

84-#302-1222.0

5

REPORT ON THE
GEOLOGY AND GEOCHEMISTRY
OF THE
HOODOO WEST CLAIM GROUP
LIARD MINING DIVISION
NTS 104B/14W

For

KERR ADDISON MINES LTD.

Owned and Operated By
Kerr Addison Mines Ltd.

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

12,220

Peter Holbek
Nov, 1933

TABLE OF CONTENTS

	<u>Page</u>
1. INTRODUCTION	1
1.1 Location and Access	1
1.2 Claims and Previous Work	1
1.3 Physiography	4
1.4 Present Work	4
2. GEOLOGY AND MINERALIZATION	
2.1 Regional Geology	5
2.2 Property Geology	5
2.3 Mineralization	6
3. GEOCHEMISTRY	
3.1 Methods	7
3.2 Discussion of Results	8
3.2.1 Soils	8
3.2.2 Rocks	8
4. CONCLUSIONS	11
APPENDICES	
Appendix 1 Geochemical Results	12
2 Cost Statement	14
3 Statement of Qualifications	15
4 Description of Sample Preparation and Analytical Techniques	16
LIST OF FIGURES	
1. Location Map	2
2. Claim Map	3
3. Soil Profiles, Heather Vein Area	9
4. Orientation Survey Results	10
5. Geochemistry and Sample Locations for Heather Vein Area	13
6. Claims, Geochemistry	In Pocket
7. Claims, Sample Locations	" "
8. Generalized Geology	" "

1. INTRODUCTION

1.1 Location and Access

The Hoodoo West Claims are located on the western side of Hoodoo Glacier between Hoodoo Mtn., to the southeast, and Surprise Mtn., to the northeast (see Figure 1). The town of Stewart, B.C. is situated 125 km to the southeast. Claims are within the Liard Mining District, NTS 104B/14W, at latitude 56°47'N and longitude 131°24'E. The Iskut River is navigable by small craft to its junction with Hoodoo River, 8 km south of the property.

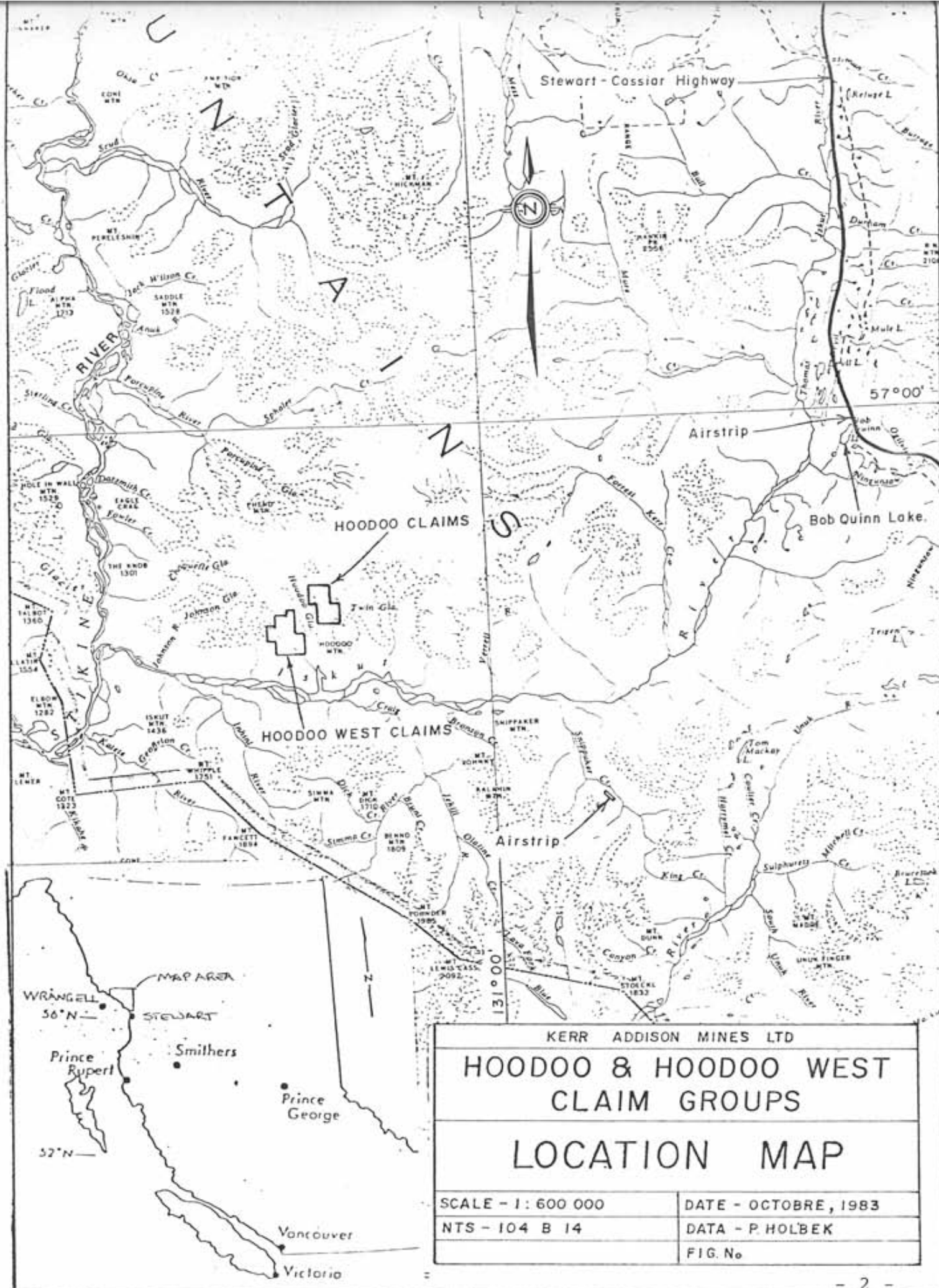
Property access is by helicopter. Permanent helicopter bases are located at Stewart and Wrangell, Alaska. Gravel airstrips, served by Trans Provincial Airlines from Terrace, B.C. are located on Snippaker Ck, 47 km to the south east, and at Bob Quinn Lake on the Stewart Cassiar Highway, 72 km to the east.

1.2 Claims

The property consists of 70 units in five claims (see Figure 2). Claims are owned by Kerr Addison Mines Ltd., pertinent data are summarized below. There is no record of previous claims or work on the property.

Table 1: Hoodoo West Claim Data

CLAIM NAME	UNITS	DATE LOCATED	DATE RECORDED	RECORD NO.
Hoodoo West 1	15	Aug 12,1983	Sept. 8,1983	2919(9)
Hoodoo West 2	12	" " "	" " "	2929(9)
Hoodoo West 3	20	Aug 11,1983	" " "	2921(9)
Hoodoo West 4	15	" " "	" " "	2922(9)
Hoodoo West 6	8	" " "	" " "	2923(9)



KERR ADDISON MINES LTD	
HOODOO & HOODOO WEST CLAIM GROUPS	
LOCATION MAP	
SCALE - 1 : 600 000	DATE - OCTOBRE, 1983
NTS - 104 B 14	DATA - P. HOLBEK
	FIG. No.



131° 25'

20'

KERR ADDISON MINES LTD	
HOODOO WEST CLAIMS	
SCALE - 1:50 000	DATE - OCTOBER, 1983
NTS - 104 B 14	FIG.No.

1.3 Physiography and Vegetation

The property is situated on a north westerly trending ridge surrounded on three sides by valley or alpine type glaciers. Elevations range from 250 m at the south to 1700 m at the north. Topography is hummocky (roches moutoneés) along the ridge crest and steep to precipitous along ridge sides.

Vegetation on the north end of the property is alpine whereas mature timber and thick underbrush occur at elevations below 1000 m on the south end.

1.4 Present Work

Eight days were spent on the property by a two man crew, subsequent to staking the claims, between August 12 and 20, 1983. Work was primarily prospecting and sampling with minor geological mapping and hand trenching. Seventeen soils and twenty-seven rock samples were collected and analyzed for Au, Ag, As and Sb. Some of the samples were also run for Ba, Hg, Cu, Zn and Pb. Geology was recorded at sample sites and plotted on 1:10,000 scale map (Figure 6). Hand trenching was undertaken in order to expose a small outcrop of mineralization and to investigate soil profiles for geochemical prospecting. Prospecting covered a 16 square km area on the northern end of the property.

2. GEOLOGY AND MINERALIZATION

2.1 Regional Geology

The claim area is situated on the eastern margin of the Coast Plutonic Complex in an area where numerous small plutons are separated by Paleozoic to Mesozoic stratified rocks. The property is underlain by both intrusive and stratified rocks with areas to the south and west becoming dominately intrusive, while stratified rocks continue to the northeast. Hoodoo Mountain, a late Tertiary peralkaline composite volcano, lies to the southeast of the claim area.

2.2 Property Geology

A generalized geology map for the northern claim area is given in Figure 6. The property is underlain by three groups of bedded rocks which are cut by a number of intrusive lithologies.

The oldest rocks consist of schistose basaltic to rhyolitic pyroclastics, sediments and limestones. Chlorite schist and quartz sericite schists are the predominate lithologies. This unit is best exposed on the ridge north of the property where a thick bed of limestone forms a tight, recumbant fold plunging gently to the north.

Thin to thick bedded green, blue, black, grey and purple cherts with minor siltstone form the second unit. Occasional pyritic members form dark gossans but are not geochemically anomalous. Quartz-pyrite fracture fillings within the same units do yield anomalous geochemical analyses. In areas of poor exposure this unit is easily confused with conformable, hornfelsed volcanics of the upper unit.

The third and upper unit consists of a thick pile of well bedded, coarse to fine volcani-clastics, sediments and, possibly, minor flows. Bedding is best seen on weathered outcrops and is gently dipping over most of the property. In general, this unit is characterized by massive, resistant, green-blue coloured outcrops. Development of black, pyritic hornfels adjacent to intrusives is common whereas epidote, garnet skarns are rare. Rusty pyritic zones also occur along some fractures.

Intrusive lithologies, in approximate order of emplacement, include: quartz monzonite, biotite grandiorite, hornblendite, fine grained feldspar porphyry diorite and quartz-eye felsite. Most intrusive-intrusive contacts are gradational and some, if not all, of the phases are likely co-genetic.

2.3 Mineralization

Three types of mineralization are exposed on the property. Porphyry style mineralization; consisting of a quartz monzonite hosted intense quartz stockwork, sparingly mineralized with chalcopyrite and molybdenite, is exposed on the ridge crest on Hoodoo West 1 claim. A large gossionous zone of intensely argillic altered quartz monzonite is exposed in the central area of Hoodoo West 6. Altered rock from this zone yield subanomalous values of arsenic and antimony.

Contact mineralization occurs as small areas of hornfelsing and pyritization within volcanic rocks peripheral to intrusives. These zones, which vary from 1 to 100 m across, form a trend that runs northwest, diagonally across the northern part of the claim area. Pyritiferous samples from the contact zones give weak to strong silver anomalies from 3 to 100 ppm.

The third type of mineralization includes quartz and quartz + carbonate veins and associated alteration. Most veins are fault and fracture fillings of quartz, carbonate and minor sulphides with large alteration envelopes of silicification and carbonatization. Breccia textures are evident in some veins. Although most veins are geochemically anomalous, precious metal contents only become significant when base metal sulphides (galena, sphalerite, tetrahedrite and arsenopyrite) are visible. Veins occur over most of the property but strongly mineralized ones have only been discovered on the south central part of the Hoodoo West 2 claim.

3. GEOCHEMISTRY

3.1 Methods

Rock samples were collected as random chips, usually from a 1 x 2 m area, in standard 20 x 33 cm plastic bags. Soil samples were collected in standard kraft bags from the 'C' horizon where possible at depths from 1 to 100cm (see section 3.2). All samples were analyzed for Au, Ag, As and Sb. Some samples were analyzed by Cu, Pb, Zn, Ba and Hg. All high geochemical results were re-analyzed using assay techniques. Sample preparations and analytical techniques are given in Appendix III. Sample locations are given in Figure 7, results are listed in Appendix IV and plotted on Figure 6. A detailed plot of geochemistry near the Heather Vein is given in Figure 5.

3.2 Discussion of Results

3.2.1 Soils

Recent glaciation, rugged topography and climate have produced varied and complex soil profiles within the claim area. Soil depths vary from 0 to 150 cm with the deeper horizons often containing considerable amounts of colluvial material such as till and talus. Variation of the soil profile with topography is illustrated diagrammatically in Figure 3. It is doubtful that soil development or depth of horizons limits geochemical prospecting, provided that soil material is residual. The presence of mineralized till or talus will, however, often lead to spurious anomalies. Additionally an impervious clay layer associated with till will prevent upward (but not lateral) dispersion of metals, particularly gold, as illustrated by samples from the Heather Vein (see Figure 4).

3.2.2 Rocks

Outcrop sampling revealed numerous areas of weak to moderate silver geochemistry. Contact type mineralization yielded variable silver analyses that were associated with some intimony but no arsenic or gold. Vein type mineralization is characterized by enriched levels of arsenic, gold and antimony. These differences should allow distinction between mineralization types during overburden sampling. With only a single exception Hg and Ba were uniformly low.

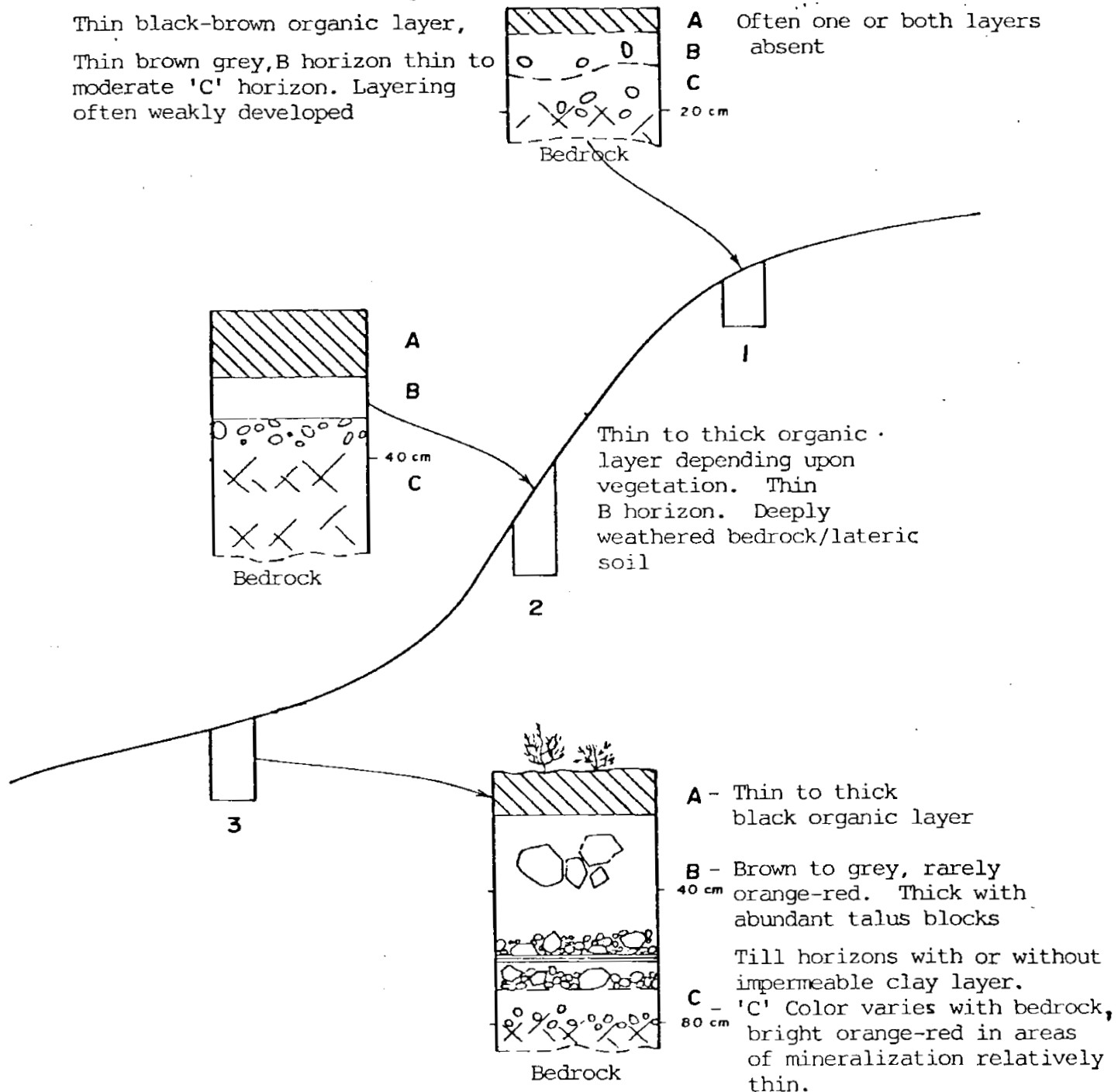
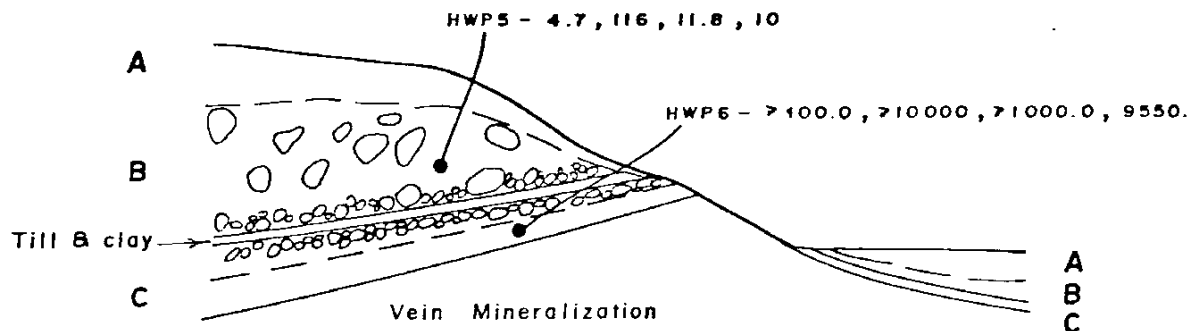
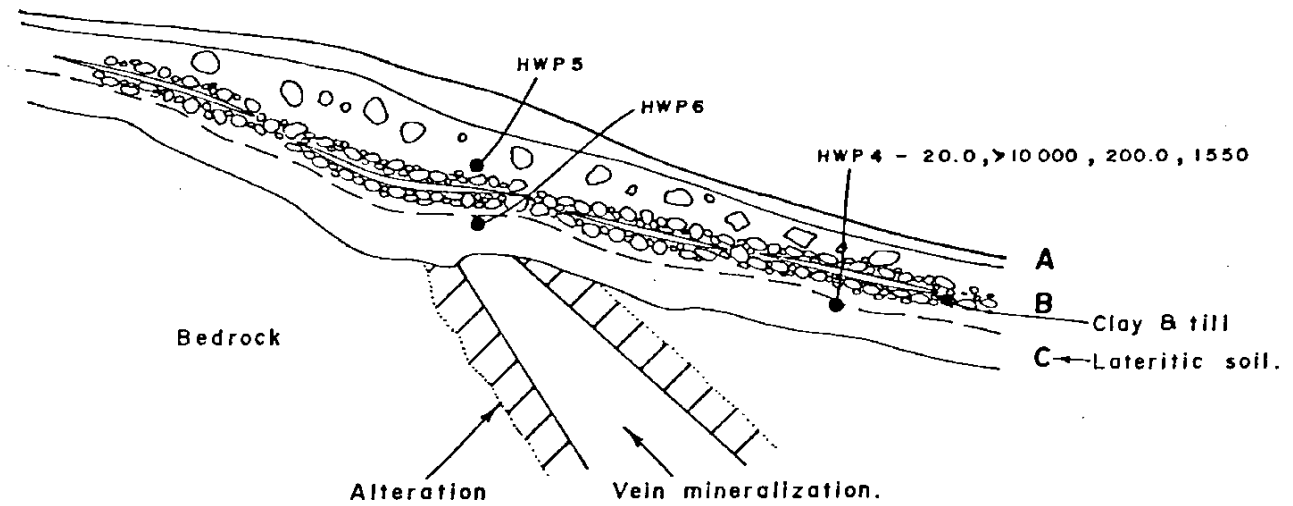


Figure 3. Generalized Soil Profiles in Vicinity of the Heather Vein Hoodoo West 2 Claim.



LONGITUDINAL SECTION

LOOKING 150°



CROSS SECTION

LOOKING 60°

Ag (ppm), As (ppm), Sb (ppm), Au (ppb).

Figure 4: Location and results from 'orientation' geochem samples, Heather Vein, Hoodoo West 2. Sections are schematic.

4. CONCLUSIONS

A complex series of plutonic rocks, ranging from hornblendite to quartz-eye felsite, have intruded a bedded pile of Permo-Triassic sediments, volcanics and volcanoclastics. Porphyry and contact type mineralization, related to quartz monzonite and feldspar porphyry phases, are widespread and yield anomalous geochemistry but have limited exploration potential. Fracture hosted lead-zinc-silver veins are preferred exploration targets. Vein mineralization is accompanied by large, orange weathering, alteration envelopes and may be related to late phase quartz-eye felsite intrusions.

client : KERR ADDISON MINES LTD.
 (ATTN: RAY DUJARDIN)
 783-1112 WEST PENDER ST.
 VANCOUVER, B.C.
 V6E 2S1

Sample description	Cu ppm	Pb ppm	Zn ppm	Ag ppm	As ppm	Sb ppm	Au ppb FA+AA	Ag oz/t	Au oz/t	Hg ppb	Ba ppm
DB3 HWA 1				0.8	14	0.1	15			110	
RB3 HWB 1								0.10	0.003		
RB3 HWB 2	500	6	42	0.5	7	0.6	5				
RB3 HWB 3								1.34			
RB3 HWB 3	650	2350	3750	31.0	170	270.0	100				
RB3 HWB 4								5.30	0.372		
RB3 HWB 5	390	325	320	3.6	16	12.8	15				
DB3 HWB 6				0.2	9	15.4	15				
DB3 HWB 7				0.1	30	5.0	10				
DB3 HWB 8				0.1	32	6.4	5				
RB3 HWB 9				0.5	100	5.8	20			90	340
RB3 HWP 1								0.22	0.006		
RB3 HWP 2								0.05	0.003		
RB3 HWP 3								0.16	0.003		
DB3 HWP 4				20.0	10000	200.0	1550				
DB3 HWP 5				4.7	116	11.8	10				
DB3 HWP 6				>100.0	>10000	1000.0	9550				
RB3 HWP 7*	0.04	0.24	0.24			0.036	0.026	2.34	0.010		
RB3 HWP 8*	0.02	0.16	0.19			0.302	0.020	2.02	0.020		
RB3 HWP 9*	0.51	6.93	8.37			0.120	0.527	49.52	0.094		
RB3 HWP 10				2.7	7	3.6	15				
DB3 HWP 11				22.0	100	19.4	100				
DB3 HWP 12				4.9	30	3.8	15				
DB3 HWP 13				5.2	230	17.4	110				
DB3 HWP 14				4.0	27	1.8	15				
RB3 HWP 15				0.5	5	0.2	15				
DB3 HWP 16				1.7	17	0.1	15				
RB3 HWP 17				1.0	7	0.1	15				
DB3 HWP 18				2.0	330	7.0	5				
DB3 HWP 19				1.8	29	2.2	5				
RB3 HWP 20				0.9	6	1.2	5			110	260
RB3 HWP 21				4.0	43	0.8	10				
RB3 HWP 22				0.4	6	0.6	10			50	500
RB3 HWP 23				0.2	5	0.6	5			70	500
RB3 HWP 24				0.2	6	0.6	15			50	100
RB3 HWP 25				1.1	3	0.6	5			50	120
RB3 HWP 26				0.2	180	11.0	15			80	380
DB3 HWP 27				0.6	5250	43.0	10			140	200
DB3 HWP 28				5.3	1300	43.0	225			180	400
RB3 HWP 29				19.5	890	3.2	225			220	400
RB3 HWP 30				2.8	5	0.4	15			50	30
RB3 HWP 31					750	29.0		0.07	0.008	90	320
RB3 HWP 32					51	250.0		0.42	0.070	450	120
RB3 HWP 33					39	30.0		0.12	0.036	6200	360

*
 Cu %
 Pb %
 Zn %
 As %
 Sb %

CHEMEX LABS LTD.

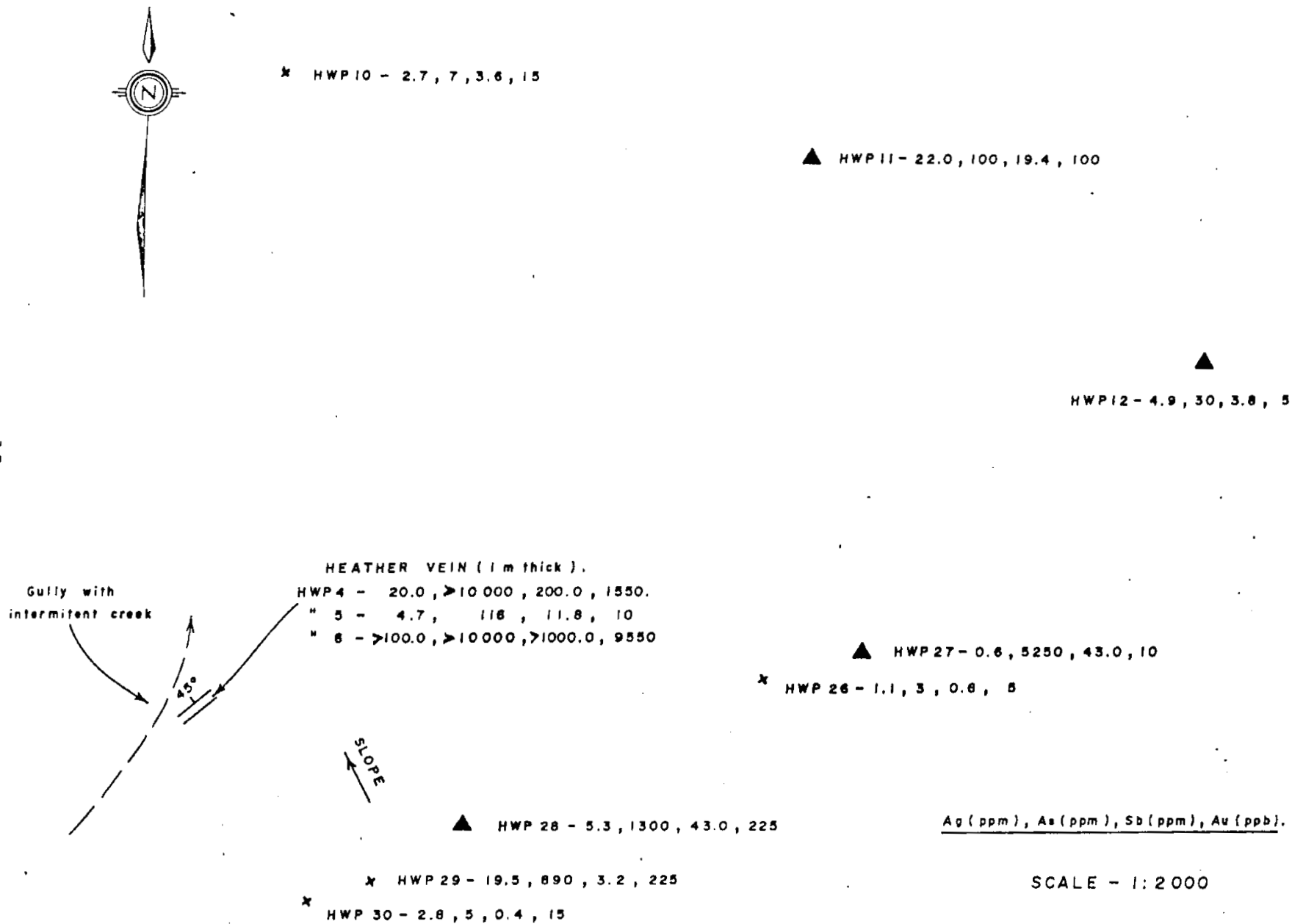


Figure 5: Sample plan for geochemistry in the vicinity of the Heather Vein. Locations are approximate. ▲ = soils ; * = rocks.

APPENDIX II

ITEMIZED COST STATEMENT

Prospecting, Sampling and Mapping Aug 12-19

P. Holbek Geologist 8 days @ \$150/day	\$1200.
B. Helgason Geologist 7 days @ \$120/day	<u>960.</u>
	\$2160.

Transportation

½ of 2 Return Airfares: Vancouver-Terrace + Terrace- Snippaker Strip	498.
½ Day Travel Time:	135.
Freight:	190.
Helicopter: Frontier's Bell 206BII 2.4 Hrs @ \$600/Hr incl. Fuel & Oil	<u>1440.</u>
	\$2263.

Supplies

Food: 16 Man Days @ \$20/Day	320.
Radio and Equipment Rental	<u>340.</u>
	\$660.

Geochemistry

Sample Preparation: 17 soils @ \$1.00	17.
12 assay preps @ \$3.75	45.
15 rock geochem @ \$2.50	37.
12 Au, Ag Assays @ \$10.50	126.
33 Ag, As, Sb, Au geochems @ \$15.15	500.
15 Hg, Ba geochems @ \$7.50	112.
3 Cu, Pb, Zn, As, Sb assays @ \$31.75	95.
3 Cu, Pb, Zn geochems @ \$3.70	<u>11.</u>
	\$943.

Drafting and Report Preparation

450.

TOTAL	<u>\$6,476.</u>
-------	-----------------

Appendix III

STATEMENT OF QUALIFICATIONS

I, Peter Holbek, with a business address of 703-1112 West Pender Street, Vancouver, B.C.

Hereby certify that:

1. I graduated from the University of B.C. in 1980 with a B.Sc. (Hons) Degree in Geological Sciences.
2. I have completed three years of post graduate research at the University of B.C.
3. I have worked as a Geologist or Assistant in B.C. for the past eight field seasons.
4. The work described herein is based on personal examination and supervision of field work carried out between July 10 and August 25, 1983.


Peter Holbek, B.Sc.

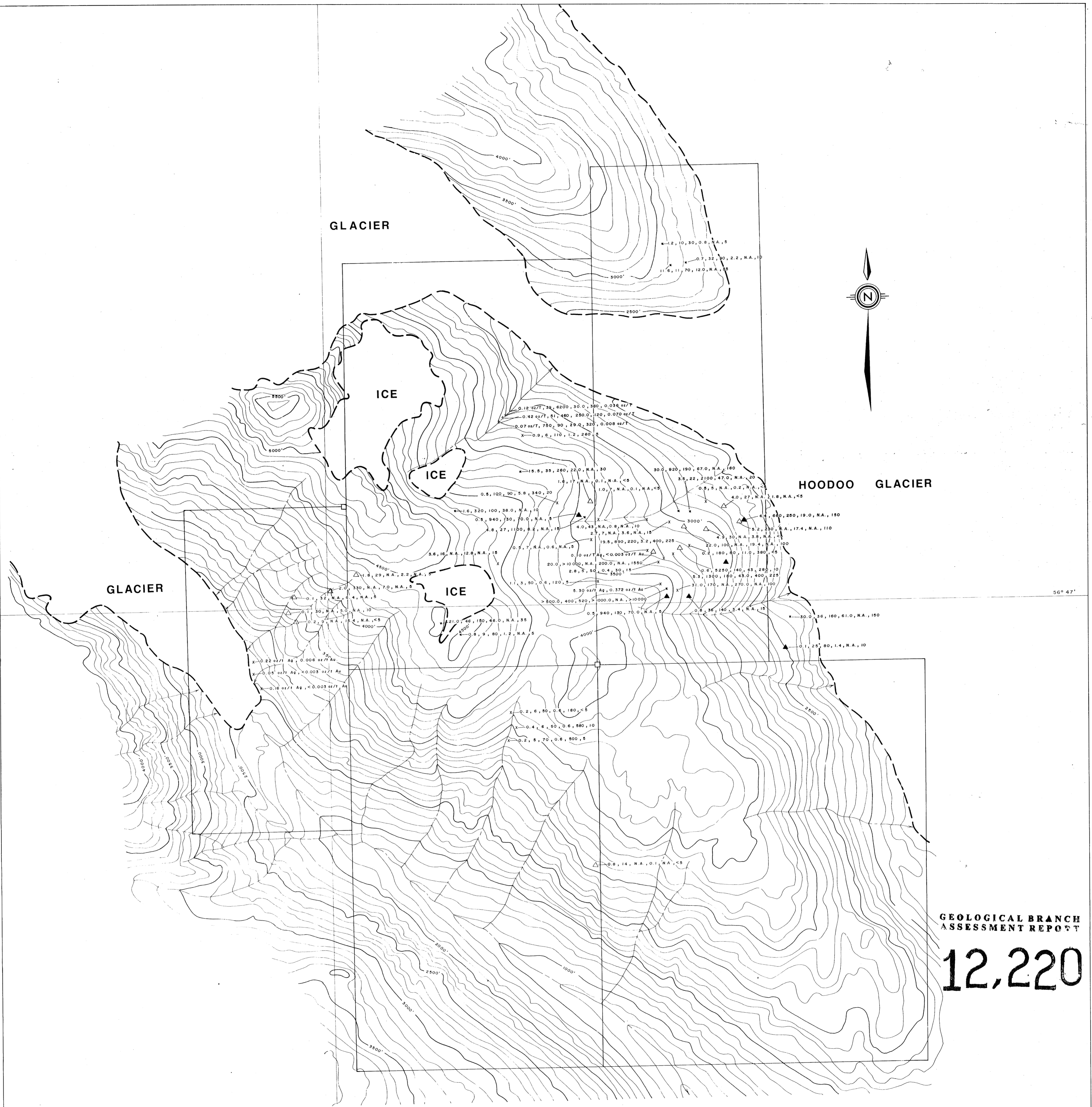
Appendix IV

ANALYTICAL TECHNIQUES

All samples were prepared and analyzed by Chemex Labs Ltd. in North Vancouver.

Soils were dried, sieved to -80 mesh prior to digestion. Rocks were crushed and split, with a 200 gm subsample ring ground to -100 mesh. Prepared sample splits (10-20 gm) were digested in nitric perchloric acid and analyzed by atomic absorption.

Silver assays were performed by fire assay with atomic absorption finish.



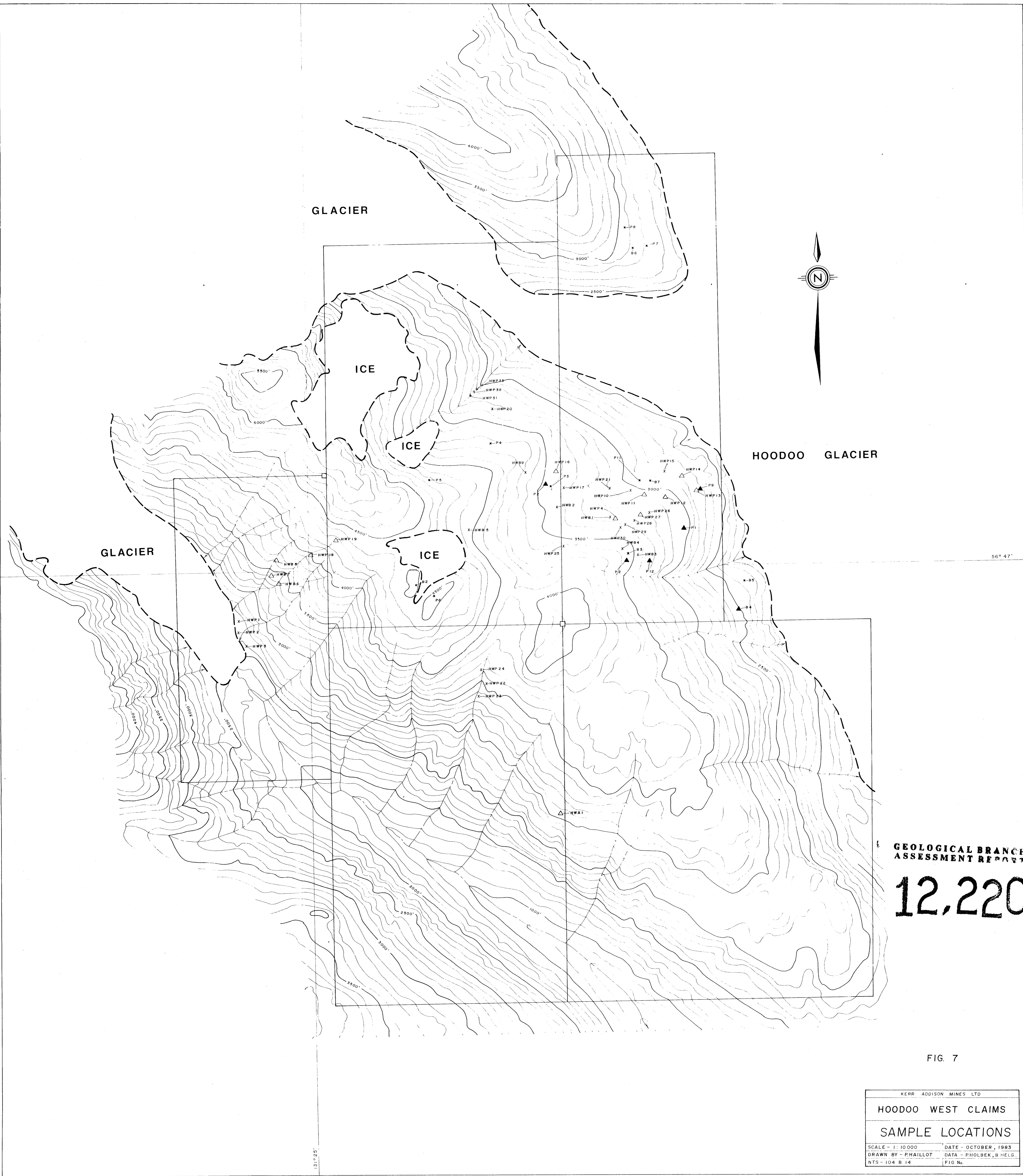
GEOLOGICAL BRANCH
ASSESSMENT REPORT

12,220

FIG. 6

0.2, 5, 70, 0.6, 500, 5 - Ag (ppm), As (ppm), Hg (ppb), Sb (ppm), Ba (ppm), Au (ppb)
 N.A. - Not assayed.
 x Rock sample (HOP/B series).
 ▲ Soil " (")
 x Rock " (HWP/B series)
 △ Soil " (")

KERR ADDISON MINES LTD	
HOODOO WEST CLAIMS	
GEOCHEMISTRY	
SCALE - 1:10000	DATE - OCTOBER, 1983
DRAWN BY - PHAILLOT	DATA - PHOLBEK, B HELG
NTS - 104 B 14	FIG. No.

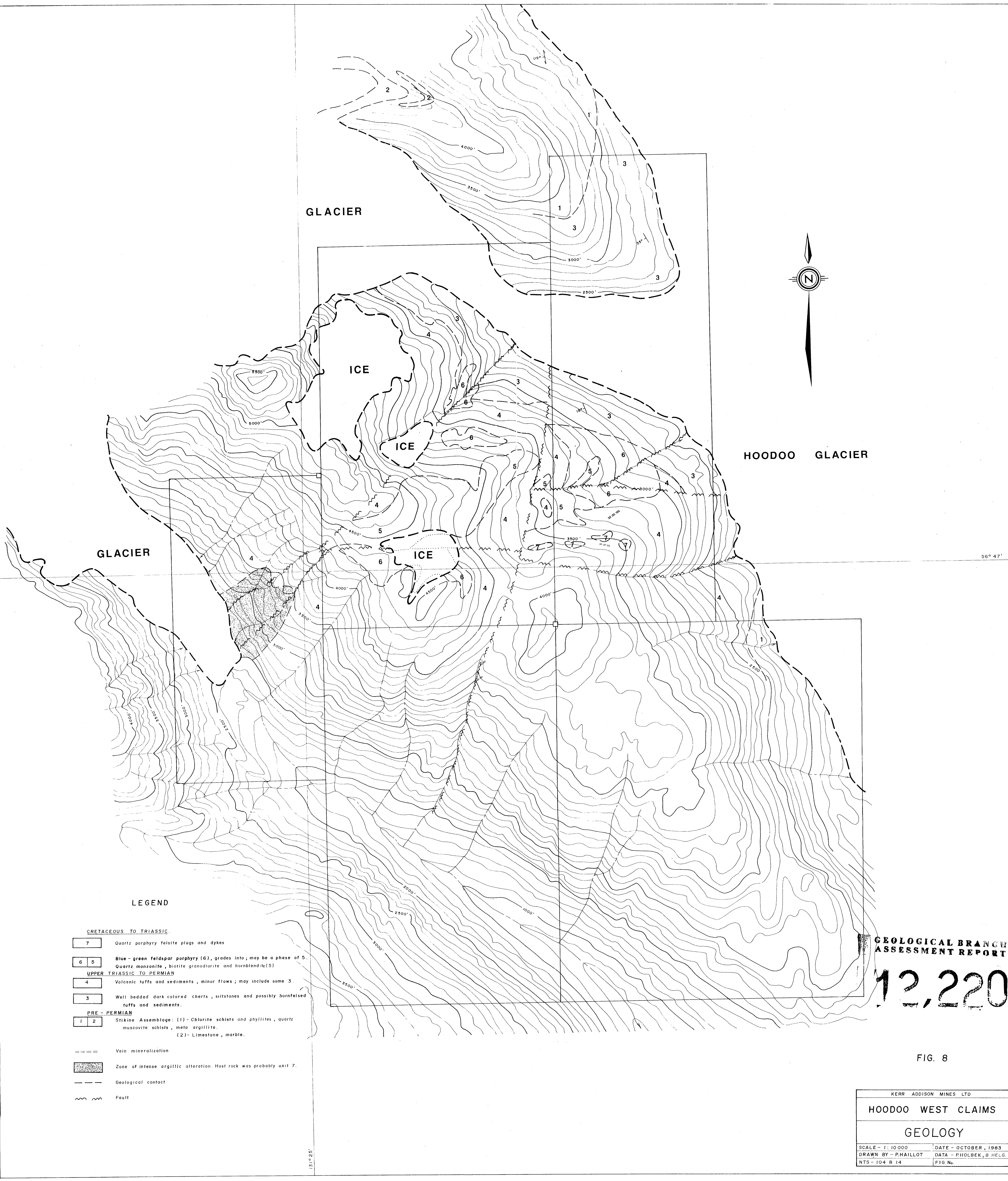


GEOLOGICAL BRANCH
ASSESSMENT REPORT

12,220

FIG. 7

KERR ADDISON MINES LTD	
HOODOO WEST CLAIMS	
SAMPLE LOCATIONS	
SCALE - 1:10000	DATE - OCTOBER, 1983
DRAWN BY - PHAILLOT	DATA - PHOLBEK, B. HELG.
NTS - 104 B 14	FIG No.



GLACIER

GLACIER

ICE

ICE

ICE

HOODOO GLACIER

LEGEND

- CRETACEOUS TO TRIASSIC**
- 7 Quartz porphyry felsite plugs and dykes
 - 6 5 Blue-green feldspar porphyry (6), grades into; may be a phase of 5. Quartz monzonite, biotite granodiorite and hornblende (5)
- UPPER TRIASSIC TO PERMIAN**
- 4 Volcanic tuffs and sediments, minor flows; may include some 3.
 - 3 Well bedded dark colored cherts, siltstones and possibly hornfelsed tuffs and sediments.
- PRE-PERMIAN**
- 1 2 Stikine Assemblage: (1) - Chlorite schists and phyllites, quartz muscovite schists, meta argillite. (2) - Limestone, marble.
- === Vein mineralization
 - Zone of intense argillic alteration. Host rock was probably unit 7.
 - Geological contact
 - ~ Fault

GEOLOGICAL BRANCH
ASSESSMENT REPORT

12,220

FIG. 8

KERR ADDISON MINES LTD	
HOODOO WEST CLAIMS	
GEOLOGY	
SCALE - 1:10000	DATE - OCTOBER, 1983
DRAWN BY - P.HAILLOT	DATA - P.HOLBEK, B.HELG.
NTS - 104 B 14	FIG. No.