



DEVIN HARSHAD, P.ENG

DRILLING, COMPLETIONS, AND WORKOVER ENGINEER

OVERVIEW

Devin Harshad is a Professional Engineer who has worked in the oil and gas industry for nearly 20 years. Over the past 10 years, Devin has focused his career on drilling and completions engineering and project management in the unconventional energy industry worldwide. His professional experience includes managing multidisciplinary engineering and operations teams in large-scale projects while being a lead contributor in drilling, completions, and workover management. Devin has worked on wells across the globe, including Australia, Argentina, Canada, Southeast Asia, and Uzbekistan. As a lead engineer and supervisor on numerous projects, he strives to execute his projects safely and on time to increase productivity and reduce capital requirements.

As a drilling engineer with RESPEC and having developed a passion for sustainable energy, he aims to augment his experience with innovative projects in solution mining, underground gas storage, and geothermal energy. Devin continues to expand his knowledge of carbon management in the energy industry through the Greenhouse Gas Management Institute.

TECHNICAL EXPERIENCE

Project Management. Devin has extensive project leadership experience in energy projects as he has managed numerous teams of up to 50 technical experts throughout his work experience with a FORTUNE Global 500 company. As a project manager, he successfully creates collaborative work environments for large multidisciplinary teams on-site and across multiple offices. In addition to managing, leading, and facilitating communication between these large teams, Devin supervises engineering projects' planning and operations execution to ensure value creation and excellence. Besides executing a project safely and on budget, Devin believes in continuous improvement and optimization to provide the best value to his stakeholders.

Drilling, Completions, and Workover Engineering. Devin has worked as a drilling, completions, and workover engineer in over 120 wells across the globe in onshore and offshore energy projects. He has extensive experience in factory style, directional /horizontal multiwell pad drilling, and completions engineering, including implementing multilateral hydraulic fracturing technology in unconventional energy projects. Devin was the lead engineer, directing the design, operations, and execution of these projects' drilling and completions scope. He has worked on the field development and commercialization of energy resources such as coal bed methane, shale oil, shale gas, and carbonates. In addition to engineering and operations, he has consulted on data engineering and management for the energy industry.

Research and Applied Technology. Throughout his career, Devin has been involved in a variety of research and technology projects that aim to source the best technologies to deliver a project successfully. From a structured, multiwell technology trial in coal bed methane wells in Australia to chairing a drilling technology committee and leading technology projects for a large operator in the Western Canadian Sedimentary Basin to applying ground-breaking North American technology to unconventional field development in Argentina, Devin has been involved in applying an empirical approach to project optimization and solving complex engineering problems.

Coalbed Methane Field Development & Gas Storage. Having started his unconventional energy career in a pioneering coal bed methane to liquified natural gas (LNG) project in Australia, Devin has significant experience in developing fit-for-purpose drilling and completions designs for extracting methane gas from coal seams in a large-scale field development setting. His work in coal bed methane also involved

TECHNICAL EXPERTISE

- / Project Management
- / Drilling, Completions, and Workover Engineering
- / Research and Applied Technology
- / Coalbed Methane Field Development and Gas Storage
- / Developing Standards and Regulations
- / Deep Drilling Engineering and Operations
- / Field Development Due Diligence

EDUCATION

- / BS in Chemical Engineering, University of Malaya, Kuala Lumpur, Malaysia
- / Diploma in GHG Measurement, Reporting, and Verification, GHG Management Institute (Ongoing)

REGISTRATIONS & LICENSES

- / Professional Engineer in Alberta Canada, Association of Professional Engineers and Geoscientists Alberta (APEGA)
- / Professional Engineer in Saskatchewan Canada, Association of Professional Engineers and Geoscientists Saskatchewan (APEGS)

PROFESSIONAL MEMBERSHIPS

- / Society of Petroleum Engineers

CERTIFICATIONS & TRAINING

- / Unconventional Resource Assessment and Valuation, Rose and Associates LLP

HONORS & AWARDS

- / University of Malaya, 2nd Class Honors

WORK HISTORY

- / RESPEC (2022–Present)
- / PETRONAS (2004–2021)

designing, executing, and monitoring several technology trials such as horizontal in-seam drilling, underbalanced drilling, wellbore cavitation, surface-to-inseam intersect wells, and hydraulic fracturing. Devin was also involved in the horizontal drilling of underground gas storage wells within a depleted reservoir.

Developing Standards and Regulations. Devin's involvement in developing new standards or adapting existing operator drilling and completions practices began in a pioneering natural gas exploration joint venture in Central Asia where, as head of a drilling project, he sought to modernize the Soviet-era standards and regulations of the established oil and gas authority. During his tenure at a FORTUNE Global 500 operator in Canada, he helped develop standards for drilling field operations that ensured a safe workplace. Using a structured, fit-for-purpose approach that considered sound well engineering and industry best practices, Devin facilitated the implementation of projects while ensuring compliance with regulatory authorities.

Deep Drilling Engineering and Operations. Devin's worldwide engineering and field operations experience includes drilling and completing deep wells up to 6,000m in Argentina, Australia, Canada, and Uzbekistan. In addition to solving complex engineering design challenges involving casing metallurgy, drilling fluid hydraulics, directional control, bit design, corrosion, and well control, he also sought to cross-pollinate drilling best practices from his comprehensive experience to optimize, add value and ensure a safe operation for all his projects. Devin's collaborative multidisciplinary approach to executing drilling projects brings system thinking and technological capability together to meet project objectives.

Field Development Technical Due Diligence. Throughout his career, Devin has been involved in several capital-intensive integrated projects requiring technical due diligence for the various field development lifecycle components to achieve the Final Investment Decision (FID). In his capacity and subject matter expert in drilling and completions engineering, he provided the technical assurance to the project team that led to successful FIDs. Overseeing the pre-FID field-level appraisal programs, he played a key role in justifying selected design implementations to the project team and its stakeholders. Upon successful FID, Devin oversaw the field implementation within his area of expertise and regularly provided updates to his stakeholders.

PUBLICATIONS & PRESENTATIONS

Tan, B., Lang, M., Harshad, D., 2012. *High-Strength, Low-Density Cement Pumped On-the-Fly using Volumetric Mixing Achieves Cement to Surface in Heavy Loss Coal Seam Gas Field.* Prepared for SPE Asia Pacific Oil and Gas Conference and Exhibition.

Harshad, D., 2016. *Overview of Drilling and Completions for Coal Bed Methane to LNG in Australia.* Prepared for PETRONAS.

Harshad, D. et al., 2018. *La Amarga Chica Field Master Development Plan (Completions and Workover).* Prepared for YPF-PETRONAS.