83-#194-#11294

TITLE: GEOLOGY AND GEOCHEMISTRY OF THE AL CLAIM

CLAIM: AL 566(5) 6 units

LOCATION: N.T.S. 92H/10E
Latitude 49°42' N
Longitude 120°36' W
Similkameen Mining Division
Princeton, B.C.

OWNER: TERRITORIAL PETROLEUM VENTURES LTD.
508 - 15th Avenue S.W.
Calgary, Alberta T2R 0R2

WORK DONE: April 9 - 13, 1983

AUTHOR: G. D. White, B.Sc. (Geologist)

OPERATOR: TAIGA CONSULTANTS LTD.
#100, 1300 - 8th St. S.W.
Calgary, Alberta T2R 1B2

SUBMITTED: May 20, 1983

TAIGA CONSULTANTS LTD.

TABLE OF CONTENTS

MAPS

INTRODUCTION

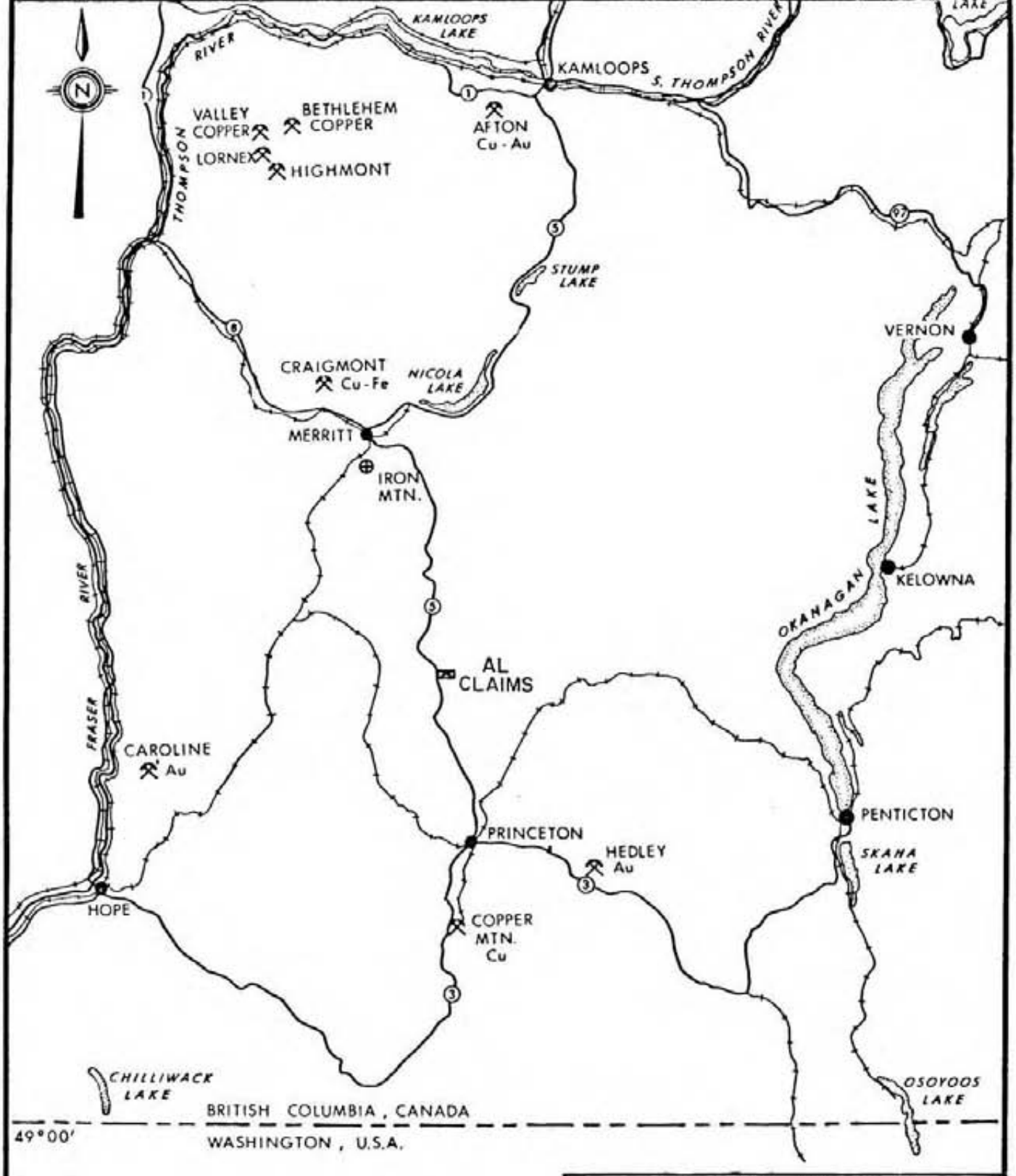
Taiga Consultants Ltd. conducted a geological and geochemical survey for Territorial Petroleum Ventures Ltd. on their AL property in the Similkameen Mining Division of British Columbia. This report is for submission under the Mineral Act regulations to apply assessment work for two years from May 4, 1983.

The six-unit AL claim is located 29 km north of Princeton on the east side of Highway 5 straddling the upper waters of Allison Creek (Ketchan Creek) on map-sheet NTS 92H/10E (Maps 1 and 2). The property is accessible via Highway 5 from Princeton to a point where Allison Creek crosses the highway just north of Allison Lake.

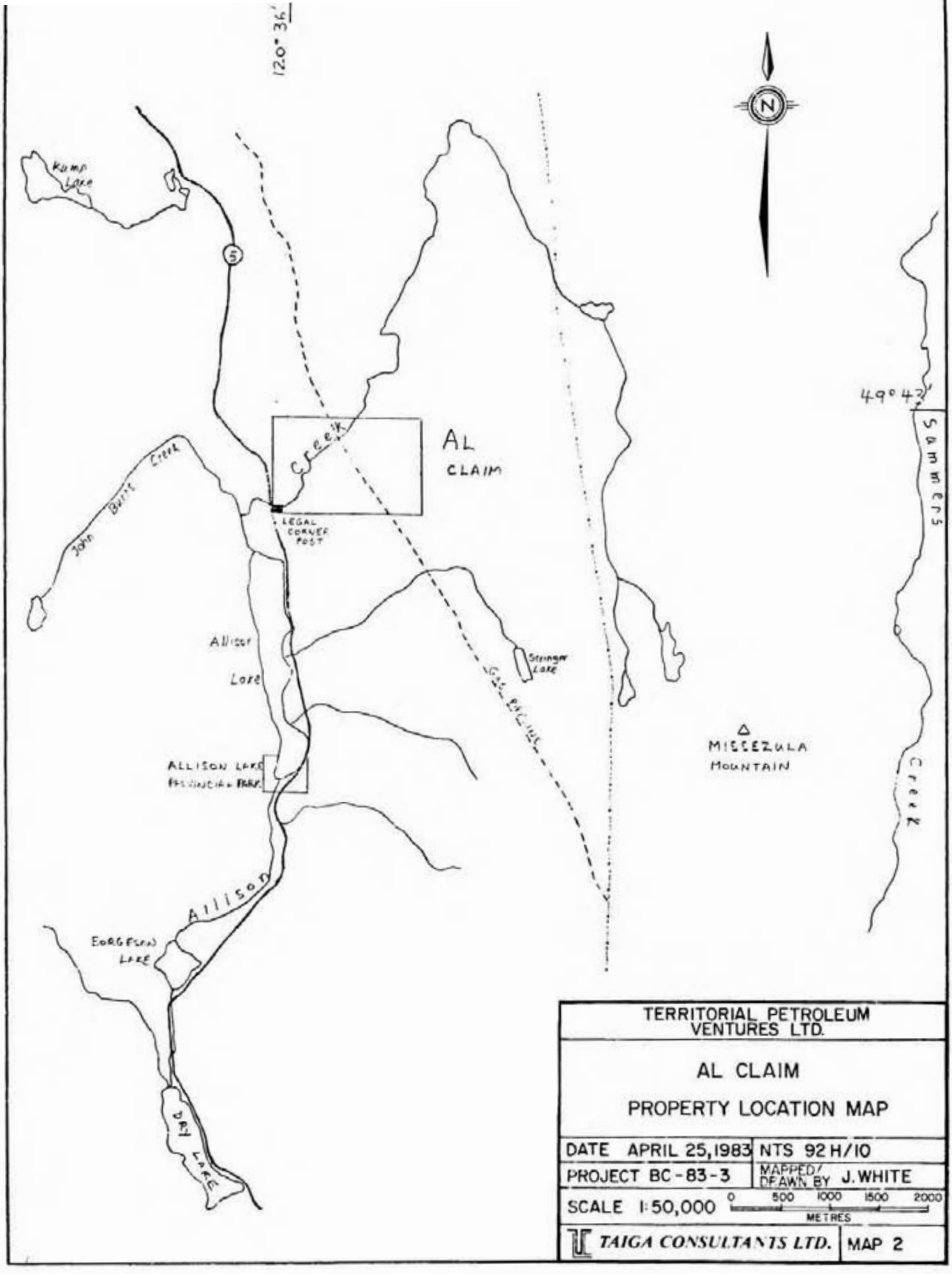
All geochemical sampling and geological mapping were completed at a scale of 1:5,000. The property covers an area of medium-grained biotite-hornblende granite and quartz monzonite of the Lower Jurassic Allison Lake Pluton which has intruded Upper Triassic andesitic Nicola volcanics lying along the eastern boundary of the claim. Two major fault zones, mapped by V. A. Preto in 1975, bound the property on the east and west.

The property was originally staked in 1972. During the 1981 field season, a geochemical soil grid was laid out over the property at 100 m line spacings, and 250 samples were collected covering 75% of the grid. In 1983, much of the remaining portion of the grid was sampled and mapped. Additional detailed sampling was also conducted over anomalous areas delineated in the 1981 survey.

The program was conducted from April 9 to 13, 1983.



TERRITORIAL PETROLEUM VENTURES LTD.	
AL CLAIM PROPERTY LOCATION MAP	
DATE APRIL 25,1983	NTS 92 H/10
PROJECT BC-83-3	MAPPED/DRAWN BY G.WHITE
SCALE 1:1,000,000	0 1 2 3 KILOMETRES
TAIGA CONSULTANTS LTD.	MAP 1



TERRITORIAL PETROLEUM VENTURES LTD.	
AL CLAIM PROPERTY LOCATION MAP	
DATE APRIL 25, 1983	NTS 92 H/10
PROJECT BC-83-3	MAPPED/DRAWN BY J. WHITE
SCALE 1:50,000	0 500 1000 1500 2000 METRES
TAIGA CONSULTANTS LTD.	MAP 2

TERRAIN

The property is located within the Intermontane Belt of southern British Columbia, characterized by gently rolling grass-covered uplands and deep north-south trending lake-filled valleys. These valleys were formed by stream dissection and glaciation. Local relief on the claim ranges up to 500 m.

Till cover on the property is extensive, occupying much of the eastern half of the claim grid, in the order of one to two metres. For this reason, outcrop exposure is poor and mainly restricted to the stream valley in the southwestern portion of the claim. Vegetation is mixed pine/fir and spruce/balsam forest. Moderate winters and precipitation with long arid summers characterize the area.

PROPERTY

The AL claim consists of six units located in the Similkameen Mining Division on map-sheet NTS 92H/10E (see Maps 1 and 2).

Size:	6 units = 150 hectares = 370.68 acres
Record Number:	566(5)
Last assessment filed:	May 4, 1981
Next assessment due:	May 4, 1983
Owner of Record:	Territorial Petroleum Ventures Ltd.

PREVIOUS WORK

The property was first staked in 1972 by J. R. Poloni. No evidence of previous work, except for some trenching over a copper-bearing quartz stringer (Preto, 1979), is known. During 1972, Mr. Poloni conducted a minimal soil geochemical and geological survey over the claim. Thirty samples were collected and analyzed. More recently, in April of 1981, geologist D. J. Brownlee of Territorial Petroleum Ventures Ltd. carried out a detailed geological and soil geochemical survey over a flagged grid on the property. He collected 239 soil and 11 silt samples on 100 m line spacings every 50 m. These were analyzed for the copper and molybdenum content. As a result, two anomalous zones were outlined in the southwestern portion of the grid. However, the program was terminated due to hazardous weather conditions when only 75% completed.

1983 WORK COMPLETED

The work covered by this report was done during the period of April 9 to 13, 1983. At this time, G. D. White of Taiga Consultants Ltd. of Calgary (agent for Territorial Petroleum Ventures Ltd.) carried out detailed geochemical sampling and geological mapping on the property. In total, 65 soil samples were collected. All were analyzed for copper and molybdenum; 32 were analyzed for gold.

The purpose was two-fold: (1) to sample those areas not surveyed during the 1981 program; and (2) to attempt to determine the source of the two anomalous zones delineated during the same period. For these reasons, much of the work was concentrated in the southwestern portion of the claim where additional grid lines at 50 m spacing were run to cover these zones.

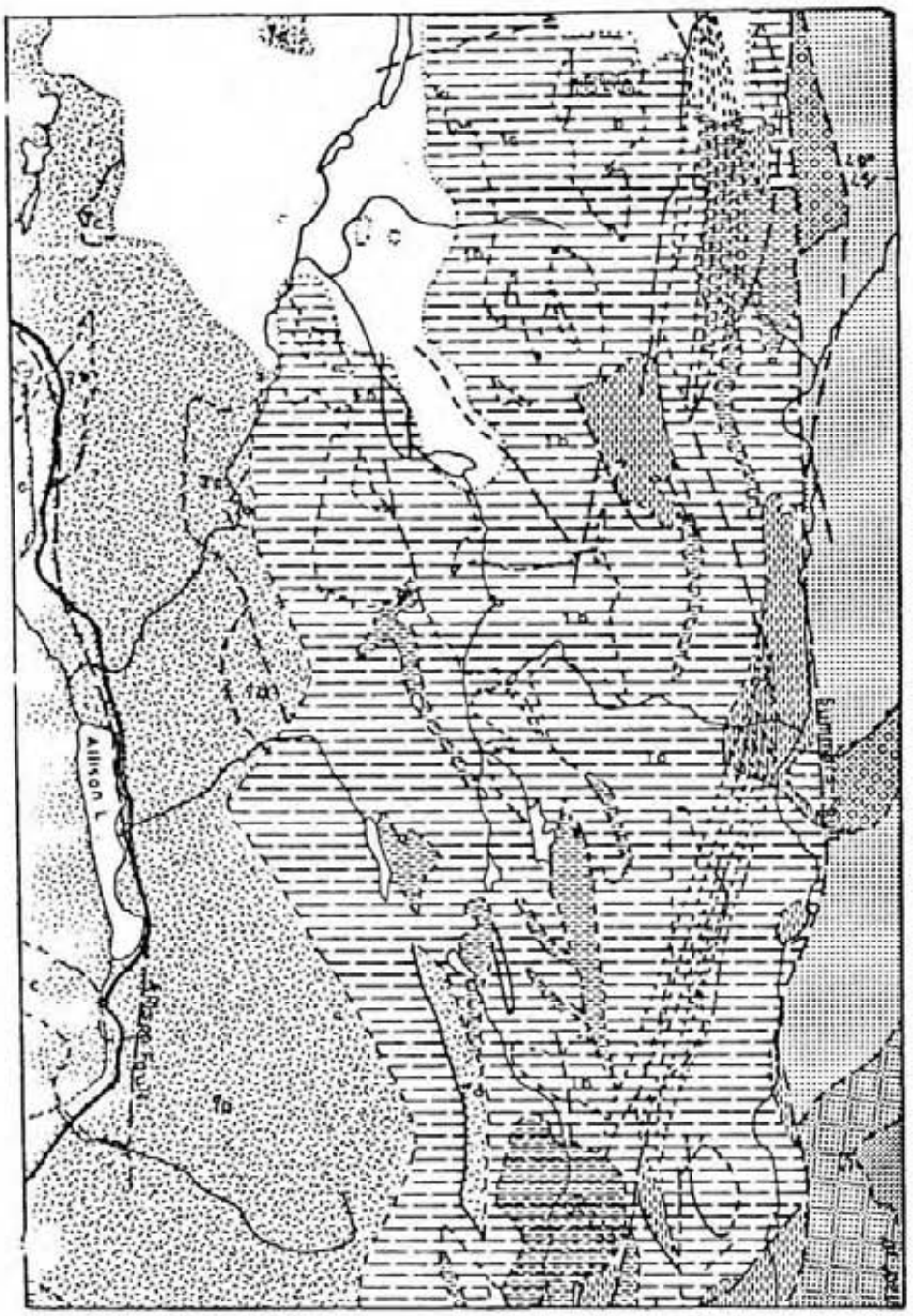
GEOLOGY

Rocks underlying the region between Princeton and Merritt lie within the Intermontane Belt of British Columbia near its boundary with the Coast Crystalline Complex to the west (Map 3). They are dominated by the Upper Triassic Nicola Group, a volcanic island arc and subduction complex which developed during the Early Mesozoic Era. Permian (Cache Creek Group) and Lower Triassic basement rocks preserve evidence of structural, sedimentary, and metamorphic events which allows separation of Triassic rocks into three fault-bounded, subparallel north-trending belts. The western fault system is the Allison Fault and basically follows the Allison Creek Valley. The eastern system is known as the Summers-Kentucky Alleyne Fault system. In the immediate area of the property, the Lower Jurassic Allison Lake Pluton intrudes the Nicola Group in three different phases.

Glacial overburden covers approximately 70%-75% of the property. Outcrop exposure is generally limited to the area lying north and west of Allison Creek which traverses the claim in a southwesterly direction.

The AL claim is underlain entirely by the Allison Lake Pluton which Preto (1979) describes in B.C. Dept. of Mines Bulletin 69. The property covers three phases of this pluton, only one of which was found exposed on the claim. It consists of reddish to reddish-grey biotite-hornblende granite and quartz monzonite. Grey hornblende granodiorite and quartz diorite were mapped as separate units by Preto (1979) near the extreme eastern edge of the claim but were not seen. A detailed description of much of the outcrop exposed on the property is given by D. J. Brownlee in the 1981 assessment report. Only those rocks encountered by the present study are described here.

In the extreme southwestern portion of the claim, a large body of outcrop was mapped occupying the steep slopes of Allison Creek. It consists mainly of grey to pink, medium-grained, leucocratic quartz monzonite containing what appears to be a large inclusion or roof pendant of strongly altered, locally migmatized Nicola rock on Line 0+00N 2+50E. Further to



AFTER PRETO 1979

TERRITORIAL PETROLEUM VENTURES Ltd

AL PROPERTY
REGINAL GEOLOGY
simmilkameem M.D. N.T.S. 92H

DRWN. BY D.J.B. APRIL 1981

100's METRES
0 5 10 15 20 25 30

LEGEND

LOWER CRETACEOUS

KINGSVALE GROUP

REDDISH VOLCANIC CONGLOMERATE, GRIT, SANDSTONE, AND SHALE

UPPER TRIASSIC TO LOWER JURASSIC

ALLISON LAKE PLUTON

7a REDDISH TO REDDISH GREY BIOTITE-HORNBLENDE GRANITE AND QUARTZ MONZONITE

7b GREY HORNBLENDE GRANODIORITE

7c GREY TO DARK GREY HORNBLENDE DIORITE, GABBRO, AND QUARTZ DIORITE

7d METAVOLCANIC ROCKS WITHIN OR NEAR THE PLUTON

PINK AND GREY MONZONITE AND SYENITE, MEDIUM-GRAINED AND GENERALLY PORPHYRITIC, FINE-GRAINED GREY DACITE

DIORITE, QUARTZ DIORITE, MONZONITE, AND DIORITE BRECCIA, MINOR FINE-GRAINED HORNBLENDE PORPHYRY

UPPER TRIASSIC

NICOLA GROUP

PURPLE AND GREY, LOCALLY ANALCITE-BEARING, AUGITE PLAGIOCLASE TRACHYANDESITE AND TRACHYBASALT PORPHYRY FLOWS AND MINOR FLOW BRECCIA

VOLCANIC SANDSTONE AND SILTSTONE, MINOR TUFF

MASSIVE TO CRUDELY LAYERED LAHAR DEPOSITS, MINOR CONGLOMERATE

1a REDDISH TO GREEN AUGITE-PLAGIOCLASE ANDESITE AND BASALT FLOWS, OCCASIONAL ANALCITE-BEARING TRACHYBASALT

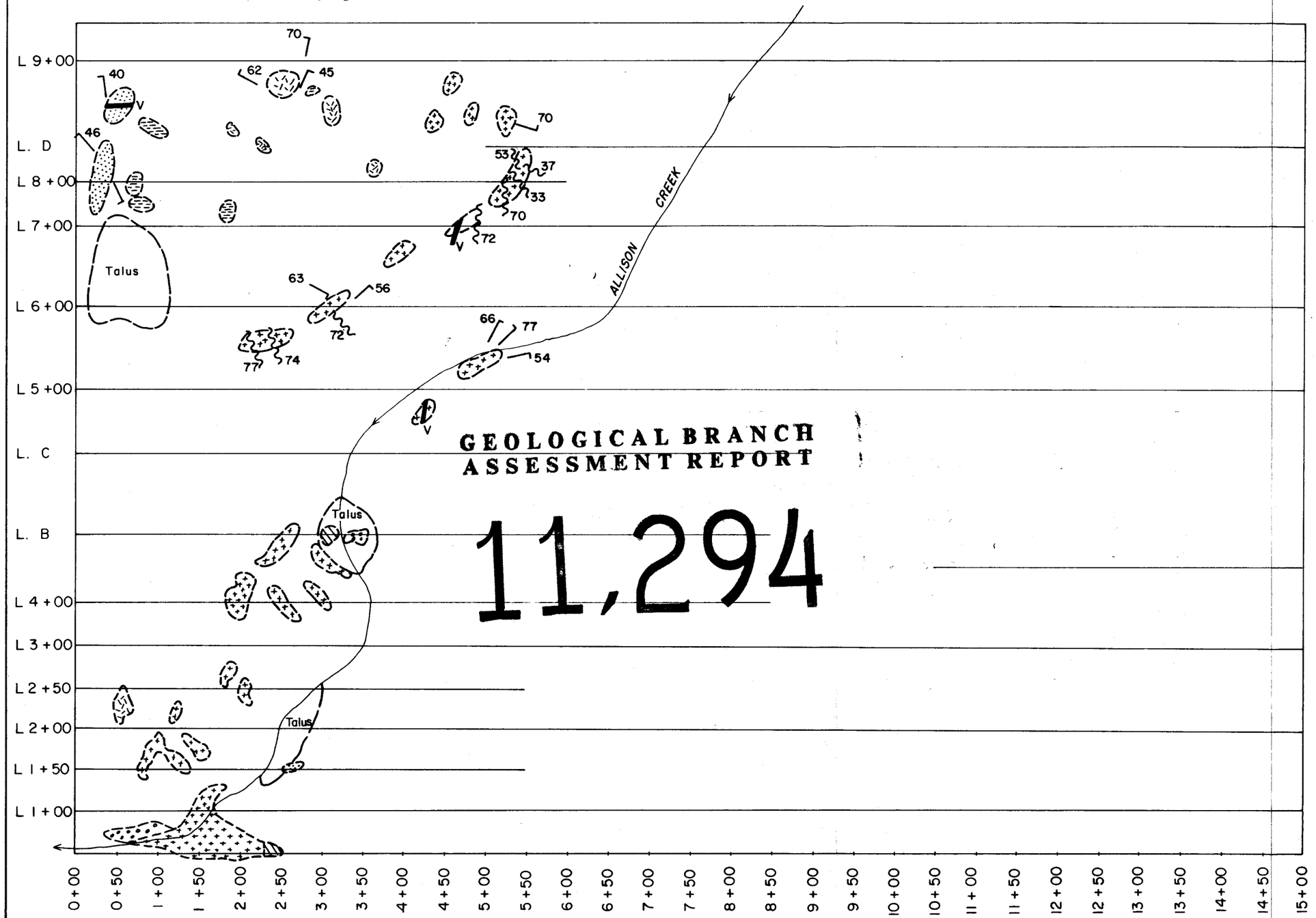
1b AUTOBRECCIATED EQUIVALENTS OF 1a

CRYSTAL AND LITHIC TUFF, GENERALLY WELL BEDDED

MAP 3

the east in this unit, the rock is less altered and consists of an andesitic lapilli tuff with subangular to subrounded cobble-size fragments in places. It is generally matrix supported. On the north side of the creek bed in this area, a fine-grained felsic to hornfelsic dyke was located. The unit is highly gossaned, in sharp contact with the surrounding quartz monzonite and locally contains minor amounts of disseminated pyrite (see Map 4).

In the vicinity of some old trenches on the west side of Allison Creek (Line LB N 3+00E), an exposure of fine-grained andesitic tuff contains microveins of calcite in which several grains of chalcopyrite were observed. Across on the east side of the creek, a large unit of highly gossaned, pink, fine-grained felsic to hornfelsic tuff was located. It is possible this latter unit may be a dyke; however, no contacts with the enclosing granitic intrusive were found. Further to the south, on Line 2+50N 2+75E, a pure white limestone unit exists containing subangular cobble-size fragments of quartz monzonite.



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N

Fault

Joint

V Vein

Biotite, hornblend, quartz monzonite

Transition zone, potassic veins in quartz monzonite

Granite

Altered, sheared and fractured intrusive hornfelsic and/or potassic

Andesite tuff (Nicola Volcanics?)

Felsic dyke rock

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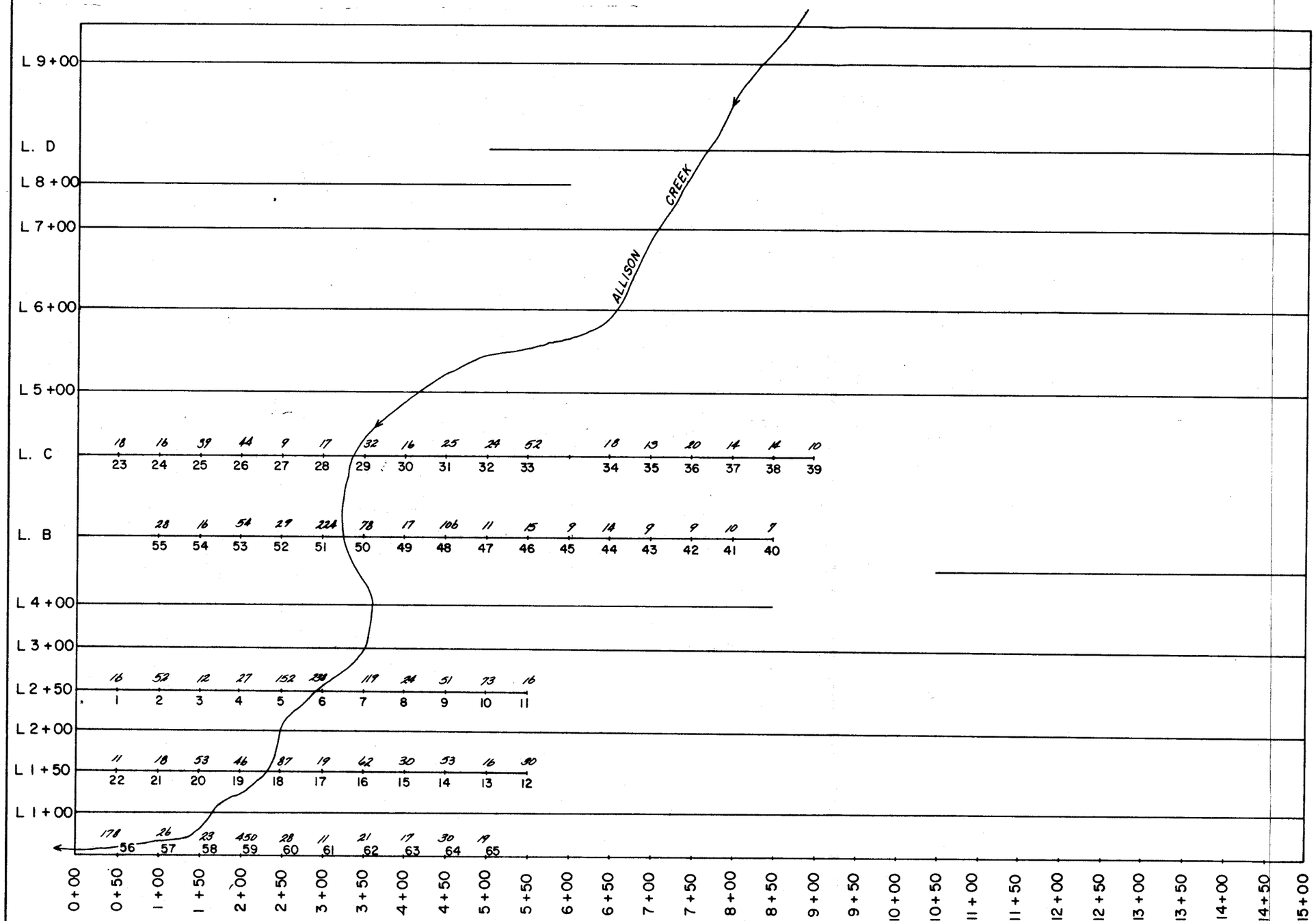
PERMIT NUMBER
P 2399
TAIGA CONSULTANTS LTD.

TERRITORIAL PETROLEUM VENTURES LTD.

AL CLAIM

GEOLOGY MAP

DATE APRIL 25, 1983	NTS 92 H/10
PROJECT BC-83-3	MAPPED/DRAWN BY G. WHITE
SCALE 1:5,000	0 50 100 150 200
TAIGA CONSULTANTS LTD.	MAP 4



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TERRITORIAL PETROLEUM VENTURES LTD.

AL CLAIM

SOIL GEOCHEMISTRY - Cu

DATE APRIL 25, 1983	NTS 92 H/10
PROJECT BC-83-3	MAPPED/DRAWN BY G. WHITE
SCALE 1:5,000 (0 50 100 150 200)	
TAIGA CONSULTANTS LTD.	MAP 5

GEOCHEMISTRY

Sixty-five soil samples were collected in 1983 on flagged north-south grid lines at 50 m intervals using a grub hoe. A large gusset bag of reddish-brown "B" horizon soil was collected from each sample location. Good representative samples were in places difficult to obtain, especially along the steep talus slopes of southern Allison Creek. Further to the east at higher elevation, the presence of snow and frozen ground also hampered the collection process. The samples were subsequently shipped to Bondar-Clegg & Company Ltd. in Vancouver for analysis by Atomic Absorption. All were analyzed for copper (Cu) and molybdenum (Mo) after a hot Lefort Aqua Regia extraction. Thirty-two of the samples from the southern portion of the grid were also analyzed for gold (Au) by a combined fire assay-atomic absorption technique (Maps 5, 6, 7).

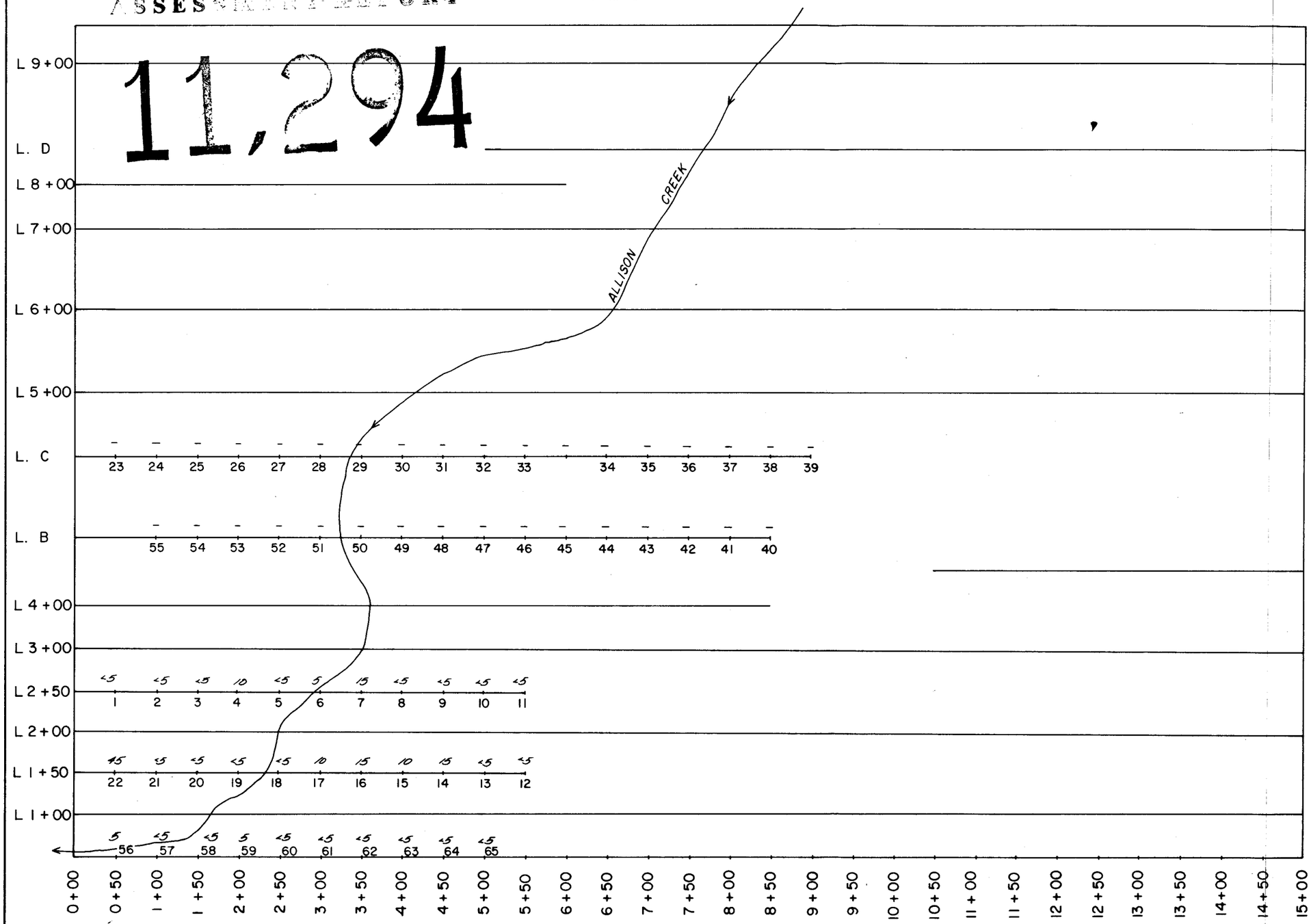
Results obtained from this year's (1983) geochemical sampling program are given in the Appendix. Threshold values for each of the three elements (Cu, Mo, Au) were established partially on an arbitrary basis and partially from results obtained in the 1981 survey. These are indicated below:

Cu	Mo	Au
79 ppm	5 ppm	10 ppb

From these values, 14 samples were shown to be anomalous and the corresponding results are as follows:

83-3-04	slightly anomalous in Au
83-3-05	anomalous in Cu, Mo
83-3-06 *	anomalous in Cu, Mo
83-3-07	slightly anomalous in Cu
83-3-14	slightly anomalous in Au
83-3-15	slightly anomalous in Au
83-3-16	slightly anomalous in Au
83-3-17	slightly anomalous in Au
83-3-18	slightly anomalous in Cu
83-3-22 *	anomalous in Au
83-3-48	slightly anomalous in Cu
83-3-51	anomalous in Cu, Mo
83-3-56	anomalous in Cu
83-3-59 *	anomalous in Cu

*indicates the sample locations with the highest values for each of the three elements

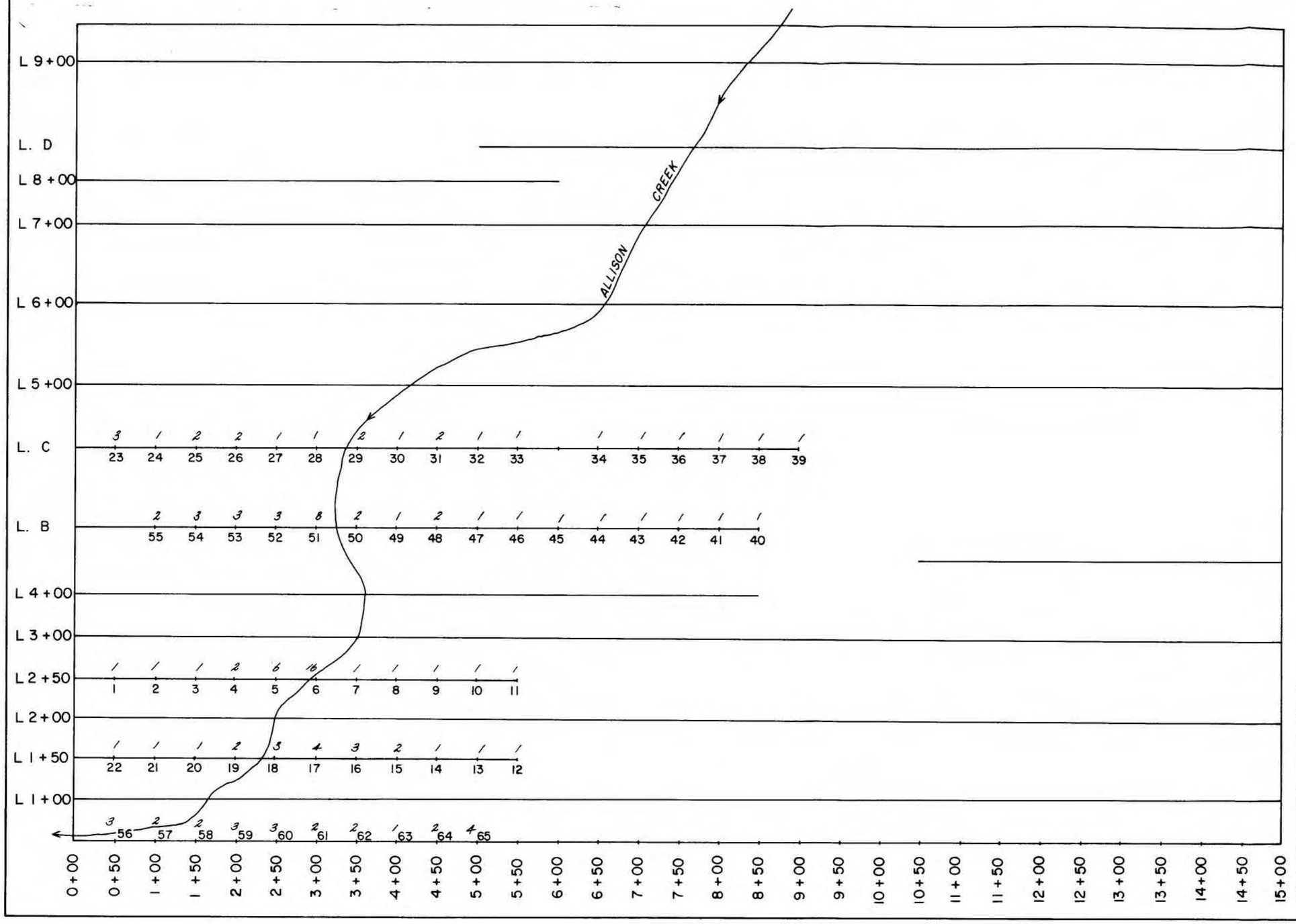


TERRITORIAL PETROLEUM VENTURES LTD.

AL CLAIM

SOIL GEOCHEMISTRY - Au

DATE APRIL 25, 1983	NTS 92 H/10
PROJECT BC-83-3	MAPPED/DRAWN BY G. WHITE
SCALE 1:5,000 (0 50 100 150 200)	
TAIGA CONSULTANTS LTD.	MAP 7



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PERMIT NUMBER P 2399
TAIGA CONSULTANTS LTD.

TERRITORIAL PETROLEUM VENTURES LTD.

AL CLAIM

SOIL GEOCHEMISTRY - Mo

DATE APRIL 25, 1983	NTS 92 H/10
PROJECT BC-83-3	MAPPED/DRAWN BY G. WHITE
SCALE 1:5,000	0 50 100 150 200
TAIGA CONSULTANTS LTD.	MAP 6

All anomalies are centered around Allison Creek in the extreme south-western portion of the claim and correspond closely to anomalous zones delineated in the 1981 program. In addition, many of the dykes and faults mapped on the property to date are in close association with these elevated geochemical values.

CONCLUSIONS

The purpose for staking the AL claim and subsequent investigations was the location of porphyry copper and/or precious metal polymetallic vein type deposits. Results to date are vague in the relationship of anomalous zones to the dykes mapped in the southwestern portion of the claim. Therefore, further study is warranted and will take the form of detailed rock sampling to analyze for base and precious metal values over all outcrop exposed in this region, with special emphasis on gossanous zones. Although generally exposure is poor on the property, it is sufficient in this part of the grid to gain better geological control than has been produced thus far. Therefore, closer attention will be paid in future studies to mapping all rock units in greater detail. Trenching may also be used in those areas of high geochemical response covered by glacial till.

REFERENCES

Brownlee, D. J. (April 1981): Geological and Geochemical Report on the AL property; Territorial Petroleum Ventures Ltd., Assessment report.

Preto, V. A. (1979): Geology of the Nicola Group between Merritt and Princeton; B.C. Dept of Mines and Petroleum Resources, Bull. 69

STATEMENT OF COSTS

Wages			
G. D. White, Geologist field work	April 9-13/83 4 days @ $240/diem		$ 960.00
Food and Accommodation			
April 9-13, 1983			
Hotel	4 days @ $23/diem	92.00	
Meals	4 days @ $15/diem	60.00	152.00
Travel Costs			
April 9-13, 1983			
Vehicle Rental (GMC Jimmy)	4 days @ $65/diem	260.00	
Vehicle gas	4 days @ $40/diem	160.00	420.00
Equipment			
Geological field equipment and disposable supplies	4 days @ $10/diem		40.00
Geochemical Analyses and Assays	May 10, 1983		
32 samples analyzed for Au	@ $6/sample	192.00	
65 samples analyzed for Cu, Mo	@ $3/sample	195.00	387.00
Report Preparation			
Report writing, map preparation, filing of assessment work, typing, drafting.			450.00
		TOTAL	$ 2,409.00

This represents two years' assessment work on the AL claim (566) to May 4, 1985

AUTHOR'S QUALIFICATIONS

I, G. D. White, of #100, 1300 - 8th St. S.W., Calgary, Alberta:

1. am a gradute of the University of Manitoba (1979) with a Bachelor of Science degree in Geology.

2. have worked in the mineral exploration field with various companies since 1975 as an assistant, as a geologist, and as a project geologist.

3. am presently employed by Taiga Consultants Ltd. of Calgary, as a minerals geologist.

DATED at Calgary, Alberta, this 20th day of May, A.D. 1983.

Gerald D. White

G. D. White, B.Sc.
Geologist

CERTIFICATE

I, the undersigned, of the City of Calgary in the Province of Alberta, do hereby certify that:

1. I am a Professional Geologist with an office mailing address of #100, 1300 - 8th Street S.W., Calgary, Alberta.

2. I graduated from St. Louis University with a Bachelor of Science degree in 1967, and with a Master of Science degree in 1969.

3. I am a registered Professional Geologist with the Association of Professional Engineers, Geologists and Geophysicists of Alberta for the past eleven years.

4. I have practised my profession as a geologist for fifteen years.

5. I have no interest directly or indirectly in the shares of Territorial Petroleum Ventures Ltd.

6. I have personally directed the exploration carried out on the claim mentioned herein during the period of April 9 to 13, A.D. 1983.

DATED at Calgary, Alberta, this 20th day of May, A.D. 1983.

THE ASSOCIATION OF
PROFESSIONAL ENGINEERS,
GEOLOGISTS AND GEOPHYSICISTS
OF ALBERTA
PERMIT NUMBER
P 2389
TAIGA
CONSULTANTS LTD.

GEOLOGICAL ASSOCIATION OF CANADA
J. W. DAVIS
PROFESSIONAL GEOLOGIST ALBERTA
JAMES W. DAVIS

James W. Davis, M.Sc., P.Geol., FGAC
TAIGA CONSULTANTS LTD.

A P P E N D I X

Geochemical Results

Bondar-Clegg & Company Ltd.
130 Pemberton Ave.
North Vancouver, B.C.
Canada V7P 2R5
Phone: (604) 985-0681
Telex: 04-352667

BONDAR-CLEGG

Geochemical Lab Report

REPORT: 123-0503

FROM: TAIGA CONSULTANTS LTD. SUBMITTED BY: J. DAVIS

DATE: 19-APR-83 PROJECT: NONE GIVEN.

ELEMENT	LOWER DETECTION LIMIT	EXTRACTION	METHOD	SIZE FRACTION	SAMPLE TYPE	SAMPLE PREPARATIONS
Cu	1 PPM	HNO3-HCL HOT EXTR	Atomic Absorption	-80	SOILS	DRY, SEIVE -80
Mo	1 PPM	HNO3-HCL HOT EXTR	Atomic Absorption	-80		RETENTION OF REJECTS

REPORT COPIES TO: MR. J.W. DAVIS

INVOICE TO: MR. J.W. DAVIS

North Vancouver, B.C.
Canada V7P 2R5
Phone: (604) 985-0681
Telex: 04-352667

BONDAR-CLEGG

Geocher
Lab Re

REPORT: 123-0503 PROJECT: NONE GIVEN

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Mo PPM	Au PPB	NOTES
S 83-3-01		16	1	<5	
S 83-3-02		52	1	<5	
S 83-3-03		12	1	<5	
S 83-3-04		27	2	10	
S 83-3-05		152	6	<5	
S 83-3-06		238	16	5	
S 83-3-07		119	1	15	
S 83-3-08		24	1	<5	
S 83-3-09		51	1	<5	
S 83-3-10		73	1	<5	
S 83-3-11		16	1	<5	
S 83-3-12		30	1	<5	
S 83-3-13		16	1	<5	
S 83-3-14		53	1	15	
S 83-3-15		30	2	10	
S 83-3-16		62	3	15	
S 83-3-17		19	4	10	
S 83-3-18		87	3	<5	
S 83-3-19		46	2	<5	
S 83-3-20		53	1	<5	
S 83-3-21		18	1	<5	
S 83-3-22		11	1	45	
S 83-3-23		18	3		
S 83-3-24		16	1		
S 83-3-25		39	2		
S 83-3-26		44	2		
S 83-3-27		9	1		
S 83-3-28		17	1		
S 83-3-29		32	2		
S 83-3-30		16	1		
S 83-3-31		25	2		
83-3-32		24	1		
83-3-33		52	1		
S 83-3-34		18	1		
83-3-35		13	1		
S 83-3-36		20	1		
83-3-37		14	1		
83-3-38		14	1		
S 83-3-39		10	1		
S 83-3-40		7	1		
S 83-3-41		10	1		
S 83-3-42		9	1		
S 83-3-43		9	1		
S 83-3-44		14	1		
S 83-3-45		9	1		
S 83-3-46		15	1		
S 83-3-47		11	1		
S 83-3-48		106	2		
S 83-3-49		17	1		
S 83-3-50		78	2		
S 83-3-51		224	8		
S 83-3-52		29	3		
S 83-3-53		54	3		
S 83-3-54		16	3		
S 83-3-55		28	2		
S 83-3-56		178	3	5	
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S 83-3-58		23	2	<5	
S 83-3-59		450	3	5	
S 83-3-60		28	3	<5	
S 83-3-61		11	2	<5	
S 83-3-62		21	2	<5	
S 83-3-63		17	1	<5	
S 83-3-64		30	2	<5	
S 83-3-65		19	4	<5	