

093L/03
Hagas

821244

CORPORATION FALCONBRIDGE COPPER

MEMORANDUM

DATE: February 18, 1985

TO: A. J. Davidson ✓

COPIES TO:

FROM: D. V. Lefebure

SUBJECT: Property Evaluation - Hagas Claims NTS 93L/3

XC → DHW
- return

Exploration Target: Ag-Au-Cu disseminations, veins and small massive sulphide lens

Location:

- 32 km southwest of Houston, central British Columbia (Figure 2)
- Omineca Mining Division
- accessible via the Morice River road and 3km of good logging road

Previous Work:

- 1965 - Julian Mining Co. Ltd. located Ag-Pb-Zn silt anomaly on Code Creek to northeast
- 1966-1971 - joined by Anaconda for IP and magnetometer surveys, soil-silt geochemical programme and geological mapping
 - some of this work overlapped on the Hagas claims
- 1972 - Helicon Explorations Limited resumed exploration to northeast of Hagas claims with detailed IP and Afmag surveys, more geochemical sampling and 25 holes totalling 11,000' on Mineral Hill.
 - Hagas claims optioned by Perry Knox Kaufman and Associates who collected 175 soil samples (As, Zn, Ag) and completed 2.4 line miles of a Turam survey which located a 1000m northwesterly trending anomaly
- 1973 - P,K,K and Assoc. drilled 2 holes DDH-1 (303') and DDH-2 (302') to test Turam anomaly
- 1977 - ground obtained by Aquataine Company Ltd. who completed 183.5 km of airborne EM by Scintrex,

9.85 km of ground EM over Turam anomaly and surface mapping at 1:25,000 and 2 holes 77-1 (154.6m) and 77.2 (154.2m)

- 1979 - Catari Ind., a private syndicate, completed geochemical surveys (Cu, Pb, Zn on soils?) and airborne EM survey by Aerodat Ltd.
- 1984 - heavy mineral analyses from soils completed over grid by Petrostone Resources Ltd.

Ownership: Petrostone Resources Ltd.
 contact: Mohan Vulimiri

Mineral Rights: - 14 claims covering a total of 102 units (Figure 1)

<u>Name</u>	<u>Record No.</u>	<u>Units</u>	<u>Expiry Date</u>
Hagas 1	108688	1 (2 post)	April 17, 1985
Hagas 3	108690	1 (2 post)	April 17, 1985
Hagas 4	108691	1 (2 post)	April 17, 1985
Hagas 5	108692	1 (2 post)	April 17, 1985
Hagas 6	108693	1 (2 post)	?
Hagas 16	108703	1 (2 post)	?
Hagas 76	507	4	November 22, 1985
Hagas 77	564	4	April 17, 1985
Hagas 78	565	18	April 14, 1985
Hagas 79	1161	3	May 12, 1985
Hagas 80	1162	8	May 12, 1985
Hagas 81 Fr.	1163	1 (fract.)	May 12, 1985
Hagas 84 Fr.	1164	1 (fract.)	May 12, 1985
Hem	826	12	October 26, 1985

all due in 85

where are other 45?

when are these due?

HAGAS 82 2071
83 2072
85 2073

57
 9
 18
 18
102

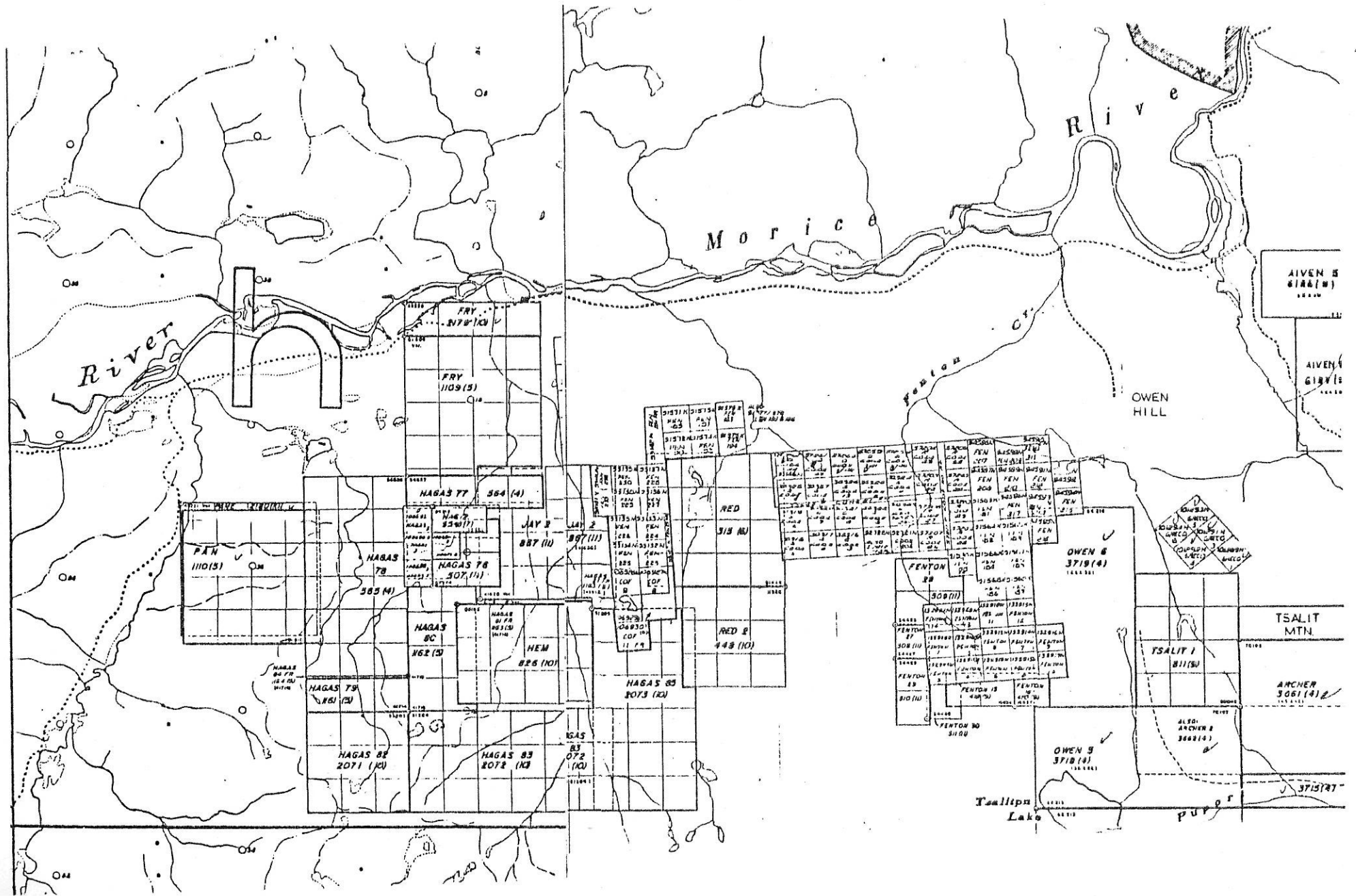


Figure 1. Claim map of the Nagas claims

Regional Geology:

Windows

Inliers of Hazelton and Kasalka Group Upper Jurassic to Cretaceous sedimentary pyroclastic and volcanic rocks with associated intrusions are surrounded by younger unconformable Lower Cretaceous and Tertiary volcanics and minor sediments (Figure 2). Ag-Au-Cu mineralization as disseminations, veinlets, veins and small massive sulphide pods occurs within the Hazelton/Kasalka Group volcanics. The Equity Silver Mine has produced 4.3 million metric tons of 135 g/t Ag, 0.45% Cu and 1.3 g/t Au from the Southern Tail zone and is currently mining the Main Zone orebody which contains 21.6 million metric tons grading 109 g/t Ag and 0.35% Cu. Higher grade ore with lower tonnages occurs at the Silver Queen Mine which reportedly has reserves of 577,600 tons grading 0.11 oz/t Au, 7.51 oz/t Ag 0.49% Cu, 1.49% Pb and 6.53% Zn.

where is this + who owns it?

Property Geology:

The western third of the claims is underlain by a basal sequence of mottled green andesite flows and breccias and overlying bedded maroon and brown andesitic flows, lapilli tuffs and dacitic pyroclastics (Figure 4). These rocks belong to the Hazelton Group and host the mineralization. The presence of tephra, numerous vesicles and hematized flow tops suggest the upper bedded sequence was deposited subaerially. The Hazelton rocks strike NE and dip steeply to the west(?). Flat-lying Tertiary Buck Creek andesite flows, overburden and possibly Upper Mesozoic rust-coloured sandstone and siltstone (Sustut Group?, Figure 3) cover the Hazelton Group on the rest of the Hagas Property. The Hazelton volcanics are cut by fine to medium grained gabbro stock of

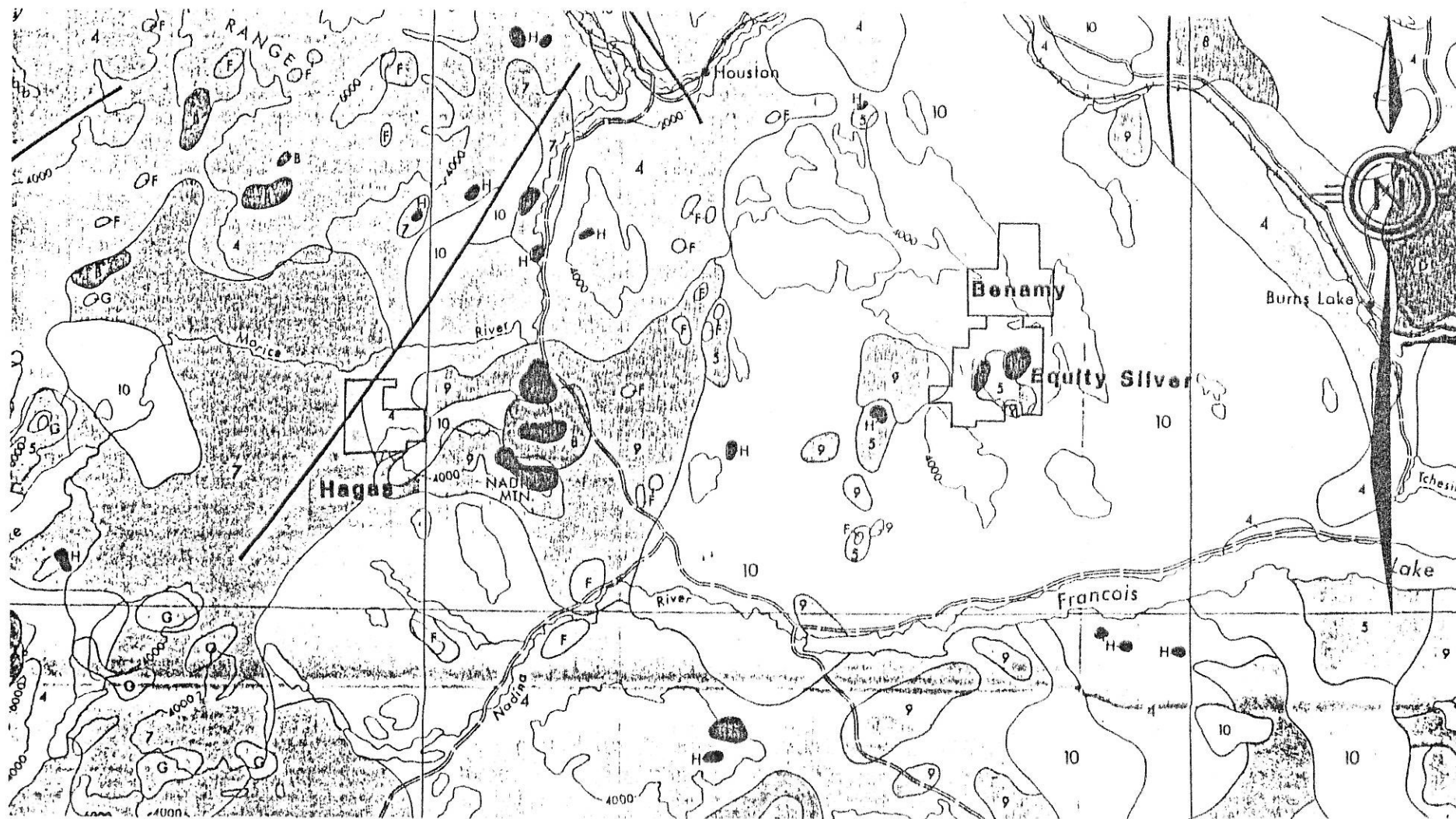


Figure 2. Regional geology of the Hagas Property, B. C. The units are identified in Figure 3 (from Carter, 1981)

supposedly similar composition to the gabbro-monzonite complex east of the Equity Silver Mine.

The eastern claims are cut by the prominent, NNE-trending Poplar Mountain lineament which can be traced 25 km to the southeast. A series of 050° faults subdivide the area into northeasterly elongated panels of volcanic rock. Fault movement parallel to the Poplar Mountain lineament could make the Mineral Hill stratigraphy equivalent to the outcropping basal sequence on the Hagas claims (Figure 4).

Geophysics:

- Turam anomalies in northeast corner of claims
- Scintrex HEM-801 airborne survey located three anomalous zones trending roughly parallel to the stratigraphy (Figure 4)
- Aerodat survey located three new anomalies on the western side of the claims, southernmost of which is coincident with the strongest Scintrex anomaly

Geochemistry:

- zinc soil anomaly (5 samples >200ppm) associated with central Aerodat anomaly and chalcopyrite in outcrop
- reportedly zinc, arsenic and mercury anomalies in area of Turam anomaly (Anaconda & Perry, Know, Kaufman and Assoc.)
- scattered anomalous gold values in heavy mineral separates from soils (up to 585 ppb) but other values erratic and not particularly encouraging (data difficult to work with as not plotted)

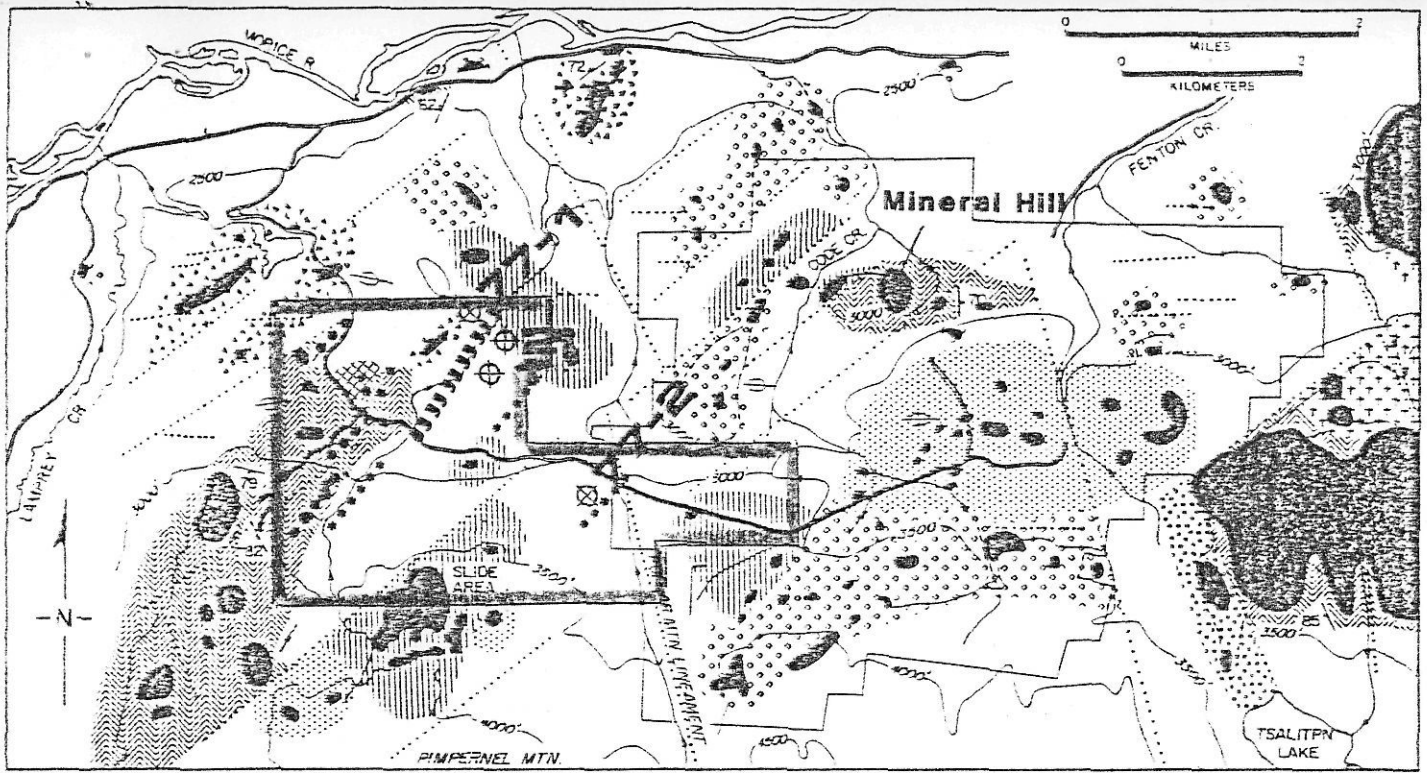
Diamond Drilling:

- 4 holes for total of 493.2m to test Turam anomaly (3 holes) and Scintrex airborne HEM anomaly

CYR, PEASE, AND SCHROETER

LEGEND					
SEDIMENTARY AND VOLCANIC ROCKS					
ERA	PERIOD	EPOCH	FORMATION	LITHOLOGY	
10	CENOZOIC	TERTIARY	Eocene and Miocene	Endako Group, Goosly Lake and Buck Creek Volcanic Rocks	Basalt and andesite flows and breccias; some rhyolite and dacite
				UNCONFORMITY	
9	MESOZOIC AND CENOZOIC	CRETACEOUS AND TERTIARY	UPPER CRETACEOUS	Ootsa Lake Group, Tip Top Hill Volcanic Rocks	Basalt, andesite, dacite, and related tuffs and breccias; some rhyolite flows and breccias
				Sustut Group (in part)	Sandstone, conglomerate, and shale
8	UNCONFORMITY				
7		CRETACEOUS	LOWER CRETACEOUS	Skeena Group, Brian Boru and Red Rose Formations	Siltstone, sandstone, shale; porphyritic andesite flows; breccias and tuffs
				UNCONFORMITY	
6	MESOZOIC	JURASSIC AND CRETACEOUS	MIDDLE JURASSIC UPPER CRETACEOUS	Hazelton Group (in part)	Siltstone, greywacke, sandstone, conglomerate, argillite
				Kasalka Group (in part)	Pebble conglomerate, rhyolite and andesitic phyroclastic and flow rocks
5	LOCAL UNCONFORMITY				
4		JURASSIC	MIDDLE JURASSIC	Hazelton Group	Andesite, basalt, dacite tuffs and breccias; volcanic sandstone and conglomerate; siltstone and greywacke
				UNCONFORMITY	
			LOWER JURASSIC	Hazelton Group	Green, red, and purple andesite and basalt tuffs and breccias; volcanic sandstone and conglomerate; argillite and greywacke
INTRUSIVE ROCKS					
H	CENOZOIC	TERTIARY	EOCENE	Goosly Lake intrusions Nanika intrusions	Gabbro, syenomonzonite quartz monzonite porphyry, feldspar porphyry, and felsite
				MESOZOIC	CRETACEOUS
	JURASSIC	UPPER JURASSIC	Francois Lake intrusions	Porphyritic quartz monzonite, granodiorite, and quartz diorite	

Figure 3. Table of formations for the Equity Silver Mine area. (from Cyr, Pease and Schroeter, 1984)



BEDDED ROCKS

TERTIARY

- FENTON CREEK VOLCANIC ROCKS: RHYOLITE AND TRACHYTE BRECCIA AND GLASSY LAVA
- SUCK CREEK VOLCANIC ROCKS?: MAINLY FRESH BROWN APHANITIC ANDESITE

UPPER MESOZOIC

- TIP TOP HILL VOLCANIC ROCKS?: DACITIC PYROCLASTIC ROCKS AND LAVAS
- SEDIMENTARY ROCKS; MAINLY SANDSTONE, LOCALLY RUST-COLOURED

LOWER OR MIDDLE MESOZOIC

- HAZELTON GROUP: MAINLY MAROON AND BROWN ANDESITIC AND DACITIC PYROCLASTIC ROCKS AND /EPIDOTE-BEARING MOTTLED GREY-GREENISH ANDESITE AND BASALT AND MINOR RHYOLITE

IGNEOUS INTRUSIONS

**TERTIARY **

- OWEN HILL GRANITE

MESOZOIC

- SMALL GABBRO STOCK

SYMBOLS

- BEDROCK EXPOSURE
- BEDDING ATTITUDE
- MAIN JOINT SET; VERTICAL, INCLINED
- GLACIAL STRIAE
- TOPOGRAPHIC LINEAMENT
- BOUNDARY-CODE-FEN CLAIM BLOCK
- TOPOGRAPHIC CONTOUR
- SMALL STREAM
- ROAD

- Scintrex TEM anomaly
- Aerodat anomaly
- Turam anomaly
- ddh

Figure 40
GEOLOGY
OF THE
CODE CREEK AREA

Figure 4. Geology of the Hagas claims (outlined in red) and surrounding area (modified from Church, 1972)

- only 77-1 cut any sulphides (no significant metal values)
- 12.5-19.6m - much pyrite veining and heavy disseminated pyrite
- 18.9-39m - some intervals heavy in pyrite
- 39-46.9m - many pyrite stringers and veining along joints 41.6 to 42m and 43.3 to 43.6m heavy pyrite cement between fragments
- most of drilling has been in rust-coloured sandstone (Upper Mesozoic) above Hazelton Group

Mineralization:

- chalcopyrite and sphalerite disseminations in andesite float in southwestern corner of grid (near Aerodat anomalies)
- tetrahedrite stringers as veinlets within fine-grained tuff
- pyrite in 77-1 (see above) -
- Cominco working on Mineral Hill to northeast of Hagas claims where bleached dacitic tuffs and tuff breccias contain f.g. pyrite, disseminated sphalerite and few veinlets of dark sphalerite and pyrite
- Mineral Hill may be stratigraphically equivalent to principal Hagas geophysical anomalies because of offset by Popular Mountain fault

Conclusions:

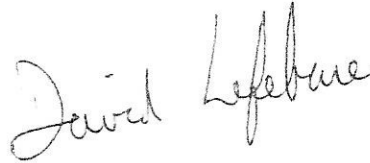
- geophysical targets are untested or poorly tested
- soil and silt geochemical responses are weak compared to other properties in the Equity Silver Mine area
- the only sulphides intersected in drilling in ddh 77-1 are barren disseminations and veinlets of pyrite which do not indicate proximity to massive sulphides

like what or which

- no significant visible alteration was ^{not found} intersected in drilling ^{2.01 logs}
- geological mapping, humus sampling and DEEPEM surveys could provide further definition of favourable zones
- Buck Creek volcanics may be less extensive than indicated on Aquitane geology map

Recommendations:

The Hagas Claims should not be optioned. There is no evidence of economic mineralization existing on this property.



D. V. Lefebure

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