

Reserves Assessment

Integrated geoscience approach to boost reserves



INDUSTRY CHALLENGES

Renewal

Declining reserves usher in the need to accurately identify new areas of prospectivity, consistently, from basin to basin to renew reserves.

Evaluation

Finding the most profitable reserves (liquids or gas) requires an integrated geoscience modeling approach to identify type, volume, location, and stratigraphic layer.

Uncertainty

In greenfield exploration, it is a must to know what hydrocarbon volumes are in place, as well as the probability of successful production.

INTEGRATED GEOSCIENCE SOLUTIONS

RESERVES ASSESSMENT ADVANTAGES

- Provides a consistent approach to reserves estimation through the expertise of experienced independent consultants
- Delivers subsurface evaluations and risked hydrocarbon volume estimates using a proven integrated geoscience workflow
- Highlights the subsurface using 3D petroleum systems modeling, with detailed layer-by-layer input

MULTI-YEAR INTEGRATED STUDY DELIVERED AHEAD OF SCHEDULE FOR KGOC

Experts from the Kuwait Gulf Oil Company (KGOC) and CGG's Geoscience team worked together to identify resource growth potential in the mature, onshore Partitioned Zone (PZ) between Kuwait and Saudi Arabia five months ahead of schedule. By integrating geoscience capabilities, from geological control through rock physics and seismic inversion to 3D petroleum systems modeling, they were able to identify and build a risked prospect portfolio that will extend the hydrocarbon potential of the PZ until the mid-21st century.



Mr. Abdullah Al-Sumaiti, Acting CEO & DCEO Planning & Commercial Affairs, KGOC (left), and Mr. Mohammad Al-Haimer, DCEO, Joint Operations, KGOC (right), receiving the Exploration Portfolio Catalogue from Dr. Guy Oliver, VP, CGG Geoscience & Project Director (center).

KEY RESERVES ASSESSMENT DELIVERABLES*

Petrophysical database

- Full conditioning and standardization across the basin
- Rock physics modeling (as required)



Seismic interpretation and inversion attributes

- Key horizon and structural element mapping in time and depth
- Advanced seismic inversion and attribute mapping
- Velocity modeling



3D petroleum systems model

- Model building to highlight history of hydrocarbon generation, migration, and accumulation
- Map generation of remaining source rock potential and hydrocarbon accumulations in place



Exploration portfolio

- Prospect and lead identification
- Probability of success assessment
- Risked volumes



*Assuming extensive well and 3D seismic data set available

RESERVES ASSESSMENT ADD-ONS

Exploration campaign budget planning	Forecasted budgetary expenditures and drilling plans, with time-shifted economic values aligned to client’s long-term strategic objectives.
Remaining reserves assessment for existing fields	Field extensions, infill drilling, assessment of drainage type and area, geocellular model built on a reservoir-by-reservoir basis.
GeoAnalytics	Advanced data analytics to identify production performance drivers within the subsurface from the integration of seismic, geology, and engineering data.

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