

180 - #356 - #8102

NORCEN ENERGY RESOURCES LIMITED
ASSESSMENT REPORT
GEOCHEMICAL AND GEOLOGICAL PROGRAM
GROUP XI (COG 6 - S1)

GOLDEN MINING DIVISION,
BRITISH COLUMBIA

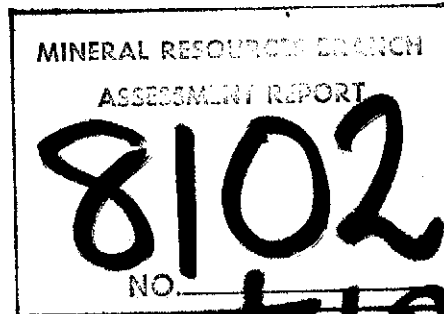
Claims: COG 6 (325)
S1 (335)

Location: 40 km South of Golden, British Columbia

Latitude: 50°55'N

Longitude: 116°57'W

Owner and Operator: Norcen Energy Resources Limited
August 18 and 22, 1979



June 9, 1980

[Handwritten signature]
L. Smith, P.Geol.

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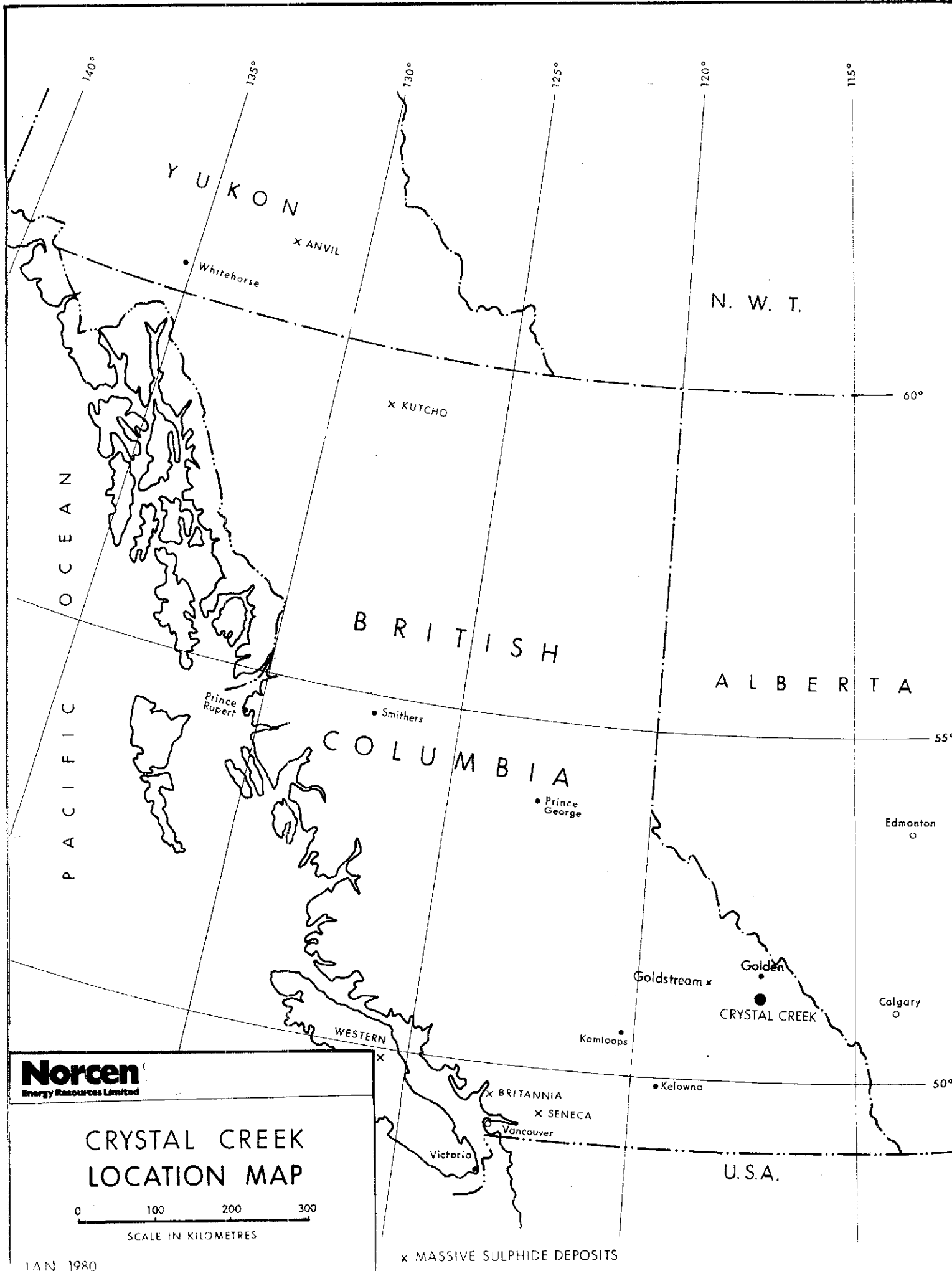
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APPENDIX I

Geochemical Assay Certificates

MAPS

1. Land Holdings Map; Crystal Creek Project, British Columbia, (Two Copies).
2. Regional Geology, Crystal Creek Project, British Columbia.
3. Regional Soil Geochemical Map, Crystal Creek Project, British Columbia.



Norcen
Energy Resources Limited



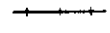


CRYSTAL CREEK LOCATION MAP

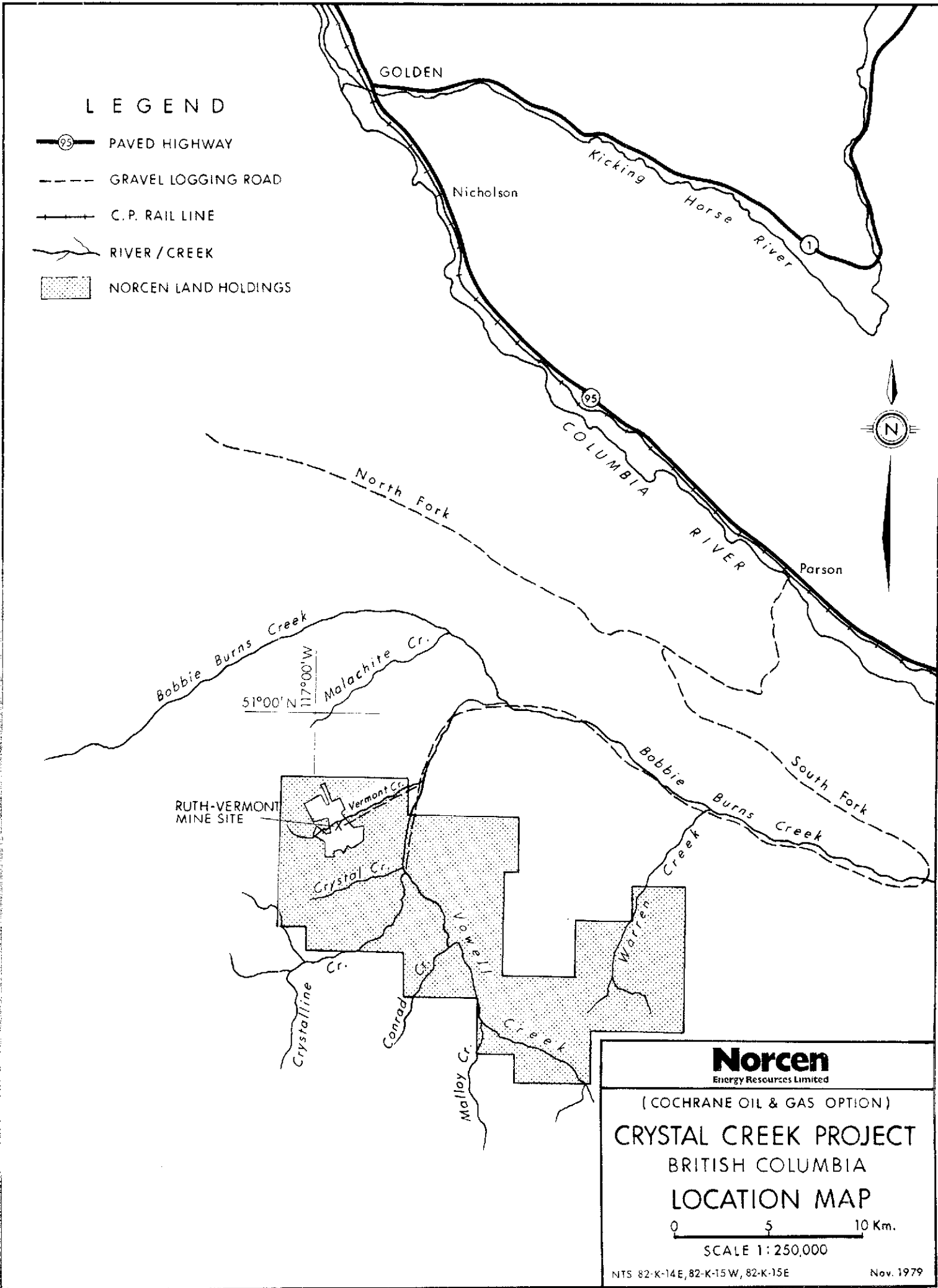


x MASSIVE SULPHIDE DEPOSITS

JAN 1980

L E G E N D

-  PAVED HIGHWAY
-  GRAVEL LOGGING ROAD
-  C. P. RAIL LINE
-  RIVER / CREEK
-  NORCEN LAND HOLDINGS



Norcen
Energy Resources Limited

(COCHRANE OIL & GAS OPTION)
CRYSTAL CREEK PROJECT
BRITISH COLUMBIA
LOCATION MAP

0 5 10 Km.

SCALE 1:250,000

NTS 82-K-14E, 82-K-15W, 82-K-15E

Nov. 1979

SUMMARY

Regional geological mapping and soil geochemical sampling was performed within the boundaries of Group XI (COG 6 - S1) on August 18 and 22, 1979. A total of twenty-three (23) B horizon soil samples were collected and geochemically analysed in parts per million for copper, lead, zinc and silver. All bedrock outcrops noted during the geochemical sampling were geologically mapped and are presented at the same scale as the soil geochemical data.

LOCATION AND ACCESS (See Land Holdings Maps, Crystal Creek Project, British Columbia)

The claims are located in the Purcell Mountains approximately 40 kilometres south of Golden, British Columbia. Access is provided by Provincial Highway 95 south from Golden to Parson, followed by 51 kilometres along a gravelled logging road along Vowell Creek.

CLAIM STATUS

The COG 6 and S1 claims form part of the Crystal Creek Property. The COG 6 and S1 claims have been grouped into Group XI (COG 6 - S1).

<u>Claim Name</u>	<u>Record Number</u>	<u>Recorded Date</u>	<u>Unit Dimensions</u>	<u>No. of Units</u>
COG 6	325	June 18, 1979	5N X 4E	20
S1	335	June 18, 1979	4E X 5N	20

GEOCHEMICAL SOIL SAMPLING

A total of twenty-three (23) B horizon soil samples were collected within the boundaries of claims COG 6 and S1. All samples were sent to Loring Laboratories Limited of 629 Beaverdam Road, N.E., Calgary, Alberta and geochemically analysed in parts per million by atomic absorption.

Previous soil geochemical sampling in the area had shown that anomalous base metal B horizon soil samples reflected close proximity to bedrock base metal mineralization. Based upon the statistical analysis of two hundred and five (205) B horizon soil samples collected in the region over Norcen Energy Resources Limited claim blocks anomalous values are defined by values in excess of: 32 ppm lead, 108 ppm zinc, 0.9 ppm silver, and 38 ppm copper.

Three anomalous samples were collected during the 1979 geochemical sampling from the COG 6 and S1 claims. These are:

<u>Sample No.</u>	<u>ppm Pb</u>	<u>ppm Zn</u>	<u>ppm Ag</u>	<u>ppm Cu</u>
MA-18-5	27	105	0.6	*42
MA-22-2	*33	82	0.6	34
MA-23-2	20	41	*1.0	19

* anomalous geochemical values

GEOLOGICAL MAPPING

All bedrock exposures encountered during the geochemical soil sampling program were investigated and geologically mapped. The rock types encountered included phyllites, arkoses, and coarser grained grits of the Horse Thief Creek Series of Proterozoic age. No economic base metal mineralization was located during the regional geological mapping.

STATEMENT OF QUALIFICATIONS

I, Laurie James Smith, of the City of Calgary in the Province of Alberta, do hereby state:

1. I am a graduate of the University of Calgary with a BSc degree in Geology.
2. I have been involved in all phases of geological exploration in many areas of Canada (British Columbia, Alberta, Saskatchewan, Northwest Territories, Ontario, Quebec, Nova Scotia, and New Brunswick) since graduation.
3. I personally supervised the geochemical soil sampling and geological mapping on Group XI (COG 6 - S1).
4. I am a member of the Association of Professional Engineers, Geologists, and Geophysicists of Alberta.
5. I am the holder of valid Free Miners Licence Number 197331.

Laurie J. Smith

ITEMIZED COST STATEMENT

A.	Geochemical Sampling and Geological Mapping	
	L. Smith, Supervision (August 22, 1979)	
	L. Smith, Report Writing (June 5, 1980)	
	1 day @\$125/day	\$ 125.00
	1 day @\$175/day	175.00
	M. Anderson - Geologist (August 18 and 22, 1979)	
	G. Wilson - Geologist (August 22, 1979)	
	3 days @\$90/day	270.00
	R. Kostiuik - Geochemical Sampler (August 18 and 22, 1979)	
	D. Desjardins - Geochemical Sampler (August 22, 1979)	
	3 days @\$75/day	225.00
B.	Transport	
	4 Wheel Drive Vehicle Rental	
	\$30.00/day X 3 days	90.00
	Fuel for Vehicle \$5.00/day X 3 days	15.00
C.	Accommodation and Meals	
	7 man days X \$25/day	175.00
D.	Assaying	
	23 Geochemical Assays @\$5/sample	<u>115.00</u>
		\$1 190.00

APPENDIX I

Geochemical Assay Certificates

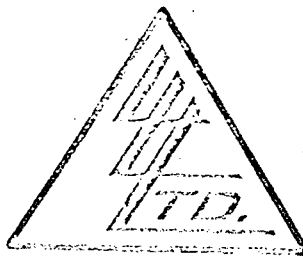
NORCEN ENERGY RESOURCES LIMITED

715 - 5th Avenue S.W.

Calgary, Alberta

T2P 2X7

ATTN: L. J. Smith



File No. 17658

Date Sept. 4, 1979

Samples Lake Sediment

Certificate of
ASSAY OF

LORING LABORATORIES LTD.

Page 2

SAMPLE No.	PPM Cu	PPM Pb	PPM Zn	PPM Ag
MA-A				
18/3	15	19	75	0.5
18/4	25	20	44	0.2
18/5	42	27	105	0.6
18/6	17	23	95	0.6
18/7	20	21	77	0.3
18/8	19	15	81	0.5
18/9	20	21	79	0.6

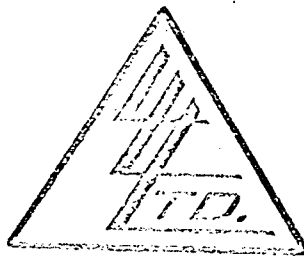
I Heroby Certify THAT THE ABOVE RESULTS ARE THOSE
ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES

Sets Retained one month.
Copies Retained one month
as specific arrangements
made in advance.

L. M. J. Mac

Licensed Assayer of British Columbia

NORGEN ENERGY RESOURCES LIMITED
 715 - 5th Avenue S.W.
 Calgary, Alberta
 T2P 2X7
 ATTN: L. J. Smith



File No. 17658
 Date Sept. 4, 1979
 Samples Lake Sediment

Certificate of
 ASSAY OF
 LORING LABORATORIES LTD.

Page 4

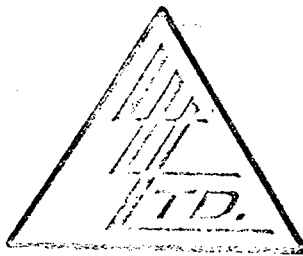
SAMPLE No.	PPM Cu	PPM Pb	PPM Zn	PPM Ag
21/9	19	18	74	0.8
21/10	25	19	83	0.8
21/11	34	18	66	0.7

I Hereby Certify THAT THE ABOVE RESULTS ARE THOSE
 ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES

Retained one month.
 Retained one month
 specific arrangements
 advance.

C. L. M. S. J. O'Connell
 Licensed Assayer of British Columbia

MINERAL ENERGY RESOURCES LIMITED
 715-5th Avenue S.W., 27th Flr.
 Calgary, Alberta T2P 2X7



File No.17716.....
 DateSeptember 17, 1979.....
 SamplesSoil.....

ATTN: L. Smith

Certificate of
 ASSAY OF
 LORING LABORATORIES LTD.

Page # 1

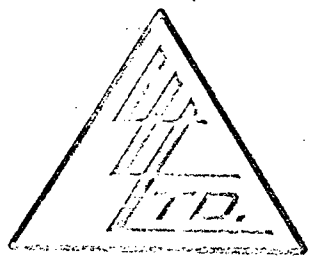
SAMPLE No.	PPM Cu	PPM Pb	PPM Zn	PPM Ag
<u>"SOIL SAMPLES"</u>				
22/1	19	12	47	0.2
22/2	34	33	82	0.6
22/3	19	20	41	1.0
22/4	18	13	58	0.3
22/5	9	14	46	0.5
22/6	13	11	48	0.5
22/7	36	24	92	0.7
22/8	15	16	50	*

I Hereby Certify THAT THE ABOVE RESULTS ARE THOSE
 ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES

Retained one month.
 of one month
 arrangements
 advance.

.....*Ed M. Spade*.....
 Licensed Assayer of British Columbia

OF NORGEN ENERGY
 715-5th Avenue S.W., 27th Flr.
 Calgary, Alberta
 T2P 2X7
 ATTN: L. Smith



File No. 17716
 Date September 17, 1979
 Samples Soil

Certificate of
ASSAY OF
LORING LABORATORIES LTD.

Page # 5

SAMPLE No.	PPM Cu	PPM Pb	PPM Zn	PPM Ag
<u>"SOIL SAMPLES"</u>				
KA-A-22/8	-	-	-	0.4
<p>I Herby Certify THAT THE ABOVE RESULTS ARE THOSE ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES</p>				

Specs Retained one month.
 s Retained one month
 s specific arrangements
 e in advance.

ad m f o a c c
 Licensed Assayer of British Columbia

W. NORON ENERGY RESOURCES LIMITED
715-5th Avenue S.W., 27th Flr.
Calgary, Alberta T2P 2X7



File No. 17716
Date September 17, 1979
Samples Soil

ATTN: L. Smith

Certificate of
ASSAY of
LORING LABORATORIES LTD.

Page # 2

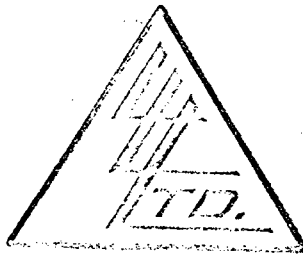
SAMPLE No.	PPM Cu	PPM Pb	PPM Zn	PPM Ag
CW-A-22/1	20	16	59	0.5
<p>I Hereby Certify THAT THE ABOVE RESULTS ARE THOSE ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES</p>				

Tests Retained one month.
Tests Retained one month
Tests specific arrangements
Tests in advance.

L. M. J. J. J.

Licensed Assayer of British Columbia

NORCON ENERGY
 715-5th Avenue S.W., 27th Flr.
 Calgary, Alberta
 T2P 2X7
 ATTN: L. Smith



File No. 17716
 Date September 17, 1979
 Samples Soil

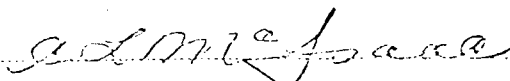
Certificate of
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Page # 5

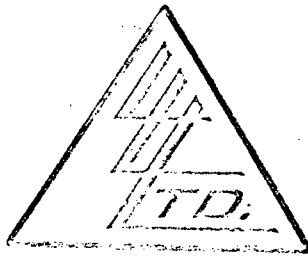
SAMPLE No.	PPM Cu	PPM Pb	PPM Zn	PPM Ag
"SOIL SAMPLES"				
GW-A-22/2	28	32	57	0.5

I Herely Certify THAT THE ABOVE RESULTS ARE THOSE
 ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES . . .

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 specific arrangements
 in advance.


 Licensed Assayer of British Columbia

NOBEN ENERGY RESOURCES LIMITED
715-5th Avenue S.W., 27th Flr.
Calgary, Alberta T2P 2X7



File No. 17716
Date September 17, 1979
Samples Soil

ATTN: L. Smith

Certificate of
ASSAY of
LORING LABORATORIES LTD.

Page # 3

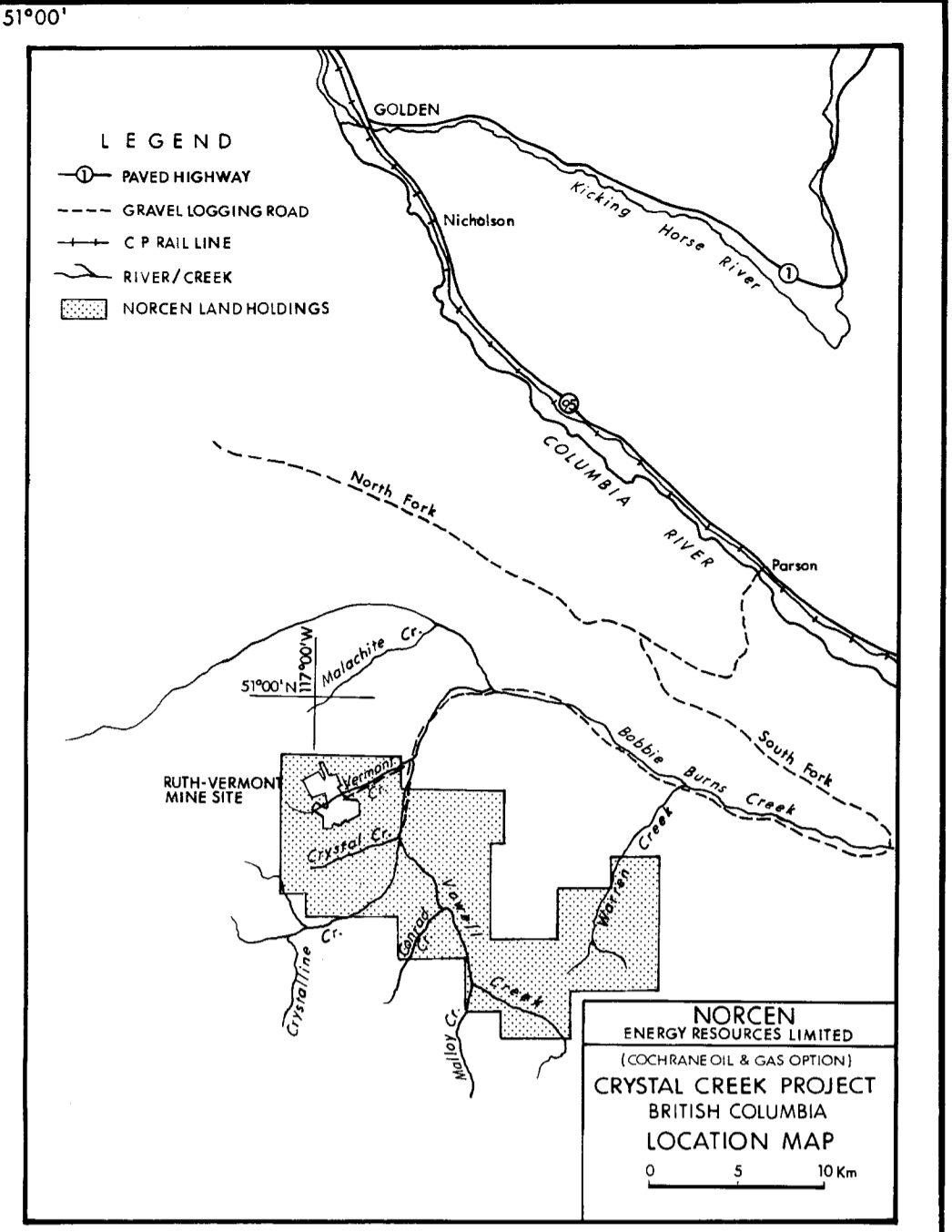
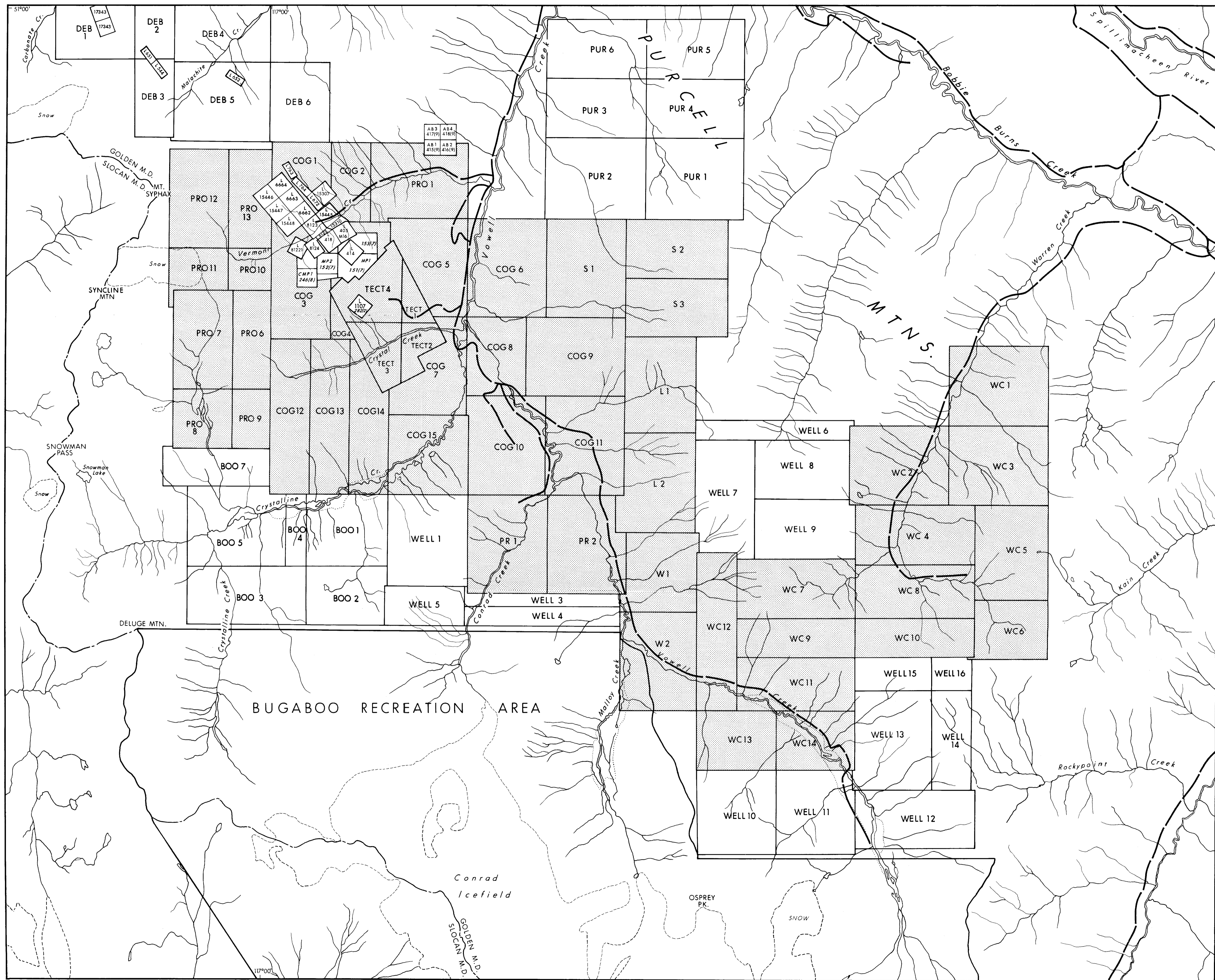
SAMPLE No.	PPM Cu	PPM Pb	PPM Zn	PPM Ag
GN-A-22/2	*	*	*	*
22/3	23	16	60	0.6
22/4	21	19	3	0.5
22/5	23	17	76	0.5

I Hereby Certify THAT THE ABOVE RESULTS ARE THOSE
ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES

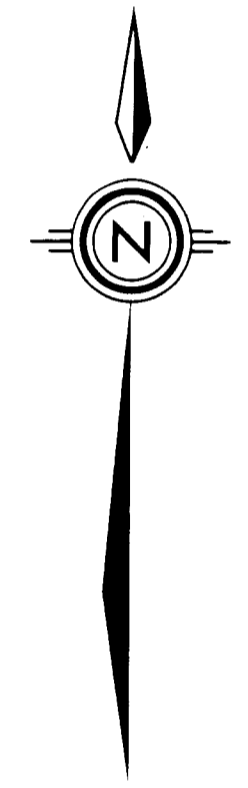
Objects Retained one month.
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specific arrangements
in advance.

L. M. Isaac

Licensed Assayer of British Columbia



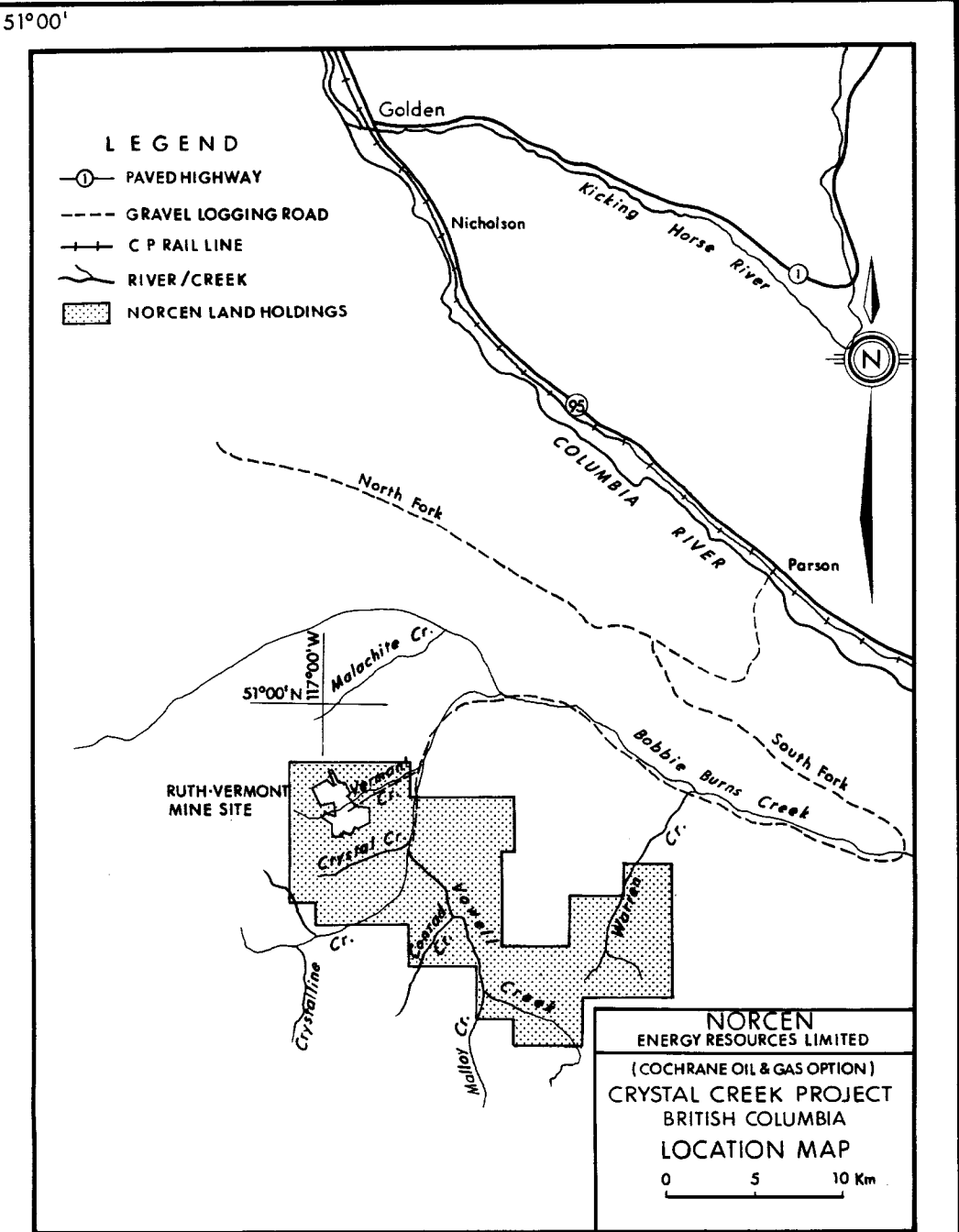
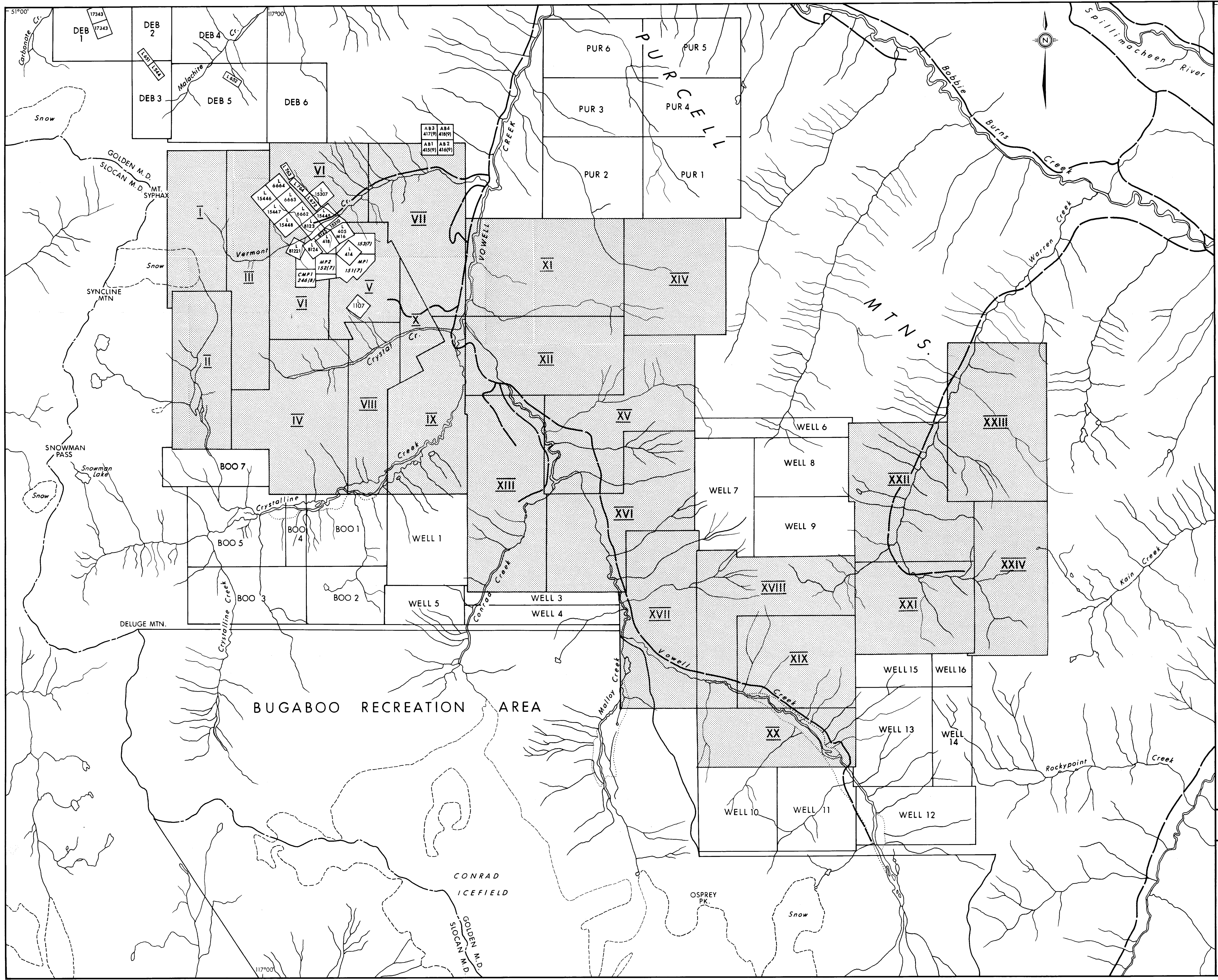
MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
8102
NO. 100
part 1 of 2



NORCEN LAND HOLDINGS
TRUCK ROAD

Norcen
Energy Resources Limited
(COCHRANE OIL AND GAS OPTION)
CRYSTAL CREEK PROJECT
BRITISH COLUMBIA
LAND HOLDINGS MAP



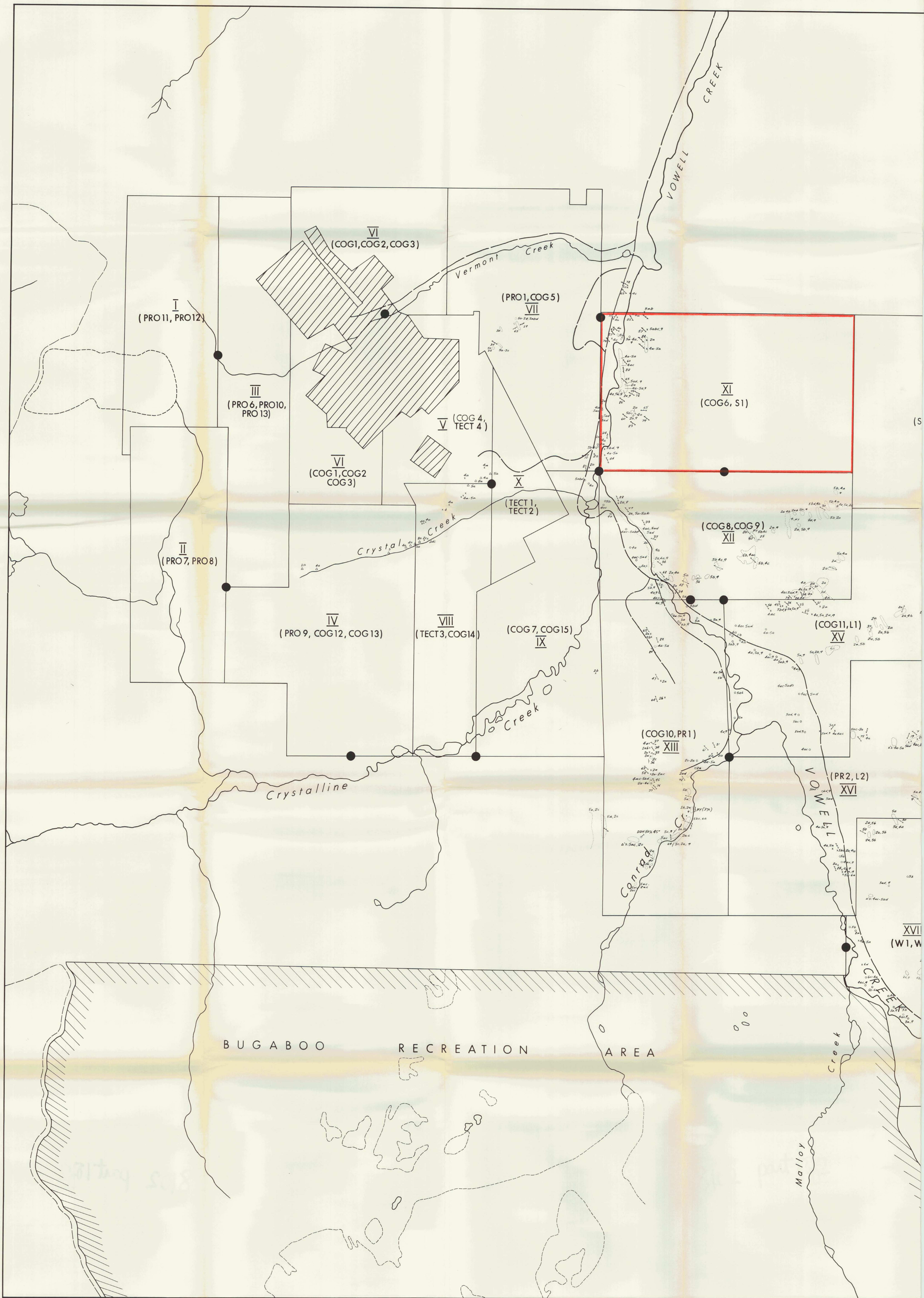


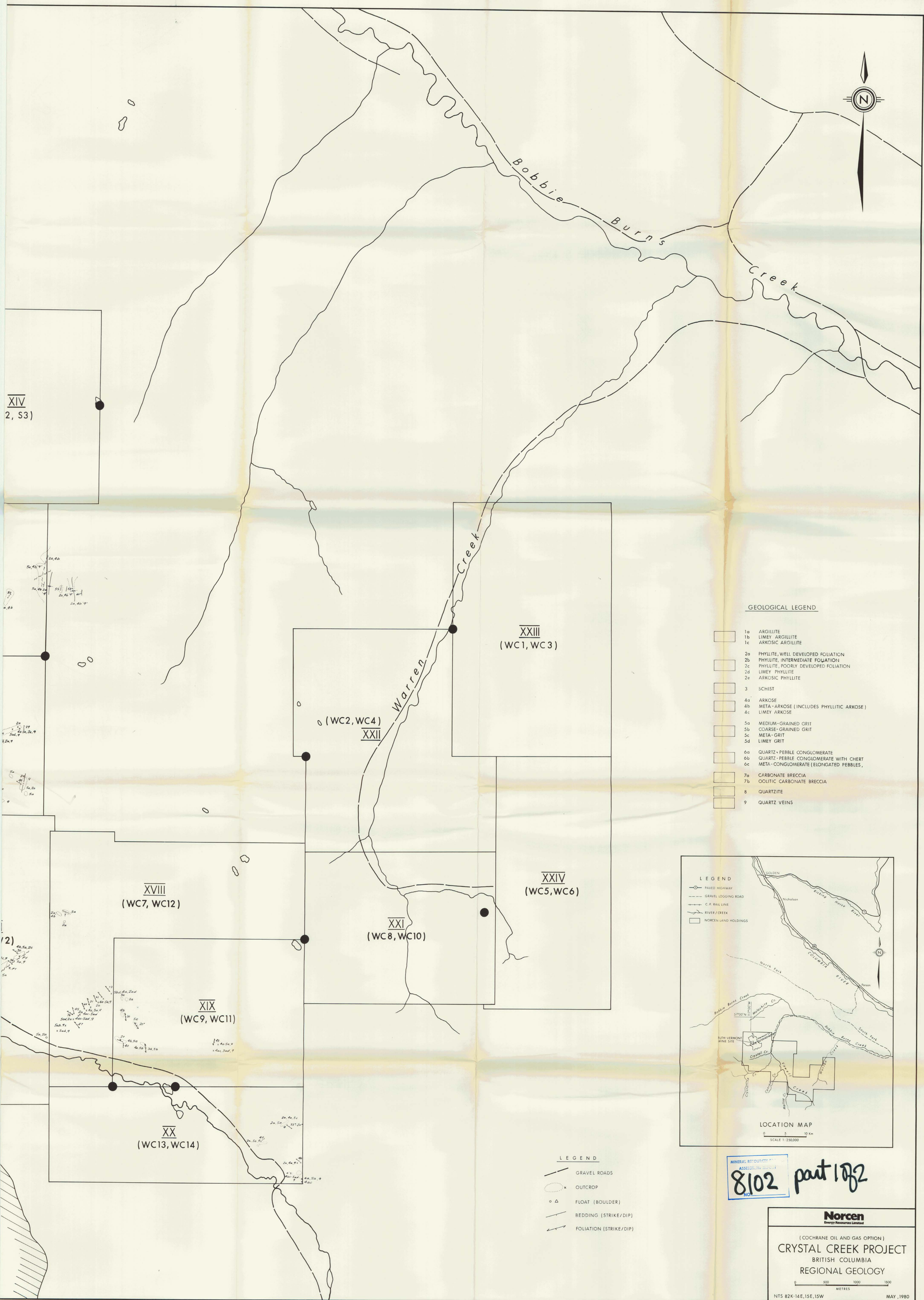
GROUP	Number of units
I	27
II	24
III	37
IV	38
V	38
VI	38
VII	40
VIII	28
IX	36
X	27
XI	40
XII	32
XIII	40
XIV	36
XV	40
XVI	40
XVII	36
XVIII	34
XIX	30
XX	24
XXI	30
XXII	38
XXIII	40
XXIV	32
TOTAL	825

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
8102
NO. ...
part 182

NORCEN LAND HOLDINGS
 TRUCK ROAD

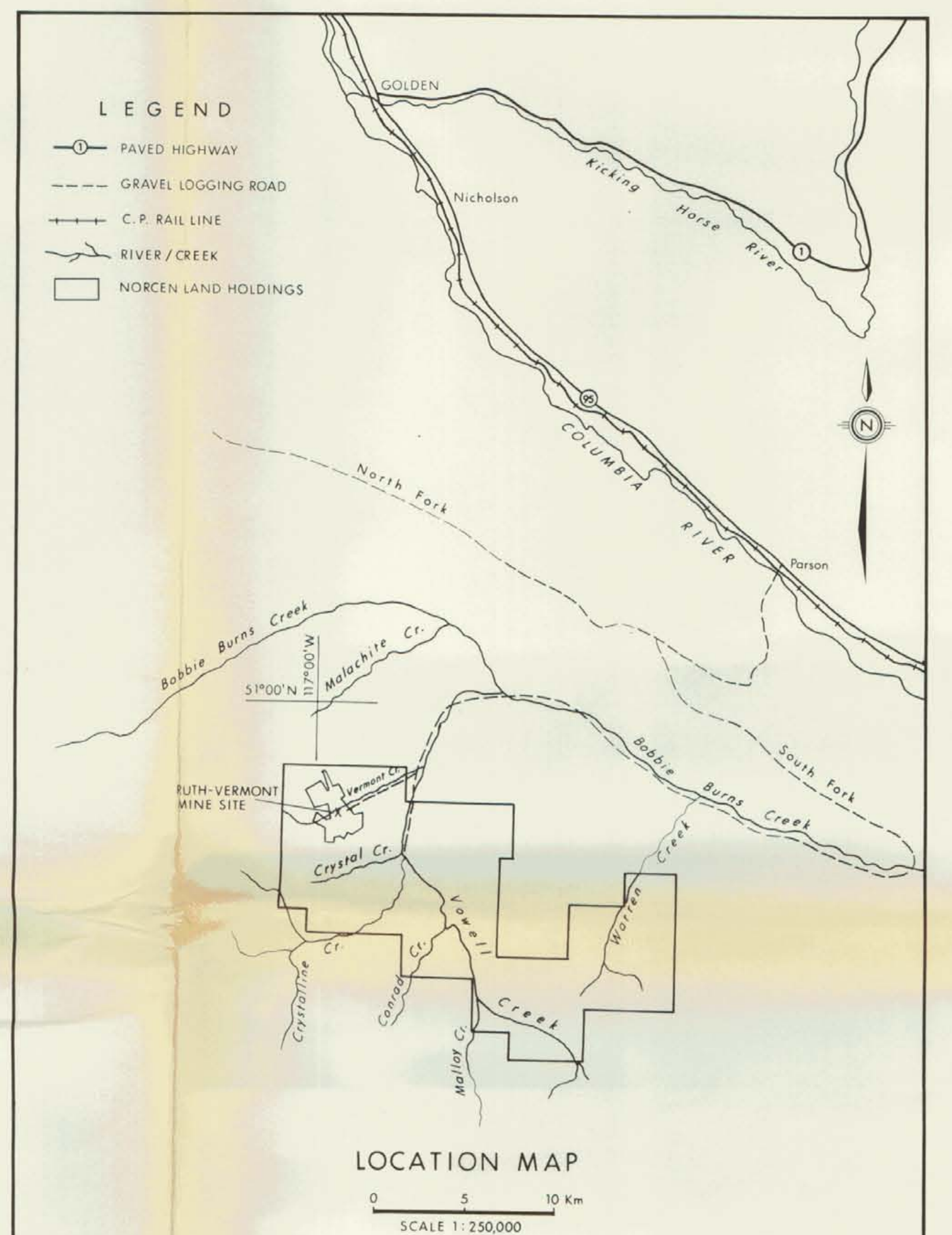
Norcen
Energy Resources Limited
(COCHRANE OIL AND GAS OPTION)
CRYSTAL CREEK PROJECT
BRITISH COLUMBIA
LAND HOLDINGS MAP
SCALE IN KILOMETRES
0 1 2 3





GEOLOGICAL LEGEND

- 1a ARGILLITE
- 1b LIMY ARGILLITE
- 1c ARKOSIC ARGILLITE
- 2a PHYLITE, WELL DEVELOPED FOLIATION
- 2b PHYLITE, INTERMEDIATE FOLIATION
- 2c PHYLITE, POORLY DEVELOPED FOLIATION
- 2d LIMY PHYLITE
- 2e ARKOSIC PHYLITE
- 3 SCHIST
- 4a ARKOSE
- 4b META-ARKOSE (INCLUDES PHYLITIC ARKOSE)
- 4c LIMY ARKOSE
- 5a MEDIUM-GRAINED GRIT
- 5b COARSE-GRAINED GRIT
- 5c META-GRIT
- 5d LIMY GRIT
- 6a QUARTZ-PEBBLE CONGLOMERATE
- 6b QUARTZ-PEBBLE CONGLOMERATE WITH CHERT
- 6c META-CONGLOMERATE (ELONGATED PEBBLES)
- 7a CARBONATE BRECCIA
- 7b OOLITIC CARBONATE BRECCIA
- 8 QUARTZITE
- 9 QUARTZ VEINS



- LEGEND**
- GRAVEL ROADS
 - x OUTCROP
 - Δ FLOAT (BOULDER)
 - BEDDING (STRIKE/DIP)
 - FOLIATION (STRIKE/DIP)

MINERAL RESOURCES ASSOCIATION OF BRITISH COLUMBIA
8102 part 1 of 2
 NO.

Norcen
 Energy Resources Limited

(COCHRANE OIL AND GAS OPTION)
CRYSTAL CREEK PROJECT
 BRITISH COLUMBIA
 REGIONAL GEOLOGY

0 500 1000 1500
 METRES

NTS 82K-14E,15E,15W MAY, 1980