

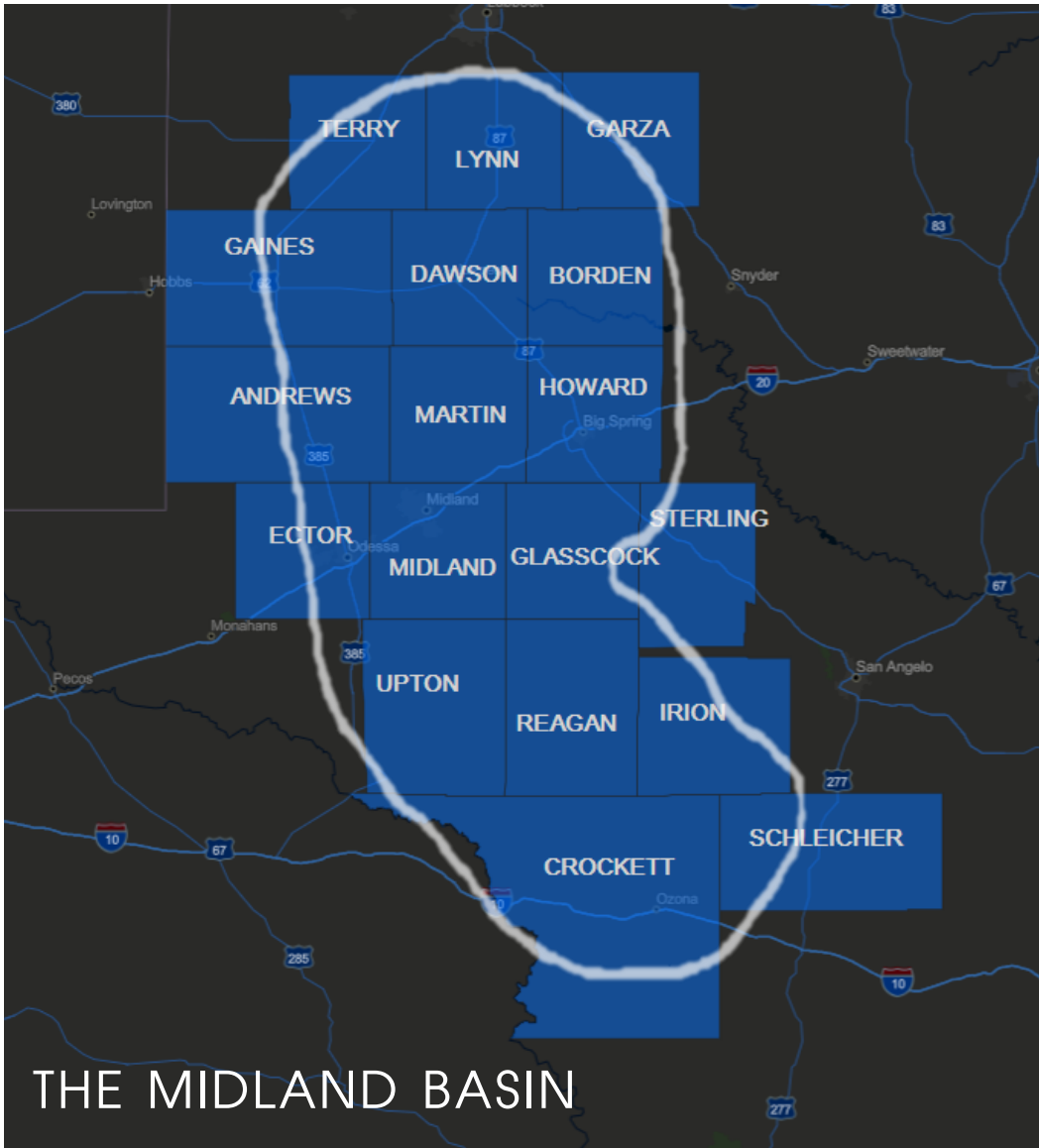
PULSE

MIDLAND BASIN EDITION

AUGUST 23, 2019

PROBUS
ENERGY SERVICES

INTRODUCTION



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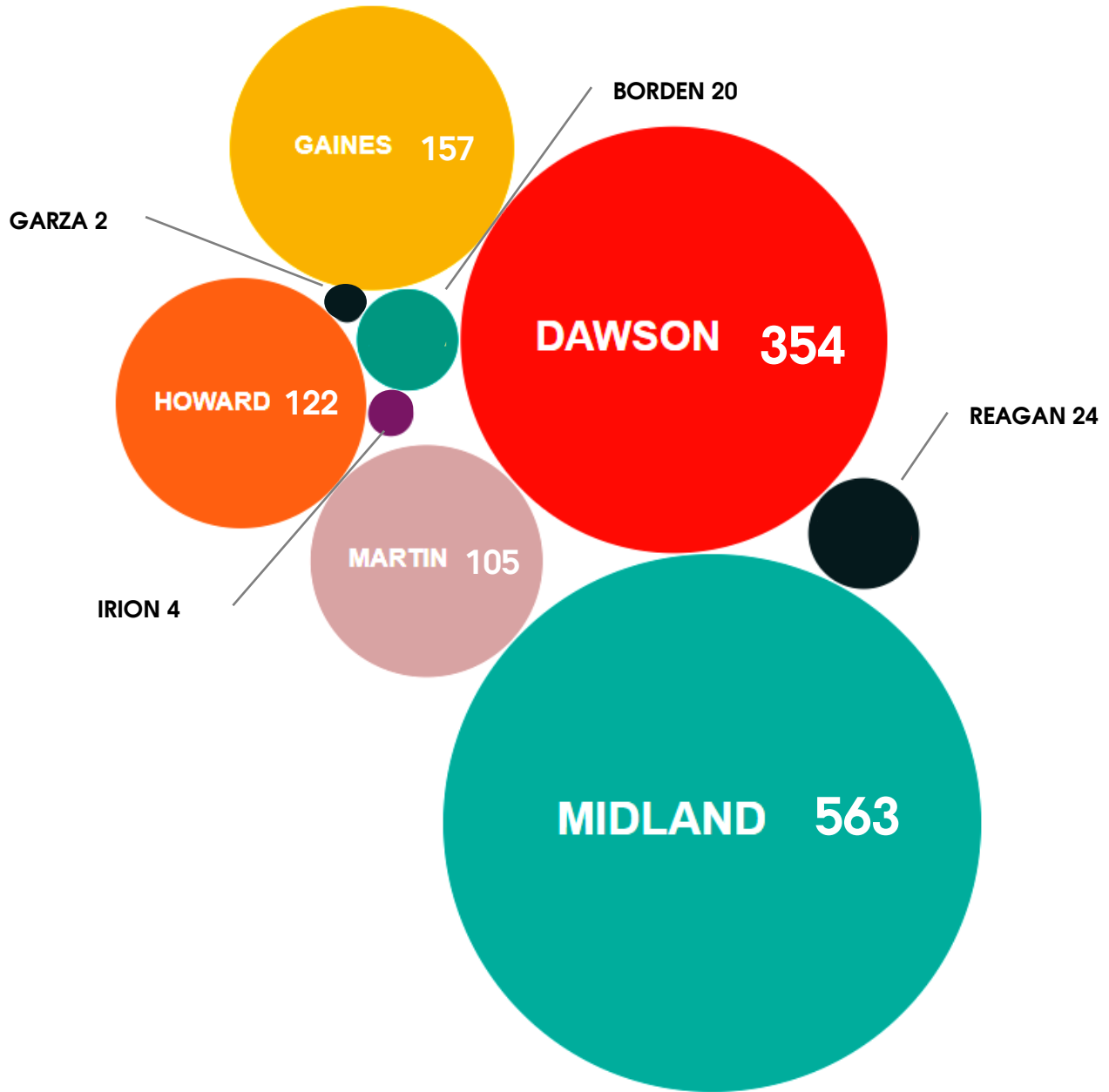

A&D LOOK

Welcome to the latest edition of the Pulse. This issue marks the first time we've revisited a previously covered basin, in this case the Midland Basin. This is where the analytical prowess of Probus Energy Services begins to really shine. Our ambition is to apply critical, creative thought to transform data into actionable information, and when you compare current activities to the previous year, interesting trends begin to emerge. Follow us as we survey the first several months of 2019 and relate that analysis to 2018 in order to spotlight potential trends. As always, we will examine the basin through different lenses, beginning with leasing and permitting, moving to production and completions, and concluding with minerals and acquisitions/divestitures.



LEASE ACTIVITY

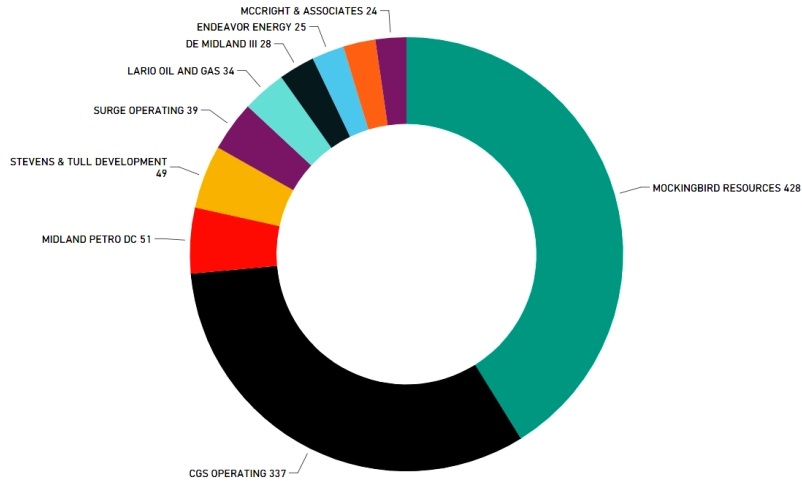
COUNTY LEASE TOTALS



WHERE IS THE LEASING ?

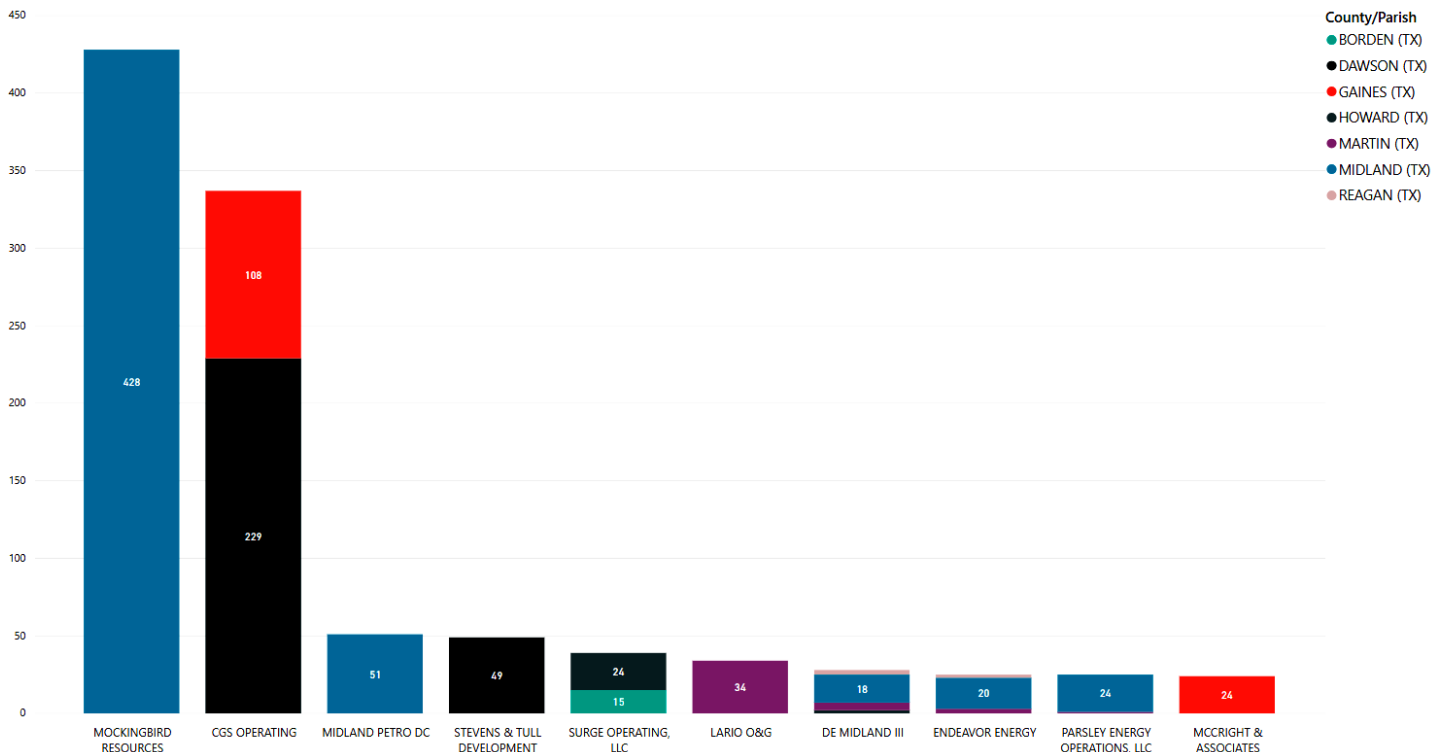
Leasing activity over the past 4 months centered around Midland County with 563 new leases. This is a shift from 2018 where Howard County was the clear favorite for leasing. Next, the activity shifts north to Dawson County with 354 leases, a total that is already 65% of what was leased in all of 2018. Gaines County rounds out the top three with 157 leases.

WHO LEASED THE MOST



WHERE THEY LEASED

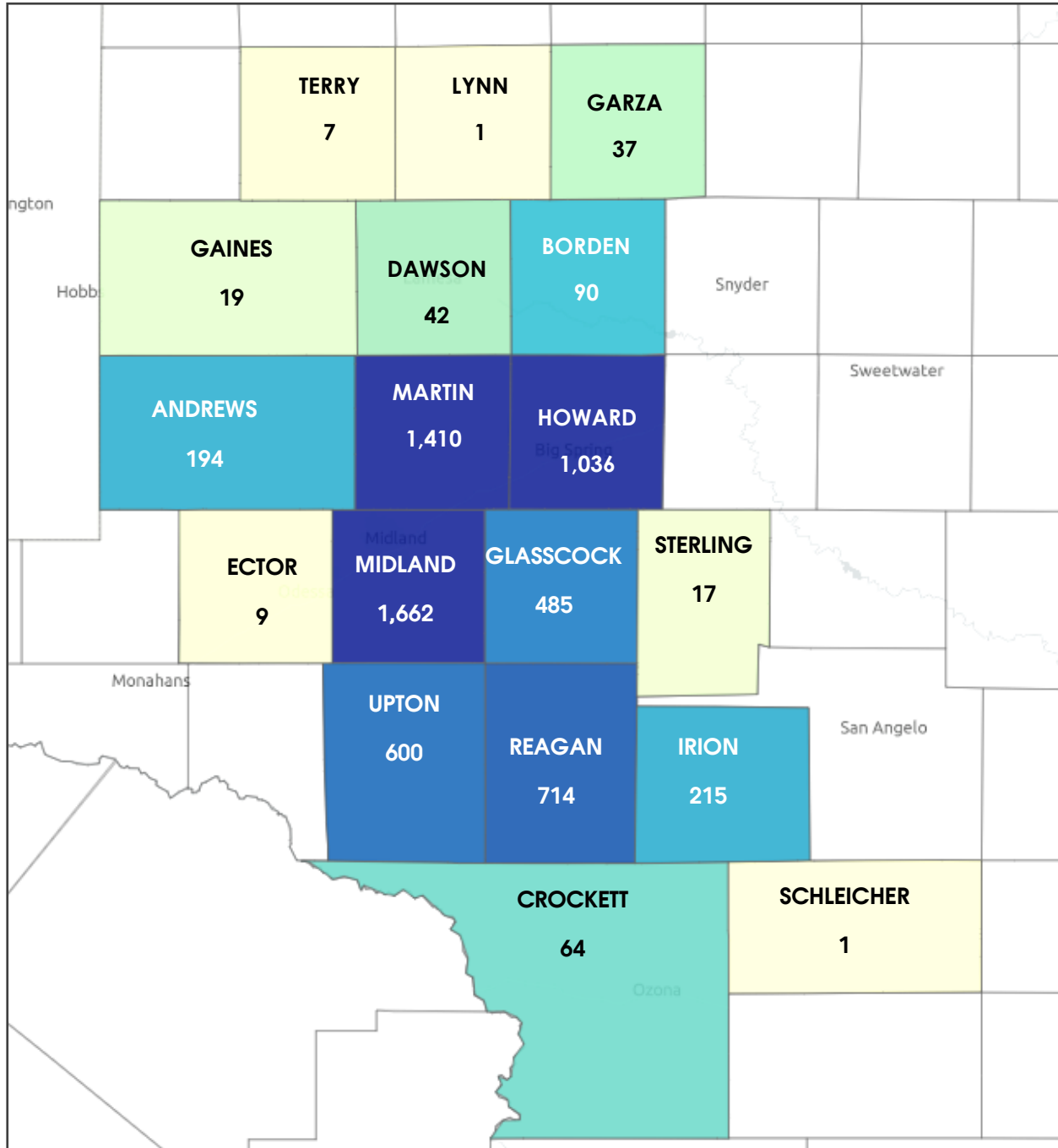
The ring above shows the ten companies that leased the most in the basin (calculated by number of leases, not total acreage). The most active lessee, Mockingbird Resources, LLC is a brand new entity, formed in February of 2019, and was formed by one of the managing members of Slickrock Land Services. After identifying the ten most active lessees, we took a look at the counties where they leased. These ten companies took 1,040 of the total 1,356 new leases in the basin over the past five months. That's an astounding 77%! Interestingly, only five of the top ten companies have active permits and/or production in the basin; Surge Operating, DE Midland, Parsley Energy and Endeavor Energy. This indicates significant leasing campaigns from non-operators.





PERMIT ACTIVITY

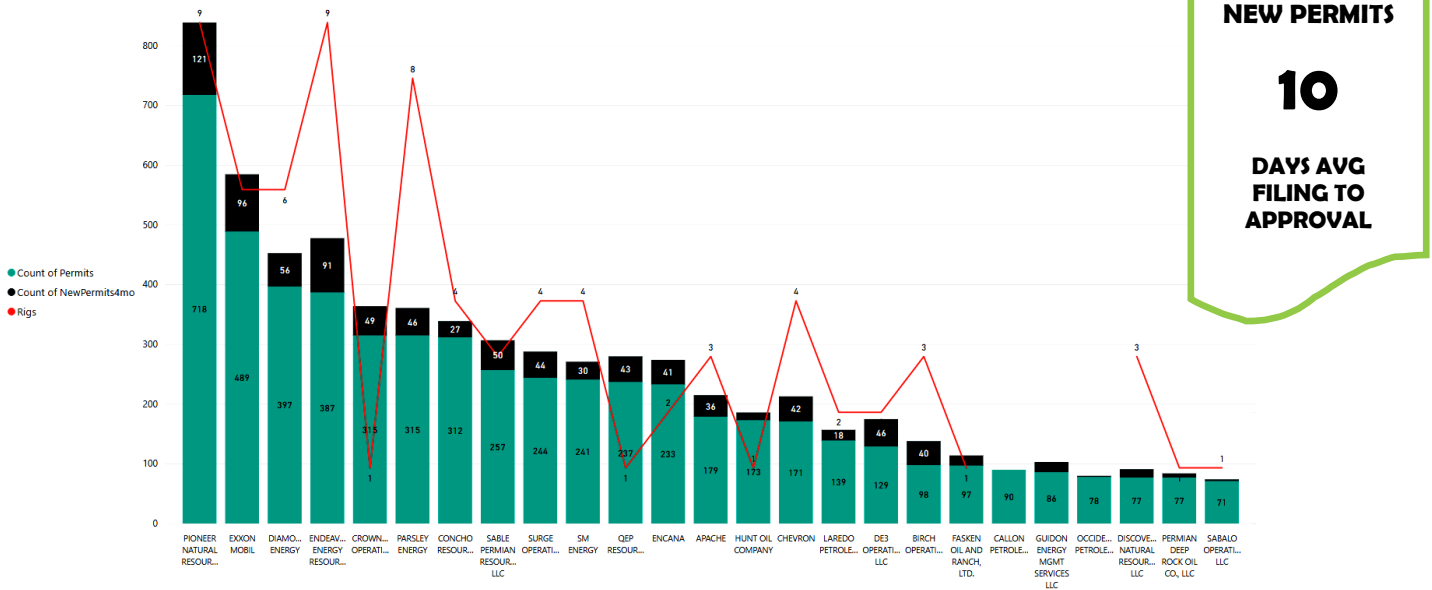
WHERE ARE THE PERMITS?



WHERE ARE THE PERMITS?

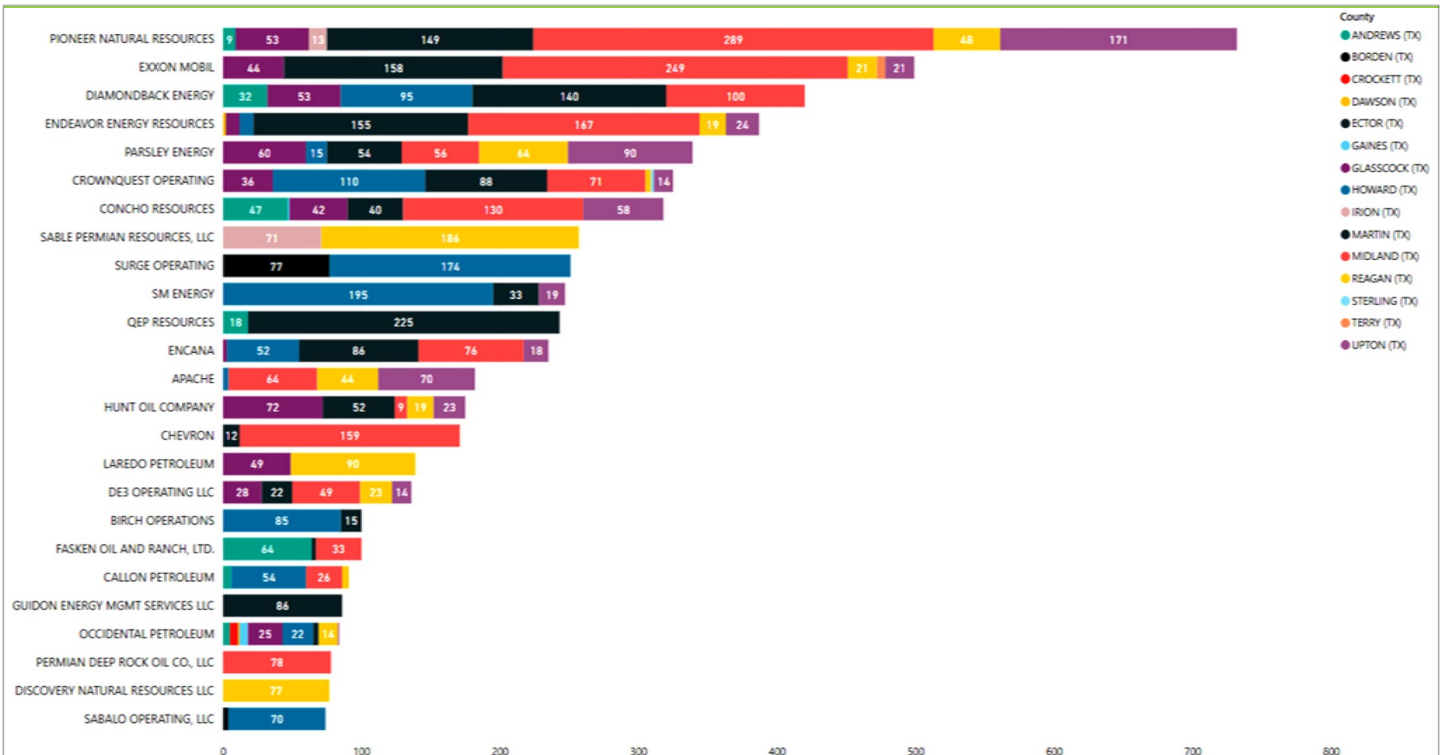
There are currently 6,605 permits in the Midland Basin for new oil and gas wells. Permits can be a good predictor of future drilling activity. Similar to the last Midland Basin Pulse Edition, the top three counties with the most permits were Midland (1,662), Martin (1,410) and Howard (1,036). Those leaders were followed by Reagan with 714 permits and Upton with 600 permits. Overall, the Midland Basin has hefty permit numbers compared to most other basins, however it still takes a backseat to the mighty Delaware Basin.

WHO HAS THE MOST PERMITS



The adjacent chart displays the top 25 operators with the most permits, the number of permits they have filed in the past 4 months, and the number of rigs they currently have in the basin. The operator with the most Midland Basin permits is still Pioneer with 718, running 9 rigs. While Pioneer received 121 new permits in the past four months, they dropped 13 rigs. Next in line is Exxon with 489 permits, followed by Diamondback (397), Endeavor (387) and Crownquest (315). Interestingly, Crownquest is only operating one rig currently, but 158 of their 315 permits expire within the next year. There are three companies in the top 25 without any rigs currently operating in the Midland Basin; Callon, Guidon and Occidental. The graph below shows the counties where the most active operators have active permits and plan future production.

WHERE THEY ARE PERMITTING



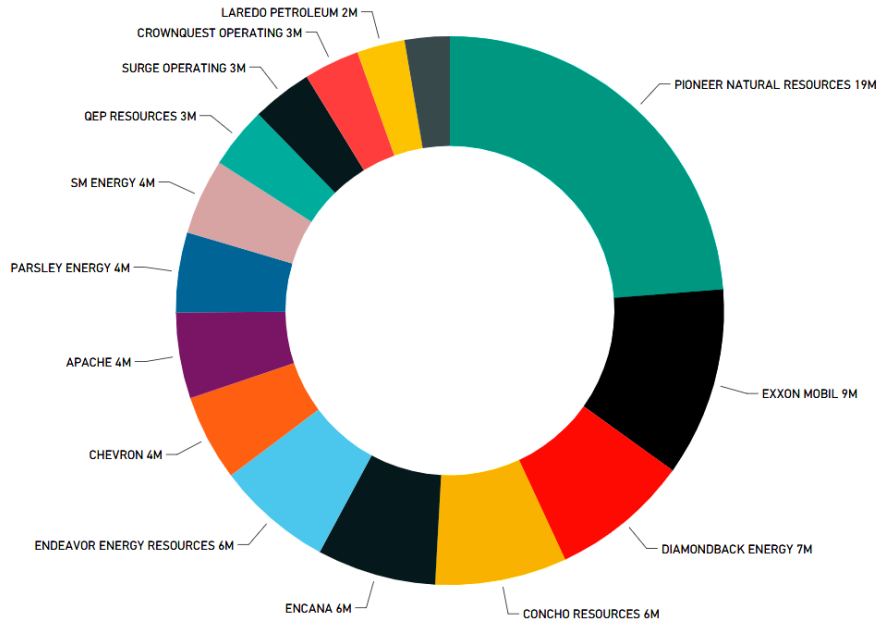
PERMIT CONVERSION

| Operator | Active Permits End 1Q 2019 | Wells Drilled (incl. DUCs) | Conversion 2Q | New Permit Approvals | Current Permits | Permits Expiring Next 3 Mo. | % Expiring Next 3 Mo. |
|--|----------------------------|----------------------------|---------------|----------------------|-----------------|-----------------------------|-----------------------|
| PIONEER NATURAL RESOURCES | 655 | 16 | 2.4% | 12 | 718 | 98 | 14% |
| EXXON MOBIL | 453 | 30 | 6.6% | 96 | 489 | 58 | 12% |
| DIAMONDBACK ENERGY | 436 | 0 | 0.0% | 56 | 397 | 72 | 18% |
| ENDEAVOR ENERGY RESOURCES | 318 | 1 | 0.3% | 91 | 387 | 32 | 8% |
| CROWNQUEST OPERATING | 292 | 2 | 0.7% | 49 | 316 | 51 | 16% |
| PARSLEY ENERGY | 329 | 0 | 0.0% | 46 | 315 | 74 | 23% |
| CONCHO RESOURCES | 327 | 0 | 0.0% | 27 | 312 | 50 | 16% |
| SABLE PERMIAN RESOURCES, LLC | 204 | 7 | 3.4% | 50 | 257 | 25 | 10% |
| SURGE OPERATING | 247 | 0 | 0.0% | 44 | 244 | 33 | 14% |
| SM ENERGY | 246 | 1 | 0.4% | 30 | 241 | 58 | 24% |
| QEP RESOURCES | 231 | 0 | 0.0% | 43 | 237 | 61 | 26% |
| ENCANA | 235 | 0 | 0.0% | 41 | 233 | 60 | 26% |
| APACHE | 151 | 15 | 9.9% | 36 | 179 | 18 | 10% |
| HUNT OIL COMPANY | 188 | 2 | 1.1% | 13 | 173 | 19 | 11% |
| CHEVRON | 152 | 14 | 9.2% | 42 | 171 | 29 | 17% |
| LAREDO PETROLEUM | 157 | 5 | 3.2% | 18 | 139 | 21 | 15% |
| DE3 OPERATING LLC | 73 | 2 | 2.7% | 46 | 129 | 0 | 0% |
| BIRCH OPERATIONS | 58 | 0 | 0.0% | 40 | 98 | 0 | 0% |
| FASKEN OIL AND RANCH, LTD. | 91 | 2 | 2.2% | 17 | 97 | 19 | 20% |
| CALLON PETROLEUM | 111 | 1 | 0.9% | 0 | 90 | 14 | 16% |
| GUIDON ENERGY MGMT SERVICES LLC | 77 | 0 | 0.0% | 17 | 86 | 5 | 6% |
| OCCIDENTAL PETROLEUM | 81 | 0 | 0.0% | 2 | 78 | 13 | 17% |
| DISCOVERY NATURAL RESOURCES LLC | 74 | 22 | 29.7% | 14 | 77 | 8 | 10% |
| PERMIAN DEEP ROCK OIL CO., LLC | 80 | 0 | 0.0% | 7 | 77 | 12 | 16% |
| SABALO OPERATING, LLC | 75 | 0 | 0.0% | 3 | 71 | 14 | 20% |

The table above tracks the permits from the top 25 operators with the most active permits in the basin. We looked back to the previous edition of the Pulse, published in April, to see how many permits were converted to wells. We included wells currently being drilled, wells drilled and uncompleted and wells completed in the second quarter. The operator that drilled the highest percent of their permitted wells was Discovery Natural Resources, with a 29.7% conversion percentage over the second quarter. Next we looked at upcoming permit expirations to make predictions regarding the probability that certain wells will be drilled in the next three months. Encana and QEP both have 26% of their permits expiring and both drilled 0 wells in the second quarter, making a good case that those 121 permits will expire in the upcoming months.

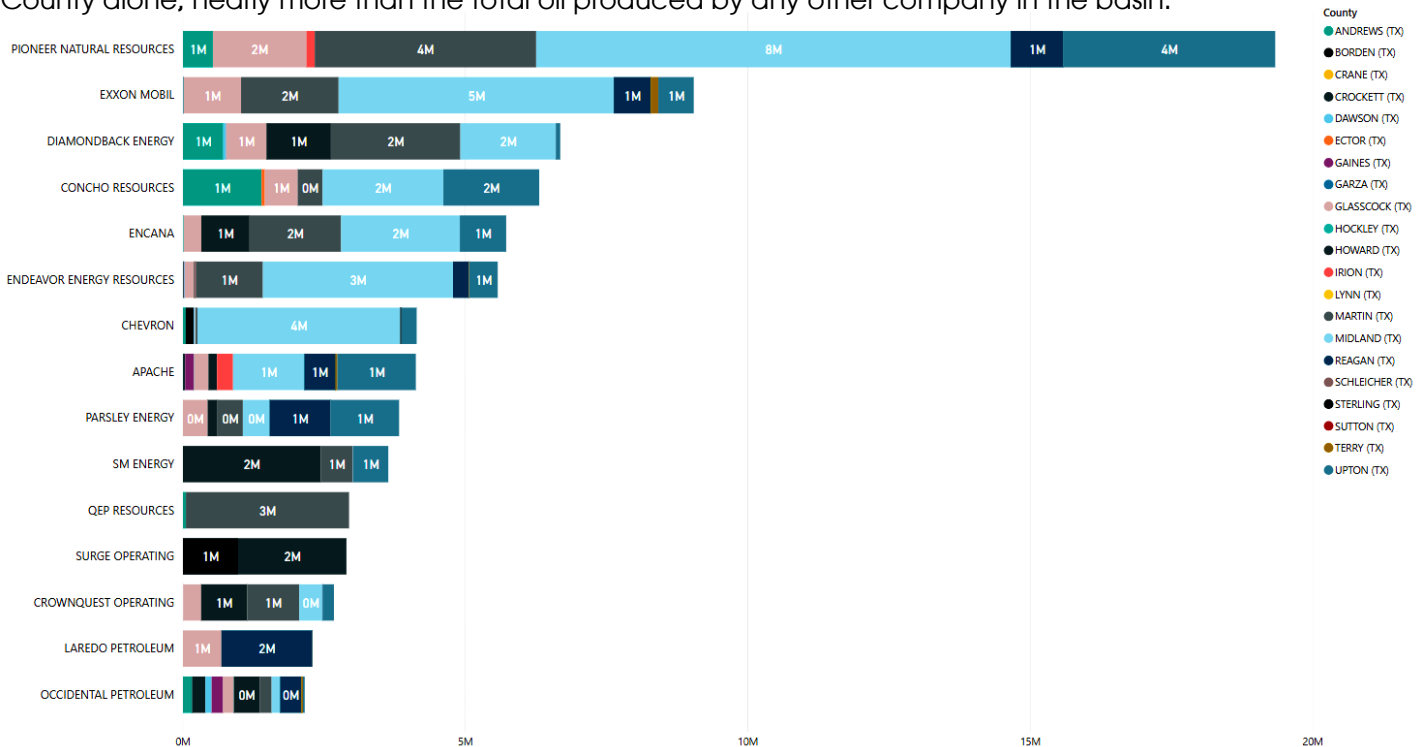
PRODUCTION

TOP 15 PRODUCING OPERATORS



TOP 15 OPERATORS: PRODUCTION BY COUNTY

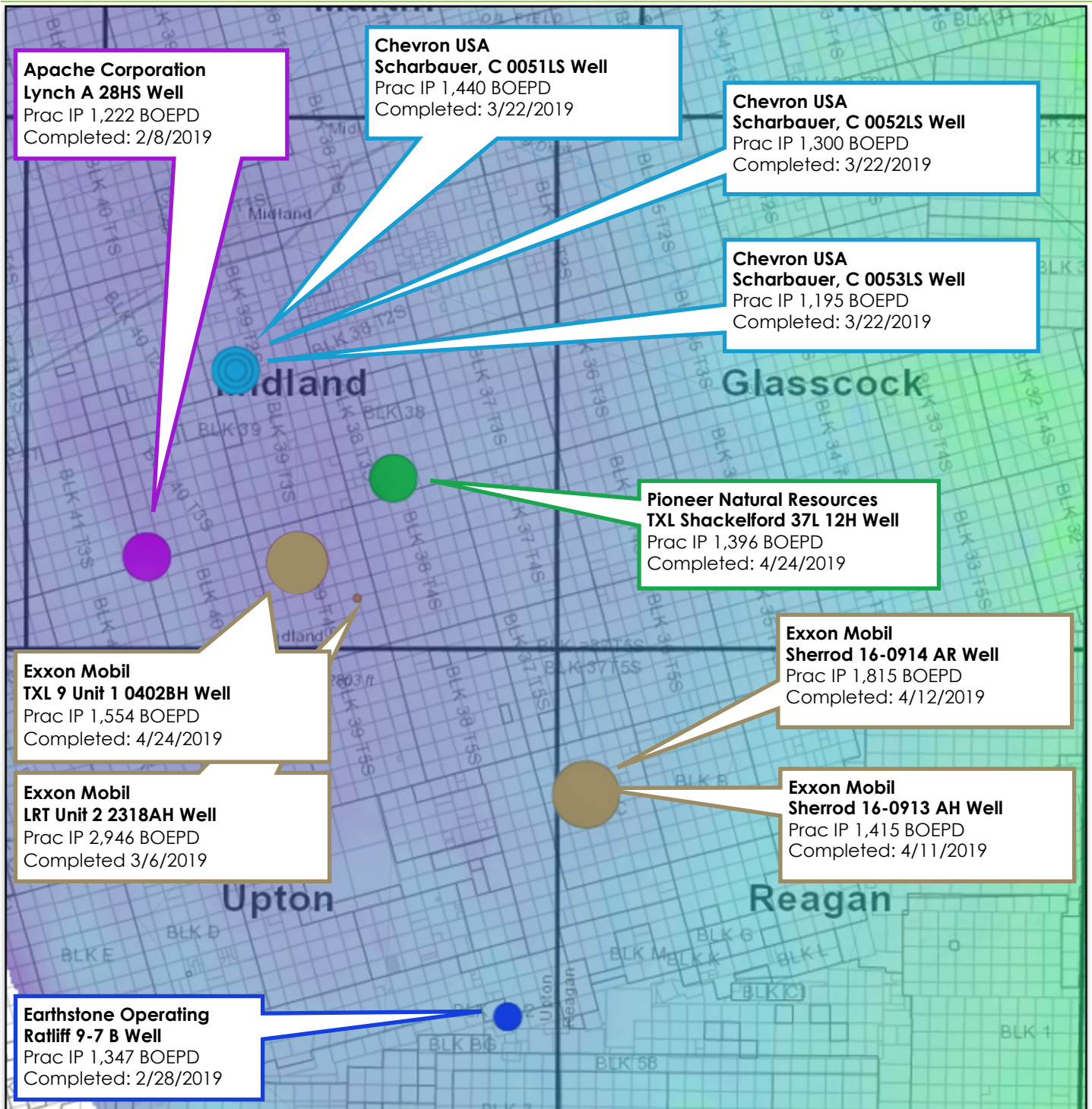
Production data reported for the second quarter of 2019 shows which operators produced the most oil in the Midland Basin. Pioneer is still head and shoulders higher than any other operator with 19.34MMbbls produced in the second quarter. Next, is ExxonMobil (9MMbbls) and Diamondback Energy (7MMbbls). Below, we look at where the production came from for these companies. Frontrunner Pioneer produced 8MMbbls of oil from Midland County alone, nearly more than the total oil produced by any other company in the basin.





COMPLETIONS

TOP 10 BIGGEST WELLS COMPLETED

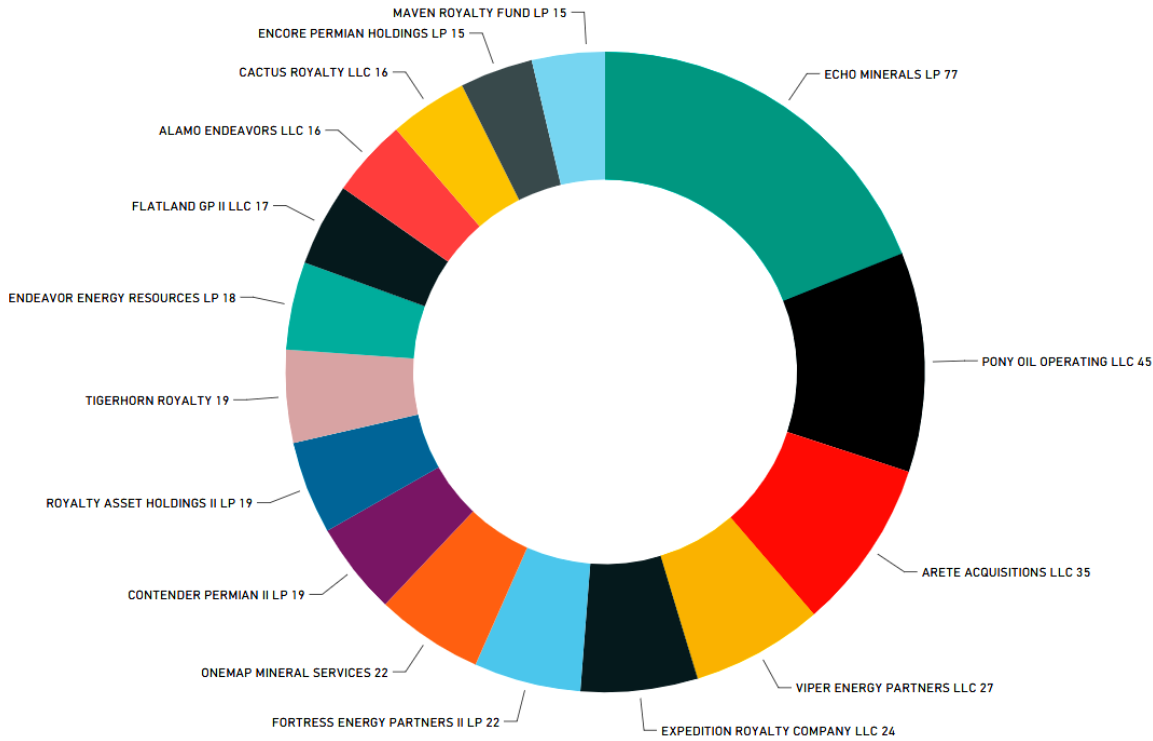


Big **congratulations** to **ExxonMobil** for their success on the LRT Unit 2 #2318AH well, the biggest well in the basin drilled in the past 6 months. The well was completed in March and had a practical IP rate of 2,946 BOEPD.

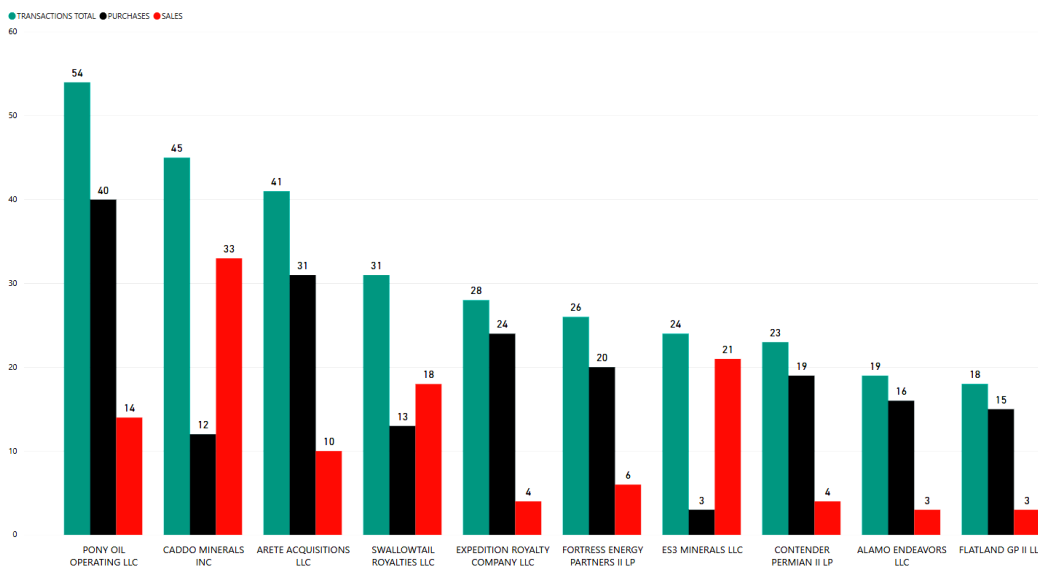
Source: DrillingInfo, Completion dates between 2/6/2019-4/6/2019 to obtain Practical IP



TOP 15* MINERAL BUYERS



TOP 10 COMPANIES THAT BROKERED MINERALS



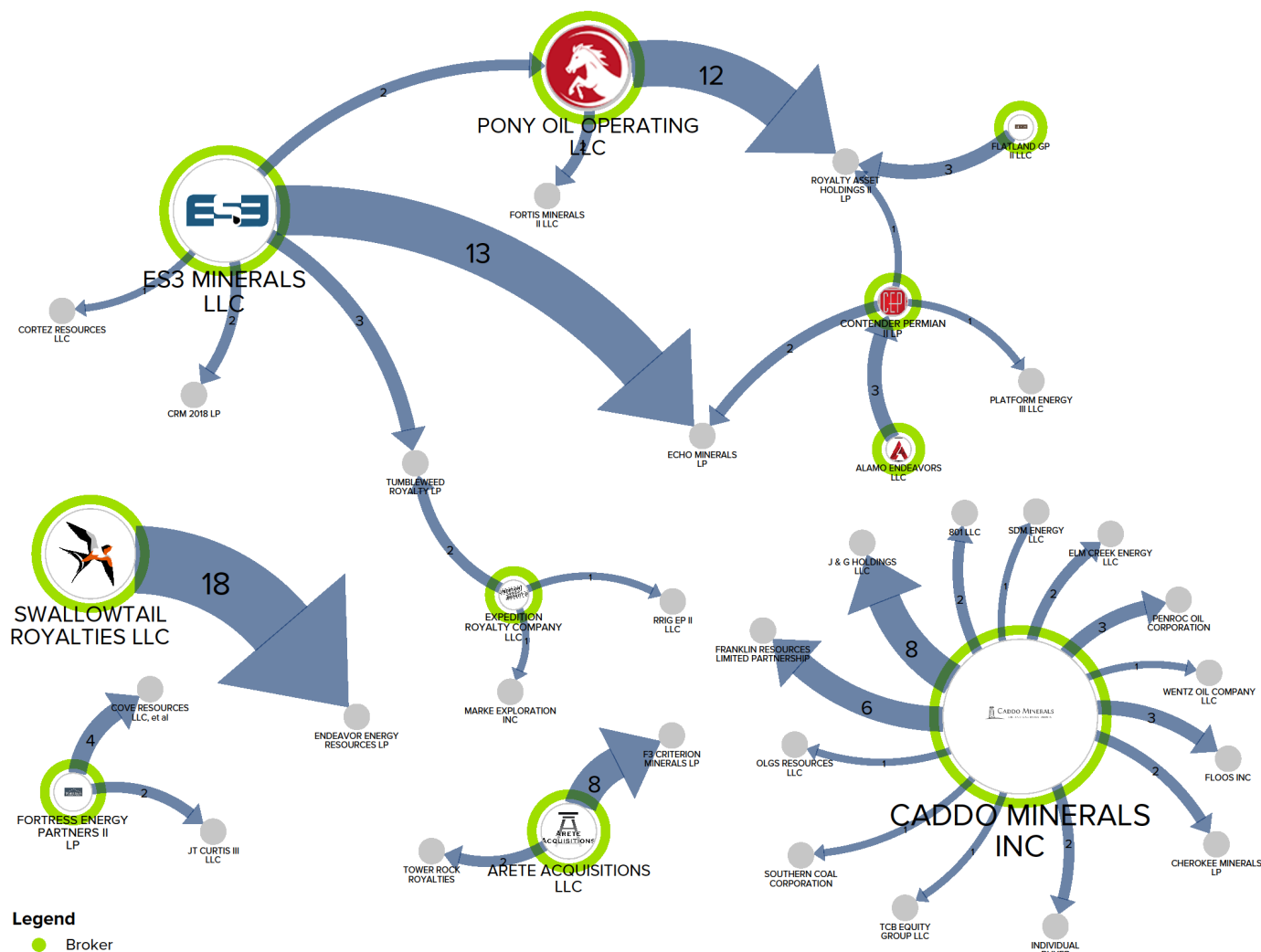
The ring shows the biggest buyers, determined by the count of mineral deeds filed in the five months. In an un-precedented event, there was a tie for 15th place and therefore we have 16 top mineral buyers. Congratulations to all the mineral companies on our top 15(ish) list! We also uncovered which mineral buyers also sold minerals. Once again, we see that some of the biggest buyers are also brokers. We excluded internal transfers, when possible, to give the most accurate count of mineral sales. The top ten companies that brokered

minerals* are below, ranked by the number of sales. We recognize the opportunity to examine this data in much more detail using net acreage and the ratio of purchases to sales. Contact us if you are interested in digging deeper for additional information. *Mineral Brokerage: We define mineral brokerage as buying and selling minerals and is by no means exclusive. Our definition includes companies that buy minerals with the intent to sell them, as well as companies that prune their mineral position from time to time. Just because a company is identified as a broker doesn't mean they aren't an end buyer, and we aren't judging.

TOP 10 COMPANIES THAT BROKERED MINERALS: TRANSACTION FLOW

What landman doesn't love a flowchart? We mapped out the transaction flow from the top ten companies that brokered minerals as a way to track transaction flow and identify relationships. The network shows the flow of mineral sales in the basin since March 2019. The companies within a green circle are the top ten brokers and the size of the green circle is representative of the number of times a company sold mineral interests. The thickness of the arrow as well as the number on the arrow is the number of times one company sold to another, indicating a strong relationship between the two entities. If you would like to see this network in more detail [Click Here](#).

Broker Transaction Flow



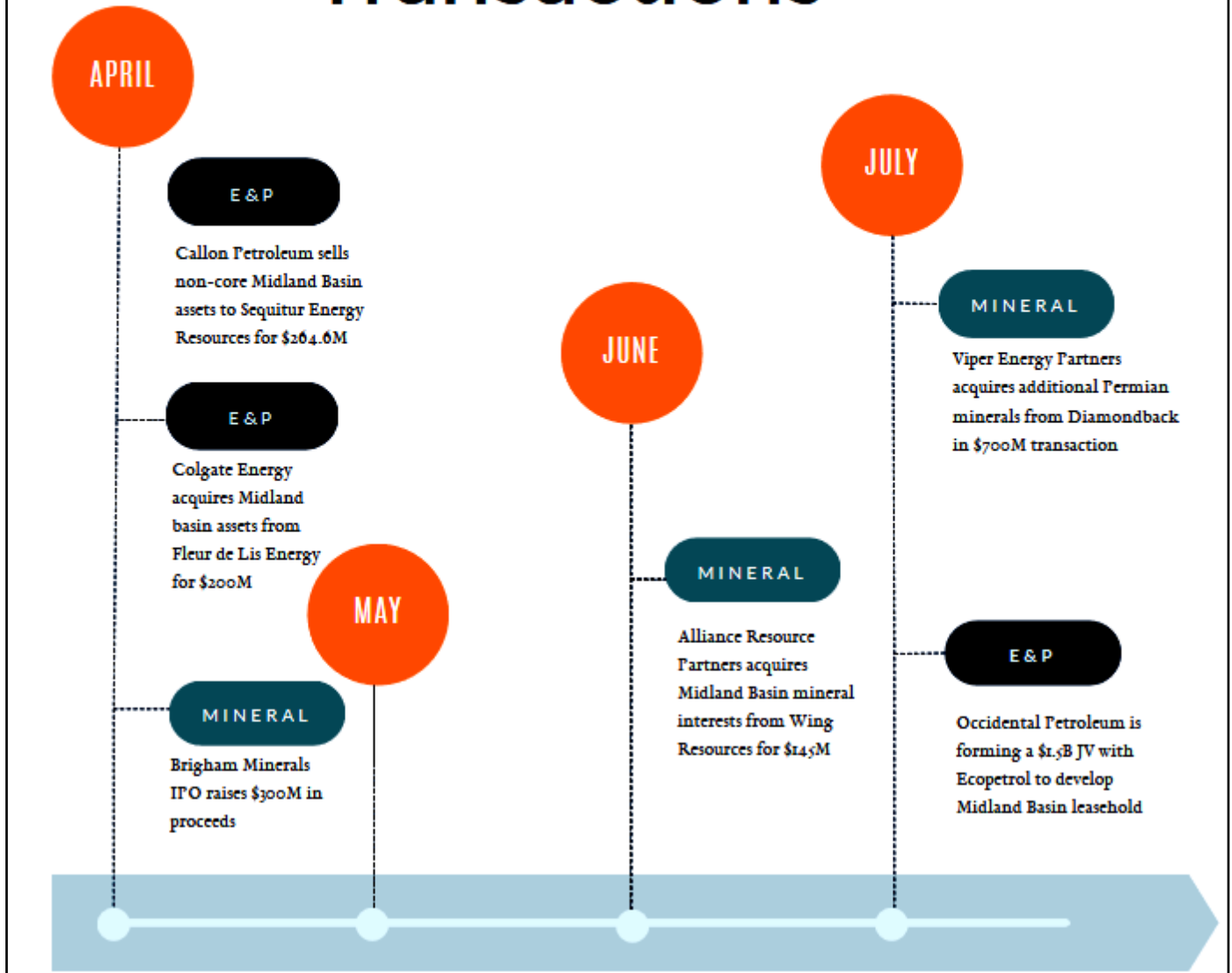
We see some interesting and different relationships emerging over the past few months. Examine the transaction flow in detail to see instances of relationships between mineral buyers. The broker with the most sales, Caddo Minerals, also appeared in the Eagle Ford Edition of the Pulse. As we saw then, Caddo frequently sells small interests, being the observable reason for the number of sales and buyers we see from them. The 11th largest buyer in the basin, Endeavor Energy Resources, had 18 purchases. They purchased all of their interests from Swallowtail Royalties, the fourth largest broker. The ninth largest mineral buyer, Royalty Asset Holdings, purchased from three of the top brokers; Pony Oil, Flatland GP and Contender Permian. These purchases account for 16 out of the total 19 mineral interests purchased by Royalty Asset Holdings since March.



A&D LOOK

April 2019 - July 2019

Notable Transactions



Here are the biggest transactions since April in the Midland Basin. The biggest was last month's announcement by Occidental Petroleum of a \$1.5B joint venture agreement with Columbian state-owned Ecopetrol to develop 97,000 acres in the Midland Basin. Read more about the deal [here](#).

In the previous edition of the Pulse, we mentioned some potential deals that we were monitoring and have updates to provide on those. Since their announcement of a possible sale in October, we have been keeping an eye on Endeavor Energy Resources. In December, reports claimed that Endeavor was entertaining an offer from Shell for \$8B but so far a deal doesn't appear to be in place. QEP was also on our radar after hearing of the offer submitted by activist investor Elliott Management in January for \$2.5B. This month, [it was announced](#) that "QEP Resources will remain an independent oil and gas producer after ending a half-year process to sell itself without a deal". Instead they have come to an agreement to work together with Elliott Management to restructure the board and move forward together.



Probus Energy Services was founded with a vision to offer world-class land services while championing relationships. We value uncompromising accuracy and apply a rigorous standard to every project. What sets us apart is that we pride ourselves on relationships, and we view them distinctly different than anyone else. It is vital that we provide outstanding service to our clients, and we see information as a collection of relationships. This view delivers unique insight on the industry and unlocks a deeper level of understanding. In turn, this allows for innovative and ultimately more effective solutions. Bottom line, we love data and we love helping our clients be successful!

We created the Pulse to be the perfect union and natural product of our love for data and staying informed about what's happening in the major oil and gas basins in the United States. The Pulse is a monthly report, focused on a different basin in each edition. If there is somewhere you want to know more about, just let us know.

Probus is a comprehensive land service company, and we want to assist you in using your information more efficiently. Let us help you with your next project, deliver solutions and reach your goals. Our team is skilled at all things land; prospect identification, leasing, title, due diligence and curative...we do it all.

The cover photo for this edition of the Pulse was taken by the talented Mr. Robert Flaherty. You can see more of his work [here](#).

We love hearing from you, drop us a line and let us know what you think. Can't wait for the next edition of the Pulse? Our email subscribers get the first look, sign up on our website.

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