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# CANMET

Canada Centre for Mineral and Energy Technology Centre canadien de la technologie des minéraux et de l'énergie

BIBLIOGRAPHY OF CANMET PUBLICATIONS ON THE COKING COALS OF EASTERN CANADA

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# BIBLIOGRAPHY OF CANMET PUBLICATIONS ON THE COKING COALS OF EASTERN CANADA

### INTRODUCTION

The Canada Centre for Mineral and Energy Technology (CANMET), formerly known as the Mines Branch, has evaluated the coking properties of Canadian coals periodically during the past 50 years, in accordance with the changes in the pattern of the market requirements for coking coals (1). During this period, numerous departmental reports ranging from internal memoranda to scientific papers have been published on the results of these studies. Most of these reports, concerned with the many facets of coal and coke technology, have been catalogued in the past in a more or less fragmented fashion, according to authors who have been concerned with compiling them by the particular group that was responsible for the original study.

Because the current energy crisis has served to focus attention on Canadian coking coal as a valuable energy resource, it was considered expedient that all publications on coking coal should be catalogued in a bibliography. A catalogue of this information would provide a valuable guide to assist the Department in acquiring an inventory of Canadian coal reserves. To compile this catalogue, publications both within and without the CANMET library were researched. Eventually this search resulted in an accumulation of a wealth of data produced by other federal government agencies as well as private industry and provincial government departments. With such a mass of published material on the coking coals it was soon apparent that the resulting bibliography should, at this stage, be restricted to the coking coals of Eastern Canada based upon CANMET publications. Subsequent cataloguing of publications can be broadened in scope to include a bibliography of reports on coking coals from other areas of Canada from other sources as well as those reports available within CANMET.

The bibliography pertaining to reports published by CANMET is by no means complete. There are numerous instances of coals having been submitted for analysis in which the exact location of the sample was not specified though the product was identified as an Eastern or Western Canadian coal.

Reports also exist of tests performed on specific coals, not to evaluate the coal as such, but to check various types of equipment and analytical techniques. In some instances these may have been included because of the fact that such a great number of publications on coal existed that it was impossible to give them more than a cursory examination.

## NOVA SCOTIA COALFIELDS

## Cape Breton Island Coal Areas

In the Sydney coalfield (Fig. 1), located on the Island of Cape Breton at the eastern extremity of Nova Scotia, are found the most important coal deposits of the Atlantic Provinces. Coal from this coalfield has been extensively mined for the past 150 years from the numerous submarine mines in the area. Coal has been extracted from 12 seams of mineable thickness that are contained in strata of Pennsylvanian age. The coal measures extend from Cape Morien in a northwesterly direction to Cape Dauphin for a distance of more than 35 miles. The coal seams extend inland for a relatively short distance but dip gently seaward in a northeasterly direction for an undetermined distance. This field is relatively undisturbed geologically, containing a series of undulating synclines and anticlines whose axes follow the dip of the enclosed coal seams. Coal mined from this area is of high volatile "A" bituminous rank and of coking quality.

The coalfields of Port Hood, Mabou, Inverness and Chimney Corner (Fig. 1), are situated on the west side of Cape Breton. Coal seams in these fields dip steeply seaward in a west to northwesterly direction and are of lower rank than those of the Sydney coalfield and they are classed as high volatile "C" bituminous in rank.

Of the four coal areas mentioned above, the Port Hood coalfield contains the most substantial coal reserves. In this field the seams dip seaward in a southwesterly direction. The main seam averages 5 feet in thickness and according to MacKay has some 10,000,000 net tons of potential reserves in the area.

In the Richmond coal basin (Fig. 1), situated due south of the Port Hood coal area, the coal is high in ash and sulphur content and the area is considerably deformed geologically. The major coal seam, reported to be 11 feet thick, contains numerous dirt bands and is of importance only for local domestic use.

The Loch Lomond coal area (Fig. 1) is located southwest of the Sydney coalfield. The coal here has been worked to a very limited extent and is reported to be suitable for metallurgical purposes. This coal is of limited value due to its limited reserve.

## Mainland Coalfields

To the west of the Richmond coal area, on the mainland of Nova Scotia, is the Pictou coalfield (Fig. 1) which is one of the more important coalfields on the mainland. This field encompasses the towns of Stellarton, Thorburn and Westville.

These coals are all contained in measures belonging to the Pictou series. The youngest coals are the 5 seams in the Thorburn area. These seams overlie the 10 seams of the Stellarton area which occupy an intermediate position in the Pictou series. Five of these coals have been mined extensively and range from 8 to 40 feet in thickness. The coals in the Westville area are the oldest seams in the Pictou coal measures. Of the 4 seams known, the 2 major seams measure 12 and 17 feet in thickness while the other 2 seams average 6 feet in thickness but are of inferior quality.

This coalfield is badly disturbed geologically having many faults of large displacement. The coal from the Stellarton and Thorburn areas is high volatile "A" bituminous in rank while the coal from the Westville area is medium volatile bituminous.

Coals of the Pictou coalfield, unlike the coals from the Sydney coalfield, are of "Drift" origin which accounts for the variations in thickness of the seams. This mode of deposition also accounts for the relatively high ash content found in the Pictou coals.

The Kemptown coal area (Fig. 1) lies in a line due west of the Pictou coalfield. The coal in this area has been mined to a limited extent in a badly faulted and folded deposit. The seam consists of 3 feet of low volatile bituminous coal with a high percentage of ash. This coal has never been exploited commercially, but is reported to have limited possibilities as a coal blend for the production of metallurgical coke.

The two remaining coal deposits of Nova Scotia, the Springhill and Joggins coalfields (Fig. 1), are located in Cumberland County due west of Kemptown.

Coals in these areas are high volatile "A" bituminous in rank but, whereas the coal from the Springhill field is a good coking coal, that of the Joggins field is not, due to its high ash and sulphur content. In the Joggins area the seams are relatively thin and mining is difficult due to a complex system of faults.

The Springhill coalfield, containing 6 major coal seams, is younger than the Joggins coals. This field contains the greater portion of reserves of coking coal, which dip steeply in a southwesterly direction. With increased depth of mining the seams flatten considerably.

Mining in this area has been severly hampered by a complex fault system and the phenomenon known locally as "Bumps". Here the seams are contained by strong sandstone strata that transferred the stresses caused by extraction of the seam to a point ahead of the mined area. These accumulated stresses, transferred to the enclosed coal seam, resulted in serious outbursts called "Bumps". This condition eventually brought an end to mining operations in the area.

An extensive drilling program was undertaken in 1958-59 to explore the possibility of finding a mineable reserve where the coal could be extracted at a shallower depth. This program failed to outline a suitable reserve due to the extensive fault system encountered.

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R.I.C.S. 6	Report of Coking Tests on Washed Princess Coal in the By-Product Plant of the Montreal Coke and Manufacturing Co., Ville LaSalle, Montreal, Nov. 13 to Nov. 21, 1931.	R.A. Strong B.F. Haanel
R.I.C.S. 10	Report of Coking Tests on N.S. Coals in the Plant of the Ottawa Gas Co. May 18, 1932.	R.A. Strong E.J. Burrough E. Swartzman
R.I.C.S. 11	Report of Storage Test on Washed Princess Coal.	R.A. Strong E.J. Burrough E. Swartzman
R.I.C.S. 22	Report No. 1 - Study of Chemical and Physical Properties of Screened Sizes of Coal from 1B Colliery, Phalen Seam, Sydney Area, N.S.	R.A. Strong
R.I.C.S. 28	Report No. 2 - Study of Chemical and Physical Properties of Screened Sizes of Coal from No. 2 Colliery, Phalen Seam, Sydney Area, N.S.	R.A. Strong
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R.I.C.S. 34	Report no. 4 - Study of Chemical and Physical Properties of Screened Sizes of Coal from No. 10 Colliery, Emery Seam, Sydney Area, N.S.	R.A. Strong
R.I.C.S. 37	Report No. 5 - Study of Chemical and Physical Properties of Coal from No. 12 Colliery, Harbour Seam, Sydney Area, N.S.	R.A. Strong
R.I.C.S. 39	Report No. 6 - Study of Chemical and Physical Properties of Screened Sizes of Coal from No. 16 Colliery, Phalen Seam, Sydney Area, N.S.	R.A. Strong
R.I.C.S. 40	Report of Field Investigation at Sydney, N.S.	R.A. Strong E. Swartzman E.J. Burrough

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R.I.C.S. 43	Report No. 8 - Study of Chemical and Physical Properties of Screened Sizes of Coal from No. 24 Colliery, Emery Seam, Sydney Area, N.S.	R.A. Strong
R.I.C.S. 44	Report No. 9 - Study of Chemcial and Physical Properties of Screened Sizes of Coal from Princess Colliery, Harbour Seam, Sydney Area, N.S.	R.A. Strong
R.I.C.S. 45	Report No. 10 - Study of Chemical and Physical Properties of Screened Sizes of Coal from Florence Colliery, Harbour Seam, Sydney Area, N.S.	R.A. Strong
R.I.C.S. 47	Report of Field Investigations at Sydney, Nova Scotia. December 1935.	R.A. Strong E. Swartzman E.J. Burrough
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R.I.C.S. 99	Physical and Chemical Survey Report No. 40 - Study of Coal from the Gardiner Seam, McNeil Pit, Dominion Coal Co. Ltd., Sydney, N.S. August 1938.	R.A. Strong E. Swartzman E.J. Burrough
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F.R.L. 126	P. and C. Survey Report No. 141 - Studies of the Preparation and Beneficiation of Canadian Coals, No. 26 Mine, Harbour Seam, Sydney Area, Nova Scotia, (Dominion Coal Co. Ltd.). October 1949.	E. Swartzman
F.R.L. 128	P. and C. Survey Report No. 142 - Study of the Properties and Beneficiation of Canadian Coals, No. 25 Mine, Gardiner Seam, Sydney Area, N.S., (Dominion Coal Co. Ltd.). November 1949.	E. Swartzman
F.R.L. 133	Study of the Washing Properties of Coal from Franklin Mine, Bras d'Or Coal Co. Ltd. and Four Star Mine, Four Star Collieries Ltd., Sydney Area, N.S. January 1950.	E. Swartzman

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F.R.L. 156	P. and C. Survey Report No. 145 - Study of Coal from Princess Mine, Harbour Seam, Sydney Mines Area, N.S., (Old Sydney Collieries Ltd.). April 1951.	E. Swartzman
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F.R.L. 192	P. and C. Survey Report No. 150 - Study of the Properties and Beneficiation of Coal from Four Star Mine, Tracey Seam, Sydney Area, N.S. June 1954.	E. Swartzman T.E. Tibbetts
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F.R.L. 245	Effect of Continuous Mechanical Mining Using the Dosco Miner on the Size Distribution of Mine Run Coal from No. 12 and No. 26 Collieries, Harbour Seam, Sydney, N.S. May 1956.	E. Swartzman T.E. Tibbetts
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F.R.L. 251	Cleaning Performance Test on Full-Seam Continuous Miner-Won Mine Run, Four Star Collieries (Sydney Area, N.S.). Coal in a Baun-Type Jig. August 1956.	E. Swartzman T.E. Tibbetts
T.M. FMP 49/56-PREP	Size Distribution Test on Coal Three Dosco Miner Walls, No. 26 Colliery, Harbour Seam.	E. Swartzman
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F.R.L. 259	Effect of Continuous Mechanical Mining Using the 3 JCM Miner on the Size Distribution of Mine Run Coal from Tracey Seam, Four Star Collieries Ltd., Broughton, N.S. March 1957.	E. Swartzman T.E. Tibbetts
F.R.L. 263	Further Data on the Effect of Continuous Mechanical Mining, Using the Dosco Miner, on the Size Distribution of Mine Run Coal from No. 26 Colliery Harbour Seam, Sydney, N.S. June 1957.	E. Swartzman T.E. Tibbetts

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IR FMP 60/124-MIN	Report on Field Trip to Dominion No. 20 Mine, Nova Scotia; Dept. of Mines and Lands, N.B.; Dufferin Terrace, Quebec City, Quebec.	T.S. Cochrane
IR FMP 61/7-SP	Review of Iron and Steel Making Operations at the Sydney Works, Dominion Steel and Coal Corp. Ltd.	J.H. Walsh
IR FMP 61/28-CG	Evaluation of Cokes Prepared from Harbour Seam Coal with Admixtures of No. 4 Pocahontas Seam Coal - Maritime Region Study Group M.R.S.C. #3.	J.C. Botham E.J. Burrough
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IR FMP 62/30-SP	Discussions with Officials of the Dominion Steel and Coal Corp. (DOSCO) concerning coke oven and blast furnace operations at the Sydney Works, Oct. 30-31, 1961, MRSG No. 4.	J.C. Botham J.H. Walsh
IR FMP 62/39-SP	A Note on the Technical Feasibility of Using Coal from Harbour Seam No. 26 Mine of the Dominion Coal Co., Glace Bay, N.S., for Coke-Making by the Steel Plants in Central Canada. MRSG No. 5.	J.H. Walsh J.C. Botham
IR FMP 62/139-PREP	A Study of the Physical and Chemical Properties of Coal from Princess Mine, Cape Breton, N.S., Old Sydney Collieries Ltd.	T.E. Tibbetts T.A. Lloyd
IR FMP 63/61-MIN	Rapid Development of Longwall Retreating in the Submarine Area of the Sydney Coalfield of N.S.	L. Frost H. Zorychta
DR FMP 65/90-SP	Memorandum Prepared for the Dominion Coal Board Concerning Discussions Held July 12, 1965 with Representatives of DOSCO Steel Ltd. and the Dominion Coal Co.	J.H. Walsh
DR FMP 66/24-CG	Movable-Wall Oven Tests and Related Analyses on Coals Submitted by DOSCO Steel Ltd., Sydney, N.S.	J.C. Botham C.H. Glaude R.C. Guenette
DR FMP 66/166-PREP	Study of the Size Consist of 2 in. x 0 Nut Slack Coal from Dominion Coal Co. Ltd., No. 12 Colliery.	T.A. Lloyd T.E. Tibbetts
DR FD 67/65-MET	Progress Report to the Dominion Coal Board, Desulphurization of Metallurgical Slack Coal from No. 26 Colliery.	J.H. Walsh B.J.P. Whalley
DR FD 67/95-PREP	Preparation of Low-Ash Coal from Dominion No. 26 Mine in Baum-Type Jig, Old Sydney Collieries Ltd.	T.E. Tibbetts T.A. Lloyd
DR FRC 68/54-SFS	Studies of the Removal of Sulphur from Cape Breton Coals.	B.J.P. Whalley S.M. Ahmed J.H. Walsh

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DR FRC 68/82-SFS	The Removal of Pyrite from Cape Breton Coals Destined for use in Metallurgical Processes - A Progress Report.	B.J.P. Whalley S.M. Ahmed J.H. Walsh
DR FRC 68/104-WRL	Addendum to Report: "Cyclone Plant for Sulphur Reduction of DOSCO No. 26 Coal".	J. Visman
DR FRC 72/64-SF	Analyses of Float and Sink Fractions of Lingan Mine Coal. August 1972.	W.J. Montgomery
DR MREC 72/86	Desulphurization of Coal: Review of Literature, Analyses of Cape Breton Coals, and Relation Between Total and Pyritic Iron.	J.C. Jorgensen
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IR MR 72/155	Preliminary Investigation of Roof Control Problems in the Lingan Mine of Devco Corp., N.S. Nov. 20-24, 1972.	F. Grant
DR FRC 73/1	Interim Report on Microscopic Examination of Pyrites and Petrographic Analyses of Float and Sink Fractions of Lingan Mine Coal. January 1973.	D.S. Montgomery B.N. Nandi
DR MREC 73/22	Application of the EMR Process for Sulphur Reduction of Cape Breton Coals.	J. Visman
IR FRC 73/25	Evaluation of Coal Channel Samples from the new Lingan Mine of Devco, (Fuels Research Centre). February 1973.	T.E. Tibbetts
DR MREC 73/36	An Investigation to Monitor the Caking and Coking Properties of a Coal Sample from the EMR Lingan Pilot Plant, Project No. 03-3-1/15-7.	J.G. Jorgensen T.A. Lloyd W. Gardiner
DR MREC 73/41	Petrographic and Related Analyses and Carbonization Data from the Mines Branch 30-1b Coke Oven of Five Samples from No. 26 Colliery submitted by DEVCO, Sydney, Nova Scotia, Project No. 03-1-3/10-1.	W. Gardiner J.G. Jorgensen
DR MREC 73/45	An Investigation to Monitor the Caking and Coking Properties of Three Hammer Mill Products and Three Clean Coal Samples from the EMR Lingan Pilot Plant.	J.G. Jorgensen

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DR MREC 73/54	Preliminary Report on Washing Results of EMR Plant, Lingan.	J. Visman
IR MR 73/56	Roof Bolt Supports Tests at Lingan Mine, Devco Corp., Nova Scotia. March 1973.	F. Grant
DR MREC 73/66	An Investigation to Monitor the Caking and Coking Properties of Hammer Mill Products and Clean Coal Samples from EMR Lingan Pilot Plant Samples from Mar. 15 to Apr. 10, 1973, Project No. 03-3-1/15-7 (C & D).	W. Gardiner T.A. Lloyd J.G. Jorgensen
DR MREC 73/81	An Evaluation Based on Petrographic and Related Analyses of the Compatibility of Sample "A", New High Volatile Coal, in Relation to Regular DEVCO Coking Coals submitted by Sydney Steel Corp., Sydney, N.S., Project No. 03-1-3/10-2.	J.G. Jorgensen
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DR MREC 73/103	A Comparison of the Caking and Coking Properties of Two Coal Blends Containing 15% DEVCO LV and 85% Lingan HV Cleaned at the Sydney Mines Washery and at the EMR Pilot Plant Washery, Project No. 03-3-1/15-7.	J.G. Jorgensen T.A. Lloyd J.C. Botham W Gardiner
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DR MREC 73/112	The EMR Process for Sulphur Reduction of Cape Breton Coals: A Flocculation Study.	H.A. Hamza R. Zrobok
DR MREC 73/113	Sulphur Reduction of Cape Breton Coals - Results obtained with the Developmental Plant at Lingan, N.S., (Presented at the 1973 Fall Meeting of the Mining Society of Nova Scotia) Sydney, N.S.	M.W. Mikhail J. Visman G.A. van der Straaten
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DR MREC 74/38	A Sulphur Reduction Plant for the Cape Breton Development Corp.	J. Visman
DR MREC 74/44	Critical Comparison of Processes for Sulphur Reduction of Lingan and No. 26 Coal.	J. Visman
DR MREC 74/56	Washability Data on Lingan N.S. No. 26 Middlings.	O.E. Humeniuk J. Gajadhar
DR MREC 74/77	Linear Expansion Characteristics of Coal Samples from the Lingan No. 26 Mine and Sysco LV submitted by the Sydney Steel Corp., Sydney, N.S.	J.G. Jorgensen T.A. Lloyd W. Gardiner J.C. Botham
DR MREC 74/89	Linear Expansion Characteristics and Related Analyses of Samples Identified as Princess Coal submitted by the Cape Breton Development Corp. (DEVCO), Sydney, N.S.	T.A. Lloyd W. Gardiner J.C. Botham J.G. Jorgensen
DR MREC 74/93	An Investigation of the Coking Properties of Coal Samples from the Lingan Mine and No. 26 Mine Sydney Washery and the EMR Pilot Plant Washery located at Lingan, N.S.	W. Gardiner J.G. Jorgensen J.C. Botham T.A. Lloyd
ERL DR 75/9	Petrographic and Related Analyses of a Sample of Scotia No. 4 Coal from Alder Point Strip Mine, submitted by the Cape Breton Development Corp., N.S.	J.G. Jorgensen
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CANMET Publicat	tions Pertaining To Port Hood Coalfield	
R.I.C.S. 73	Physical and Chemical Survey Report No. 22 - Study of Coal from Port Hood Mine, Main Seam, Port Hood Coal Mines Ltd., Port Hood, N.S. August 1937.	R.A. Strong E. Swartzman E.J. Burrough
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F.R.L. 181	Report on Channel Samples of Coal from the Harbour View Mines, Port Hood Area, Operated by Margaree Steamship Co. Ltd., Sydney, N.S. August 1952.	E. Swartzman T.E. Tibbetts
F.R.L. 187	Supplementary Report on Channel Samples of Coal from the Harbour View Mine, Port Hood Area, Operated by Margaree Steamship Co. Ltd., Sydney, N.S. February 1954.	E. Swartzman T.E. Tibbetts
CANMET Publicat	ions Pertaining To Mabou Coalfield	
F.R.L. 173	Report on a Borehole Sample of the 7 ft. and 8 ft. Coal Seams from the Mabou Area, Inverness Co., N.S., Supplied by Margaree Steamship Co. Ltd., Sydney, N.S. February 1953.	E. Swartzman
CANMET Publicat	ions Pertaining To Inverness Coalfield	
R.I.C.S. 70	Physical and Chemical Survey Report No. 20 - Study of Coal from No. 1 Mine, Seven-foot Seam, Inverness Coal Mine, Government Control, Inverness, N.S. September 1937.	R.A. Strong E.J. Burrough E. Swartzman
R.I.C.S. 72	Physical and Chemical Survey Report No. 21 - Study of Coal from No. 4 Mine, Thirteenfoot Seam, Inverness Coal Mine, Government Control, Inverness, N.S. September 1937.	R.A. Strong E.J. Burrough E. Swartzman
R.I.C.S. 114	Report of Investigation on the Use of Lime-Alum Mixtures in the Storage of Inverness No. 1 and 4 Mine Coal at Inverness, N.S. March 1939.	R.A. Strong E. Swartzman E.J. Burrough
R.I.C.S. 120	Physical and Chemical Survey of the Coal Mines of Canada, N.S1- Inverness County Coal Field. May 1939.	R.A. Strong E. Swartzman E.J. Burrough J.H. Nicolls R.E. Gilmore
F.R.L. 89	Study of the Washing Characteristics of Slack Coal from the MacDonald Mine, Inverness, N.S. for the Production of Domestic Stoker Coal. January 1948.	E. Swartzman
IR FMP 61/258-MIN	Possibilities for the Economic Operation of Rosebank No. 3 Mine, S.J. Doucet and Sons Ltd., Inverness, Nova Scotia.	A. Brown

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CANMET E	Publications	Pertaining	To S	St.	Rose -	Chimney	Corner	Coalfield

R.I.C.S. 102 Physical and Chemical Survey Report No. 41 R.A. Strong
- Study of Coal from the St. Rose Mine,
Ste. Rose, Nova Scotia. October 1938. E.J. Burrough

# CANMET Publications Pertaining To Pictou Coalfield

- R.I.C.S. 83 Physical and Chemical Survey Report No. 29 R.A. Strong
   Study of Coal from Milford Mine, George
  McKay Seam, Greenwood Coal Co. Ltd., E.J. Burrough
  Coalburn, N.S. March 1938.
- R.I.C.S. 85 Physical and Chemical Survey Report No. 30 R.A. Strong
   Study of Coal from Acadia No. 3 and 8 E. Swartzman
  Mines, Six-foot (Vale) Seam, the Acadia E.J. Burrough
  Coal Co. Ltd., Thorburn, N.S. March 1938.
- R.I.C.S. 88 Physical and Chemical Survey Report No. 31 R.A. Strong
   Study of Coal from Drummond No. 2 Mine,
  Second (Scott) Seam, Intercolonial Coal E.J. Burrough
  Co. Ltd., Westville, N.S., April 1938.
- R.I.C.S. 89 Physical and Chemical Survey Report No. 32 R.A. Strong
   Study of Coal from Drummond No. 1 and E. Swartzman
  5 Mines, Main Seam, Intercolonial Coal Co. E.J. Burrough
  Ltd., Westville, N.S. April 1938.
- R.I.C.S. 90 Physical and Chemical Survey Report No. 33 R.A. Strong
   Study of Coal from Foord Seam, Allan
  Mine, Acadia Coal Co. Ltd., Stellarton,
  N.S. May 1938.
- R.I.C.S. 91 Physical and Chemical Survey Report No. 34 R.A. Strong
   Study of Coal from the Third Seam, Albion
  Mine, Acadia Coal Co. Ltd., Stellarton,
  N.S. May 1938.
- R.I.C.S. 92 Physical and Chemical Survey No. 35 R.A. Strong
  Study of Coal from the Cage Seam, Albion E. Swartzman
  Mine and Acadia No. 7 Mine, the Acadia Coal E.J. Burrough
  Co. Ltd., Stellarton, N.S. May 1938.
- R.I.C.S. 93 Physical and Chemical Survey Report No. 36 E. Swartzman Study of Coal from the McGregor Seam, McGregor Mine, Acadia Coal Co. Ltd., E.J. Burrough Stellarton, N.S. June 1939.
- R.I.C.S. 94 Physical and Chemical Survey Report No. 37 R.A. Strong
   Study of Coal from the Four-foot Seam,
  Allan Mine, Acadia Coal Co. Ltd.,
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R.I.C.S. 95	Report on the Coals from the Northeast and Southeast Sections of the Foord Seam, Allan Mine, Acadia Coal Co. Ltd., Stellarton, Foord. June 1938.	R.A. Strong E. Swartzman E.J. Burrough
R.I.C.S. 96	Physical and Chemical Survey Report No. 38 - Study of Coal from the Fleming Seam, McGregor Mine, Acadia Coal Co. Ltd., Stellarton, N.S.	R.A. Strong E. Swartzman E.J. Burrough
F.R.L. 41	Report on the Washing Characteristics of Coal Mined at the Allan and Albion Collieries by the Acadia Coal Co. Ltd. August 1938.	E. Swartzman
F.R.L. 53	P. and C. Survey No. 123 - Acadia No. 1 Seam, Albion Colliery, Stellarton Area, N.S., Acadia Coal Co. Ltd. October 1946.	E. Swartzman
F.R.L. 92	Report on Performance Tests at the Acadia Washery Equipped with Vissac Jigs at the Acadia Coal Co. Ltd., Stellarton. April 1948.	E. Swartzman
F.R.L. 127	Study of the Washing Properties of Coal from the No. 1 and No. 3 Mines, Intercolonial Coal Co. Ltd., Westville, N.S. October 1949.	E. Swartzman
F.R.L. 164	Report of Carbonization Tests on Drummond Coal from Intercolonial Coal Co., Westville, N.S., and Blends with Dosco Washed Coal from Dominion Steel and Coal Corp., Sydney, N.S. March 1952.	J.C. Botham E.J. Burrough
F.R.L. 180	Report of Carbonization Test of Blends of Dominion Coal and Acadia Coal for the Production of Metallurgical Coke. August 1953.	E.J. Burrough J.C. Botham
F.R.L. 214	Physical and Chemical Survey Report No. 153 - Study of Coal from McBean Mine, Pictou County Area, N.S. December 1955.	E. Swartzman T.E. Tibbetts
TM FMP 161/58-PREP	Study of the Properties and Beneficiation of Coal from McBean Mine, Pictou Area, Nova Scotia, (Second Report).	T.E. Tibbetts E. Swartzman
IR FMP 60/116-PREP	Use of Pictou County Coals on Hydrographic Service Ships.	T.E. Tibbetts

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DR FRC 70/1-PREP	An Inspection of the Coal Preparation Plant at Stellarton, Nova Scotia.	T.E. Tibbetts D.J. O'Brien
DR MREC 72/37	Inspection of the Acadia Wash Plant at Stellarton, Nova Scotia. March 14-15, 1972.	J. Visman
DR FRC 73/71	Evaluation of Drill Hole Samples from Three Coal Mine Waste Banks at Stellarton.	T.E. Tibbetts
CANMET Publicat	ions Pertaining To Springhill Coalfield	
R.I.C.S. 49	Report of Field Investigations at Springhill, Nova Scotia.	E. Swartzman R.A. Strong E.J. Burrough
R.I.C.S. 51	Report No. 11 - Study of Chemical and Physical Properties of Screened Sizes of Coal from No. 2 Colliery, No. 2 Seam, Springhill Area, Springhill, N.S.	R.A. Strong
R.I.C.S. 53	Report No. 12 - Study of Chemical and Physical Properties of Screened Sizes of Coal from No. 2 Colliery, No. 1 Seam, Springhill Area, N.S.	R.A. Strong
R.I.C.S. 55	Report No. 13 - Study of Chemical and Physical Properties of Screened Sizes of Coal from No. 4 Colliery, No. 7 Seam, Springhill Area, Springhill, Nova Scotia.	R.A. Strong E.J. Burrough E. Swartzman
TM FMP 43/56-CG	Results from Field Testing Core Samples of Coal for Residual Sorbed Gas Content at the No. 2 Mine of the Cumberland Railway and Coal Co. at Springhill, N.S. during the period of May 14-19, 1956.	J.C. Botham
TM FMP 53/56-CG	Clarification of the Method of Sampling and Further Data on Rate of Evolution of Residual Sorbed Gas from Coal Samples taken from No. 2 Mine of the Cumberland Railway and Coal Co., Springhill, N.S.	J.C. Botham
TM FMP 10/58-MIN	Deep Coal Mining in No. 2 Mine, Springhill, N.S.	W.F. Campbell
TM FMP 1/59-PREP	Memorandum for the Royal Commission Appointed to Inquire into the Upheaval, or Falls, or Other Disturbances, Some- times called Bumps, at No. 2 Mine, Springhill, Nova Scotia. October 23, 1958.	Fuels Division

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IR FMP 61/264-MIN	Report on Springhill Coal Mines, Ltd., No. 1 Mine, Springhill, N.S., (Dominion Coal Board).	A. Brown
DR FRC 69/67-PREP	The Problem of the Coal Mine Refuse Bank at Springhill, Nova Scotia.	T.E. Tibbetts
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CANMET Publicat	ions Pertaining To Joggins Coalfield	
R.I.C.S. 79	Physical and Chemical Survey Report No. 26 - Study of Coal from Strathcona No. 1 Mine, Strathcona Seam, Standard Coal Co. Ltd., River Hebert, East, N.S. January 1938.	R.A. Strong E. Swartzman E.J. Burrough
R.I.C.S. 80	Physical and Chemical Survey Report No. 27 - Study of Coal from Victoria No. 4 Mine, Joggins Bench Seam, Victoria Coal Co. Ltd., River Hebert, N.S. January 1938.	R.A. Strong E. Swartzman E.J. Burrough
R.I.C.S. 81	Physical and Chemical Survey Report No. 28 - Study of Coal from Maple Leaf No. 4 Mine, Joggins Bench Seam, Maritime Coal Railway and Power Co. Ltd., River Hebert, N.S.	R.A. Strong E. Swartzman E.J. Burrough
F.R.L. 19	Underground Gasification for the Joggins - River Hebert Coal District. July 1945.	E. Swartzman
F.R.L. 132	Study of the Washing Properties of Coal from the Bayview No. 8 Mine, Joggins Coal Co. Ltd., Joggins, N.S. January 1950.	E. Swartzman
F.R.L. 196	Laboratory Washing Study of Three Samples of Lump Coal from Bayview No. 8 Mine, Joggins Coal Co. Ltd. October 1954.	E. Swartzman T.E. Tibbetts

### NEW BRUNSWICK COALFIELDS

The province of New Brunswick has an extensive deposit of carboniferous rocks of Pennsylvanian age comparable to the coal-bearing formations of Nova Scotia. This area is composed of the Minto Coalfield and the Beersville (Coal Branch) coal area of which only the former is of economic significance.

The Minto Coalfield (sometimes referred to as the Grand Lake Coal Basin), located north of Grand Lake (Fig. 1), covers an area approximately twenty miles long and six miles wide with the longer axis running in a northeasterly direction. Coal from this field has been extracted from the main or surface seam which averages 18 inches in thickness. This coal is classified as high volatile "A" bituminous and is comparable to the Nova Scotia coals, but due to the high sulphur and ash content is not consided suitable for coke production.

The Beersville coal area is approximately 50 miles northeast of the Minto Coalfield. Here the dip is in a northeasterly direction and the seam is known to maintain its thickness and quality throughout the area. The seam, averaging 15 inches in thickness is covered by overburden that varies from 20 feet on the western margin to 100 feet on the eastern border. This coal is of high volatile "A" bituminous rank but is of no commercial importance due to the thinness of the seam and the quality of the coal.

Recently (1975) coal has been found in the Lake Stream area of New Brunswick which is approximately 35 miles northwest of Moncton. Because exploration work is only in the development stages not too much is known about this coal area, though it is reported that the deposit will double the known coal reserves of the province. The seam varies from 14 inches to 16 inches in thickness and is relatively flat showing a dip of 2° over a reported area of 10 square miles. The seam lies at depths that are reported to vary from 30 to 130 feet. The above figures are based on the data retrieved (to date) from 20 boreholes drilled over a widespread area on a random basis. Because this coal discovery is still undergoing development work not too much is known at present. Proximate analytical results (Table 1) based on one analysis show the coal to be high volatile "A" bituminous in rank.

Table 1
Proximate Analyses of Lake Stream Coal (as received)

	Lake Stream
Moisture	11.0%
Ash	10.0%
Volatile Matter	32.0%
Fixed Carbon	47.0%
Calorific Value	11850 Btu/1b
Sulphur	4.8%

Report No.

Title

Authors

CANMET Publica	tions Pertaining To New Brunswick Coalfield	<b>S</b>
R.I.C.S. 48	Report of Washing and Coking Study of Coals from the Minto Coal Basin, N.B. December 1936.	R.A. Strong E.J. Burrough E. Swartzman
R.I.C.S. 54	Study of the Washing Characteristics and Coking Properties of Slack Coal (1/2") from the Minto Coal Co. Ltd., Minto, N.B. May 1936.	R.A. Strong E.J. Burrough E. Swartzman
R.I.C.S. 57	Investigations on Minto Coal from the Minto Coal Co. Ltd., Minto, N.B. September 1936.	R.A. Strong E.J. Burrough E. Swartzman
R.I.C.S. 58	Investigations on Winterport Coal from the Avon Coal Co. Ltd., St. John, N.B.	R.A. Strong E.J. Burrough E. Swartzman
R.I.C.S. 62	Study of the Washing Characteristics of Coal from the 6" bottom seam underlying the main seam of the Rothwell Mine, Operated by W. Benton Evans, New Brunswick.	R.A. Strong E.J. Burrough E. Swartzman
R.I.C.S. 104	Physical and Chemical Survey Report No. 42 - Study of Coal from the West Slope Mine, North Minto Area, Operated by the Minto Coal Co. Ltd., Minto, N.B. November 1938.	R.A. Strong E.J. Burrough E. Swartzman J.H. Nicolls
R.I.C.S. 105	Physical and Chemical Survey Report No. 43-Study of Coal from the Rothwell Mine, South Minto Area, Operated by W. Benton Evans (Rothwell Coal Co. Ltd.) Rothwell, N.B. December 1938.	R.A. Strong E.J. Burrough E. Swartzman J.H. Nicolls
R.I.C.S. 106	Physical and Chemical Survey Report No. 44 - Study of Coal from the Tweekie Mine, South Minto Area, near Rothwell, Operated by Minto Coal Co. Ltd., North Minto, N.B. December 1938.	R.A. Strong E.J. Burrough E. Swartzman J.H. Nicolls
R.I.C.S. 107	Physical and Chemical Survey Report No. 45 - Study of Coal from Avon Mines No. 26 and 28, South Minto Area, Operated by the Avon Coal Co. Ltd., Minto, N.B. December 1939.	R.A. Strong E.J. Burrough E. Swartzman J.H. Nicolls
R.I.C.S. 109	Physical and Chemical Survey Report No. 46 - Study of Coal from Kelley Mine No. 1, South Minto Area, Operated by Welton-Henderson Ltd., Minto, N.B.	R.A. Strong E.J. Burrough E. Swartzman J.H. Nicolls

Report No.	Title	Authors
R.I.C.S. 112	Physical and Chemical Survey Report No. 47 - Study of Coal from Black Diamond Mines, Newcastle Bridge Area, Operated by Welton-Henderson Ltd., Minto, N.B. February 1939.	R.A. Strong E.J. Burrough E. Swartzman J.H. Nicolls
R.I.C.S. 113	Physical and Chemical Survey Report No. 48 - Study of Coal from Miramichi No. 15 Mine, North Minto Area, Operated by Miramichi Lumber Co. Ltd., Miramichi, N.B. March 1939.	R.A. Strong E.J. Burrough E. Swartzman J.H. Nicolls
R.I.C.S. 116	Physical and Chemical Survey Report No. 49 - Study of Coal from Newcastle No. 2 Mine, Newcastle Bridge Area, Operated by Newcastle Coal Co. Ltd., Minto, N.B. March 1939.	R.A. Strong E.J. Burrough E. Swartzman J.H. Nicolls
R.I.C.S. 117	Physical and Chemical Survey Report No. 50 - Study of "Soft" or "Crop" Coal from Burpee Stripping Mine, Chipman Area, Operated by George H. Myles and Co., Chipman, N.B. April 1939.	R.A. Strong E.J. Burrough E. Swartzman J.H. Nicolls
R.I.C.S. 118	Physical and Chemical Survey Report No. 51 - Study of Coal from Long Creek Stripping Mine, Chipman Area, Operated by George H. Myles and Co., Chipman, N.B. April 1939.	R.A. Strong E.J. Burrough E. Swartzman J.H. Nicolls
R.I.C.S. 119	Physical and Chemical Survey Report No. 52 - Study of Coal from McDougal Mine, Newcastle Bridge Area, Operated by John McDougal, Minto, N.B. April 1939.	R.A. Strong E.J. Burrough E. Swartzman J.H. Nicolls
R.I.C.S. 121	Physical and Chemical Survey Report No. 53 - Study of Coal from Harvey Welton Mine, South Minto Area, Operated by Harvey Welton Ltd., Minto, N.B. June 1939.	R.A. Strong E.J. Burrough E. Swartzman J.H. Nicolls
R.I.C.S. 122	Physical and Chemical Survey Report No. 54 - Study of Coal from Broderick Stripping Mine, Chipman Area, Operated by Rennlyn Coal Co., Chipman, N.B. June 1939.	R.A. Strong E.J. Burrough E. Swartzman J.H. Nicolls
R.I.C.S. 123	Physical and Chemical Survey Report No. 55 - Study of Coal from Yeamans Mines, South Minto Area, Operated by C.S. Yeamans, Newcastle Bridge, N.B. June 1939.	R.A. Strong E.J. Burrough E. Swartzman J.H. Nicolls

Report No.	Title	Authors
R.I.C.S. 124	Physical and Chemical Survey Report No. 56 - Study of Coal from King Shaft No. 5 Mine, Chipman Area, Operated by O.H. King, Chipman, N.B. July 1939.	R.A. Strong E.J. Burrough E. Swartzman J.H. Nicolls
R.I.C.S. 127	Physical and Chemical Survey Report No. 57 - Study of Coal from Myles Slope No. 1 Mine, Chipman Area, Operated by George H. Myles and Co., Chipman, N.B. September 1939.	R.A. Strong E.J. Burrough E. Swartzman J.H. Nicolls
R.I.C.S. 148	Carbonization Tests on Washed New Brunswick Coals by the Curran-Knowles Process at the Plant of the Public Utilities Commission, Owen Sound, Ontario. June 1940.	R.A. Strong E.J. Burrough E. Swartzman
R.I.C.S. 181	Survey of Commercial Coal Grades in New Brunswick. March 1943.	E. Swartzman
R.I.C.S. 195	A Report on a Plan for the Beneficiation of the New Brunswick Coal Industry. December 1944.	E. Swartzman
F.R.L. 33	Interim Report on the Washing Characteristics of Coal from the Minto Coalfield, N.B., Conducted for the Province of N.B.	E. Swartzman
F.R.L. 36	Final Report on the Washing Characteristics of Coal from the Minto Coalfield, N.B., Conducted for the Province of N.B. March 1946.	E. Swartzman
F.R.L. 68	P. and C. Survey No. 127 - Strip Mines No. 14 and 24 Southern District, Minto Coalfield, Minto Coal Co. Ltd. April 1947.	E. Swartzman
F.R.L. 167	Report on the Washing Characteristics of Strip Coal from the Mine of Avon Coal Co. Ltd., Minto, N.B. April 1952.	E. Swartzman
47 CE 56 MECH	Report of Tests on a Special Sample of Minto Washed Stoker Coal in the SMA/BCR Stoker Test Unit. September 1953.	W.H. Harper
F.R.L. 182	Report of a Plant Washing Test Conducted on Minto N.B. Mine Run Coal in June 1953, in the Washery of the Acadia Coal Co. Ltd., Stellarton, N.S. for the New Brunswick Electric Power Commission. October 1953.	E. Swartzman T.E. Tibbetts

Report No.	Title	Authors
F.R.L. 185	Report on the Washing Characteristics of Minus 1/4 in. Dryer Fines from the Avon Coal Co. Ltd., Minto, N.B. December 1953.	E. Swartzman T.E. Tibbetts
F.R.L. 186	Report on the Convertol Processing of Minto $0 \times 1/4$ in. Fines Conducted for the New Brunswick Electric Power Commission, August 1953. February 1954.	E. Swartzman T.E. Tibbetts
TM FMP 57/55	Confidential Memorandum re: Power for New Brunswick Mining Operations. October 28, 1955.	C.E. Baltzer
F.R.L. 232	Report on Cleaning Performance Tests on Mine Run Coal, Conducted at the Preparation Plant of Avon Coal Co. Ltd., Minto, N.B. February 1956.	E. Swartzman T.E. Tibbetts
F.R.L. 233	Report on Cleaning Performance Test 2 x 0 in. Slack Conducted in Baum Type Jig at the Preparation Plant of Avon Coal Co. Ltd., Minto, N.B. (Sequel to Report FRL 232). February 1956.	E. Swartzman T.E. Tibbetts
F.R.L. 239	Cleaning Characteristics of a Carbonaceous Shale and Clay Parting Occurring in the Coal Seam of the Minto Coalfield, New Brunswick. April 1956.	E. Swartzman T.E. Tibbetts
TM FD 123/59-PREP	Cleaning Performance Test on Slack and Crushed Mine Run New Brunswick Strip Coal at the Preparation Plant of D.W. & R.A. Mills Ltd., Minto, N.B. December 1959.	E. Swartzman T.E. Tibbetts
IR FMP 60/34-PREP	Cleaning Characteristics of Coal from Underground Mine of V.C. McMann Ltd., Minto Area, N.B.	T.E. Tibbetts T.A. Lloyd
IR FMP 61/246-PREP	Investigation of Coal Supply and Coal Sampling at Camp Gagetown, N.B.	T.E. Tibbetts
IR FMP 61/261-MIN	Report on Experiment in Mechanizing a Thin Coal Seam - New Brunswick.	A. Brown
IR FMP 62/8-PREP	Investigation of the Cleaning of Coal Won by Mechanical Miner in an Underground Mine of the Minto Coalfield - Project 2-2-2/68 Report No. 1.	T.E. Tibbetts T.A. Lloyd
IR FMP 62/165-PREP	Flotation Tests on Coal Fines from Avon Coal Co. Ltd.	T.E. Tibbetts T.A. Lloyd

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DR FMP 65/29-PREP	Study of Coal Reserves of New Brunswick (Project 2-2-5/2) Dominion Coal Board Drilling Program.	T.E. Tibbetts
IR FMP 65/41-PREP	Survey of Canadian Commercial Coals, New Brunswick - 1964. March 1965.	T.E. Tibbetts T.A. Lloyd
DR FMP 65/113-PREP	Study of the Coal Reserves of New Brunswick.	T.E. Tibbetts

## PRINCE EDWARD ISLAND COALFIELDS

The prospects of finding coal in the province of Prince Edward Island have been based on the hypothesis that the Carboniferous strata of Nova Scotia and/or New Brunswick would extend under Northumberland Strait and contain coal at depth in that area (3).

Gray (4) reported on boreholes to a depth of 2,000 ft that did not cut Carboniferous strata containing coal measures. Hacquebard and Donaldson published reflectance data on carbonaceous material (bark vitrains found in sedimentary rock) found at depths varying from 346 to 2,650 ft, but did not encounter true coal seams. Up to the present time there is no record of coal seams in the province.

Because of the complete lack of coal in the above mentioned province, coupled with the fact that this bibliography is concerned only with coals of coking quality, the publications that deal with isolated references to carbonaceous material from P.E.I. were not included. The interested reader may wish to research the literature himself for matters of academic interest only.

#### NEWFOUNDLAND COALFIELDS

Map 900A, Principal Mineral Areas of Canada, twenty-fourth edition, 1974, shows no coal mines in either Prince Edward Island or Newfoundland. One possible explanation for the paucity of EMR reports on Newfoundland is the late entry of this province into confederation with the Dominion of Canada in 1949.

Hacquebard and Donaldson (1970) mention samples from prospects and outcrops from Pennsylvanian strata in the area southwest of Corner Brook. Davies, 1963, lists a total of 8 reports on Newfoundland coal occurrences, none of which have been published by CANMET or deal with coal of coking quality.

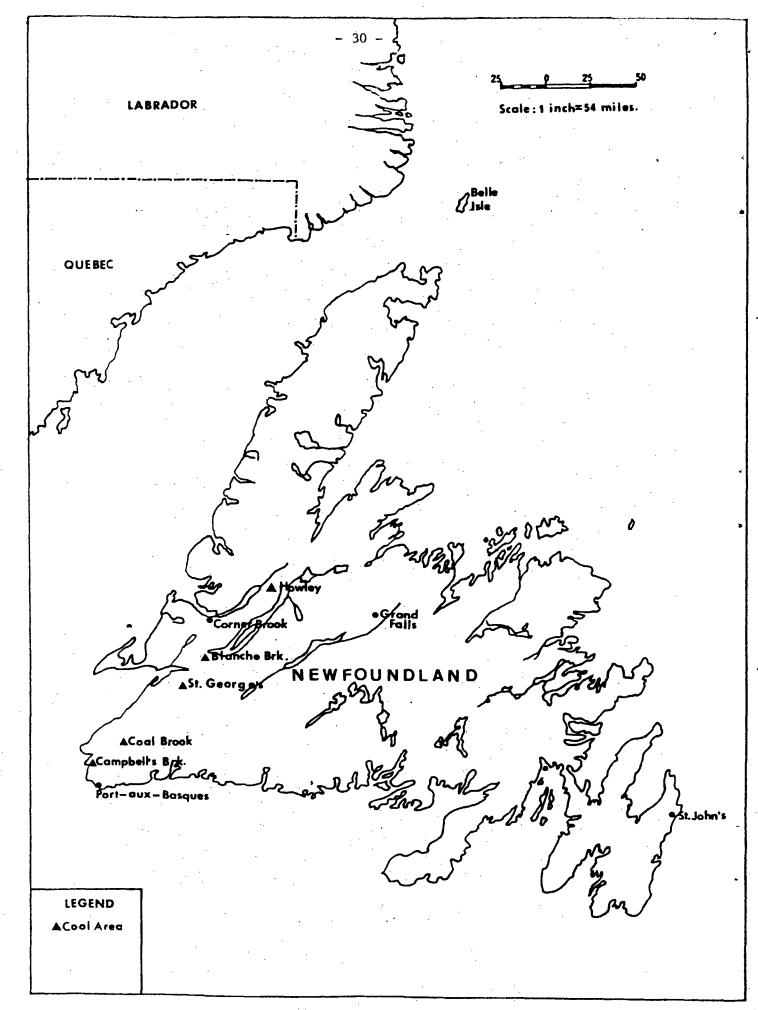


FIG. 2 COAL AREAS OF NEWFOUNDLAND

# OTHER CANMET PUBLICATIONS PERTAINING TO MARITIME PROVINCES

Report No.	Title	Authors
R.I.C.S. 46	Report on Washing and Coking Study of Coals from Five Independently Operated Mines in Nova Scotia. December 1935.	R.A. Strong E.J. Burrough E. Swartzman
R.I.C.S. 52	Report on Reactivity of Coke.	E.J. Burrough R.A. Strong E. Swartzman
R.I.C.S. 59	Report of Coking Tests on Nova Scotia Coal at the Plant of the Hamilton By- Product Coke Ovens Ltd. November 1936.	R.A. Strong E.J. Burrough E. Swartzman
R.I.C.S. 69	Physical and Chemical Survey of Nova Scotia Coals, Field Investigations. July 1937.	E. Swartzman
R.I.C.S. 97	Field Investigations re Collection of Samples for the Physical and Chemical Survey of Nova Scotia and New Brunswick Coals during the months of July and August 1938.	E. Swartzman
R.I.C.S. 125	Field Investigations on Coal Washeries and Coke Oven Plants of Nova Scotia. August 1939.	E.J. Burrough
R.I.C.S. 134	Report of Investigation on the Use of Lime-Alum Mixtures in the Storage of Dominion Run-of-Mine Coal at the Canadian National Storage Yards, Coteau, P.Q., during 1939. December 1939.	R.A. Strong E.J. Burrough E. Swartzman
R.I.C.S. 136	Laboratory Study re Effect of Coal Blending and Oxidation on the Clinkering and Burning Characteristics of Certain Nova Scotia Coals. February 1940.	R.A. Strong E. Swartzman E.J. Burrough H.P. Hudson
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