

7-# 117 1743

GEOCHEMICAL REPORT

KLIYUL CLAIM, #1581(12), 20 UNITS

OMINECA MINING DIVISION

MAP 94 D/8E, 94 C/5W

LAT. 56°27', LONG. 126°00'

BY

P. FOLK, P.Eng.
TECK EXPLORATIONS LIMITED

FOR

TECK MINING GROUP LIMITED

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT

NO 7743

Vancouver, B. C.

December 18, 1979

PART 2 OF 2

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MAPS AND FIGURES

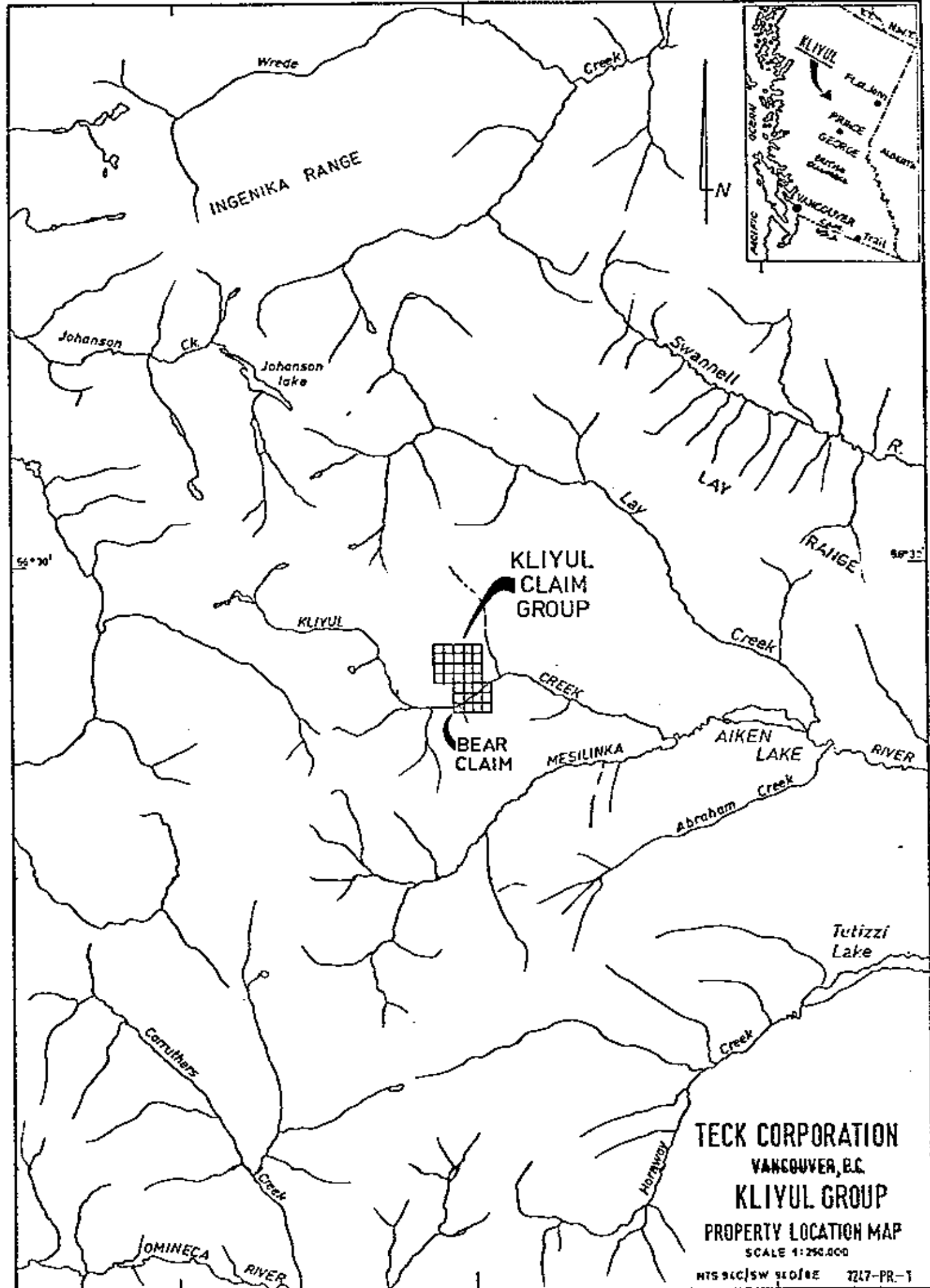
Figure 1: Property Location	After Page 1
Figure 2: Grid and Drill Hole Locations	After Page 2
Figure 3: Molybdenum in ppm	in pocket
Figure 4: Copper in ppm	in pocket
Figure 5: Tungsten in ppm	in pocket
Figure 6: Lead and Silver in ppm	in pocket
Figure 7: Topography, Grid, Drill Hole Locations and Outline of Glacial Drift	in pocket

INTRODUCTION

The KLIYUL claim (Figure 2) containing 20 units was staked in December 1978 by employees of Teck Explorations Limited over an old Rio Tinto porphyry copper-molybdenum prospect found in 1963. Located on the northeastern flank of the Omineca Mountains approximately 340 km northwest of Prince George (Figure 1) the claim is about 20 km by air southwest of the Johanson Lake airstrip. Access is by the Omineca road to Aiken Lake about 400 km from Fort St. James and then by helicopter about 15 km up Kliyul Creek.

The property contains fairly steep and rugged, well glaciated terrain. In the grid area thick dwarf balsam plague the slopes at the treeline and two steep canyons trisect the zone of interest. All creeks originate in well-developed cirques, some with permanent snow and ice.

431 soil samples were taken on 25 metre spacings on lines 100 metres apart. Samples were analyzed for Mo, Cu, Pb, Ag, W. Also a series of 38 rock geochemical samples were taken at 25 m. intervals along the two creek canyons cutting the mineralized zone. Two significant Mo anomalies were defined and subsequently a drill program was initiated. This report summarizes the results of the geochemical survey. The work was done under the supervision of P. Folk, P.Eng.



TECK CORPORATION
VANCOUVER, B.C.
KLIYUL GROUP
PROPERTY LOCATION MAP
 SCALE 1:250,000

GEOLOGY

A quartz monzonite stock presumably related to the Omineca Batholith intrudes altered rocks of the Takla Volcanics and basic to ultrabasic diorites, hornblendites and related rocks. Pyrite, molybdenite, chalcopyrite and scheelite are related to the stock.

GEOCHEMICAL SURVEY

Purpose

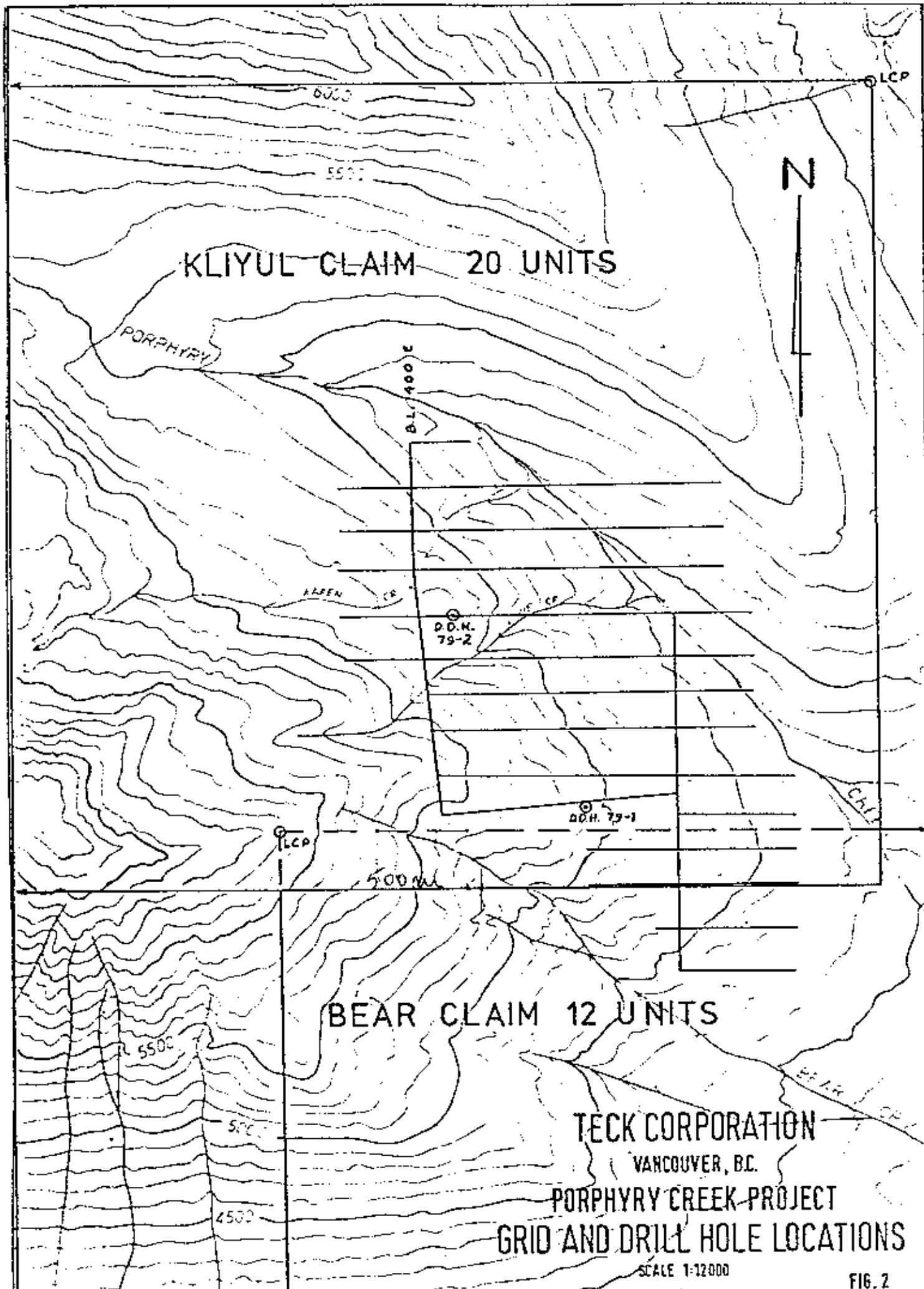
The purpose of the survey was to define anomalous geochemistry located by Rio Tinto in 1973.

Sampling

Samples were taken at an average depth of 20 cm in the "B" or "C" soil horizon. Depth and type of soil were noted and the material was placed in kraft paper bags. Bondar-Clegg and Company Ltd., of North Vancouver analyzed the samples by standard atomic absorption methods. See Appendix for a detailed description of the analytical methods.

Results

Results of the sampling are plotted on Figures 3 through 6. Two well defined anomalies greater than 50 ppm Mo with irregular peripheral zones of high Cu and W are obvious. The southern molybdenum zone is about 250 m square while the northern one is roughly 400 m by 250 m. There is an



SCALE 1:12000

FIG. 2

Area of weak Mo values between the two anomalies. Observations on the ground indicate:

1. Glacial till effectively terminates high results. Figure 7 is a compilation from the samplers' notebooks and shows areas containing significant depths of glacial till. The extent to which molybdenum mineralization extends below the till is unknown; the two anomalous zones could, in fact, be continuous.
2. A fault seen on the ground terminates the larger anomaly to the west and may in fact have separated the original zone into two distinct parts. A horizontal displacement of about 500 m. would have had to occur for this to be the case. If this is in fact true the area between the two zones may not be mineralized.
3. A good correspondence between the quartz monzonite stock and molybdenum in soils and rocks was observed.
4. Peripheral Cu and W enrichment was seen to occur in the intruded rocks.

SUMMARY AND CONCLUSIONS

1. A significant area of high molybdenum content in soils was outlined.
2. The distribution of anomalous Mo values in a quartz monzonite stock with peripheral Cu and W was observed and is characteristic of porphyry type deposits.
3. The results have been correlated with low grade molybdenite mineralization visible in outcrop. A significant volume of mineralized material is indicated.
4. Glacial till masks the geochemical results in the lower parts of the property so the ultimate extent of the mineralization is unknown.
5. A significant fault may have bisected the original zone to form two anomalies but glacial till masks the critical area.



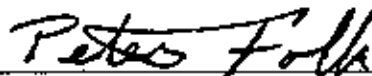
P. Folk, P.Eng.

December 18, 1979

CERTIFICATE OF QUALIFICATION

I, Peter G. Folk, do hereby certify that:

1. I graduated from the University of British Columbia in 1971 as a Bachelor of Applied Science in Geological Engineering.
2. Since that time I have been employed as both a mine and exploration geologist in British Columbia and elsewhere.
3. I am presently employed by Teck Explorations Limited, Vancouver, B. C.
4. I am a member in good standing of the Association of Professional Engineers of the Province of British Columbia.
5. The work described in this report was done under my direct supervision.



P. G. Folk, P.Eng.
December 18, 1979

COST STATEMENT


1. Salaries

P. Folk, Geologist, Box 431, Keremeos, B.C. August 11-17, 1979 - 7 days @ \$125/day	\$ 875.00
G. Lovang, Prospector, 1199 West Hastings St., Vancouver, B. C. August 4-17, 1979 - 14 days @ \$70/day	980.00
R. Schneider, Keremeos, B. C. August 4-17, 1979 - 14 days @ \$90/day	1,260.00

2. Geochemical Analysis

431 samples assayed for Cu, Mo, @ \$2.60/sample	1,120.60
365 samples re-assayed for W, Ag, Pb, @ \$5.55 per sample	<u>2,025.75</u>
TOTAL	<u>\$ 6,261.35</u>

The above costs are all directly applicable to the actual assessment work on the KLIYUL claim.



P. Folk, P. Eng.

Vancouver, B. C.
December 18, 1979

APPENDIX

ANALYTICAL METHODS



BONDAR-CLEGG & COMPANY LTD.

1500 PEMBERTON AVE., NORTH VANCOUVER, B.C. PHONE: 985-0581 TELEX: 04-54554

Response to your inquiry concerning what and why, at our lab.

1. Flow Sheet

1 SORT

sorting by project and box no.
inspection by supervisor
organization of priorities
samples put in order in drying trays
samples present vs sample list
entry in log book.

2 DRY

drying in low temp driers
coin envelopes for sifted samples
made
lab sheets made up

3 SIFT

sifting and retention of rejects

4 WEIGH

37 samples
2 checks
1 pulp standard in every rack of 40

5 DIGEST (CuPbZnMoAgMnCdFe)

HNO₃ attack of organics & sulfides/
carbonates

HCl attack of resistant material
95°C 2 1/2 - 3 1/2 hr.

6 HOMOGENIZE

diluted to 20% acid concentration
and homogenize
1 hour settling time

7 ANALYZE

atomic absorption
background correction simultaneous for
Pb Ag Cd
results permanently on chart

8 TELEX - TYPING

all results call checked

2. Sample Prep Procedures - Everything done in numerical order

SOIL/SEDS

- a) bang dry sample in the bag with rubber mallet to break loose fines from clods/mosses/etc.
- b) pour into 80 mesh stainless steel sieve.
- c) sift out all -80; if samples are for Au, sift out -20 if -80 fraction less than 20 gm.
- d) re-bag sample and re-file if retention of rejects requested. Otherwise - out goes the oversize

ROCKS

- a) put in numerical order; insert made-up pulp bags into proper rock bag.
- b) primary crush

- c) secondary crush (70% -10 mesh)
- d) split out 200 - 400 gm with a Jones riffle
- e) pulverize via an impact (ring and puck) grinder. Final product is about 50% -150 mesh and 99% -80 mesh, and is free from pulverizer contamination.

PAN CON'S

- a) bagged, dry sample is wholly pulverized as above, mixing of sample is thorough and complete in pulverizer.

Please no coarse metallic nuggets without prior warning.

3. Separation Methods

$\text{HNO}_3\text{-HCl}$ - a vicious attack that satisfactorily leaches Cu Pb Zn Mo Ag Mn Cd Ni Co etc. in "all" rocks and soils/seds. Problems would be low level values (<40 ppm) in high iron oxide soils, or in tight refractory lattices.

HNO_3 - satisfactory for almost all present day ore minerals of U, Bi some Ag minerals, and most sulfides.

Partial Extractions - specific for specific type occurrences or for loosely bonded (e.g. hydromorphically deposited) ions.

$\text{HNO}_3\text{-HClO}_4\text{-HF}$ - a higher temperature, vicious attack that specifically attacks some refractory silicates and oxides. More difficult to control precision, but useful for things like V, Be, Se, and certain low level metallics in rock geochem programs.

HBr-Br - a slow, but powerful oxidative attack designed for Te minerals etc.

HCl-HCl_2 - a powerful reducing attack for dissolving magnetites, etc.

Various fusions - for difficult to handle elements in refractory lattices. (e.g. W Cr Au Pt).

4. Best Analytical Techniques as far as we are concerned (and as far as the state of the art)

<u>Element</u>	<u>Method</u>
Au	- Fire assay and atomic absorption. Technique and systems critical.
Pt Group	- Fire assay and atomic absorption. Technique and systems critical. - Fire assay and spec okay. Technique and systems critical.
U	- Fluorimetric preferred on routine. Technique critical. - XRF very good in 10 ppm - 2% range - Neutron activation very good, but also subject to corrections - technique control. Cannot handle very high volumes or handle them cheaply - Laser Spectrometers - good for clean, low-level solutions. - Colourimetric - satisfactory; good for high grade ores.
Cu Pb Zn Mo Ag Mn Fe Cd Ni Co	- Atomic absorption preferred
Mo	- Colourimetric after fusion acceptable
Ag	- Cyanide acceptable

<u>Element</u>	<u>Method</u>
Sn	- XRF preferred - Colourimetric after fusion or distillation not satisfactory for routine work - Spec okay at intermediate levels, but small sample size taken precludes its use
W	- Colourimetric quite acceptable. Technique critical.

5. Background correction

In our lab, principally dirty carbonate matrices may enhance low-level Ag Cd values up to a false value of 3 - 6 ppm, Pb up to 45 - 65 ppm, Sb Bi values up to 100 ppm.

Background correction measures the majority of this false impulse simultaneously with the Ag Pb etc signal and automatically gives a more accurate answer. Exact reproducibility is more difficult, but still very acceptable.

Background correction for Ag Cd Pb is strongly recommended except in areas where Ag Cd Pb thresholds are over 10-10-100 ppm. To a lesser extent low level Ni Co could be added to this list. Sb Bi cannot be determined in low levels without background correction; this is included in the price of analysis.

6. Discussion of Special Techniques we use.

We are happy to thoroughly discuss things verbally. The range is too broad, and some of the techniques too confidential to put in print.

7. Detection limits - printed on fee schedules

Results usually \pm detection limit at detection limit.

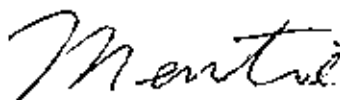
We are happy to clarify and discuss any of the above at your request. Do not hesitate to ask questions - either simple ones or complex ones.

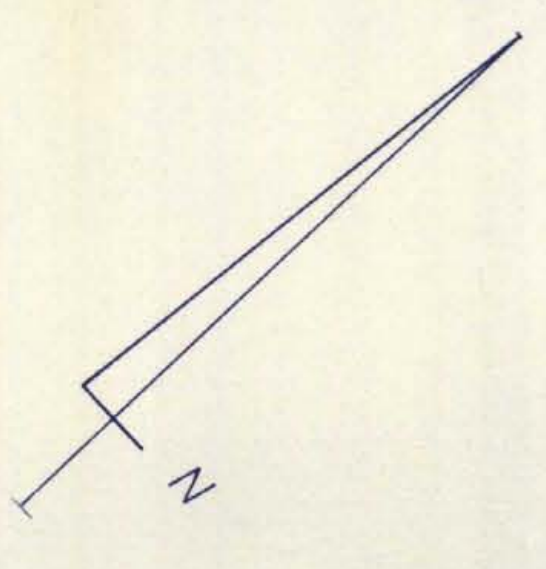
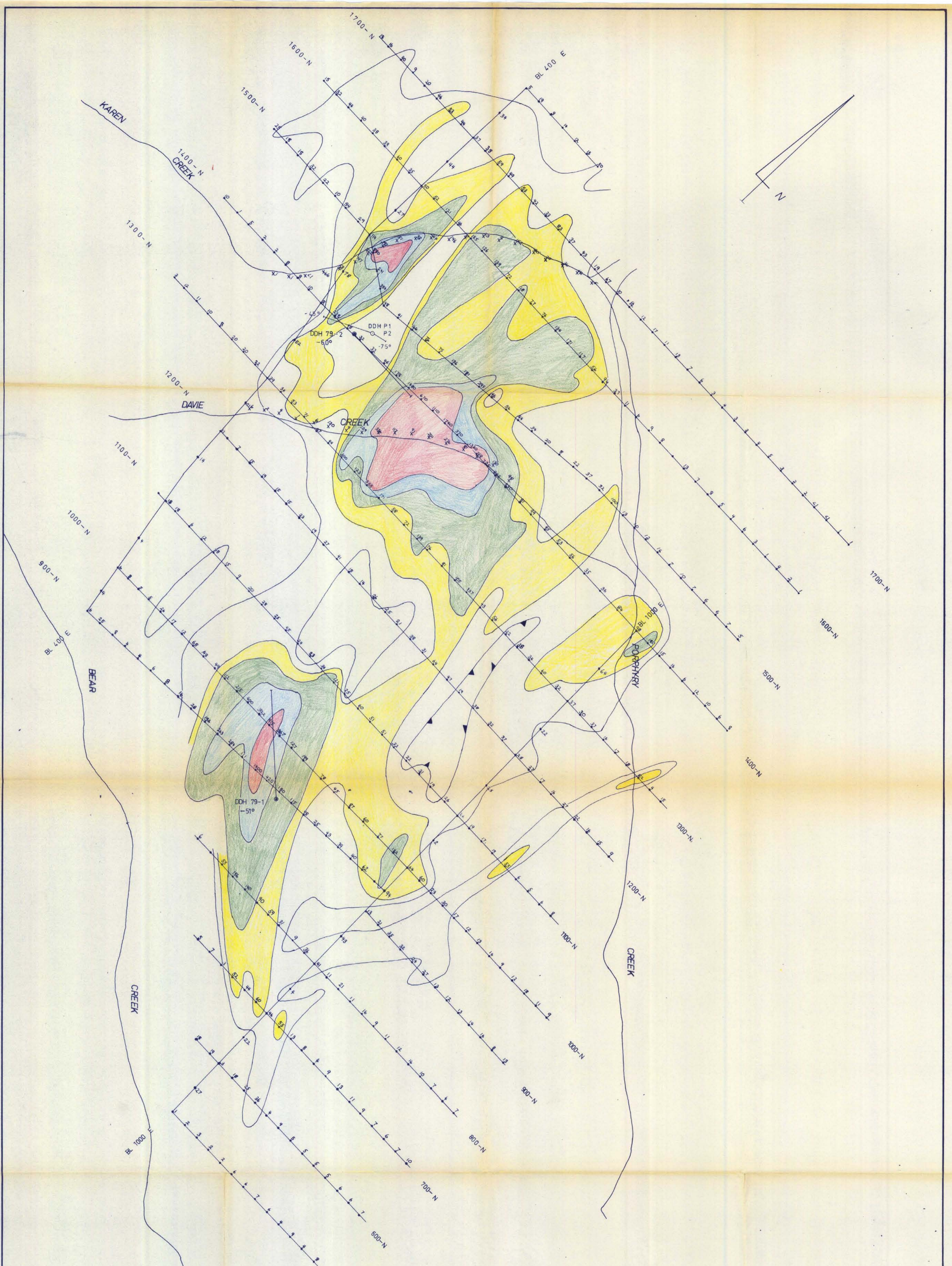
Cordially yours,

BONDAR-CLEGG & COMPANY LTD.

Ken Bright
Geol. E.

KB/sja





CONTOURS AT
 25 PPM
 50 PPM
 100 PPM
 250 PPM
 500 PPM

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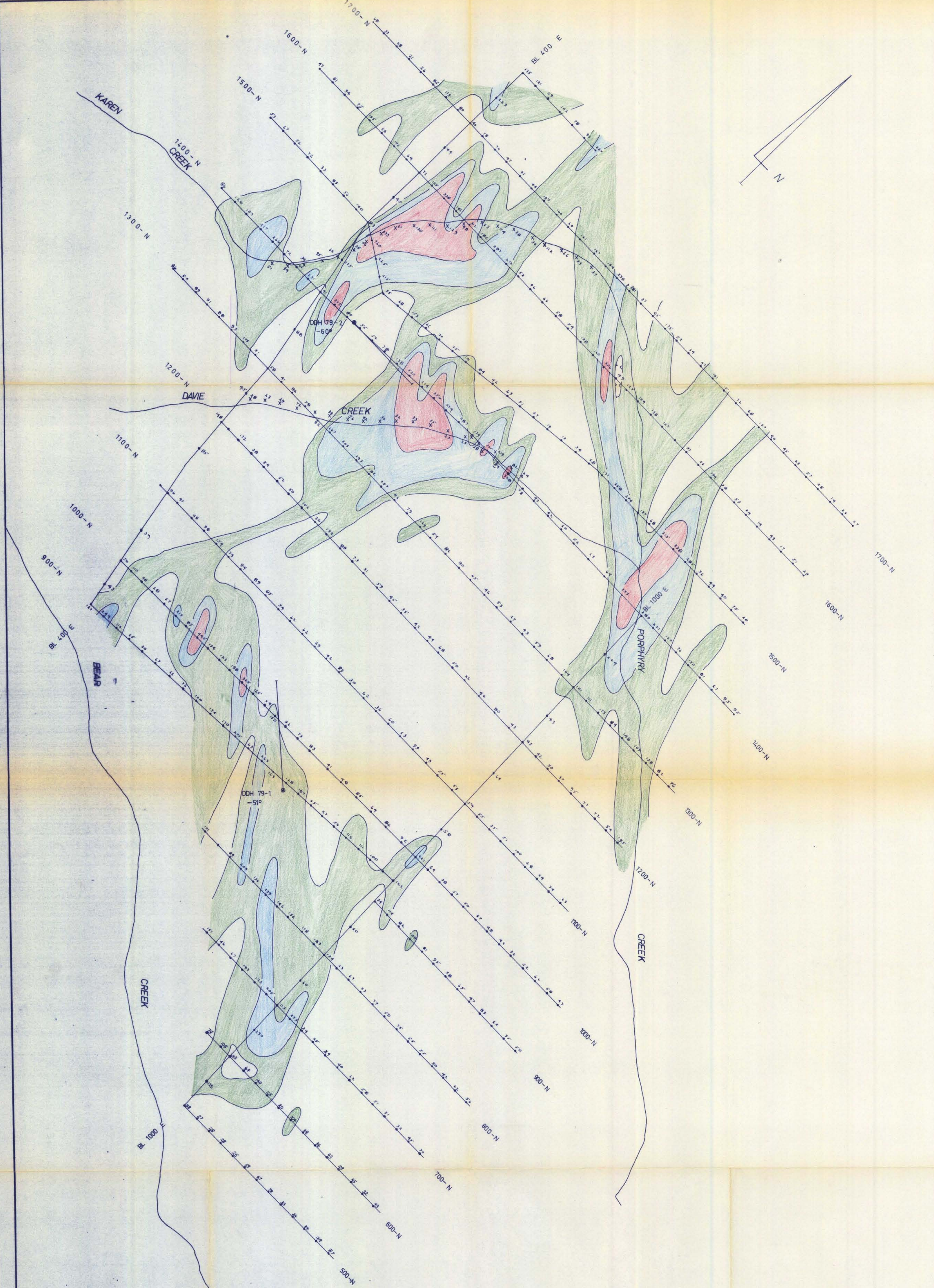
TECK CORPORATION
 VANCOUVER, B.C.

PORPHYRY CREEK PROJECT
 OMENICA M.D., B.C.

GEOCHEMICAL SURVEY
 MOLYBDENUM IN P.P.M.

0 100 200 400 600 FEET
 0 25 50 75 100 150 200 METERS

DRAWN: NOV. 1979 / K.L.	REVISED	NTS NO: 94-C5/94-DB	DRAWING NO: 1247-FIG. 3
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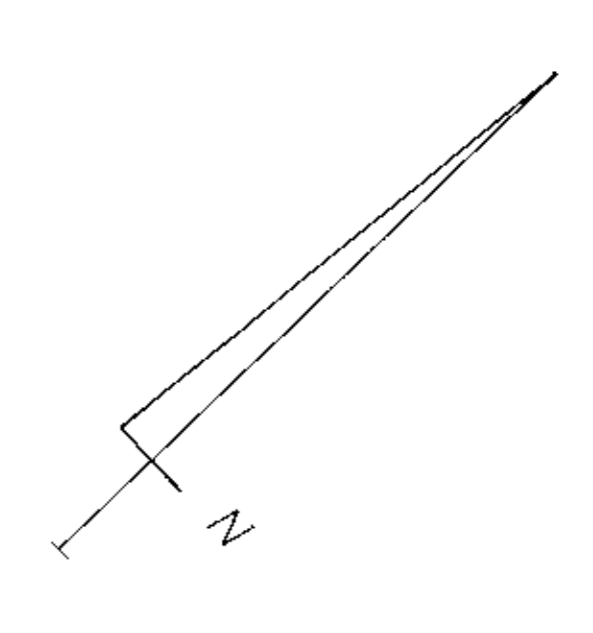
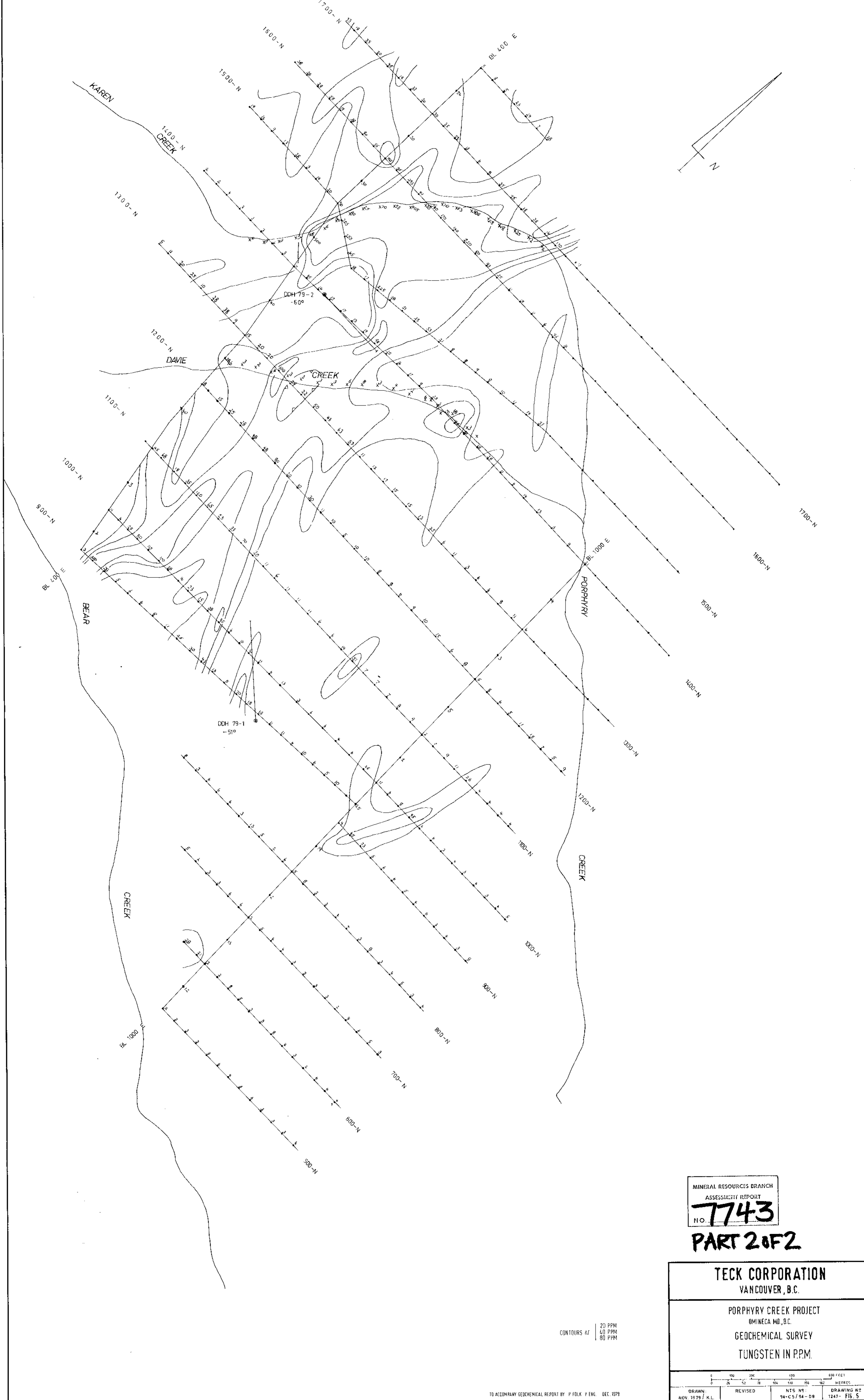


CONTOURS AT 100 PPM
200 PPM
300 PPM

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PORPHYRY CREEK PROJECT OMINECA MD, B.C.	
GEOCHEMICAL SURVEY COPPER IN P.P.M.	
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DRAWING NO. 1247-FIG. 4	



CONTOURS AT
 20 PPM
 40 PPM
 80 PPM

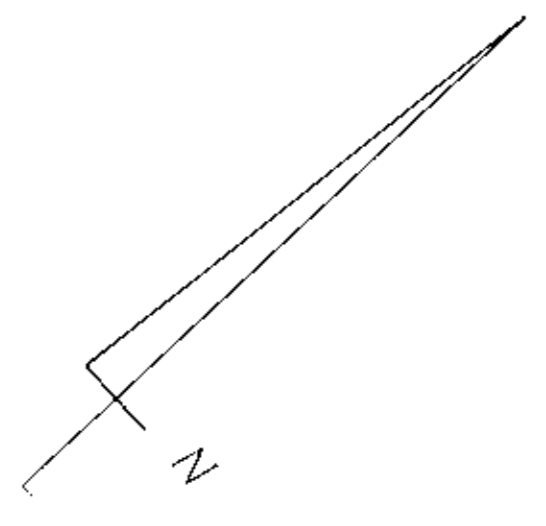
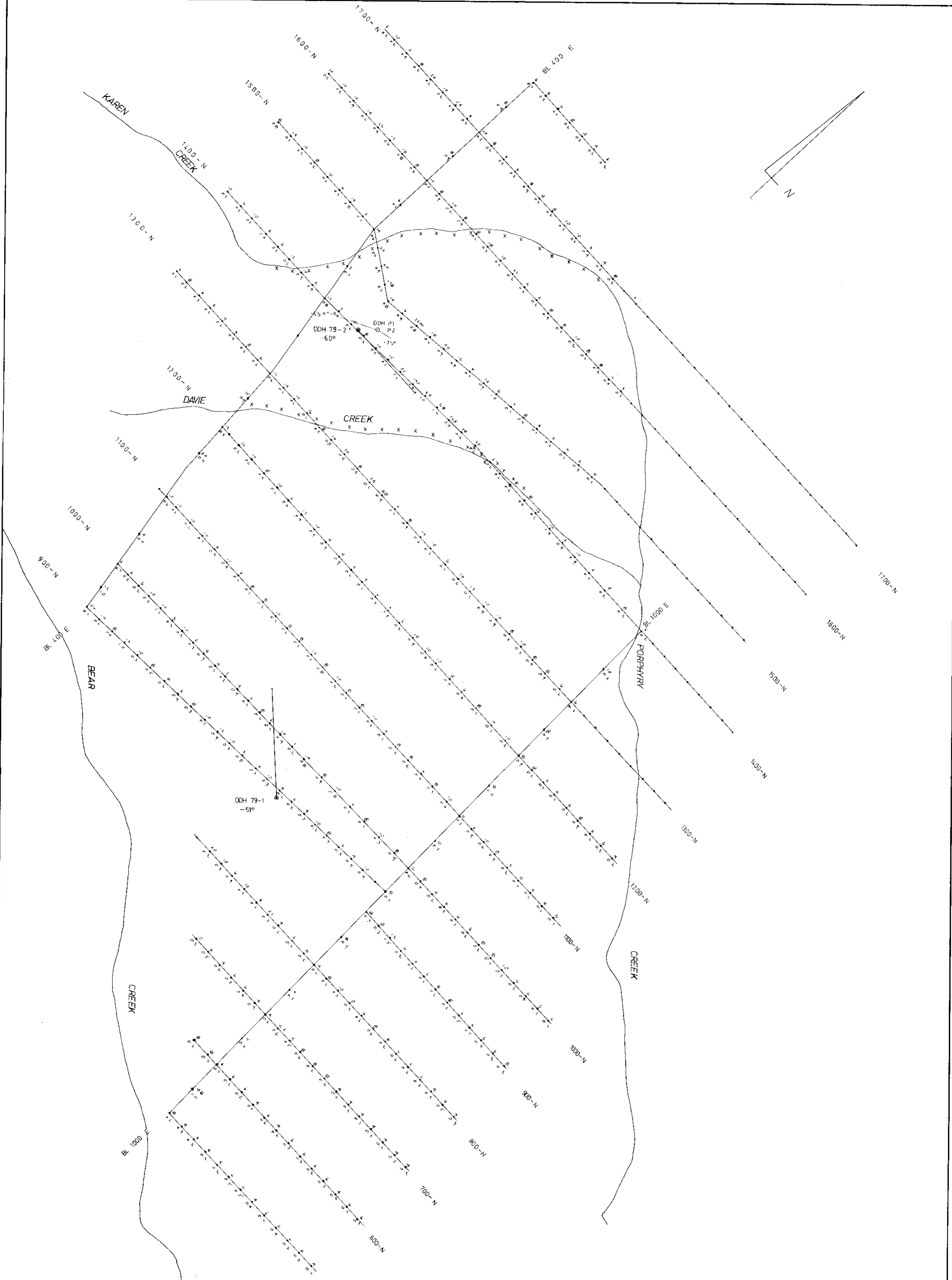
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 OMECA M.D., B.C.
 GEOCHEMICAL SURVEY
 TUNGSTEN IN P.P.M.

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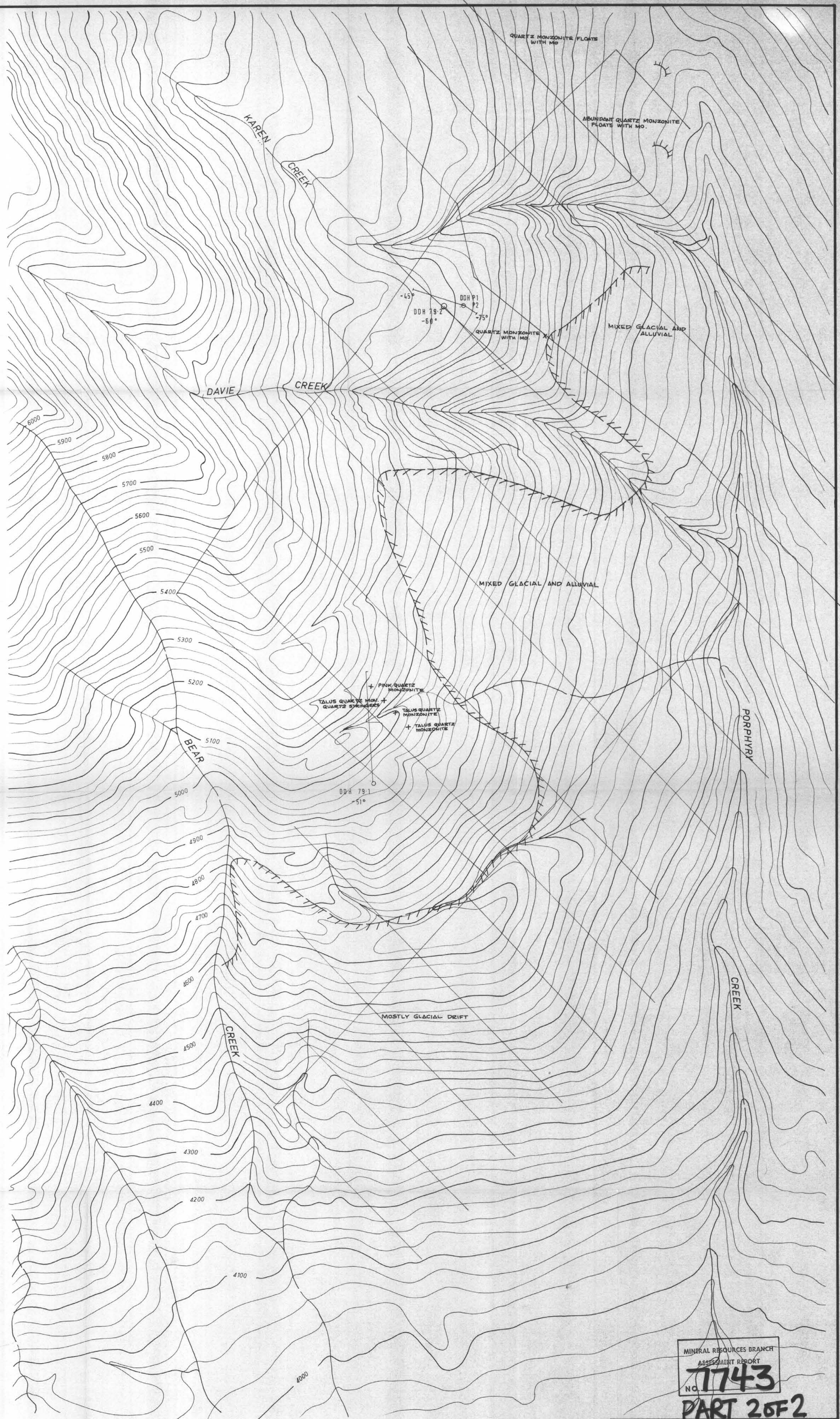
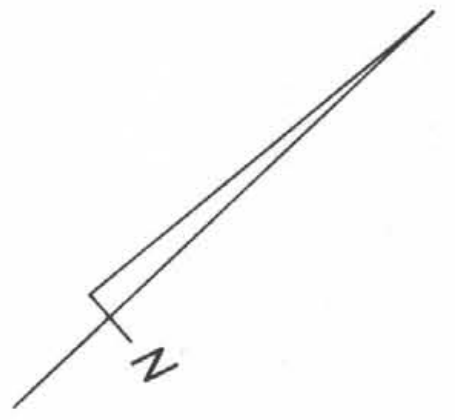
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VANCOUVER, B.C.

PORPHYRY CREEK PROJECT
OMINECA M.D. BC.
GEOCHEMICAL SURVEY
LEAD & SILVER IN P.P.M.

0	100	200	400	600 FEET
0	25	50	75	100 METERS
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PORPHYRY CREEK PROJECT
OMINECA M.D., B.C.
TOPOGRAPHY, GRID, DRILL HOLE LOCATIONS
AND
OUTLINE OF GLACIAL DRIFT

0	100	200	300	400	500	600	700	800	900	1000
METRES										
0	100	200	300	400	500	600	700	800	900	1000
FEET										
DRAWN:	REVISED:	DATE:	BY:	DATE:	BY:	DATE:	BY:	DATE:	BY:	DATE:
JUNE 1977 / P.V.										