

## The Upside Potential In Montney Completion Trends

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### Summary

This presentation compares the Montney to analogous plays in the L48 on well productivity, well costs and completions trends. The analysis suggests, that as demonstrated in the top L48 plays, higher proppant intensities materially yield better well performance. This presentation covers the upside potential a more aggressive completion design would have on the valuation of a Montney asset.

### Introduction

Within the Canadian oil and gas industry, the Montney is a dominant unconventional resource as a result of its extensive distribution and superior economics. Although the Montney is not a true shale play, it shares similar reservoir characteristics with some of the prominent plays in the Lower 48. For instance, the Montney is productive across all fluid windows much like the Eagle Ford Formation in the Gulf Coast Basin, and has multiple productive zone similar to the stacked zone potential of the Delaware and Midland Basin of East Texas and New Mexico. While in recent years, drilling activity has been heavily focused within the major L48 plays (i.e., Midland and Delaware, Anadarko and Appalachian basins), increased drilling rates and improved completion designs have contributed to make the Montney one of the cheapest plays in North America to drill and complete on a lateral foot basis. This presentation will discuss the different factors that keep the Montney competitive to its peer plays in the L48; reservoir qualities (i.e., porosity, fraccability, depth and fluid maturity), completion designs and well costs. Emphasis will be placed on current completion designs, such as proppant and fluid intensities, and learnings realized in the Eagle Ford, Permian and Marcellus to highlight upside potential in the Montney.

### Theory and/or Method

This study used over 7,000 wells to derive more than 500 unique type curves for complete single-well breakeven estimates, and completion data was analyzed for over 2,000 wells from 2012 to now. Type curves were generated based on sub-region within the field, operator, and vintage to minimize the impact of well completion design and changing geological conditions. Single well breakeven estimates (i.e. the estimated commodity price required to drill an economic well) were calculated from the generated type curves (scaled for equivalent completion design) and company disclosed well costs.

### Conclusions

Despite depressed commodity prices, Montney operators have demonstrated resiliency and innovation contributing to competitive breakevens with the major L48 plays. This study highlights that more aggressive completions materially yield better well performance, and shows that many operators within the Montney have yet to fully adopt this view. This suggests the upper limits of proppant loading has yet to be determined and indicates there is significant upside potential for increased well performance.