Ernesto Fonseca

Houston, TX 77098
Ernesto Fonseca | LinkedIn
713.854.7368
ernesto.r.fonseca@gmail.com

Results Driven Energy Sector Leader

Inspire Teams for Bottom Line Impact & Innovation

Impactful energy leader, dedicated to inspiring transformation of bottom-line results and innovation to realize maximum potential in energy sector. Inspire material bottom line (cash, value, and return on investment) by understanding context and focusing efforts of team impact while leading in safety, environmental and regulatory requirements. Lead by example in driving work in a structured, gritty, and transparent manner with strong commitment to also advance development goals of team members and overall goals of company and stakeholders.

Certified SME Production Engineering & Project Manager Mid-Size (US $600M) Capital Developments | Petroleum Engineering Production Operations | Digital Applications | Cross-Functional Team Leadership | Technology Strategy Development & Commercialization | Contract Negotiation & Management

Selected Accomplishments

Material Bottom Line Impact

- Argentina Shale Oil Development: Kept US $ 500M / year capital budget flat and increased Vaca Muerta asset valuation 29% and cash flow 20% over 3 years, with projected 37% growth by end of decade, by reengineering well economics with data analytics, production practices, and optimizing facility development; Recognized as part Shell Asset of the Year 2022 award.
- Appalachia Shale Gas Operations: Reduced OPEX budget 7% and increased total production revenue contribution from 5% to 11% by revitalizing production optimization processes and facility modifications; Recognized as part Shell Asset of the Year 2019 award.
- Technology Commercialization: Secured globally $14M in external research funding and licensing contracts for technologies like low-cost directional drilling and subsea tree, drilling data processing and hydraulic fracturing design software, etc.

Inspiring Leadership

- Argentina Shale Oil Development (Team 25): Elevated team leadership survey results to top quartile with 54% increase by creating a better work experience: improved data management and career development.
- Appalachia Shale Gas Operations (Team 12): Raised team leadership survey results to top quartile with 23% increase through consistent process leadership and empathic team engagement and actions.
- Technology Commercialization Consultant: Secured customer success satisfaction for commercializing 10 technologies in consultation with stakeholders and use of market data and economic simulations.

Production Engineering and Development

- Increased (as site process owner) operational efficiency with intent-based leadership production optimization, managing threats and opportunities, equipment care, and management of change processes.
- Provided production engineering subject matter expert (SME) input for quality decision in hydraulic fracturing design, artificial lift (Plunger lift, Rod Pump, Gas Lift), surveillance strategy, flow assurance, sand management, well testing, gas compression network, water recycling, fluid separation and testing of data analytics and event tracking.
- Optimized chemical costs 15% using laboratory and field data while overseeing operations chemistry program: scale management, hydrate prevention, foam injection, and winterization.
- Managed non-operating developments with partners YPF, Total, and Equinor. Key Focus Areas of deepening HSSE, reducing well delivery costs while improving simultaneous operations and bottom-line performance in cash and production 10% to 15% YOY.

Selected Accomplishments (continued)

Technology Strategy, Delivery and Commercialization

- Argentina Shale Oil Development: Optimized well economics 25% by well completion decisions using data analytics and optimization of friction reducer dosage based on first-in-country well fiber optic implementation. Positioned venture for digital transformation by developing company first comprehensive IT funnel and supported deployment of connected field worker.
- Internal Consultancy Team Leader: Achieved 20-30% cost reduction potential in Permian by advancing to field trial better hydraulic fluid / solid transport with new materials like cement or polymer coatings, shaped particles, and out-of-industry thickening agents. Created access to new software technologies through business development and product delivery via startup companies.
- Led other innovations and delivery in production and petroleum engineering captured in more than 15 patent applications and 10 conference papers.

Professional Experience

SHELL, Houston, TX

Front End Development-Manager and Technology Sponsor, Buenos Aires, Argentina 2021 to 2024
Managed reservoir development with cross-functional petroleum engineering team of 25 members and business delivery (CAPEX US $500M) of 2-rig program for operated and non-operated blocks. Led opportunity management of key facility projects, joint venture blocks and technology program for asset. Oversaw surveillance decisions on sand, choke management and, choice of artificial lift.

Surveillance and Facilities Manager of Shell Appalachia 2018 to 2021
Led facilities field and subsurface office teams, maximizing gas production output 350 wells while maintaining safety and environmental regulatory standards. Served as technical authority for production engineering, flow assurance, providing facility design decisions, improving artificial lift and winterization that advanced system reliability.

Technology Commercialization Manager Deepwater and Wells 2016 to 2018
Developed new processes of technology business development as internal consultant leading customer success strategy, value cost take-out evaluation, business development, and execution of technology commercialization contracts.

Team Leader Production Forecasting and Stimulation R&D for Shale Reservoirs 2011 to 2016
Spearheaded internal consultant subsurface technology team of 10 engineers with $15M to $20M annual budget to guarantee customer success through improvement of technology for shale reservoirs. Contributed technical expertise, screening insights, and competitive intelligence to assist Technology Manager in preparing shale reservoirs technology plan, enhancing quality of strategic decision-making.

Additional Relevant Experience

SHELL, Houston, TX
Production Engineering

- Directed demonstration of all production engineering of In-situ Heavy Oil Upgrade technology pilot in Canada, high gas ratio and thermal envelope (150 to 600°F) with 12% H2S. Included wellhead qualification API 6A, workover techniques, rod pump and gas lift artificial lift design, wireline for flowing gradient surveys, and managed surface viscous oil.
- Drove technology by managing and leading onshore demonstration of novel fluid and heat transfer dynamics in artificial lift (heated gas lift) for offshore heavy oil projects in Brazil (BS4) and Alaska (Sivulliq).
- Spearheaded initiatives to reduce deferment and operating expenses (OPEX) by formulating in laboratory with vendors better asphaltene inhibitor squeezes.

Education

- **Master of Science (MSc)**, Petroleum Technology, Curtin University, Bentley, Australia
- **Bachelor of Science (BS)**, Chemical Engineering, Washington University in St. Louis, St. Louis, MO
- Executive Education Certificate, Energy Leadership, University of Texas at Austin, Austin, TX
- Executive Education Certificate, Management & Leadership, MIT, Cambridge, MA

Addendum

Patent Applications

Subsurface Characterization:

- Method and apparatus for reservoir testing
- Method of conducting diagnostics on a formation

Wells & Facilities Architecture:

- Drilling system
- Electrically heated subsea flow lines
- Method for well divergence using wireline
- Method of drilling a borehole in earth formation
- Circulated heated fluid used to treat formation
- Method to under-displace hydraulic fractures in horizontal or deviated wells
- Thermal expansion accommodation for circulated fluid systems used to heat subsurface formations.

Stimulation & Increased Recovery:

- Mechanized slot drilling
- Proppant for fracking fluid
- Phased stimulation methods
- Electro-fracturing formations
- Treating subsurface hydrocarbons
- Fluid injection in light-tight oil reservoirs
- Methods for heating with slots in hydrocarbon formations
- Cement-coated substrate and methods of making and using same
- Method of treating subterranean formation with mortar slurry designed to form permeable mortar

Conference Papers

- 174822 SPE – Emerging Hydraulic Fracturing Execution Technologies in Unconventional Gas and Tight Oil
- 173367 SPE – A New Tool for Multi-Cluster & Multi-Well Hydraulic Fracture Modeling
- 173338 SPE – A New Generation High-drag Proppant
- 17447 IPTC – Estimation of Rock Compressive Strength Using Downhole Weight-on-Bit & Drilling.
- 17439 IPTC – Emerging Technologies and the Future of Hydraulic Fracturing Design in UG.
- 168616 SPE – A New Look on Fracturing Injection Test for Shale Gas: Marcellus Case.
- 167086 SPE – Land, Air, and Water Footprint Reductions through Technology.
- 163847 SPE – Hydraulic Fracturing Simulation Case Study and Post Frac Analysis in the Haynesville.
- 154864 SPE – Natural Fracture Identification and Characterization while Drilling Underbalanced.
- 151607 SPE – Advance Computational Modeling of Proppant Settling in Water Fractures for Shale Gas Production.
- 96531 SPE – Acid Fracturing in Lake Maracaibo: How Continuous Improvements Kept on Raising the Expectation Bar.