Advanced Petroleum Geology

Duration: 5 days

Location: Kish Island , Iran (for Course CNPC Company)

Number of Participants: 18

Required Starting Date: No Later than Sep.28, 2013

Course Content

• HSE aspect

• Definition and scope of Petroleum Geology

• Course objective

• Course plan

• The petroleum system

• Origin of petroleum

• Source rocks and their sedimentology/stratigraphy; Kerogen, Maturation and measures of maturity; geochemical analysis; oil- source rock typing.

• Properties of petroleum

• Composition and occurrences of oil and gas.

• Primary and secondary migration mechanisms

• PVT fluids and properties

• Fluid production

• Structural geology and sedimentary basins; Basin categories; Basin types by tectonic setting

• Basin types; Types and seals; Definitions ; Trap types and modes of origin; Sealscalculating

seal capacity; Seal rock types

• Exploration geology

• Stratigraphical methods(litho-bio-and sequence stratigraphy); Depositional facies and reservoir models for exploration and development

- Seismological methods; Other geophysical methods
- Subsurface geological mapping and sections.
- Operational geology; well logging and evaluation; mug logs; driller's logs.
- Sampling and description
- Core description; analysis shortcomings and interpretation.
- Petroleum reservoirs; definitions; reservoirs rock properties in clastic and carbonate sediments; determination of reservoir properties; properties from petrophysical measurements laboratory and logging.
- Fractured reservoirs
- Properties, saturation, wettability, capillarity, capillary pressure, formation factor, recovery efficiency.
- Reservoir flow units and definition of flow unit, baffle, barrier and petrophysical rock type.
- Evaluation flow unit quality; definition petrophydical rock types.
- Influence of digenesis' on reservoir characteristics.
- Prospectivity
- Uncertainities and their mitigation.
- Correlations, mapping of prospects; volumetrics and economic evaluation of prospects, POS.
- Geology and field development
- Examples of fields
- Course evaluation.