ARIS SUMMARY SHEET

District Geologist, Prince George Off Confidential: 89.03.11

ASSESSMENT REPORT 17246 MINING DIVISION: Cariboo

PROPERTY: Wim-Ta
LOCATION: LAT 52 59 18 LONG 121 53 02
UTM 10 5871338 574924
NTS 093A13W
CLAIM(S): Wim-Ta 1,Wim-Ta 6
OPERATOR(S): Trifco Min. Trifaux, R.
AUTHOR(S): Trifaux, R.
REPORT YEAR: 1988, 108 Pages
COMMODITIES
SEARCHED FOR: Talc,Magnesite,Dolomite,Nickel,Copper,Cobalt,Gold,Platinum,Silver
GEOLOGICAL
SUMMARY: The claims are underlain by Upper Triassic phyllite, argillite, quartzite, schist, serpentinite and peridotite. Greenschist facies metamorphism is evident. Extensive metamorphism south of the ultramafic rocks has resulted in talc occurrences.

WORK
DONE: Physical,Geological,Drilling
DIAD 64.0 m 4 hole(s);EX
PETR 34 sample(s)
TREN 560.0 m 3 trench(es)
MINFILE: 093A 013

LOG NO: 0407	RD.
ACTION:	
FILE NO:	

REPORT ON WIM WIM-TA CLAIMS

OF

TRIFCO MINERALS LTD.

CARIBOO MINING DIVISION

NTS - 93A / 13

LATITUDE	LONGITUDE
53° 59' 20" N	121° 51' 30" W

OWNER OF CLAIMS - TRIFCO MINERALS LTD.

OPERATOR - TRIFCO MINERALS LTD. - R. TRIFAUX

FILMED

GEOLOGICAL BRANCH
ASSESSMENT REPORT

17,246

WIM WIM-TA TOM ARNE GROUP OF CLAIMS

TABLE OF CONTENTS

1:0 SUMMARY

Recent exploration conducted in 1987 on the Wim - Wim-Ta group of claims situated at approximately 40 kms south-east of Quesnel has identified a huge body of talc and dolomites in the area of Creek No 3. (See map - page 12) Furthermore, two trenches of approximately 200 m in length have been done to have a cross section of the terrain at the low level of the creek itself, but situated (the two of them) north of the Swift River Road.

From all the samples analyzed by petrographic study of the talc bearing rocks and the x-ray diffraction confirmed the primary objectives to establish the talc presence, estimate it's abundance in the various samples, and to know it's grain, size and mode of occurrence in the rocks. Results of x-ray diffracton analyses confirmed the identification of talc.

Individual descriptions of each sample, based on microscopic examination of the thin sections, gives the salient features.

The trenchings established the presence of talc in all their lengths. Some huge talc boulders have been encountered, in creek No 1, No 2 and No 3. The diamond drilling was not very well executed because of the state of the equipment which did the work.

2:0 INTRODUCTION

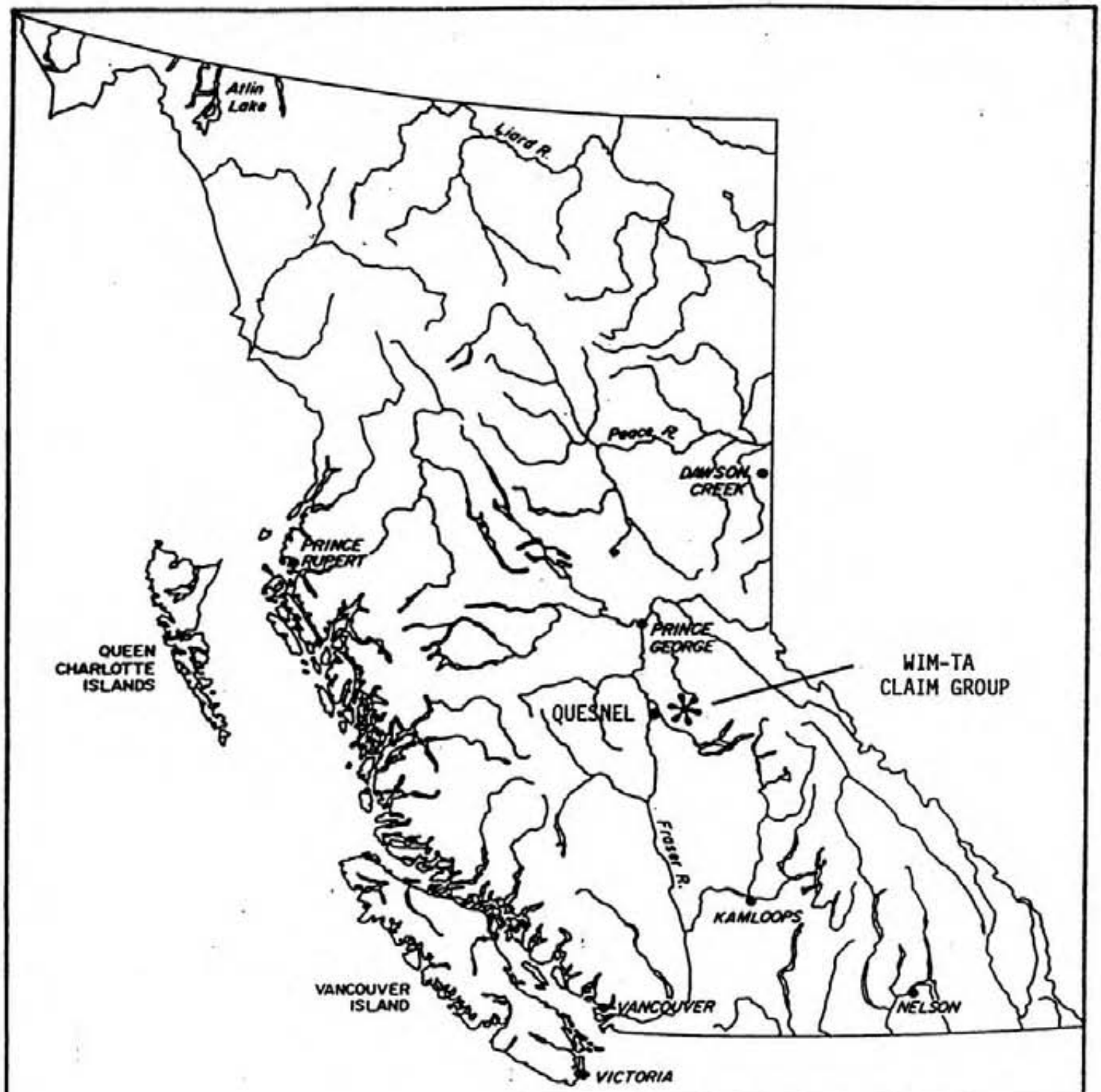
2:1 Terms of Reference

This report is based on the works done from June 1 to July 1, 1987 in the Cariboo Mining Division where the group of claims is situated. It is intended to give a description of the results of work performed and to give recommendations for future development. A new development took place on the claims with the trenching, diamond drilling and samples taking in the areas of Creeks No 1, No 2 and No 3.

2:2 Property Description

Table I - Claim Data

Claim Name	Record No.	Units	Expiry Date	Owner
Wim 1	418	1	June 8, 1992	Rene Trifaux
Wim 2	334	1	May 12, 1992	Rene Trifaux
Wim-Ta 1	335	1	May 12, 1992	Rene Trifaux
Wim-Ta 2	338	1	May 16, 1992	Rene Trifaux
Wim-Ta 3	461	1	July 25, 1992	Rene Trifaux
Wim-Ta 4	462	1	July 25, 1992	Rene Trifaux
Wim-Ta 5	419	1	June 8, 1992	Rene Trifaux
Wim-Ta 6	463	1	June 25, 1992	Rene Trifaux
Wim-Ta 7	6869	2	June 26, 1992	Rene Trifaux
Wim-Ta 8	6868	2	June 26, 1992	Rene Trifaux
Wim-Ta 9	7082	1	August 12, 1992	Rene Trifaux
Arne	6893	2	July 10, 1992	Rene Trifaux
Tom	4766	1	April 14, 1993	Rene Trifaux



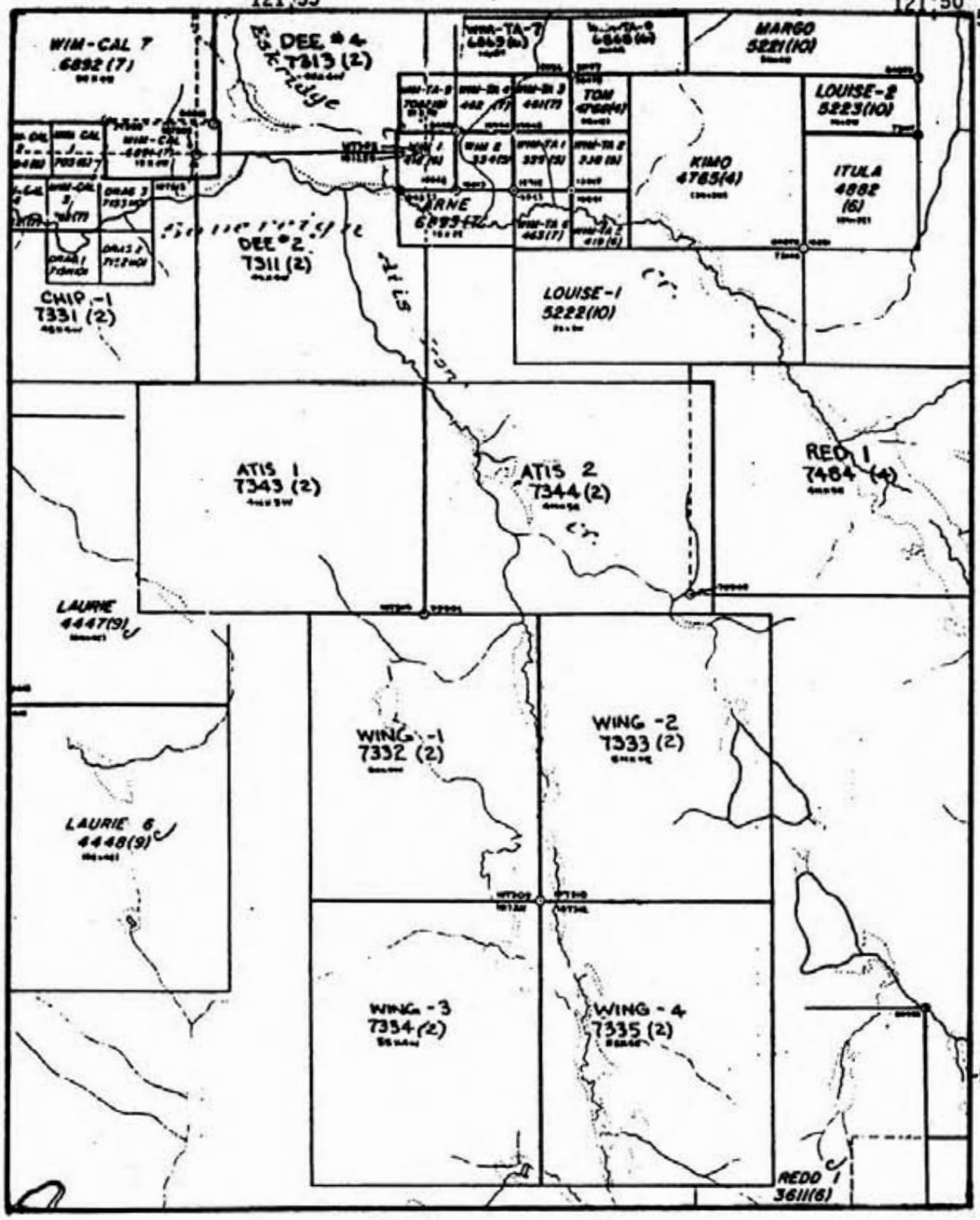
TRIFCO MINERALS LTD.

LOCATION MAP

WIM-TA CLAIM GROUP

FIGURE 1	JULY, 1987

NEVIN SADLIER-BROWN GOODBRAND LTD.



As of 4 July 1987

FIGURE 2

MINERAL CLAIM MAP

WIM-TA Claim Group
Sovereign Creek Area
NTS 93A/13W

2:3 Access & Physiography

The access to the Wim-Ta claim group is by way of the Swift River forestry road, No 1300 which leaves southward from Highway 26 at a point 32 kms (20 miles) east of Quesnel. The road is an all weather, secondary gravel road that traverses the southern portion of the claims, crossing the Do-Do creek at km16. All the talc occurrences on Do-Do Reek, Creek No 1, Creek No 2 and Creek No 3 are within 500 m of the road and are reached by foot. Facilities will be built in the near future.

The property is situated on the south flank of the Sovereign mountains between 1050 and 1350 m (3500 to 4500') in elevation. Local relief is 650 m (2100'). Mountains are bounded with moderate slopes forested predominately by fir and pine. Perennial undergrowth is thick, in the shallow depressions common on the property. Bedrock is mainly covered by overburden, which results in poor outcrop conditions. Some glacial drift blankets the low lying southerly portions of the claims.

2:4 Exploration History and Current Work Synopsis

The existence of talc at the Do-Do Creek ultrabasic has been recognized at least since 1960 when it was discovered by R. Trifaux. During the early 1970's Mr. Trifaux explored the ultramafic (metamorphics) for nickel with a series of shallow diamond drill holes. Extensive talc mineralizations were noted at that time. Recently, prospecting by Trifco Minerals Ltd. has extended known talc occurences across much of the Wim-Ta group.

In 1986, exploration focussed primarily on the Do-Do Creek area where a program involving 300 feet of diamond drilling, geological mapping, prospecting and sampling was conducted in the vicinity in a attempt to delineate the extent of the talcose exposed in the Do-Do Creek.

Work was conducted as a partial fulfillment of the recommendation of an earlier report by B. Fairbank, geologist for Nevin Sadlier-Brown Goodbrand Ltd. consultants. Additionally a brief geological evaluation was performed at talc showings on Creeks No 1, No 2 and No 3, although the assessment was of a cursory nature.

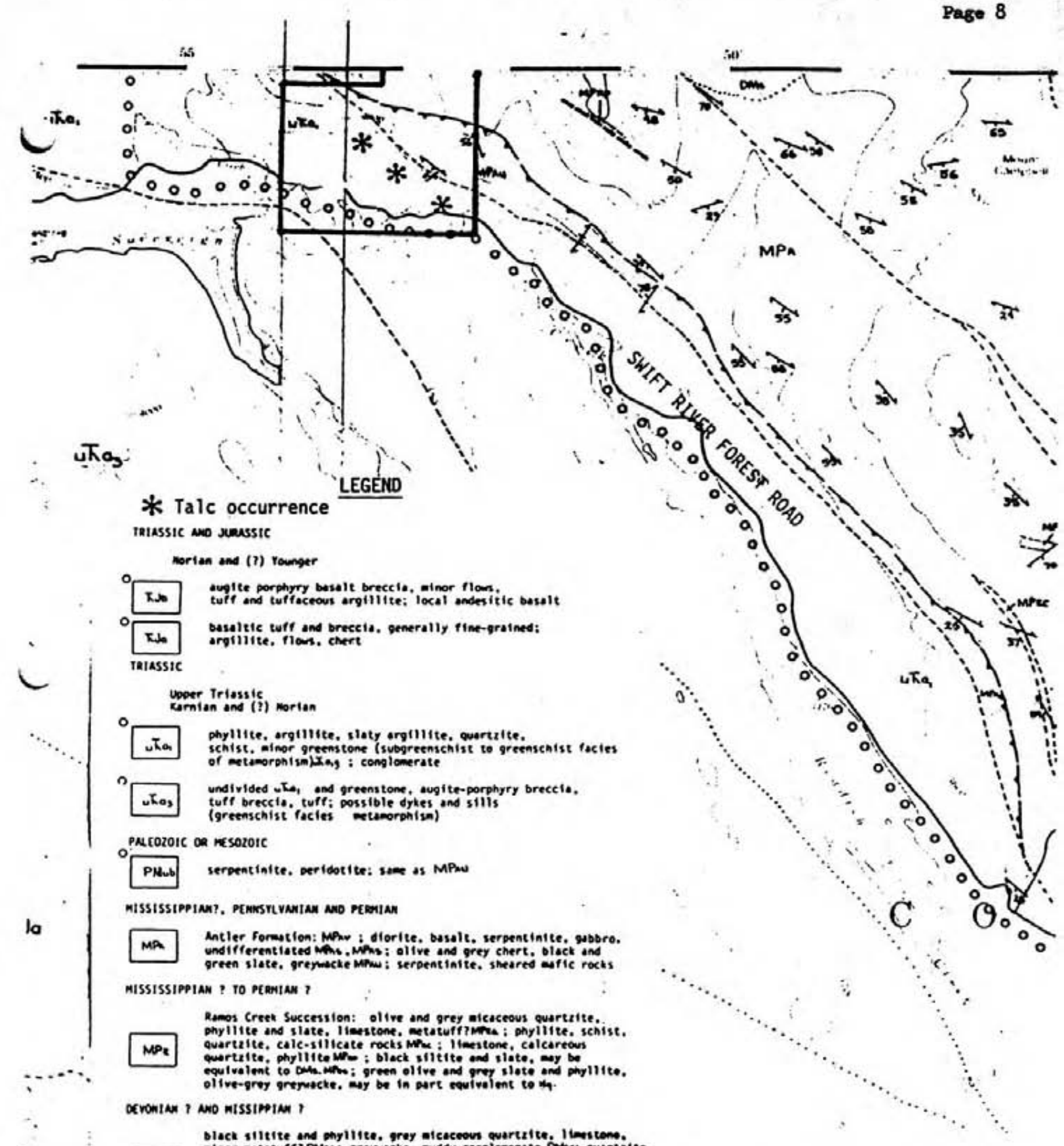
3:0 GEOLOGY

3:1 Regional Geology

The property is underlain by three main geologic units (Figure 3). From youngest to oldest, they are as follows:

- Upper Triassic, phyllite, argillite, quartzite, schist, minor greenstone, (UTa|) best exposed along Do-Do Creek above the Road No 1300.
- Antler Formation serpentinite and sheared mafic rocks (MPau) which are locally talcose.
- Ramos Creek succesSon (MPr) olivine and micaceous quartzite, phyllite slate and limestone in the northern upper reaches of the property.

Upper triassic rocks and the antler formation are thrust over the Ramos Creek succession. Stratigraphy generally trends west-northwest and dips southwest. However, on a local or property scale recumbent drag folding and other complex structures are evident.



LEGEND

* Talc occurrence

TRIASSIC AND JURASSIC

Norian and (?) Younger

- TJa — augite porphyry basalt breccia, minor flows, tuff and tuffaceous argillite; local andesitic basalt
- TJa — basaltic tuff and breccia, generally fine-grained; argillite, flows, chert

TRIASSIC

Upper Triassic
Karnian and (?) Norian

- uTRa1 — phyllite, argillite, slaty argillite, quartzite, schist, minor greenstone (subgreenschist to greenschist facies of metamorphism) uTRa3 ; conglomerate
- uTRa3 — undivided uTRa1 and greenstone, augite-porphyry breccia, tuff breccia, tuff; possible dykes and sills (greenschist facies metamorphism)

PALEOZOIC OR MESOZOIC

- PMub — serpentinite, peridotite; same as MPmu

MISSISSIPPIAN?, PENNSYLVANIAN AND PERMIAN

- MPA — Antler Formation: MPmu ; diorite, basalt, serpentinite, gabbro, undifferentiated MPms, MPms; olive and grey chert, black and green slate, greywacke MPmu; serpentinite, sheared mafic rocks

MISSISSIPPIAN ? TO PERMIAN ?

- MPE — Ramos Creek Succession: olive and grey micaceous quartzite, phyllite and slate, limestone, metatuff? MPms ; phyllite, schist, quartzite, calc-silicate rocks MPsc ; limestone, calcareous quartzite, phyllite MPmu ; black siltite and slate, may be equivalent to DMs, MPms; green olive and grey slate and phyllite, olive-grey greywacke, may be in part equivalent to Hq

DEVONIAN ? AND MISSIPPIAN ?

- DMs — black siltite and phyllite, grey micaceous quartzite, limestone, minor metatuff? DMsv; greywacke, muddy conglomerate DMsg; quartzite clast conglomerate, quartzite DMsc; limestone, minor dolostone DMsc; grey micaceous quartzite, dark grey phyllite DMsq; quartzite, minor conglomerate DMsc; interbedded grey slate and green metatuff in part calcareous

[redacted]

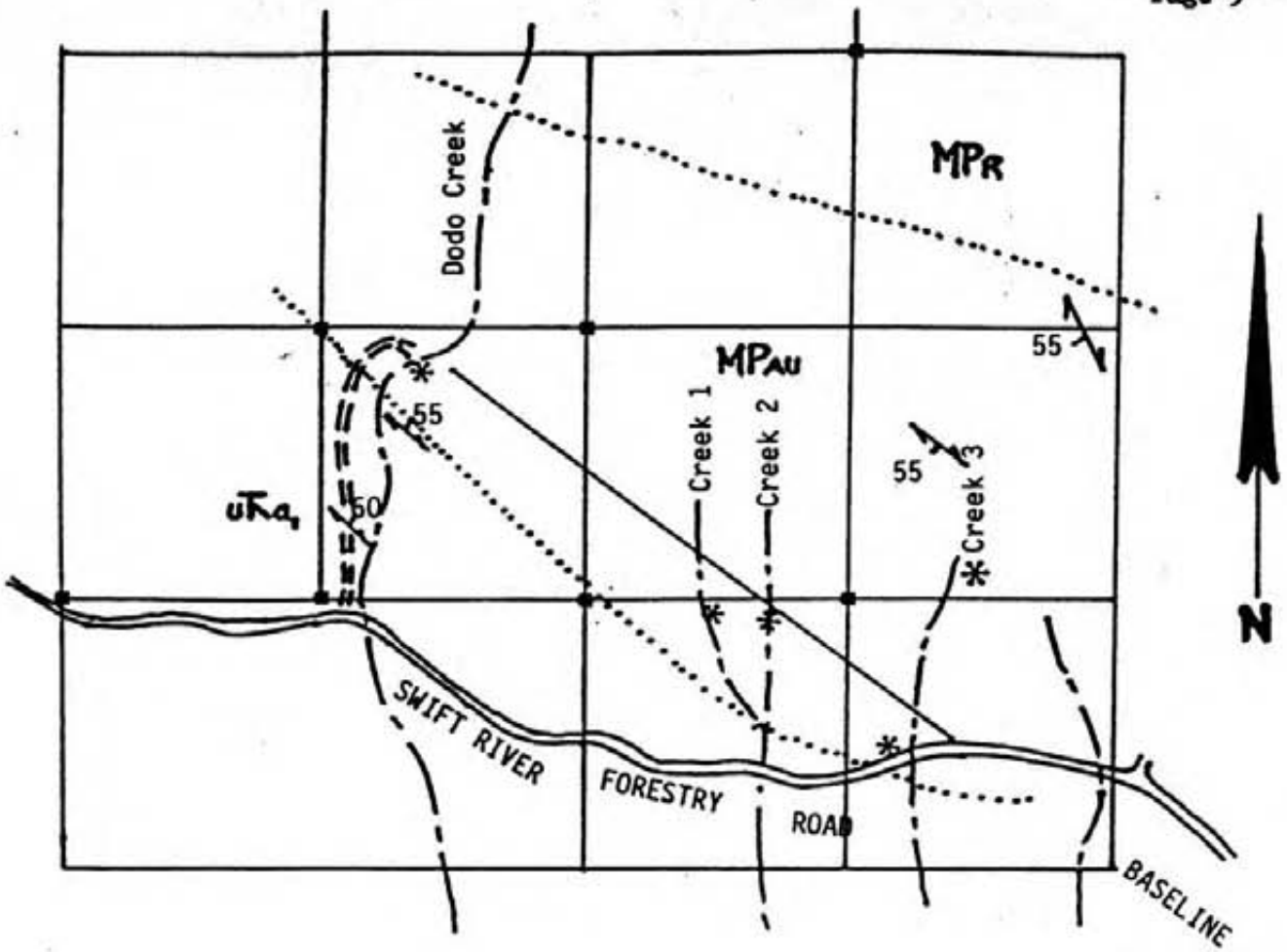
- Hq — grey and olive fine micaceous quartzite, and phyllite, minor marble Hqm; marble, phyllite Hqp; grey and green phyllite, minor olive quartzite Hqq; white to dark grey quartzite
- HP — undifferentiated H to MPs, mainly DMs to MPo

FIGURE 3: REGIONAL GEOLOGY

SOVEREIGN CREEK TALC PROSPECT

WIM-TA Claim Group

NTS 93A/13W SCALE 1:50,000



LEGEND

uTa,	Phyllite, argillite, quartzite schist, minor greenstone
MPAU	ANTLER FORMATION serpentinite, gabbro
MPR	RAMOS CREEK SUCCESSION quartzite, phyllite, slate, limestone
55	Foliation
*	Talc occurrence
	Road
■	Legal Corner Post (LCP)

Scale

500m

FIGURE 4: PROPERTY MAP
GEOLOGY AND TALC OCCURRENCES

3:2 Talc Occurrences

Talc occurrences are confined to Antler formation serpentinite and serpentinized ultramafic intrusions (Figure 4). Four widely separated areas of talc alterations along a one km linear trend have been identified.

1. Do-Do Creek talcose ultramific
2. Creek 1 and Creek 2 platy talc floats
3. Creek 3 platy talc and float
4. Swift River Forest Road talc-carbonate schist boulders

Apart from the primary exploration target at Do-Do Creek, "platy" steatite occurences at km 17.2 on the Swift River Forest Road and in Creek No 3, a small intermittent tributary to Sovereign Creek which crosses the Forestry Road at 17 km are of particular interest. A small prospecting program of 16 hand dug pits at the former site has identified an area of approximately 3000 m^2 containing occurrences of talcose schist in either bedrock or large angular boulders. At Creek No 3, Mr. S Croft, geologist observed an area approximately 50m x 200m mantled by overburden containing angular steatite cobbles. In both areas the nature of the float suggests close proximity of the bedrock source.

Creek 1 and Creek 2 float boulders are distinctly different from the talc at Do-Do Creek. Platy fine grained comprises 80 to 90% of the rock with the remainder being mostly chlorite. Pyrite

3:2 Talc Occurrences (continued)

and limonite are up to 5% by volume.

The alignment of the talc alterations zone 1 indicates a probable west - northwest stratigraphic or structural control of the mineralization.

1986 Drilling Program

During June 1986, a small scale diamond drilling program designed to know the extent of the Do-Do Creek talc showing was implemented. Six holes were drilled and the drill cores were logged by Mr. S. Croft, geologist.

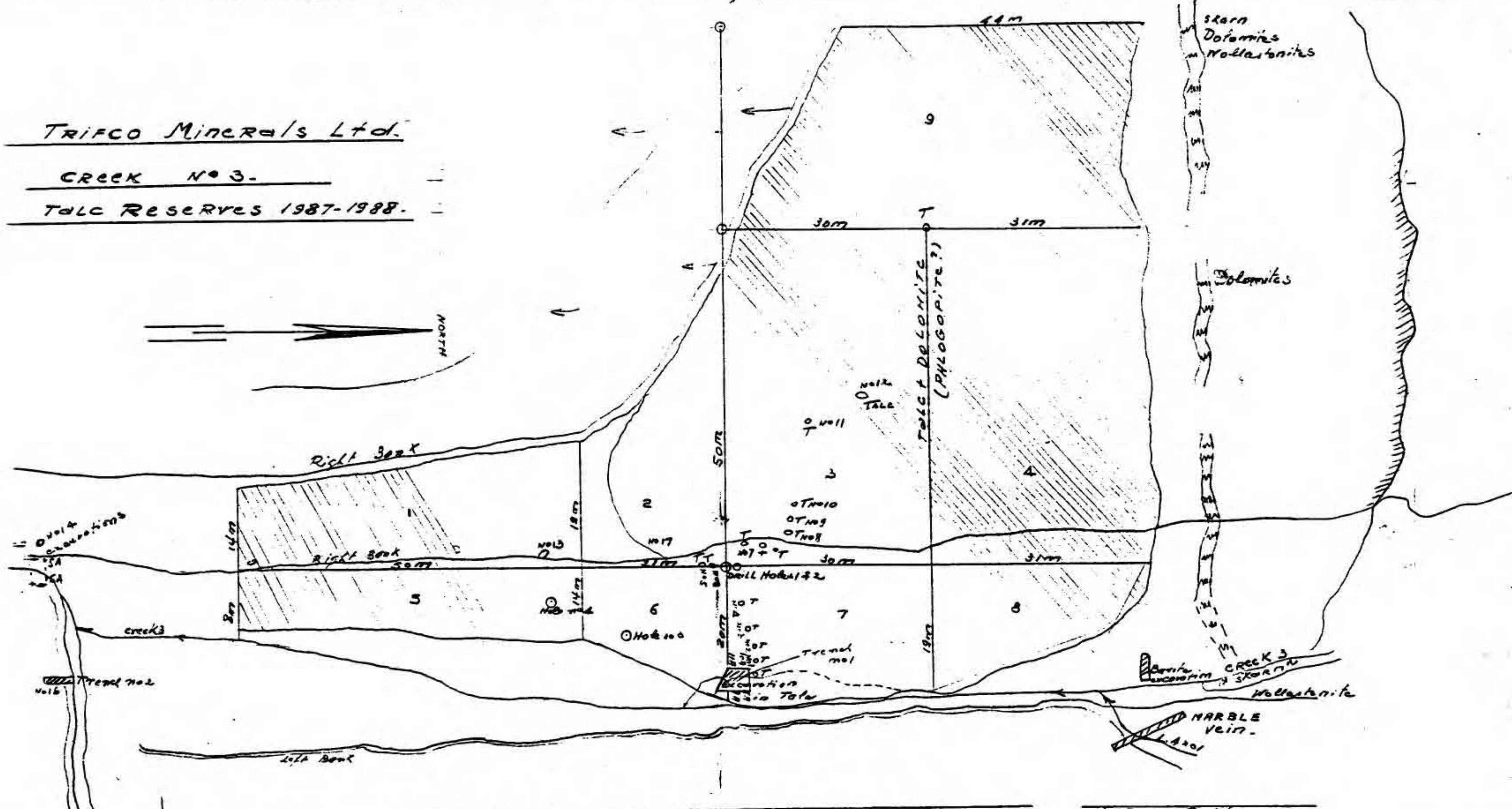
The analyses of the cores and the grade determinations were done by Geotex Consultants Ltd. by x-ray diffraction analyses, by petrographic analyses to know the mineralogical modes for each sample. Whole rock analyses by the Chemex Laboratory were considered to be most representative of the samples.

The reserves calculation has also been made by Mr. S. Croft and the results were positive by giving 316,000 tons of ores at 45% talc average or 150,000 tons of talc reserves.

TRIFCO Minerals Ltd.

CREEK Nº 3.

TALC RESERVES 1987-1988.



ABOVE COLLARS OF DRILLED HOLES

AREAS

no1.	TRAPEZE	15m+14m x 50m ÷ 2	= 825 m²
no2.	"	50m+19m x 21m ÷ 2	= 725 m²
no3.	Rectangle	50m x 30m =	1500 m²
no4.	"	50m x 31m =	1550 m²
no5.	TRAPEZE	8m + 14m x 50 ÷ 2	= 550 m²
no6.	"	20m + 14m x 21 ÷ 2	= 357 m²
no7.	"	20m+19m x 30 ÷ 2	= 585 m²
no8.	"	19m + 10m x 31 ÷ 2	= 378 m²
no9	"	61m + 44m x 30 ÷ 2	= 1575 m²
			8045 m²

ESTIMATED AREA - 8045 m²

Based on measurements.
SAMPLES TAKEN IN DIGGINGS IN CREEKS AND CUTS ON THE BANK.

No1 - RIGHT AFFLUENT - HOLE No1 MICACEOUS SCHISTOSE WITH NODULES OF ORIGINAL ROCKS DISCOVERY.
2m FROM TRENCH 45m x 2m x 1.50m.
No2 - ON RIGHT BANK OF AFFLUENT. HOLE No1. MICACEOUS - LIMONITIC COLOUR. ALTERED + nodules of rock in place.
No3 - ON RIGHT BANK - 2m from No2 - going west - micaceous schistose with nodules.
No4 - Same bank - 3m from No3. Nodules - going west.
No5 - 18m west of trench No1 - no nodules. Schists only 7m south of drilled hole No1. Schistose in place.
No6 - 18m west of trench No1 - 5m south of Hole No1
No7 - micaceous schistose with nodules in the altered formation.
No8 - 4m - North-west of No7. sample with nodules
No9 - 6m west of No8 sample " "
No10 - 10m " " No9 " " "
No11 - 3m " " No10 " " "
No12 - North-west of No11 " " "
No13 - 23m south of Hole No1. (drilled) " "
No14 - Right bank of creek - near diggings in creek.

CUBAGES

DEPTHS	CUBAGE
no1 - 10m	8250 m³
no2 - 15m	10875 "
no3 - 25m	37500 "
no4 - 30m	46500 "
no5 - 10m	5500 "
no6 - 10m	3750 "
no7 - 15m	8775.00
no8 - 12m	4536.00
no9 - 27m	42525.00
	168211 m³
sp. gravity 2.8 tonnage	470,990 tons

UNDER COLLARS.

Hole no1. Zone of influence -
50 x 50 = 2500 m²
depth - 27m -
Cubage. 2500 x 27 = 67500 m³
Tonnage. 67500 x 2.8 = 189,000 tons.
Total Tonnage = 470,990 + 189,000 = 660,000 tons of ore
specific gravity used 2.8.

Hole no2. Zone of influence - 33 x 33 = 1089 m²
depth 47' or 14 m = 1089 x 14 = 15246 m³
tonnage. 15246 x 2.8 = 42,700 tons x 6,15 = 6405T

Total tonnage of ores = 660.000 + 42700 = 702 700 tons of ores.
Talc Tonnage - 702700 x 0,40 = 281,080 tons - Say 300,000 tons.

LEGEND

- ○ DRILLED HOLES.
- ○ DUG HOLES
- EXCAVATIONS
- TRENCH.
- SMALL TRENCH.
- MARBLE VEIN.
- BARITE DIGGINGS.
- ← Creek.

SCALE 2cm = 70 m.

JULY-18-1987-

[signature]

DOLOMITE - 702,700 tons x 0,44% = 310,000 TONS

3:3 Samples Location

The location of the samples taken for petrographic examination and XRD are shown on the following sketch map and are figurated as follows:

Area No 1 - Micaceous schist - dug by hand

Area No 2 - o Decomposed in part - (in place) - dug by hand

Area No 3 - o Micaceous schistose - dug by hand

Area No 4 - o 3m from No 3 - micaceous schistose - dug by hand

Area No 5 - o 18m east of trench No 1 - dug by hand

Area No 6 - o 18m east of trench No 1 - dug by hand

Area No 7 - Hole No 1 - dug by hand

Area No 8 - Hole No 1 - dug by hand

Area No 9 - 6m east of No 8 sample - dug by hand

Area No 10 - 10m east of No 9 sample - dug by hand

Area No 11 - 9 m east of No 10 sample - dug by hand

Area No 12 - North east of No 11 - dug by hand

Area No 13 - 29 m south of Hole No 1 - dug by hand

Area No 14 - Right bank - east of areas 1 and 5 - dug by hand

Samples taken with A. Fardal on the right bank of the Creek No 3. The samples examinations are part of the petrographic report issued by Vancouver Petrographics Ltd. of Langley, B.C.

3:4 Nature of Samples

The pages for description of the samples are included in the petrographic XR diffraction report executed by J. Harris PhD. geologist.

4:0 PETROGRAPHY

4:1 Petrographic Reports - Analyses

Diamond drilling - Surface mapping - Petrographic Analyses - X-ray diffractions - Creek No 3.

Following surface mapping, sampling, diamond drilling, a new mineralized zone of talc has been found on the the right bank of Creek No 3. Preliminary mineral inventory estimates were established using the available surface diamond drilling information on a small grid containing four holes.

The figures obtained using the extrapolation method were qualified as probable and semi-probable.

Under the collar of diamond drilled hole	42,700 tons
Above the collar of diamond drilled hole	660,000 tons
	702,700 tons

Talc 40% x 702,700 = 281,800 tons or say 300,000 tons of talc.
The dolomite has a better percentage - I calculated 50%.
702,700 tons x 50% = 351,350 tons.
The deposit consists of a voluminous mineralized ore zone, with talc, dolomite and phlogopite.

4:1 Petrographic Report - Analyses (continued)

Following surface mapping, sampling and deep diamond drilling, the mineralized zone was found on the right bank of Creek No 3. Preliminary minerals inventory estminates were established using the available surface drilling information.

The diamond drilling consisted of four holes - three of them to ninety feet. Unfortunately the recovery of the cores has been very poor. Besides the drilling we did an exploration of the right bank of Creek No 3 where we found a new body of talc and dolomite.

The average values of talc encountered were 40%. We have value for 22 to 50% talc. The petrographic analyses are showing all the values (see report of J. Harris) plus the dolomite ores and the phlogopite. We calculated the values of talc based on the values of the cores and the depth below the collar of the drilled holes, also above the collar, the height of the deposit is 42 meters. See cross section attached to this introduction.

The reserves calculated by extrapolation have been done by R. Trifaux. When the road giving access to Creek No 3 from Creek No 2 will be excavated, we have to come with a better machine than the Winkie to calculate the reserves with accuracy. But the values have been established by the samples taken by R. Trifaux and A. Fardal and the report from Vancouver Petrographics Ltd.

4:1 Petrographic Report - Analyses (continued)

When the road giving access to Creek No 3 from Creek No 2 will be done, cross cutting and trenching will be done on the body to give a precise evaluation of the talc reserves.

To date we have two deposits of talc which have been delineated in part.

4:1 Petrographic Report - Analyses (continued)

X-RAY DIFFRACTION

SAMPLE NO	% TALC	% MICA	% CHLOR	% DOLOM	OBSERVATIONS
Z- 1 DHI 29'	-	24	-	5	
Z- 2 DHI 43'	-	12	1	7	
Z- 3 DHI 47'	-	12	Tr	4	
Z- 4 DHI 58'	22	14	2	14	Talc found - first 58'
Z- 5 DHI 62'	14	4	2	54	Talc found
Z- 6 DHI 64'	40	10	3	25	Talc found
Z- 7 DHI 73'					Talc has been crushed with the rig - in poor shape
Z- 8 DDH2-25'	-	9	-	5	Nil
Z- 9 DDH4-13'	35	10	3	12	Talc found 13' 18' 24' 32' 45' & 36'
Z-10 DDH4-18'	5	-	Tr	50	Talc crushed - white water coming from the hole
Z-11 DDH4-27'	20	25	2	13	
Z-12 DDH4-32'	3	Tr	5	50	
Z-13 DDH4-34'			7	74	
Z-14 DDH4-45'	10	4	1	63	
Z-15 DDH4-36'	14	12	6	28	
Z-16 DDHJ-11'	45	5	-	50	Good talc and dolomites
Z-17 alt 3475'	8	30	2		Schistose
Z-18 alt 3475'	12	4	Tr	60	Dolomite is high.
Z-19 alt 3474'	9	3	2	66	Dolomite is high. Grey slabs.
Z-20 alt 3858'	22	7	2	42	Dolomite is high.
Z-21 alt 3472'	92	-	5	1	92% Talc - trench to be opened again
Z-22		2	2	72	Trench 6m x 1m x 4m
Z-23 CR3	47	1	2	48	Trench Creek 3. 47% talc and 48% dolomite
Z-24 Tr 1	7	2	2	69	Micaceous schistose with nodules. Trench - creek 3.
Z-25 Tr 2	28	7	2	28	Micaceous schistose with nodules.
Z-26 Tr 3	6	6	2	63	Micaceous schistose with nodules.
Z-27 Tr 4	40	2	2	52	40% talc & 52& dolomite
Z-28 Tr 5	18	4	3	52	Schistose in places. No nodules.
Z-29 Tr 6	35	10	Tr	18	Schistose in places. No nodules.
Z-30 Tr 7	50	8	2	-	Micaceous schistose w/nodules.
Z-31 Tr 8	40	8	4	40	Micaceous schistose w/nodules.
Z-32 Tr 9	12	5	1	63	Micaceous schistose w/nodules.
Z-33 Tr10	25	9	3	38	Micaceous schistose w/nodules.
Z-34 Tr11	40	9	2	-	Right bank in creek near slab.

4:1 Petrographic Reports - Analyses (continued)

The analyses of the 34 samples above the plateau on the right bank of the creek indicate the presence of dolomite, phlogopite, talc and chlorite. The dolomite represents the hanging wall on the deposits and the monzonite granite which is 70 m lower in the creek represents the foot wall of the deposit. It will be confirmed with the drilling being done in 1988.

We took an average value of 40% from the analyses and with the areas calculated by extrapolation arrived at 280,000 tons of talc - probable reserves.

4:2 Comments on Results

Vancouver Petrographics Ltd. from Trifco Minerals Ltd.

Core samples submitted July 7, 1987

Drilling - Creek No 3

Hole No 1 - 0 to 90 feet - 3/4 inch core - altitude 3488'

At 22 feet Micaceous schistose - no recovery

At 29 feet Micaceous schistose - dark grey

At 43 feet Micaceous schistose - dark grey - paler than 29'

At 47 feet Micaceous schistose - dark grey - white striations

At 58 feet Micaceous schistose - light grey - softer than 29' 43' 47' samples

At 62 feet Micaceous schistose - light grey - softer than 29' 43' 47' samples

At 64 feet Micaceous schistose - light grey - softer than 29' 43' 47' samples

At 73 feet Micaceous schistose - grey - soft material

Hole No 2 - altitude 3488' - 3/4 inch core

At 25 feet Micaceous schistose - dark grey

Hole No 3 - altitude 3478' - 3/4 inch core

Poor recovery

4:2 Comments on Results (continued)

Hole No 4 - altitude 3480' - 3/4 inch core

At 13 feet - Micaceous schistose - greyish platy

At 18 feet - Micaceous schistose - greyish platy

At 27 feet - Micaceous schistose - greyish platy

At 32 feet - Micaceous schistose - greyish platy - some white quartz

At 34 feet - Micaceous schistose - greyish platy

At 45 feet - Micaceous schistose - dark grey platy

Hole No 5 - altitude 3330' - 1 3/4 inch core

At 11 feet - Steatization of micaceous schistose. See verde antique - sulfides.

Creek No 3 - No 5 - 7 m south west of Hole No 1 - sample No 2 taken with A. Fardal. Altitude 3485'. Micaceous schistose in place.

Creek No 3 - No 14 - Grey slab in creek. Micaceous schistose. 3475' in altitude.

Creek No 3 - No 15 - Grey rock in creek. Micaceous schistose. 3474' in altitude.

Creek No 3 - No 12 - Sample No 1 taken with A. Fardal, 19m north west of Hole No 1. Elevation 3538'. Collar No 1 Hole - 3488' Micaceous schistose rock inside altered materials.

4:2 Comments on Results (continued)

Creek No 3 - No 16 - Trench (3 m) dug by B. McLean. Dirt (steatite materials) from trench. Altitude 3472' to 3475'.

Creek No 3 - No 17 - Trench (3 m) dug by B. McLean. Grey hard rock. Some alteration. Micaceous schist.

Creek No 3 - No 18 - Trench (3 m) dug by B. McLean. Rock - grey micaceous.

Eleven samples in different stages of alterations

No 1A Hard rock from Creek No 3. Part of a slab. Some alterations.

No 2A Hard rock from Creek No 3. Different stage of alteration.

No 3A Hard rock from Creek No 3. Different stage of alteration.

No 4A Hard rock from Creek No 3. Different stage of alteration.

No 5A Hard rock from Creek No 3. Different stage of alteration.

No 6A Hard rock from Creek No 3. Different stage of alteration.

No 7A Hard rock from Creek No 3. Different stage of alteration.

No 8A Advanced altered rock. Micaceous schistose. Creek No 3.

No 9A Advanced stage of alteration. Micaceous schistose. Creek No. 3.

No 10A Advanced stage of alteration. Micaceous schistose. Creek No 3.

No 11A Advanced stage of alteration. Micaceous schistose. Creek No 3.

4:2 Comments on Results (continued)

A phase No 1 exploration program to determine the relation between known talc occurrences and to define the Do-Do Creek zone has been done in 1985 - 1986.

A phase No 2 exploration has been done this year to locate bed rock source of the talc floats seen in Creek No 1, No 2 and No 3.

Talcs at the Do-Do Creek came from a zone of serpentinite on top at 41% talc but came to a platy talc at 60 feet deep. An extensive trenching program has been done in Creeks No 1, 2 & 3. Seventeen hole diggings have been executed to locate the extensive micaceous schistose in place. The samples submitted are all from a grey, very platy, micaceous schistose. No serpentines present. The intrusions are from Mississipian to Permian age. The metamorphic is seen on 1 km 400 long.

Work is continuing - Trifco Minerals Ltd. request the following:

1. Four sample no.
2. Estimated mode. (Talc, carbonate, chlorate etc.)
3. Description.
4. Grain size in micaceous.
5. Thin sections in hole No 1, No 4 and in rocks at different stages of alteration.
6. Photomicrographs of core and other samples.

4:2 Comments on Results (continued)

A phase I exploration program to determine the relationship between the known talc occurrences, to define the Do-Do Creek zone has been done in 1986.

A phase II exploration has been done this year to locate bedrock source of talc floats in Creek No 1, No 2, & No 3. Talcs at the Do-Do Creek come from a zone of serpentinite and serpentinized ultramafic intrusions of Mississipian to Permian age.

An extensive trenching program has been done this year as follows:

Trench No 1 - Creek 2 left bank	220 m
Trench No 2 - Creek 3	180 m
Trench No 3 - Creek 3	160 m

An area of 10 m x 5 m has been dug in Creek No 1 - left bank.

Also the followng diggings have been executed:

No. 1 - Greyish micaceous schistose (altered)

No. 2 - Limonitic and greyish schistose (micaceous) altered.

No. 3 - Limonitic and greyish schistose (micaceous) altered.

No. 4 - Limonitic and greyish schistose (micaceous) altered.

No. 5 - Schistose - dark grey - very platy - micaceous in places.

No. 6 - Schistose - dark grey - very platy - micaceous in places.

No. 7 - Schistose - dark grey - very platy - micaceous in places.

No. 8 - Schistose - dark grey - micaceous with altered rock in places.

4:2 Comments on Results (continued)

No. 9 - Schistose - dark grey - altered micaceous with altered rock in places.

No. 10 - Schistose - dark grey - altered micaceous with altered rock in places.

No. 11 - Schistose - dark grey - altered micaceous with altered rock in places.

No. 12 - Schistose - dark grey - altered micaceous with altered rock in places.

No. 13 - Schistose - dark grey - micaceous - altered.

No. 14 - Schistose - clear grey platy micaceous in a flat (not altered) rock.

No. 15 - Schistose - clear grey platy starting with some alteration.

No. 16 - Schistose - boulders and dirt from steatite rock.

No. 17 - Schistose - dark grey - limonitic - altered.

4:2 Comments on Results (continued)

Talc Reserves 1987

Length of talc in place 100 m on the mountain

Width of talc in place 60 m on the mountain

Area with talc = 100 x 60 = 6,000 m^2 on the mountain

Thickness of talc in place 20 m

Cubage = 6,000 x 20 = 120,000 m^3

Specific gravity = 2.7

Total talc tonnage 120,000 x 2.7 = 324,000 tons

at 80% talc = 324,000 x 0.80 = 259,200 tons of talc

Length of talc where the holes were drilled 50 m

Width 50 m

Area drilled (zones of influence) 50 x 50 = 2,500 m^2

Depth of hole 90 feet

22 feet in altered hole

53 feet in cores

15 feet no recovery (talc) or 75 ÷ 3 = 25 m in depth

Cubage 2,500 x 25 = 62,500 m^3

Tonnage = 62,500 x 2,7 = 168,750 tons x 0.80 = 135,000.

Total tonnage 259,200 + 135,000 = 394,000 tons

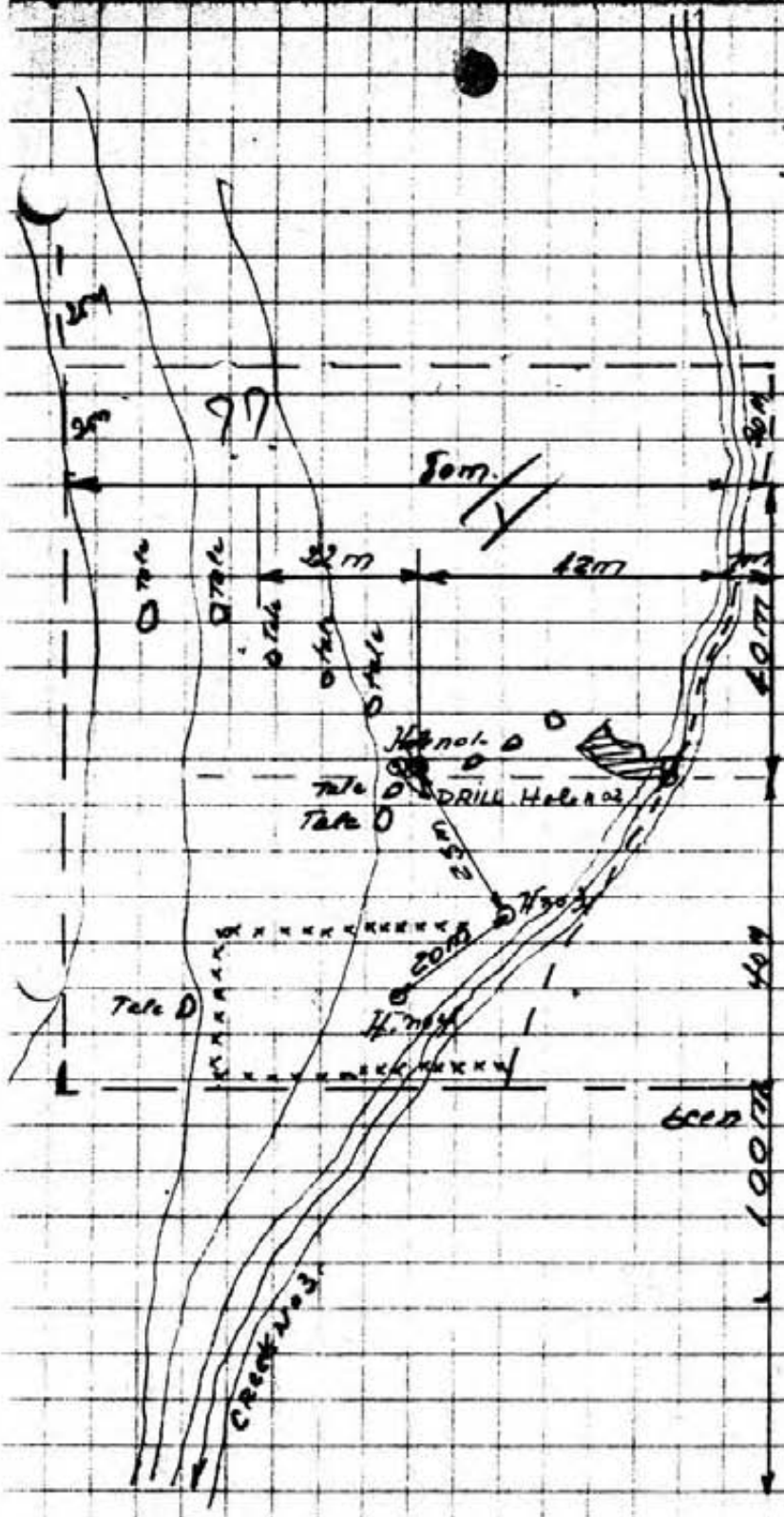
Fourth hole 50 x 20 = 1,000 m^2

1,000 m^2 x 48' or 16 m = 16,000 m^3

Specific gravity 16,000 x 2.7 = 43,200 tons x 0.80 = 36,560 tons

Grand total 394,000 + 36,500 = 430,560 tons.

KIM-KIM-TA CLAIMS
CREEK No 3



Hole no1 - 90' - 15' no recovery.
Hole no2 - @ 60° inclination - 25' for establishing dip of formation
Hole no3 - 43'
Hole no4 - 47'

NOTES. Hole no1 90' talc
Hole no2. 25' talc
Hole no3 8' recovery ??
Hole no4 10' water colored white with talc.

In general the first 22' are represented by talc which has altered over the years. all excavations contain talc.

scale - 1cm = 10 metres
June 30-1987.

Legend
- OΔ - small excavations
- □ - excavation in creek
- ⊙ - Drilled Hole
- ∫ - creek

D. Sloan

4:2 Comments on Results (continued)

Diggings by R. Trifaux - Samples X-Ray Defraction

No. 1 - With trenchings several nodules of original rocks in place have been discovered, platy, rounded. Right affluent of Creek 3. 5 m x 2 m x 1.50 = 15 m^3

No. 2 - On right bank of affluent. Hole No 1 - micaceous schistose - limonitic colors also nodules of original rocks discovered. 2 m from trench.

No. 3 - On right bank 2 m from sample 2 going west. Micaceous schistose with nodules of rocks in place before alteration.

No. 4 - On right bank 3 m from sample 3 going west. Micaceous schistose with nodules of rocks in place before alteration.

No. 5 - 18 m west of trench in schistose in place. No nodules but schists only. Schistose in place. 7 m south of drilled hole No 1.

No. 6 - 18 m west of trench. Schistose in place. 5 m south of hole No. 1.

No. 7 - Micaceous schistose with nodules of rocks in the altered micaceous. Schistose - 5 m north of hole No. 1.

No. 8 - 4 m north west of No. 7 in mountain - micaceous schists.

No. 9 - 6 m north west of No. 8 in mountain - micaceous schists with nodules.

No. 10 - 6 m north west of No. 9 in mountain - micaceous schists with nodules.

No. 11 - 9 m west of No. 10 in mountain - micaceous schists with nodules.

4:2 Comments on Results (continued)

No. 12 - North west of No. 11 in mountain - micaceous schists with nodules.

No. 13 - 29 m south of hole No. 1 in mountain - micaceous schists with nodules.

No. 14 - 23 m south of hole No. 13 in mountain - micaceous schists with nodules.

Also see the following sketch maps related to:

Diamond drilling

Trenching

Hand digging

Talc occurrences

Trials to build a road

Staking

Reserves

TRIACO MINERALS LTD.

DIAMOND DRILLING, TRENCHINGS, DIGGINGS.

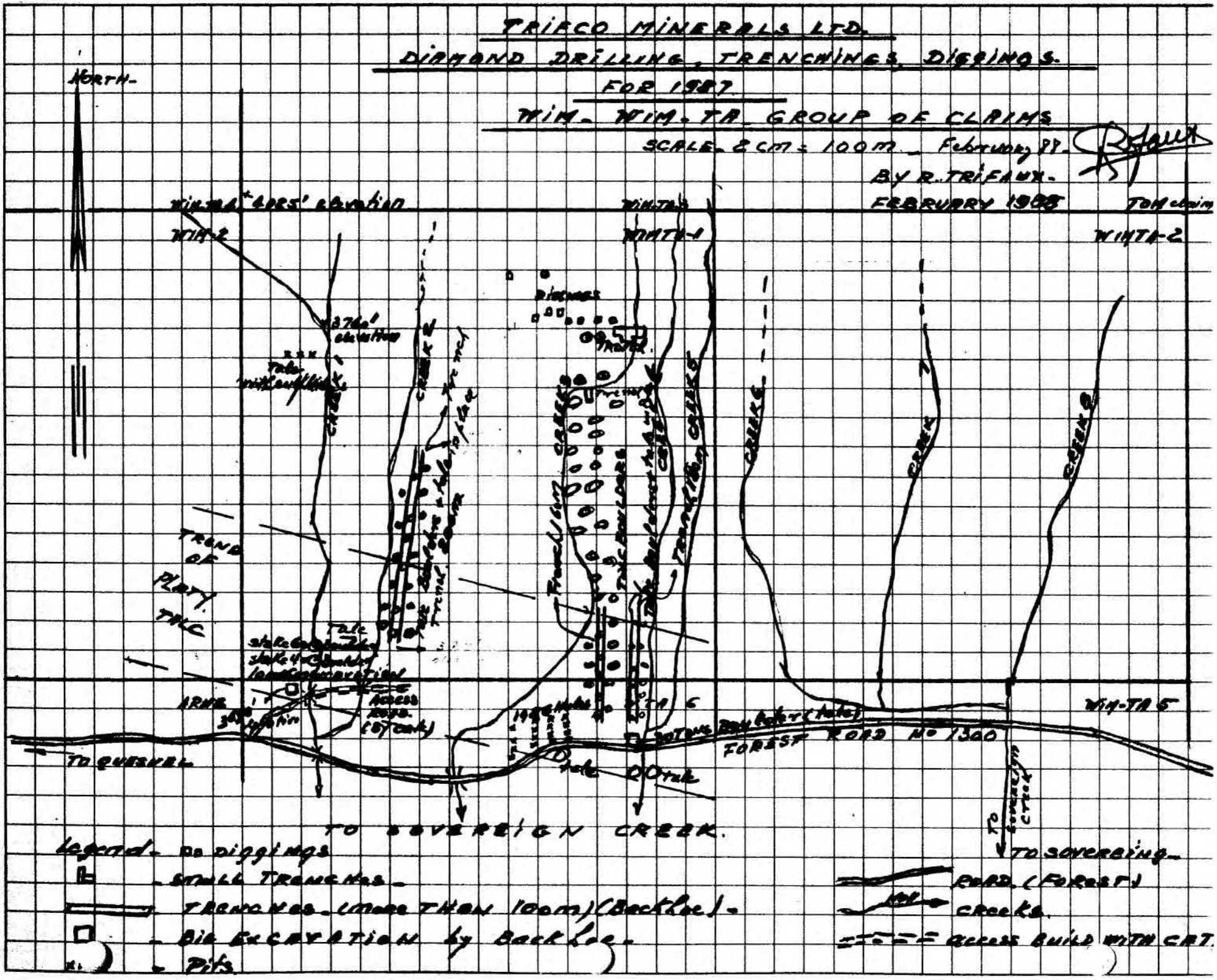
FOR 1987

WIM - WIM-TA GROUP OF CLAIMS

SCALE 2 cm = 100 m _ February 87.

BY R. TRIFAUX.

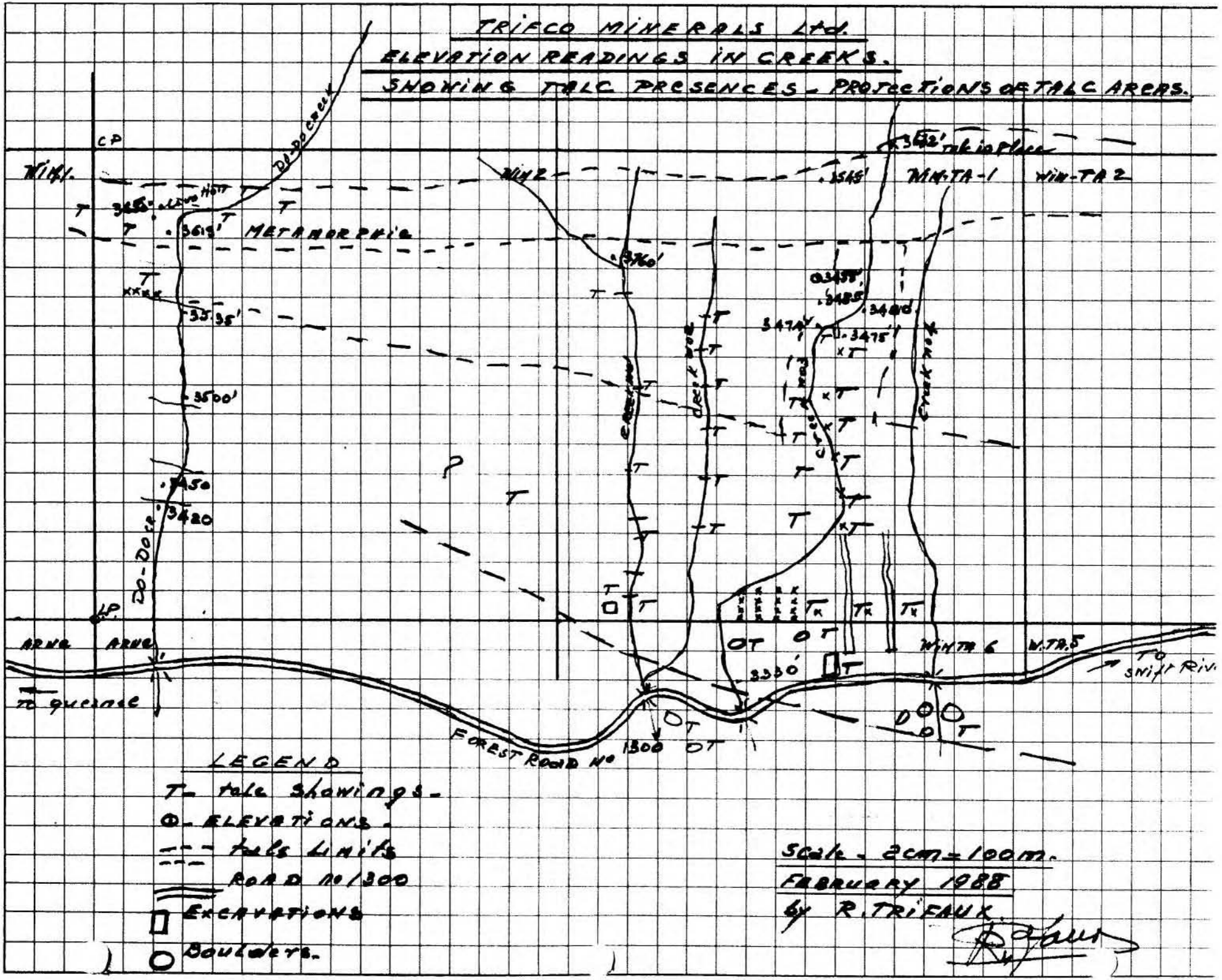
FEBRUARY 1988



TRIFCO MINERALS Ltd.

ELEVATION READINGS IN CREEKS.

SHOWING TALC PRESENCES - PROJECTIONS OF TALC AREAS.



LEGEND

T - Talc Showings -

⊕ - ELEVATIONS -

---- Talc Limits

ROAD No 1300

□ EXCAVATIONS

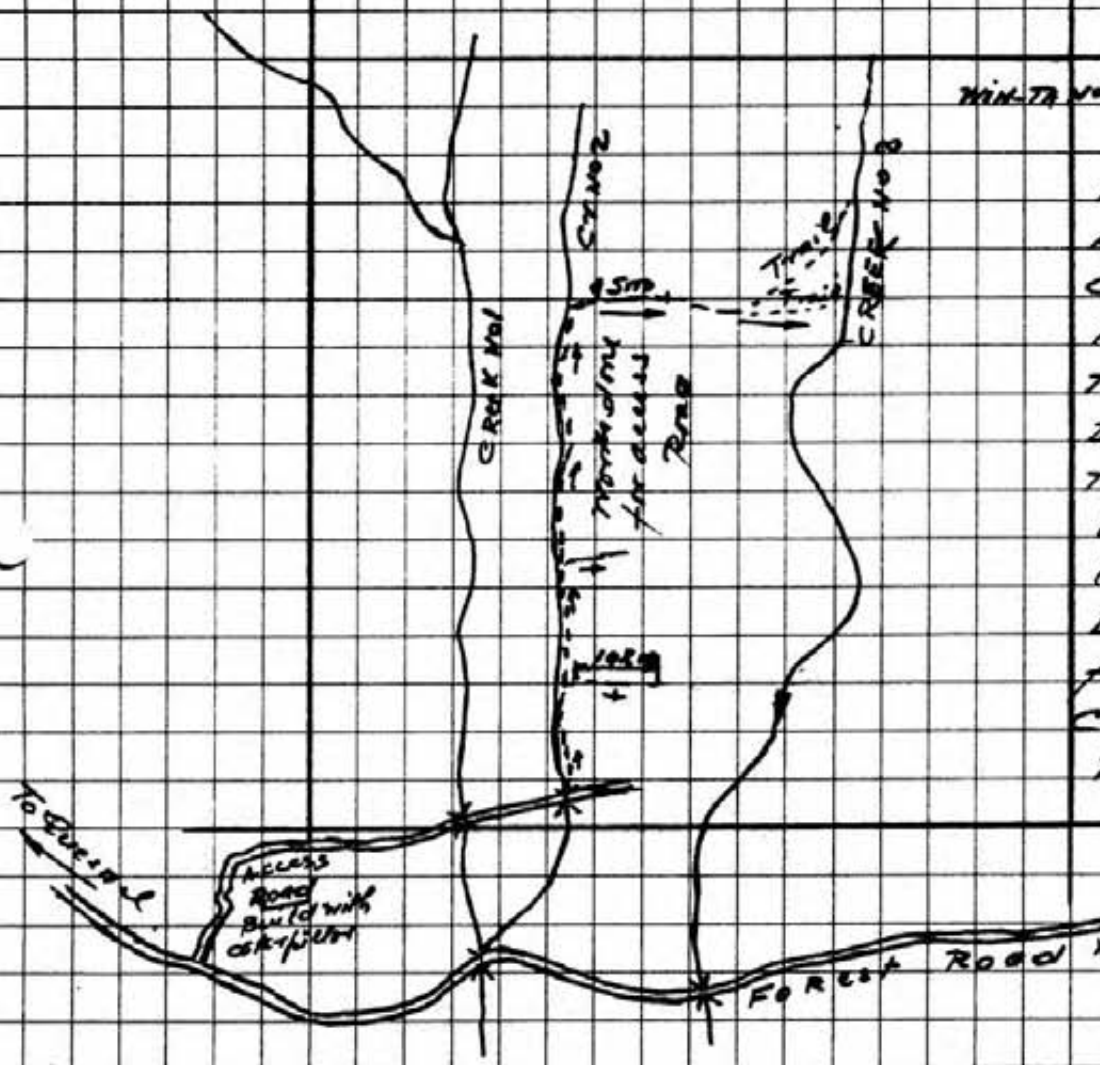
○ Boulders.

Scale - 2cm = 100m.

FEBRUARY 1988

by R. TRIFAUX.

TRIECO MINERALS Ltd
ACCESS TO CREEK No 3



Main Trench claim.

ATTEMPTS TO BUILD AN ACCESS ROAD FROM CREEK No 2 TO CREEK No 3 TO BE ABLE TO MOVE THE BIG DRILLING RIG ON THE CREEK No 3 SITES.
CAT MAN A ERICKSON BECAUSE of BIG FALLEN TREES THE CAT WAS UNABLE TO MOVE

LEGEND

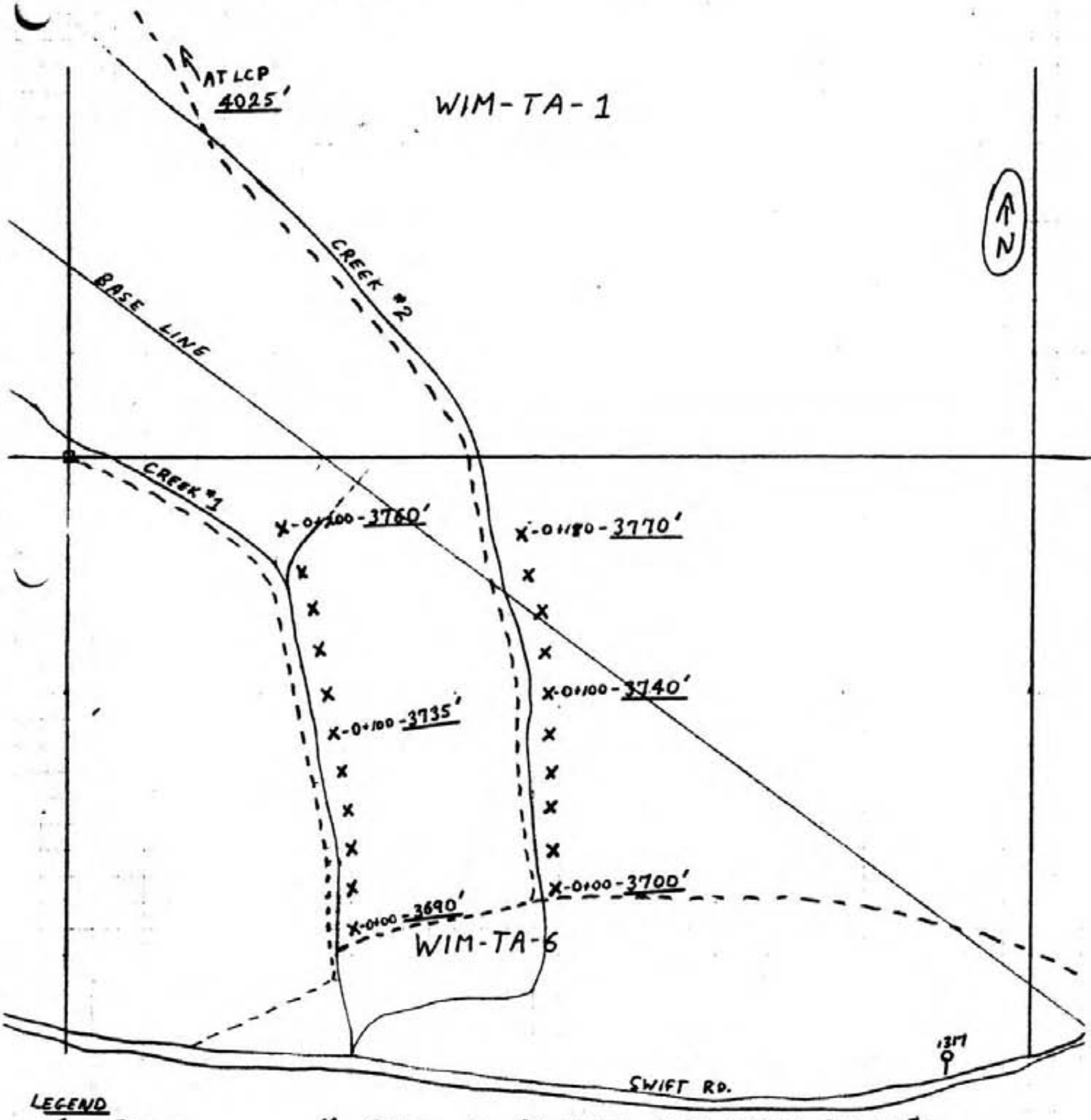
- CREEKS
- Trails
- Accesses existing
- Access Road.
- Main Road.

Scale 2 cm = 100 m
FEBRUARY 1988
BY R. TRIEAUX.

TRIFCO MINERALS MAP FOR STAKING + ELEVATION CHECKS ON CREEKS #1 + #2

BY A. FARDAL
JUNE 1/87
Page 33

SCALE - 1 ½" = 100 METERS



LEGEND

- ~ - TRAILS
- X - STAKES
- 9 - Km. POST

11 STAKES ARE NUMBERED 0+00 - 0+200 ON CR.#1
10 STAKES ARE NUMBERED 0+00 - 0+180 ON CR.#2
- ALL STAKES HAVE BLUE RIBBONS ON THEM

5:0 SUMMARY OF COSTS

Page 1	$ 21,039.20
Page 2	1,764.52
Page 3	1,349.00
	$ 24,152.72

5:0 SUMMARY OF COSTS (continued)

1. Diamond drilling Creek 3 - Allen Diamond Drilling		$ 6,035.57
2. Ray Kozuchak, Quesnel. Invoice June 1, June 5, July 14, 1987. Trenching on Creek 1, 2, 3 & Do-Do.		3,442.75
3. D.S. Lobdell, geologist. Invoice #139 (G. Corbett)		1,969.93
4. Vancouver Petrographic Ltd. Examinations, reports XRD. Invoice # 65-75 July 1987	$2,138.50	
Invoice # 87-87 August 1987	32.50	2,171.00
5. Other independent contractors:		
(a) Arne Fardal - invoices 301, 302, 303, 305, 308, 311 & 312 for months of February, March, April, May, June, September, October and November 1987.		2,241.20
(b) Berton McLean - time sheets for May, June and October, 1987.		387.75
(c) Phil Megyesi - time sheets June & July 1987.		222.25
(d) Mike Weber - time sheets May, June, July & October, 1987.		242.00
6. R. Trifaux time, mileage, meals. (see details on separate sheets)		4,326.75
		$21,039.20

5:0 COSTS SUMMARY (continued)

June 1987

Good Knight Inn - Motel Quesnel - Invoice 36	$1,291.70	
Geologist - Invoice 37	172.80	
Meeting room	32.40	
Invoice #35673 total		$1,496.90
Meals, motel & miscellaneous:		
White Spot - Invoice 576 3100	$ 10.30	
Northland Restaurant, Cache Creek 078208	6.10	
Husky, Williams Lake - invoice 1359270	10.80	
Smitty's, 100 Mile House - invoice 5099369	13.60	
Smitty's - invoice 5159619	13.00	
- invoice 5680077	16.00	
Candlelight, Quesnel - invoice 572 3407 (NSG)	15.80	
100 Mile House - motel invoice 5188234	28.08	
Coquitlam Post Office - hold mail	8.00	
Sandman Inn - invoice 5067413	19.10	
Best Western, Vernon - invoice 5525120	56.16	
Telephone	3.51	
		200.45
Willis Harper Hardware - invoice 2539528	16.42	
Pinetree, Quesnel - small tools invoice 5327	50.75	
		67.17
		$1,764.52

5:0 COSTS SUMMARY (continued)

Miscellaneous Costs

Preparation of samples and post office for Vancouver Petrographics, Langley and return trip.		
Time 2 hours x 15.00	$ 30.00	
Bags	2.00	
P.O. Copies	2.00	
Mileage 100 km x 0.25	25.00	
	------	$ 59.00
Correspondence with B. McLean, Weber & Fardal		5.00
Correspondence with lawyer - Allen Diamond Drilling Ltd.		25.00
Plastic bags, samples in the field		10.00
Sketches, maps 15 x 10.00		150.00
Diary 1 hour x 30 days		300.00
Reports - two drafts		
one original, two copies		
photocopies		
covers		
typist		800.00

		$1.349.00

5:0 COST SUMMARY (continued)

Diamond Drilling on Wim-ta claims

July 1, 1987 invoice 87-9		$7,322.92
Claim by R. Trifaux against Allen Diamond Drilling		1,287.35
Revised cost of diamond drilling		$6,035.57
Advance payment	$ 4,000.00	
Payment on completion	2,035.57	
	$ 6,035.57	

Mr. R.K. Kozuchak
Box 15, R.R. 4,
Aird Road, Quesnel, B.C. V2J 3M8

Invoices for ditches dug on Wim Wim-Ta claims and Do-Do Creek

June 1, 1987	$ 475.00	
May 27, 1987	325.00	
May 28, 1987	300.00	
May 29, 1987	325.00	
		$1,425.00
June 5, 1987 - June 3,4 & 5 - Hole 10m x 10m Creek #2		1,305.25
June 14, 1987 - first ditch	$ 137.50	
second ditch	262.50	
third ditch	312.50	
		712.50
		$3,442.75

5:0 COST SUMMARY (continued)

Geologist - Wim-Ta claims

Mr. D.S. Lubdell

Invoice No 139 to Dr. Grant Corbett

Project 87-5 - supervision of diamond drilling in Creek No. 3

Total amount.....$1,969.93

Vancouver Petrographics Ltd. Wim Wim-Ta claims

Creek No. 3

Invoice 6575 - July 1987		
Report	$ 315.00	
Analyses	1,526.00	
Thin sections 34 x $7.00 each	238.00	
Ground and labelled thin section	25.50	
Rock - spar stains 10 cents each	34.00	
		$2,138.50
Invoice 87-87 August 15, 1987		
Harms Exploratory Services - additional information for July report		32.50
Grand Total.....		$2,171.00

5:0 COST SUMMARY (continued)

A. Fardal - Summary of Costs

DATE	TIME	MILEAGE
1987		
February	13 hrs	105 kms
March	1	5
April	6	93
May	72	760
June	53.5	670
September	2	
October	13.5	79
November	4	78
	165	1790

Time 157 hrs x 10.00	$ 1,570.00
8 hrs x 25.15	201.20
Mileage 1790 kms x 0.25	447.50
Power saw rental	22.50
	$ 2,241.20

5:0 COST SUMMARY (continued)

Breakdown of A. Fardal Expenses

DATE	HOURS	RATE	MILES	RATE	REMARKS	
02-19-87	2	20.00			Diatomaceous report.	
02-21-87	3	30.00			Visits, phone calls	
02-24-87	3	30.00	75	18.75		
02-28-87	5	50.00	30	7.50		
	13	130.00	105	26.25	Invoice 301	$ 156.25
06-03-87	1	10.00	5	1.25	Estimate for blasting & crushing talc	
					Invoice 302	$ 11.25
02-04-87	1	10.00			Updating map	
09-04-87	1	10.00	5	1.25	Photocopying	
25-04-87	4	40.00	88	22.00	Meeting with Corbett	
	6	60.00	93	23.25	Invoice 303	$ 83.25
05-05-87	8	80.00	73	18.25	Test holes	
06-05-87	6	60.00	73	18.25	Test holes	
07-05-87	5	50.00	73	18.25	Test holes	
09-05-87	8.5	85.00	79	19.75	Trail	
power saw rental				9.00		
12-05-87	1	10.00				
18-05-87	8	80.00	77	19.25	Trail	
23-05-87	9	90.00	77	19.25	Trail	
power saw rental				9.00		
25-05-87	3	30.00	77	19.25	Access road	
27-05-87	7	70.00	77	19.25	Ditch	
power saw rental				4.50		
28-05-87	7.5	75.00	77	19.25	Ditch	
29-05-87	7	70.00	77	19.25	Ditch and hole	
30-05-87	2	20.00				
	72	720.00	760	212.50	Invoice #305	$ 932.50

5:0 COST SUMMARY (continued)

Breakdown of A. Fardal Expenses (continued)

DATE	HOURS	RATE	MILES	RATE	REMARKS	
01-06-87	6	60.00	77	19.25		
02-06-87	7	70.00	77	19.25		
03-06-87	7	70.00	85	21.25		
04-06-87	8	80.00	77	19.25		
05-06-87	7	70.00	77	19.25		
06-06-87	4.5	45.00	103	70.75	Trip to Hixon for new property.	
11-06-87	8	80.00	84	21.00	Corbett visit.	
13-06-87	6	60.00	90	22.50		
	53.5	656.20	670	167.50	Invoice 308	$ 823.70
21-09-87	2	20.00			Invoice 311	$ 20.00
06-10-87	1	10.00			Went to claims	
09-10-87	1	10.00			Parcels for talcs - to go	
11-10-87	1	10.00			to Wim & Wim-Ta claims for	
13-10-87	1	10.00			sampling. Parcels and	
14-10-87	.5	5.00			expediting. Go to recorder	
23-10-87	1	10.00			office for maps, claims,	
24-10-87	7	70.00	79	19.75	tapes etc. Miscellaneous.	
03-11-87	1	10.00				
	13.5	135.00	79	19.75		$ 154.75
-11-87	4	40.00	78	19.50	Invoice 312	$ 59.50
						$2,241.20

5:0 COST SUMMARY (continued)

Breakdown of Bertie McLean Expenses

DATE	HOURS	RATE 9.00	RATE 4.50	MILES	RATE	MISCELLANEOUS	
1987							
20-06-87	3.5	31.50				Power saw	5.25
	2.0		9.00				
21-06-87	4.5	40.50					
	2.0		9.00				
24-06-87	2.0		9.00	74	18.50		
25-06-87	2.0	18.00					
	2.0		9.00	74	18.50		
26-06-87	1.0	9.00					
	2.0		9.00				
	21.0	99.00	45.00	148	37.00		5.25
31-10-87	6.0	54.00					
	2.0		9.00	74	18.50		
	8.0	54.00	9.00	74	18.50		
09-05-87	8.0	56.00				Power saw	3.00
23-05-87	8.5	59.50				Power saw	1.50
	16.5	115.50					4.50

16.5 hours x 7.00	$ 115.50
17 hours x 9.00	153.00
12 hours x 4.50	54.00
222 miles x 0.25	55.50
Power saw rental	9.75
	$ 387.75

5:0 COST SUMMARY (continued)

Breakdown of Phil Megyesi Expenses

DATE	HOURS	FULL RATE	HALF RATE	MILES	RATE	OTHER	
20-06-87	3.5	31.50	9.00	74	18.50	Power saw	5.25
27-06-87	11.0	99.00					
	2.0		9.00				
18-07-87	2.5	22.50					
	2.0		9.00	74	18.50		
	23.0	153.00	27.00	148	37.00	Power saw	5.25

17 hours x 9.00	$ 153.00
6 hours x 4.50	27.00
148 miles x 0.25	37.00
Power saw rental	5.25
	$ 222.25

Breakdown of Mike Weber Expenses

DATE	HOURS	FULL RATE	HALF RATE	MILES	RATE
09-05-87	8.0	56.00			
23-05-87	8.5	59.50			
25-06-87	2.0	18.00			
	2.0		9.00		
26-06-87	1.0	9.00			
	2.0		9.00	74	18.50
31-10-87	6.0	54.00			
	2.0		9.00		
	31.5	196.50	27.00	74	18.50

16.5 hours x 7.00	$ 115.50
9.0 hours x 9.00	81.00
6.0 hours x 4.50	27.00
74 miles x 0.25	18.50
	$ 242.00

5:0 COST SUMMARY (continued)

Breakdown of R. Trifaux Expenses

DATE	DESCRIPTION	TIME	KMS	MEALS
01-06-87	Trip to Quesnel		680	
02-06-87	Trip to Wim-Ta claims to examine the works done with the caterpillar and back hoe on Creek No 1 and 2. A huge excavation has been done south of Creek No 1 (6m x 6m x 4m) = 144 cubic meters. Also to ditch dug on the left bank of Creek No 2 - 200m with a 6m in depth and 90cm in width. (200m x 0.90cm x 6m = 1080 meters cubed. Road distance created by cat on the claim. From road to Creek No 1 - 110m and from Creek No 1 to Creek No 2 - 50m. Presence of talc is everywhere. Talc boulders all over in the ditches and the one excavated on the sides of the ditches.	5.5	90	1
03-06-87	Creek No 1 - diggings on creek right bank for new talc discoveries by A. Fardal. Found slab of good talc boulders in creek. Stake + 45 and stake + 90 are the best indications of the talc in place.	9.5	90	3
04-06-87	8 AM phone call from S. Croft - coming to Quesnel next Sunday with another geologist. Preparation of works for drilling Margo & Louise II claims. 10:30 departure for field to see driller. No rig yet on the site. Went together to see the sights to be drilled. Wim-Ta claims. Met Ray Kozuchak & A. Fardal in the trench. Inspected all the boulders of talc found to date. Visited the Do-Do Creek ditch on the right bank of the creek.	8.5	90	3
05-06-87	7AM departure for Do-Do Creek. Searched in the trench 60m x 0.90 x 2m = 108 cubic meters for samples of wollastonite. I found a good one in the creek. Trail finished to go to the graphitic deposit, near the falls (drilling). 8.72 and 9.75 %. Carbon graphite in the analyses. Visit to Ray who is finishing the last trench in Creek No 3. Trench 130m x 0.90 x 6m = 702 cubic meters. Inspected all the boulders in the trench and out. Sampling on Margo & Louise II claims.	9.5	90	3
R. Trifaux Expenses - Page 1 totals		33.0	1040	10

8:0 COST SUMMARY (continued)

Breakdown of R. Trifaux Expenses (continued

DATE	DESCRIPTION	TIME	KMS	MEALS
06-06-87	Departure 10 AM with A. Fardal for talc showings north of Quesnel. The showings are sporadic. Return 1 PM. Phone call Allen Drilling that the rig will be in place Tuesday at the Margo claim, Departure for Margo claims where I put the stakes for the drilling. Met S. Croft, geologist at Wim-Ta at 5 PM.	8.0	90	3
07-06-87	Went to bottom of falls for measuring width of graphitic deposit at the Do-Do Creek. Found calcium silicate at the beginning, good sample of wollastonite - heavy sulfides in graphites (trench?) Size of sulfides increase going up in the Creek. Via the second trench, I went to Creek No. 3 - remarkable presence of talc boulders in the creek. Boulders in trench and talc in place and the beginning of trench. Talc in place is nearly. Talc presence up to the 1st plateau in the creek. 5:30 PM visit Allen to tell him about the stakes.	6.5	90	2
08-06-87	7:30 AM departure. Do-Do Creek - found extensions of talc going to the east of the creek. I dug in the talcs. Good indications for diamond drilling. I went to see the works done on the trail going to Wim-Ta claims east from top of the creek. (Good trail - trees cut ok) Samples of wollastonite and dolonite taken. Wollastonite is used in dielectric porcelain, in glazes, frits and fluxes - also wollastonite in a matrix of coarsely crystalline calcite. Metamorphism important in this area. Photographs of ditches. 6:30 PM	8.5	90	3
09-06-87	8 AM Preparation of papers for Thursday. Bought hard hats (7) for the visit of Corbett Bros. on the site. I checked if everything was ready for drilling and it was. Some correlation exists in the two trenches in Creek No. 3 for the presence of the talc in place. 6 PM.	8.5	90	3
R. Trifaux Expenses - Page 2 totals		31.5	360	11

5:0 COST SUMMARY (continued)

Breakdown of R. Trifaux Expenses (continued)

DATE	DESCRIPTION	TIME	KMS	MEALS
10-06-87	Stu Croft, geologist came on the site with the second geologist. 6:30 AM I went on the site and went to the hole where syenite was found at the Do-Do Creek. I analyzed the levels of the syenite and the monzonite in Creek No 3 - left bank. The monzonite is lower than the syenite - same formations. Too many issues unresolved with the geologist. Digging with augers. 6 PM The visit of the geologists was unconclusive.	10.5	90	3
11-06-87	7:30 AM Do-Do Creek. Digging for prolongation of talc beds to the east. Discovery of mica (geologist saw). It is vermeculite. I dug for definition of new talc showings on the west of Wim. (no success). Visit of several people on the site. Corbett Bros. showed the extent of explorations and showings of talc. They wanted some drilling in the platy talc, they took samples in the graphites. Visit with Allen (the driller) and A. Fardal in Creek No. 3 to see the possibility of getting the drilling rig above the plateau. It is not an impossibility. 6:30 PM.	9.0	90	3
12-06-87	7:30 AM Do-Do Creek. Lower Falls. Investigating the presence of sulphides in the two banks. 2 - 5% + sulphides - dark and scaly graphite. Trail should be built on left bank of Do-Do to top of graphites. Showed the driller where to drill above the huge talc boulder near the beginning of 2nd trench in Creek No. 3. All the boulders shown to the geologist. I asked if it was far from the bedrock, they didn't know for sure. For the big rig to be installed on the plateau in Creek No 3, a road should be built. 6 PM.	9.5	90	3
13-06-87	7:30 Small road to be built by Allen to put the rig close to beginning of trench No. 2 Creek No. 3. Allen thought the boulder was bed rock. A trip to the top of Creek No. 3 for the next drilling to be done above plateau No 1. The drilling with the helicopter can do it. The workers are reluctant to carry the rig going up. 5:30 PM.	8.0	90	3
R. Trifaux Expenses - Page 3 totals		37.0	360	12

5:0 COST SUMMARY (continued)

Breakdown of R. Trifaux Expenses (continued)

DATE	DESCRIPTION	TIME	KMS	MEALS
14-06-87	8:30 AM Pictures of boulders near the road. Observations of talc in trench No.1. Some material (rotten deeply) seems to be in place. Analyzed the east side of the trench for the presence of talc. The talc in place is not far away - this is my contention. A boulder of 35 tons, south of trench No 2, cannot be far away from it's source. 5:30 PM.	7.5	90	3
15-06-87	7:30 AM Morning of big drilling rig from Margo - Louise II to Creek No. 3 on the Wim-Ta claims. I dug under the big boulder to find a new area below and found new talc with sulphides. I told Allen to dig a platform with the cat and the road of access as soon as possible. Trip in the Creek No. 3 on the left bank for new talc boulders. 6 PM.	9.5	90	3
16-06-87	8 AM After phone call with Mr. Booth from Ontario Research Foundation and Grant Corbett. No drilling today - Allen went to Wells. I dug for talcs in place until 5:30 PM More work for tomorrow.	6.0	90	2
17-06-87	Drilling today on Wim Wim-Ta claims at the south side of trench No. 2. 7:30 AM. Search for talc in places (platy) 3 areas. Talc on top is oxidized deeply, reduced to a soft micaceous appearance. 1 to 1 1/2 foot below it becomes greyish blue. 5:30 PM.	5.5	90	2
18-06-87	8:00 AM Diggings for body in place, blue slab discovered on right bank of Creek No 3 below the plateaus. 5:30 PM.	9.0	90	3
	Meeting with Clayton Ward and his wife (Director of Trifco Minerals Ltd. 7:00 - 8:30.	1.5		
	R. Trifaux Expenses - Page 4 totals	39.0	450	13

5:0 COST SUMMARY (continued)

Breakdown of R. Trifaux Expenses (continued)

19-06-87 7:30 AM Research for body in place in Creek No 3. Trip to Creek No 2 with Allen to look at the possibility to build a road going to the plateau. Visit of Megyesi, Weber and McLean with their spouses - shareholders of Trifco Minerals Ltd.	6.0	90	3
20-06-87 8 AM Megyesi, McLean and I met with Allen in the Creek No. 2 to try to start to build the road. Fallen trees too big to be pushed by Allen's cat. Fiasco! 3 PM	6.0	90	2
21-06-87 7:30 AM With Bertie McLean - visit to Herb Allen for estimated costs to drill on top of the plateau. Use of helicopter, difficulties of access. I went to the body under the plateau and worked in the trench with him. 5:30 PM	7.0	90	3
22-06-87 Revisions of account in Quesnel. Invoices from Kozuchak, Allen etc. Estimate for transportation by helicopters. Visit with A. Fardal, explanation about Company Development, public relations.	4.0		
Field 1:30 -5:00 PM	4.5	90	3
23-06-87 Departure 11:00 AM Went to A. Fardal to pick up invoices for the back hoe (first)	2.0		
Field assisted for the placement of the rig by the helicopter with Herb Allen and his son. More digging in the mountain for talc in place. Left 6:30 PM	7.5	90	3
24-06-87 Willis Harper in Quesnel - buying a ribbon to measure distances in the field.	2.0		
10:00 AM departures for the field. The geologist phoned my wife that I wait for him in the field, after 5:30 PM he will come to contact new place. He never came. Back to Quesnel at 8:30 PM. Geologist arrived in Quesnel 9:00 PM - late	8.5	90	3
R. Trifaux Expenses - Page 5 totals	47.5	540	17

COST SUMMARY (continued)

Breakdown of R. Trifaux Expenses (continued)

DATE	DESCRIPTION	TIME	KMS	MEALS
25-06-87	9:00 AM departure with the geologist. We went in Creek No. 3 to look at the trends. He was impressed with the steatite boulders. I showed my digging for the discovery of talc in place. Drilling - to 53' first. Later to 75' - after 15' no recovery. Engine of the drill stopped and had to be replaced. My diggings continued for talc in places. Back at 7:30 PM with geologist and McLean.	10.5	90	3
26-06-87	9:00 AM Bank of Montreal for cash. Departure with geologist at 10:00 AM. A new hole at 60° inclination was drilled at the request of the geologist, to know the direction of the formations. Return 6:00 PM.	1.0 6.0	90	2
27-06-87	Depart 9:30 AM. Visited the drilling operation. The geologist relocated relocation of holes without consulting me, The high was 125' north of what had been decided. Samples taken in the box of the cores of the south hole. Hole No. 3 was started at 10:30 PM and recovered the rock after 21' of drilling. Berton and Megyesi remained in the field digging in the trench. Hole No. 3 - crushed rock in the hole. Poor results. Machine is in poor shape. Took a witness of what happened in the field at this time. 6:30 PM.	6.5	90	3
28-06-87	8:00 AM Geologist at Hole No 4. He told me that 10' of crushed talc came out of the hole, also did Berton McLean (indication of steatite in the hole) creamy with oxidation. The geologist confirmed the talc presence in the hole. The geologist come with McLean and I to see the talc discovered above the plateau, where 34 samples have been taken by R. Trifaux for analyses. 6:30 PM - stop the drilling. Departure of geologist.	8.5	90	3
R. Trifaux Expenses - Page 6 totals		32.5	360	11

5:0 COST SUMMARY (continued)

Breakdown of R. Trifaux Expenses (continued)

DATE	DESCRIPTION	TIME	KMS	MEALS
29-06-87	9:30 AM New samples in Creek No. 3. The helicopter is coming to pick up the rig to put it on the place to be picked up by Allen. Episode with a black bear and it's cub. Samples taken with A. Fardal in new discovery. Samples from McLean's trench. 6:30 PM.	8.0	90	3
30-06-87	Office work to 1:30 PM. Visited Allen and analyzed the bill for drilling on the road.	3.0		1
	Initiated Berton for the trenching and sample taking for geochemical surveys in general. Horizon for samples taking, measurements, orientation. 7:30 PM in Quesnel. Paid Ray Kozarchuk for refilling the trenches.	6.0	90	2
	R. Trifaux Expenses - Page 7 totals	17.0	180	6

Recap of Expenses:

PAGE #	TIME	KMS	MEALS
1	33.0	1,040	10
2	31.5	360	11
3	37.0	360	12
4	39.0	450	13
5	47.5	540	17
6	32.5	360	11
7	17.0	180	6
Totals	237.5	3,290	80

Hours	237.5 x 15.00	$3,562.25
Mileage	3290 kms x 0.25 x .20	164.50
Meals	80 x 7.50	600.00
Total Expenses - R. Trifaux		$4,326.75

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 with my 1977-1978 statement of works in Quesnel, Cariboo.

4. I passed successfully the test of rocks and mineral identification with a mining engineer from the Department of Mines in 1978, in Robson Square, Vancouver.
5. Cost accounting (2 years) with McMaster University in Ontario.

EXPERIENCE

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

6:0 STATEMENT OF QUALIFICATIONS (continued)

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.

3. Mr. R. Henrion, Explorations Minieres 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.

6:0 STATEMENT OF QUALIFICATIONS (continued)

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.

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.)

6:0 STATEMENT OF QUALIFICATIONS (continued)

I learned very useful informations on the industrial minerals from the Ontario Research Foundation, related to talc, graphlite, 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.

Vancouver Petrographics Ltd.

JAMES VINNELL, Manager
JOHN G. PAYNE, Ph.D. Geologist
A.L. LITTLEJOHN, M.Sc. Geologist
JEFF HARRIS, Ph.D. Geologist

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GEOLOGICAL BRANCH
ASSESSMENT REPORT

17,246

Invoice #6575

July 21st, 1987

Report for: Rene Trifaux,
Trifco Minerals Ltd.,
Ste 308-751 Clark Rd.,
Coquitlam B.C. V3J 3Y3

PETROGRAPHIC STUDY OF TALC-BEARING ROCKS FROM THE CREEK NO.3 AREA OF THE DO-DO CLAIM GROUP, NEAR QUESNEL, B.C.

Introduction:

A suite of 34 samples collected by R. Trifaux was submitted for thin sectioning and petrographic examination.

The primary objectives of the study were to confirm the presence of talc, to estimate its abundance in the various samples, and to investigate its grain size and mode of occurrence in the rock.

Results of X-ray diffraction analyses confirming the identification of talc are found in Appendix 1.

Photomicrographs, with descriptive notes, to illustrate the character of the rocks and the mode of occurrence of the talc are included as Appendix 2.

Individual descriptions of each sample, based on microscopic examination of the thin sections, prefaced by a generalized description of some of the salient features, constitute Appendix 3.

Samples:

The suite consists of 16 samples of core from the short exploratory diamond drill holes, no.s 1, 2, 4 and 5; 7 samples from trenches and exposures in the creek, mainly around elevation 3472 - 75 ft; and 11 samples from a prospecting traverse in and around No. 3 Creek (locations on record by R. Trifaux).

Samples are listed in Table 1, together with their estimated talc contents and mineralogical compositions based on microscopic examination.

The simple consecutive number series Z 1 - 34 (shown in the first column of Table 1) was assigned in the lab for preparation purposes. These brief and convenient numbers are used for discussion of the results throughout this report.

Summary of Results:

The petrographic study shows that the rocks of this suite are metasediments ranging in composition from quartzo-feldspathic wackes to dolomites, with all intermediate stages. A single sample (Z-7) is an andesitic intrusive unrelated to the rest of the suite.

Talc is a widespread and often prominent constituent. Of 33 samples, one contains an estimated 92% talc, 10 contain 26 - 50% talc, and another 10 contain 10 - 25% talc. Of the remaining 12 samples, 5 have low but detectable contents of talc, in the order of a few percent.

The mineralogy of the suite is simple and consistent, the rocks being made up essentially of various proportions of quartz, feldspars, dolomite, phlogopite mica and talc. They range from schistose greywackes with low carbonate contents to more or less unfoliated, variably silty or sandy dolomites.

Talc is seen in all types and there appears to be no direct correlation of talc content and host rock lithology.

The talc occurs principally in the characteristic form of minutely fine-grained felted aggregates. This material occurs intimately intergrown, in pervasive or interstitial fashion, with the other constituents of these rocks. It concentrates as small pockets and streaks ranging in size from 50 - 500 microns, the coarser concentrations naturally being found in the rocks of highest overall talc content. This mode of occurrence is well illustrated by the photomicrographs.

Some talc may occur in a somewhat different form. Many of the rocks contain a colourless to pale brown (locally darker red-brown) mica which is believed to be phlogopite. This occurs as individual flakes and small, compact masses up to 0.5mm or so in size. Its optical properties are, in part, gradational to those of talc, and, in some samples, it also appears texturally gradational.

XRD analyses fail to yield a phlogopite peak in some samples where this mineral is comparatively abundant, possibly indicating that a part of the component identified as phlogopite in the thin sections may, in fact, be talc.

The highest grade sample in the suite (Z-21) is a breccia of compact talc. Its relation to the talcose metasediments is not known.

Conclusion:

Talc is a widespread and often relatively major constituent of the rocks of this suite.

No comment can be made on the possible extent of potentially economic talc occurrences on the property from present evidence, except that the existence of strongly talcose material has now been identified from several well separated locations (see my previous reports: June 1985 and March 1987).

The recognition of talc as an integral constituent of bedded metasedimentary strata offers the possibility of good lateral continuity.

Continued exploration on the property appears strongly merited, and should include systematic geological mapping, sampling and drilling, to determine the geometry, grade and extent of the talc-bearing rocks. Concentration test work to determine the extractablility of the talc is also required.

J.F. Harris Ph.D.

Table 1: LIST OF SAMPLES AND ESTIMATED MODAL PERCENTAGES

Lab No.	Sample No.	Talc	Phlogopite	Chlorite	Dolomite	Quartz & Feldspar clasts	Chert/ Felsite	Rutile	Dark sub-opaques	Limonite, opaques
Z-1	DDH-1 29'	-	24	-	5	15	50	-	6	-
2	43'	-	12	1	7	20	57	-	3	-
3	47'	-	12	trace	4	18	62	-	4	-
4	58'	22	14	2	14	24	24	-	-	-
5	62'	14	4	2	54	20	6	-	-	-
6	64'	40	10	3	15	10	22	-	-	-
7	73'	andesite dyke								
8	DDH-2 25'	-	9	-	5	6	76	-	4	-
9	DDH-4 13'	35	10	3	12	13	27	-	-	-
10	18'	5	-	trace	50	17	28	-	-	-
11	27'	20	25	2	13	20*	20	-	-	-
12	32'	3	trace	5	50	10*	32	-	-	-
13	34'	-	-	7	74	8*	11	-	-	-
14	45'	10	4	1	63	4	16	1	-	1
15	36'	14	12	6	28	15	25	-	-	-
16	DDH-5 11'	45	5	-	50	-	-	-	-	-
17	Ck3 Alt 3475 - schistose	8	? 30	2	-	19	38	1	-	-
18	Ck3 Alt 3475 - grey slab	12	4	trace	60	8	16	-	-	-
19	Ck3 Alt 3474 -	9	3	2	66	8	12	-	-	-
20	Ck3 Alt 3538 -	22	7	2	42	13	14	-	-	-
21	Ck3 Alt 3472-75 trench	92	-	5	1	-	-	-	-	2
22	Ck3 trench (grey,hard)	-	2	2	72	10	14	-	-	-
23	Ck3 trench	47	1	2	48	2	-	-	-	-
24	Ck3 #1	7	2	2	69	10	10	-	-	-
25	#2	28	7	2	28	20	15	-	-	-
26	#3	6	6	2	63	8	15	-	-	-
27	#4	40	2	2	52	4	-	-	-	-
28	#5	18	4	3	52	9	14	-	-	-
29	#6	35	10	trace	18	18	18	-	1	-
30	#7	50	8	2	-	18	22	-	-	-
31	#8	40	8	4	10	18	20	-	-	-
32	#9	12	5	1	63	10	8	-	1	-
33	#10	25	9	3	38	12	13	-	-	-
34	#11	40	9	2	-	19	27	-	-	3

*Quartz, as coarse granular masses, often with carbonate. Probably disrupted beds or veins.

Appendix 1: X-RAY DIFFRACTION ANALYSES

A group of the samples were checked by X-ray diffraction.

Small portions were finely ground with acetone and dispersed on glass slides. These were then scanned by CuK radiation over the 2 ranges 7° - 10° and 27° - 31.5° (or parts of these ranges).

The primary objectives were to confirm the presence of talc (XRD peaks at 9.5° and 20.7°) and to confirm the carbonate species as dolomite (peak at 31.0°). In some samples scans were extended to 13° and 33° to check for the peaks of chlorite (12.5°), siderite (32.1°) and magnesite (32.7°). The peak of phlogopite (at 8.7°) was also covered by the low-angle scan.

Results are tabulated below. The symbol + indicates a moderate to strong peak; (+) indicates a weak peak; - indicates peak absent; NS indicates not scanned over this range.

TABLE

Sample No.	Phlogopite	Talc	Chlorite	Calcite	Dolomite	Siderite	Magnesite
Z-1	+	-	NS	NS	NS	NS	NS
Z-9	-	+	NS	-	+	NS	NS
Z-11	+	+	NS	-	-	-	-
Z-17	-	(+)	NS	NS	NS	NS	NS
Z-18	-	+	-	-	+	-	-
Z-21	-	++	NS	-	-	NS	NS
Z-27	-	+	NS	(+)	+	NS	NS
Z-30	-	+	+	-	-	-	-
Z-31	-	+	+	-	-	-	-
Z-34	-	+	NS	-	-	-	-

Conclusions from the above results are as follows:

X-ray diffraction analysis confirms the lack of talc in Z-1 and the presence of significant talc in all of the others tested. A detectable peak implies the presence of 10% or more of that constituent.

It was not considered necessary to run all the samples by XRD. The material identified as talc in the thin sections is similar in all cases, and the confirmation obtained on this sub-group can safely be assumed to apply to the suite as a whole.

In all cases where carbonate peaks were present they are of dolomite, except that the additional presence of accessory calcite was confirmed in Z-27. Where the presence of siderite and magnesite was sought, the results were always negative.

The presence of phlogopite is confirmed in Z-1 and Z-11. No peaks were obtained in the other samples, suggesting that, if present, phlogopite amounts to less than 10%. This is contrary to the petrographic evidence in Z-17. Apparently the portion taken for XRD was dissimilar to that represented by the thin section. These results lend some support to the fact that a part of the material identified petrographically as phlogopite may, in fact, be talc.

Appendix 2: PHOTOMICROGRAPHS

All photomicrographs (except where otherwise stated) are taken by cross-polarized transmitted light, and are at the scale 1 cm = 85 microns.

Neg. No.	Sample No.	
93-1A	Z-21	Shows breccia fragments of compact felted talc, cemented by brown-stained talc with disseminated Fe-oxides (black, opaque) and flecks and streaks of chlorite (dark blue-black; e.g. bottom right). The appearance of the talc in the fragments (very fine aggregates in pale pastel colours) can be used as a key to its recognition in the other photographs.
93-14A	Z-16	High grade talcose dolomite. Talc (pastel colours) as interstitial matrix to individual dolomite grains (greys). Segregation of essentially pure talc at left. Also see 93-2A.
93-3A	Z-23	Same sample. Shows interstitial/matrix relation of talc to dolomite. Note streaky concentration of talc (upper left). This grades to a coarse flake of phlogopite (bright colours with dark lamellae, bottom left). Light blue-grey patches are quartz clasts.
93-4A	Z-23	Same field as 3A but plane polarized light. Shows the pale brown phlogopite (bottom left) grading to colourless talc. The scale of intergrowth of dolomite (high relief grains) and talc (low relief, colourless background) is clearly displayed.
93-12A	Z-24	Example of weakly talcose dolomite. Note occurrence of talc as sparse wisps intergranular to the blocky carbonate grains. Bluish-grey colours are quartz (individual clasts, e.g. bottom right). Note that talc also occurs as dispersed flecks in the chert/felsite (finely granular blue-grey patches e.g. bottom right).
93-11A	Z-14	Foliated variety of weakly talcose dolomite. Note similar mode of occurrence of talc as in 93-12A: intergranular wisps in dolomite matrix and diffuse flecks in patches of chert/ felsite (bluish grey).
93-8A	Z-30	Talcose wacke. Shows igneous-textured clasts of intergrown feldspars and quartz (rounded mosaic masses, centre, top right, bottom right). Talc concentrates as interstitial pockets (e.g. upper left) and intimately pervades microgranular chert/ felsite (e.g. bottom left).
93-6A	Z-20	Shows talc in 'lumpy-textured' dolomitic siltstone. Note light and dark grey clasts of quartz and feldspars, and irregular patches of microgranular chert/felsite (speckled greys e.g. bottom left). Brownish flaky clumps (e.g. top left) are phlogopite. Scattered brownish-grey grains are dolomite. Note well-segregated, pockety mode of occurrence of talc (very fine-grained, felted, pale pastel colours), mostly on scale 70 - 150 microns.

Appendix 2 cont.

Neg. No	Sample No.	
93-10A	Z-31	Shows mode of occurrence of talc in a foliated, dolomite-poor siltstone. Pockets and streaky concentrations of talc with quartz-feldspar clasts (lower left) and schlieren of phlogopite (flaky lamellar structure, centre and far right). Note that talc tends to be intergrown with patches of microgranular chert/felsite (upper right centre), which sometimes occurs as remnants within talc pockets (upper left centre).
93-13A	Z-15	Talc in poorly segregated mode in dolomitic siltstone. Note intimate intergrowth of talc with chert/felsite (upper left). Talc in dolomite with abundant chert/felsite inclusions (bottom right) is in streaky, wispy form. Despite the overall abundance of talc, separation from this type of material may be difficult.
93-16A	Z-11	Intergrowth of talc and phlogopite. The phlogopite is generally distinguishable by coarser, more flaky habit and stronger interference colours.* Large black area (centre) is a void in the slide caused by plucking during preparation.
93-17A	Z-11	Same field as 93-16A but plane polarized light. Shows variation in colour of phlogopite and difficulty in estimating relative proportions viz a viz talc. Darkest brown areas are definitely phlogopite or possibly even local intergrowths of the Fe-rich equivalent, biotite. Medium to light brown areas may be phlogopite, but grade to even paler brown areas which may be a form of talc.
		* Speckled greys are intergrown chert/felsite.
93-2A	Z-23	High-grade talcose dolomite. Talc as pockets, 50 - 400 microns in size, in dolomite. Scattered grains of quartz (e.g. pale bluish grey grains, left).

Appendix 3 PETROGRAPHIC DESCRIPTIONS

Introduction

Quartz and feldspars are almost ubiquitous constituents in this suite. They range between 20 - 40% in combined modal percentage in the silty dolomites, and between 40 - 80% in the carbonate-poor wackes.

They occur in two more or less distinct forms: as individual grains of apparent clastic origin, 0.1 - 0.5mm in size, or rarely up to 1 or 2mm: and as micro-granular aggregates of grain size 10 - 50 microns, probably representing recrystallized silt. The latter material sometimes appears to be composed dominantly of quartz, and sometimes of feldspars; it is not possible to differentiate reliably at this grain size, and the component is designated in the modal estimates simply as 'chert/felsite'.

Differentiation of quartz and feldspar proportions within the coarser clasts is not critical to the present study and these, also, are estimated in combined form. Quartz is generally predominant over feldspars, but plagioclase almost always accompanies it. Cobaltinitrite staining indicates that K-feldspar is also present in minor amounts (1 - 4%) in most of the samples. In a few of the coarser rocks the clasts include granular intergrowths of quartz and feldspars of igneous aspect, or composites of coarse crystalline and fine chert/felsite material.

In the more siliceous rocks (wackes), chert/felsite forms a matrix to individual quartz and feldspar clasts. In the more dolomitic types it forms irregular patches and interstitial pockets accompanying, but generally independent of, scattered small quartz and feldspar clasts.

Carbonate in these rocks ranges from 0 - 74 in estimated modal percentage. More than half of them contain >30% carbonate and are classed as dolomites or silty dolomites.

The carbonate species is predominantly dolomite, but some of the samples show a weak but perceptible reactivity to dilute acid indicating the presence of minor intergrown calcite. This appears to be principally as marginal overgrowths on dolomite grains. Some coarse (remobilized?) segregations are also calcitic (e.g. Z-26).

The dolomite is commonly in the form of 'sandy' aggregates of individual subhedral grains, often of apparent clastic aspect. Sparser individual grains occur as accessories in the quartzo-feldspathic wackes.

Phlogopite mica is another common constituent. It occurs in the more schistose wackes as coalescent flakes and schlieren, and in the more dolomitic rocks as disseminated, individual flakes and clumps. In some samples it shows colour and textural mode gradational with that of talc.

Talc typically occurs in rather evenly dispersed form, as intergranular networks in carbonate (or small sub-parallel wisps in the foliated varieties) and as permeations and replacements of chert/felsite in the siliceous rocks. When

present in substantial proportions it often shows partial segregation into discrete pockets and streaks (see photomicrographs).

A few of the samples show strong deformation features (e.g. Z-2, 11, 12, 31). Most, however, are undeformed, with primary bedding and clastic textural features well preserved. Some exhibit a schistosity and/or recrystallization features indicative of a regional metamorphic overprint.

The abundance of talc in metasedimentary rocks of this kind is unexpected. Its presence may have some connection with ultramafic rocks which are known to occur nearby. The Mg-rich components, phlogopite and dolomite, may be similarly related. The intimate admixture with sandy/silty clastic detritus of quartzo-feldspathic (possibly granitically derived) composition suggests the possible convergence of more than one genetic process.

Individual petrographic descriptions of the samples follow.

Sample Z-1 DDH-1 29 ft. FINE-GRAINED LAMINATED GREYWACKE

Estimated mode

Quartz and feldspar clasts	15
Chert)	50
Felsite)	
Carbonate	5
Phlogopite	24
Fine-grained opaques/ sub-opaques	6

This rock is composed dominantly of a very fine-grained (5 - 20 microns), silty aggregate of chert/felsite which acts as matrix to scattered, equant clasts of quartz and plagioclase, 0.1 - 0.2mm in size.

Phlogopite occurs as dispersed flecks in felsite, individual, sub-oriented flakes, 0.03 - 0.1mm in size, and occasional semi-continuous schlieren.

Carbonate occurs as small, equant, disseminated grains and rare, thin, lensy laminae.

Close-spaced, anastomosing foliae of fine-grained opaque/sub-opaque material define a strong foliation.

Sample Z-2 DDH-1 43 ft. CONTORTED, LAMINATED, FINE-GRAINED GREYWACKE

Estimated mode

Quartz and feldspar clasts	20
Chert)	57
Felsite)	
Carbonate	7
Phlogopite	12
Chlorite	1
Fine-grained opaques/ sub-opaques	3

This is a similar type of rock to Z-1 but the dark, opaque/sub-opaque laminae or partings are less pronounced. Minor chlorite is intergrown with the phlogopite and opaque wisps.

Carbonate occurs as small individuals to 0.1mm, and as rare, local veinlets.

Quartz/feldspar clasts range downwards in size from 0.1mm to merge with the fine silty matrix. They sometimes show incipient marginal granulation/ recrystallization.

The rock shows intense, crenulate microfolding.

Sample Z-3 DDH-1 47 ft. LAMINATED FINE-GRAINED GREYWACKE

Estimated mode

Quartz and feldspar clasts	18
Chert)	62
Felsite)	
Carbonate	4
Phlogopite	12
Chlorite	trace
Fine-grained opaques/ sub-opaques	4

This is a similar type of rock to Z-1 and Z-2, but is more schistose.

Well-oriented phlogopite forms sinuous, anastomosing schlieren impregnated with dark, opaque/sub-opaque material. These schlieren show local dislocation by micro-faults, which may be tectonic or could be a relict soft sediment feature (slippage of delicate, laminated bedding).

Clasts, to 0.1mm in size, consist of quartz and plagioclase grains in approximately equal abundance. The rock includes 1 - 2% feldspar.

Sample Z-4 DDH-1 58 ft. COARSE TALCOSE GREYWACKE IN CONTACT WITH FINE, SCHISTOSE TALC-CARBONATE SILTSTONE

Estimated mode

Quartz and feldspar clasts	24
Chert)	24
Felsite)	
Carbonate	14
Phlogopite	14
Chlorite	2
Talc	22
Rutile)	trace
Opeques)	

This slide includes coarser and finer beds in conformable contact.

The coarse phase contains augen-like clasts, 0.5 - 2.0mm in size, often made up of intergrown granular quartz and feldspar. These are set in a matrix of chert/felsite, extensively and intimately pervaded by fine-grained talc. The talc ranges from individual flakes of 10 - 20 microns up to lensy concentrations of 200 - 300 microns.

Schlieren of phlogopite and chlorite, with trains of minute granules of rutile, define a strong, lenticular foliation.

Some lenticles are rich in carbonate, which also contains intimately intergrown talc. Carbonate is also seen as diffuse disseminations and local concentrated laminae.

The fine phase contains only a few small clasts and the quartzo-feldspathic material is mainly silt-sized. It is strongly foliated and relatively enriched in talc. It shows laminar gradation to a carbonate-rich variety.

A few irregular, discordant, vein-like bodies of mosaic quartz (dislocated quartzite beds or veins?) are present.

Sample Z-5 DDH-1 62 ft. BEDDED SANDY TALCOSE DOLOMITE

Estimated mode

Quartz and feldspar clasts	20
Chert)	
Felsite)	6
Carbonate	54
Phlogopite	4
Chlorite	2
Talc	14

This slide also straddles a bedded contact between a sandy dolomite and a finer grained micaceous dolomite.

The coarser phase consists of irregular-shaped, sometimes somewhat elongate clasts of quartz and feldspar, 0.1 - 0.5mm in size, set in a matrix of dolomite with intimately intergrown wisps and permeations of very fine-grained talc. The talc is as flakes, 10 - 20 microns in size, concentrating as lensy pockets up to 200 microns.

Minor remnants (?) of chert/felsite are occasionally seen in the talcose dolomite, but individual crystal clasts are the predominant form of quartz and feldspar. Scattered, sub-oriented flakes and discontinuous schlieren of phlogopite and chlorite occur, but bestow only a weak foliation.

The other phase is essentially similar but finer. It has occasional clasts to 0.1mm, and is somewhat more micaceous and better foliated than the coarser bed.

Sample Z-6 DDH-1 64 ft. TALCOSE DOLOMITIC SILTSTONE

Estimated mode

Quartz and feldspar clasts	10
Chert) Felsite)	22
Carbonate	15
Phlogopite	10
Chlorite	3
Talc	40

This is a rather irregularly foliated, locally obliquely sheared rock, consisting dominantly of an intimate intergrowth of fine-grained talc and chert/felsite. Schlieren and individual sub-oriented flakes of phlogopite and chlorite outline a sinuous fabric, apparently made up of lenticular clasts of chert/felsite, more or less intensely pervaded and replaced by talc. The talc forms wispy, foliaceous concentrations up to 200 microns.

Carbonate is another prominent constituent, diffusely intergrown throughout, and also as laminar concentrations, oblique microshears and sub-concordant, vein-like bodies with granular quartz.

Quartz clasts (to 0.2mm) are relatively sparse. They tend to be ragged, with incipient marginal replacement by talc or carbonate.

Sample 2-7 DDH-1 73 ft. ANDESITE (DYKE?)

Estimated mode

Plagioclase	60
K-feldspar	6
Quartz	4
Hornblende	20
Biotite	6
Chlorite	3
Carbonate	1
Apatite	trace
Rutile, Opaques	trace

This rock is made up essentially of equigranular to meshwork-textured plagioclase and minor K-spar of grain size 0.1 - 0.5mm. Quartz occurs as interstitial pockets to 0.1mm.

Mafics are pale brown hornblende, generally of slender prismatic form, minor green biotite and a little chlorite. Carbonate occurs as sparse flecks and rare irregular veinlets.

The plagioclase is very mildly sericitized. The hornblende is fresh.

This is a fresh, unmetamorphosed, non-porphyritic rock, probably a minor intrusive dyke or sill.

Sample Z-8 DDH-2 25 ft. MICROLENTICULAR SILTSTONE WITH OPAQUE WISPS

Estimated mode

Quartz and feldspar clasts	6
Chert)	76
Felsite)	
Carbonate	5
Phlogopite	9
Fine-grained opaques/ sub-opaques	4

This is a rock of related type to Z-1, 2 and 3, but with less of the sand-sized quartz and feldspar clasts. It consists essentially of a cherty/felsitic aggregate of grain size 0.01 - 0.03mm, which probably represents a partially recrystallized siltstone. It contains rare quartz and fewer plagioclase clasts to 0.1mm. In contrast to most of the metasediments of the suite, this rock lacks accessory K-spar.

Phlogopite occurs as individual sub-oriented flakes. Carbonate forms disseminated equant grains of similar grain size to the sandy quartz grains; these may be clasts, or of authigenic origin.

The rock is non-schistose, but shows a patchily developed foliation defined by irregular areas of close-spaced, anastomosing, opaque/sub-opaque schlieren which outline a strong microlenticular fabric. These dark, wispy zones are separated by coarser lenses of more structureless siltstone.

Sample Z-9 DDH-4 13 ft. FOLIATED TALCOSE DOLOMITIC WACKE

Estimated mode

Quartz and feldspar clasts	13
Chert)	27
Felsite)	
Carbonate	12
Phlogopite	10
Chlorite	3
Talc	35

This is a rather similar rock to Z-6, but with somewhat more abundant and coarser clasts. These include occasional polygranular quartz and quartz/feldspar aggregates to 1.0mm. They are sometimes elongate in form, and show marginal assimilation and/or granulation/recrystallization.

The rock shows a fairly strong sinuous foliation and has a microlenticular fabric. It consists dominantly of an intimate intergrowth of chert/felsite, talc and carbonate. Diffuse lenticular remnants of chert/felsite are fairly prominent within the more talcose matrix.

The size distribution of the talc is similar to that in the other relatively talc-rich rocks of the suite, ranging from individual disseminated flecks of 10 - 20 microns, up to lensy, pockety segregations of 300 microns or more. The latter are, however, seldom totally free of intimately intergrown chert/felsite and/or carbonate.

The rock contains occasional, discordant, vein-like segregations of fine-grained carbonate with minor quartz.

Sample Z-10 DDH-4 18 ft. LAMINATED SANDY DOLOMITE

Estimated mode

Quartz and feldspar clasts	17
Chert)	28
Felsite)	
Carbonate	50
Chlorite	trace
Talc	5

This rock exhibits a strongly foliated, lenticular fabric. Laminae and lenses of chert/felsite alternate, on a scale of fractions of a millimetre, with fine -grained carbonate.

Minor talc occurs as minute oriented wisps intergrown with either component or on their contacts.

Relatively coarse, elongate/lensoid clasts of quartz and prominent K-feldspar occur, sometimes as granular composites. These are in the size range 0.2 - 1.0mm.

This is a mica-poor, gritty, dolomitic siltstone. It is of somewhat similar composition to Sample Z-5, but has more chert/felsite and less talc.

Sample Z-11 DDH-4 27 ft. FOLDED TALC-PHLOGOPITE SCHIST WITH QUARTZ CARBONATE SEGREGATIONS

Estimated mode

Granular quartz segregations	20
Chert) Felsite)	20
Carbonate	13
Phlogopite	25
Chlorite	2
Talc	20
Rutile	trace

This is a heterogenous sample. Strongly foliated, locally crenulated, fine-grained phlogopite-talc-chert/felsite schist grades, at one end of the slide, to non-foliated carbonate-chert/felsite rock.

Granular quartz, massive carbonate and intergrowths of the two form concordant lenses and irregular masses throughout. These may be disrupted beds, veinlets or replacement bodies. The rock locally shows crenulate micro-folding and is strongly deformed.

The dominant material between the massive quartz/carbonate zones is strongly foliated and mica-rich. It consists of an intimate intergrowth of phlogopite, talc and chert/felsite, locally with lenses of chlorite. Trains of dust-sized rutile emphasise the crumpled schistosity.

The scale of intergrowth of talc in this rock is generally very fine, seldom showing segregations >100 microns in size.

At one end of the slide the mica-rich assemblage changes gradationally to a non-foliated, dolomitic one in which talc is more irregularly distributed.

Sample Z-12 DDH-2 32 ft. DEFORMED, RECRYSTALLIZED QUARTZITIC DOLOMITE

Estimated mode

Granular quartz segregations	10
Chert)	32
Felsite)	
Carbonate	50
Phlogopite	trace
Chlorite	5
Talc	3

This rock is similar to Z-11 in exhibiting a somewhat deformed, extensively recrystallized fabric with sub-concordant segregations of coarse quartz and quartz/carbonate.

It differs compositionally from the previous sample in that it contains very little mica or talc. It does, however, contain more chlorite than most rocks of the suite.

It consists essentially of a streaky, lensy/laminar intergrowth of chert/felsite and dolomite. The chert/felsite is commonly somewhat coarser than in most of the rocks of the suite, and locally shows strong grain elongation. Local crenulate micro-folding is also apparent. Intermittent schistose zones rich in chlorite occur. Talc is very minor.

The coarser segregations appear more or less gradational, and are probably inter-bedded. They consist of compact carbonate, sometimes with a platy, sheared fabric, containing irregular, lensoid masses of granular quartz, of grain size up to 1.0mm.

Sample Z-13 DDH-2 34 ft. SILTY CHLORITIC DOLOMITE

Estimated mode

Granular quartz segregations	6
Quartz and feldspar clasts	2
Chert)	
Felsite)	11
Carbonate	74
Chlorite	7

This is a rock of rather similar character to Z-12.

It consists dominantly of compact carbonate with rather abundant, evenly distributed, sinuous wisps and pockets of chlorite and irregular patches or semi-connected networks of chert/felsite, often with a notably high content of K-feldspar.

Rare clast-like grains of quartz to 0.2mm are seen. Quartz also occurs as irregular, granular segregations in diffuse, discordant zones of carbonate which probably represent disrupted, folded beds. Local strong fluidal micro-folding is seen in chloritic schlieren adjacent to these zones.

Talc appears to be absent.

Sample Z-14 DDH-2 45 ft. TALCOSE SILTY DOLARENITE

Estimated mode

Quartz and feldspar clasts	4
Chert)	
Felsite)	16
Carbonate	63
Phlogopite	4
Chlorite	1
Talc	10
Rutile)	
Opaques)	1
Limonite	1

This is a fine-grained rock showing an undisturbed, well-foliated, wispily laminated, micro-lenticular fabric.

It consists essentially of an intergrowth of carbonate and chert/felsite in which both components occur chiefly as discrete, lenticular, clast-like bodies, 0.05 - 0.1mm in size, often outlined by micron-sized opaque dust. Rare undoubted clasts of quartz and feldspar, 0.1 - 0.3mm in size, occur randomly scattered throughout.

Phlogopite occurs as scattered flakes and small lenses, and talc occurs as an intimate very fine-grained permeation of the chert/felsite.

A few interlayers are slightly coarser, lack opaque dust and are carbonate-rich, with chert/felsite as a minor, intergranular phase. This material also has a much higher content of talc, as wisps and lensy pockets between the distinctly clast-like grains of carbonate.

Sample Z-15 DDH-4 36 ft. TALCOSE SILTY DOLOMITE AND WACKE

Estimated mode

Quartz and feldspar clasts	15
Chert)	25
Felsite)	
Carbonate	28
Phlogopite	12
Chlorite	6
Talc	14

This slide is another which shows finer and coarser sediments in bedded contact.

The finer phase is a weakly foliated rock consisting essentially of an intergrowth of carbonate and chert/felsite, with minor scattered clasts 0.1 - 0.2mm in size. The carbonate in this rock tends to occur as ragged, semi-coalescent grains of similar size to the crystal clasts, and may itself be partially clastic. Very fine-grained flecks of talc occur intimately disseminated through both the carbonate and the chert/felsite. There are also scattered, sub-oriented, coarser flakes of phlogopite.

The coarser phase contains more abundant clasts, consisting of quartz and feldspars, 0.1 - 0.5mm in size, set in a streaky, sinuously foliaceous matrix of chert/felsite, phlogopite, chlorite, carbonate and talc in rather heterogenous pockety/lensy intergrowth. The clasts commonly show incipient replacement and assimilation by the matrix. This bed is cut by an oblique, vein-like zone of intergrown quartz and carbonate.

The contact between the coarser and finer phases is defined by a thin, platy zone of interlaminated carbonate and chlorite.

Sample Z-16 DDH-5 11 ft. TALC-DOLOMITE ROCK

EStimated mode

Dolomite	50
Chlorite	5
Talc	45

This is a sample of distinctive type, being devoid of quartz-feldspathic material and containing a high proportion of talc.

It consists essentially of a non-foliated, 'sandy' aggregate of individual, subhedral grains of carbonate, 0.02 - 0.1mm in size, interstially cemented by fine-grained, felted talc. The talc forms scattered, patchy to streaky, carbonate-free concentrations up to 0.5mm in size, but much of it is very intimately intergrown with the carbonate.

Chlorite forms rounded to irregular pockets and irregular, sometimes contorted laminae.

Carbonate forms occasional coarser, compact, fragment-like patches to 2.0mm in size, as well as irregular/elongate networks and vein-like bodies.

The slide is traversed by a thin laminar (sheared?) zone consisting of carbonate-free foliaceous talc with anastomosing schlieren and irregular pockets of chlorite.

The rock contains rare, stylolite-like zones containing granules of opaques and zircon, presumably of detrital origin. The presence of the latter mineral (which is also seen in rare traces in many other rocks of the suite) suggests that this rock is meta-sedimentary, like the more obviously bedded rocks of the suite.

Sample Z-17 CK 3, 7m. SW of DDH-1 FINE-GRAINED, LAMINATED MICACEOUS WACKE

Estimated mode

Quartz and feldspar clasts	19
Chert)	38
Felsite)	
Phlogopite	32
Chlorite	2
Talc	8
Rutile)	1
Opaques)	

This is a carbonate-free, fine-grained wacke of rather similar type to Z-1, 2, 3 and 8, but considerably richer in micas.

Individual, equant to somewhat elongate clasts of quartz and lesser plagioclase, 0.05 - 0.2mm in size, are scattered through a matrix of chert/felsite of grain size 10 - 30 microns. The clasts commonly show marginal recrystallization and incipient assimilation by the matrix.

A strongly foliated, micro-lenticular fabric is defined by abundant anastomosing schlieren of phlogopite with intergrown dusty opaque/sub-opaque material. Some of the constituent lenticles are themselves composed of felted, pale micas.

Minute flecks of what is assumed to be talc occur sparsely disseminated through the chert/felsite lenticles. In addition, a proportion of the pale brown micaceous schlieren is probably talc.

XRD results on this sample are puzzling. A weak peak of talc (consistent with a content of around 10° or a little more) was obtained, but no peak to confirm the abundant phlogopite seen in the slide.

Sample Z-18 Ck 3, Alt 3475 SILTY TALCOSE DOLOMITE

Estimated mode

Quartz and feldspar clasts	8
Chert)	
Felsite)	16
Carbonate	60
Phlogopite	4
Chlorite	trace
Talc	12

This is a rock of very different texture to the preceding sample. In common with other carbonate-rich rocks of the suite, it is essentially non-foliated.

It consists dominantly of an aggregate of individual, subhedral, equant, clast-like grains of carbonate, 0.05 - 0.25mm in size, occasionally coalescing to form irregular patches of granular mosaic. This matrix is sprinkled with sub-angular clasts of quartz and feldspars (including a significant proportion of K-spar) and irregular pockets of fine-grained chert/felsite. Some of the latter are themselves clasts, composite with discrete coarser quartz grains.

Pale brown to colourless mica, with occasional interlaminae of dark red-brown biotite, occurs as disseminated, randomly oriented, often contorted flakes and discrete pockets.

Talc occurs as minute flecks in chert/felsite and, more abundantly, as networks and pockets (10 - 100 microns in size) of fine felted material in interstitial and intergranular relation to the dominant carbonate.

Sample Z-19 Ck 3, Alt 3474 SILTY DOLOMITE

Estimated mode

Quartz and feldspar clasts	8
Chert)	
Felsite)	12
Carbonate	66
Phlogopite	3
Chlorite	2
Talc	9

This rock is essentially identical to Z-18, differing only in having a slightly lower content of talc.

Sample Z-20 Ck 3, Alt 3538 SANDY TALCOSE DOLOMITE

Estimated mode

Quartz and feldspar clasts	13
Chert)	14
Felsite)	
Carbonate	42
Phlogopite	7
Chlorite	2
Talc	22

This sample is another rock of similar general type to Z-18 and 19, being a non-foliated, mica-poor carbonate rock with fairly abundant quartz and feldspar clasts.

If differs from the previous two samples in being somewhat coarser-grained, with clasts in the size range 0.1 - 0.5mm, and in having a higher concentration of talc.

The carbonate is again a 'loose' aggregage of somewhat clast-like, individual, subhedral grains, 0.05 - 0.3mm, locally coalescing to mosaic clumps. It commonly shows a weak, pervasive dusting by fine-grained limonite.

Irregular pockets of chert/felsite,similar in size to the clasts, are scattered through the carbonate, which is interstitially impregnated and cemented throughout by fine felted talc. This occurs as diffuse wisps and pockets, on the scale 50 - 200 microns, and as more intimate replacement(?) flecks within chert/felsite and carbonate.

Phlogopite, partially intergrown with chlorite, occurs as scattered, individual, contorted flakes and wisps and occasional, clast-like, felted patches. The micas tend to mantle the relatively coarse clasts and carbonate grains, producing a characteristic 'lumpy' texture seen in several other rocks of the suite.

Sample Z-21 Ck 3, Trench Alt 3472 TALC BRECCIA

Estimated mode

Talc	92
Chlorite	5
Carbonate	1
Limonite	2

This is the only sample of its type in the suite.

It consists of a close-packed aggregate of sub-rounded fragments, 0.2 to several mm in size, of fine-grained, compact, felted-textured talc rock. This breccia is locally cemented by finer talcose material and by diffuse limonitic material - possibly derived by oxidation of scattered small granules and clumps of opaques (oxides? sulfides?).

Some of the talc fragments contain more or less diffusely intergrown chlorite. Chlorite also occurs as rare clasts in its own right, and as intimately intergrown wisps in the cementing phase.

A few talc clasts have minor intergrown carbonate. Single examples were also seen of clasts of chert/felsite intergrown with carbonate and with chlorite. These features tend to suggest a common ancestry of this material with the less pure, sedimentary-associated talc rocks making up the bulk of the suite.

Sample Z-22 Ck 3, Trench (grey, hard) SILTY DOLOMITE

Estimated mode

Quartz and feldspar clasts	10
Chert)	14
Felsite)	
Carbonate	72
Phlogopite	2
Chlorite	2
Talc	trace

This is one of the relatively few rocks of the suite in which the slide shows essentially no talc. It is notable that the rock is otherwise closely similar to talc-bearing silty dolomites like Z-18 and 19.

It is a 'sandy' aggregate of individual carbonate grains, 0.05 - 0.3mm, with interstitial pockets of chert/felsite, sprinkled with discrete anhedral clasts of quartz and lesser K-spar to 0.2mm in size. Sparse, individual, non-oriented flakes and pockets of phlogopite and chlorite are the accessory constituents. Rare, small, isolated clumps of talc are also seen, but the pervasive intergranular form exhibited by this mineral in other samples is absent.

Sample Z-23 Ck 3 Trench (grey, micaceous) TALC-DOLOMITE ROCK

Estimated mode

Quartz and feldspar clasts	2
Carbonate	48
Phlogopite	1
Chlorite	2
Talc	47

In contrast to Z-22 (which exemplifies the talc-free end member of a more or less talcose silty dolomite lithotype), this sample represents the opposite extreme, being of similar general character, but having one of the highest concentrations of talc observed within the suite.

It is a 'clean', mica-poor, non-foliated aggregate of carbonate as individual grains and grain clumps, 0.05 - 0.5mm. Fine-grained, felted talc forms an abundant interstitial or matrix component.

Chlorite and phlogopite form occasional individual flakes and pockets. Fine-grained, well-crystallized sphene is a notable, though rare, trace constituent.

The majority of the talc in this rock is segregated as essentially mono-mineralic patches, 0.1 - 0.5mm in size, and rock of this type constitutes an extremely desirable and readily treatable source of talc.

A few small discrete clasts of quartz to 0.2mm in size are present, but the chert/felsite material normally present in these rocks is apparently absent. Possibly it has been completely replaced by talc?

Sample Z-24 Ck 3, traverse: #1 SILTY DOLOMITE

Estimated mode

Quartz and feldspar clasts	10
Chert)	10
Felsite)	
Carbonate	69
Phlogopite	2
Chlorite	2
Talc	7

This is another of the weakly talcose, non-foliated, silty dolomite lithotype. It is essentially identical to Z-18 and 19 (q.v.).

Sample Z-25 Ck 3 traverse: #2 SANDY TALCOSE DOLOMITE

Estimated mode

Quartz and feldspar clasts	20
Chert)	15
Felsite)	
Carbonate	28
Phlogopite	7
Chlorite	2
Talc	28

This is a rock of similar type to Z-20 or the coarse phase in Z-4. It represents a relatively coarse, quartzo-feldspathic dolomite with rather abundant talc.

Clasts are mainly 0.1 - 0.5mm in size, and include considerable K-feldspar. There are also some composite quartz/feldspar and microgranular quartz clasts, ranging up to 1.5mm in size.

The clasts are set in a rather heterogenous matrix. This is randomly oriented, but locally streaky, flaky or crumpled. It is composed of ragged patches of chert/felsite, grains of carbonate 0.05 - 0.4mm in size, individual wisps and contorted flakes of phlogopite and abundant, pervasive, intergranular talc as minutely felted aggregates.

Relationships throughout seem somewhat diffuse, with widespread indications of marginal replacement e.g. of chert/felsite by carbonate and talc, and of carbonate by talc.

A proportion of the talc is concentrated as streaks and pockets, 0.1 - 0.2mm in size, though much of it is in intimately intergrown form with the various other constituents.

Sample Z-26 Ck 3, traverse: #3 SILTY DOLOMITE

Estimated mode

Quartz and feldspar clasts	8
Chert)	
Felsite)	15
Carbonate	63
Phlogopite	6
Chlorite	2
Talc	6

This sample is essentially identical to Z-18 and 19, being a non-foliated, somewhat silty dolomite. The carbonate exhibits the characteristic sandy texture of this lithotype, being a close-packed aggregate of equant grains, 0.1 - 0.2mm in size.

Talc occurs as wispy intergranular networks in the carbonate, and sparse flecks in patches of chert/felsite. The overall content is low in this particular sample.

The slide includes an irregular vein-like zone of carbonate with diffusely intergrown patches and networks of granular mosaic quartz. The carbonate in this segregation is calcite as opposed to dolomite in the rest of the rock.

Sample Z-27 Ck 3, traverse: #4 TALC-DOLOMITE ROCK

Estimated mode

Quartz and feldspar clasts	4
Carbonate	52
Phlogopite	2
Chlorite	2
Talc	40

This is a clean, high-grade talc-carbonate rock of essentially identical type to Z-23 (q.v.).

The carbonate in this sample shows, as in several rocks of the suite, a weak but distinct reactivity to dilute acid. This suggests a minor component of calcite intergrown with the dominant dolomite. This conclusion is confirmed by XRD analysis.

The feature is recognizable in thin section as subhedral overgrowths (calcite) on some of the primary clast-like grains (dolomite).

Sample Z-28 Ck 3, traverse: #5 TALCOSE SILTY DOLOMITE

Estimated mode

Quartz and feldspar clasts	9
Chert)	
Felsite)	14
Carbonate	52
Phlogopite	4
Chlorite	3
Talc	18

This sample is another of the non-foliated, silty dolomite lithotype, in this case having a moderate content of intergranular talc.

It is closely similar to Z-19.

Sample Z-29 Ck 3, traverse: #6 TALCOSE DOLOMITIC WACKE

Estimated mode

Quartz and feldspar clasts	18
Chert) Felsite)	18
Carbonate	18
Phlogopite	10
Chlorite	trace
Talc	35
Fine-grained sub-opaques	1

This is a similar type of rock to Z-25 and the coarser phase in Z-14, being a relatively strongly quartzo-feldspathic variant of the non-foliated impure dolomites making up much of the suite. It is rich in talc.

Clasts of quartz and feldspar are rather abundant and range in size from 0.1 - 0.5mm. They are sometimes polygranular and consist of coarse, individual grains composite with chert/felsite. K-spar is relatively minor in this rock.

The ragged areas of chert/felsite which occur throughout in intimate, often replacement-like intergrowth with carbonate and talc, themselves often appear to be remnants of original rather coarse clasts.

Phlogopite is rather abundant and forms contorted flakes, irregular networks and flaky masses, outlining and emphasising the 'lumpy' clastic texture. It is sometimes intergrown with fine-grained sub-opaque material.

Talc is abundant, but tends to be very intimately and finely intergrown with the other constituents. It seldom forms segregations greater than 100 microns in size.

Sample Z-30 Ck 3, traverse: #7 TALCOSE WACKE

Estimated mode

Quartz and feldspar clasts	18
chert)	22
Felsite)	
Phlogopite	8
Chlorite	2
Talc	50

This is a rock of similar heterogenous, 'lumpy' texture to Z-29, and appears to represent a dolomite-free end-member variant of the talcose (dolomitic) wacke lithotype.

Clasts in this rock include coarse fragments to 1.5mm composed of igneous-textured, granular quartz/feldspar and quartz/felsite intergrowths.

Phlogopite and chlorite form vari-directional contorted flakes and wisps diverging around the coarser clasts.

Talc is abundant. It forms the usual fine felted aggregages which locally concentrate as pockets up to 0.3mm. Much of the talc is intimately intergrown with the other constituents, and seems to exhibit an active pervasive replacement relationship to chert/felsite and feldspar clasts. It also appears gradational to a coarser-grained form which is closely associated with, and hard to distinguish from, the phlogopite.

XRD results on this sample showed a much weaker talc peak than would be expected from the evidence of the slide. No phlogopite peak was detected.

This type of rock, though rich in talc, appears texturally less amenable to concentration than the talc-carbonate rocks like Z-16, 23 and 27.

Sample Z-31 Ck 3, traverse: #8 TALCOSE WACKE

Estimated mode

Quartz and feldspar clasts	18
Chert)	
Felsite)	20
Carbonate	10
Phlogopite	8
Chlorite	4
Talc	40

This is a similar type of rock to Z-29.

It shows a slight tendency to a weak foliation defined by partial preferred elongation of clasts and a system of sub-parallel chloritic shears. Internally, however, it shows the familiar lumpy, pseudo-contorted fabric defined by phlogopite flakes mantling the quartzo-feldspathic clasts.

Talc is abundant and in large part segregates as felted pockets and lenses in the size range 100 - 250 microns. It also shows the features seen in Z-30 of active replacement or diffuse intergrowth in chert/felsite and textural gradation to coarser flaky phlogopite.

Carbonate in this rock is relatively minor. It occurs as ragged, individual clast-like grains, often mildly limonitized.

Sample Z-32 Ck 3, traverse: #9 SILTY DOLOMITE WITH TALC

Estimated mode

Quartz and feldspar clasts	10
Chert)	8
Felsite)	
Carbonate	63
Phlogopite	5
Chlorite	1
Talc	12
Fine-grained sub-opaques	1

This is a rock of the Z-18 type. It differs only in exhibiting a weak overall foliation defined by the sub-parallel orientation of flakes and occasional coalescent schlieren of phlogopite and wisps of talc.

The talc is intimately intergranular to carbonate and forms diffuse flecks in chert/felsite, but pockety segregations to 100 microns are relatively common.

Sample Z-33 Ck 3, traverse: #10 TALCOSE SILTY DOLOMITE

Estimated mode

Quartz and feldspar clasts	12
Chert)	13
Felsite)	
Carbonate	38
Phlogopite	9
Chlorite	3
Talc	25

This rock is essentially identical to Z-32, except for a higher content of talc and some slightly coarser clasts (to 0.5mm).

It is a weakly foliated, silty to sandy dolomite with a rather high content of talc. The phlogopite defining the foliation is rather commonly intergrown with (altered to?) chlorite.

Carbonate occurs, as in the majority of these rocks, as individual subhedral grains which often look like clasts, though could be partly of authigenic origin.

Most of the talc is reasonably well-segregated as small pockets and lenses, 50 - 200 microns in size, though a proportion of it occurs minutely and diffusely dispersed within chert/felsite.

Sample Z-34 Ck 3, traverse: #11 TALCOSE WACKE

Estimated mode

Quartz and feldspar clasts	19
Chert)	27
Felsite)	
Phlogopite	9
Chlorite	2
Talc	40
Limonite	3

This is another carbonate-free, talc-rich wacke, similar in type to Z-30 (q.v.) but lacking the coarse, igneous-textured clasts seen in that sample.

It also differs in having a high content of limonite, which occurs in pervasive fashion as diffuse dusty impregnations and brown staining of phlogopite and chert/sericite.

Talc in this sample is rather evenly intergrown in fine-grained fashion throughout, especially as diffuse replacements of the rather abundant chert/felsite material, and associated with coarser flaky phlogopite. Much of it concentrates as small pockets and lenses in the size range 50 - 150 microns.

SHORT REPORT ON THE 1987 DIAMOND DRILLING PROGRAM

CREEK #3, SOVEREIGN MOUNTAIN AREA

NTS 93A/13W

CARIBOO MINING DIVISION

BRITISH COLUMBIA

12 AUGUST 1987

FOR:

TRIFCO MINERALS LTD.
308 - 751 Clarke Road
Coquitlam, BC V3T 3Y3

BY:

David G. Lobdell, P.Geol.
P.O. Box 3103
Kamloops, BC V2C 6B8

1.0 INTRODUCTION

This short report documents the events and results of a drilling program in talcose metasediments in the Creek #3 area of the Do-Do Claim Group, Sovereign Mountain, Cariboo Mining Division, B.C. The drilling program used a Winkie drill supplied by Herb Allen and operated by a two-man crew, on behalf of Trifco Minerals Ltd., Rene Trifaux, President. Drill supervision and core-logging services were supplied by the writer on behalf of the Corbett family, minor investors in Trifco.

2.0 CHRONOLOGY OF EVENTS AND TERMS OF REFERENCE

The writer accompanied members of the Corbett family to the subject property on the 14th of June, 1987, in order to supply an independent evaluation of the property's mineral potential. The principal mineral of interest is talc. At that time no high-purity outcrops of talc were observed on the property, but outcroppings of impure talc occurred on the property, cobbles and boulders of high-purity talc were common in float, and fractions of talc in the soils were ubiquitous. These showings were certainly of economic interest, and all in the party were eager to follow the results of a pending drilling program organized by Trifco.

Afterwards, as Trifco management explained, an attempt was made to provide access for large-diameter, truck-mounted, diamond drills, but site conditions were deemed unsafe by the equipment operator and most alternatives were considered impratical or cost-prohibitive. It was then decided to revert to a method which had proven successful in the past: a portable Winkie drill.

On the eve of the Winkie-drilling program, the writer was contacted by the Corbett family, and informed that Trifco was to begin their drilling program, and a request by the Company had been made for the writer to log the cores. The writer agreed to log the cores under the employ of the Corbett family, and arrived in Quesnel the following evening. The following morning (25 June), the writer arrived at the jobsite, midway through the footage of the first corehole.

The short notice precluded the possibility of obtaining maps, airphotos, and background literature; and some of the required field equipment was not brought to the job by the writer. And no budget was subsequently made available to do any work other than what was done at the jobsite. Nonetheless, most of these problems were made insignificant due to the poor recovery of core, and the limited footage drilled before the program was halted on the recommendations of the writer.

3.0 THE DRILLING PROGRAM

3.1 LOGIC OF DRILL LOCATIONS

DDH-1: The first drillhole site was chosen by Trifco management. A minor amount of talc was encountered, and no recovery was obtained in the last 15-feet of drilling (suggesting the possibility of pure talc, somewhat supported by talcose mud on the return fluid).

DDH-1A: Since the first hole (vertical hole DDH-1) possibly encountered talc, it was reasonable to locate the next hole down section. However, since the strike of the beds/foliation was not known with certainty, DDH-1A was drilled at the same site, but at a dip 30° from the vertical, into the hillside. The three angles (bedding dip DDH-1, bedding dip DDH-1A, and the angle between DDH-1 and DDH-1A) yeilded a unique solution which suggested bedding dips into the hillside at an angle of about 25-30°.

DDH-2: It was intended this drillhole would continue at about the same bedding plane as where DDH-1 left off. Unfortunately, the hole was collared near the center of the creek bottom, and overburden proved to be too thick. The minor amount of seemingly unrelated core probably resulted from drilling boulders. The rod siezed in the hole, and the hole was abandoned.

DDH-3: This hole was located was located at the extreme western edge of the steam-bottom floor, as was DDH-1. Probably a gap of at least 15 feet exists between the bottom of hole DDH-1 and the top of the bedrock encountered in DDH-3. This hole was abandoned when the rods siezed in the hole; the program was halted due to the overall poor recovery and the high ratio of cost to information.

3.2 Drill Logs

Drill logs for the lithologic sections encountered are attached.

4.0 CONCLUSIONS AND RECOMMENDATIONS

This drilling program failed to find an economically significant talc body, and any economic interest in the property continues to be based upon showings. The most interesting materials are the nearly pure cobbles and boulders of talc observed in float, which are certainly not far removed from their source.

The writer has observed a talc showing north of Quesnel which consists of well exposed dikes altered to talc, the dikes being relatively narrow (a few centimeters to 4-metres wide). If the subject talc deposit occurs in a similar mode, the source of the talc may be difficult to find without knowing something of its geometry. If the talc occurs in tabular bodies parallel to bedding/foliation, and bedding dips 30°into the steep hillside, the deposit may be difficult to mine. And unless the talc bodies are much thicker than those observed north of Quesnel, the deposit may be uneconomic.

Nontheless, there are several positive aspects which should be recognized, namely:

(1.) Good regional and export markets exist for talc.

(2.) The deposit reasonably well-situated with respect to potential markets and required infrastuctures.

(3.) Contrary to some previous reports, the writer was not able to document the presence of asbestos in any of the high-grade samples submitted to Ontario Research for detection of fibrous minerals.

The writer does not think it prudent to pursue any western talc deposit unless it is relatively pure talc (say over 75%), due to market conditions. Brightness may not be all that important, in that many good regional markets do not require a high-brightness material.

If work were to continue on the property, the following minimum work program and budget is recommended:

(1.) Any future program should be properly researched, and professionally planned and executed. All work should be preceded by a broad-spectrum but low-cost study of potential markets.

CERTIFICATE

I, David G. Lobdell, of the City of Kamloops, Province of British Columbia, do hereby certify that:

1. I am a consulting geologist with my place of business a 912B Laval Crescent, Kamloops, BC and mailing address at P.O. Box 3103, Kamloops, BC V2C 6B8.

2. I am a graduate of the University of Montana (B.A. - Geology, 1971) and have post graduate education at the Universities of Alberta and Guelph. I am a graduate candidate at the University of Idaho, College of Mines, with a degree pending (B.Geol.E.).

3. I am a Professional Geologist registered to practice in Alberta (APEGGA).

4. I am an industrial minerals specialist with over 15 years experience as a geologist, the last seven years exclusively in industrial minerals. I am President of Amrock Processors Inc., a company actively involved in the brokerage and distribution of industrial minerals.

5. I have no direct or indirect interest, nor do I expect to receive any interest directly or indirectly, in the property or securities of Trifco Minerals Ltd., or any affiliate.

6. The statements made in this report are based upon accumulated expertise, review of earlier reports concerned with the property, and field examination on the following dates in June 1987: 14, 26, 27, and 28.

7. Permission is granted to use this report as required by any securities commission or stock exchange, in whole or part, and for assessment purposes relating to maintenance of claims under the terms of the BC Mineral Act.

Dated at Kamloops,
this 12th Day of August, 1987.

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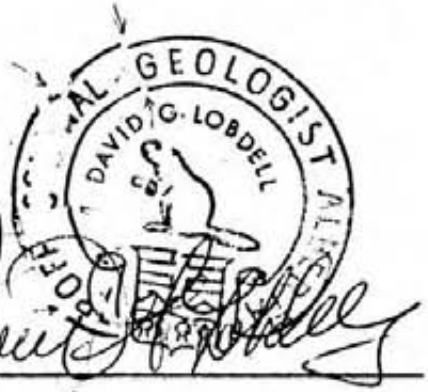


David G. Lobdell, P.Geol.(AB)

DRILLHOLE: DDH-1
ELEVATION: Base 0 feet
LOCATION: Reference
ANGLE: vertical
AZIMUTH:
DATE STARTED: 24 June 1987
DATE COMPLETED: 25 June 1987
DRILLER: Herb Allan
DRILL: Winkie
LOGGED BY: D. G. Lobdell

DEPTH (feet)	DESCRIPTION	RECOVERY	RQD
0 - 22	SOIL, micaceous, talcose, brown	0%	0
22 - 54	PHYLLITE, micaceous, siliceous. some pyrite; non-calcareous, except for thin (.3mm) dolomite filled fractures and occasional calcite veinlets; sedimentary slump structures evident; well-developed foliation with slaty cleaveage; light bands of siliceous cemented material with silica veinlets to 25-mm thick; dipping 35 - 45°, (30° at 23'); not readily scratched by knife	70%	ave 1" max 4"
54 - 60	Similar to above, with calcite (vuggy) infilling; becoming more siliceous, dolomitic, and lighter in colour with depth; at 58', 1 foot of impure talc	50%	
60 - 65	IMPURE TALC, dolomitic, quartzo-feldspathic; granular texture with evidence of foliation, nearly massive; light to medium grey in color		
65 - 69.5	PHYLLITE, similar to material from 22 - 54'		
69.5 - 75	DIORITE/ANDESITE, 5% hornblende blades, slightly dolomitic/calcareous; massive; very hard, scratches knife; light to medium drab green color	80%	max 6"
75 - 90	No recovery	0%	

End of Hole

DRILLHOLE: DDH-1A
ELEVATION: Base 0 feet
LOCATION: 1 foot north DDH-1
ANGLE: 30° from vertical
AZIMUTH: dipping perpendicular to strike of valley floor, into hill
DATE STARTED: 26 June 1987
DATE COMPLETED: 26 June 1987
DRILLER: Herb Allan
DRILL: Winkie
LOGGED BY: D. G. Lobdell

DEPTH (feet)	DESCRIPTION	RECOVERY	RQD
0 - 23	SOIL, micaceous, talcose, brown	0%	0
23 - 30	PHYLLITE, micaceous, siliceous. some pyrite; non-calcareous, except for thin (.3mm) dolomite filled fractures and occaisional calcite veinlets; sedimentary slump structures evident; well-developed foliation with slaty cleaveage; light bands of siliceous cemented material with silica veinlets to 25-mm thick; dipping 50°; not readily scratched by knife Since dip steepened, bedding must dip into hill	70%	ave 1" max 4"

End of Hole

DRILLHOLE: DDH-2
ELEVATION: Base minus 11m **LOCATION:** 42m (on slope) SE of DDH-1
ANGLE: vertical **AZIMUTH:**
DATE STARTED: 27 June 1987 **DATE COMPLETED:** 27 June 1987
DRILLER: Herb Allan **DRILL:** Winkie
LOGGED BY: D. G. Lobdell

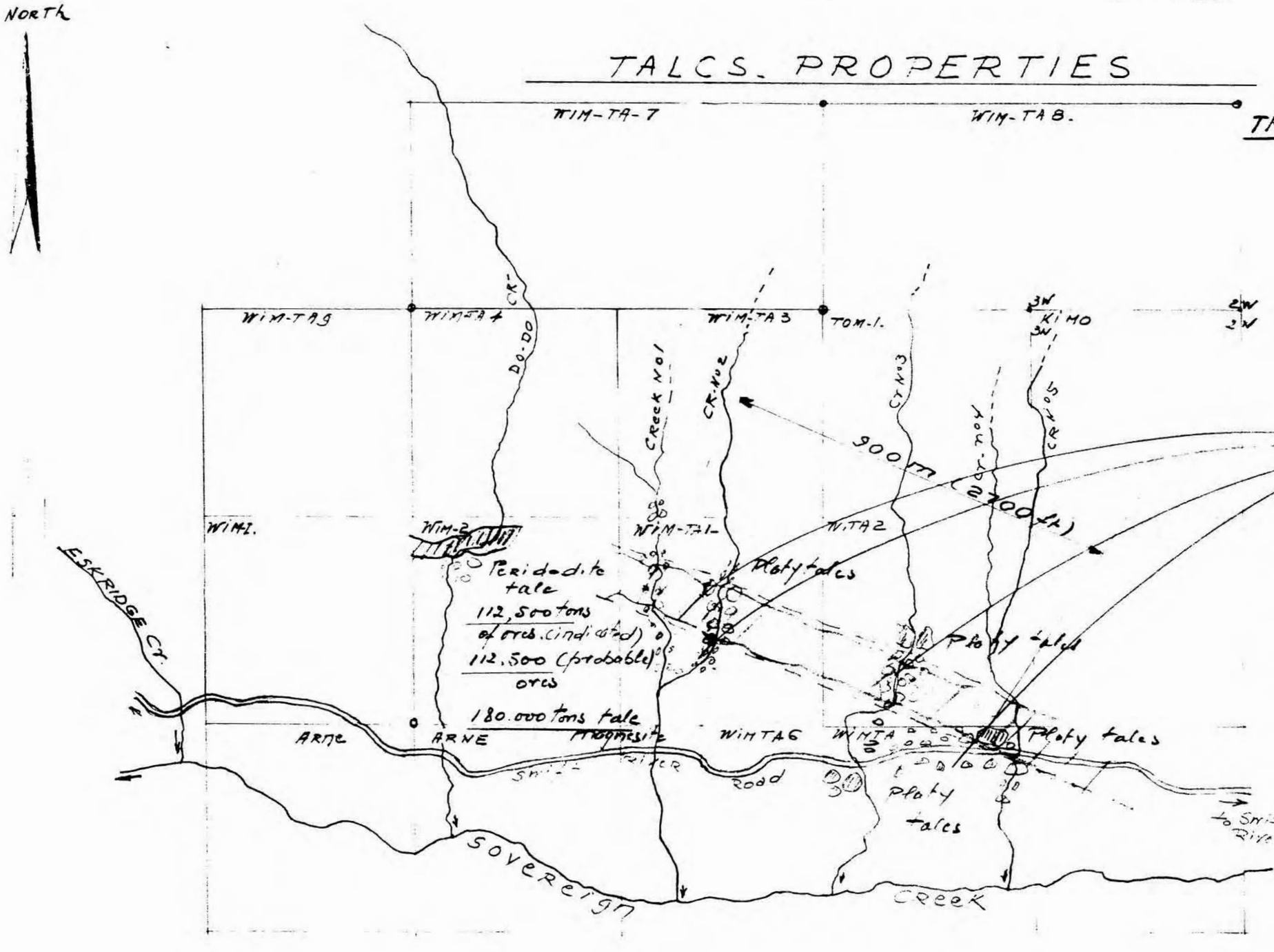
DEPTH (feet)	DESCRIPTION	RECOVERY	RQD
0 - 43	No recovery, probably overburden w/drilling in boulders	0%	0
End of Hole			

DRILLHOLE: DDH-3
ELEVATION: Base minus 12m **LOCATION:** 30m west of DDH-2
ANGLE: vertical **AZIMUTH:** Dipping 2 - 4° into hill
STARTED: 27 June 1987 **DATE COMPLETED:** 28 June 1987
DRILLER: Herb Allan **DRILL:** Winkie
LOGGED BY: D. G. Lobdell

DEPTH (feet)	DESCRIPTION	RECOVERY	RQD
0 - 13	SOIL, mud brownish, turning whitish at 7'	0%	0
13 -27	IMPURE TALC/CARBONATE, schistose, dipping 30°; light to medium grey, becoming darker and more schistose with depth; calcareous and siliceous veinlets to 3mm from 18 - 27'		
(13 - 18)		28%	ave 1" max 3"
(18 - 22)		17%	max 2"
(22 - 27)		6%	
	On all the above section, mud was off-white in color, and drill penetration rapid		
27 - 32	PHYLLITE/ MARBLE, dolomitic, pelitic; marl-like texture; siliceous and carbonate veinlets to 6mm; dipping 30°; much slower drilling than above; medium grey color	75%	ave 2" max 3"
37 - 42	very slow penetration	0%	0
42 - 47	DOLOMITE/SILTSTONE, pyritic; fine-grained, dense; distinct 0.5mm bedding dipping at 30°; medium to dark grey color;	60%	max 8"
End of Hole	Sloughing in hole and binding of drill rods forced abandonment - program halted		

TALCS. PROPERTIES

TRIFCO MINERALS LTD



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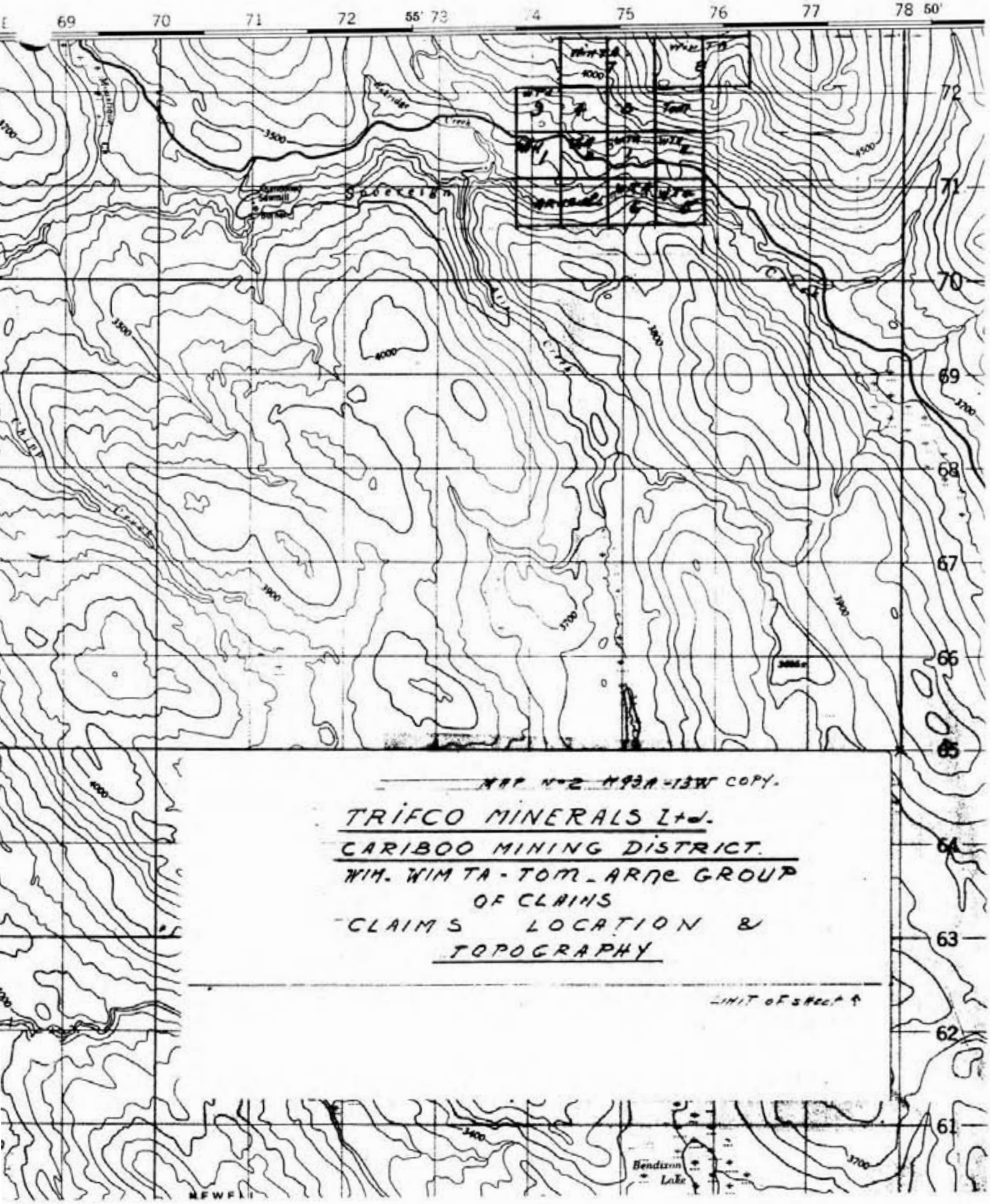


MAP N°2 W93A-13W COPY.

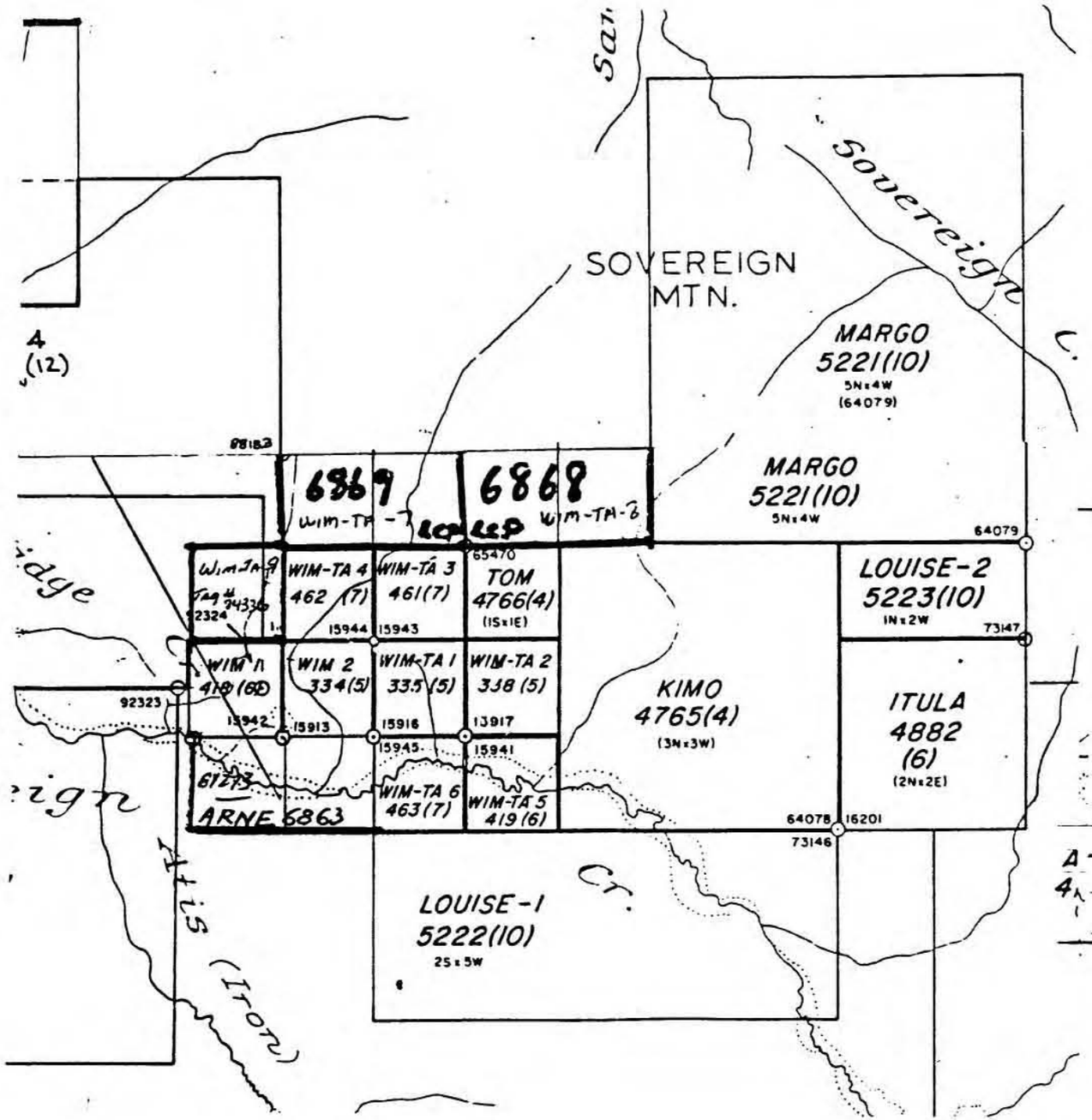
TRIFCO MINERALS Ltd.

CARIBOO MINING DISTRICT.

WIM. WIM TA - TOM - ARNE GROUP OF CLAIMS

CLAIMS LOCATION & TOPOGRAPHY

LIMIT OF STAKING



TRIFCO MINERALS Ltd.

CLAIMS LOCATION

WIM - WIMTA CL

ARNE CL - SCALE 1cm, 6 = 500m

No. 1 Map - M 93A - 13W (copy)