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ASSESSMENT REPORT

GEOLOGICAL AND GEOCHEMICAL SURVEY

HIGHLINER GROUP

ATLIN MINING DIVISION

Tatsamenie Lake Area, B. C.

N.T.S. 104K/Tulsequah Sheet

58° 07' N

132° 14' W

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

11,821

OWNER: CHEVRON CANADA LIMITED

OPERATOR: CHEVRON CANADA RESOURCES LIMITED

AUTHORS: Mike Gray

Godfrey Walton

November 1983

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LOCATION AND ACCESS

The HIGHLINER Group is located 40 km south-southwest of Tatsamenie Lake. Its coordinates are 58°07'N, 132°14'W. Access to the claims was provided by a Hughes 500D helicopter from a base camp at Bearskin Lake approximately 10 km north of the claims.

CLAIMS

The HIGH and LINER claims were staked in June, 1983 as follows:

<u>Claim</u>	<u>Record Number</u>	<u>Record Date</u>	<u>Number of Units</u>
HIGH	1964	July 4, 1983	15
LINER	1965	July 4, 1983	20

The Northern boundary of the HIGH claim overlaps the ORO 4 claim which was staked just prior to the HIGH claim.

REGIONAL GEOLOGY

The HIGHLINER Group is underlain by Stikine Terrane rocks of Pre-Upper Triassic age (Monger, 1975) which is comprised of interlayered volcanics and sediments (Souther, 1971). To the west are intermediate intrusive rocks covering much of the southwest corner of the Tulsequah map sheet. A fault contact trending north-northwest probably exists between the intrusives and Stikine Assemblage rocks.

GEOLOGICAL SURVEY OF CLAIMS

Two days were spent mapping the HIGHLINER Group on its eastern slopes. Although outcrop exposure is excellent, traverses are restricted because of rugged terrain.

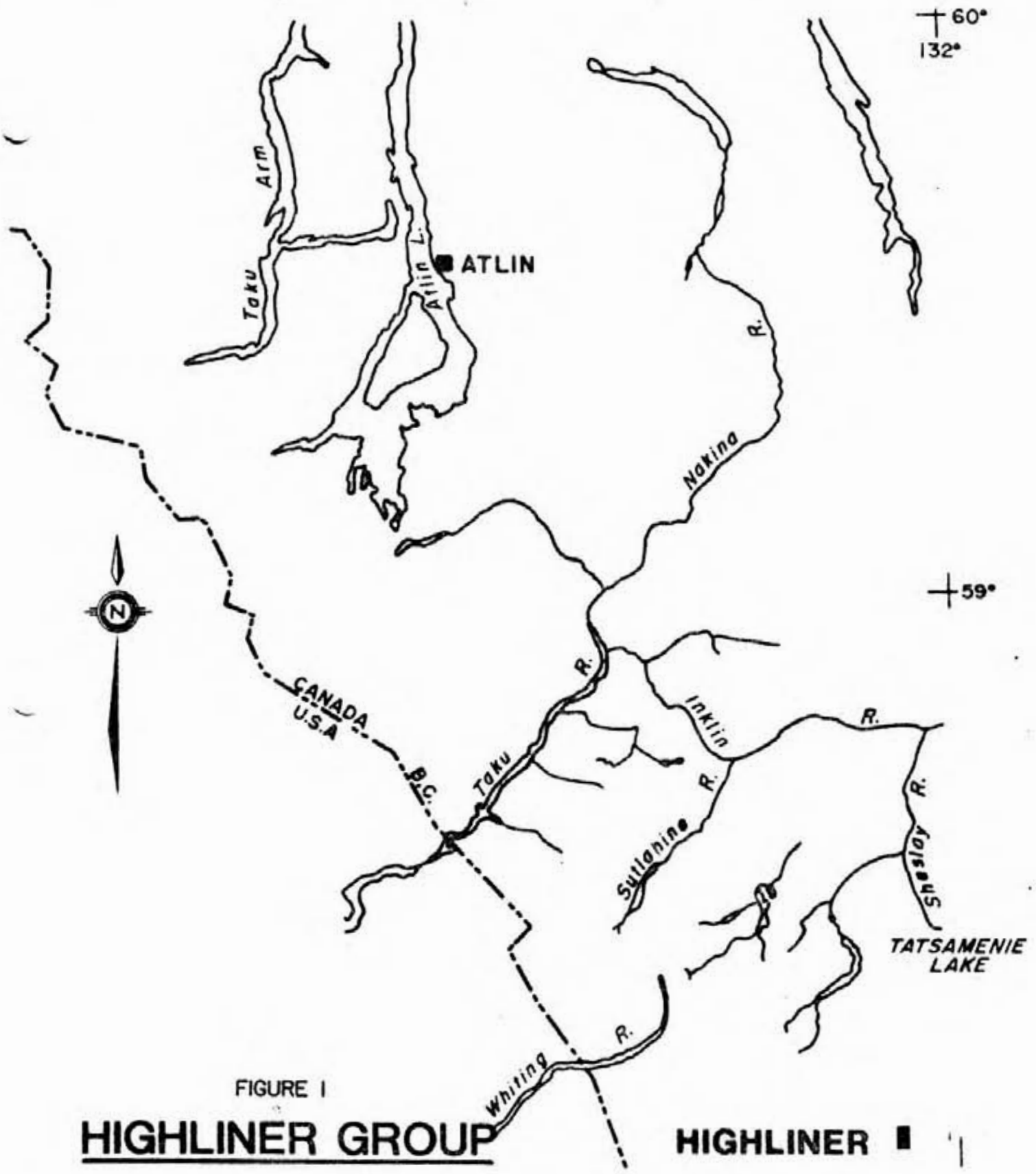


FIGURE 1

HIGHLINER GROUP

**LOCATION MAP
M504**

HIGHLINER ■

0 30
Km

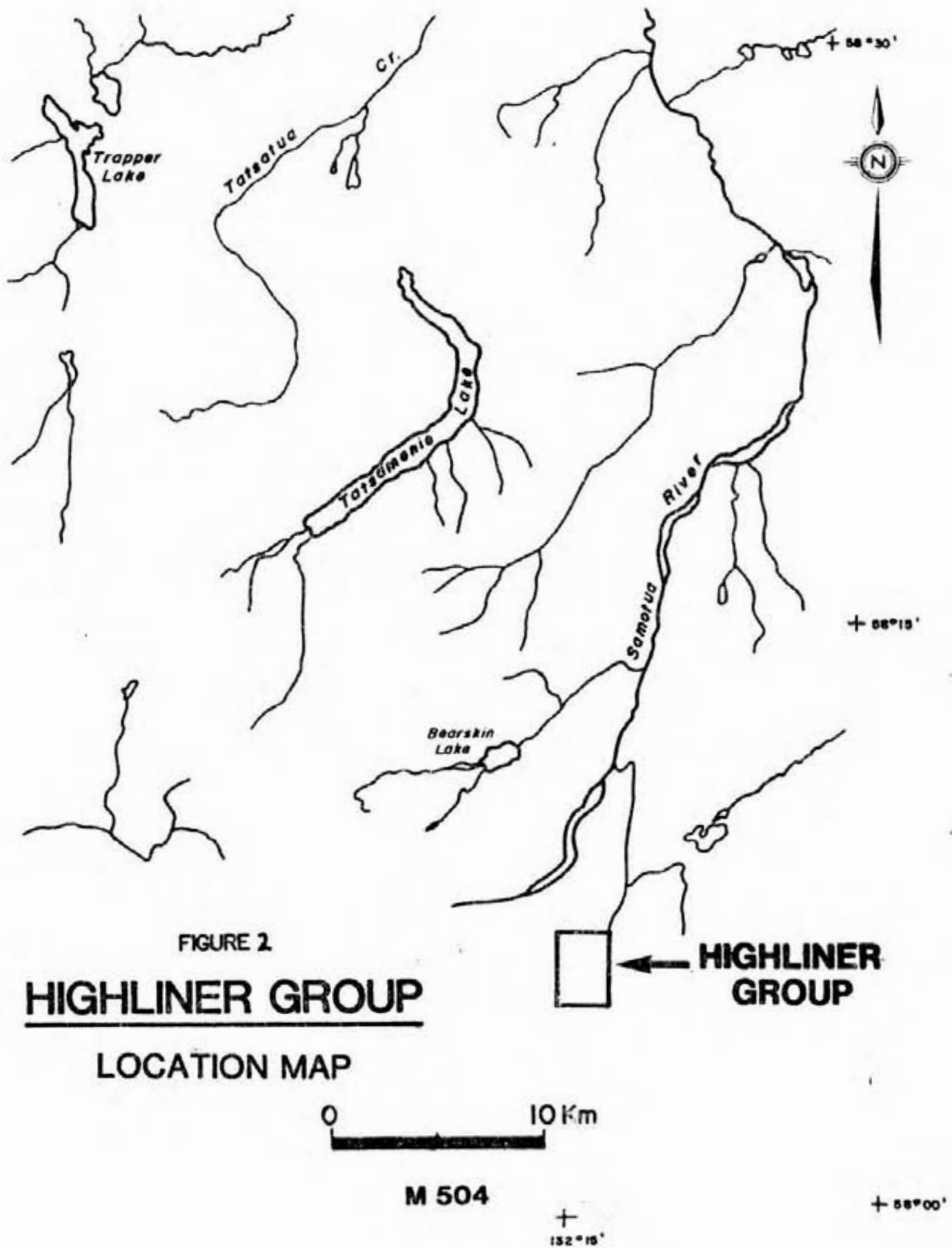


FIGURE 2

HIGHLINER GROUP

LOCATION MAP



M 504

+ 132°15'

HIGHLINER GROUP

The HIGHLINER Group encompasses a portion of a large ridge and its slopes. The property is underlain by greenstones and phyllites of the Pre-Upper Triassic Stikine Terrane. A number of rhyolite(?) dykes cut the greenstone and phyllites. All have a similar orientation.

Abundant porphyritic feldspar diorite talus is found in the southern part of the claims close to the tufa deposit.

A description of the units follows:

Stikine Terrane (Unit 1)

Stikine Terrane rocks include greenstones with interlayered phyllites and lithic tuffs that strike 120 to 128 and dip 35 to 55 W. Attitudes were taken from compositional layering in the greenstone. The greenstone weathers dark green as it has been moderately chloritized.

Thin beds of carbonaceous siltstone are found at two locations in the stratigraphy. The black to dark gray beds are gray beds are 2 m to 3 m thick, quite recessive, fine-grained and slightly argillaceous. At one siltstone outcrop in a creek, a 5 m thick ribbon chert bed or lens is exposed. The chert is light to medium gray silica, probably getting its colour from gray pyrite inclusions.

Tertiary(?) - Jurassic(?) Porphyritic Feldspar Diorite (Unit 2)

The diorite is mapped where abundant diorite talus is concentrated. The intermediate intrusion is composed of 30 - 40% plagioclase phenocrysts and 60 - 70% fine to medium grained mafic minerals. The feldspar phenocrysts

are .5 cm to 3 cm long, euhedral, albite twinned and white. The diorite talus is fresh and only seen in one locality.

Tertiary Rhyolite(?) Dykes

Rhyolite(?) dykes occur on the eastern slopes of the claims as a swarm of parallel dykes dipping moderately to the northeast. The dykes are conspicuous due to characteristic orange-brown weathering and their resistant nature.

The dykes are light gray-green felsic intrusions, varying in width from .5 m to 5 m. A breccia zone 10 cm to 30 cm wide is often at the lower contact of the dykes, and is made of greenstone and rhyolite(?) fragments. Adjacent to the breccia zone are a series of small chalcedony and iron-carbonate veins, roughly parallel to the trend of the dykes.

Tufa Deposit (Unit 3)

The tufa deposit is an active calcium-rich groundwater system discharging from a greenstone outcrop. The creamy to light brown calcium precipitate veneers the greenstone outcrop and cements some of the talus at the base of the outcrop.

MINERALIZATION AND ALTERATION

The HIGHLINER Group has little alteration beyond moderate chloritization of the greenstone. Minor quartz-carbonate veins appear to be associated with the rhyolite(?) dykes.

Mineralization is associated with quartz veins at a number of locations on the eastern side of the claims. The veins can be differentiated based on

their mineralogy. One type has fine gray pyrite (3%), and possibly 2 - 3% chalcantite(?) and melanterite. The other quartz veins characteristically have 1 - 3% brass coloured pyrite and up to 4% chalcopyrite.

GEOCHEMICAL SURVEY OF CLAIMS

Soil contour traverses were used to obtain geochemical data in the claims rugged terrain. Two north-south lines on the western slope and one line on the eastern slope produced a total of 176 soil samples and 20 rock samples. Field assistants were given altimeters to help maintain constant elevation where possible. The spacing between samples is 50 m, and the two lines on the west side of the property are generally 150 to 200 m apart from one another.

Soil samples were placed in kraft wet strength soil bags, air dried and shipped to Chemex Labs, North Vancouver, B. C. The samples were further dried and then sieved, with the -80 mesh portion being retained for analysis. Rock samples were crushed and then pulverized in a ring grinder to -100 mesh. For Au determination, a fire assay - atomic absorption technique is used with the fire assay bead being dissolved in HCl and HNO₃ then analyzed by conventional atomic absorption techniques. For Ag, a mixture of HClO₄ and HNO₃ is used to digest the sample, which is followed by atomic absorption spectrophotometry. The As analyses are done by standard colorometric techniques following an HClO₄ plus HNO₃ digestion. Antimony analyses are done by digesting the sample in HCl, then adding potassium iodide, extracting with TOPO - MIBK and then analyzing by atomic absorption spectrophotometry.

All of the 1983 rock samples were collected on the east side of the ridge centred on the claim running roughly north-south. Samples were taken predominantly from mineralized quartz veins, and altered rhyolite(?) dykes. Other lithologies sampled include an argillaceous black shale, and a pyritiferous ribbon chert bed.

Very weak gold anomalies were detected in two of the rock samples, both quartz veins. Relatively high silver values (19.3, 18.5, 8.8 ppm) were also associated with quartz veins except one which is a quartz-carbonate breccia with extremely high arsenic and antimony values (>10,000 ppm, >1000 ppm).

Only one soil was anomalous in gold (60 ppb) and one silver (7.3 ppm); the latter taken under one of the quartz veins.

Background soil values on HIGHLINER are 5 ppb Au, .1 - .5 ppm Ag, .4 - 1.0 ppm Sb, and 10 - 15 ppm As.

CONCLUSIONS AND RECOMMENDATIONS

To date, no significant gold mineralization has been located on the HIGHLINER Group. Moderate levels of silver, arsenic and antimony are encouraging but restricted to quartz veins.

Follow-up work of the silver, arsenic and antimony anomalies is recommended.

REFERENCES

Souther, J.G. (1971). Geology and mineral deposits of Tulsequah map-area, British Columbia. Geological Survey of Canada Memoir 362, 84 p.

Monger, J.W.H. (1975) Upper Paleozoic Rocks of the Atlin Terrane, Northwestern British Columbia and South-Central Yukon, Geological Survey of Canada, Paper 74-47.

1983 EXPLORATION PROGRAM
HIGHLINER GROUP
COST STATEMENT

PERIOD: August 25 to September 10, 1983

LABOUR:

	<u>Position</u>	<u>Field Days</u>	<u>Office Days</u>
G. Walton	Geologist	.5	
J. Armstrong	Sampler	3.0	
W. Hewgill	Sampler	2.0	
D. Hodge	Sampler	2.5	
M. Gray	Assistant	<u>1.0</u>	<u>2</u>
	Total Man Days	9.0	2

Average cost per field man day @\$100.00	\$ 900.00
Average cost per office man day @\$150.00	300.00

ANALYSIS:

Rock: 20 samples @\$17.65 each	\$ 353.00	
Soil: 176 samples @\$16.15 each	<u>\$2,842.40</u>	3,195.40

CAMP COSTS:

Total man days 9 @\$60.00/day	540.00
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HELICOPTER:

3.25 hrs. @\$500.00 per hr. including fuel	1,625.00
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DRAFTING:

2 man days @\$100.00 per day	<u>200.00</u>
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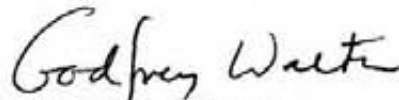
TOTAL	<u>\$6,760.40</u>
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STATEMENT OF QUALIFICATIONS

I, Godfrey Walton, have worked as a geologist in British Columbia, Yukon, Northwest Territories, Alberta and Ontario since 1973. A B.Sc. (Hons. Geology) was received in 1974 from the University of Alberta and followed by a M.Sc. degree in geology from Queen's University in 1978. I am currently employed as a geologist with Chevron Canada Resources Limited of Vancouver, B. C.

I am a member of the Canadian Institute of Mining and Metallurgy, Exploration Geochemists and Mineralogical Association of Canada.

The work on the TAN Group was carried out under my supervision.

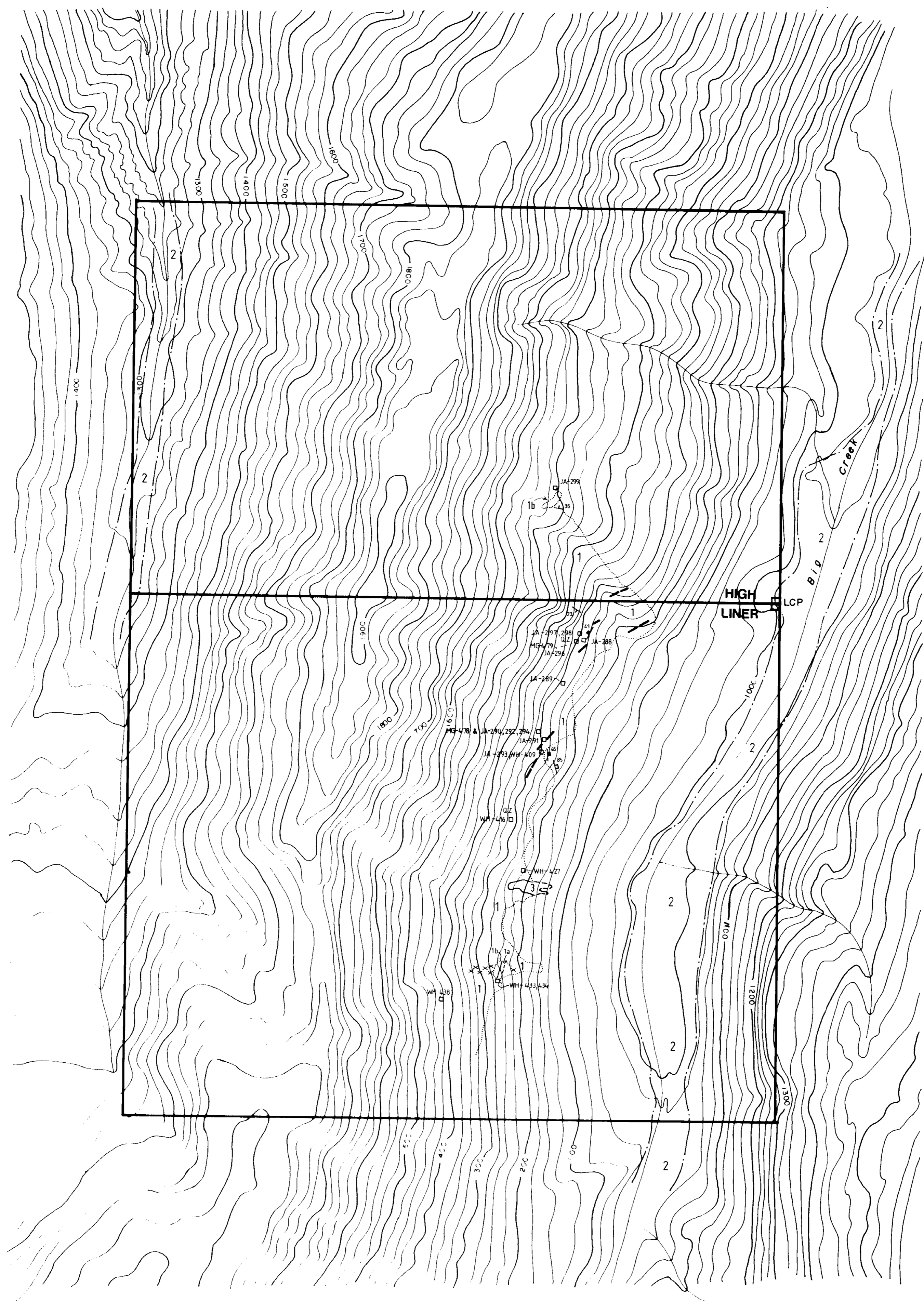

GODFREY WALTON

STATEMENT OF QUALIFICATIONS

I, Michael Gray, have completed 3rd year geology at the University of British Columbia. I have worked as geologist's field assistant in B. C. for the past three summers and am employed on a temporary basis with Chevron Canada Resources Limited, Vancouver, B. C.

A handwritten signature in cursive script that reads "Michael G. Gray". The signature is written in dark ink and is positioned to the right of the typed text.

MICHAEL GRAY



LEGEND

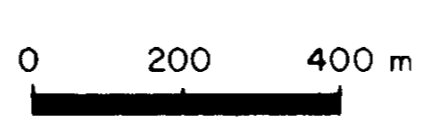
- QUATERNARY**
- 3 Tufa deposit
 - 2 FLUVIAL DEPOSITS; GRAVELS ETC.
- TERTIARY**
- RHYOLITE (?) DYKES; FINE GRAINED FELSIC VOLCANIC DYKES VARYING FROM 0.5-5M IN WIDTH
- TERTIARY(?), JURASSIC(?)**
- FELDSPAR PORPHYRY TALUS; INTERMEDIATE INTRUSION; FELDSPAR PHENOCRYST UP TO 3 CM
- PRE-UPPER TRIASSIC**
- STIKINE TERRANE - GREENSTONE AND PHYLLITES; MEDIUM GREEN INTERLAYED SEDIMENTS AND VOLCANIC ROCKS.
 - 1a- RIBBON CHERT; DARK GREY, PYRITIFEROUS.
 - 1b- SILTSTONE; BLACK, CARBON-RICH (?)
- SYMBOLS**
- GEOLOGICAL CONTACT; DEFINED, APPROXIMATE
 - - - LIMIT OF OUTCROP
 - ↗ FRACTURE ORIENTATION
 - ↘ DYKE ATTITUDE
 - QZ QUARTZ VEINING
 - U GRAVEL CONTACT WITH SLOPES
 - LAYERING
- WH, JA, MG - 1983 ROCK SAMPLE LOCATIONS

GEOCHEMISTRY

	Ag	As	Sb	Au
JA 311-287	0.1	3	0.6	<5
JA 311-288	39.0	>10000	>1000	<5
JA 311-289	1.1	80	9.0	5
JA 311-290	185	22	2.0	125
JA 311-291	0.9	190	240.0	20
JA 311-292	8.8	7	3.2	30
JA 311-293	0.2	16	3.4	<5
JA 311-294	2.4	20	3.6	10
JA 311-296	0.2	6	1.0	5
JA 311-297	3.0	7	1.4	30
JA 311-298	19.3	27	1.2	165
JA 311-299	0.3	43	6.6	<5
WH311-429	0.1	30	5.2	<5
WH311-416	2.0	15	0.4	20
WH311-427	0.8	16	0.1	10
WH311-433	0.1	27	1.4	10
WH311-434	0.1	10	0.6	5
WH311-438	0.1	23	0.1	5
MG 311-478	10.0	5	1.0	70
MG 311-479	0.7	3	0.8	5

GEOCHEMISTRY ASSESSMENT REPORT

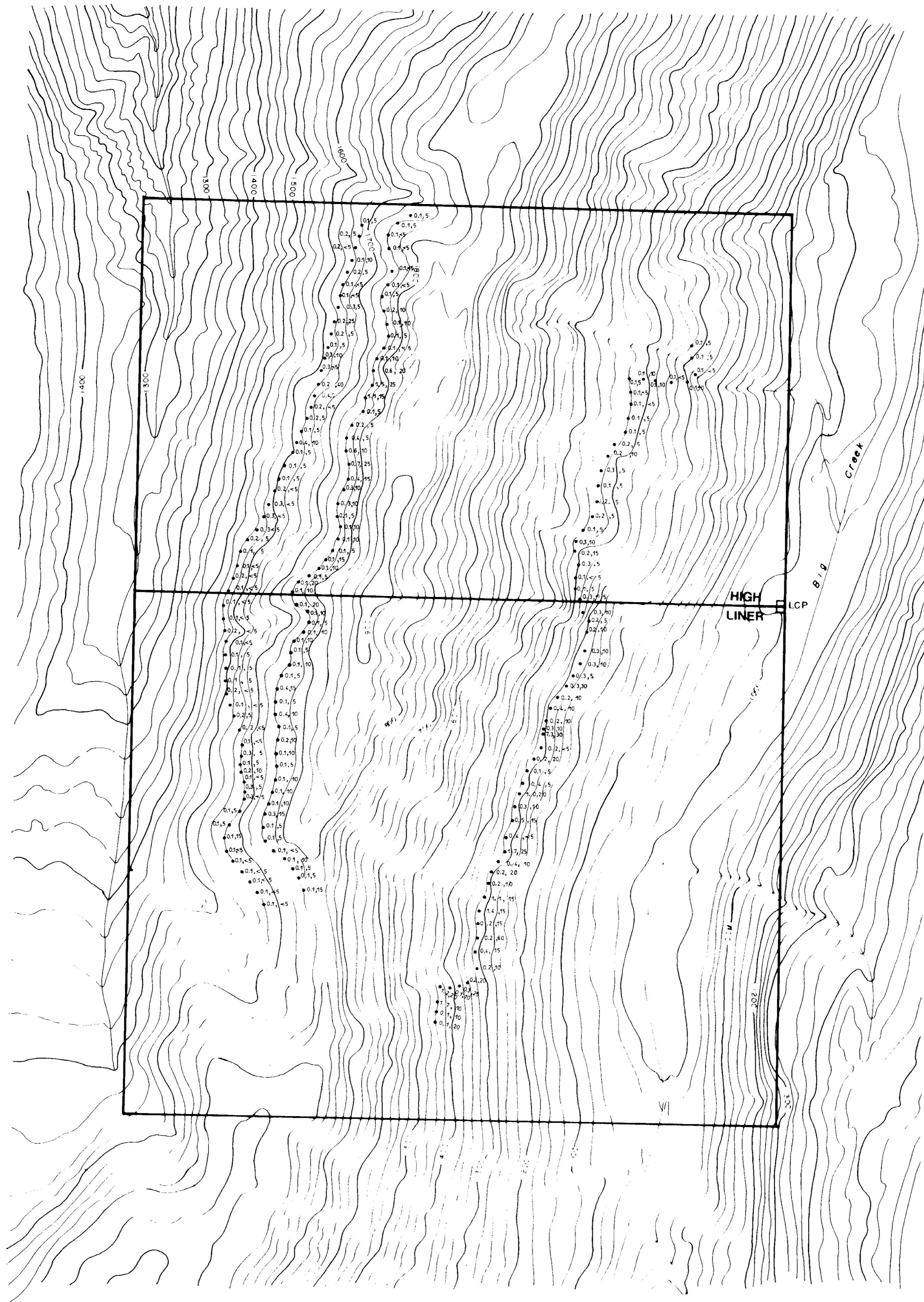
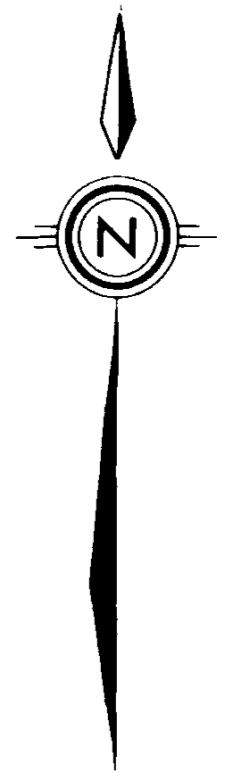
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Chevron Canada Resources Limited
Minerals Staff

HIGHLINER GROUP
GEOLOGY
ROCK SAMPLE LOCATIONS AND GEOCHEMISTRY

FIGURE No. 3	PROJECT No. M504
DATE OCT.83	REVISIONS
NTS No.	SCALE 1:10,000
COMPILED BY D.B.	FILE No. 6-21




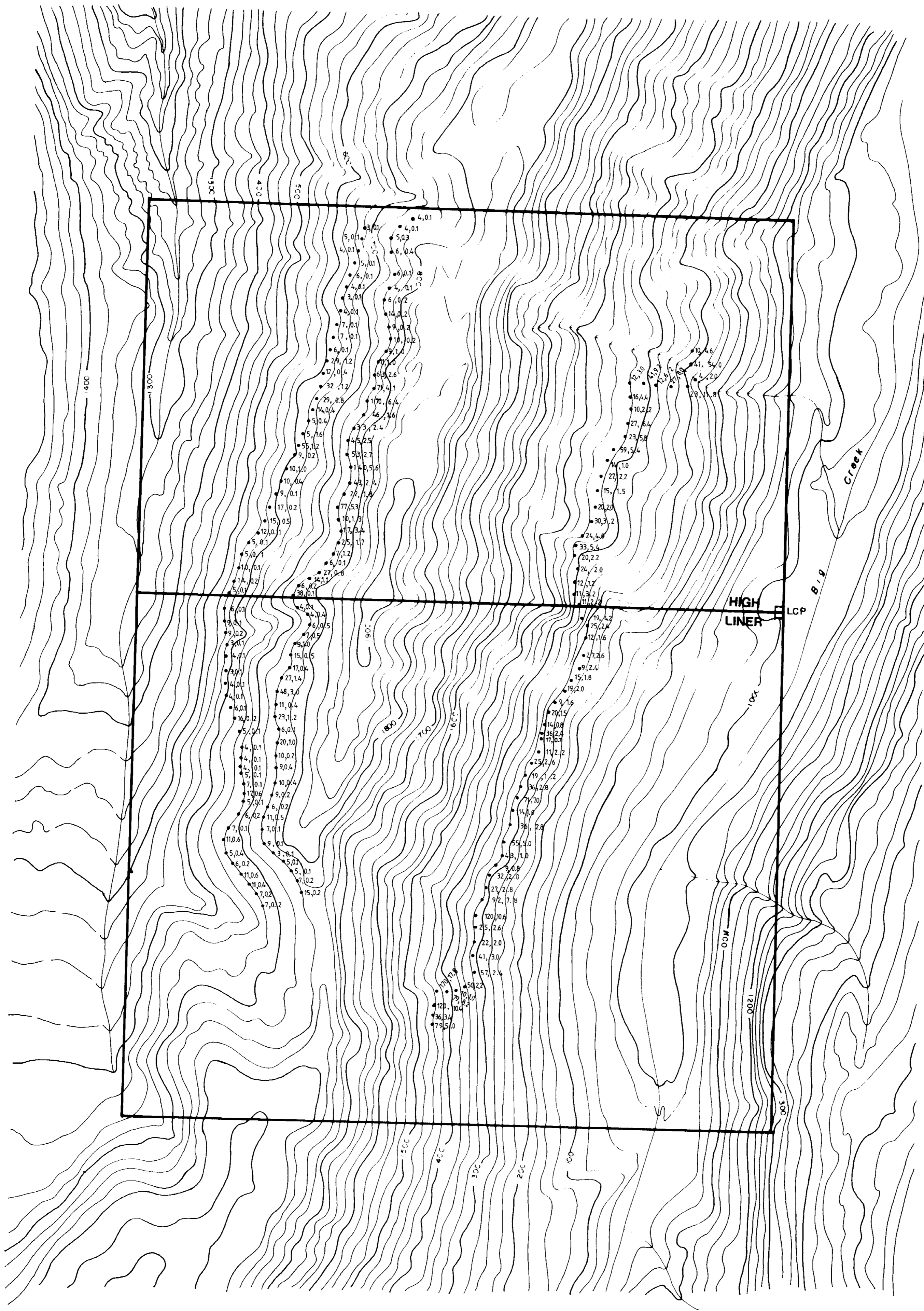
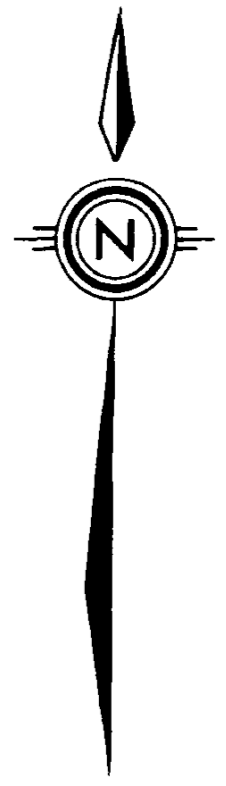
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0 200 400 m

Ag Au
• 0.2, 10

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HIGHLINER GROUP GEOCHEMISTRY Ag (ppm) & Au (ppb)			
FIGURE No. 4	PROJECT No.	M504	
OCT.83	DATE	SCALE: 1:10,000	
D.B.	BY	PAGE No. C-182	




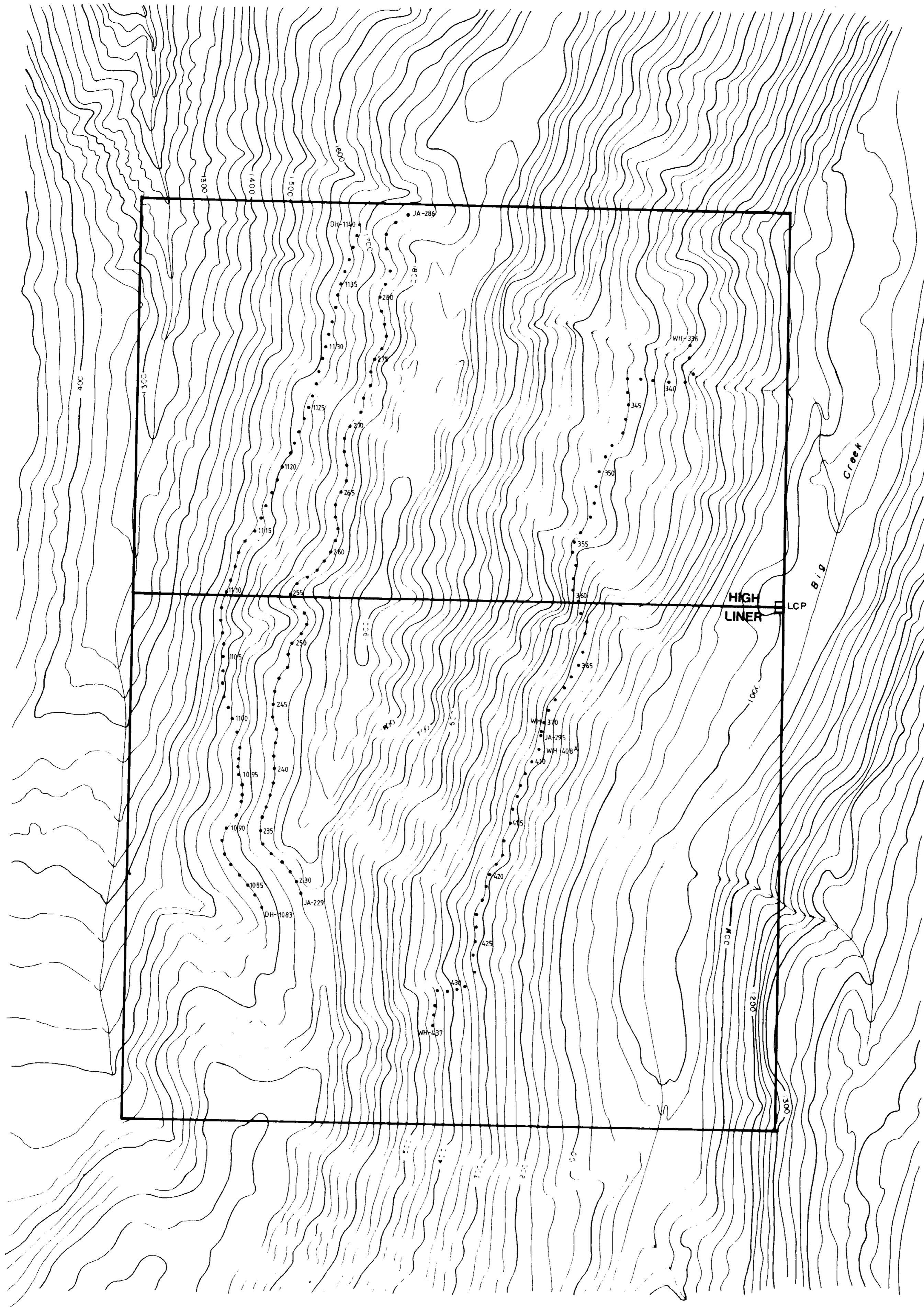
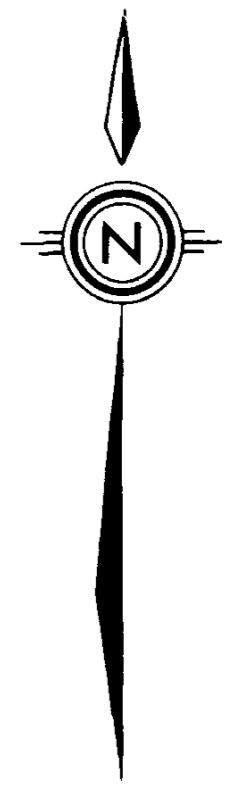
GEOLOGICAL BRANCH
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0 200 400 m

As Sb
• 170, 7.8


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HIGHLINER GROUP GEOCHEMISTRY As (ppm) & Sb (ppm)			
FIGURE No 5	PROJECT No	M504	
DATE OCT.83	REVISIONS	SCALE: 1:10,000	
NTS No		FILE No	
COMPILED BY: D.B.		C-121	



0 200 400 m

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ASSESSMENT REPORT

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HIGHLINER GROUP SOIL SAMPLE LOCATIONS			
FIGURE No	6	PROJECT No	M504
DATE	OCT.83	REVISIONS	SCALE 1:10,000
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