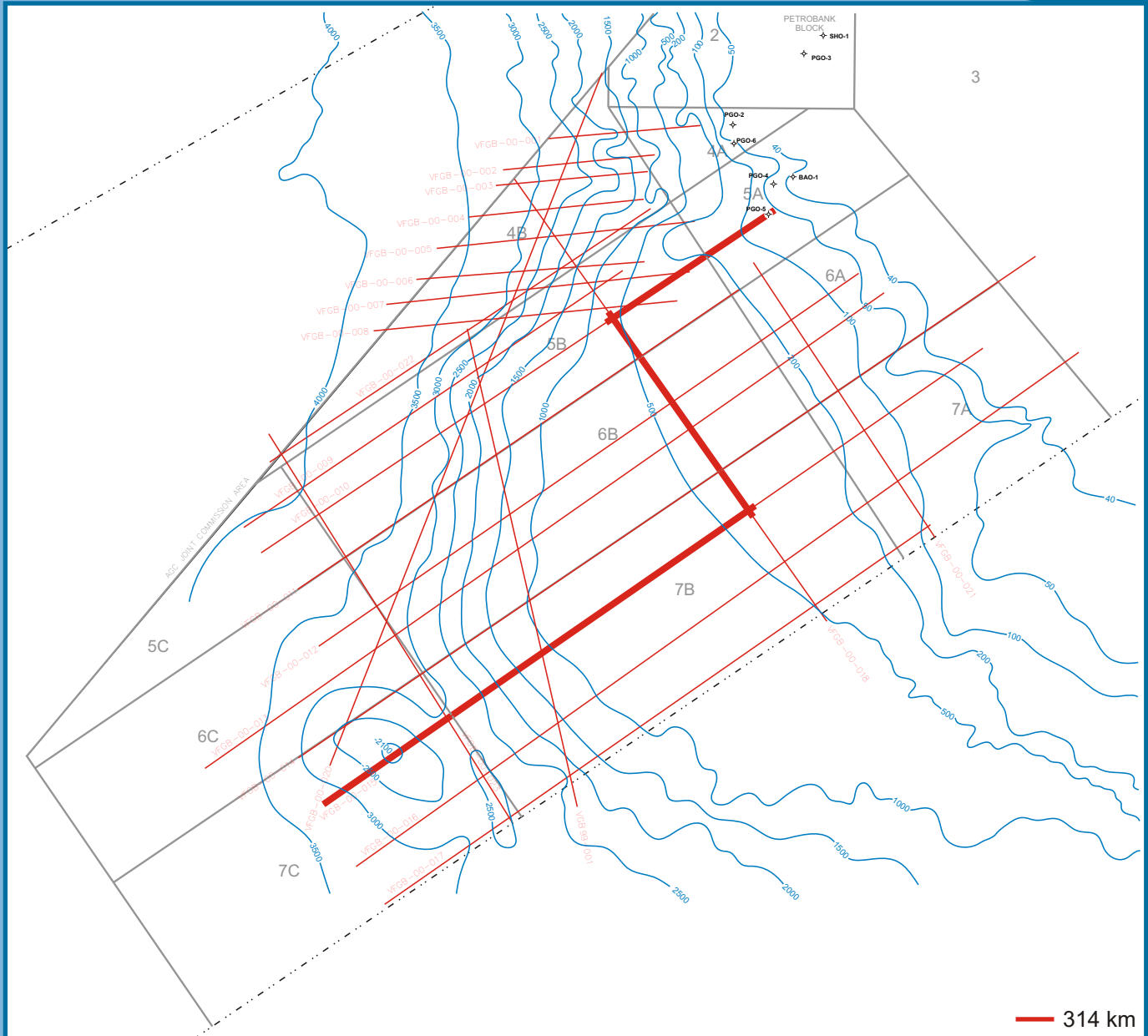


ACOUSTIC IMPEDENCE INVERSION PROJECT GUINEA BISSAU DEEP WATER SEISMIC DATA



- **New seismic over a deep-water area without previous coverage**
- **Lithology interpreted from Acoustic Impedance Inversion**
- **Shipboard acquired gravity and magnetic data included for each new line**



ACOUSTIC IMPEDENCE INVERSION PROJECT GUINEA BISSAU DEEP WATER SEISMIC DATA

VERITAS DGC and partner FIRST EXCHANGE Corporation recently acquired 3,726 km of new 2D seismic data covering the deep-water Guinea Platform Margin off Guinea Bissau. This new program was acquired to provide control over the half of the Guinea Bissau offshore area that previously lacked available seismic coverage. The new GB deepwater data grid was then supplemented in 2002 with a well-tie seismic line to DSDP367, and shelf control is provided by our newly reprocessed shelf spec data.

Multiple new exploration opportunities are evident. In-board of the NW African Margin carbonate bank, these include both fault block and stratigraphic traps with affinity to those present along the West Australia shelf. Reservoirs are predicted to consist of carbonates and sandstones. A thick, grainstone unit caps the carbonate bank, and large-scale rotational structures are present below the ocean-wards crest of the bank.

Our new seismic revealed a 4500 sq. km deltaic complex lying outboard of the carbonate bank, more than 300 kilometers from the mainland in water depths that rise up to only 2,100 meters. We attribute it to the proto-Amazon delta, and place it early Cretaceous in age. Seismic stratigraphy shows indications of deep-water fan deposition within paleo-relief controlled by the carbonate bank slope. Giant field potential is evident. Our recently completed Seabed Piston Coring Geochemical Program with TDI-Brooks has sampled the entire deepwater area, including regions of seismically and satellite defined seepage. Heat-flow measurements, together with paleontological cores from the delta complex, were also acquired.

So to predict and enhance the deepwater Guinea Bissau reservoir and hydrocarbon charge properties, we had the Seismic Rock Properties Group at VERITAS DGC use a long regional composite line of our new deepwater seismic data. This synthesis and process employed the Acoustic Impedance Inversion process to anchor on the salt-basin situated shallow water PGO-5 well, cross the Guinea Marginal Plateau, and connect into the newly indicated deepwater delta. This inversion technology has been successfully utilized in field delineation and extrapolation by VERITAS in control areas to enhance risk predictions.

Basin modeling by GES then was employed to predict pseudowells using the existing well control for a source succession to indicate the level of maturation for oil generation.

ACOUSTIC IMPEDENCE INVERSION PROJECT

GUINEA BISSAU DEEP WATER SEISMIC DATA

Deliverables for this project are:

1. SEG-Y data for segments of lines VFGB00-010, VFGB00-015, VFGB00-018 in the form of both post-stack time, and post-stack depth conversion displays.
2. Acoustic Impedance Processing results for the composite line transverse.
3. Shipboard acquired Gravity and Magnetic 2D profiles along the line traverse.
4. Geoseismic profiles with interpreted horizons tied from the shelf well control.
5. Piston Core data consists of 1-Paleo core, 2-Heatflow cores, & 3-Geochem cores.
6. Maturity modeling from 4 unique pseudo-well locations, on the shelf, the shelf edge, the slope, and the indicated Proto-Amazonian delta complex.
7. Our written geotechnical discussion throughout relates the geophysical, geochemical, and the geologic hard data to the indicated predictions, synthesizing the methodologies & techniques to our newly obtained geologic knowledge of the DeepWater Guinea Margin.

Acoustic Impedance anomalies are present in multiple settings along the length of the traverse. The excellent fit with the peak Oil Window as determined by the basin modeling suggests that migrant hydrocarbons are present in a wide variety of traps.

Total package cost is: **US \$125,000**

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