



## Consultation Services

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# Who We Are?

PSA is a training and consulting company established in Egypt operating from our head office in New Cairo. The company is utilizing a team of talents that built up a robust experience in Training and Consultation for Energy and Industrial applications in Egypt, MENA region, and other countries in Africa and Asian Continents.

## Our Clients:



## Why PSA?

We offer you all required training and consultation projects for your industries through our qualified instructors and experts (Egyptians or Expats) whom have the academic, accredit and operational experiences in their fields with a very competitive price. We are committed to deliver to fulfil your training and Consultations needs with international standards.

We are also very flexible; we can deliver the training & consultants physically in our premises, in yours or any prestigious Training rooms and virtually online within the suitable date of your choice.

We aim to be your first, logical, assured, and reliable choice and to build a long-term relationship for fulfilling your training matrix and to help you in rising the technical quality of your workforce to achieve the most positive outcomes from your operation process safely with highest quality.

# Artificial Lift Technologies



## Cyril Girard

<https://artificial-lift-excellence.com/>

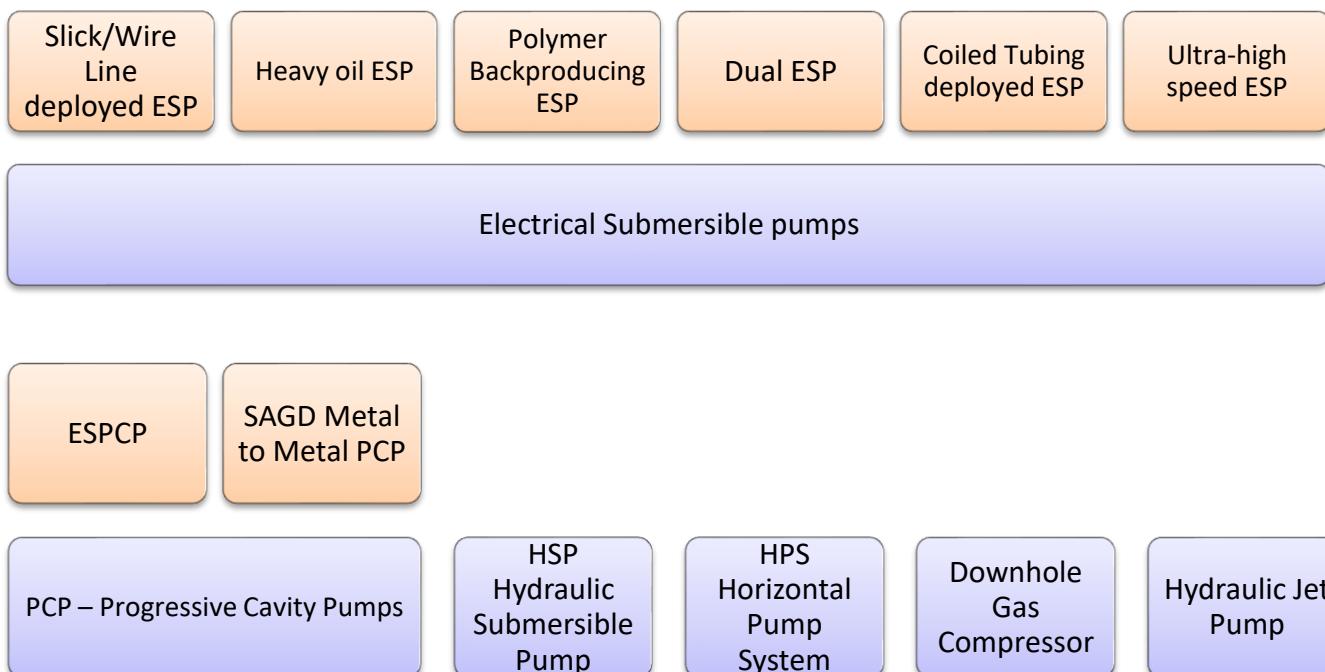
Production Technologist professional with 25 years experience in the Oil & Gas, specialized in Artificial Lift.

### AL Lifecycle Support

- ✓ QAP – Quality Assurance Plan To make sure that equipment is manufactured satisfying customer requirements as well as business objectives, a project specific Quality Assurance Plan is issued.
- ✓ ITP (Inspection and Test Plan) to ensure the purchased equipment is as per specification and contract.
- ✓ Failure Investigation and Remediation for past pump installations and defining shortcomings of failed ones with application of

### AL Technologies selection

- ✓ AL type selection based on well condition: Gas Lift, ESP, Sucker rod, PCP or Jet pump
- ✓ Proper types for special applications like Harsh environment sandy, corrosive fluid, scale , High GOR wells and heavy oil



# Production Technology

We provide all the support to maximize production, revenue and debottlenecking of all production constrains in the system. Our team can collaborate with your company's team to set unique optimization approach that permits the engineer to determine the optimum setting and reduce the downtime. We always keep our eyes on success criteria till achieving the target starting from opportunities framing.

## Well Productivity enhancement

- ✓ assessment of Productivity index and possible damage using Well test techniques.
- ✓ Treatment selection based on Lithology with proven effective solutions (Hydraulic fracturing, Acidizing)
- ✓ Application of best practices for Well stimulation jobs

## Smart completion Decision

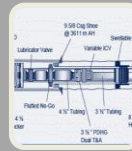
- ✓ Screening Criteria and economics evaluation
- ✓ Design ICVs optimum number, sizes and staging
- ✓ Horizontal well design i.e., optimum horizontal length and ICDs segmentations
- ✓ Multilateral completion and modelling

## Sand Management Strategy

- ✓ Active Sand control decision and selection
- ✓ Sand product monitoring and passive control
- ✓ Through tubing sand control
- ✓ Flow assurance and Erosion limits for 4 phase flow

## Flow Assurance Studies

- ✓ System De-bottlenecking solutions for different Oil and Gas systems by using the power of Integrated Asset Modelling (IAM) from your reservoirs till delivery point.
- ✓ Flow assurance studies to ensure Safe hydrocarbon delive analyses to detect solids formation that clogs the system.



Smart Completion



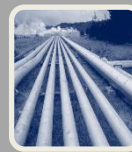
Well Stimulation Design



Artificial lift design



Flow Assurance



Integrated Asset Modelling

# Improved Hydrocarbon Recovery

A comprehensive solution strategy that involves the optimal application of revitalization and engineering options in a timely Amanner. These options for a solution strategy include:

## Assess current asset state by

- ✓ Reviewing Hydrocarbons in place
- ✓ Production analysis, drive mechanism and recovery factors
- ✓ Wellbore conditions, facilities capacity
- ✓ Address near term production issues

## Immediate impact, quick win opportunities "Well-centric Productivity"

- ✓ Looking for well-centric production improvements through Immediate Impact Interventions -
- ✓ Facilities de-bottlenecking and other surface facility improvements
- ✓ Identify new pay opportunities through enhanced re-evaluation of subsurface logs or through additional surveillance programs - "Additional Reserves".
- ✓ Stranded behind pipe reserves for optimum depletion plans.

## Look for improved recovery opportunities "Field-centric Productivity".

- ✓ Increased reservoir contact techniques through infill drilling or additional fracturing/stimulation
- ✓ Implementing improved reservoir surveillance and management techniques
- ✓ Improving production management and recovery through better pressure maintenance techniques
- ✓ Look for opportunities to implement IOR/EOR: increasing oil mobility through injecting combinations of alkalis, surfactants, or polymers.

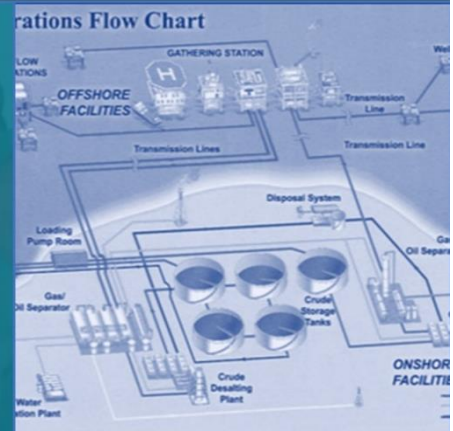
## Build a field re-development plan that includes.

- ✓ Prioritized list of immediate impact intervention
- ✓ Screened and ranked IOR and/or EOR techniques which could include combinations of infill drilling, flooding, or artificial lift programs.
- ✓ Delineated opportunities to exploit new pay

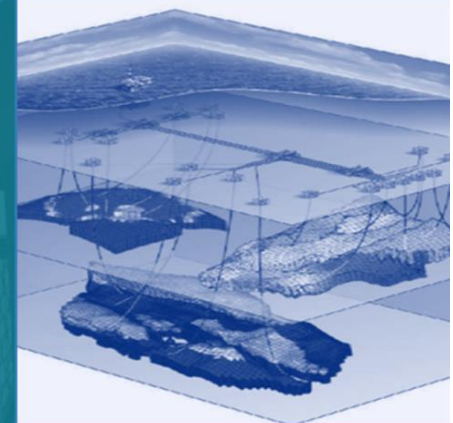
Well Centric



Development Plans



Field Centric



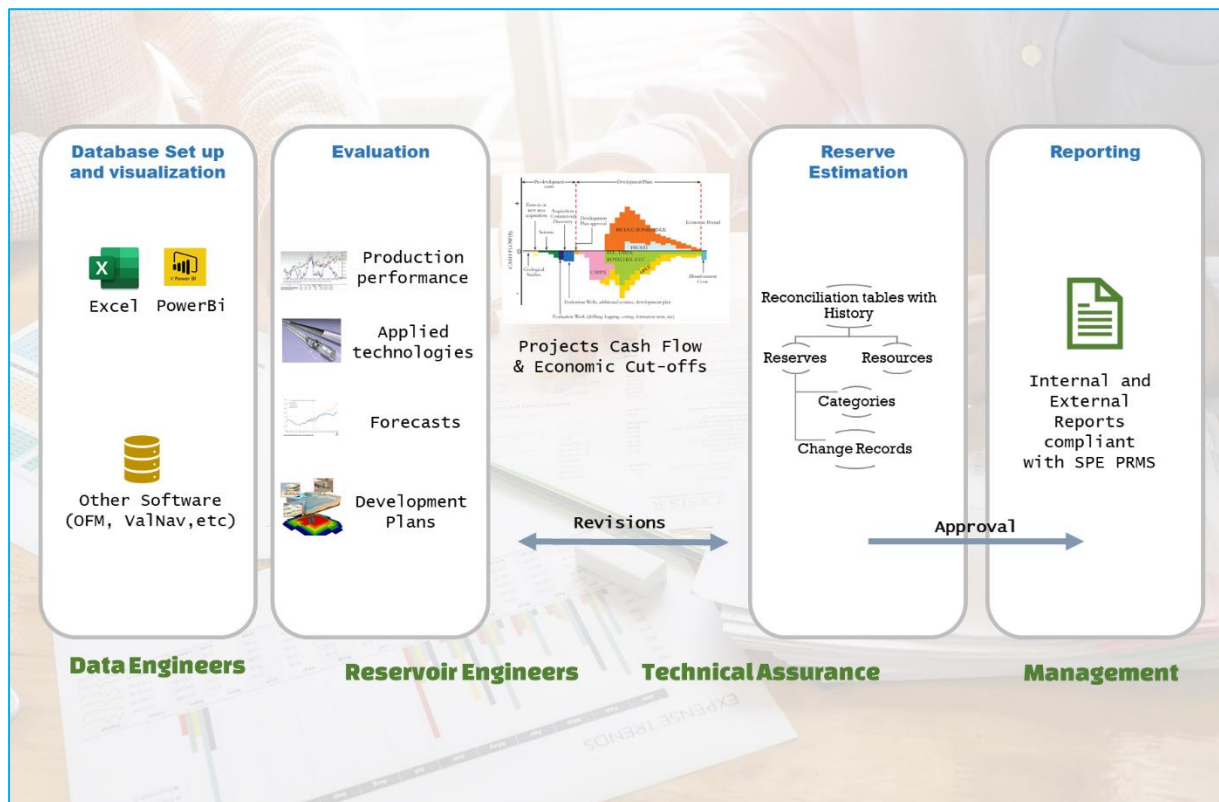
# Reserves and Resources Assessment

Our Experts have accumulated solid Experience with Reserve assessment according to SPE PRMS guidelines are the ideal candidates to help clients with

- ✓ Annual Reserves and Resources reporting
- ✓ Commercial valuation of current assets
- ✓ Acquisitions, Divestments and Mergers
- ✓ Portfolio Management

To eliminates the inconsistency the team follows systematic approach into the reserves management process and brings together the Production data, Accounting system data, Well and Field Event data and current applied Technologies to a common and uniform context. The following tasks comprise the reserves management workflow:

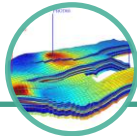
- ✓ Administrative tasks - definition of reserve categories, products, and reasons for change.
- ✓ Data loading – move of data from the transactional workspace where production and economics data is continuously recorded and updated, into the reserve’s reconciliation context where the opening and closing balances are static for the reconciliation exercise.
- ✓ Reconciliation or change tracking and recording of change reasons - in the reconciliation context, for each asset, Analyst considers the difference between the opening and closing positions, and using the predefined reasons for change, and allocates values to the change components.
- ✓ Approval of changes - pass of the explained asset change values and reasons through approval levels usually depending on value.
- ✓ Reporting – internal/external; collate of the reconciled change values by category and product type into reports formatted for either internal or external consumption.



# Subsurface Studies Catalogue

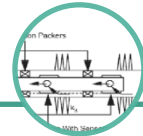
Well-tests Design and Analysis  
PVT analysis and modeling  
Well production data analysis  
Dynamic Volumetrics with Material Balance  
3D Dynamic Modelling  
Field Development surveillance  
Integerated Asset Modelling  
Field Development Plans (FDP)

## Reservoir Engineering



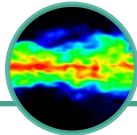
Well Trajectory and Wellbore Stability  
Casing and Tubing Design  
Drilling and Completion Programs  
Horizontal well and Multilaterals  
Artificial lift Design and Evaluation  
Well Stimulation Design and evaluation  
Sand Control and Solid Management

## Well Engineering



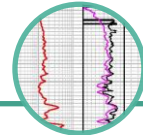
Design of Oil and Gas Pipelines  
Steady and transient flow modelling  
Definition of Operating Envelope, Remediation  
and Mitigation strategies  
Projection of Hydrate, wax, Asphaltene, scale,  
and emulsion  
Resolving Production Allocation disputes  
Nodal Analysis in Production Networks

## Surface Facility/Flow Assurance



Routine and Special Core Analysis  
Conventional Reservoir Evaluation in Sand and  
Carbonates  
Shaly Sand and Thinbedded Reservoirs  
Evaluation  
Pressure Gradients and contacts (MDT/RFT)  
Reservoir characterization  
Saturation height modeling

## Petrophysics



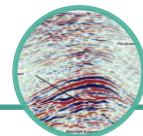
Sedimentation Analysis  
Paleomorphologic Analysis  
Paleotectonic Analysis  
Correlation of Wells Fences  
Reservoir 3D Modeling  
Volumetric of Oil, Gas and Condensate  
Sensitivity and Uncertainty Analysis

## Geology



Preparing a geophysics project and loading all  
the available data  
Horizon & Faults Interpretation  
Generating Synthetic Seismograms  
Depth Velocity Conversion  
AVO Analysis

## Geophysics





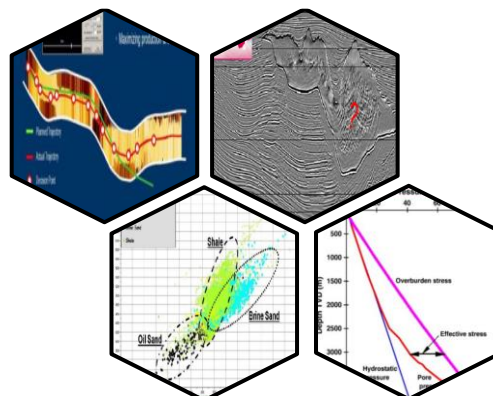
## Mohamed Abdelmonem Eissa,

PHD, University of Oklahoma, Ok, USA

Seismic Reservoir Characterization Services LLC (SRCS)

A Principal seismic petrophysicist, with 25 years industry experience that includes Excellent experience in integrating geological, geophysical, and engineering data to produce reliable products with less uncertainty.

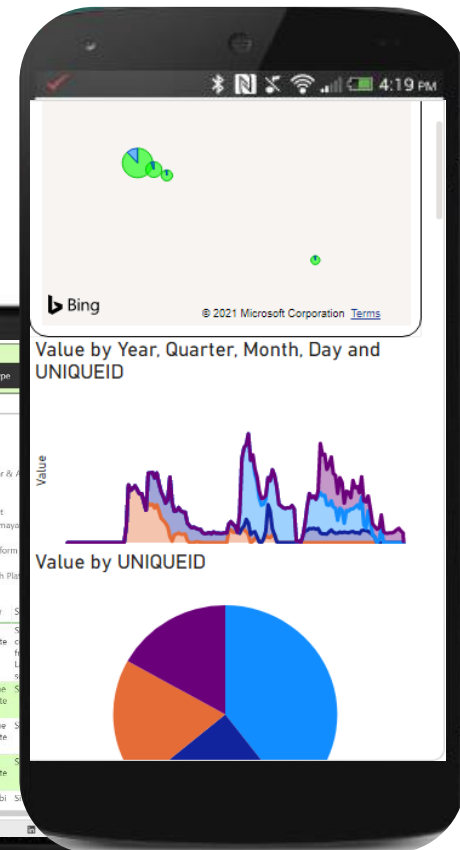
- ✓ **Well log editing and field-wide data consistency**
- ✓ **Quantitative well calibrated seismic (QWCS)**  
The essences of Quantitative Well Calibrated Seismic processing is to use well data guiding and monitoring seismic data processing to provide surface seismic data ready for inversion and seismic reservoir characterization
- ✓ **Petrophysical analysis**
- ✓ **Rock Physics modelling**
- ✓ **Pre-stack Inversion Lithology classification based on rock physics model.**
- ✓ **Pore pressure Prediction (PPP)**  
Local scale (Reservoir): Using AVO inversion results ❖Regional scale (Basin): Using velocity from Tomo Rock physics model for pore pressure prediction
- ✓ **Real Time Seismic Guided Drilling (SGD)**  
Seismic-guided drilling integrates surface seismic and downhole measurements simultaneously while drilling to identify geological and geomechanical complexities. It uses the most accurate model available to help you plan your well design and avoid drilling hazards that may not be apparent until you reach a certain depth.
- ✓ **Heterogenous salt modeling**



# Digitalization & Data Management

Your company had accumulated experience whilst working on different challenges to maximize value and productivity of oil and gas fields. These experience lies within the hard-working employees and a good data management system. We can help you Maximize the value of those by providing several services:

- ✓ Define Talent Network of your company and identify strength and weakness in your team.
- ✓ Organize well data into simple solutions or Industry solutions like
  - Oracle: Our Oracle experts can guide you through high-level projects or support routine Oracle management tasks.
  - SQL Server: our expert team includes specialists with expertise in versions 7 through 2019
  - MySQL: We can help you optimize your MySQL environments.
  - others: DB2, PostgreSQL, MongoDB, and AWS Databases: our experts provide a range of services, including troubleshooting, addressing replication latency issues, scheduling maintenance, enabling new features, and much more.
- ✓ Our Technical experts and data engineers will define data flow paths fit for your company for faster data analysis and decision making.
- ✓ Define Bi solutions for Management and engineers to visualize and download data.



# Our Experts Track Record

## FIELD DEVELOPMENT PLANS FOR MAJOR GAS FIELDS IN MEDITERRANEAN, EGYPT

### Scope

To sustain gas production by drilling new offshore subsea wells in Major fields. The targets are Pliocene turbidities.



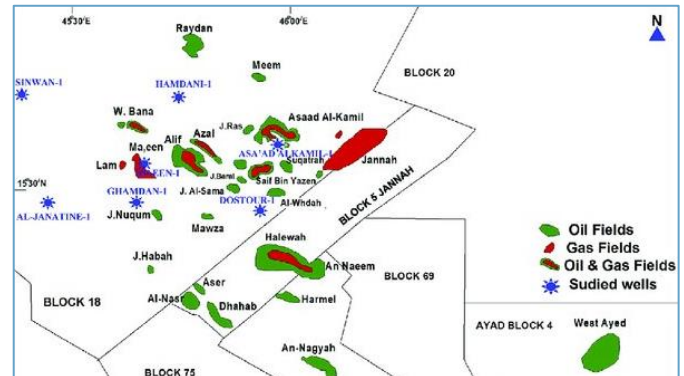
### Included Studies

- ✓ PVT analysis and Tuning EOS for more than 100 samples for gas, gas condensate, oil, and water samples.
- ✓ Built a Database of SCAL data for fields including Core flood studies, Capillary Pressure, formation Damage and Rock.
- ✓ Reservoir Simulation initialization for more than 50 fields including well location optimization, multi segment modelling for smart completion and horizontal wells design with experimental design to capture all uncertainties matrix.
- ✓ History matching of wells performance for more than 20 fields for production forecast and Infill drilling.
- ✓ Well placement and design optimization using uncertainty packages for maximum recovery.
- ✓ Coupled Reservoir Simulation modelling for the full network for full reserve estimation process for the company.

## PROJECT +10 KBOPD FOR BLOCK 18 CONCESSION ,YEMEN

### Scope

Complete study from reservoir to delivery point to maximize oil and condensate production from mature gas cap and gas condensate fields.



### Included Studies

- ✓ Integrated reservoir studies for 6 oil rim, gas condensate fields with gas injection since 1985.
- ✓ Gas Project upgrade analysis of the need of new compressors. Full Nodal analysis and bottle necks detection of the gas fields (Raja-Asaad El-Kamil- ...) was done. The purchase of the compressors was not needed as lower costs debottlenecking was done because of the study.
- ✓ Evaluation of Gas Injection and Gas Recycling Projects (used new analytical method for correction of Oil rim production volumes and differentiate it from condensate volumes which is produced under continuous gas recycling)
- ✓ Identification of bypassed oil areas in the oil rim to be targeted by infill drilling and intervention.

# Our Experts Track Record

## EARLY MONETIZATION PROJECT, MALAYSIA

### Scope

Acceleration of 5 infill wells and Gas Lift optimization for existing wells



### Included Studies

- ✓ Setting WAG and water Injectors patterns design and cycles for existing wells.
- ✓ Implementation of Natural Gas lift utilizing existing gas intervals to assist artificial Gas lift for proper gas lift distribution.
- ✓ Material selection for DEMP project for harsh CO<sub>2</sub> and H<sub>2</sub>S environment from reservoir souring issue.
- ✓ Migrate to smart completion for highly deviated wells and Implementing More Than 50 Smart completion wells.
- ✓
- ✓ Study of implementation of Harsh environment Intervention ESPs for depleting wells
- ✓ Auto Gas Lift for deepening the point of injection and maximizing the production rates.

## INTEGRATED RESERVOIR SIMULATION STUDIES FOR MATURE FIELDS IN EGYPT ,LIBYA AND SOUTH SUDAN.

### Scope

Revisiting mature oil fields for potential infill drilling and intervention to sustain production.



### Included Studies

- ✓ Plan for infill drilling and possible interventions for mature 7 oil Carbonate reservoirs with water flooding since 1975 (NC171 -103C -103B-103T- Aswad- Safsaf and Zella). Block 103 Concession, Libya.
- ✓ Infill drilling planning for an offshore oil field in Gulf of Suez, Egypt. It comprises Palaeocene Nubian sands laying over fractured basement.
- ✓ Applied smart techniques for fluid identification during field simulation study for heavy oil fields in South Sudan. The main uncertainty was in fluid type as heavy oil was fresh water as connate water making it not easily differentiated by conventional methods.
- ✓ Development wells planning for Banda Gas field offshore Mauritania.

# Our Experts Track Record

## INTEGRATED ASSET MODELLING FOR OFFSHORE GAS NETWORK, MEDITERRANEAN

### Scope

Detecting production bottlenecks in wells, Liquid holdups and slugging in the system and optimize configurations for least backpressure with maximum gas rates.

### Included Studies

- ✓ Building Gas Network IAM for more than 70 wells to identify the value of Compressors staging and Re-wheeling.
- ✓ Screen failure analysis and well operating envelopes for more than 60 lower completions wells
- ✓ A study to evaluate the purchase of a new MEG unit using Coupled simulation model and GAP IAM model with Excel to detect the future MEG quantities.
- ✓ Implementation of a new Export pipeline for the company. The study included the development of operation envelope (Holdup, Erosion, hydrates and wax deposition, Corrosion management) for the pipeline, the impact on reserves using coupled simulation model and company's integrated asset model (IAM) built on GAP software and the use of Enthalpy and Heat Transfer models in Prosper Software.
- ✓ Well modelling and performance evaluations workshops.
- ✓ Tubing sizing for more than 100 of wells to avoid bottleneck the well potentials with cost optimization.

## FDP AND PRODUCTION DEBOTTLENECKING FOR WESTERN DESERT OIL WELLS, EGYPT

### Scope

Planning for infill wells, reviewing, and optimizing the Workovers and Artificial lift installations.

### Included Studies

- ✓ Comprehensive Database and Production Preparation of previous Runs for ESP & SR
- ✓ Identification of core operational, quality and installation issues limiting Run life of the pumps.
- ✓ Held a series of Pump performance workshops and peer reviews to discuss the performance well by well.
- ✓ Operations monitoring including Water flood Management (Well placement review, VRR, sweep Efficiency... etc.) in reservoir and pumping efficiency (ESP, Sucker rod, jet pump, gas lift) evaluation.
- ✓ PVT and tracer analysis to solve gas condensate and volatile oil allocation problems with other partners.
- ✓ Static and dynamic Volumetric Assessment of all Jurassic to Cretaceous pay intervals
- ✓ Extensive review of development options and expected recoveries from tight and thin bedded layers.

# Our Experts Track Record

## STEAM ENHANCED HEAVY OIL PRODUCTION OPTIMIZATION PROJECT, EGYPT

### Scope

Complete Well Surveillance and data Analysis of production data to reduce bypassed oil and optimize steam injection plan.

### Included Studies

- ✓ Carry out complete surveillance on wells including Well testing and fluid level analysis.
- ✓ Full database of ESP, PCP and SR pumps failure analysis and optimization plans were put in place.
- ✓ Reserve estimation using Volumetric, material balance and Decline curve analysis.
- ✓ Full optimization plan was done for optimum steam oil ratio , injection targets, infill drilling and intervention.

## GIANT OIL FIELD PRODUCTION OPTIMIZATION PROJECT, IRAQ

### Scope

Multilayer Giant field with long production history. Producing layers are fractured carbonates and sandstone. The Reservoir Simulation models needed review and update to be able to optimize work plan.

### Included Studies

- ✓ Evaluate and optimize reservoir and well performance, including water injection surveillance and VRR optimization.
- ✓ Reservoir Management and Reserve evaluation Using Volumetric calculation, Material balance, decline curve analysis, and Reservoir Simulations studies
- ✓ Full review of available reservoir simulation study was done, and the needed enhancements were done to optimize production predictions and future work plans.
- ✓ Infill Well development and detection of bypassed oil zones in very heterogeneous fractured reservoir.

