



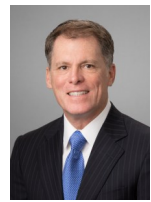
Weekly E&P Update

March 5, 2024

Vol. 10

Analyzing the Underpinnings of the LNG Project Approval Pause

By Steve Hendrickson
President of Ralph E. Davis Associates

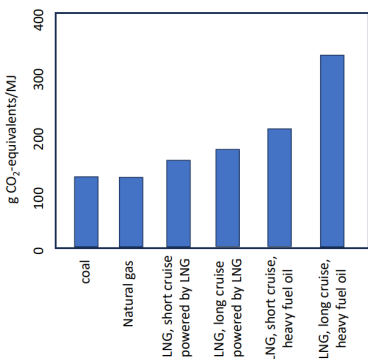


Recently, the Biden administration temporarily held Department of Energy approvals for specific proposed liquefied natural gas (LNG) projects. The administration pointed to the inadequacy of current models in accurately assessing the climate impact of the LNG supply chain, which current models may underestimate. Although this hiatus does not affect projects already given the green light, it introduces a measure of unpredictability for pending projects and their eventual operational status. The repercussions of this uncertainty may extend to the complexities of negotiating gas contracts and the difficulties in securing financing for LNG transactions, potentially endangering projects with extended timelines.

The [revelation that a study by Robert Howarth](#) prompted this decision surfaced through a report by the Independent Producers Association of America. Howarth's study posits that the entire lifecycle of LNG operations could be more detrimental to the environment than coal combustion. Intrigued by such a claim, I examined the study to understand the basis for this assertion.

A significant concern about [Howarth's study](#) is that it has not undergone peer review—a crucial process for academic rigor and validity. Despite this, the study was circulated among policymakers, evidently to influence environmental policy. According to the author, this document was submitted to a technical journal on October 24, 2023, but the final peer-reviewed iteration remains elusive. Nevertheless, the preliminary study has already achieved broad circulation, bolstering its influence.

This preliminary study, consisting of twenty-four pages adorned with charts and references, employs a basic methodological framework to evaluate the implications of several LNG scenarios' greenhouse gas (GHG). These scenarios are benchmarked against a single coal and a natural gas case. An unnumbered graph from the study—presumed to be Figure 2—encapsulates the principal results. This graph compares coal and natural gas's full cycle GHG footprint to four LNG transportation scenarios, considering tankers that utilize either LNG or heavy fuel oil for voyages of varying distances. In this comparison, methane emissions are recalculated as carbon dioxide equivalents using a 20-year global warming potential (GWP20).



[CLICK TO ENLARGE](#)
(Source: Howarth, 2023)

Table Of Contents

[This Week in Oil & Gas](#)

[US Commodity Prices](#)

[Industry Headlines](#)

[Recent Transactions](#)

[Rig Activity by US Region](#)

[Deal Value by US Region](#)

[Total US Rig Count by US Region](#)

[US Daily Crude & Dry Natural Gas Production](#)

[Historical Production of US Shale Regions](#)

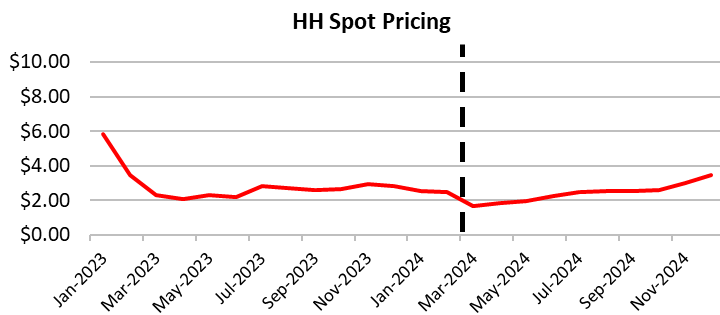
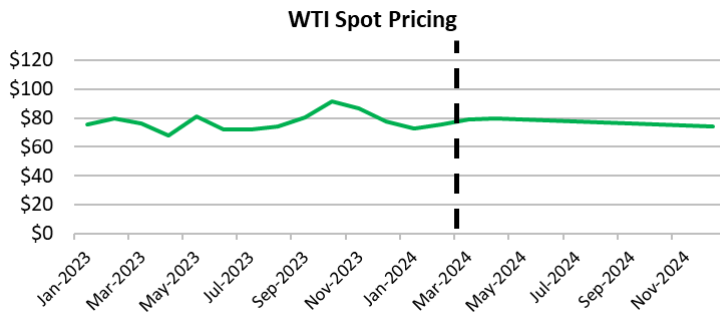
[Upcoming Events](#)

[About Us/Key Contacts](#)

Due to space constraints, a thorough critique of Howarth's underlying assumptions is not feasible here. However, the methodology for calculating the coal-related GHG emissions—comprising direct combustion emissions, fugitive methane from coal mining and transportation, and indirect emissions from transportation—raises questions. The latter was inferred from a [New York state-published figure](#) concerning its coal imports for power generation. This is a seemingly skewed comparison when juxtaposed against the global transit of LNG, as opposed to coal's regional shipment from locales like West Virginia. It's hoped that the finalized study will adopt a more fitting baseline for comparison.



NYMEX FUTURE PRICING



MONDAY'S MARKET CLOSE

NYMEX WTI CRUDE OIL FUTURES as of March 04, 2024 Close (\$/bbl)

Period	Current	WoW Change	Last Week	1 Yr Ago
2024	\$76.90	\$1.47	\$75.43	\$72.50
2025	\$71.23	\$0.54	\$70.69	\$68.20
2026	\$67.52	\$0.21	\$67.31	\$64.60
2027	\$65.28	\$0.02	\$65.26	\$61.55
2028	\$64.08	(\$0.14)	\$64.22	\$58.86

NYMEX HH NATURAL GAS FUTURES as of March 04, 2024 Close (\$/MMBtu)

Period	Current	WoW Change	Last Week	1 Yr Ago
2024	\$2.51	\$0.15	\$2.36	\$3.78
2025	\$3.46	\$0.05	\$3.41	\$4.02
2026	\$3.77	\$0.02	\$3.75	\$4.13
2027	\$3.78	\$0.01	\$3.77	\$4.19
2028	\$3.73	\$0.02	\$3.71	\$4.23

INDUSTRY METRICS—QUICK SNAPSHOT

	Current	Last Week	WoW Change	%Change
Crude Oil Near-Month Price (\$/bbl)	\$78.74	\$77.62	\$1.12	1%
Natural Gas Near-Month Price (\$/MMBtu)	\$1.93	\$1.63	\$0.30	19%
Weekly Upstream-Deal Transaction Value (\$MM)	\$100.00	\$4,045.00	(\$3,945.00)	(98%)
Weekly Number of Upstream-Deal Transactions	3	4	(1)	(25%)
Current Total US Rig Count	629	626	3	0.5%
US Field Crude Oil Production (MMbbl/day)	13.3	13.3	0	-
US Field Dry Natural Gas Production (Bcf/day)	107.5	109.5	(2)	(2%)
Commercial Crude Oil Stocks-Excluding SPR (MMbbl)	447	443	4	0.9%
Natural Gas Stocks-Working Gas Underground Storage (Bcf)	2,374	2,470	(96)	(4%)
Total Drilled But Uncompleted Wells (DUC-Last Month)	4,386	4,386	0	-

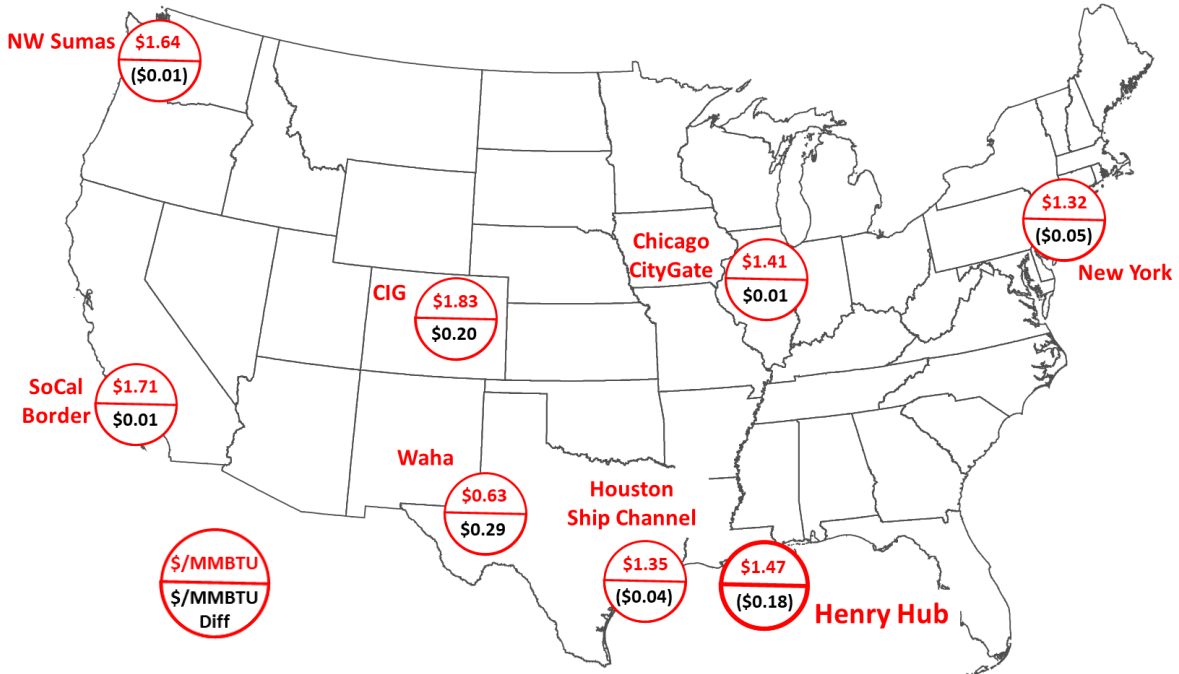
*Source—Energy Information Administration, United States (EIA)

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

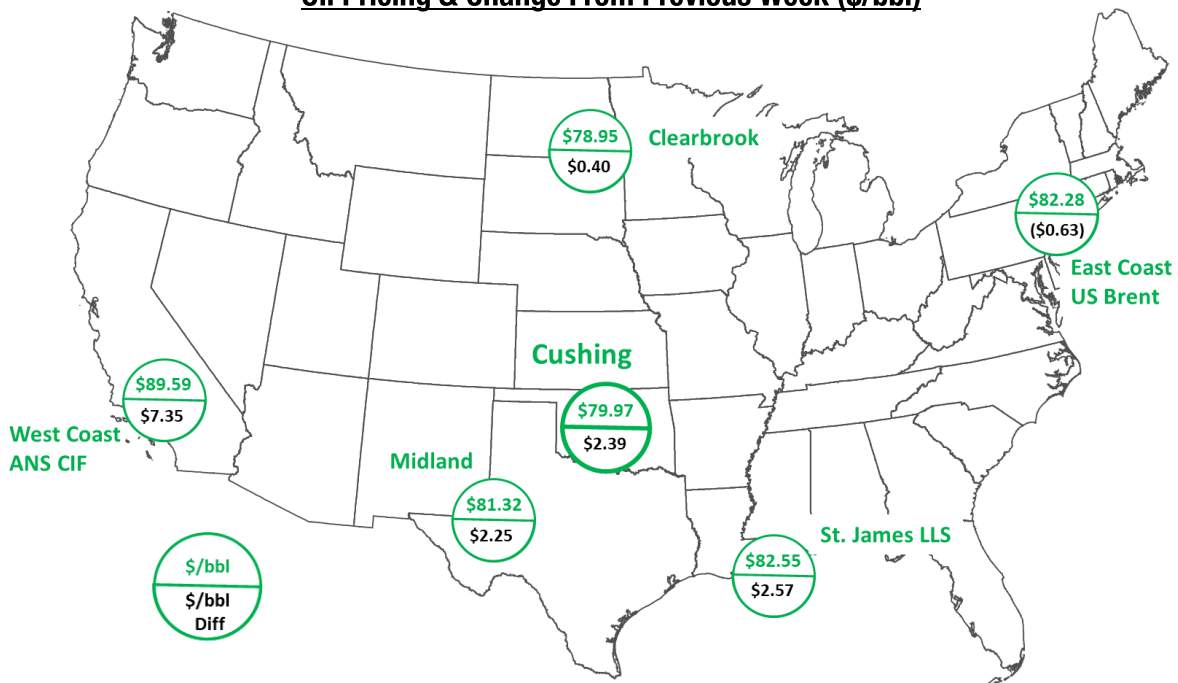


US COMMODITY PRICES CONTINUED

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



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



*Source—Bloomberg LP



SELECTED INDUSTRY HEADLINES

Oil Drifts Lower as China Reforms Underwhelm Despite OPEC+ Support

Oil slipped for a second day on Tuesday as concern over China's plan for growth and uncertainty over the pace of U.S. interest rate cuts offset the prospect of a tighter market due to continued OPEC+ supply restraint.

EIA: Oil Demand to Hold Steady Through 2024 After Surging to Four-year High

Domestic fuel consumption reached 20.23 MMBpd last year, the highest level since 2019, according to Energy Information Administration data released Thursday.

Rystad: More Deepwater Wells to be Drilled in 2024 (LOGIN CREDENTIALS REQUIRED)

Upstream majors dive into deeper and frontier waters while exploration budgets for 2024 remain flat.

North American Rig Count up 3 as US Oil Drillers Add Rigs

US drilling activity increased by 3 units to 629 rotary rigs working this week, down from the 749 units working during the period a year ago, Baker Hughes Inc. reported Friday.

Oil Prices Edge Higher After OPEC+ Extends Voluntary Oil Output Cuts Until Mid-year

Oil prices edged higher Monday after oil cartel OPEC+ agreed to extend voluntary output reductions until the second quarter, in an effort to support the short-term stability of crude markets.

OPEC Plus Extends Oil Supply Curbs to June

OPEC+ extended its oil supply cutbacks to the middle of the year in a bid to avert a global surplus and shore up prices.

Natural Gas Soars After Top US Producer Slashes Output; Oil Prices Dip As OPEC+ Extends Production Curbs

U.S. natural gas futures jumped 5.6% to \$1.938, while exchange traded funds that track gas prices were also higher.

Prices Jump as Natural Gas Driller EQT Corp. Reduces Production to Fight Excess Supply

U.S. natural gas prices surged after EQT Corp., the nation's largest producer, said it will slash production after an unseasonably warm winter and the resulting supply glut triggered a price collapse.

U.S. Natural Gas Futures Gain on Lower Production

Natural gas futures rise as the front month switches to April amid expectations that lower U.S. production could offset the lack of support from weather-driven demand.

US LNG Exports Fall in February on Outage and Fewer Calendar Days

A month-long closure at Freeport LNG plant in Texas and fewer days in the month pushed February U.S. liquefied natural gas exports 7% lower than in January, preliminary data from financial firm LSEG showed on Friday.

API Cites Overwhelming Support for LNG Exports to Allies in New Poll

Voters overwhelmingly support continued LNG exports to allies in Europe and other countries to help bolster the nation's economy and strengthen national security, according to a new industry poll.

Enverus Believes Gen AI Will Shape Oil and Gas Decision Making in 2024

Enverus believes generative AI will shape oil and gas decision making in 2024 and into the future, the company's Chief Innovation Officer, Colin Westmoreland, revealed to Rigzone.

Frackers Are Now Drilling for Clean Power (LOGIN CREDENTIALS REQUIRED)

Oil-and-gas companies are accelerating investments in geothermal energy, betting the technologies that fueled the shale revolution can turn the budding industry into a large producer of clean power.



SELECTED RECENT TRANSACTIONS

Civitas, Prioritizing Permian, Jettisons Non-core Colorado Assets

After plowing nearly \$7 billion into Permian Basin M&A last year, Civitas Resources is selling off non-core acreage from its legacy position in Colorado as part of a \$300 million divestiture goal.

Epsilon Energy Bolsters Permian Presence With Pradera Fuego Acquisition, Eyes Future Drilling

Epsilon Energy's acquisition in Ector County, Texas, underscores its strategic focus on expanding crude oil production in the Permian Basin, positioning the company for growth and operational efficiencies.

Esperanza, Andros Capital Partners to Acquire ExxonMobil's Interests in Ursa, Princess Fields

Esperanza Capital Partners and Andros Capital Partners LLC have announced the execution of a definitive purchase agreement to acquire Exxon Mobil Corporation's assets in the Ursa and Princess fields in the Gulf of Mexico.

Chord Energy, Canada's Enerplus to Combine Into \$11 Billion Company in North Dakota's Williston Basin

Chord Energy Corp. and Canada's Enerplus Corp. said late Wednesday they have agreed to merge in an \$11 billion stock and cash deal with an eye toward establishing a "premier" position in North Dakota's Williston shale basin.

Benchmark Buys Revolution Resources' Anadarko Assets in \$145 Million Deal

Benchmark Energy II is acquiring Revolution Resources just over four years after Revolution bought out Jones Energy Inc.'s Midcontinent portfolio.

Bayswater Acquires New Oil and Gas Production, Drilling Assets in DJ Basin

Bayswater Exploration & Production, a Denver-based oil and natural gas development company, recently acquired assets that will continue to expand its operations in the Denver Julesburg Basin in Weld County, Colorado.

Diamondback Agrees to \$26 Billion Deal to Buy Endeavor Energy in Growing Permian Push

Shale producer Diamondback Energy said on Monday it would buy the largest privately held oil and gas producer in the Permian Basin, Endeavor Energy Partners, in a cash-and-stock deal valued at about \$26 billion, including debt.

California Resources Corporation to Combine With Aera Energy

California Resources Corporation announced the signing of a definitive merger agreement to combine with Aera Energy, LLC in an all-stock transaction valued at approximately \$2.1 billion.

Vital Energy Closes Deal to Acquire Additional Interests in Permian Basin Assets

The \$78-million deal gives Vital Energy additional working interests in producing assets associated with the recent asset acquisition from Henry Energy LP, Moriah Henry Partners LLC, and Henry Resources LLC.

Silver Hill Energy Partners to Buy Liberty Resources' North Dakota Assets

Silver Hill Energy Partners said it would acquire Liberty Resources II's interests in oil and gas properties and all of Liberty Midstream Solutions in North Dakota for an undisclosed amount.

Permian Resources Unveils Two Bolt-on Acquisitions For \$175 Million

Permian Resources announced a series of deals consisting of two bolt-on acquisitions, an acreage swap, a sale of non-core assets and additional grassroots acquisitions.

W&T Offshore to Increase Oil and Gas Production With \$72 Million U.S. Gulf of Mexico Acquisitions

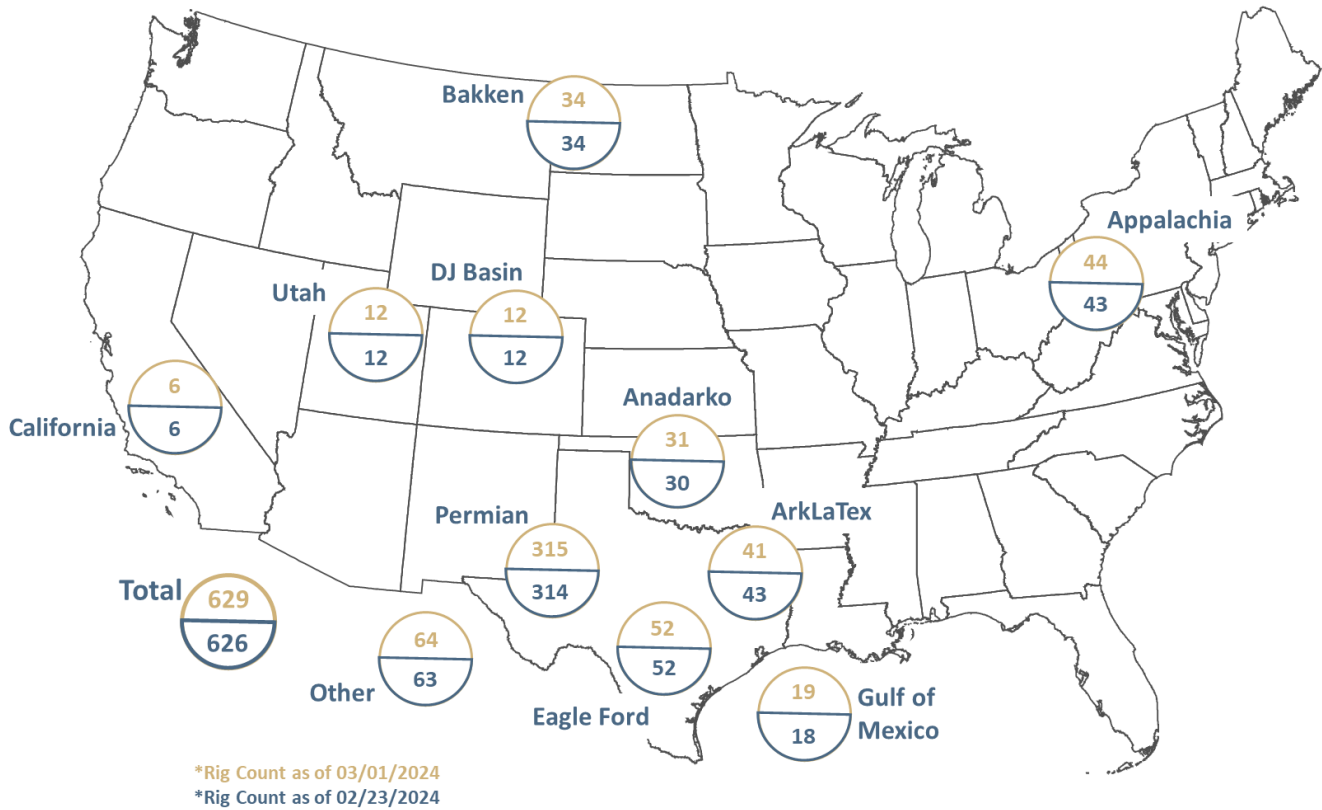
W&T Offshore, Inc. has completed the accretive acquisition of six fields in shallow waters of the U.S. Gulf of Mexico.

Talos Energy to Acquire QuarterNorth Energy For \$1.29 Billion

Oil and gas company Talos Energy, said it will acquire privately held QuarterNorth Energy in a \$1.29 billion cash-and-stock deal to bolster its presence in the Gulf of Mexico.



RIG ACTIVITY BY US REGION

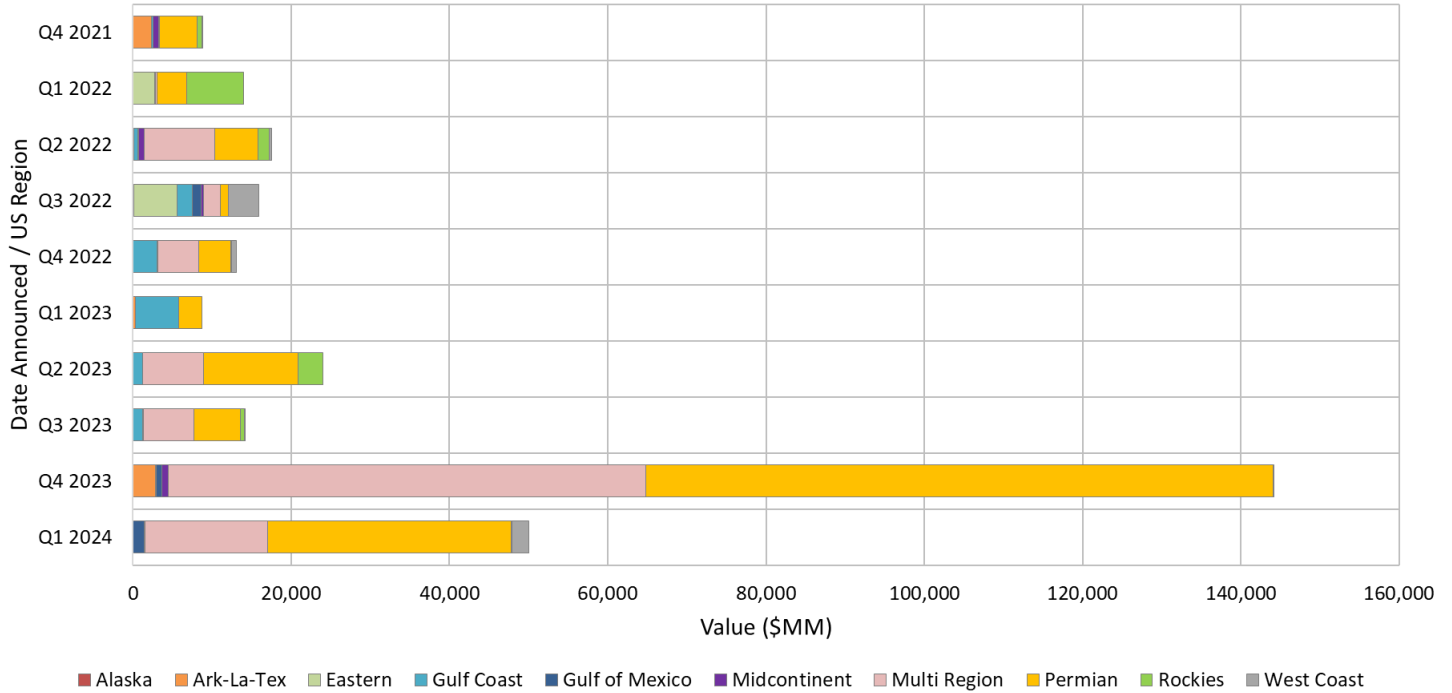


	Week Ending 03/01/2024			Week Ending 02/23/2024		Week Ending 03/03/2023
U.S. Rig Breakouts	Count	+/-	Count	+/-	Count	
Oil	506	3	503	(86)	592	
Gas	119	(1)	120	(35)	154	
Not Specified	4	1	3	1	3	
Directional	52	2	50	7	45	
Horizontal	561	1	560	(129)	690	
Vertical	16	0	16	2	14	
Land (Inc Others)	608	2	606	(124)	732	
Inland Waters	0	0	0	(1)	1	
Offshore	21	1	20	5	16	
US Total	629	3	626	(120)	749	

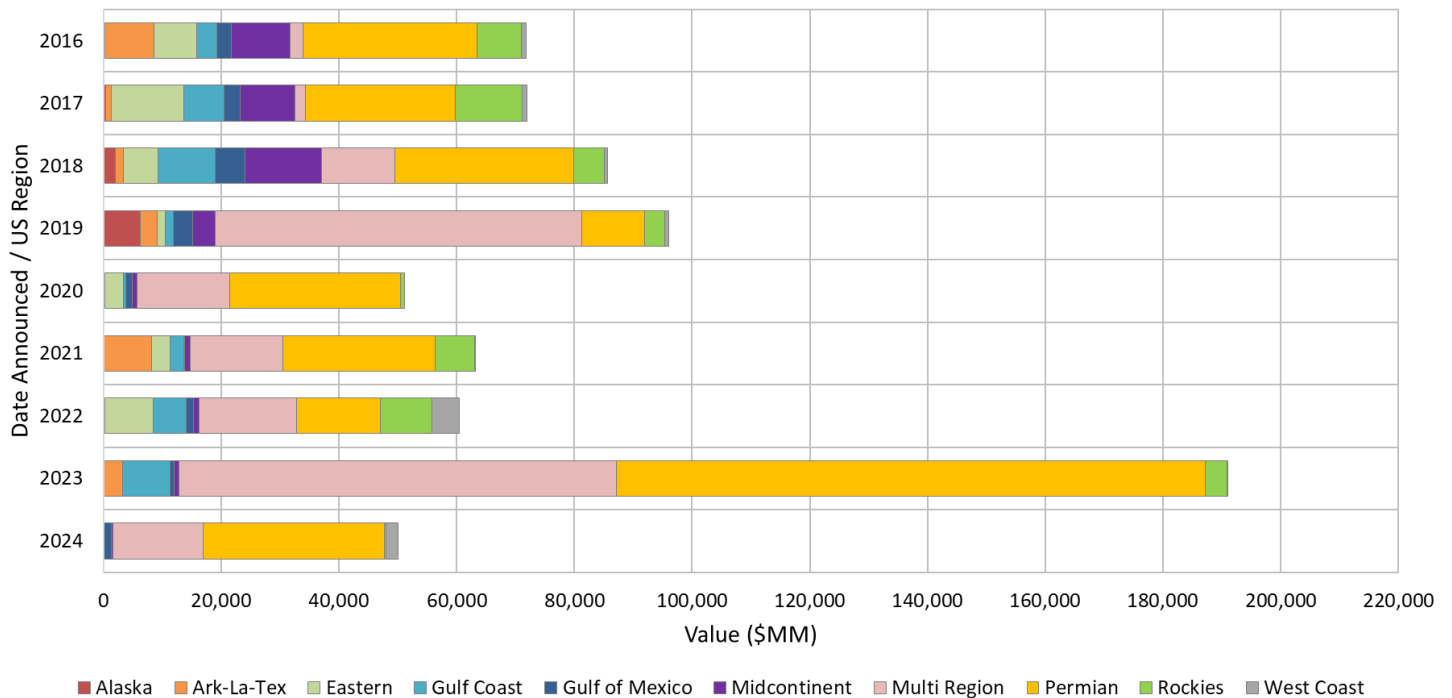
*Source—Baker Hughes Weekly Rig Counts



DEAL VALUE BY US REGION (BY QUARTER)



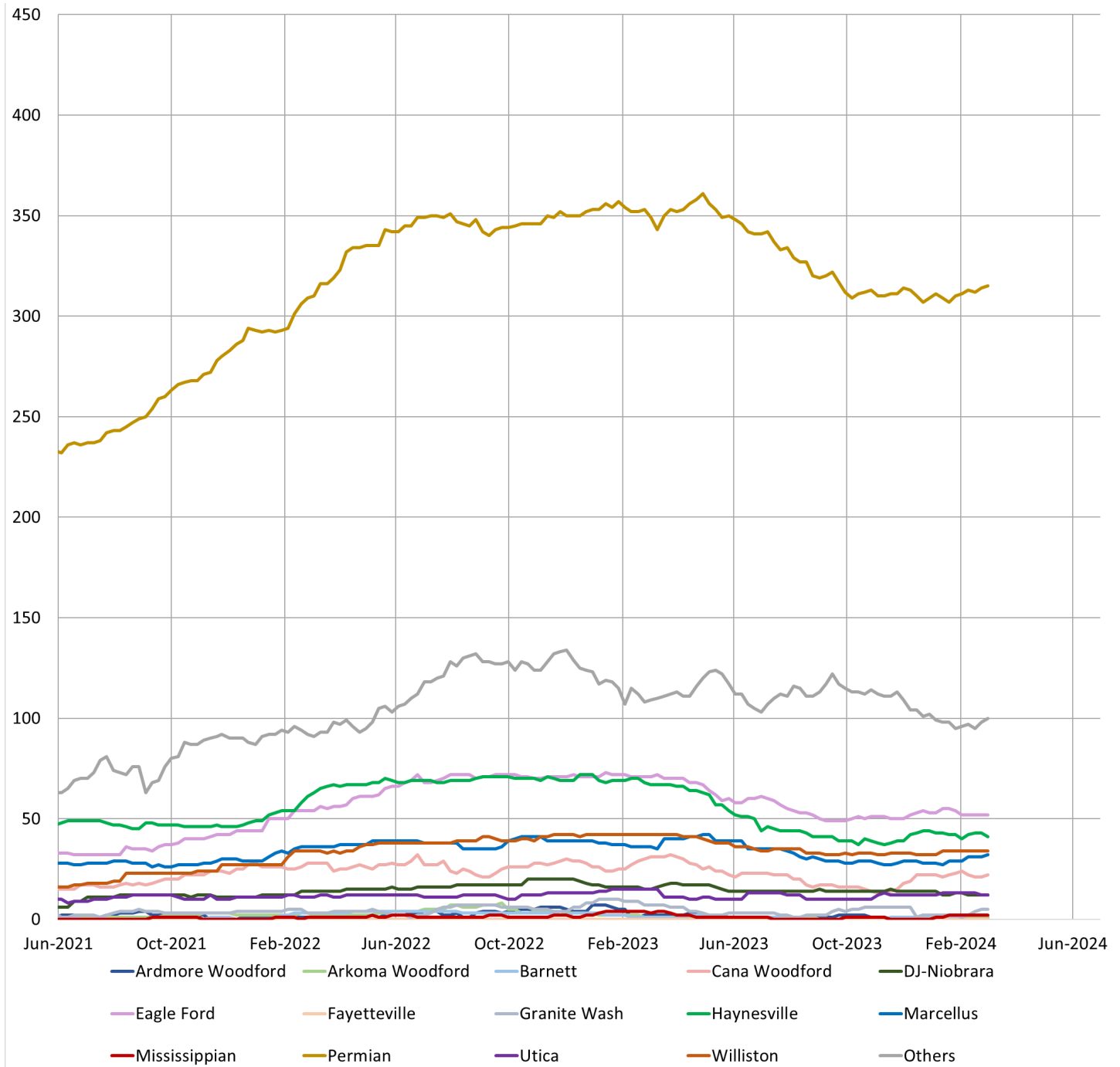
DEAL VALUE BY US REGION (BY YEAR)



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



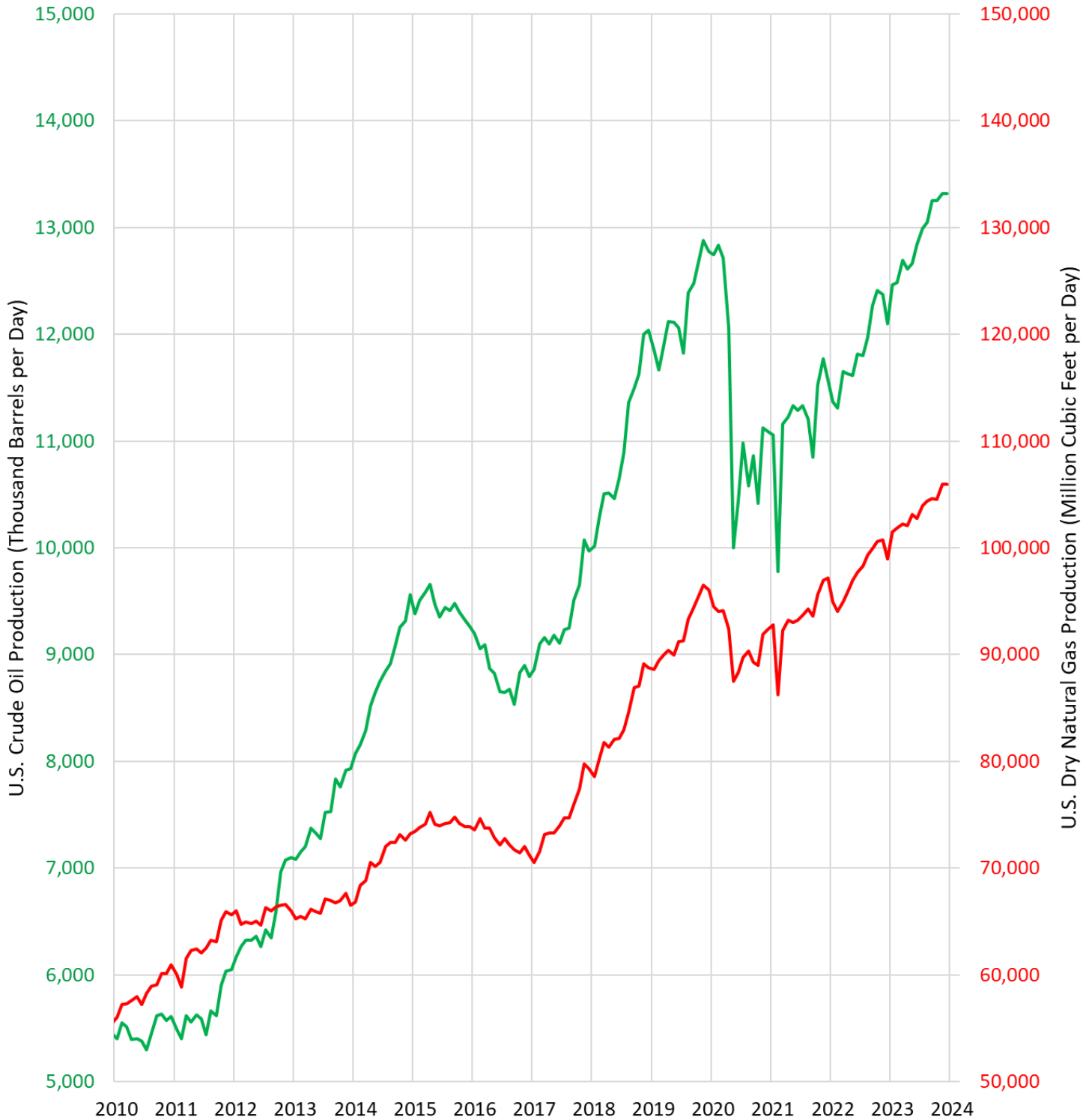
RIG ACTIVITY BY US REGION



*Source—Baker Hughes Weekly Rig Counts



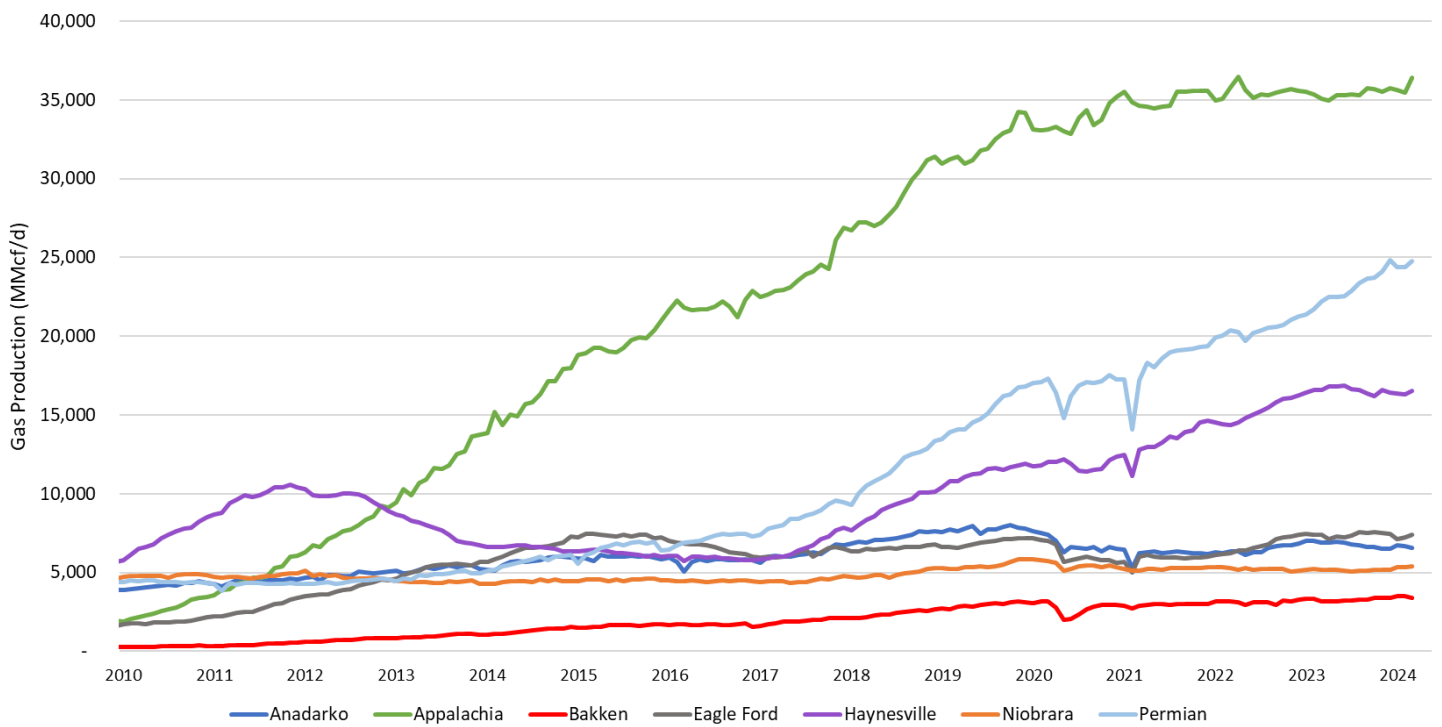
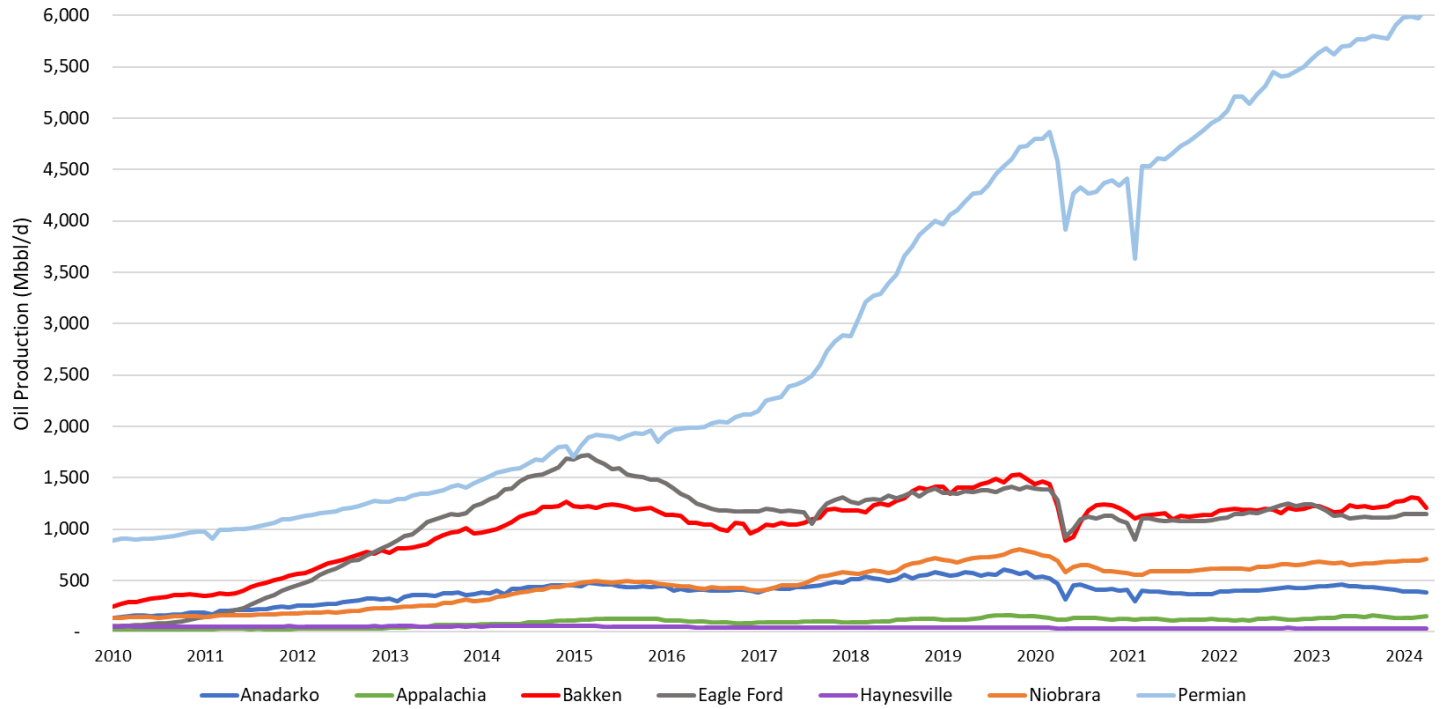
US DAILY CRUDE (MMbbl) & DRY NATURAL GAS PRODUCTION (MMcf)



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



HISTORICAL PRODUCTION OF SELECTED US SHALE REGIONS



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



UPCOMING EVENTS

March 2024

<u>5th Circuit Bankruptcy Bench-Bar Conference</u>	March 6-8	New Orleans, LA
<u>Tulsa Irish Festival</u>	March 8-10	Tulsa, OK
<u>OneGoal Pathways of Promise Luncheon</u>	March 20	Houston, TX
<u>ROCC US Men's Clay Court Championship</u>	March 30 - April 7	Houston, TX

April 2024

<u>World Oilman's Poker Tournament (WOPT)</u>	April 3-5	Las Vegas, NV
<u>The Leukemia & Lymphoma Society (LLS) Big Climb</u>	April 6	Houston, TX
<u>HBA & HPF Spring Social</u>	April 11	Houston, TX
<u>World Oilman's Mineral & Royalty Conference (MARC)</u>	April 15-16	Houston, TX
<u>Quorum Qnections Conference</u>	April 23-25	Las Vegas, NV
<u>HPF/SPE Fifth Annual Crawfish Boil</u>	April 24	Houston, TX
<u>World Oilman's Tennis Tournament (WOTT)</u>	April 24-27	Houston, TX
<u>ADAM Energy Golf Tournament</u>	April 29	Frisco, TX

*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).



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.

