

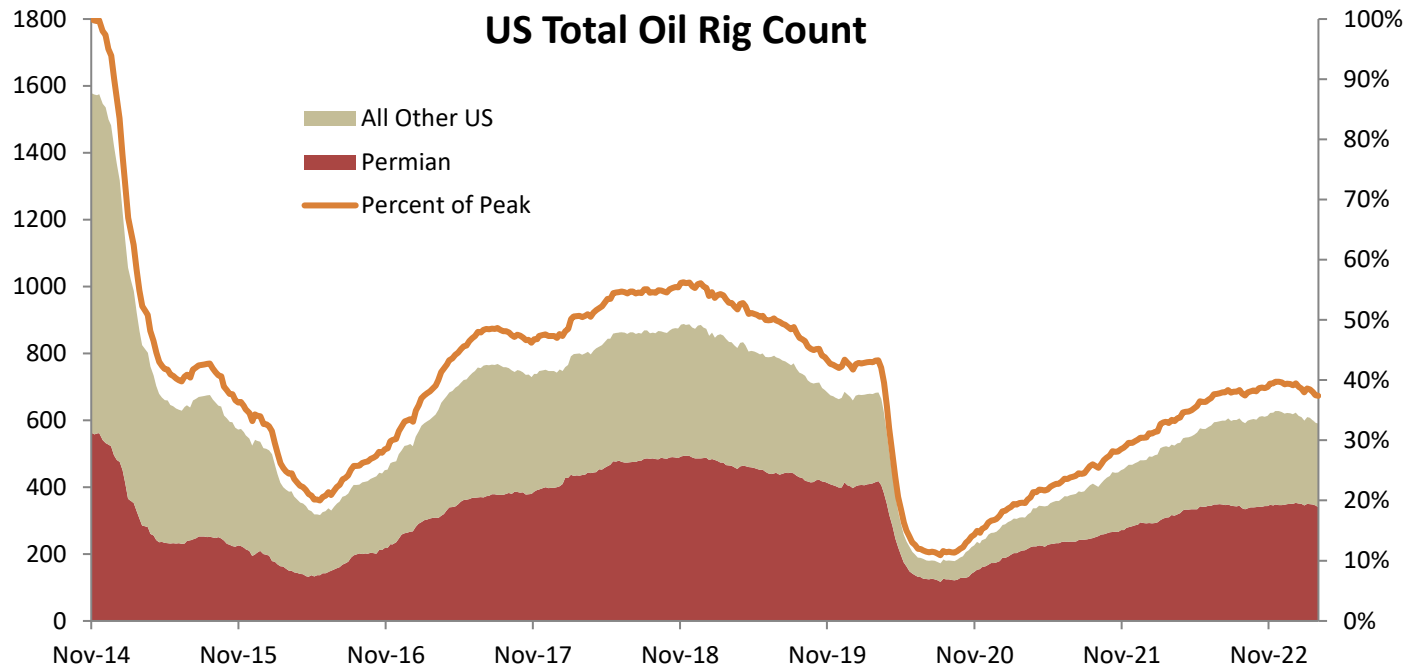
Baker Hughes Oil Rig and Primary Vision Frac Spread Counts

10 March 2023

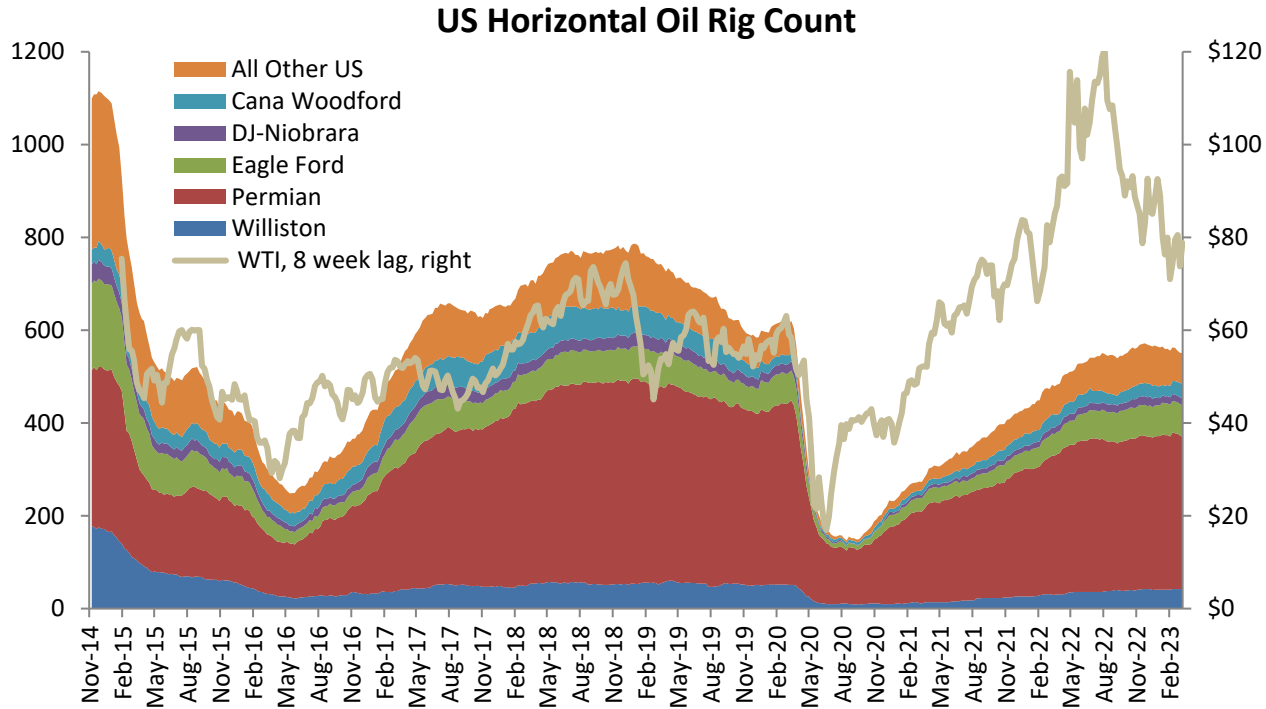
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- Rigs counts fell again
 - Total oil rig counts fell, -2 to 590
 - Horizontal oil rig counts were flat at 551
 - The Permian shed 3 horizontal oil rigs. No good.
- The pace of horizontal rig additions fell to -3.0 / week on a 4 wma basis.
 - This number has been negative for 13 of the last 14 weeks
 - As before, our model suggests that rig counts could erode at a pace of -1 / week for the next two months
- Frac spreads were flat at 276
- DUCS were up 9 for the month of February, essentially flat as a statistical matter.
 - At current rig and spread productivity levels, we would expect the DUC inventory flat over the coming month

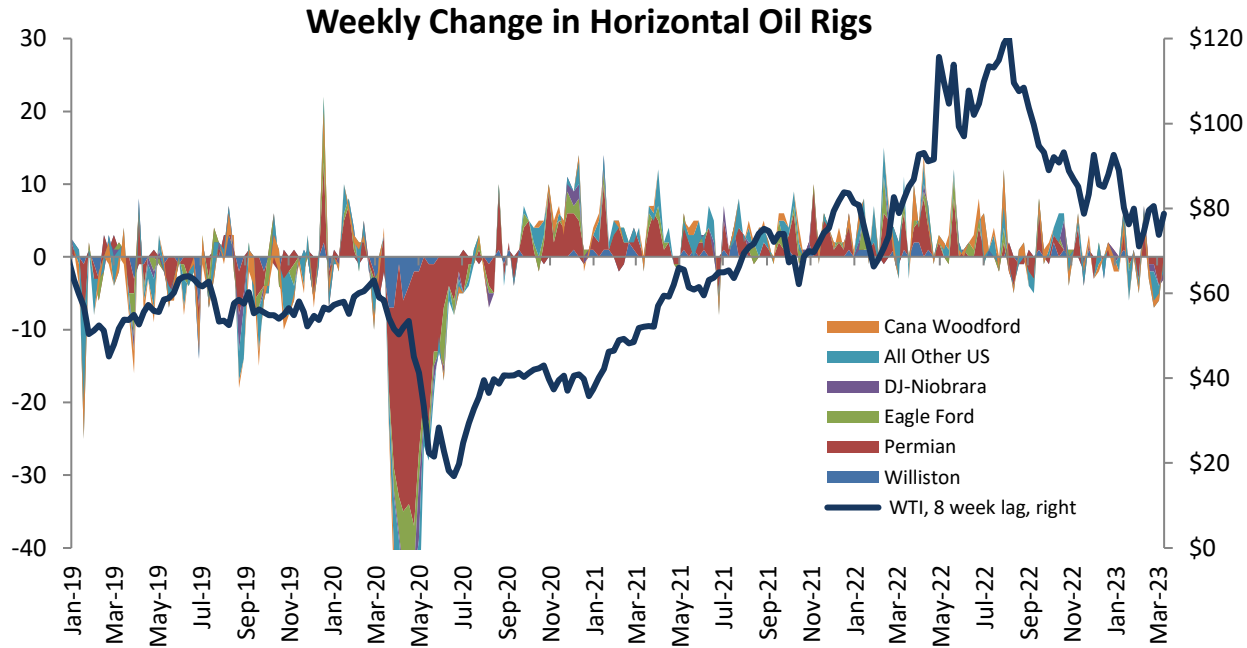


- Total oil rigs: -2 to 590
- Permian: -6
- All Other US: +4



- Horizontal oil rigs: +0 to 551
- Permian: -3
- All Other US: +3

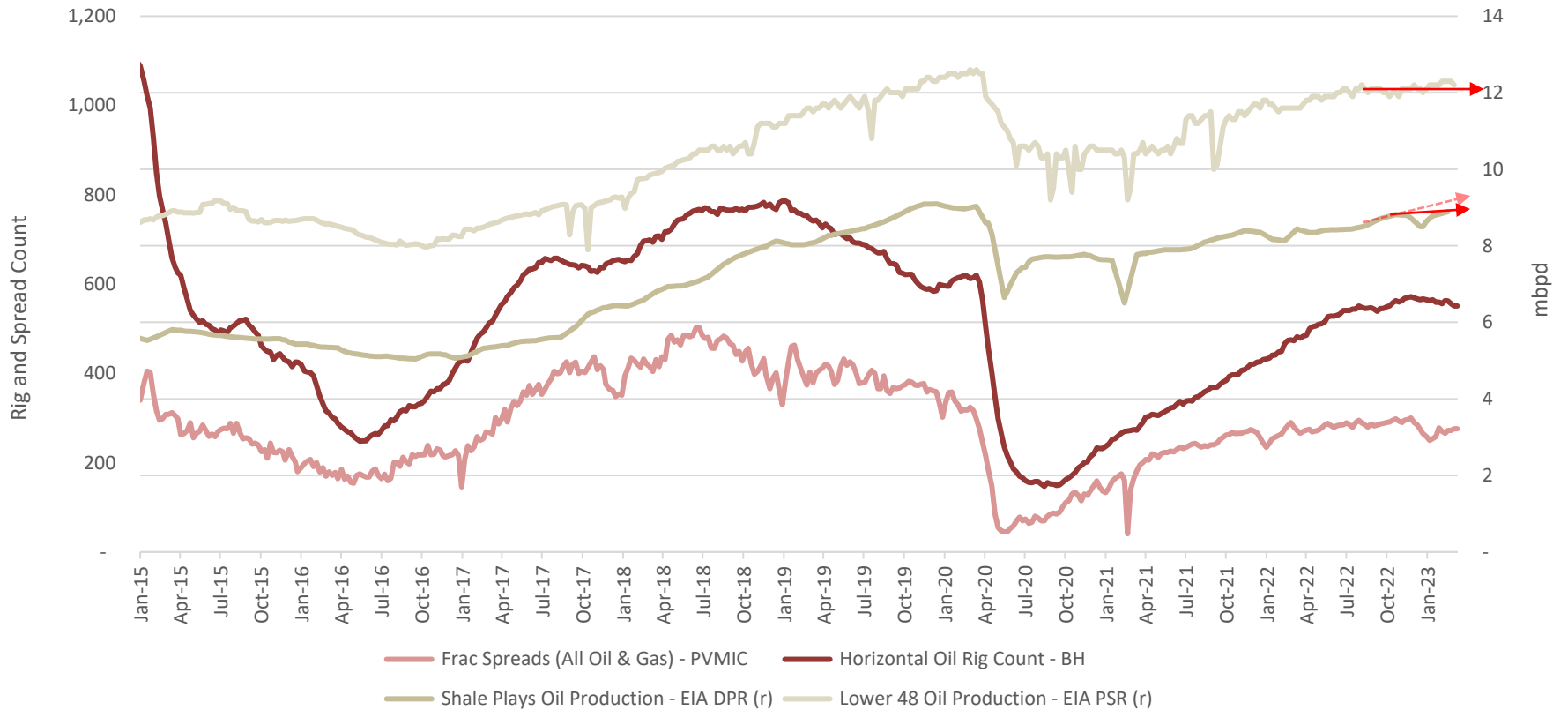
Weekly Change in Horizontal Oil Rig Count by Basin



• By Basin	Change	Count
- Williston	0	42
- Permian	-3	328
- Eagle Ford	0	68
- DJ Niobrara	+1	15
- Cana Wdford	0	31
- Other US	+2	67
- Total	0	551

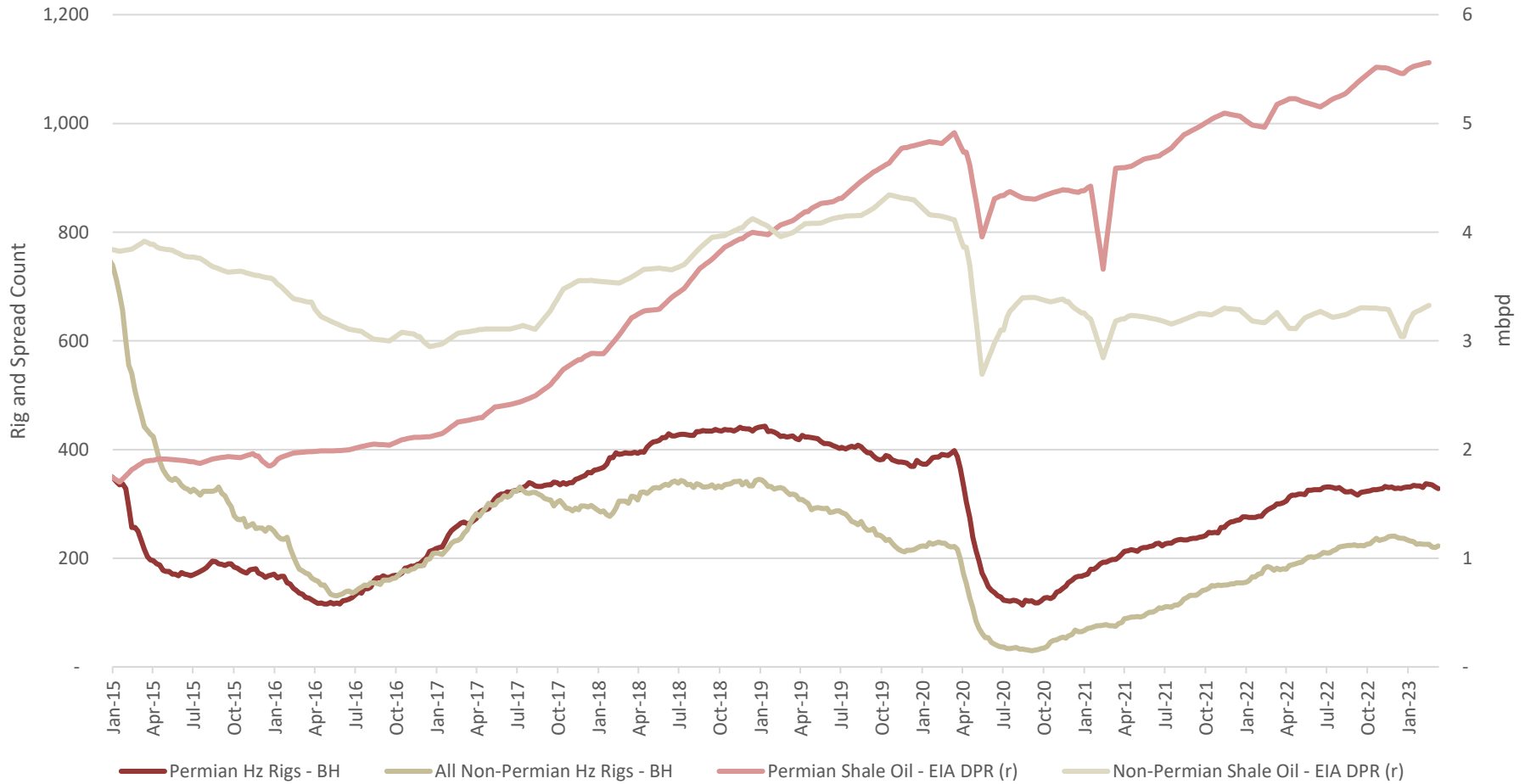
Rigs, Spreads and US Oil Production

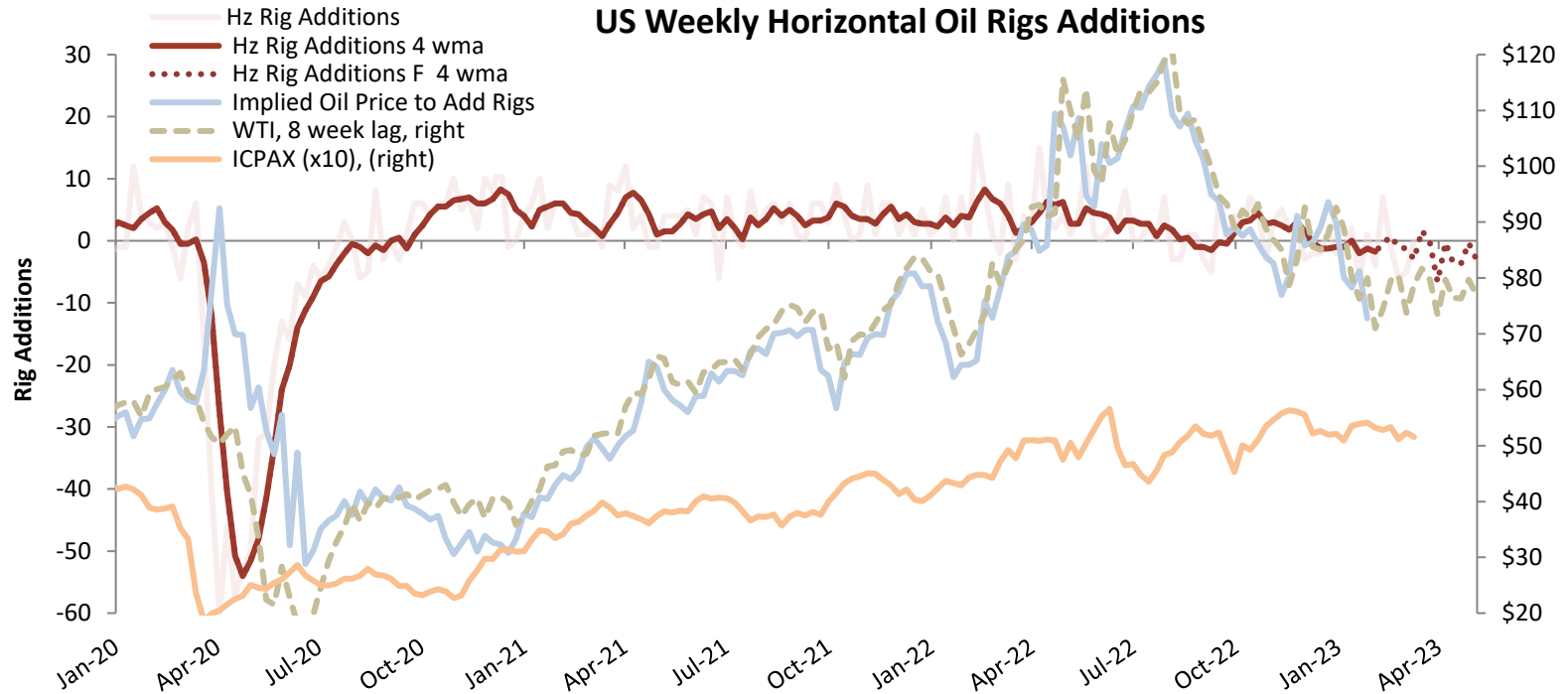
Rigs, Spreads and US Crude and Condensate Production



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

Permian and Non-Permian Shale Oil Production and Horizontal Rigs

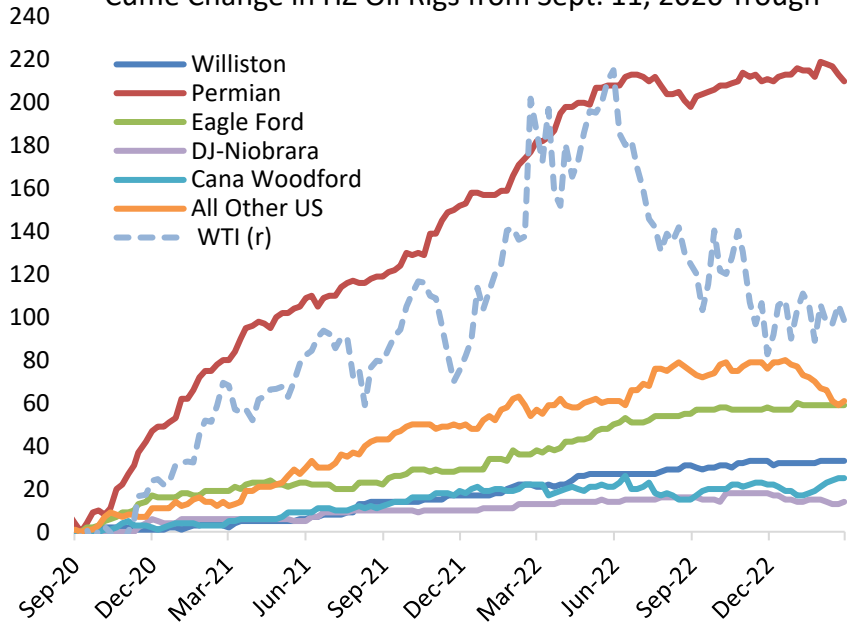




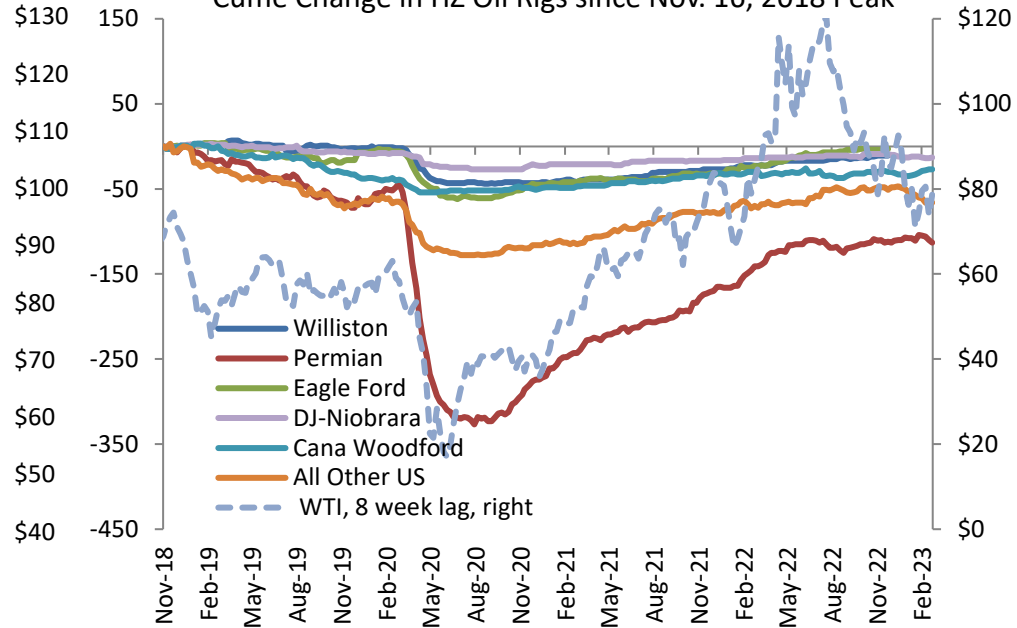
- The 4 wma pace of horizontal rig additions fell to -3.0 / week, negative for the twelfth time in the last thirteen weeks
- With an eight week lag, the breakeven to add horizontal oil rigs rose to \$82 / barrel on a WTI basis with \$77 on the screen

US Horizontal Oil Rig Change from Peak and Trough

Cume Change in HZ Oil Rigs from Sept. 11, 2020 Trough

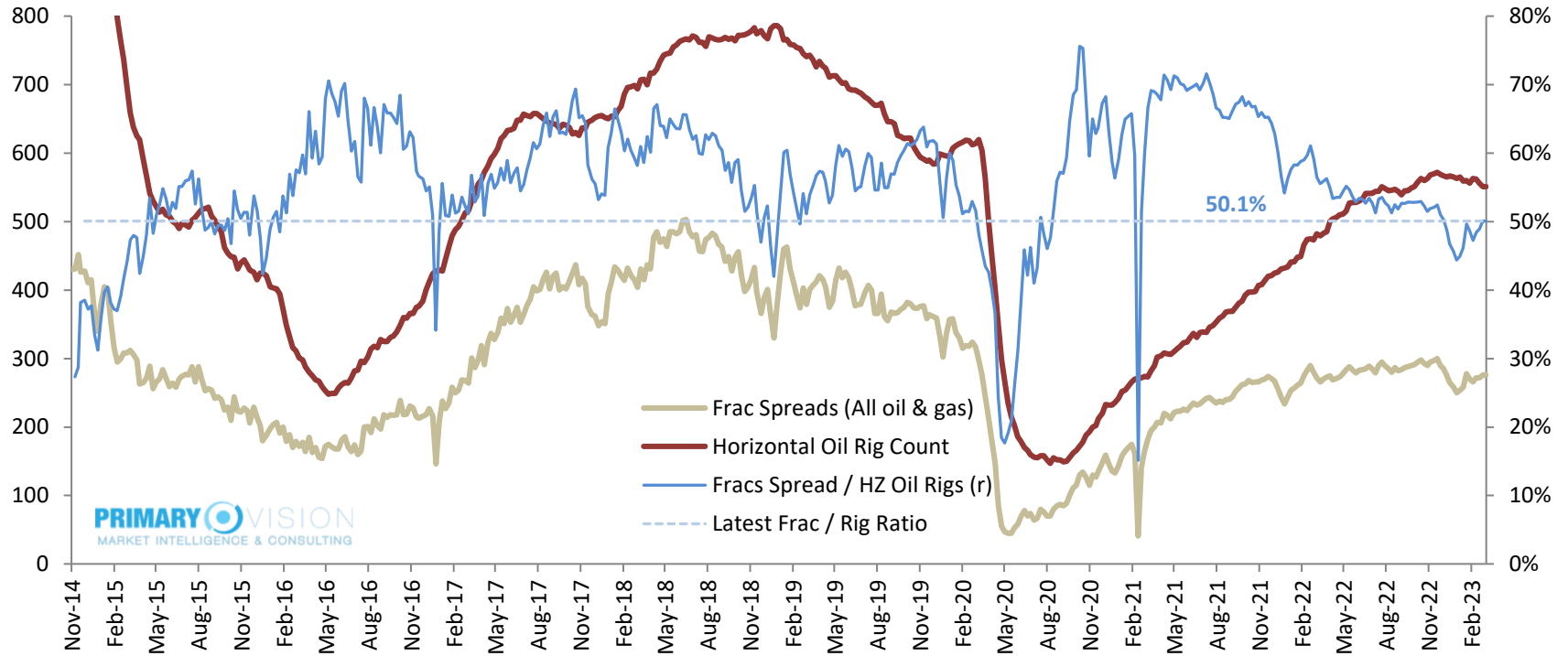


Cume Change in HZ Oil Rigs since Nov. 16, 2018 Peak

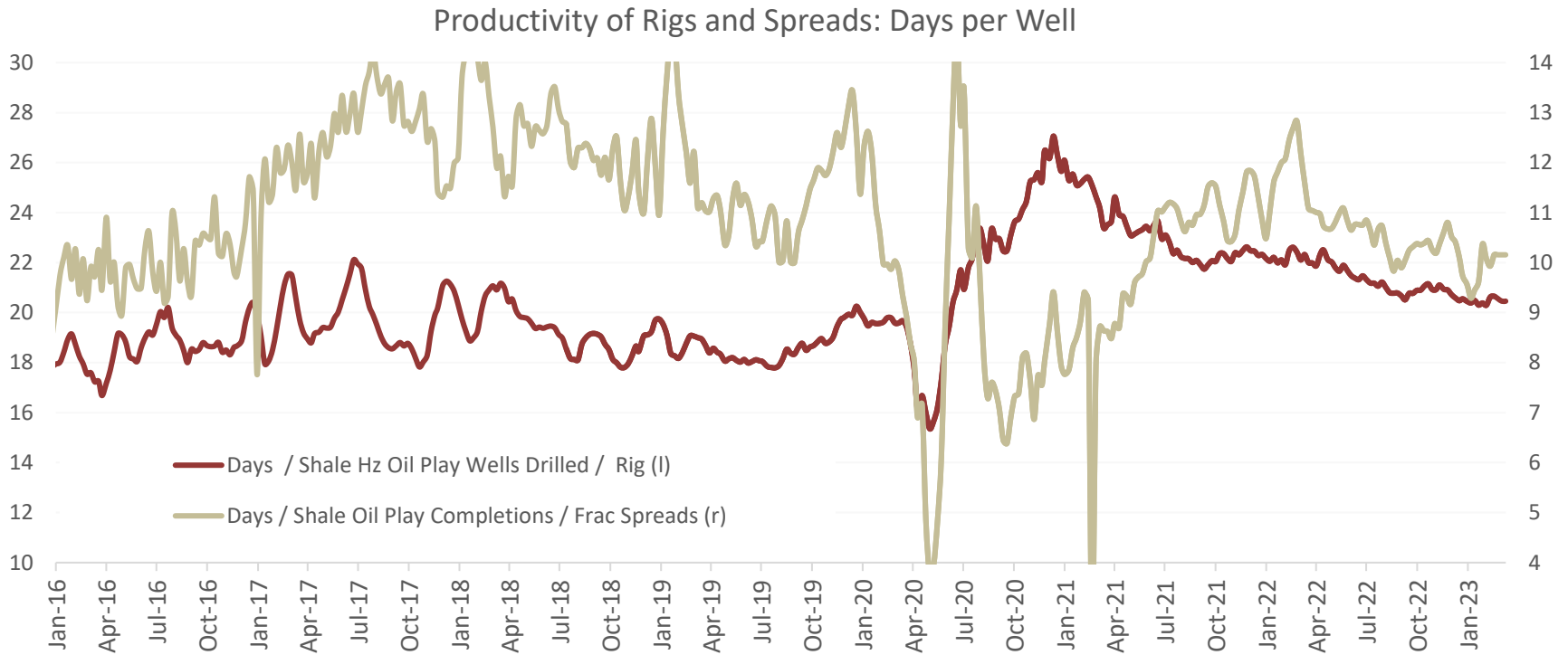


	Latest HZ	Trough August 14, 2020				Prior Peak Nov. 16, 2018			
	Rig Count	Trough Count	Rig Change	Percent Change	Pct of Rig Gained	Peak Count	Rig Change	Percent Change	Pct of Rigs Lost
- Williston	42	11	31	282%	8%	53	(11)	-21%	5%
- Permian	328	114	214	188%	53%	441	(113)	-26%	49%
- Eagle Ford	68	10	58	580%	14%	70	(2)	-3%	1%
- DJ Niobrara	15	1	14	1400%	3%	28	(13)	-46%	6%
- Cana Wdford	31	6	25	417%	6%	58	(27)	-47%	12%
- Other US	67	5	62	1240%	15%	133	(66)	-50%	28%
- Total	551	147	404	275%	100%	783	(232)	-30%	100%
		05/22/20							
- Frac Spreads	276	45	231	513%		433	(157)	-36%	
<i>Spread Ratio</i>	50.1%	30.6%				55.3%			

Frac Spreads and Horizontal Oil Rigs



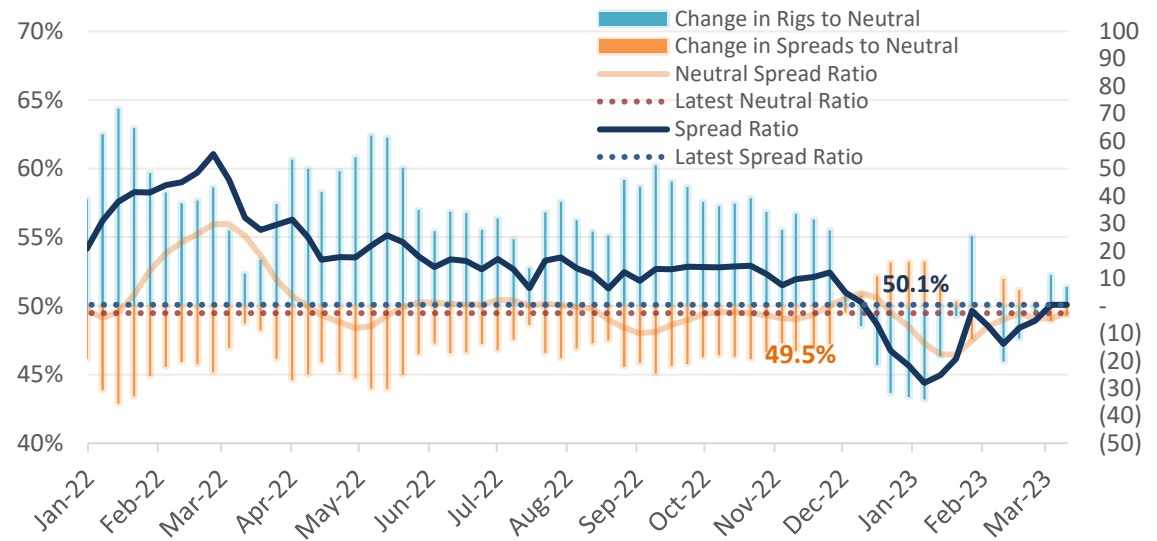
- Frac spreads were flat at 276



Rig and Spread Productivity

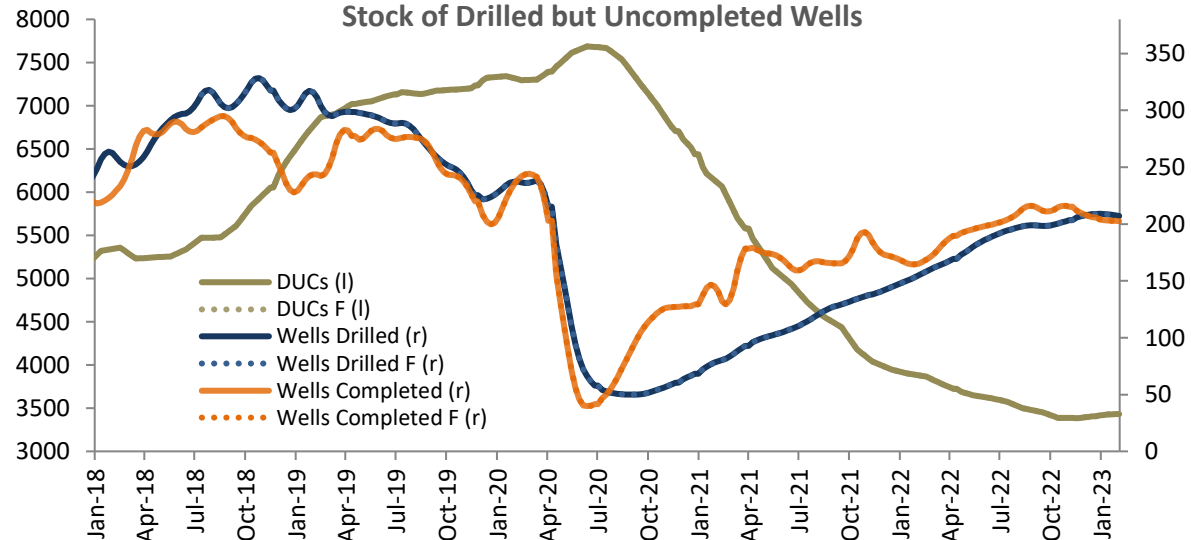
- At estimated productivity levels and current rig and spread counts, the DUC inventory should hold broadly steady over the next month

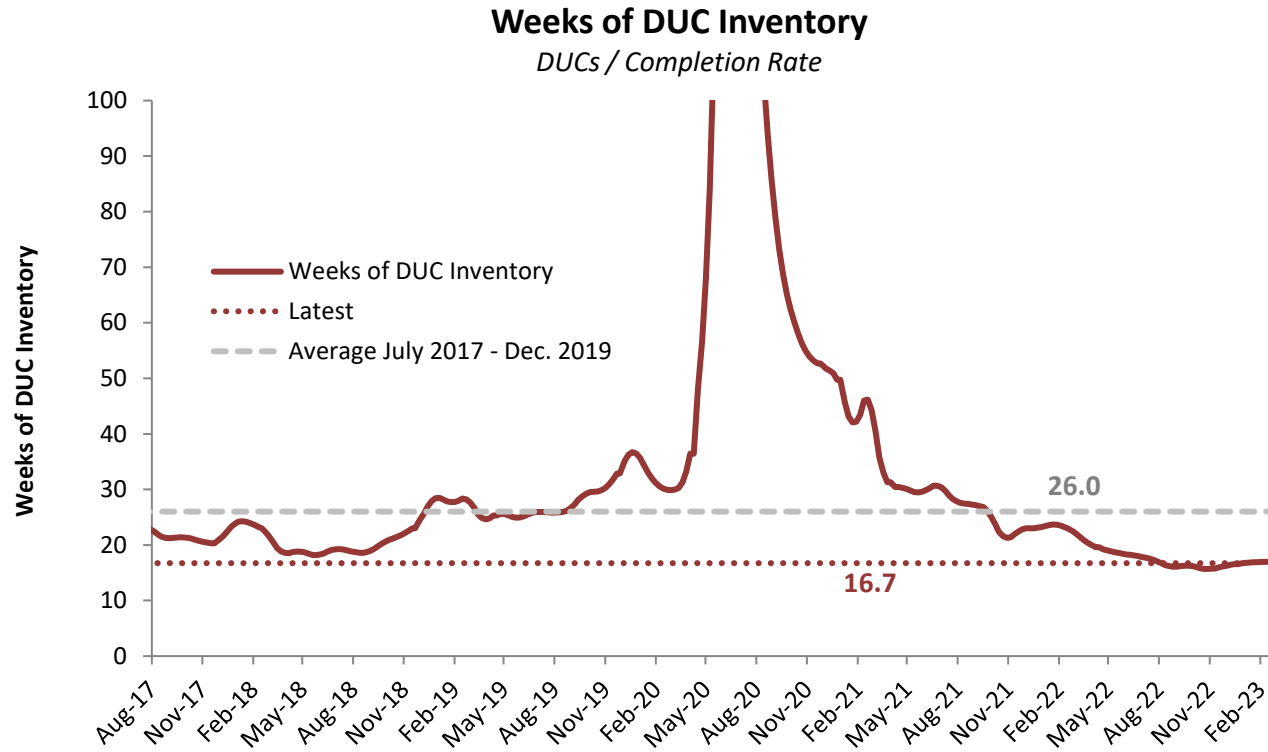
The Spread Ratio and Rigs and Spreads for DUC Neutrality



Horizontal Oil Wells Drilled and Completed per Week

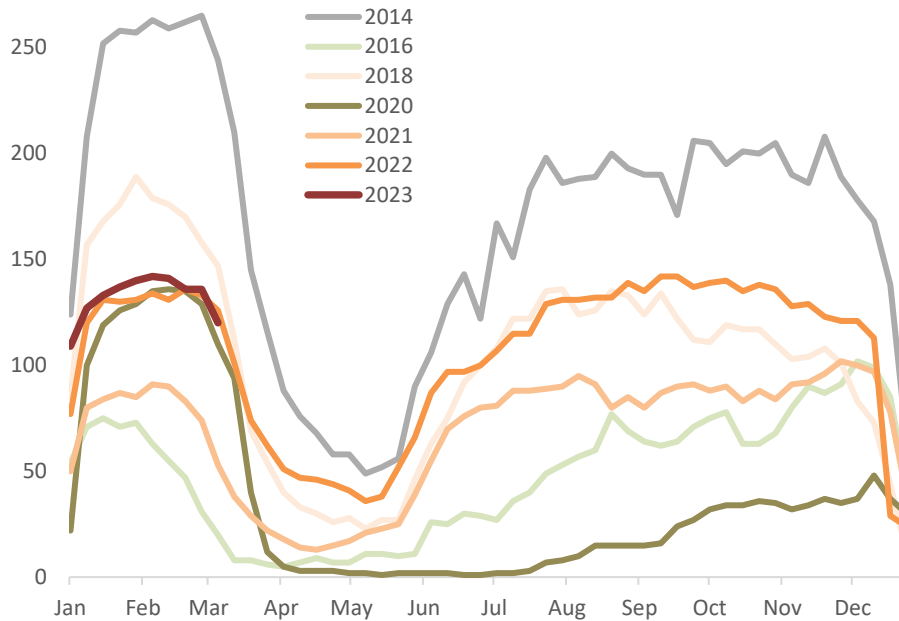
Stock of Drilled but Uncompleted Wells



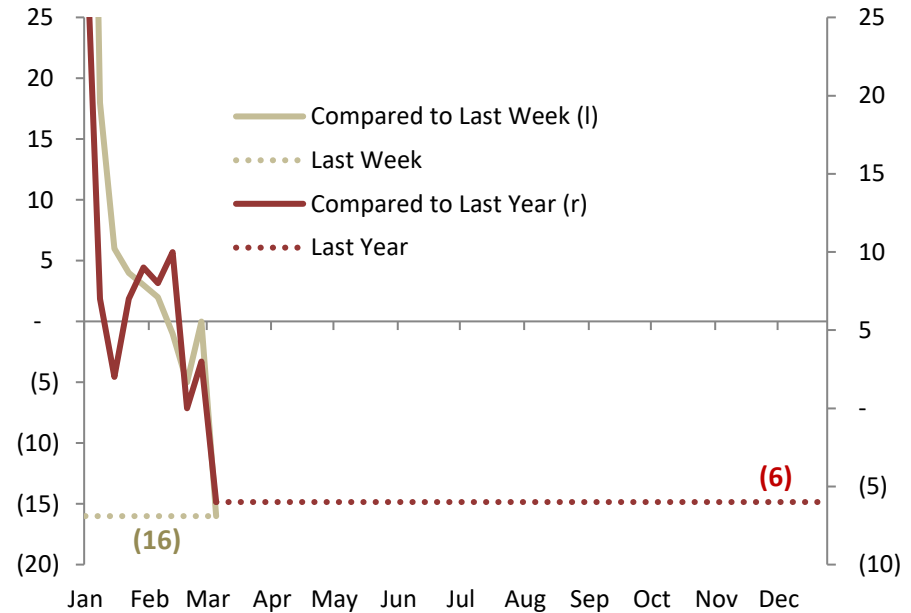


- DUC inventories are steady around 16 weeks of turnover

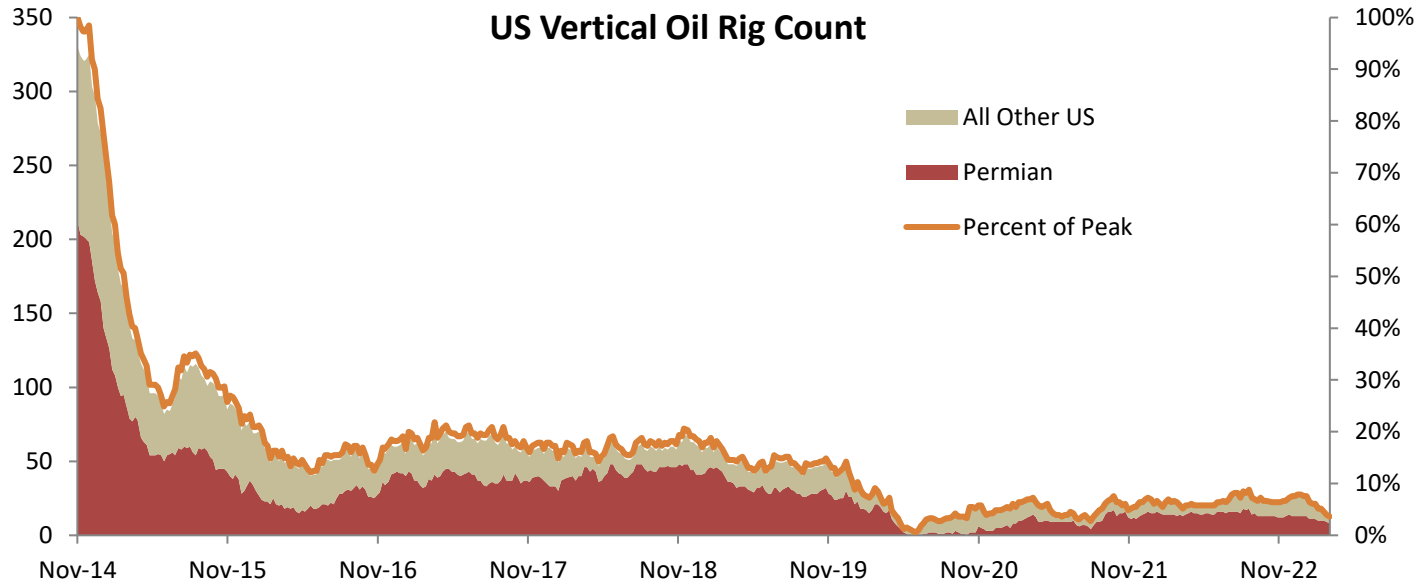
Canada Horizontal Oil Rigs



Compared to Previous Week, Previous Year

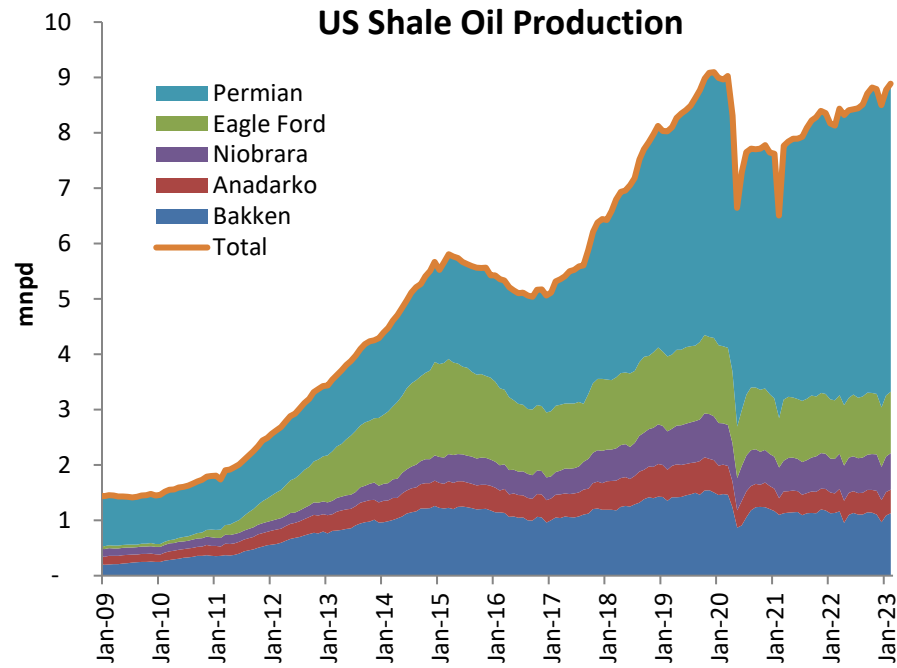


- Canada horizontal oil rigs were down 16 to 120 last week
- Rigs counts were at -6 compared to the same week last year



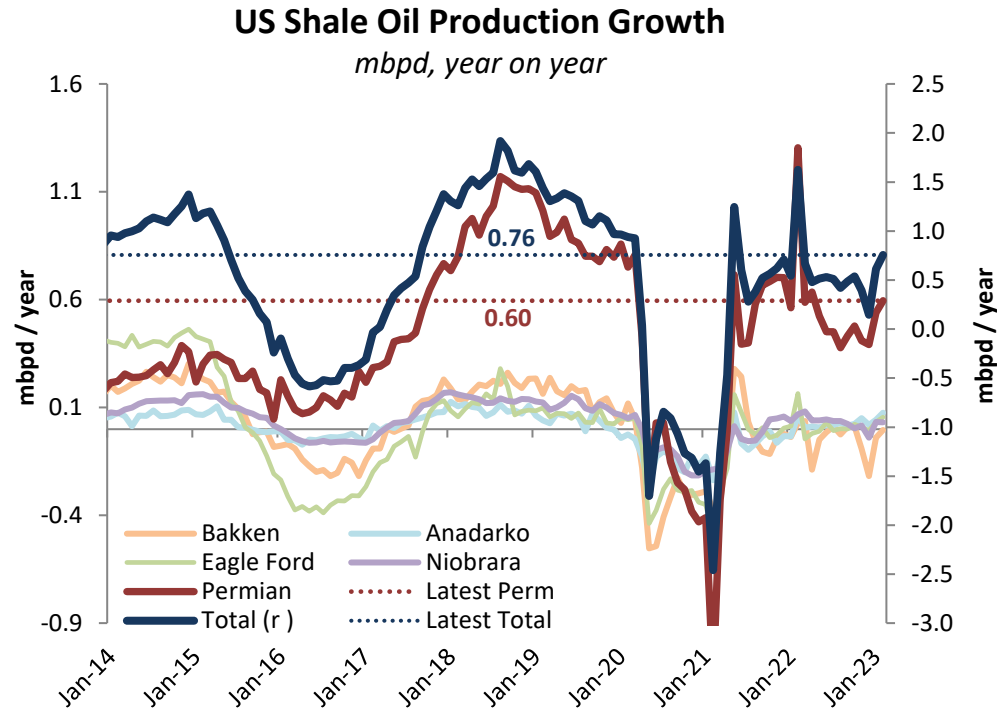
- Vertical oil rigs: -1 to 12
- Permian: -1
- All Other US: +0

US Shale Production Growth (March DPR)



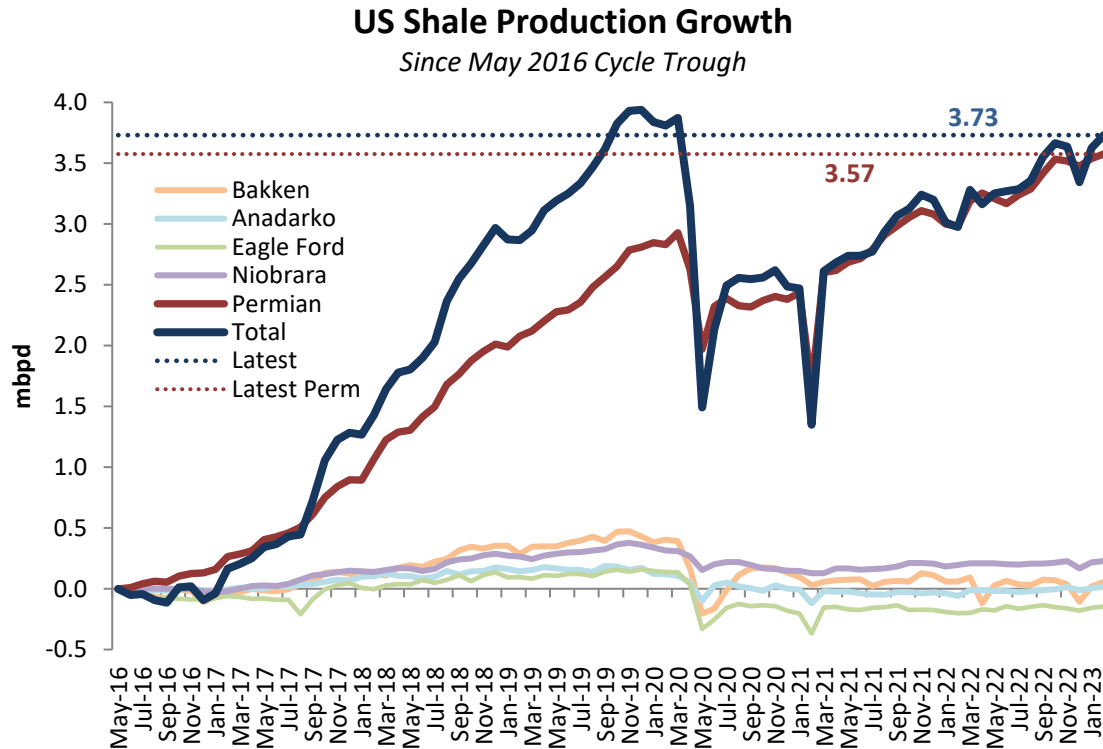
- In the March DPR report, crude and condensate production from key shale plays rose to 8.89 mmbpd in February, up 107 kbbpd from January. Total shale oil production growth has averaged 32 kbbpd / month over the last three months, compared to 64 kbbpd / month in the last DPR report (February)
- Permian production was up 35 kbbpd in February. Permian production growth has averaged 19 kbbpd / month over the last three months, down from 40 kbbpd / month as of last month
- Once again, the EIA revised down historical shale production quite sharply, by a whopping 443 kbbpd for December and 250 kbbpd for January. Added to last month's revision, December output has been revised down 542,000 bpd in the last two months. That's a colossal revision.

US Shale Production Growth (March DPR)



- Compared to last year, total shale oil production is up 0.76 mbpd
- The Permian is up 0.6 mbpd
- This is quite healthy growth at the annual horizon

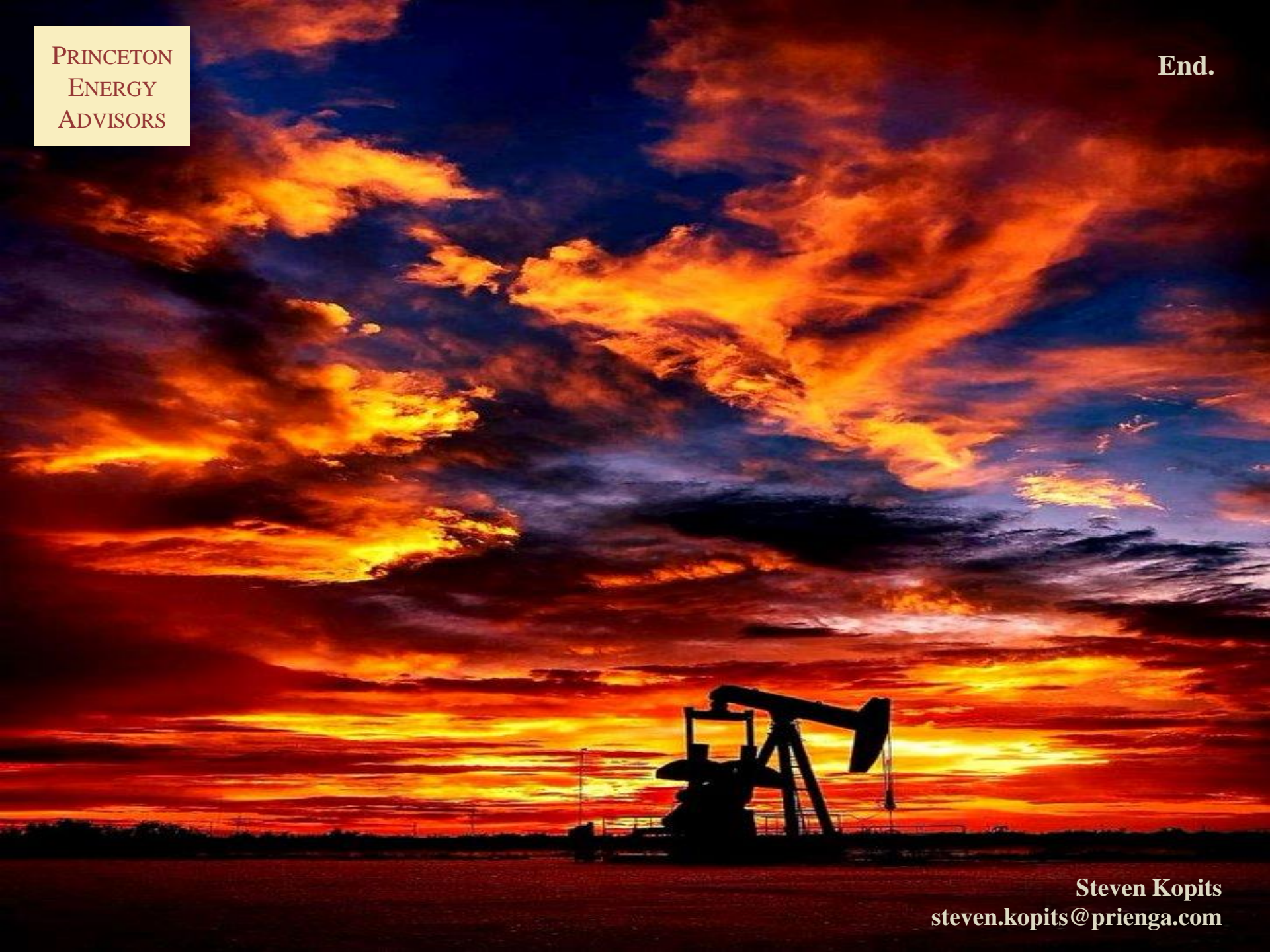
US Shale Production Growth from May '16 (March DPR)



- Since the prior cyclical trough in May 2016, total shale oil production from the key plays is up 3.73 mbpd
- All but 260,000 bpd of this growth comes from the Permian basin

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