

## **Understanding the Importance of Data Integration on Well Spacing in the Eagle Ford Shale**

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### **Abstract**

Determination of proper well spacing is a key factor in successful resource play development. The objective is to optimize spacing between lateral wells that effectively stimulates the reservoir rock volume, increases overall recoveries and minimizes interaction between wells. Recent work by PXD to optimize well spacing along the Eagle Ford sub-surface trend has resulted in reduced lateral spacing, as well as vertical staggering within the target interval.

Numerous tools are used to aid in determination of well spacing across the trend, and it is critical to integrate data from all the tools available when establishing a spacing recommendation. A workflow is presented here to establish a spacing recommendation through integration and analysis of multi-source data collected during the lifecycle of an unconventional resource play.

The well spacing toolkit includes data collected from multiple disciplines. Microseismic data is integrated with 3D seismic data and fracture models to derive stimulated rock volumes. RA tracer and chemical fluid tracer data collected during well stimulation both provide information on propped fracture length and height, and inter-well communication, respectively. Pressure data recorded during well stimulation and interference tests performed after stimulation are used to help understand changes in well communication over time. Oil and gas geochemistry data from wells drilled in multiple stratigraphic intervals can be used to provide insight on fracture height growth, and XRF geochemical data acquired from drill cuttings provide information on target rock quality along the lateral.

Due to the recent change in commodity prices, data integration becomes increasingly important for understanding the Eagle Ford Shale, and is critical for optimizing subsurface development.