PG4 2-D & 3-D SEISMIC DATA INTERPRETATION

PETRO-TEC **IN-HOUSE**

COURSE OVERVIEW

This course is intended to give in-depth knowledge in Seismic Interpretation using advanced techniques. Step-by-step procedures will be discussed and many case examples will be studied.

WHO SHOULD ATTEND

Geophysicists, geologists, production geologists, and petrophysicists.

COURSE CONTENT

- **Seismic Reflection Interpretation:**
  - Introduction to structural and stratigrphic seismic events.
  - Assumptions made in data processing, seismic resolutiona.
  - The seismic amplitude, reflection characteristics, reflection continuity and reflection features.
- **Planning and preparation for the seismic interpretation:**
  - Well data required, well data corrections, time-to-depth conversion of well data.
  - Generation of synthetic seismograms and examination of well synthetics-to-seismic data tie at well locations.
- **Horizon Interpretation:**
  - Define key seismic events for interpretation.
  - Tracing and time picking of a seismic horizon.
  - Naming of reflections.
  - Interpretation of seismically and geological complex areas.
- **Fault Interpretation:**
  - review fault types and their features on a seismic section.
  - Fault picking on the seismic data.
  - Using of time-slice for fault interpretation.
  - Fault cuts, fault interpretation on 3-D data volume.
  - Calculation of fault heave.
  - Fault polygons, and fault mapping.

- **Time-depth Conversion:**
  - Production of horizon-velocity maps.
  - Review available time- depth conversion methods, and using well data for time- depth conversion.
- **Presenting the Results of Interpretation:**
  - Structural and horizon maps in time (isochrons).
  - Generation of time-thickness maps (isochore), horizon-velocity maps.
  - Time-to-depth conversion of picked seismic events.
  - Generation of horizon depth maps, testing and correcting horizon-depth maps at well control points, and QC structural and horizon produced maps.
- **Mapping and Volumetrics:**
  - Horizon and fault maps.
  - Gridding of picked horizon and fault maps.
  - Data interpolation and smoothing, computations of isopach maps.
  - production of reservoir characteristics (i.e. porosity and pore-fluid saturation over the field) maps, definition of OWC, GOC, and GWC.
  - investigation of reservoir compartmentalisation for volumetric computations and reserves' computations.

THE LECTURER
ONE OF PETRO-TEC CONSULTANTS