

Chart Toppers: The Best Wells of 2022-23

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Summary

This presentation will be an overview of the top-producing wells drilled in several key formations in the WCSB in 2022-2023. A detailed geological summary, along with available technical information (including drilling and completion details) will be used to illustrate what sets these top wells apart from their less prolific counterparts.

Theory / Method / Workflow

The authors are part of a team that continuously evaluates and maps publicly available drilling, completions and production data throughout Western Canada, all within a geological context. The top producing wells (based on IP90 rates) from each of several geological zones (including the Montney, Cardium, and Clearwater/Grand Rapids) are analyzed and compared to other recent wells targeting the same intervals.

Results, Observations, Conclusions

The top tier of Montney wells has, in recent years, been populated by Ovintiv's horizontals at Sunrise, BC (Horton and Podetz, 2022), the best of which have IP90 rates exceeding 25 mmcf/day, nearly five times the industry average on a boe basis. While a greater lateral length appears to be a contributor in the performance of these high rate wells (figure 1), other factors such as completion intensity, well spacing, and the presence of high-pressure/high reservoir quality "sweet spots" undoubtedly play a role.

In the Cardium, the highest gas rates of late have come from two areas in central-west Alberta; Anderson and Chambers wells, based on offset well logs, target faulted Cardium sections where porosity and permeability are likely enhanced by structurally-associated fracturing (Podetz and Horton, 2023) (figure 2). On the oil side, top producers such as those at Lochend also target faulted intervals, whereas those farther north at Wapiti benefit more from a thick, high-quality reservoir less affected by any structural deformation.

The still-relatively new Clearwater/Grand Rapids multi-lateral oil play in northern and central Alberta continues to produce at consistently high rates from the thick Clearwater "C" sand at Marten Hills. Further west at Dawson-Peavine, however, multi-laterals targeting the markedly thinner Grand Rapids "A" sand (as defined by the authors) consistently outperform their Marten Hills counterparts on a normalized basis (Podetz, 2023) (figure 3). Factors influencing production here may include oil viscosity, pressure, and trapping mechanism.

Figure 1: Montney IP90 vs Lateral Length, Sunrise

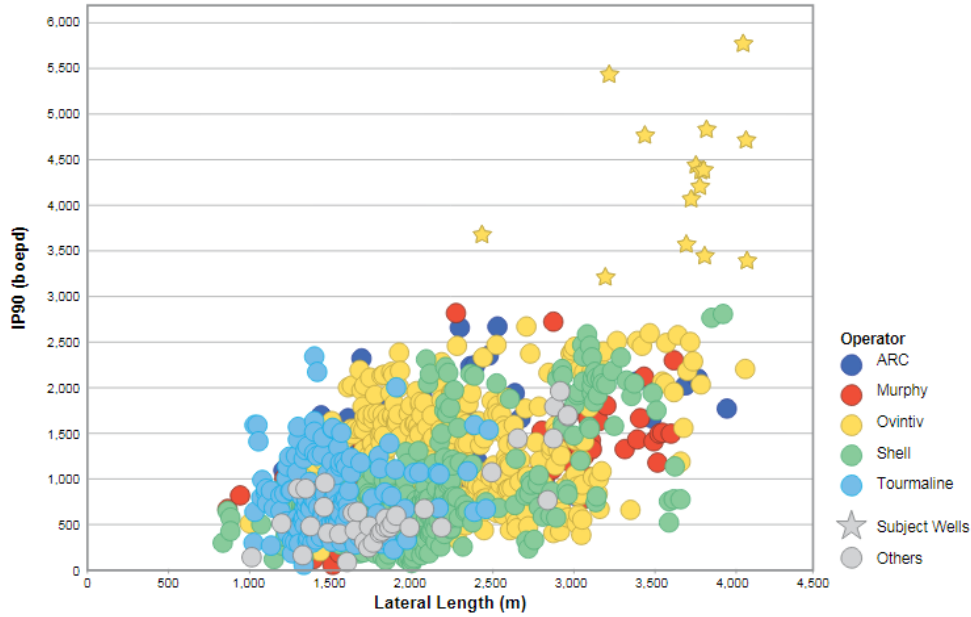


Figure 2: Chambers 14-6-41-10W5 Cardium Log Suite

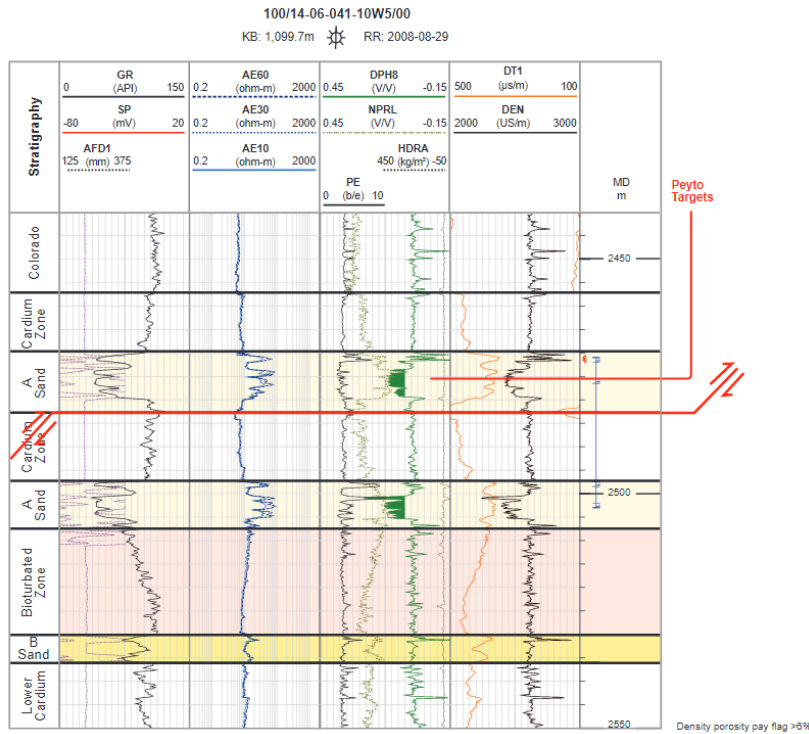
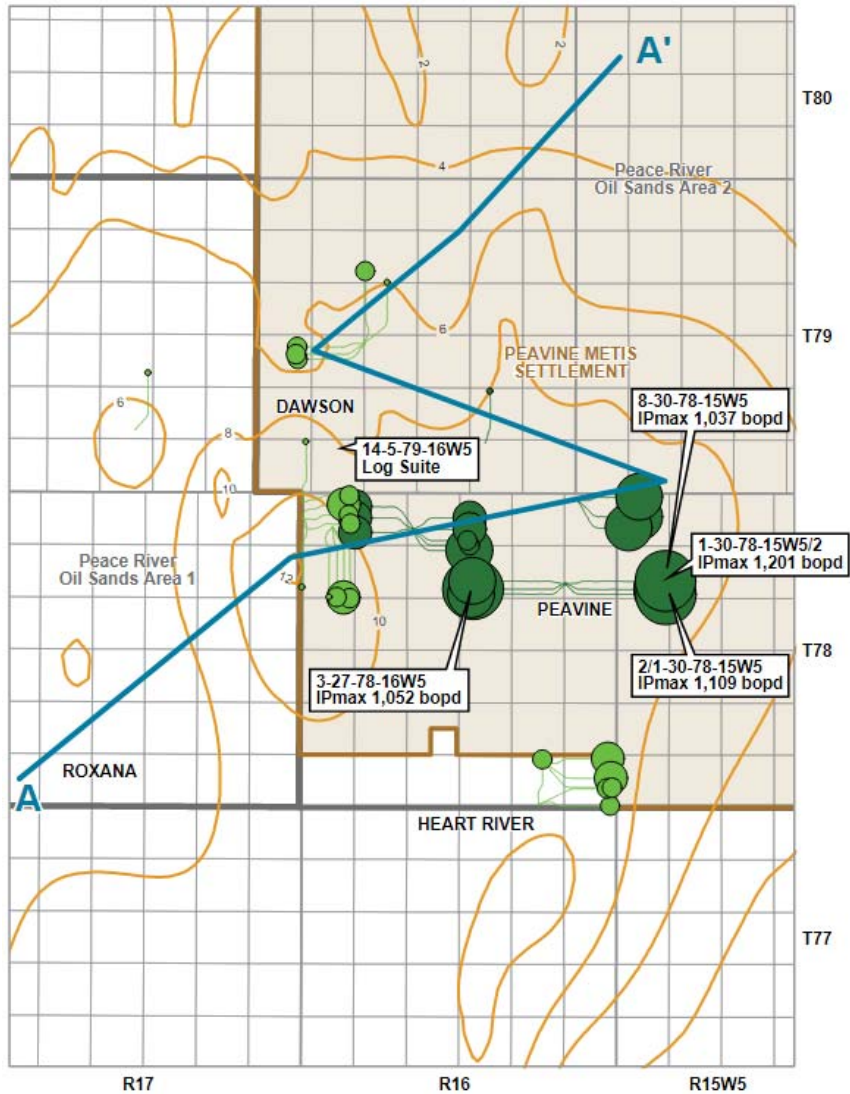


Figure 3: Grand Rapids “A” Sand Thickness and IPmax Rates



References

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