

BOE Report Weekly Round-up

March 21st, 2025

We spend a lot of time talking about the Montney and Duvernay, and for good reason – they are fantastic plays. So much so that last week saw an almost-record number of Duvernay wells licensed in all parts of the play – but today we shift gears...

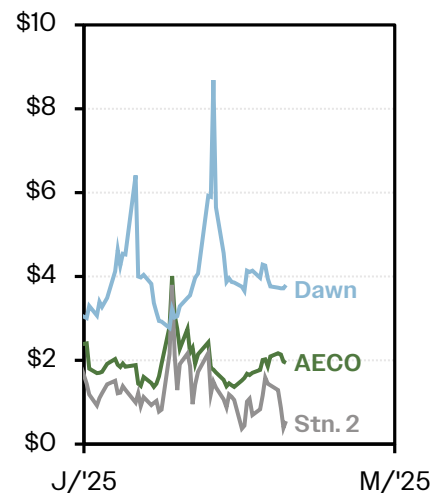
Inside we answer key questions that plague the industry daily – like “can Vaca Muerta economics compete with the Duvernay”, or “can we extend the Duvernay north to Rainbow Lake”?

In a map-heavy edition, we snoop around the WCSB outside of our beloved Montney and Duvernay – then hunt around the globe in Germany, Holland and Argentina with our new global datasets that we’re extremely pleased to offer clients as of this morning.

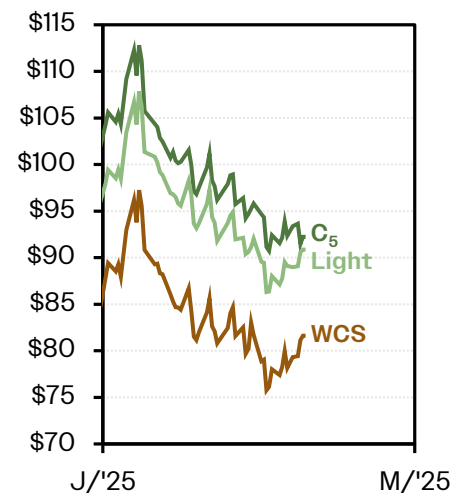
Rig Counts by Operator

 15	 9	 8	 7	 6
 6	 5	 5	 5	 4
 4	 3	 2	 2	 2
 2	 1	 1	 0	 0

Producer Netback Gas Prices by Hub (CAD\$/GJ)



Spot Edmonton/Hardisty Crude Pricing (CAD\$/Bbl)

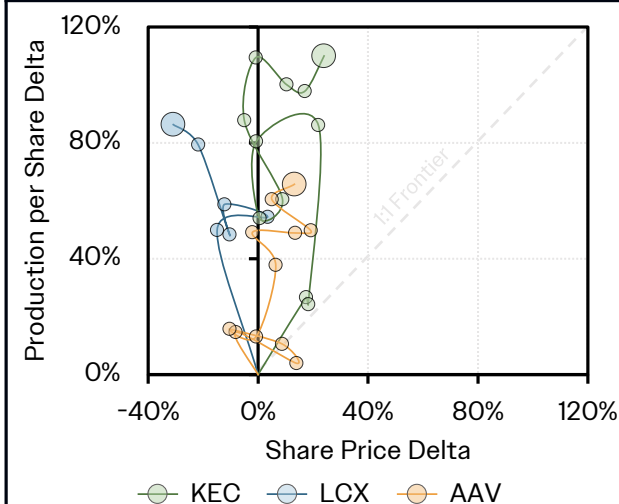


Note: Gas netbacks assume Gordondale plantgate, long-haul tolls assumed at minimum FT-R rates
Source: Bloomberg, NGL, HTM Data Suite

Weekly Headlines

- [LGN releases 2024 financial results, reserve report](#)
- [JOY enters into lending agreement to fund Duvernay JV](#)
- [PEA releases 2024 financial results, reserve report](#)
- [GFR releases 2024 financial results, reserve report](#)
- [Energy CEOs provide plan to strengthen Canada](#)
- [HME releases reserve report](#)
- [LNG Canada first cool down cargo en-route to Kitimat](#)

3-21.1: PPS vs. Share Price Delta to 2022

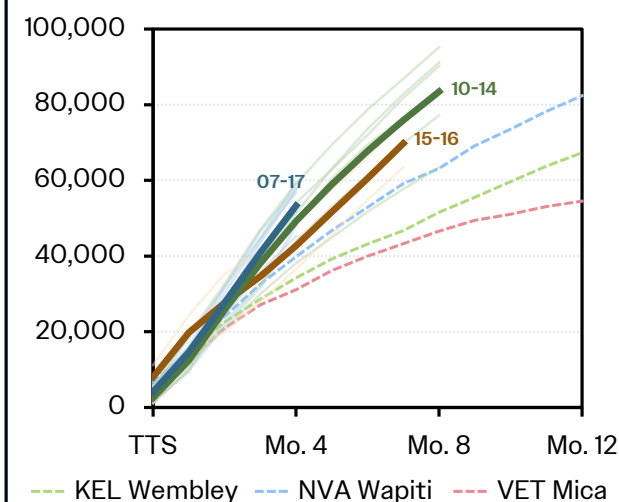


Strategic Reviews Continue to Signal Equity Exhaustion

With YE results, 3 issuers have initiated, or indicated they plan to initiate some form of strategic review. Kiwetinohk disclosed they are ‘considering engaging advisors to evaluate all potential alternatives’, Lycos initiated a full-blown strategic review (and they are now being marketed); finally Advantage announced they formed a special committee to ‘review strategic opportunities’ (though no doubt at the behest of Kimmeridge). Certainly a stinging reminder of how agonizing the equity markets can be.

To the left we show per-share production growth over 2022 vs. equity gains – and while companies push per-share metrics higher, they aren’t seeing credit for it in their equity. While we would never expect a 1:1 reflection of growth to share price, actual results have been nothing close. For Kiwetinohk, it’s been a ~6:1 growth-to-gains ratio, and for Lycos it’s a negative figure! Typically, transaction multiples are markedly lower (and not just on an absolute basis) below US\$70/Bbl WTI, so it’s peculiar timing – though perhaps an ideal situation for acquirers with strong balance sheets, and a long-term mindset.

3-21.2: Veren PnP Pad Oil Cumes (Bbls)



Great Reservoirs Deliver Good Results Under Bad Conditions

Despite the noise around plug-n’-perf fracs, incremental well data continues to affirm the Montney reservoir quality at Gold Creek. February’s data shows PnP wells continuing to produce flat, on track to deliver liquids IP₃₆₅ rates >300Bbls/d. While decidedly not Tier 1, these results outperform local peers on an oil basis. It’s notable that multiple wells on the 07-17 pad (in the core of Gold Creek) are producing at >500Bbls/d in their 5th month online, after producing 50-60,000Bbls of oil already. This, combined with the noticeably lower GORs from the undercompleted wells, suggests that the plug-n’-perf softness was indeed completions-driven – with the frac likely not growing tall enough to liberate the gas higher in the Montney. Veren has said they will switch these wells to high-pressure gas lift to coax out that reservoir energy, which should help stabilize, or even increase oil production rates – perhaps what we are seeing with this month of data.

Certainly a testament to how much potential lies at Gold Creek through Elsworth – and why we were big fans of Veren. We believe that as fracture behavior in the updip window continues to be understood and optimized, the pro forma Whitecap will benefit.

The Industry is Moving it Back to Zama – Spur and Cenovus both Deliver Exploration Success

Paramount may soon look foolish for giving away all their untapped Zama upside to Ovintiv – as broker sales (and successful well tests) continue to flood in from the north of Alberta.

With their quarterly release, Spur announced that they tested their Haro Pekisko well at rates up to 150Bbbls/d. This is a phenomenal test, and even moreso the fact they disclosed the water cut was <5% which tends to confirm their thesis that previous fracs were growing into wet zones, making the play uneconomic to develop.

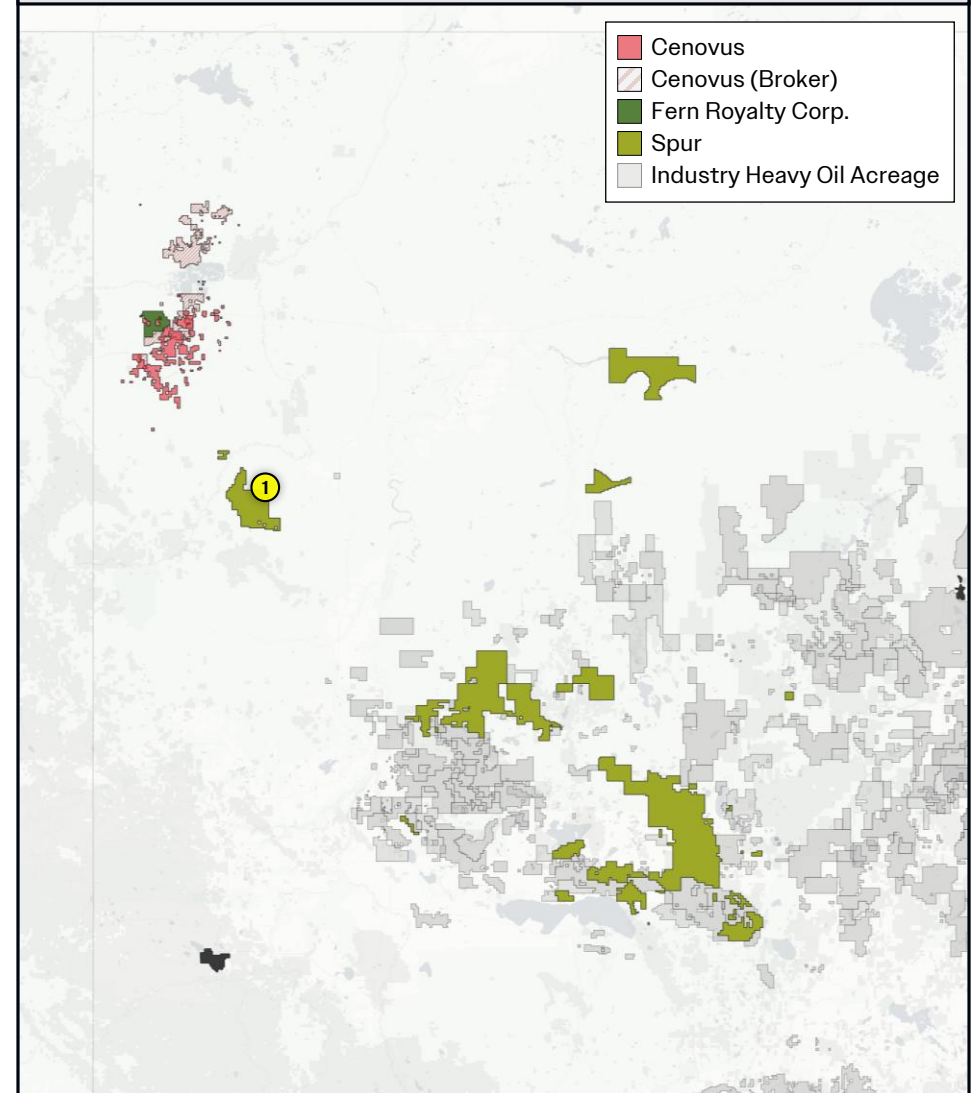
This has some folks wondering if it's time to pick up a vacation home in Rainbow Lake – as the Pekisko isn't the only play in town. Original production at Zama targeted a gorgeous pinnacle reef, that Apache even had plans to CO₂ flood (but never materialized).

The Jean Marie has been exploited on the BC side of the border for gas, though not on the Alberta side in any meaningful way. It's a limestone and produces light oil with lower porosity than other conventional multilateral plays at ~5%, through good thickness at ~30'. This isn't the first time Cenovus has tried conventional wildcats – they did so in the Keg River over the past few years,.

The Muskwa is certainly the most interesting, as it's a shale – a resource play unlike the Muskeg or Jean Marie; though much like the Utica to the Eagle Ford, the Muskwa fairway at Rainbow is much skinner than the Duvernay at Kaybob, or even Willesden Green. On the following page we show our interpretation of the Muskwa phase windows at Rainbow, along with some key well results.

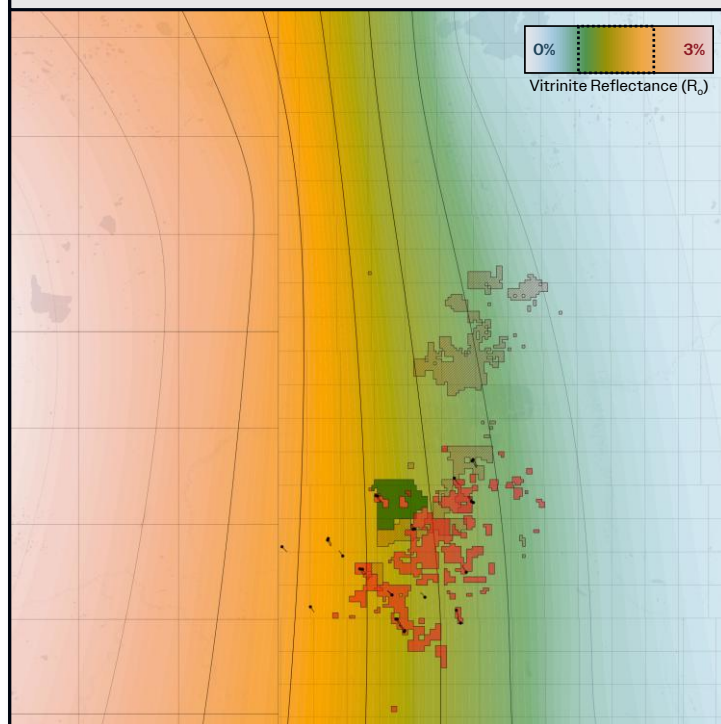
1 Spur Pekisko test, IP_{30PD} 55Bbbls/d oil, rates up to 150Bbbls/d

3-21.3: Northern Alberta Asset Map

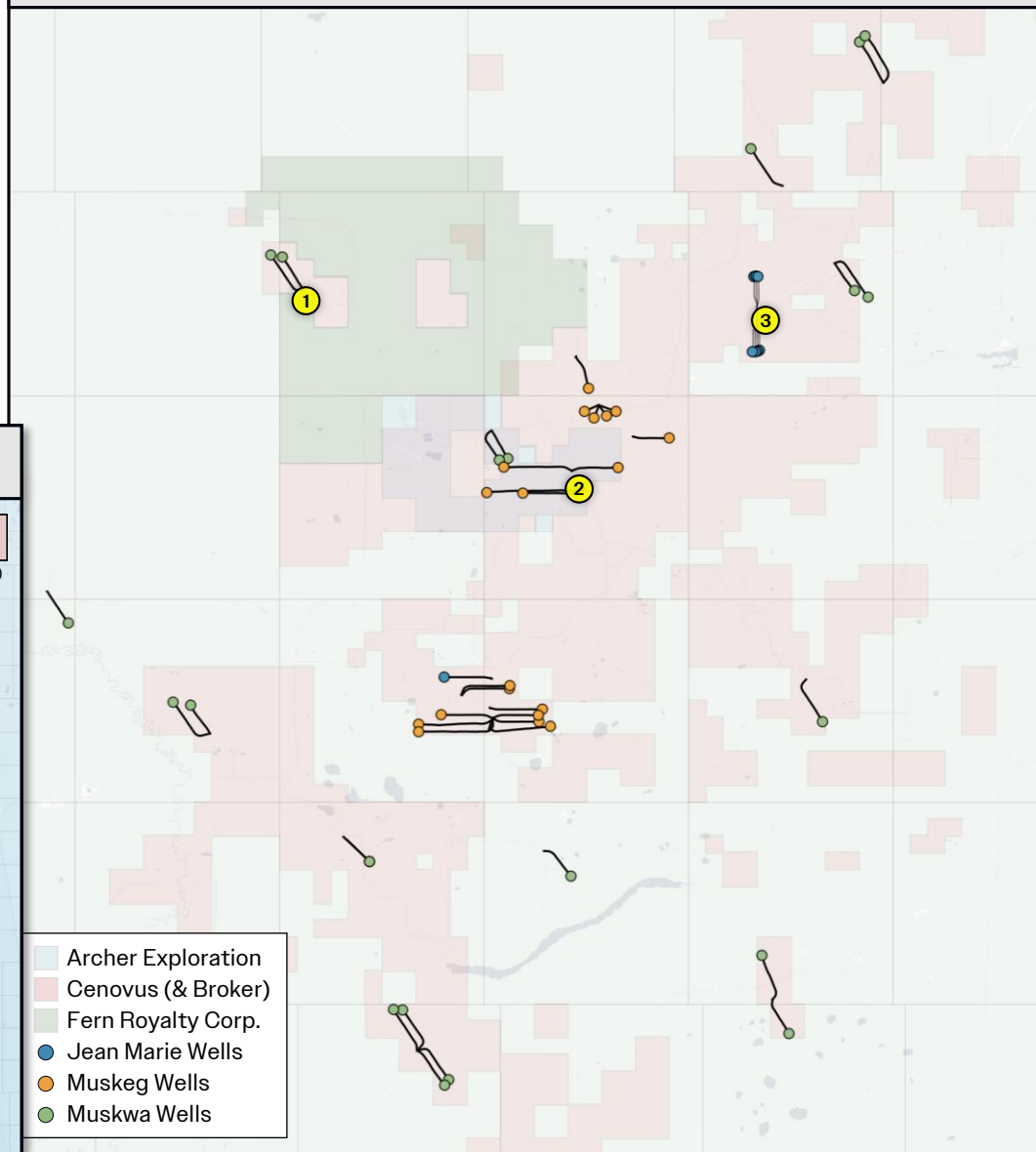


- ① 2012 Husky Muskwa well, PnP frac, ~5,500' lateral, 20 stages, HTMe oil EUR of 13Bbbls/ft
- ② Archer Exploration 2021-era Muskeg wells, peak oil IP₃₀ rate of ~200Bbbls/d, HTMe EUR of ~150MBbbls
- ③ 2x Cenovus Jean Marie multilateral tests, February data shows northbound 3-leg well produced 90Bbbls/d of oil, 4-leg well produced 190Bbbls/d of oil

3-21.5: Muskwa Shale Thermal Maturity



3-21.4: Local Rainbow Asset Map



Shell Ditched the Duvernay for a Different Emerging Shale in 2021 – Did it Work Out?

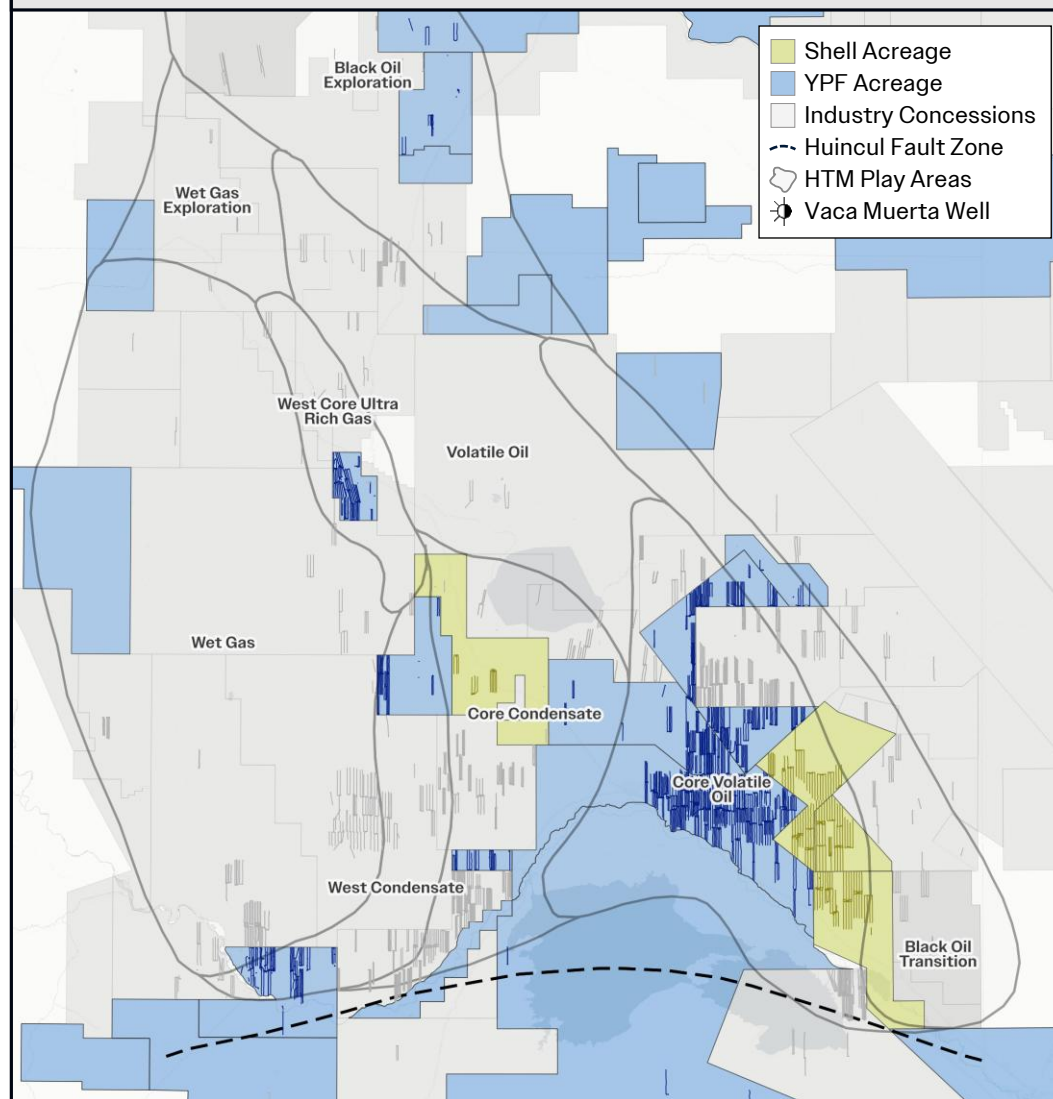
Shell first made a big splash in the Vaca Muerta in 2014, acquiring a ~45% interest in two licenses from Total. They further acquired an interest in the Bandurria Sur block from SLB in 2020, and have since increased production to as high as 175,000BOE/d in 2024. As a part of their infrastructure plans, Shell also agreed to develop a floating LNG terminal with Golar, and YPF, the national oil company. To the right we show Shell's acreage in the Vaca Muerta, along with YPF. We think that Shell and YPF are in the core of the volatile oil window – on the next page we show a basic interpretation of vitrinite reflectance.

Structurally, the play is bounded by the thrust and fold belt to the west, and the Huincul high to the south, with the thickest part of the basin in the rich gas window where it's possible to stagger laterals vertically in the section, like Whitecap at Kaybob. The TOC weighting is a solid 3-6% throughout the play. Productivity has continued to improve annually as operators deploy new fracs – not dissimilar from the Duvernay; though the single well recoveries are shocking in the Vaca Muerta – with fully bounded development wells exceeding 1MMBbls of oil/condensate.

A fun fact – at one point, Pine Cliff held an interest in the Neuquén Basin, where the Vaca Muerta is located, through their early-2010s partnership with CanAmericas Energy.

What Shell left behind in the Duvernay isn't too different – both are high quality marine shales with limestone marls deposited in an anoxic environment – though the Duvernay is Devonian age, and the Vaca Muerta is Lake Jurassic. As with the Duvernay; the most desirable phase window isn't black oil by default, it's the volatile oil transition window – where most development to date has clustered. On the following page we show key well results.

3-21.6: Vaca Muerta Development Map



①

YPF El Orejano Block: Upper Vaca Muerta is >1,000' thick, though gas is fairly lean, YPF develops modern pads closer to a wine-rack configuration, IP₃₀ peak rates ~8MMcf/d (~280BOE/d liquids)

②

Exxon Bajo del Choique 163X: 6x wells with 475ft spacing in a thicker part of the condensate window, produced peak IP₃₀ rate ~2,000BOE/d at ~385Bbls/MMcf

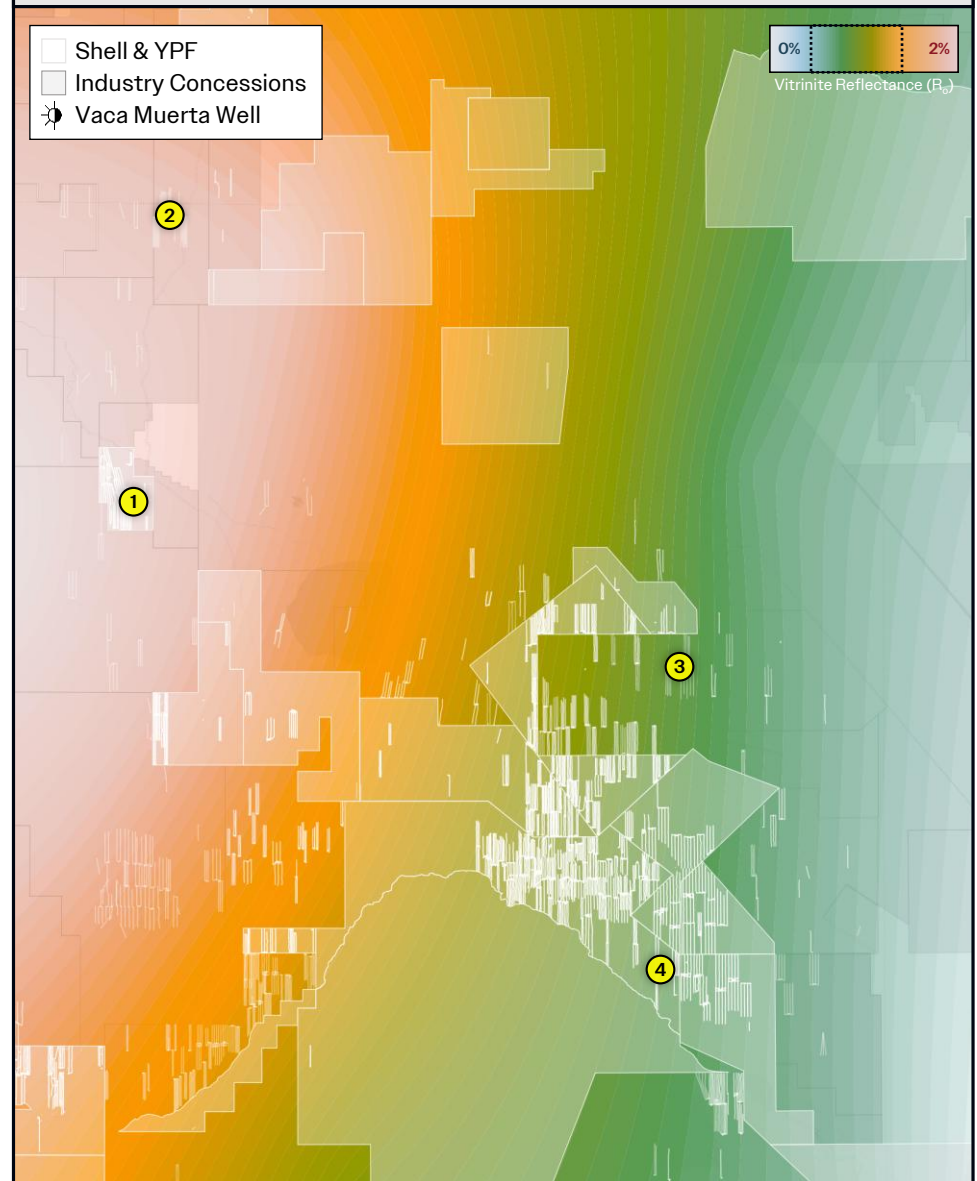
③

Vista Bajada del Palo 164X: 4x wells with tight interwell spacing, peak IP₃₀ oil rates of ~2-3,000Bbls/d, HTMe EURs <175Bbls/ft

④

YPF Loma Campa East 162X: 4x wells, average lateral length of ~10,000', HTMe EUR of 205Bbls/ft (>7MMBbls from the pad)

3-21.7: Vaca Muerta Core Maturity Fairway

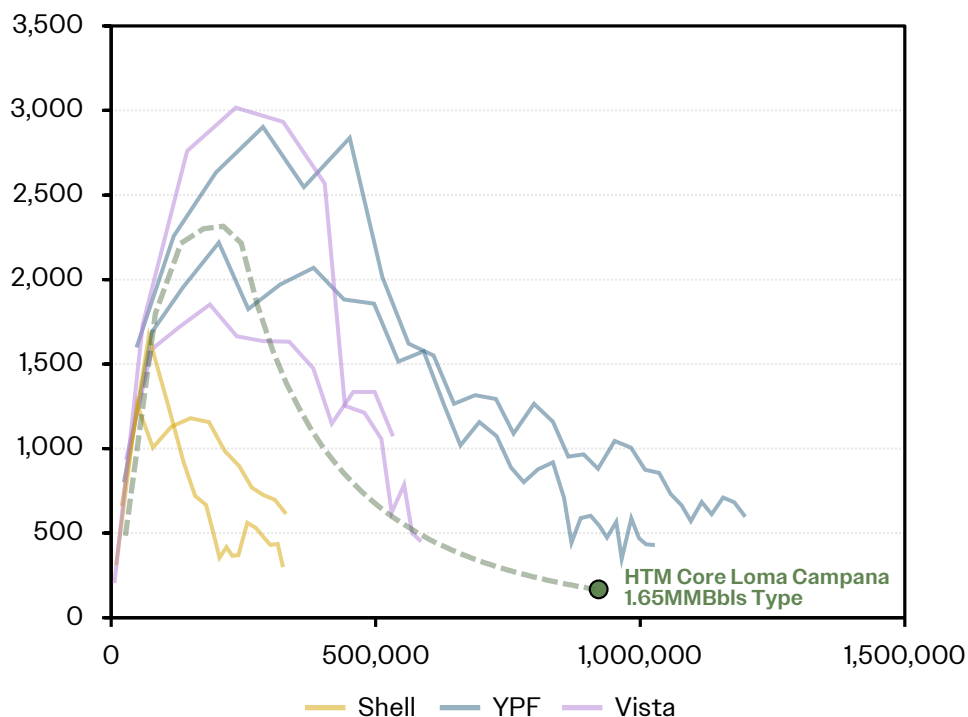


So Did Shell Get the Better Deal Ditching the Duvernay for the Vaca Muerta?

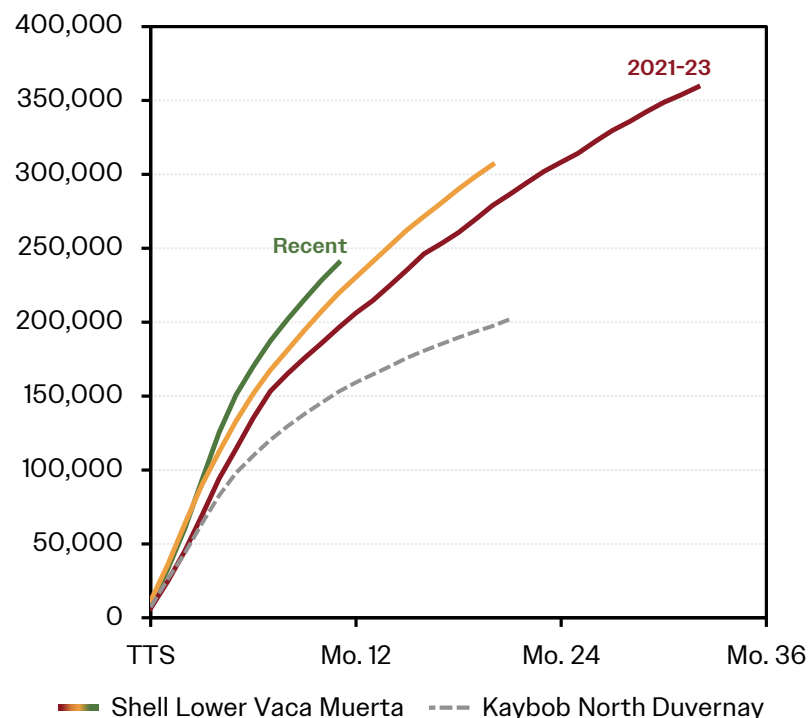
While painful to say, it would unfortunately seem as such. Even though their wells are ‘worse’ than offsetting peers – Shell’s Vaca Muerta results are far better than what they left behind at Kaybob on both a single-well F&D basis, and full-field development basis, especially considering the ease of operating in Argentina, the ability to construct from scratch (no NGTL), and not to mention that the local price of gas in Argentina is almost 500% higher than where AECO is trading this week.

In the Vaca Muerta we estimate that US\$11-13MM DCE&T costs are delivering >1MMbbl EURs. Argentina features a similarly favorable royalty regime, along with a *desire to build*. For context, Shell made their LNG Canada FID in 2011, and the facility will be operational 14 years later. In Argentina, Shell signed a partnership with YPF to develop a floating LNG terminal – which may be operational as early as 2027 – just 3-years later. Now, Crescent Point at the time didn’t get the bad end of this deal – they were able to upgrade their portfolio from SE SK conventional – adding a repeatable unconventional play that kickstarted a phenomenal portfolio transformation.

3-21.8: Select Core Vaca Muerta Well Results (Bbls/d & Bbls)



3-21.9: Shell Vaca Muerta Oil/Condy Cumes (Bbls)

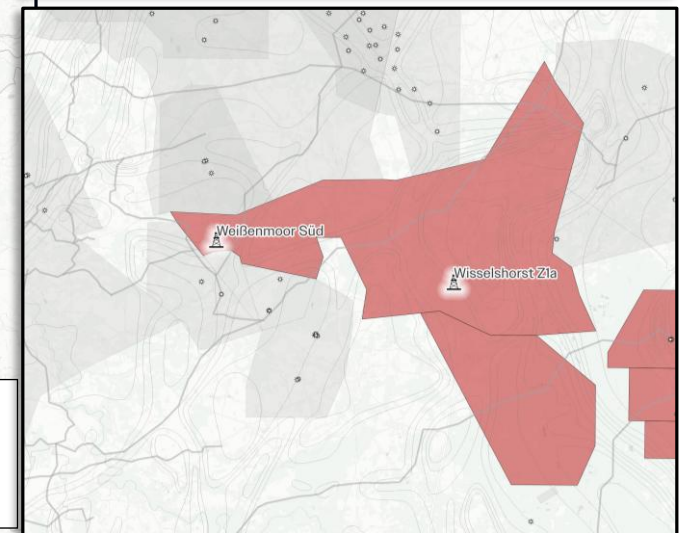
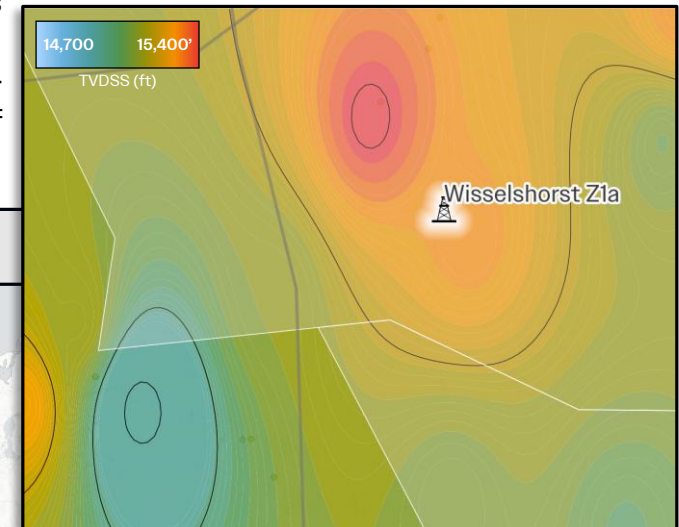
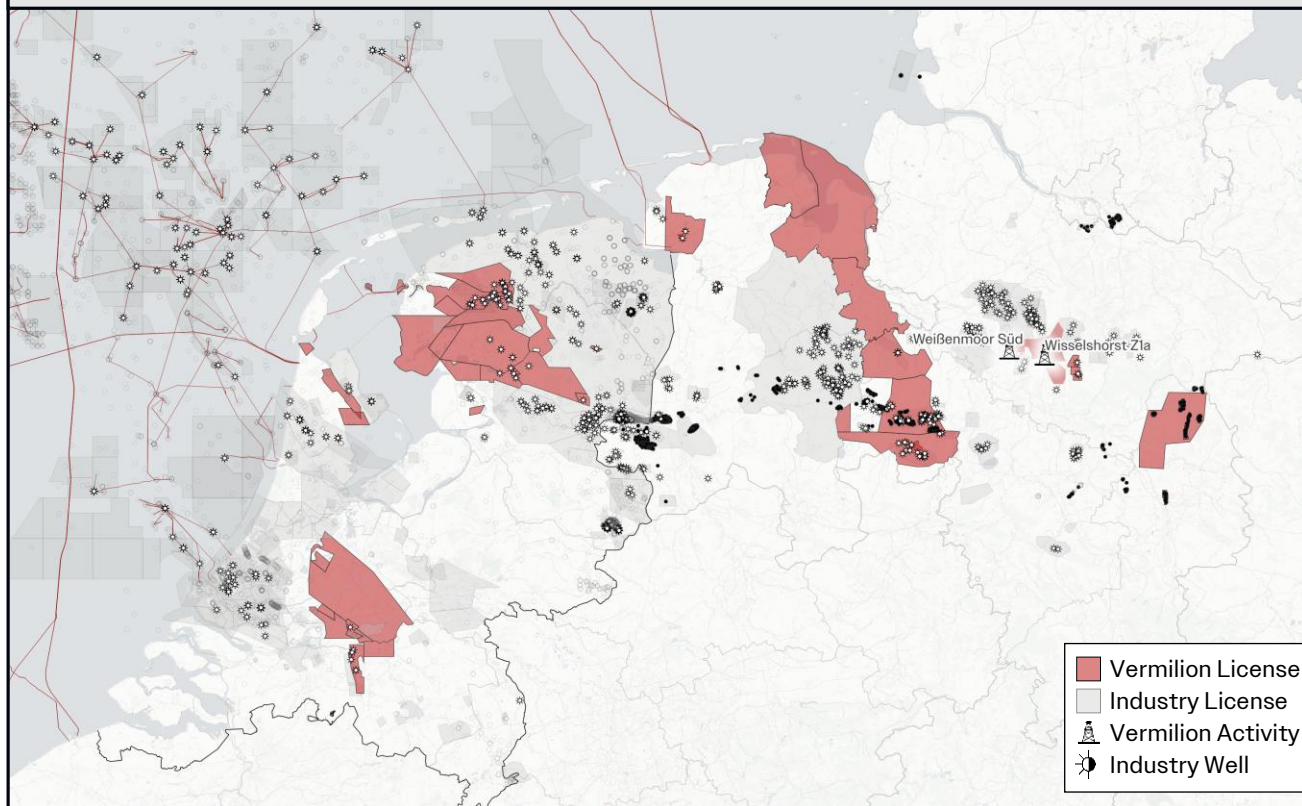


Vermilion Delivers Two Successful Wells in Germany in a New Era of Their European Unit

In a much less desirable place to operate, Vermilion announced that their Weissenmoor and Wisselshorst exploration wells onshore Germany both tested for high rates of gas. The Wisselshorst Z1a (shown in the inset), was situated updip in high-quality sands. This follows further exploration success in Croatia, where they are currently building a gas plant.

While successful exploration is positive news, we think it's even better coming after Vermilion has shifted their maintenance burden back to Canada, with the acquisition of Westbrick. We discuss inside why we think Vermilion's business has fundamentally changed.

3-21.10: Vermilion Netherlands & Germany Operating Map



Vermilion Has a Real Pathway to Adding Value Over the Next 5 Years

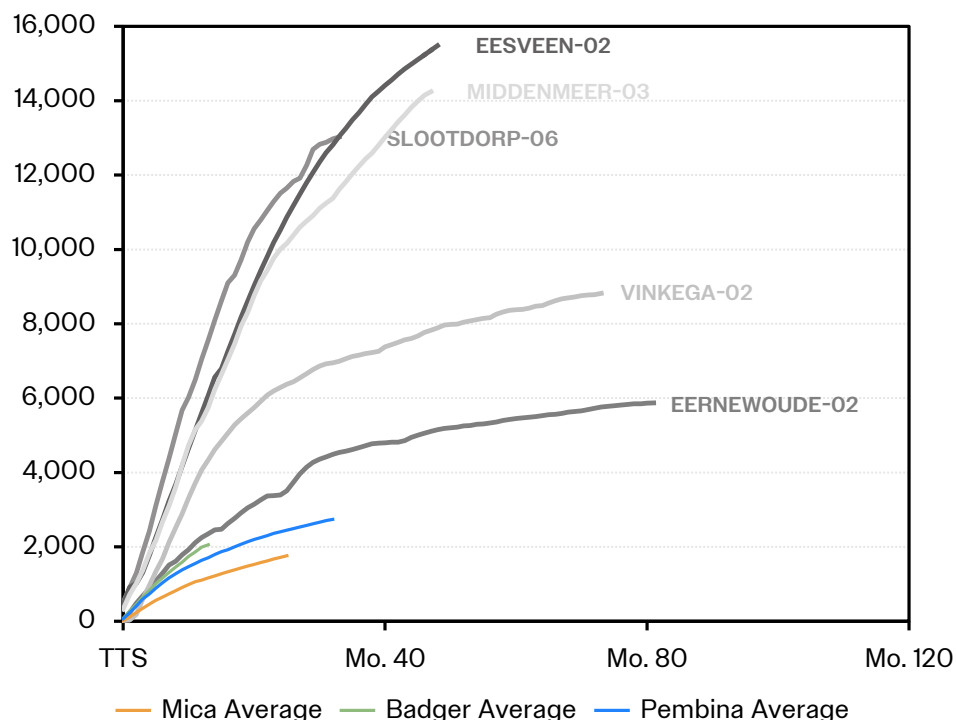
While many folks like Vermilion because their European assets “print money”, the reality is, before their big acquisition spree, Vermilion didn’t have anything to reinvest those European funds into. Their SE SK inventory picture was grim, the Powder River Basin is hardly a serious play, and their Central Alberta assets were tired – the average Vermilion Deep Basin IP₃₆₅ declined from 425BOE/d in 2021, to 375BOE/d in 2022, and to 270BOE/d in 2023. Vermilion was in a very bad spot by early-2022. We think they had overexposed their business to conventional geology risks, with few other avenues to add value. And while their European wells are great – as we show below – they’re conventional, not repeatable, not easily deployable, windfall taxable, obstructible by local governments...

While the conventional wells Vermilion is drilling in Europe are more profitable on a recycle-ratio basis, we far prefer lower-risk exploitation as a core business. We think that Vermilion has done a good job providing themselves with a development runway without incremental shareholder dilution, while now allowing their European business unit to add value through higher-impact exploration.

We’re interested in how Vermilion can use the European gas strength to improve the business in a non-transitory way, as we have seen them already execute. With that said, we’d like to see Vermilion finish the follow-through and core-up their portfolio, focusing on rich gas opportunities in the Deep Basin, Montney, and Europe. This includes divesting their Australia, SE SK, and PRB assets. Based on Horizon/Mereenie, Amplify/Juniper and Saturn/Crescent Point precedents, we think Vermilion could raise ~\$800MM through various dispositions, while only selling ~16,500BOE/d, or ~\$275MM of FFO. We’d like to see ~\$600MM of that directed to the balance sheet (mid-2026 1x ND/FFO), with the remaining disposition proceeds directed to Badger – a largely derisked, development-ready Wilrich project Vermilion inherited from Westbrick.

This would put Vermilion at a ~\$3.4Bn EV, with ~\$1.2-1.3Bn of FFO with Badger online. Their maintenance levered FCF yield would be ~29% post-Badger, even with normalized TTF prices; and with a cored-up strategy, we think there’s a real reason for the equity markets to assign a higher multiple. We’d like to see Vermilion use this 2025 TTF windfall to execute these moves, we think this can lead to a more durable, long-term potential tailwind for the company, and longer-term reason for a rerate higher, rather than simply being commodity price beta.

3-21.11: Vermilion Netherlands Raw Gas Cumcs (MMcf)



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