

LOG NO: <i>March 8/91 RD.</i>
ACTION:
FILE NO:

MWITO CLAIMS - NO 1 & NO 2

ASSESSMENT WORKS 1990 - 1991

Location - South of Main Cultus Lake (Sardis) Road

- North of the Cultus North claim

Longitude 122° 01' 30"      Latitude 49° 03' 30"

Owner: R. Trifaux  
308 - 751 Clarke Road,  
Coquitlam, B. C. V3J 3Y3

**G E O L O G I C A L B R A N C H  
A S S E S S M E N T R E P O R T**

**21,044**

MWITO CLAIMS - NO 1 & NO 2 ASSESSMENT WORKS 1990 - 1991

NEW WESTMINSTER MINING DIVISION

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MAPS & SKETCHES BY R. TRIFAU

- # 1 - Location of Samples and Outcrops
- # 2 - Claims Location
- # 3 - Samples Location - Mwito No 1 & No 2
- # 4 - Quarry No 2
- # 5 - Cultus North claims - Samples Location
- # 6 - Mineral Values on Claims
- # 7 - Quarry No 1
- # 8 - Report on Values - Chemex Locations
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MAPS:

- # 1 - No 1069A - Victoria - Vancouver, B.C.  
Scale 1/506860 or 1 inch/ 8 miles  
Geological Survey of Canada  
Sedimentary Volcanic Rocks  
Intrusive Rocks  
Minerals - Mines
- # 2 - Map No 1485A - Surficial Geology - Mission, B.C.  
Scale 1/50,000  
Geology by J.E. Armstrong 1953-1959-1974-1976
- # 3 - Map # 92G.1 - Mission, Canada - United States  
Survey & Mapping Branch Department of Energy, Mines  
and Petroleum Resources, from aerial photographs taken  
in 1976

PHOTOGRAPHS:

- # 1 - Quarry No 2
- # 2 - Quarry No 2

## 1:0 SUMMARY

Recent exploration has been conducted from March to December 1990 on the Mwito No 1 and No 2 claims, which are adjacent and situated on the extreme north of the Vedder Mountain in the Cascade Mountains in British Columbia.

Beside the ultrabasic formations found in 1987, 1988 and 1989 we discovered a huge greenstone body oriented from east to west of the Vedder Mountain (gabbroic stones). In this area several analyses have been done and chalcopyrites, sphalerites, galena and pyrites have been discovered. The base metals are well represented but precious metals have also been encountered. Numerous quartzite veinlets are present all over the formations.

We prospected the areas north of the Cultus North claim (owner R. Trifaux) and we also found good showings of Copper, Zinc, Lead, Gold and Silver.

From the Quarry # 1, shown on the drawings of Cu-No claim, we established a line from the west side of the Mwito No 2 claim going east on the access road. We took several samples to check if the metals were also present. We located several outcrops (see sketches) prospected from west to east, from south to north, to make a reconnaissance of the majority of the outcrops and made their location on the eastern part of claim. We also took samples and analyzed them and we also found some mineralizations of base and precious metals, located <sup>in</sup> the outcrops.

## 2:0 INTRODUCTION

## 2:1 Terms of Reference

Our examinations relate to the geology mapped under the Geological Survey of Canada, with geological information compiled by H.A. Price from published and unpublished maps of the Geological Survey of Canada and the British Columbia Department of Mines information to December 1957.

Our examinations also relate to the petrographic analyses executed by Vancouver Petrographics Ltd. regarding the Cultus North claim, adjacent to the Mwito claims No 1 and No 2.

Our work has obtained good information on the geologies on the claims, localized several outcrops.

Samples taken analyzed with hand lens permitted us to describe in general terms the type of rocks encountered and their relations with previous works done on Cultus North claims.

The analyses of the rock, permitted us to locate huge mineralized formations of greenstones, serpentines, containing interesting values of base and precious metals.

## 2:0 INTRODUCTION

## 2:2 Property Description &amp; Claims Data

The Mwito No 1 and No 2 claims group is comprised of 17 units contiguous to each other, each 500 m x 500 m. Claim posts are in place in the field and the staking conforms to the Minerals Act regulations for British Columbia. One can verify the data in the office of the Gold Commissioner in New Westminster, B.C.

	Record #	Units	Recorded Owner
Mwito No 1	Title No. 3841		R. Trifaux
Mwito No 2	Title No. 3842		R. Trifaux

## 2:0 INTRODUCTION

## 2:3 Access &amp; Physiography

The Mwito claims are situated on the extreme north east of the mountain. The peak of the Vedder is at elevation 3060' in the middle of the batholith. Starting from the east side of the B.C. Hydro Railway on the Cultus Lake Road, which starts at Yarrow, if one follows the road going east, for 3 km 500 m, one is traveling on the most northerly part of the geologies described in this report. (See Map - Scale 2 cm/500m 92G/1 Yarrow.

The width of the said geologies is approximately 1 km 500 m on the Mwito No 1 and No 2 claims.

The access to the claims is by the Cultus Lake Road from Yarrow to the intersection with the road from Chilliwack which is also going to Cultus Lake. From the intersection one drives for 2 kms 500 m to reach the Forestry Road which gives access to the Vedder Mountain.

From the intersection to the Vedder Mountain Road with the Cultus Lake Road, one drives for 2 kms and arrives at the culvert on the Hatchery Creek. The culvert is situated 50 m north of the north west corner of Unit # 1 of the Mwito claim No 2. Also from the culvert, one can drive for 500 m to the east on a logging road and reach the legal posts of Mwito No 1 and Mwito No 2.

The unit of No 2 claim, south line, is approximately at the 200' level of elevation.

## 2:0 INTRODUCTION

## 2:4 Exploration History

During the exploration for the Cultus North claims, we investigated a quarry opened by the Municipal District of the region.

Three lines of holes have been blasted in this area which is adjacent to the Mwito No 2 claim, and the mineralogy has given excellent values in Copper, Zinc, Silver and Gold. Also, the fault which contains serpentines (ultrabasic rocks) is containing values of Nickel, Copper and Lead.

Beside the exploration for the Cultus North claims, we conducted works to establish the Marg-Sum claims. The centre lines of 2 post claims of the Marg-Sum claims is passing on the centre line of the culvert on the Hatchery Creek.

Copper and Zinc have been noticed on the claims. The Marg-Sum have been abandoned but the area is situated on the Mwito No 2 claim now.



2:0 INTRODUCTION

2:5 Current Works Synopsis

700 m east of the culvert on the Hatchery Creek, on the access road established by the logging road, and 35 m west of the legal post of Mwito No 2, we found an excavation created for the gravel for the road. We found argillite containing good values of Copper and Gold.

Further east, 75 m from the same legal post, for the No 1 claim, we also found schists and argillites, containing Copper, Zinc and Gold too.

We decided to claim the area because of the values in metals. We have prospected the areas situated 600 m north of the N.E. corner post of Cultus-North claims, part of the area was in the Marg-Sum claims

## 3:0 PROSPECTING

## 3:1 Reconnaissance

The batholith of the Vedder Mountain is well mineralized in base and precious metals. It is composed of diorites, mafic and ophitic dikes and contains also a huge ultramafic formation which follows the fault which run in an north easterly direction on the mountain.

Several investigations (geochemical - geological) have been executed.

The reconnaissance has shown extensive hydrothermal alterations on the western part of the batholith.

Silicifications are intense and pronounced in several outcrops on the anticline and in the syncline situated on the north east part of the Vedder Mountain, on the Mwito claims.

## 3:0 PROSPECTING

## 3:1 Reconnaissance (continued)

The general aspect of the gangue of the deposits, is principally silicates in the greenstones.

Quartz is common in all the samples, which helps to understand the presence of Gold in the area.

Some barite and calcium have been detected geochemically in the areas. Tests for magnetite have been successful with the sulfides.

In the west of the formations, in the quarry there are very permeable rocks in their structures. Because of the said permeability of the rocks it permitted the presence of base and precious metals because of the easy hydrothermal fluids access in the structures.

The structure are numerous, with shear zones, fractures networks, with gneissic, sericitic, greenstone terrains.

3:0 PROSPECTING

3:2 Quarry No 2 Samples

Samples - Quarry No 2 and surroundings - Hydrothermal formations

- # 1 - Heavy rock, deep grey - greenish color, quartz veinlets. Type of graywacke, gneissic, presence of sericite. Sulfides of Cu, Zn, Ag and Au. Analyzed geochem for Cu-No claims. Presence of iron.
- # 2 - Graywacke type of rock. Hornblende, grey to greenish color. Some quartzites, sericite. Sulfides of Cu, Zn, Ag and Au. Iron - fine grained silica.
- # 3 - Rock with a layer volume of silica (quartz, quartzite, some veinlets, greenish in appearance. Pyrites, pyrrhotites, ferruginous alterations.
- # 4 - Abundance of sericite, type of graywacke, dark grey in appearance, ferruginous alterations. Pyrites - pyrrhotites.
- # 5 - Darker type of rock. Hard, deep greenish tint. Quartz veinlets. 3 to 4 % sulfides, pyrites, some pyrrhotites - (greenstone) ferruginous alterations.
- # 6 - Dark type of rock with white quartz veinlets. Type of greenstone. Heavy, hard, some ferruginous alterations.
- # 7 - Graywacke, intense sericitizations, sulfides 2 to 3 %, veinlets of white quartz with north east general direction. 7% north east - fine grained silica.
- # 8 - Graywacke, some calcium, quartz, extensive ferruginous alterations - veinlets of white quartz. Irregular, greenstone, sericite, pyrites, arsenopyrites.

## 3:0 PROSPECTING

## 3:2 Quarry No 2 Samples (continued)

# 9 - Dark green rock - quartz - some sericite. Presence of pyrites, few pyrrhotites, some limonite - greenstone.

# 10 - Graywacke, dark rock, veins of quartz. Iron oxides, some sulfides, iron oxides. Limonites in places.

# 11 - Graywacke, greenstones, quartz veinlets, brecciations, ferruginous alterations.

# 12 - Silicified zone. Intense silification - brecciation, iron oxides, no sulfides.

# 13 - Silica zone, characterized by several types of brecciations followed by silicifications, large going to the south. Quartz, chlorite, iron oxides, some sulfides.

# 14 - Ultrabasic rocks, some serpentines, also grey rock, indurated, difficult to break, sulfides, presence of Ni, Co. Seems to be related to the fault which contains the serpentines on the Cultus North claims.

# 15 - Metamorphic rocks, schists, argillite, quartz veinlets, presence of sulfides smeared on rocks. Chalcopyrites, pyrites, chalcocite.

See Map No 1 for outcrops location.

For all the samples it seems that we are in a telethermal zone with ores present near the surface of the formation. Pyrites, pyrrhotites, near the surface.

## 3:0 PROSPECTING

## 3:3 Outcrops Samples

We started the reconnaissance for outcrops from quarry # 2 which is situated on a line adjacent to Cultus North and Mwito No 1 and No 2 claims. The same types of rocks occur on the Mwito and Cultus claims at that site - large presence of pyrites, sulfides and sericite.

From the quarry No 2, we went in an easterly direction and 150 m from the quarry we found a small outcrop containing sulfides, greenish in color, with quartz veinlets (greenstones). Outcrop No 2 situated at 650 m from the quarry.

Also from the quarry, in a north-easterly direction we found rocks with large values of silica (quartz) with pyrites and pyrrhotites. Outcrop No 3 situated at 1100 m in a north easterly direction from the quarry No 2. Outcrop No 4.

Outcrop No 5 is situated on a north line which starts from the north east corner post of the Cultus North claim in a north direction, and at 400 m from the said post. Presence of a grey type of rock, some silicification, presence of a few sulfides, ferruginous alterations.

## 3:0 PROSPECTING

## 3:3 Outcrops Samples (continued)

Also in a north easterly direction at a distance of 750 m from legal post of Mwito claims No 1 and No 2, we found a boulder which also has the nature of the greenstones - no sulfides, no ferruginous alterations.

Quarry No 1 - (4 samples) - Outcrop No 7, in unit No 9 of Mwito claim No 1 - Greenstones, intense sericitization - pyrites, pyrrhotites. The quarry is situated 250 m south of the north line of the claim unit No 9. Massive graywacke.

Outcrop No 8 - In unit No 8 of the Mwito claim No 1 - two samples taken directly from the south side of the Main Road and containing greenstone of the same nature as those taken in Quarry No 1. Sulfides, ferruginous oxidations.

Outcrop No 9 - Situated at 200 m south of the north west corner post - containing less sericites than outcrop No 8 and 7. Same nature of greenstone.

Outcrop No 10 - Situated at 420 m south of main road going to Cultus Lake. Greenstones, same nature as outcrops No 7, 8 and 9. Less sulfides - 2% - pyrrhotite and pyrites. Limonites.

3:0 PROSPECTING

3:3 Outcrops Samples (continued)

Outcrop No 11 - Situated 102 m south of the Cultus Lake Road. Masses of greenstones - graywacke - with veinlets of quartz and 2 to 3 % sulfides. Pyrites mostly.

Outcrop No 12 - Situated 200 m south east of quarry No 2. Intense brecciation and silicifications of the outcrop. No sulfides. Unit No 4 of Mwito No 2 claim.

Outcrop No 13 - Also situated in unit No 4 of Mwito claims No 2, 400 m south east of quarry No 2 containing dark rocks with sulfides, disseminated. These rocks are also situated directly east of the breccias with intense silicifications. Biotization - greenstones?

Outcrop No 14 - Ultrabasic formations. Serpentine and also other green rocks. Harder than the serpentines with sulfides containing 3000 ppm of Ni. Continuation of the main fault containing ultrabasic rocks all over the Vedder Mountain.

Outcrop No 15 - Extensive presence of metamorphic rocks, schists, argillites, veinlets of quartz. Concentrations of sulfides of chalcopyrites. Presence of chalcocites.

See Map No 1 for locations.





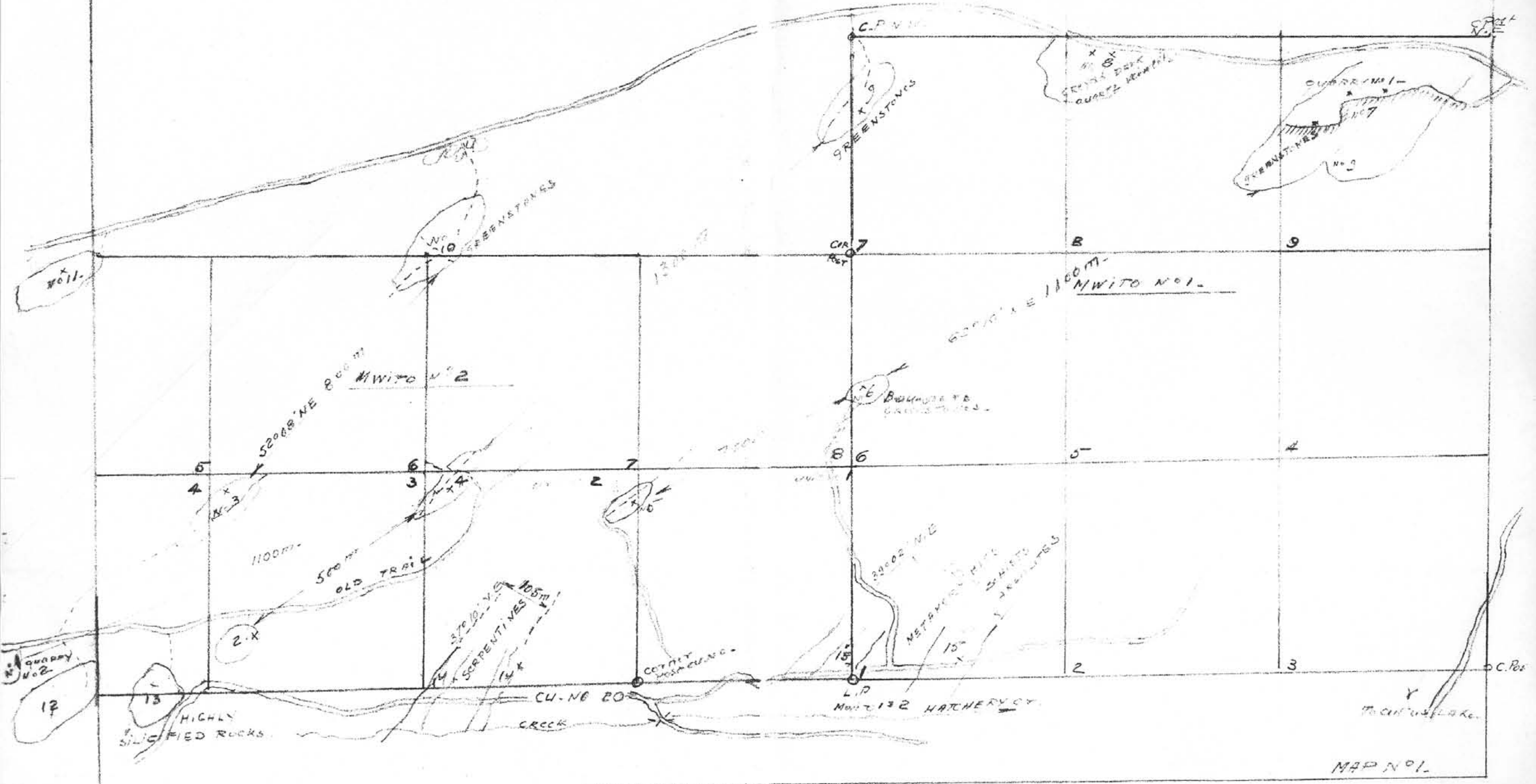
MWITO GROUP OF CLAIMS  
MWITO NO. 1 - 9 UNITS - NO. 2 - 8 UNITS  
OUTCROPS

SCALE 6 CM = 500 M



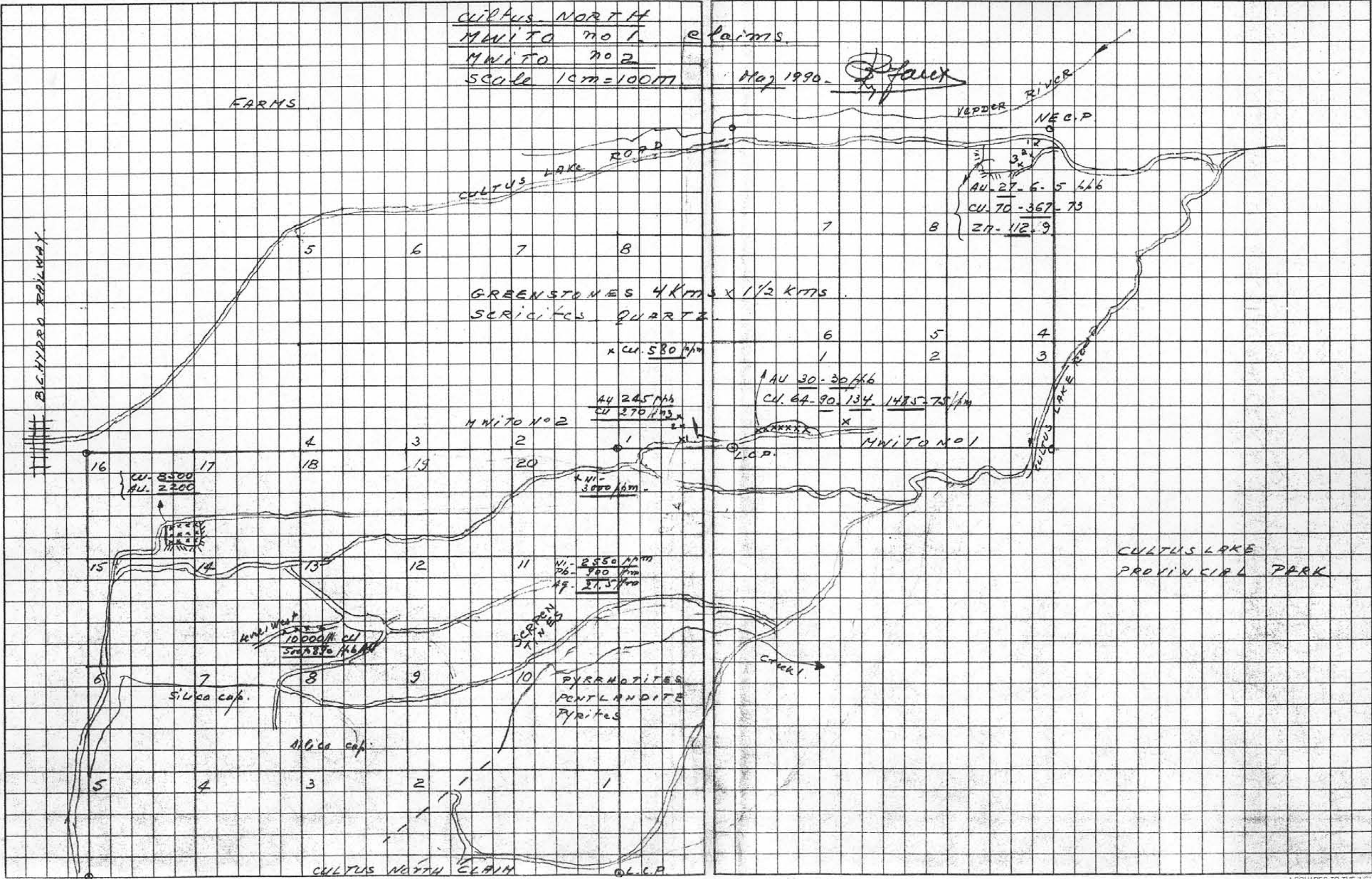
LEGEND.

- OUTCROPS 14-15
- OUTCROPS, OUTER QUARRIES
- OUTCROPS IN QUARRY
- BOULDER
- LOGGING ROADS
- CREEK



CULTUS NORTH CLAIMS  
MUNITO no 1  
MUNITO no 2  
SCALE 1cm=100m

May 1990. *DeLaney*





## 3:0 PROSPECTING

## 3:6 Exploration - Metamorphic Rocks

More exploration for metamorphic rocks situated on the 2 claims (see Map # 3) Rocks containing chalcocite, chalcopyrites on Mwito No 1 - 100 m east of 1st showing on Mwito No 2.

Breaking rocks, digging in the cuts of the road.

Mafic (basic) rocks discovered 60 m east of metamorphosed formation. Darker minerals than in the greenstones found north and west on the mountain. Presence of chlorite, some slip on faces. Dug three pits on the flank of the road, to obtain samples with sulfides. Strike gray.

Sample # 1 - Dark rock, low in silica with some sulfides, grain relatively fine, some ferruginous alterations.

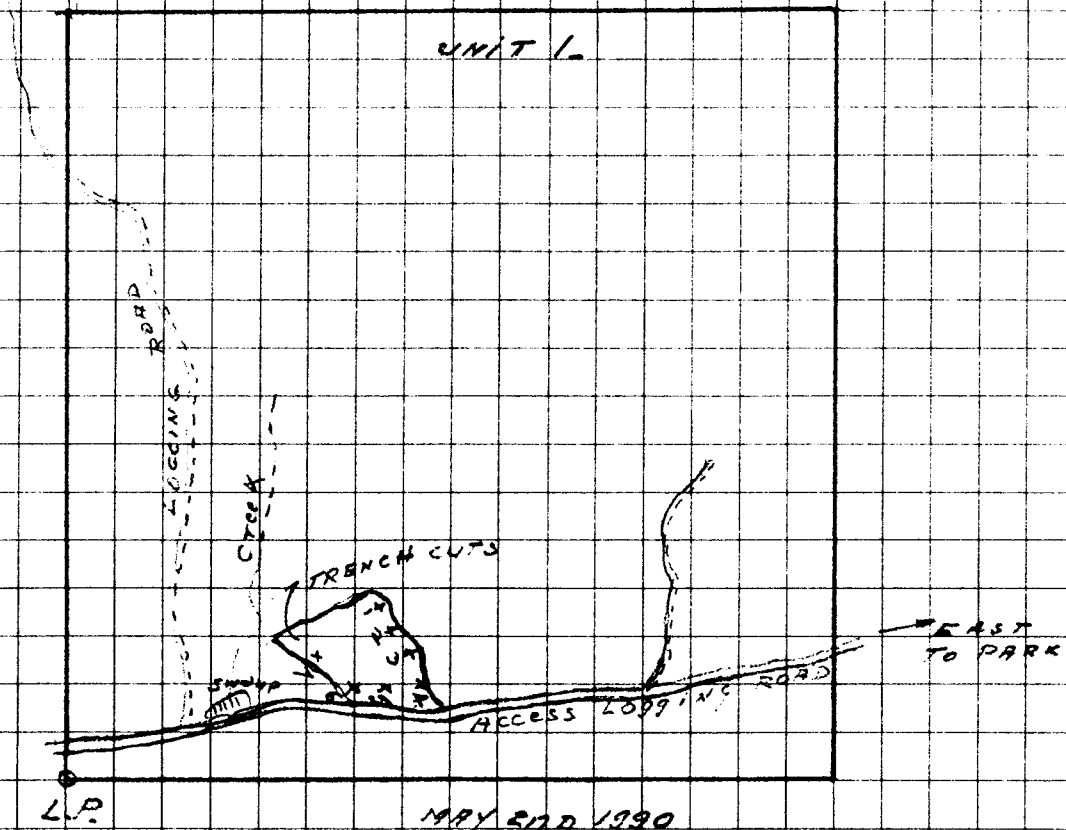
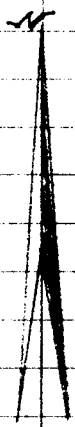
Sample # 2 - Greyish rock with some quartz. Sulfides are present. Dark minerals brilliant, metallic. Chalcocites? Strike grey, non-magnetic.

Sample # 3 - Same material as in Sample # 2. Visible sulfides, strike grey, non-magnetic.

Sample # 4 - Dioritic altered type of rock with numerous sulfides 4 to 6 %. Some of the sulfides are altered to a deep black color with iridescent tarnishes - oxidations. Strike greyish. No layering - no magnetism.

Sample # 5 - 220 m east of legal post on Mwito No 2. Dark rock with sulfides - quartz veinlets, ferruginous alterations.

MUNITO N°2. UNIT N°1  
GEOCHEM SURVEY. ROCKS.  
SAMPLES LOCATION.  
SCALE 10 CM = 500 M



MAY 21<sup>ST</sup> 1990

LEGEND

- ROAD
- LOGGING ACC RD.
- LEGAL POST
- CREEK
- EXCAVATIONS
- SCHISTS, ARCELLITES
- QUARTZ

REPORT A90/2302 CHEMBX

MWITO No 1 CLAIM.  
 70M EAST OF L.C. POST  
 SCHIST. METAMORPHOSED ROCK.

Chemex No	Al ppm	Ag ppm	Co ppm	Cu ppm	Fe %	Mn ppm	Mo ppm	Ni ppm	Pb ppm	Zn ppm	LOCATIONS
6	<u>30</u>	<0.5	<u>32</u>	65	3.2	520	<1	44	4	<u>114</u>	Chemex # 9015408 MWITO 1.
7	5	<0.5	25	<u>95</u>	3.62	690	3	50	2	<u>146</u>	" 5409 Chemex
8	<30	<0.5	31	64	3.36	555	<1	26	4	58	" 5408 "
14	<u>45</u>	<0.5	20	<u>95</u>	5.61		<1	22	4	102	PYRRHOTITES. <sup>5412</sup> LEVEL 1 "
9	<30	<0.5	40	<u>90</u>	4.20	670	<1	24	2	66	MWITO 1. 5408 "
15	<u>890</u>	.5	33	<u>5780</u>	2.23	270	<1	57	2	52	LEVEL 1. 5411 "
10	<30	<0.5	41	<u>134</u>	3.70	545	<1	25	<2	62	MWITO 1 5408 "
11	<u>30</u>	<0.5	30	<u>1485</u>	8.03	280	<1	40	2	46	" 5408 "
12	<30	<0.5	25	75	2.81	420	<1	39	2	100	" 5408 "
16	<3	<0.5	29	49	6.25	270	<1	72	10	<u>132</u>	KR. NO 1. 5410 "
13	<u>30</u>	<0.5	17	64	6.02	1000	<1	43	2	80	MWITO 1. 5408 "

CHALCOPYRITES  
 VISIBLE IN NO 15.

## 4:0 GEOLOGY

## 4:1 Regional Geology

Geology - Pre-Tertiary. Map 1485 A Mission, B.C. 92G/1 Mesozoic and Upper Paleozoic bedrock. Includes sedimentary, volcanic, granitic and metamorphic rocks, mantled 90 % of the area by deposits 1 to 5 m thick, of glacial, colluvial and eolian sediments. (surficial geology).

Geological Survey of Canada - Map 1069 Victoria - Vancouver, B.C.

Mesozoic - Triassic in part - earlier and later. Andesite, tuff, agglomerate, volcanic breccia, minor basalt and rhyolite; shale argillite, slate.

Quartzite, limestone, graywacke, chlorite schists. Greenstone, gneissic equivalents.

Jurassic and/or Cretaceous - Sedimentary and volcanic rocks.

Upper Jurassic and/or lower cretaceous.

Argillite, slate, arkose, graywacke, tuff, minor conglomerate, limestone, greenstone, chlorite schists.

Mineral symbols in the areas:

As - Arsenic

Ni - Nickel

Cu - Copper

Pt - Platinum

Au - Gold

Ag - Silver

Pb - Lead

Zn - Zinc

Mo - Molybdenum



## 4:0 GEOLOGY

## 4:1 Regional Geology (continued)

1. Outline of outcrops. Plan No.
2. Lithology - areas west of main fault. Volcanic breccia, shale, argillite, slate, quartzite, graywacke, chloritic schist. Greenstones.

Lithology The igneous rocks are mostly basic, dark green in appearance (greenstones). There are also important presence of acidic rocks. In some places the rocks are mesocratic (quartz and basic). The rocks are medium and coarse grained, dark, granular, hard, some banding in the quarries.

In other places, the rocks are melanocratic in appearance with massive dark formations. (See description of outcrops 1.

Lithology).

In the middle of the huge area, exist major fault, with a general north-east direction which divides the rocks in two separate lithologies.

Areas east of the main fault are andesitic and contain volcanic breccia, agglomerate and minor basalt and rhyolite, shale, argillite, shale, quartzite. Here the rocks are also mesocratic and melanocratic. The colors of the rock are black, dark green, grey. The general appearance of the formation is dioritic. There are white and grey phenocrysts. Plagioclase is prominent in the rocks. Presence of alkali feldspars. Some white veinlets of quartz are remarkable in different parts of the

## 4:0 GEOLOGY

## 4:1 Regional Geology (continued)

bodies but the ground mass is dark.

A huge fault oriented  $40^{\circ}$  N/E divides the Vedder Mountain.

The fault consists mainly of serpentinites, gabbroic material, which have exactly the same direction. The fault is seen on 7 to 10 km and in some places noritic rocks are adjacent to the serpentines. On the east side of the fault, argillite, schists, graywacke, conglomerate are observed. A good showing of the conglomerate is observed on the logging road going to the lake, in the middle of the mountain. Granitic rock (boulders) have been found in several places, on the roads going to the works established by the military.

A huge formation of aplites exist on the west side of the mountain, looking onto the Fraser Valley, also granitic materials which have been detonated and contain significant magnetites. A feldspathic formation exists on the east side of the road going to Cultus Lake from the middle of the mountain. A gravel deposit (terrace with boulders and rounded gravel) containing ilmenite exist on the same road on the south west side, 220 m from the Main road.

Granitic gravel on the south side of the Vedder Mountain contains also significant magnetites.

## 4:0 GEOLOGY

## 4:1 Regional Geology (continued)

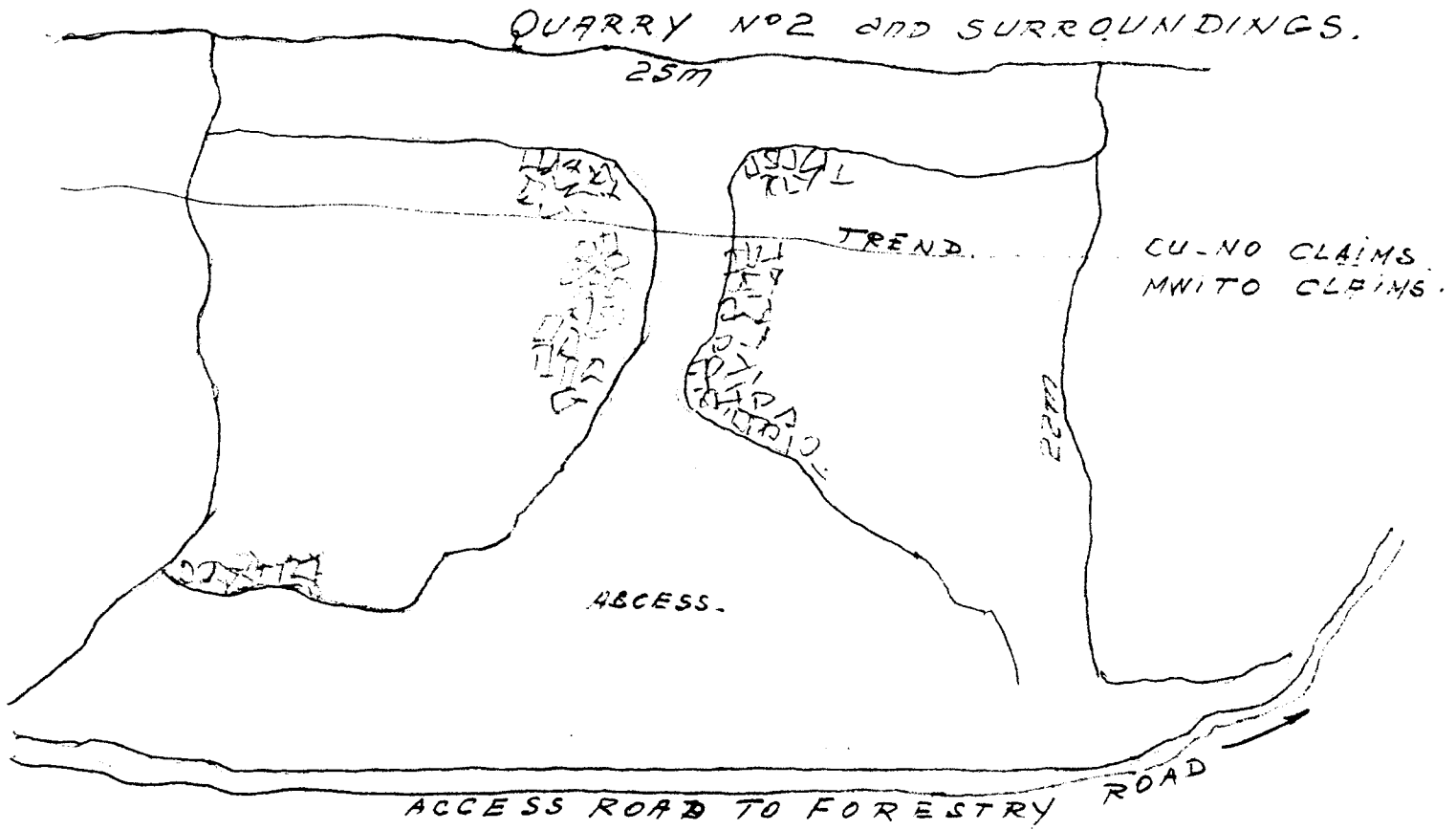
Hardpan has been observed and some diggings done on the south side of the Vedder. Abundant quartz veinlets have been observed 300 m from the hairpin in a southerly direction, containing base metals and Gold, Silver.

The serpentines contain Nickel, Cobalt, Platinum, Gold, Silver, Lead in one place with 900 ppm. The width of the serpentine to the north, is approximately 150 to 180 m - (this is the width of the fault ??)

The north of the mountain contains a huge formation of greenstone, which seems to be well mineralized.

On the south side of the mountain, on the road overlooking the Columbia Valley, several argillite formations containing manganese and some sulfides have been observed.

The Municipal government has opened a huge quarry in the north in the greenstone, which supplies the materials needed for rip-rap and gravel on roads.



QUARTZ, ALBITE, SERICITES,  
 BIOTITE (ALTERED), PERVASIVE  
 SERICITIZATIONS, ASSOCIATED WITH COPPER.  
 LARGE AMOUNTS OF PYRITES AND PYRRHOTITES.  
 HIGH VALUES OF BASE & PRECIOUS METALS.

SKETCH OF QUARRY NO 2

February 1991.

*[Handwritten signature]*

## 4:0 GEOLOGY

## 4:3 Reconnaissance &amp; Prospecting - Mwito and surroundings

Mwito No 1 and No 2 claims.

No 1 claims - adjacent to Cultus North claims.

Geology - Reconnaissance and Prospecting

Samples and analyses of the veins and stock works of the surrounding areas and of the quarries have permitted to describe some aspects of the geology. On the north side of the Vedder Mountain, a huge greenstone formation represents a belt of metamorphosed volcanic and intrusive rocks of Upper Triassic and Upper Jurassic age (Mesozoic).

Bodies of porphyritic quartz albite, sericite, schists have been observed and are hosting disseminated Cu, Au, Zn deposits.

Deformations from anticlines to synclines that intersect all the area, form a complex structure mineralization consisting of quartz, some ankerite veins, stock works and stringers.

Albite, epidote, amphiboles in the quarries represent an extensive fault. The above describe generally the formation situated in the north west of the Mwito claim, from the quarry No 2 to the Railway track near Yarrow.

## 4:0 GEOLOGY

4:3 Reconnaissance & Prospecting - Mwito and surroundings  
(continued)

General stock breccias with quartz stringers. In place there is a massive quartz content, that pinch and swell with some shear surfaces.

Igneous rocks include dikes of cretaceous Tertiary age containing ultramafics. The bodies containing some serpentinization which are emplaced as thrust, but alterations do not come to talc tremolite.

Mesozoic

The coast crystalline occurred during the Mesozoic age. The strata on the cascades has a northwestward trend. It has been deformed by the driftings of the continent. The cascades uplift represents the mountainous terrain in B.C. with the coast mountains.

The quaternary evidences are Mount Baker & Garibaldi on the Cultus Lake Road, 200 m east of the B.C. Hydro track Railway, one can see the amphibolite - hornblendite formation (greenstones). If one follows the Main road on approximately 5 kms, the same amphibolite and hornblendites are observed on outcrops.

## 4:0 GEOLOGY

## 4:3 Reconnaissance &amp; Prospecting - Mwito and surroundings

(continued)

If one proceeds east of the Cultus Lake Road going to the lake, one can observe greenstones which have been sheared and faulted with serpentine in many of the fractures. The main fault on the Vedder Mountain on the Cultus North claims and on to the Mwito claims is a huge serpentine dike. Because of the presence of ultramafic rocks, altogether it looks deep green (greenstone).

The slats and shales found 200 m north of Cultus Lake itself are part of the Jurassic, see some foldings in the formation.

The Copper deposit found on the Cultus North and the Mwito No 2 claims is composed of greenstone, serpentized dikes, amphibolites and hornblende - (plagioclase) porphyry plug.

The length of the greenstone is approximately 465 kms on the north and has an approximate wide of 4 km. Chalcopyrites, pyrites, bornite, and chalcocite occur in the Copper zone. We didn't determine the halo of the pyrite yet.

The hydrothermal alteration is characterized by chlorite, some biotite - chloritization is strong, in pyritized rocks. There is an association of lead and zinc sulfides. Sulfide - silicate alteration zones are seen in the hydrothermal episode with high values in Zinc.

## 4:0 GEOLOGY

4:3 Reconnaissance & Prospecting - Mwito and surroundings  
(continued)Plagioclase, hornblende, biotite porphyry

The formation has a north westerly elliptical direction. Northerly trending dikes or sills are seen everywhere. Biotite and hornblende are seen in a fine grained matrix as well as quartz in numerous white veinlets. In general, the rock exposures are altered to a certain extent.

A prominent structure at the Vedder Mountain is the north - north westerly trending fault which bisects the area. Fractures with a variety of orientations are seen in the quarries.

Mineralization

The grades of the ores are not determined at this stage but values up to 19,000 ppm in Cu have been detected. The Copper sulfides are mainly chalcopyrites, distributed chiefly in fractures, stock works with or without quartz, but in places quartz is prominent.

Sulfide Zoning

Most of the chalcopyrite occurs along seams and veinlets, mainly with quartz. Some pyrrhotite exists in the pyrite halos. Marcassite is seen associated with pyrite, galena, sphalerite. The sulfide zone are allied with specific silicate zones, this distribution of the sulfide - silicate assemblage is widespread.



4:0 GEOLOGY

4:4 Quarry Rock Geology - Structure Greenstones

Quarry No 1

Quarry developed by the Municipal District of the Vedder Area.

To the north of the quarry the same type of greenstones are encountered with the same proportion of silicates. Quartz veinlets are giving a greyish appearance to the rocks.

Quartz, albite, sericites, muscovite (abundant) and altered biotites.

High values of Copper associated with the sericites.

## 4:0 GEOLOGY

## 4:4 Quarry Rock Geology - Structure Greenstones (continued)

Structures of the greenstones in Mwito No 1 and No 2.

Brecciation exists near the surface of the deposit in quarry # 2. The brecciations indicate failure under light load and at relatively shallow depths. It includes all type of failure from simple fissure to brecciation zones or breccia pipes or stocks. In the quarry # 1, the rocks have been fissured considerable and some of them contain white particles of quartz.

The mineralogy of the breccia encountered contains Cu, Pb, Zn and Au.

Pyrites are dense in places and are in accordance with other breccia mineralizations. Pyrrhotites are also included in the above mineralizations. At this stage, on claims No 2, we do not know the depth of the breccia, they are close to the parent intensive body.

Silicifation - 300 m south east of the quarry several bodies of rocks which are extensively silicified. The amount of pyrites and pyrrhotites here is diminished but the numerous white quartz veinlets are typical in the area. Two samples analyzed came with 13 ppb in Au.

## 4:0 GEOLOGY

## 4:4 Quarry Rock Geology - Structure Greenstones (continued)

Ore deposits: some relationship to structures.

Structure - Structural breaks that control ore deposition are 2 types, shear breaks and fracture or brecciation breaks with all gradation between shear zones (breaks) result where rock fails under pressure and deformation approach flow. Shear zones are evidence of failure under heavy load and great depth.

Brecciation indicates failure under light load and at relatively shallow depth. Brecciation includes all types of failure from single fissures to breccia zones or breccia pipes or breccia stocks where expansion accompanies failure.

Cultus - North claims - brecciation exists near the surface of the deposits. All the rocks in the first quarry have been fissured considerable and some of them contain white particles of quartz.

Mineralization of the shear zone is largely by replacement. Large masses of the sheared rock are almost completely replaced by ore and gangue failure.

## 4:0 GEOLOGY

## 4:4 Quarry Rock Geology - Structure Greenstones (continued)

In the first quarry brecciation is seen near the surface. This type of brecciation is a characteristic of the structure and mineralogy encountered with intensive bodies in ore deposits. The mineralization is large by replacement, large masses of the fractured and sheared rocks are almost completely replaced by ore and gangue minerals. Also, the breccia mineralization is partly by replacement and partly by filling of open spaces in the fractured rock.

The mineralogy of the breccias contains Copper, Lead, Zinc and Gold. Pyrites are dense and are in accordance with other breccia mineralizations, also pyrrhotites exist with the breccias. Several breccia exposures have been localized around the intensive body known as the quarry, but at this stage other breccias and porphyritic formations have no genetic relation with such intrusive bodies.

Also, we do not know the extent at depth of extension of the breccias and the depth of the shear zones but the breccias are close to the parent intrusive body.

## 4:0 GEOLOGY

## 4:4 Quarry Rock Geology - Structure Greenstones (continued)

Physical factors in the localization of ore. Beside the body discovered in the quarry there are other bodies and we know they are deep seated because of their presence high on the mountain. The same metals are present at lower altitudes and there is a connection with the discoveries at the quarry. Intensive bodies with shear zones at depth.

Magmas are related to the ore and ores are deposited from emanation given by a deeper lying portion of the magma represented by the rocks at the surface.

It is apparent that the composition of the fluids is a primary factor in determining the type of ore formed.

In the bodies encountered on the mountain. fragmentation has occurred in great areas and sulfides and they have a relation with the grain size of the ore.

## 4:0 GEOLOGY

## 4:5 Petrologies Cultus North - Mwito claims (all related)

## Vancouver Petrographics Ltd.

Cultus-North claims and surrounding Mwito claims - study of sulfide minerals. Study made only of the opaque and semi-opaque minerals. Mineralogy of silicates and carbonates could be made only in thin sections not in polished sections.

A. Ultramafic sample containing pentlandite and chromite.

B. Mafic and other samples free of pentlandite and chromite.

Samples # 7678-1, 7678-2, 7678-3, 7678-3A, 7678-4 and 7678-5, are related to ultramafic rocks found on the boundary of Cultus-North and Mwito No 2 claims. See sketch plan for locations.

All the samples contain Nickel (pentlandite) except sample # 7678-2 and some magnetism. Also five samples contain chromite except # 7678-1.

Samples # 7678-6, 7678-8, 7678-9, 7678-10, 7678-11, 7678-12, 7678-13 and 7678-14 do not contain any Nickel. Five of the samples contain chalcopyrite except samples # 7678-6, 7678-10 and 7678-14.

The samples with chalcopyrite come from the mafic rocks situated also on the areas of contiguity of the Cultus-North and Mwito claims. The petrography applies to the same general area and are pertinent for the two claims. No magnetism.



JAMES VINNELL, Manager  
JOHN G. PAYNE, Ph. D. Geologist

4:30  
PAGE 34  
Conferment to *John & Donaldson*  
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Invoice 7638  
September 1988

Samples: 7678 Series: 1 to 5, 8 to 14 *SERPENTINES*  
Study of Sulfide Minerals Only *CU-NO. MARG-SUN - cts.*

Summary:

Samples 1, 2, 3, 3A, 4, 5, and 6 are thin sections of rock chips up to a few mm across (averaging 0.5-1.5 mm). Samples 8, 9, 10, 11, 12, 13, and 14 are polished sections of rock samples. The study was made only of the opaque and semiopaque minerals. The mineralogy of silicates and carbonates could be made on the thin sections, but not on the polished sections.

The samples can be divided into two main suites on the basis of their sulfide and oxide mineralogy as follows:

- A: Ultramafic samples containing pentlandite and/or chromite
- B: Mafic and other samples free of pentlandite and chromite

Most samples contain pyrrhotite and pyrite with much less chalcopyrite.

Pyrrhotite forms very fine to fine grained patches, either alone or intergrown with lesser pentlandite and minor chalcopyrite, and extremely fine grained inclusions in pyrite, either alone or with chalcopyrite. In some samples, it is altered moderately to strongly to secondary marcasite/pyrite-(oxide/carbonate), or more strongly altered to limonite/hematite.

Pentlandite occurs alone and with pyrrhotite in very fine grained intergrowths. A mineral which may be pentlandite occurs as interstitial grains in some pyrite aggregates in samples containing pyrrhotite-pentlandite aggregates.

Chalcopyrite is a minor phase occurring with or near pyrrhotite and as inclusions in pyrite.

Pyrite generally forms anhedral grains up to 1.5 mm in size. It is free of inclusions or contains minor ones of one or more of pyrrhotite, chalcopyrite, and pentlandite.

Chromite forms anhedral, strongly fractured and segmented grains up to 2 mm in size.

Ilmenite and Ti-oxide occur together in patches, in part associated with biotite. Ti-oxide is secondary after ilmenite. In one sample magnetite and ilmenite are abundant, and commonly form aggregates of very fine grains. Locally ilmenite contains exsolution lenses of magnetite or hematite.

Minor phases include sphalerite (with exsolution chalcopyrite) and coarse pyrite cubes.

In the summary below, phases are listed in order of decreasing abundance. Phases in brackets are much less abundant than those listed before the brackets. Phases present in trace amounts are not listed.

**A: Ultramafic Samples with Pentlandite and/or Chromite**

The ultramafic nature of these samples is indicated by the presence of chromite and by the sulfide association pyrrhotite-pentlandite.

Sample 7678-1	pyrite-pyrrhotite-(pentlandite)	
7678-2	pyrite-pyrrhotite-chromite-ilmenite	
7678-3	pyrite-pyrrhotite-pentlandite-chromite	T
7678-3A	pyrite-chromite-(pyrrhotite-pentlandite)	
7678-4	pyrite-pyrrhotite-pentlandite-chromite	
7678-5	pyrrhotite-pyrite-pentlandite-chromite-ilmenite	

**B: Mafic and Other Samples without Pentlandite and/or Chromite** *CU-No identification only.*

7678-6	pyrrhotite-(pyrite)
8	ilmenite-magnetite-(pyrite-pyrrhotite-chalcopyrite)
9	pyrrhotite-(chalcopyrite- Ti-oxide)
10	pyrrhotite
11	ilmenite-(pyrite), vein of pyrite-(chalcopyrite)
12	pyrite-pyrrhotite-ilmenite/Ti-oxide-(chalcopyrite)
13	pyrite-(sphalerite-chalcopyrite)
14	pyrite



### Sample 7678-1

Pyrite (3-4%) forms angular grains averaging 0.1-0.3 mm in size, with a few from 0.6 to 1.5 mm in size.

Pyrrhotite (2-3%) forms patches averaging 0.07-0.15 mm of very fine, anhedral, equant grains. Some patches are altered strongly to completely to hematite along a major crystallographic direction of the pyrrhotite grains.

Pentlandite (0.2%) forms grains averaging 0.02-0.05 mm in size intergrown with pyrrhotite.

Chalcopyrite (trace) forms a very few grains up to 0.02 mm in size bordering or near pyrrhotite, and a few inclusions in pyrrhotite.

### Sample 7678-2

Pyrite (0.1%) forms grains averaging 0.03-0.2 mm in size. Several are surrounded by thin alteration rims of hematite.

Pyrrhotite (minor) forms grains averaging 0.05-0.15 mm in size; many are altered completely to limonite/hematite.

Chromite (minor) forms a few angular grains 0.25 mm across.

Ilmenite (minor) and Ti-oxide (0.2%) occur in clusters up to 0.3 mm in size as grains averaging 0.03-0.07 mm in size.

### Sample 7678-3

Pyrite (2- 3%) forms subhedral to anhedral grains averaging 0.1-0.2 mm in size, with a few up to 0.6 mm across. Some grains contain irregular tiny inclusions of pyrrhotite, pentlandite(?), and chalcopyrite. A few are altered slightly to moderately along borders and fractures to hematite.

Pyrrhotite (1%) forms anhedral grains 0.05-0.15 mm in size.

Pentlandite (0.5%) forms grains averaging 0.03-0.07 mm in size intergrown with pyrrhotite and much less chalcopyrite.

Chromite (1%) forms anhedral, strongly fractured grains up to 2 mm across.

### Sample 7678-3A

Pyrite (2- 3%) forms grains averaging 0.05-0.3 mm in size, with a few up to 1.2 mm across. A few contain minor inclusions of chalcopyrite, pentlandite(?), and pyrrhotite. A few are altered on borders and along a few coarse fractures to hematite.

Pyrrhotite (minor) forms a few grains up to 0.1 mm in size, mainly intergrown with pentlandite. Some are replaced completely by hematite.

Pentlandite (minor) occurs in intergrowths with pyrrhotite, as grains from 0.05-0.1 mm in size.

Chromite (1-2%) forms strongly fractured grains up to 2 mm across.

Chalcopyrite (trace) forms minor inclusions in pyrite.

#### Sample 7678-4

Pyrrhotite (0.4%) forms grains average 0.05-0.1 mm in size, and a few clusters up to 0.6 mm long of grains averaging 0.03-0.05 mm across.

Pyrite (0.2%) forms clusters up to 0.4 mm in size of grains averaging 0.05-0.1 mm across. Some patches consist of pyrrhotite intergrown with lesser, subhedral pyrite grains averaging 0.05-0.07 mm in size.

Pentlandite (0.2%) forms anhedral grains from 0.03-0.07 mm in size, in part alone and in part intergrown coarsely with pyrrhotite.

Chromite (0.3%) forms angular grains averaging 0.1-0.3 mm in size.

#### Sample 7678-5

Pyrrhotite (0.7%) forms anhedral grains averaging 0.05-0.08 mm in size. Some are altered to secondary marcasite/pyrite and some are more strongly altered to limonite/hematite.

Pyrite (0.2%) forms subhedral to euhedral grains averaging 0.07-0.15 mm in size, with a few up to 0.5 mm across. One large grain is altered to hematite on coarse fractures. A few other grains are altered slightly on their borders to limonite/hematite.

Pentlandite (0.1%) forms anhedral grains from 0.03-0.1 mm in size, in part intergrown coarsely with pyrrhotite.

Chalcopyrite (trace) forms a few angular grains up to 0.03 mm in size intergrown with silicates.

Chromite (0.3%) forms a few ragged, slightly to strongly fractured and replaced grains from 0.1-0.8 mm in size.

Ilmenite (0.2%) forms a clusters of grains up to 0.6 mm in size associated with biotite (partly altered to muscovite). Ilmenite is replaced moderately by Ti-oxide.

#### Sample 7678-6

Pyrrhotite (2-3%) forms anhedral patches averaging 0.1-0.3 mm in size, with a few from 0.5-0.8 mm across. Several are altered moderately to strongly to secondary marcasite/pyrite and/or limonite/hematite. In the largest grain, secondary marcasite/pyrite is oriented along one crystallographic direction in pyrrhotite, and partly forms halos about narrow fractures.

Pyrite (0.3-0.5%) forms anhedral fragments from 0.1-0.2 mm in size.

#### Sample 8

Magnetite (1%) and ilmenite (2- 3%) occur in disseminated, commonly skeletal intergrowths up to 0.5 mm in size intergrown with rounded silicate grains. Oxide grains commonly are subrounded and average 0.05-0.2 mm in size. A few coarser grains of ilmenite up to 0.4 mm in size contain abundant, extremely fine grained, exsolution lenses of magnetite or hematite. Disseminated grains average 0.015-0.03 mm in size. The rock is moderately magnetic.

### Sample 8 (continued)

Sulfide grains occur alone or locally intergrown coarsely with magnetite and lesser ilmenite.

Pyrite (0.2%) forms anhedral grains averaging 0.05-0.15 mm in size. Several contain minor subrounded inclusions of chalcopyrite, and a few contain one or two inclusions of pyrrhotite-chalcopyrite. Some are rimmed by hematite.

Pyrrhotite (0.1%) forms a few patches up to 0.15 mm in size. In many patches it is altered to marcasite/pyrite or limonite/hematite.

Chalcopyrite (minor) forms grains averaging 0.02-0.05 mm in size, mainly associated with pyrite or pyrrhotite.

### Sample 9

Pyrrhotite (1- 2%) occurs in silicate (quartz?) veins as patches averaging 0.2-0.7 mm in size, with a few lenses up to 3 mm long. In several patches, it is altered strongly to marcasite/pyrite, and in a few others it is altered strongly to limonite/hematite. Pyrrhotite also forms moderately abundant disseminated grains averaging 0.01-0.02 mm in size; many of these are replaced by limonite/hematite.

Chalcopyrite (minor) forms a few anhedral grains up to 0.1 mm in size associated with pyrrhotite and a few up to 0.03 mm in size in silicate (quartz?) veins.

Ti-oxide (0.1%) forms disseminated, subrounded grains averaging 0.01 mm in size.

### Sample 10

Pyrrhotite (5- 7%) forms subrounded, irregular, locally skeletal patches averaging 1-2 mm in size. Grain size is medium. Along one side of the section, alteration is strong to secondary marcasite/pyrite. Many patches contain abundant silicate inclusions averaging 0.02-0.05 mm in size.

Chalcopyrite (trace) forms a very few grains from 0.03-0.13 mm in size in pyrrhotite.

### Sample 11

Pyrite (0.2%) forms disseminated, subhedral grains averaging 0.03-0.05 mm in size. One contains two rounded inclusions of pyrrhotite 0.007-0.01 mm across. One patch of grains up to 0.1 mm in size is replaced strongly by hematite.

Chalcopyrite (trace) forms disseminated grains up to 0.05 mm in size.

Ilmenite (1%) forms disseminated, equant grains averaging 0.05-0.15 mm in size, in part associated with Ti-oxide.

A veinlike zone up to a few mm wide is dominated by extremely fine to very fine grained aggregates of pyrite (10-12%), with locally, subhedral coarser grains up to 0.6 mm in size. Dusty to extremely fine grained silicate inclusions are common in finer grained aggregates, and much less common in coarser grains. Chalcopyrite (0.2%) forms a few anhedral, interstitial patches up to 0.2 mm in size in silicates adjacent to pyrite and a few patches up to 0.05 mm in size within pyrite.

### Sample 12

Pyrite (5- 7%) forms anhedral to subhedral aggregates of very fine grains in patches up to 1.2 mm in size. Some patches are slightly pleochroic, suggesting that the mineral is marcasite/pyrite. Most grains contain abundant tiny silicate inclusions; patches with abundant, extremely fine grained to dusty inclusions may be secondary after pyrrhotite.

Pyrrhotite (3- 4%) forms grains up to 0.5 mm in size in patches up to 1 mm in size. Many are altered to secondary marcasite/pyrite and much less non-reflective opaque.

Chalcopyrite (0.3%) forms interstitial patches in pyrite clusters, averaging 0.02-0.07 mm in size, with a few up to 0.15 mm across. A few chalcopyrite grains and patches up to 0.3 mm in size are interstitial to silicates. A few chalcopyrite-rich veinlets up to 0.07 mm wide and 1.5 mm long contain minor pyrrhotite (altered to marcasite/pyrite).

Ilmenite and Ti-oxide (1-2%) occur in patches averaging 0.1-0.3 mm in size, with grains averaging 0.03-0.05 mm in size. Ti-oxide generally is concentrated towards the margins of the patches and probably is secondary after ilmenite.

### Sample 13

Pyrite (7-8%) forms anhedral to subhedral grains averaging 0.1-1.5 mm in size in clusters up to 3 mm in size. They contain very abundant tiny silicate inclusions and a very few pyrrhotite inclusions averaging 0.01-0.02 mm in size.

Sphalerite (minor) forms a few anhedral grains up to 0.2 mm in size, with abundant exsolution blebs of chalcopyrite (0.003-0.005 mm).

Chalcopyrite (trace) forms one grain 0.03 mm across in silicate.

### Sample 14

The rock contains euhedral to subhedral pyrite cubes up to a few mm across, in part slightly intergrown with groundmass silicates.



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RT-1 Altered Olivine Gabbro; veins of Chlorite-Quartz-(Actinolite)

The rock is a medium to fine grained aggregate of plagioclase, clinopyroxene and lesser olivine and hornblende. Plagioclase is altered very strongly to epidote, olivine to serpentine, and hornblende to unknown brown minerals. The rock contains interstitial patches of quartz and tremolite. Veins and replacement patches are of dominated by chlorite; veins contain lesser quartz and minor actinolite.

plagioclase	60-65%
clinopyroxene	20-25
olivine	2- 3
hornblende	2- 3
quartz	1- 1.5
clinozoisite	minor
opaque	trace
tremolite	0.5
chlorite	4- 5
veins	
chlorite	.2- 3
quartz	0.7- 1
actinolite	0.1
carbonate	minor

Plagioclase forms subhedral to anhedral prismatic grains averaging 0.5-1.5 mm in size. Alteration is strong to complete to extremely fine grained epidote.

Clinopyroxene forms clusters up to 1.2 mm across of anhedral grains averaging 0.1-0.3 mm in size, and equant to prismatic grains from 0.5-1.5 mm long.

Olivine forms scattered subhedral to anhedral, prismatic to equant grains up to 1.5 mm in size. It is altered completely to aggregates of serpentine/chlorite.

Hornblende forms anhedral grains averaging 0.2-0.3 mm in size, commonly bordering clinopyroxene patches. It is altered completely to medium to dark brown aggregates of extremely fine grains of uncertain composition.

Quartz forms interstitial grains averaging 0.2-0.5 mm in size.

Clinozoisite forms a few patches up to 0.1 mm in size of anhedral grains. Opaque forms clusters of grains from 0.01-0.03 mm in size, mainly associated with clinozoisite or hornblende.

The rock contains a few replacement patches averaging 0.3-0.4 mm in size of very fine grained, in part radiating tremolite, either alone or intergrown irregularly with quartz.

Chlorite forms irregular replacement patches and veinlike zones up to 1 mm in size. Some of these are interstitial to clinopyroxene clusters.

Late veins up to 1 mm wide are dominated by very fine grained chlorite with minor to moderately abundant irregular aggregates of quartz concentrated near cores of veins. Light green actinolite forms very fine grained, subradiating prismatic aggregates in patches up to 0.5 mm in size intergrown coarsely with patches of quartz and of chlorite, mainly in the core of the largest vein. Carbonate forms wispy seams up to 0.01 mm wide which run irregularly along the main veins.

**RT-2 Andesite Tuff; veins of Quartz-(Ankerite)**

The rock contains angular fragments averaging 0.05-0.2 mm in size dominated by plagioclase, with lesser andesite and opaque, and minor cherty dacite fragments in an extremely fine grained groundmass of uncertain composition, probably dominated by plagioclase and lesser epidote and chlorite. Opaque (pyrite) forms a few porphyroblasts up to 0.5 mm in size. A few veins up to 0.4 mm wide are of quartz-(ankerite/limonite)

fragments	
plagioclase	30-35%
andesite	3- 4
opaque (pyrite?)	1
chlorite	0.2
dacite	0.2
clinopyroxene	trace
groundmass	55-60
opaque seams	1- 2
tremolite-(opaque) patches	1- 2
veins	
quartz-(ankerite/limonite)	1- 2

Plagioclase forms angular fragments ranging from 0.03-0.7 mm in size, averaging 0.07-0.15 mm. These appear to be fragments of phenocrysts of probable andesine composition.

Andesite forms a few fragments up to 0.5 mm in size and one large fragment up to 4 mm across. These contain minor anhedral phenocrysts of plagioclase up to 0.3 mm in size in a groundmass dominated by lathy plagioclase averaging 0.03-0.07 mm in size, with interstitial chlorite and plagioclase and minor opaque.

Opaque (possibly pyrite) forms patches from 0.05-0.8 mm in size. One lensy patch up to 0.9 mm long consists of oriented, extremely fine grained chlorite flakes.

Several fragments averaging 0.1 mm in size consist of extremely fine grained cherty dacite composed of equant grains of plagioclase/quartz.

Clinopyroxene(?) forms a few fragments averaging 0.03-0.05 mm in size.

The groundmass averages 0.003-0.005 mm in grain size. Its composition is uncertain, but probably is dominated by plagioclase, chlorite, and clinozoisite.

Tremolite forms patches up to 0.9 mm in size of subhedral to anhedral prismatic grains, in part with subradiating textures. Grains average 0.07 mm in length. The largest patch contains moderately abundant, interstitial patches of opaque averaging 0.03-0.08 mm in size.

Veins up to 0.6 mm wide are dominated by very fine grained quartz with patches up to 0.2 mm in size of very fine grained ankerite, stained orange by limonite.

The rock contains abundant angular fragments of cherty dacite, chert, an unknown calcsilicate, quartz grains and aggregates, plagioclase, andesite, and a few fragments of several minor types in a sparse, extremely fine grained groundmass of uncertain composition (possibly quartz-sericite-chlorite). Composition varies moderately between layers(?), with cherty dacite, chert, calcsilicate and quartz dominant on one side of the tremolite vein and plagioclase and andesite much more abundant on the other. A replacement vein zone up to a few mm wide is dominated by tremolite with minor quartz. A few discontinuous quartz veins and patches cut and replace the rock.

## major fragments (5-15%)

cherty dacite  
chert  
quartz aggregates  
quartz grains  
plagioclase  
andesite  
calcsilicate

## minor fragments (1-3%)

quartz diorite  
epidote  
mudstone  
volcanic glass(?)  
carbonaceous opaque  
hornblende(?)  
chalcedony  
opaque  
Ti-oxide  
spinel

Cherty dacite forms fragments up to 1 mm in size. Grain size ranges from cryptocrystalline to  $\theta.01$  mm. A few contain replacement patches of very fine grained chlorite. Slightly coarser grained fragments of dacite are dominated by plagioclase with interstitial chlorite and minor Ti-oxide.

Chert forms lensey fragments up to  $\theta.7$  mm in size. It is dominated by cryptocrystalline silica, with local patches and veinlets of extremely fine grained quartz. Numerous fragments with similar texture and grain size are dominated by an unknown pale green calcsilicate with moderate relief and low birefringence. Some of these contain minor to moderately abundant quartz/plagioclase.

Quartz forms fragments of single grains and aggregates of a few fine grains; some of these show wavy extinction. One fragment 1.5 mm long is of feathery, in part subradiating aggregates of chalcedony.

Plagioclase forms fragments of phenocrysts of andesine composition (based on mineral appearance); these are altered slightly to chlorite and/or sericite, and locally contain replacement patches of tremolite.

Andesite forms a few fragments up to  $\theta.5$  mm in size; these contain phenocrysts of plagioclase up to  $\theta.2$  mm in size in a groundmass of plagioclase with minor chlorite and opaque. One fragment is dominated by lathy, very fine grained plagioclase with interstitial chlorite.

Opaque forms equant fragments averaging  $\theta.07$ - $\theta.15$  mm in size.

Ti-oxide forms a few angular fragments up to  $\theta.2$  mm long.

Quartz diorite forms one fragment 1.2 mm across of fine grained quartz and lesser plagioclase (slightly altered to sericite).

Epidote forms a few fragments up to  $\theta.2$  mm in size.

Chlorite (after biotite) forms a few ragged flakes up to  $\theta.4$  mm long.

Hornblende(?) forms a few fragments up to  $\theta.2$  mm in size; it is deep brown in color.

Volcanic glass forms a few equant, isotropic fragments of medium brown color.

(continued)

Garnet(?) forms an elongate fragment 0.3 mm long.

Spinel forms an equant fragment 0.1 mm in size; it is medium-dark green in color, has high relief, and is isotropic.

A few fragments up to 1 mm long are of extremely fine grained mudstone, containing moderately abundant opaque intergrown with plagioclase(?) and quartz (?).

The rock is cut by a few, discontinuous, irregular veins up to 0.3 mm wide of very fine grained quartz.

The main vein zone contains an irregular border zone of extremely fine grained tremolite and epidote(?). This is replaced(?) by patches of fine to very fine grained tremolite. In the broad core are prismatic tremolite grains up to 0.6 mm in length intergrown with fine to medium grained quartz.



**RT-4 Clinopyroxenite; with Interstitial Patches and Veins of Tremolite-(Spinel[?]-Pyrite)**

The rock is a massive, medium to fine grained clinopyroxenite dominated by clinopyroxene of diopside composition. The rock is deformed slightly by fracturing and warping of grains; pyroxene is replaced on grain borders and along fractures by tremolite, and lesser spinel(?) and pyrite. A braided vein along one side of the sample is of similar replacement mineralogy.

clinopyroxene (diopside)	88-92%
tremolite	5- 7
spinel(?)	0.3
pyrite/limonite	0.2 —
opaque (oxide?)	0.1
vein	
tremolite-(spinel[?]-pyrite)	2- 3

Clinopyroxene forms anhedral, equant grains averaging 0.3-1.5 mm in size. Most contain minor to moderately abundant, extremely fine grained lenses and patches of secondary tremolite. Some grains contain abundant disseminated dusty opaque (probably ilmenite).

Interstitial patches up to 1 mm in size are dominated by very fine grained, equant to locally prismatic tremolite, with interstitial patches of spinel(?) and of pyrite. Tremolite also forms a few prismatic grains up to 0.2 mm long within clinopyroxene grains.

Spinel(?) forms anhedral, equant grains averaging 0.03-0.1 mm in size. It has moderately high relief, is medium to dark green in color, and isotropic. The anhedral shape is atypical of spinel, but the optical properties do not fit any other common mineral. Opaque (probably pyrite) forms anhedral grains averaging 0.03-0.15 mm in size. It is altered slightly to limonite, which forms wispy seams in areas of pyrite grains.

The vein zone is up to 1.2 mm wide. It contains relic patches of clinopyroxene surrounded by very fine grained tremolite, with lesser spinel(?) and pyrite/limonite as in the interstitial patches. Pyrite is altered strongly to limonite in the vein zone, and secondary limonite forms seams along the length of the vein.

**RT-5 Porphyritic Andesite/Basalt, Pyrite patches, Chlorite Amygdules; Contact with Andesite Tuff (at one end)**

The rock contains phenocrysts of plagioclase and clusters of plagioclase phenocrysts and lesser opaque and minor Ti-oxide in an extremely fine grained groundmass dominated by lathy plagioclase with interstitial chlorite and Ti-oxide. ~~Replacement patches are of pyrite.~~ Amygdules are of chlorite. At one end of the section is a contact with andesite tuff (as in Sample RT-2)

phenocrysts	
plagioclase	7- 8%
pyrite	1- 2 (includes replacement patches)
Ti-oxide	0.2
groundmass	
plagioclase	55-60
chlorite	<u>25-30</u>
Ti-oxide	1.5- 2
amygdules	
chlorite	1- 1.5
andesite tuff	2- 3

Plagioclase forms clusters up to 2 mm in size of subhedral prismatic to equant phenocrysts from 0.5-1.2 mm in size. Clusters commonly contain grains or aggregates of pyrite up to 1 mm in size, in part interstitial to plagioclase, and in part possibly replacing original mafic minerals. Some patches up to 1.2 mm in size of pyrite probably are of replacement origin.

Ti-oxide forms equant, subhedral to anhedral grains averaging 0.1-0.15 mm in size, in part alone, and in part associated with clusters of plagioclase and opaque.

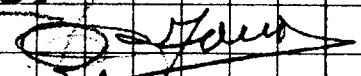
The groundmass is dominated by lathy plagioclase grains averaging 0.05 mm in length. Interstitial to plagioclase is extremely fine grained, pale green chlorite. Ti-oxide is concentrated in rings and irregular seams; these outline a faint spheroidal to polygonal structure, with spheroids and polygonal patches averaging 0.3-1 mm in size.

Chlorite forms irregular, commonly lency amygdules up to 1.2 mm in length. Grain size ranges up to 0.08 mm, with coarser grains commonly in cores of amygdules, and oriented perpendicular to walls of amygdules.

The andesite tuff contains abundant angular fragments mainly of plagioclase averaging 0.05-0.1 mm in size surrounded by extremely fine grained groundmass. Opaque forms irregular disseminated patches up to 0.2 mm in size. Epidote forms cryptocrystalline replacement patches and seams, and is most abundant along the contact of the andesite/basalt.

CULTUS NORTH CLAIM  
PETROGRAPHIC & GEOCHEMICAL  
STUDIES OF PYRRHOTITES &  
SERPENTINITES.

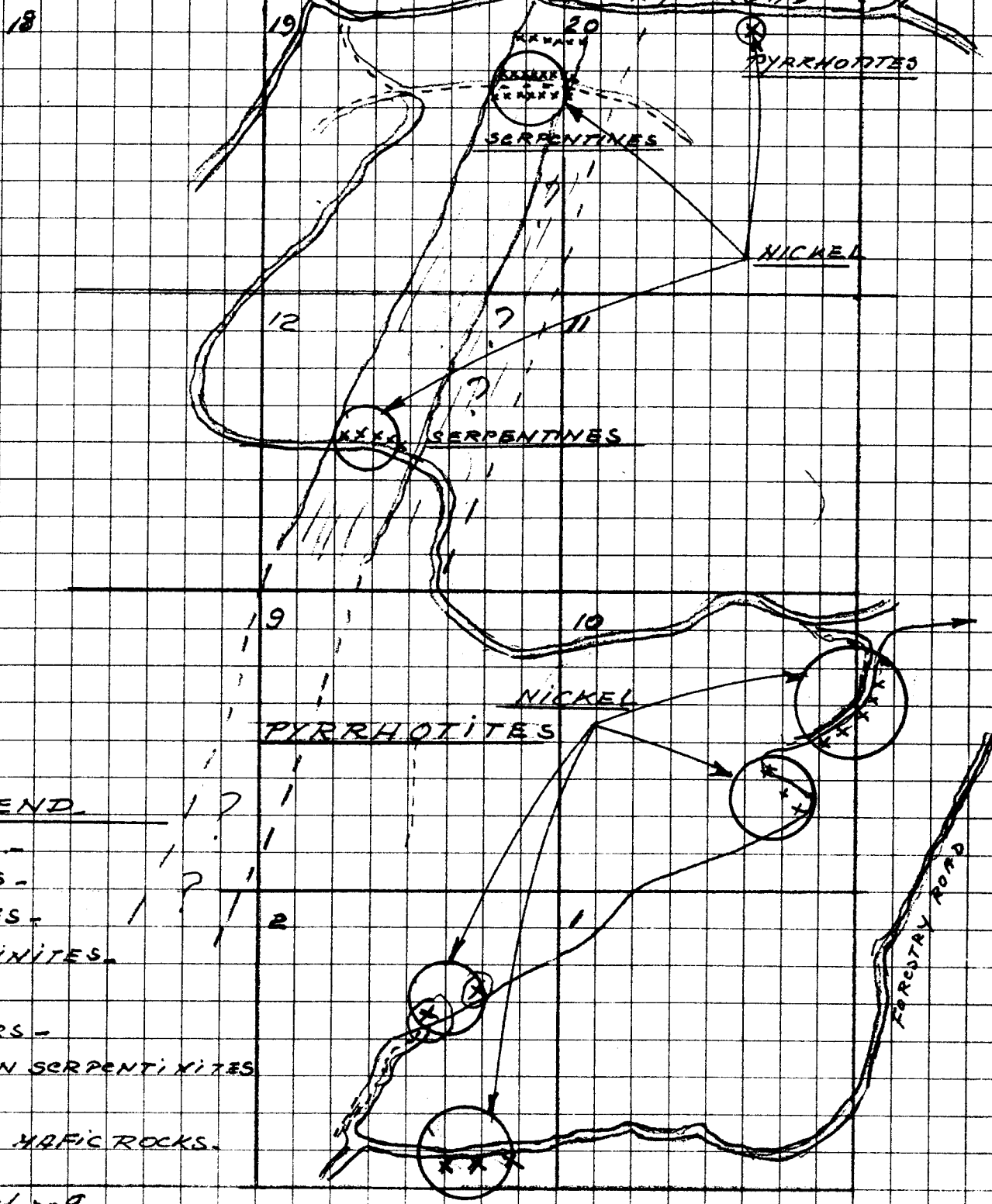
SCALE 1CM = 500M



Map 1990.

HWY to claim

FORESTRY ROAD



LEGEND.

- ROADS -
- CREEKS -
- SAMPLES -
- SERPENTINITES -
- DYKE -
- BOULDERS -
- NICKEL IN SERPENTINITES
- NICKEL IN MAFIC ROCKS.

Map no 9

CULTUS-NORTH CLAIM,  
ROCK GEOCHEM SURVEY - CREEK NO 1  
SAMPLES LOCATION, NI PROSPECT,  
SCALE 10CMS = 500M.  
FROM 1988 DIARY.

NORTH

12

11

*John*  
11/1/90

CRIT  
TO  
CULTUS  
LAKE.

TO YARROW

10

LEGEND

- CREEK.
- ROAD.
- L.C. POST.
- SAMPLE LOCATION
- BOULDER.
- 12 UNIT NO
- SANDSTONES
- MAFIC ROCKS
- SMALL ROAD FOR CATERPILLARS.

PETROGRAPHIC  
SAMPLES.

ULTRA-BASICS  
CREEK NO 1

2

1st UNIT

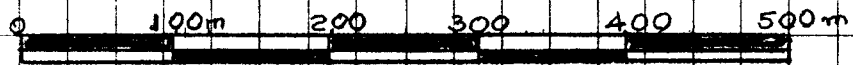
ULTRA-BASICS

MAFIC ROCKS

S12 S13 S14

MAFIC R.

FORESTRY ROAD  
TO CULTUS LAKE



HAP M05

BAR SCALE

PETROGRAPHIC STUDIES  
CULTUS NORTH CLAIM

~~W. HUNT~~  
MAY 1990

S No	UNIT No	CREEK	OTHER LOCATION	MINERALS	REMARKS
					NO OF TIN-SECTION
1	9	No 1	SAMPLES TAKEN IN CREEK NO 1	PYRRHOTITES. PENTLANDITE.	7678 - 1
2	9	No 1	also IN CUTS IN	PYRRHOTITE	7678 - 2
3	9	No 1	ROCK ON THE BRNKS	PYRRHOTITE PENTLANDITE	7678 - 3
3A	9	No 1		PYRRHOTITE PENTLANDITE	7678 - 3A
4	9	No 1		PYRRHOTITE PENTLANDITE	7678 - 4
5	9	No 1		PYRRHOTITE PENTLANDITE	7678 - 5
6	9	No 1		PYRRHOTITE	7678 - 6
7	9	No 1		PYRRHOTITE CHALCOPYRITE	7678 - 7
8	9	No 1		PYRRHOTITE CHALCOPYRITE.	7678 - 8
9	9	No 1		PYRRHOTITE. CHALCOPYRITE.	7678 - 9
10	8	Boulder	RIGHT BANK OF CREEK NO 1.	PYRRHOTITE	7678 - 10
11	1	Boulder	HUGE BLDERS ULTRABASIC TOP	PYRITES-CHALCOP.	7678 - 11
12	1	ROAD-BED-ROCK	MAFIC ROCK	PYRITE-CHALCOPY. TOP	7678 - 12
13	1	ROAD-B-R	IN DITCH	PYRITE-CHALCOP. TOP	7678 - 13
14	1	ROAD-B-R	IN DITCH ALL IN PLACE	PYRITE TOP	7678 - 14

PYRRHOTITE MOST ABUNDANT MINERAL WITH PENTLANDITE, MAGNETITE, ILMENITE, CHALCOPYRITE PYRITES.

## 5:0 GEOCHEMISTRY

5:1 Bondar Clegg & Kamloops Laboratory - Semi-Quantitative  
Analyses

Kamloops Laboratory - Bondar Clegg Laboratory.

The two laboratories in 1982 examined the same nature of samples taken at the time during the early prospecting done on the Vedder Mountain. It was the beginning of the explorations and the exact location of the geologies were not recognized. We were trying to know if the mineralogy was responsive also to see if the values found were simply erratic.

The two analyzed samples are showing positively the presence of Copper, Nickel and Cobalt with high anomalous readings in that area.

Also, the location of the samples are exactly following the same direction of the main fault situated on sketch maps in this report.

Also, these semi-quantitative analyses of the two samples are confirming the presence of base metals on the Vedder formations.

## 5:0 GEOCHEMISTRY

5:1 Bondar Clegg & Kamloops Laboratory - Semi-Quantitative  
Analyses (continued)

Semi - quantitative spectrographic analyses.

The samples analyzed here have been taken on the contiguous line between Cultus-North and Mwito No 2 claims, in unit No 2 of the Mwito No 2 claims.

Sample Ku-82:	PPM Kamloops Lab	PPM Bondar-Clegg
Cu	200	60 ppm
Fe	10	
Ni	3,000	0.3 - 6#
Co	300	200 ppm
Cr	2,000	2,700 ppm
Mn	3,000	2,700 ppm
B	500	200 ppm
Mg	7	3 - 10 %
Si	20	3 - 10 %

See locations on Map No 6

The two analyses by two different laboratories are similar and suggest more exploration for the metals on the Cultus-North and Mwito No 2 claims. Exploration will be done in 1991.



# BONDAR-CLEGG & COMPANY LTD.

130 PEMBERTON AVE. NORTH VANCOUVER, B.C. V7P 2R5 PHONE 985 0681 TELEX 04-35266

*3.10% of  
Moly - Sum el  
Mnito - claims  
Gill-82*

## SEMI-QUANTITATIVE ANALYSIS

No: 122

Sample No.: *1 sample*

From: Mr. Fritaux

Method: *SC 700 W* KA-82 XRF and E SPEC

Date: June 10

No. of Elements: 35

Analyst:

TRACE ELEMENTS (%)	< 0.03	0.03 - 0.1	0.1 - 0.3	0.3 - 0.1	<u>0.1 - 1</u>	0.5 - 1.0	1.0 - 3.0	3.0 - 10.0	> 10.0
Ag									
Cu									
Pb									
Zn									
Mo									
Fe									
W									
Ni									
Co									
Cr									
As									
Sb	X								
Mn									
V	X								
Bi	X								
Sn	X								
Zr	X								
B		X							
Ba	X								
Be	X								
La	X								
Nb	X								
Sr	X								
Y									
Ce									
U									
Tl									

*Y*

*X 2700 ppm  
3000 ppm  
Kam Electro Lab*

*X 2700 ppm  
2000 ppm  
Kam Electro Lab*

*X 90*

*\* 90*

*(9)*

*27/10*



**KAMLOOPS**  
**SEARCH & ASSAY**  
**LABORATORY LTD.**

**B.C. CERTIFIED ASSAYERS**

912-1 LAVAL CRESCENT — KAMLOOPS, B.C.  
 V2C 5P5  
 PHONE: (604) 372-2784 — TELEX: 048-8320



To Mr. R. Trifaux  
 308-751 Charles Rd.,  
 Coquitlam, B.C.  
 V3J 3Y3

Date: June 23, 1982

File No.: G 685

**SEMI-QUANTITATIVE SPECTROGRAPHIC ANALYSIS CERTIFICATE**

Fe, Mg, Ca, Ti, Na, K, Si, Al and P reported in %; all other elements reported in ppm.

Element	Average for Earth's Crust	Lower Detection Limit	Sample #	Sample #	Element	Average for Earth's Crust	Lower Detection Limit	Sample #	Sample #
			19K	K4-82				19K	K4-82
Au	.004	0	N	N	Zr	102	10	100	N
Ag	.08	.5	N	N	B	9	10	15	500
Cu	68	5	100	200	Ba	390	10	200	N
Pb	13	10	200	N	Be	2	1	2	N
Zn	76	200	1000	N	La	34.6	20	N	N
Mo	1.2	5	N	N	Nb	20	10	10	N
Fe	5.08%	0.05%	10.0	10.0	Sc	25	5	20	N
W	1.2	50	N	N	Sr	384	100	500	N
Ni	99	5	150	3000	Y	31	10	50	N
Co	29	10	50	300	Ca	4.66%	0.05%	4.0	0.07
Cr	122	10	200	2000	Mg	2.34%	0.02%	3.0	7.0
Cd	.16	10	N	N	Ti	6320	.001%	61.0	0.00
As	1.8	200	N	N	Na	2.1%	.02%	5.0	N
Sb	.2	100	N	N	K	1.8%	.5%	N	N
Mn	1060	10	1500	3000	Si	27.3%	1%	30.0	20.0
V	136	10	300	20	Al	8.36%	.5%	10.0	N
Bi	.0082	10	N	N	P	1120	.1%	0.2	N
Sn	2.1	10	N	N					

Ni  
Co  
Cu

N — Not detected

G — Greater than value shown

L — Detected but below limit of determination

This certificate refers to analysis performed by Speccomp Services.

Values expressed in these analyses may be considered accurate to within plus or minus 35 to 50% of the amount present.

Signed

## 5:0 GEOCHEMISTRY

## 5:2 Min-En Laboratories - Results

## Min-En Laboratories - Certificate OV-0440-RG1 - Rocks

SAMPLE #	AU ppb	AG ppm	AS ppm	CU ppm	MO ppm	PB ppm	SB ppm	ZN ppm	HG ppm
MI - 2									
05-90	4	0.3	3	64	25	34	1	89	5
06-90	2	0.9	2	62	7	16	1	43	5
07-90	1	0.8	3	65	14	23	1	169	5
08-90	2	0.7	9	52	4	20	1	41	5
09-90	3	0.5	12	83	30	27	1	93	5
10-90	1	0.6	10	65	10	26	1	85	5
11-90	2	0.3	6	118	6	17	2	47	10
12-90	3	0.5	8	58	17	15	1	91	5
13-90	4	0.2	4	75	5	19	2	62	5
9 Samples	100%	100%	100%	100%	100%	100%	100%	100%	100%

The presence of Gold is in every sample without being anomalous. Arsenic is anomalous in each sample, highly anomalous in samples # 4, 5 and 6.

Silver is anomalous in all the samples, pathfinder in porphyry. Copper deposit - Igneous rocks (55 ppm). The rocks analyzed are from the igneous types. All samples are anomalous in Cu, except No 4 which anomalous in No 7.

## 5:0 CHEMISTRY

## 5:2 Min-En Laboratories - Results (continued)

Molybdenum - igneous rock - 1.5 average - Mafic 1 ppm to 2 ppm.

All the samples are anomalous and 100 % high, pathfinders for Cu deposits - the two associations of Cu and Mo in the prospect. Au good indication for a porphyry copper deposit.

Lead - Igneous rocks - Av 13 - Mafic 5 - Inter 15 to 20

It is in this type of rocks (igneous) Pb is definitely anomalous in all samples.

Antimony - (stibnite) all samples are anomalous with same average values in all rock types as .02 ppm. In this case they are relatively low.

Zinc - in igneous rocks the average is 70 ppm. We have 5 samples with anomalous readings, one highly anomalous only.

Mercury - Hg in igneous rocks has an average of 0.08 ppm. All the samples are highly anomalous in Hg. It is a pathfinder for base metals. It is also present as a pathfinder for Sb and As.

## 5:0 GEOCHEMISTRY

## 5:2 Min-En Laboratories - Results (continued)

Quarry situated on Muito No 1 and No 2 claims on the Vedder mountain. Purpose of survey was to locate anomalies related to mineralization.

Variations of Commodities Concentrations

SAMPLE	AU ppb	AG ppm	CU ppm	ZN ppm	HG ppb
1.89-R	31	0.62	1,300	1,300	90
2.89-R	93	2.1	4,000	1,600	110
3.89-R	62	2.1	2,970	2,800	90
4.89-R	2,233	5.27	19,200	200	40
5.89-R	31		540	200	60
6.89-R	31		540		60
7.89-R	5	0.31	225		60
8.89-R	31	0.93	650	4,650	430
9.89-R	5	0.62	1,350	3,200	170
10.89-R	31	0.31	1,800	3,200	130
8A.89-R	31	1.24	570	1,200	200

Report A 8914425 - Chemex Labs. Ltd. Line 2

Geochemical anomalies discovered in 1989 by R. Trifaux.

This is line No 2 in the middle of the quarry. Gold, Silver, Copper and Zinc are highly anomalous. The geology north of the quarry, on the claims Muito 1 and 2 is the same. Greenstones with chlorite and sulfides, pyrites, marcasites? Dark green rock, hard with hornblende some with deep ferruginous oxidations.

5:0 GEOCHEMISTRY

5:2 Min-En Laboratories - Results (continued)

Au - ppb		Relative Frequency		Cu - ppm		Zn - ppm	
		Ag - ppm					
0 - 5 = 2		0.1 - 0.5 = 2		0 - 100 = 0		1 - 120 = 0	
6 - 10 = 0		0.6 - 1.0 = 3		101 - 200 = 0		121 - 200 = 2	
11 - 20 = 0		1.1 - 2 = 1		201 - 400 = 1		201 - 1000 = 0	
21 - 30 = 0		2.1 - 3 = 2		401 - 500 = 0		1001 - 1200 = 1	
31 - 60 = 6		3.1 - 4 = 0		501 - 600 = 3		1201 - 1300 = 1	
62 - 90 = 1		4.1 - 5 = 0		601 - 700 = 1		1300 - 1600 = 1	
93 - 100 = 1		5.1 - 6 = 1		701 - 1100 = 0		2001 - 2800 = 1	
2233 = 1				1101 - 1300 = 1		2801 - 3000 = 0	
There is some insight				1301 - 1700 = 1		3001 - 3200 = 2	
into the nature of the				1701 - 1800 = 1		4650 = 1	
underlying distribution				1801 - 3000 = 1			
				3001 - 4000 = 1			
				19,200 = 1			

HG

1 - 10 = 0
11 - 40 = 1
41 - 60 = 3
61 - 90 = 2
91 - 110 = 1
111 - 130 = 1
131 - 170 = 1
171 - 200 = 1
201 - 300 = 0
301 - 430 = 1

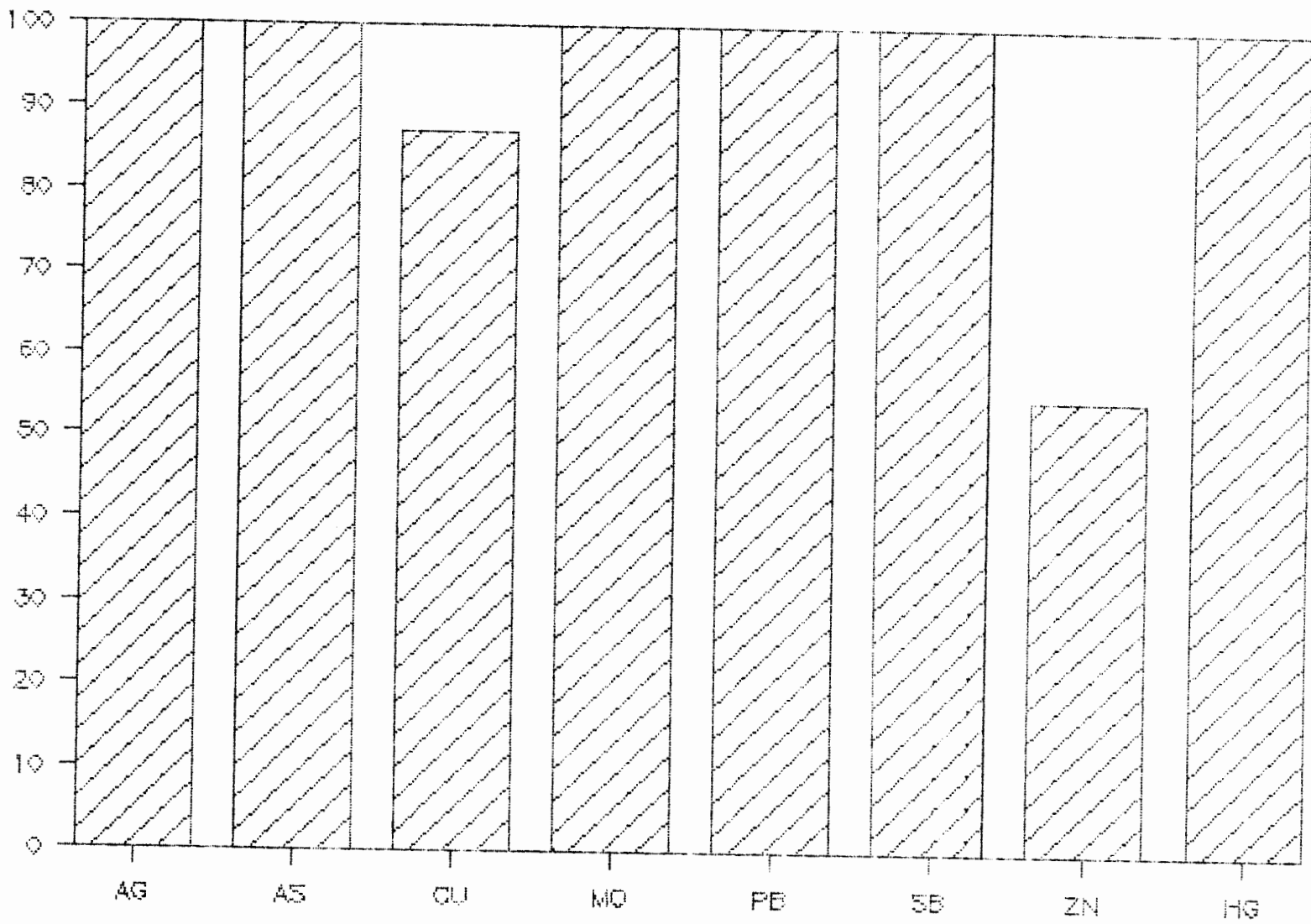
Cu - there are more high values

Ag - 7 high values

Zn - 7 higher values

Hg - 11 higher values

HISTOGRAM





Geochemical Analysis Certificate

0V-0440-RG1

Company: **R. TRIFAUX**  
Project: MW1-2 P.O.#3  
Attn: R. TRIFAUX

Date: MAY-09-90  
Copy 1. R. TRIFAUX, COQUITLAM, B.C.

**We hereby certify** the following Geochemical Analysis of 9 ROCK samples submitted MAY-04-90 by R. TRIFAUX.

Sample Number	AU-FIRE PPB	AG PPM	AS PPM	CU PPM	MO PPM	PB PPM	SB PPM	ZN PPM	H6 PPB
ME 5-90 MW1 2 S ND1	4	0.3	3	64	25	34	1	89	5
ME 6-90 MW1 2 S ND2	2	0.9	2	62	7	16	1	43	5
ME 7-90 MW1 2 S ND3	1	0.8	3	65	14	23	1	169	5
ME 8-90 MW1 2 S ND4	2	0.7	9	52	4	20	1	41	5
ME 9-90 MW1 2 S ND5	3	0.5	12	83	30	27	1	93	5
ME10-90 MW1 2 S ND6	1	0.6	10	65	10	26	1	85	5
ME11-90 MW1 2 S ND7	2	0.3	6	118	6	17	2	47	10
ME12-90 MW1 2 S ND8	3	0.5	8	58	17	15	1	91	5
ME13-90 MW1 2 S ND9	4	0.2	4	75	5	19	2	62	5

Certified by \_\_\_\_\_

MIN-EN LABORATORIES

5:0 GEOCHEMISTRY

5:3 Chemex Labs - Comments on Results

Chemex Labs Ltd. - Certificate of Analyses # 9012302, 09015409

SAMPLE #	AU ppb	AS ppm	AG ppm	CO ppm	CU ppm	MN ppm	MO ppm	NI ppm	PB ppm	ZN ppm	SB ppm
-----											
2302											
1	27	1	<0.5	14	70	400	<1	42	<5	76	
2	6	2	<0.5	24	367	385	<1	59	<5	112	
3	6	1	<0.5	17	78	595	<1	67	<5	48	
4	<1	3	<0.5	63	216	405	2	56	<5	106	
5	2	4	<0.5	10	65	900	2	31	5	94	
6	4	1	<0.5	12	31	410	<1	59	<5	58	
7	<1	1	<0.5	8	63	185	<1	14	<5	20	
-----											
5409											
1	5		<0.5	25	95	690	3	50	2	146	
5408											
1	0.03 gr		<0.5	32	65	520	<1	44	4	114	
3	<0.03 gr		<0.5	31	64	555	<1	26	4	58	
5	<0.03 gr		<0.5	40	90	670	<1	24	2	66	
7	<0.03 gr		<0.5	41	134	545	<1	25	<2	62	
8	0.03 gr		<0.5	30	1485	280	<1	40	2	46	
9	<0.03 gr		<0.5	25	75	420	<1	39	2	100	
11	0.03 gr		<0.5	17	64	1000	<1	43	2	80	
-----											
	245	2	0.8		270		<1		7	50	



## 5:0 GEOCHEMISTRY

## 5:3 Chemex Labs - Comments on Results (continued)

This is a greenstone belt. On the south of the quarry, an epithermal formation with high values in Au, Ag, Cu, Zn has been recognized in part. (Cultus-North claims 1988-89)

## Positive Correlations:

Frequency of anomalous Gold values - 9 on 11 samples

Frequency of anomalous Silver values - 8 on 11 sample

Frequency of anomalous Copper values - 11 on 11 samples

Frequency of anomalous Zinc values - 9 on 11 samples

Frequency of anomalous Mercury values - 11 on 11 samples

5:0 GEOCHEMISTRY

5:3 Chemex Labs - Comments on Results (continued)

Chemex Lab

Gold - Au is present in all the samples and in six samples anomalous and highly anomalous with good readings of 30 ppb in three samples and one with 27 ppb.

Arsenic - As is anomalous in all samples where it has been asked in the analyses.

Silver - Ag is poor in all the samples

Cobalt - Co - igneous type of rock, average 25 ppm. Anomalous in one sample with 63 ppm. Anomalous in 5 others, but slightly.

Copper - Cu highly anomalous in four samples with a high of 1485 ppm. Anomalous above 55 ppm in 10 samples - one sample not anomalous.

Molybdenum - Mo is low in the samples.

Nickel - Ni is low in the samples

Lead - Pb is very low in all samples

Zinc - Zn has three samples anomalous above threshold of 112 ppm.

## 5:0 GEOCHEMISTRY

## 5:3 Chemex Labs - Comments on Results (continued)

Rank of Values in order of increasing magnitudes - Table # 1

---

Quarry No 1 - 11 samples

AU ppb	AG ppm	CU ppm	ZN ppm	HG ppb
5	0.31	225	200	40
5	0.31	540	200	60
31	0.62	540	1,200	60
31	0.62	570	1,300	60
31	0.93	650	1,600	90
31	1.24	1,300	2,800	90
31	2.1	1,350	3,200	110
31	2.1	1,800	3,200	130
62	5.27	2,970	4,650	170
93		4,000		200
2,223		19,200		430

## Regional Values - Threshold:

Au - 5 ppb - 9 out of 11 above 5 ppb

Ag - 0.1 ppm - 9 out of 11 above 0.1 ppm

Cu - 100 ppm - 11 out of 11 above 100 ppm

Zn - 120 ppm - 11 out of 11 above 120 ppm

Hg - 10 ppb - 11 out of 11 above 10 ppb

With the regional threshold approximately known in the area, the level of localized concentrations of values in each element, is very well above the regional level know at this time.



# Chemex Labs Ltd.

Analytical Chemists \* Geochemists \* Registered Assayers  
212 Brooksbank Ave., North Vancouver  
British Columbia, Canada V7J 2C1  
PHONE: 604-984-0221

To: TRIFCO MINERALS LTD.

308 - 751 CLARKE RD.  
COQUITLAM, BC  
V3J 3Y3

A9012302

Comments:

**CERTIFICATE**

**A9012302**

TRIFCO MINERALS LTD.

Project: MW-1&2  
P.O.#: 201

Samples submitted to our lab in Vancouver, BC.  
This report was printed on 16-MAR-90.

## SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
205	7	Geochem ring to approx 150 mesh
294	7	Crush and split
298	7	ICP: Aqua regia digestion

## ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
101	7	Au ppb: Fuse 10 g sample	FA-NAA	1	10000
13	7	As ppm: HNO <sub>3</sub> -aqua regia digest	AAS-HYDRIDE/EDL	1	10000
1005	7	Ag ppm: 9 element, soil and rock	ICP-AES	0.5	200
1929	7	Co ppm: 9 element, soil & rock	ICP-AES	1	10000
1931	7	Cu ppm: 9 element, soil & rock	ICP-AES	1	10000
1932	7	Fe %: 9 element, soil & rock	ICP-AES	0.01	15.00
1937	7	Mn ppm: 9 element, soil & rock	ICP-AES	5	10000
1938	7	Mo ppm: 9 element, soil & rock	ICP-AES	1	10000
1940	7	Ni ppm: 9 element, soil & rock	ICP-AES	1	10000
1004	7	Pb ppm: 9 element, soil and rock	ICP-AES	5	10000
1950	7	Zn ppm: 9 element, soil & rock	ICP-AES	2	10000



# Chemex Labs Ltd.

Analytical Chemists \* Geochemists \* Registered Assayers  
212 Brooksbank Ave., North Vancouver  
British Columbia, Canada V7J 2C1  
PHONE: 604-984-0221

To: TRIFCO MINERALS LTD.

308 - 751 CLARKE RD.  
COQUITLAM, BC  
V3J 3Y3

A9015408

Comments:

**CERTIFICATE**

**A9015408**

TRIFCO MINERALS LTD.

Project: MWI-1  
P.O. #: 3

Samples submitted to our lab in Vancouver, BC.  
This report was printed on 24-MAY-90.

## SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
208	7	Assay ring to approx 150 mesh
294	7	Crush and split (0-10 pounds)
238	7	NITRIC-AQUA REGIA DIGESTION

## ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
999	7	Au g/tonne: 1 assay ton	FA-AAS	0.03	500.00
1005	7	Ag ppm: 9 element, soil and rock	ICP-AES	0.5	200
1929	7	Co ppm: 9 element, soil & rock	ICP-AES	1	10000
1931	7	Cu ppm: 9 element, soil & rock	ICP-AES	1	10000
1932	7	Fe %: 9 element, soil & rock	ICP-AES	0.01	15.00
1937	7	Mn ppm: 9 element, soil & rock	ICP-AES	5	10000
1938	7	Mo ppm: 9 element, soil & rock	ICP-AES	1	10000
1940	7	Ni ppm: 9 element, soil & rock	ICP-AES	1	10000
1004	7	Pb ppm: 9 element, soil and rock	ICP-AES	5	10000
1950	7	Zn ppm: 9 element, soil & rock	ICP-AES	2	10000



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A9015409

Comments:

**CERTIFICATE** **A9015409**

TRIFCO MINERALS LTD.

Project: MWI-1  
 P.O. #: 3

Samples submitted to our lab in Vancouver, BC.  
 This report was printed on 24-MAY-90.

SAMPLE PREPARATION		
CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
205	1	Geochem ring to approx 150 mesh
294	1	Crush and split (0-10 pounds)
238	1	NITRIC-AQUA REGIA DIGESTION

ANALYTICAL PROCEDURES					
CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
983	1	Au ppb: Fuse 30 g sample	FA-AAS	5	10000
1005	1	Ag ppm: 9 element, soil and rock	ICP-AES	0.5	200
1929	1	Co ppm: 9 element, soil & rock	ICP-AES	1	10000
1931	1	Cu ppm: 9 element, soil & rock	ICP-AES	1	10000
1932	1	Fe %: 9 element, soil & rock	ICP-AES	0.01	15.00
1937	1	Mn ppm: 9 element, soil & rock	ICP-AES	5	10000
1938	1	Mo ppm: 9 element, soil & rock	ICP-AES	1	10000
1940	1	Ni ppm: 9 element, soil & rock	ICP-AES	1	10000
1004	1	Pb ppm: 9 element, soil and rock	ICP-AES	5	10000
1950	1	Zn ppm: 9 element, soil & rock	ICP-AES	2	10000



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To: TRIFCO MINERALS LTD.  
308 - 751 CLARKE RD.  
COQUITLAM, BC  
V3J 3Y3

Page Number : 1  
Total Pages : 1  
Invoice Date : 16-MAR-90  
Invoice No. : I-9012302  
P.O. Number : 201

Project : MW-1&2  
Comments :

## CERTIFICATE OF ANALYSIS A9012302

*Big quarry*

SAMPLE DESCRIPTION	PREP CODE	Au NAA ppb	As ppm	Ag ppm	Co ppm	Cu ppm	Fe %	Mn ppm	Mo ppm	Ni ppm	Pb ppm	Zn ppm			
MW-CHE NO. 1	205 294	27	1	< 0.5	14	70	3.18	400	< 1	42	< 5	70	Munito 1 - Big quarry		
MW-CHE NO. 2	205 294	6	2	< 0.5	24	367	3.75	385	< 1	59	< 5	112	Munito 1 "		
MW-CHE NO. 3	205 294	6	1	< 0.5	17	78	3.07	595	< 1	67	< 5	88	Munito 2 "		
MW-CHE NO. 4	205 294	1	3	< 0.5	63	216	4.42	405	2	56	< 5	106	Munito 2 = "		
MW-CHE NO. 5	205 294	2	4	< 0.5	10	65	4.40	900	2	31	5	94	Munito 2 = "		
MW-CHE NO. 6	205 294	4	1	< 0.5	12	31	2.57	410	< 1	59	< 5	58	Munito 2 road cut		
MW-CHE NO. 7	205 294	4	1	< 0.5	8	63	1.19	185	< 1	14	< 5	20	Road cut - near quarry no. 1		

*Munito - no. 2. 3  
Big quarry  
Munito 2 west of L Post  
1st digging*

CERTIFICATION: B. Coughlin



# Chemex Labs Ltd.

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 212 Brooksbank Ave., North Vancouver  
 British Columbia, Canada V7J 2C1  
 PHONE: 604-984-0221

To: TRIFCO MINERALS LTD.

308 - 751 CLARKE RD.  
 COQUITLAM, BC  
 V3J 3Y3

Project : MWI-1  
 Comments:

5:5

PAGE 56

Page Number : 1  
 Total Pages : 1  
 Invoice Date : 24-MAY-90  
 Invoice No. : I-9015408  
 P.O. Number : 3

## CERTIFICATE OF ANALYSIS A9015408

SAMPLE DESCRIPTION	PREP CODE	Au g/tonne	Ag ppm	Co ppm	Cu ppm	Fe %	Mn ppm	Mo ppm	Ni ppm	Pb ppm	Zn ppm
CH-6-S.NO1 <i>Mwito 1</i>	208 294	0.03	< 0.5	32	65	3.20	520	< 1	44	4	114
CH-8-S.NO3 <i>Mwito 1</i>	208 294	< 0.03	< 0.5	31	64	3.26	555	< 1	26	4	58
CH-9-S.NO5 <i>Mwito 1</i>	208 294	< 0.03	< 0.5	40	60	4.20	670	< 1	24	2	66
CH-10-S.NO7 <i>Mwito 1</i>	208 294	< 0.03	< 0.5	41	134	3.70	545	< 1	25	< 2	62
CH-11-S.NO8 <i>Mwito 1</i>	208 294	0.03	< 0.5	30	1485	8.03	280	< 1	40	2	46
CH-12-S.NO9 <i>Mwito 1</i>	208 294	< 0.03	< 0.5	25	75	2.81	420	< 1	39	2	100
CH-13-S.NO11 <i>Mwito 1</i>	208 294	0.03	< 0.5	17	64	5.02	1000	< 1	43	2	80

*Mwito 1.*

CERTIFICATION:

*Mark Vank*





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308 - 751 CLARKE RD.  
COQUITLAM, BC  
V3J 3Y3

Project : MWI-1  
Comments:

Page Number : 1  
Total Pages : 1  
Invoice Date : 24-MAY-90  
Invoice No. : I-9015409  
P.O. Number : 3

## CERTIFICATE OF ANALYSIS A9015409

SAMPLE DESCRIPTION	PREP CODE		Au ppb FA+AA	Ag ppm	Co ppm	Cu ppm	Fe %	Mn ppm	Mo ppm	Ni ppm	Pb ppm	Zn ppm
CH-7-S.NO2	205	294	5	< 0.5	25	95	3.62	690	3	50	2	146
						<i>Murito mol.</i>						

CERTIFICATION: 



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To: TRIFCO MINERALS LTD.

308 - 751 CLARKE RD.  
 COQUITLAM, BC  
 V3J 3Y3

Page Number : 1  
 Total Pages : 1  
 Invoice Date: 1-MAY-90  
 Invoice No. : I-9014545  
 P.O. Number : 2-90

Project : CU-NO  
 Comments:

**CERTIFICATE OF ANALYSIS**      **A9014545**

SAMPLE DESCRIPTION	PREP CODE	Au ppb RUSH	Ag ppm Aqua R	As ppm	Cu ppm	Mo ppm	Pb ppm	Sb ppm	Zn ppm		
CH-NO-10-90 CUN	255 295	10	< 0.2	1	500	< 1	< 1	< 0.2	56		
CH-NO-11-90-CUN	255 295	245	0.8	2	270	< 1	7	< 0.2	50		
										Level 1 - West outcrops of Munito <sup>2</sup> cl. a normal as } Cu 1st Sample taken	

CERTIFICATION: Hart Bickler



# Chemex Labs Ltd.

Analytical Chemists \* Geochemists \* Registered Assayers  
212 Brooksbank Ave., North Vancouver  
British Columbia, Canada V7J 2C1  
PHONE: 604-984-0221

To: TRIFCO MINERALS LTD.  
308 - 751 CLARKE RD.  
COQUITLAM, BC  
V3J 3Y3

Page Number : 1  
Total Pages : 1  
Invoice Date: 24-MAY-90  
Invoice No. : I-9015412  
P.O. Number : 3

Project : CU.NO LEVEL 1  
Comments:

## CERTIFICATE OF ANALYSIS A9015412

SAMPLE DESCRIPTION	PREP CODE	Au ppb FA+AA	Ag ppm Aqua R	As ppm	Bi ppm	Co ppm	Cu ppm	Fe %	Mn ppm	Mo ppm	Ni ppm	Pb ppm	Sb ppm	Zn ppm
CH-14-R-S. NO4	205 294	45	0.2	1	< 0.1	20	95	5.61	1205	< 1	22	4	0.2	102
							<i>Mwito no1</i>							

CERTIFICATION: *Therik Vonk*

CULTUS LAKE ROAD.

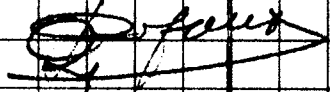
VEDDER MOUNTAIN

MWITO No 1 and No 2

REPORTS CHEMEX-A 904545-

SCALE 1CM = 100M

MAY-1990.

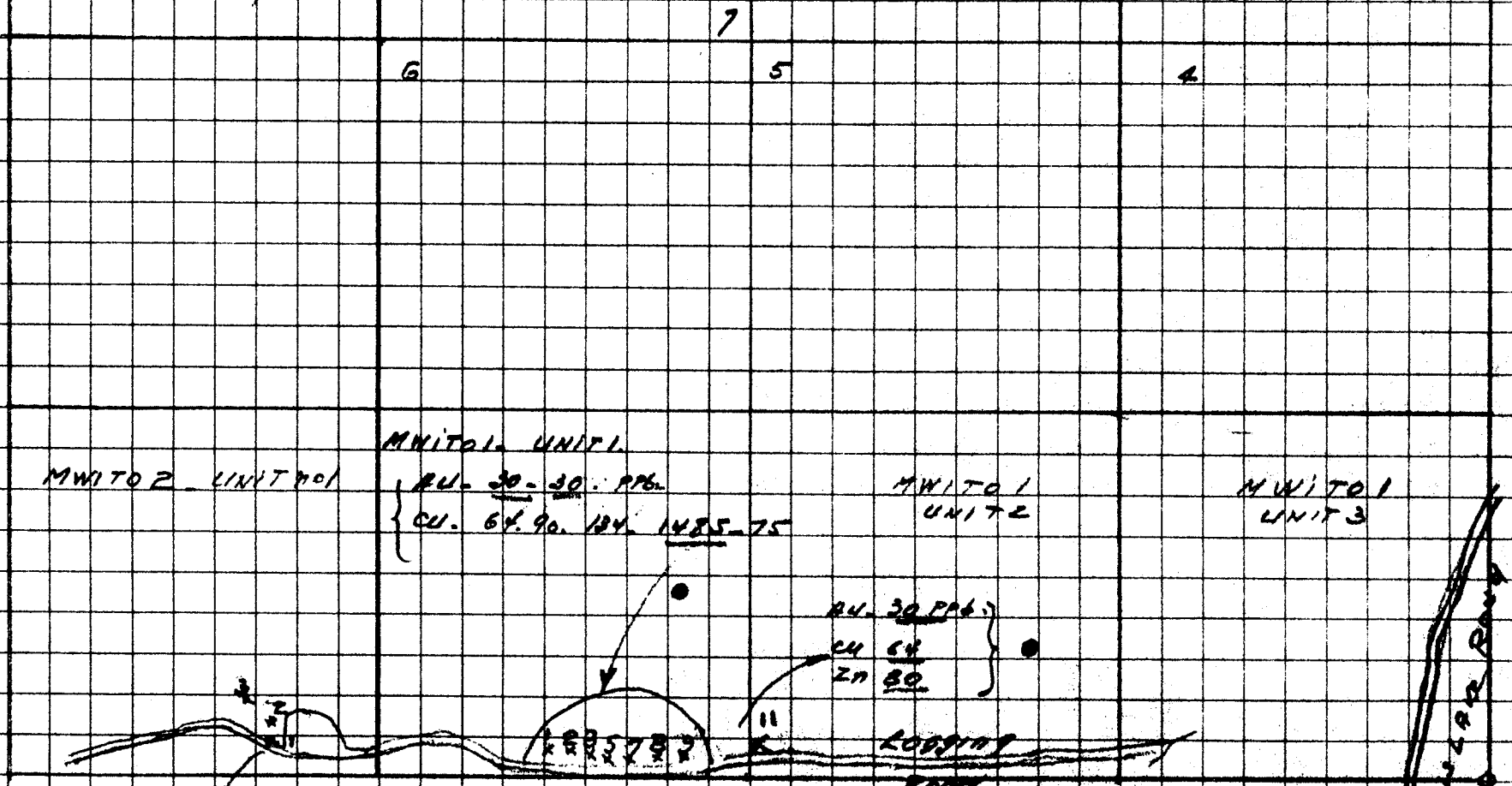
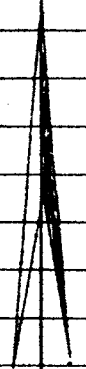


901 2302  
90 15408-409.  
90 15 410-411-412.

UNIT NO 9-

AU 27-6-5.  
CU. 70-367-73  
Zn. 112

NORTH



MWITO 2 UNIT 001

MWITO 1 UNIT 1

AU. 30-30-PP6  
CU. 64-90-124-1425-75

MWITO 1 UNIT 2

MWITO 1 UNIT 3

AU. 30-PP6  
CU. 64  
Zn. 80

AU. 245  
CU. 270

Map No 8

NORTH

VEDDER RIVER

N.E. CORNER POST

MWITO CL. NO 2

TO CULTUS LAKE ROAD

ORCS

ORCS

274600

367 NW 1/4  
112 PM 27

S1

S2

S3

TO CULTUS

AUTO WRECKER

BORDER OF QUARRY

LIMIT NO 7

REPORT 90/2308  
CHEYENNE

CHILLIWACK MUNICIPALITY

QUARRY

ON MWITO I CLAIM

SAMPLES LOCATION.

NOT TO SCALE

MAY 1990

*[Signature]*

Map no 7.

Hwib-1 BIG QUARRY - ON MAIN ROAD

Report	AV	AS	AG	CO	CU	MO	NI	PS	Zn	Remarks
--------	----	----	----	----	----	----	----	----	----	---------

Limes

Havel - 1990.

A 9012302

S No 1	<u>27</u>	1	<0.5	14	70	<1	42	<5	70	
--------	-----------	---	------	----	----	----	----	----	----	--

S No 2	6	2	<0.5	24	<u>367</u>	<1	59	<5	<u>112</u>	
--------	---	---	------	----	------------	----	----	----	------------	--

S No 3	6	3	<0.5	17	78	<1	67	<5	48	
--------	---	---	------	----	----	----	----	----	----	--

6:0 COST STATEMENTS

6:1 Recap of Expenses

Time, mileage and meals - prospecting geological \$ 2,624.00

Analyses - geochem:

Min-En Laboratories	\$ 274.05	
Chemex Labs	149.25	
P10 preparation - bags		
and time	125.00	
	-----	548.30

Miscellaneous Costs:

Descriptions - tests of samples	\$ 120.00	
Mapping locations of samples	245.00	
Mapping locations of outcrops	187.00	
Tests - magnetism, strike, color		
sulfides percentage noticed	173.00	
Bags, sketches, maps	220.00	
	-----	945.00

Report - first draft and typing, second draft		
and final typing. Stationery and time		
of R. Trifaux		600.00
		-----

\$ 4,717.30

## 6:0 COST STATEMENTS

## 6:2 R. Trifaux Expenses

DATE	DESCRIPTION	TIME	KMS	MEALS
02-05-90	Reconnaissance - geology outcrops on Mwito No 1 and No 2 claims. Prospecting.	8	210	3
10-05-90	Mwito claims No 1 and No 2. Geology outcrops, schists, metamorphosed rocks - argillites	8	210	3
17-05-90	Claims No 1 and No 2. Argillites, schists, metamorphosed rocks. Research for serpentines from Cultus-North	8	210	3
20-05-90	North quarry No 2. Reconnaissance - nature of formations on Mwito No 2. Samples taking.	7	210	2
24-05-90	Claim No 1 Argillites, schists formations. Discovery chalcopyrite samples.	8	210	3
30-05-90	Reconnaissance - geology outcrops	8	210	3
05-06-90	Reconnaissance - geology outcrops	7	210	2
08-06-90	Reconnaissance - geology outcrops	8	210	3
12-06-90	Reconnaissance - geology outcrops	8	210	3
28-06-90	Reconnaissance - geology outcrops Bagging of samples, information	8	210	3
Totals		78	2,100	28

Time - 78 hours x \$20 = \$ 1,560.00

Mileage - 2,100 kms x 0.40 = 840.00

Meals - 28 meals x \$8 = 224.00

-----  
\$ 2,624.00



## 6:0 STATEMENT OF QUALIFICATIONS

EDUCATION

1. Tamines School of Mines, Belgium. 2 years - diploma
2. Chatelineau School of Mines, Belgium. 2 years - diploma
3. University of Charleroi, Hainaut, Belgium. 1 year mining, geology, mining technologies, reports. 1 certificate.

The copies of diplomas and certificates have been presented to the Cariboo Mining Division in Quesnel, B.C. with my 1977-1978 statement of works.

4. In 1978 I successfully passed the test of rocks and minerals identification with a mining engineer from the Department of Mines, Robson Square, Vancouver, B.C.

EXPERIENCE

I have extensive experience in exploration and mining from Zaire (previously Belgian Congo) and from Ruanda - Berundi in Central Africa.

1. "La Compagnie Des Grands Lacs Africains" Brussels from Belgium. Minerals mined were cassiterite, columbite, gold and increase of reserves by exploration of benches in the creeks.
2. "La Compagnie Mirudi" affiliated company of the "Grands Lacs Africains Company" Brussels, Belgium. (Cassiterite, Colombo - tantalites, gold ores). Localities: Mokoro, Musumba, Mutwe-Niamdo.

EXPERIENCE (continued)

3. Mr. R. Henrion, Explorations Minières in Central Africa, Busoro, Ruanda on Kivu Lake. (Cassiterites, wolframites, beryllium ores).

4. DeBorchgrave Mines d'Etain, Kigali, Ruanda. Open pit, underground mines of cassiterite, columbites.

I was successful in exploring the granitic massif of Central Ruanda-Burundi. I described my method of exploration in the 1977-1978 report (assessment works) related to the distances between lines and pits, flying prospecting and systematic with calculations of zones of influence and reserves in placers. I opened several mines in gold, cassiterite, columbite, plotting and establishing the hydraulic works, worked in open pit and underground. I established topographical maps showing the locations of my discoveries.

I started prospecting in British Columbia in 1959 for gold placer in the Cariboo Mining Division for a company. Today I have claims containing precious metals, base metals and industrial minerals. I do my geochemical surveys in silt, soils and rocks for my reconnaissance and systematic prospecting and orient my works according to the results of such surveys.

Beneficiation studies of some industrial mineral products have been done by the Ontario Research Foundation.

EXPERIENCE (continued)

I am a member of the Canadian Institute of Mining and Metallurgy (CIM) and the Chamber of Mines of British Columbia. I buy my literature from the Department of Mines of B.C. and Ottawa and from the Geological Survey of Canada, in Vancouver. I have subscriptions to the Engineering and Mining Journal, CIM Bulletin, Chemical Week and Northern Miner. I keep informed with different publications from private and government organizations.

I consult with professionals and use the most up to date prospecting equipment available to prospectors (topolite, geiger counter, mineral light, stereoscope, small microscope, altimeters, etc.)

I learned very useful information on the industrial minerals from the Ontario Research Foundation, related to talc, graphite, calcium carbonate, wollastonite etc. I am engaged in the research of miscellaneous industrial minerals which will be needed in the following years and the following century.

Photographs  
Quarry No 2

By R. T. Ingham. 1989-90.

GEOLOGICAL BRANCH  
ASSESSMENT REPORT

21,044

Quarry No 2

Samples taking.

Line 3. N.E.

Cu - Zn - Pb - Ag, Ag.



Quartz no 2  
south face

Sulfides

Chalcopyrite, pyrite, sphalerite  
Cu, Zn, Pb, Au, Ag.

