Polarcus Workflow Solutions

Time is money, and in a fast moving world the pressure to take quick and accurate decisions on key exploration milestones is greater than ever. To help clients cut exploration time, reduce costs and mitigate drilling risks, Polarcus offers RightFLOW™. This is a unique approach that seamlessly integrates and accelerates every step of the seismic data acquisition and processing workflow, from the initial survey design through to the delivery of final data and interpretation products, tailoring the workflow for any given geologic and geophysical environment. The result will enable clients to make better informed decisions about potential well commitments earlier in the exploration cycle.

The RightFLOW™ proposition, which is the product of a data processing collaboration between Polarcus and DownUnder GeoSolutions (DUG), can itself be structured in different ways to suit individual client requirements. For example, comprehensive onboard acquisition QC followed by full onshore processing; ultra-fast advanced onboard 3D processing followed by a more complex onshore processing sequence; or a combined offshore / onshore flow that passes an onboard processed intermediate dataset to a DUG onshore processing centre for more sophisticated multi-channel noise attenuation, velocity analysis, regularization, and time and/or depth imaging.

RightFLOW™ provides the optimum balance of offshore and onshore efforts, tailored to generate exactly the right product deliverables in exactly the right time frame.

See overfold for more information.
Scenario 1

The client has limited time remaining in his ‘drill or drop’ license and requires a high quality 3D survey to assess whether to commit to a well. The target is a sub-salt Carboniferous play in water depths of < 80 m.

Results

Pre-survey work by Polarcus experts ensures optimal survey design recognizing multiple shallow water hazards and infrastructure constraints. Low frequencies are enhanced through onboard broadband de-ghosting on a Polarcus 3D vessel to image the sub-salt Carboniferous target horizon, with a pre-stack time migration output prepared for an initial interpretation. Velocity data are merged with legacy data onboard to build a complete velocity model which is delivered to the onshore DUG facility. A full pre-stack depth migration sequence is run at an onshore DUG processing facility.

A depth migration product delivered to the client in quick order with no compromise to quality enabling a drill or drop call to be made with confidence in the available time.

Scenario 2

The client has a producing oil field in a mature basin where production has been declining faster than model. A baseline high-density 3D survey had been acquired some years earlier and the client now wishes to acquire a monitor survey to update the reservoir model and identify possible bypassed oil.

Results

Reprocessing of the existing baseline survey is undertaken at a DUG onshore facility with pre-stack de-ghosting to enhance overall bandwidth, especially at low frequencies. A 4D monitor survey is designed by Polarcus and DUG experts to ensure source and receiver repeatability. Onboard a Polarcus vessel acquisition QC is performed to ensure overall data quality, perform operational optimization such as feather matching, QC of 4D repeatability, and preparation of de-ghosted shot gathers to be sent back to the onshore DUG facility. A full 4D processing sequence is subsequently undertaken at an onshore DUG processing facility.

A high quality 4D monitor survey is delivered in a timely fashion enabling the client to update the reservoir model with confidence and plan for infill drilling to recover falling production levels and extend the life of field.