

CORPORATION FALCONBRIDGE COPPER

MEMORANDUM

DATE: August 22, 1985
À TO: A. J. Davidson
COPIES À TO: D. H. Watkins
DE FROM: L. D. Pirie
SUJET SUBJECT: Property Exam; Genesis Claims, 92I/11, 14

826913

The Genesis claims are located in the Kamloops Mining Division immediately to the west of Cache Creek. They were brought to our attention by Spirex Geoservices Ltd., the owners, along with a short report (NTS file 92I/11,14). The property was located to cover Nicola volcanics along strike and to the north of BP-Selco's Red Hill property where felsic centres in the Nicola host massive sulphide mineralization (e.g. 0.59% Cu, 1.60% Zn, 1.91 g/T Ag, 0.39 g/T Au over 2.58m).

On August 4th, 1985, I visited the property in the company of Ralph Shearing. Our visit confirmed the presence of felsic pyroclastic rocks ranging from crystal tuffs, through lapilli tuffs and lapilli-stones, up to quite coarse fragmentals. Quartz-eyes and feldspar phenocrysts are abundant and minor pyrite is locally present.

Unfortunately our visit also revealed an extreme paucity of outcrop. The few that we found were confined to the northern zone of felsics (see Bedrock Geology map in pocket of their report) and we were unable to find any at all on the rest of the property.

Through conversation with Dave Gamble of BP-Selco I understand that geophysics and surficial deposit geochem are not very effective in this area due to conductive overburden etc, and that geology/lithogeochem are the best tools. Given the almost total lack of outcrop, the Genesis claims would therefore be very tough to explore by a company without prior knowledge of the environment.

There is little doubt that the Nicola volcanics deserve our continued attention as potential massive sulphide hosts. This property should not be dismissed outright but could only be effectively explored by us if we could build up knowledge of the area through a property where outcrop is better, e.g. a JV with Selco or optioning Rea's ground if Selco drop it (a possibility I understand).

la

GEOLOGICAL EVALUATION

OF THE

GENESIS CLAIMS

1 - 20

KAMLOOPS MINING DIVISION

BRITISH COLUMBIA

5 KM WEST OF CACHE CREEK, B.C.

N.T.S. 92I 11 14

LAT. 50° 46° N
LONG. 121° 23° W

BY

J.W. PARDY

JUNE 13 1985

FOR

SPIREX GEOSERVICES LTD.

SEP 16 1985

(VALUES IN %)	AL2O3	BA	CAD	FE2O3	K2O	MNO	MND2	NA2O	PK	SI02	TIO2	ZR
R4	12.52	.046	1.99	2.62	3.01	.74	.09	1.45	.015	69.27	.30	.013
R13	4.94	.005	45.60	3.24	.48	.67	.06	.05	.005	16.58	.30	.005
R18	2.56	.005	49.10	.86	.16	.79	.27	.95	.005	12.01	.05	.005
R21	10.46	.097	.86	3.09	.10	.31	.01	5.86	.005	76.74	.14	.005
R22	11.46	.005	1.45	2.00	.15	1.01	.07	5.61	.006	65.18	.16	.005
R24	19.06	.024	7.05	16.75	1.70	3.57	.05	1.84	.025	47.11	.48	.005
R25	21.17	.045	3.50	14.62	3.14	2.73	.06	4.07	.024	48.56	.53	.005
R26	13.28	.055	2.81	8.83	1.99	2.66	.04	1.86	.013	66.89	.43	.005
R27	12.66	.010	.24	2.82	.40	.52	.05	6.93	.013	68.46	.27	.005
R17	15.50	.069	2.72	5.04	3.51	1.55	.04	3.01	.017	66.46	.56	.005
P9	15.07	.102	2.92	9.00	.81	1.74	.06	4.69	.018	63.29	1.03	.005
P11	.88	.005	.74	7.71	.02	26.21	.17	.03	.025	34.43	.01	.005
P8	10.82	.015	7.87	3.47	.78	1.53	.15	3.81	.007	61.33	.45	.005
PC9	13.29	.005	14.55	8.40	.03	1.01	.20	.05	.011	60.20	.62	.005

*Genesis claims
RN 382*

COMPANY: CBSP-FALCONBRIDGE COPPER

MIN-EN LABS ICP REPORT

(ACT:LI26) PAGE 2 OF 2

PROJECT NO: SPIREX GEDSERVICES

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2

FILE NO: 5-600

ATTENTION: A. DAVIDSON

(604)980-5814 OR (604)988-4524

* TYPE ROCK GEOCHEM *

DATE: SEPT 14, 1985

(VALUES IN %)	CU-PPM	ZN-PPM	AU-PPB
R4	27	35	1
R13	18	46	5
R18	16	90	7
R21	11	13	5
R22	9	37	4
R24	450	34	2
R25	475	27	2
R26	375	23	2
R27	14	33	3
R17	15	48	5
P9	35	67	46
P11	23	15	4
P8	30	71	3
PC9	1750	26	1

→ ~~8/4~~



SPIREX GEOSERVICES LTD.

GEOLOGICAL CONSULTANTS • GEOLOGICAL SERVICES • GEOPHYSICAL SURVEYS

P.O. Box 12137 Nelson Square, 501 - 808 Nelson Street, Vancouver, British Columbia V6Z 2H2
Telephone: (604) 684-7527

July 10 1985

Falconbridge Limited
6415 - 64th Street
Delta, British Columbia
V4K 4E2

Dear Sirs:

Enclosed herewith is a geological evaluation report on the Genesis claims.

This property is available for option under the following terms:

- 1. Down payment of \$10,000 to cover staking costs \$ 10,000
- 2. Three additional payments of \$10,000 every 4 months
for 1 year 30,000
- 3. 15% carried interest

If this property is of interest to your company please contact the writer at the above address.

When you have finished with this report would you be good enough to pass it on to Mr. Alex Davidson of Corporation Falconbridge Copper for his perusal.

Yours very truly

SPIREX GEOSERVICES LTD.

per: *Ralph Shearing*

Ralph Shearing, P. Geol.
President
RS/dld
encls.

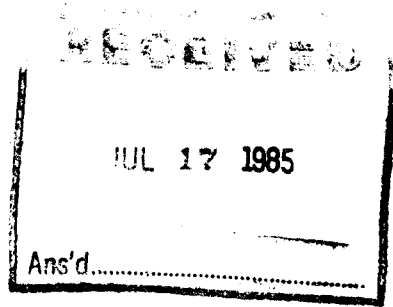
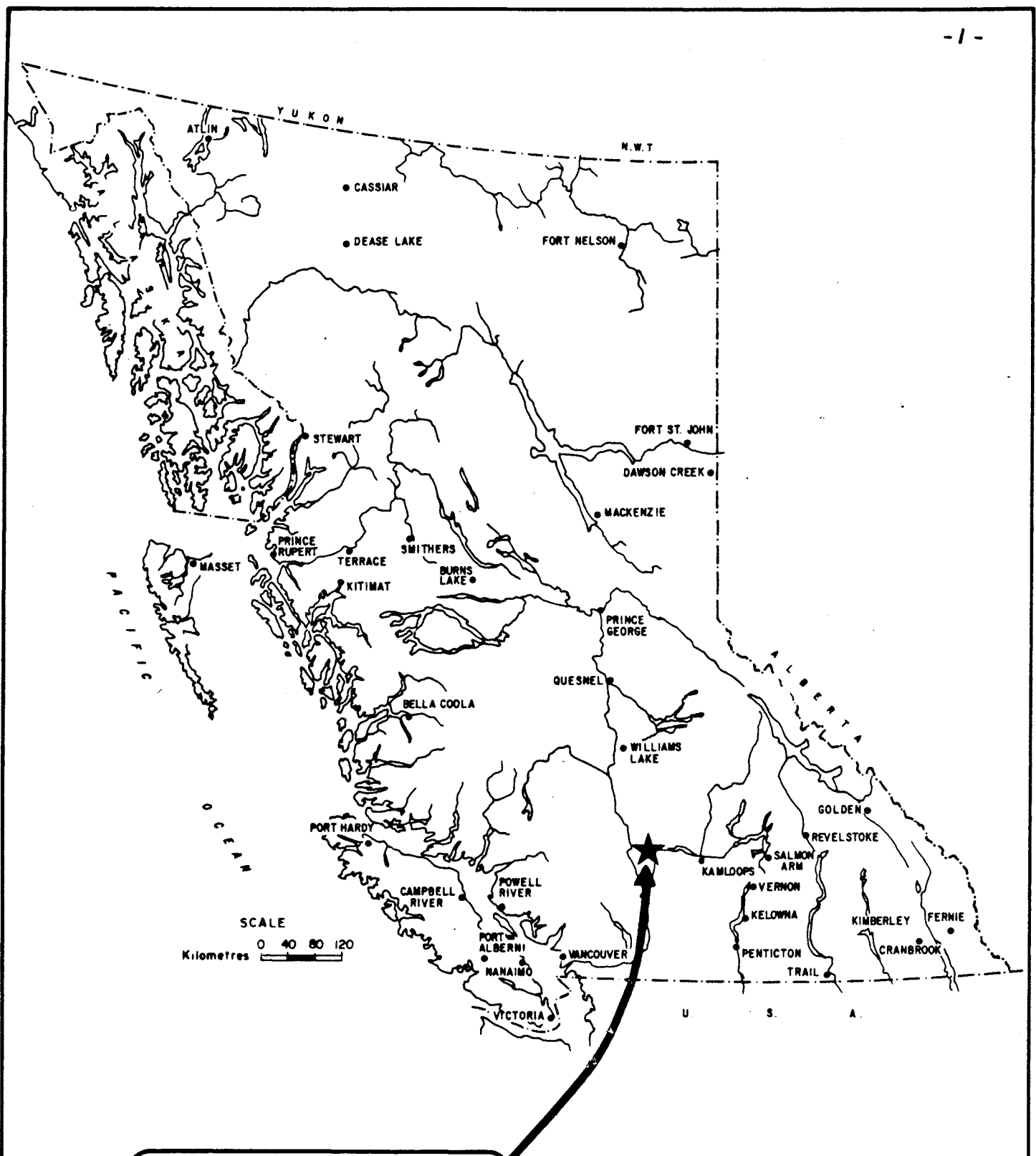


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2. Assessment Report No. 3153, Soil Geochemical Report on McLean Group.	



GENESIS CLAIMS

<i>Spirex Geoservices Ltd.</i>	
GENESIS CLAIMS	
LOCATION MAP	
KILOMETERS 0 100 200 300	
<i>Kamloops Mining Division</i>	
SCALE: 1: 8,000,000	DATE: <i>May 85</i>

SUMMARY AND CONCLUSIONS

The Genesis Claims (281 units) are located in the Kamloops Mining Division in south central British Columbia.

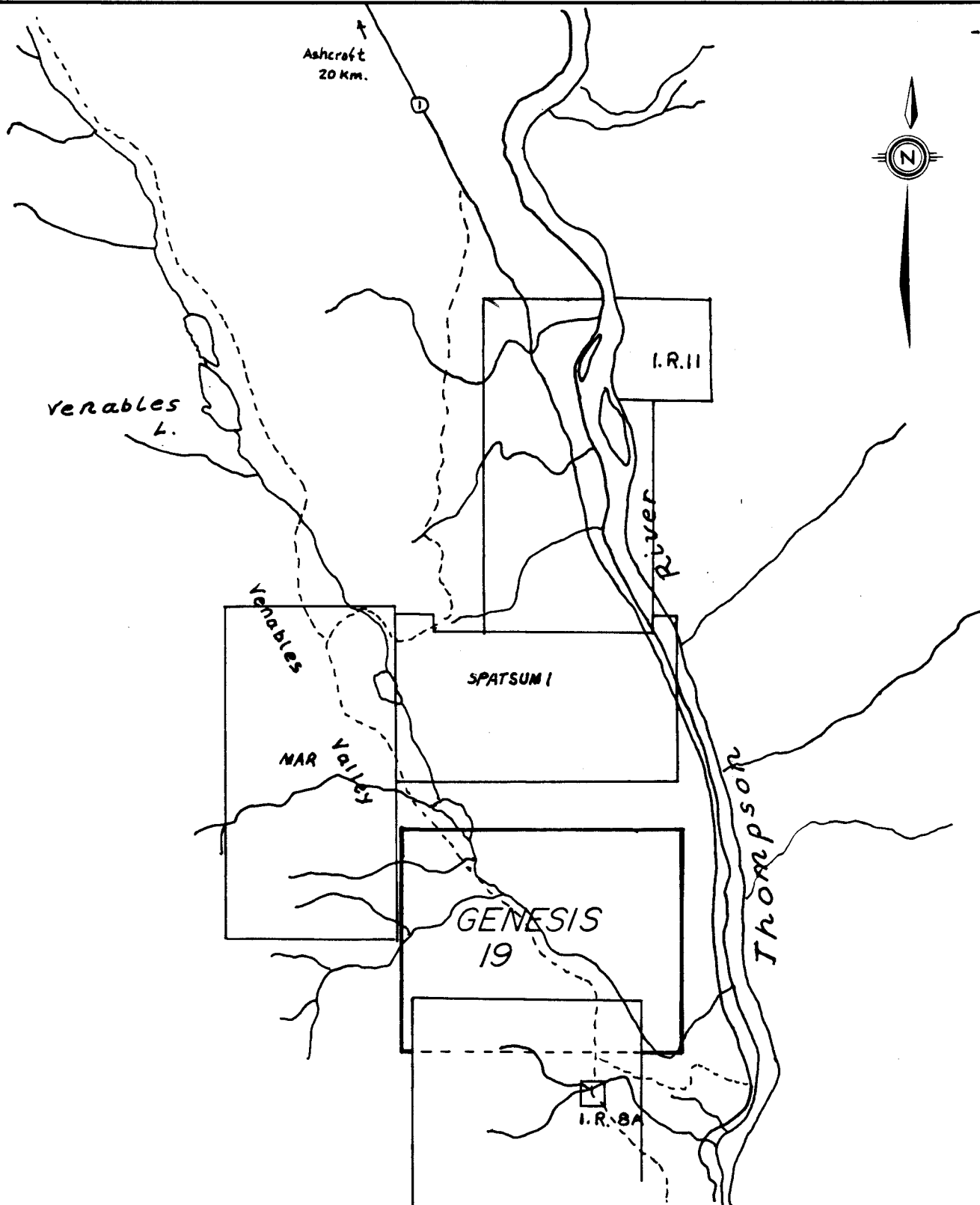
Massive sulphide zones and disseminated pyrite zones occur within acidic volcanic units of the Nicola Group at Red Hill, immediately south of the Genesis Claims. Similar acidic volcanic rocks are shown to occur on the Genesis Property. Previous exploration conducted within the Genesis Property shows soil geochemical anomalies coincident with a package of these acidic Nicola volcanics.

The Genesis Property warrants a thorough program of geological exploration to assess its economic potential.

INTRODUCTION

This report discusses the geology and the exploration potential of the Genesis Claims located in the Kamloops Mining Division in south central British Columbia on N.T.S. maps 92I/11 and 14. The property consists of 17 M.G.S. claims totalling 278 units and 3 two post mineral claims. All claims are contiguous except for Genesis 19 which is approximately 20 km south of the main group of claims. The name and record numbers of the mineral claims are as follows:

<u>Mineral Claim</u>	<u>Recording Date</u>	<u>Record Number</u>	<u>Units</u>
Genesis 1	May 10 1985	6192	12
Genesis 2	May 10 1985	6193	15
Genesis 3	May 10 1985	6194	16
Genesis 4	May 10 1985	6195	16
Genesis 5	May 10 1985	6196	18
Genesis 6	May 10 1985	6197	18
Genesis 7	May 10 1985	6198	20
Genesis 8	May 10 1985	6199	20
Genesis 9	May 10 1985	6200	16
Genesis 10	May 10 1985	6201	16
Genesis 11	May 10 1985	6202	20
Genesis 12	May 10 1985	6203	20
Genesis 13	May 10 1985	6204	9



Spirex Geoservices Ltd.	
GENESIS 19	
CLAIM MAP	
KILOMETERS	
Kamloops Mining Division	
Scale 1:50,000	Date May 85.

Figure 2

Genesis 14	May 10 1985	6205	12
Genesis 15	May 10 1985	6206	18
Genesis 16	May 10 1985	6207	1
Genesis 17	May 10 1985	6208	20
Genesis 18	May 10 1985	6209	1
Genesis 19	May 10 1985	6210	20
Genesis 20	May 10 1985	6211	1

Several of the Genesis claims lie in a Mineral Reserve (Order-In-Council No. 1319) and are subject to surface rights held by B.C. Hydro for the future development of the Hat Creek Coal Fields. Refer to appendix 1 for a lawyer's evaluation and interpretation of this order-in-council.

LOCATION AND ACCESS

All but one of the claims form a belt centered approximately 5 km west of the town of Cache Creek, B.C., extending 8 km north and 12 km south. Access is by way of range roads from Highways No. 1, 91 and 12, see Bedrock Geology/Claim Map (Figure 3).

Genesis 19 lies approximately 12 km north of Spences Bridge just west of Highway No. 1. Access is by way of dirt roads from Highway No. 1, see claim map (Figure 2).

TOPOGRAPHY AND VEGETATION

Relief is gentle to moderate with elevation ranging from 1500 to 4500 feet above sea level. Genesis 19 has moderate to steep topography with cliffs in the northwestern corner.

The vegetation consists of grasslands, sage brush and cactus at lower elevations with increasing amounts of pine and fir at higher elevations. Rock outcrop is limited to slopes and gulleys.

PREVIOUS WORK

The first major survey of the Ashcroft map area was made by S. Duffell and K.C. McTaggart as shown in the G.S.C. Memoir No. 262

(1952). Several studies, (Ladd 1977, 79) and (Travers 1978), were conducted in the late seventies. The second major publication was compiled by J.W.H. Monger, G.S.C. 1980-82, and W.S. McMillan, B.C.M.M.P.R. 1969-75 and 1977-80. The results of this work are presented in the G.S.C. open file 980.

The area was subject to exploration activity in the 1960's and early 1970's by major mining companies and Vancouver juniors. Exploration targets were porphyry copper deposits.

Most of the recent work has been south of Cache Creek near Red Hill. Noranda Exploration Co., Bethlehem Copper Corp. and Guichon Explorco Limited are some of the companies who have worked on the gossan zones at Red Hill. Recent studies by D. Gamble (1980-81) have recognized the potential for volcanogenic stratabound sulphide deposits within the Nicola Group near Red Hill. The Selco Division of B.P. Canada Limited is now actively exploring this area.

Geochemical and geophysical work has been conducted on the ground west of Cache Creek by Vancouver juniors in the early seventies. Results reported included gold, copper, zinc and lead anomalies (assessment reports 3153, 4068 and 9177).

REGIONAL GEOLOGY

The Genesis claims lie within a north-northwest trending belt of Triassic volcanic and sedimentary rocks belonging to the Nicola Group (Figure 3). Rock types include basic to acidic volcanoclastics and flows with intercalated argillite and their metamorphic equivalents. The belt is bounded on the east unconformably by sediments of the Ashcroft Formation, which consists of argillite, siltstone, sandstone and conglomerate. A fault contact with the Permian Cache Creek Complex and with unnamed Cretaceous sediments forms the western boundary of the belt. The Cretaceous sediments consist of conglomerate, sandstone and minor shale with coal horizons. The Cache Creek Complex consists of basalt, pillow basalt, diabase and gabbro intrusions, massive carbonate with argillite and tuffaceous interbeds, (the Marble Canyon Formation), and local basalt and chert sequences with small bodies of ultramafic rock.

PROPERTY GEOLOGY

The Nicola Group on the claims consists of basic to acidic volcanoclastics with intercalated argillite. Packages of acidic flows and volcanoclastic rocks are located in Genesis 11,13,15 and in Genesis 2,3,4,5,6 and 7. A small block of Nicola carbonate is located in Genesis 12. An intrusive, which is likely genetically related to the Nicola volcanics, occurs in Genesis 2 and 4.

The Genesis 19 claim is underlain by Nicola Group volcanics, the Ashcroft Formation and the melange sequence of the Cache Creek Complex. Gossan zones were observed during the staking of this property.

DISCUSSION

The Nicola Group volcanic rocks, particularly the acidic volcanic rocks, have the potential of hosting stratabound sulphide deposits as evidenced by past work and current drilling activity by the Selco Division of B.P. Canada Limited. Diamond drilling by Selco in 1984 intersected disseminated pyrite zones in felsic volcanic units and massive pyrite-pyrrhotite layers. One 2.58 m thick section assayed an average of .59% Cu, 1.60% Zn, 1.91 grams Ag/tonne and 0.39 grams Au/tonne (Rea Gold Corporation - News Release 1984).

Similar acidic volcanic rocks are shown to occur on the Genesis claims (G.S.C. Open File 980).

Previous exploration within the Genesis property shows interesting and encouraging geochemical anomalies in soils. In 1971 Adera Mining Limited conducted a geochemical soil sampling program on their McLean claim group. This survey delineated a Zn anomaly over 600 m in length (Appendix 2). This strong Zn soil geochemical anomaly is supported by a weak Pb response. A data compilation shows this anomaly to be located on the Genesis 11 within a large, 4 x 1 kilometer, wedge of acidic volcanoclastic rocks. This area provides an interesting exploration target which has the potential of hosting stratabound massive sulphide deposits.

Another large package of acidic volcanoclastics and flows occurs within the Genesis 2,3,4,5,6, and 7. Previous exploration in this area has either not been reported or not performed. This rock package is shown to be approximately 8 kilometers long in a north-northwest direction and ranges from 1-2 km in width. This belt of rocks also provides an excellent exploration target.

CONCLUSIONS

Massive sulphide zones and disseminated pyrite zones occur within acidic volcanic units of the Nicola Group at Red Hill immediately south of the Genesis claims.

An earlier geochemical survey conducted within the Genesis 11 claim shows a strong Zn anomaly in soils. This area is underlain by acidic volcanic rocks.

The Genesis claims have not received a comprehensive exploration program in the past. The Nicola volcanics which underlies the property are considered to have excellent potential for hosting massive sulphide deposits in a volcanogenic environment. These claims warrant a thorough program of geological exploration.

LIST OF REFERENCES

Monger, J.W.H. and
McMillan, W.J. (1983)

"Bedrock Geology of Ashcroft
(92 I) Map Area"
G.S.C. O.F. 980

Duffell, S. and
McTaggart, K.C. (1952)

"Ashcroft Map - Area, British
Columbia"
G.S.C. Memior No. 262

Kamloops Mining Division
Assessment Report

#8892 - Guichon Explorco Limited
#9415 - Explorco Limited
#3153 - Adera Mining Limited
#4068 - Milestone Mines Ltd.
(N.P.L.)
#9177 - Cominco Ltd.

A P P E N D I X 1

HANNA, FORTH & SCOTT
BARRISTERS & SOLICITORS

720-999 W. Hastings Street
Vancouver, British Columbia
Canada V6C 2W2
Telephone (604) 669-1103
Telex 04-51161 (HFS VCR)
Telecopier (604) 683-4921

May 1, 1985

Spirex Geoservices Ltd.
P.O. Box 12137, Nelson Square
Suite 501, 808 Nelson Street
Vancouver, B.C.
V6Z 2H2

Attention: Ralph Shearing

Dear Ralph:

Re: Order-in-Council No. 1319

We have reviewed the Order-in-Council and have the following comments:

1. The acquisition by location of any mineral claim or placer lease is permitted within the area. However, if B.C. Hydro establishes a right-of-way or builds any buildings within the area, the holder of the mineral claim or lease cannot use the surface occupied by such right-of-way or structure. Section 10 of the Mineral Act entitles the holder of a mineral claim to use and possess the surface for the purpose of exploring for, developing, and producing minerals, and so the Order-in-Council effectively removes some of the rights which a mineral claim holder normally has. From a practical point of view, the Order-in-Council has the biggest impact on owners of placer leases. This is because the use of the surface is an integral part of a placer operation and also because placer operations normally take place in valleys, and valleys are the usual routes for rights-of-way. For the mineral claim holder, the Order-in-Council would only provide a limitation where a large, open-pit deposit had been outlined, and even then, I would think that arrangements can be made with B.C. Hydro for a re-positioning of the right-of-way.

Spirex Geoservices Ltd.
May 1, 1985
Page 2

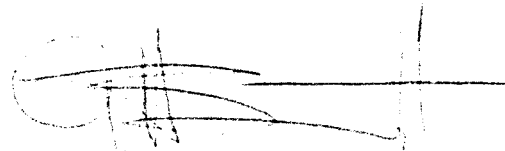
2. The Order-in-Council also absolves B.C. Hydro of any liability for damages caused by the construction, operation or maintenance of any works within the reserve. This means that if one were to discover a large, open-pit deposit, and if the right-of-way or structure had to be built over the deposit, the holder would not be able to sue B.C. Hydro for the loss of profits resulting from the portion of the ore body which could not thereby be mined.

By way of general comments, we would add that the Chief Gold Commissioner is now conducting a review of all mineral reserves in the province with a view to eliminating a great number of them. In the case of Hat Creek, although we would doubt that the mineral reserve would be removed, current estimates are that the Hat Creek deposit will not be developed for a long time to come. The reserve was established in the so-called "energy crisis" of the mid-1970's and was a reaction to the perceived market projections at that time. Those projections have since been substantially reduced. In addition, B.C. Hydro is a Crown corporation and is therefore responsive to the provincial government. The provincial government, in turn, advocates the so-called "multiple use" concept and therefore will do whatever it thinks is appropriate to allow the area to be used for both mineral development for metals and also for development of the coal field.

It is our view, therefore, that the Order-in-Council does not appear to pose a serious restriction on the exploration, development and production of located mineral claims within the area.

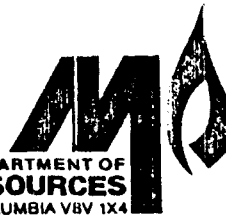
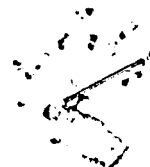
If you have any questions in connection with the foregoing, kindly telephone the undersigned.

Yours truly,



Graham H. Scott

GHS:ecs



THE DEPARTMENT OF
MINES AND PETROLEUM RESOURCES
PARLIAMENT BUILDINGS, VICTORIA, BRITISH COLUMBIA V8V 1X4

WHEN REPLYING PLEASE REFER TO

FILE NO. **113(433)**.....

MINERAL RESOURCES BRANCH

April 28, 1977

471

Mr. D. Doyle
Mining Recorder
320 - 890 West Pender Street
Vancouver, British Columbia
V6C 1J9

DEPT. OF MINES AND PETROLEUM RESOURCES	
Rec'd MAY 2 1977	
SUBJECT	_____
FILE	_____
VANCOUVER, B. C.	

Dear Sir:

Re: Order-in-Council No. 1319

Enclosed for your information is a copy of Order-in-Council No. 1319, approved April 21, 1977, which establishes a reserve as requested by B.C. Hydro & Power Authority for B.C. Hydro facilities, such as roads, pipelines, hydro transmission lines, for their proposed Hat Creek coal operation.

Also enclosed is a sketch showing the location of the reserve.

92 I 11E4W
12E
13E
14E4W

Yours very truly,

O/C # 1319 - APRIL 21/77



1319

APPROVED AND ORDERED 21. APR. 1977

W. S. Quinn

Lieutenant-Governor

EXECUTIVE COUNCIL CHAMBERS, VICTORIA 21. APR. 1977

RM Pursuant to the Mineral Act and Placer Mining Act, and upon the recommendation of the undersigned, the Lieutenant-Governor, by and with the advice and consent of the Executive Council,

orders that no person may locate or mine or develop or produce minerals or stake or acquire a location on any of the lands within the area described in Schedule "A" attached hereto and made a part hereof, which lands are situated in the Kamloops Mining Division, Kamloops Division of Yale Land District, and are hereby designated as placer reserves under the Placer Mining Act, except in accordance with and subject to the following terms and conditions:

1. No holder of a mineral claim or lease issued under the Mineral and Placer Mining Acts that may hereafter be located within the area outlined above, shall be entitled to any surface rights in and along the right-of-way of any road, railway bed, power line, pipeline or the site of a structure of any kind whatsoever, which may come into existence on the said mineral claim or lease as a result of the building of the road, railway bed, power line, pipeline, or structure of any kind by British Columbia Hydro and Power Authority.
2. No holder of a mineral claim or lease issued under the Mineral and Placer Mining Acts that may hereafter be located within the area outlined above or any person exploring, developing, mining or working in any way the said mineral claim or lease shall be entitled to any claim for damage which may be caused by any construction, operation and maintenance of a railway bed, road, power line, or pipeline or structure of any kind whatsoever, which may come into existence on the said mineral claim or lease as a result of the building of the road, railway bed, power line, pipeline, or a structure of any kind whatsoever, by British Columbia Hydro and Power Authority.
3. Upon the expiry of any mineral claim or lease which lies within the area outlined above, the lands covered by any such mineral claim or lease shall become and are hereby constituted a reservation under the terms of this Order.

Don J. Thibault
Minister of Mines and Petroleum Resources

W. R. Bennett
Presiding Member of the Executive Council

FILED

APR 26 1977

B.C. REG. No. 153/77

Schedule "A"

Which forms part of Order in Council No.

- (a) Commencing at the north-west corner of I.R. No. 2 "Lower Hat Creek"; thence southerly and easterly along the westerly and southerly boundaries of said I.R. No. 2 to the most south-easterly corner thereof; thence southeasterly 8080 metres more or less in a straight line to the north-west corner of Section 20, TP 21, R 25, W6M; thence easterly along the northerly boundaries of Sections 20, 21 and 22 of TP 21, R 25, W6M, to the north-west corner of Section 23, TP 21, R 25, W6M; thence southerly along the westerly boundary of Section 23, TP 21, R 25, W6M, to the north-west corner of the south half of Section 23, TP 21, R 25, W6M; thence easterly along the northerly boundaries of the south half of Sections 23 and 24, TP 21, R 25, W6M, to the westerly boundary of L 103, Group 2; thence southeasterly along the westerly boundary of said Lot 103, Group 2 to the most southerly corner thereof; thence south-easterly 1650 metres more or less in a straight line to the north-west corner of the south half of Section 17, TP 21, R 24, W6M; thence easterly along the northerly boundaries of the south half of Sections 17 and 16, TP 21, R 24, W6M, to the north-east corner of the south half of Section 16, TP 21, R 24, W6M; thence southerly along the easterly boundaries of Sections 16 and 9, TP 21, R 24, W6M to the northwest corner of Section 3, TP 21, R 24, W6M; thence easterly and southerly along the northerly and easterly boundaries of the said Section 3 to the natural boundary of the right bank of the Thompson River; thence due South 900 metres more or less to the westerly boundary of the Canadian Pacific Railway (3T 196Rly); thence southerly along the said westerly boundary of the Canadian Pacific Railway to a point due east of the south-east corner of Lot 376; thence due West 400 metres more or less to the said south-east corner of L. 376; thence N 38° W 12, 190 metres; thence westerly 7315 metres more or less to the south-east corner of the south-west quarter of Section 3, TP 21, R 26, W6M; thence southerly along the easterly boundaries of the west half of Sections 34, 27, 22 and 15, TP 20, R 26, W6M to the south-east corner of the west half of Section 15, TP 20, R 26, W6M; thence ~~Westerly~~ along the southerly boundary of said Section 15 to the south-east corner of Section 16, TP 20, R 26, W6M; thence northerly along the easterly boundaries of Sections 16, 21, 28, 33, TP 20, R 26, W6M and Sections 4, 9, 16, 21, TP 21, R 26, W6M to the north-east corner of Section 21, TP 21, R 26, W6M; thence westerly along the northerly boundaries of Sections 21 and 20, TP 21, R 26, W6M to the easterly boundary of I.R. 1 "Upper Hat Creek"; thence northerly, easterly and westerly along the easterly, southerly and northerly boundaries of I.R. 1 "Upper Hat Creek" to the most northerly north-west corner thereof; thence north-easterly 6890 metres more or less in a straight line to the north-west corner of I.R. No. 2 "Lower Hat Creek", being the point of commencement.
- (b) The west half of Section 27, TP 19, R 26, W6M.

SEE O/C #2071

A P P E N D I X 2

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ATTACHMENTS

1. Property and Location Map face plate
2. Copper Soil Geochemical Map, 1"=400', pocket
3. Zinc Soil Geochemical Map, 1"=400', pocket
4. Lead Soil Geochemical Map, 1"=400', pocket
5. Ground Magnetics 1"=400'

3153

SOIL GEOCHEMICAL REPORT

on

McLEAN GROUP

McLean 1, 3, 5, 7, 9, 11, 13
McLean 15-24, 26 FR.

3 1/2 mi West of Cache Creek, B.C.

Lat. 50° 49' N
Long. 121° 24' W 92 T / 14 W

by

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 3153 MAP

Charles A.R. Lennie, P. Eng.

July 21, 1971

for

Adara Mining Limited

SOIL GEOCHEMICAL REPORT

McLEAN GROUP 92 I 14 W

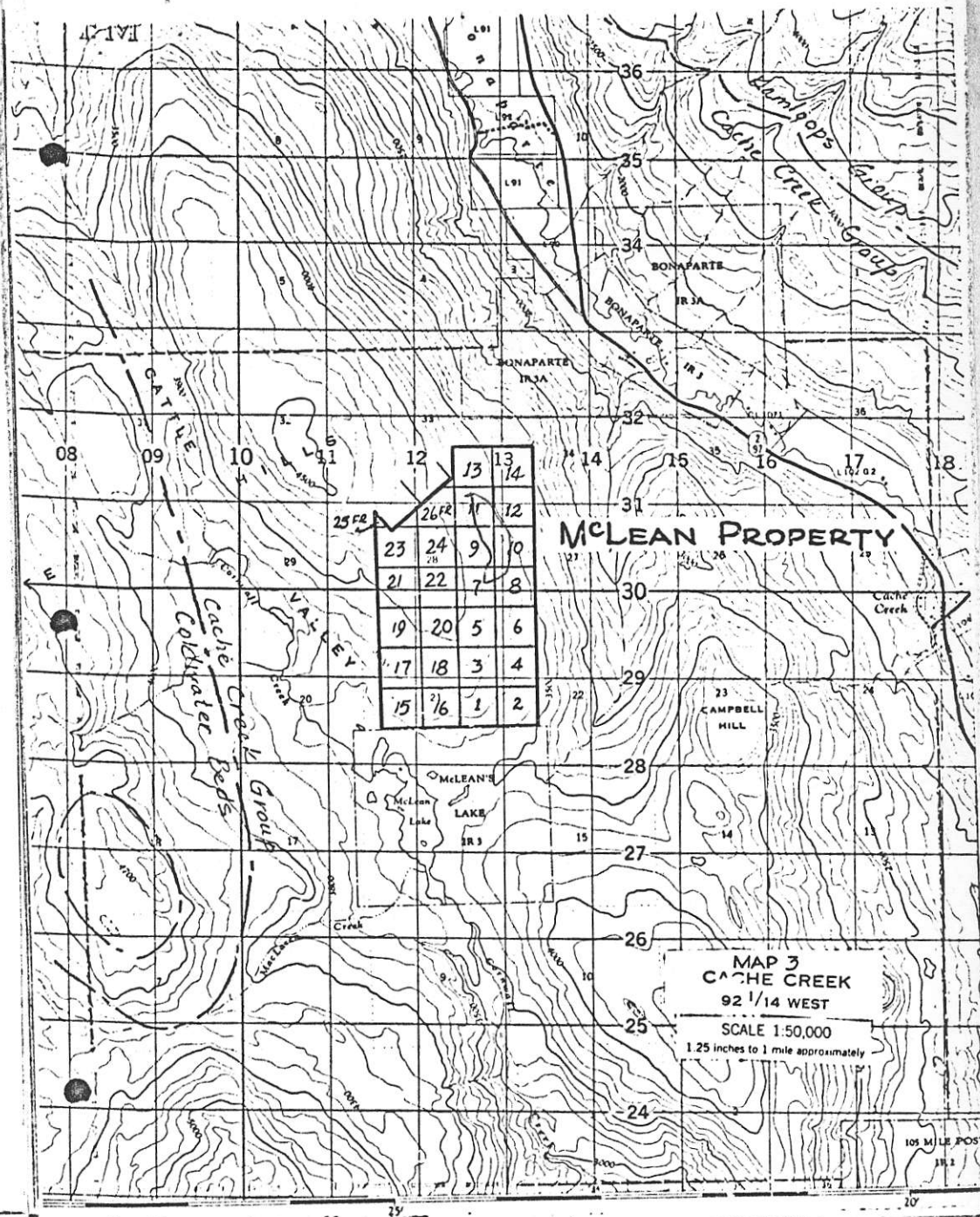
INTRODUCTION

During early July, 1971 (July 7-13), an exploratory program of geochemical sampling was carried out on the McLean Group of Mineral Claims, 3½ miles west of Cache Creek, B.C., owned by Adera Mining Limited, Vancouver. The sampling carried out by Impact Enterprises Limited, Vancouver, entailed setting out chained and compassed lines and the collection of some 500 soil samples from 200' stations along 25 lines separated by 400' intervals. Some 19.1 miles of line, including base line, were sampled in this fashion. Analytical work for Cu, Zn and Pb was done by Barringer Research Ltd., Vancouver. In addition to outlining the usual introductory material, this report will describe the sampling procedure, the soils, the analytical methods used, the results, and will offer interpretations and conclusions. The attached maps show the sample locations and their analyses.

PROPERTY (Location Map)

As staked, the property consisted of McLean 1-24 and McLean 25-26 FR. However, on preliminary boundary survey, it was found that McLean 2, 4, 6, 8, 10, 12, 14 and McLean 25 FR overstaked pre-existing claims and were not valid. Pertinent details regarding the claims follows:

<u>Claim</u>	<u>Record</u>	<u>Anniversary</u>
McLean 1,3,5,7,9,11,13	96555, 57, 59, 61, 63, 65, 67	April 26, 1972
McLean 15-24	96569-96578	April 26, 1972
McLean 25 FR.	96579	April 26, 1972



These are arranged in a contiguous northerly elongate block and may be reached by old logging roads that join B.C. Highway 97 at a point on Indian Reserve 3A, 3 miles northwest of the community of Cache Creek, B.C.

The area of the claims is the gentle easterly and southerly slopes of a broad ridge, between elevations 3,000 and 4,300'. The southern portion of the property is alpine meadow on drumlinized terrain, the remaining portion is forested.

SOIL CHARACTER AND SAMPLING TECHNIQUE

For the most part, soils on the property have developed by podzolization of glacial drift. The soil profile is nowhere well developed. On the meadows the A horizon is generally 3-6" deep, but locally in the troughs between drumlins or in the hollows of meltwater channels this humus horizon is greater than 12" deep. In the forest the A horizon is generally 2-4" deep. The B horizon is tan or brown coloured, and consists of sandy and gravelly clay. Wherever possible the horizon sampled was below the A horizon, within the top few inches of the B horizon. Accordingly sampling depths were generally between 6 and 10".

All samples were taken by hand from mattock holes, placed in water resistant craft paper envelopes appropriately labelled and forwarded for Cu, Zn and Pb analyses to Barringer Research Ltd., Vancouver.

The samples were taken by myself and R.W. Thompson.

ANALYTICAL PROCEDURE

Upon arrival at the laboratory the samples were dried in a warm air dryer, then screened on 80 mesh stainless steel. One-quarter gram portions of the undersize material were then digested in perchloric

acid and later diluted with demineralized water. Copper, zinc and lead concentrations were determined by conventional atomic absorption spectrophotometer techniques.

RESULTS

The results of the survey are shown on Maps 2, 3, and 4 (pocket) on which sample locations and their respective metal contents are depicted.

Copper content in the soils on McLean Claims, as shown on Map 2, range generally from 30-60 ppm. This is considered as normal background copper for the area.

General background zinc concentrations for the area (Map 4) range between 60 and 140 ppm. A strong zinc soil anomaly is present on parts of McLean claims 9, 7 and 24. General background lead concentrations for the area (Map 3) range between 20 and 40 ppm. The zinc anomaly on McLean claims 9, 7 and 24 is weakly supported by local lead concentrations up to 68 ppm.

The area of the zinc anomaly was checked by geological and magnetometer traverses. Two mylonitized outcrops of sedimentary Cache Creek (siltstones?) vaguely define a shear zone trending northwest across the southwest corner of McLean 9. Magnetic traverses ~~across~~ (McPhar M700 vertical field flux gate with sensitivity of 20 gamma per scale division) show no magnetic response in the area of the anomaly (Map 5).

CONCLUSIONS

A strong zinc anomaly weakly supported by lead in soils occurs on portions of McLean claims 9, 7 and 24. It is probable that the source

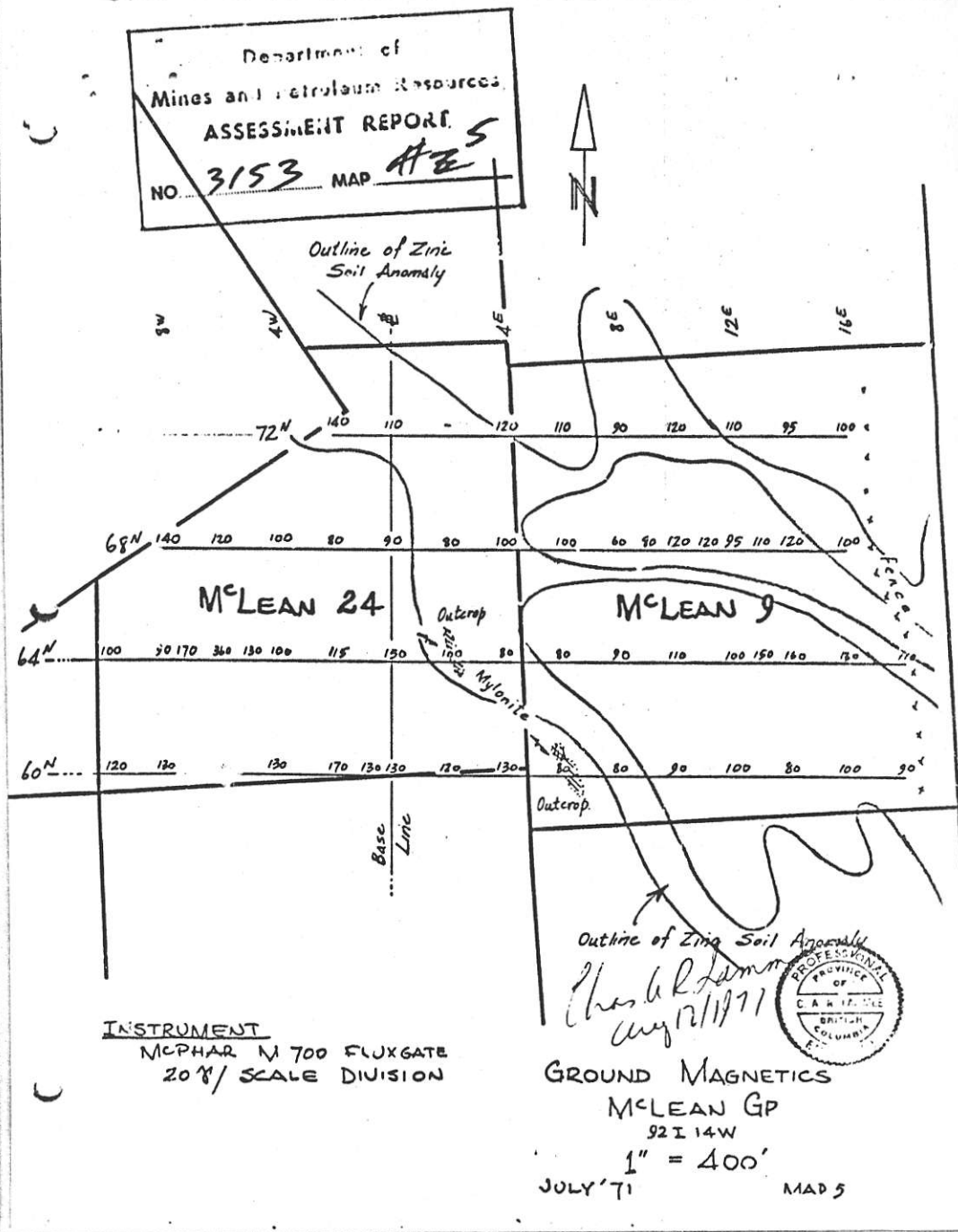
of these metals is a Zn-Pb deposit related to the mylonitized shear zone trending northwest and dipping southeast across the southwest corner of McLean 9.

Additional work in the form of closer spaced, detailed geochemistry and bulldozing would be the most expedient way to delimit and expose the suspected Zn-Pb mineralization.

Respectfully submitted:

Charles A.R. Lammie

Charles A.R. Lammie, P. Eng.

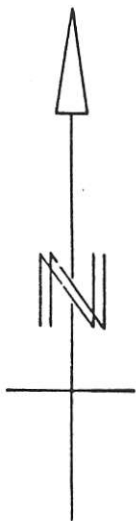


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ASSESSMENT REPORT

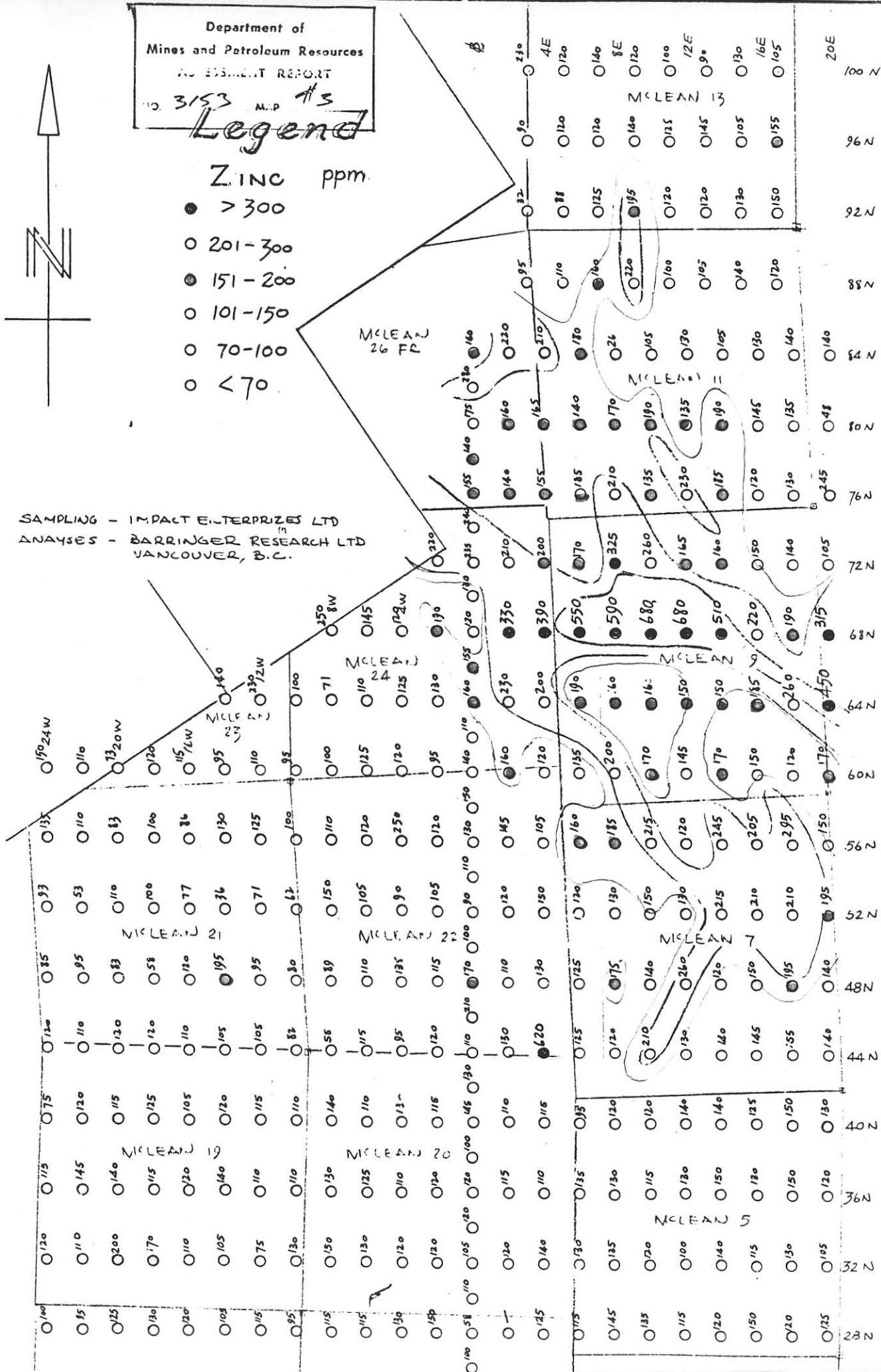
3153 M.P. #5
Legend

ZINC ppm.

- > 300
- 201-300
- 151-200
- 101-150
- 70-100
- < 70



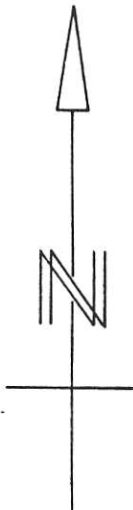
SAMPLING - IMPACT ENTERPRISES LTD
ANALYSES - BARRINGER RESEARCH LTD
VANCOUVER, B.C.



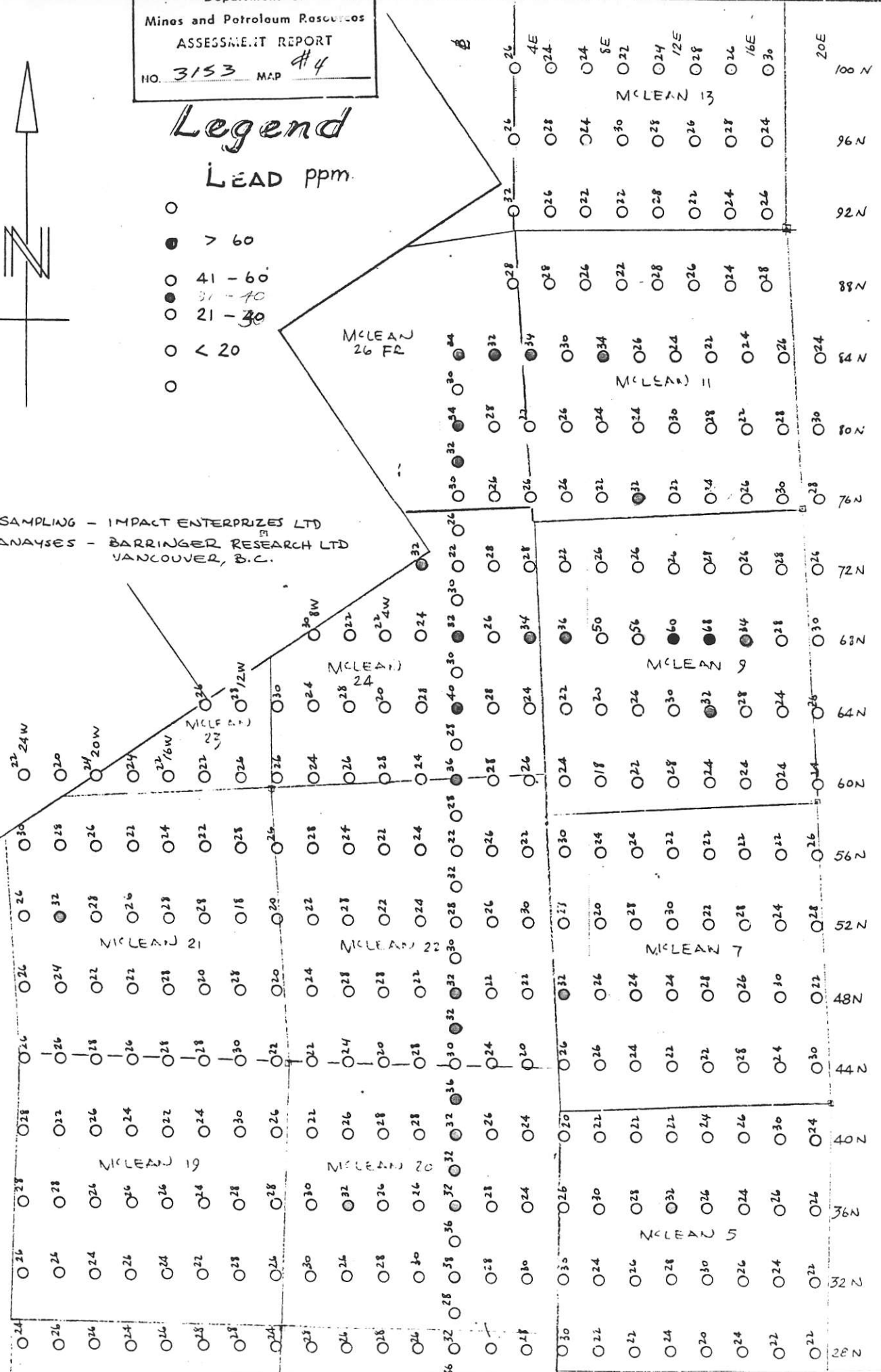
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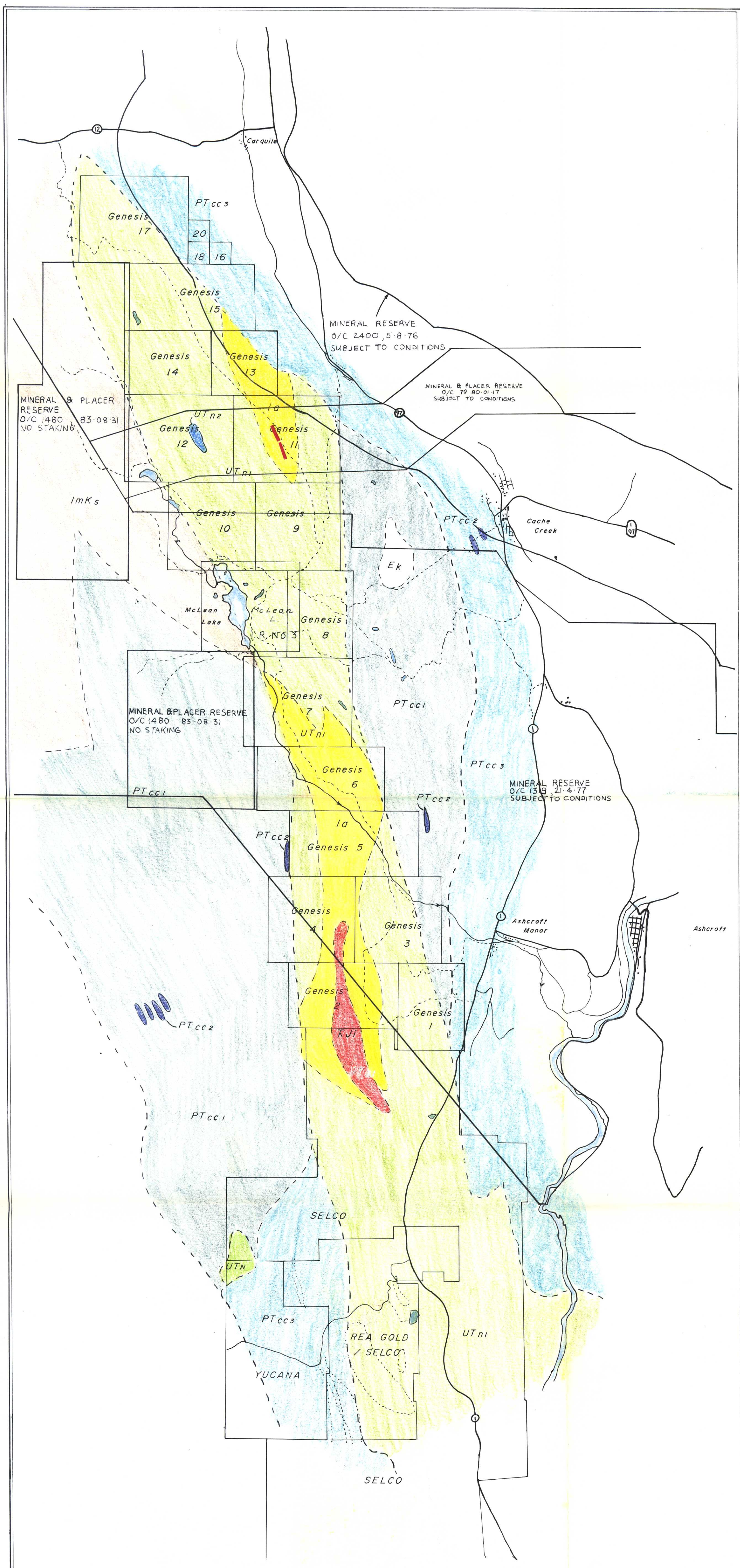
LEAD ppm.

- < 20
- 21 - 30
- 31 - 40
- 41 - 60
- > 60



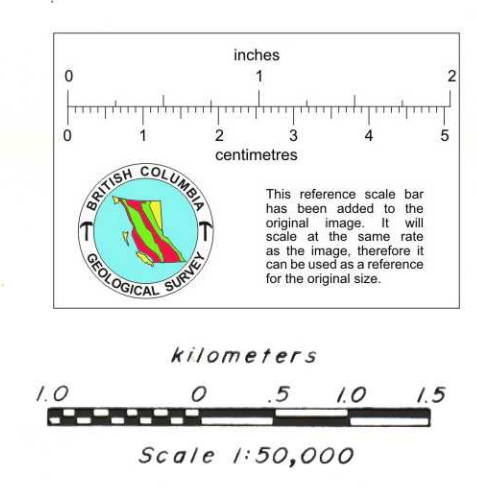
SAMPLING - IMPACT ENTERPRISES LTD
ANALYSES - BARRINGER RESEARCH LTD
VANCOUVER, B.C.





LEGEND

- Eocene**
- Ek** Kamloops Group: basalt, andesite, dacite, rhyolite, breccia, tuff and local intercalated sandstone; conglomerate, shale.
- Cretaceous**
- ImKs** Conglomerate and sandstone, derived in large part from chert-rich source terranes, minor shale with coal horizons.
- Triassic**
- UTni** Nicola Group: basic to acidic, mainly volcanoclastic and intercalated argillite; **1a**, acid flows and volcanoclastics, local schistose equivalents; **1b2** Nicola carbonate
- TJI** undifferentiated intrusives
- Pennsylvanian to Triassic**
- PTcc1** Cache Creek Complex: basalt, pillow basalt, diabase, gabbro.
- PTcc2** Cache Creek Complex: ultramafic, mainly serpentinite, local gabbro.
- PTcc3** Cache Creek Complex: melange; radiolarian chert, chert-argillite matrix containing probably olistostromal limestone, chert, greenstone and ultramafic blocks and locally, acid volcanic blocks.
- geologic boundary
- roads; paved, dirt
- Zn soil geochemical anomaly
- Geology after G.S.C. O.F. 980



BEDROCK GEOLOGY / CLAIM MAP

GENESIS CLAIMS

KAMLOOPS MINING DIVISION

NTS: 921/11,14

May 1985. Figure 3

SPIREX GEOSERVICES LTD.