

Andrea Binda, MS, EMBA

Principal II Reservoir Engineer / Carbon Capture and Storage / Business Development

Citizenships: Australian / Italian

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Accomplished Reservoir Engineer with a particular interest in reservoir management and optimisation. My goal is to maximize asset value through integration of data and people. I have 18 years' experience in Oil&Gas, Hydrogeology and Environmental that I gained working in technical and leadership roles for consultant, operators and major companies over seven countries.

Professional History:



Woodside, WA - 2022 to Present – Carbon Capture and Storage Principal II Engineer

I am working in New Energies on CCS projects. I develop compositional models to assess the storage volume of sites and injectivity that wells can achieve. I developed the guidelines for Worst Case Discharge in CCS Projects. I work in the project development of Non-Operated Joint Ventures and in business development, expanding relations with potential CO2 customers and preparing bids for new international acreage. I am also company supervisor for two PhDs related to Underground Hydrogen Storage and Wellbore long-term effects of CO2 injection.



BHP Perth, WA - 2018 to 2022 – Principal I Reservoir Engineer (NOVs)

In this role I was responsible for SEC/PRMS compliant reserves assessments and long-term forecasts for all the assets in GWF and the Bass Strait. I was also in charge of the subsurface development of GWF2 and several full field studies focused on defining new opportunities and updating reserves.



DHI Perth, WA - 2018 – Groundwater Modeller

I was the Project Engineer in charge of business development of the groundwater / mining portfolio for selected key clients as well as general customer support. My main work area was the development of 3D models with Feflow (3D Finite Element model for groundwater flow, contaminant, age and heat transport). I developed Python scripts to interact with the 3D model, with the aim of automatize processes and optimize goal functions.



Shell Iraq - 2016 to 2017 - Hydraulic Network Modelling Focal Point

I worked in the field on shifts; I was responsible for the hydraulic network modelling of a +220'000 bbl/d oil multi-layer reservoir. I developed the asset model and I was responsible for its monthly calibration and for the simulation of all the activities on the field that have an impact on production, like wells optimization, new wells and facilities (new pipelines and new water processing). I was the Focal Point for the integration of this model with the reservoir 3D models and my main deliverables included Business Plan, Reserves and Forecasting.



Shell Malaysia - 2013 to 2015 - Study Leader and Senior Reservoir Engineer

I managed a team of 7 subsurface professionals with the goal to understand and model the pressure communication of four carbonate gas fields in a common geological structure (EAGE26181), also managing the stakeholders relations with Partners (Carigali) and Regulator (Petronas). I was also Team Leader for a field study to redefine the gas reserves, aquifer movement and subsidence issues (OTC26535MS). I was also Subsurface Project Leader during drilling and commissioning of a two wells clastic gas field. I worked on four other 3D reservoir models and carried HSE activities like Pore Pressure Prediction, to minimise drilling risks.



Shell UK - 2012 - Reservoir Engineer

I worked in the development stage of an oil rim-gas cap reservoir around a salt diaper structure. I designed single and multi well-tests and interference tests for reservoir definition and connectivity. I developed several sensitivities on the 3D reservoir model mainly related to geostatistical, economic and hydraulic connectivity

uncertainties. I was responsible for pressure data and fluid samples acquisition and interpretation. I finalized several documents like Field Development Plan, Business Plan, Reservoir Management Plan, Technical Design Documentation etc.



ENI Congo - 2009 to 2011 - Reservoir Engineer

This was a hands-on operational role with several activities on the field; I managed a water injection network of 200'000 bbl/d defining daily injection rates for all the 30+ wells, according to underground withdrawal balance of the different geological compartments. I followed the startup of an offshore gas condensate field and I planned well activities (well tests, infill well positioning, work over, PLTs, slick-line/coil-tubing operations), altogether with reservoir management practices (production monitoring and optimization, forecasting, well problem identification and intervention), water flooding issues (SPE146817) and hydraulic Fracturing (SPE151860). I worked on brown fields with issues related to very high water production (>90%) and pumps optimization (ESPs). I also worked on six 3D reservoir models and two network models.



ENI Italy - 2007 to 2009 - Reservoir Engineer (Numerical Modelling)

I worked in the risk analysis department where I developed statistical studies to quantify the reservoir uncertainties and minimise oil and gas production risks. I studied the effect of condensate banking in the near wellbore and its impact on field recovery. I also developed a reservoir study with computer-aided History Match and an application of risk analysis to a network of integrated assets (SPE134294). I studied the impact of capillary forces on hydrocarbons volumes and movement. I worked on the Field Development Plan for the gas field Blacktip, Australia. I was also lecturer in the reservoir simulation course at Master in Petroleum Engineering, Polytechnic of Turin.



MWH Italy - 2006 - Project Engineer and Hydrogeologist

I developed a model for the diffusion of pollutants in the aquifer near a wastewater plant with bio-remediation treatment, assessing the risk of contamination for nearby potable wells. I also developed a model to optimize and predict the behaviour of a groundwater-river remediation plant in a pharmaceutical industry. I was the onsite engineer responsible for the remediation plant and of the various field activities, including water and soil sampling, monitoring campaigns and contractors management for hazardous substances and waste disposal.

Education:



Quantic School of Business and Technology - Apr 2022 – Executive MBA (Hons)

Final project developing the business plan for Khelp, a start-up that cultivates kelps and sink them in the deep ocean, sequestering CO2 and helping solve Climate Change.



Polytechnic of Milan - Apr 2006 - Master of Science in Environmental Engineering

Thesis "Hydrogeological Study of the Olona River" where I developed both the basin conceptual model and the river-aquifer interaction in MODFLOW. The model was used to assess the water usage sustainability and aquifer stress in the basin.



Polytechnic of Milan - Oct 2003 - Bachelor's Degree in Environmental Engineering

Graduation project on the calibration of ultrasonic flow meter and the study of error propagation.

Languages:

- Italian
- English
- Python
- Visual Basics
- C++
- French (basic knowledge)

Computer skills:

Reservoir Modelling: Intersect, Eclipse 100-300, PetrelRE, Feflow, Modflow, MoReS, PVT Sim
Network Modelling: MBAL-Prosper-GAP, with VisualBasic integration
Surveillance and wells: Kappa suite, OFM, Spotfire

Publications:

SPE 134294 “Dealing with Risk Analysis for Integrated Asset Modeling”, A. Binda, S. Giliberti, A. Preti, R. Rossi (eni), SPE ATCE 2010, Italy
SPE 146817 “Monitoring and Improving Water Injection Efficiency in a Structurally Complex Field”, M. Rotondi, A. Binda, M. Draoui, A. Tsoumou, L. Tealdi (eni Congo), SPE ATCE 2011, USA
SPE 151860 “Hydraulic Fracturing as Development Strategy in the Congo Onshore”, R. Perfetto, F. Martocchia, A. Binda, R. Itoua, G.Tita, L.Tealdi, R. Cafarelli (eni Congo), R.L. Ceccarelli (eni E.&P)
OTC 26535MS “Data Integration to Aid Water Breakthrough Management and Prediction in a Mature Gas Field, Luconia Province, Malaysia”, E. Chiew, A. Binda, G. Warrlich, E. Adams (Sarawak Shell Berhad), Offshore Technology Conference Asia conference 2016, Malaysia
EAGE 26181 “The Impact of Carbonate Reservoir Heterogeneities on Hydrocarbon Flow & Recovery: Lessons Learned from Central Luconia”, Warrlich, G.M.D., Adams E.W., Ryba, A., Tam, A., Burgess, C., Angelatos, M., Binda, A., Stevens, D.A. (Sarawak Shell Berhad), APGCE 2015, Malaysia

Lifelong Learning (personal and professional):

2022 The Science of Well-being, Online University of Yale
2021 Leadership Principles, Online Harvard Business School
2021 Applied Data Science I: Scientific Computing & Python (Hons), Worldquant University
2021 Climate Change: Carbon Capture and Storage, Online University of Edinburgh
2021 Climate Change: Financial Risks and Opportunities, Imperial Business School X
2020 Hydrocarbons Reserves Estimation (re-certification)
2017 Introduction to computer science using Python, Online MIT verified courses
2017 EPIC: Basic Building Workshop for building sustainable houses in Malaysia
2016 Circuits and Electronics 01, 02, 03, Online MIT verified courses
2015 SPE Workshop “Gas Field Developments – Pushing the Limits” presenter
2015 OPITO Tropical BOSIET re-certification (sea survival and firefighting)
2014 Project Management and Business Skills
2014 Defensive driving
2013 PADI Advanced Open Water Scuba Diving + Nitrox Diving
2012 Hydrocarbon Fluid Properties and Phase Equilibria, B. Dindoruk, Shell Rijswijk
2011 Reservoir Engineering (by M. Thiele, Stanford University)
2010 Reservoir Simulation (by H. Tchelepi, Stanford University)
2009 Production Optimization (by Michael J. Economides, Texas University)
2008 PVT & fluid behaviour (by B. Thoidi, Heriot-Watt University)
2007 Geomechanics (by R. Lancillotta, Politecnico of Turin)
2006 HSE Construction Site Safety Coordinator Certification
2005 Red Cross Voluntary Operators Course, Italian Red Cross