3708

A GEOCHEMICAL REPORT

on the

JUA MINERAL CLAIMS

92I/2W for

EXEL EXPLORATIONS LIMITED (N.P.L.)
NICOLA MINING DIVISION
BRITISH COLUMBIA

A GEOCHEMICAL REPORT

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NICOLA MINING DIVISION
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Mineral Claims:	JUA 1-28 and 39-52 incl.
Location:	Approximately 6.5 miles north of Lower Nicola Latitude 50° 15' N., Longitude 120° 52' W.
Claim Sheets:	92 I/2W and 92 I/7W
Work Period:	May 23, 1972 to June 1, 1972

Vancouver, B.C.
June 30, 1972

R. E. Hindson, B.Sc., F.G.A.C.

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SUMMARY

During the period May 23, 1972 to June 1, 1972, Teck Corporation Ltd. carried out a geochemical survey on a group of 42 contiguous mineral claims located some 6.5 miles north of Lower Nicola in south central British Columbia.

The claim group, known as the JUA, is owned by Exel Explorations Ltd. (N.P.L.) of Vancouver, B.C. and the work was carried out on their behalf.

The geochemical survey was conducted in an attempt to evaluate the economic potential of the property.

The property lies on the eastern margin at the Guichon Creek batholith, a large multiple intrusion copper bearing body that is exposed over an area of some 400 square miles. The claim group is believed to be underlain by the outer "Hybrid" phase of the batholith which is contaminated in part by assimilated pre-intrusive rocks.

The claim group is largely covered by a mantle of glacial debris of varying thickness. However, two outcrops of diorite were located indicating that the geochemical techniques would be amenable to some degree.

The results of the geochemical survey were not encouraging with only 29 of the 800 samples analysed having a value in excess of the threshold.

The high values obtained were largely scattered throughout the area tested and can possibly best be attributed to contamination by copper bearing waters draining the batholith and by float transported into the area through glaciation.

Further work on the property based on the results of the geochemical survey is not recommended.

PROPERTY, LOCATION AND ACCESS

The property described in this report is located in the Nicola Mining Division of British Columbia some 6.5 miles due North of town of Lower Nicola.

Access to the property is gained by road which runs North from Lower Nicola on Highway No. 8. The first 3.5 miles is paved and serves as access to the Craigmont Mine site. The remainder is all weather gravel road which passes through the property and continues on to Chataway Lake.

The property consists of 42 contiguous mineral claims whose centre lies approximately 50° 15' N. and 120° 52' W.

The following is a list of the mineral claims contained in the claim group giving the name of the claim, the claim number, the claim record number and the claim sheet on which the claim was staked.

The date of expiry of all of the claims contained in the group prior to the filing of the geochemical survey as representation work was June 5, 1972.

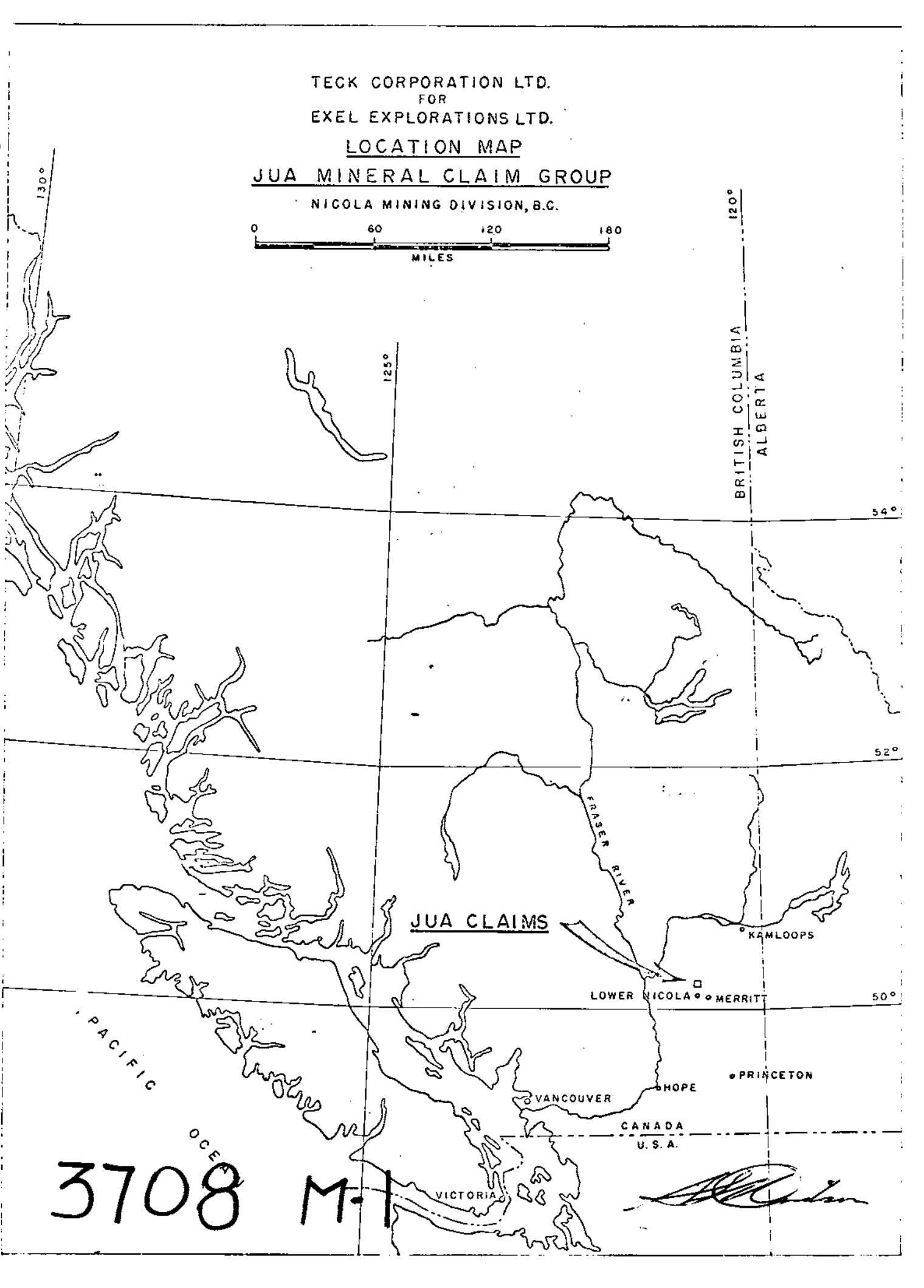
Claim Name	Claim Number	Record Number	Claim Sheet
JUA	1-12	45957-45968	92I/2W
JUA	13-22	45969-45978	92I/7W
JUA	23-28	45979-45984	92I/2W
JUA	39-52	45995-46008	92I/2W

TECK CORPORATION LTD.
FOR
EXEL EXPLORATIONS LTD.

LOCATION MAP

JUA MINERAL CLAIM GROUP

NICOLA MINING DIVISION, B.C.



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Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 3708 MAP #1

IN BOUT

REGIONAL AND LOCAL GEOLOGY

The JUA property lies on the Eastern margin of the Guichon Creek batholith, a large intrusive body which is exposed within an area of some 400 square miles in south central British Columbia.

The batholith intrudes sedimentary and volcanic rocks of the Cache Creek Group, which is Permian in age and the Nicola Group which is Upper Triassic.

Post-intrusive rocks comprised of Middle and Upper Jurassic sediments, Lower Cretaceous volcanics and related sediments (Spences Bridge and Kingsvale Groups) and Tertiary volcanics (Kamloops Group) unconformably overlie the batholith.

The batholith consists of a number of phases (multiple intrusions) which grade from the youngest to the oldest towards the margin of the intrusive.

The oldest phase, which is known as the Hybrid, is contaminated by pre-intrusive rocks that it has assimilated in part.

The Hybrid phase is predominately quartz diorite but shows variation from hornblendite through diorite to quartz monzonite.

It is within the Hybrid phase that the property is believed to lie.

Only two outcrops were located on the property, during the course of geochemical sampling and both were found to have the composition of a diorite. The outcrops were fresh and showed no evidence of alteration or mineralization.

The remainder of the property is covered by a mantle of Pleistocene glacial and interglacial material that forms southeasterly trending drumlins and eskers.

GEOCHEMICAL SURVEY

The geochemical survey conducted on the JUA claim group was carried out in an attempt to evaluate the economic potential of the property.

Although it was felt that the mantle of glacial debris covering the area would be of a considerable hinderance in making a geochemical evaluation, the following two positive factors were taken into consideration. Firstly, there is outcrop on the property which indicates that the overburden is not excessively thick. Secondly, the topographic lows between the eskers and drumlins possibly lie close enough to bedrock to reflect any anomalous copper content.

The geochemical sampling was conducted on a total of 28 claims of the 42 claim group. Sampling was carried out on JUA mineral claims 1-12, 23-28, 39-45, 47, 51 and 52, all inclusive.

A north-south base line was established with the aid of a transit, and cross lines were laid out at 400 foot intervals. Samples were collected at 100 foot intervals, with the aid of a small spade and were placed in small manila envelopes. Only every second sample collected (every 200 feet) was submitted for analysis. The remainder of the samples were placed in storage.

The soil development in the area was generally immature having a very thin A horizon and a poorly developed B horizon. All samples were collected in the C horizon at a depth of approximately 10-12 inches. The C horizon was comprised mainly of a fine light brown sandy material which at times was slightly pebbley.

The samples submitted for analysis were analyzed for ppm Cu by Commercial Testing and Engineering Co. of 147 Riverside Drive, North Vancouver, B.C. The method of analysis is outlined in Appendix III.

DATA

Total number of sample sites	1,639
Total number of sample sites under water (flooded)	19
Total number of samples collected	1,620
Total number of samples submitted for analysis	800
Total number of claims covered by the survey	28
Average number of samples collected per mineral claim supplied	58
Total number of line miles surveyed	31.4

GEOCHEMICAL RESULTS

The threshold and anomalous values for the area were calculated to be 129 ppm Cu and 169 ppm Cu respectively.

The calculations used in determining the aforementioned values using the standard deviation technique are outlined in Appendix IV.

DISCUSSION OF RESULTS

A geochemical map at a scale of 400 feet to the inch, showing the sample location sites and the results of the sample analyses, is included in this report. Claim locations with name and number are also illustrated.

Samples exceeding the threshold value of 129 ppm Cu have been circled in blue on the map and those exceeding the anomalous value of 169 ppm Cu have been enclosed by a red triangle.

Of the 800 samples analysed only 29 were above the threshold value and 8 of those lay within close proximity to a creek that winds its way through the centre of the claim group in a southeasterly direction.

There is no set pattern to the remainder of the values that are above threshold and they can best be described as scattered erratic highs.

The analyses of percussion cuttings from an outcrop that was drilled in 1971 returned only 94 ppm Cu.

CONCLUSIONS AND RECOMMENDATIONS

The geochemical highs obtained on the property in the vicinity of the creek can possibly be attributed to contamination by copper bearing waters draining the Guichon Creek batholith which is known to be copper rich.

The remaining scattered, anomalous values may be associated with copper bearing float material from the batholith which has been transported to the area through glaciation.

It should be noted that the analyses of percussion cuttings from an outcrop previously drilled on the property returned 94 ppm Cu which is almost twice that of background (49 ppm Cu). Since the outcrop was fresh and showed no signs of alteration or mineralization the contained upper content (background) of the rocks in the area is believed to be relatively high.

Since there was no definite population of values on the property above threshold (129 ppm Cu) and since the copper content of outcrop in the area was close to threshold (94 ppm Cu) further work on the property based on the results of the geochemical survey is not recommended.

Respectfully submitted,

R.E. Hindson, B.Sc., F.G.A.C.

Vancouver, B.C.
June 30, 1972

APPENDIX V

SURVEY COSTS

	Cost
Supervising Geologist - (active participant) 10 days @ $100.00/day	$1,000.00
Samplers - 4 men - 10 days @ $60.00/man day	2,400.00
Accommodation - 10 days @ $29.00/day	290.00
Meals - 10 days @ $6.00/man day for 5 men	300.00
Vehicle - 10 days @ $18.00/day (rental & gas)	180.00
Geochemical Analyses - 800 samples @ $1.00 per sample	800.00
Total	$4,970.00

Note: A total of $4,200.00 was applied to the claims listed below. One year's assessment work was applied to each claim.

JUA Group 1	JUA Group 2
JUA 1 to 28 incl.	JUA 39 to 52 incl.
Record numbers 45957 to 45984	Record numbers 45995 to 46008 incl.

The above costs are property related costs only and do not include preliminary compilation of previous data, administration costs, transportation to and from Vancouver, and other costs not normally applicable for assessment credits.

APPENDIX IV

GEOCHEMISTRY

CALCULATION OF THRESHOLD VALUES AND ANOMALOUS VALUES USING STANDARD DEVIATION

$$S = \sqrt{\frac{\sum (Xi)^2 - N\bar{X}^2}{N - 1}}$$

$$\bar{X} = \frac{\sum Xi}{N}$$

S = standard deviation

$\bar{X}$ = mean or average value

Xi = value

N = total number of values

Total number of samples collected = 1,600
Total number of samples analysed = 800
Average spacing between lines = 400 feet
Sample interval analysed = 200 feet

$N = 800$

$$\bar{X} = \frac{Xi}{N} = \frac{38,900}{800} = 48.6 \text{ say } 49.0$$

$$(\bar{X})^2 = (48.6)^2 = 2,364.9$$

$$(Xi)^2 = 3,159,379$$

$$S = \sqrt{\frac{\sum (Xi)^2 - N(\bar{X})^2}{N-1}}$$

$$S = \sqrt{\frac{3,159,379 - 800\ (2,364.9)}{799}}$$

$S = 39.8$ say 40.0

Threshold Value = $\bar{X} + 2S = 49 + 2(40) = 129.0$

Anomalous Value = $\bar{X} + 3S = 49 + 3(40) = 169.0$

APPENDIX III

GEOCHEMISTRY - METHOD OF ANALYSIS

1. The samples collected were oven dried and screened on a -80 mesh screen.

2. 0.5 gms. of the -80 mesh fraction was weighed into a test tube and was digested in an acid solution (85% $HClO_4$, 15% HNO_3) for 3.5 to 4 hours.

3. 2 mls of the solution was extracted after digestion and was diluted to 10 mls with H_2O.

4. The resultant clear solution was analysed for copper by atomic absorption spectroscopy which involves the comparison of the copper content in the sample to the content of a known standard.

   The atomic absorption unit used was a Techtron AA5.

APPENDIX II

PERSONNEL AND DATES

The following personnel were engaged in the geochemical sampling of the JUA mineral claims, described herein from May 23, 1972 to June 1, 1972.

Name and Address	Position or Positions
R. E. Hindson 509 - 2045 Barclay Street Vancouver 5, B.C.	Supervising Geologist - Sampler
B. Hainsworth 4664 Clovelly Walk West Vancouver, B.C.	Sampler - Line Surveyor
M. Siscoe 11312 Bond Boulevard Delta, B.C.	Sampler - Line Cutter
G. Keevil 6808 Lowell Court S.W. Calgary, Alberta	Sampler - Line Cutter
W. Schilling Box 325 Chetwynd, B.C.	Sampler

APPENDIX I

CERTIFICATE

I, Robert E. Hindson, of Vancouver, British Columbia, do hereby certify:

1. that I am a geologist residing at 509 - 2045 Barclay Street, Vancouver 5, British Columbia,

2. that I am a graduate of the Provincial Institute of Mining in Ontario, with a diploma in Engineering Technology in 1961,

3. that I am a graduate of Carleton University in Ottawa, Ontario with a degree of Bachelor of Science in 1966,

4. that I have been practising my profession continuously since graduation from university,

5. that I am an employee of Teck Corporation Limited with offices at 1177 West Hastings Street, Vancouver, British Columbia,

6. that during the period May 23, 1972 to June 1, 1972 I supervised and actively participated in the geochemical survey described in this report.

JUA 21 JUA 22

JUA 19 JUA 20

JUA 17 JUA 18

JUA 15 JUA 16

JUA 13 JUA 14

JUA 11 JUA 12

JUA 9 JUA 10

JUA 7 JUA 8

JUA 27 JUA 28 JUA 5 JUA 6

JUA 25 JUA 26 JUA 3 JUA 4 JUA 51

JUA 23 JUA 24 JUA 1 JUA 2 JUA 52

JUA 39 JUA 41 JUA 43

JUA 40 JUA 42 JUA 44

JUA 45 JUA 47 JUA 49

JUA 46 JUA 48 JUA 50

BASE LINE

88N 84N 80N 76N 72N 68N 64N 60N 56N 52N 48N 44N 40N 36N 32N 28N 24N 20N 16N 12N 8N 4N 0 4S 8S 12S 16S 20S 24S 28S 32S 36S 40S 44S

3750 4000 4250 3500 3250 3000 2750 3100 2950 3200 2850 2700

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LEGEND:

● THRESHOLD (129 PPM CU) or >

▲ ANOMALOUS (169 PPM CU) or >

TO ACCOMPANY "A GEOCHEMICAL REPORT ON THE JUA MINERAL CLAIMS", DATED JUNE 30, 1972 BY R. E. HINDSON B.Sc.

Job No. 1032 - 3

TECK CORPORATION LTD.
FOR
EXEL EXPLORATIONS LTD. (N.P.L.)

JUA CLAIM GROUP

NICOLA MINING DIVISION, B.C.

GEOCHEMICAL SURVEY

COPPER

400 0 400 800 1200 FEET

DRAWN: R.E.H./W.B.	REVISED:	MAP No:
DATE: JUNE 30, 1972		N.T.S 92 I/7W