

## April 2021 – CSUR Technical Webinar #2

### Argentina and The Vaca Muerta



#### ARGENTINA AND THE VACA MUERTA

PRESENTED BY  
GARY GRAF, WINTERSHALL DEA.

April 2021's 2<sup>nd</sup> Technical Webinar featured Gary Graf, Senior Technical Advisor for Wintershall Dea (WD). Now based at his organization's headquarters in Hamburg, Germany, he elaborated on Argentina's Vaca Muerta (which literally means "Dead Cow" in Spanish) shale play and his company's focus in the Neuquén Basin. WD is Europe's largest independent Oil & Gas Company, with operations in 13 countries around the world (counting Argentina). The main objective of the session was to provide a high level summary of the play for the audience, including the key elements for success in Argentina, the main players in the basin, the geology & depositional setting of the Vaca Muerta, comparison to some of the key shale plays in North America, and its progression to a world-class resource play. It is considered to be the 2<sup>nd</sup> largest shale gas deposit and the 4<sup>th</sup> largest shale oil resource in the world! As such, its impact and importance to Argentina's economy is significant, as indicated by the speaker.

In addition to providing the areal and geological setting of the play (late Jurassic to early Cretaceous), Gary also delved into some of the intricate and specific drilling, completion, reservoir, and production parameters play wide & for various operators. With the goal that aims to maximize the play's substantial potential, which already accounts for about 25% of the country's total oil and gas output, various players continue to utilize the learnings from the North American shale plays to further the development

of the Vaca Muerta. As the activity in the play ramps up again after the setback due to the global pandemic, it would appear that additional and focused technical (geomechanical & geotechnical) work is being employed to advance the optimization process.

While YPF is the most active operator in the basin by far with over 850 wells and almost 3900 km<sup>2</sup> of net shale acreage, WD's total operated & non-operated interests consist of 530 km<sup>2</sup> net shale acreage and 40+ wells to date (including 14 operated wells). As with all the operators in the basin, WD continues to implement the necessary steps to improve their frac designs via targeted landing zones for their laterals, increasing the lateral lengths and incorporating the required completions efficiencies (well & frac spacing, proppant & fluid intensities) to enhance production from their wells.

Finally, the pace of activity in the play is significantly lower & slower than in North America. Like any other play, the Vaca Muerta has its own unique set of challenges (both technical and non-technical) that the various operators need to overcome. However, as in other plays, the drive for better economics through improved operational efficiencies and cost reductions is ongoing!

## Summary

Argentina is the eight largest country in the world by area and contains one of the largest shale opportunities outside of North America. The Vaca Muerta shale hosts the second largest shale gas resource and fourth largest shale oil resource in the world. It has a significant impact on the economy and was 25% of the total oil production and 22% of the gas production in Argentina at the end of 2020.

This presentation will cover a broad range of topics associated with the Vaca Muerta and will include an overview of the geology, reservoir, geomechanics, the players, activity, drilling, completions, production and some of ongoing geotechnical work that aims to maximise the value from the assets.

**PRESENTER:** Gary Graf, Wintershall Dea.

Gary Graf received an M.Sc. degree from the University of Ottawa. He started his career, in Calgary in 1986, as a geologist with Chevron Canada. Since that time he has worked with other companies that include Crestar Energy, Coastal Oil & Gas Canada, West Energy and Stone Mountain Resources in a variety of technical and managerial positions but has also provided consulting services. Prior to moving to Wintershall Dea, Gary was involved in projects in the Horn River, Montney and Bakken.

He recently spent over 5 years in Argentina in the position of Subsurface Manager for the Unconventional Operated Assets in Aguada Federal and Bandurria Norte in addition to Reservoir Development and Engineering Manager. He has recently moved to the company headquarters in Hamburg, Germany where he is currently a Senior Technical Advisor for Wintershall Dea.

During his career, Gary has been involved in projects in Canada, U.S., Papua New Guinea, Germany, Russia and Argentina.



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**TECHNICAL WEBINAR**

**ARGENTINA  
AND THE VACA MUERTA**

presented by Gary Graf, Wintershall Dea

Tuesday, April 20th, 2021 | 09:00am MDT  
**\*\*pre-registration is mandatory\*\***

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