



Weekly E&P Update

April 25, 2023

Vol. 16

Increases In Drilling Permits Are Just Part Of The Story

By Steve Hendrickson
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One of the articles we highlight in our [Industry Headlines](#) this week addresses the recent increase in permitting activity in certain US basins. Permitting activity is a good indicator of future drilling activity, but it can also be misleading because not all wells that are permitted are actually drilled. Here's a closer look at what I'm talking about.

For this analysis, I retrieved data from Enverus for oil and gas well permits filed from 2010 for horizontal producers in the onshore US. Although there is scattered activity in some of the less active basins (and there are some interesting stories there), I've focused on the basins where the majority of the current activity is concentrated. Here are where these permits are located: the size of the circles is based on the number of permits approved in each county.



[CLICK TO ENLARGE](#)

So you can see the big picture, here are the trends over time -



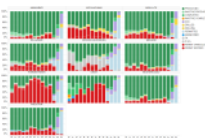
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Note that 2023 is only a partial year in the chart above. When isolating just the first three months of each year, we see a nice increase in the Appalachian, Delaware, and DJ Basins. The Williston, Midland, and Western Gulf are flat year-over-year for the first quarter. Note also the large percentage jump in the Uintah.



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But as I mentioned earlier, not all of these permits will get drilled. Here is the same data showing the current status of the wells. Each basin is scaled to 100%.



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We can see that in some basins, a very high percentage of previously permitted wells were never drilled because their permits expired or were canceled. For example, in the Powder River and Uintah Basins, only 20-40% of the permits were ultimately drilled. The PRB, in particular, experienced a permitting rush over the last few years due to specifics regarding their state regulations. On the other end, many basins have a drill rate of 70-90%. Keep in mind that permits are valid for a few years, which explains the light blue bars in more recent years.

The bottom line is that increased permitting is an optimistic signal (wells can't be drilled without them), but it's important to consider the portion that is actually drilled before getting too excited.

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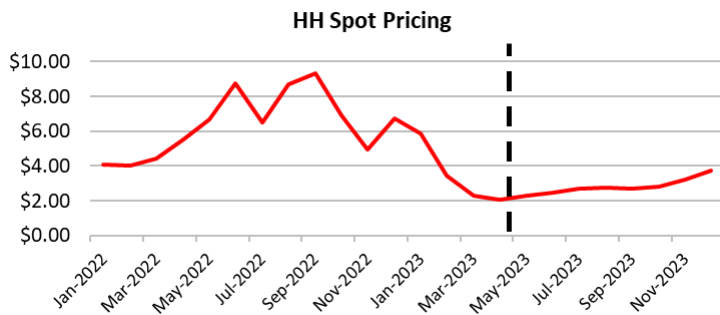
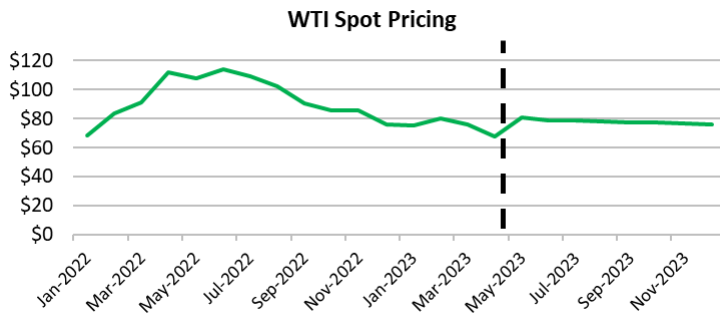
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NYMEX FUTURE PRICING



MONDAY'S MARKET CLOSE

NYMEX WTI CRUDE OIL FUTURES as of April 24, 2023 Close (\$/bbl)

Period	Current	WoW Change	Last Week	1 Yr Ago
2023	\$77.61	(\$1.89)	\$79.50	\$86.91
2024	\$73.52	(\$0.79)	\$74.31	\$78.45
2025	\$69.65	(\$0.03)	\$69.68	\$72.69
2026	\$66.57	\$0.58	\$65.99	\$68.74
2027	\$63.92	\$1.10	\$62.82	\$66.18

NYMEX HH NATURAL GAS FUTURES as of April 24, 2023 Close (\$/MMBtu)

Period	Current	WoW Change	Last Week	1 Yr Ago
2023	\$2.83	\$0.04	\$2.79	\$4.75
2024	\$3.65	\$0.09	\$3.56	\$3.89
2025	\$4.27	\$0.10	\$4.17	\$3.83
2026	\$4.35	\$0.09	\$4.26	\$3.90
2027	\$4.30	\$0.08	\$4.22	\$3.94

INDUSTRY METRICS—QUICK SNAPSHOT

	Current	Last Week	WoW Change	%Change
Crude Oil Near-Month Price (\$/bbl)	\$77.97	\$82.40	(\$4.43)	(5%)
Natural Gas Near-Month Price (\$/MMBtu)	\$2.22	\$2.02	\$0.21	10%
Weekly Upstream-Deal Transaction Value (\$MM)	\$0.00	\$143.10	(\$143.10)	(100%)
Weekly Number of Upstream-Deal Transactions	2	4	(2)	(50%)
Current Total US Rig Count	753	748	5	0.7%
US Field Crude Oil Production (MMbbl/day)	12.3	12.3	-	0%
US Field Dry Natural Gas Production (Bcf/day)	105.5	105.3	0.2	0.2%
Commercial Crude Oil Stocks-Excluding SPR (MMbbl)	466	471	(5)	(1%)
Natural Gas Stocks-Working Gas Underground Storage (Bcf)	1,930	1,855	75	4%
Total Drilled But Uncompleted Wells (DUC-Last Month)	4,676	4,773	(97)	(2%)

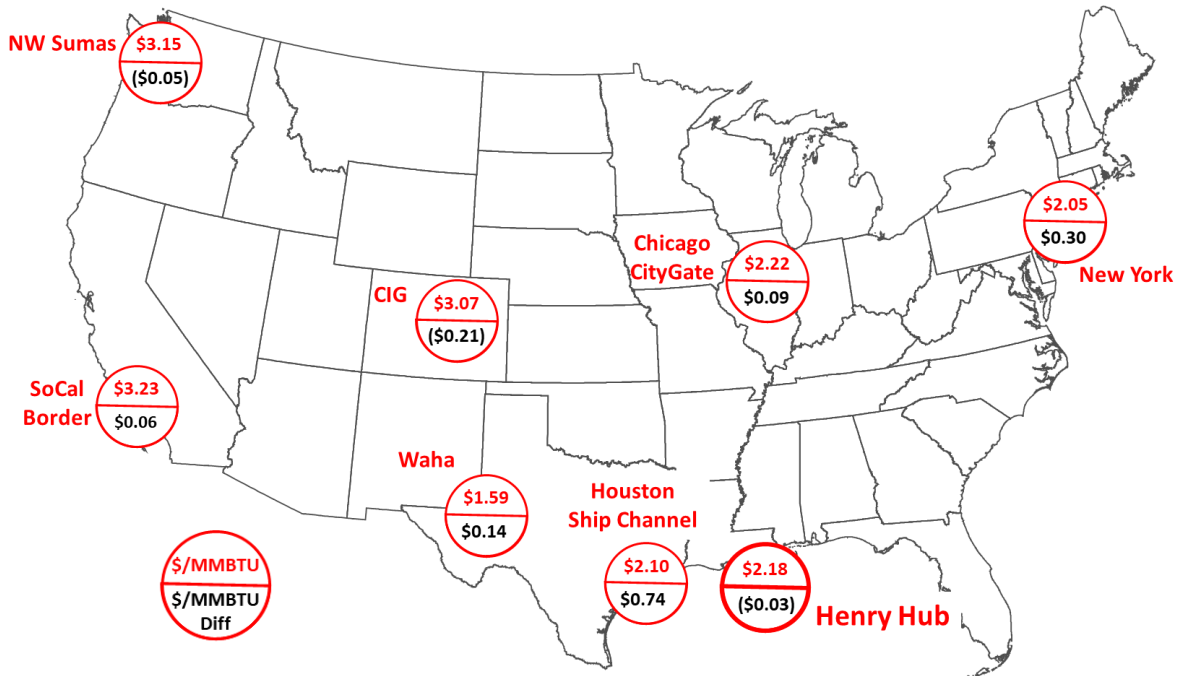
*Source—Energy Information Administration, United States (EIA)

*Source—Baker Hughes North America Rotary Rig Count & PLS M&A Database

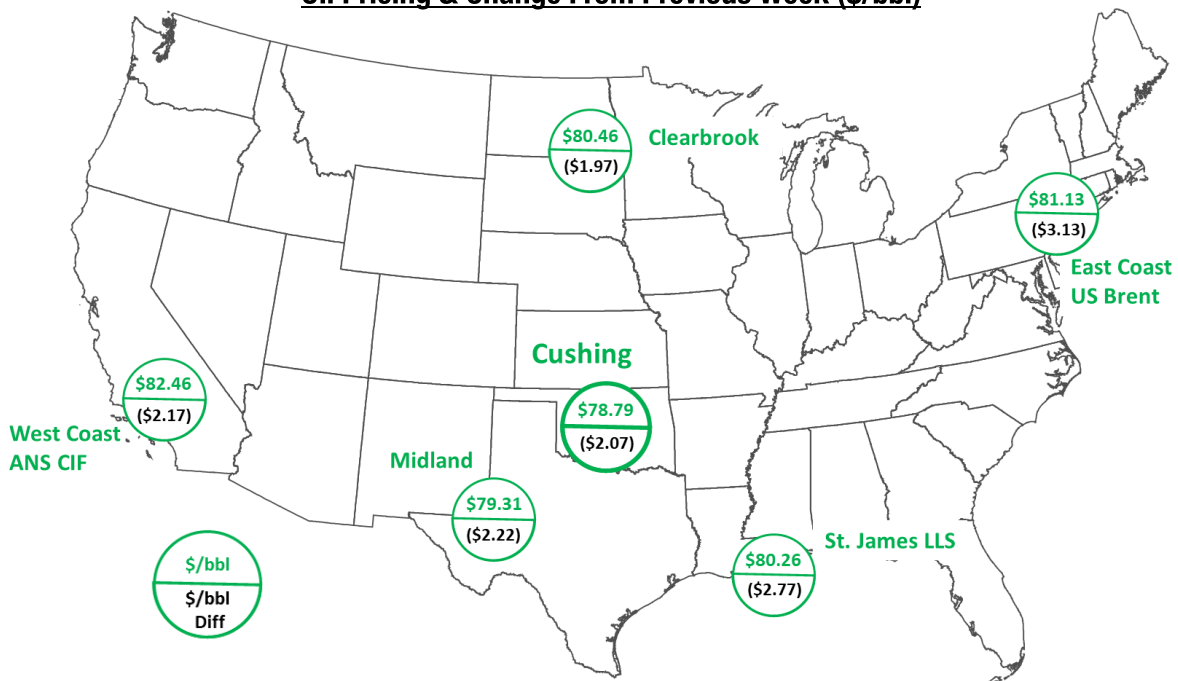


US COMMODITY PRICES CONTINUED

Natural Gas Pricing & Change From Previous Week (\$/MMBTu)



Oil Pricing & Change From Previous Week (\$/bbl)



*Source—Bloomberg LP



SELECTED INDUSTRY HEADLINES

Permian In Spotlight As Energy Dealmaking Gathers Steam

Companies with a focus on the oil-rich Permian basin are likely to be at the center of the next wave of consolidation in the U.S. energy sector as favorable oil prices prompt cash-rich drillers to tap into the largest source of shale oil.

Putin, Saudi Crown Prince Discuss OPEC Cooperation

Russian president Vladimir Putin and Saudi Crown Prince Mohammed bin Salman talked about OPEC+ cooperation by phone, the Kremlin said recently.

Permian, Powder River, Eagle Ford Drive Sharp Gains In Lower 48 Natural Gas, Oil Permitting

Lower 48 oil and gas permitting activity surged in March, driven by plays including the Permian and Powder River basins, and the Eagle Ford Shale.

Private Equity Returns To Oil And Gas Industry (LOGIN CREDENTIALS REQUIRED)

As private equity firms return to upstream oil and gas, firms might raise up to \$15 billion for oil and gas upstream, but the industry could use up to \$25 billion, experts said.

Energy Security Trumps Sustainability

The environmental, social, and governance movement was supposed to accelerate the transition by making capital cheap for clean energy projects, but in the last year, energy security has trumped sustainability.

Russia To Boost Natural Gas Exports To China By 50%

Russian plans to increase natural gas exports to China by almost 50 percent this year, Deputy Prime Minister Alexander Novak has said recently.

U.S. Energy Companies Could Help Ukraine Win Energy Freedom and Neuter Russia (LOGIN CREDENTIALS REQUIRED)

And now Ukraine is vowing energy independence. But its future power lies in becoming a net exporter of natural gas to Europe.

Abandoned Oil Wells Offer New Source Of Lithium

Direct extraction could be the next big thing in mining for lithium — one of the most crucial minerals for the energy transition.

What Would China-Taiwan Conflict Mean For Oil, Gas In The Region?

If a China-Taiwan crisis/conflict occurs in a two to five year timeline, China may see its natural gas supply affected as the bulk of its gas comes from LNG imports, especially from Australia.

Why Texas, Louisiana Are Poised To Win The Carbon Capture Sweepstakes

For the oil and gas industry, the success or failure of a rapidly growing carbon capture, use and storage (CCUS) sector in the U.S. and globally is shaping up to be almost a matter of survival as the world community treads down the path of the 'energy transition.'

Biden EPA To Issue Power Plant Rules That Lean On Carbon Capture (LOGIN CREDENTIALS REQUIRED)

The U.S. government may soon require natural gas-fired power plants to install technology to capture carbon emissions, sources said, as President Joe Biden's administration enacts new rules to help decarbonize the power sector in 12 years.



SELECTED RECENT TRANSACTIONS

88 Energy Awarded New Alaskan North Slope Block

88 Energy Ltd., Perth, has been awarded a new exploration block (Project Leonis) on the North Slope of Alaska, about 15km southwest of the town of Deadhorse and 25km north of the operator's Project Phoenix block.

Japan's Mitsui Buys U.S. Gas Asset In 'Pragmatic Solution' For Energy Transition

Japan's Mitsui & Co Ltd., has bought a 92% stake in an unconventional gas asset in Texas and plans to promote its gas business as a "pragmatic solution" for the energy transition, it said on Thursday.

Kimbell Royalty Partners, LP Announces \$143.1 Million Midland Basin Mineral and Royalty Acquisition

Kimbell Royalty Partners, LP has entered into an agreement to acquire Midland Basin mineral and royalty assets in Texas from MB Minerals LP, a subsidiary of Sabalo Holdings LLC (backed by EnCap Investments).

Ovintiv To Acquire Leasehold Interest And Related Assets

Ovintiv Inc has entered into agreements to divest its Bakken assets in North Dakota to Grayson Mill Bakken LLC, an affiliate of Grayson Mill Energy LLC.

Ovintiv To Acquire \$4.2B Midland Basin Assets

Ovintiv Inc has entered into a definitive purchase agreement to acquire substantially all leasehold interest and related assets of Black Swan Oil & Gas LLC, PetroLegacy Energy II LLC, and Piedra Energy III LLC.

Phoenix Capital Group Has Acquired Over 560 Net Mineral Acres For A Purchase Price Exceeding \$6M

Phoenix Capital Group Holdings, LLC, doing business as Phoenix Capital Group, is excited to announce it has acquired more than 560 net mineral acres for a purchase price that exceeds \$6 million.

Wedgemount Resources To Acquire Additional Texas Permian Basin Oil And Gas Assets

Wedgemount Resources Corp., is pleased to announce that it has entered into a Purchase and Sale Agreement for the acquisition of additional oil and gas assets located in the prolific Permian Basin of west central Texas.

Principal Solar To Acquire Minerva-Rockdale Leases, Wells, And Assets

Principal Solar, Inc. recently announced that it has executed a Letter of Intent to purchase a controlling working interest in the leases and oil & gas wells along with all of the assets associated with the Minerva-Rockdale Oil Field from Winchester Oil & Gas LLC.

Carrier Energy Partners II Sells Eagle Ford Assets

Carrier Energy Partners II, LLC has closed on the sale of its oil and gas assets in the Eagle Ford Shale in South Texas for total cash consideration of \$145 million.

CPP Investments Partners With IKAV To Acquire Aera Energy

Canada Pension Plan Investment Board (CPP Investments) will partner with international asset management group IKAV to acquire California energy producer Aera Energy LLC.

Riley Permian Announces New Mexico Yeso Trend Acquisition

Riley Exploration Permian, Inc. recently announced that it has entered into a definitive purchase agreement to acquire oil and gas assets from Pecos Oil & Gas, LLC, an affiliate of Cibolo Energy Partners LLC, for cash consideration of \$330 million.

Baytex To Acquire Eagle Ford Operator Ranger Oil, Accelerates Shareholder Returns And Introduces A Dividend With Enhanced Free Cash Flow

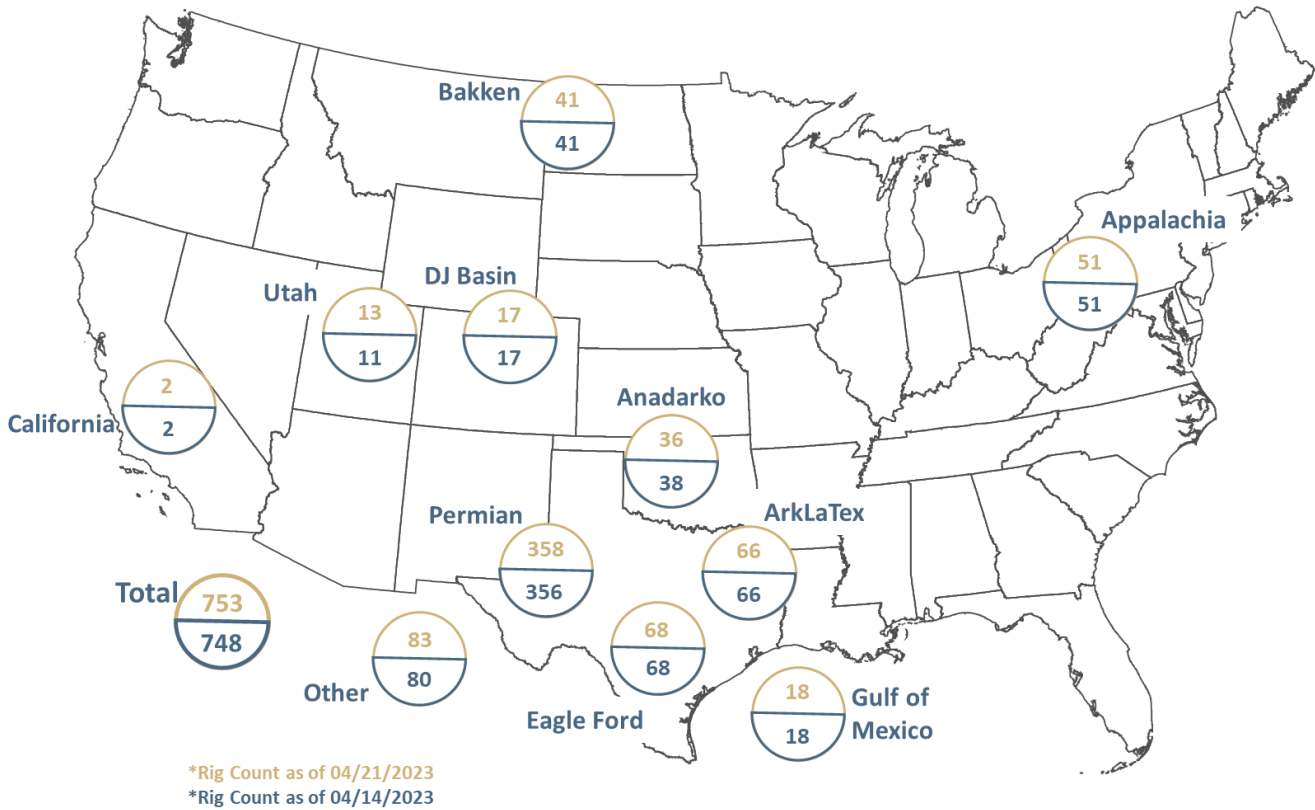
Baytex Energy Corp. recently announced that it has entered into a definitive agreement to acquire Ranger Oil Corporation, a pure play Eagle Ford company.

Diamondback Energy, Inc. Announces Fourth Quarter And Full Year 2022 Financial And Operating Results; Increases Base Dividend

Diamondback Energy, Inc. recently announced financial and operating results for the fourth quarter and full year ended December 31, 2022, which includes entering into definitive agreements to divest certain Midland and Delaware Basin assets in Texas.



RIG ACTIVITY BY US REGION

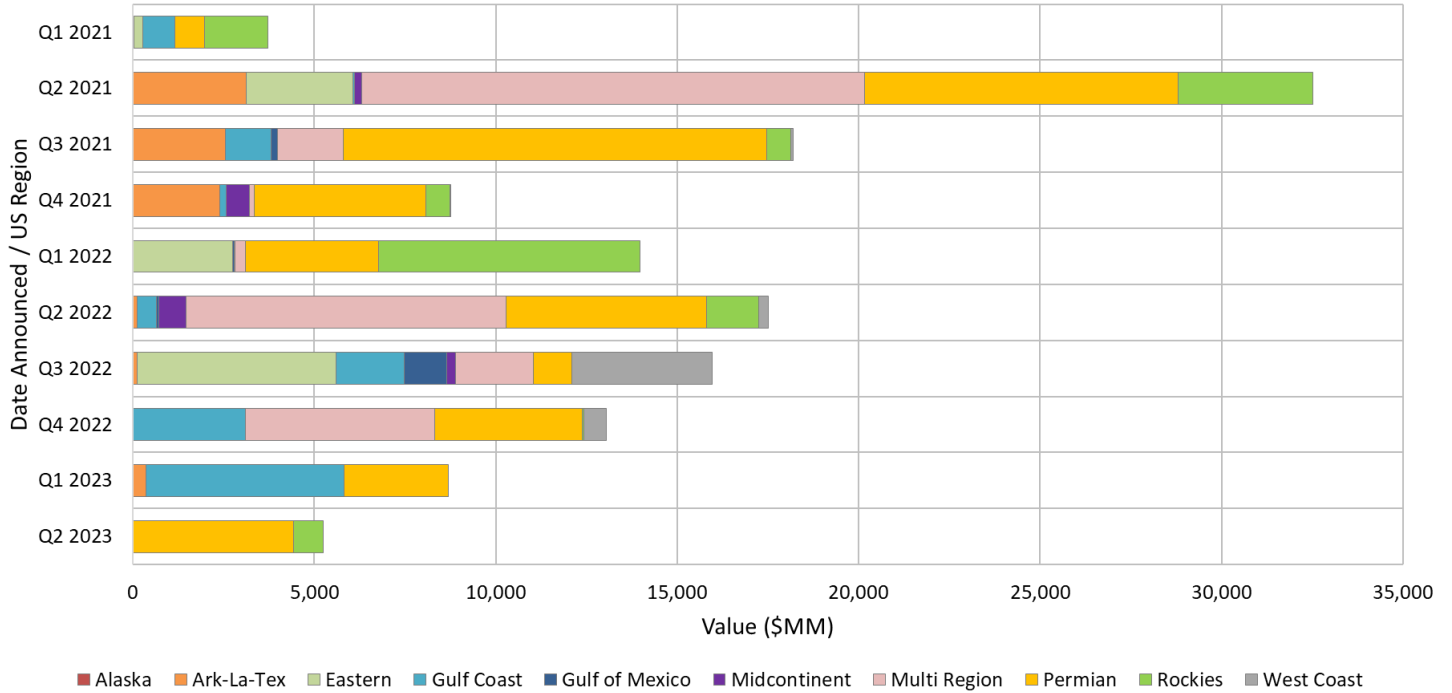


U.S. Rig Breakouts	Week Ending 04/21/2023			Week Ending 04/14/2023		Week Ending 04/22/2022
	Count	+/-	Count	+/-	Count	
Oil	591	3	588	42	549	
Gas	159	2	157	15	144	
Not Specified	3	0	3	1	2	
Directional	48	2	46	17	31	
Horizontal	687	4	683	48	639	
Vertical	18	(1)	19	(7)	25	
Land (Inc Others)	732	5	727	50	682	
Inland Waters	1	0	1	1	0	
Offshore	20	0	20	7	13	
US Total	753	5	748	58	695	

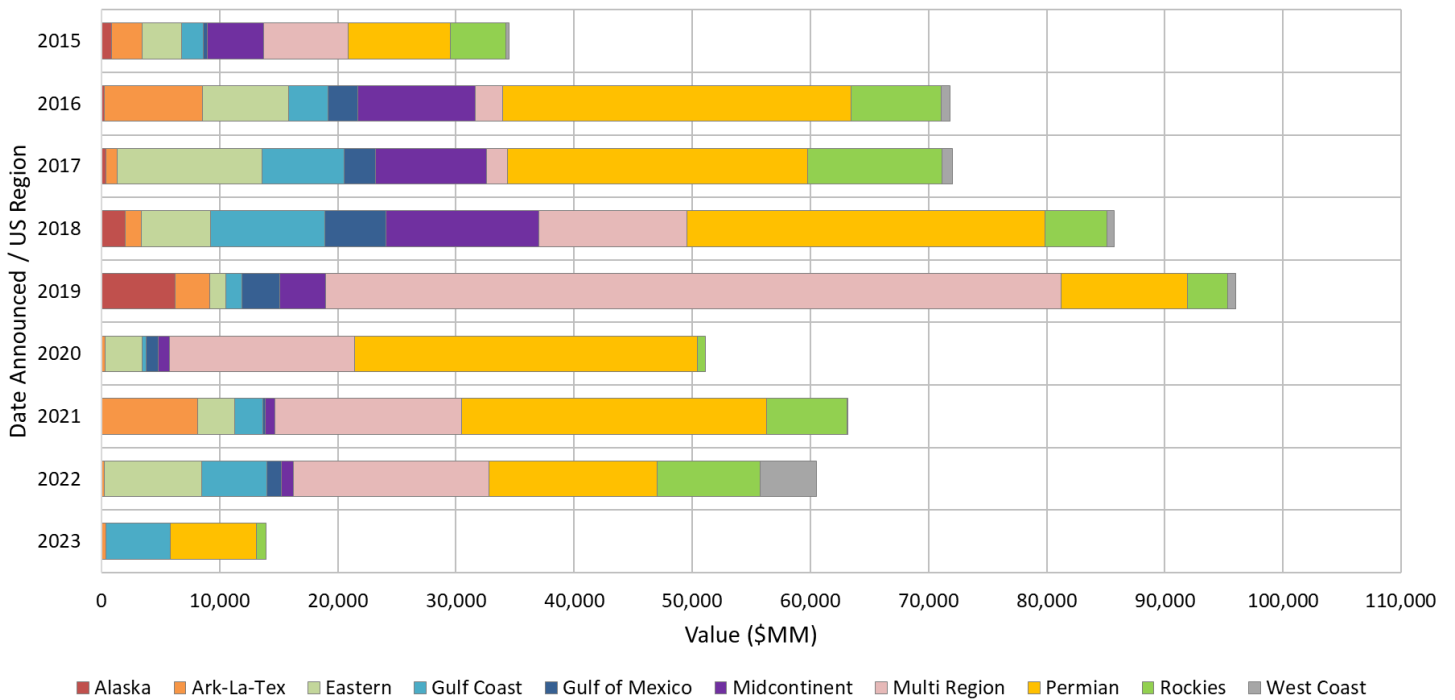
*Source—Baker Hughes Weekly Rig Counts



DEAL VALUE BY US REGION (BY QUARTER)



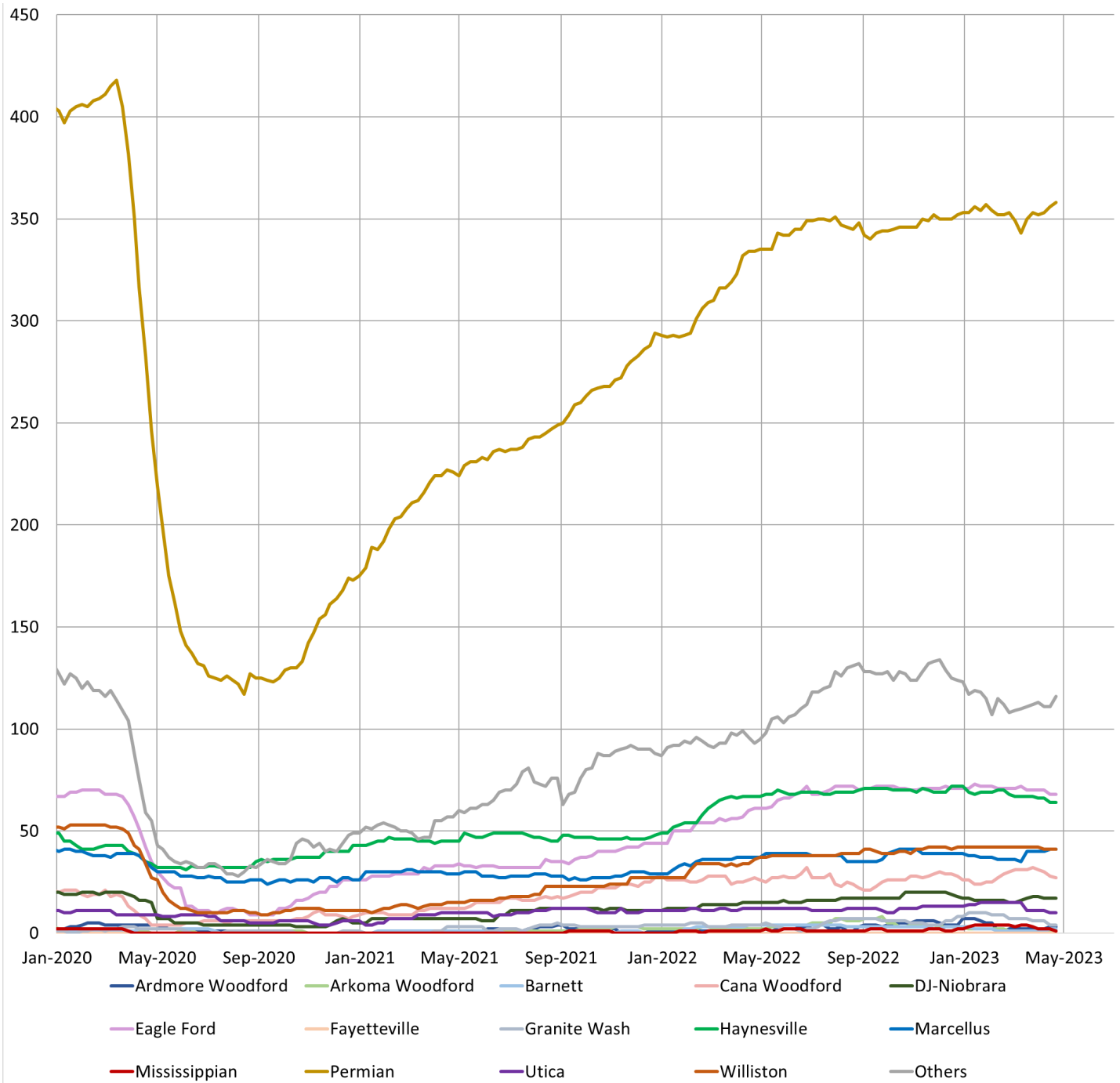
DEAL VALUE BY US REGION (BY YEAR)



*Source—PLS M&A Database (Charts exclude terminated deals)



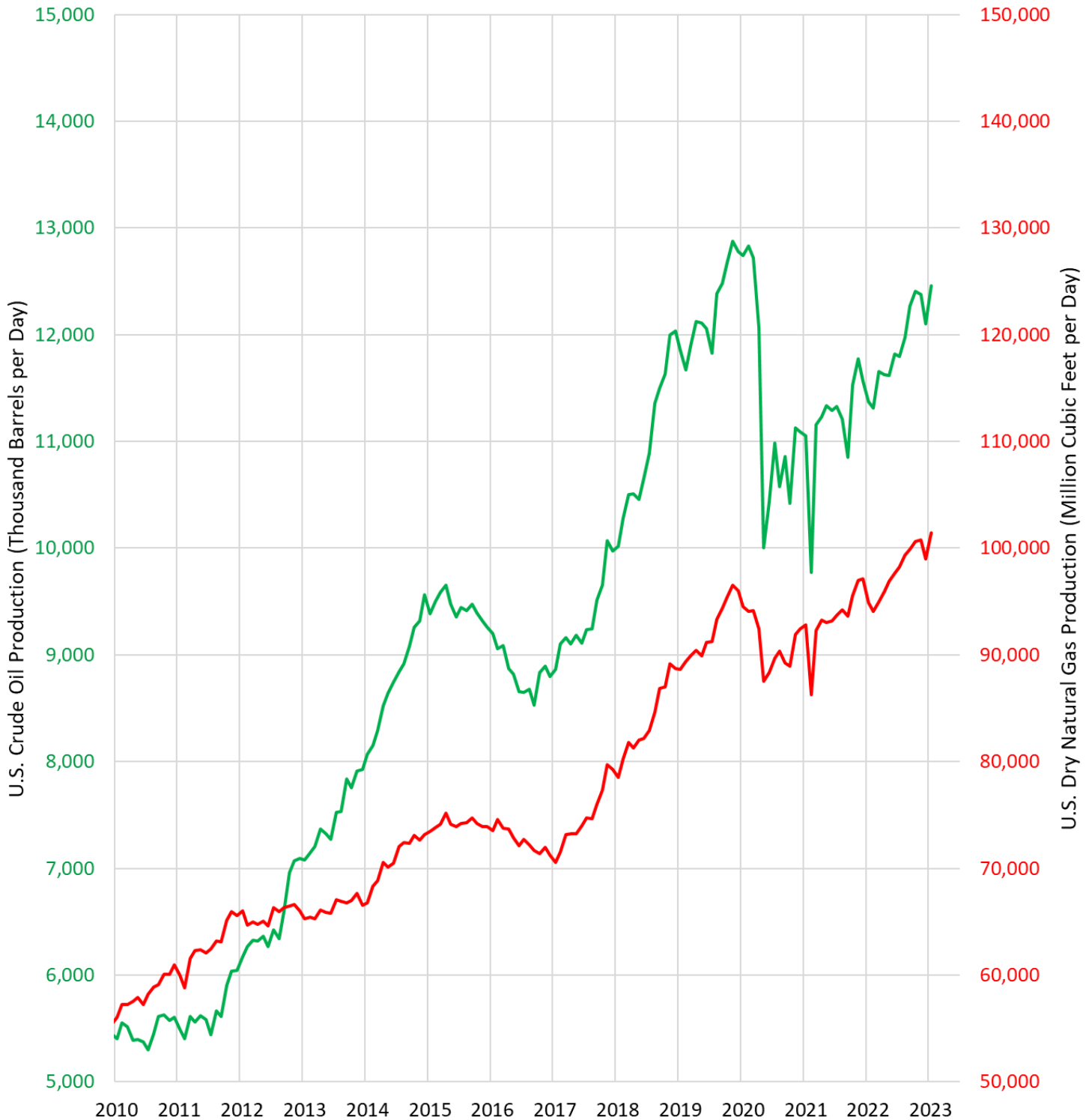
RIG ACTIVITY BY US REGION



*Source—Baker Hughes Weekly Rig Counts



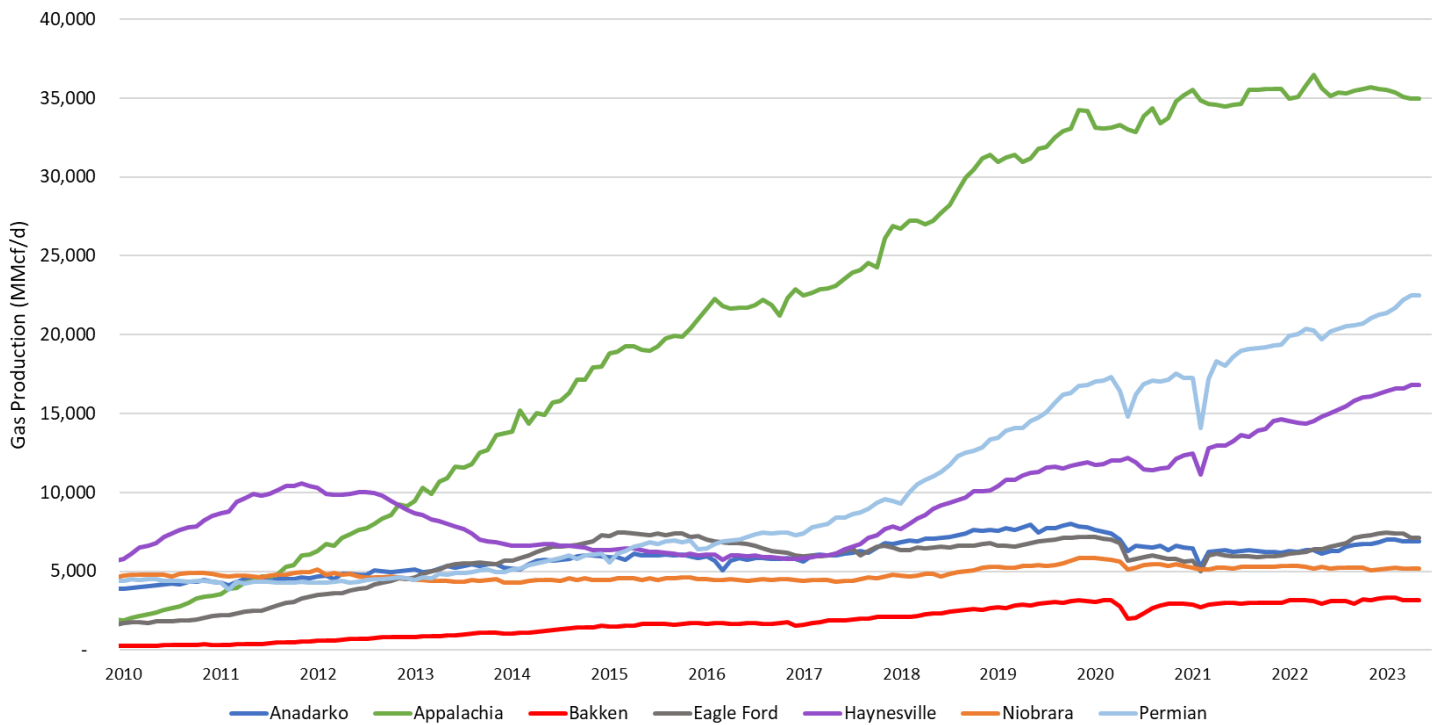
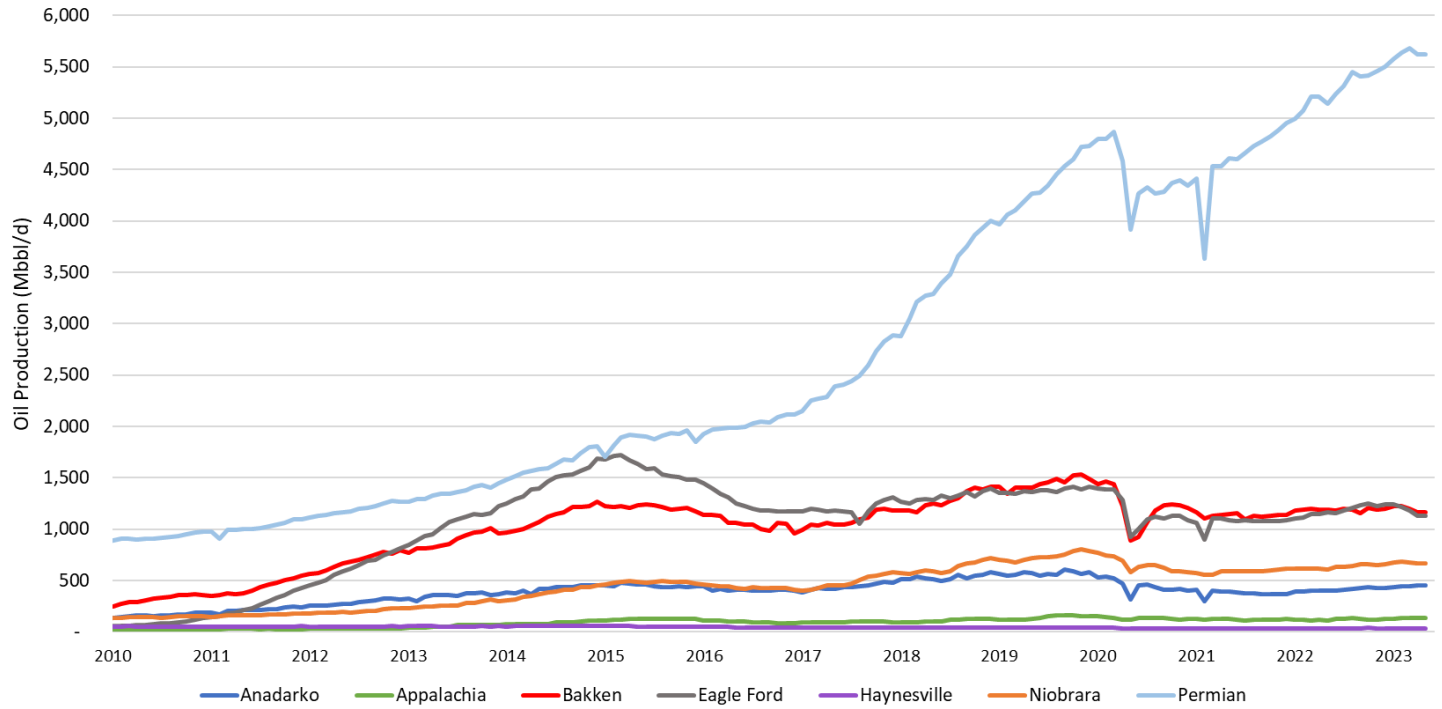
US DAILY CRUDE (MMbbl) & DRY NATURAL GAS PRODUCTION (MMcf)



*Source—Energy Information Administration, United States (EIA)



HISTORICAL PRODUCTION OF SELECTED US SHALE REGIONS



*Source—Energy Information Administration, United States (EIA)



UPCOMING EVENTS

April 2023

<u>2023 World Oilman's Poker Tournament</u>	April 26-28	Las Vegas, NV
<u>World Oilman's Tennis Tournament (WOTT)</u>	April 26-29	Houston, TX
<u>Houston Producers Forum/SPE Fourth Annual Crawfish Boil</u>	April 27	Houston, TX

May 2023

<u>Offshore Technology Conference 2023</u>	May 1-4	Houston, TX
<u>Her Justice Annual Photography Auction + Benefit</u>	May 9	New York, NY
<u>Salesforce For Energy (with Opportune)</u>	May 10	Denver, CO
<u>Energy Valuation Conference</u>	May 11	Houston, TX
<u>Allegro User Conference</u>	May 11-12	Houston, TX
<u>North American Petroleum Accounting Conference</u>	May 18-19	Dallas, TX
<u>DUG Permian Basin & Eagle Ford Conference & Exhibition</u>	May 22-24	Fort Worth, TX

June 2023

<u>Society Of Petroleum Evaluation Engineers (SPEE) Annual Meeting</u>	June 17-20	Newport, RI
<u>Telluride Executive Series</u>	June 27-29	Telluride, CO

July 2023

<u>Banff Energy Summit</u>	July 12-14	Banff, Alberta, Canada
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*Denotes an Opportune Sponsored Event



ABOUT RALPH E. DAVIS ASSOCIATES

Ralph E. Davis Associates LLC (RED) is an industry-leading petroleum engineering and geosciences firm committed to satisfying the individual needs of clients. We accomplish this by holding ourselves to the highest standards of integrity and professionalism to deliver honest, direct and actionable insights to help clients achieve their strategic objectives. We distinguish ourselves by combining reservoir engineering, geoscience evaluation techniques and advanced data analytics with economic analyses to provide our clients with individual, customized solutions.

Banks, bondholders, private equity firms, financial institutions and law firms around the world trust in RED's diverse services and unrivaled upstream oil and gas expertise to deliver comprehensive solutions that help clients make informed decisions. We add value to every engagement by employing a team approach, leveraging Opportune LLP's experienced bench of experts in transactional due diligence, tax advisory, investment banking, restructuring and valuation.

We offer technical and economic analyses to deliver our clients a complete, independent, accurate and detailed assessment of the value of their assets. We apply a robust set of technical capabilities to assist our clients. Our capabilities include:

- Reservoir engineering and geosciences
- Economic forecasting and reporting
- Data analytics and geospatial analysis

KEY CONTACTS



Steve Hendrickson is the President of Ralph E. Davis Associates, an Opportune LLP company. Steve has over 35 years of professional leadership experience in the energy industry with a proven track record of adding value through acquisitions, development and operations. Steve is a licensed professional engineer in the state of Texas, and holds an M.S. in Finance from the University of Houston and a B.S. in Chemical Engineering from The University of Texas at Austin. He recently served as a board member of the Society of Petroleum Evaluation Engineers (SPEE) and is a registered FINRA representative.



John Beaird is Vice President of Ralph E. Davis Associates, an Opportune LLP company. John has 39 years of oil and gas management, reservoir engineering, and petroleum economics evaluation experience. Recent relevant experience includes the Permian, Western Gulf, Tx-La-Miss Salt, Mid-Continent, Denver-Julesburg, Wind River, Williston Basin, and Appalachian Basins. John is a registered Petroleum Engineer in the State of Texas and holds a B.S. in Petroleum Engineering from Louisiana Tech University. He is also an active member of the Society of Petroleum Evaluation Engineers (SPEE).



Yvonne Trujillo is a Senior Petroleum Engineer at Ralph E. Davis Associates, an Opportune LLP company. Yvonne has over 25 years experience in the oil and gas industry with extensive expertise in reserves engineering, SEC and PRMS/SPE reporting and economics and asset evaluation in conventional and unconventional reservoirs in the U.S. Lower 48. Yvonne earned a B.S. in Mechanical Engineering at Simon Bolivar University in Caracas, Venezuela and an M.S. in Petroleum Engineering at the University of Houston.



David Edwards is a Petroleum Engineer at Ralph E. Davis Associates, an Opportune LLP company. David has over three years of reserves engineering experience in conventional and unconventional reservoirs. Before RED, David was a Petroleum Engineer at a lower middle market A&D advisory firm where he handled the technical processes for marketed assets. He began his career with an operator in Dallas, where he contributed to its engineering, operations, and A&D teams. David holds an M.B.A. from The University of Texas Permian Basin and a B.S. in Petroleum Engineering from The University of Oklahoma.

