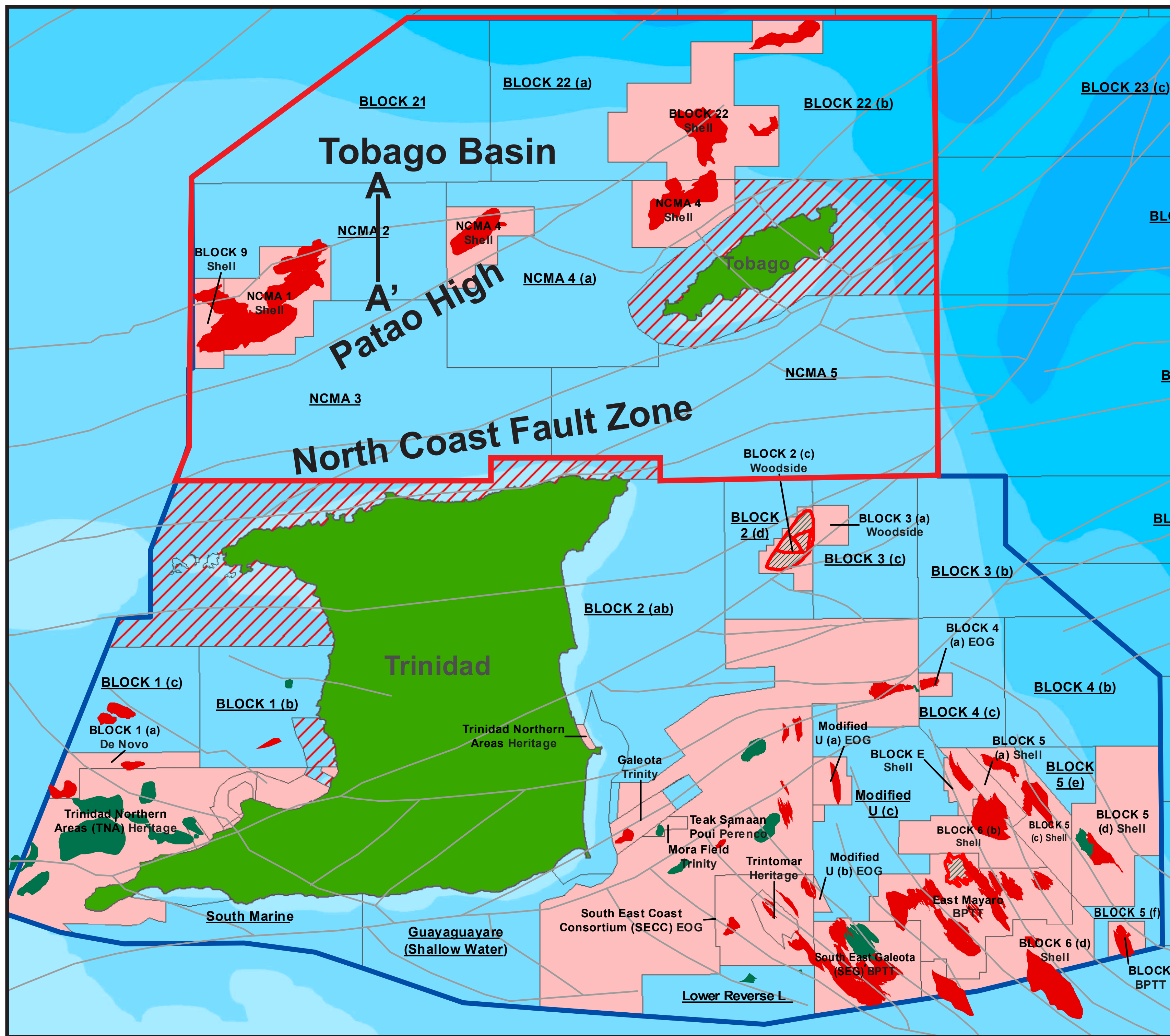


NORTH COAST MARINE AREA



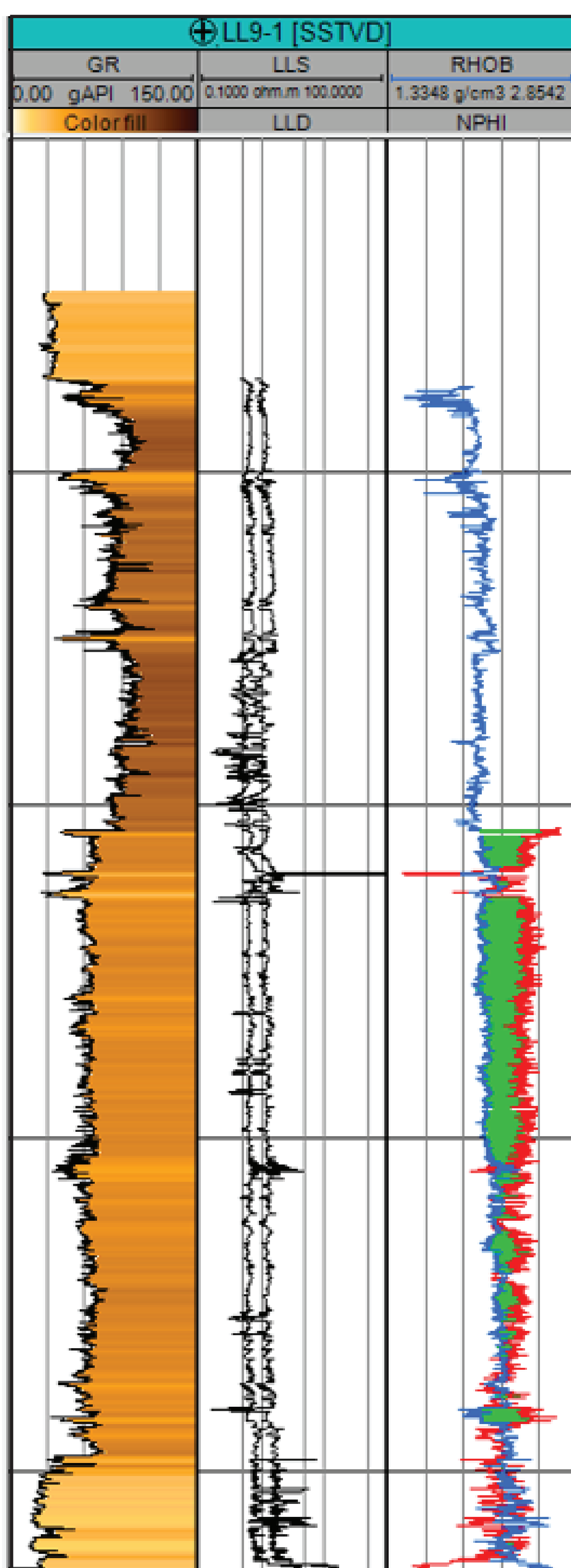
Avg. Open Block Size: 1300 Km²
Water Depths: 100m to 1200m

Blocks **NCMA 2, NCMA 3, NCMA 4(a), 21, 22(a) and 22(b)** are available for bidding.

Major discoveries since 1971 have proven the presence of a **dry gas petroleum system** in nearby Blocks 9, 22, NCMA 1 and NCMA 4. Cumulative production to date is approximately **2 TCF**.

Existing infrastructure includes the **Poinsettia and Hibiscus Platforms** and **two natural gas pipelines** (20" & 24") with capacities of 330 and 525 mmscf/d respectively.

Dataset includes 2D and 3D seismic surveys of varying vintages and numerous exploration wells and reports.

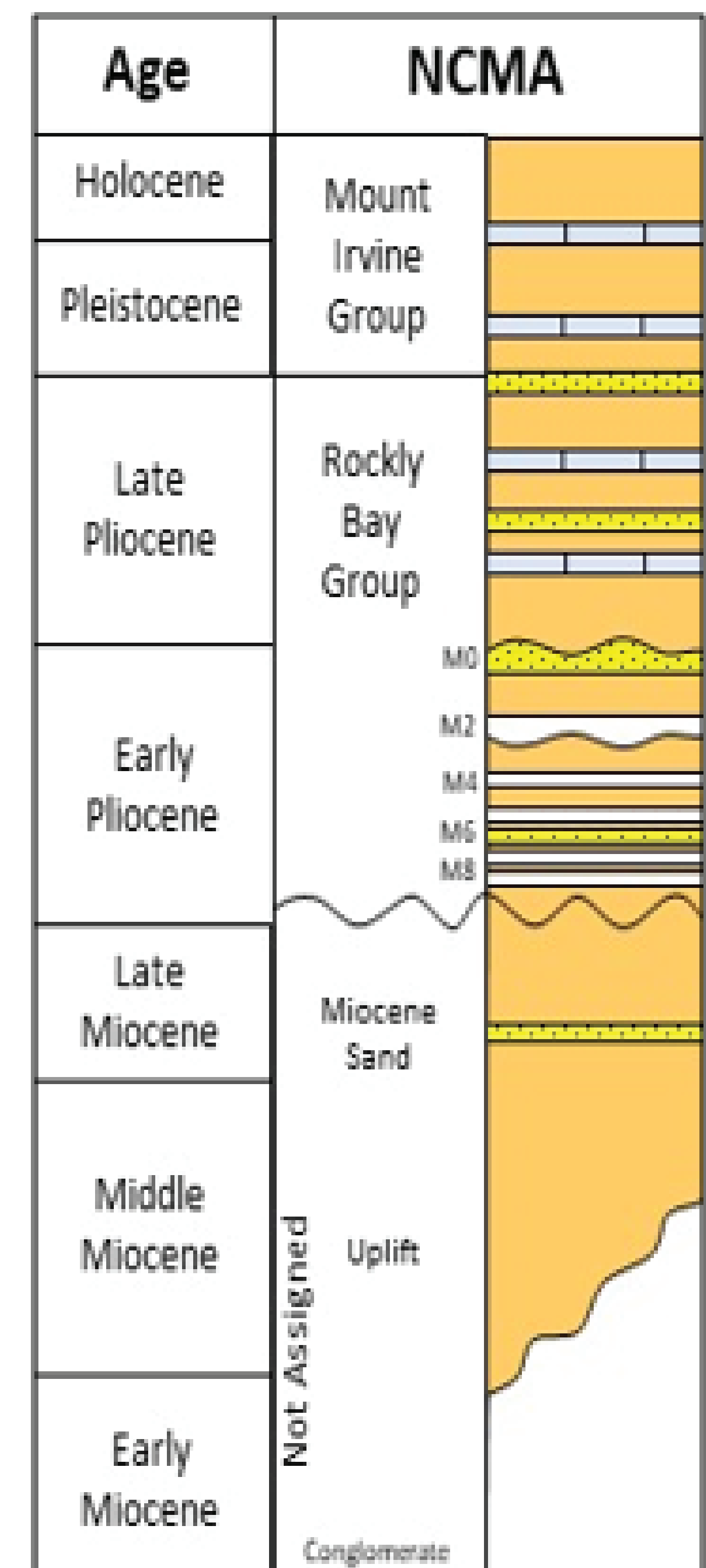


Tobago Basin: Wedge shaped prism comprising Oligocene-Miocene to Pleistocene sediment which onlaps the basement to the south and thickens towards the north.

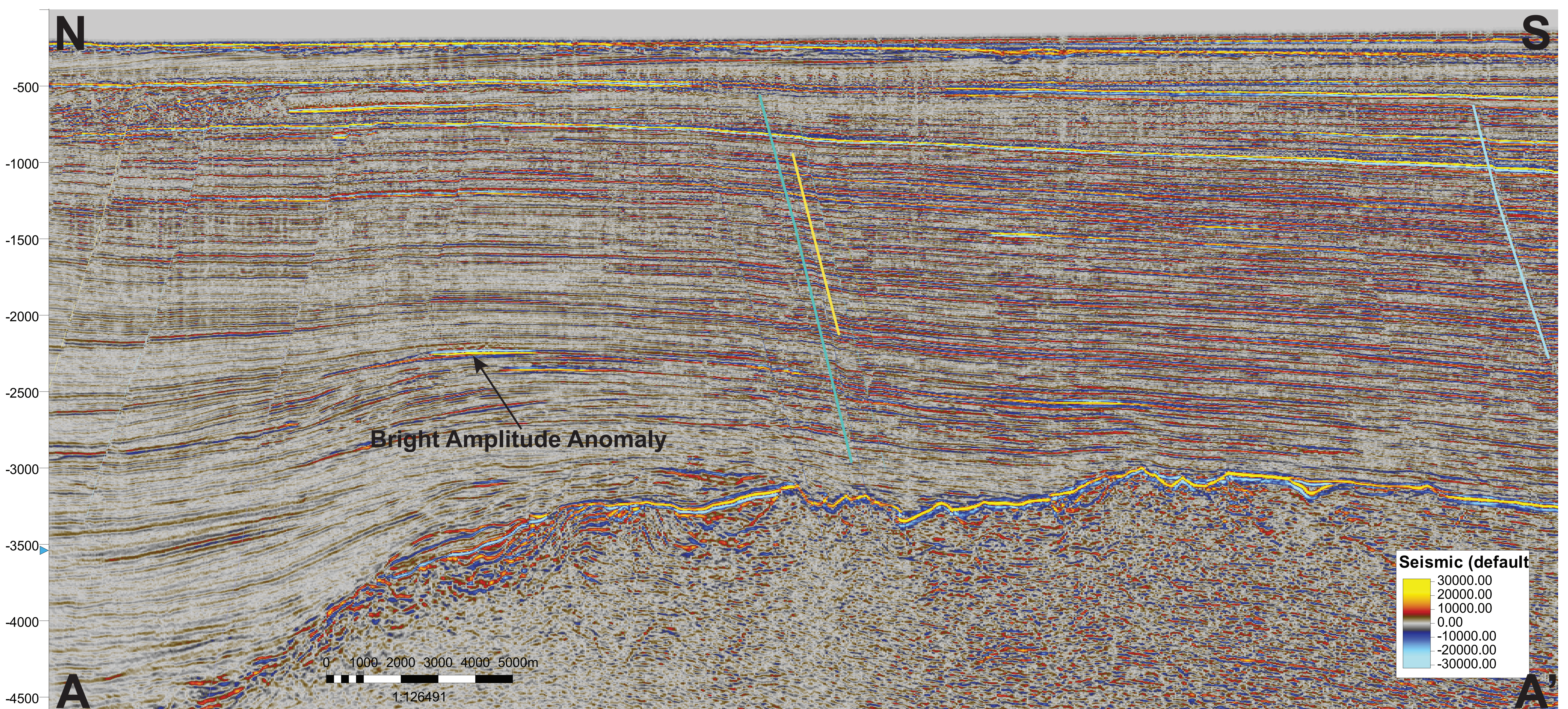
Patao High: NE trending anti-form which plunges to the east and is truncated by a series of NW-SE normal en-echelon faults which formed due to oblique strain tectonics in the region.

North Coast Fault Zone: A major strikeslip fault zone which parallels the north coast of Trinidad and consists of two main fault segments with numerous accompanying normal faults.

Source & seal: Intraformational shales
Reservoirs: Plio-Pleistocene shoreface sands (M-series)
Reservoir Depths: 500m to 3500m
Reservoir Quality: ϕ =20% to 30%, N:G= 35% to 55%
Trap Types: Stratigraphic or combination
Migration: Along carrier beds or non-sealing faults.



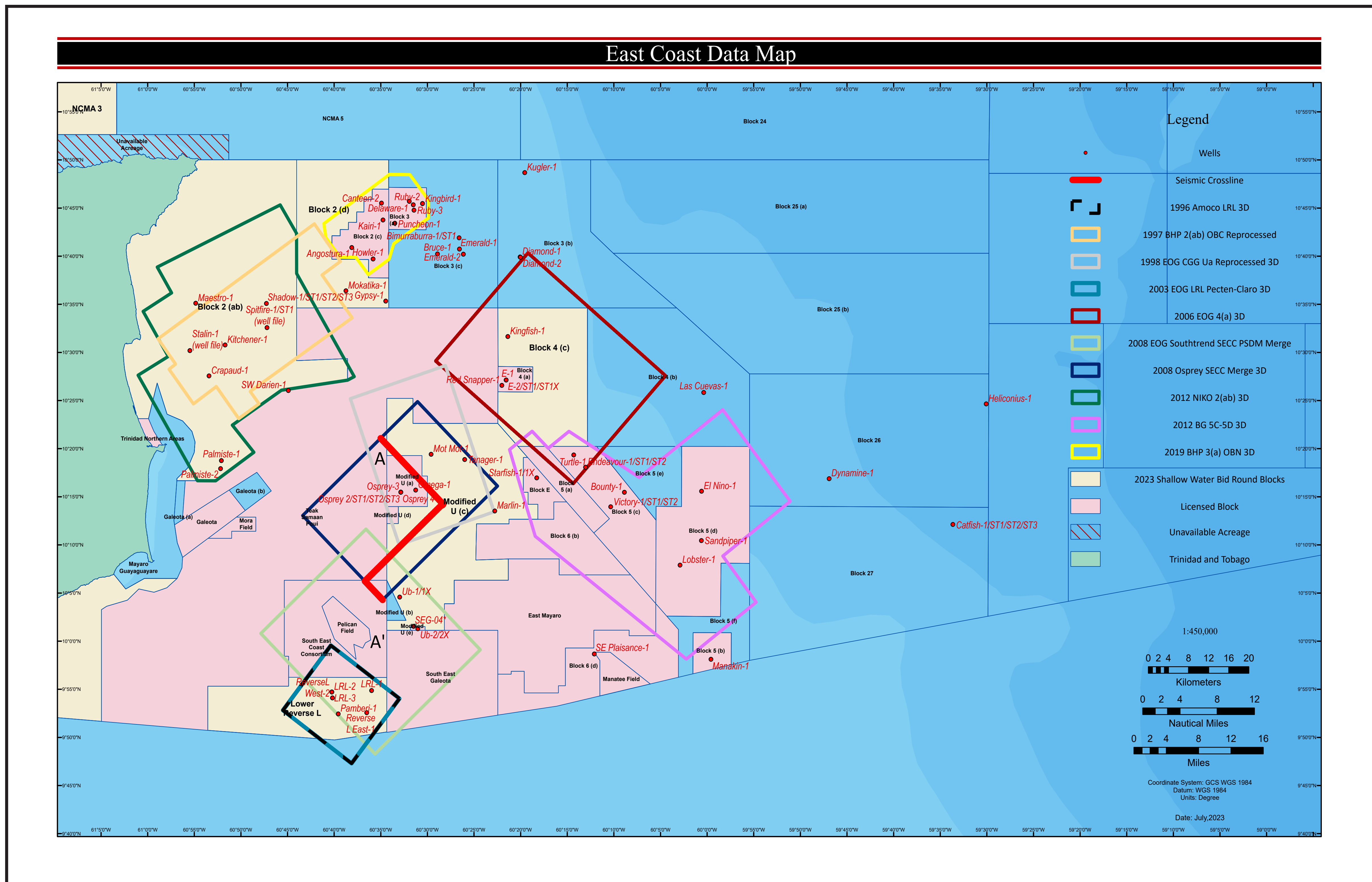
Gas-bearing reservoirs are well imaged on seismic data due to the high acoustic impedance contrast between the gas-bearing sands and the encasing mudstones.



EAST COAST MARINE ACREAGE

Blocks 2(ab), 2(d), 4(c), U(c) and Lower Reverse L are available for competitive bidding. They fall within the prominent Columbus Basin, which accounts for most of Trinidad and Tobago's natural gas and condensate production. Although the acreage has been highly explored since the late 1960's, there are exploration opportunities in the complex stratigraphy and deeper structures of the basin.

East Coast Blocks Data Map



Available Data

- Over 2000km² 3D seismic coverage
- Over 50 Exploration and Appraisal Wells

PETROLEUM SYSTEM

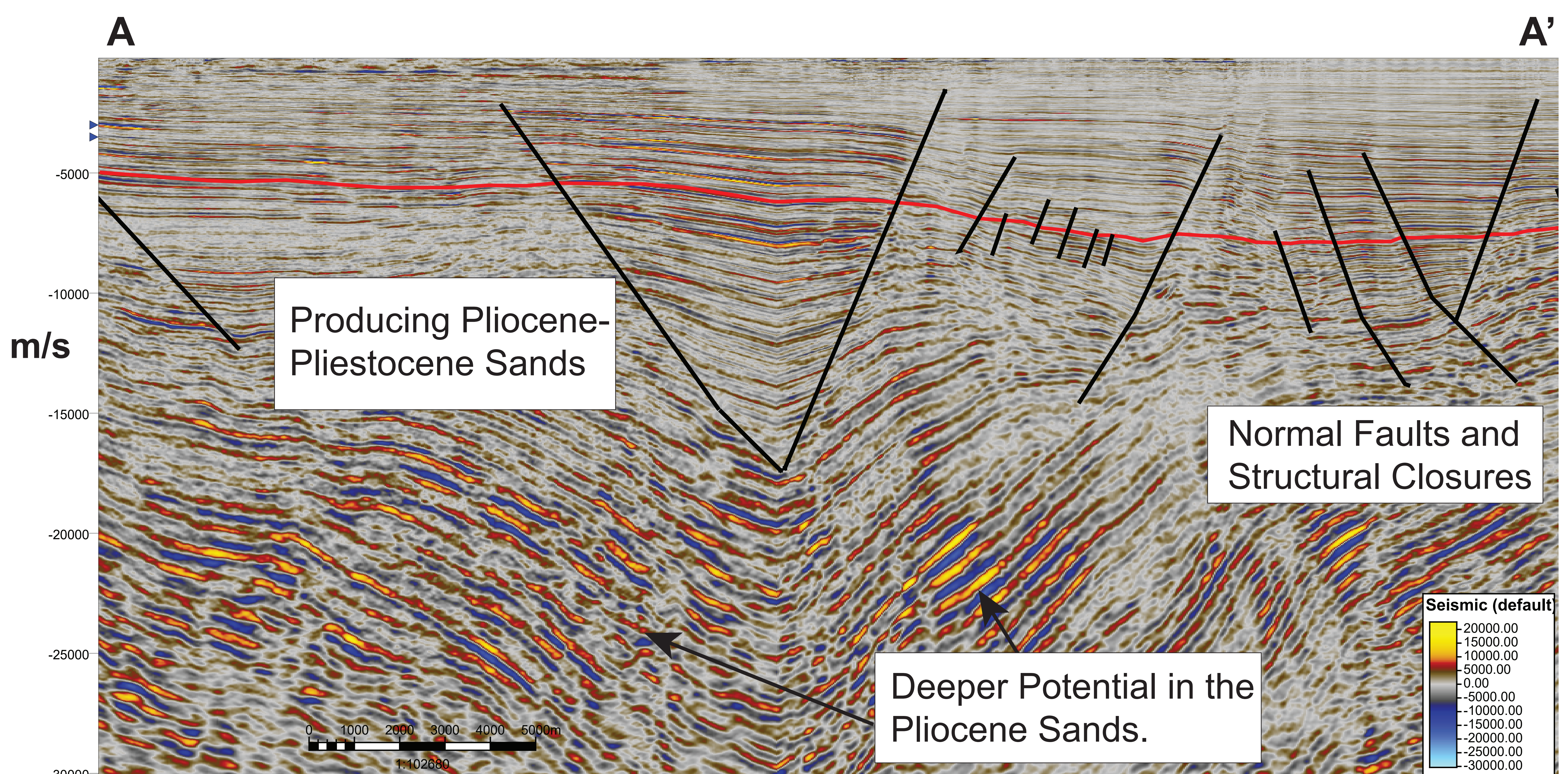
Source Rock - Organic rich mudstones that are cretaceous in age. They are primarily from Type II and Type III kerogen.

Trapping and Migration - Generally, structural three-way and four-way fault closures are seen with some stratigraphic pinchouts. Types of migration include, large down-to-the-basin, extensional normal faults and through hydraulically induced fractures within a highly over-pressured section.

Reservoir Rocks - Clastic sedimentary rocks in the Columbus Basin which were supplied by the Paleo-Orinoco Delta System are of Pliocene and Pliestocene in age.

Seals - Interbedded shales of pliestocene age with medium to fine grained sandstone reservoirs.

Fluid Type - Biogenic gas in the shallow zones with oil/condensate in the deeper zones.



Crossline highlighting geological structures

WEST AND SOUTH COAST SHALLOW WATER ACREAGE

West Coast - Block 1(b)

Block Overview

- Block 1(b) is located in the Gulf of Paria and has proven oil, condensate and biogenic gas reservoir sands
- The block is approximately 578 km² in size
- Water depths within the block range from 0-50m

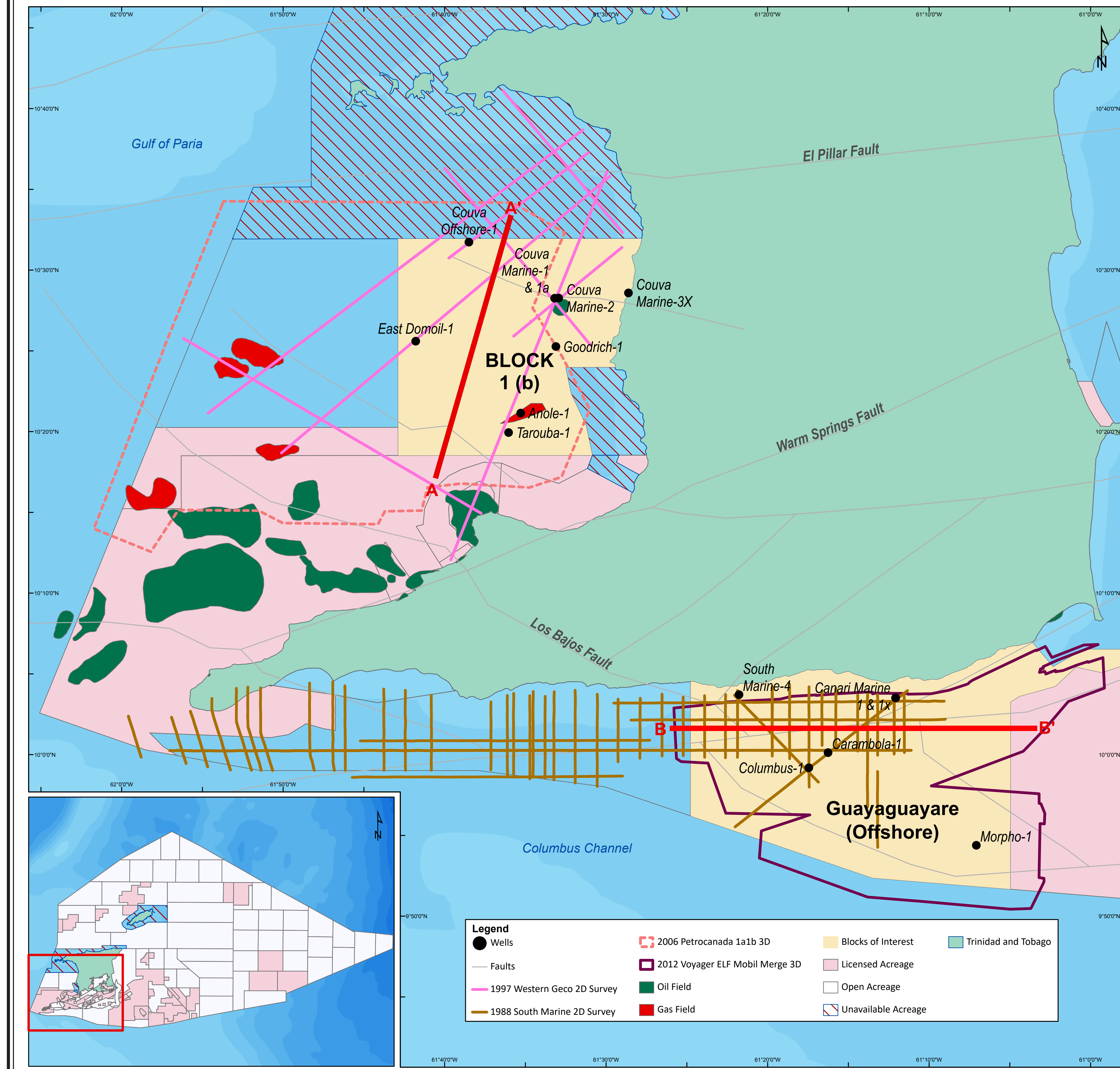
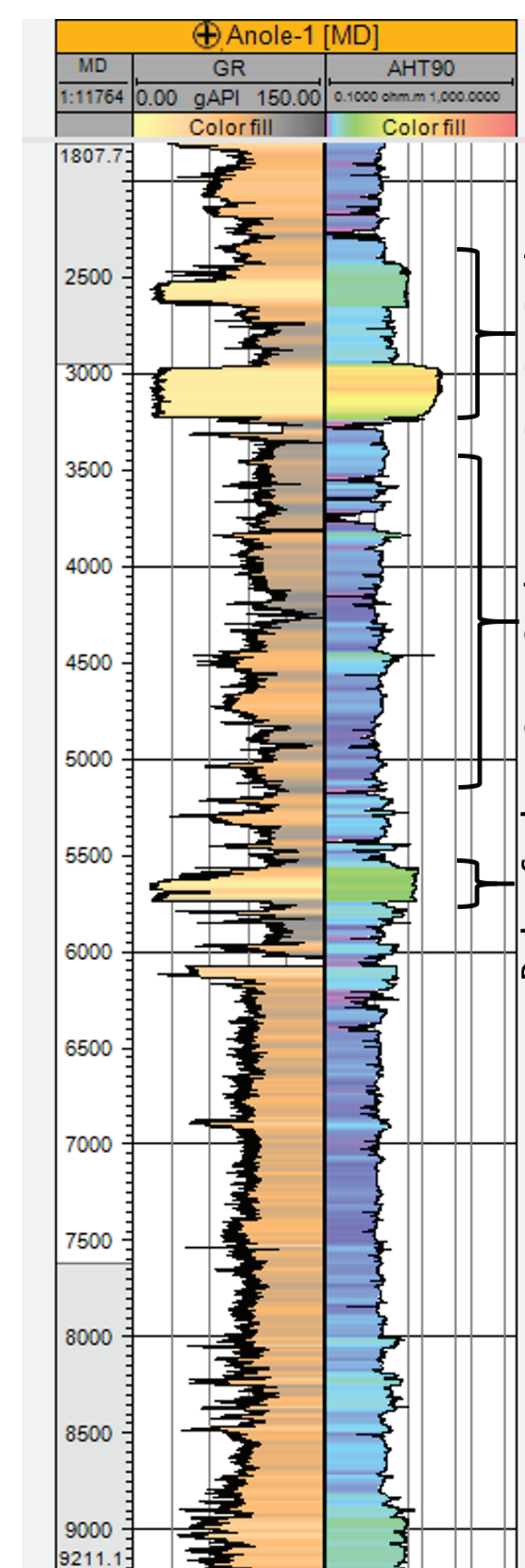
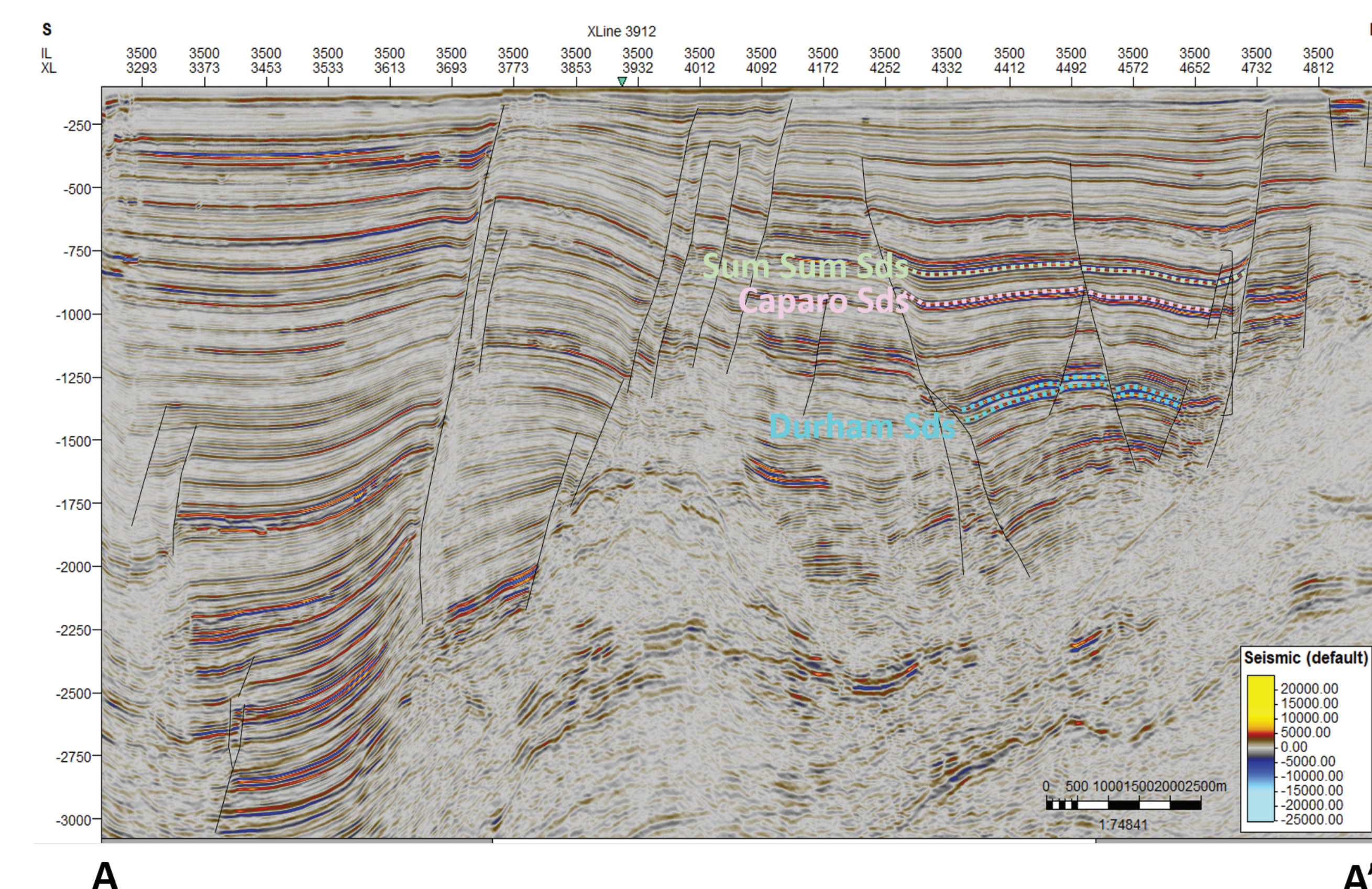
Key Geological Features

- Gulf of Paria Pull-Apart Basin:** Compressional basin comprising of NW verging thrusts, resulting from wrenching along the El Pilar Fault
- Warm Springs Fault:** SW-NE trending trans-tensional fault system

Petroleum System

- Source:** Miocene -Pliestocene Brasso and Manzanilla Formations
- Reservoir:** Pliestocene Manzanilla, Springvale and Talparo Formations
- Reservoir Properties:** Porosity: 15-33%, Permeability: 190-260 mD and Water Saturation: 45-60%
- Trap:** Combination of Structural and Stratigraphic
- Seal:** Overburden and Interbedded clays
- Migration:** Occurs along main fault lines and fractures

Production: 226 Mbbls from Couva Marine Field



South Coast-Guayaguayare Offshore

Block Overview

- Guayaguayare Offshore is located in the Columbus Channel
- The block is approximately 817 km² in size
- Water depths within the block range from 0-75m

Key Geological Features

- Columbus Basin:** Trans-tensional continuation of the Eastern Venezuela foreland basin, comprised of southern thrust belts and eastern dipping growth faults
- Los Bajos Fault:** NW-SE trending right lateral wrench fault system

Petroleum System

- Source:** Cretaceous Naparima Hill and Gautier Formations
- Reservoir:** Plio-Pliestocene Palmiste, Mayaro and Gros Morne Formations
- Reservoir Properties:** Porosity: 14-30%, Permeability: 200-1000mD and Water Saturation: 20-30%
- Trap:** Combination of Structural and Stratigraphic
- Seal:** Intraformational shales
- Migration:** Occurs along main fault lines and fracture systems

Data Available

Block 1 (b)

Wells

- Nine (9) Wells: Anole-1, Couva Marine -1, 1a, 2, 3x, Couva Offshore -1, East Domoil-1, Goodrich-1, Tarouba-1

Seismic

- 2006 Petro-Canada 1(a) & 1(b) 3D Survey
- 1997 Western Geco 2D Survey

Guayaguayare Offshore Wells

- Six (6) Wells: Canari Marine 1 & 1x, Carambola-1, Columbus-1, Morpho-1, South Marine-4

Seismic

- 2012 Voyager Mobil ELF 3D Merge
- 1990 Mobil 2D Survey
- 1988 South Marine 2D Survey

