method	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
	Analyte	Recvd Wt.	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cs
	Units	kg	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
	LOD	0.02	0.01	0.01	0.1	0.02	10	10	0.05	0.01	0.01	0.01	0.02	0.1	1	0.05
19MACK-1		1.28	0.50	0.61	11.0	1.04	<10	100	0.10	0.52	0.09	0.36	14.10	4.8	6	0.52
19MACK-2		1.50	0.37	0.80	49.5	0.09	<10	220	0.15	0.09	0.05	0.15	7.66	8.7	32	0.40
19MACK-3		0.76	0.04	2.07	1.1	<0.02	<10	10	0.10	0.01	2.44	0.07	2.75	7.1	56	<0.05
19MACK-4		1.20	0.06	1.64	6.0	0.03	<10	50	0.22	0.06	0.80	0.12	19.75	13.8	50	1.26
19MACK-5		1.50	0.29	0.21	11.7	0.42	<10	90	0.07	0.36	0.04	0.06	6.20	5.3	11	0.15
19MACK-6		0.98	0.12	3.21	1.8	<0.02	10	60	0.26	0.02	3.31	0.17	10.75	20.6	20	0.08
19MACK-7		1.16	1.00	0.76	76.7	0.03	<10	20	0.13	0.03	0.04	0.08	5.38	10.0	9	0.19
19MACK-8		0.98	0.33	1.83	338	0.08	10	80	0.22	0.06	0.11	0.07	40.1	7.6	28	0.59
19MACK-9		0.82	0.28	1.27	350	0.08	<10	160	0.23	0.04	0.18	0.11	15.30	6.5	5	0.64
19MACK-10		0.92	0.17	0.82	802	0.09	<10	100	0.12	0.05	0.05	0.20	11.30	6.9	19	0.23
19MACK-11		0.82	0.27	0.55	54.2	0.14	<10	140	0.11	0.05	0.06	0.65	6.27	4.5	12	0.57
19MACK-12		1.38	0.56	0.64	106.5	0.33	<10	190	0.12	0.13	0.05	0.50	4.80	4.3	14	0.58

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CERTIFICATE OF ANALYSIS VA19240358

Sample Description	Method	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
	Analyte	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na	Nb
	Units	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm
	LOD	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
19MACK-1		41.2	2.25	1.36	<0.05	0.13	0.15	0.011	0.28	6.8	0.9	0.18	120	26.6	0.01	0.39
19MACK-2		15.6	1.82	1.82	<0.05	0.02	0.91	0.009	0.12	3.3	3.7	0.30	217	30.1	0.01	<0.05
19MACK-3		55.1	1.51	8.35	0.22	0.37	0.02	0.014	0.01	1.0	0.9	0.30	638	0.43	0.02	0.62
19MACK-4		16.7	3.02	3.83	<0.05	0.03	0.31	0.015	0.15	9.3	4.7	1.38	505	5.27	0.02	<0.05
19MACK-5		39.1	1.95	0.48	<0.05	<0.02	0.08	0.008	0.09	3.1	0.5	0.04	77	37.6	0.01	<0.05
19MACK-6		147.0	4.68	20.6	0.30	0.63	0.01	0.025	0.02	3.6	1.4	1.12	486	0.67	0.06	0.41
19MACK-7		46.2	2.43	1.30	<0.05	0.02	0.30	0.014	0.08	1.3	3.4	0.20	537	12.00	0.01	<0.05
19MACK-8		13.3	3.14	4.24	0.06	0.02	0.85	0.014	0.18	20.7	11.8	0.58	182	3.13	0.01	<0.05
19MACK-9		11.7	2.61	3.10	<0.05	0.02	0.70	0.016	0.20	8.2	6.2	0.38	293	1.55	0.01	<0.05
19MACK-10		17.0	1.83	1.80	<0.05	0.02	0.52	0.008	0.12	6.3	4.0	0.28	443	2.33	0.01	<0.05
19MACK-11		109.5	1.98	1.54	<0.05	<0.02	0.34	0.020	0.16	2.7	1.7	0.18	156	7.57	0.01	<0.05
19MACK-12		97.2	2.40	1.93	<0.05	<0.02	0.33	0.017	0.17	2.3	2.1	0.23	167	9.35	0.01	<0.05

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Sample Description	Method / Analyte / Units / LOD	ME-MS41 Ni ppm 0.2	ME-MS41 P ppm 10	ME-MS41 Pb ppm 0.2	ME-MS41 Rb ppm 0.1	ME-MS41 Re ppm 0.001	ME-MS41 S % 0.01	ME-MS41 Sb ppm 0.05	ME-MS41 Sc ppm 0.2	ME-MS41 Se ppm 0.2	ME-MS41 Sn ppm 0.2	ME-MS41 Sr ppm 0.2	ME-MS41 Ta ppm 0.01	ME-MS41 Te ppm 0.01	ME-MS41 Th ppm 0.2	ME-MS41 Ti % 0.005
19MACK-1		1.7	350	9.0	9.1	0.001	0.86	0.27	1.8	0.2	0.2	3.2	<0.01	0.26	1.6	0.083
19MACK-2		15.3	290	7.4	2.9	0.002	0.28	1.63	2.6	5.4	0.2	2.1	<0.01	0.44	0.2	<0.005
19MACK-3		15.9	190	0.8	0.2	0.006	<0.01	0.08	5.0	0.3	0.3	49.8	0.01	0.01	0.2	0.349
19MACK-4		19.5	390	3.5	3.6	<0.001	0.40	0.54	4.6	<0.2	0.3	12.1	<0.01	0.03	1.0	<0.005
19MACK-5		1.3	90	4.1	2.2	0.001	1.46	0.36	0.6	1.1	<0.2	1.9	<0.01	0.42	0.7	<0.005
19MACK-6		34.2	360	2.0	1.5	0.001	0.01	<0.05	9.4	0.6	0.7	7.0	<0.01	<0.01	0.4	0.563
19MACK-7		2.3	220	6.4	2.0	0.001	0.06	1.79	3.0	3.7	0.3	1.1	<0.01	0.11	0.8	<0.005
19MACK-8		11.0	490	6.1	4.3	0.001	0.21	2.52	4.4	3.0	0.2	2.4	<0.01	0.10	0.5	<0.005
19MACK-9		4.9	740	6.0	4.5	0.001	0.28	2.69	2.5	2.9	0.2	4.4	<0.01	0.11	0.3	<0.005
19MACK-10		5.2	280	4.8	2.5	0.001	0.09	7.77	2.1	3.0	0.2	2.0	<0.01	0.20	0.2	<0.005
19MACK-11		11.7	410	3.0	3.4	<0.001	0.76	1.34	1.3	2.9	<0.2	2.1	<0.01	0.21	0.2	<0.005
19MACK-12		8.0	420	4.6	3.8	<0.001	0.71	1.87	1.4	2.9	0.2	3.1	<0.01	0.54	0.2	<0.005

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Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Tl	U	V	W	Y	Zn	Zr
	Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.02	0.05	1	0.05	0.05	2	0.5
19MACK-1		0.07	0.92	18	0.79	6.39	17	2.8
19MACK-2		0.11	0.07	28	0.11	4.29	26	<0.5
19MACK-3		<0.02	0.08	54	0.06	3.43	19	17.4
19MACK-4		0.02	0.16	37	<0.05	5.73	65	1.0
19MACK-5		0.03	0.14	4	<0.05	2.27	6	<0.5
19MACK-6		<0.02	0.18	142	<0.05	10.80	55	35.5
19MACK-7		0.09	0.23	15	0.08	3.12	22	0.6
19MACK-8		0.05	0.08	45	0.13	12.15	46	0.5
19MACK-9		0.06	0.08	20	0.09	11.20	49	<0.5
19MACK-10		0.05	0.10	23	0.15	8.18	29	0.5
19MACK-11		0.08	0.05	11	0.06	3.52	27	<0.5
19MACK-12		0.08	0.06	14	0.12	3.09	36	<0.5

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CERTIFICATE OF ANALYSIS VA19240358

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	DISP-01	LOG-22	ME-MS41
PUL-31	SPL-21	WEI-21	

ALS Minerals Appendix B - ALS methods and procedures

SAMPLE PREPARATION PACKAGE

PREP- 31

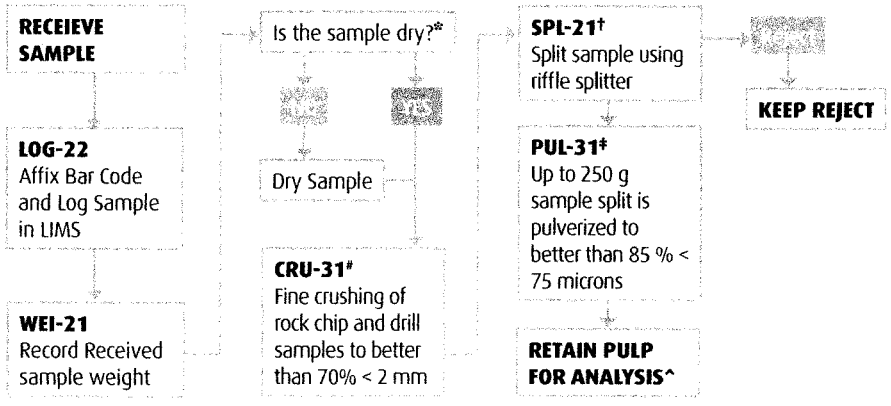
STANDARD SAMPLE PREPARATION: DRY, CRUSH, SPLIT AND PULVERIZE

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.
DRY-21	Drying of excessively wet samples in drying ovens. This is the default drying procedure for most rock chip and drill samples.
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.

FLOW CHART - SAMPLE PREPARATION PACKAGE – PREP-31
STANDARD SAMPLE PREPARATION: DRY, CRUSH, SPLIT AND PULVERIZE



*If samples air-dry overnight, no charge to client. If samples are excessively wet, the sample should be dried to a maximum of 120°C. (**DRY-21**)

#QC testing of crushing efficiency is conducted on random samples (**CRU-QC**).

†The sample reject is saved or dumped pending client instructions. Prolonged storage (> 45 days) of rejects will be charged to the client.

‡QC testing of pulverizing efficiency is conducted on random samples (**PUL-QC**).

^Lab splits are required when analyses must be performed at a location different than where samples received.

ALS Minerals

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	UNIT	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

ALS Minerals

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

Sample ID	MTO tenure	Zone Name	Easting NAD 83	Northing NAD 83	Elev (m)	Sample Type	Lithology
19MACK-1	1054918	Jack	364915	5443299	660	outcrop	qtz diorite, porphyritic
19MACK-2	1054917	Fred	364772	5443497	667	outcrop	qtz diorite, porphyritic
19MACK-3	1054917	Moly	364646	5443775	667	float (angular)	qtz diorite, porphyritic
19MACK-4	1054917	Zinc	364703	5443406	715	outcrop	qtz diorite, porphyritic
19MACK-5	1054917	Moly	364564	5443536	707	float (angular)	qtz diorite, porphyritic
19MACK-6	1054917	Moly	364536	5443434	717	float (angular)	qtz diorite, porphyritic
19MACK-7	1054917	Moly	364425	5443280	659	outcrop	tholeiitic basalt
19MACK-8	1054917	Jack	364815	5443137	637	float (angular)	tholeiitic basalt
19MACK-9	1054917	Jack	364801	5443129	648	float (angular)	tholeiitic basalt
19MACK-10	1054918	Fred	364915	5443561	530	float (angular)	qtz diorite, porphyritic
19MACK-11	1054917	Fred	364833	5443557	607	float (angular)	qtz diorite, porphyritic
19MACK-12	1054917	Fred	364793	5443528	633	float (angular)	qtz diorite, porphyritic

Sample ID	Alteration	Mineralization	Strike	Dip	Width	Cu ppm	Pb ppm
19MACK-1	quartz, chlorite, kaolinite, limonite, k-feldspar	pyrite	44	77 SE	15 cm	41.2	9
19MACK-2	quartz, chlorite, kaolinite, limonite, hematite	pyrite	35	88 SE	30 cm	15.6	7.4
19MACK-3	quartz, chlorite, kaolinite, limonite, pyrolusite ,calcite	pyrite				55.1	0.8
19MACK-4	quartz, chlorite, kaolinite, limonite, pyrolusite ,calcite	pyrite	58		30 cm	16.7	3.5
19MACK-5	quartz, chlorite, kaolinite, limonite, hematite	pyrite				39.1	4.1
19MACK-6	quartz, chlorite, kaolinite, limonite, pyrolusite ,calcite	pyrite, chalcopyrite				147	2
19MACK-7	quartz, chlorite, kaolinite, limonite, pyrolusite	pyrite			30 cm	46.2	6.4
19MACK-8	quartz, chlorite, kaolinite, limonite, hematite	pyrite, arsenopyrite				13.3	6.1
19MACK-9	quartz, chlorite, kaolinite, limonite, hematite	pyrite, arsenopyrite				11.7	6
19MACK-10	quartz, chlorite, kaolinite, limonite, hematite	pyrite, arsenopyrite				17	4.8
19MACK-11	quartz, chlorite, kaolinite, limonite, hematite	pyrite				109.5	3
19MACK-12	quartz, chlorite, kaolinite, limonite, hematite	pyrite				97.2	4.6

Sample ID	Zn ppm	Ag ppm	Au ppm	Mo ppm	Fe %	S %	As ppm	Ca %	Mn ppm	K %	Ag / Au
19MACK-1	17	0.5	1.04	26.6	2.25	0.27	11	0.09	120	0.28	0.48
19MACK-2	26	0.37	0.09	30.1	1.82	1.63	49.5	0.05	217	0.12	4.1
19MACK-3	19	0.04	<0.02	0.43	1.51	0.08	1.1	2.44	638	0.01	2
19MACK-4	65	0.06	0.03	5.27	3.02	0.54	6	0.8	505	0.15	2
19MACK-5	6	0.29	0.42	37.6	1.95	0.36	11.7	0.04	77	0.09	0.69
19MACK-6	55	0.12	<0.02	0.67	4.68	<0.05	1.8	3.31	486	0.02	0.69
19MACK-7	22	1	0.08	12	2.43	1.79	76.7	0.04	537	0.08	33.3
19MACK-8	46	0.33	0.08	3.13	3.14	2.52	338	0.11	182	0.18	4.13
19MACK-9	49	0.28	0.08	1.55	2.61	2.69	350	0.18	293	0.2	3.5
19MACK-10	29	0.17	0.09	2.33	1.83	7.77	802	0.05	443	0.12	1.89
19MACK-11	27	0.27	0.14	7.57	2.98	1.34	54.2	0.06	156	0.16	1.93
19MACK-12	36	0.56	0.33	9.35	2.4	1.87	106.5	0.05	167	0.17	1.7

MINFILE Record Summary
MINFILE No 092F 012

Appendix D- Minfile

XML Extract / Inventory Report

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File Created: 11-Aug-1989 by Wim S. Vanderpoll (WV)
Last Edit: 26-Jul-2013 by Karl A. Flower (KAF)

SUMMARY Summary Help

Name	MACKTUSH, HIGH SIERRA, COPPER, MCMASTER, RED, BLUE, HWMM, SIERRA, FRED, MACTUSH, MAKTUSH, DAVE, DAVID, UPPER DAVID, JACK, SY, ZINC, MOLY	**NMI Mining Division**	Nanaimo
		BCGS Map	092F016
Status	Developed Prospect	**NTS Map**	092F02W
Latitude	049° 07' 24"	**UTM**	10 (NAD 83)
Longitude	124° 50' 27"	**Northing**	5442798
		Easting	365693
Commodities	Gold, Silver, Copper, Molybdenum	**Deposit Types**	L04 : Porphyry Cu +/- Mo +/- Au
Tectonic Belt	Insular	**Terrane**	Wrangell, Plutonic Rocks

Capsule Geology

The Macktush occurrences are located on a ridge north of Macktush Creek, approximately 1.5 kilometres north west of the creek mouth.

The area is underlain by Upper Triassic Vancouver Group, Karmutsen Formation volcanics which have been intruded by granodioritic rocks of the Early to Middle Jurassic Island Plutonic Suite. The volcanic rocks are comprised of dark green to massive, fine-grained basalt and andesite interbedded with, or intruded by, coarsely porphyritic felsic flows or dykes that strike 030 degrees and range up to 40 metres in thickness. The mafic volcanics contain disseminated pyrite and epidote veinlets. Calcite veinlets are common near faults. Locally, minor disseminated chalcopyrite is present. Areas with abundant sulphides appear lensy, are generally less than 0.6 metres wide and are of limited lateral extent.

The main intrusive body ranges in composition from granodiorite to quartz diorite and diorite. The only observed contact with the volcanics is along a 030 degree striking fault. Here the diorite contains disseminated pyrite and is epidote-altered. The fault is 0.3 metre wide and contains feldspathic gouge and an irregular, vuggy quartz vein that is up to 0.6 metres wide. No sulphides were observed in this vein. The intrusive body is cut by numerous joints and fractures which are less than 0.6 metre wide and contain fault gouge and kaolinized granodiorite. Many of the larger faults in the intrusion contain barren calcite veins and occasional quartz veins. At least four of these quartz veins occur over an area of about 150 by 200 metres. The veins strike 030 to 080 degrees and range up to 0.8 metre in width.

The only vein sampled is exposed for 0.7 metre in a shallow open cut. The diorite host rock is intensely silicified over a 1.0 metre wide alteration envelope which encompasses the mineralized vein. The vein material consists of quartz, pyrite, chalcopyrite, rare bornite and malachite. A sample assayed 18.86 grams per tonne gold, 89.15 grams per tonne silver and 1.16 per cent copper, with anomalous values in tin, molybdenite and tungsten (Ray, 1982).

The Fred and Dave veins easterly to north easterly trending, steeply dipping zones of crudely banded, vuggy quartz in shears that cut discordantly across a contact between Karmutsen volcanic rock and an Island intrusion. Both contain a minor amount of fine pyrite, pyrrhotite, chalcopyrite and traces of bornite and tetrahedrite. They appear to be laterally persistent and relatively uniform in grade. The Fred vein has a minimum length of 600 metres and is reported to have an average grade of 13.7 grams per tonne gold, 60.0 grams per tonne silver and 0.9 per cent copper over a minimum surface width of 1.5 metres. The Dave vein is similar. It has been traced for 365 metres and is reported to have an estimated, grade of 12.0 grams per tonne gold, 47.0 grams per tonne silver and 0.6 per cent copper over an average surface width of 1.5 metres. Both of the veins are open along strike and relatively untested at depth. (Exploration in BC 1998, page 53.)

The Zinc vein is located on a slope between 650 and 750 metres elevation in the area of the Fred and Dave veins. It curves along strike from 020 to 070 degrees azimuth and dips approximately 75 degrees to the south east, and is 0.5 to 4.5 metres thick. The vein is banded and brecciated with sulphide mineralogy consisting of pyrite, chalcopyrite, sphalerite and minor molybdenite comprising 2 to 10 per cent of the vein. Gangue mineralogy of the vein is mainly quartz with minor amounts of calcite and chlorite. The host rock of the vein is sheared granodiorite or quartz feldspar porphyry of the Jurassic island plutonic suite. A chip sample of the vein assayed 1.54 grams per tonne gold over 0.75 metres (Assessment Report 28989).

The Jack vein outcrops in a single trench at 750 metres elevation in the area of the Fred and Dave veins. It strikes at 020 degrees azimuth and dips vertically, and is 0.3 to 2.3 metres thick, and lies in the structural

footwall to the southeast of the Zinc vein, and may converge with the Zinc vein to the northeast. is a banded and brecciated vein with sulphide mineralogy consisting of pyrite, chalcopyrite, bornite, sphalerite and minor molybdenite comprising 3 to 8 per cent of the vein. Gangue mineralogy of the vein is mainly quartz with minor amounts of calcite, chlorite, sericite, magnetite, hematite and/or rhodonite. The host rock of the Jack vein is sheared granodiorite or quartz feldspar porphyry of the Jurassic island plutonic suite. A sample of the vein assayed 1.82 grams per tonne gold over 0.4 metres (Assessment Report 28989).

The Moly vein is located at 700 metres elevation in the area of the Fred and Dave veins. It is oriented at 040 to 060 degrees azimuth and dips vertically to 60 degrees southeast, and is 0.5 to 1 metre thick. The vein is a banded and brecciated vein with sulphide mineralogy consisting of pyrite, chalcopyrite and molybdenite comprising 1.5 to 5 per cent of the vein. Gangue mineralogy of the vein is primarily quartz with variable amounts of calcite and chlorite. A sample (312708) of the vein assayed 4.27 grams per tonne gold and 0.006 per cent molybdenum over 0.3 metres (Assessment Report 28989).

Copper-molybdenum mineralization in intrusive rock is reported along the shore of Alberni Inlet, 1.5 kilometres northeast of the veins. No details are available.

In 1992 through 2006, SYMC resources prospected the area as apart of the of the Macktush Property along the west side of the Alberni Inlet. A total of 23 drill holes, totalling 1,353.5 metres, were completed on the Macktush veins during this time.

In 2002 the company commissioned David Pawliuk, P. Geo. to complete a mineral resource estimate for the Fred and David veins in accordance with National Instrument 43-101. The inferred resource for the Fred vein is 166,000 tonnes grading 12.38 grams per tonne gold, 48.8 grams per tonne silver and 0.695 per cent copper. This resource was calculated using a strike length of 770 metres, a width of 2.0 metres, a depth below surface of 40 metres and a specific gravity of 2.7. The inferred resource for the David vein is 54,000 tonnes grading 16.24 grams per tonne gold, 61.24 grams per tonne silver and 1.02 per cent copper. This resource was calculated using a strike length of 800 metres, a width of 1.0 metre, a depth below surface of 25 metres and a specific gravity of 2.7 (Press Release, SYMC Resources Limited, July 12, 2002 (http://www.sedar.com)).

Previous resources estimates of measured reserves totalled 137,891 tonnes grading 18.52 grams per tonne gold, 78.52 grams per tonne silver and 0.75 per cent copper (Northwest Prospector, October/November 1988).

In 2007, a indicated mineral inventory estimate was made of the various zones/veins:

Vein/Zone Tonnes Gold Silver Copper

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

David 16,278 5.65 25.6 0.31

Fred 54,457 13.91 48.1 0.59

Zinc 35,710 8.97 44.5 0.57

Jack 13,994 2.00 0.8 0.02

Moly 504 4.27 1.5 0.01

(Assessment Report 32297)

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.

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EMPR OF 1998-10
EMPR PF (*Ray, G.E. (1982): A Report Concerning a Visit to the McMaster Claims, Port Alberni, May 28-29, 1982); G.E.P. Eastwood: field notes, XRD results, rock descriptions, maps, and photos 1982; Misc. assays, 1982, 1987, 1988; claims filing forms, 1984; claims map, 1986; Forestry road map, 1987; Drill and work plan maps, 1990, c.2000; Forest cover maps, 19??, 1993; assorted maps and figures, 1990, 1996; Photos, 1994, 1996, 2000; Prospectus, SYMC Resources Ltd., 1988, 1995; Dist. Geol. assays, 2000, 2001, 2002; Acid/base and assay results, 2002; Floatation test results, 2002; Wilson, J, (1991): Review of Work Done on the MacTush Property to July 10, 1991 for SYMC Resources Ltd.; Carter, N.C. (1994): Geological Report on the MacTush Property for SYMC Resources Ltd.; Davey, R.A. and Carter, N.C. (1997): Geological Report and Results of a Surface Sampling Programme on the Copper, Arden, Sky and Mc Groups of Mining Claims for SYMC Resources Ltd.; Press Rel.: Jan.13, 1997; Jun.7, 2001; Jul.12, 2002)
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Appendix E - Vancouver Island major mineral deposits (Joule, 2015)

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 Macktush Mineral Claims General Location

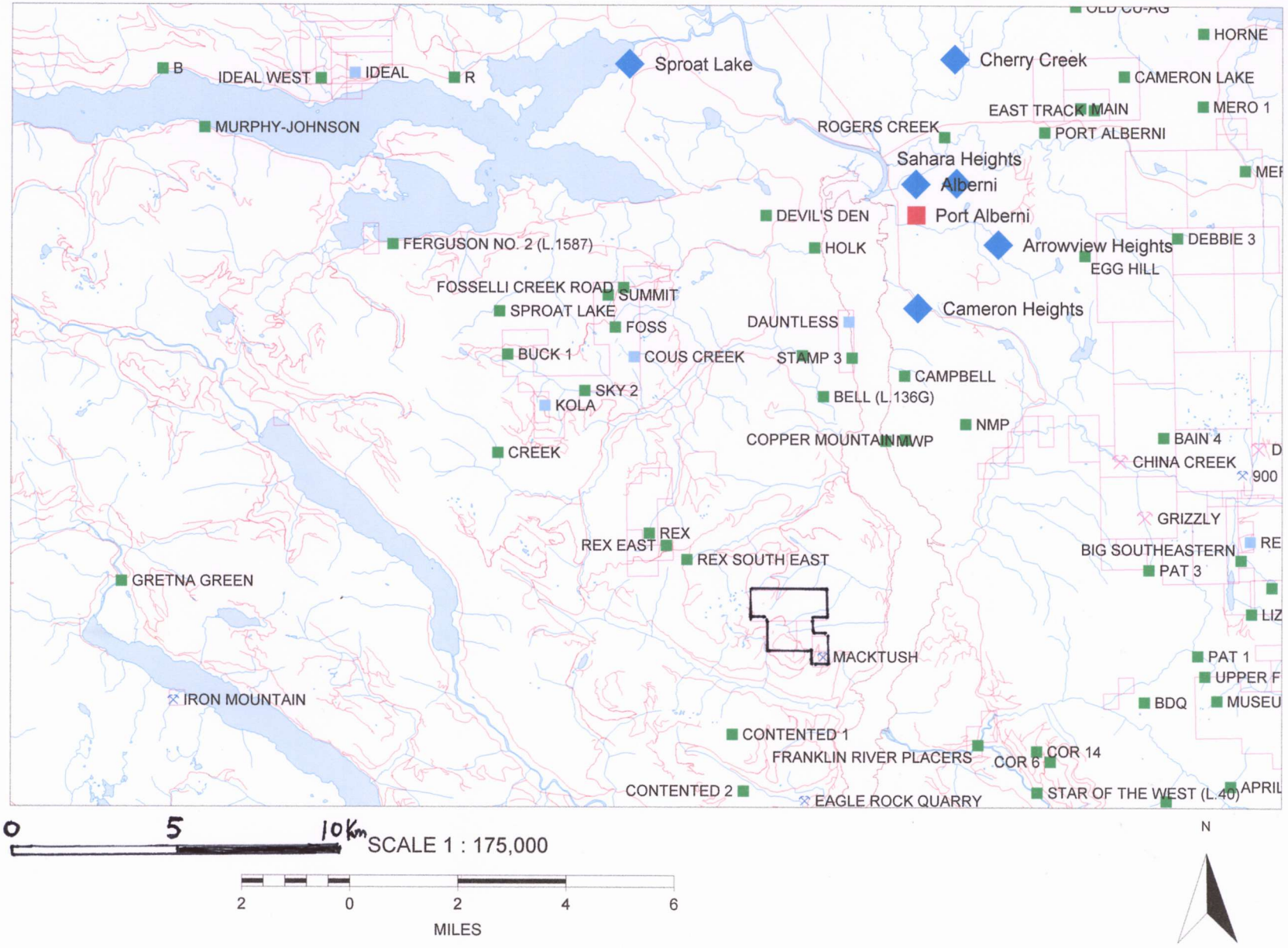
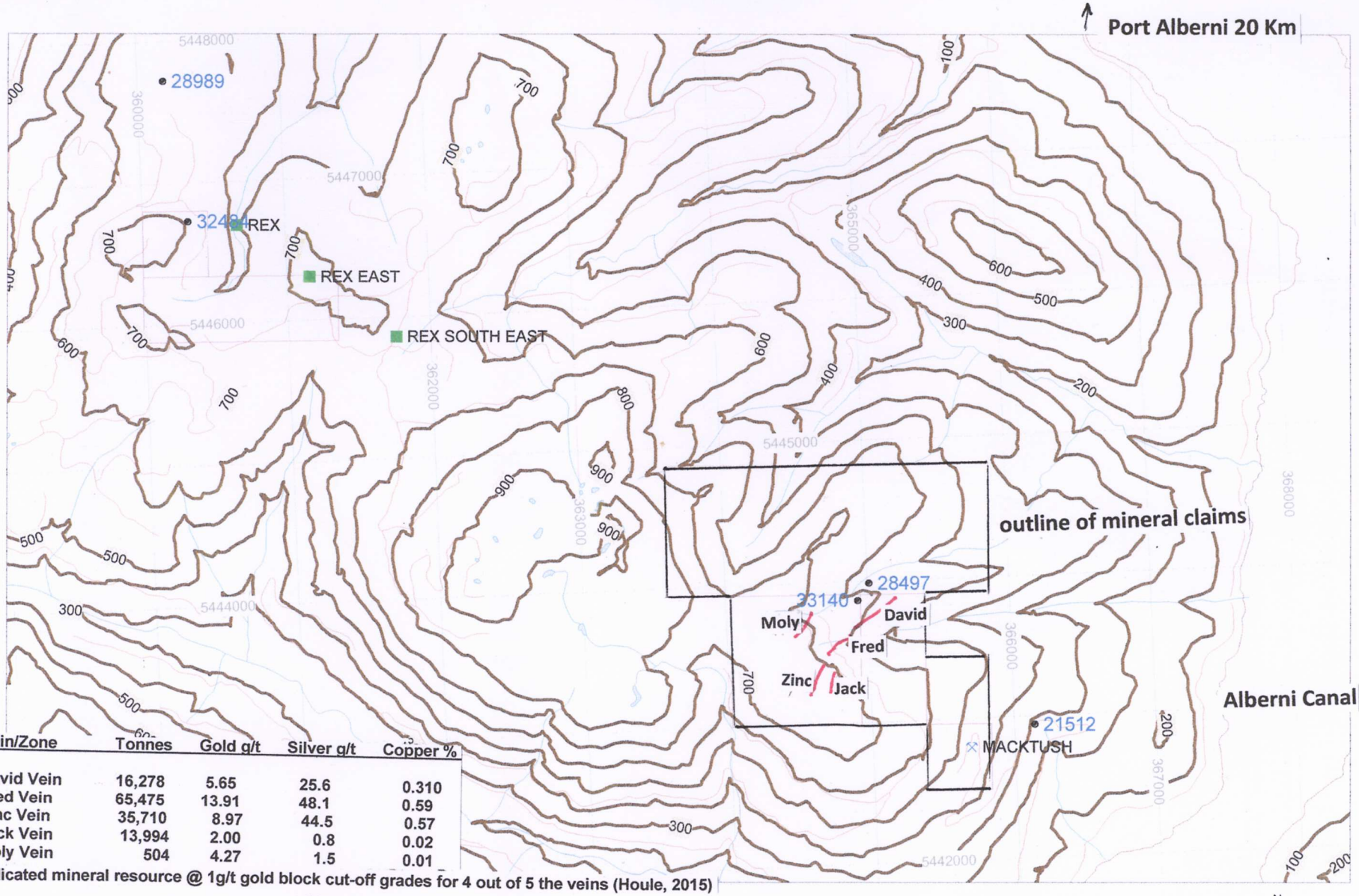


Fig 1B Macktush (Rex)



Vein/Zone	Tonnes	Gold g/t	Silver g/t	Copper %
David Vein	16,278	5.65	25.6	0.310
Fred Vein	65,475	13.91	48.1	0.59
Zinc Vein	35,710	8.97	44.5	0.57
Jack Vein	13,994	2.00	0.8	0.02
Moly Vein	504	4.27	1.5	0.01

Indicated mineral resource @ 1g/t gold block cut-off grades for 4 out of 5 the veins (Houle, 2015)

0 1 Km SCALE 1 : 40,000

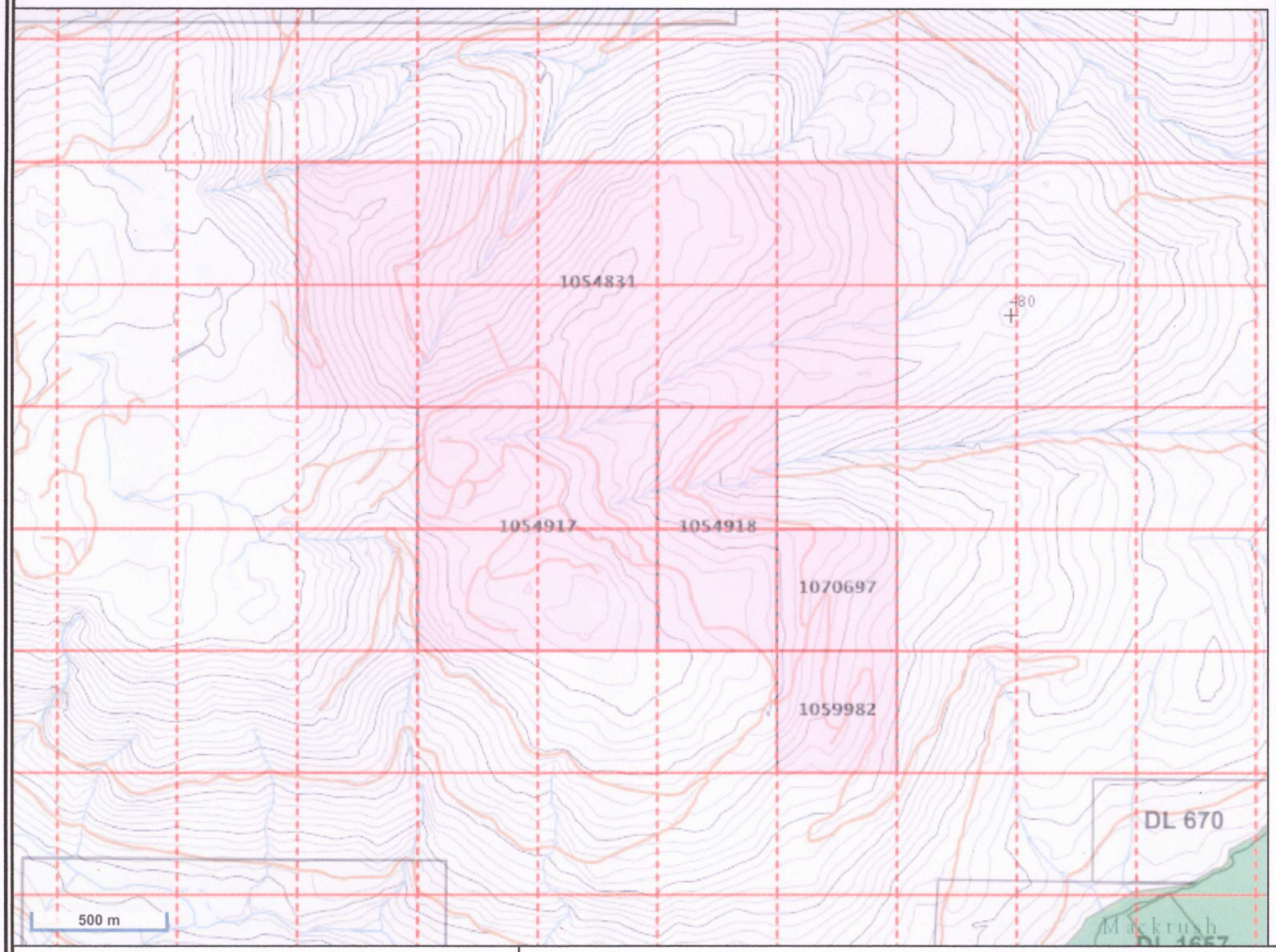
2,000 0 2,000 4,000 6,000
FEET

N

● ARIS Assessment Report Numbers Listed

Surface Trace of Au-Ag Bearing Qtz-Sulphide Vein

Fig 2 Macktush 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

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.NTS 092F 2W, BCGS 092F.016, Alberni MD

Center: 49°7'51", -124°51'8"
Scale: 1 : 33855
SRS: EPSG:3857
UTM Zone: 10

N

Fig 3 Mactush Mineral Claims General Geology

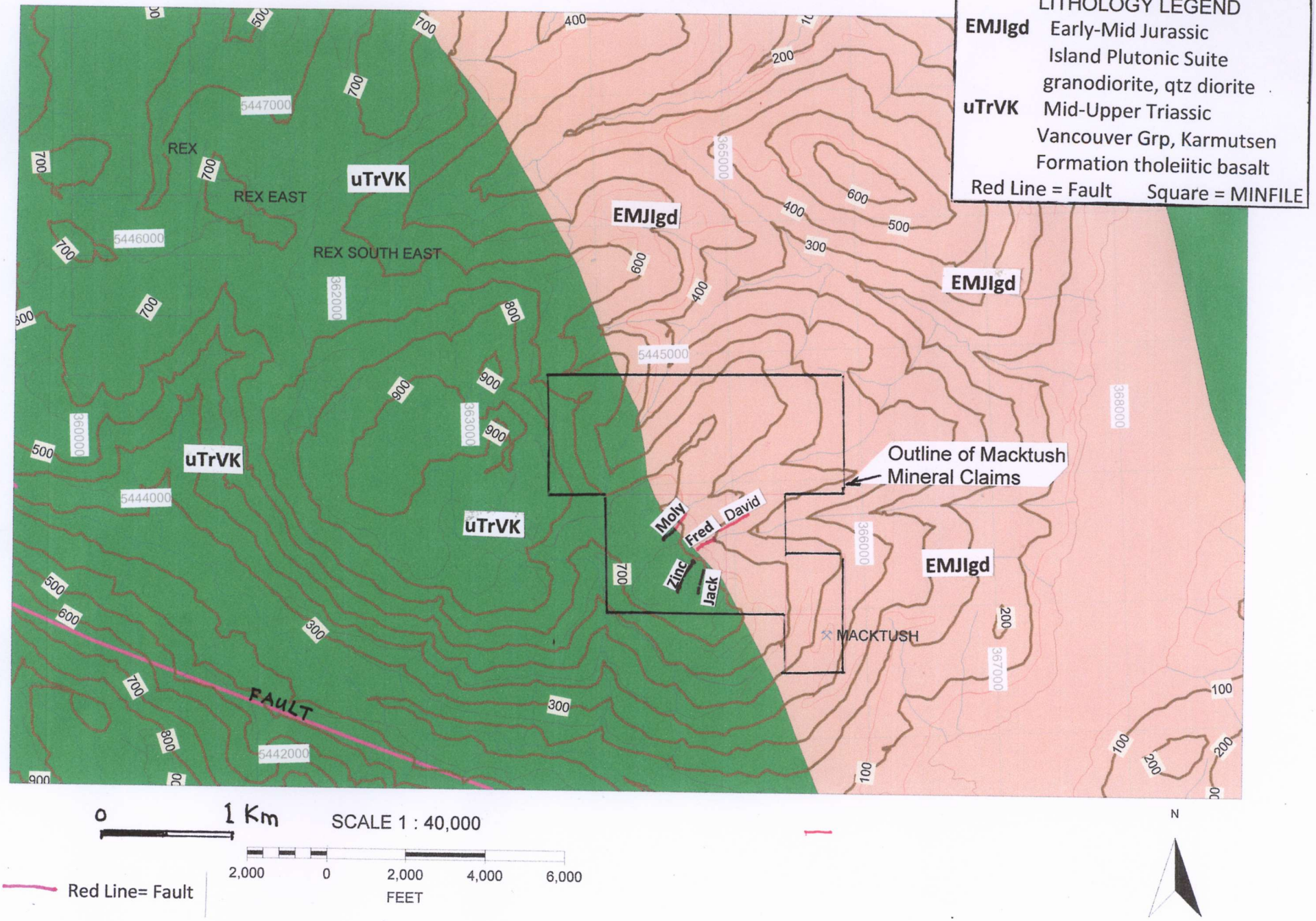


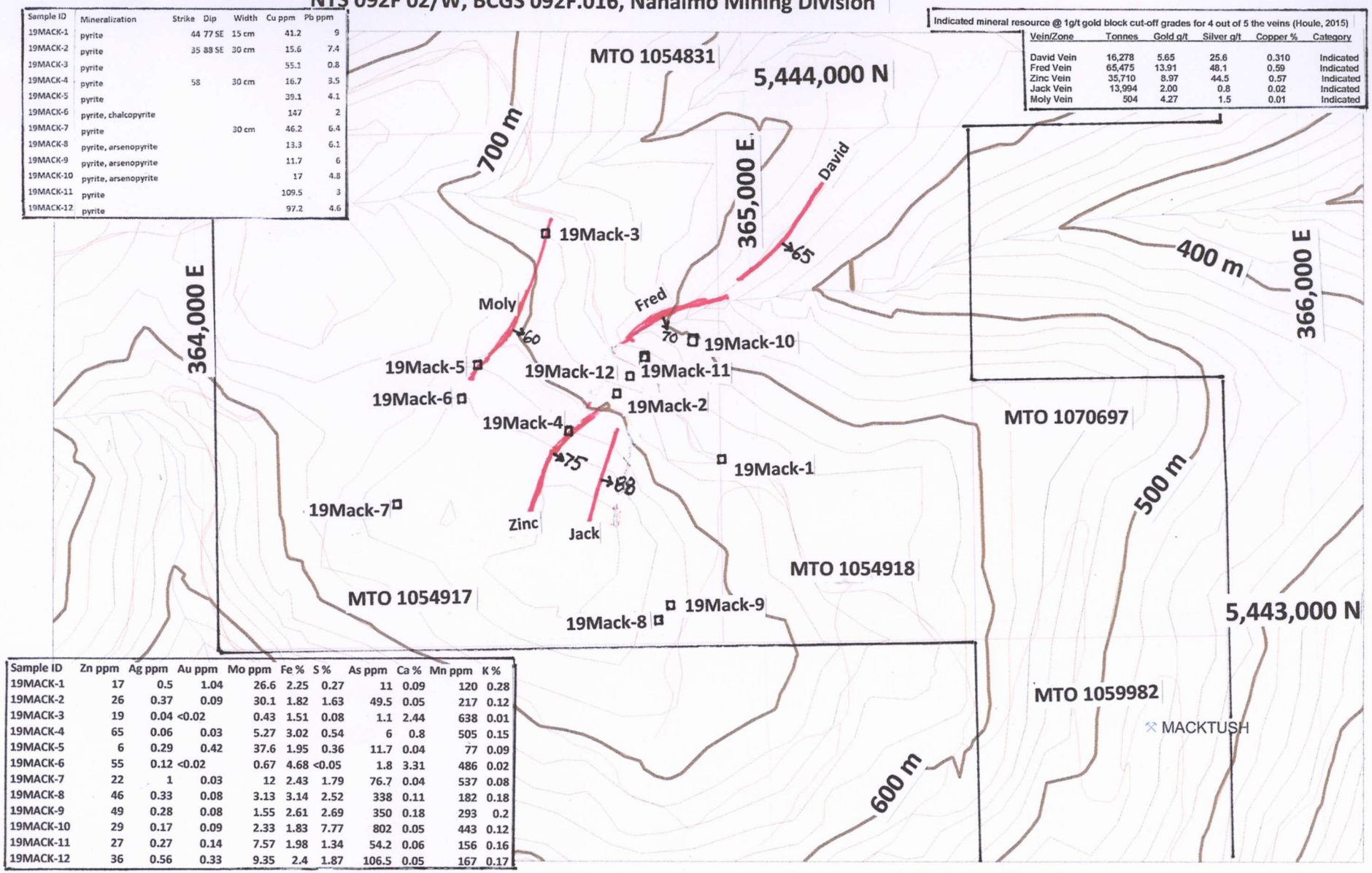
Fig 4 Mactush Mineral Claims 2019 Rock Chip Samples

NTS 092F 02/W, BCGS 092F.016, Nanaimo Mining Division

Sample ID	Mineralization	Strike	Dip	Width	Cu ppm	Pb ppm
19MACK-1	pyrite	44	77 SE	15 cm	41.2	9
19MACK-2	pyrite	35	88 SE	30 cm	15.6	7.4
19MACK-3	pyrite				55.1	0.8
19MACK-4	pyrite	58		30 cm	16.7	3.5
19MACK-5	pyrite				39.1	4.1
19MACK-6	pyrite, chalcopyrite				147	2
19MACK-7	pyrite			30 cm	46.2	6.4
19MACK-8	pyrite, arsenopyrite				13.3	6.1
19MACK-9	pyrite, arsenopyrite				11.7	6
19MACK-10	pyrite, arsenopyrite				17	4.8
19MACK-11	pyrite				109.5	3
19MACK-12	pyrite				97.2	4.6

Indicated mineral resource @ 1g/t gold block cut-off grades for 4 out of 5 the veins (Houle, 2015)

Vein/Zone	Tonnes	Gold g/t	Silver g/t	Copper %	Category
David Vein	16,278	5.65	25.6	0.310	Indicated
Fred Vein	65,475	13.91	48.1	0.59	Indicated
Zinc Vein	35,710	8.97	44.5	0.57	Indicated
Jack Vein	13,994	2.00	0.8	0.02	Indicated
Moly Vein	504	4.27	1.5	0.01	Indicated



Sample ID	Zn ppm	Ag ppm	Au ppm	Mo ppm	Fe %	S %	As ppm	Ca %	Mn ppm	K %
19MACK-1	17	0.5	1.04	26.6	2.25	0.27	11	0.09	120	0.28
19MACK-2	26	0.37	0.09	30.1	1.82	1.63	49.5	0.05	217	0.12
19MACK-3	19	0.04	<0.02	0.43	1.51	0.08	1.1	2.44	638	0.01
19MACK-4	65	0.06	0.03	5.27	3.02	0.54	6	0.8	505	0.15
19MACK-5	6	0.29	0.42	37.6	1.95	0.36	11.7	0.04	77	0.09
19MACK-6	55	0.12	<0.02	0.67	4.68	<0.05	1.8	3.31	486	0.02
19MACK-7	22	1	0.03	12	2.43	1.79	76.7	0.04	537	0.08
19MACK-8	46	0.33	0.08	3.13	3.14	2.52	338	0.11	182	0.18
19MACK-9	49	0.28	0.08	1.55	2.61	2.69	350	0.18	293	0.2
19MACK-10	29	0.17	0.09	2.33	1.83	7.77	802	0.05	443	0.12
19MACK-11	27	0.27	0.14	7.57	1.98	1.34	54.2	0.06	156	0.16
19MACK-12	36	0.56	0.33	9.35	2.4	1.87	106.5	0.05	167	0.17

0 300 m

SCALE 1 : 10,000

1,000 0 1,000 2,000 3,000

FEET

Rock Chip Sample

Surface Trace of Au-Ag Bearing Qtz-Sulphide Vein

N

Fig 5 Macktush 2019 Rock Chip Samples

MTO Mineral Tenures 1054917 & 1054918 Access Via M100 Logging Road

Sample ID	Zn ppm	Ag ppm	Au ppm	Mo ppm	Fe %	S %	As ppm	Ca %	Mn ppm	K %
19MACK-1	17	0.5	1.04	26.6	2.25	0.27	11	0.09	120	0.28
19MACK-2	26	0.37	0.09	30.1	1.82	1.63	49.5	0.05	217	0.12
19MACK-3	19	0.04	<0.02	0.43	1.51	0.08	1.1	2.44	638	0.01
19MACK-4	65	0.06	0.03	5.27	3.02	0.54	6	0.8	505	0.15
19MACK-5	6	0.29	0.42	37.6	1.95	0.36	11.7	0.04	77	0.09
19MACK-6	55	0.12	<0.02	0.67	4.68	<0.05	1.8	3.31	486	0.02
19MACK-7	22	1	0.03	12	2.43	1.79	76.7	0.04	537	0.08
19MACK-8	46	0.33	0.08	3.13	3.14	2.52	338	0.11	182	0.18
19MACK-9	49	0.28	0.08	1.55	2.61	2.69	350	0.18	293	0.2
19MACK-10	29	0.17	0.09	2.33	1.83	7.77	802	0.05	443	0.12
19MACK-11	27	0.27	0.14	7.57	1.98	1.34	54.2	0.06	156	0.16
19MACK-12	36	0.56	0.33	9.35	2.4	1.87	106.5	0.05	167	0.17

Sample ID	MTO tenure	Zone Name	Easting NAD 83	Northing NAD 83	Elev (m)	Sample Type
19MACK-1	1054918	Jack	364915	5443299	660	outcrop
19MACK-2	1054917	Fred	364772	5443497	667	outcrop
19MACK-3	1054917	Moly	364646	5443775	667	float (angular)
19MACK-4	1054917	Zinc	364703	5443406	715	outcrop
19MACK-5	1054917	Moly	364564	5443536	707	float (angular)
19MACK-6	1054917	Moly	364536	5443434	717	float (angular)
19MACK-7	1054917	Moly	364425	5443280	659	outcrop
19MACK-8	1054917	Jack	364815	5443137	637	float (angular)
19MACK-9	1054917	Jack	364801	5443129	648	float (angular)
19MACK-10	1054918	Fred	364915	5443561	530	float (angular)
19MACK-11	1054917	Fred	364833	5443557	607	float (angular)
19MACK-12	1054917	Fred	364793	5443528	633	float (angular)

Legend

Rock Chip Sample

M-3
M-11
M-10
M-5
M-12
M-2
M-6
M-4
MTO 1054917
MTO 1054918
M-1
M-7
M-8
M-9

Google Earth

Image © 2019 CNES / Airbus

NTS 092F 02/W, BCGS 092F.016, Nanaimo Mining Division

N

400 m

Fig 6 Macktush 2019 Rock Chip Samples (Detail)

NTS 092F 02/W, BCGS 092F.016, Nanaimo Mining Division

Sample ID	Alteration	Mineralization	Strike	Dip	Width	Cu ppm	Pb ppm
19MACK-1	quartz, chlorite, kaolinite, limonite, k-feldspar	pyrite	44	77 SE	15 cm	41.2	9
19MACK-2	quartz, chlorite, kaolinite, limonite, hematite	pyrite	35	88 SE	30 cm	15.6	7.4
19MACK-3	quartz, chlorite, kaolinite, limonite, pyrolusite ,calcite	pyrite				55.1	0.8
19MACK-4	quartz, chlorite, kaolinite, limonite, pyrolusite ,calcite	pyrite	58		30 cm	16.7	3.5
19MACK-5	quartz, chlorite, kaolinite, limonite, hematite	pyrite				39.1	4.1
19MACK-6	quartz, chlorite, kaolinite, limonite, pyrolusite ,calcite	pyrite, chalcopyrite				147	2
19MACK-7	quartz, chlorite, kaolinite, limonite, pyrolusite	pyrite			30 cm	46.2	6.4
19MACK-8	quartz, chlorite, kaolinite, limonite, hematite	pyrite, arsenopyrite				13.3	6.1
19MACK-9	quartz, chlorite, kaolinite, limonite, hematite	pyrite, arsenopyrite				11.7	6
19MACK-10	quartz, chlorite, kaolinite, limonite, hematite	pyrite, arsenopyrite				17	4.8
19MACK-11	quartz, chlorite, kaolinite, limonite, hematite	pyrite				109.5	3
19MACK-12	quartz, chlorite, kaolinite, limonite, hematite	pyrite				97.2	4.6

Sample ID	Zn ppm	Ag ppm	Au ppm	Mo ppm	Fe %	S %	As ppm	Ca %	Mn ppm	K %
19MACK-1	17	0.5	1.04	26.6	2.25	0.27	11	0.09	120	0.28
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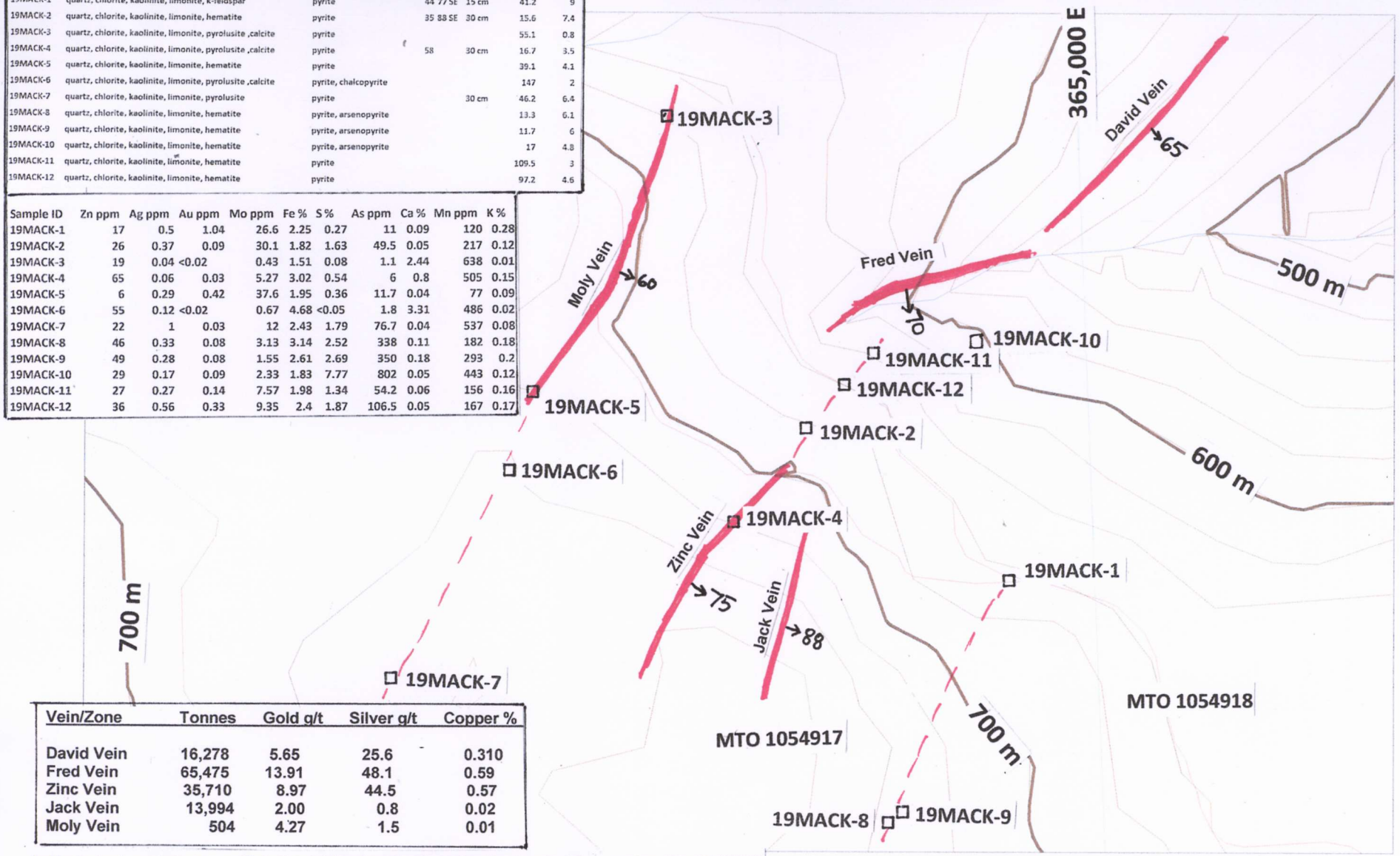
19MACK-4	65	0.06	0.03	5.27	3.02	0.54	6	0.8	505	0.15
19MACK-5	6	0.29	0.42	37.6	1.95	0.36	11.7	0.04	77	0.09
19MACK-6	55	0.12	<0.02	0.67	4.68	<0.05	1.8	3.31	486	0.02
19MACK-7	22	1	0.03	12	2.43	1.79	76.7	0.04	537	0.08
19MACK-8	46	0.33	0.08	3.13	3.14	2.52	338	0.11	182	0.18
19MACK-9	49	0.28	0.08	1.55	2.61	2.69	350	0.18	293	0.2
19MACK-10	29	0.17	0.09	2.33	1.83	7.77	802	0.05	443	0.12
19MACK-11	27	0.27	0.14	7.57	1.98	1.34	54.2	0.06	156	0.16
19MACK-12	36	0.56	0.33	9.35	2.4	1.87	106.5	0.05	167	0.17



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Jack Vein	13,994	2.00	0.8	0.02
Moly Vein	504	4.27	1.5	0.01

Indicated mineral resource @ 1g/t gold block cut-off grades for 4 out of 5 veins (Houle, 2015)

0 200 m SCALE 1 : 5,000

500 0 500 1,000 1,500 FEET

Rock Chip Sample

Surface Trace of Au-Ag Bearing Qtz-Sulphide Vein

Dip in degrees

N