Mick Law P.C. LLO
Non-Traded Retail Energy Report

Brad Updike, LLM, JD
(402)275-1816
bupdike@micklawpc.com

Retail Sector Summary

In 2020, nine oil and gas sponsors raised $272,833,038 for use within various energy programs. This represents a year-over-year decrease of 26% from $367 MM raised in 2019, which was not unexpected considering the headwinds of the COVID-19 Pandemic and the oil/gas pricing volatility observed throughout most of 2020. While this sector of retail fundraising did not achieve growth in 2020, the sector managed to outperform 2015's numbers, i.e., $247 MM, which followed the oil market crash of Q4 2014.

Of the nine sponsors, six raised capital to fund drilling projects in various geologic basins that include the Permian Basin, Eagle Ford Shale, Marcellus Shale, Illinois Basin and shallow oil-producing zones in Tennessee. Leading the capital raising efforts among the drilling sponsors was U.S. Energy Development Corp. ("**U.S. Energy**") and MDS Energy ("**MDS**"), each of which raised approximately $60 million in capital. Also raising significant capital for drilling was Mewbourne Development Corporation ("**Mewbourne"**), which raised $55.31 million. *While the capital raised from each of these sponsors was lower than what was achieved in 2019, the raised capital of each is sufficient to fund the drilling of many wells within each of the sponsor's designated operational areas (i.e., a commendable result given the challenges presented by the COVID-19 Pandemic)*.

Of the nine sponsors, three reported varying levels of capital growth from 2019 through 2020, which included: (i) STL Resources ("**STL**," up $8.3 MM from 2019); (ii) Waveland Capital ("**Waveland**," up about $3 MM from 2019); and John Henry Oil ("**JHO**," up $4.35 MM from 2019). We note, that while oil and gas fundraising was down in 2020, the volume of broker-dealers ("**BDs**"), registered investment advisors ("**RIAs**"), family offices, and other firms that requested our due diligence opinions on various energy sponsors and programs was strong in 2020, with over a hundred of such firms requesting our opinions on various oil/gas opportunities. This indicates that, while the retail channel is being cautious as to what energy offerings are funded, the channel continues to be open-minded to well underwritten opportunities. A chart of the fundraising totals of the nine sponsors we covered in 2020 is provided below:

Company	Strategy	2020 Raise	2019 Raise	2018 Raise
Mewbourne	*Drilling*-Horizontal Wells in the Permian Basin, Texas Panhandle and Anadarko Basin	$55.31 MM	$99.31 MM	$116.7 MM
MDS	*Drilling*-Horizontal Wells in the Marcellus Shale Play	$60.0 MM	$68.0 MM	$65.5 MM

APX	*Drilling*-Mississippian Oil Targets in the Illinois Basin	$12.0 MM	$21.0 MM	$23.4 MM
STL	*Drilling*-Marcellus Shale of Eastern Pennsylvania	$17.3 MM	$9.0 MM	NA
U.S. Energy	*Drilling*-Permian Basin, Powder River Basin and Eagle Ford Shale Play; the QOF is an Opportunity Fund Seeking Working Interests and Other Upstream Assets	$64.0 MM drilling; $20.0 MM QOF program	$99.0 MM	$100 MM
Waveland	*Opportunity Fund* Targeting Minerals and Non-Operated Working Interests in the Bakken Shale	$22.0 MM	$18.6 MM	$33 MM
Resource Royalty	*1031 Program* Acquiring Minerals and Royalties in STACK Play of Oklahoma	$5.373 MM	$19.15 MM	$30 MM
Montego Minerals	*1031 Programs* Acquiring Minerals and Royalties in the Permian Basin, East Texas, and Central Oklahoma	$12.5 MM	$32.0 MM	$27.9 MM
JHO	*Drilling*-Oil Producing Zones in Tennessee	$4.35 MM	Did not raise capital	$4.5 MM

2020 Totals by Strategy

Total Capital:	$272,833,038
Drilling:	76%
Opportunity Funds:	17%
Minerals/Royalties:	7%

Three Internal Revenue Code ("**IRC**") Section 1031 ("**§1031**") programs were wholly or partially funded by Resource Royalty and Montego Minerals. Overall, §1031 energy capital dropped from what was reported in 2018 ($58 MM) and 2019 ($50 MM). While the assets we reviewed within the §1031 programs are positioned to generate competitive returns under current commodities prices, COVID-19 Pandemic developments, coupled with a severe level of commodities pricing volatility, presented substantial headwinds for these programs. Pending a more stable pricing environment and perhaps with some additional advisor level education concerning the virtues of royalties, we believe this segment can achieve capital growth in 2021.

We note that a sponsor-level review was completed by our firm for Bellatorum Resources ("**Bellatorum**"), a mineral rights acquisition company whose operations are based in Houston, Texas. Bellatorum specializes in acquiring mineral rights and royalties within various geologic plays in Texas. Bellatorum has achieved a respectable record of exits in prior programs and will seek to establish relations with RIAs, family offices, and professional service providers in 2021.

Perspective Regarding the Future

We note that the size of the oil and gas sponsor group has been stable over the past couple of years (e.g., eight to nine sponsors in 2017-2020), with drilling programs outpacing royalties and opportunistic funds in terms of fundraising. The fundraising results of this sponsor group has been choppy over the past few years ($330 MM 2017, $401 MM 2018, $369 MM 2019, and $273 MM 2020). The choppiness has been caused by severe market volatility, coupled with the fact that the sector continues to seek the reestablishment of investor trust that was lost as a result of performance failures by several companies that no longer raise capital in the retail channel.

We note that the drop in capital in relation to private oil/gas programs correlates with a drop off in M&A activities in the broader upstream (i.e., E&P) sector of energy over the past few years, which fell year-over-year in both 2019 and 2020 by more than 50% in transactional value. On this point, no sector of the oil/gas universe is immune the effects of an uneasy market, as reflected in the Alerian MLP Index, which continued to fall last year (it dropped 30% from mid-January 2020 to mid-January 2021). Due to severe price volatility, energy banks have also followed suit and have tightened their lending standards considerably.[1]

By analogy, the §1031 real estate segment went through restructuring and came back from approximately $200 MM raised in years 2009 and 2010 to over $3 B in years 2019 and 2020. For oil and gas sponsors, however, we anticipate a slow climb back to pre-2015 raise numbers (i.e., $800 MM - $1 B) as oil prices are expected to remain below the pre-2015 prices in 2021 and 2022. On a better note, we continue to believe that the overall strength of the oil and gas sponsor group today compared to what was the case ten years ago bodes well for this segment going into 2021.

Three Cycles in One

Oil and gas pricing has moved like a roller coaster over the past 15 years. Unfortunately, this has worked to the peril of some E&P oriented programs in which the cap. ex. spent was relational to the higher prices of the underlying commodities (i.e., as the costs for energy assets and drilling related services move in positive correlation with oil/gas prices). The cycles of the past decade are summarized as follows:

- The shale boom that took U.S. oil production from under four million barrels of oil per day ("**BOPD"**) in late 2008 to more than 9 million BOPD in 2014 over-supplied the global market. Saudi Arabia's attempt to regain market share in 2014 caused the oil price to decline from over $100 per barrel ("**bbl**") to under $30 per bbl. The double bottom in early 2016 appeared to be the end of this cycle, and oil prices moved back over $70 per bbl in the summer of 2018.

- Then, the U.S. vs. China trade war took oil back under $50 per bbl. The signing of phase one of the trade agreement had oil back on track to the $70s. In the first week of this year, oil was trading over $62 per bbl, and everyone thought the price was heading higher.

[1] Mark Holmes, *Oil & Gas Industry Feels Financing Squeeze*, debtexplorer.whitecase.com (June 23, 2020).

- Then along comes the COVID-19 Pandemic and the oil price crash in April 2020. From April 2020 through the first week of May 2020, we saw prices settle below $20 bbl and even dip below $0 for a day.

Better times ahead? Probably

Barring another round of severe COVID-19 Pandemic shutdowns, oil, natural gas and natural gas liquids ("**NGL**") prices appear to be heading in a better direction. While oil prices have yet to return to the levels observed in 2018, such prices have rebounded quicker than what the futures markets predicted in April/May 2020, with oil prices stabilizing at around $45-50 bbl over the past 60 days. Natural gas prices have also made a comeback, which have found a level of $2.50-$2.75 mcf through December 2020.

Market experts, including Goldman Sachs and Raymond James, are predicting a continuation of better pricing for oil/gas. As to natural gas, both firms are bullish on pricing for 2021 based upon the reduction in drilling cap. ex. within major U.S. fields, which has led to a reduction in the U.S. rig count from over 750 rigs a year ago to approximately 340 rigs running as of January 8, 2021. While most of these rigs are deployed within fields whose economics are driven primarily by oil production (i.e., Permian Basin), less drilling for oil *means* that *less associated natural gas* will be produced as a consequence. In view of a lower *expected* level of associated natural gas production, both Goldman Sachs and Raymond James have suggested the possibilities of $3.00 mcf through much of 2021 (but with natural gas expected to settle back to pre-COVID Pandemic price levels in 2022 upon a rebalancing of market supply/demand for oil).

While oil is expected to move upward, the climb is expected to be slow rolling as worldwide GDP and associated oil demand are not expected to return to pre-COVID19 Pandemic levels until 2022. For this reason, Raymond James forecasted a moderately higher WTI price average of $57 bbl in 2021 as a result of a gradual reopening of worldwide economies and OPEC/Russian cooperation in continued production cuts. Raymond James anticipates oil pricing of $65 bbl in 2022 based upon a rebalancing of oil supply/demand.

While the above-mentioned sentiment gives us pause for hope, higher oil prices will require an economic re-normalization that depends upon the widespread availability of a COVID-19 vaccine for billions across the world. Taking a more conservative approach, the Energy Information Administration ("**EIA**") projects the Brent crude spot price to average $53 bbl in 2021, which compares favorably to the average of $42 bbl in 2020. This forecast, which is driven by the EIA's expectation for a GDP increase of 4% in 2021, implies an average WTI spot price around $50 bbl for this year. Similar to Raymond James' forecast, the EIA anticipates natural gas pricing of about $3.00 mcf through much of 2021.

So where is the activity today?

OPEC has been cooperative at keeping its output in check, as evidenced by its willingness to cut its production to 25.6 million BOPD in 2020.[2] Supporting this, the U.S. petroleum industry has

[2] Energy Information Administration's Short-Term Outlook (Jan. 12, 2021).

curbed its drilling activities, with the number of U.S. rigs decreasing from 750 a year ago to 340 rigs today. The reduction in U.S. drilling is illustrated through the following activity data published by Baker Hughes:

Basin	1/8/2021 Rig Count	Year Ago Rig Count	1 Yr. Change
Arkoma/Woodford Region	10	25	-60%
Barnett Shale	0	1	-100%
DJ-Niobrara	5	19	-74%
Eagle Ford Shale	26	67	-61%
Granite Wash	0	1	-100%
Haynesville Shale	43	45	-4%
Marcellus Shale	30	41	-26%
Mississippian Play	0	2	-100%
Permian Basin	179	397	-55%
Utica Shale	4	10	-60%
Williston Basin/Bakken	11	51	-78%

Baker Hughes, 1/3/20

While no U.S. Basin has been immune to activity reductions, we note that the Haynesville Shale and the Marcellus Shale Plays fared better than the major oil producing basins in terms of their activity declines. This appears to be linked, in part to a generally bullish outlook for the prospects of natural gas in 2021, coupled also with emerging opportunities in the U.S. to export LNG abroad. *Coincidentally, the retail fundraising channel appears to have taken notice of this, which is evidenced by the comparatively strong fundraising results of MDS and STL, both of which raised capital for natural gas drilling in 2020.*

US production can turn on a dime

Despite the sentiment for better oil pricing this year, a stable market commands a worldwide supply/demand balance. A potential disruptor to this equation is the fact that the U.S. drilling industry can drill and operate wells at lower break-even prices as compared with its OPEC counterparts. In contrast to the fiscal break-even prices of many OPEC countries that range within a $60-100 bbl pricing level,[3] U.S. oil producers operating in the Permian Basin, Eagle Ford, and other basins can drill economic wells within a $45-50 bbl pricing level, while breaking even from a post-drilling operational perspective at $20-30 bbl.[4] A table that illustrates the break-even for drilling and operating wells within the above-mentioned oil fields is provided below (reported on a "**per bbl**" basis):

Play	**Avg. Break Even Drilling**	**Range of Reponses B/E Drilling**	**Avg. Price to Recover Op. Costs**
Permian-Midland	$46	$30-60	$26

[3] *Oil Profitability Around the Word – or – what is the cost to keep their social programs running?* www.oilandgas360.com (website visited Jan. 12, 2021).
[4] Federal Reserve Bank of Dallas (Jan. 6, 2021).

Permian-Delaware	$52	$35-60	$26
Permian-Other	$50	$30-70	$32
Eagle Ford	$46	$40-55	$23
Bakken Shale	$51	$40-60	$28
Other U.S. Shale	$51	$20-70	$30

Federal Reserve Bank of Dallas Survey
92 E & P Firm Responses Were Reported Jan. 6, 2021

Despite the abilities of U.S. producers to operate at lower prices, U.S**.** oil production in 2020 was tempered significantly by the COVID-19 Pandemic, which caused U.S. oil prices to drop below $20 bbl in April and caused oil production to drop from 13.1 million BOPD in early March 2020 to 9.7 million BOPD in August 2020. However, as oil prices improved in Q3-Q4 2020, so followed U.S. oil production, which *quickly* moved back to 11 million BOPD through much of November and December of last year.

The EIA expects U.S. oil production to stabilize at about 11.1 million BOPD in 2021, with OPEC expected to gradually lift its production cuts and increase its output moderately from 25.6 million BOPD in 2020 to 27.2 million BOPD in 2021. While this sentiment is comforting at first blush, **it must be noted that many U.S. producers operating in economically profitable areas are positioning themselves to increase their drilling and production activities in 2021**.[5] Within a recent survey conducted by the Federal Reserve Bank of Dallas that included about a hundred executives from various E & P companies, about 50% expressed their intentions to ramp up their drilling capital expenditures this year under the belief that oil prices will fall within a range of $40-50 bbl this year. As such, the ability of the world oil market to return to better pricing could be flustered by the desires of U.S. producers to achieve profits through drilling in 2021/2022.

On the political front, one might be inclined to consider the plans of the incoming President-Elect Biden to ban fracking on federal properties. At first blush, it might also be tempting to assume that this development will drive U.S. oil production downward. However, it should be noted that the impact of President-Elect Biden's plan is limited to ***federally*** owned lands, which account for about 10% of the U.S. oil production. *Conversely, President-Elect Biden's anti-fracking position could be construed as a welcomed development by some U.S. oil producers that stand to see their oil properties become more valuable as a result*.

Market Pricing

The following market information was derived from a number of informational sources:

Oil

As of January 14, 2021, the WTI spot price for crude was $53.33 per bbl, with the Brent spot price being $56.24 per bbl. The EIA forecasts Brent spot prices to average $53 per bbl in both 2021 and 2022 compared with an average of $42 per bbl in 2020. The EIA estimates that global consumption of petroleum and liquid fuels averaged 92.2 million BOPD for all of 2020, down by 9.0 million

[5] Dallas Fed Energy Survey (Dec. 30, 2020).

BOPD from 2019. The EIA expects that global liquid fuels consumption will grow by 5.6 million BOPD in 2021 and 3.3 million BOPD in 2022. The EIA expects oil prices to increase in 2021 due to the development of a COVID vaccine and a gradual increase in oil demand as travel/GDP increases in the second half of this year.

The EIA's sentiments, which imply an average WTI price of about $50 bbl for 2021, are slightly lower, yet generally consistent with the NYMEX futures prices observed on January 12, 2021. While financial firms such as Raymond James and Goldman Sachs are assuming an optimistic posture regarding the future of oil, *the broader futures market is more pessimistic due to the uncertainties surrounding a full-scale return to pre-COVID economic conditions, coupled with the fact that U.S. production levels remain a wildcard due to the ability of U.S. producers to drill profitability at a $45-50 bbl price level.*

Jan. 12, 2021 NYMEX Contract Month	Contract Price
Feb. 2021	$53.33/bbl
July 2021	$52.68/bbl
Jan. 2022	$50.73/bbl
Jan. 2023	$48.53/bbl
Jan. 2024	$47.24/bbl

In respect to oil produced from the Permian Basin, we note that pricing tensions in the basin appear to have eased based upon the pipelines added. While the Midland-Cushing pricing differential peaked at a negative $16.12 per bbl in September 2018, the differential worked its way down and has settled recently at about $1 per bbl.[6]

Natural Gas

As reported by the EIA, natural gas inventory in the U.S. stood at 3,198 bcf on January 8, 2021, which is 4.1% above the natural gas inventory reported a year ago. In view of higher inventories, natural gas futures prices remain consistent with prices generally observed since 2015:

Strip Jan. 14, 2021 NYMEX Contract Month	Contract Price
Feb. 2021	$2.68/mcf
July 2021	$2.81/mcf
Jan. 2022	$3.11/mcf

Natural gas price average – past five years

2015	$2.62
2016	$2.52
2017	$2.99

[6] CME, WTI Midland Argus vs. WTI Financial Futures (Jan. 12, 2021).

2018	$3.15
2019	$2.58
2020	$2.03

In relation to natural gas prices, it is important to consider circumstances that cause local natural gas prices to deviate from the main market. **Such circumstances include gas supplies in an area and the area's ability to carry the supplies to market.** Areas of the U.S. where most of the domestic natural gas is produced include Appalachia (Marcellus/Utica), 30,613 mcf/day, Permian Basin, 11,531 mcf/day, Haynesville Shale Play (E. Texas and W. Louisiana), 9.212 mcf/day, and the Eagle Ford, 4.047 mcf/day. Coincidentally, areas of high production can experience bottlenecks in takeaway capacity. Historically, this has played out in Pennsylvania, the core of the Marcellus Shale Play, and in the Permian Basin, which accounts for about 50% of the rigs operating in the U.S.

While substantial natural gas differentials were experienced in the Marcellus a couple of years ago, the addition of transmission infrastructure reduced price differentials from $1 per mcf and higher in 2015-2017 to about $0.46 per mcf today. Based upon DTI gas pricing, the differential expected for gas produced in eastern Pennsylvania that is purchased by Dominion Energy Transmission, Inc. is expected to average about $0.60 per mcf in 2021 (which is lower than the differentials observed in 2015-2017).

Interestingly, lower differentials have also been experienced by operators that deliver their natural gas to the Waha Hub in Pecos County, Texas, which services the Delaware and Midland Basins. The differential for gas delivered to the Waha Hub is $0.13 per mcf for February 2021 deliveries and is expected to remain under $0.20 per mcf through much of 2021. This result is a welcomed development in view of the differentials observed a year ago (i.e., exceeding $1.50 per mcf). The presence of additional pipelines, coupled with a drop in oil and associated natural gas production through 202,0 appear to have eliminated much of the Waha pricing differential for now.

<u>Market Pricing Summaries</u>

WTI Oil Spot Price (1/14/2021):	$53.33 (2020 avg. was $39.17/bbl)
Brent Oil Spot Price (1/14/21):	$56.24 (2020 avg. was $41.69/bbl)
NYMEX Gas (Feb. 2021 deliveries):	$2.68 mcf (2021 avg. was $2.03/mcf)
NYMEX Futures 2021/oil:	$51-53 per bbl (CME 1/14/21)
NYMEX Futures 2021/gas:	$2.60-3.00 mcf (CME 1/14/21)
DTI Avg. 2021 Differential:	$0.63 per mcf (CME 1/14/21, futures prices)
WAHA Avg. 2021 Differential:	$0.20 per mcf (CME 1/14/21, futures prices)
ILL/Countrymark Differential (1/14/21):	$7 per bbl (preferred pricing is available for certain operators in So. Ill. based upon volumes)

Summary: What Makes Sense in 2021

As was the case a year ago, oil pricing remains a wildcard for 2021.

On the positive side, some respected energy finance firms are optimistic about the prospects for better oil prices. While the sentiment of the broader NYMEX oil futures market is somewhat more pessimistic than that of Raymond James and Goldman Sachs, NYMEX' expectations also bode favorably when compared with the average oil price realized last year. The uncertainties surrounding a full-scale return to pre-COVID economic conditions, coupled with the question as to whether U.S. producers will keep their feet off the pedal long enough to allow the world's supply and demand fundamentals to rebalance are undoubtedly the wildcards this year.

Despite the uncertainties, there are areas in the U.S. where oil/gas can be profitably developed and/or produced at low break-evens. As such, drilling and other E&P focused investments will continue to present viable opportunities to investors in 2021. **However, cautious underwriting is key, as it is important to understand the break-evens of projects given their locations and corresponding challenges.** Pro formas must factor relevant commodities pricing discounts based upon local supply/demand and available infrastructure. Additionally, special cost related considerations, such as water disposal, sponsor/manager compensation, and load must be built into the economic underwriting models.

While the press has historically favored the Permian and Eagle Ford, **remember that there are core and non-core areas in all popular plays**. This is another area where the value of independent project underwriting comes into play.

While capital raise numbers have yet to reach the levels realized five years ago, the foundation for growth continues to be better today than what we had a decade ago in a promoter-infested environment.

Underwrite, underwrite, underwrite.