

180-288-# 8096

NORCEN ENERGY RESOURCES LIMITED
ASSESSMENT REPORT
GEOCHEMICAL AND GEOLOGICAL PROGRAM
GROUP XIII (COG 10 - PR1)
GOLDEN MINING DIVISION,
BRITISH COLUMBIA

Claims: COG 10 (329)
PR 1 (342)

Location: 45 km South of Golden, British Columbia

Latitude: 50°53'N

Longitude: 116°55'W

Owner and Operator: Norcen Energy Resources Limited
August 16, 20, 30, 1979

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
8096
NO. _____

part 102

June 9, 1980



L. Smith, P.Geol.

TABLE OF CONTENTS

	<u>Page No.</u>
SUMMARY	1
LOCATION AND ACCESS	1
CLAIM STATUS	1
GEOCHEMICAL SOIL SAMPLING	2
GEOLOGICAL MAPPING	2
STATEMENT OF QUALIFICATIONS	3
ITEMIZED COST STATEMENT	4

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.

SUMMARY

Regional geological mapping and soil geochemical sampling was performed within the boundaries of Group XIII (COG 10 - PR1) on August 16, 20, and 30, 1979. A total of thirty-six (36) 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.

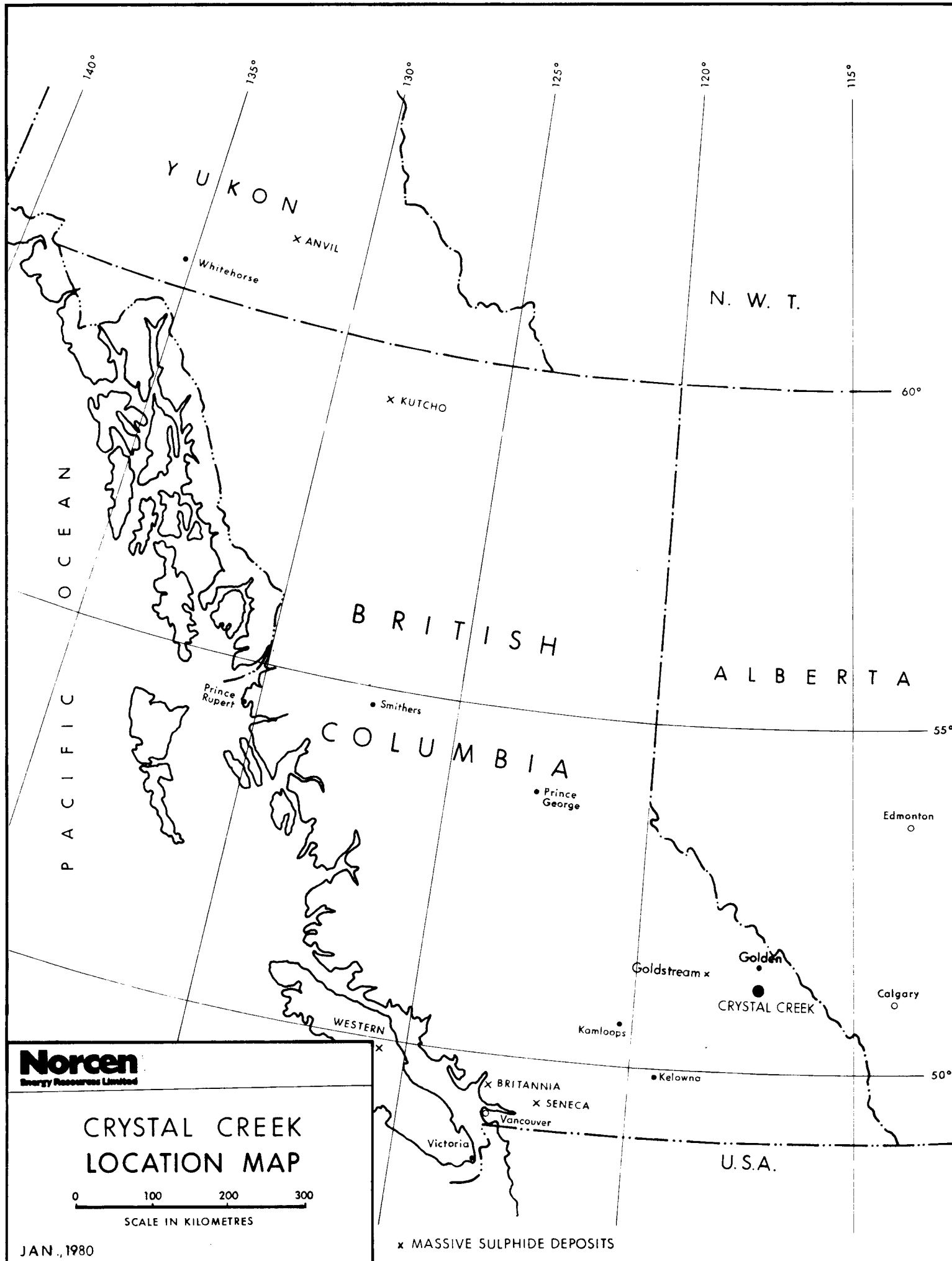
LOCATION AND ACCESS (See Land Holdings Maps, Crystal Creek Project, British Columbia)

The claims are located in the Purcell Mountains approximately 45 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 10 and PR 1 claims form part of the Crystal Creek Property. The COG 10 and PR 1 claims have been grouped into Group XIII (COG 10 - PR1).

<u>Claim Name</u>	<u>Record Number</u>	<u>Recorded Date</u>	<u>Unit Dimensions</u>	<u>No. of Units</u>
COG 10	329	June 18, 1979	5S X 4W	20
PR 1	342	June 18, 1979	5S X 4W	20



Norcen
Energy Resources Limited






CRYSTAL CREEK LOCATION MAP

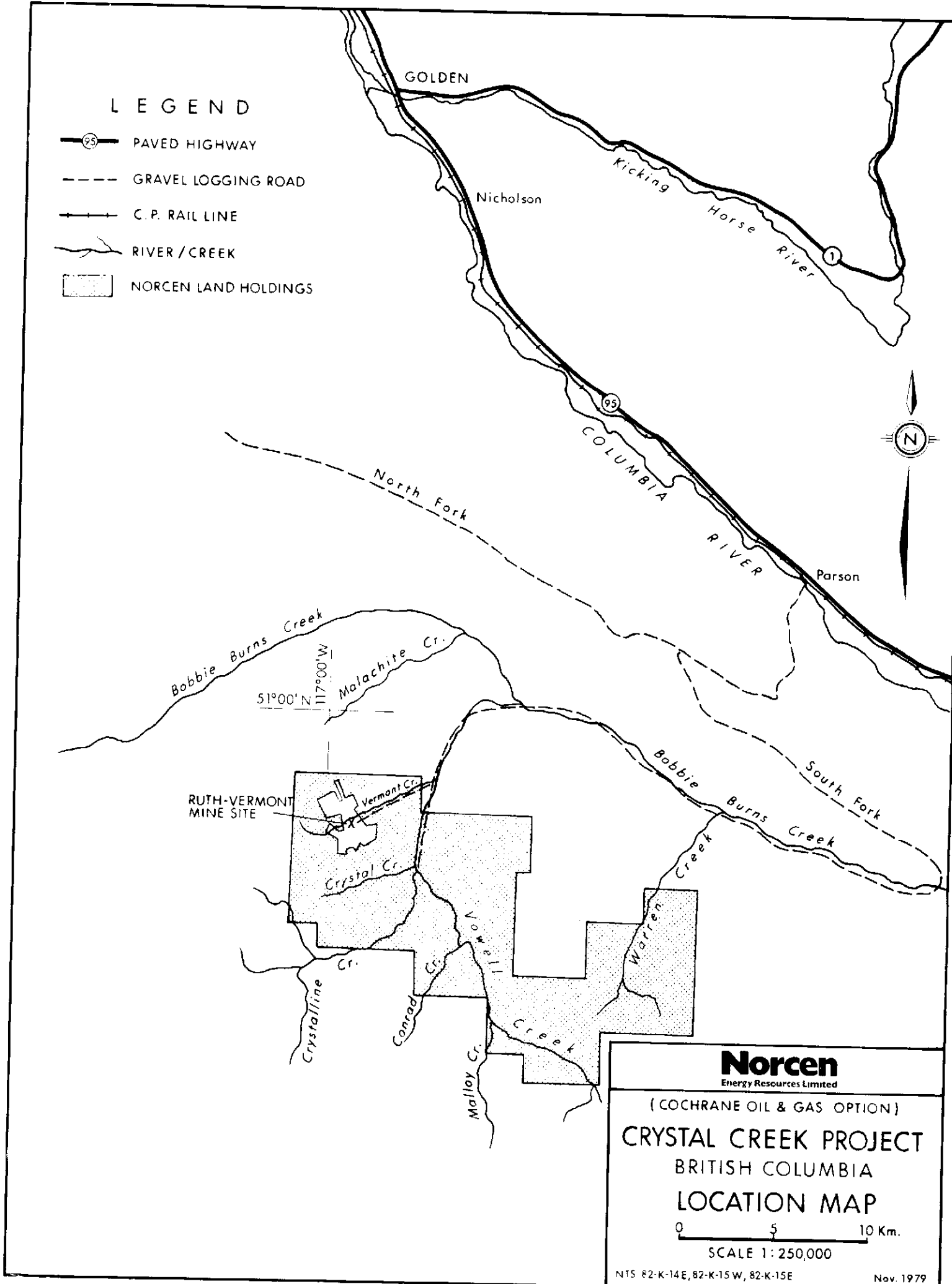


JAN., 1980

x MASSIVE SULPHIDE DEPOSITS

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

GEOCHEMICAL SOIL SAMPLING

A total of thirty-six (36) B horizon soil samples were collected within the boundaries of claims COG 10 and PR 1. 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.

Five anomalous samples were collected during the 1979 geochemical sampling from the COG 10 and PR 1 claims. These are:

<u>Sample No.</u>	<u>ppm Pb</u>	<u>ppm Zn</u>	<u>ppm Ag</u>	<u>ppm Cu</u>
MA-17-9	28	*131	0.8	22
MA-17-3	20	56	*1.0	15
MA-30-4	31	90	*1.0	*41
MA-30-5	*33	*120	0.6	32
GW-30-2	28	84	0.6	*40

* 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 XIII (COG 10 - PR 1).
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

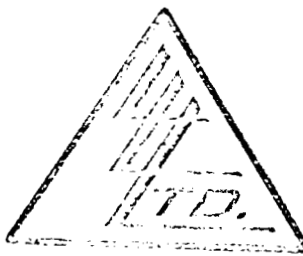
ITEMIZED COST STATEMENT

A.	Geochemical Sampling and Geological Mapping	
	L. Smith, Supervision (August 20, 1979)	
	L. Smith, Report Writing (June 6, 1980)	
	1 day @\$125/day	\$ 125.00
	1 day @\$175/day	175.00
	M. Anderson - Geologist (August 16, 20, 30, 1979)	
	G. Wilson - Geologist (August 30, 1979)	
	4 days @\$90/day	360.00
	R. Kostiuk - Geochemical Sampler (August 16, 20, 30, 1979)	
	D. Desjardins - Geochemical Sampler (August 30, 1979)	
	4 days @\$75/day	300.00
B.	Transport	
	4 Wheel Drive Vehicle Rental	
	\$30.00/day X 4 days	120.00
	Fuel for Vehicle \$5.00/day X 4 days	20.00
C.	Accommodation and Meals	
	9 man days X \$25/day	225.00
D.	Assaying	
	36 Geochemical Assays @\$5/sample	<u>180.00</u>
		\$1 505.00

APPENDIX I

Geochemical Assay Certificates

NORON 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

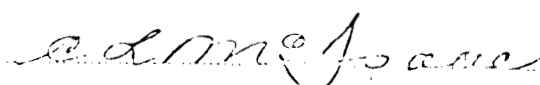
Certificate of
 ASSAY OF
 LORING LABORATORIES LTD.

Page 1

SAMPLE No.	PPM Cu	PPM Pb	PPM Zn	PPM Ag
<u>LAKE SEDIMENT</u>				
16-16/1	13	21	98	0.8
16/2	33	23	94	0.9
16/3	30	25	86	0.8
16/4	33	26	93	0.8
17-17/1	18	28	85	0.8
17/2	14	20	56	1.0
17/3	15	20	73	0.7
17/4	16	30	52	0.8
17/5	20	21	77	0.6
17/6	28	27	74	0.6
17/7	12	17	73	0.5
17/8	21	23	68	0.5
17/9	22	28	131	0.8

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

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


 Licensed Assayer of British Columbia

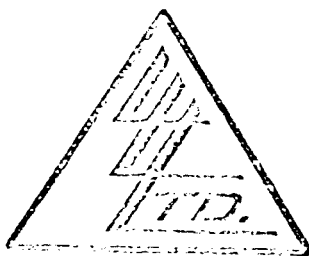
MINING ENTERPRISE RESOURCES LIMITED

715 - 5th Avenue S.W.

Calgary, Alberta

TSP. 227

ATTN: I. J. Smith



File No. 17658

Date Sept. 4, 1979

Samples Lake Sediment

Certificate of ASSAY OF

LORING LABORATORIES LTD.

Page 3

SAMPLE No.	FPM Cu	FPM Pb	FPM Zn	FPM Ag
MA-A-				
19/26	32	19	67	0.7
19/27	12	19	61	0.7
19/28	21	27	82	0.9
MA-A-20/1	31	14	101	0.9
20/2	19	20	74	0.7
20/3	25	19	63	0.8
20/8	14	16	59	0.6
20/9	12	15	60	0.7
20/10	16	24	75	0.8
20/11	31	30	96	0.7
20/12	29	22	87	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
in advance.

A. L. M. Isaac
Licensed Assayer of British Columbia

■ MARCON 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
MA-1-88/13	23	27	72	0.7

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

L. J. Smith

Licensed Assayer of British Columbia

Retained one month.
Retained one month
for your arrangements
in advance.

TO: MERCEN 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
MA-A-30/1	20	22	60	0.6
30/2	26	22	85	0.6
30/3	21	21	78	0.5
30/4	41	31	90	1.0
30/5	32	33	120	0.6
30/6	27	21	106	0.7
30/7	37	28	86	0.5

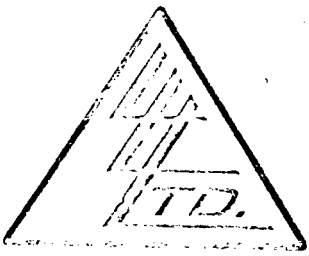
I Heroby Certify THAT THE ABOVE RESULTS ARE THOSE
 ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES

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

ADM J. A. C.
 Licensed Assayer of British Columbia

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

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



APP: L. Smith

Certificate of
 ASSAY of
 LORING LABORATORIES LTD.

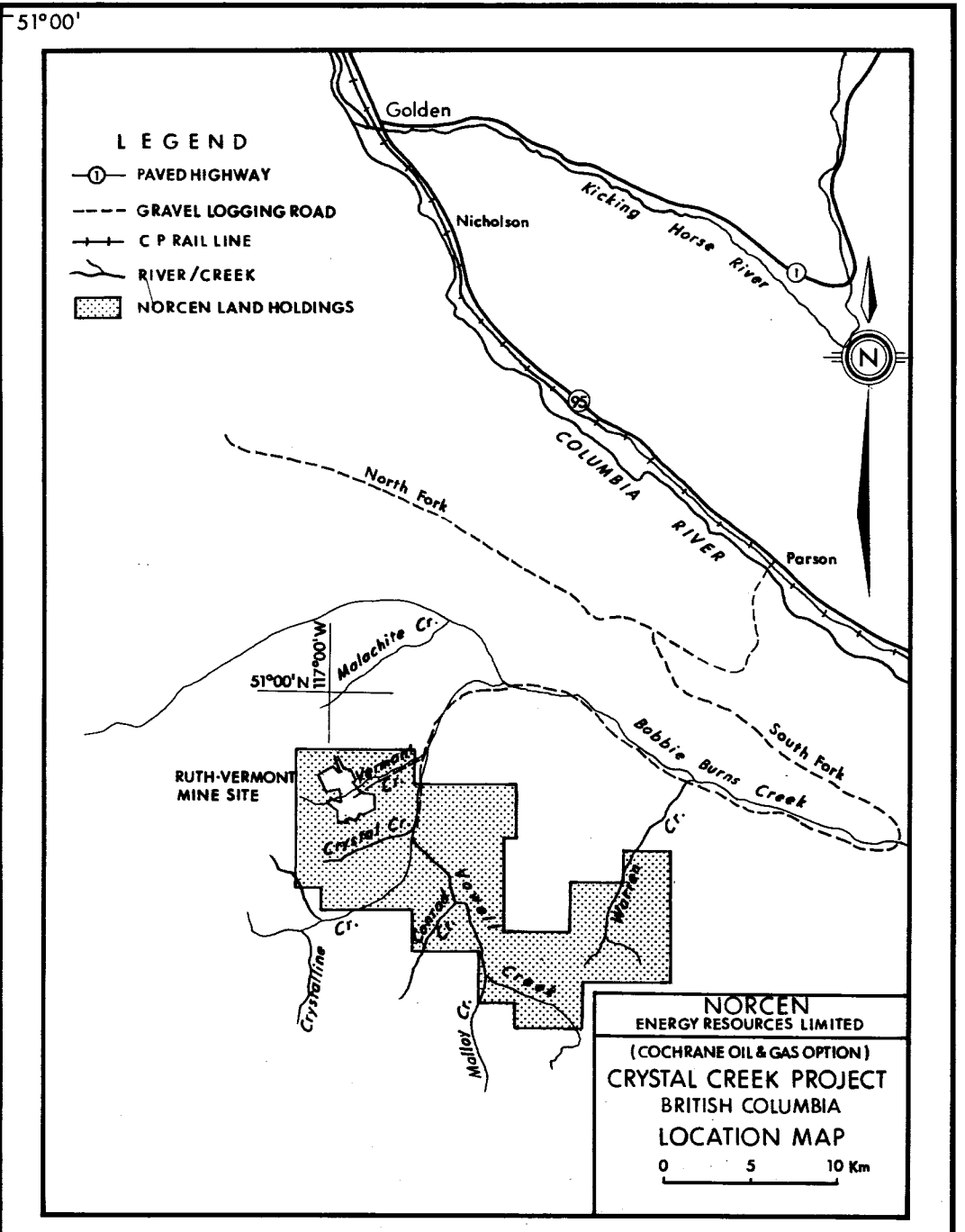
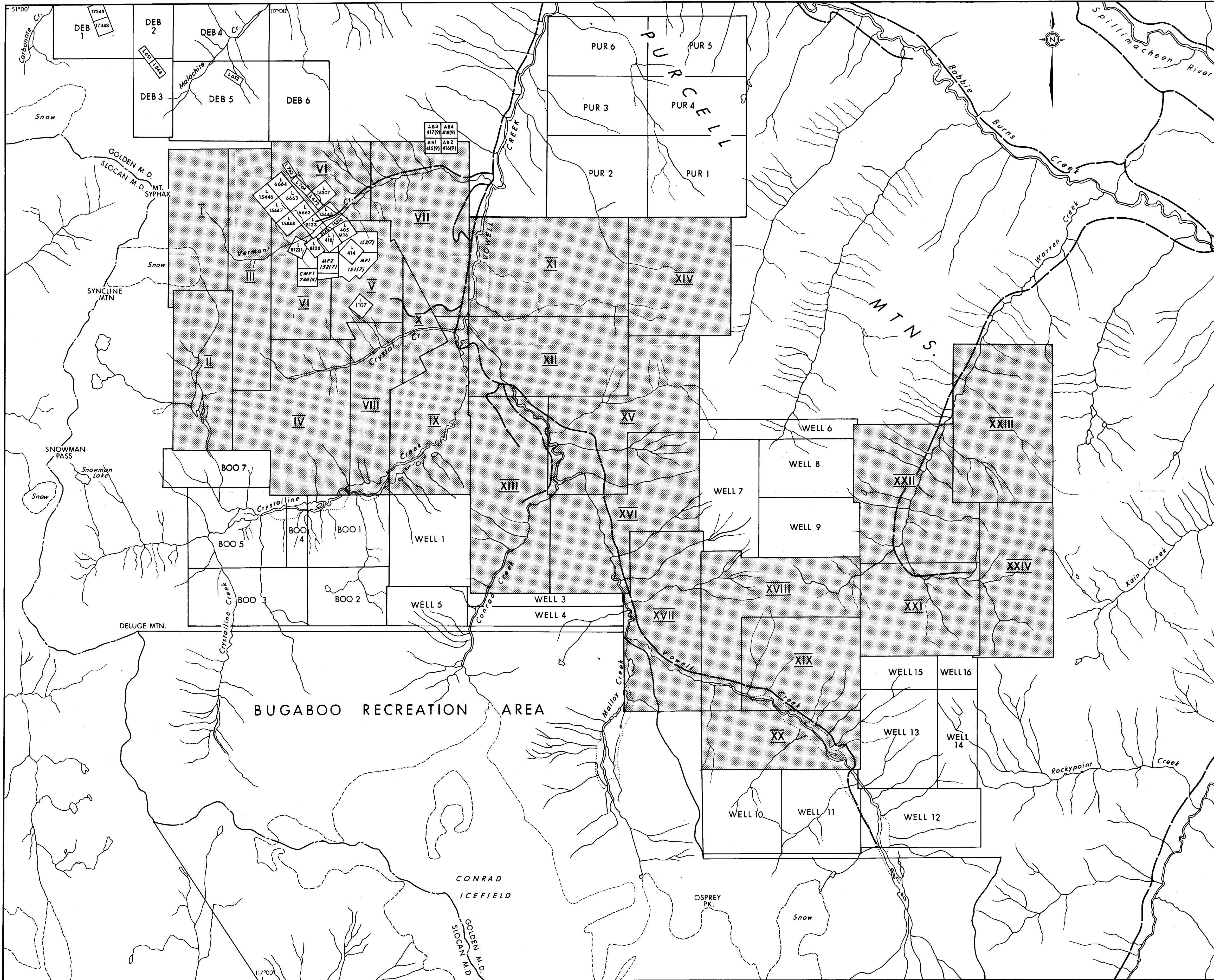
Page # 4

SAMPLE No.	PPM Cu	PPM Pb	PPM Zn	PPM Ag
EX-A-30/1	28	25	91	0.6
30/2	40	28	84	0.6
30/3	29	20	76	0.6
30/4	33	26	86	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
 in advance.

L. M. J. ...
 Licensed Assayer of British Columbia



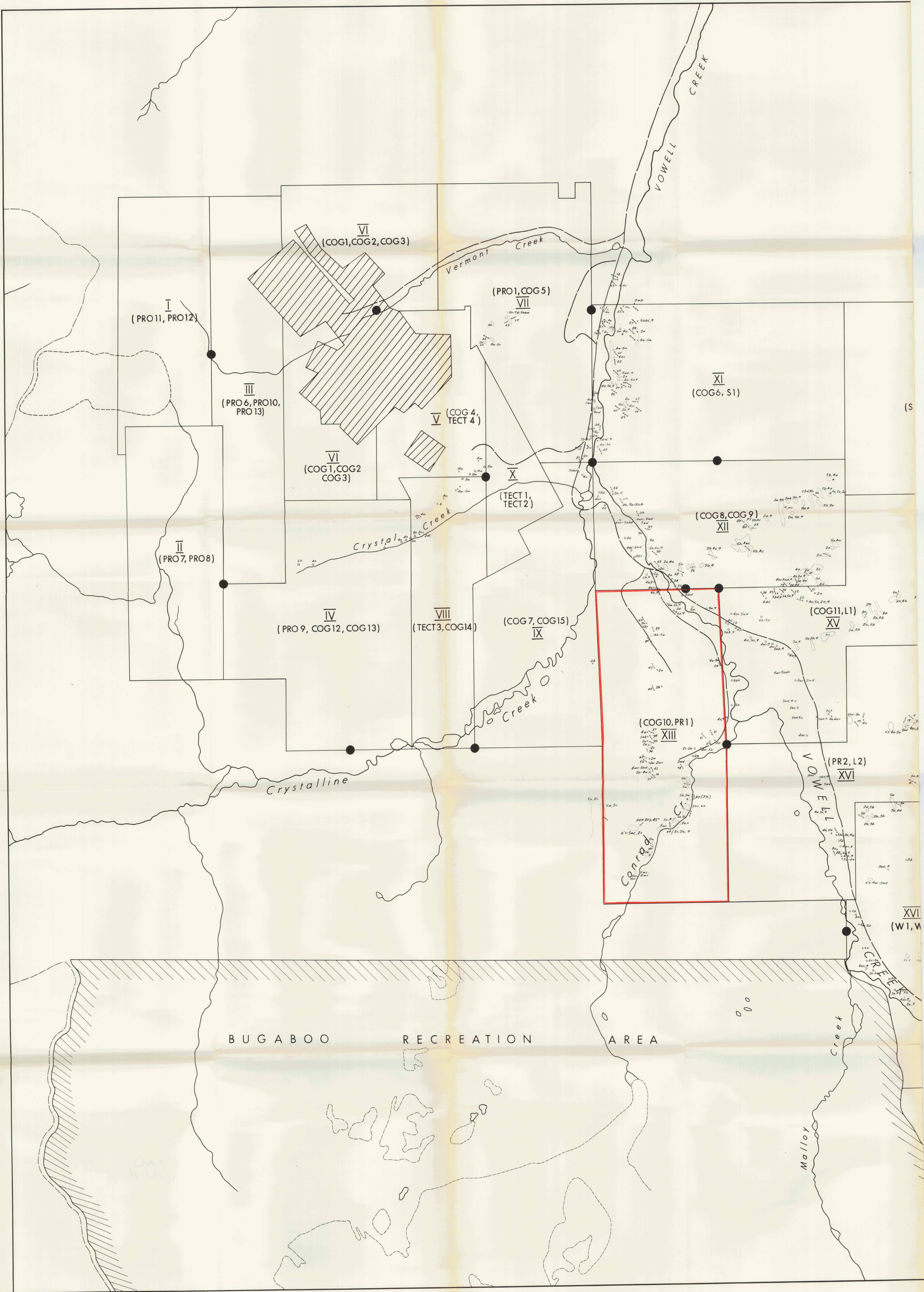
GROUP	Number of units
I	27
II	24
III	37
IV	38
V	38
VI	38
VII	40
VIII	28
IX	36
X	27
XI	40
XII	32
XIII	40
XIV	36
XV	40
XVI	40
XVII	36
XVIII	34
XIX	30
XX	24
XXI	30
XXII	38
XXIII	40
XXIV	32
	825

8096
 Part 2
 TOP 2

NORCEN LAND HOLDINGS
 TRUCK ROAD

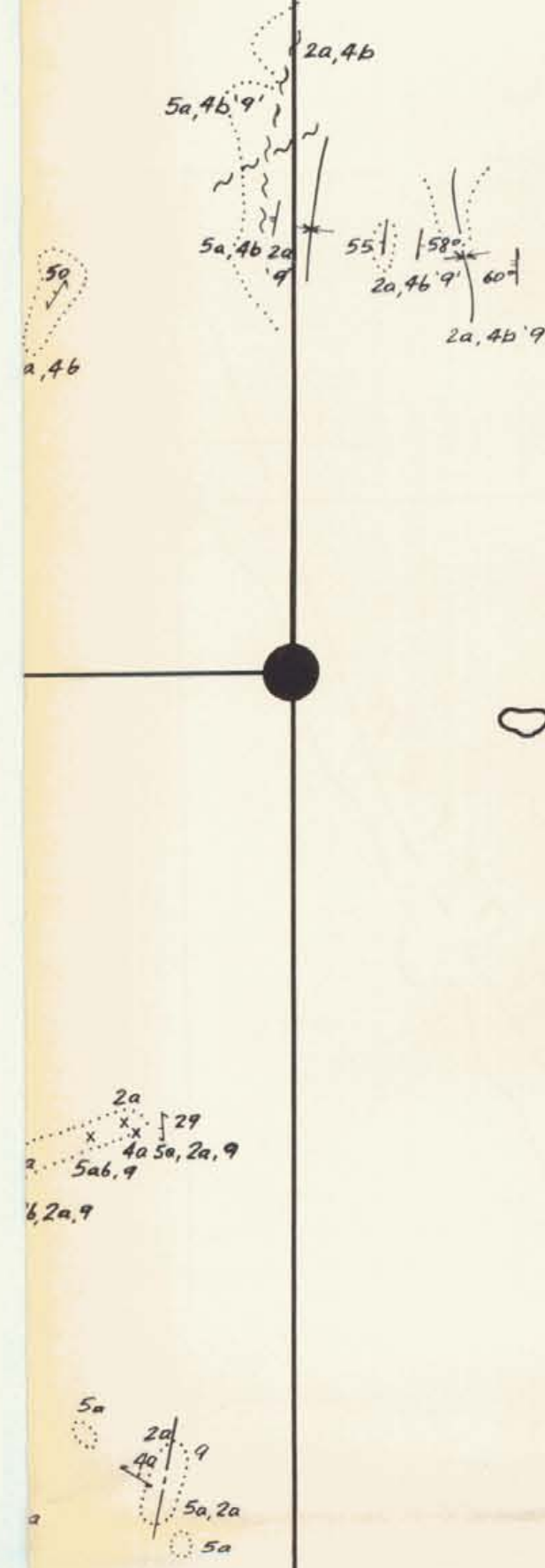
Norcen
 Energy Resources Limited

(COCHRANE OIL AND GAS OPTION)
 CRYSTAL CREEK PROJECT
 BRITISH COLUMBIA
 LAND HOLDINGS MAP
 0 5 10 20 30
 SCALE IN KILOMETRES





XIV
2, S3)



(2)

XVIII
(WC7, WC12)

XIX
(WC9, WC11)

XX
(WC13, WC14)

(WC2, WC4)
XXII

XXI
(WC8, WC10)

XXIII
(WC1, WC3)

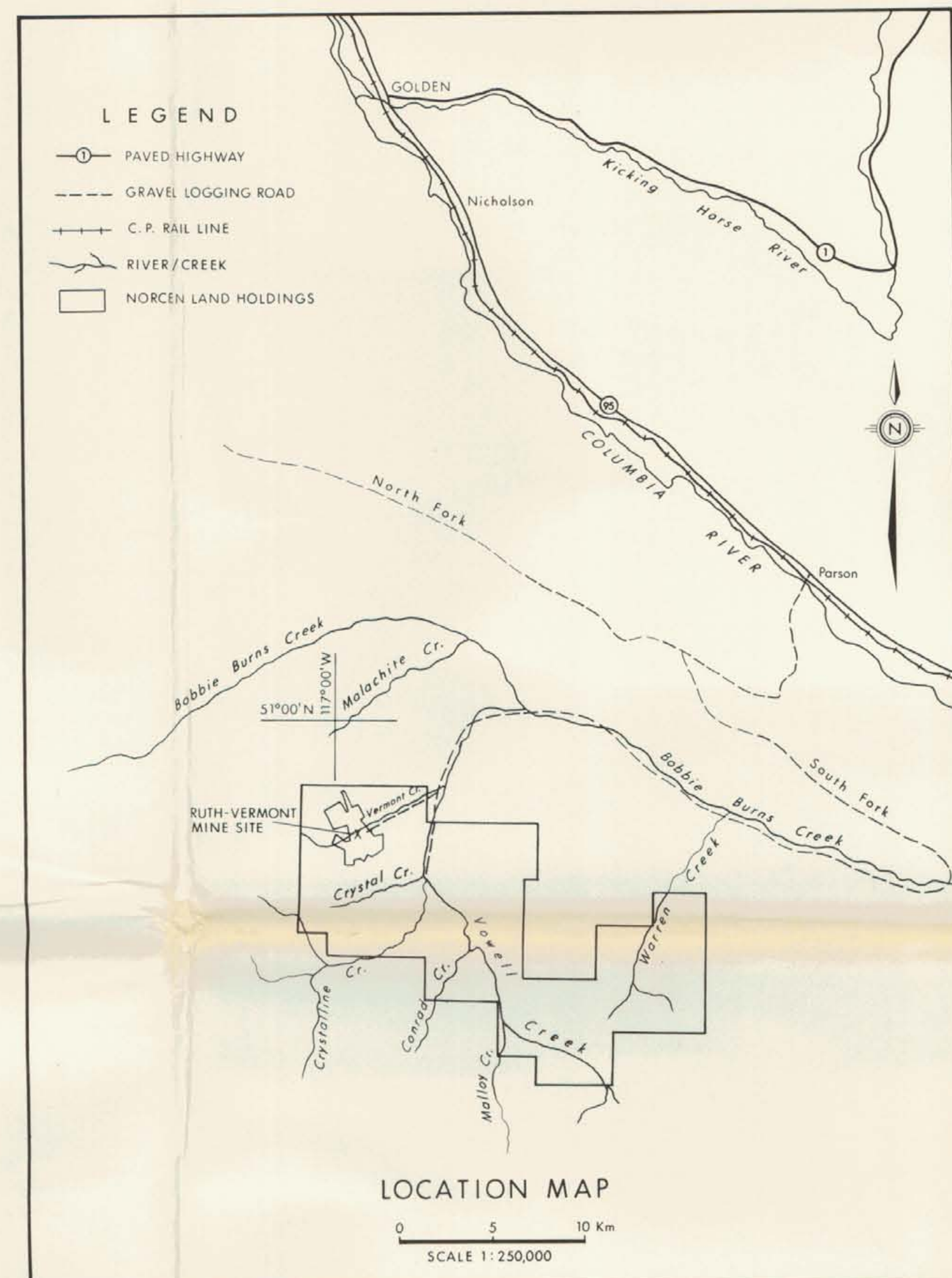
XXIV
(WC5, WC6)

LEGEND

- GRAVEL ROADS
- OUTCROP
- FLOAT (BOULDER)
- BEDDING (STRIKE/DIP)
- FOLIATION (STRIKE/DIP)

GEOLOGICAL LEGEND

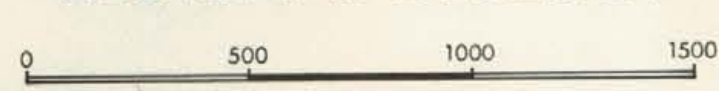
- 1a ARGILLITE
- 1b LIMY ARGILLITE
- 1c ARKOSIC ARGILLITE
- 2a PHYLLITE, WELL DEVELOPED FOLIATION
- 2b PHYLLITE, INTERMEDIATE FOLIATION
- 2c PHYLLITE, POORLY DEVELOPED FOLIATION
- 2d LIMY PHYLLITE
- 2e ARKOSIC PHYLLITE
- 3 SCHIST
- 4a ARKOSE
- 4b META-ARKOSE (INCLUDES PHYLLITIC ARKOSE)
- 4c LIMY ARKOSE
- 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



MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
8096 part 1032
NO.

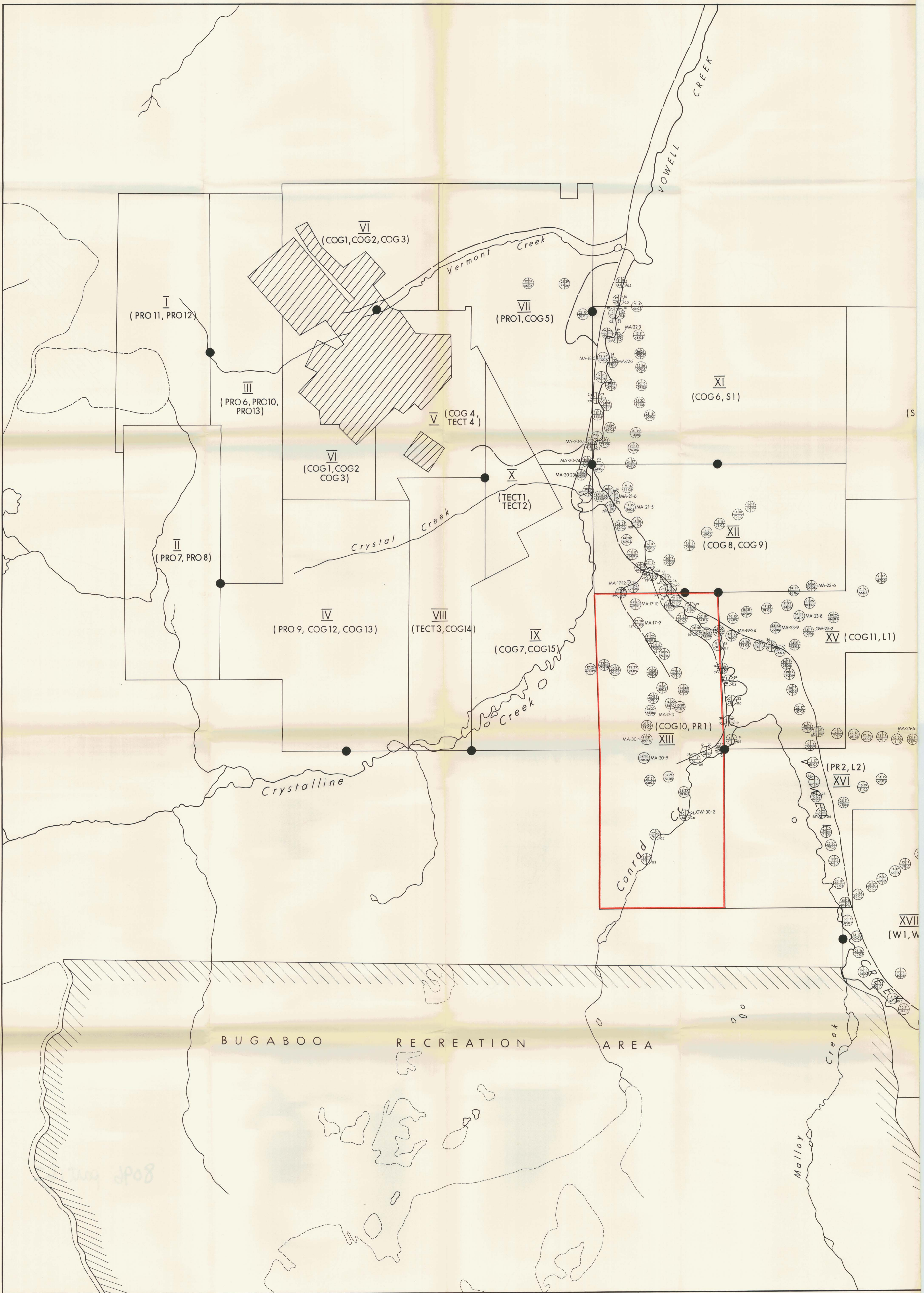
Norcen
Energy Resources Limited

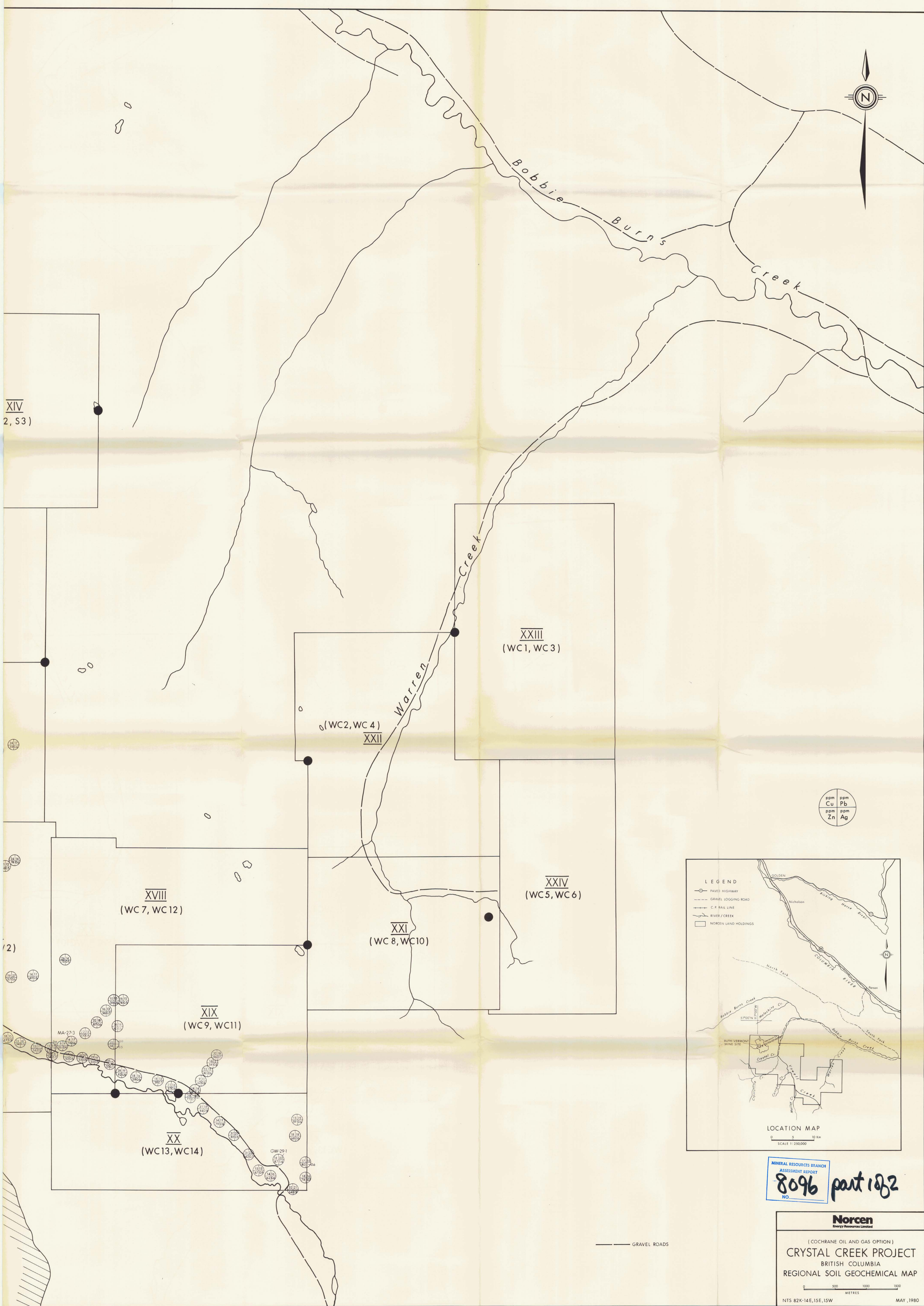
(COCHRANE OIL AND GAS OPTION)
CRYSTAL CREEK PROJECT
BRITISH COLUMBIA
REGIONAL GEOLOGY



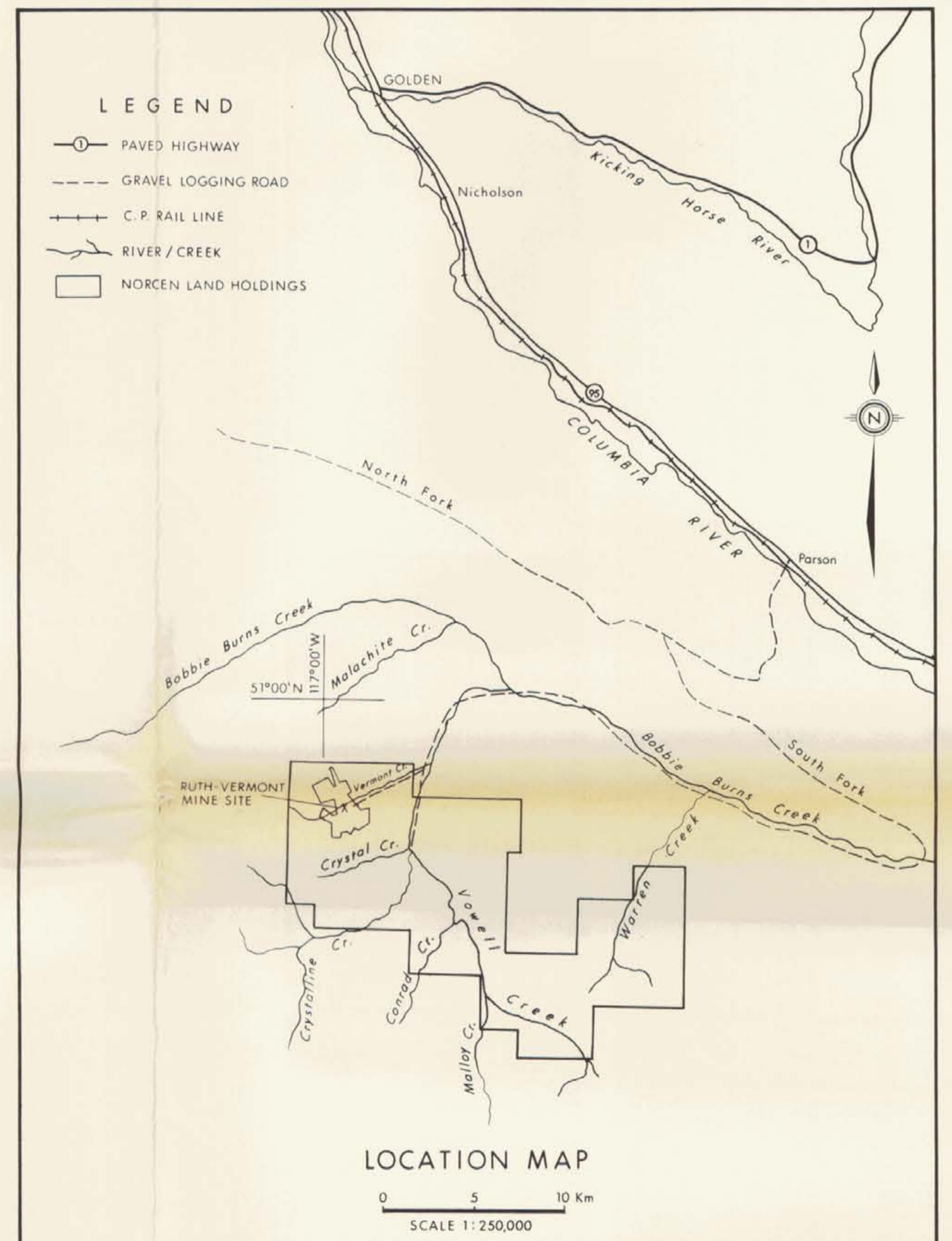
NTS 82K-14E, 15E, 15W

MAY, 1980





ppm	ppm
Cu	Pb
ppm	ppm
Zn	Ag



MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
8096 part 182
NO.

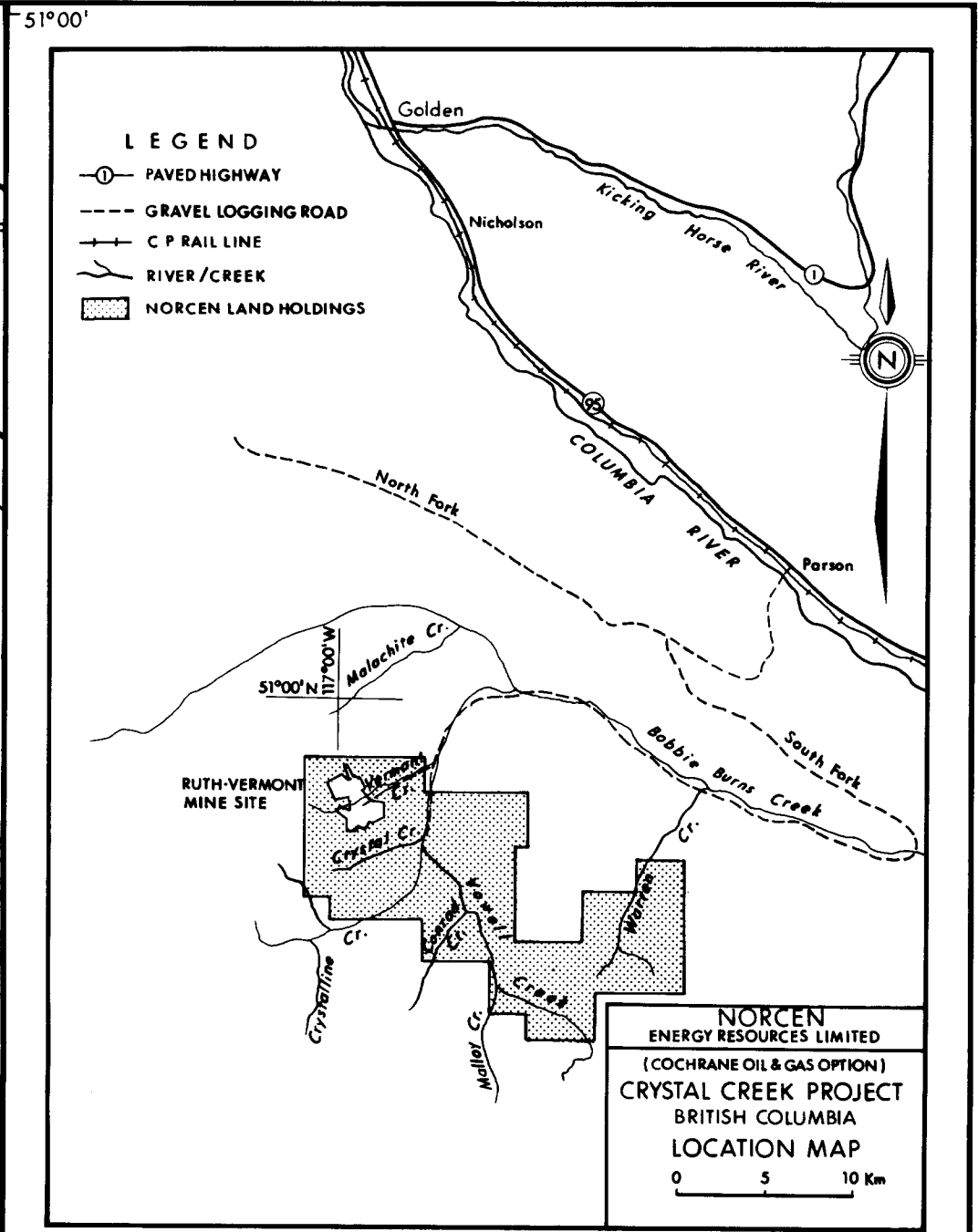
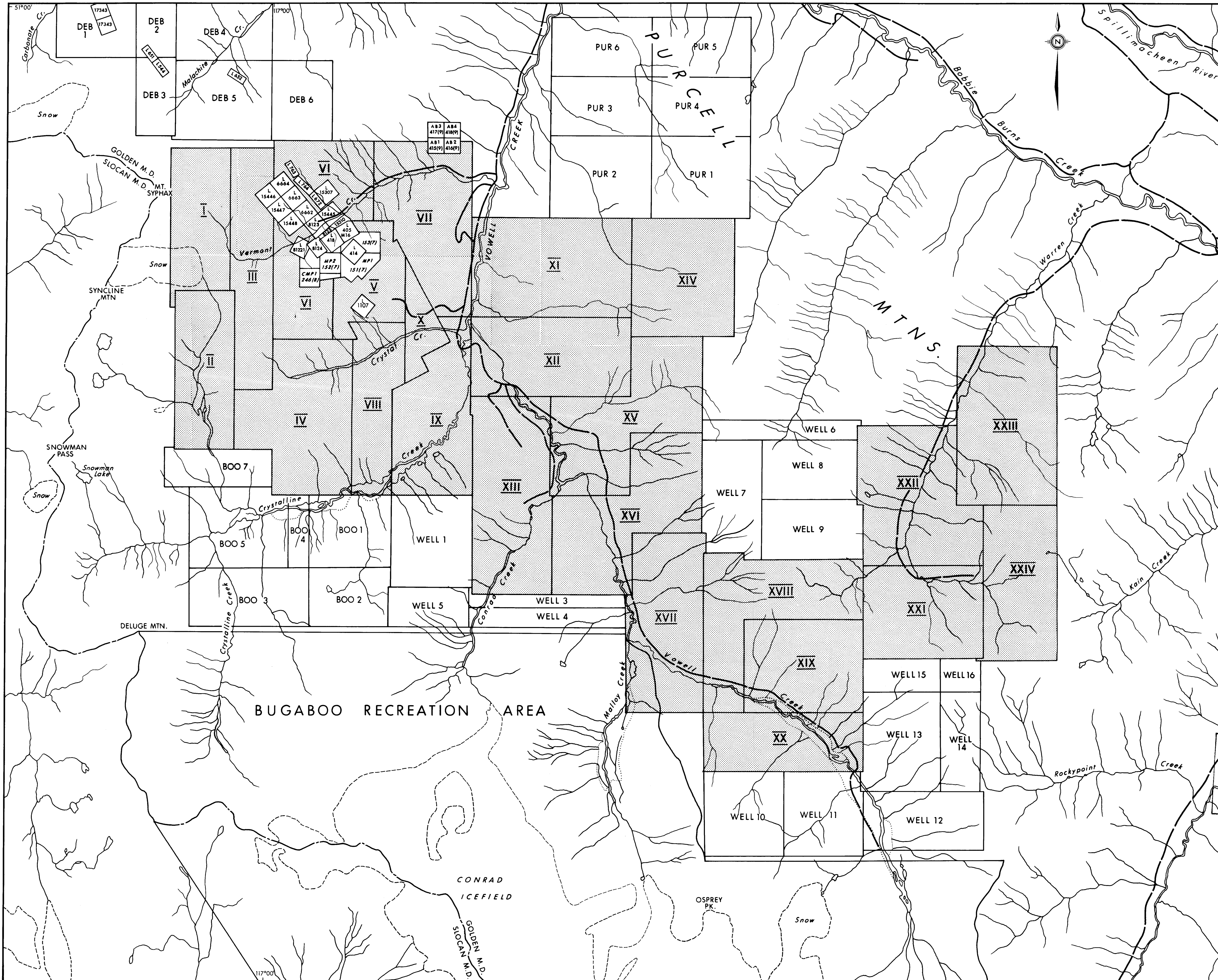
Norcen
Energy Resources Limited

(COCHRANE OIL AND GAS OPTION)
CRYSTAL CREEK PROJECT
BRITISH COLUMBIA
REGIONAL SOIL GEOCHEMICAL MAP



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

———— GRAVEL ROADS



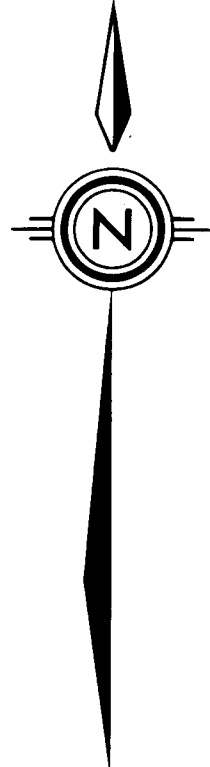
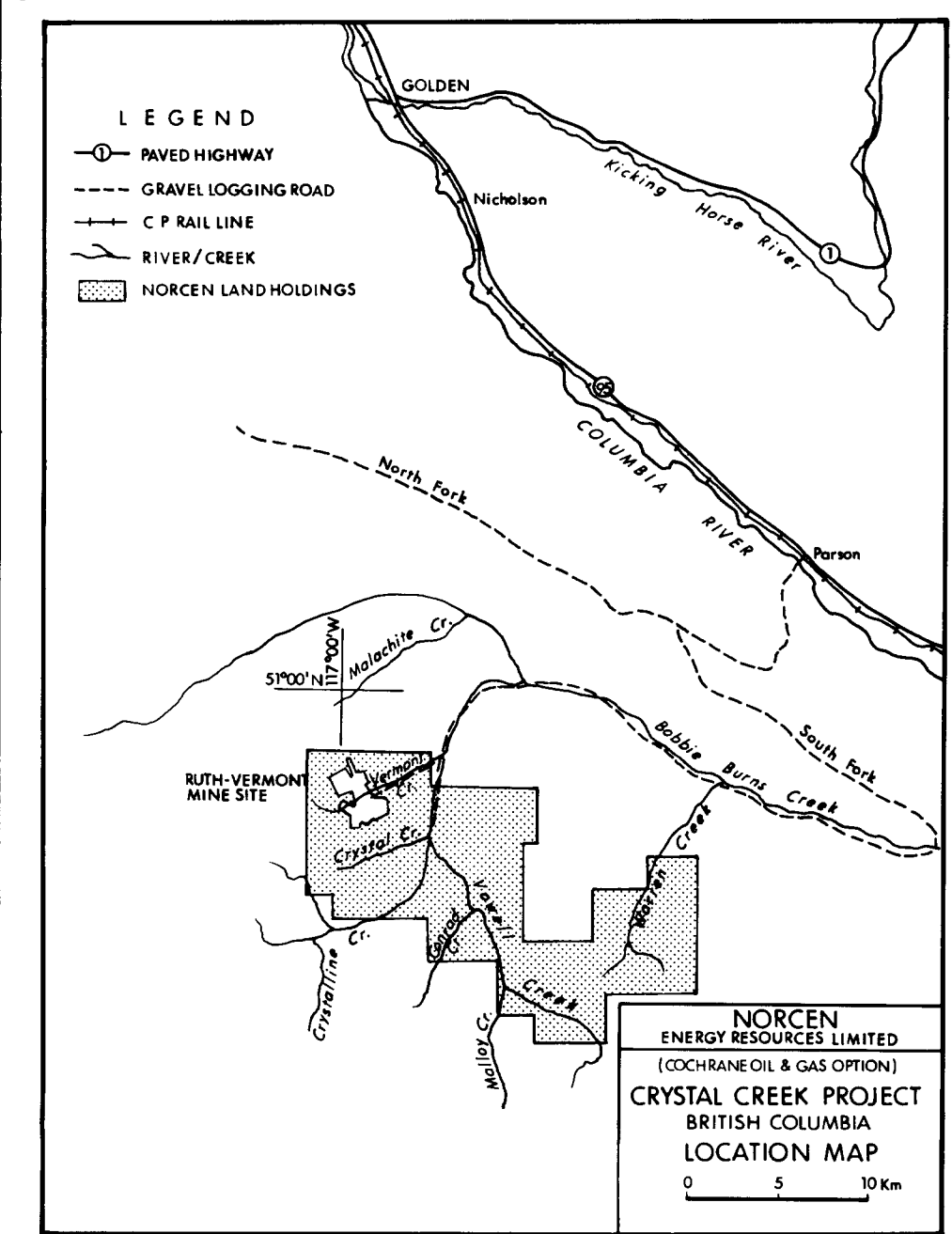
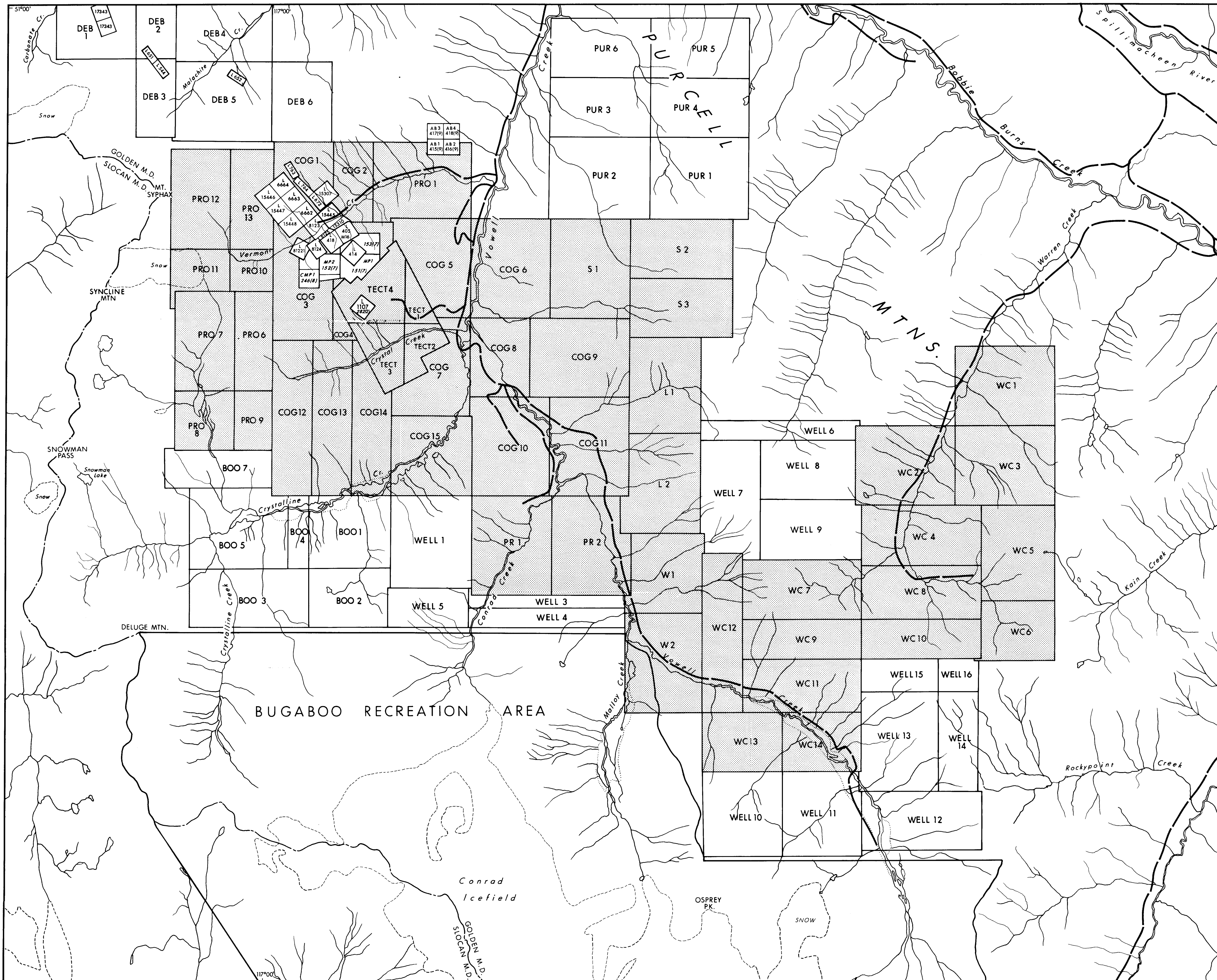
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XIV	36
XV	40
XVI	40
XVII	36
XVIII	34
XIX	30
XX	24
XXI	30
XXII	38
XXIII	40
XXIV	32
TOTAL	825

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
8096 part 182
NO.

Norcen
Energy Resources Limited

(COCHRANE OIL AND GAS OPTION)
CRYSTAL CREEK PROJECT
BRITISH COLUMBIA
LAND HOLDINGS MAP





MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. **8096 part 1 of 2**

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(COCHRANE OIL AND GAS OPTION)
CRYSTAL CREEK PROJECT
BRITISH COLUMBIA
LAND HOLDINGS MAP

