- PR- NT GORMAN 79 (1) A -

PRELIMINARY REPORT ON THE GEOLOGY
OF THE MT. GORMAN AND COAL RIDGE AREA
B.C. COAL LICENSES

Prepared for Mr. W. Filipek of Edmonton, Alberta

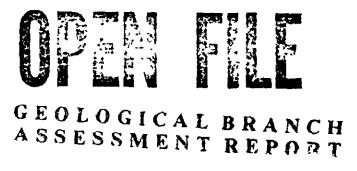
By:

Dr. Alois Pribyl, Chief Geologist of the Geological and Geotechnical Institute of the Czechoslovak Academy of Sciences, Prague, Czechoslovakia

License #5740, 5741

N.T.S. Map Reference No. Jarvis Lakes (93-I-1F)

Edmonton, Alberta, Canada September 3, 1979



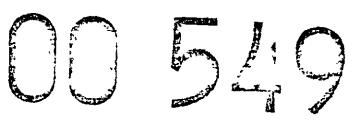


TABLE OF CONTENTS

Introduction	Page 1
Location	Page 1
Access	Page 1
Physiography	Page 1
Scope of work	Page 2
Certificate	Page 3 & 4
Structural Geology	Page 5
Stratigraphy	Page 5
Coal Seams	Page 8
Chemical Ánalysis of Surface	Page 10
Conclusions and Recommendations	Page 15
Preliminary Calculation of Coal Reserves	Page 16
Bibliography	Page 16
Geological Maps & Cross Sections	Back Folder

A Preliminary Report on the Geology

of the Mt. Gorman and Coal Ridge Area,

B.C. coal licenses

Prepared for Mr. W. Filipek of Edmonton, Alberta

-

BY:

Dr. Alois Přibyl, Chief Geologist of the Geological and Geotechnical Institute of the Czechoslovak Academy of Sciences, Prague, Czechoslovakia

and

Robi C. Day, B. Sc. (Conc. in Geology)

Freelance Prospecting Ceologist of

Edwonton, Alberta

Edmonton, Alberta, Canada September 3, 1979

Introduction

In the summer of 1979, Dr. A. Pribyl and Mr. R. Day were requested by Mr. W. Filipek of Edmonton, Alberta to prepare a preliminary geological report and geological map on the Mt. Gorman and Coal Ridge area in B.C., coal licenses held by Mr. W. Filipek.

Location

The Coal Ridge and Mt. Gorman coal licenses are comprised of two sections of land and are located in the province of British Columbia, Canada, on 1:56,000 topographic and map Jarvis Lakes (93-1-1). The licenses are bounded by the Alberta-British Columbia border to the east, by Mt. Gorman to the north and by Gorman Creek to the west and southwest of Coal Ridge. These licenses are:

License # 574 NTS 93-I-1 Block I Units 1, 2, 11, 12

License # 574 NTS 93-I-1 Block H Units 81, 82, 91, 92

Access

Access in this area is possible by helicopter from the Sherman Meadows forestry airstrip located approximately 110 miles southwest of the Town of Grande Prairie, Alberta, on the Wapiti Road.

Physicgraphy

Elevations range from 3700' to as high as 8000' at Mt. Minnes. Treeline is at 5800' and forest cover consists mainly of mature spruce. All coal on the above licenses is above treeline.

Scope of Work

The undersigned acknowledge herewith that they agree with all opinions and recommendations specified in this preliminary report. They would like to express their gratitude to Mr. W. Filipek from Edmonton, Alberta who supplied them with valuable information.

of At. Vindyo.

Dr. Alois Pribyl, Chief Geologist of the Geological and Geotechnical Institute of the Czechoslovak Academy of Sciences, Prague, Czechoslovakia **.**...

and

Robin C. Day, B Sc. (Conc. in Geology) Freelance Prospecting Geologist of

Edmonton, Alberta

Certificate - I, Alois Pribyl of Prague, Czechoslovakia, hereby certify that:

- I am Chief Geologist of the Geological and Geotechnical Institute
 of the Czechoslovak Academy of Sciences, Prague, Czechoslovakia.
- 2) I am a graduate of the Charles University of Prague with a doctorate degree of RNDr (Rerum Naturalium Doctoris) received in 1951 in Geology, Petrology and Palaeontology and later received a D. Sc. degree in 1963.
- 3) I am a member of the Society of Mineralogy and Geology in Czechoslovakia, the Palaeontological Society of Great Britain, the Palaeontological Society of the U.S.A., etc.
- 4) I have practised my profession as a geologist for more than 35 years.
- 5) I have published to date over 340 geological and palaeontological books and papers which are published in various languages (Czech, German, English, Russian, etc.).
- 6) I have no direct or indirect interest, nor do I expect to have any interest in the Mt. Gorman, and Coal Ridge, B.C. coal licenses held by Mr. W. Filipek, or in any of his mineral claims.
- 7) The report and recommendations are based on a personal examination of the above coal licenses mentioned during the period between August 1 and August 16, 1979.

Dated this 3rd day of September, 1979

Dr. A. Přibyl

Certificate - I, Robin C. Day, of Edmonton, Alberta, hereby certify that:

- 1) I am a graduate of the University of Alberta with a B. Sc. (Concentration in Geology) obtained in 1975. I have been engaged in freelance mapping and prospecting geology for four (4) years.
- 2) Experience two seasons as an assistant, mapping in Palaeozoics in the Rocky Mountains north of the Peace River.
 - consulting for gravel resources in the Edmonton Area

ځ

- placer mining in Burwash Creek, Yukon
- prospecting for Au, Ag in Soukham and Northern B.C.
- prospecting for asbestos in Northern B.C.
- mapping coal licenses in the Jarvis Lakes map sheet
- prospecting for base metals in the Yukon
- 3) I have no direct or indirect interest nor do I expect to have any interest in the Mt. Gorman and Coal Ridge B.C. coal licenses held by Mr. W. Filipek or in any of his mineral claims.
- 4) This report and recommendations are based on a personal examination of the above coal licenses mentioned, during the period between August 1 and August 17, 1979.

Dated this 3rd day of September 1979

Robin C. Day, B. Sc

THE GEOLOGY OF THE MT. CORMAN AND COAL RIDGE AREA B.C. COAL LICENSES

Structural Geology

The structural geology of the mapped area is unusually simple. The main structural feature is a remnant of the Northeast limb of a large and gentle syncline, as outlined by the Cadomin Formation, which forms the Coal Ridge Spur South of Mt. Gorman and west of Coal Ridge. There are no folds or faults to be dealt with on the Coal Ridge licenses. Deformation of the bedding of the uppermost Gates Member of this formation is minimal. All bedding dips gently to the S.W.

Stratigraphy

The coal licenses are underlain by the following Jurassic and Lower Cretaceous Formations.

Nikanassin Formation - The Nikanassin Formation is the oldest formation outcropping in the Mt. Gorman and Coal Ridge area. The strata of this formation consist of grey-brown to dark grey, fine to medium grained, ripple marked carbonaceous, grey to buff weathering, quartzitic sandstones, often laminated and showing cross-bedding, and black, carbonaceous interbedded siltstones of marine and non-marine origin which give the Nikanassin formation a ribbed appearance. The thickness approaches 6,000'. The lower and middle part of this formation is Jurassic in age and the upper part belongs to the Lower Cretaceous. Sedimentation of the upper part of this formation was in a brackish to deltaic environment which produced many thin coal seams from 6" to 5' thick in the upper part of the Nikanassin Formation.

167.

Cadomin Formation - The Cadomin Formation lies unconformably over the Nikanassin Formation. This formation is approximately 80' thick in this area and is a poorly cemented conglomerate comprised predominantly of well rounded quartzite pebbles ranging in size from 'k" to over 6" in diameter. Well rounded pebbles of black, green and grey pebbles of chert are also seen. These are some cross-bedded, coarse grained sandstone lenses. The Cadomin Formation is an excellent marker and outlines the structural geology as a cliff forming unit in this area. No coal seams are present.

Gething Formation - The Gething Formation lies conformally over the Cadomin Formation approximately 150' thick in this area and is mainly non-marine sandstone and siltstone with some shales and minor conglomerates. A coal seam is at the top of this formation and is 8' - 10' thick in this area.

Moosebar Formation - This formation rests conformably over the older Gething Formation, is 120' - 170' thick and is comprised of grey to tan coloured marine shale with thin siltstones weathering to a rusty maroon colour. No coal seams are present.

Commotion Formation — The Gates Member of the Lower Commotion Formation is the main coal bearer of this area. Only the lower most Torrens River Member S.S. and the Gates Member are present in the licensed area. The middle Commotion (Hulcross Member) and the upper Commotion (Boulder Creek Member) have been eroded. The Torrens River Member lays conformably over the Moosebar Formation. This sandstone unit is approximately 40' thick, exhibits much cross-bedding, and is thin to thick bedded. The uppermost bed weathers a blue-grey colour and lays immediately below coal seam f1. The thickness of the remaining part of the Gates Member is about 310' with only the lowest four Gates coal seams present.

FILIPEK HOLDINGS LTD.

TORRENS RIVER
Sample No. NK-1 (Trench)
Seam No. Nikanassin Formation
B.C. Coal License No.

PROXIMATE ANALYSIS:	Air-dry Basis	Dry Basis
Ash %	19.39	20.04
R.M. Z	3.22	-
V.M.%	28.62	29.57
F.C.%	48.77	50.39
TOTAL SULPHUR %:	0.61	0.63
CALIFORIC VALUE:		
Cal/gm.	6,230	6,440
BTU/1b.	11,210	11,580

August 22, 1979

FREE SWELLING INDEX:

CYCLONE ENGINEERING SALES LTD.

1

Thin bedded to platy, light brown weathering, siltstones and sandstones with thick weathering rinds are found above coal seam #1 in the Gates

Member. They contain many plant fossils immediately above the coal seams.

Coal Seams

Five coal seams have been found in outcrops within the boundary of the licenses. Mainly:

- a) Gething Coal Seam: This seam occurs at the top of the Gething

 Formation and is approximately 10' thick. This coal seam can be

 seen on the top of Coal Ridge.
- b) Commotion Coal Seam #1. This seam is 6' 9' thick at the outcrop of Coal Ridge, but is known to be 12' 30' thick with an average thickness of 20' on adjoining coal licenses. This coal rests immediately above the Torrens River Member sandstone.
- c) Commotion Coal Seam #2: This seam is 12' 15' thick and is approximately 50' above coal seam #1. The thickness of the sandstone between coal seams #1 and #2 is apparently highly variable as they are only 15' 20' apart in outcrop in Wolverine Creek, to the North about 3 miles.
- d) Commotion Coal Seam #3: This seam is only 1' thick at the trenched outcrop on Coal Ridge. It is locally up to 5' thick and lies about 90' above seam #2.
- e) Cormotion Coal Seam #4: This seam is 18' 20' thick at the trenched outcrop on Coal Ridge. This is the thickest coal seam and is locally known on adjoining licenses, to average 30' in thickness. Coal seam #4 lies about 70' above coal seam "3. There is only 10' to 30' of sandstone overlying seam #4 on Coal Ridge. The overlying parts of the Cormotion Formation have been eroded.

Remarks: The Gates coal seams on Coal Ridge are somewhat thinner than at other known outcrops and from logs in the immediate area. More thorough trenching should give a better idea as to true thickness. The numerical system for the coal seams was borrowed from Denison Mines - Saxon Coal Project - 1976/1978. Four coal seams (Gething, 1, 2 and 4) appear to be mineable.

Composition and Quality of Coal Scams - Chemical Analysis of Surface

FILIPEK HOLDINGS LTD.
TORRENS RIVER
Sample No. 2
Seam No. Gething Seam
B.C. Coal License No.

PROXIMATE ANALYSIS:	Air-dry Basis	Dry Basis
Ash ['] %	17.62	19.00
R.M.% -	7.25	
V.M.%	24.20	26.09
1.C.%	50.93	54.91
TOTAL SULPHUR %:	0.29	0.31
CALORIFIC VALUE:		
Cal/gm.	5,480	5,9 10
BTU/1b.	9,870	10,640

FREE SWELLING INDEX:

N/A

August 22, 1979

CYCLONE ENGINEERING SALES LTD.

--

43

FILIPEK HOLDINGS LTD.
TORRENS RIVER
Sample No. 1
Seam No. 1
B.C. Coal License No.

PROXIMATE ANALYSIS:	Air-dry Basis	Dry Basis
Ash %	33.27	35.40
R.M.%	6.01	-
V.M.%	20.90	22.24
F.C.%	39.82	42.36
TOTAL SULPHUR %:	0.35	0.37
CALORIFIC VALUE:		
Cal/gm.	4,300	4,570
BTU/1b.	7,740	8,230

FREE SWELLING INDEX:

N/A

August 22, 1979

CYCLONE ENGINEERING SALES LTD.

FILIPEK HOLDINGS LTD.
TORRENS RIVER
Sample No. 3
Seam No. 2
B.C. Coal License No.

PROXIMATE ANALYSIS:	Air-dry Basis	Dry Basis
Ash %	23.62	24.80
R.M.%	4.74	
V.M.%	22.68	23.80
F.C.%	48.96	51.40
Į.		
TOTAL SULPHUR %:	0.35	0.37
CALORIFIC VALUE:		
Cal/gm.	5,560	5,840
BTU/1b.	10,010	10,510

FREE SWELLING INDEX:

N/A

August 22, 1979

CYCLONE ENGINEERING SALES LTD.

P.K.

FII.IPEK HOLDINGS LTD.
TORRENS RIVER
Sample No. 4
Seam No. 4
B.C. Coal License No.

PROXIMATE ANALYSIS:	Air-dry Basis	Dry Basis
Ash %	15.65	16.57
ĸ.M.%	5.56	~ `
V.M.%	24.32	25.7 5
F.C.%	54.47	47.68
TOTAL SULPHUR %:	0.35	0.37
CALORIFIC VALUE:		
Cal/gm.	6,040	6,400
BTU/1b.	10,870	11,510

FREE SWELLING INDEX:

N/A

August 22, 1979

CYCLONE ENGINEERING SALES LTD.

Conclusions and Recommendations

From the data obtained from the preliminary geological mapping of the coal licenses on Coal Ridge, B.C., the authors arrived at the following conclusions which are submitted to Mr. W. Filipek for his consideration.

- 1) No drilling is required to prove up the Coal Ridge coal licenses as the coal seams can be seen in outcrop around the entire Ridge.
- coal seams lie above treeline, on a dip slope of approximately 9° with stripping ratios ranging from 1:1 on coal seam #4 to a maximum of 15:1 on coal seam #2 and the Gething coal seam.
- 3) Tonnages are sufficient to support the mining of 400,000 tons of raw coal per year for ten (10) years.
- 4) Adits should be made in all coal seams except Commotion Coal seam #3
 to recover unoxidized bulk samples for analysis. Heavy equipment
 cannot easily be transported to the top of Coal Ridge. Helicopter
 Transport of a compressor, hose, timber, dynamite, tools, fuel, etc.
 will be necessary to make adits. All adits should be made near the
 southwest end of Coal Ridge where steeper slopes will facilitate
 shorter adits.
- 5) Railroad and roads may be built from Dome Creek, B.C. from the C.N.

 Rail Line, up Jarvis Pass, by Jarvis Lakes, B.C. to Stinking Creek
 Torrens River, Alberta. Exploration access is about one (1) mile from
 the Kakwa Mines Ltd. Stinking Creek Horn Ridge Road.

*

Preliminary Calculation of Coal Reserves

The preliminary calculation of coal reserves on Coal Ridge area was made by the counting of centimeter squares which give 4,000,000 to as much as 4,500,000,000¹long tons of raw coal reserves. The Gething coal seam and Commotion seams numbers 1, 2 and 4 have been included in the calculations:

Cething Coal
$$-1.7 \times 10^6 \text{ m}^3$$
 (1.01 × 10⁶ long tons)
Commotion Coal #1 - .78 × 10⁶ m³ (1.01 × 10⁶ long tons)
#2 - .88 × 10⁶ m³ (1.14 × 10⁶ long tons)
#4 - .33 × 10⁶ m³ (.43 × 10⁶ long tons)
* Conversion Factor of 1.3

References:

1) Useful Reports

- a) Blackstock, W.J., 1970, Preliminary Report on the Kakwa River

 Coal Lands held by Kakwa Mines Ltd. prepared by Alcon Engineering

 Ltd. Calgary, Alberta, pp. 1-33 and maps.
- b) Pribyl, A., 1970, Preliminary Report on the Geology of the Territory between the Kakwa and Torrens Rivers in Northwestern Alberta, Canada (prepared for Mr. W. Filipek of Kakwa Mines Ltd.), pp. 1-17 and maps.
- c) Pribyl, A. and Vach, J., 1971, Preliminary Report on the Geology of the Territory between Coal Ridge and Rim Ridge in Northwestern Alberta, Canada (prepared for Coal Ridge Mines Ltd.), pp. 1-7 and maps.

- d) Pribyl, A., and team of experts, 1973, opinion and recommendations on order of magnitude, feasibility study no. 8, 1972, Kakva Coal Project, Alberta, Notus Exploration Company, Vancouver, B.C., pp. 1-53 (geology), 1-29 (mining part) texts and maps.
- e) Robertson, D.B. and McFall, C.E., 1972, Progress Reports, Kakwa Coal
 Project Notus Exploration Co., Suppl. App. Nos I-II
 (Text and Drill Hole logs).
- f) Pt. III A report to Notus Exploration Co. on the Preparation,

 Analysis and Washing of Seams 3, 3a, and 4 of the Kakwa Coal Project
 Birtley Engineering (Canada) Ltd. Calgary, Alberta, pp. 1-174.
- g) Vogan, Ross S., 1970, Report on Geology of Kakwa River Coal Project (prepared for Woods Petroleum of Canada Ltd., Calgary), pp. 1-369 and maps.

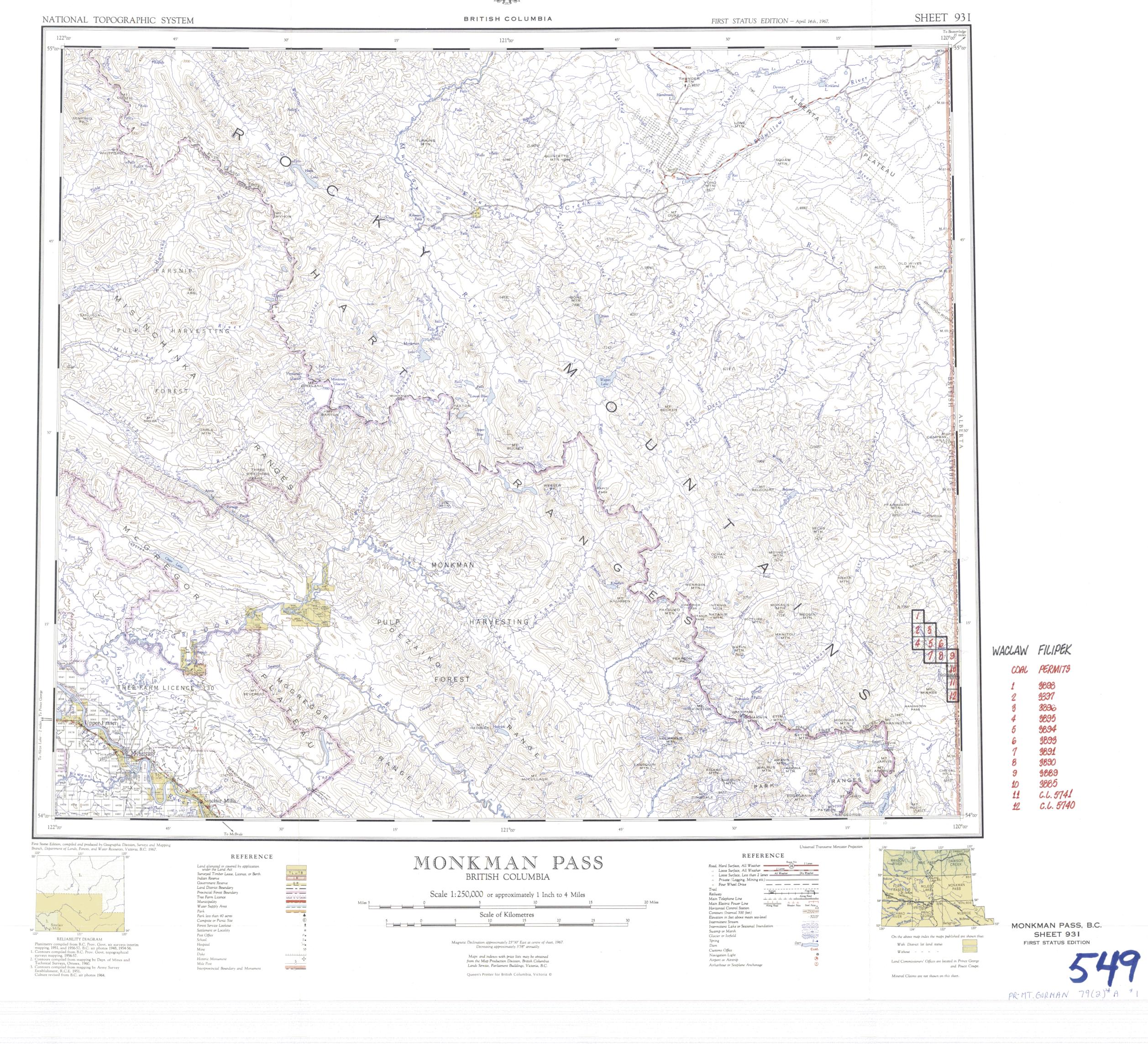
2. Publications

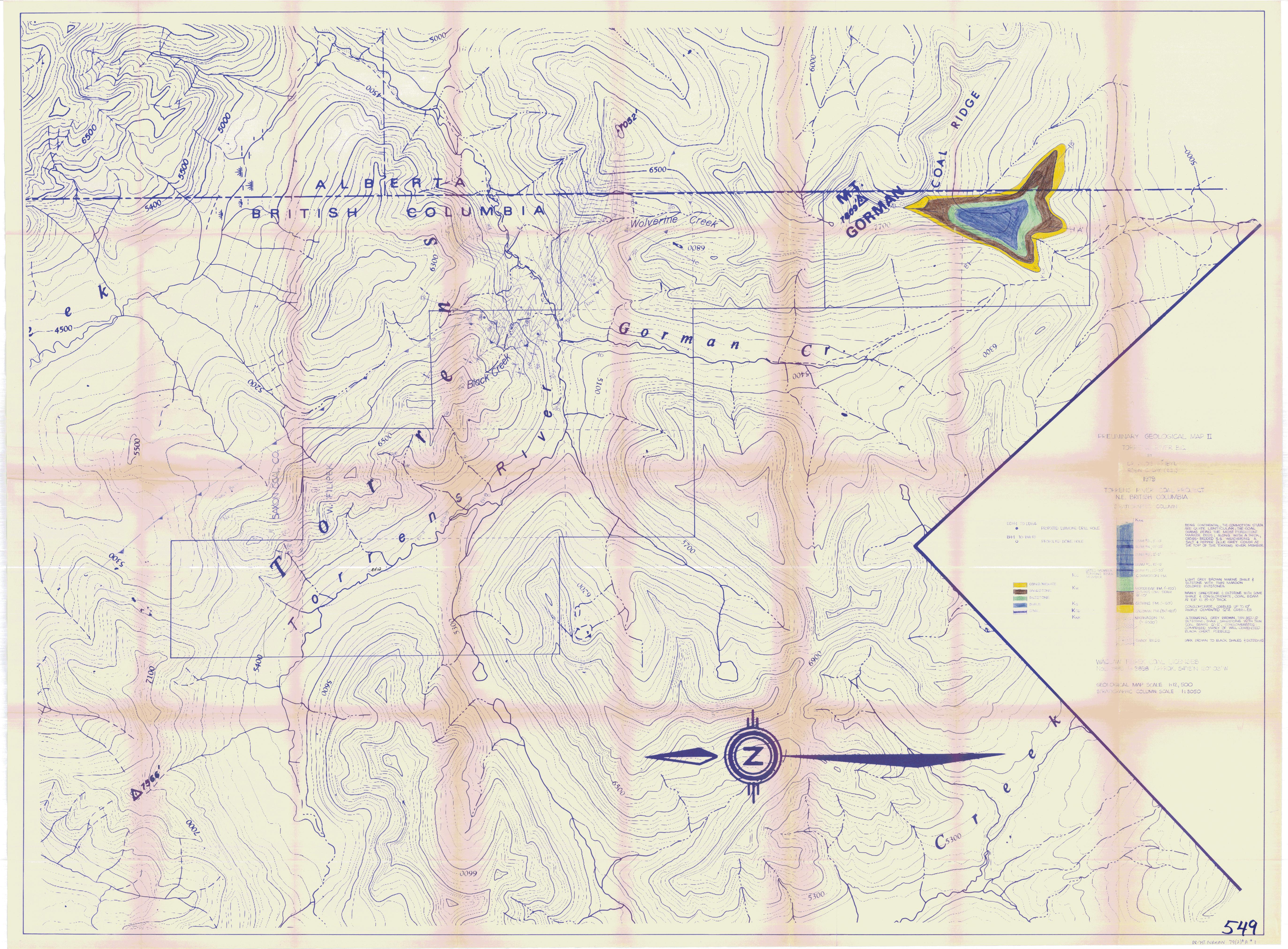
Irish, E.J., 1965, Geology of the Rocky Mountain Foothills, Alberta (between latitudes 50° - 15' and 540° - 25'). Geological Survey of Canada, Dept. of Mines etc. Memoir 334, pp. 1-241 and maps. Ottawa. Stott, J., 1960, Cretaceous Rocks between Smokey and Pine Rivers, Rocky Mountain Foothills, Alberta and British Columbia, G.S.C. Dept. of Mines and Technical Surveys, Paper 68-16, pp. 1-62, Ottawa.

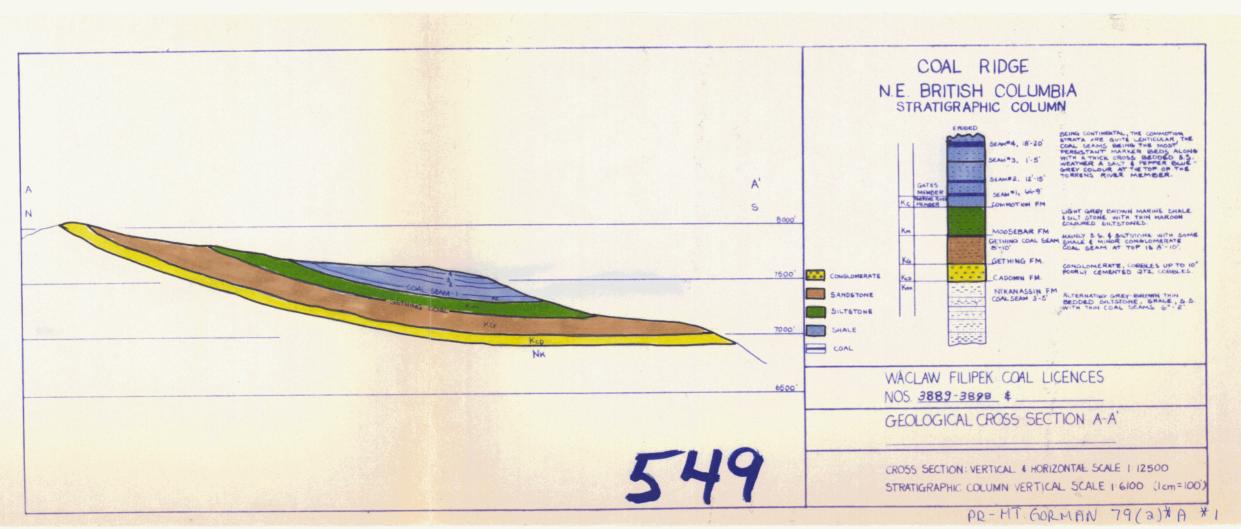
Supplement

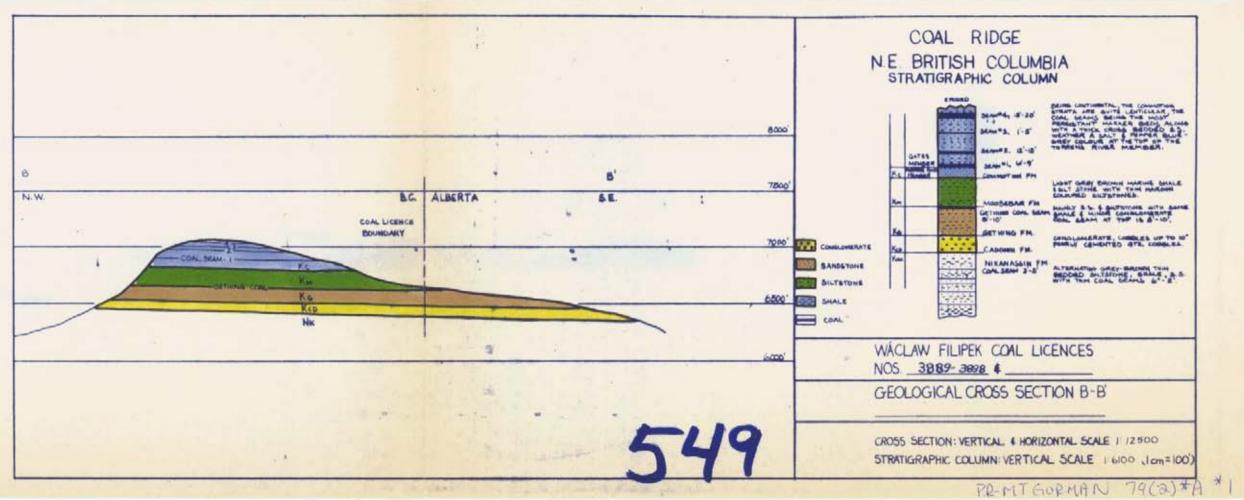
- 1. Preliminary Geological Map Scale 1:12,500.
- 2. Geographical Map with location of licenses.
- Geological Cross-sections.

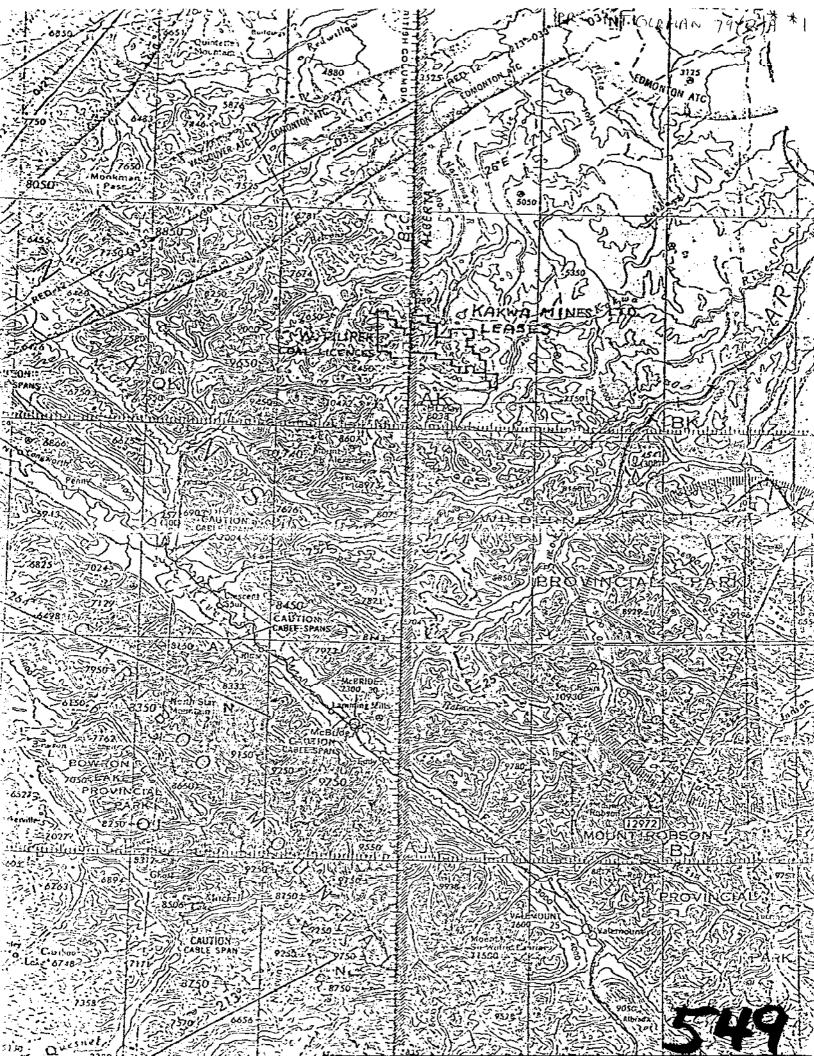


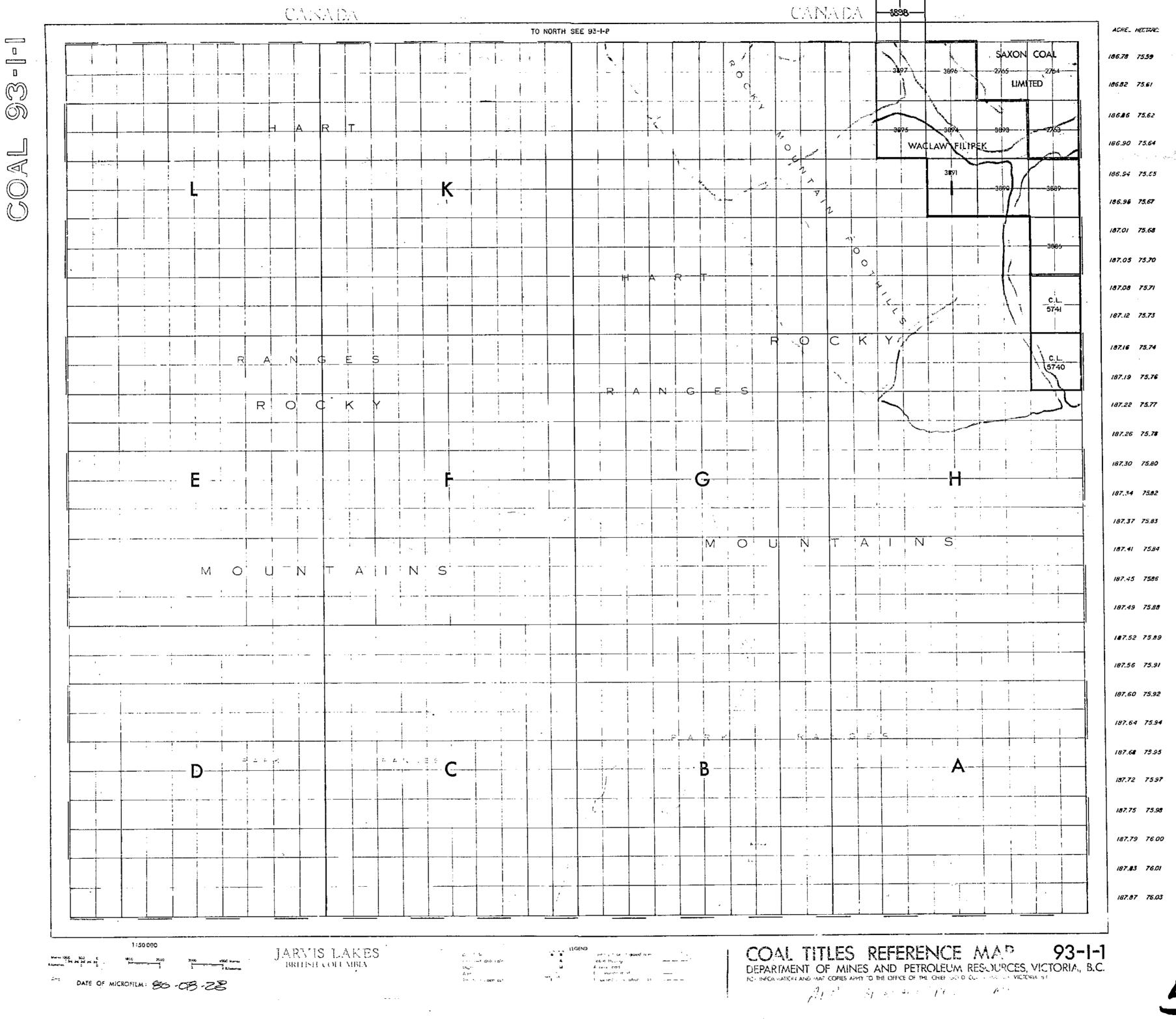












· 1986年 - 198

549