LOG NO: 16-01	RD.
ACTION:	
FILE NO:	

ASSESSMENT REPORT

ROCK GEOCHEMISTRY REPORT

TROITSA 1 MINERAL CLAIM

WHITESAIL RANGE, (93E/11E)

54° 35' 42" 126° 02' 30"

for

Alpine Exploration Corporation
#900, 474 Howe Street,
Vancouver, B.C.

by

T.A. Richards, PhD
Box 4186, Smithers, B.C.
1990

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LOCATION AND ACCESS

The Troitsa 1 mineral claim is located in west-central British Columbia (figure 1), at north latitude 53° 35' 42" and west longitude 127° 02' 30" on NTS map sheet 93E/11E (Troitsa Lake, 1:50,000 scale) in the Whitesail Lake map shee 93E. The claims are centered immediately east of Troitsa Peak in the Whitesail Range, 130 kilometers due south of the town of Smithers and 12 kilometers south of the north shore of Tahtsa Reach of the Kemano Power Resevoir.

Access onto the claims is by helicopter from Smithers or from the end of access and logging roads that terminate along the north shore of Tahtsa Reach (figure 2). These roads are open from snow by late spring to mid-late fall.

The claims are above tree-line, ranging between 1700 and 2100 meters in elevation.

CLAIMS AND OWNERSHIP

The claim consists of 16 units (4x4), of Record Number 4320. It expires on October 21, 1991, see figure 3.

The claim is owned 100% by Alpine Exploration Corp. of suite 900, 425 Howe Street, Vancouver, B.C.

PREVIOUS WORK

Evidence of precious metal mineralization on the Whitesail Range is indicated by an unspecified occurrence along the south flank on the range in a geologic report by Duffell (1959).

Mineralization on the claim was discovered in 1981 by prospector Pat Suratt with the discovery of quartz veins and stringers, containing to 750 ppb Au and to 5 oz/t Ag, at the head of the south fork of an unnamed east-flowing creek (Old Shovel Creek) in proximal boulders at the toe of a small pocket glacier. Subsequent work (1982-Union Carbide Corp., 1983-Canamax, 1986-87 -Alpine Exploration Corp.) concentrated on showings on the immediate adjacent mineral claims. The claims were mapped by Ms. H. Jamieson for Union Carbide in 1982. Other than mapping, no exploration has been done on the claim since 1981.

TROITSA PEAK PROPERTY

LOCATION MAP

FIGURE 1

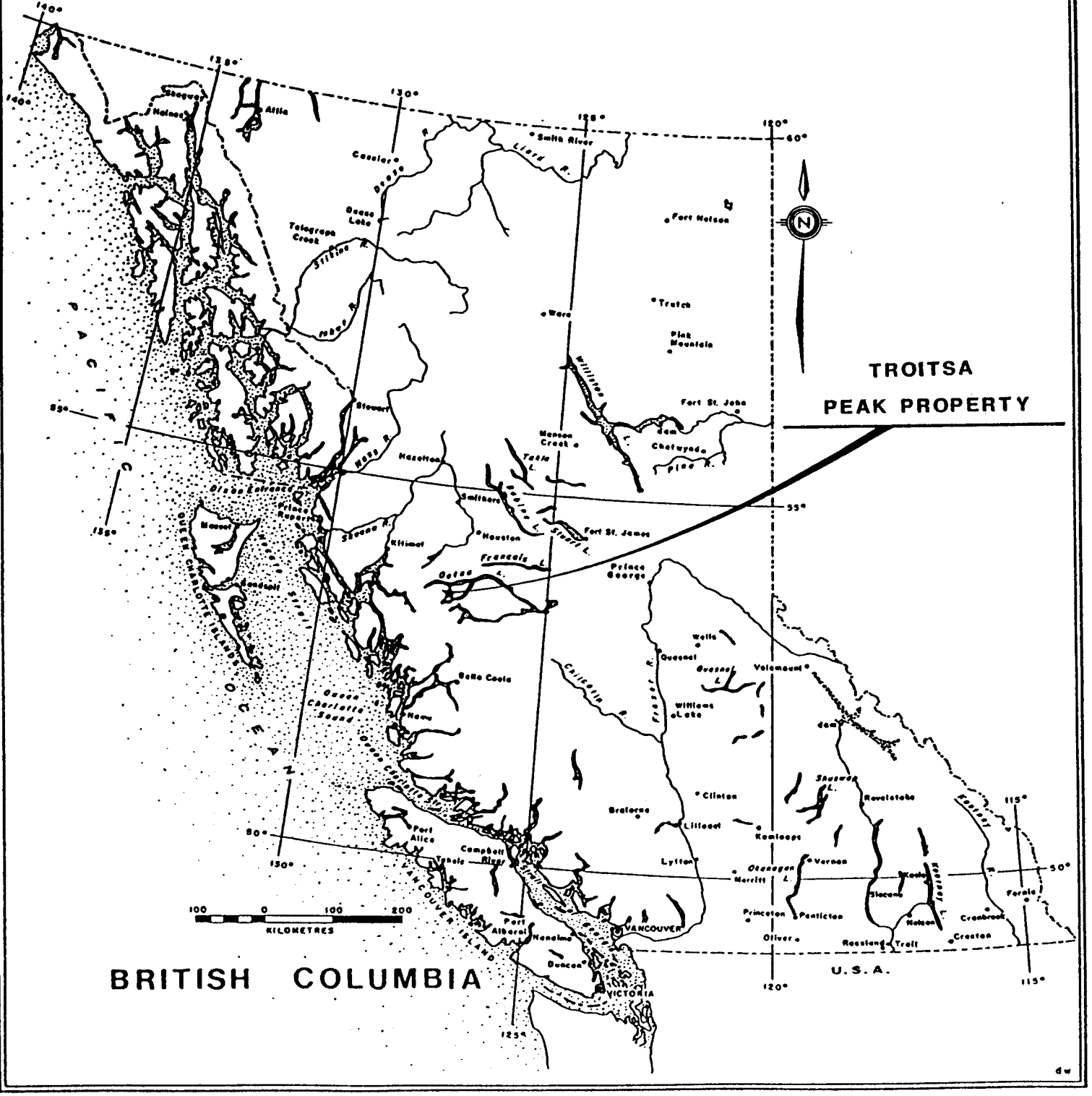


FIGURE 2

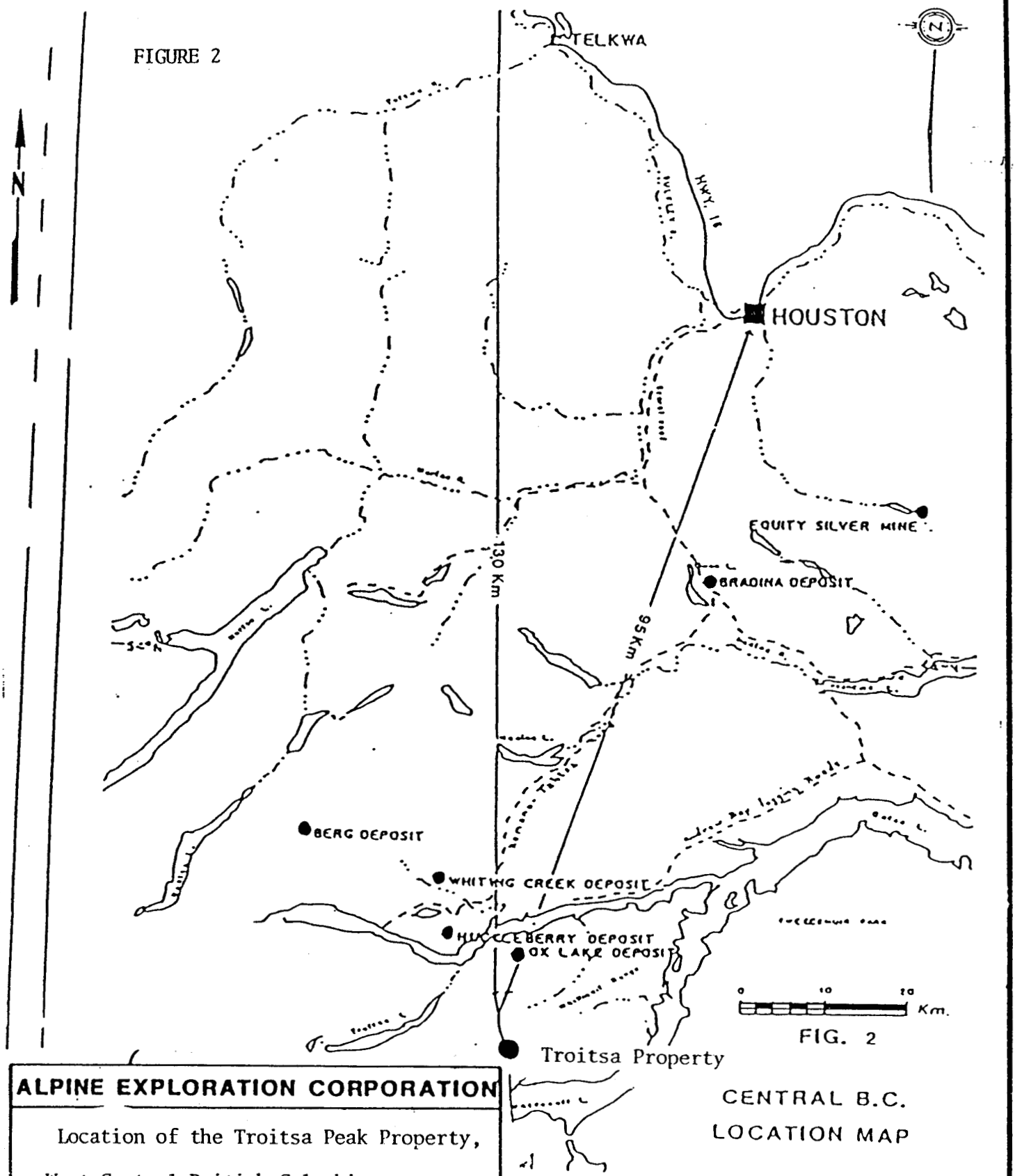


FIG. 2

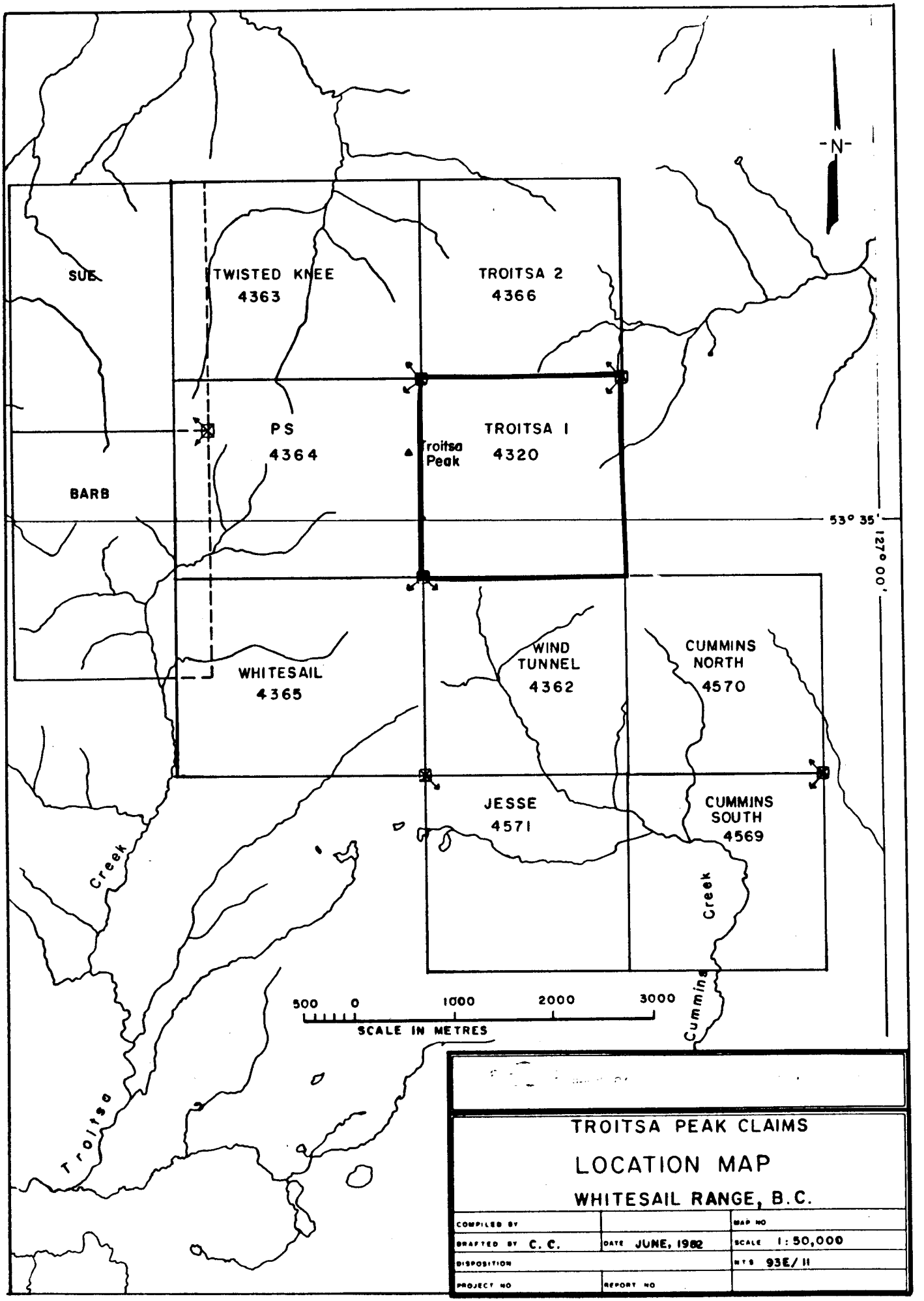
CENTRAL B.C.
LOCATION MAP

ALPINE EXPLORATION CORPORATION

Location of the Troitsa Peak Property,
West-Central British Columbia

FIG.		N.T.S. 93E / 11
2	Colin Harivel	DATE: FEB. 17, 1988

4.



TROITSA PEAK CLAIMS

LOCATION MAP

WHITESAIL RANGE, B.C.

COMPILED BY		MAP NO
DRAFTED BY C. C.	DATE JUNE, 1982	SCALE 1:50,000
DISPOSITION		N.T.S. 93E/11
PROJECT NO	REPORT NO	

PRESENT WORK

The work program was designed to take rock samples of quartz veins, stockworks, altered rock and fresh rock to determine the geochemical signature of the mineralized system.

One day (October 19), with four men (geologist Tom Richards and prospectors Pat Suratt, Rob Reding and Ian Anderson), was spent collecting samples of the appropiate rocks for analysis. The time available to collect rocks was limited as a serious winter storm was encountered during the period of sampling. All samples collected were from the the boulder trains that constitute the original showing of 1981, the Discovery Showing. No samples of fresh rock where collected. Elsewhere, snow covered all exposures.

REGIONAL GEOLOGIC SETTING

The claims lie in the west-central part of the Intermontane belt of the Canadian Cordillera. Strata there comprise Upper Triassic to Middle Jurassic island arc volcanics (Stuhinni and Hazelton Group), Middle and Upper Jurassic fine grained clastics (Ashman Formation of the Bowser Lake Group), Lower Cretaceous fine-grained fluvial and littoral clastics (Skeena Group), and Upper Cretaceous to Eocene continental caldera-related volcanics of the Kasalka Group and the Ootsa Lake Group. Small Stocks and plugs related to the Kasalka and Ootsa Lake Groups are widespread through out the area.

The Ootsa Lake Group volcanics have been dated at 49 Ma, and are the host to the anomalous precious metal mineralizaton.

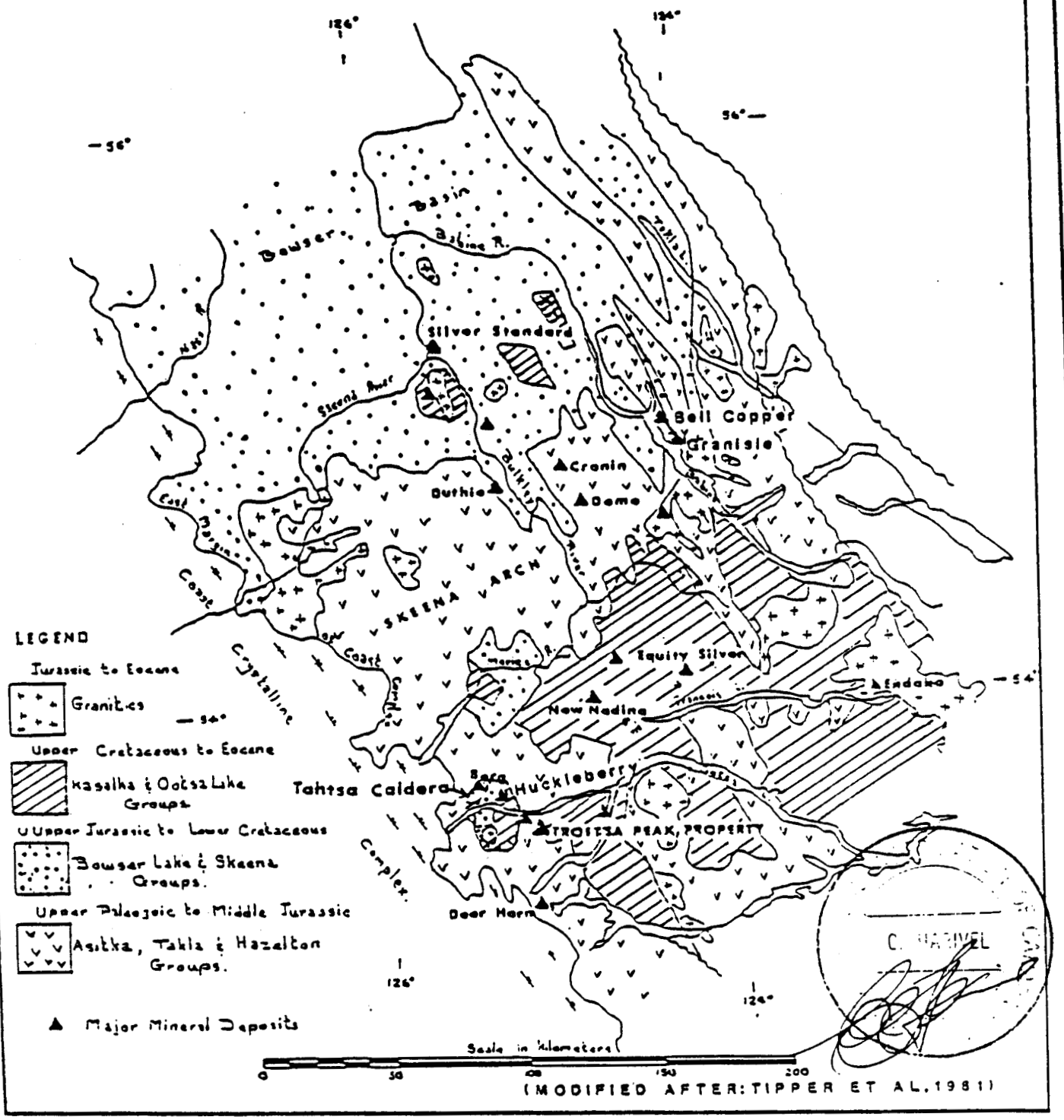
Regional geology has been done by Woodsworth (1980) at 1:250,000 scale and Diakow (1987) at 1:50,000 scale.

The claims lie along the south margin a highly mineralized belt across west-central British Columbia known as the Skeena Ach (figure 4) and includes the mineral deposits of Deer Horn, Equity Silver, Silver Queen, Duthie, Cronin and Dome precious metal deposits and the Granisle, Bell Copper, Berg, and Huckleberry porphyry deposits.

In the immediate regional setting, the claims area underlain by volcanic and intrusions of the Eocene Ootsa Lake Group and the Lower Jurassic Hazelton Group (figure 5). The Ootsa Lake volcanics comprise flows, lahars, breccias, tuffs and correlative high level intrusives. Lower strata of the Ootsa Lake group are mainly basalt and andesite, upper strata are rhyolite and andesite. These unconformabley overlie volcanics and

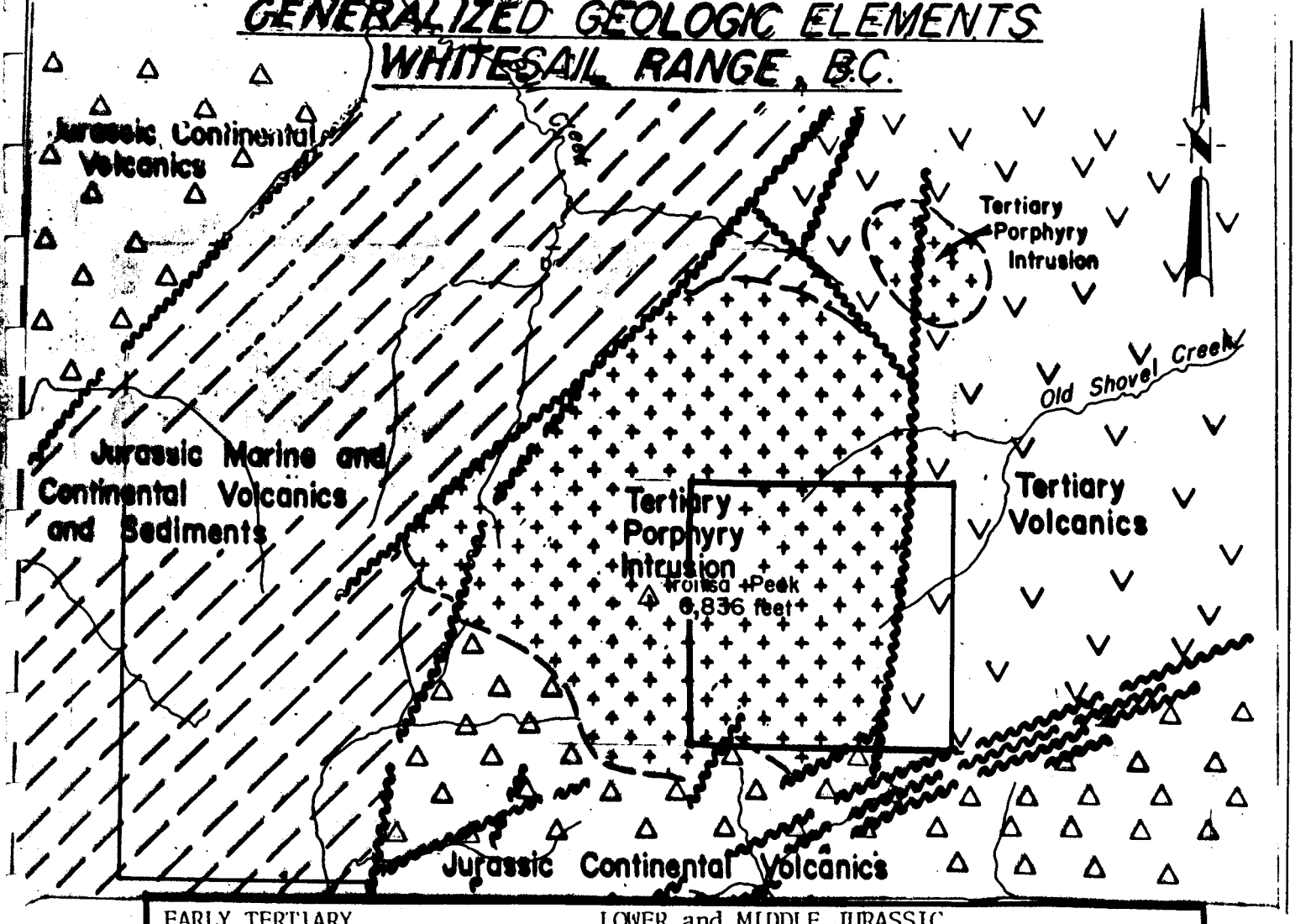
Figure 4

GEOLOGIC SETTING, MINERAL DEPOSITS
West-central British Columbia



(MODIFIED AFTER: TIPPER ET AL. 1981)

TROITSA CLAIM GROUP
GENERALIZED GEOLOGIC ELEMENTS
WHITESAIL RANGE, B.C.



EARLY TERTIARY

- felsite, aplite, quartz porphyry
- diabase,/granite
- hypabyssal rhyolite to andesite intrusive complex
- rhyolite to andesite volcanics

LOWER and MIDDLE JURASSIC

- marine sandstone, siltstone and shale
- marine acidic volcanics, volcaniclastic sediments, shale and siltstone
- subareal lapilli tuffs, breccias and rhyolite to andesite flows

0 1 2 3 Kilometres

0 1 2 3 Miles

Figure 5

sediments of the Lower Jurassic Hazelton Group which form the basement to the Ootsa. The Ootsa Lake Group volcanics appear to have been deposited within a down-faulted basin, ether as a caldera or graben structure into the older Jurassic volcanic basement. Faults bounding the Ootsa Lake volcanic basin from the adjacent older Hazelton volcanics trend 060 and north-south. The claims appear to underlie a feeder complex for the Eocene volcanics.

GEOLOGY OF THE TROITSA 1 CLAIM

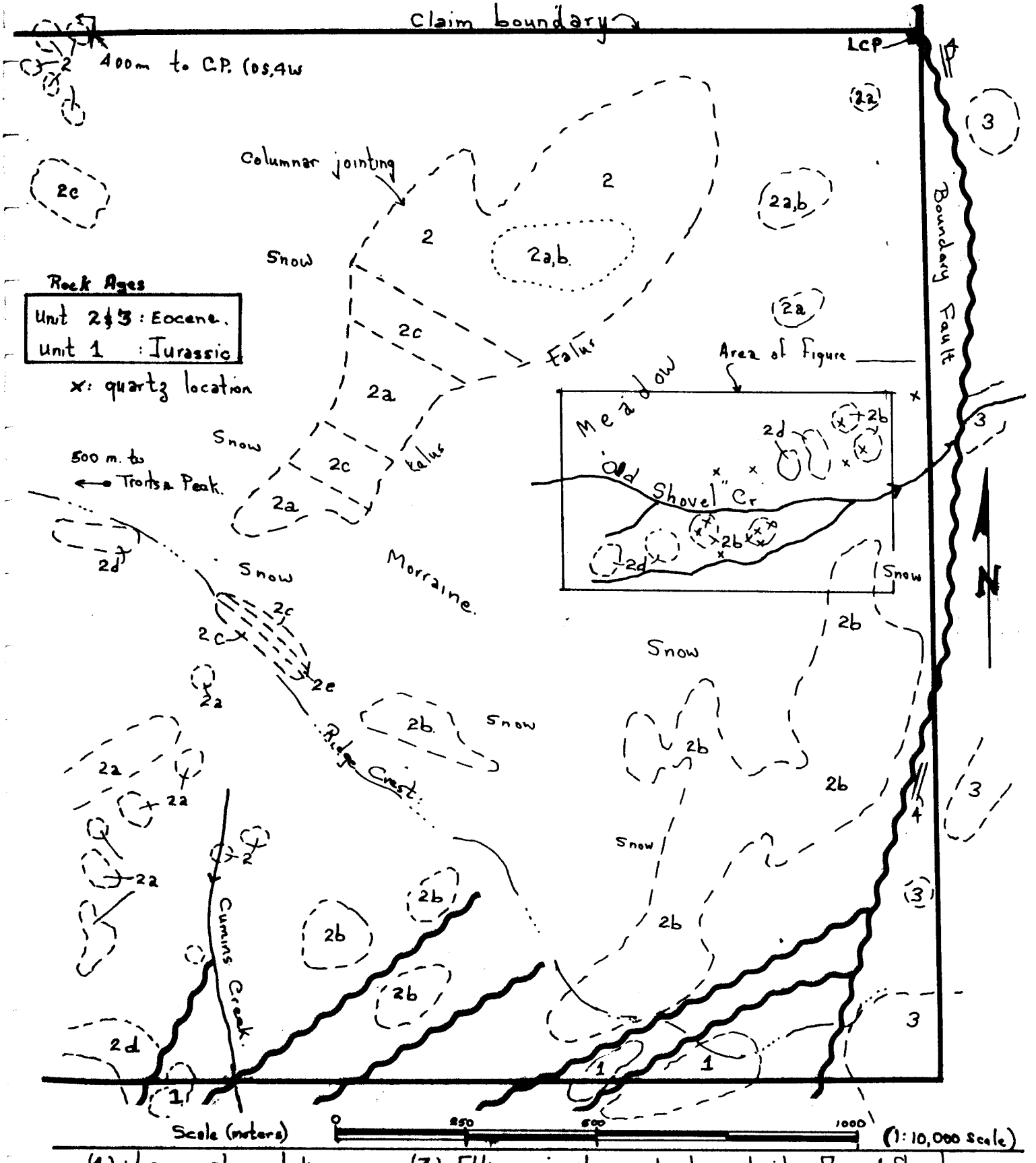
The geology of the claims has been outlined by Jamieson (1981) as part of the mapping of a larger, contiguous claim group then held by Union Cabide Exploration Corp. (figure 6).

The dominant rock type underlying most of the claim block is a feldspar phyric, blue-grey dacitic-andesite. Massive to well bedded bedded, flows, ash and lapilli welded tuff and bedded tuff, with and without fine-grained glassy plagioclase phenocrysts, comprise the major extrusive units. Massive units, of very highly variable thickness and commonly columnar jointed, likley represent flow-domes. In the southeast part of the claims, a prominent bladed feldspar porphyry appears to be an intrusive related to the extrusive units. In three localities, a distinctive polymicitic breccia, comprising propylite to early argillic altered, matrix supported, volcanic fragments to 1 meter diameter, crops out as limited exposures and proximal boulders. These represent either lahars or diatremes. This assemblage is interpreted as a dissected volcanic centre.

To the immediate east of the above volcanics, a sequence of well bedded basalt and andesite flows and flow breccias of the lower strata of the Ootsa Lake Group are in fault contact with the intrusive-extrusive complex. This fault is a major, north-trending structure that hosts anomalous mineralization immedietely north of the claims.

A series of east-northeast trending faults separated andesite and dacite maroon tuffs, lapilli tuffs and flows of the Jurassic Hazelton Group from the extrusive-intrusive complex of the Eocene Ootsa Lake Group. These faults are part of a regional east-northeast trending shear zone that parallel the trend of Whitesail Lake.

Figure 6 Geology of Troitsa 1 Mineral Claim.



(4.): Lamprophyre dykes ; (3.) Feldspar porphyry, dacite-andesite flows & flow breccia.
(2.) Troitsa Complex: 2: aphyric blue-grey dacite, 2a: blue-grey dacitic dykes, intrusives, and flows, fine-grained glassy plagioclase phenocrysts, 2b: megacrystic feldspar porphyry, 2c: welded ash-lapilli flow tuff; 2d: heterolithic breccia (lahar? diatrem?), 2e: bedded tuff; 1: Hazelton Group red lapilli tuff

MINERALIZATION AND ALTERATION

All the mineralization noted on the Troitsa 1 claim comprises veins (2cm to 20cm width), quartz stringers and stockworks hosted in propylite to early argillic altered bladed feldspar porphyry intrusion. No direct exposures of the mineralizaton was noted, as it occurs in numerous boulders traceable for about 200 meters along the toe of a large ice patch, or pocket glacier. The eastern limit of mineralization is marked by unaltered bladed feldspar porphyry, gradational into the mineralized zone. The western limit of the mineralization is marked by large, friable boulders of polymictic lahar or diatreme breccia. The breccia is pervasively altered to propylite and early argillic mineral assemblates. No fragments of quartz or veined volcanics were noted in the breccia fragments.

Pyrite is distributed throughout the alteration zone.

Snow cover prevented the concluding if the mineralized zone extended to the south, above the ice patch.

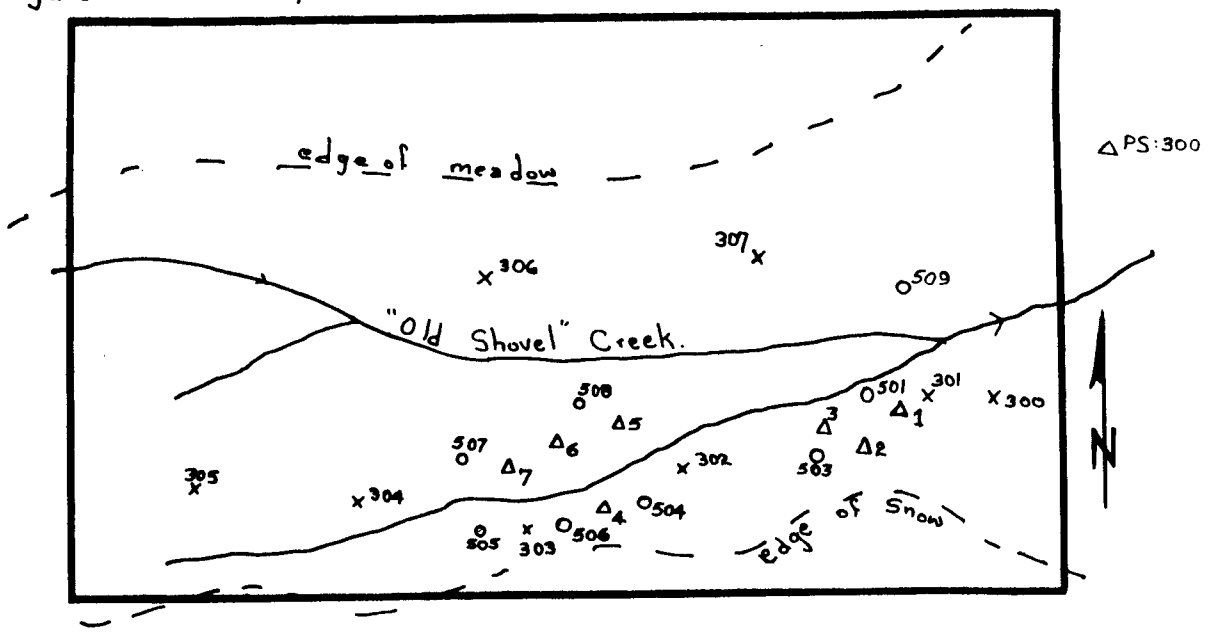
SAMPLING PROGRAM

Chips of quartz vein, stringers and stockworks along with altered bladed feldspar porphyry and altered bladed feldspar porphyry and breccia were collected and analysed for gold, silver and 30 element ICP geochemical analysis. Seven quartz vein, nine stockwork + altered host and eight altered host rock samples were collected (total 24 samples). Sample locations are shown in figure 7 and gold/silver values plotted in figure 8.

Five elements (Au, Ag, As, Mo and Mn) showed geochemical variation between vein and altered host (figure 9). Other metals as lead, zinc, bismuth, cadmium, and antimony showed little variation between rock types. Lithophile elements were not plotted as such values by ICP are unreliable.

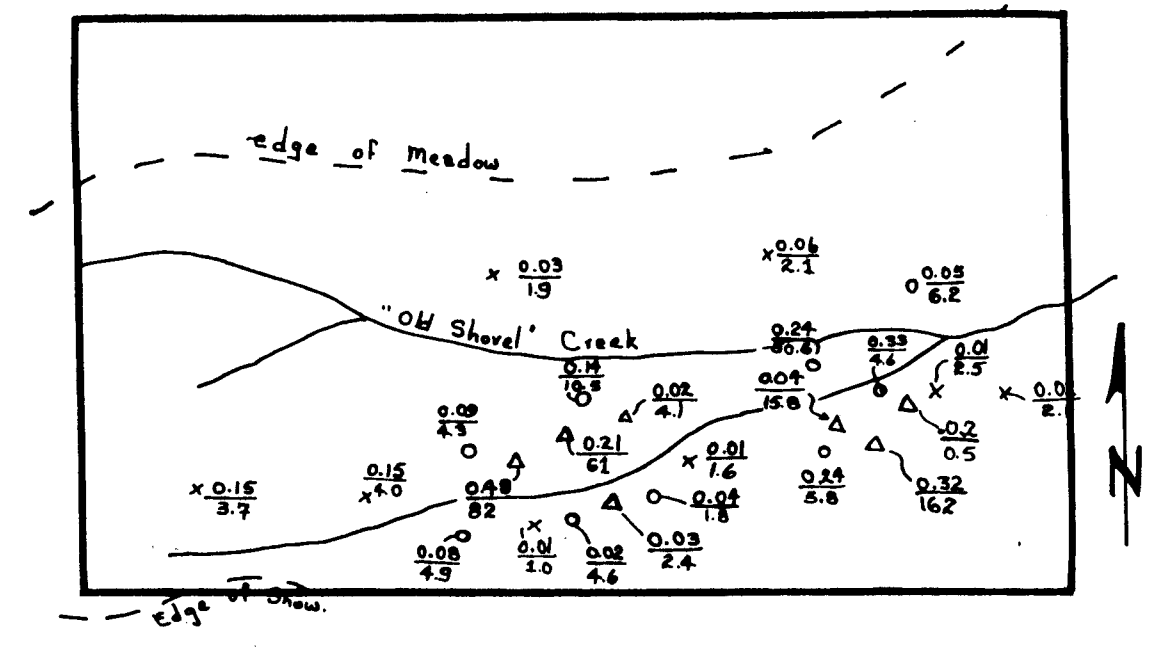
Analysis were done by Min En Laboratories of 705 West 15th Street, North Vancouver, B.C. Analytical values are shown in table 1.

Figure: 7 Sample Location: Rocks.



△ TR 1 to 7 : Quartz vein sample; 5 to 20 cm. width.
○ TR 500 to 509 : stringer quartz + propylite altered rock.
× AA 300 to 307 : propylite altered rock (± argillic)

Figure: 8 Gold - Silver (gm/t) values of rock samples (see figure)



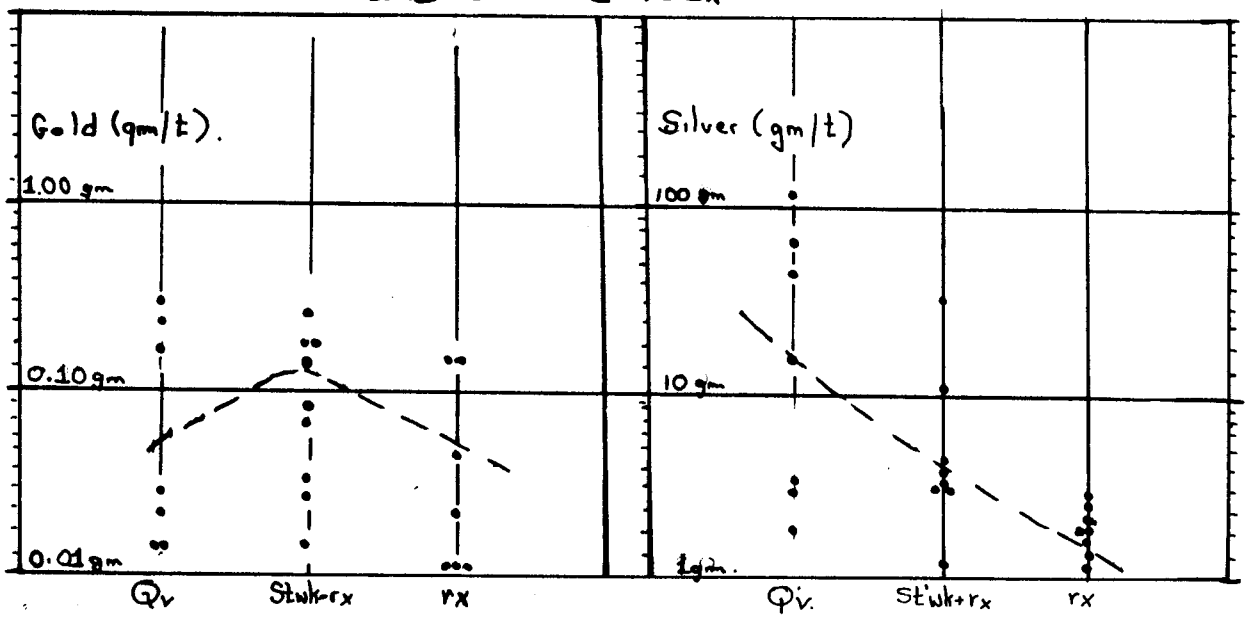
△ quartz vein
○ Stringer+ altered rock
× altered rock.

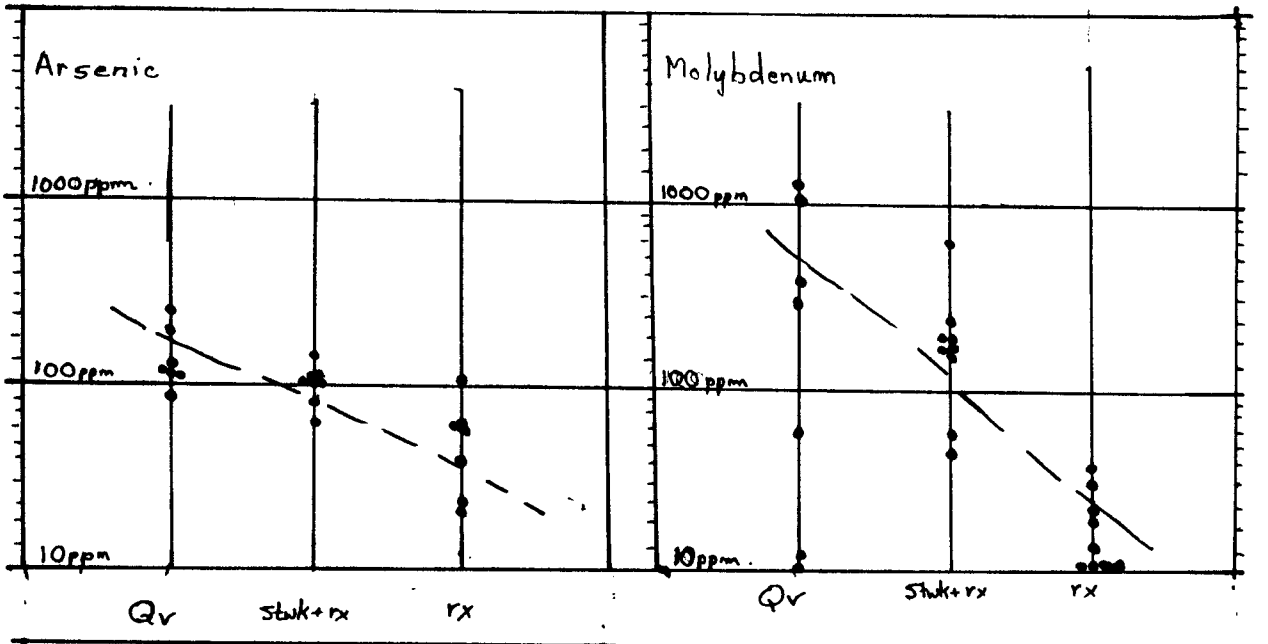
0.15 — gold (gm/t)
3.7 — Silver (gm/t)

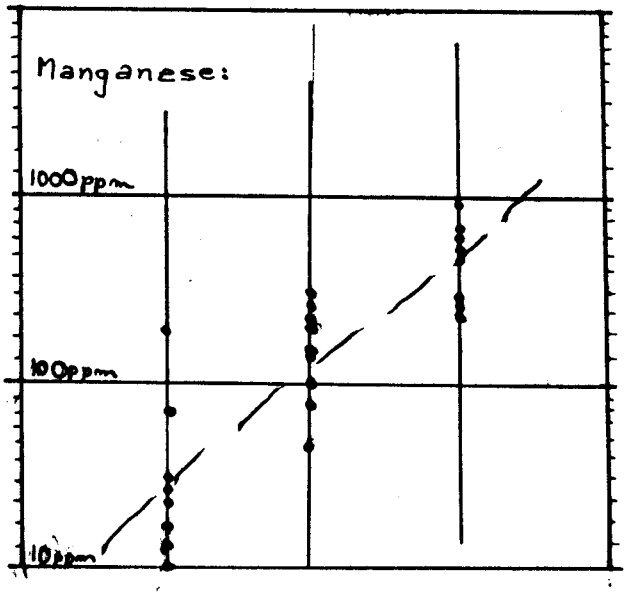
Scale in meters. (Fig: — 1 —)

0 50 100 150 200 250 500

Figure: 9 Element Distribution between quartz vein and altered rock







Au, Ag: Fire Assay + A.A.
As, Mo, Mn: ICP.
Pb, Zn, Bi, Sb, Cd; little variation.

Qv: quartz-vein.
Stwk+rx: qtz stringers (<1cm) + propylite ± early argillic altered rock.
rx: propylite + early argillic altered rock

pyrite - ubiquitous

(no fresh rock analysis)

DISCUSSION OF RESULTS AND CONCLUSIONS

Au, Ag, As, Mo and Mn values from the three rock types are plotted in figure 9 on a log scale. Samples have no geographic significance, as they were collected from float boulders and snow cover limited material available for sampling.

Gold values were weak to moderately anomalous. Gold to 0.48 gm/t were noted. Values greater than 0.10 gm/t were found in all rock types, with the highest grouping of values in the stockwork-altered rock suite.

Silver, arsenic and molybdenum all showed a positive correlation between the amount of silica and the value of metal analysed.

Manganese showed a negative correlation between the amount of silica and the value of the metal.

The range in metal values Ag, As, Mo and Mn and the correlation between value of metal and rock type indicates that soil and rock geochemistry may be useful in delineating future mineralized zones.

REFERENCES

Diakow, L, and Mihalynuk, M., (1987), Geology ofWhitesail Reach and Troitsa Lake Areas, 93E/10W and 93E/11E, B.C. Ministry of Energy, Mines and Petroleum Resources, Open File 1987/4

Duffel, S. (1959), Whitesail Lake Map Area, Geo. Surv. of Canada, Memoir 299

Jamieson, H. (1982), Geology of the Troitsa Peak Area, Internal Report, Union Carbide Exploration Corp.

Woodsworth, G. (1986) Geology of Whitesail Lake Map Area (93E), 1:250000 Scale. Geol. Surv. of Canada, Open File 708

Table 1

MIN-EN LABORATORIES
(DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

THUNDER BAY LAB.:
TELEPHONE (807) 622-8958
FAX (807) 623-5931

SMITHERS LAB.:
TELEPHONE/FAX (604) 847-3004

Assay Certificate

OS-0721-RA1

Company: TOM RICHARDS PROSPECTING
Project:
Attn: TOM RICHARDS

Date: OCT-30-90
Copy 1. TOM RICHARDS PROSPECTING, SMITHERS,B.C.

He hereby certify the following Assay of 25 ROCK samples submitted OCT-22-90 by TOM RICHARDS.

Sample Number	AU g/tonne	AU oz/ton	AG g/tonne	AG oz/ton
90-TR-1	.02	.001	.5	.01
90-TR-2	.32	.009	162.0	4.73
90-TR-3	.04	.001	15.8	.46
90-TR-4	.03	.001	2.4	.07
90-TR-5	.02	.001	4.1	.12
90-TR-6	.21	.006	61.0	1.78
90-TR-7	.48	.014	82.0	2.39
90-AA-300	.02	.001	2.1	.06
90-AA-301	.01	.001	2.5	.07
90-AA-302	.01	.001	1.6	.05
90-AA-303	.01	.001	1.0	.03
90-AA-304	.15	.004	4.0	.12
90-AA-305	.15	.004	3.7	.11
90-AA-306	.03	.001	1.9	.06
90-AA-307	.06	.002	2.1	.06
90-TR-501	.33	.010	4.6	.13
90-TR-502	.24	.007	50.6	1.48
90-TR-503	.24	.007	5.8	.17
90-TR-504	.04	.001	1.8	.05
90-TR-505	.08	.002	4.9	.14
90-TR-506	.02	.001	4.6	.13
90-TR-507	.09	.003	4.3	.13
90-TR-508	.14	.004	10.5	.31
90-TR-509	.05	.001	6.2	.18
PS-300	.02	.001	.3	.01

Certified by _____

MIN-EN LABORATORIES

15.

COMP: TOM RICHARDS PROSPECTING
PROJ:
ATTN: TOM RICHARDS

MIN-EN LABS — ICP REPORT

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2
(604)980-5814 OR (604)988-4524

FILE NO: 0S-0721-RJ1
DATE: 90/10/30
* ROCK * (ACT:F31)

SAMPLE NUMBER	AG PPM	AL PPM	AS PPM	B PPM	BA PPM	BE PPM	BI PPM	CA PPM	CD PPM	CO PPM	CU PPM	FE PPM	K PPM	LI PPM	MG PPM	MN PPM	MO PPM	NA PPM	NI PPM	P PPM	PB PPM	SB PPM	SR PPM	TH PPM	U PPM	V PPM	ZN PPM	GA PPM	SN PPM	W PPM	CR PPM
90-TR-1	.6	3410	210	14	486	.1	1	710	2.7	3	7	13170	420	9	620	262	8	40	5	150	25	2	6	1	1	12.1	83	1	1	2	223
90-TR-2	133.5	5460	94	19	115	.4	1	1420	.3	3	15	5240	3020	4	460	41	1002	70	5	380	54	9	6	1	1	32.8	29	1	2	2	162
90-TR-3	15.5	4310	105	11	46	.5	1	1800	1.2	4	12	8310	2360	5	660	85	537	50	4	610	34	3	4	1	1	16.5	48	1	1	2	168
90-TR-4	1.8	980	484	6	133	.1	3	210	3.9	33	50	41120	230	2	70	4	72	20	8	80	32	75	20	1	1	4.0	31	1	1	1	156
90-TR-5	3.1	460	107	2	172	.1	3	160	.2	13	29	17180	190	1	80	42	13	50	16	60	17	8	2	1	1	2.9	16	1	1	3	285
90-TR-6	46.9	4190	174	22	89	.5	1	600	.1	3	12	8100	2520	2	300	30	1820	40	4	400	61	10	5	1	1	42.6	36	2	3	2	176
90-TR-7	66.1	5550	129	10	114	.2	1	2080	.7	4	22	12810	3720	1	410	23	698	30	2	910	43	16	7	1	1	18.5	54	1	2	1	137
90-AA-300	2.2	16610	19	5	85	.8	3	20210	.1	13	22	33440	3450	21	10860	762	45	270	4	1780	27	1	27	1	1	46.3	89	1	1	1	39
90-AA-301	2.1	16390	30	4	70	.9	1	26110	.1	9	14	27030	4110	20	9210	938	12	300	5	1810	30	1	35	1	1	36.2	83	2	1	1	72
90-AA-302	1.3	15830	78	6	64	.9	1	8440	.1	12	7	31490	4900	17	7640	646	10	120	5	1970	27	1	13	1	1	29.7	94	1	1	1	45
90-AA-303	1.3	13160	29	4	64	.5	1	18100	.1	8	56	24280	3210	16	6540	723	5	200	1	1820	26	1	22	1	1	29.3	74	1	1	1	39
90-AA-304	3.4	13890	118	7	55	.8	1	5440	.3	9	13	28090	3820	15	6600	415	28	130	1	1600	26	1	9	1	1	35.9	80	2	1	1	38
90-AA-305	2.6	8090	73	3	38	.6	1	9320	.1	6	22	22010	2280	9	3620	363	49	200	1	1490	177	1	11	1	1	20.1	49	1	1	1	43
90-AA-306	1.5	15480	54	5	124	.9	1	21200	.1	9	23	27430	3820	18	8100	754	9	160	1	1750	28	1	27	1	1	30.8	73	2	1	1	32
90-AA-307	1.4	11120	73	4	47	.5	1	5970	.3	8	14	27670	3130	13	5500	342	27	230	1	1560	80	1	8	1	1	22.9	63	1	1	1	63
90-TR-501	4.4	11990	107	4	85	.5	1	9290	.1	8	17	24360	3420	13	6310	422	157	230	1	1470	25	3	11	1	1	30.8	76	2	3	1	53
90-TR-502	38.3	6490	81	10	49	.5	1	2180	.1	3	16	9440	3280	5	1890	128	862	140	2	490	43	11	5	1	1	18.0	36	1	1	1	152
90-TR-503	5.2	11060	204	5	76	.8	1	5420	.6	6	11	20090	4080	8	4890	254	176	220	1	1130	31	1	5	1	1	43.8	53	1	3	2	139
90-TR-504	2.2	8480	102	2	62	.2	1	2270	.1	5	7	15670	3840	5	2750	106	70	30	1	1010	26	1	3	1	1	25.7	34	1	1	1	125
90-TR-505	4.0	10560	109	7	183	.4	1	2590	.1	5	6	18290	4050	4	2770	130	229	50	1	1100	66	4	6	1	1	24.5	38	1	1	1	120
90-TR-506	3.5	11440	86	2	79	.5	1	2370	.1	8	14	17800	3120	16	6560	230	60	200	9	950	44	2	5	1	1	25.0	54	2	3	2	184
90-TR-507	4.5	5720	109	3	39	.4	1	1090	.2	4	6	9840	2420	5	1910	83	226	50	3	370	58	5	3	1	1	12.9	33	1	1	2	213
90-TR-508	9.2	2240	128	3	21	.1	1	370	.8	2	8	5700	1000	3	690	63	386	50	8	130	35	4	2	1	1	11.8	16	1	1	3	376
90-TR-509	5.2	9850	175	3	47	.3	1	3280	2.8	8	19	25120	2910	10	4920	403	136	390	1	1320	95	1	7	1	1	29.7	490	1	1	1	112
PS-300	.6	7900	73	1	229	.6	1	200	.3	3	15	21480	190	7	190	7	8	30	1	220	11	1	115	1	1	13.7	11	1	2	1	73

STATEMENT OF THE AUTHOR'S QUALIFICATIONS

I, Tom Richards, of box 436, Hazelton, B.C., have been involved in geologic mapping and exploration in the B.C. Cordillera since 1963.

I hold a BSc (1965) and a PhD (1971) from the University of British Columbia, and am a Fellow of the Geological Association of Canada.

I am presently a director and hold shares in the company holding the Troitsa 1 Mineral Claim.

STATEMENT OF EXPENSES

Man-time:		
Geologist, T. Richards	$400	
Prospector, P. Surat	250	
Prospector, R. Reding	200	
Propsector, I. Anderson	200	
Employee Expenses	135	1185
Transportation		
Helicopter, 2.5hrs	$1750	
Truck, one day	50	1800
Geochemical Analysis, 24 samples		270
Supplies and Exquipment		
snowshoes	50	
sample bags, filament, ribbon	15	65
Report, preparation, drafting secretarial		400
Total Expenses		$3750