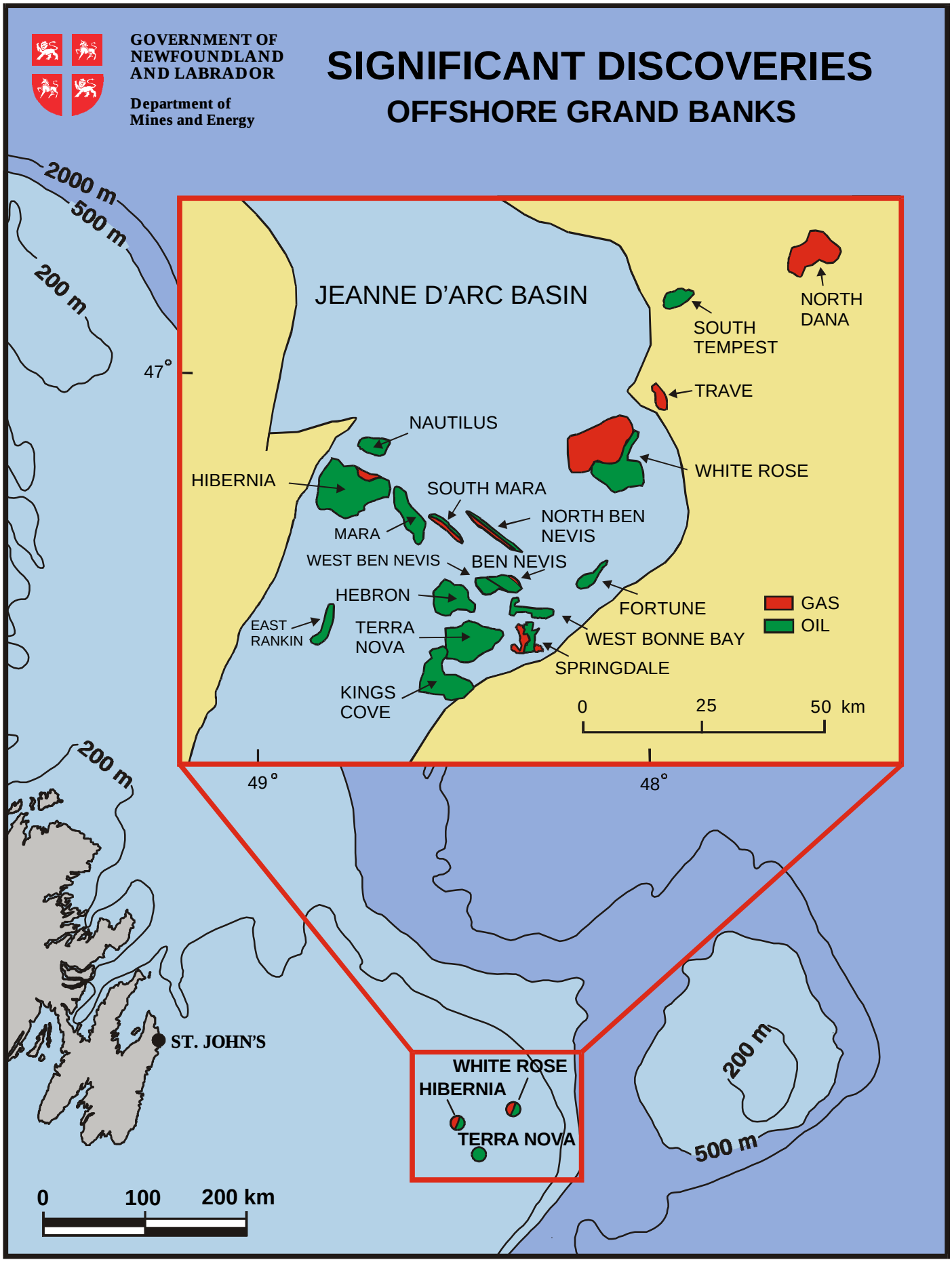
Department of Mines and Energy
Government of Newfoundland and Labrador

OFFSHORE NEWFOUNDLAND AND LABRADOR

CALL FOR BIDS

And
Overview of
Newfoundland and Labrador
Offshore Exploration
and Development



NOTE: For illustrative purposes only

After: C-NOPB

Department of Mines and Energy

GOVERNMENT OF NEWFOUNDLAND AND LABRADOR

Offshore Newfoundland and Labrador Call for Bids NF00-1

August, 2000

FOREWORD

The purpose of this report is to provide information on offshore petroleum exploration and development opportunities in the Province of Newfoundland. General information is provided on the overall business climate, petroleum related infrastructure and geology, along with specific information on 14 land parcels being offered in a Call for Bids closing December 11, 2000.

TABLE OF CONTENTS

Hibernia Gravity Based Structure (GBS)

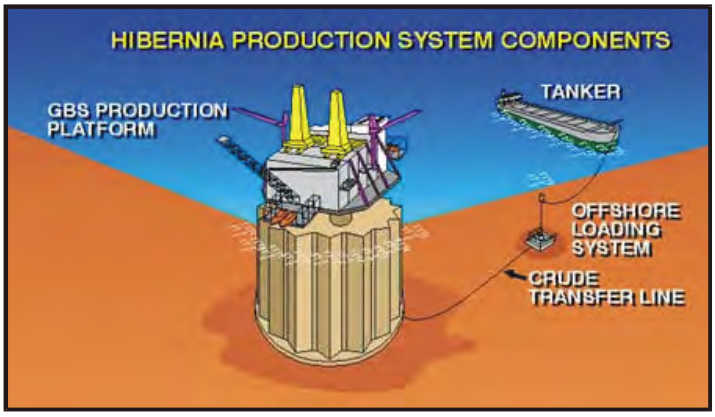
The C-NOPB has recently upgraded its Hibernia reserve estimate from 666 million to 884 million barrels recoverable oil.

The East Coast of Canada, including offshore Nova Scotia and offshore Newfoundland and Labrador, has recently come to prominence as a major new territory for petroleum exploration and development. The Hibernia field, in 80 metres of water on the Grand Banks of Newfoundland, began production with a gravity based structure in 1997, and is currently producing about 150,000 barrels of oil per day. The Terra Nova field, located 35-km southeast of Hibernia, will be brought onstream next year using a floating production system that is expected to produce more than 115,000 barrels of oil per day at startup.

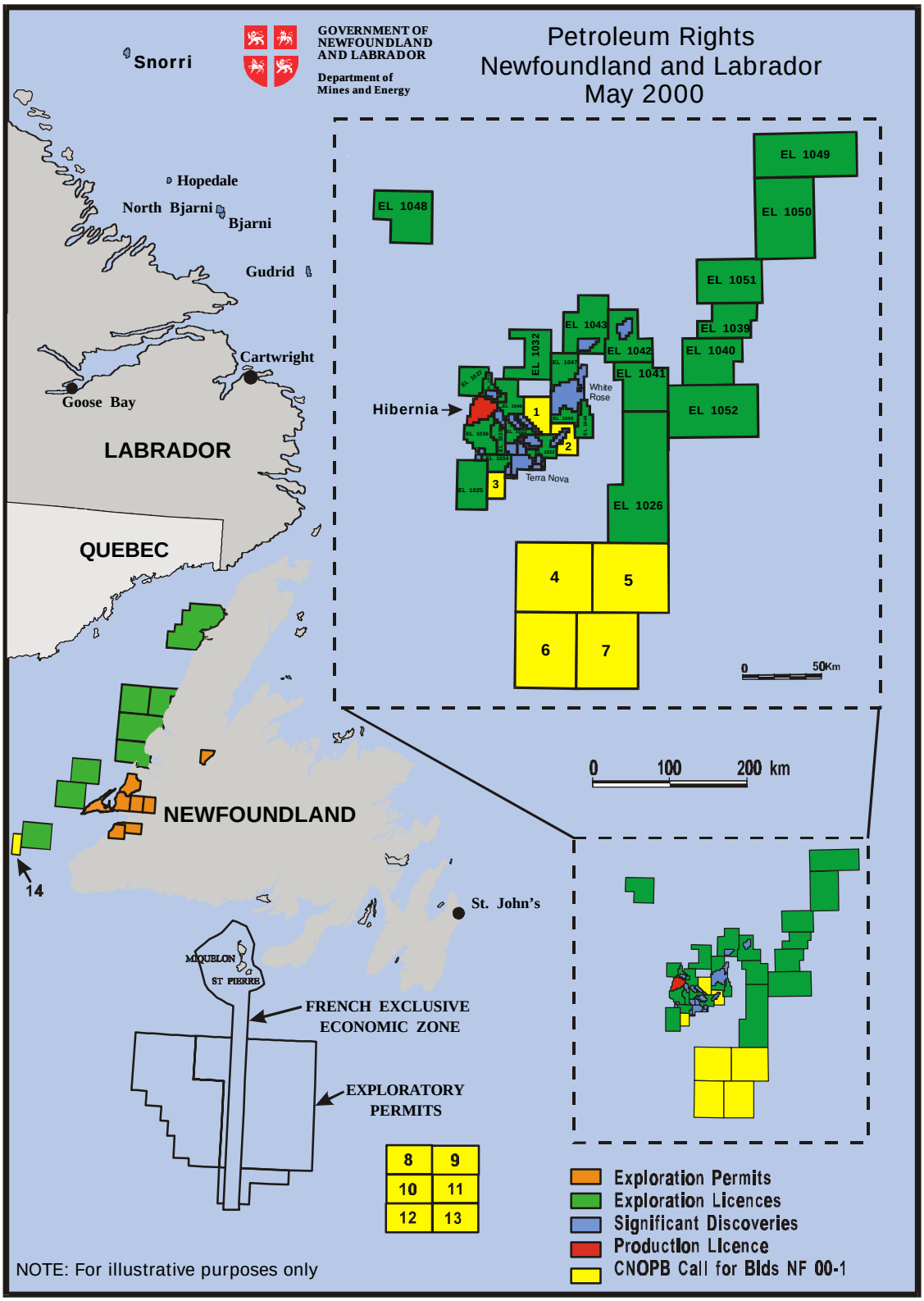
Husky Oil recently announced a development proposal to produce 75,000 to 100,000 bopd from the White Rose field by late 2003 and Chevron is currently studying the possibility of developing the Hebron/Ben Nevis fields.To date, 127 exploration wells, 29 delineation wells and 37 development wells have been drilled and resulted in the discovery of recoverable resources of 2.1 billion barrels of oil, 9.3 tcf of gas and 413 million barrels of natural gas liquids. The international petroleum industry, along with local companies and research institutions, have successfully adapted technologies developed in the North Sea, Gulf of Mexico and elsewhere to meet the challenges of the northwest Atlantic environment, in a manner that allows for safe and profitable access to the area's considerable petroleum resources. Finding costs for the Grand Banks are less than US $1.00[1] and extraction costs for the Terra Nova field are estimated at US$ 7.50 based on a reserve of 370 million barrels[2]. Petro-Canada estimates that an undrilled fault block in the field may contain an additional 100 million barrels. More detail on discovered resources and geological framework is provided in Section 3.

Terra Nova Floating Production Storage and Offloading Facility

Finding costs for the Grand Banks are less than US $1.00.



Fourteen parcels of land totaling 2.2 million hectares are offered in the Call for Bids NF00-1 that closes December 11, 2000.



Newfoundland Petroleum Rights

STRATEGIC LOCATION

Whatever your markets, you can easily access them from Newfoundland and Labrador. Our trading patterns with Europe and North America have developed modern and extensive air, land and water infrastructure.

Being the easternmost land mass of the North American continent, the Province of Newfoundland has held a strategic position throughout its 500 years of settlement by Europeans. With its rich fishing grounds and location at the gateway to North America, the area was coveted by the European powers and ultimately became the first installment in the British Empire. The importance of Newfoundland and Labrador's location was recognized repeatedly in the twentieth century with the establishment of major American and Canadian military bases. Today, as a province of Canada, Newfoundland continues to capitalize on its location as it expands its economy beyond the traditional industries into the high tech world of offshore petroleum exploration and development.

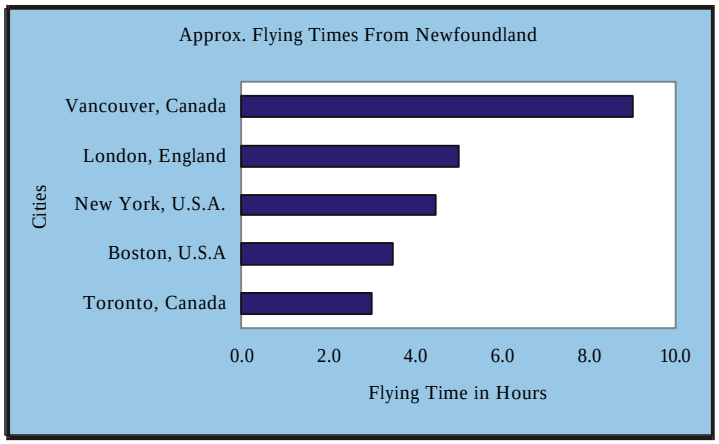


Figure 1.1

Approximate flying times from Newfoundland

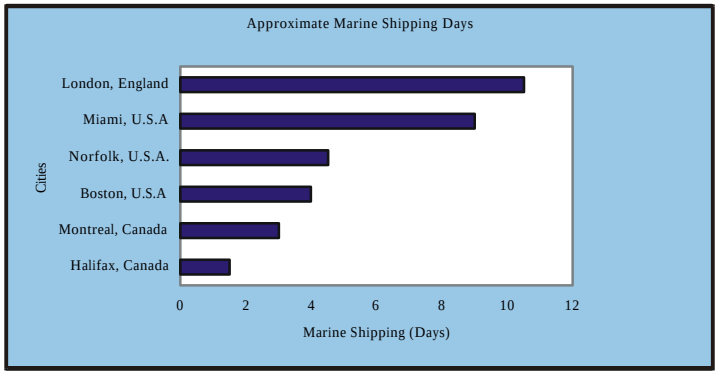


Figure 1.2

Approximate marine shipping days from Newfoundland

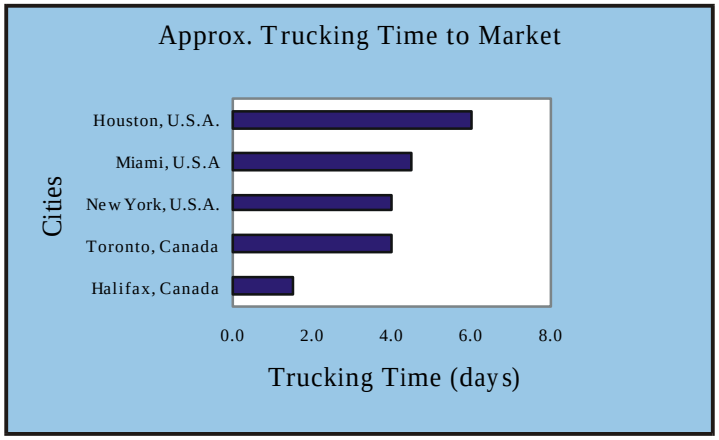


Figure 1.3

Approximate trucking days from Newfoundland

STRATEGIC LOCATION

Figure 1.4

The Hibernia discovery well was the sixtieth to be drilled offshore Newfoundland and Labrador. Since that discovery an average of 30 million barrels have been found per exploration well.

WHY EXPLORE IN NEWFOUNDLAND?

⇒ Large undrilled structures in proven areas

⇒ Proximal to major markets

⇒ High production rates and recovery factors

⇒ High quality sweet crude

⇒ Plenty of unlicenced land in prospective areas

⇒ Stable political climate

INDUSTRIAL INFRASTRUCTURE
A BRIEF INTRODUCTION

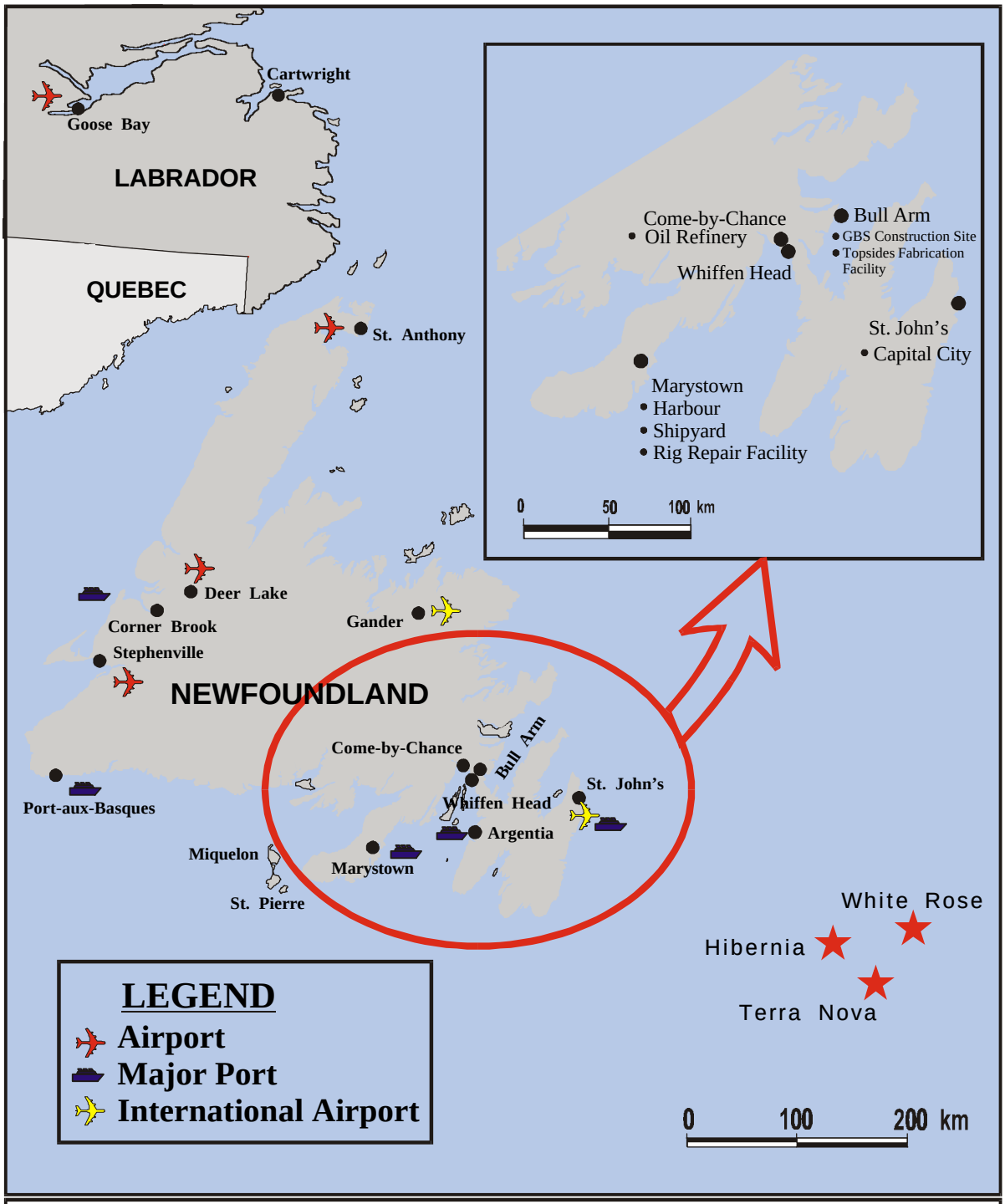


Figure 2.1
Industrial Infrastructure Map of

Newfoundland and Labrador continues to expand its industrial infrastructure to meet the needs of the petroleum industry.

INDUSTRIAL INFRASTRUCTURE
A BRIEF INTRODUCTION

St. John's and Surrounding Areas

Figure 2.2
St. John's Waterfront

Population of 174,051 (1996 Census)

⇒ Supply base for support services to the offshore oil and gas industry

⇒ Helibase that provides passenger handling facilities, aviation fuel, pre-operational technical support, first response personnel and equipment, and airport terminal and maintenance/repair facilities.

⇒ Subsea component fabrication facilities for fabrication of subsea templates and manifold systems.

⇒ Services such as directional drilling, cementing, well completion, electrical wireline, perforating and pumping, reservoir management and data acquisition companies.

⇒ According to a 1997 KPMG study, St. John's is the most cost-effective city to do business of 42 cities in 7 countries.

⇒ The St. John's metropolitan area offers a variety of cost-effective industrial and office space. Prime industrial space is located in fully serviced industrial parks and you'll find Class A office space in downtown towers.

⇒ Major administrative, research and training facilities, including:

Memorial University
College of the North Atlantic
Centre for Cold Ocean Resources Engineering
Institute for Marine Dynamics
Marine Institute

According to a 1997 KPMG study, St. John's is the most cost-effective city to do business of 42 cities in 7 countries.

Figure 2.3
Institute for Marine Dynamics

INFRASTRUCTURE

Figure 2.4
Hibernia Tow Out

Bull Arm

Figure 2.5
Bull Arm Construction Site

Bull Arm was the fabrication and construction site for the 1.2 million tonne offshore oil drilling and production platform for the Hibernia oil field. The $470 million site was also used to fabricate topsides modules for the Terra Nova FPSO vessel. The Terra Nova FPSO arrived at Bull Arm on May 12, 2000 for installation of the topsides modules, hook-up and commissioning.

From the Whiffen Head Storage facility Grand Banks crude has ready access to the North American Market.

Whiffen Head

Figure 2.6
Newfoundland Transshipment Terminal Berth

The Newfoundland Transshipment Terminal facility has 3 tanks each with 500,000 barrels of storage capacity. It is currently constructing additional storage tanks for Terra Nova production and has the capacity to expand as offshore production levels increase. The expansion is expected to be completed by October 2000.

INFRASTRUCTURE

North Atlantic Oil Refinery

Figure 2.7
North Atlantic Oil Refinery

Located at the head of Placentia Bay, the North Atlantic Refining Ltd. oil refinery has a rated capacity of 105,000 barrels of oil per day and crude and product storage for over 7 million barrels. In addition, the deep-water facility is capable of receiving ultra large crude carriers in excess of 300,000 dwt directly at the dock.

Marystown

Figure 2.8
Friede Goldman Facility at Marystown

The Friede Goldman shipyard is capable of completing a wide variety of construction, fabrication and engineering requirements for offshore, shipbuilding, ship repair and general industrial work. The facility can also accommodate refitting, conversion, upgrading and maintenance as well as repairs to marine systems and oil rigs.

In cities, towns and communities across Newfoundland, numerous companies have been established to meet the needs of offshore projects. Access to ancillary support, education infrastructure and a diversified labor force make this province an attractive and competitive site for your business.

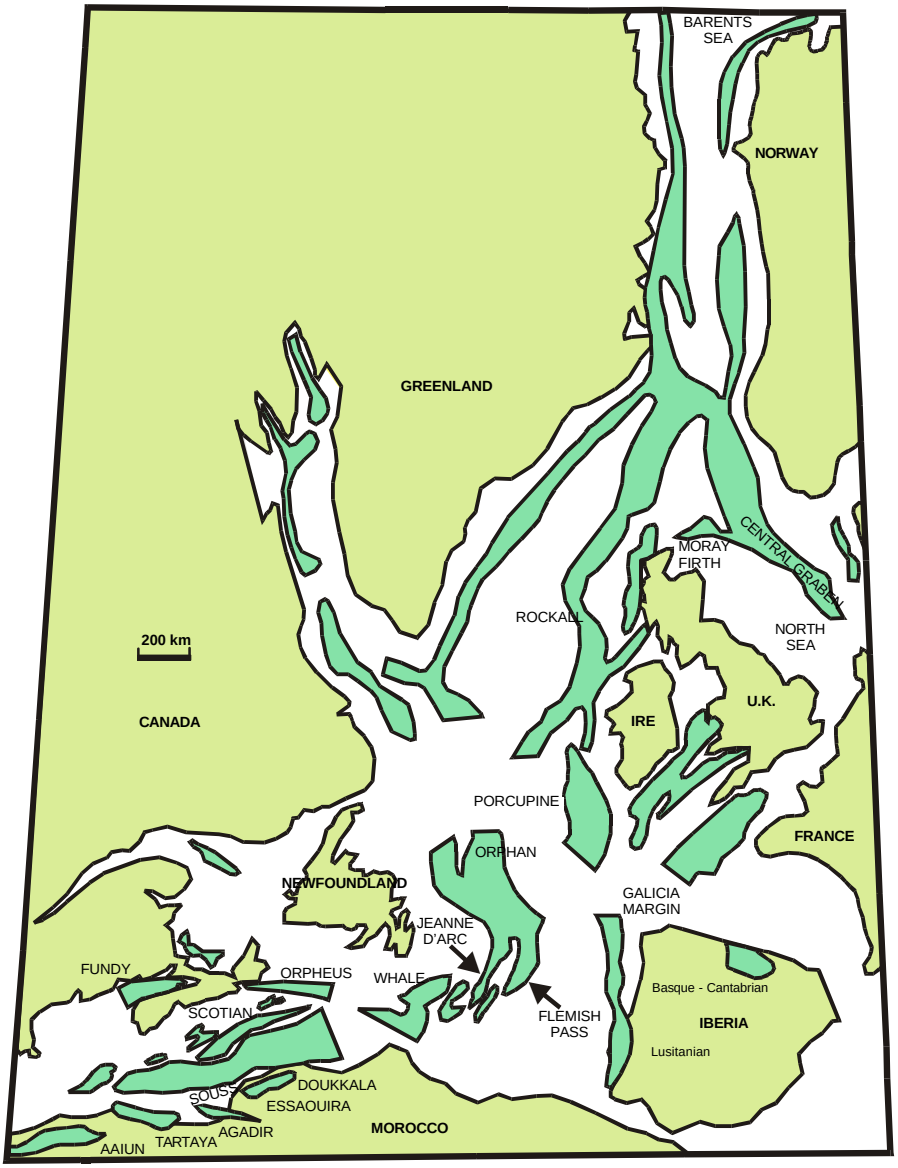
GEOLOGICAL FRAMEWORK

Mesozoic Basins of the North Atlantic

More than 26 billion barrels of oil and 63 tcf of natural gas have been produced from the Mesozoic basins of the North Atlantic. The primary producing reservoirs thus far have been the Lower Cretaceous, Jurassic and Tertiary sandstones of the British and Norwegian North Sea, but since November, 1997 major production has been achieved from the Lower Cretaceous reservoirs on the west side of the Atlantic - at the Hibernia field. Although the distinction of first oil production in the northwest Atlantic goes to the Cohasset/Panuke field offshore Nova Scotia, which produced about 43 million barrels, Hibernia is the first giant field to be developed and is currently producing at 150,000 bopd from only 9 production wells.

Figure 3.1 illustrates the parallel ancestry of the North Sea and offshore Newfoundland and Labrador basins, both of which were formed by the separation of Europe and Northwest Africa from North America by the continental drift that commenced in the Triassic/Early Jurassic.

To date more than 2600 exploration wells have been drilled in the North Sea and have proven resources of more than 55 billion barrels of oil and 200 tcf of gas[3]. Only 127 exploration wells have been drilled Offshore Newfoundland and Labrador, by which some 2.1 billion barrels of oil and 9.3 tcf of natural gas have been discovered [4]. Studies of undiscovered oil resources in the Newfoundland and Labrador offshore area have focused primarily on the Northern Grand Banks and have resulted in estimates ranging from 6 to 12 billion barrels recoverable. The undiscovered gas resource for the offshore area is about 60 trillion cubic feet [5].

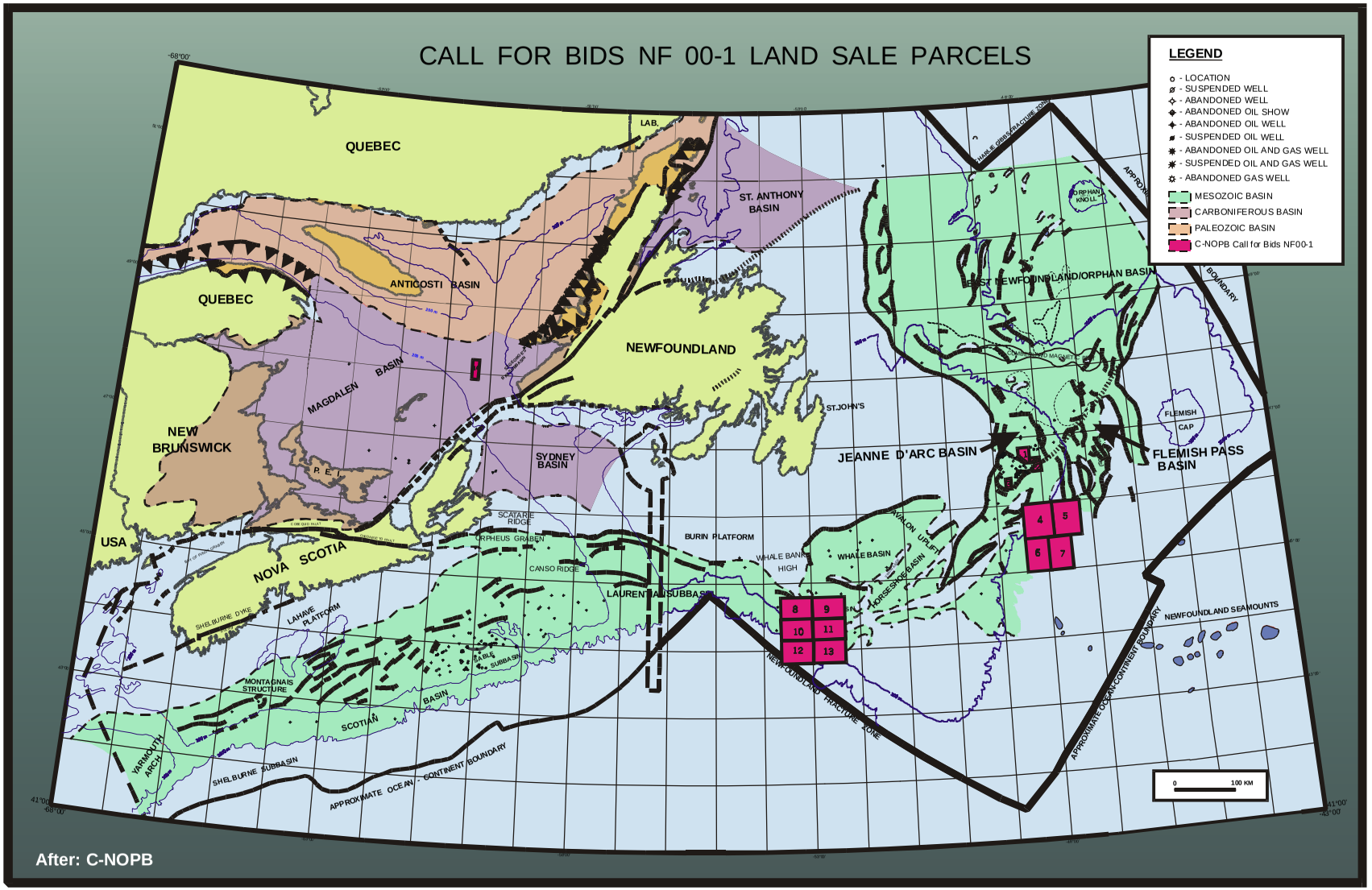


Predrift rift basins of the North Atlantic margins.

After: A. J. Tankard

Figure 3.1

Figure 3.2



Exploration is occurring in the Mesozoic Basins of the Grand Banks and Scotian Shelf as well as in the Paleozoic Basins of Western Newfoundland and throughout Eastern Canada. Lands are being offered in the Mesozoic and Paleozoic Basins in Call for Bids NF 00-1.

GEOLOGICAL FRAMEWORK

Jeanne d'Arc Basin

Figures 3.3 and 3.4 illustrate the primary reservoirs and structural style of the Jeanne d'Arc and the Flemish Pass basins. To date the key reservoirs are the Lower Cretaceous Ben Nevis/Avalon and Hibernia sandstones and the Late Jurassic Jeanne d'Arc sandstones. As in the North Sea the source rock is a regional Kimmeridgian shale with total organic carbon in the neighborhood of 4.5% and a hydrogen index in the range of five hundred to seven hundred, indicating a highly oil prone source rock .

The Jeanne d'Arc basin is home to all of the large oil fields discovered to date, including Hibernia, Terra Nova, Hebron and White Rose. Based on current developments (Hibernia and Terra Nova), this basin will be producing about 300,000 barrels per day by March of 2001, and if development proceeds as expected at White Rose and Hebron, could be producing more than 500,000 bopd by mid-decade. In the meantime new seismic data continues to refine the geologic picture and identify new targets, exploratory drilling continues, and recent land sales have recorded record bids . Three parcels in this years Request for Bids are located in the Jeanne d'Arc Basin (Figure 3.4).

The Hibernia B-16-1 well set a Canadian daily flow rate record in 1998 when it tested at 56,000 barrels of oil per day from the Hibernia Sandstone Reservoir.

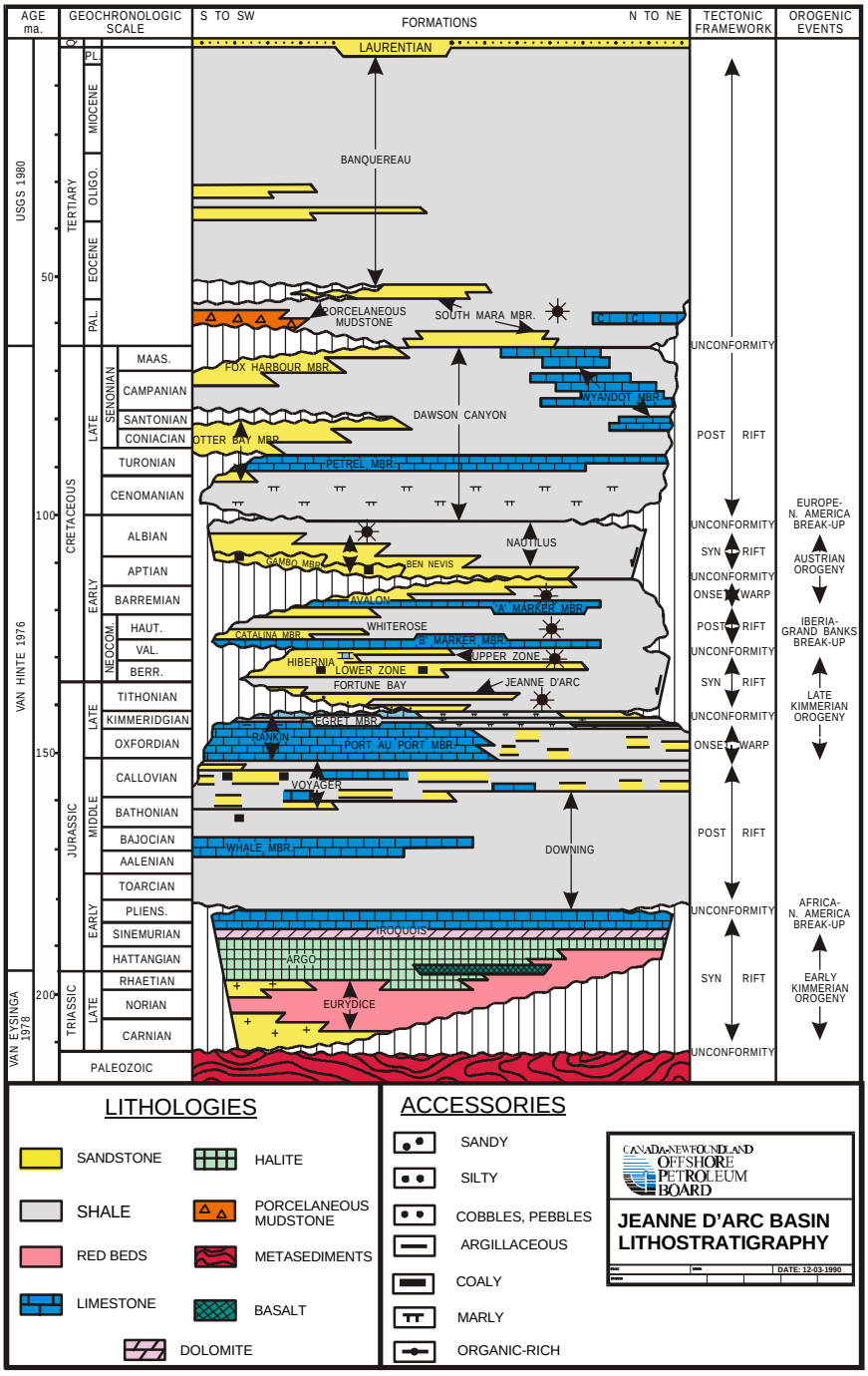
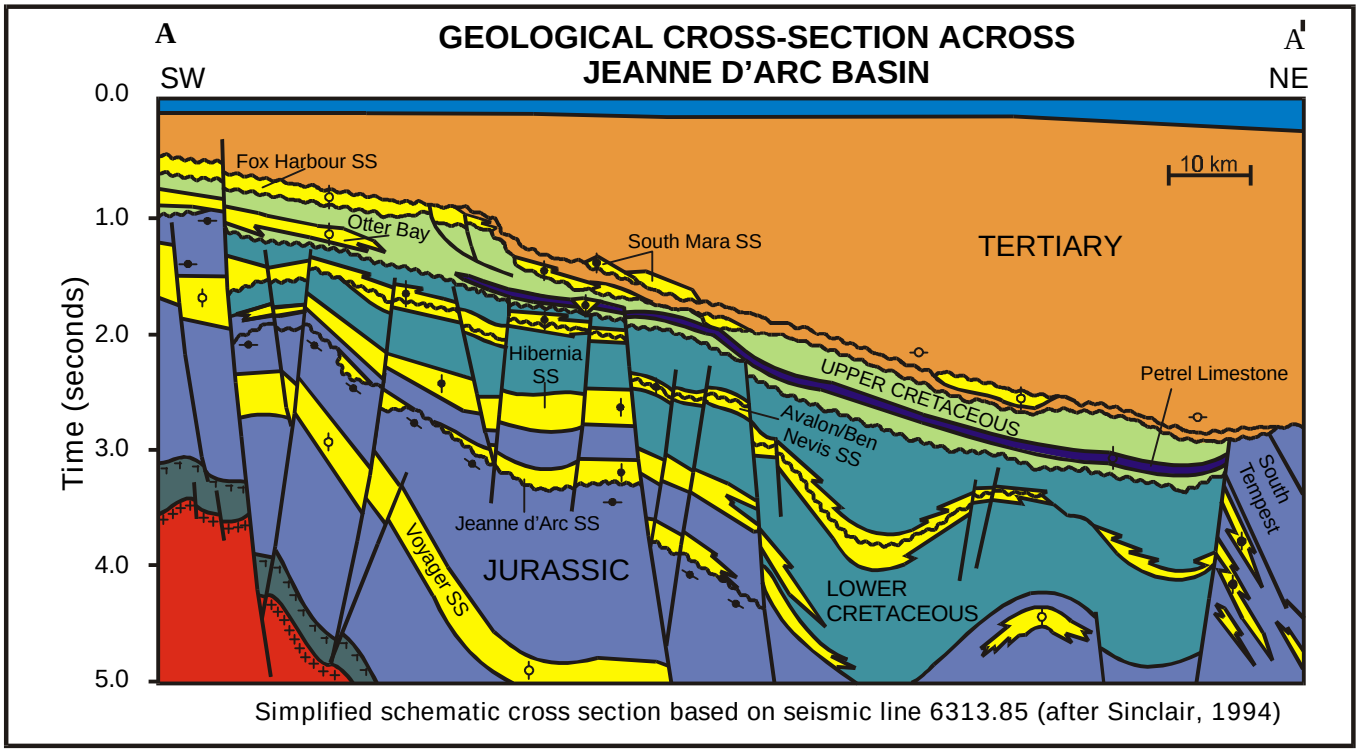


Figure 3.3

The primary reservoirs of the Jeanne d'Arc basin are the Lower Cretaceous Avalon/Ben Nevis and Hibernia Sands, and the Late Jurassic Jeanne d'Arc Sands. The key source rock is the Kimmeridgian aged Egret Member.

GEOLOGICAL FRAMEWORK



Simplified schematic cross section based on seismic line 6313.85 (after Sinclair, 1994)

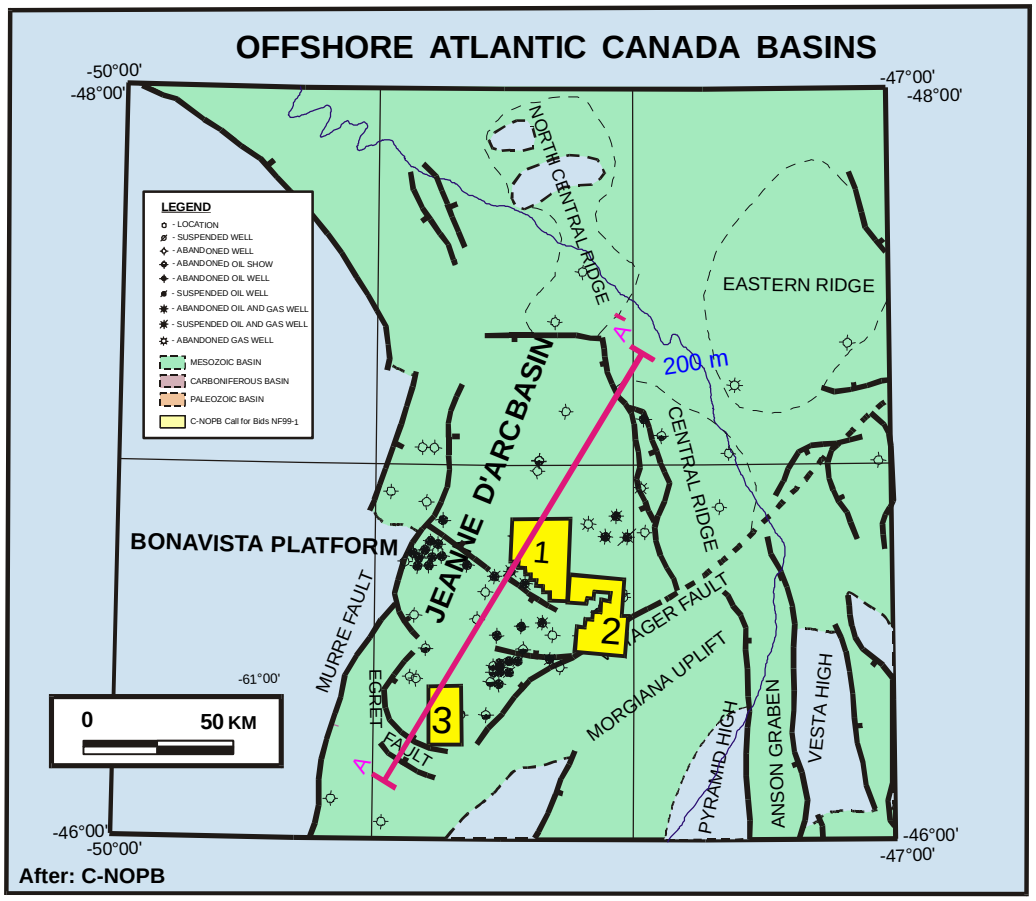
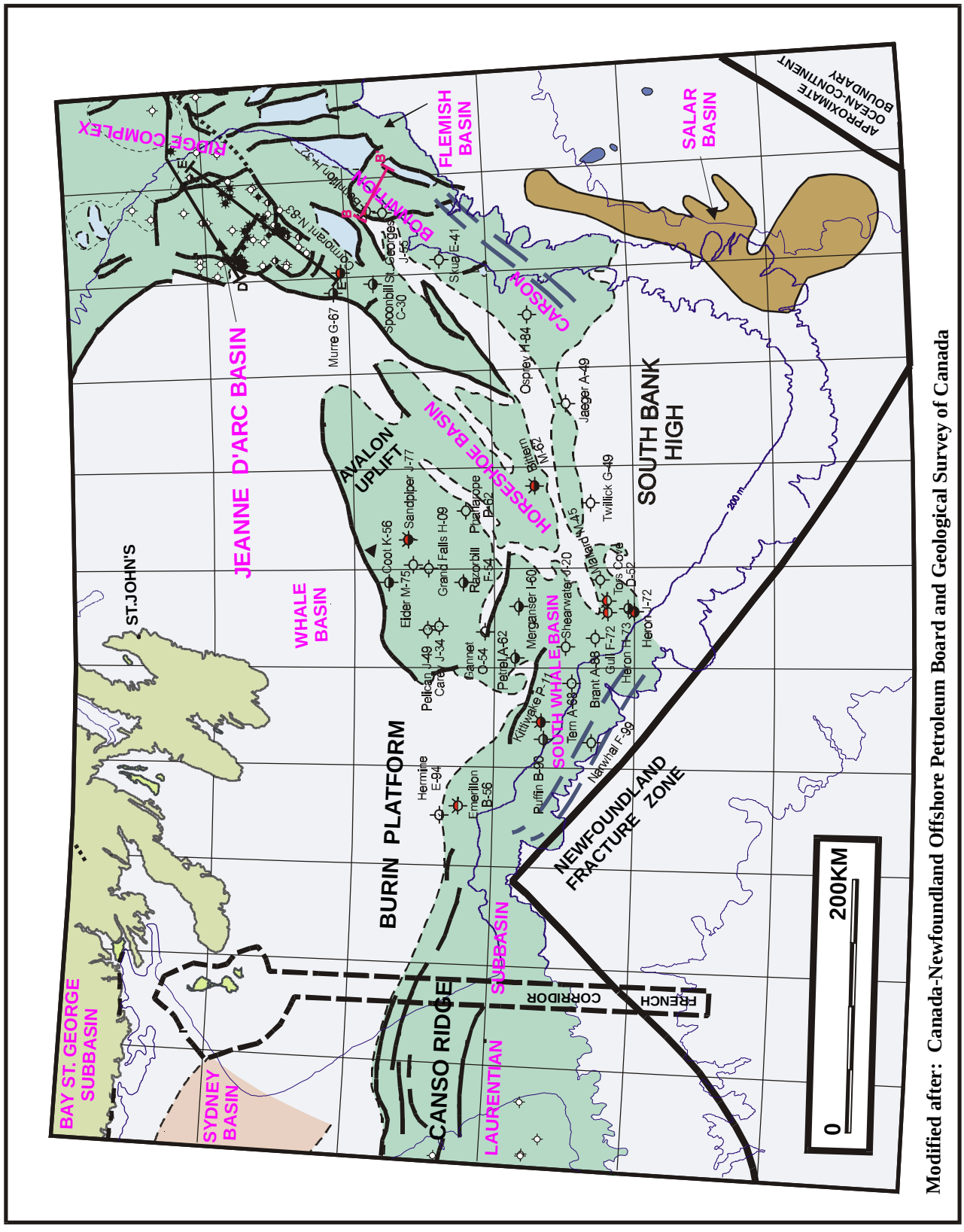


Figure 3.4

Southern Grand Banks Basin

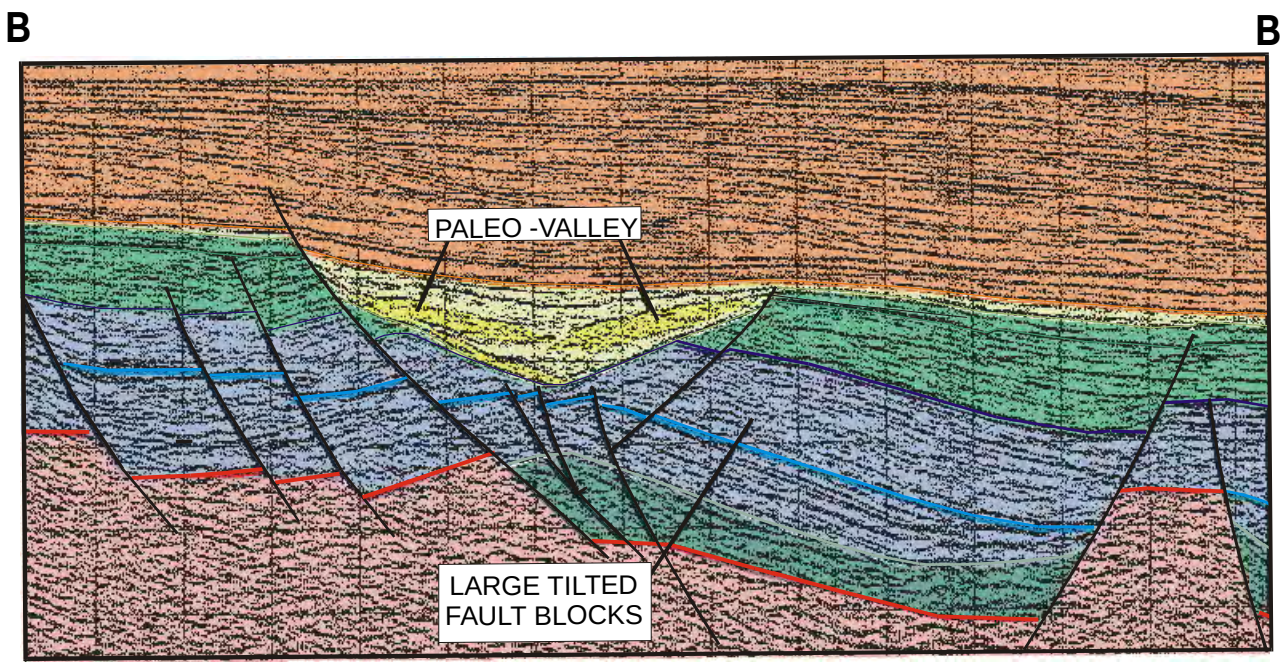


Modified after: Canada-Newfoundland Offshore Petroleum Board and Geological Survey of Canada

Figure 3.5

GEOLOGICAL FRAMEWORK

Carson/Bonnition Basin



Seismic Line 83-2704 Courtesy of Geological Survey of Canada

Figure 3.6

This seismic located in the Bonnition Basin shows possible turbidites in the Lower Tertiary and Lower Cretaceous

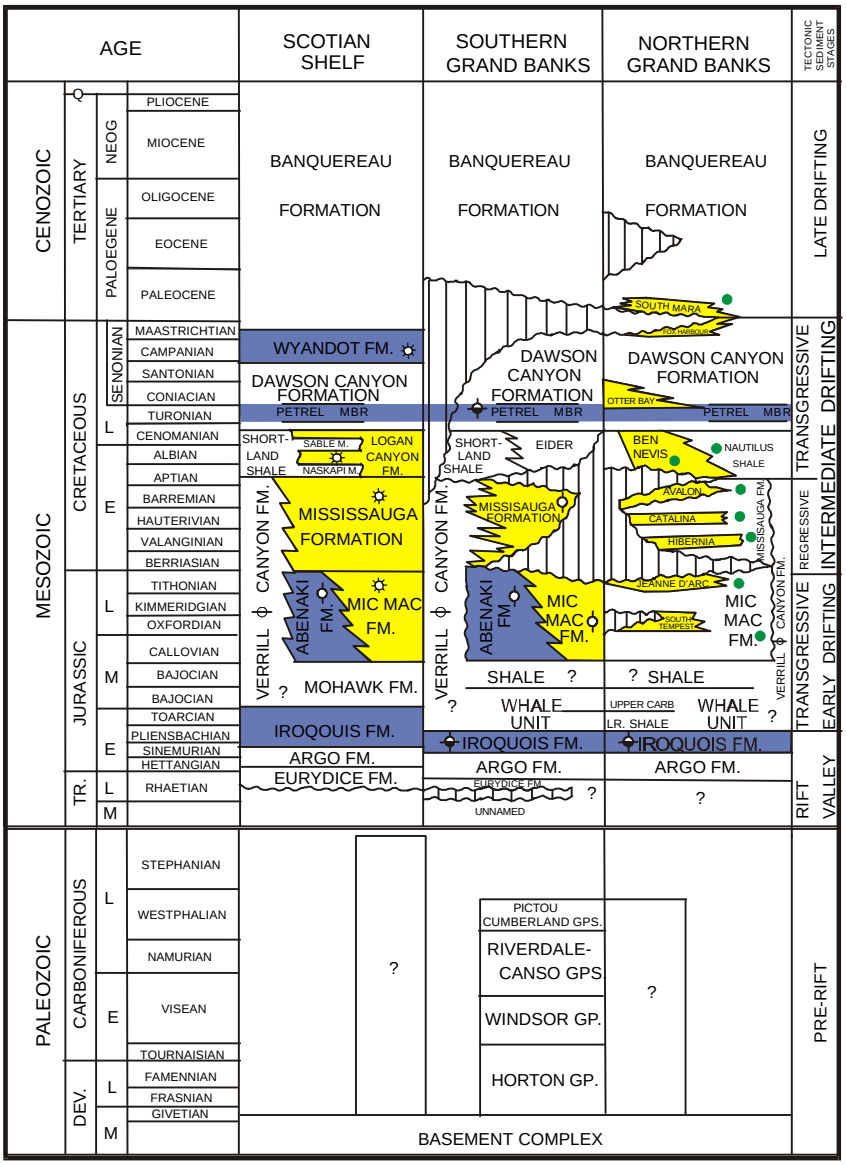
Parcels four to seven of Request for Bids NF 00-1 are located within the Carson/Bonnition Basin. The basin contains only 4 wells, all of which are located along an elevated terrace on its northwest margin. The *Bonnition H-32* and the *St. George J-55* wells encountered Lower Cretaceous and Jurassic sandstones, and *Bonnition* had gas shows in the Lower Cretaceous Missisauga sandstones. No source rock has been identified by the limited drilling but the basin deepens considerably to the southeast, presenting the possibility of thick shale sequences. Seismic line 83-2704 indicates the presence of a large paleo-valley (figure 3.6) approximately six km wide and 900 meters deep, suggesting a major river system that could have brought considerable amounts of sand to the area. Seismic also shows large basement ridge structures running parallel to and outboard of the ancient seacoast, that could have provided the restricted marine conditions that favor the development of source rock. Play concepts include Cretaceous and Jurassic fault blocks, stratigraphic subcrops and Cretaceous and Tertiary turbidites.

GEOLOGICAL FRAMEWORK

South Whale Subbasin

The South Whale Subbasin was the first to be drilled offshore Newfoundland and Labrador. Fourteen wells were drilled between 1966 and 1974 and one well (*Narwhal F-99*) was drilled in 1987. In this first phase of Grand Banks exploration the companies primarily targeted the salt piercement features involving the Lower Jurrassic Argo Salt. It appears, however, that the Argo salt movement may have postdated the migration of hydrocarbons and no discoveries were made. There were several oil and gas shows in the South Whale Subbasin but a source rock has yet to be identified by the limited drilling. However, given that the South Whale Subbasin lies on trend with the Scotian Basin which has a rich gas-prone source rock in the Upper Jurassic Verill Canyon Shales, there is a very good chance of similar age source rocks in the deeper parts of the South Whale. It is also possible that the Egret Member, that has sourced the oil and gas discoveries of the Jeanne d'Arc Basin may be present in this area. Although similarities to the Scotian Basin suggests that the area may be gas prone, large basement ridges (observed on seismic data) that run parallel to the shelf may have provided the restricted marine conditions that favor the development of oil-prone source rocks. These ridges appear to have been the base for carbonate banks that grew within the Jurassic. These banks, interpreted on the basis of seismic character, may have porosity development creating the opportunity for structural / stratigraphic plays.

Figure 3.7



After Northcor Energy Report 1984 & MacLean and Wade, 1990

Comparative stratigraphy of Scotian Shelf, Southern Grand Banks and Northern Grand Banks.

The South Whale Subbasin contains the equivalent of the Micmac and Mississauga sandstones that have been key producers in the Scotian Basin. Seismic data indicates the presence of an Upper Jurassic reef front, that is known to contain thick porous intervals on the Scotian Shelf, but which has never been drilled offshore Newfoundland. Pan-Canadian Petroleum recently announced a major gas discovery within such a reef front offshore Nova Scotia. This "Deep Panuke" discovery was tested by two wells, both of which tested in excess of 50 million cubic feet per-day with the flow rates limited by equipment.

GEOLOGICAL FRAMEWORK

Western Newfoundland

The presence of petroleum in Western Newfoundland has been recognized in surface seeps and shallow drilling since the late 1800's. The first modern exploration effort - using seismic to select a well location - was carried out by Hunt Oil and Pan Canadian in 1994-95 and resulted in the Hunt/Pan Canadian *Port au Port #1* discovery. This well encountered four zones of good reservoir quality in the Cambro-Ordivician platform. The two lower zones were wet, but the upper two zones flowed oil at rates of 1528 and 1742 b/d respectively. Although follow up drilling at four other locations failed to make additional discoveries, the *Port au Port #1* well proved the presence of a viable petroleum system in the area. Released seismic data show that large undrilled prospects remain to be tested throughout the offshore and onshore areas of western Newfoundland.

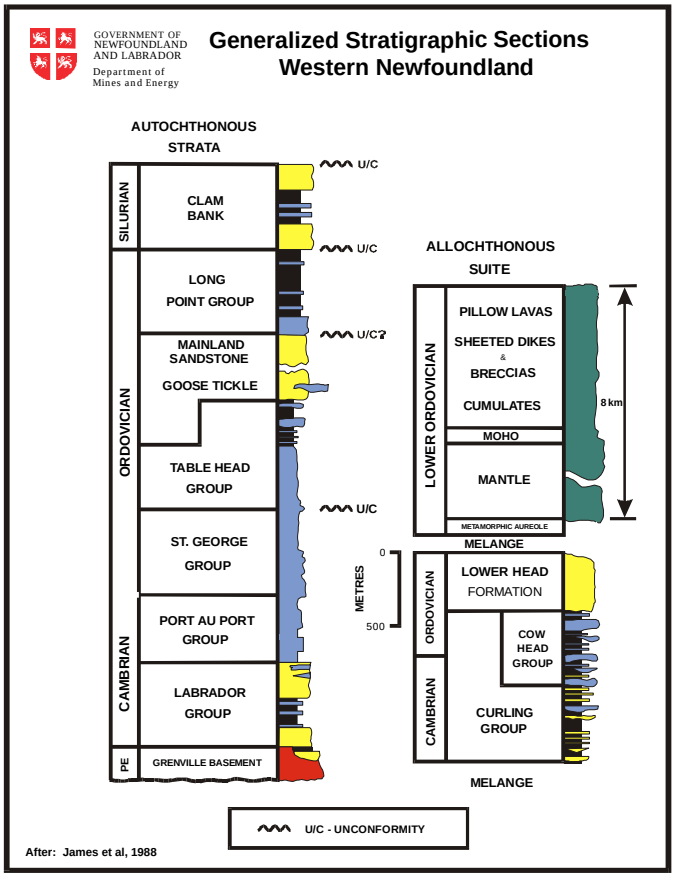


Figure 3.8

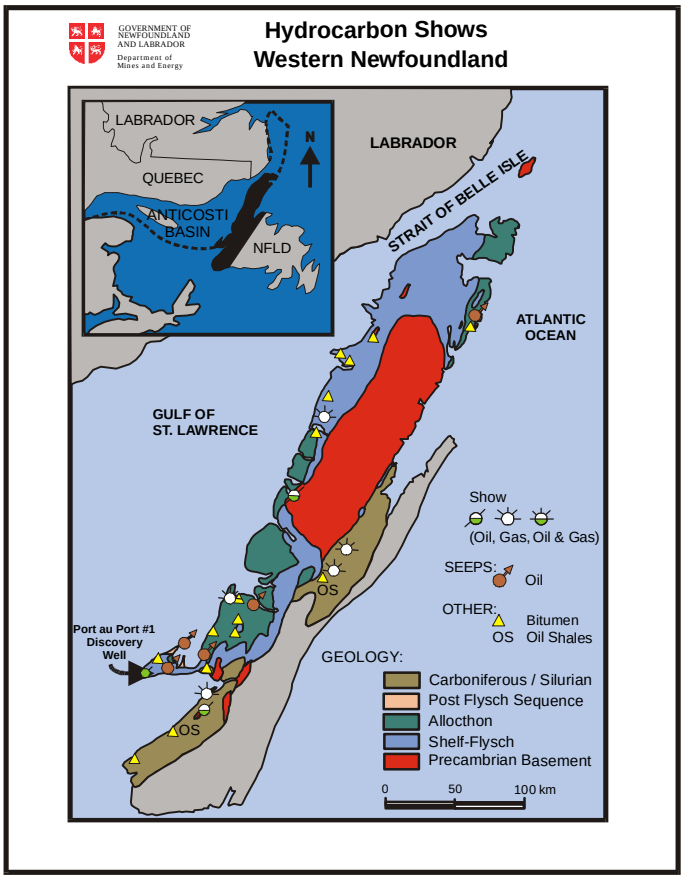


Figure 3.9

In Western Newfoundland and offshore in the Gulf of St. Lawrence, a Cambro-Ordovician carbonate platform overlies Paleozoic clastic sediments of the Labrador Group and crystalline basement. The Ordovician carbonates and clastics are locally overlain by Carboniferous clastic and carbonate sediments. Reservoir quality rocks have been identified in both the Cambro-Ordovician and the Carboniferous. The tectonic history of the area is complex. In the late Ordovician subsidence reactivated faulting, initiated during a period of extension in the Cambrian, produced normal faults in the carbonate platform. Later, compression brought the onset of thrusting and reverse faulting of the carbonate platform and older formations. Strike slip faulting along the Cabot Fault Zone led to the creation of Carboniferous pull apart basins.

GEOLOGICAL FRAMEWORK

Western Newfoundland

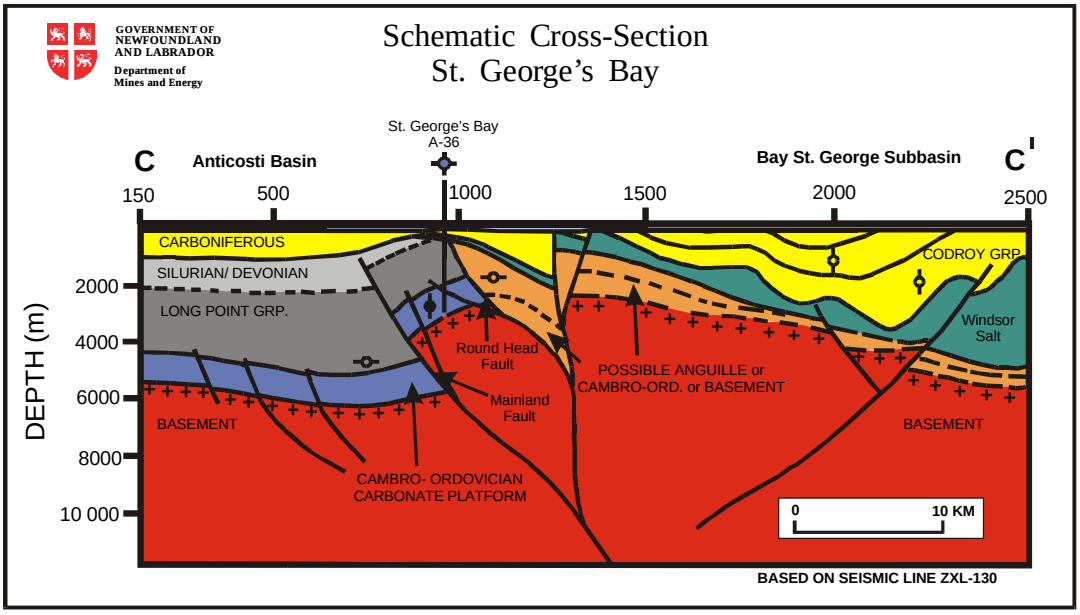


Figure 3.10

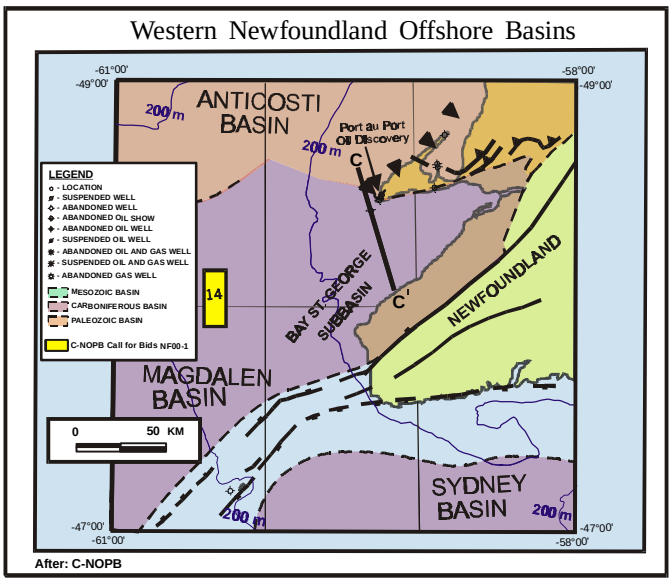


Figure 3.11

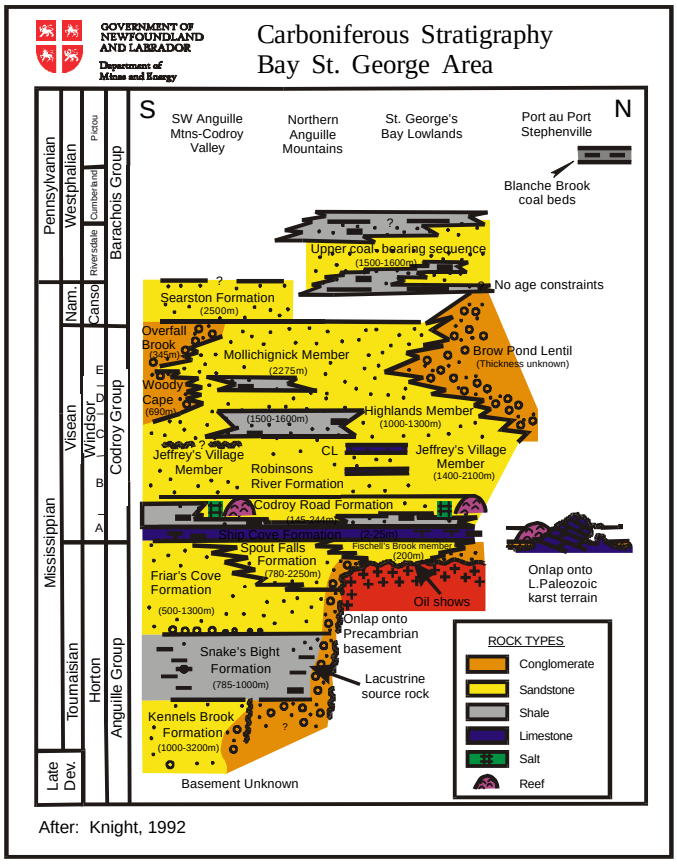


Figure 3.12

Cross section II' illustrates the transition from the Bay St. George Carboniferous subbasin into the Anticosti Basin. It is unknown if the carbonate platform is preserved beneath the Carboniferous in Bay St. George.

Request For Bids Parcels

This section provides a detailed description of each land sale parcel. The maps provided show the location of the land parcels and the released seismic data on those parcels. Hard copies and interpretive reports based on these data are available from the Canada-Newfoundland Offshore Petroleum Board for the cost of reproduction. For the purposes of this report representative seismic sections that show the general geology and recognizable play types have been selected. The seismic data quality varies with area and data vintage. For example there is very little released data on parcel fourteen. What data is available is on poor quality microfiche and seriously degraded by multiple.

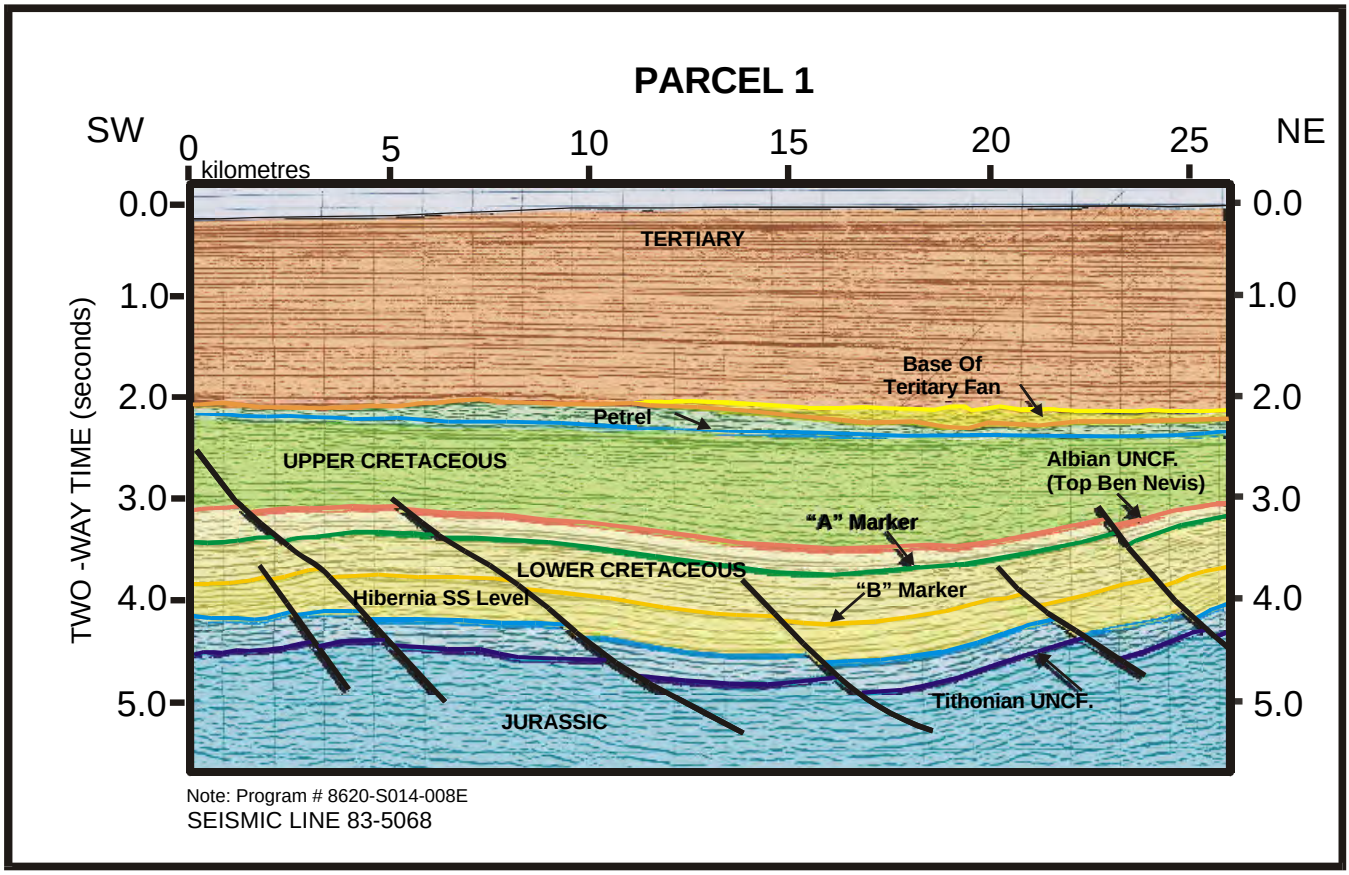
Recent Landsale Results

Year	Number of Parcels Bid	Bids ($Can Millions)
1995	1	95.8
1996	8	126.1
1997	7	97.0
1998	13	175.2
1999	5	192.3
Total	34	686.4

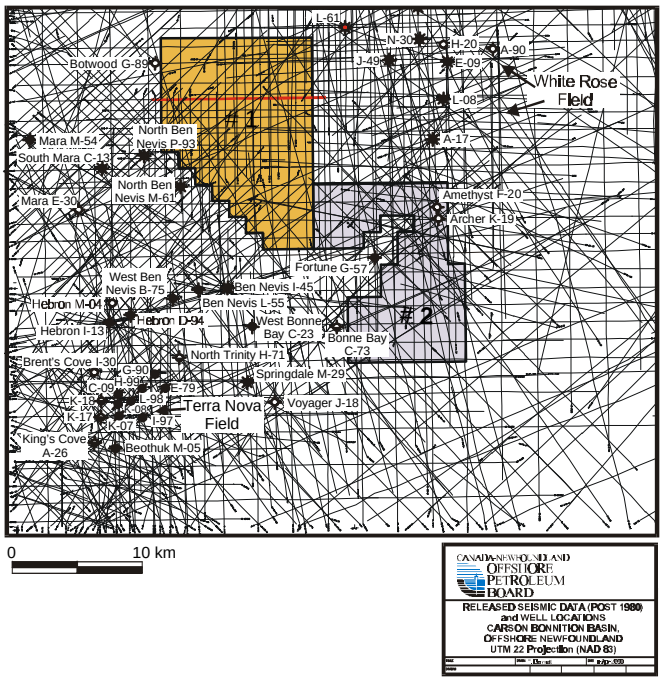
Conversion rate: $CAN1.00~ $US .70

Table 4.1

Request For Bids Parcels



Note: Program # 8620-S014-008E
SEISMIC LINE 83-5068

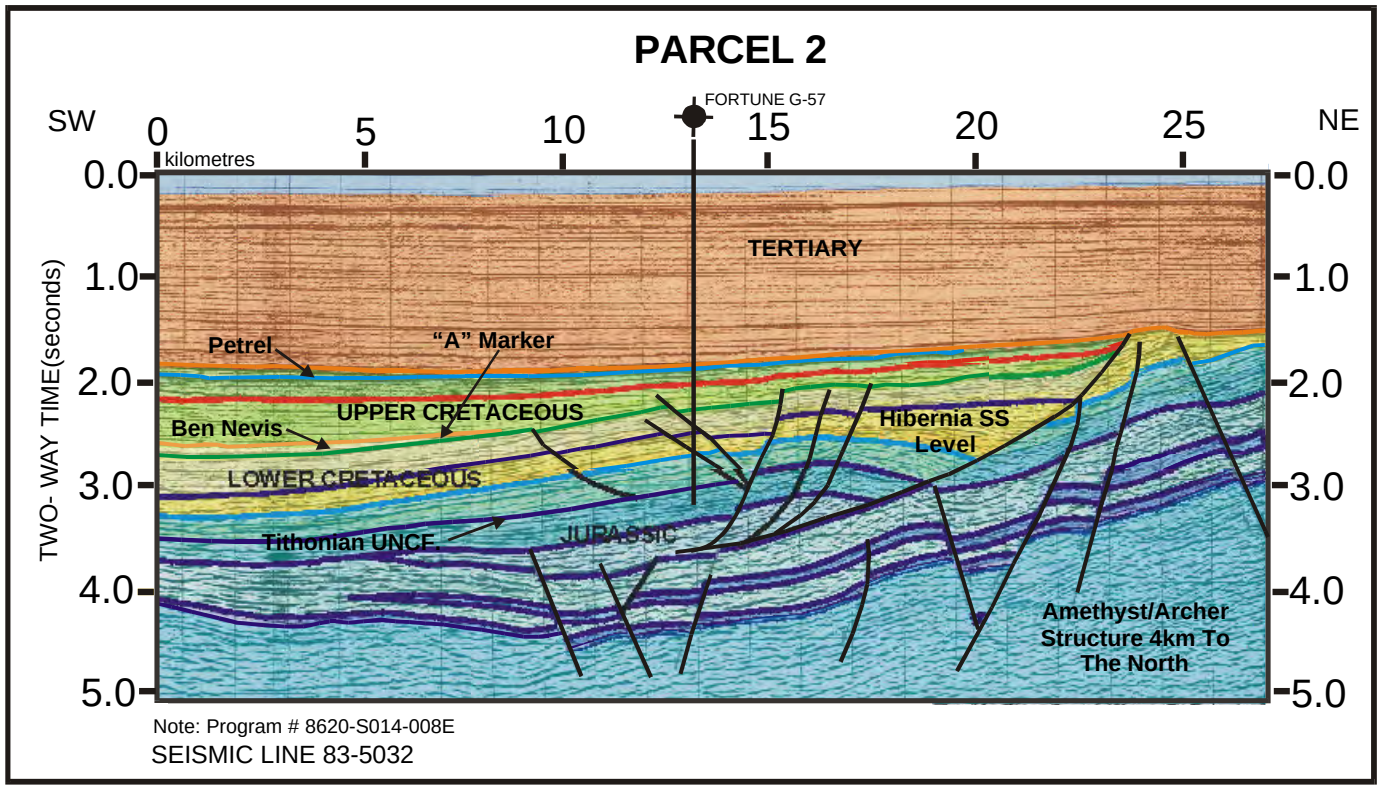


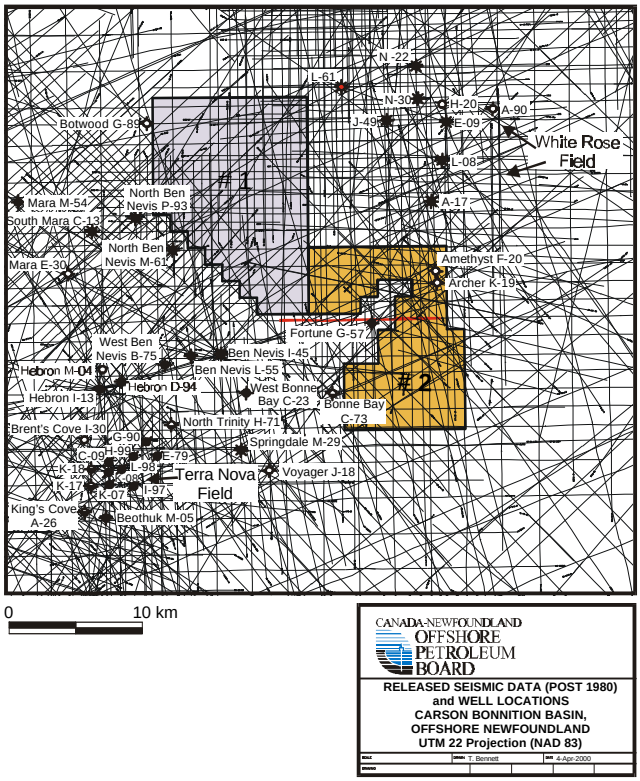
Location: Jeanne d'Arc Basin
Parcel Area: 33,957 hectares
Water depth: 100 m
Released Seismic Data: 2213.16 km
Data Vintages: 1966 –1990

Play Types:
- Base of Tertiary fans and turbidites
- Cretaceous and Jurassic sands in tilted fault blocks

This parcel is surrounded on three sides by significant discoveries that contain oil and gas in primarily Lower Cretaceous and Upper Jurassic sands. The section shows some potential leads from faulting in the Lower Cretaceous and Jurassic as well as a gentle roll over of the Jurassic to Upper Cretaceous section. Very little drilling has targeted Lower Tertiary fans but the Mara M-54 well tested 620 bopd from such a fan and White Rose L-61 tested 12 mmcf/d from an equivalent age sand.

Request For Bids Parcels



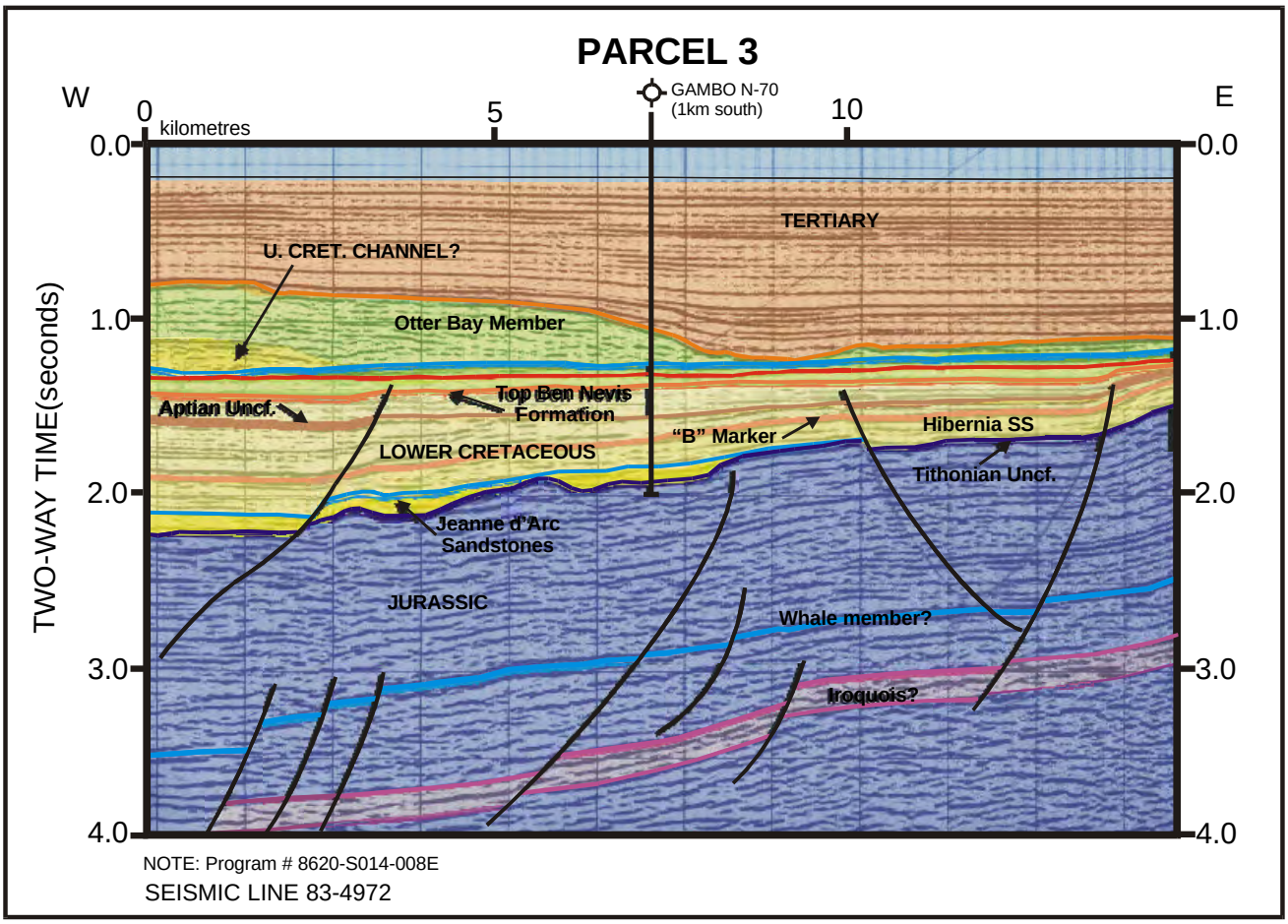


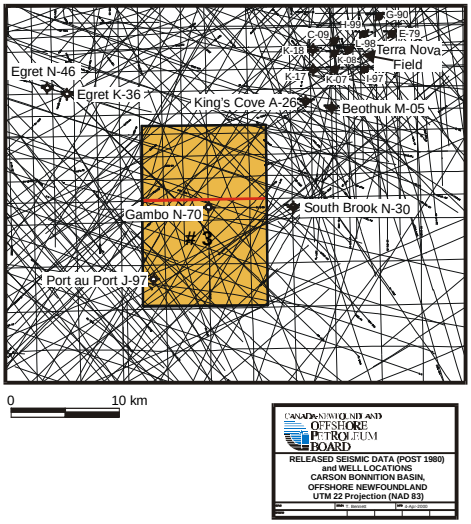
Location: Jeanne d'Arc Basin
Parcel Area: 24,467 hectares
Water depth: 100 m
Released Seismic Data: 3573.57 km
Data Vintages: 1966 –1990

Play Types:
- Cretaceous and Jurassic sands in tilted fault blocks
- Pinch out of Avalon sands against the Aptian unconformity
- Deep, older faulted structures in the Jurassic

The parcel lies along the western edge of the Ridge Complex with the White Rose field to the north and the *Fortune G-57* significant discovery near the centre of the parcel. The section shows extensive faulting with a roll over feature up dip from the Fortune well. Jurassic and Lower Cretaceous faults appear to be locally de-coupled presenting the possibility of independent trapping at the two levels.

Request For Bids Parcels

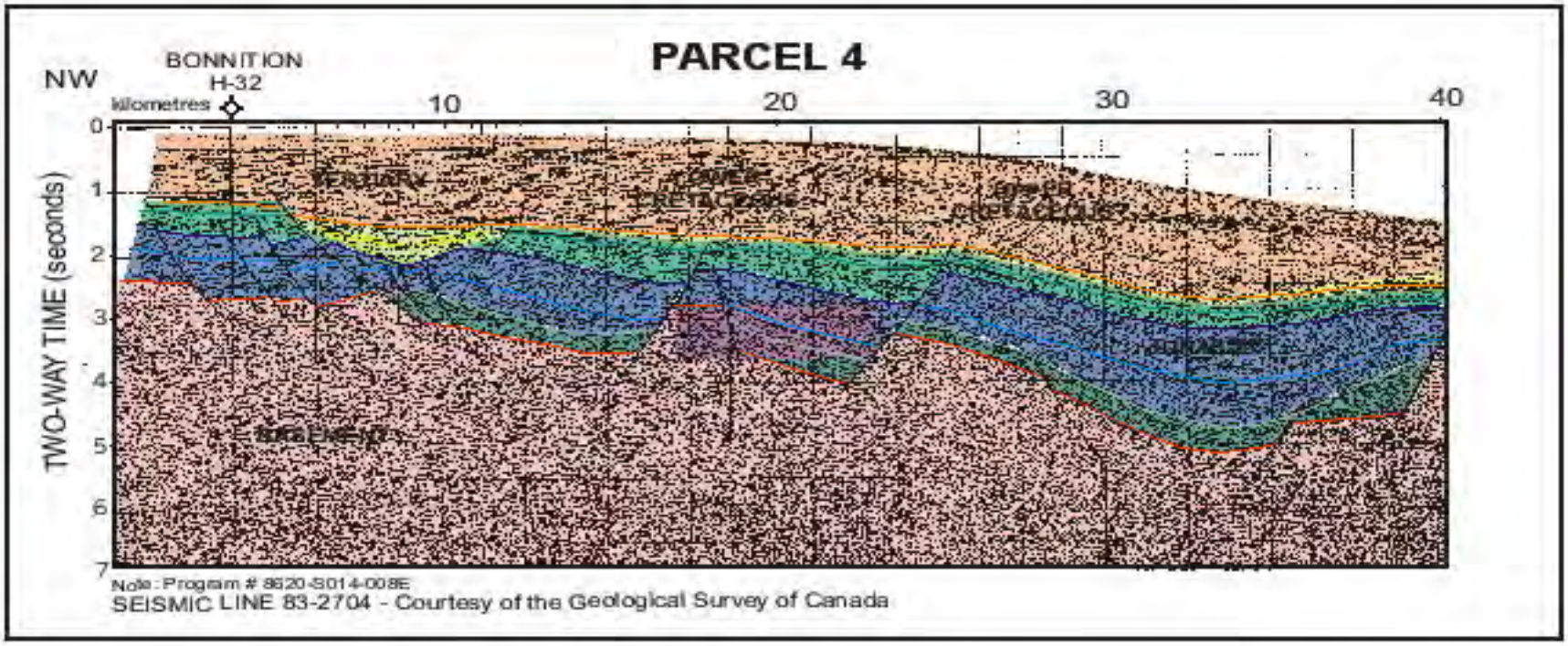


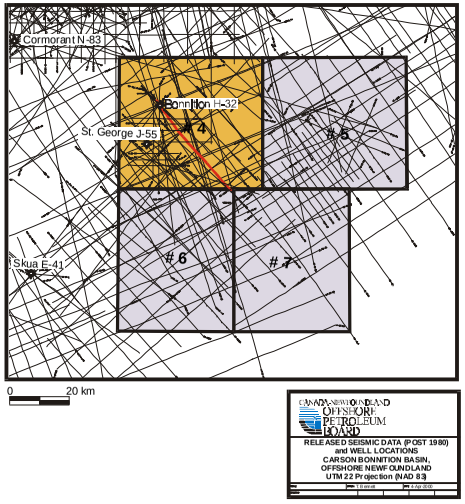


Location: Jeanne d'Arc Basin
Parcel Area: 19,248 hectares
Water depth: 100 m
Released Seismic Data: 1305.86 km
Data Vintages: 1966 –1990

Play Types:
- Cretaceous and Jurassic sands in tilted fault blocks
- Pinch out of Avalon sands against the Aptian unconformity
- Jeanne d'Arc channel sands in stratigraphic traps

This parcel lies adjacent to *South Brook N-20* which recovered minor amounts of oil and gas from the South Mara, Ben Nevis and Hibernia Sandstones. The *Gambo N-70* well in the centre of the parcel encountered 30 metres of conglomerate at the Jeanne d'Arc level but the *Port au Port J-97* well encountered no Jeanne d'Arc. The seismic section indicates potential stratigraphic plays at the Jeanne d'Arc and Upper Cretaceous levels as well as potential fault traps.

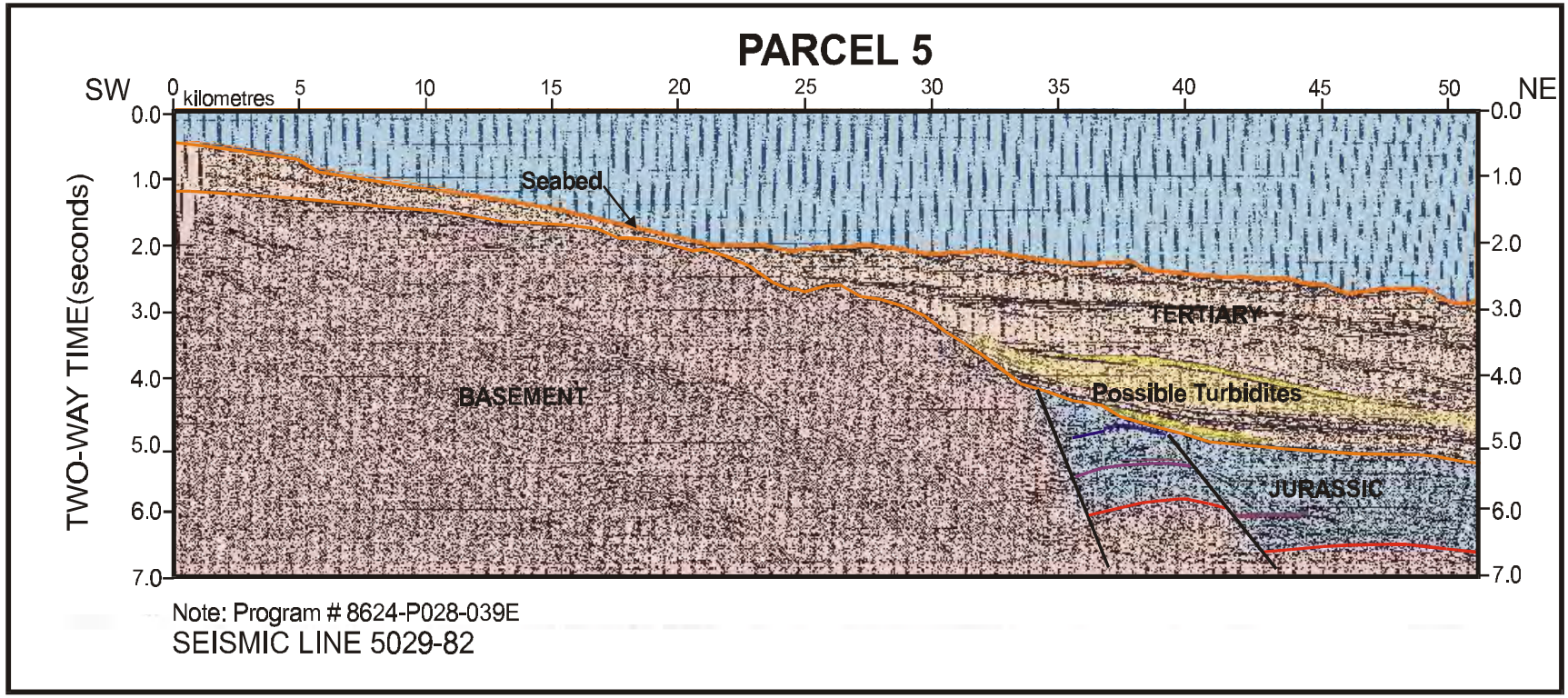


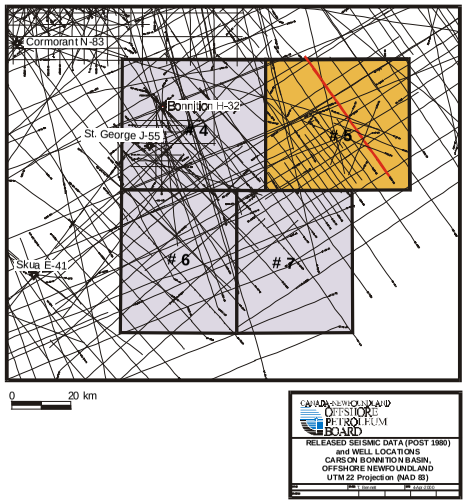


Location: Carson / Bonnition Basin
Parcel Area: 215,875 hectares
Water depth: 100 - >1000 m
Released Seismic Data: 2677.12 km
Data Vintages: 1966 –1985

Play Types: - Cretaceous and Base of Tertiary sands infilling a broad, 'paleo-valley'
- Cretaceous and Jurassic sands in tilted fault blocks

This block includes the *Bonnition H-32* and *St. George J-55* wells, both of which were drilled on an elevated terrace on the western side of the Bonnition Basin. The Jurassic and Cretaceous section is thinner on this terrace with less development of reservoir quality sediments. The *Bonnition* well encountered gas shows while drilling. To the east of the terrace the basin deepens considerably. The seismic line shows a thick Lower Cretaceous and Jurassic with fault blocks resembling the successful "Trans-basin Fault Trend" of the Jeanne d'Arc Basin. The line also shows a deep, wide canyon that cut through the L. Cretaceous and into the Jurassic. This "paleo valley" was filled by Upper Cretaceous and Tertiary sediments and could contain thick channel sands and fan deposits. Additionally, the river system that created the valley would have delivered considerable sand to the area.



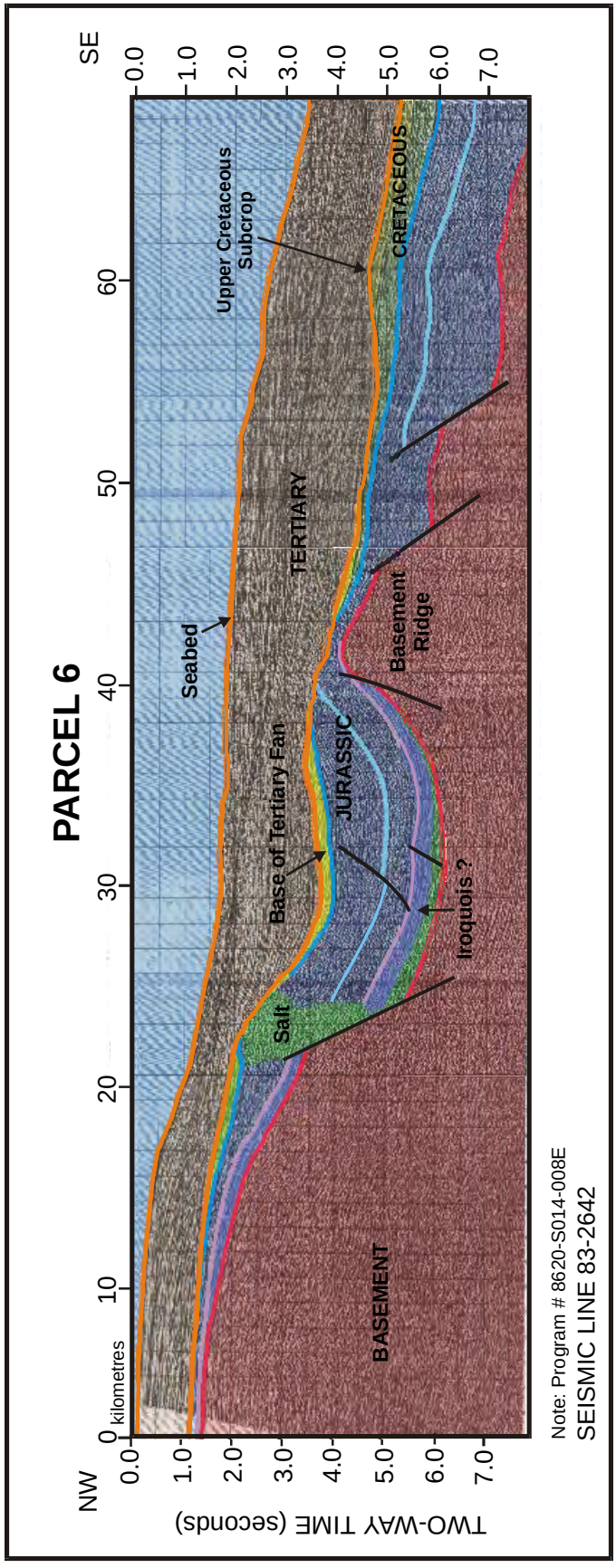


Location: Carson / Bonnition Basin
Parcel Area: 215,875 hectares
Water depth: >1000 m
Released Seismic Data: 2920.01 km
Data Vintages: 1966 –1983

Play Types:
- Base of Tertiary fans and turbidites
- Cretaceous and Jurassic sands in tilted fault blocks

This line shows a basement high to the north and west with little or no overlying Jurassic or Cretaceous sediments. Thick Tertiary sediment in the southeastern portion of the parcel may contain turbidite deposits at the base of the slope break. Below these features, a deep seated fault block may contain Lower Cretaceous and Jurassic sections.

Request For Bids Parcels



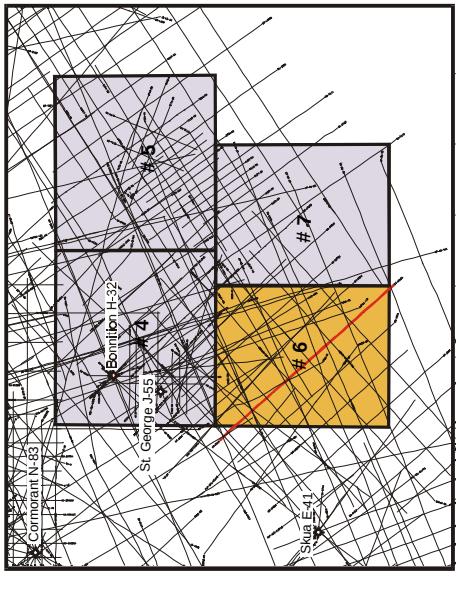
Note: Program # 8620-S014-008E
SEISMIC LINE 83-2642

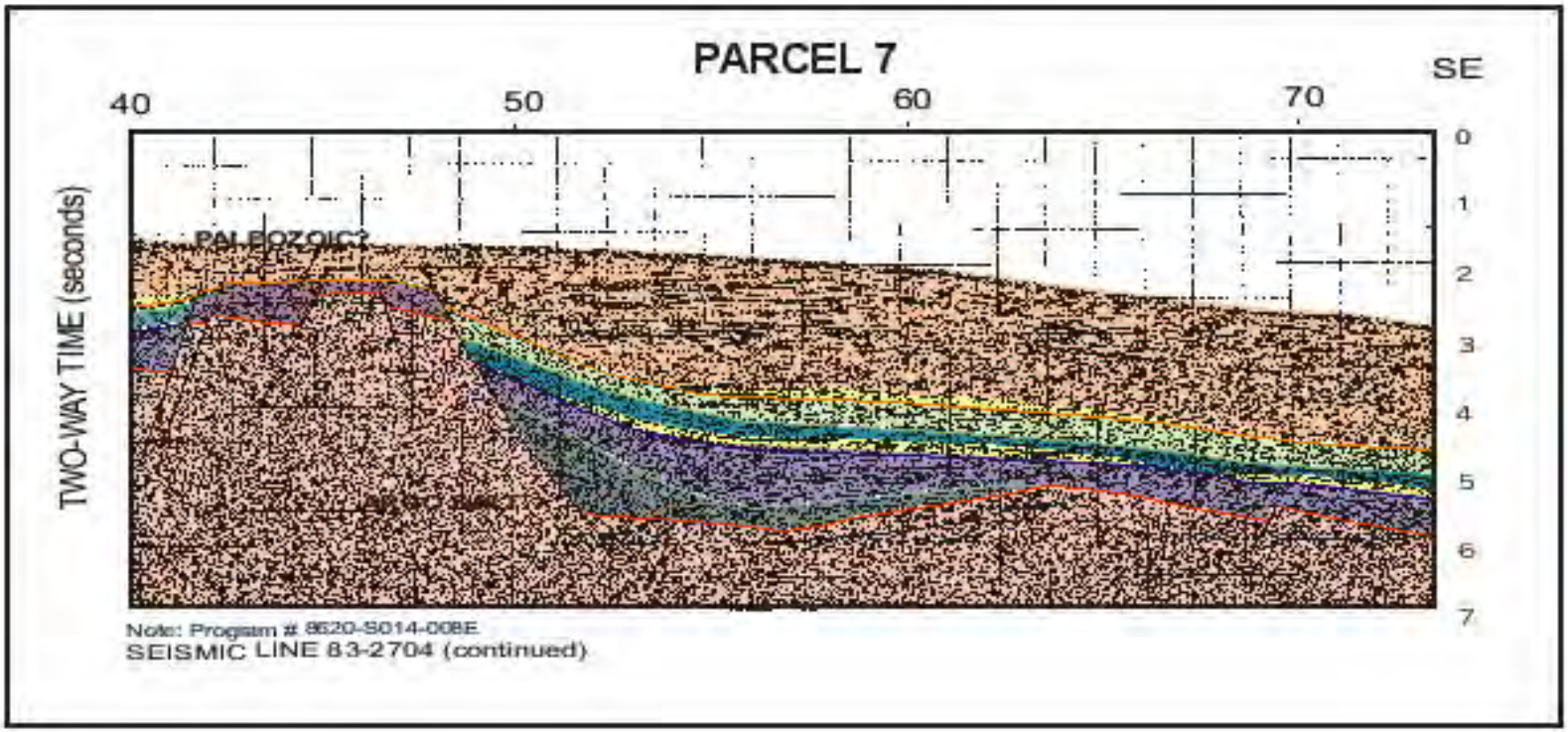
This line clearly shows the high terrace along the western part of the Carson Basin dropping off to the east where a thick Jurassic section is preserved. No Lower Cretaceous has been interpreted to be present in this part of the Carson Basin. The Jurassic section has been deformed by salt movement resulting in steeply dipping beds that terminate against the base of Tertiary unconformity providing the opportunity for stratigraphic traps. Overlying the Jurassic section, fans and turbidite deposits are interpreted in the Lower Tertiary. To the east of the basement ridge, tilted fault blocks provide the opportunity for structural traps within the Jurassic.

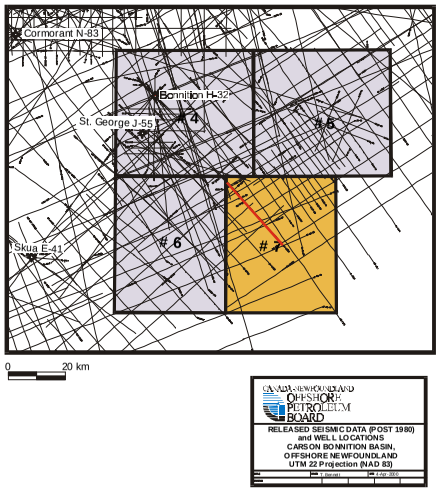
Location: Carson / Bonnition Basin
Parcel Area: 188,420 hectares
Water depth: 100 - >1000 m
Released Seismic Data: 2063.28 km
Data Vintages: 1971 –1985

Play Types:

- Base of Tertiary fans and turbidites
- Cretaceous and Jurassic sands in tilted fault blocks
- Pinch out of Jurassic sands and carbonates against the Base of Tertiary unconformity and over the basement high on the NW end of the line



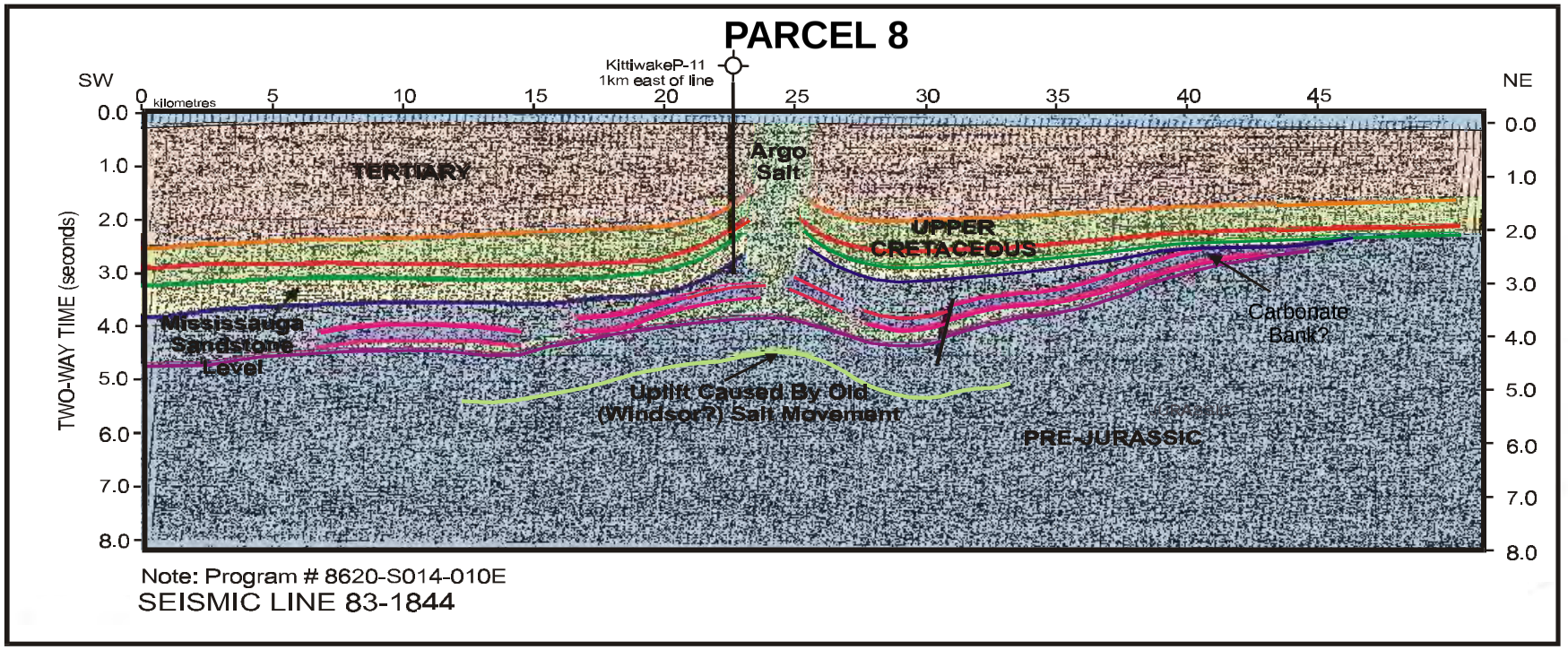


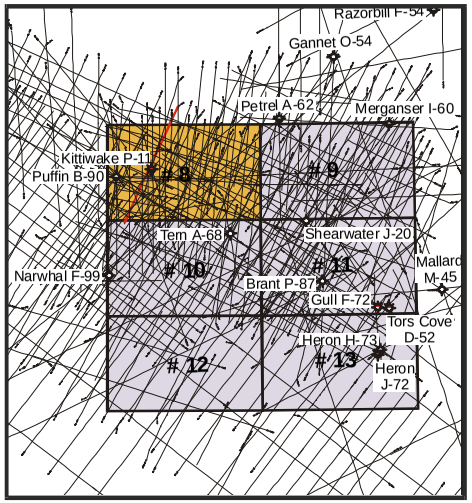


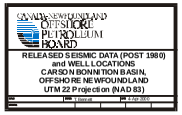
Location: Carson / Bonnition Basin
Parcel Area: 188,420 hectares
Water depth: >1000 m
Released Seismic Data: 853.55 km
Data Vintages: 1971 –1985

Play Types:
- Base of Tertiary and Cretaceous fans and turbidites
- Cretaceous and Jurassic sands in tilted fault blocks

This parcel lies in the deep water portion of the Bonnition basin, to the southeast of a large basement ridge. A deep structure contains Jurassic and Cretaceous sediments draped over a basement high. Overlying this structure are large mound-like features within the Tertiary and Cretaceous sections that are interpreted to be turbidites.







Location: South Whale Basin
Parcel Area: 220,140 hectares
Water depth: 100 m
Released Seismic Data: 6787.59 km
Data Vintages: 1964 –1985

Play Types:
- Drape of Cretaceous sands over Jurassic fault blocks and salt cored structures
- Cretaceous and Jurassic sands in tilted fault blocks or over salt cored structures
- Faulted Jurassic structures below salt diapirs
- Prograding Jurassic sands in stratigraphic traps pinched out against the Base of Cretaceous unconformity
- Jurassic carbonate bank porosity in structural and stratigraphic traps

Thick sections of reservoir quality sands were encountered at the Mississauga level in the two wells drilled on this parcel. *Kittiwake P-11* was drilled adjacent to a salt dome which would appear to have had very late movement as it breaches the sea bed. *Puffin B-90* tested a fault play which it appears was not sealed across the fault. Potential plays exist where gentle roll overs can be mapped at the Mississauga - as evident between kilometres 5 and 15. Jurassic carbonates draped over Windsor salt and subbcropping against the Base of Cretaceous unconformity may provide deeper targets.

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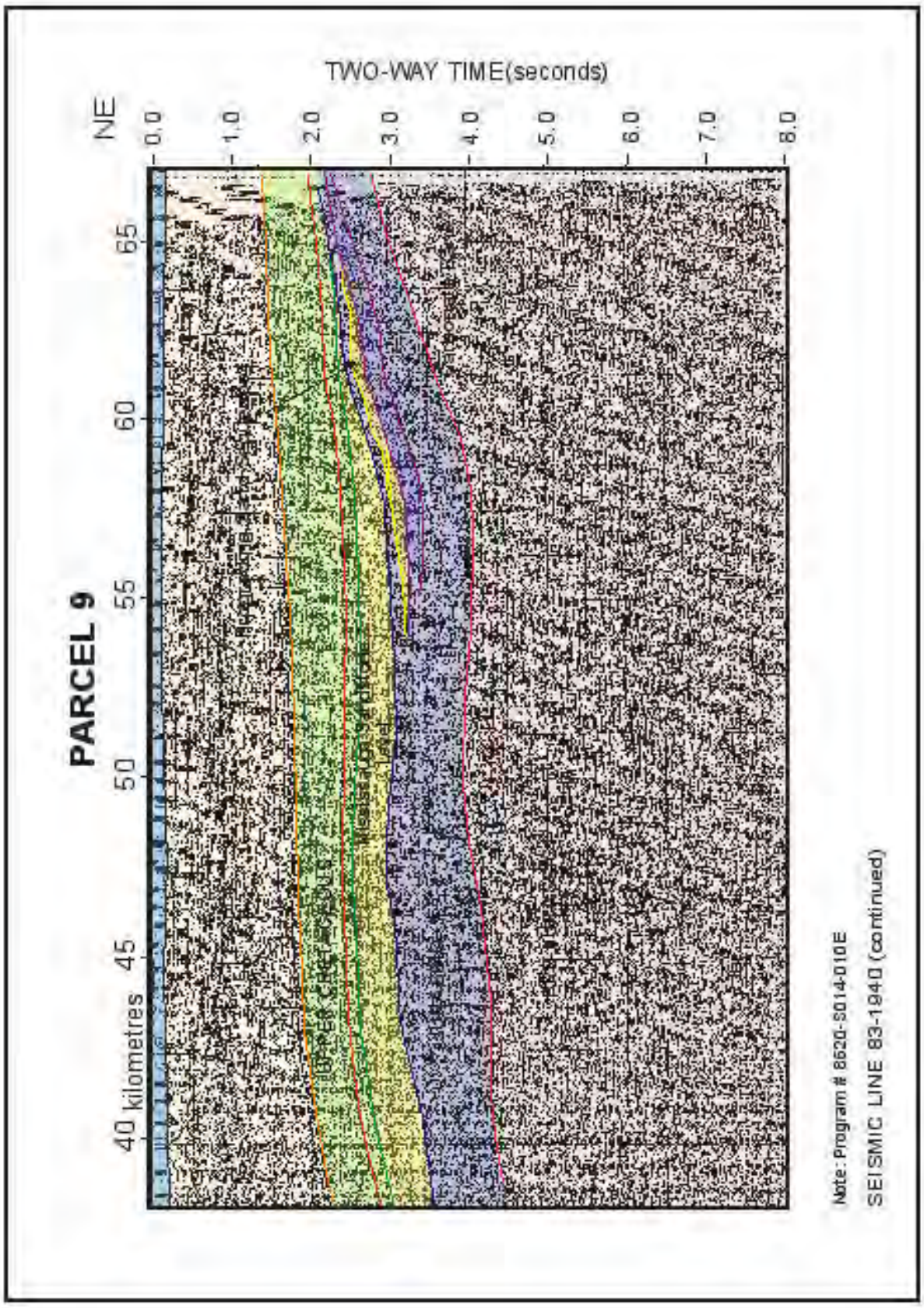
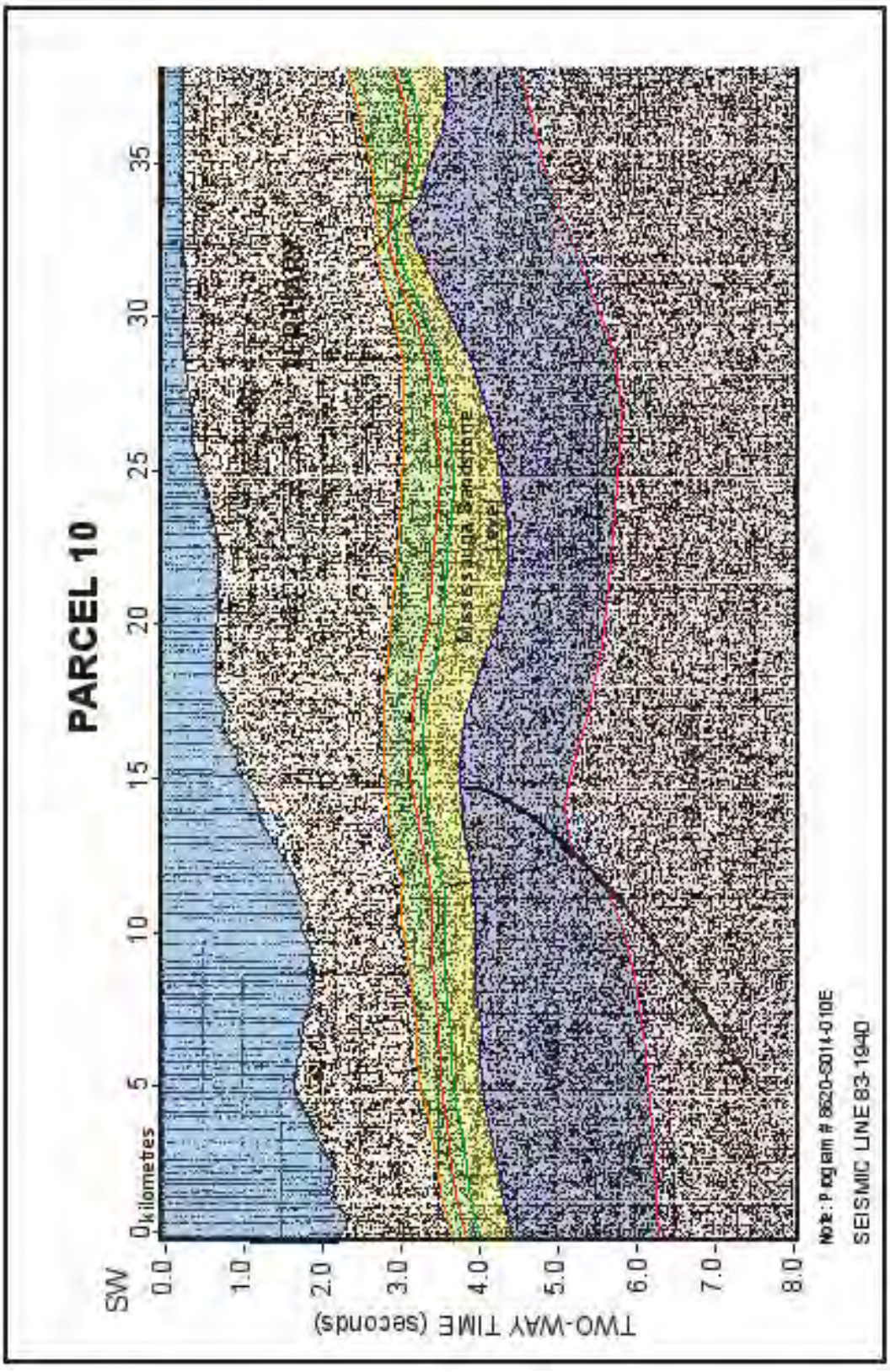


Request For Bids Parcels



See Page 30 For Maps and Playtypes

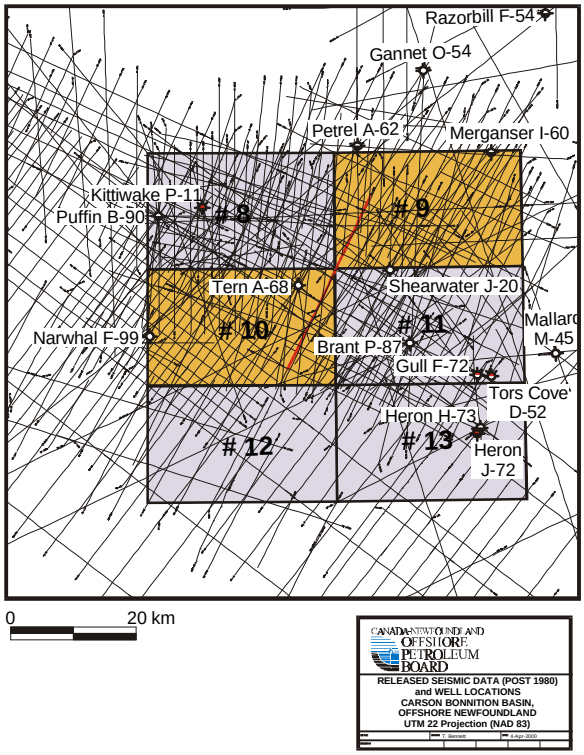
Request For Bids Parcels

PARCEL 9

Location: South Whale Basin
Parcel Area: 220,140 hectares
Water depth: 100 m
Released Seismic Data: 5314.97 km
Data Vintages: 1964 –1985

Play Types:
- Drape of Cretaceous sands over Jurassic fault blocks and salt cored structures
- Cretaceous and Jurassic sands in tilted fault blocks or over salt cored structures
- Jurassic faulted structures below salt diapirs
- Prograding Jurassic sands in stratigraphic traps pinched out against the Base of Cretaceous unconformity
- Jurassic carbonate bank porosity in structural and stratigraphic traps

The nearest wells to this parcel are *Petrel A-82* and *Merganser I-80*. Both were drilled on salt features and both had oil staining in the Jurassic cap rock (Iroquois?). Seismic line 83-1940 shows a possible carbonate bank with overlying prograding sand sequences that may provide structural / stratigraphic plays within the Jurassic section. A large, gentle rollover feature within the Cretaceous section, including the Mississauga Sandstone Formation, exists between kilometres 40 and 55. A strike line through this feature shows at least 50 ms of closure along strike.

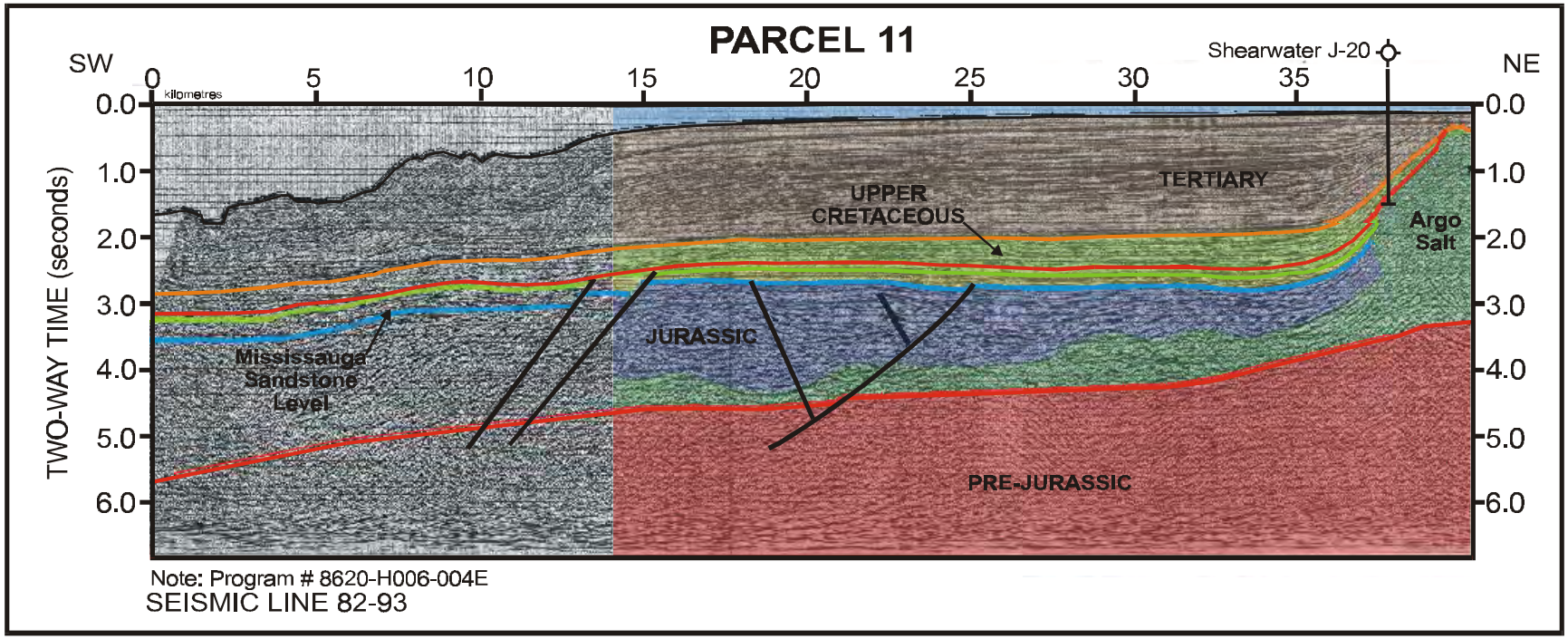


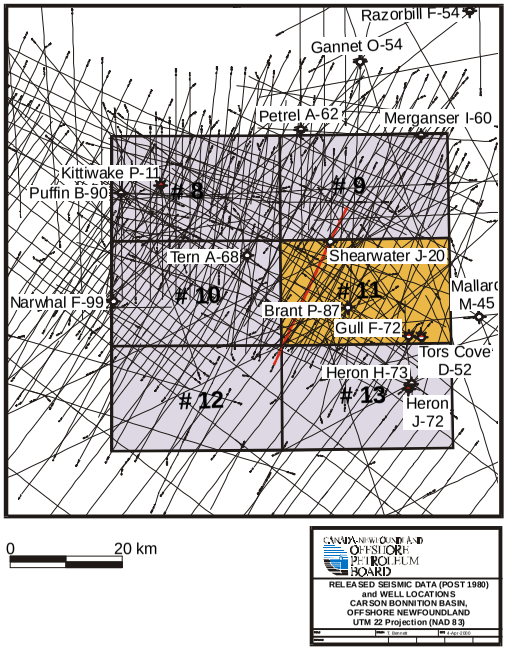
PARCEL 10

The *Tern A-68* well drilled a salt diapir and encountered reservoir quality Mississauga sands but was a dry hole. The *Narwhal F-99* well drilled a basement high with poor sand development in the overlying Lower Cretaceous and Jurassic sections. The southwest portion of line 83-1940 indicates a large, basement fault with considerable structural relief within a thick Jurassic section. The Mississauga Formation is gently draped over the structure providing a potentially large trap within a thick Lower Cretaceous section. Water depth variations will require careful depth imaging to define potential target locations.

Location: South Whale Basin
Parcel Area: 221,400 hectares
Water depth: 200 – 1000 m
Released Seismic Data: 3599.08 km
Data Vintages: 1964 –1985

Play Types:
- Drape of Cretaceous sands over Jurassic fault blocks and salt cored structures
- Cretaceous and Jurassic sands in tilted fault blocks or over salt cored structures
- Jurassic faulted structures below salt diapirs



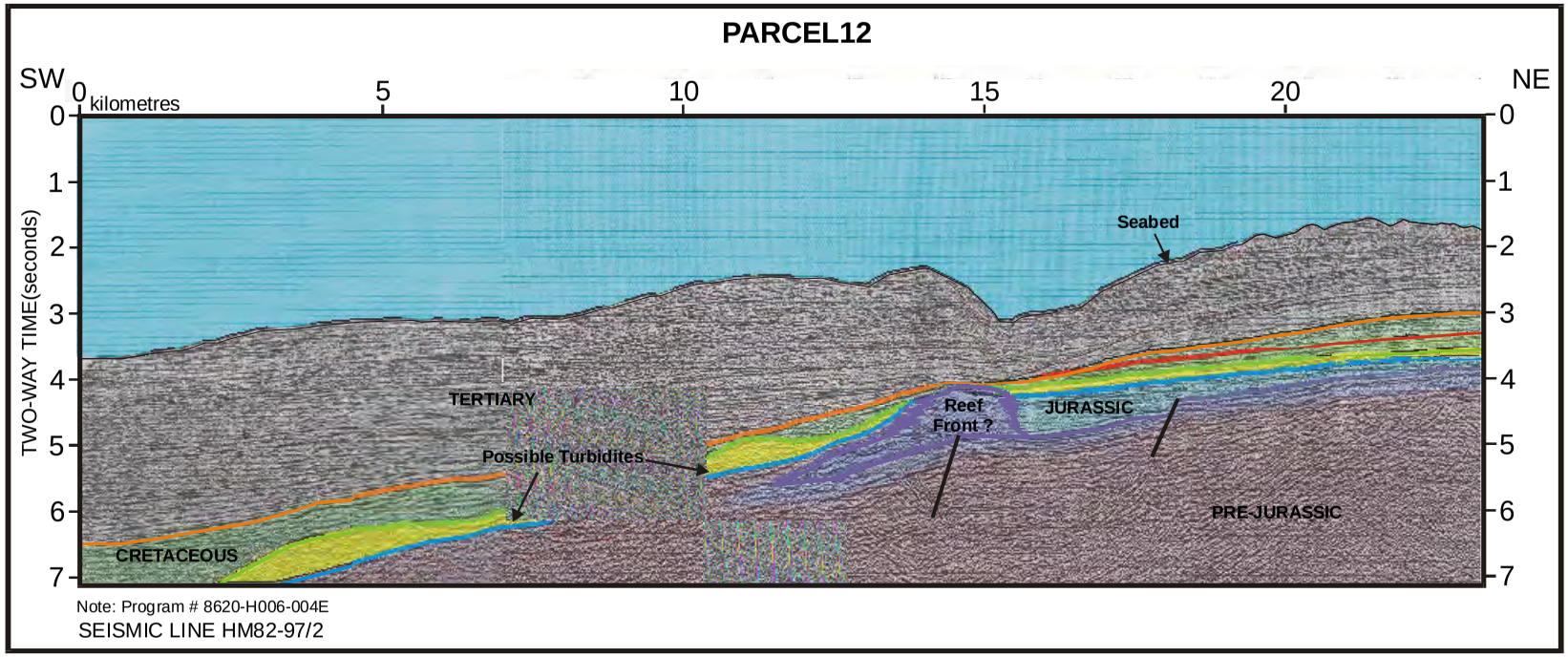


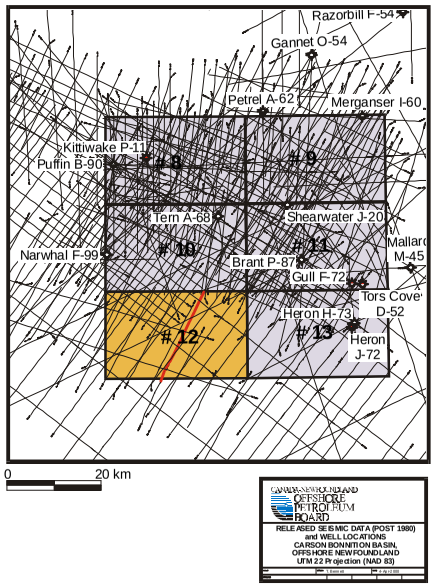
Location: South Whale Basin
Parcel Area: 221,400 hectares
Water depth: 100 - 200 m
Released Seismic Data: 5491.87 km
Data Vintages: 1964 –1985

Play Types:

- Drape of Cretaceous sands over Jurassic fault blocks and salt cored structures
- Cretaceous and Jurassic sands in tilted fault blocks or over salt cored structures
- Prograding Jurassic sands in stratigraphic traps pinched out against the Base of Cretaceous unconformity

Seismic line 82-93 shows broad gentle drape of the Mississauga Formation over a tilted Jurassic fault block, providing both Cretaceous and Jurassic targets at the same location. The *Shearwater J-20* well drilled a salt diapir without penetrating the Lower Cretaceous. The *Gull F-72* and *Tors Cove D-52* wells also drilled the top of a salt diapir but both had gas shows in the Eocene. The *Brant P-87* well targeted a “bright spot” that turned out to be Lower Cretaceous basalt.

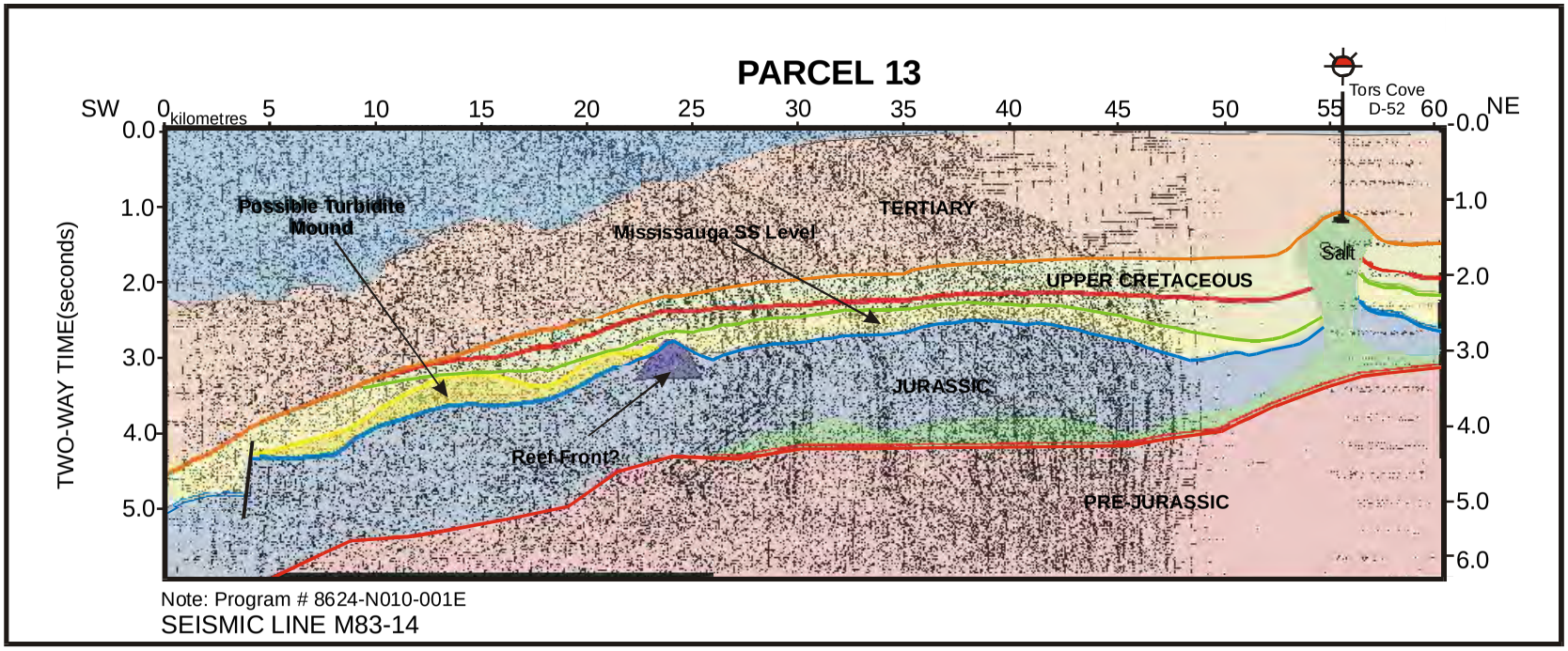


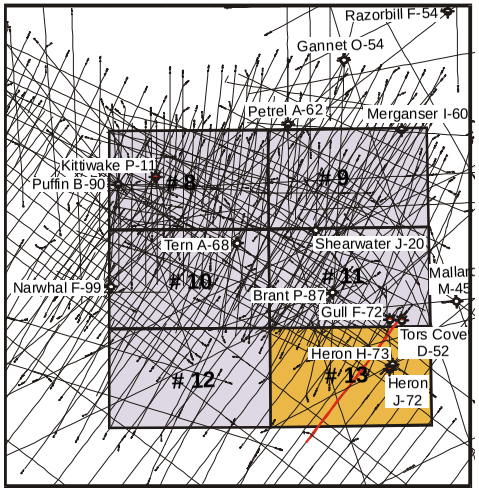


Location: South Whale Basin
Parcel Area: 222,630 hectares
Water depth: ~2000 m
Released Seismic Data: 1311.48 km
Data Vintages: 1971 –1985

Play Types:
- Drape of Cretaceous sands over Jurassic fault blocks and salt cored structures
- Cretaceous and Jurassic sands in tilted fault blocks or over salt cored structures
- Jurassic faulted structures below salt diapirs
- Prograding Jurassic sands in stratigraphic traps pinched out against the Base of Cretaceous unconformity
- Jurassic carbonate bank porosity in structural and stratigraphic traps
- Jurrasic reef front play

This parcel, which is mostly in deep water, shows two interesting features. The first is a possible reef front that has also been observed on seismic on the western side of the subbasin. The reef interpretation at this location is complicated by the rapid water depth change above it which has degraded the imaging of the section and caused spurious migration artifacts. Nevertheless, a general thickening of the Upper Jurassic section supports the reef front interpretation. To the southwest of the reef front, two large mounds could represent turbidites within the Cretaceous section.

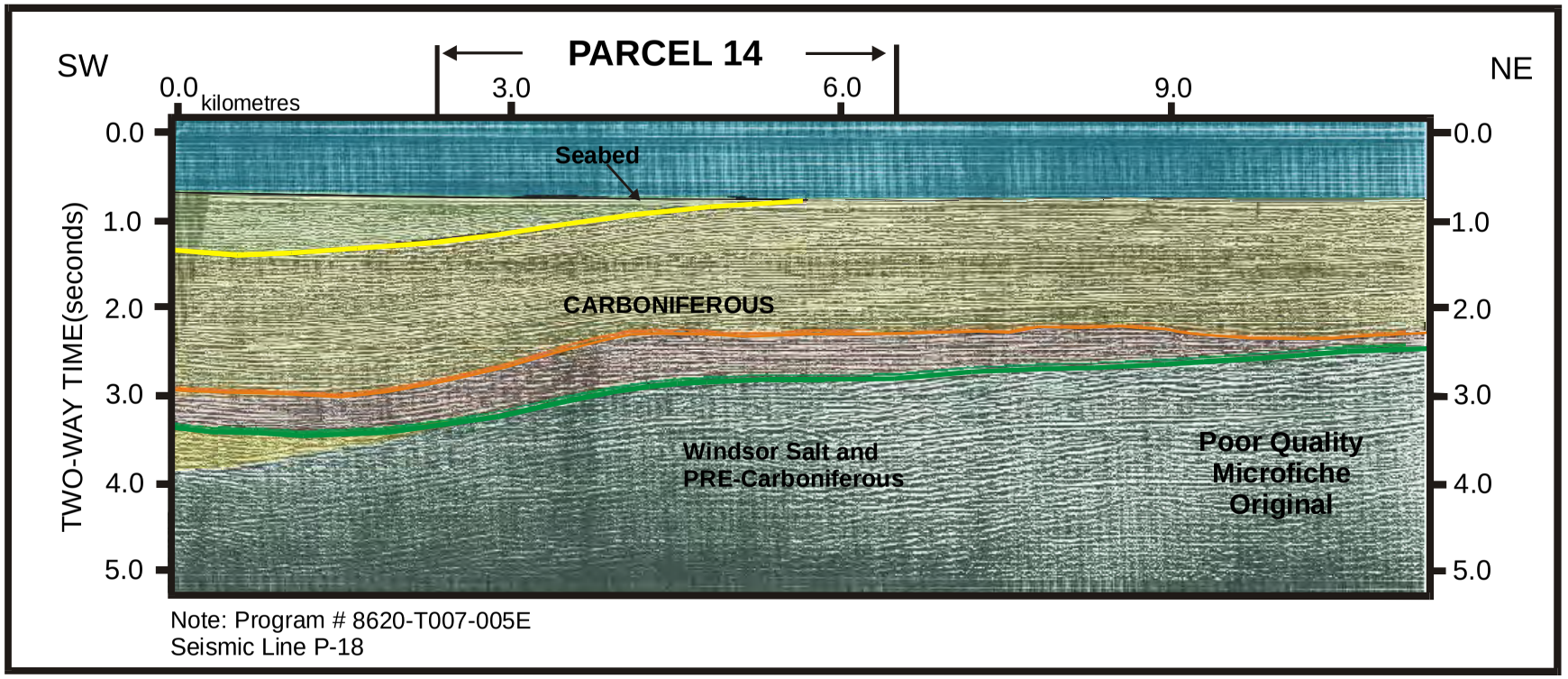


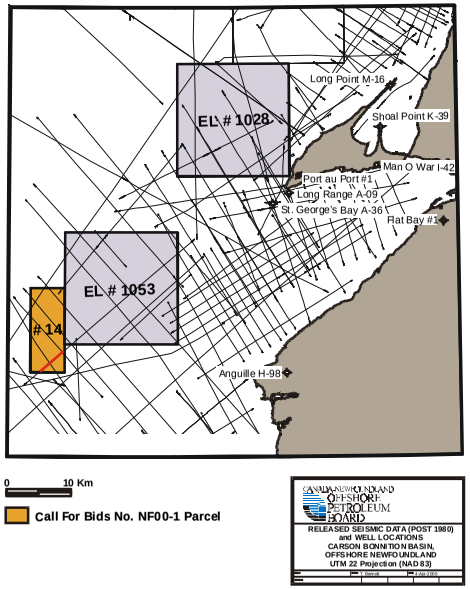


Location: South Whale Basin
Parcel Area: 222,630 hectares
Water depth: 100 – 1000 m
Released Seismic Data: 2686.12 km
Data Vintages: 1964 –1985

Play Types:
- Drape of Cretaceous sands over Jurassic fault blocks and salt cored structures
- Cretaceous and Jurassic sands in tilted fault blocks or over salt cored structures
- Prograding Jurassic sands in stratigraphic traps pinched out against the Base of Cretaceous unconformity
- Jurassic carbonate bank porosity in structural and stratigraphic traps
- Jurrasic reef front play

This line has a broad, gentle rollover at the Mississauga Sandstone level southwest of the *Tors Cove D-52* salt diapir. Further southwest, the reef front seen on line HM82-97/2 is also interpreted to be present. Southwest of the reef, two large mounds within the Cretaceous could be turbidite deposits. The *Heron J-72* and *H-73* wells were also drilled on a salt diapir. The *J-72* well which was drilled on the flank of the diapir drill stem tested 22 barrels of heavy oil from in a fractured zone within the Petrel limestone.





Location: Western Newfoundland – MagdalenBasin
Parcel Area: 31,068 hectares
Water depth: 400 - 600 m
Released Seismic Data: 79.44 km
Data Vintages: 1969 –1973

Play Types: - Carboniferous sands over salt cored anticline
- Pinchouts in Lower-Carboniferous
- Structure within the Cambro-Ordovician carbonate bank, if present

This parcel is located at the northeast corner of the Carboniferous, Magdalen basin. Although the data quality is poor because of strong water bottom multiple interference and poor quality microfiche originals, internal reflections indicate the presence of a thick sedimentary package. It is unclear from the poor quality data whether the Cambro-Ordovician section is preserved at depth. The nearest well is *St. Georges Bay A-36*, at the boundary between the Anticosti Basin and Bay St. George Subbasin, which encountered a thin Carboniferous section overlying Ordovician clastics and the carbonate platform. Seismic line P-18 shows a potential closure within the lower-Carboniferous. Several reflections are seen to subcrops against the “green” reflector suggesting it may represent an unconformity with associated stratigraphic trapping potential. The nearest Magdelen Basin well, *Brion Island #1*, ~100 km to the southwest, is reported to have encountered oil stained Westphalian B sands.

HOW TO MAKE A BID

Administration

The Canada-Newfoundland Offshore Petroleum Board (C-NOPB) administers offshore petroleum exploration and development on behalf of the Government of Canada and the Government of Newfoundland and Labrador

How to Make a Bid

The 2000 C-NOPB Call for Bids closes at 4:00 p.m. on December 11, 2000. There is only one basis for selecting successful bids: the total amount of money the bidder commits to spend on exploration of the respective parcel during the first five years of the licence. The minimum amount that can be bid on any parcel in the Jeanne d'Arc Basin, Carson/Bonnition and South Whale Basin is CAN $1 million *. The minimum amount that can be bid on parcel #14 on the West Coast of Newfoundland is CAN $250 thousand. If a bid is successful, an exploration licence will be issued for a term of nine years. A well must be drilled during the first five years of a licence to qualify for extension into the final four years.

For further information, please contact:

H.H. Stanley Chairman and CEO Tel: (709) 778-1456

D. Angus Taylor Manager, Legal and Land Tel: (709) 778-1458

Or visit the C-NOPB website
www.cnopb.nfnet.com

* $1 CAN ~ $.70 US

FISCAL REGIMES AND TAXATION

Royalty Structure

An independent consultant has advised that the regime is competitive on a worldwide basis, ranking in the top half when compared with other national and international regimes.

Generic Offshore Royalty Regime	
Basic Royalty	
until earliest of: (i) 20% of reserves (ii) 50 million barrels (mmbls)	1%
(i) 100 mmbls cumulative	2.5%
next 100 mmbls	5%
thereafter	7.5%
Net Royalty	
Tier 1 Rate	20%
Tier 2 Rate	10%

* LTGBR - Long Term Government of Canada Bond Rate

The royalty is comprised of a basic royalty component and a net royalty component. The basic royalty component is an ad valorem type royalty applied to the value of petroleum production. The net royalty is profit-based and, consequently, is a progressive royalty. An independent consultant has advised that the regime is competitive on a worldwide basis, ranking in the top half when compared with other national and international regimes.

The Basic Royalty is payable from the very first barrel of oil produced from a petroleum project and is payable on each and every barrel produced thereafter. The Basic Royalty rate applicable is phased in as certain levels of production are achieved (see table). If the project achieves Simple Payout prior to 100 million barrels of production the Basic Royalty rate automatically increases to five percent.

Net Royalty commences to be payable upon the occurrence of Net Royalty Payout. When costs are recovered and the Tier 1 Return Allowance is achieved, the Tier 1 Net Royalty rate becomes applicable. The Basic Royalty paid is applied as a credit against any Tier 1 Net Royalty payable and, as a result, royalties payable for any particular period would be the greater of the Basic Royalty or the Tier 1 Net Royalty.

When the Tier 2 Return Allowance is achieved, the Tier 2 Net Royalty rate becomes applicable. The Tier 2 Royalty is in addition to any other royalties payable.

FISCAL REGIMES AND TAXATION

Taxation

Competitive Tax Environment

The federal and provincial governments tax companies operating in Newfoundland and Labrador on the basis of net income. Municipalities tax business property and/or asset value. Provincial tax relief is available to qualifying companies under the Economic Diversification and Growth Enterprises Program (EDGE). There are other business assistance programs and generous training partnerships.

The EDGE program offers attractive tax concessions that are among the most generous in North America.

The EDGE Program

Your new or expanding company may qualify for EDGE status should you choose to locate in Newfoundland and Labrador. EDGE is a program that includes attractive tax concessions (and other incentives) that are among some of the most generous being offered in North America. If a company is making a minimum capital investment of $300,000 or has incremental sales of $500,000 and can create ten new local jobs, it may qualify for: A ten year tax holiday from provincial corporate income tax, health and post-secondary education tax, and municipal tax (in participating municipalities); A further 5-year period, over which these taxes will be phased in at a rate of 20% of the basic rate annually.

Figure 6.1
A comparison of Newfoundland's provincial corporate tax rates with other eastern Canadian provinces.

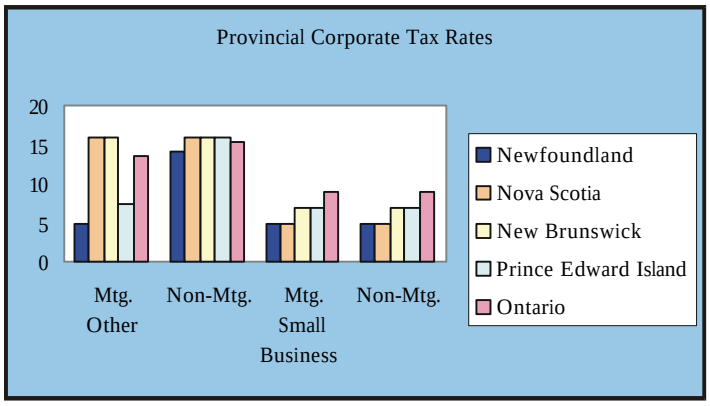
Provincial Taxes and Premiums

In Canada, businesses pay corporate income tax at both the Federal and Provincial level, health and post-secondary education tax, and workers compensation premiums.

The Federal Corporate income tax rates are:

- 28% (large corporations)
- 21% (manufacturing corporations)
- 12 % (small business rate)

Companies must also contribute to two employee benefit programs: Employment Insurance and the Canada Pension Plan. Employers must deduct premiums for each of these programs from their employees' pay and make employer contributions.



Harmonized Sales Tax (HST)

Newfoundland and Labrador's Provincial Sales Tax (PST) and Canada's national Goods and Services tax (GST) are combined to form the 15% Harmonized Sales Tax (HST). It is applied to the same goods and services as the GST. By allowing full input tax credits to businesses, goods and services (produced within this province) will be more competitive in both local and global markets. Harmonization of these taxes reduces the administrative burden of tax on business.

Municipal Taxes

Local governments provide a wide range of municipal services and form a tax base from one or both of property tax and business occupancy tax. While property tax rates vary across municipalities, rates are still well below national averages. In addition, the EDGE program allows municipal governments to grant qualifying companies a ten-year tax holiday from property tax followed by a 5-year phase-in.

RELATED WEB LINKS

GOVERNMENT OF NEWFOUNDLAND AND LABRADOR

Department of Mines and Energy

For further information, please contact;

Gary Calahan
Director of Communications

Phone: (729) 729-4890
Fax: (709) 729-2871
Email: gcalahan@mail.gov.nf.ca

We're on the web!
www.gov.nf.ca/mines&en

The document is also accessible at the Department of Mines and Energy website Http://www.gov.nf.ca/mines&en/

Industrial Infrastructure

City of St. John's	www.city.st-johns.nf.ca
City of Corner Brook	www.city.corner-brook.nf.ca
City of Mt. Pearl	www.mtpearl.nf.ca
Capital Coast	www.entnet.nf.ca/capital-coast
Bull Arm Construction Site	www.bullarm.com/
Friede Goldman Facility at Marystown	www.enterprise.newcomm.net/fgn/

Fiscal Regimes and Taxation

Economic Diversification and Growth Enterprises Program (EDGE)
www.success.nfld.net/business/programs.html

Harmonized Sales Tax (HST)	www.gov.nf.ca/fin/hst/hstmain.htm
Worker's Compensation Commission	www.wcc.nf.ca
Employment Insurance	www.hrdc-drhc.gc.ca/ei/common/home.shtml
Human Resources Development Canada	www.hrdc-drhc.gc.ca

Education and Training

Memorial University	www.mun.ca
Marine Institute	www.ifmt.nf.ca
College of the North Atlantic	www.northatlantic.nf.ca
Centre for Cold Ocean Resources Engineering	www.mun.ca/research/publications/centres/ccore.html
Institute for Marine Dynamics	www.mun.ca/recruit/virtour/imd.html

Boards, Organizations and Companies

Canada Newfoundland Offshore Petroleum Board	www.cnopb.nfnet.com
Newfoundland Offshore Industries Association	www.noia.nf.ca
Terra Nova Project	www.terranovaproject.com
Hibernia Management Development Corp.	www.hibernia.ca

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APPENDIX A - RELEASED GEOLOGICAL AND GEOPHYSICAL REPORTS

Parcel 1

Program Number	*Completion Date*	*Line Segment*
8620-C055-001E	12-Jul-83	1.58 km
8620-G005-001P	11-May-71	24.81 km
8620-G005-011P	15-May-80	11.19 km
8620-J008-003E	23-Sep-82	36.53 km
8620-M003-004E	15-Sep-66	18.51 km
8620-M003-005E	25-Sep-67	53.6 km
8620-M003-017E	28-Jul-73	17.55 km
8620-S014-008E	07-Mar-83	387.38 km
8624-C055-001E	17-Sep-82	18.4 km
8624-G005-001P	19-May-82	28.21 km
8624-G005-002P	05-Aug-82	18.55 km
8624-G005-009P	22-Apr-84	117.47 km
8624-H006-001E	14-Jul-81	41.09 km
8624-H006-006E	23-Oct-84	158.33 km
8624-H006-009E	23-Oct-84	101.87 km
8624-M003-003E	09-Oct-71	9.59 km
8624-M003-005E	25-Jun-71	135.68 km
8624-M003-013E	30-Aug-72	37.76 km
8624-M003-026E	22-Jul-75	55.34 km
8624-M003-031E	10-Nov-78	26.88 km
8624-M003-032E	30-Aug-79	36.57 km
8624-M003-034E	29-Nov-79	75.72 km
8624-M003-037E	15-Dec-80	26.58 km
8624-M003-038E	08-Jun-81	104.89 km
8624-M003-039E	15-Oct-81	32.99 km
8624-M003-046E	09-Jun-82	114. km
8624-M003-048E	26-Aug-83	88.29 km
8624-M003-050E	08-Jul-84	88.58 km
8624-P028-081E	24-Nov-85	12.08 km
8924-S006-001E	25-Aug-90	333.17 km

Approximate total for parcel #1 **2213.16 km**

Parcel 2

Program Number	*Completion Date*	*Line Segment*
8620-C055-001E	12-Jul-83	98.38 km
8620-G005-001P	11-May-71	19.26 km
8620-J001-010E	13-Oct-80	1.5 km
8620-J008-003E	23-Sep-82	63.75 km
8620-M003-004E	15-Sep-66	38.05 km
8620-M003-005E	25-Sep-67	30.53 km
8620-M003-017E	28-Jul-73	31.4 km
8620-M003-021E	25-Jul-74	1.22 km
8620-S014-008E	07-Mar-83	402.31 km
8624-C055-001E	17-Sep-82	58.75 km
8624-G005-001P	19-May-82	39.3 km
8624-G005-002P	05-Aug-82	21.48 km
8624-G005-009P	22-Apr-84	85.22 km
8624-H006-009E	23-Oct-84	202.73 km
8624-M003-005E	25-Jun-71	104.85 km
8624-M003-013E	30-Aug-72	25.97 km
8624-M003-026E	22-Jul-75	.35 km
8624-M003-031E	10-Nov-78	4.88 km
8624-M003-032E	30-Aug-79	77.44 km
8624-M003-034E	29-Nov-79	23.51 km
8624-M003-037E	15-Dec-80	40.7 km
8624-M003-038E	08-Jun-81	157.32 km
8624-M003-039E	15-Oct-81	38.33 km
8624-M003-046E	09-Jun-82	169.99 km
8624-M003-048E	26-Aug-83	135.8 km
8624-P003-001E	16-Dec-81	14.9 km
8924-J001-001E	08-Jul-90	1685.65 km

Approximate total for parcel #2 **3573.57 km**

Parcel 3

Program Number	*Completion Date*	*Line Segment*
8620-A004-003E	27-Aug-65	19.41 km
8620-A004-004E	31-Aug-67	12.06 km
8620-A004-006E	08-Jan-73	35.34 km
8620-C055-001E	12-Jul-83	45.8 km
8620-G005-001P	11-May-71	2.46 km
8620-G005-011P	15-May-80	2.76 km
8620-J001-010E	13-Oct-80	16.78 km
8620-J008-003E	23-Sep-82	5.5 km
8620-M003-004E	15-Sep-66	11.93 km
8620-M003-005E	25-Sep-67	1.38 km
8620-M003-017E	28-Jul-73	.32 km
8620-S014-008E	07-Mar-83	149.47 km
8624-A004-003E	10-Dec-68	44.1 km
8624-A004-005E	15-Sep-69	27.18 km
8624-A004-017E	11-Sep-74	21.13 km
8624-C004-005E	14-Sep-80	69.57 km
8624-C004-008E	14-Jul-81	84.22 km
8624-G005-001P	19-May-82	27.86 km
8624-G005-002P	05-Aug-82	12.78 km
8624-G005-009P	22-Apr-84	40.39 km
8624-H006-001E	14-Jul-81	234.75 km
8624-M003-003E	09-Oct-71	5.81 km
8624-M003-005E	25-Jun-71	35.7 km
8624-P028-004E	06-May-80	79.02 km
8624-P028-014E	18-Jan-81	24.92 km
8624-P028-017E	13-Nov-81	39.51 km
8624-P028-047E	07-Nov-82	1.5 km
8624-P028-058E	20-Sep-83	29.28 km
8624-P028-070E	12-Jun-84	24.95 km
8624-S018-001P	05-Aug-84	143.55 km
8924-P028-002E	26-Aug-90	14.83 km
8926-P028-001E	27-May-88	36.87 km
8926-P028-002E	06-Oct-88	4.77 km

Approximate total for parcel #3 **1305.86 km**

Parcel 4

Program Number	*Completion Date*	*Line Segment*
8620-C020-003E	29-Oct-71	91.38 km
8620-G005-011P	15-May-80	51.43 km
8620-J008-003E	23-Sep-82	34.3 km
8620-M003-004E	15-Sep-66	28.13 km
8620-M003-017E	28-Jul-73	272.43 km
8620-S014-008E	07-Mar-83	196.09 km
8624-A004-003E	10-Dec-68	26.11 km
8624-A004-005E	15-Sep-69	7.72 km
8624-A011-002E	18-Sep-72	62.4 km
8624-C055-001E	17-Sep-82	77.98 km
8624-G001-001E	24-Nov-80	10.83 km
8624-G005-001P	19-May-82	62.32 km
8624-G005-002P	05-Aug-82	103.14 km
8624-G005-009P	22-Apr-84	396.11 km
8624-H006-001E	14-Jul-81	350.5 km
8624-J001-002E	10-Mar-81	117.1 km
8624-M003-003E	09-Oct-71	14.98 km
8624-M003-005E	25-Jun-71	222.29 km
8624-M003-013E	30-Aug-72	26.3 km
8624-M003-038E	08-Jun-81	17.5 km
8624-P003-001E	16-Dec-81	181.28 km
8624-P028-006E	02-Apr-81	25.94 km
8624-P028-039E	07-Apr-82	39.71 km
8624-P028-040E	07-Apr-82	27.28 km
8624-P028-061E	23-Sep-83	208.93 km
8624-P028-076E	24-Jun-85	24.96 km

Approximate total for parcel #4 **2677.12 km**

Parcel 5

Program Number	*Completion Date*	*Line Segment*
8620-C006-001E	11-Jan-71	55.51 km
8620-C020-003E	29-Oct-71	32.5 km
8620-G005-001P	11-May-71	75.4 km
8620-G005-011P	15-May-80	33.06 km
8620-M003-004E	15-Sep-66	37.55 km
8620-M003-017E	28-Jul-73	137.4 km
8620-S014-008E	07-Mar-83	71.99 km
8624-A004-008E	06-Sep-71	40.7 km
8624-C055-001E	17-Sep-82	17.45 km
8624-G005-001P	19-May-82	100.6 km
8624-G005-002P	05-Aug-82	243.67 km
8624-G005-009P	22-Apr-84	440.73 km
8624-H006-001E	14-Jul-81	277.19 km
8624-J001-002E	10-Mar-81	133.46 km
8624-M003-003E	09-Oct-71	15.14 km
8624-M003-005E	25-Jun-71	56.06 km
8624-M003-013E	30-Aug-72	10.81 km
8624-M003-038E	08-Jun-81	1.63 km
8624-P003-001E	16-Dec-81	149.25 km
8624-P028-006E	02-Apr-81	182.82 km
8624-P028-021E	25-Aug-81	16.07 km
8624-P028-022E	25-Aug-81	92.32 km
8624-P028-040E	07-Apr-82	315.31 km
8624-P028-061E	23-Sep-83	383.41 km

Approximate total for parcel #5 **2920.01 km**

Parcel 6

Program Number	*Completion Date*	*Line Segment*
8620-C020-003E	29-Oct-71	93.42 km
8620-G005-001P	11-May-71	78.94 km
8620-G005-011P	15-May-80	2.81 km
8620-M003-017E	28-Jul-73	11.41 km
8620-S014-008E	07-Mar-83	444.15 km
8620-T007-008E	26-Nov-73	72.03 km
8624-A004-011E	09-Aug-72	2.35 km
8624-A011-002E	18-Sep-72	51.22 km
8624-C055-001E	17-Sep-82	72.18 km
8624-C055-002E	08-Mar-82	48.57 km
8624-G005-002P	05-Aug-82	147.29 km
8624-G005-009P	22-Apr-84	236.68 km
8624-H006-001E	14-Jul-81	293.63 km
8624-J001-002E	10-Mar-81	164.24 km
8624-P003-001E	16-Dec-81	59.89 km
8624-P028-006E	02-Apr-81	.1 km
8624-P028-040E	07-Apr-82	4.56 km
8624-P028-076E	24-Jun-85	112.83 km
8624-T007-017E	10-Jul-77	166.99 km

Approximate total for parcel #6 **2063.28 km**

Parcel 7

Program Number	*Completion Date*	*Line Segment*
8620-C006-001E	11-Jan-71	4.83 km
8620-G005-001P	11-May-71	40.6 km
8620-G005-004P	12-Feb-72	29.43 km
8620-G005-011P	15-May-80	5.22 km
8620-S014-008E	07-Mar-83	130.6 km
8620-T007-008E	26-Nov-73	26.87 km
8624-C055-002E	08-Mar-82	4.85 km
8624-G005-002P	05-Aug-82	157.37 km
8624-G005-009P	22-Apr-84	28.85 km
8624-H006-001E	14-Jul-81	37.76 km
8624-J001-002E	10-Mar-81	4.74 km
8624-P003-001E	16-Dec-81	8.37 km
8624-P028-006E	02-Apr-81	100.47 km
8624-P028-022E	25-Aug-81	130.91 km
8624-P028-040E	07-Apr-82	8.51 km
8624-P028-061E	23-Sep-83	89.09 km
8624-P028-076E	24-Jun-85	20. km
8624-T007-017E	10-Jul-77	25.06 km

Approximate total for parcel #7 **853.53 km**

Parcel 8

Program Number	*Completion Date*	*Line Segment*
8620-A004-001E	20-Nov-64	384.28 km
8620-A004-003E	27-Aug-65	1648.8 km
8620-A004-004E	31-Aug-67	492.34 km
8620-A004-006E	08-Jan-73	39.85 km
8620-G005-001P	11-May-71	109.91 km
8620-G005-004P	12-Feb-72	62.59 km
8620-H006-004E	23-May-82	365. km
8620-S014-010E	06-Sep-83	654.95 km
8624-A004-003E	10-Dec-68	166.26 km
8624-A004-006E	10-Jan-70	228.18 km
8624-A004-011E	09-Aug-72	31.18 km
8624-A004-017E	11-Sep-74	322.88 km
8624-A025-001E	27-Sep-81	103.51 km
8624-A025-002E	27-Sep-81	123.33 km
8624-D001-002P	12-Jan-70	43.01 km
8624-D001-003P	20-Dec-70	120.84 km
8624-H006-003E	14-Nov-81	259.66 km
8624-H007-013E	08-Apr-81	184.44 km
8624-N010-001E	26-Nov-83	154.56 km
8624-N010-002E	27-Jun-84	93.03 km
8624-P028-007E	25-Feb-81	77.24 km
8624-P028-023E	11-Jan-81	471.85 km
8624-P028-032E	19-Jul-82	18.34 km
8624-P028-066E	10-Oct-83	384.94 km
8624-P028-078E	25-Sep-85	199.15 km
8624-P028-081E	24-Nov-85	47.48 km

Approximate total for parcel #8 **6787.59 km**

Parcel 9

Program Number	*Completion Date*	*Line Segment*
8620-A004-001E	20-Nov-64	193.31 km
8620-A004-003E	27-Aug-65	1343.49 km
8620-A004-004E	31-Aug-67	584.28 km
8620-A004-006E	08-Jan-73	161.7 km
8620-G005-001P	11-May-71	38.05 km
8620-G005-004P	12-Feb-72	129.05 km
8620-H006-004E	23-May-82	783.04 km
8620-M003-005E	25-Sep-67	18.25 km
8620-S014-010E	06-Sep-83	219.18 km
8624-A004-003E	10-Dec-68	137.08 km
8624-A004-006E	10-Jan-70	189.37 km
8624-A004-011E	09-Aug-72	111.74 km
8624-A004-017E	11-Sep-74	41.88 km
8624-A025-001E	27-Sep-81	41.14 km
8624-D001-003P	20-Dec-70	2.96 km
8624-G005-003P	19-Dec-82	72.22 km
8624-H006-003E	14-Nov-81	223.09 km
8624-H007-013E	08-Apr-81	23.74 km
8624-N010-001E	26-Nov-83	50.59 km
8624-P028-023E	11-Jan-81	558.09 km
8624-P028-066E	10-Oct-83	19.98 km
8624-P028-077E	15-Jul-85	25.85 km
8624-P028-078E	25-Sep-85	334.12 km
8624-P028-081E	24-Nov-85	12.77 km

Approximate total for parcel #9 **5314.97 km**

Parcel 10

Program Number	*Completion Date*	*Line Segment*
8620-A004-001E	20-Nov-64	46.78 km
8620-A004-003E	27-Aug-65	110.52 km
8620-A004-004E	31-Aug-67	196.04 km
8620-A004-006E	08-Jan-73	24.81 km
8620-G005-001P	11-May-71	54.8 km
8620-G005-004P	12-Feb-72	89.52 km
8620-H006-004E	23-May-82	152.94 km
8620-J001-001E	14-Oct-72	2.14 km
8620-S014-010E	06-Sep-83	334.53 km
8624-A004-003E	10-Dec-68	3.83 km
8624-A004-006E	10-Jan-70	239.12 km
8624-A004-011E	09-Aug-72	217.42 km
8624-A004-017E	11-Sep-74	111.61 km
8624-A025-001E	27-Sep-81	36.87 km
8624-A025-002E	27-Sep-81	1.79 km
8624-D001-003P	20-Dec-70	73.01 km
8624-G005-003P	19-Dec-82	52.02 km
8624-H006-003E	14-Nov-81	268.45 km
8624-H007-013E	08-Apr-81	41.85 km
8624-N010-001E	26-Nov-83	382.16 km
8624-N010-002E	27-Jun-84	468.11 km
8624-P028-007E	25-Feb-81	76.5 km
8624-P028-023E	11-Jan-81	420.48 km
8624-P028-024E	16-Nov-81	10.76 km
8624-P028-066E	10-Oct-83	26.38 km
8624-P028-078E	25-Sep-85	44.12 km
8624-P028-081E	24-Nov-85	37.46 km
8624-T007-018E	10-May-77	2.09 km
8624-T021-005E	18-Apr-81	3.14 km
8624-T021-009E	21-Jul-83	69.87 km

Approximate total for parcel #10 **3599.08 km**

Parcel 11

Program Number	*Completion Date*	*Line Segment*
8620-A004-001E	20-Nov-64	200.86 km
8620-A004-003E	27-Aug-65	1226.19 km
8620-A004-004E	31-Aug-67	394.22 km
8620-A004-006E	08-Jan-73	284.31 km
8620-G005-001P	11-May-71	53.65 km
8620-G005-004P	12-Feb-72	40.13 km
8620-H006-004E	23-May-82	746.79 km
8620-M003-005E	25-Sep-67	58.38 km
8620-S014-010E	06-Sep-83	334.46 km
8624-A004-003E	10-Dec-68	59.14 km
8624-A004-006E	10-Jan-70	314.45 km
8624-A004-011E	09-Aug-72	93.51 km
8624-A004-012E	10-Jan-72	23.13 km
8624-A004-017E	11-Sep-74	195.17 km
8624-A025-001E	27-Sep-81	108.38 km
8624-D001-003P	20-Dec-70	94.47 km
8624-G005-003P	19-Dec-82	83.48 km
8624-H006-003E	14-Nov-81	196.97 km
8624-H007-013E	08-Apr-81	110.37 km
8624-N010-001E	26-Nov-83	174.21 km
8624-P028-007E	25-Feb-81	33.83 km
8624-P028-023E	11-Jan-81	463.68 km
8624-P028-078E	25-Sep-85	202.1 km

Approximate total for parcel #11 **5491.87 km**

Parcel 12

Program Number	*Completion Date*	*Line Segment*
8620-G005-001P	11-May-71	19.27 km
8620-G005-004P	12-Feb-72	60.22 km
8620-H006-004E	23-May-82	71.31 km
8620-J001-001E	14-Oct-72	104.04 km
8620-J001-002E	10-Jan-73	24.95 km
8620-S014-010E	06-Sep-83	18.4 km
8624-A004-011E	09-Aug-72	55.39 km
8624-A004-017E	11-Sep-74	.9 km
8624-A025-001E	27-Sep-81	.73 km
8624-D001-003P	20-Dec-70	63.4 km
8624-G005-003P	19-Dec-82	81.93 km
8624-H006-003E	14-Nov-81	1.28 km
8624-N010-001E	26-Nov-83	352.54 km
8624-N010-002E	27-Jun-84	190.3 km
8624-P028-007E	25-Feb-81	168.77 km
8624-P028-023E	11-Jan-81	11.68 km
8624-P028-024E	16-Nov-81	77.36 km
8624-P028-078E	25-Sep-85	9. km

Approximate total for parcel #12 **1311.48 km**

Parcel 13

Program Number	*Completion Date*	*Line Segment*
8620-A004-001E	20-Nov-64	53.34 km
8620-A004-003E	27-Aug-65	435.38 km
8620-A004-004E	31-Aug-67	373.37 km
8620-A004-006E	08-Jan-73	58.17 km
8620-G005-001P	11-May-71	127.05 km
8620-G005-004P	12-Feb-72	41.87 km
8620-H006-004E	23-May-82	239.24 km
8620-M003-005E	25-Sep-67	37.89 km
8620-S014-010E	06-Sep-83	111.2 km
8624-A004-003E	10-Dec-68	44.31 km
8624-A004-006E	10-Jan-70	87.67 km
8624-A004-011E	09-Aug-72	216.85 km
8624-A004-012E	10-Jan-72	38.88 km
8624-A004-017E	11-Sep-74	9.5 km
8624-A025-001E	27-Sep-81	23.81 km
8624-D001-003P	20-Dec-70	25.06 km
8624-G005-003P	19-Dec-82	40.59 km
8624-H006-003E	14-Nov-81	62.04 km
8624-N010-001E	26-Nov-83	319.87 km
8624-N010-002E	27-Jun-84	152.7 km
8624-P028-007E	25-Feb-81	104.31 km
8624-P028-023E	11-Jan-81	8.93 km
8624-P028-078E	25-Sep-85	74.1 km

Approximate total for parcel #13 **2686.12 km**

Parcel 14

Program Number	*Completion Date*	*Line Segment*
8620-T007-005E	29-Jul-71	29.99 km
8620-T007-007E	22-Aug-73	17.4 km
8624-C015-001P	14-Oct-69	22.07 km
8624-T007-006E	14-Nov-70	9.98 km

Approximate total for parcel #14 **79.44 km**

SIGNIFICANT DISCOVERIES
DISCOVERED RESOURCES

FIELD	OIL (MMSTB)	GAS (BSCF)	NGL'S (MMSTB)
GRAND BANKS AREA			
HIBERNIA[1]	884	1375	145
TERRA NOVA[1]	406	269	14
HEBRON	325	-	-
WHITE ROSE	274	2091	77
WEST BEN NEVIS	34	-	-
MARA	23	-	-
BEN NEVIS	55	315	30
NORTH BEN NEVIS	18	116	4
SPRINGDALE	14	238	-
NAUTILUS	13	-	-
KING'S COVE	10	-	-
SOUTH TEMPEST	8	-	-
EAST RANKIN	7	-	-
FORTUNE	6	-	-
SOUTH MARA	4	144	8
NORTH DANA	0	472	11
TRAVE	0	30	1
WEST BONNE BAY	36	-	-
SUBTOTAL (GRAND BANKS)	2 117	5 050	290
LABRADOR SHELF			
NORTH BJARNI	0	2 247	82
GUDRID	0	924	6
BJARNI	0	863	31
HOPEDALE	0	105	2
SNORRI	0	105	2
SUBTOTAL (LABRADOR)	0	4 224	123
TOTAL	2 117	9 294	413

ource: C-NOPB website

Reserves" are those volumes of hydrocarbons, proven by drilling, testing and interpretation of geological, geophysical and engineering data that a nsidered to be recoverable using current technology and under present and anticipated economic conditions. Hibernia and Terra Nova are assified as reserves.

GOVERNMENT OF NEWFOUNDLAND AND LABRADOR

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