

Baker Hughes Oil Rig and Primary Vision Frac Spread Counts

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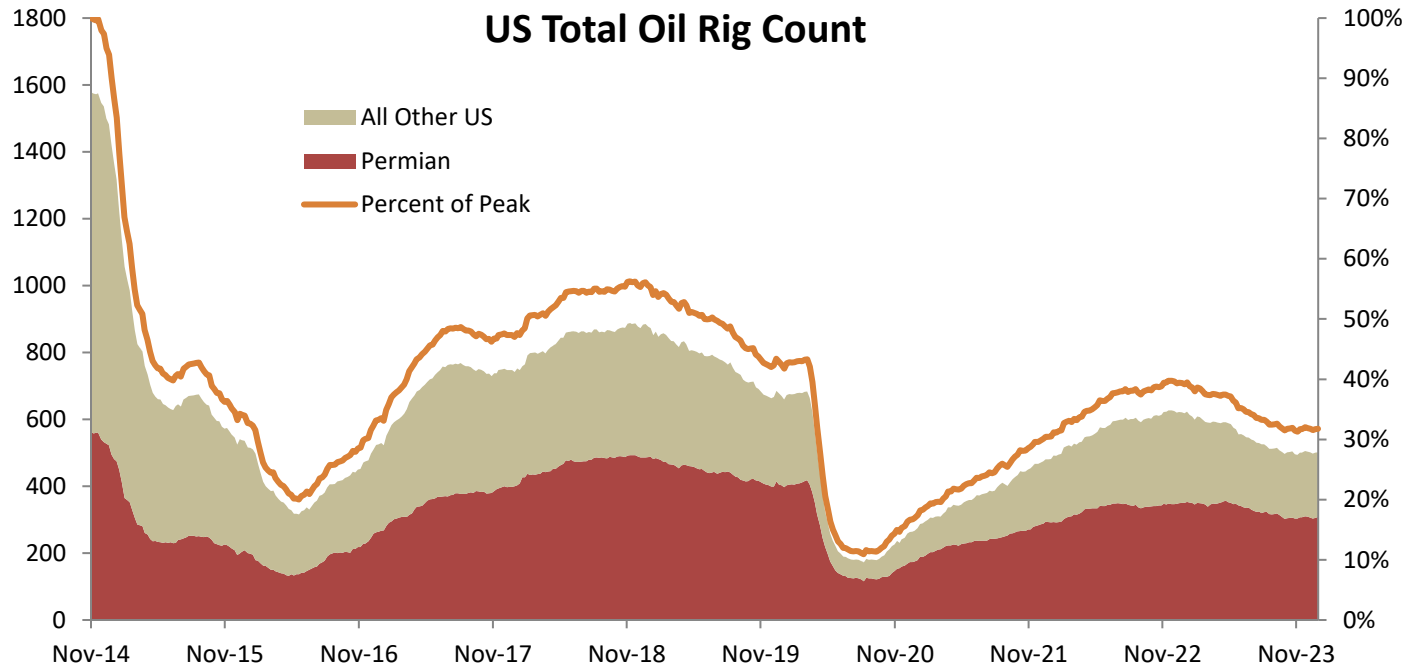
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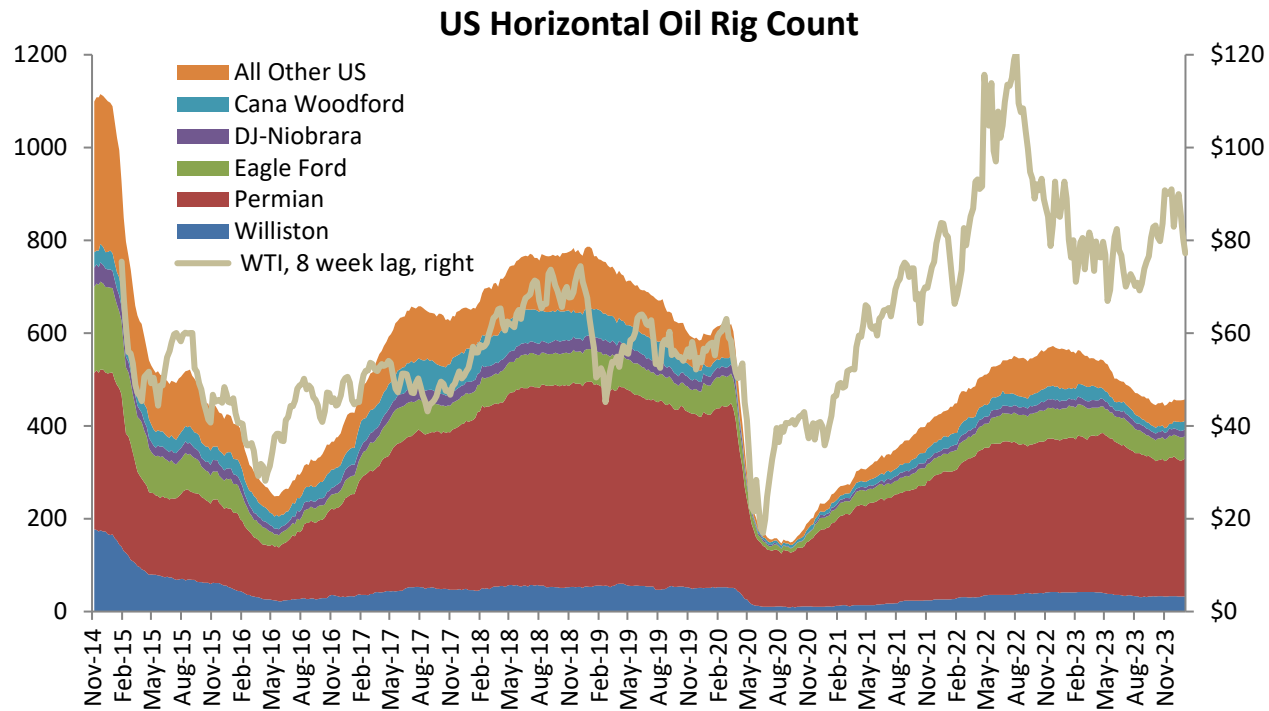


- The rig and spread counts are seeing both regime change and seasonal variation
 - Horizontal oil rig counts appear to have stabilized in the mid 450s, essentially unchanged in the last two months. This represents a new regime in the shale patch, as counts had been falling steadily for the year prior
 - Frac spreads have rolled off heavily over the last four weeks, down 32 since early December. Most of this can be attributed to seasonal factors, but the effect has been to stem the erosion in the DUC inventory witnessed over the last several years. On seasonal trends, spread counts may be expected to recover over the next several weeks with a renewed erosion in DUC inventories.
 - We continue to see a disparity between the EIA and media reports with respect to production growth. The media frequently refers to [surging US oil production](#), and that is certainly true considering 2023 as a whole. However, the EIA sees US shale oil production peaking in October 2023, with modest declines to be expected over the next several months.

- Rig counts
 - Total oil rig counts: +1 to 501
 - Horizontal oil rig counts: +1 to 457
 - The Permian horizontal oil rig count: +3
- The US horizontal oil rig count is rising at a pace of +0.5 / week
- Frac spreads fell, -4 to 236, the lowest level in more than two years
- DUC inventory, as measured in days of turnover, rose to 16.1 weeks on seasonal factors
 - Based on last year's precedent, expect the spread count to recover and inventory to fall back towards 14 weeks

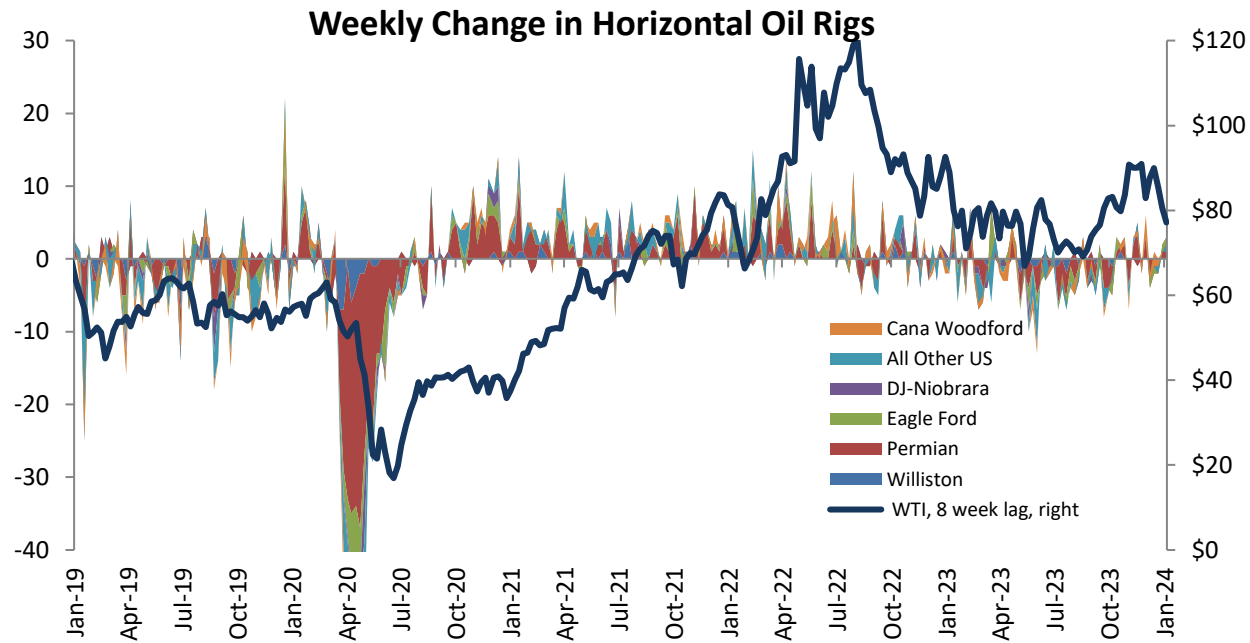


- Total oil rigs: +1 to 501
- Permian: +3
- All Other US: -2



- Horizontal oil rigs: +1 to 457
- Permian: +3
- All Other US: -2

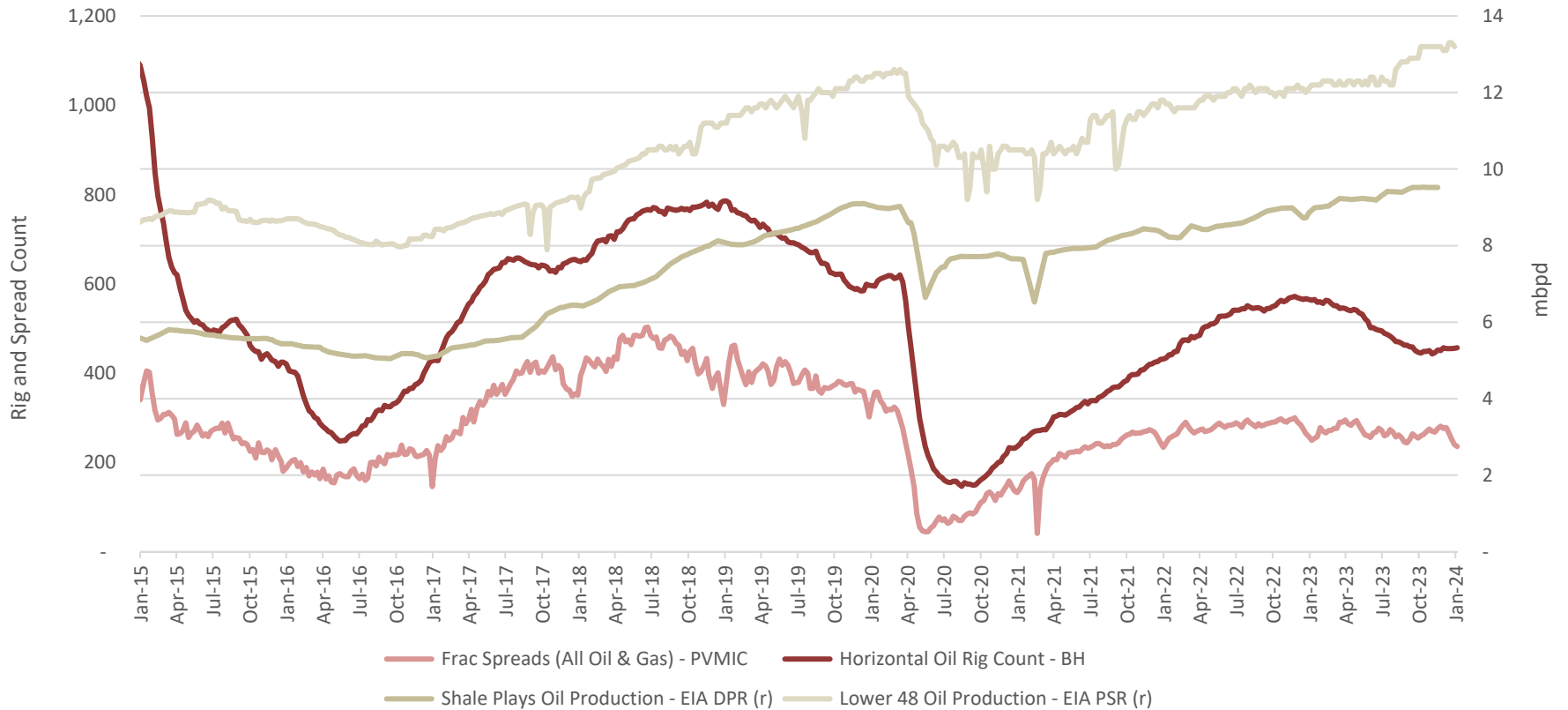
Weekly Change in Horizontal Oil Rig Count by Basin



• By Basin	Change	Count
- Williston	0	32
- Permian	+3	298
- Eagle Ford	-1	48
- DJ Niobrara	0	14
- Cana Wdford	0	19
- Other US	-1	46
- Total	+1	457

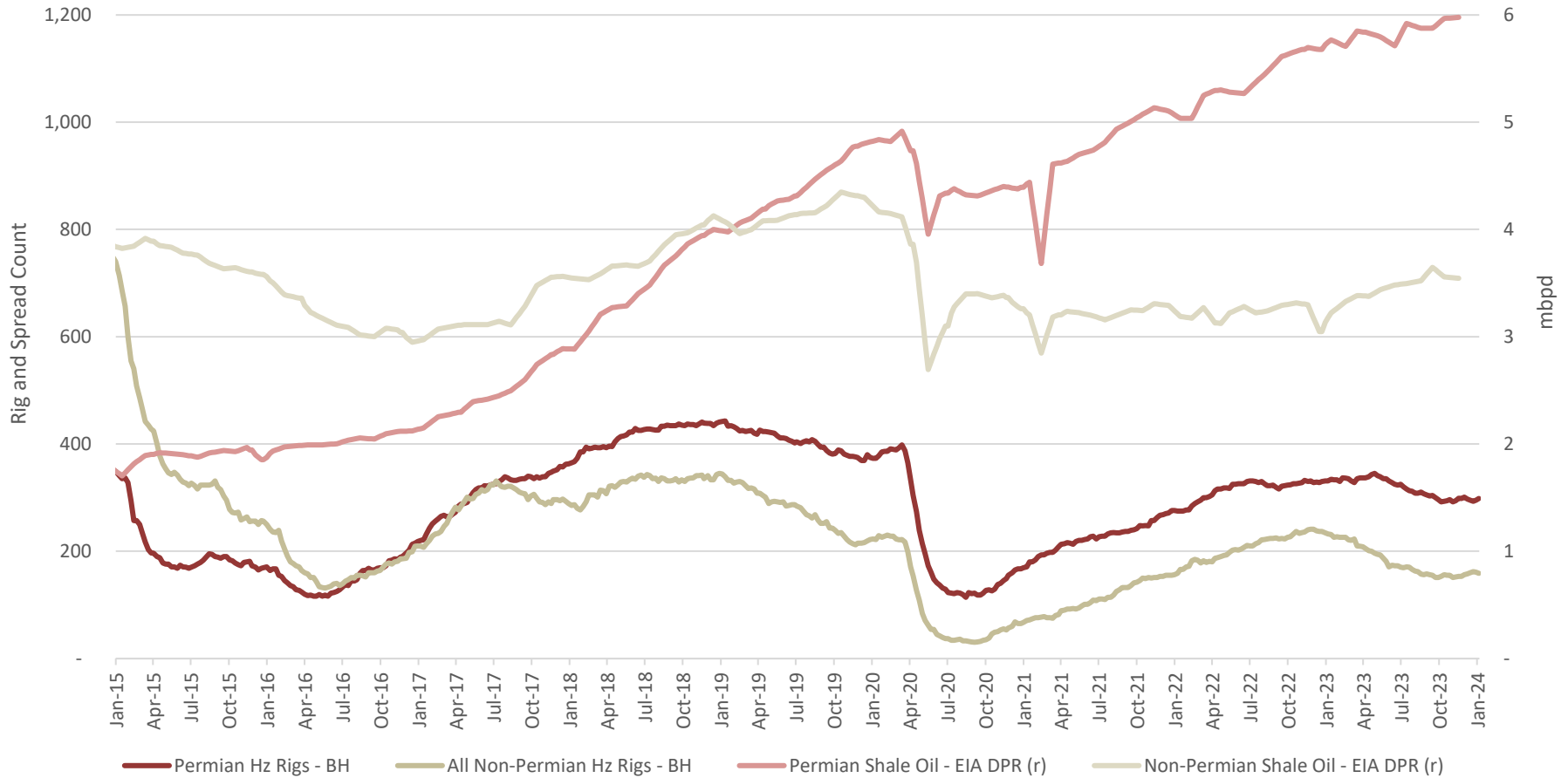
Rigs, Spreads and US Oil Production

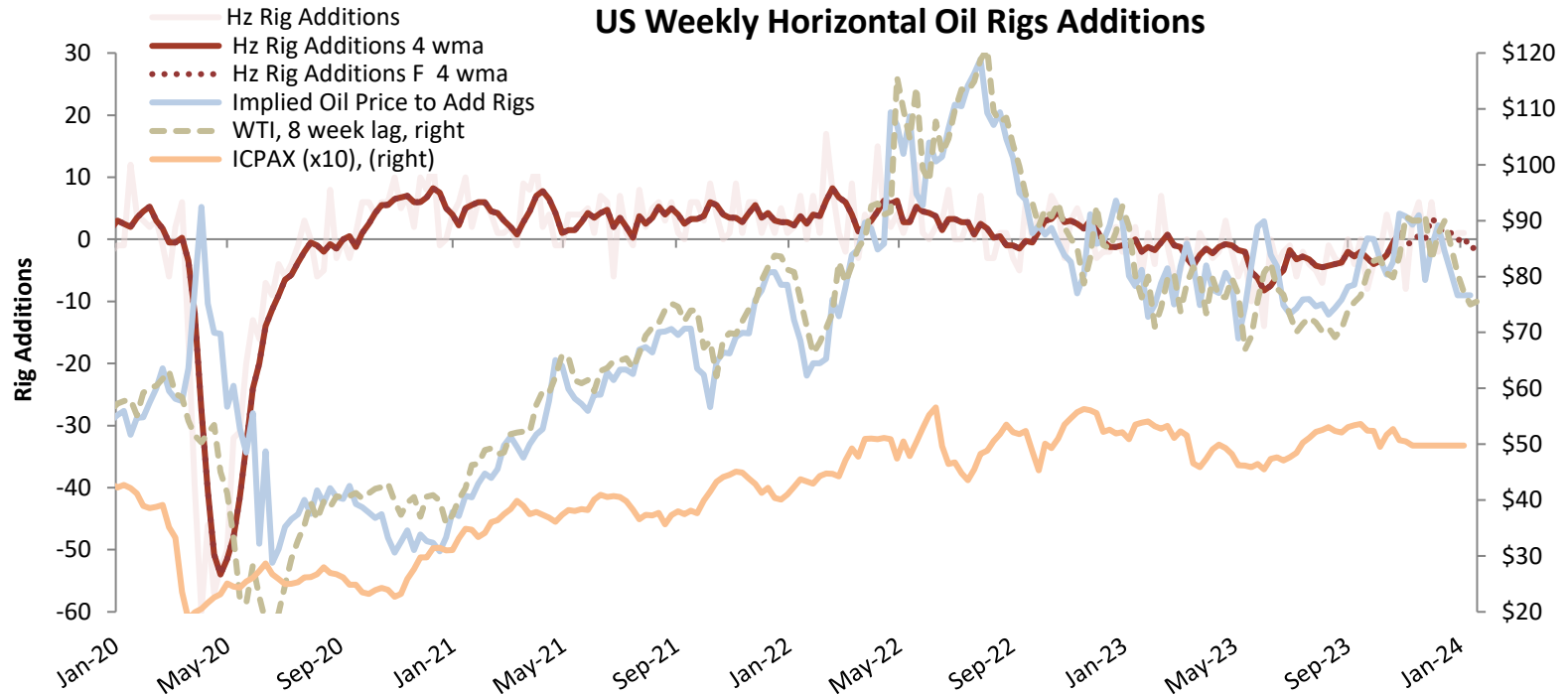
Rigs, Spreads and US Crude and Condensate Production



Permian & Non-Permian Shale Oil Production and Hz Oil Rigs

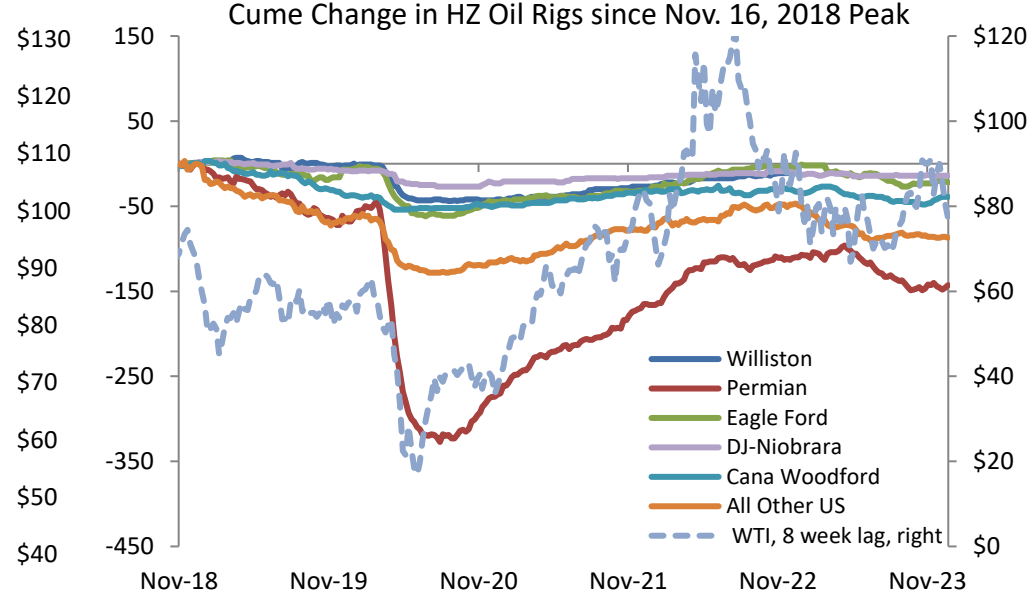
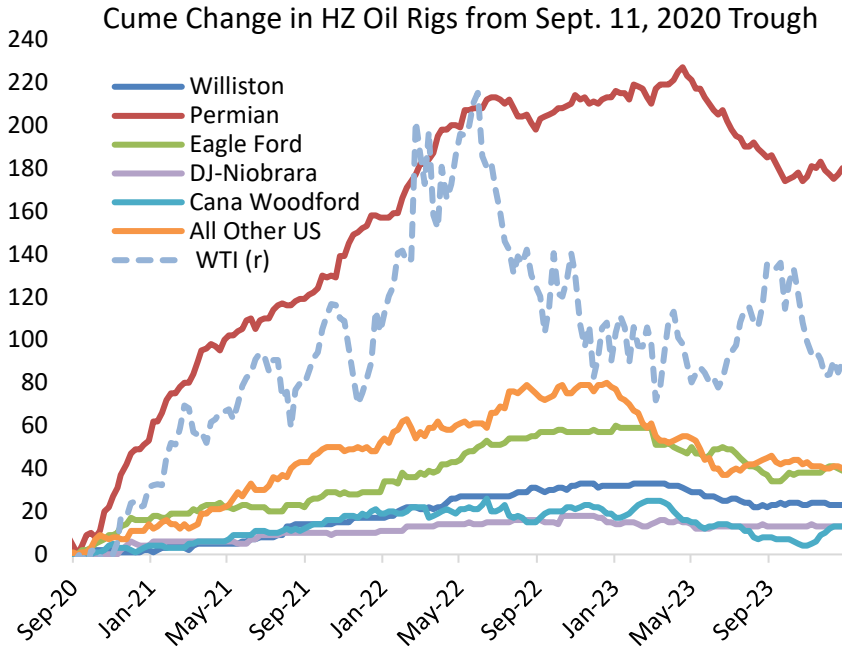
Permian and Non-Permian Shale Oil Production and Horizontal Rigs





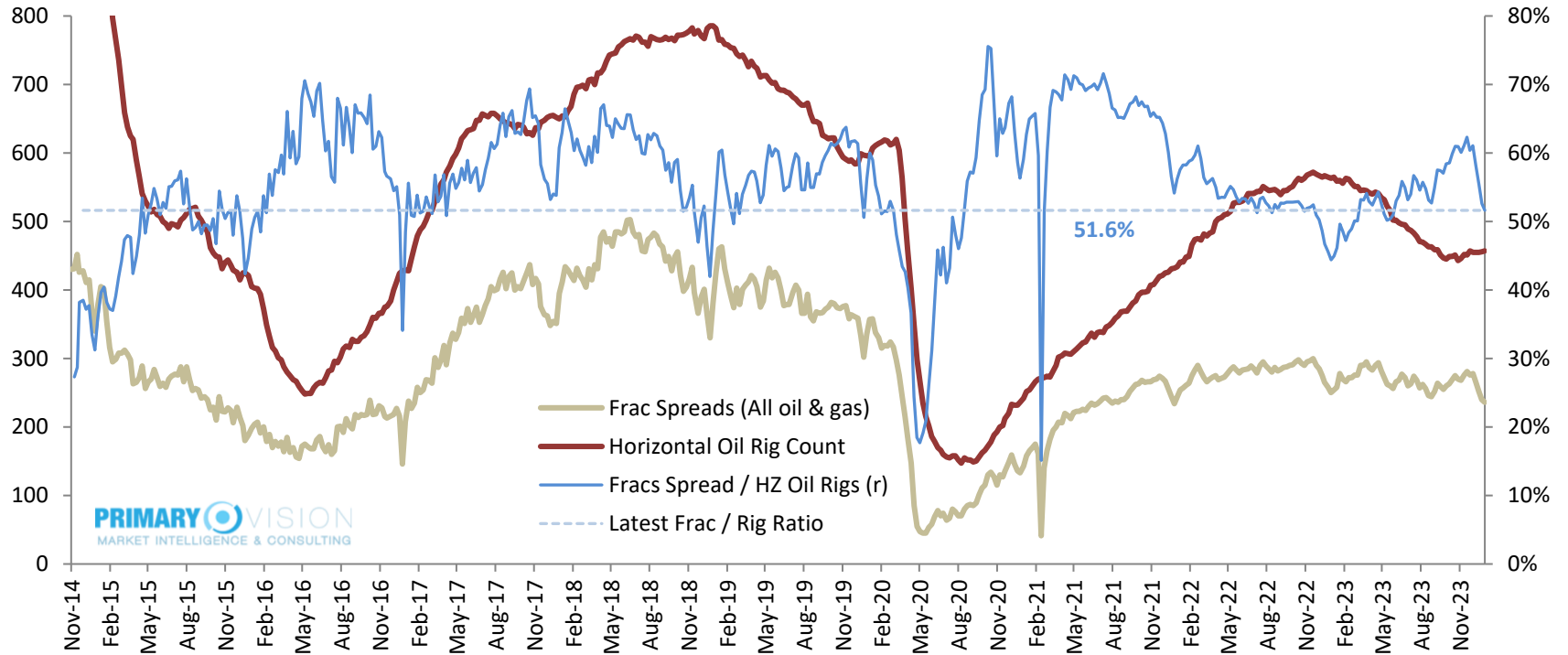
- The 4 wma pace of horizontal rig additions rose to +0.5 / week, on a winning streak for five weeks now.
- With an eight-week lag, the breakeven to add horizontal oil rigs stands at a horrific WTI \$77 / barrel with \$74 on the screen at writing

US Horizontal Oil Rig Change from Peak and Trough



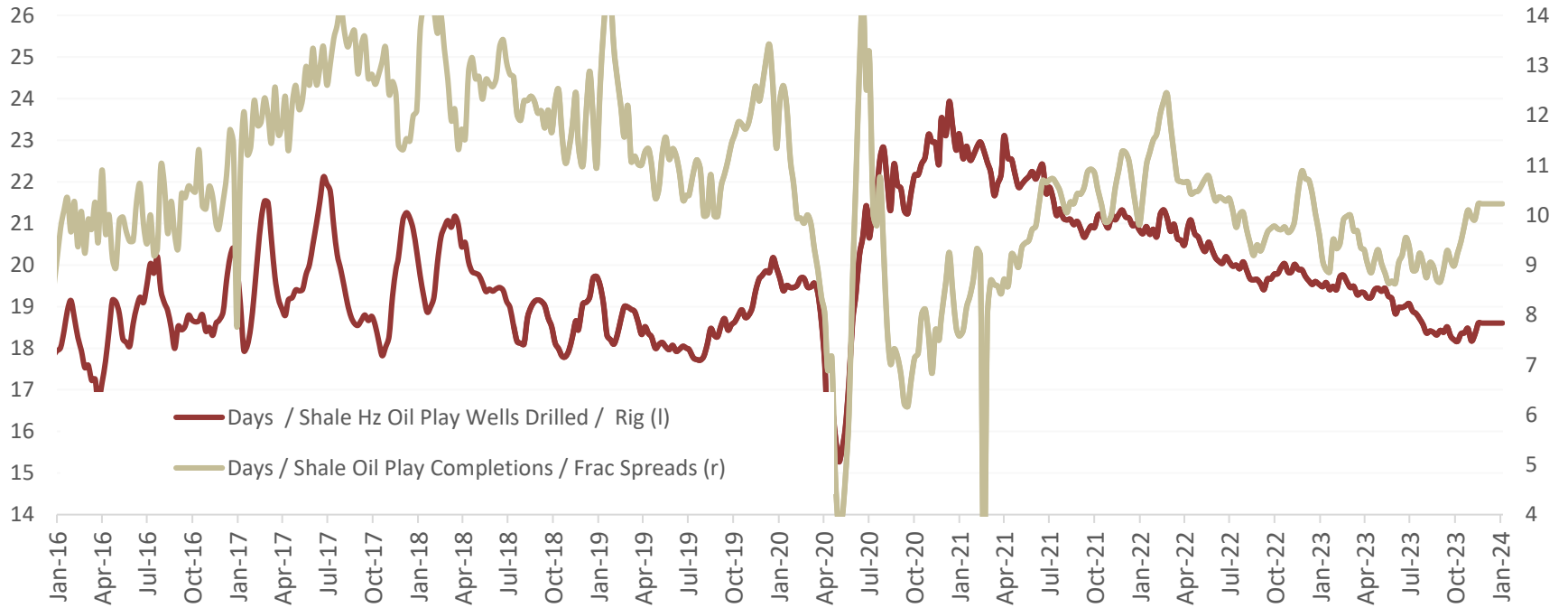
	Latest HZ Rig Count	Trough August 14, 2020				Prior Peak Nov. 16, 2018			
		Trough Count	Rig Change	Percent Change	Pct of Rig Gained	Peak Count	Rig Change	Percent Change	Pct of Rigs Lost
- Williston	32	11	21	191%	7%	53	(21)	-40%	6%
- Permian	298	114	184	161%	59%	441	(143)	-32%	44%
- Eagle Ford	48	10	38	380%	12%	70	(22)	-31%	7%
- DJ Niobrara	14	1	13	1300%	4%	28	(14)	-50%	4%
- Cana Wdford	19	6	13	217%	4%	58	(39)	-67%	12%
- Other US	46	5	41	820%	13%	133	(87)	-65%	27%
- Total	457	147	310	211%	100%	783	(326)	-42%	100%
		<i>05/22/20</i>							
- Frac Spreads	236	45	191	424%		433	(197)	-45%	
<i>Spread Ratio</i>	<i>51.6%</i>	<i>30.6%</i>				<i>55.3%</i>			

Frac Spreads and Horizontal Oil Rigs



- Frac spreads were -13 to 265

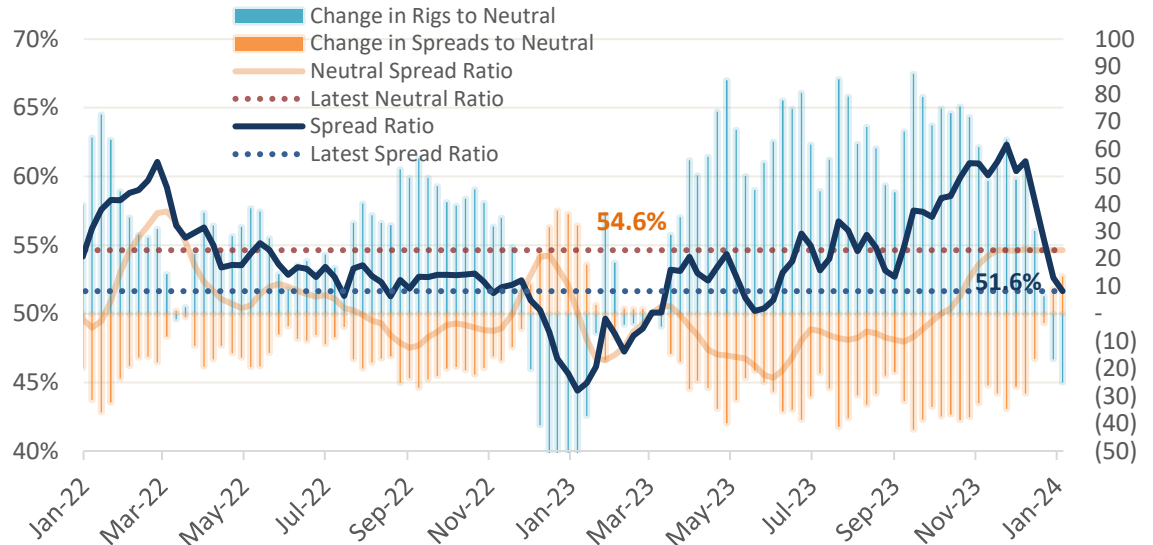
Productivity of Rigs and Spreads: Days per Well



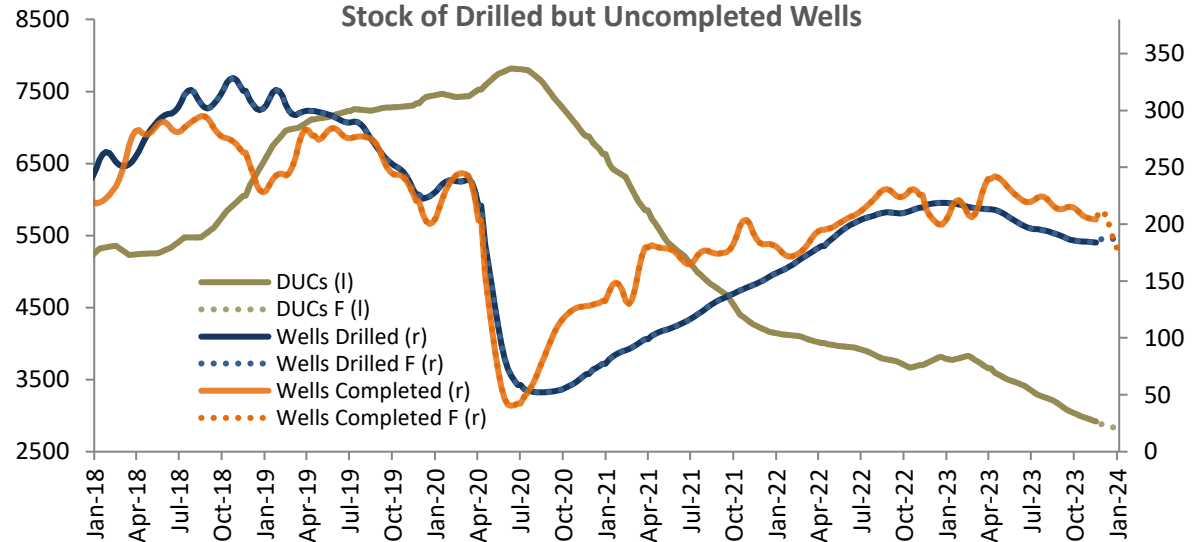
Rig and Spread Productivity

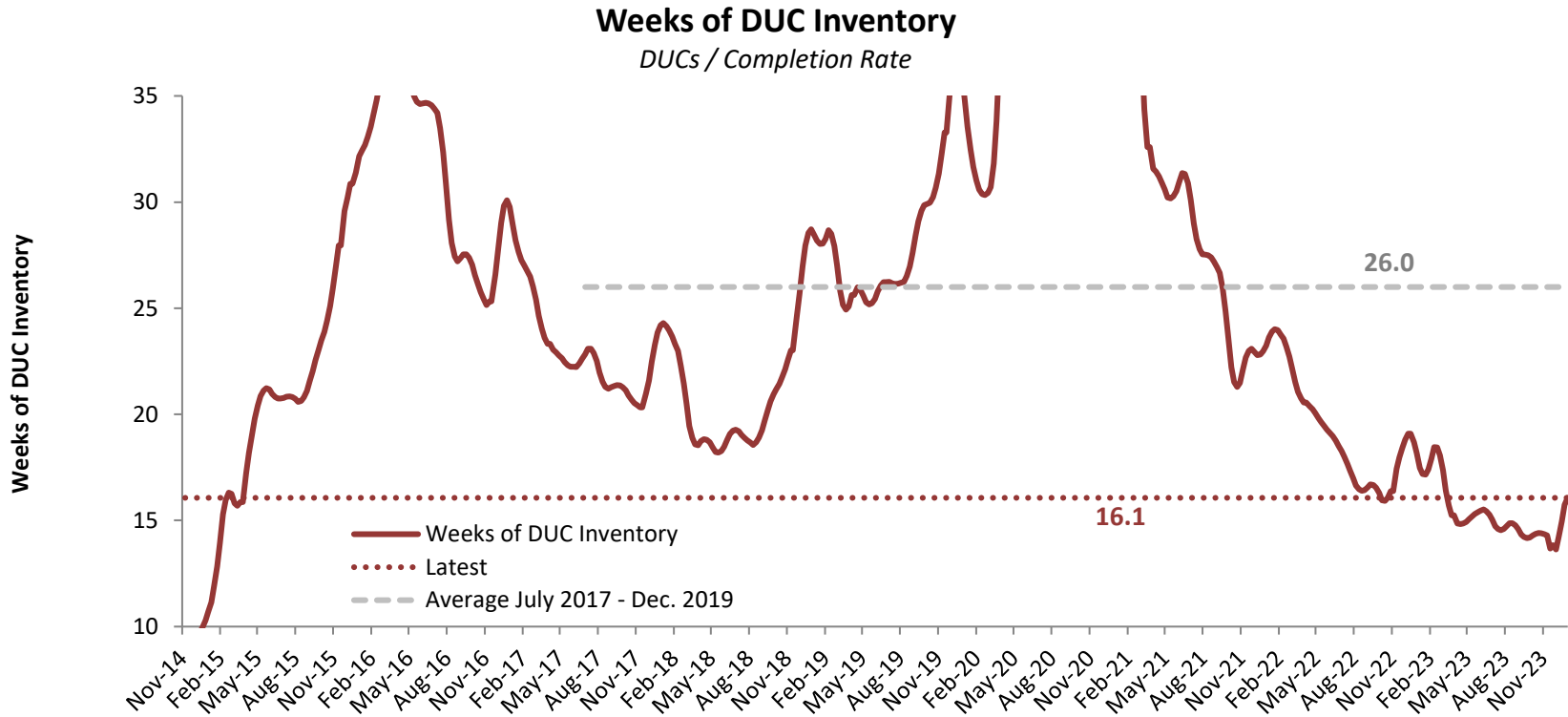
- At estimated productivity levels and current rig and spread counts, the DUC inventory is essentially flat

The Spread Ratio and Rigs and Spreads for DUC Neutrality



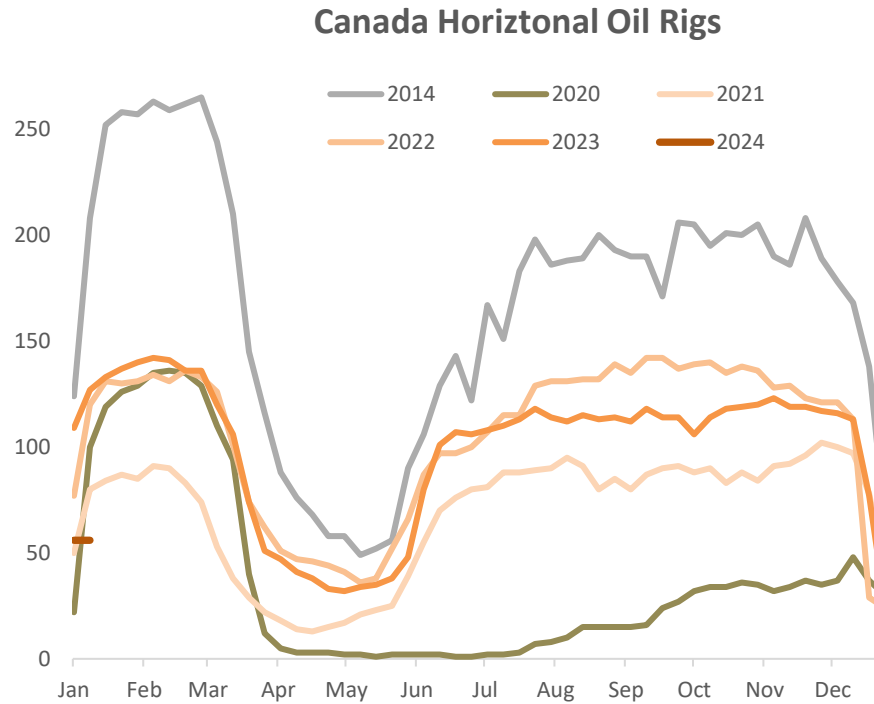
Horizontal Oil Wells Drilled and Completed per Week
Stock of Drilled but Uncompleted Wells



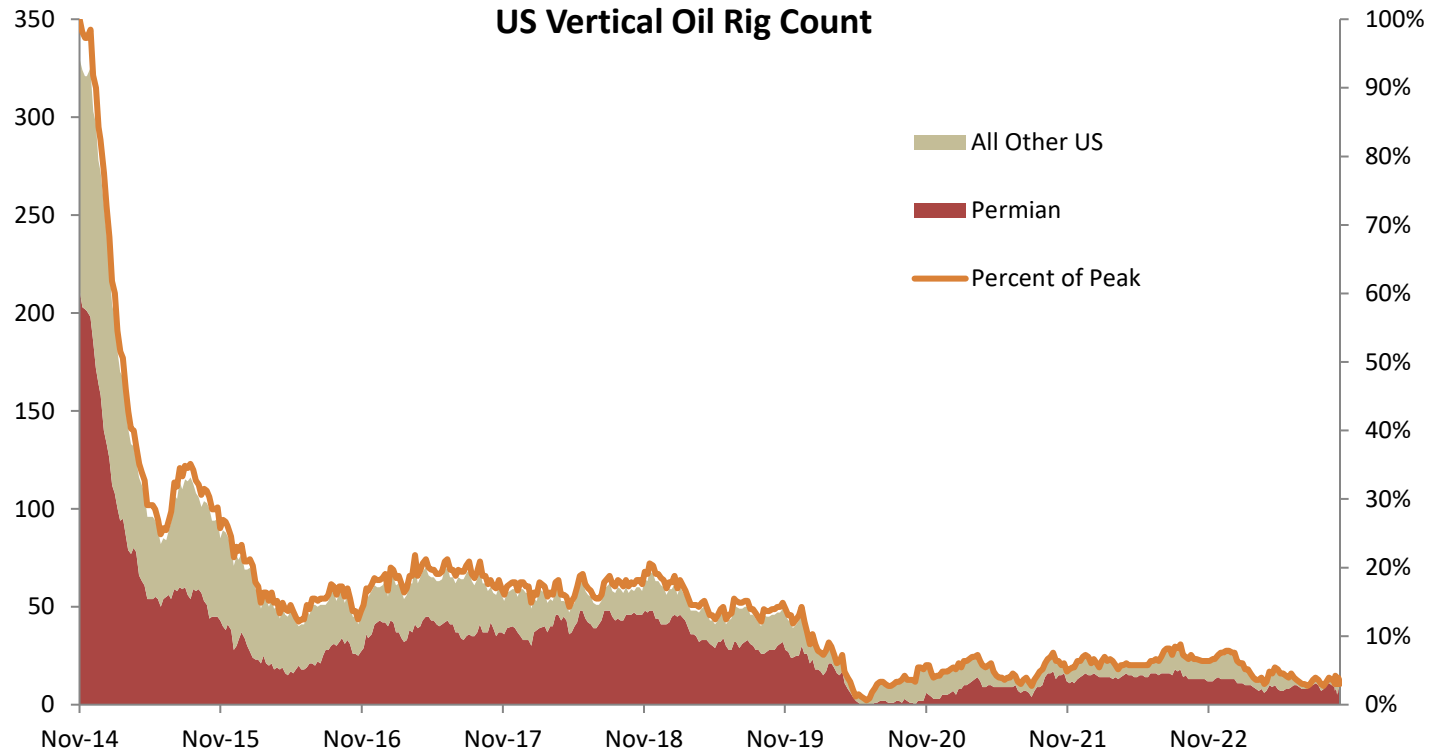


- DUC inventories rose to 16.1 weeks on seasonal reductions in frac spread counts.
- DUC inventory might be expected to return to around 14 weeks over the next two months

Canada Horizontal Oil Rig Count

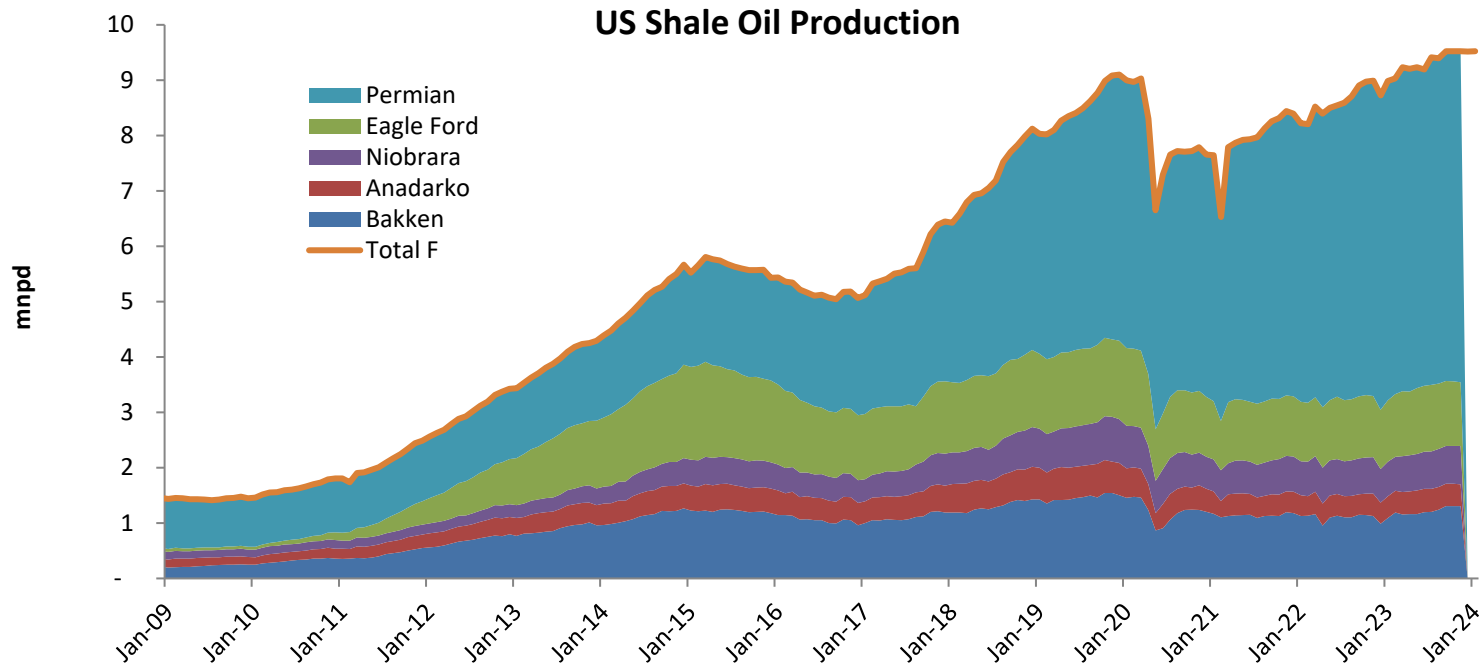


- Canada horizontal oil rigs were up 31 to 56 last week
- Rigs counts were -53 compared to the same week last year



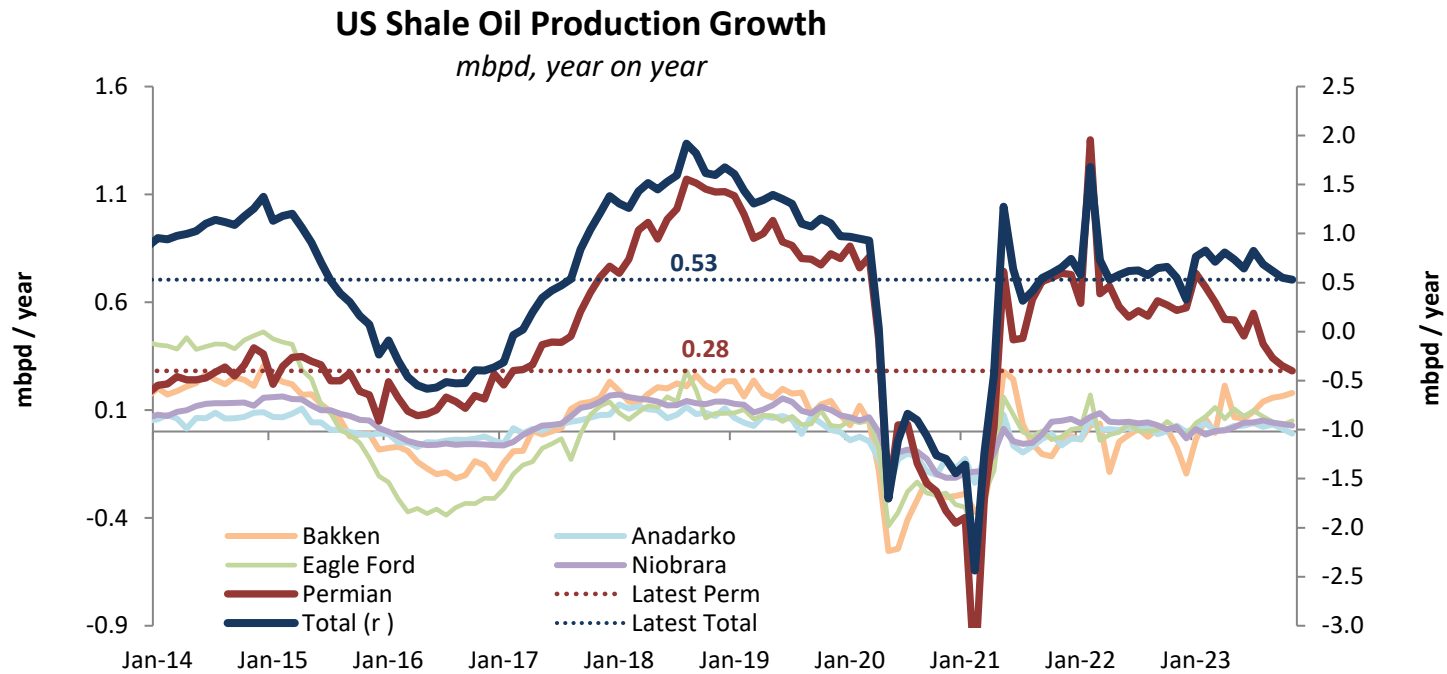
- Vertical oil rigs: +0 to 10
- Permian: +0
- All Other US: +0

US Shale Production Growth (Dec. DPR)



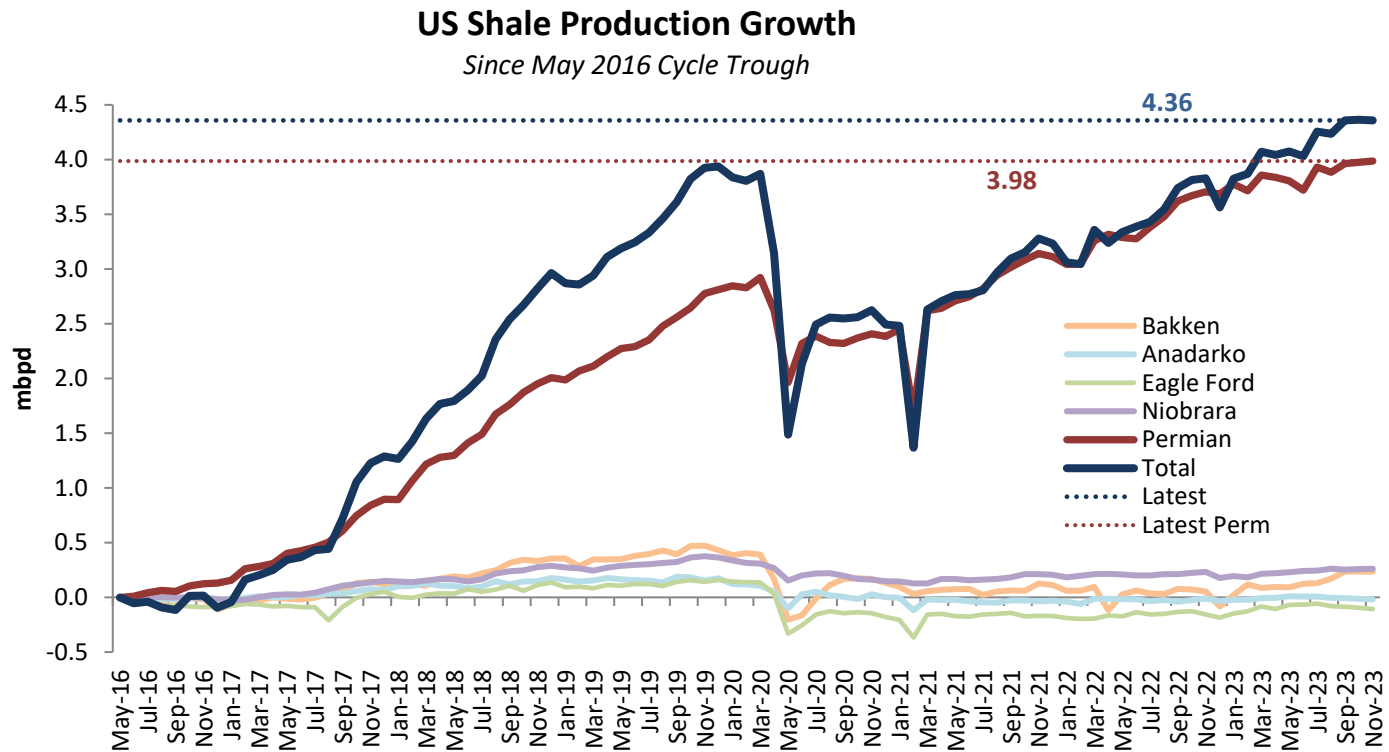
- In the December DPR report, November crude and condensate production from key shale plays fell 4,000 bpd to 9.52 mbpd.
- Shale C+C production was revised up 37 kbpd on average for September and October, with September revised up marginally
- The EIA continues to see peak shale oil output, but with the peak delayed from July to October.

US Shale Production Growth (Dec. DPR)



- Compared to last year, total shale oil production is up 0.5 mbpd
- The Permian is up 0.3 mbpd
- As before, annual Permian growth is rapidly decelerating

US Shale Production Growth from May '16 (Dec. DPR)



- Since the prior cyclical trough in May 2016, total shale oil production from the key plays is up 4.4 mbpd
- All but 380,000 bpd of this growth comes from the Permian basin

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