Mohamed Karam Abdo Refaei

Reservoir Engineer | Department Head

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PROFESSIONAL SUMMARY

Reservoir engineer with 19 years of experience in Egypt's Western Desert, moving from First Engineer to Department Head at Khalda Petroleum Company. Work covers reservoir surveillance, reserves estimation, well testing, production forecasting, waterflood management and field development planning, including unconventional (Apollonia) and horizontal-well development. Presented technical findings to management, the Ministry of Petroleum and EGPC.

CORE SKILLS

- Reservoir surveillance and performance analysis
- Reserves estimation: volumetrics, decline curve analysis, material balance
- Well testing: RFT, DST, PLT
- Production forecasting and development planning: infill drilling, workovers, stimulation
- Waterflood management and pressure maintenance
- Reservoir simulation and unconventional reservoir evaluation (Apollonia)
- **Software:** ECLIPSE, Petroleum Experts, Ecrin, IP, Bivus, Harmony, Well Navigator, WellStream

PROFESSIONAL EXPERIENCE

Khalda Petroleum Company, Egypt | 2007 – Present

- Department Head | 2019 – Present
- Senior Engineer / Senior Petroleum Engineer | 2014 – 2018
- Engineer / Petroleum Engineer | 2011 – 2014
- First Engineer | 2007 – 2011

Also supervised drilling and workover operations at the rig site from 2008, alongside the reservoir roles.

Reservoir Engineering Consultant, on assignment with INA, Egypt | 2018 – 2019

Responsibilities and achievements

- Ran reservoir surveillance and performance analysis for onshore Western Desert reservoirs.
- Estimated reserves and field potential using volumetrics, decline curve analysis and material balance.
- Designed and interpreted well tests (RFT, DST, PLT) to guide recovery strategy.
- Produced production forecasts and development plans covering infill drilling, workovers and stimulation.
- Supervised waterflood projects, including injection monitoring and reservoir pressure maintenance.
- Worked on two horizontal wells (NRQ-2556H and Razak area).
- Wrote technical reports and presented findings to management, the Ministry of Petroleum and EGPC.

Key projects

- **Reservoir management software and unconventional development (Synergy / Khalda):** worked with Synergy on a study to assess and adapt the IP application for reservoir management and field development planning. Used it to evaluate the Apollonia Formation and helped identify hydrocarbon potential not previously recorded in Khalda's field data.
- **NRQ255 field development study (with Apache and IPR):** modelled two cases in ECLIPSE, one horizontal well against two vertical wells. The simulation favoured the horizontal well, which set the well configuration and development plan.

EDUCATION AND CERTIFICATION

- B.Sc. Petroleum Engineering, Cairo University, May 2006 | Very Good (75.93%)
- IPEP Diploma, Colorado School of Mines, November 2007
- NEBOSH International General Certificate in Occupational Health and Safety, 2022

SELECTED TRAINING

- Applied Reservoir Simulation (Tatweer, 2018)
- Production Data Analysis and OFM (KPC, 2021)
- Integrated Production System Analysis (OGS, 2019)
- Risk and Uncertainty in New Petroleum Industries (OGS, 2019 and 2022)
- Core Analysis and Well Logging Integration (STC, 2017)
- Unconventional Reservoirs (EDS, 2015)
- Water Flooding Techniques (OGS, 2014)
- Well Test Analysis; PVT Analysis and Equations of State (METC, 2014)
- Petrel (Schlumberger, 2011 and 2013)
- Advanced Pressure Transient Analysis and Well Testing (OGS, 2008)

MEMBERSHIP

Society of Petroleum Engineers (SPE)

LANGUAGES

Arabic: native | English: advanced / fluent | Russian: moderate