

Nova Scotia



Department of  
Mines and Energy

Information Series No. 14

# Reflection Seismic Coverage of Onshore and Nearshore Nova Scotia 1942-1987

compiled by P.G. McMahon





**Information Series No.14**

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Onshore and Nearshore Nova Scotia  
1942-1987**

**compiled by P.G. McMahon**

**Honourable Ken Streach, Minister**

**John J. Laffin, P. Eng., FEIC, Deputy Minister**

**HALIFAX, NOVA SCOTIA**

**1988**

## ADDENDUM

Due to a modification in the coding of Nova Scotia Department of Mines and Energy Assessment Reports, the following reference numbers cited in the text should be changed:

<b>Old Number</b>	<b>New Number</b>
AR 11E/05D 39-D-74(06)	AR 83-014
AR 11E/05D 39-D-74(10)	AR OFFSHORE 77-001
AR 21H/09D 39-E-23(01)	AR 72-001
AR 11F/13B 39-B-10(03)	AR OFFSHORE 82-014
AR 11F/12C 39-B-04(05)	AR 82-004
AR 11K/03B 39-J-35(10)	AR 82-030
AR 11K/13A 39-B-40(02)	AR OFFSHORE 83-023
AR OFFSHORE 39-W-23(04)	10-87-0038-S.2 (central registry)
AR 21H/09D 39-W-13(03)	10-87-0087-0 (central registry)
AR OFFSHORE 39-W-13(05)	10-87-0085-0 (central registry)

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## ENCLOSURES

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Map No. 2	- Seismic Coverage, Central Nova Scotia	.....	rear pocket
Map No. 3	- Seismic Coverage, Northeastern Nova Scotia	.....	rear pocket

## INTRODUCTION

The purpose of this report is to provide a summary compilation of the reflection seismic projects which have been conducted both onshore and near-shore Nova Scotia. A vast amount of offshore data, therefore, has not been included. A number of refraction seismic projects, conducted for shallow depth geotechnical purposes, are not included. One refraction project was included due to its potential importance to the petroleum industry. The compilation is meant to serve as a quick reference to indicate where seismic work has been completed and to facilitate further research by interested parties.

Within the last few years much more emphasis has been placed on making use of existing seismic information. This has been due to an increased awareness of the value of such information and an increase in the availability of data. Access to data can be gained through the reports and files cited or directly through the companies involved.

Each project has been summarized and given a map index number based on the chronological order of the projects. The lines for each have been plotted with the appropriate project

index number. Where the addition of lines would lead to confusion due to the density of information, area boundaries are substituted. Three map sheets covering onshore and nearshore Nova Scotia are included with this report (Fig. 1).

The information in this report was obtained from various reports and files found at the Nova Scotia Department of Mines and Energy, Halifax. These are cited under the summary for each project. These files and reports, submitted to the Nova Scotia Department of Mines and Energy, contain a range of information varying from a plan map of the area covered to detailed interpretive geophysical and geological reports. The researcher looking for more complete information is encouraged to contact the participating companies directly.

A majority (some 70%) of the seismic coverage was found to originate from petroleum exploration activities. Coal-related exploration accounted for 15% of the projects listed. The remaining projects were conducted for geotechnical purposes, potash exploration and general structural geological information.

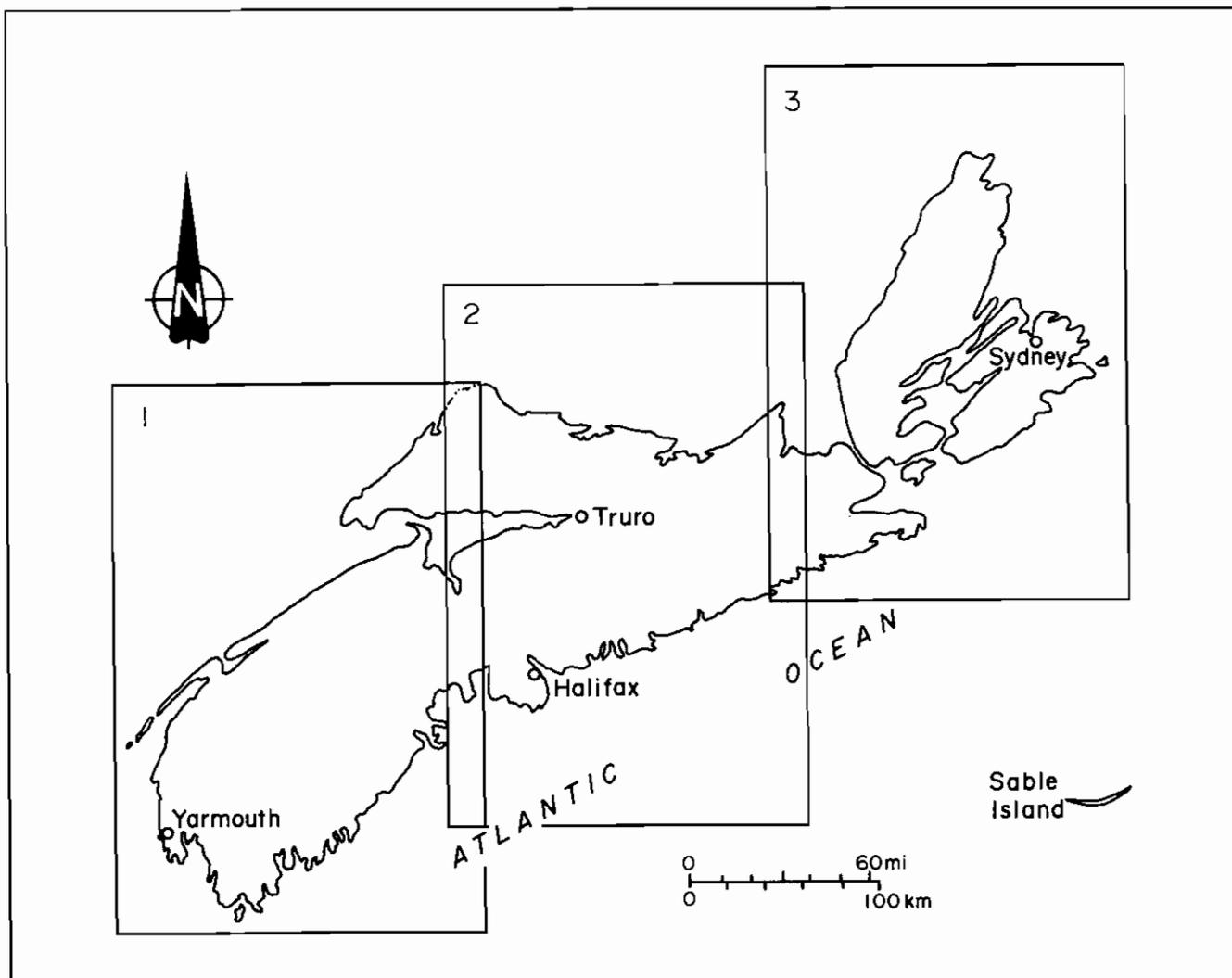


Figure 1. Map of Nova Scotia showing the coverage of the three map sheets in the rear pocket.

**MAP INDEX NUMBER 1****AREA**

Mabou, Inverness County

**DATE**

August 27, 1942-October 31, 1942

**PURPOSE OF PROJECT**

Oil Exploration

**COMPANY**

Cape Breton Petroleum Company

**CONTRACTOR**

Heiland Exploration Company

**TYPE OF STUDY**

Seismic Reflection

**COVERAGE**

Approximately 25 km (15.5 mi)

**SECTIONS AVAILABLE AT NSDME**

No

**REFERENCES**

Goudge, M. G.  
1942: Miscellaneous Memo re  
Petroleum, Mabou Area,  
Inverness County, Nova  
Scotia; Nova Scotia  
Department of Mines and  
Energy, Assessment  
Report 11K/03B 39-J-  
35(00).

Heiland Exploration Company Limited  
1942: Seismograph Surveys  
Report, Mabou Area, Nova  
Scotia; Nova Scotia  
Department of Mines and  
Energy, Assessment  
Report 11K/03B 39-J-  
35(03).

Lion Oil Refining Company  
1944: Petroleum Report, Mabou  
Area, Nova Scotia; Nova  
Scotia Department of  
Mines and Energy,  
Assessment Report  
11K/03B 39-J-35(04).

**NOTES**

According to M. G. Goudge (1942) the results were generally poor due to difficulties with shot hole drilling, seismic reflection response and structural geologic complexities. The maximum depth of shot holes was 45 m (150 ft). Dynamite was used as a source to a maximum of 27.2 kg (60 lbs).

**MAP INDEX NUMBER 2****AREA**

Southside of Antigonish Harbour,  
Antigonish County.

**DATE**

May-July 1958

**PURPOSE OF PROJECT**

Petroleum Exploration

**COMPANY**

Lura Corporation Limited

**CONTRACTOR**

Nova Scotia Research Foundation

**TYPE OF STUDY**

High resolution reflection seismic,  
dynamite charges of 2.3-4.5 kg (5-10  
lbs)

**COVERAGE**

11.3 km (7 mi)

**SECTIONS AVAILABLE AT NSDME**

Sections are included in the report listed below, which shows dip angles plotted on a graph of time (in seconds) versus surface location of shot points.

**REFERENCE**

Nova Scotia Research Foundation  
1959: Geophysical Exploration, Antigonish County; Lura Corporation Limited; Nova Scotia Department of Mines and Energy, Assessment Report 11F/12C 39-B-05(05).

**NOTES**

In the above report, the reflections were described as fair to poor. Seventy-three shot holes were drilled to an average depth of 8.8 m (29 ft). Three lines were shot (lines 6, 7 and 8).

**MAP INDEX NUMBER 3****AREA**

Amherst and Wallace Harbour area, Cumberland County.

**DATE**

June 4, 1963-July 8, 1963  
June 20, 1963-August 3, 1963 (included work done in Sydney area)

**PURPOSE OF PROJECT**

Petroleum exploration

**COMPANY**

Pacific Petroleum Limited

**CONTRACTOR**

Beaver Geophysical Services Limited

**TYPE OF STUDY**

Reflection Seismograph

**COVERAGE**

Approximately 101 km (63 mi)

**SECTIONS AVAILABLE AT NSDME**

No

**REFERENCES**

Beaver Geophysical Services Limited  
1963: Report on the Reflection Seismograph Survey for Pacific Petroleum Limited; Nova Scotia Department of Mines and Energy, Assessment Report 11E/13A 39-E-33(01).

Beaver Geophysical Services Limited  
1967: Report on a Seismic Survey for Pacific Petroleum Limited; Nova Scotia Department of Mines and Energy, Assessment Report 11E/13A 39-E-33(02).

Rodak, L.  
1980: Report on Seismic Profiles Recorded by Beaver Geophysical Services and Computed by Geodigit (1972) for Murphy Oil Company Limited; Nova Scotia Department of Mines and Energy, Assessment Report 11K/01A 39-C-95(01).

White, R. D.  
1972: The Cumberland Basin - a possible rift; Canadian Mining and Metallurgical Bulletin, v. 85, p. 267-272.

**NOTES**

According to S. Oczkowski, Chief

Geophysicist, Beaver Geophysical Services Limited, 1967, the work done in the Amherst area was of poor quality, therefore no interpretive mapping was attempted. The work completed in the Pugwash area was of better quality.

Limited; Nova Scotia Department of Mines and Energy, Assessment Report 11E/13A 39-E-33(01).

1967: Report on a Seismic Survey for Pacific Petroleum Limited; Nova Scotia Department of Mines and Energy, Assessment Report 11E/13A 39-E-33(02).

## MAP INDEX NUMBER 4

**AREA**  
Sydney-Glace Bay, Cape Breton County

**DATE**  
July 8, 1963-July 20, 1963  
July 12, 1965-August 9, 1965

**PURPOSE OF PROJECT**  
Petroleum exploration

**COMPANY**  
Pacific Petroleum Limited

**CONTRACTOR**  
Beaver Geophysical Services Limited processed by Geodigit (1972)

**TYPE OF STUDY**  
Reflection seismograph, 100% coverage

**COVERAGE**  
Approximately 52 km (32 mi)

**SECTIONS AVAILABLE AT NSDME**  
Section prints for lines 1 to 10 are included in Rodak's Report for Murphy Oil Company Limited.

**REFERENCES**  
Beaver Geophysical Services Limited  
1963: Report on the Reflection Seismograph Survey for Pacific Petroleum

Rodak, L.  
1980: Report on Seismic Profiles recorded by Beaver Geophysical Services and computed by Geodigit (1972) for Murphy Oil Company Limited; Nova Scotia Department of Mines and Energy, Assessment Report 11K/01A 39-C-95(01).

**NOTES**  
According to S. Oczkowski, Chief Geophysicist, Beaver Geophysical Services Limited, 1967, record quality was generally fair. Shot holes, averaging 18.3 m (60 ft), were used with 4.5 to 22.7 kg (10 to 50 lbs) of powder.

## MAP INDEX NUMBER 5

**AREA**  
Minas Basin, Cumberland County

**DATE**  
July 1965 - August 1966

**PURPOSE OF PROJECT**  
Geotechnical studies re tidal power projects

**COMPANY**

Atlantic Development Board (Tidal Power Corporation)

**CONTRACTOR**

Huntec Limited

**TYPE OF STUDY**

Marine sparker source

**COVERAGE**

Approximately 161 km (100 mi)

**SECTIONS AVAILABLE AT NSDME**

Seismic profiles are included in the report below, obtained by Tricentrol Oils Limited from Atlantic Development Board.

**REFERENCE**

Far-Away Resources Limited  
1983: Progress Report on the Exploration Evaluation of the Tricentrol Oils Limited Acreage in Minas Basin-St. Mary's Graben, Nova Scotia, for Tricentrol Oils Limited; Nova Scotia Department of Mines and Energy, Assessment Report 11E/05D 39-D-74(06).

**NOTES**

According to Far-Away Resources Limited, 1983, the data quality is good with poor reflectors to 0.2 second.

**MAP INDEX NUMBER 6**

**AREA**

Roslin-Malagash, Cumberland County

**DATE**

August 16, 1965-September 3, 1965

**PURPOSE OF PROJECT**

Potash exploration

**COMPANY**

Nova Scotia Department of Mines and Energy

**CONTRACTOR**

Beaver Geophysical Services Limited

**TYPE OF STUDY**

Reflection seismic, 15.2-18.3 m (50-60 ft) shot holes at 402.3 m (1,320 ft) intervals, dynamite source

**COVERAGE**

32.1 km (20 mi)

**SECTIONS AVAILABLE AT NSDME**

Two sample sections are included in the report below.

**REFERENCE**

Nova Scotia Department of Mines  
1967: Potash Exploration Project; Nova Scotia Department of Mines, Nova Scotia Research Foundation, Beaver Geophysical Services Limited and Saskatchewan Research Council; Nova Scotia Department of Mines and Energy, Open File Report 049.

**NOTES**

According to the above report, record quality was fairly good except in areas underlain by Mississippian strata. Beaver Geophysical classified the data as varying from poor to fair.

**MAP INDEX NUMBER 7****AREA**

Cabot Strait

**DATE**

1967, 1969-1971

**PURPOSE OF PROJECT**

Petroleum exploration

**COMPANY**

Texaco Exploration Canada Limited

**CONTRACTOR**

Delta Exploration Inc.

**TYPE OF STUDY**

Marine Seismic

**COVERAGE**

2176 km (1,360 mi) Proprietary; 368 km (230 mi) Proprietary or Trade data; only lines within map boundary plotted

**SECTIONS AVAILABLE AT NSDME**

No

**REFERENCES**

Lyons, R. H.

1971: Marine Vibroseis Survey, Cabot Strait, Final Report Summer 1971 for Texaco Exploration Company by Delta Exploration Inc.; Nova Scotia Department of Mines and Energy, Petroleum Resources Section files.

Plant, M. G.

1974: Cabot Strait Geophysical Survey Conducted for Texaco Exploration

Canada by Kenting Exploration Services and Compagnie Generale de Geophysique; Nova Scotia Department of Mines and Energy, Petroleum Resources Section files.

**NOTES**

This summary includes four separate Delta Exploration Inc. projects.

**MAP INDEX NUMBER 8****AREA**

Northumberland Strait

**DATE**

July 29, 1967-August 31, 1967

**PURPOSE OF PROJECT**

Petroleum exploration

**COMPANY**

Hudson's Bay Oil and Gas Company Limited

**CONTRACTOR**

Delta Exploration Company Inc.

**TYPE OF STUDY**

Marine Seismic

**COVERAGE**

2065 km (1,283 mi); only lines within map boundary plotted

**SECTIONS AVAILABLE AT NSDME**

No

**REFERENCE**

Reasor, J. L.

1967: Hudson's Bay Oil and Gas

Company Limited Report on 1967 Geophysical Operation, Northumberland Strait; Nova Scotia Department of Mines and Energy, Petroleum Resources Section files.

**NOTES**

J. L. Reazor states that areas of "very poor" to "no data" constitute an estimated 25% of the total coverage. No meaningful events were recorded from the pre-Mississippian. Two areas of pronounced "poor" to "no data" occur (1) in the northeast where extensive salt tectonics muted the overlying data, and (2) in the southern area along the Nova Scotia mainland and including much of the Northumberland Strait where complex faulting, possible igneous intrusions and nearshore facies have caused poor seismic response.

**MAP INDEX NUMBER 9**

**AREA**

Minas Basin

**DATE**

1968

**PURPOSE OF PROJECT**

Geotechnical regarding tidal power proposal

**COMPANY**

Atlantic Tidal Power Programming Board

**CONTRACTOR**

Dames and Moore

**TYPE OF STUDY**

Marine seismic, sparker source

**COVERAGE**

Approximately 24 km (15 mi)

**SECTIONS AVAILABLE AT NSDME**

No

**REFERENCES**

Far-Away Resources Limited  
 1983: Progress Report of the Exploration Evaluation of the Tricentrol Oils Limited Acreage in the Minas Basin-St. Mary's Graben, Nova Scotia, for Tricentrol Oils Limited; Nova Scotia Department of Mines and Energy, Assessment Report 11E/05D 39-D-74(06).

Stewart, J. and Ruffman, A.  
 1977: Report on Marine Seismic Surveys by Geomarine Associates Limited for Canadian Atlantic Power Group; Nova Scotia Department of Mines and Energy, Assessment Report 11E/05D 39-D-74(10).

**NOTES**

According to the Far-Away Resources Limited report, the quality was good with poor to good reflections to 0.2 second.

**MAP INDEX NUMBER 10**

**AREA**

Bay of Fundy

**DATE**

September 4, 1968-September 24, 1968  
 September 8, 1969-September 25, 1969  
 March 25, 1972-April 3, 1972  
 November 27, 1973-November 28, 1973

**PURPOSE OF PROJECT**

Petroleum exploration

**COMPANY**

Mobil Oil Canada, Ltd.

**CONTRACTOR**Mobil Oil Canada, Ltd., 1968, 1969  
Geophysical Services Inc., 1972, 1973**TYPE OF STUDY**

Reflection seismic, air gun

**COVERAGE**1968 - 613.8 km (381.5 mi)  
1969 - 1437.6 km (893.5 mi)  
1972 - 492 km (306 mi)  
1973 - 167 km (104 mi)  
Total - 2710.4 km (1,685 mi)**SECTIONS AVAILABLE AT NSDME**

Yes

**REFERENCES**

Elekes, I. J. G.

1973: Bay of Fundy 1972  
Reflection Seismic  
Survey by Mobil Oil  
Canada, Ltd.; Nova  
Scotia Department of  
Mines and Energy,  
Petroleum Resources  
Section files.

Griesbrecht, A. H.

1972: Mobil Oil Canada, Ltd.,  
Geophysical Operations  
Report, Bay of Fundy;  
Nova Scotia Department  
of Mines and Energy,  
Petroleum Resources  
Section files.

Mobil Oil Canada, Ltd.

1970a: Geophysical Report 1968  
Operational Season,  
Grand Banks, Banquereau  
Bank, Sable Island,South Sable, Georges  
Bank, Truxton and Bay of  
Fundy Areas, April; Nova  
Scotia Department of  
Mines and Energy,  
Petroleum Resources  
Section files.

Mobil Oil Canada, Ltd.

1970b: Geophysical Report 1969  
Operational Season,  
Banquereau, Sable  
Island, Georges Bank,  
Truxton and Bay of Fundy  
Areas, April; Nova  
Scotia Department of  
Mines and Energy,  
Petroleum Resources  
Section files.**NOTES**Three consecutive projects were run  
which included the Bay of Fundy areas.  
The 1968 and 1969 surveys produced good  
to high quality data and the 1972  
survey produced data which was  
generally fair to poor. The  
reliability of the picks from the 1972  
survey decreased near the anticlinal  
crest due to high energy water bottom  
multiples and reverberations.**MAP INDEX NUMBER 11****AREA**

Offshore Cape St. Lawrence

**DATE**May 25, 1968-June 3, 1968  
August 5, 1968-September 8, 1968**PURPOSE OF PROJECT**

Petroleum exploration

**COMPANY**

Pan American Petroleum Corporation

**CONTRACTOR**

Geophysical Service Incorporated

**TYPE OF STUDY**

Marine seismic

**COVERAGE**

&gt;209 km (&gt;130 mi); only lines within map boundary plotted

**SECTIONS AVAILABLE AT NSDME**

No

**REFERENCE**

Birnie, D. E.  
 1969: Report of Geophysical Seismograph Reflection Survey Conducted by Western Geophysical Company of America and Geophysical Service Incorporated for Pan American Petroleum Corporation; Nova Scotia Department of Mines and Energy, Petroleum Resources Section files.

**MAP INDEX NUMBER 12****AREA**

Northumberland Strait-Cabot Strait

**DATE**

1969, 1970

**PURPOSE OF PROJECT**

Petroleum exploration

**COMPANY**

Texaco Exploration Canada Limited  
 Sun Oil Company

**CONTRACTOR**

Catalina Exploration and Development Limited

**TYPE OF STUDY**

Marine seismic, air gun

**COVERAGE**

805 km (500 mi); only lines within map boundary plotted

**SECTIONS AVAILABLE AT NSDME**

No

**REFERENCES**

Manning, T. T.  
 1971: Seismic Survey in the Gulf of St. Lawrence, Petroleum License No. 320; Submarine Area, Purchase of Delta Seismic Data; Nova Scotia Department of Mines and Energy, Petroleum Resources Section files.

Plant, M. G.  
 1974: Cabot Strait Geophysical Survey Conducted for Texaco Exploration Canada by Kenting Exploration Services and Compagnie Generale de Geophysique; Nova Scotia Department of Mines and Energy, Petroleum Resources Section files.

**NOTES**

Texaco has classed this data as "Participation or Trade Data".

Sun Oil acquired, to the west of Cape Breton, 231.7 km (144 mi) of line from these projects which, according to Manning, vary in quality from "fair to no data".

**MAP INDEX NUMBER 13****MAP INDEX NUMBER 14****AREA**

Sunnybrae, Pictou County, to Caledonia,  
Guysborough County

**DATE**

1970-1971

**PURPOSE OF PROJECT**

Geophysical investigation of the St.  
Mary's Graben to determine depth of  
Horton Group sediments.

**COMPANY**

Nova Scotia Research Foundation

**CONTRACTOR**

Nova Scotia Research Foundation

**TYPE OF STUDY**

Refraction seismic line with reflection  
seismic run on a portion of the line,  
explosive charges from 1 to > 6.8 kg  
(15 lbs)

**COVERAGE**

Refraction - approximately 21.3 km  
(13.3 mi)  
Reflection - approximately 1.9 km (1.2  
mi)

**SECTIONS AVAILABLE AT NSDME**

The reference below includes an  
interpretive trace section of corrected  
reflection events.

**REFERENCES**

Nova Scotia Research Foundation  
1970: Seismic Surveys at  
Sunnybrae, Pictou  
County; Nova Scotia  
Department of Mines and  
Energy, Open File Report  
057.

**AREA**

Cabot Strait

**DATE**

1971

**PURPOSE OF PROJECT**

Petroleum exploration

**COMPANY**

Texaco Exploration Canada Limited

**CONTRACTOR**

Geophysical Service Incorporated

**TYPE OF STUDY**

Marine seismic, air gun

**COVERAGE**

805 km (500 mi); only lines within map  
boundary plotted

**SECTIONS AVAILABLE AT NSDME**

No

**REFERENCE**

Plant, M. G.  
1974: Cabot Strait Geophysical  
Survey Conducted for  
Texaco Exploration  
Canada by Kenting  
Exploration Services and  
Compagnie Generale de  
Geophysique; Nova Scotia  
Department of Mines and  
Energy, Petroleum  
Resources Section files.

**NOTES**

Texaco has classed this data as  
"Participation or Trade Data".

**MAP INDEX NUMBER 15****AREA**

Gulf of St. Lawrence, Offshore northwest of northern Cape Breton Island

**DATE**

1971

**PURPOSE OF PROJECT**

Petroleum exploration

**COMPANY**

Amoco

**CONTRACTOR**

Unknown

**TYPE OF STUDY**

Reflection seismic

**COVERAGE**

Approximately 2000 km (1250 mi) of the project were included within this report's map area

**SECTIONS AVAILABLE AT NSDME**

No

**REFERENCES**

Lemmens, J.  
1972: Geophysical Progress Report, Gulf of St. Lawrence, Nova Scotia Licenses Nos. 258 and 259; by Shell Canada Limited; prepared for Department of Mines, Government of Nova Scotia; Nova Scotia Department of Mines and Energy, Petroleum Resources Section files.

Woods, R. I. and Candy, G. J.

1974: Geophysical Progress Report, Eastern Division Exploration, Gulf of St. Lawrence, Provincial Licenses Nos. L-174, L-175, L-258 and L-259; by Shell Canada Limited; prepared for Department of Mines, Government of Nova Scotia; Nova Scotia Department of Mines and Energy, Petroleum Resources Section files.

**NOTES**

In the above report by Lemmens, line locations marked "Amoco" were plotted along with Shell's 1972 seismic program line locations on a 1:250 000 scale regional map. Amoco line locations were also plotted on line location maps enclosed with the 1974 report by Woods and Candy.

**MAP INDEX NUMBER 16****AREA**

Offshore Bay St. Lawrence, Offshore Sydney

**DATE**

July 13, 1971-July 21, 1971

**PURPOSE OF PROJECT**

Petroleum exploration

**COMPANY**

Murphy Oil Company Limited

**CONTRACTOR**

Geophysical Service Incorporated

**TYPE OF STUDY**

Marine seismic reflection, air gun

**COVERAGE**

519.7 km (322.93 mi); 21 lines

**SECTIONS AVAILABLE AT NSDME**

No

**REFERENCE**

Geophysical Service Incorporated  
 1972: Operations Report,  
 Offshore Cape Breton  
 Island for Murphy Oil  
 Company Limited; Nova  
 Scotia Department of  
 Mines and Energy,  
 Assessment Report  
 Offshore 39-W-23(04).

**NOTES**

Twelve of the 21 lines were run north  
 of Bay St. Lawrence. The other nine  
 were run northeast of Sydney.

**MAP INDEX NUMBER 17****AREA**

Cumberland County, Colchester County,  
 Pictou County

**DATE**

May 11, 1972-July 11, 1972  
 August 30, 1972-September 19, 1972  
 September 25, 1972-October 3, 1972

**PURPOSE OF PROJECT**

Petroleum exploration

**COMPANY**

Anchutz (Canada) Exploration Limited

**CONTRACTOR**

Ray Geophysical Division, Mandrel  
 Canada Limited

**TYPE OF STUDY**

Vibroseis

**COVERAGE**

482 km (299.5 mi)

**SECTIONS AVAILABLE AT NSDME**

Only the Glace Bay line section is  
 included in McGregor's Report (1972)

**REFERENCES**

Athias, Y. C.  
 1972: Northern Nova Scotia  
 Seismic Interpretation;  
 Anschutz (Canada)  
 Exploration Limited;  
 Nova Scotia Department  
 of Mines and Energy,  
 Assessment Report  
 21H/09D 39-E-23(01).

Fawcett, G. W.  
 1975: Report on Reflection  
 Seismic Survey,  
 Cumberland County, Nova  
 Scotia; Gulf Oil Canada  
 Limited; Nova Scotia  
 Department of Mines and  
 Energy, Assessment  
 Report 11E/12C 39-E-  
 23(01).

McGregor, M.  
 1972: Vibroseis Field Report  
 of the Northern Nova  
 Scotia Area and the  
 Glace Bay Area by  
 Mandrel Canada Limited  
 for Anschutz (Canada)  
 Exploration Limited;  
 Nova Scotia Department  
 of Mines and Energy,  
 Assessment Report  
 21H/09D 39-E-10(01).

**NOTES**

According to Athias (1972), the data  
 quality is generally fair to good  
 except in faulted areas.

## MAP INDEX NUMBER 18

## AREA

Middle River

## DATE

September 21, 1972-September 24, 1972

## PURPOSE OF PROJECT

Investigate structure in Middle River Valley

## COMPANY

Nova Scotia Department of Mines and Energy

## CONTRACTOR

Mandrel Canada Limited

## TYPE OF STUDY

Vibroseis 1200%

## COVERAGE

14.8 km (9.209 mi)

## SECTIONS AVAILABLE AT NSDME

No

## REFERENCE

Mandrel Canada Limited  
 1972: Vibroseis Survey Report of the Middle River Area, Province of Nova Scotia; Nova Scotia Department of Mines and Energy, Open File Report 116.

## MAP INDEX NUMBER 19

## AREA

Gulf of St. Lawrence, Offshore northwest of northern Cape Breton Island

## DATE

October 7, 1972-October 22, 1972

## PURPOSE OF PROJECT

Petroleum exploration

## COMPANY

Shell Canada Limited

## CONTRACTOR

Shell Oil Company

## TYPE OF STUDY

Reflection seismic, air gun, 2400% CDP

## COVERAGE

877.1 km (545 mi)

## SECTIONS AVAILABLE AT NSDME

No

## REFERENCES

Frey, F. R. and Burke, W. F.  
 1973: Geophysical Progress Report, Gulf of St. Lawrence, Nova Scotia, Licenses Nos. L-174, L-175, L-258, L-259, by Shell Canada Limited; prepared for Department of Mines, Government of Nova Scotia; Nova Scotia Department of Mines and Energy, Petroleum Resources Section files.

Lemmens, J.  
 1972: Geophysical Progress

Report, Gulf of St. Lawrence, Nova Scotia Licenses Nos. 258 and 259 by Shell Canada Limited; prepared for the Department of Mines, Government of Nova Scotia; Nova Scotia Department of Mines and Energy, Petroleum Resources Section files.

#### NOTES

According to the report by Frey and Burke (1973) the quality of data from beneath the evaporite section (Mississippian) is generally good in the salt-withdrawal synclines. Near the salt-sediment contacts, the quality is poor. Interpretive structure maps are included with the report.

#### MAP INDEX NUMBER 20

#### AREA

Economy, Debert-Truro, Colchester County

#### DATE

November 18, 1972-November 30, 1972

#### PURPOSE OF PROJECT

Petroleum exploration

#### COMPANY

Ram Petroleums Inc.

#### CONTRACTOR

Ray Geophysical Division, Mandrel Canada Limited, Calgary  
Processed by Teledyne Exploration Limited

#### TYPE OF STUDY

Vibroseis, 600-1200%

#### COVERAGE

33 km (20.5 mi) 600-1200%, 4 lines

#### SECTIONS AVAILABLE AT NSDME

Interpretive sections of the four lines are included within the references by Austin (1973) and Jordan Lewis and Jose Geophysical Consultants Limited (1973).

#### REFERENCES

Austin, G. H.

1973: Preliminary Geological Appraisal, Cobequid Bay Region; for Ram Petroleums Limited; Nova Scotia Provincial Licenses Nos. 342 and 356; Nova Scotia Department of Mines and Energy, Assessment Report 11E/05D 39-D-74(01).

Far-Away Resources Limited

1983: Progress Report of the Exploration Evaluation of the Tricentrol Oils Limited Acreage in the Minas Basin-St. Mary's Graben, Nova Scotia; for Tricentrol Oils Limited; Nova Scotia Department of Mines and Energy, Assessment Report 11E/05D 39-D-74(06).

Jordan Lewis and Jose Geophysical Consultants Limited

1973: Preliminary Report, Seismic Reconnaissance-Cobequid Bay, Nova Scotia; prepared for Ram Petroleums Limited; Nova Scotia Department of Mines and Energy, Assessment Report 11E/05D 39-D-74(02).

#### NOTES

According to the Jordan Lewis and Jose Report, the record quality varied from

fair to good on lines 1 and 3, to poor on line 2 and very poor on line 4.

According to the Far-Away Resources Limited report, the data quality is poor to good with poor to adequate reflectors to 3.5 seconds.

## MAP INDEX NUMBER 21

### AREA

Gulf of St. Lawrence, Offshore of northern Cape Breton Island

### DATE

June 9, 1973-June 16, 1973

### PURPOSE OF REPORT

Petroleum exploration

### COMPANY

Shell Canada Limited

### CONTRACTOR

Geophysical Services Inc.

### TYPE OF STUDY

Seismic reflection, air gun, 2400% CDP

### COVERAGE

391.9 km (243.5 mi)

### SECTIONS AVAILABLE AT NSDME

No

### REFERENCE

Woods, R. I. and Candy, G. J.  
1974: Geophysical Progress Report, Eastern Division Exploration - Gulf of St. Lawrence, Provincial Licenses Nos. L-174, L-175, L-177, L-258 and L-

259 by Shell Canada Limited; prepared for Department of Mines, Province of Nova Scotia; Nova Scotia Department of Mines and Energy, Petroleum Resources Section files.

## NOTES

In the above report, the seismic data quality was described as poor. Although the purpose of the project was to map structural closure on the downthrown side of the Hollow Fault Zone, the presence of closed structures was not indicated.

## MAP INDEX NUMBER 22

### AREA

Cabot Strait

### DATE

July and August, 1973

### PURPOSE OF PROJECT

Petroleum exploration

### COMPANY

Texaco Exploration Canada Limited

### CONTRACTOR

Kenting Exploration Services

### TYPE OF STUDY

Marine seismic, air gun source, 2400%

### COVERAGE

1497 km (930 mi); Only lines within map boundary plotted

### SECTIONS AVAILABLE AT NSDME

No

**REFERENCE**

Plant, M. G.  
1974: Cabot Strait Geophysical Survey; conducted for Texaco Exploration Canada by Kenting Exploration Services and Compagnie Generale de Geophysique; Nova Scotia Department of Mines and Energy, Petroleum Resources Section files.

**NOTES**

According to the above reference, the 1973 survey (including the survey by Compagnie Generale de Geophysique) provided Texaco with data of better quality than had been acquired in previous years, although water bottom related multiples were still problematic. Some of the previous data failed to tie with the new data.

**MAP INDEX NUMBER 23****AREA**

Cabot Strait

**DATE**

December, 1973

**PURPOSE OF PROJECT**

Petroleum exploration

**COMPANY**

Texaco Exploration Canada Limited

**CONTRACTOR**

Compagnie Generale de Geophysique

**TYPE OF STUDY**

Marine seismic, Vaporchoc source, 4800%

**COVERAGE**

250 km (155 mi); only lines within map boundary plotted

**SECTIONS AVAILABLE AT NSDME**

No

**REFERENCE**

Plant, M. G.  
1974: Cabot Strait Geophysical Survey; conducted for Texaco Exploration Canada by Kenting Exploration Services and Compagnie Generale de Geophysique; Nova Scotia Department of Mines and Energy, Petroleum Resources Section files.

**NOTES**

According to the above reference, the 1973 survey (including the survey by Kenting Exploration Services) provided Texaco with data of better quality than had been acquired in previous years. Problems were encountered with water bottom related multiples and a failure in some cases to tie previous data with the new data.

**MAP INDEX NUMBER 24****AREA**

River Hebert, Amherst-Northport, Cumberland County

**DATE**

August 12, 1974-September 27, 1974 and March 3, 1975-March 11, 1975

**PURPOSE OF PROJECT**

Petroleum exploration

**COMPANY**

Gulf Oil Canada Limited

**CONTRACTOR**

Dresser Olympic Canada Operations

**TYPE OF STUDY**

Vibroseis, reflection

**COVERAGE**

193.79 km (120.42 mi)

**SECTIONS AVAILABLE AT NSDME**

No

**REFERENCE**

Fawcett, G. W.  
 1975: Report on Reflection  
 Seismic Survey,  
 Cumberland County, Nova  
 Scotia; Gulf Oil Canada  
 Limited; Nova Scotia  
 Department of Mines and  
 Energy, Assessment  
 Report 11E/12C 39-E-  
 23(01).

**MAP INDEX NUMBER 25****AREA**

Chebaducto Bay

**DATE**

November, 1974

**PURPOSE OF PROJECT**

Petroleum exploration

**COMPANY**

Cavalier Energy Inc.

**CONTRACTOR**

Unknown

**TYPE OF STUDY**

Marine seismic reflection, 1200%

**COVERAGE**

90.8 km (56.4 mi)

**SECTIONS AVAILABLE AT NSDME**

No

**REFERENCE**

Lundberg Seismic Consultants Limited  
 1975: Chedabucto Bay, Nova  
 Scotia, Seismic  
 Interpretation; for  
 Cavalier Energy Inc.;  
 Nova Scotia Department  
 of Mines and Energy,  
 Petroleum Resources  
 Section files.

**NOTES**

The 1200% record sections are enclosed with the report. Six lines were shot but only two display continuous seismic reflections according to the above report.

**MAP INDEX NUMBER 26****AREA**

Northumberland Strait - St. Georges Bay

**DATE**

GSI: November 12, 1974-November 26,  
 1974  
 CGG: December 27, 1974

**PURPOSE OF PROJECT**

Petroleum exploration

**COMPANY**

Societe Quebecois D'Initiatives  
 Petrolieres

**CONTRACTOR**

Geophysical Services Incorporated (GSI)  
Compagnie Generale de Geophysique (CGG)

**TYPE OF STUDY**

Marine seismic, air gun (GSI);  
Vaporchoc (GGG)

**COVERAGE**

Northumberland Strait: 910.9 km (566  
mi) 24 and 12 fold

Georges Bay: 30.7 km (19.1 mi) 24 fold  
(CGG)

**SECTIONS AVAILABLE AT NSDME**

Four sample sections from the  
Northumberland Strait are included on a  
map with the report referenced below.

**REFERENCE**

Anger, C.  
1976: Geophysical Report on  
Prince Edward Island  
(Northumberland Strait)  
for Societe Quebecois  
D'Initiatives  
Petrolieres; by  
Geophysical Services  
Incorporated and  
Compagnie Generale de  
Geophysical; Report No.  
7211; Nova Scotia  
Department of Mines and  
Energy, Petroleum  
Resources Sections  
files.

**NOTES**

According to Anger (1976), data quality  
was generally fair to good in spite of  
difficult conditions of water depth and  
the proximity of the coast.

**MAP INDEX NUMBER 27****AREA**

Noel-Kennetcook, Hants County

**DATE**

February, 1975

**PURPOSE OF PROJECT**

Petroleum exploration

**COMPANY**

SOQUIP A.C.C., Aquitaine Company of  
Canada Limited

**CONTRACTOR**

Dresser Olympia Canada Operations  
Data processing by Geodigit

**TYPE OF STUDY**

Vibroseis 1200%

**COVERAGE**

42 km (26 mi)

**SECTIONS AVAILABLE AT NSDME**

No

**REFERENCES**

Far-Away Resources Limited  
1983: Progress Report of the  
Exploration Evaluation  
of the Tricentrol Oils  
Limited Acreage in the  
Minas Basin-St. Mary's  
Graben, Nova Scotia; for  
Tricentrol Oils Limited;  
Nova Scotia Department  
of Mines and Energy,  
Assessment Report  
11E/05D 39-D-74(06).

Trepanier, A.

1976: Geophysical Report on  
Minas Project No. 2051,

Nova Scotia, Report 6495; Nova Scotia Department of Mines and Energy, Petroleum Resources Section files.

**NOTES**

According to Far-Away Resources Limited (1983), the data quality is good with adequate reflectors to 0.9 seconds. Trepanier (1976) states that the reflection quality varies greatly with two of the four lines showing good quality and the other two lines showing "less quality".

**MAP INDEX NUMBER 28**

**AREA**

Minas Basin

**DATE**

1976

**PURPOSE OF PROJECT**

Unknown

**COMPANY**

Bedford Institute of Oceanography

**CONTRACTOR**

Amos

**TYPE OF STUDY**

Marine seismic, sparker source

**COVERAGE**

Approximately 22 km (14 mi)

**SECTIONS AVAILABLE AT NSDME**

No

**REFERENCE**

Far-Away Resources Limited  
 1983: Progress Report of the Exploration Evaluation of the Tricentrol Oils Limited Acreage in the Minas Basin-St. Mary's Graben, Nova Scotia; for Tricentrol Oils Limited; Nova Scotia Department of Mines and Energy, Assessment Report 11E/05D 39-D-74(06).

**NOTES**

According to the above reference, the data quality is poor with limited penetration.

**MAP INDEX NUMBER 29**

**AREA**

Minas Basin

**DATE**

1977

**PURPOSE OF PROJECT**

Unknown

**COMPANY**

McMaster University

**CONTRACTOR**

Knight

**TYPE OF STUDY**

Marine seismic, sparker source

**COVERAGE**

Approximately 80 km (50 mi)

**SECTIONS AVAILABLE AT NSDME**

No

**REFERENCE**

Far-Away Resources Limited  
 1983: Progress Report of the Exploration Evaluation of the Tricentrol Oils Limited Acreage in the Minas Basin-St. Mary's Graben, Nova Scotia; for Tricentrol Oils Limited; Nova Scotia Department of Mines and Energy, Assessment Report 11E/05D 39-D-74(06).

**NOTES**

According to the above reference, the data quality is poor with limited penetration.

**MAP INDEX NUMBER 30**

**AREA**

Offshore, Mabou Mines, Inverness County

**DATE**

1977

**PURPOSE OF PROJECT**

Coal exploration

**COMPANY**

Nova Scotia Department of Mines and Energy

**CONTRACTOR**

Nova Scotia Research Foundation Corporation

**TYPE OF STUDY**

High resolution reflection seismic,

sparker source

**COVERAGE**

37 km (23 mi)

**SECTIONS AVAILABLE AT NSDME**

No

**REFERENCE**

Nova Scotia Research Foundation  
 1978: Integration of Marine Seismic Reflection Data off the West Coast of Cape Breton Island, Nova Scotia; for the Nova Scotia Department of Mines; Nova Scotia Research Foundation, Report 1-78.

**NOTES**

According to the above report, usable information was gained to about 61 m (200 ft) below the seabed. Seismic data acquired from Hudson's Bay Oil and Gas Company Limited and Continental Oil Company Limited from surveys carried out in 1968 and 1967, respectively, provided information from 914 m (3,000 ft) below seabed to a maximum of 5 640 m (18,500 ft).

**MAP INDEX NUMBER 31**

**AREA**

Offshore of Joggins, Cumberland County, and Minas Basin

**DATE**

May 10, 1977-May 22, 1977

**PURPOSE OF PROJECT**

Surficial sediment studies re tidal power projects

**COMPANY**

Tidal Power Review Board (Canadian Atlantic Power Group)

**CONTRACTOR**

Geomarine Associates Limited

**TYPE OF STUDY**

Reflection seismic, marine sparker, boomer, air gun

**COVERAGE**

Offshore Joggins - approximately 37 km (23 mi)  
Minas Basin - approximately 59 km (37 mi)

**SECTIONS AVAILABLE AT NSDME**

Of the nine lines in this area, Section G-A2 is included in the Far-Away Resources Limited report. The nine reflection profiles of the Minas Basin are included within Stewart and Ruffman's report.

**REFERENCES**

- Far-Away Resources Limited  
1983: Progress Report of the Exploration Evaluation of the Tricentrol Oils Limited Acreage in the Minas Basin-St. Mary's Graben, Nova Scotia; for Tricentrol Oils Limited; Nova Scotia Department of Mines and Energy, Assessment Report 11E/05D 39-D-74(06).
- Stewart, J. and Ruffman, A.  
1977: Report on Marine Seismic Surveys by Geomarine Associates Limited for Canadian Atlantic Power Group; Nova Scotia Department of Mines and Energy, Assessment Report 11E/05D 39-D-74(10).

**NOTES**

According to Far-Away Resources Limited's report, the data quality within the Minas Basin area is good, with poor to good reflectors to 0.1 second.

**MAP INDEX NUMBER 32****AREA**

Offshore Port Morien

**DATE**

September 19, 1977-September 24, 1977

**PURPOSE OF PROJECT**

Coal exploration

**COMPANY**

Nova Scotia Department of Mines and Energy

**CONTRACTOR**

Nova Scotia Research Foundation Corporation

**TYPE OF STUDY**

Reflection, marine sparker

**COVERAGE**

80.5 km (50 mi)

**SECTIONS AVAILABLE AT NSDME**

No

**REFERENCE**

- Howells, K.  
1977: A marine seismic profiling survey to determine geological structures in coal-bearing sediments in Morien Bay and adjacent

offshore areas, Cape Breton Island, Nova Scotia; for Nova Scotia Department of Mines; Nova Scotia Research Foundation Corporation, Report 7-77.

exploration seismic survey - track plot and four line sections (line numbers 1, 2, 6, 11); Miscellaneous file; Nova Scotia Department of Mines and Energy, Coal Development Section files.

### MAP INDEX NUMBER 33

#### AREA

Offshore Mabou, Inverness County

#### DATE

June 18, 1978-July 11, 1978

#### PURPOSE OF PROJECT

Coal exploration

#### COMPANY

Nova Scotia Department of Mines and Energy

#### CONTRACTOR

Geomarine Associates Limited; processed by Geodigit Limited

#### TYPE OF STUDY

Marine seismic, Flexichoc sound source

#### COVERAGE

200 km (124 mi)

#### SECTIONS AVAILABLE AT NSDME

Three of the 16 seismic sections have been included in Steward and Meagher's 1978 report. Four line sections are included in the miscellaneous file referenced below.

#### REFERENCES

Geomarine Associates Limited  
1978: Mabou offshore coal

Steward, J. and Meagher, L.

1978: Marine geophysical survey, offshore Mabou, Cape Breton Island, Nova Scotia; by Geomarine Associates Limited for Nova Scotia Department of Mines and Energy, Project No. 78-16; Nova Scotia Department of Mines and Energy, Open File Report 384.

#### NOTES

The survey was conducted to provide data from a greater depth than that provided by the previous Nova Scotia Research Foundation survey run during the summer of 1977.

### MAP INDEX NUMBER 34

#### AREA

Offshore Sydney

#### DATE

July, 1978-September 1978

#### PURPOSE OF PROJECT

Coal exploration

#### COMPANY

Nova Scotia Department of Mines and Energy and Cape Breton Development Corporation

**CONTRACTOR**

Nova Scotia Research Foundation Corporation

**TYPE OF STUDY**

Reflection seismic

**COVERAGE**

1031 km (640.7 mi)

**SECTIONS AVAILABLE AT NSDME**

No

**REFERENCES**

Nova Scotia Research Foundation Corporation

1979a: Point Aconi seismic survey for Nova Scotia Department of Mines; Nova Scotia Research Foundation Corporation, Report No. 1-79.

1979b: Donkin and New Waterford seismic reflection survey for Cape Breton Development Corporation; Nova Scotia Research Foundation Corporation, Report 6-79.

**MAP INDEX NUMBER 35****AREA**

Bras d'Or Lake

**DATE**

July-August, 1980

**PURPOSE OF PROJECT**

Petroleum exploration

**COMPANY**

Chevron Canada Resources Limited

**CONTRACTOR**

Processed by Merlin Geophysical Company Ltd.

Shot by Fairfield Aquatronics Ltd.

**TYPE OF STUDY**

"Fairflex" energy source, 1200% coverage

**COVERAGE**

Approximately 490 km (305 mi)

**SECTIONS AVAILABLE AT NSDME**

Yes

**REFERENCE**

Line map (scale 1:50 000) and seismic sections submitted to Nova Scotia Department of Mines and Energy by Chevron Canada Ltd.

**NOTES**

The data is generally poor.

**MAP INDEX NUMBER 36****AREA**

Pictou County, Colchester County, Cumberland County

**DATE**

June, 1980-December 1980

**PURPOSE OF PROJECT**

Petroleum exploration

**COMPANY**

Chevron Standard Limited

**CONTRACTOR**

Grant Geophysical Limited

**TYPE OF STUDY**Reflection seismograph, vibroseis,  
1200% CDP**COVERAGE**

399.7 km (248.4 mi)

**SECTIONS AVAILABLE AT NSDME**Line profiles are included in the  
report referenced below.**REFERENCE**

McCormack, W. J.  
1981: Final report on  
geophysical survey  
conducted by Chevron  
Standard Limited,  
Cumberland Basin, Nova  
Scotia; Nova Scotia  
Department of Mines and  
Energy, Assessment  
Report 21H/09D 39-E-  
10(01).

**NOTES**

According to the above report, the data  
quality is relatively good except in  
the southern and western portions of  
the prospect area. This is thought to  
reflect complex geology, not a data  
acquisition or processing problem.

**MAP INDEX NUMBER 37****AREA**

Bay of Fundy

**DATE**

September 21, 1980-October 1, 1980

**PURPOSE OF PROJECT**

Petroleum exploration

**COMPANY**

Chevron Standard Limited

**CONTRACTOR**

Western Geophysical Company of America

**TYPE OF STUDY**Reflection seismic survey, 3600%, air  
gun**COVERAGE**

807.8 km (502 mi)

**SECTIONS AVAILABLE AT NSDME**Line sections are included with the  
report.**REFERENCE**

McCormack, W. J.  
1981: Bay of Fundy 1980 report  
on the geophysical  
survey conducted by  
Chevron Standard  
Limited; Nova Scotia  
Department of Mines and  
Energy, Petroleum  
Resources Section files.

**NOTES**

The North Mountain Basalt event is the  
only continuous reflection that can be  
correlated over most of the survey  
according to McCormack's report. In  
general, the interpretation of the  
lines support the half-graben model of  
the Fundy Basin.

**MAP INDEX NUMBER 38****AREA**

Northumberland Strait, St. Georges Bay

**DATE**

July 17, 1981-July 26, 1981

**PURPOSE OF PROJECT**

Petroleum exploration

**COMPANY**

Chevron Standard Limited

**CONTRACTOR**

Western Geophysical Company of America

**TYPE OF STUDY**

Reflective seismic, air gun

**COVERAGE**

698 km (433.7 mi)

**SECTIONS AVAILABLE AT NSDME**

Seismic sections are included within the report.

**REFERENCE**

McCormack, W. J.

1981: Northumberland Strait report on the geophysical survey conducted by Chevron Standard Limited, 1982; Nova Scotia Department of Mines and Energy, Assessment Report 11F/13B 39-B-10(03).

**NOTES**

According to the above report, the overall performance of the energy source was exceptional.

**MAP INDEX NUMBER 39****AREA**

Aspy Bay

**DATE**

July 21, 1981-August 30, 1981

**PURPOSE OF PROJECT**

Coal exploration

**COMPANY**

Petro-Canada Exploration Inc.

**CONTRACTOR**

Geoterrex Limited

**TYPE OF STUDY**

Marine reflection seismic, 16 lines, mini-flexichoc, 24 fold

**COVERAGE**

332 km (206 mi)

**SECTIONS AVAILABLE AT NSDME**

Interpretative sections on portions of some of the lines have been included in the report referenced below.

**REFERENCE**

Fortan, G. and Godard, L.

1981: Marine bottom and sub-bottom survey by geophysical methods on-site located in Aspy Bay, Nova Scotia; Operations and Interpretation Report, Geoterrex Project No. 93-12 for Petro-Canada Exploration Inc.; Nova Scotia Department of Mines and Energy, Coal Development Section files.

**NOTES**

According to the above report, the quality of the sections obtained varies from very good in the eastern three quarters of the survey area, to fair in the western margin of the grid. Processing was applied to emphasize the uppermost portion (100-300 msec) where coal seams were expected. Strong water

bottom and 'peg leg' multiples mask deeper information.

### MAP INDEX NUMBER 40

#### AREA

Cumberland County, Colchester County, Pictou County, Antigonish County.

#### DATE

August, 1981-December, 1981

#### PURPOSE OF PROJECT

Petroleum exploration

#### COMPANY

Chevron Standard Limited

#### CONTRACTOR

Grant Geophysical Limited

#### TYPE OF STUDY

Reflection seismograph, vibroseis, 1200% CDP

#### COVERAGE

280.0 km (174.5 mi)

#### SECTIONS AVAILABLE AT NSDME

No

#### REFERENCE

McCormack, W. J.  
1982: Cumberland Basin and Antigonish, Nova Scotia, final report on geophysical survey conducted by Chevron Standard Limited; Nova Scotia Department of Mines and Energy, Assessment Report 11F/12C 39-B-04(05).

#### NOTES

According to the above references, the data quality varied from very good to very poor.

### MAP INDEX NUMBER 41

#### AREA

Port Hood-Glencoe, Inverness County

#### DATE

August 4, 1981-August 26, 1981

#### PURPOSE OF PROJECT

Petroleum exploration

#### COMPANY

Chevron Standard Limited

#### CONTRACTOR

Grant Geophysical Limited

#### TYPE OF STUDY

Reflection seismograph, 1200% CDP, vibroseis

#### COVERAGE

71.16 km (44.2 mi)

#### SECTIONS AVAILABLE AT NSDME

Line sections are included in the report referenced below.

#### REFERENCE

McCormick, W. J.  
1982: Final report on geophysical survey conducted by Chevron Standard Limited; Geophysical License No. 14, 1981-07 to 1981-08; Cape Breton, Nova

Scotia; Nova Scotia  
Department of Mines and  
Energy, Assessment  
Report 11K/03B 39-J-  
35(10).

survey conducted by  
Chevron Standard  
Limited; Nova Scotia  
Department of Mines and  
Energy, Assessment  
Report Offshore 39-W-  
13(05).

**NOTES**

According to the above references, the  
data quality is fair to poor.

**MAP INDEX NUMBER 43****MAP INDEX NUMBER 42****AREA**

Bay of Fundy

**DATE**

August 15, 1981-August 24, 1981

**PURPOSE OF PROJECT**

Petroleum exploration

**COMPANY**

Chevron Standard Limited

**CONTRACTOR**

Western Geophysical Company of America

**TYPE OF STUDY**

Seismic reflection, 4800%, air gun

**COVERAGE**

654 km (406.4 mi)

**SECTIONS AVAILABLE AT NSDME**

Migrated data display sections and one  
page of interpretive results are  
included with McCormack's report.

**REFERENCE**

McCormick, W. J.  
1982: Bay of Fundy 1981 report  
on the geophysical

**AREA**

Kennetcook, Hants County; Truro-Middle  
Musquodoboit, Colchester and Halifax  
Counties.

**DATE**

September 30, 1981-November 11, 1981

**PURPOSE OF PROJECT**

Petroleum exploration

**COMPANY**

Chevron Standard Limited

**CONTRACTOR**

Grant Geophysical Limited

**TYPE OF STUDY**

Reflection seismograph, vibroseis,  
1200% CDP

**COVERAGE**

131.01 km (81.41 mi)

**SECTIONS AVAILABLE AT NSDME**

Line sections have been included with  
the report.

**REFERENCE**

McCormack, W. J.  
1982: Minas Basin, Nova  
Scotia, final report on  
geophysical survey

conducted by Chevron Standard Limited; Geophysical Licence No. 14, 1981-09 to 1981-11; Nova Scotia Department of Mines and Energy, Petroleum Resources Section files.

included with the report, as are two pages of interpretive results.

#### REFERENCE

Davitt, W. C.  
1983: Bay of Fundy 1982 report on the geophysical survey conducted by Chevron Standard Limited; Nova Scotia Department of Mines and Energy, Assessment Report 21H/09D 39-W-13(03).

#### NOTES

In the above report, it was stated that the "data quality in this area can best be described as very poor. For this reason, no interpretations and maps have been included with the report...".

### MAP INDEX NUMBER 44

#### AREA

Bay of Fundy

#### DATE

June 12, 1982-June 28, 1982

#### PURPOSE OF PROJECT

Petroleum exploration

#### COMPANY

Chevron Standard Limited

#### CONTRACTOR

Sefel Geophysical

#### TYPE OF STUDY

Seismic reflection, 4800%

#### COVERAGE

458 km (284.6 mi)

#### SECTIONS AVAILABLE AT NSDME

Stacked and migrated line sections are

#### NOTES

According to the above report, the top of the North Mountain Basalt is the only horizon that can be correlated across the Bay with any degree of certainty.

### MAP INDEX NUMBER 45

#### AREA

St. Georges Bay

#### DATE

June 30, 1982-July 22, 1982

#### PURPOSE OF PROJECT

Petroleum exploration

#### COMPANY

Chevron Canada Resources Limited

#### CONTRACTOR

Sefel Geophysical

#### TYPE OF STUDY

Reflection seismic, air gun, 4800%

#### COVERAGE

Cape Tormentine - 151.7 km (94.3 mi); 6 lines

St. Georges Bay - 237.9 km (147.8 mi);  
11 lines

**SECTIONS AVAILABLE AT NSDME**

Seismic sections are included in the  
report referenced below.

**REFERENCE**

Davitt, W. C.  
1983: Northumberland Strait  
1982 report on the  
geophysical survey  
conducted by Chevron  
Canada Resources  
Limited; Nova Scotia  
Department of Mines and  
Energy, Assessment  
Report 11F/13A 39-B-  
40(02).

**MAP INDEX NUMBER 46**

**AREA**

Stellarton

**DATE**

August-September, 1982 - University of  
Calgary  
May-June, 1983 - Enertec

**PURPOSE OF PROJECT**

Coal exploration

**COMPANY**

Suncor Inc. Resources Group

**CONTRACTOR**

University of Calgary  
Enertec Geophysical Services Limited

**TYPE OF STUDY**

Reflection seismic survey

**COVERAGE**

University of Calgary - 3.4 km (2.1  
mi); 12 and 24 fold  
Enertec - 33 km (20.5 mi); 24 fold

**SECTIONS AVAILABLE AT NSDME**

Yes; confidential status.

**REFERENCE**

Data submitted by Suncor Inc. Resources  
Group to the Nova Scotia Department of  
Mines and Energy are under confidential  
status.

**MAP INDEX NUMBER 47**

**AREA**

Offshore St. Paul Island

**DATE**

February 2, 1983-February 18, 1983

**PURPOSE OF PROJECT**

Petroleum exploration

**COMPANY**

Petro-Canada

**CONTRACTOR**

Sefel Geophysical Limited

**TYPE OF STUDY**

Marine seismic

**COVERAGE**

210 km (130.49 mi)

**SECTIONS AVAILABLE AT NSDME**

No

**REFERENCE**

Data submitted by Petro-Canada to the

Nova Scotia Department of Mines and Energy are under confidential status until February 18, 1988.

Department of Mines and Energy are under confidential status until March 19, 1988.

### MAP INDEX NUMBER 48

#### AREA

Mabou and Lake Ainslie area

#### DATE

February 22, 1983-March 9, 1983

#### PURPOSE OF PROJECT

Petroleum exploration

#### COMPANY

Chevron Canada Resources Limited

#### CONTRACTOR

Chevron Geosciences Limited

#### TYPE OF STUDY

Reflection seismograph survey

#### COVERAGE

66.2 km (41.1 mi)

#### SECTIONS AVAILABLE AT NSDME

Yes; confidential status

#### REFERENCE

Data submitted by Chevron Canada Resources Limited to the Nova Scotia

### MAP INDEX NUMBER 49

#### AREA

Debert, Colchester County

#### DATE

June, 1983

#### PURPOSE OF PROJECT

Petroleum exploration

#### COMPANY

Tricentrol Oils Limited

#### CONTRACTOR

Enertec Geophysical Services Limited processed by Seismic Data Processors Limited

#### TYPE OF STUDY

Reflection seismic

#### COVERAGE

Approximately 4 km (2.5 mi)

#### SECTIONS AVAILABLE AT NSDME

Confidential status

#### REFERENCE

Data submitted by Tricentrol Oils Limited to the Nova Scotia Department of Mines and Energy are under confidential status until June 1988.

### MAP INDEX NUMBER 50

**AREA**

Offshore Ingonish-Sydney

**DATE**

August 4, 1983-August 7, 1983

**PURPOSE OF PROJECT**

Petroleum exploration

**COMPANY**

Petro-Canada

**CONTRACTOR**

Sonics Exploration Limited

**TYPE OF STUDY**

Marine seismic

**COVERAGE**

300 km (186.4 mi)

**SECTIONS AVAILABLE AT NSDME**

No

**REFERENCE**

Data submitted by Petro-Canada to the Nova Scotia Department of Mines and Energy are under confidential status until August 7, 1988.

### MAP INDEX NUMBER 51

**AREA**

Mabou-Inverness area

**DATE**

December 1983

### PURPOSE OF PROJECT

Petroleum exploration

**COMPANY**

Chevron Canada Resources Ltd.

**CONTRACTOR**

Chevron

**TYPE OF STUDY**

Reflection seismic

**COVERAGE**

Approximately 26 km (16.2 mi)

**SECTIONS AVAILABLE AT NSDME**

Yes, confidential status.

**REFERENCE**

Line map (scale 1:50 000) and seismic sections submitted to Nova Scotia Department of Mines and Energy by Chevron Canada Resources Ltd. Data submitted by Chevron Canada Resources Ltd. to the Nova Scotia Department of Mines and Energy are under confidential status until December 1988.

### MAP INDEX NUMBER 52

**AREA**

Offshore Port Hood

**DATE**

September 19-September 21, 1985

**PURPOSE OF PROJECT**

Coal exploration

**COMPANY**

Nova Scotia Department of Mines and Energy-Geological Survey of Canada

**CONTRACTOR**

McGregor Geoscience Ltd.

**TYPE OF STUDY**

Reflection, sparker source

**COVERAGE**

25 km (15.5 mi), 5 lines

**SECTIONS AVAILABLE AT NSDME**

Two of the five lines run are included in the report references below.

**REFERENCE**

McGregor Geoscience Ltd.  
 1986: Marine Seismic Survey, Port Hood area, Cape Breton Island, Nova Scotia; Text and Enclosures; for Geological Survey of Canada; Nova Scotia Department of Mines and Energy, Coal Development Section files.

**NOTES**

The project was initiated to define the structure more fully and, as such, was a success. The depths to the Six-Foot Seam were projected based on the delineation of a nearby marker horizon.

**MAP INDEX NUMBER 53****AREA**

Offshore Inverness

**DATE**

September 21-September 22, 1985

**PURPOSE OF PROJECT**

Coal exploration

**COMPANY**

Nova Scotia Department of Mines and Energy/Geological Survey of Canada

**CONTRACTOR**

McGregor Geoscience Ltd.

**TYPE OF STUDY**

Reflection, sparker source

**COVERAGE**

84 km (52.2 mi), 10 lines

**SECTIONS AVAILABLE AT NSDME**

Three of the 10 lines run are included in the report referenced below.

**REFERENCE**

McGregor Geoscience Ltd.  
 1986: Marine Survey, Inverness area, Cape Breton Island, Nova Scotia; Text and Enclosures; for Geological Survey of Canada; Nova Scotia Department of Mines and Energy, Coal Development Section files.

**NOTES**

The project was initiated to define more fully the structure and, as such, was a success. Dips were delineated which increased the coal tonnage prognosis of the area.

**MAP INDEX NUMBER 54****AREA**

Kennetcook, Hants County

**DATE**

October 10, 1986-November 2, 1986

**PURPOSE OF PROJECT**

Petroleum exploration

**COMPANY**

Consultants A.G.R.E.N. Canada Inc.

**CONTRACTOR**

Canjay Exploration (1975) Ltd.

**TYPE OF STUDY**

Refraction seismic

**COVERAGE**

Confidential status

**SECTIONS AVAILABLE AT NSDME**

Yes, under confidential status

**REFERENCE**

Reference submitted to the Nova Scotia Department of Mines and Energy is under confidential status until November 3, 1991.

**MAP INDEX NUMBER 55**

**AREA**

River Hebert-Springhill, Cumberland County

**DATE**

June, 1985-August, 1987

**PURPOSE OF PROJECT**

Coal exploration, stratigraphy

**COMPANY**

Geological Survey of Canada-Nova Scotia  
Department of Mines and Energy

**CONTRACTOR**

Geological Survey of Canada, 1985, 1987  
G.P.R. Geophysics, 1986

**TYPE OF STUDY**

Reflection, shot hole

**COVERAGE**

80 km (49.7 mi)

**SECTIONS AVAILABLE AT NSDME**

Yes

**REFERENCE**

Verbal; reports pending.

**NOTES**

Good resolution was obtained on the Cumberland Group and to the east on the Riversdale Group. The line between Halfway River and Southampton provided poorer quality data.

