



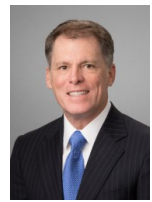
Weekly E&P Update

March 7, 2023

Vol. 9

The Rest Of The Story

By Steve Hendrickson
President of Ralph E. Davis Associates



In [last week's newsletter](#), we examined the recent oil production trends of the OPEC countries, so this week we'll complete the story by looking at the non-OPEC producers. These countries account for about 2/3rds of the global crude and other liquids production.

Here's a plot of each country's crude and other liquids production, expressed as a yearly average in millions of barrels per day.

And here are a few comments about the latest trends among countries, ordered by their 2022 average daily production.



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(Source: Energy Information Agency)

United States (20.3 mmbpd, 33%) - No country can match the US's dramatic production increase that the shale revolution brought. Despite a sharp drop in production during the COVID pandemic and a widespread shift from growth to a "free cash" model, production has recently hit new records.

Russia (10.9 mmbpd, 18%) - Russia has invested heavily in its upstream business. Still, its growth rate has slowed, and while it had nearly recovered from the pandemic declines, the fallout from its decision to invade Ukraine has reduced its access to markets and led to another drop in production.

Canada (5.7 mmbpd, 9%) - [Canada](#) has steadily grown its production and is now producing double what it did twenty years ago. Most of its production growth and reserves are related to oil sands.

China (5.1 mmbpd, 8%) - [China](#) experienced strong production growth until about five years ago. Much of their production comes from older fields using enhanced oil recovery, and another significant portion is from synthetic fuels derived from coal.

Brazil (3.8 mmbpd, 6%) - [Brazil](#) has the second largest reserves in South America and has tripled its oil output in the last twenty years. Much of this growth results from significant offshore discoveries in the "pre-salt" deposits of the Santos and Campos Basins.

Norway (1.9 mmbpd, 3%) - [Norway](#), has experienced declining oil production over the last twenty years. In this case, it's due to aging North Sea fields, many of which were discovered in the 1960s and 70s. Natural gas production has recently reached over 4 bcfd, however.

Mexico (1.9 mmbpd, 3%) - [Mexico](#) has seen its oil production fall in half since the early 2000s, and much of this is blamed on the failure of the state-run oil company to adequately re-invest in the industry. Natural gas production has also fallen significantly.

Qatar (1.9 mmbpd, 3%) - [Qatar](#) is best known as a significant natural gas producer (having almost 900 TCF of reserves). Still, their oil production has doubled since 2000, mostly attributable to condensate associated with their natural gas production.

Kazakhstan (1.9 mmbpd, 3%) - This is [another nation](#) whose oil production has grown significantly and more than tripled in the last twenty years. Their growth has been driven primarily by two giant fields, Tengiz and Karachagnak.

Others - The 14 remaining countries (including the [UK](#), Oman, and Indonesia) produce about 8 mmbpd collectively and are mostly in decline. The UK, in particular, has seen its production fall by 2/3rd since 2000 as aging North Sea fields wind down.

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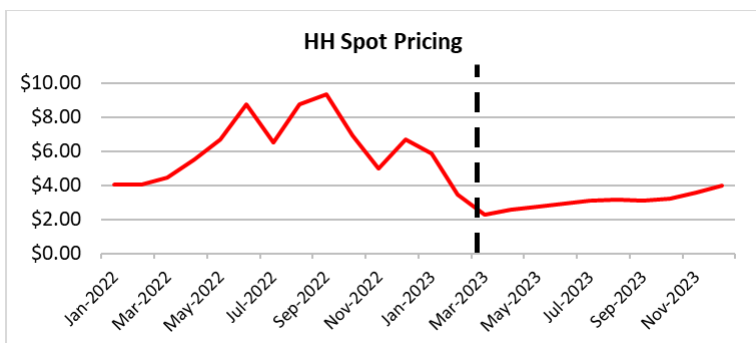
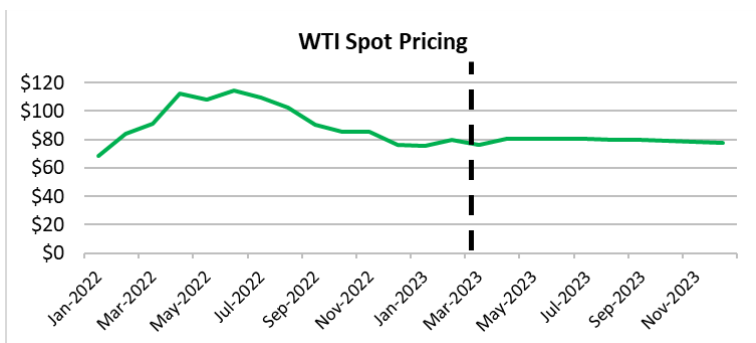
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NYMEX FUTURE PRICING



MONDAY'S MARKET CLOSE

NYMEX WTI CRUDE OIL FUTURES as of March 06, 2023 Close (\$/bbl)

Period	Current	WoW Change	Last Week	1 Yr Ago
2023	\$79.61	\$4.57	\$75.04	\$88.82
2024	\$74.90	\$3.60	\$71.30	\$81.11
2025	\$70.12	\$2.44	\$67.68	\$75.68
2026	\$66.13	\$1.58	\$64.55	\$71.46
2027	\$62.73	\$0.92	\$61.81	\$69.11

NYMEX HH NATURAL GAS FUTURES as of March 06, 2023 Close (\$/MMBtu)

Period	Current	WoW Change	Last Week	1 Yr Ago
2023	\$3.15	(\$0.10)	\$3.25	\$4.04
2024	\$3.79	\$0.13	\$3.66	\$3.49
2025	\$4.16	\$0.29	\$3.87	\$3.44
2026	\$4.22	\$0.21	\$4.01	\$3.46
2027	\$4.27	\$0.21	\$4.06	\$3.52

INDUSTRY METRICS—QUICK SNAPSHOT

	Current	Last Week	WoW Change	%Change
Crude Oil Near-Month Price (\$/bbl)	\$77.89	\$75.60	\$2.29	3%
Natural Gas Near-Month Price (\$/MMBtu)	\$2.79	\$2.35	\$0.44	19%
Weekly Upstream-Deal Transaction Value (\$MM)	\$2,830.00	\$1,838.43	\$991.57	54%
Weekly Number of Upstream-Deal Transactions	6	3	3	100%
Current Total US Rig Count	749	753	(4)	(0.5%)
US Field Crude Oil Production (MMbbl/day)	12.3	12.3	0	-
US Field Dry Natural Gas Production (Bcf/day)	105.9	105.2	0.7	0.7%
Commercial Crude Oil Stocks-Excluding SPR (MMbbl)	480	479	1	0.2%
Natural Gas Stocks-Working Gas Underground Storage (Bcf)	2,114	2,195	(81)	(4%)
Total Drilled But Uncompleted Wells (DUC-Last Month)	4,671	4,671	0	-

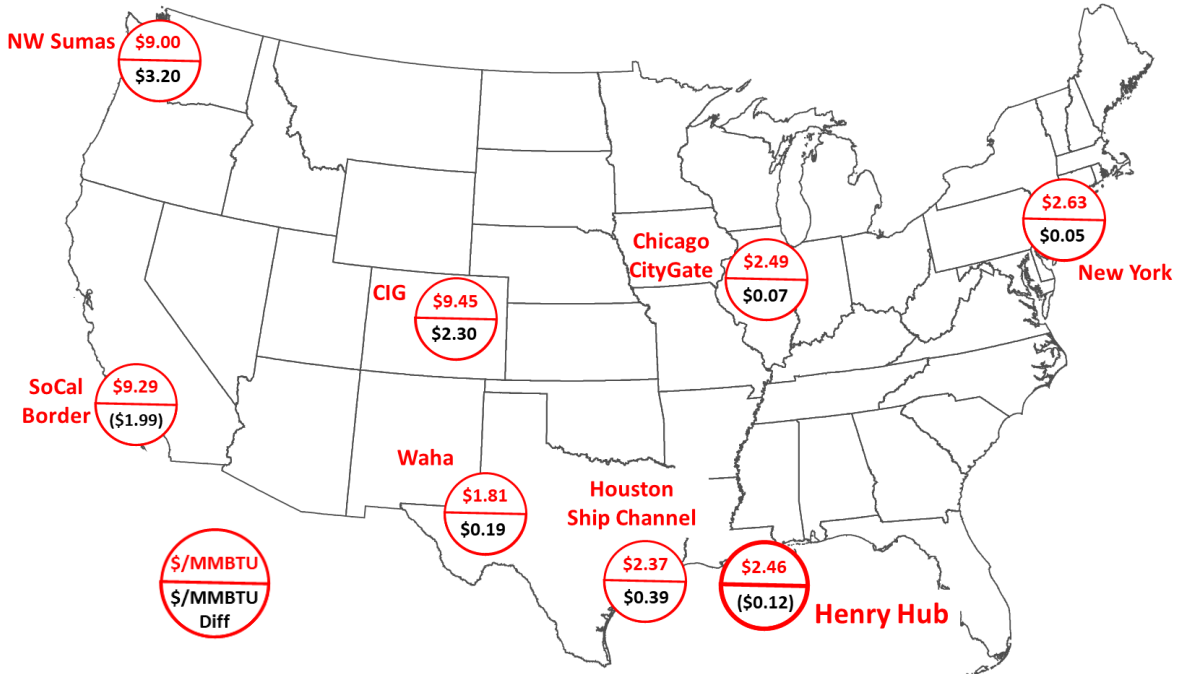
*Source—Energy Information Administration, United States (EIA)

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

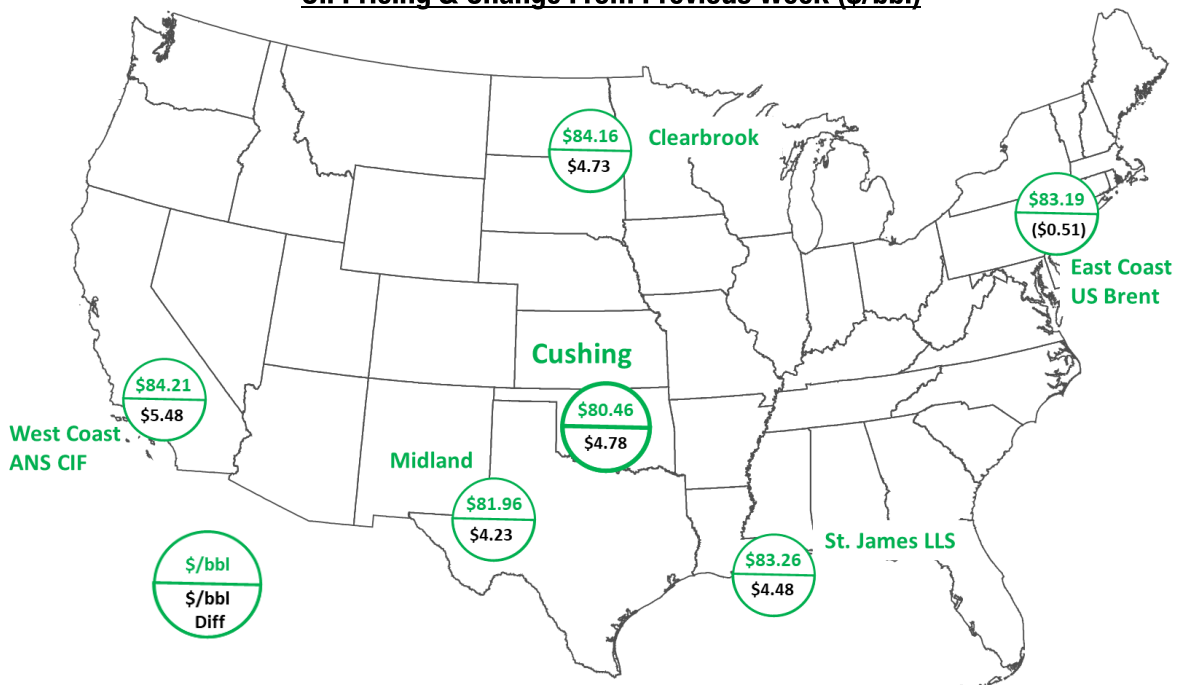


US COMMODITY PRICES CONTINUED

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



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



*Source—Bloomberg LP



SELECTED INDUSTRY HEADLINES

How Russia's War On Ukraine Is Altering Global Crude Oil Trade

The Ukraine-Russia war has disrupted crude tanker flows, leading to higher profits for midsize crude tankers and unusual transport patterns for U.S. crude.

Critical For Kazakhstan To Pursue Oil Export Options Outside Of Russia

Kazakhstan's ability to diversify its seaborne crude oil export routes away from Russian territory is critical to the country's economic growth, the developer of a port told CNBC.

Oil Rises As Permian Output Is Predicted To Peak

Oil broke above its 100-day moving average as a shale executive in Houston projected year America's most prolific basin will soon peak, though China's tempered economic forecast limited crude's upside.

WTI Crude Hits \$80 Despite Disappointing Growth Plans From China

West Texas Intermediate crude oil prices have broken above the \$80 barrier despite disappointing growth plans coming out of China recently.

Oil And Gas Jobs What It Takes To Make It In The Oil Industry

The oil and gas sector offers numerous job opportunities in production, exploration, transportation, and refining. Understanding the various roles in upstream, midstream, and downstream sectors can help determine which career path is right for you.

Shell CEO Says Cutting Oil And Gas Production Is "Not Healthy"

Shell Plc's new boss said cutting oil and gas output would be bad for consumers, echoing a pivot by other major producers toward fossil fuels and energy security.

Africa's Oil Industry Is Set To Flourish In 2023

As global oil demand climbs and the world attempts to find new sources of low-carbon energy supply, 2023 could be a big year for Africa's oil industry.

UAE Officials Deny Report They're Considering Quitting OPEC

The United Arab Emirates has no plans to leave the OPEC alliance, officials said on condition of anonymity, denying a report that sent oil prices tumbling.

Norway Sees Several Finds Already in 2023

Several discoveries have already been made offshore Norway in 2023, the Norwegian Petroleum Directorate's (NPD) website shows.

U.S. Crude Oil Inventories Continue To Build

U.S. crude oil inventories continued to build last week, with the total balance adding almost 59 million barrels since the beginning of the year.

Offshore Oil And Gas Drilling A Comprehensive Guide

This guide provides an overview of offshore oil and gas drilling, including its process, ideal locations, necessity, environmental impact, and potential.



SELECTED RECENT TRANSACTIONS

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.

Chesapeake Energy Corporation Announces Sale Of Second Eagle Ford Package For \$1.4 Billion

Chesapeake Energy Corporation recently announced that it has executed an agreement to sell a portion of its remaining Eagle Ford asset to INEOS Energy for \$1.4 billion.

Verde Bio Holdings, Inc. Announces Acquisition Of Haynesville Shale Mineral And Royalty Interest

Verde Bio Holdings, Inc. recently announced that it has entered into an agreement to acquire revenue producing mineral and royalty interests in the prolific Haynesville Shale of Northern Louisiana, held by a private seller for a purchase price of \$425,000 in cash.

Foothills Exploration Acquires Certain Leases and Wells In Oklahoma

Foothills Exploration recently announced that it had managed to complete the acquisition of some wells and leases in Comanche County in Oklahoma.

Vital Energy Announces Midland Basin Acquisition

Vital Energy, Inc. recently announced the signing of a definitive purchase and sale agreement to acquire the assets of Driftwood Energy Operating, LLC, inclusive of all leasehold interests and hedges, in exchange for 1,578,948 shares of Vital common stock and \$127.6 million of cash.

Surge Energy America Announces Recent Acreage Acquisitions and Finalization of Houston Corporate Office Move

Surge Energy US Holdings Company recently announced it has recently added incremental acreage to the Company's portfolio. Additionally, earlier this month the company finalized the previously announced move of its corporate office.

Alliance Resource Partners, L.P. Announces \$72.3 Million Mineral Acquisition

Alliance Resource Partners, L.P. recently announced a \$72.3 million acquisition of oil & gas mineral interests in the Permian Basin from JC Resources LP.

INPEX Sells Eagle Ford Tight Oil Production And Development Assets To Repsol

Japan's INPEX Corporation has sold its Eagle Ford assets to Repsol Oil & Gas USA, a subsidiary of Spanish energy company Repsol.

Elk Range Royalties Announces Acquisition in the Permian Basin and Launch of Elk Range Royalties II

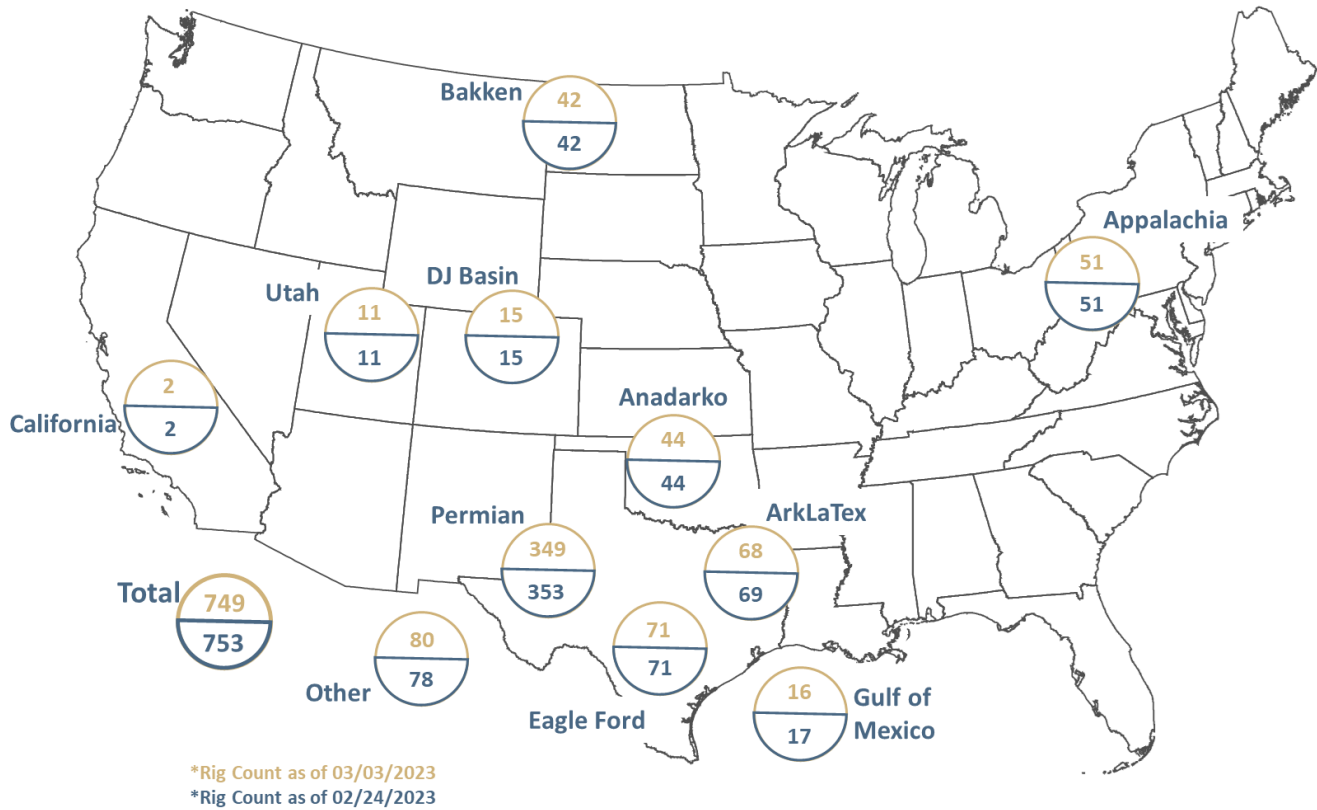
Elk Range Royalties, LP recently announced it has closed an acquisition of Permian Basin mineral and royalty interests pursuant to a purchase and sale agreement with Tower Rock Oil & Gas and its affiliates.

Arena Energy Acquires Gulf of Mexico Shelf Properties from Cox Operating, LLC

Arena Energy, LLC recently announced it has closed on the acquisition of Cox Operating, LLC's interest in two fields located in the shallow waters of the Gulf of Mexico.



RIG ACTIVITY BY US REGION

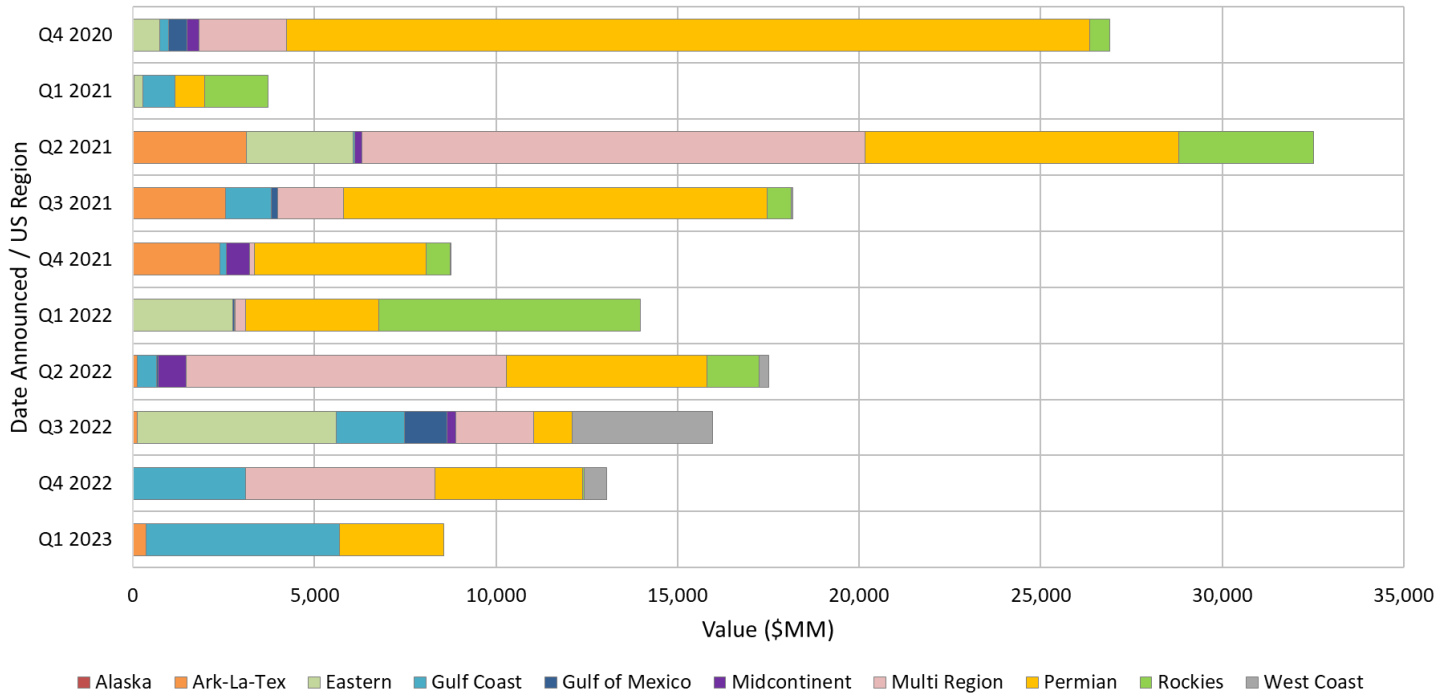


	Week Ending 03/03/2023			Week Ending 02/24/2023		Week Ending 03/04/2022
U.S. Rig Breakouts	Count	+/-	Count	+/-	Count	
Oil	592	(8)	600	73	519	
Gas	154	3	151	24	130	
Not Specified	3	1	2	2	1	
Directional	45	1	44	15	30	
Horizontal	690	(3)	693	95	595	
Vertical	14	(2)	16	(11)	25	
Land (Inc Others)	732	(2)	734	97	635	
Inland Waters	1	(1)	2	(2)	3	
Offshore	16	(1)	17	4	12	
US Total	749	(4)	753	99	650	

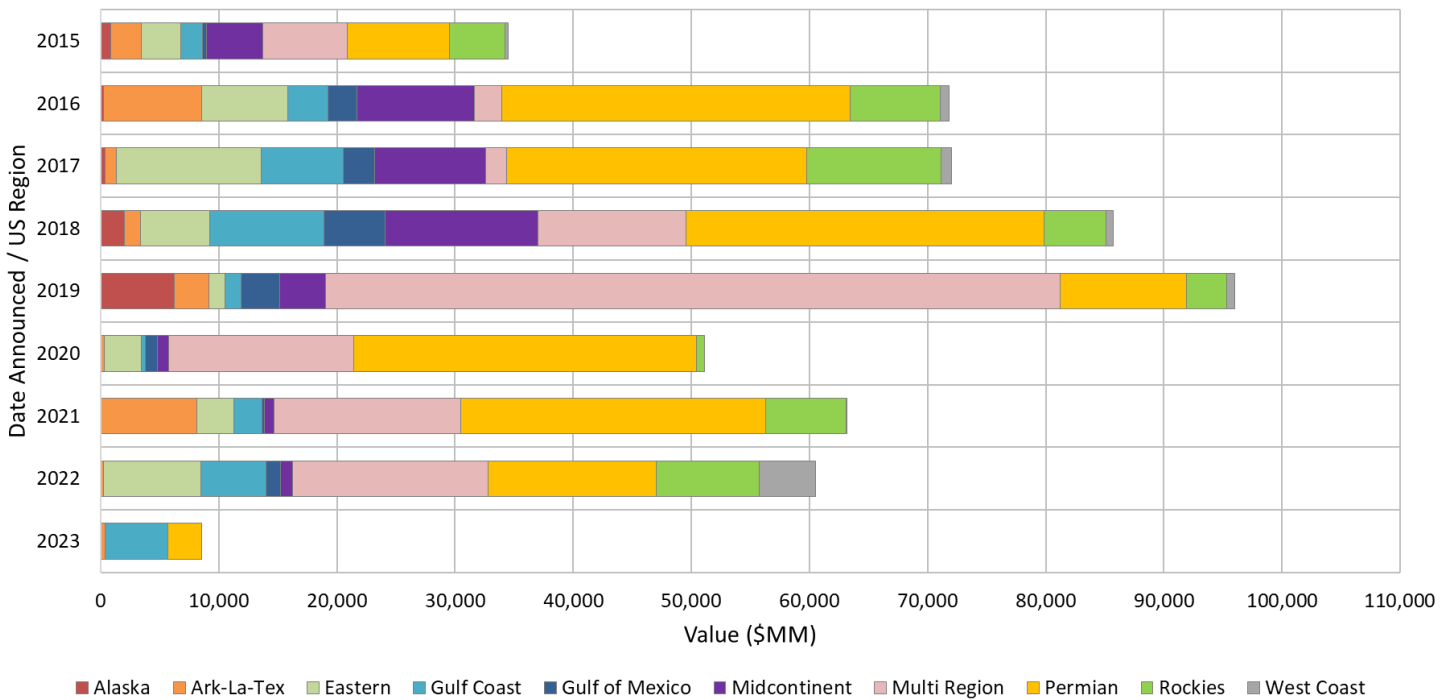
*Source—Baker Hughes Weekly Rig Counts



DEAL VALUE BY US REGION (BY QUARTER)



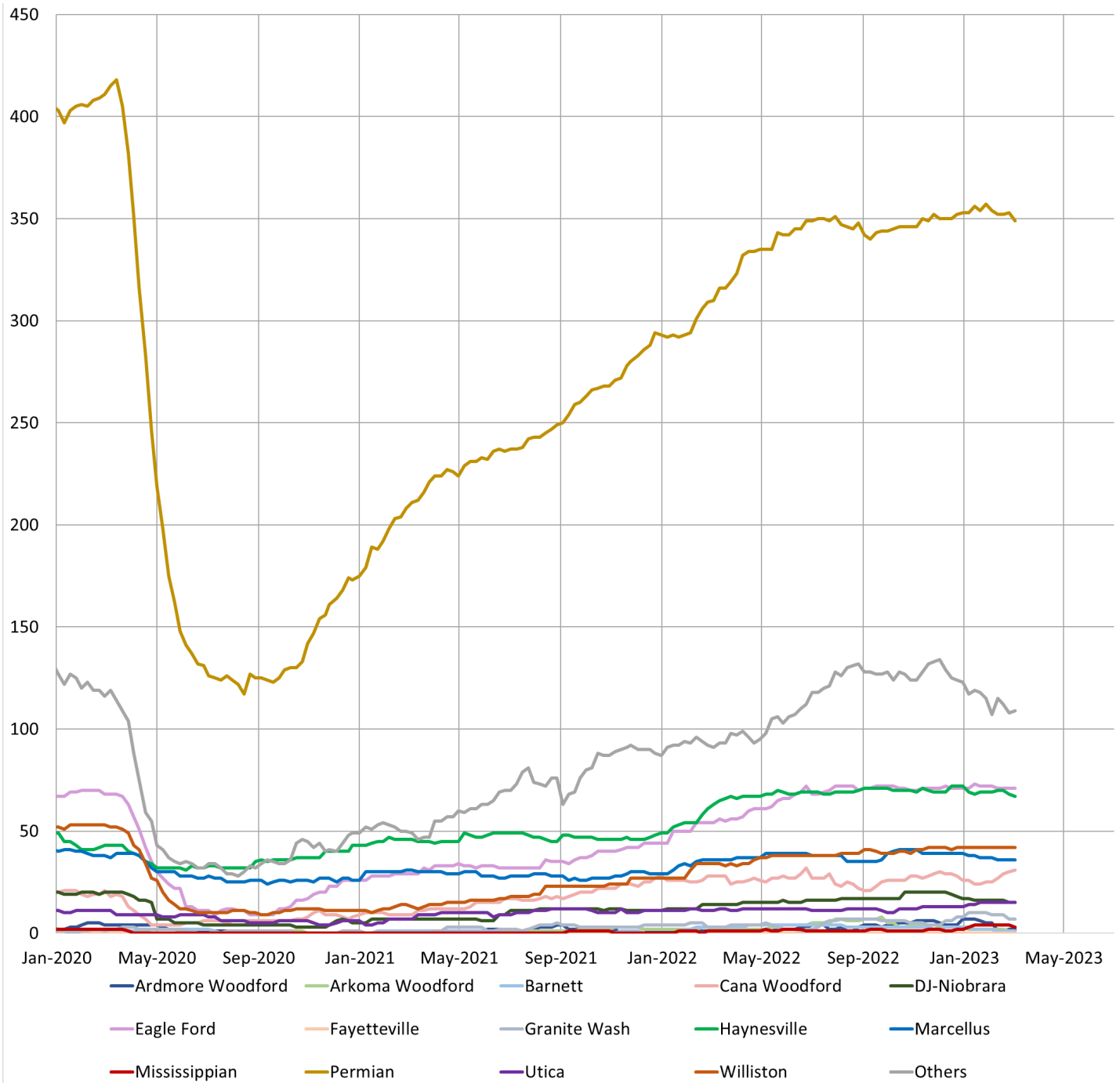
DEAL VALUE BY US REGION (BY YEAR)



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



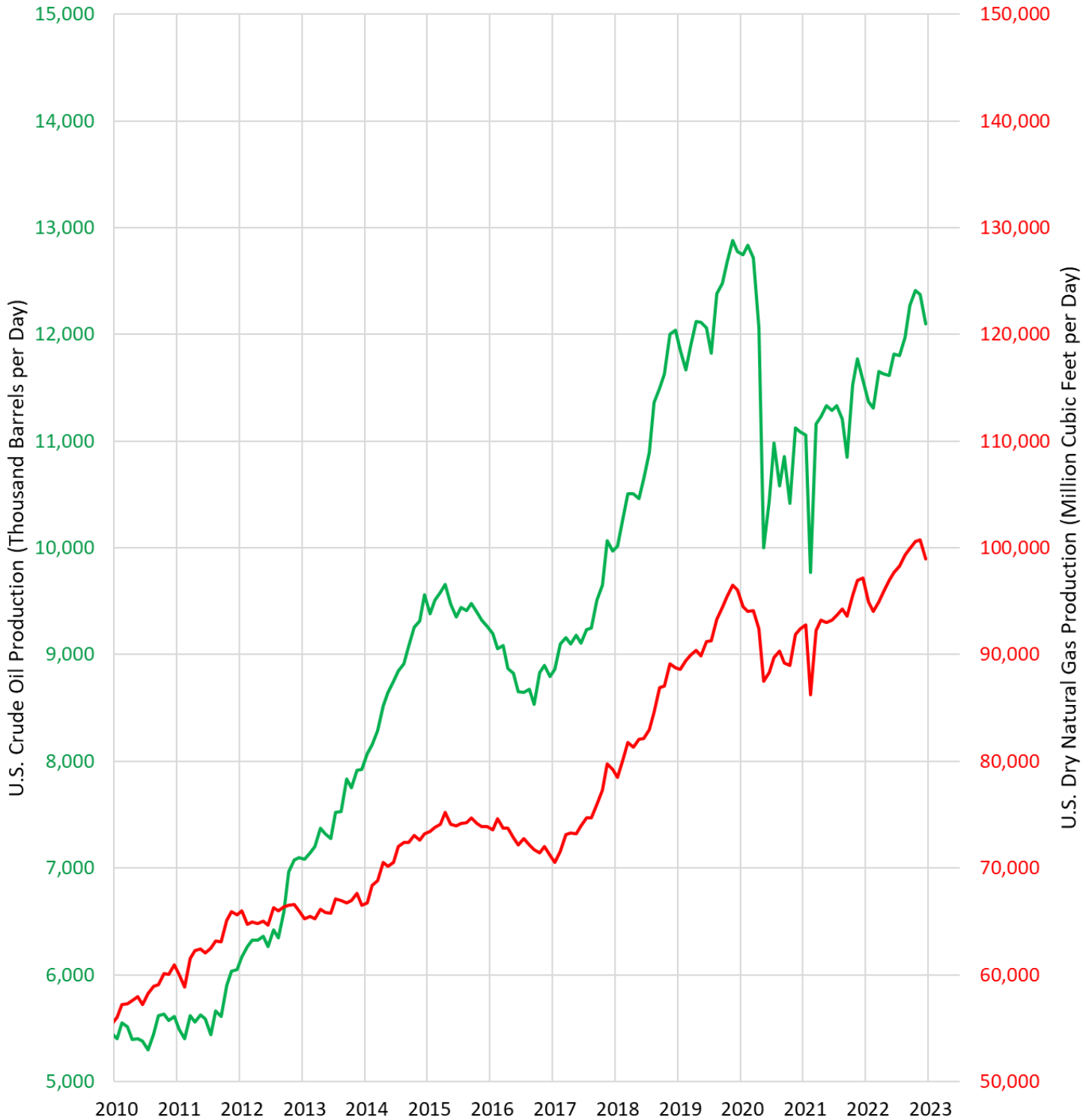
RIG ACTIVITY BY US REGION



*Source—Baker Hughes Weekly Rig Counts



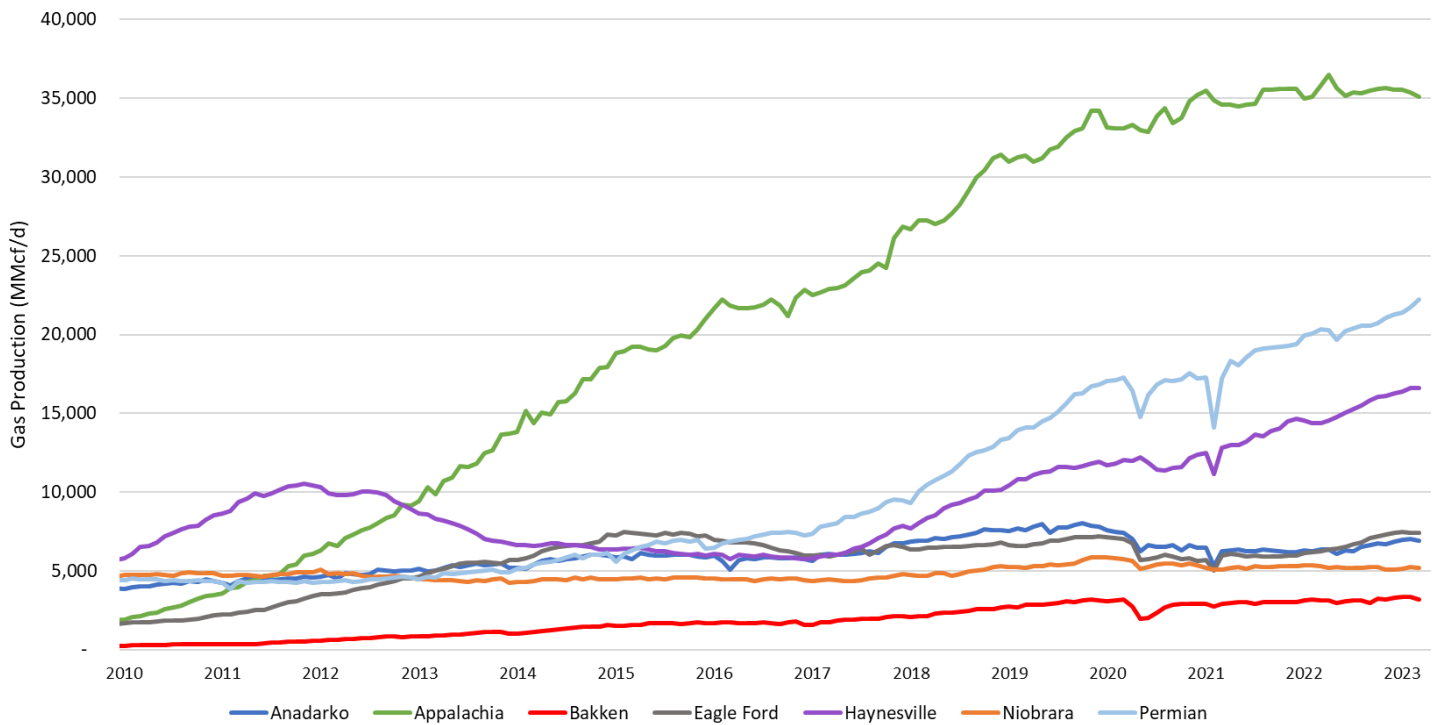
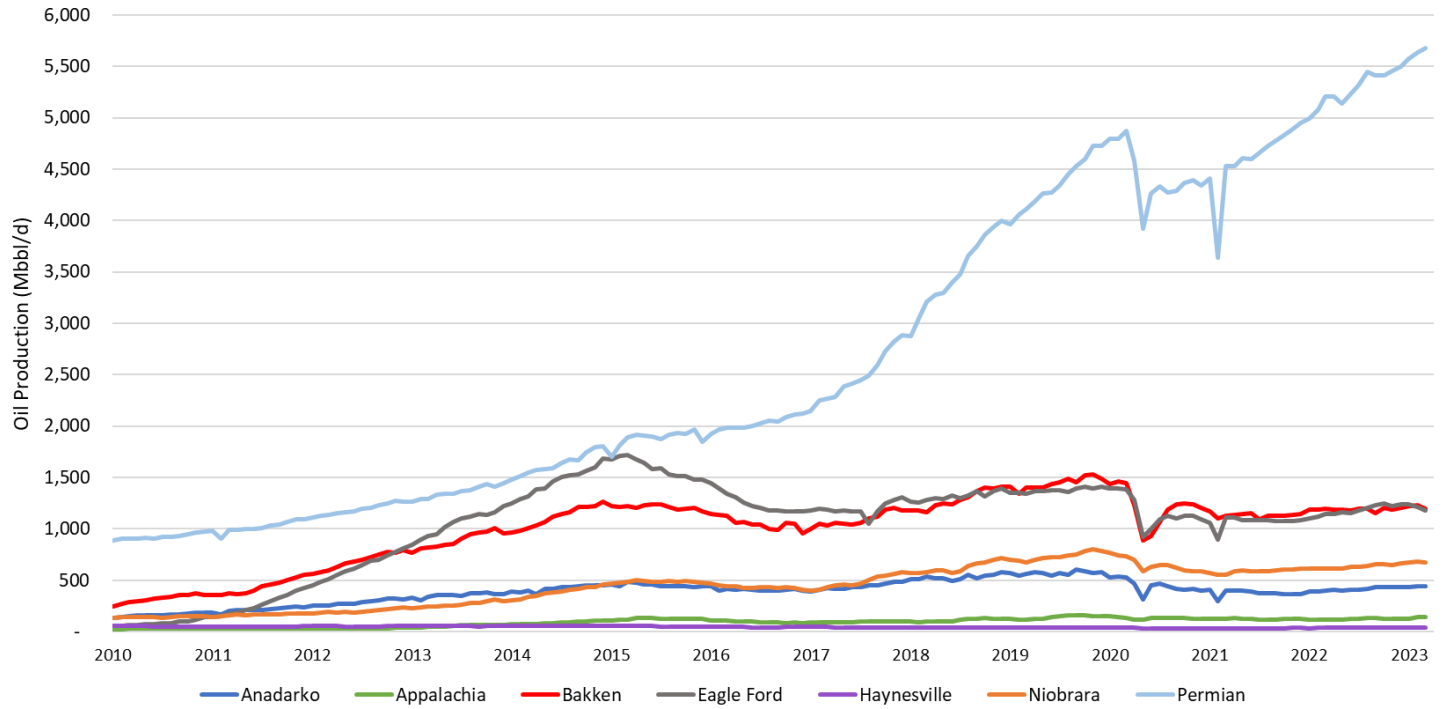
US DAILY CRUDE (MMbbl) & DRY NATURAL GAS PRODUCTION (MMcf)



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



HISTORICAL PRODUCTION OF SELECTED US SHALE REGIONS



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



UPCOMING EVENTS

March 2023

[CERAWeek 2023](#)

March 6-10 Houston, TX

[4th American LNG Forum](#)

March 13-14 Houston, TX

[Qnections 2023](#)

March 27-29 Las Vegas, NV

[DUG Haynesville Conference & Exhibition](#)

March 28-29 Shreveport, LA

April 2023

[US Men's Clay Court Championship 2023](#)

April 1-9 Houston, TX

[World Oilman's Minerals & Royalty Conference \(MARC\)](#)

April 10-11 Houston, TX

[Small Steps Wine Classic](#)

April 19 Houston, TX

[2023 World Oilman's Poker Tournament](#)

April 26-28 Las Vegas, NV

[World Oilman's Tennis Tournament \(WOTT\)](#)

April 26-29 Houston, TX

May 2023

[Offshore Technology Conference 2023](#)

May 1-4 Houston, TX

[Energy Valuation Conference](#)

May 11 Houston, TX

[DUG Permian Basin & Eagle Ford Conference & Exhibition](#)

May 22-24 Fort Worth, TX

June 2023

[Society Of Petroleum Evaluation Engineers \(SPEE\) Annual Meeting](#)

June 17-20 Newport, RI

*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 two years of reserves engineering experience. Before RED, David was a Petroleum Engineer at Energy Advisors Group where he handled the technical processes for marketed conventional and unconventional assets across the Lower 48. He began his career with Longfellow Energy where he contributed to its engineering, operations, and A&D teams. David holds an MBA from The University of Texas Permian Basin and a B.S. in Petroleum Engineering from The University of Oklahoma.

