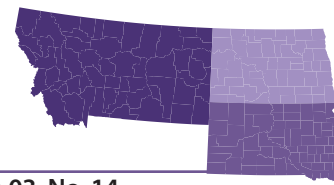




# BAKKEN SCOUT



Serving the local market with drilling activity, permits & deals for sale

Volume 03, No. 14

## Regional Activity (State Data)

Permits Issued (09/13/16 to 10/06/16)

	Compls	Permits
Montana	1	9
North Dakota	29	141
South Dakota	-	-

## Most Active Operators by Permits

1 XTO Energy	20
2 EOG Resources	14
3 Newfield Production	14

## Permits by Formation (by Last Scout)

Formation	10/11	09/20	08/30
Bakken	27	6	18
M Bakken	19	14	26
Three Forks	14	5	26
Three Forks B1	12	13	28
Sanish	2	-	-
Three Forks B2	2	1	2
Dakota	1	-	-
Swift	1	-	-
Three Forks B3	1	1	-
Other Formations	71	104	67
<b>TOTAL</b>	<b>150</b>	<b>144</b>	<b>167</b>

## Top 5 Fields by Permits

Field	10/11	09/20	08/30
Parshall	10	1	4
Siverston	10	-	3
Blue Buttes	9	-	12
Lost Bridge	9	4	5
Lindahl	8	-	-

Sources: MBOGC, NDIC & SDDENR

Active Rigs Running (Baker Hughes) 30

## Continental looks to bright future in the Bakken

Continental Resources will be active in the Bakken for the foreseeable future despite finding success in other plays, president and COO Jack Stark said during the recent North Dakota Petroleum Council Annual Meeting. Stark said more than 60% of the company's total production comes from the Williston Basin.

Stark stressed that Continental has learned where the Three Forks produces the best and where the best

reservoir performance is in the basin. The company's drilling strategies and completion approaches have improved as well. Since 2008, drilling times have

**Bakken wells completed today can attain 40% IRR at \$50/bbl oil.**

dropped 70%. The company recently drilled three 15,000-ft-plus laterals with a single drillbit and motor. "I couldn't have ever thought of doing that back in 2008," he said.

▶ Continues On Pg 16

## New vapor standard pushes innovation for Bakken operators

North Dakota regulators now require Bakken crude to meet a new vapor pressure standard to ensure that a less volatile product is being shipped out of state. The new VPCR4 standard—13.7 psi at 110° at a 4:1 volume-to-liquid ratio—has been implemented to drive off more volatile organic compounds (VOCs) prior to transport. VOCs are being blamed for the massive fire damage railcar crashes have caused over the last couple of years.

North Dakota's cold temperatures pose additional challenges for meeting this new safety standard. When it is cold, a liquid holds

more tightly to its VOCs, so it takes more fuel to achieve the new standard. Wayne King of Canada's Tecvalco is utilizing modified heat treaters to accomplish this. His new heating system uses a passive flame bed rather than a fire and includes a flame arrestor.

The North Dakota Industrial Commission allows this new type of unit to be 21 ft from the tanks instead of the current 125 ft, lowering costs by reducing the required overall size of a lease. King's technology is being tested in North Dakota with several operators, including QEP Energy, which installed the first testing unit about a year ago.

## Bakken EURs up and Costs Down for Continental

### Average EUR up 13% from 2015

- 2016 target average EUR: 900 MBoe per well
- 2015 average EUR: 800 MBoe per well

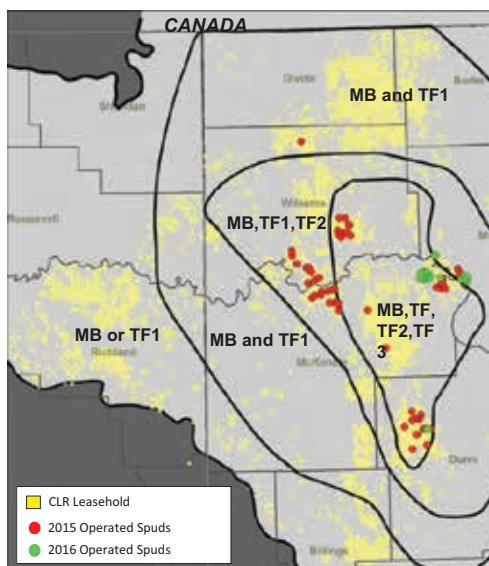
### Enhanced CWC reduced to \$6.2 million

- Down from \$600,000 from YE 2015
- Targeting \$6.0 million by YE 2016

### Valuable DUC inventory

- Projecting ~190 DUCs at YE 2016
- 850 MBoe average EUR
- \$3.5 million incremental completion cost
- Over 100% ROR for incremental completion cost for DUCs at \$45 WTI and \$2.50 gas

Outlines of Productive Bakken and Three Forks Reservoirs



Source: Continental Resources September 06, 2016 via PLS docFinder (www.plsx.com/finder)

## Deals For Sale

### MONTANA LEASEHOLD FOR SALE

~36,742-Net Leasehold Acres.  
ROOSEVELT, SHERIDAN & DANIELS  
BAKKEN SHALE  
 Target Formations: Bakken, Three Forks, Nisku, Ratcliffe, Red River & Mississippian  
ACREAGE FOR SALE THREE FORKS  
L 3030DV

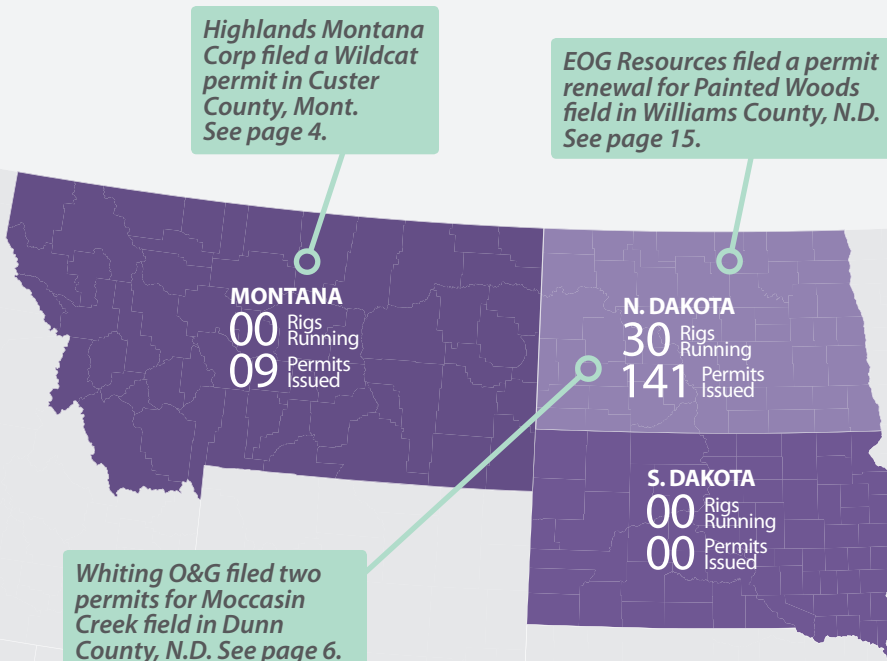
### NORTH DAKOTA PROPERTY

60-Wells. 60,465-Net Acres (85% HBP).  
BILLINGS, DUNN & STARK COUNTIES  
WILLISTON BASIN  
 97 Bakken HZ Locations Identified.  
 Recompletion & Refrac Candidates  
~86% OPERATED WI: 70% NRI  
 Net Production: 1,030 BOED  
 Projected Net Cash Flow: \$737,750/Mn  
 Proved Reserves: 33.9 MMBOE  
 CONTACT AGENT FOR UPDATE  
PP 5962DV

**PP**  
**1,030**  
**BOED**

## County Index • 30 Rigs Running / 150 Permits Issued

Rig Count Provided by Baker Hughes



### Operator Index

	Permits	Pg(s)
Burlington Resources	12	6-7
Continental Resources	6	4, 7
Crescent Point Energy	2	15
EOG Resources	14	7, 14-15
Hess Corp	9	15-16
Highlands Montana Corp	1	4
HRC Operating	4	7, 16
Hunt Oil	1	15
Keesun Corp	1	4
Liberty Resources Mgmt	1	16
Lime Rock Resources	3	15
Marathon Oil	6	5, 7
Montana Land & Exp Inc	1	4
Newfield Production	14	7
North Range Resources	1	8
Oasis Petroleum	12	4, 8, 16
Petro-Hunt LLC	4	4-5, 8
QEP Energy	11	6, 8
Resource Energy	1	4
SHD O&G	2	14
Sinclair O&G	2	4
Slawson Exploration	5	8, 15
SM Energy	-	4-5
Somont Oil	-	4
Statoil O&G	7	14, 16
Trendwell Energy	1	4
Whiting O&G	4	6, 14
WPX Energy	5	15
XTO Energy	20	6, 14, 16

MONTANA		Source: MBOGC	
Pg	County	BHI Rigs	State Permits
4	Blaine	-	1
4	Custer	-	1
4	Richland	-	4
4	Roosevelt	-	2
4	Toole	-	1
TOTALS		-	9

NORTH DAKOTA		Source: NDIC	
Pg	County	BHI Rigs	State Permits
4	Burke	1	3
4	Divide	1	1
5	Dunn	11	22
6	McKenzie	10	56
14	McLean	-	2
14	Mountrail	3	22
-	Stark	1	-
15	Williams	3	35
TOTALS		30	141

### Regional Scouts

The **Bakken Scout** is published every three weeks which includes stories and graphics highlighting local drilling activity, discoveries, new developments *plus* stats on drilling permits, completions and P&A activity for Montana, N. Dakota & S. Dakota.

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### Bakken Monthly Stock Performance

Company	Ticker	10/10/16	09/09/16	% Change	52 Week High
Continental	CLR	\$54.13	\$49.95	8.4%	-2%
Hess	HES	\$53.96	\$49.92	8.1%	-16%
ExxonMobil	XOM	\$88.48	\$86.84	1.9%	-7%
EOG Resources	EOG	\$97.29	\$92.65	5.0%	-1%
Oasis	OAS	\$11.68	\$10.29	13.5%	-15%
Statoil	STO	\$17.30	\$15.59	11.0%	-4%
Whiting Petroleum	WLL	\$9.41	\$7.62	23.5%	-58%
QEP Resources	QEP	\$18.53	\$18.14	2.1%	-12%
WPX Energy	WPX	\$12.79	\$12.79	0.0%	-8%
Enerplus	ERF	\$7.44	\$5.97	24.6%	-5%

Source: Google Finance

Completion Index (03/19/16 - 09/17/16)			Source: PLS DataPortal				
County	Operator	Well Name	TD	boe/d	% Oil	Oil Grav	Pg
<b>MONTANA</b>							
Toole	Somont Oil	Helgerson #3	1,500	8	100%	-	4
<b>NORTH DAKOTA</b>							
Divide	SM Energy	Anne #13-19HN	17,787	384	92%	-	5
Divide	SM Energy	Anne #13-19HS	18,554	314	91%	-	4
Divide	SM Energy	Anne #13B-19HN	17,739	506	89%	-	5
Divide	SM Energy	Anne #13B-19HS	18,396	195	89%	-	4
Divide	SM Energy	Bronkar #2B-6HS	18,820	316	86%	40.0°	5
Divide	SM Energy	11x Inez #1B-16HN	18,197	460	93%	40.2°	5
Divide	SM Energy	Jeremy Federal #14B-10HN	17,814	580	91%	40.1°	5
Divide	SM Energy	Loren #1B-16HS	17,615	350	91%	40.2°	5
Divide	SM Energy	Rolie #1-16HN	18,268	402	92%	40.2°	5
Divide	SM Energy	Sandra #14B-10HS	18,302	133	90%	40.1°	5
Divide	SM Energy	Stevens #2B-18HN	19,300	511	88%	41.8°	4
Dunn	Petro-Hunt LLC	Klatt #145-97-18A-19-2H	21,148	1,196	90%	43.8°	5
McKenzie	Burlington Res	Jerome #21-15MBH-2SH	20,691	2,230	80%	-	6
McKenzie	Burlington Res	Jerome #21-15TFH-3SH	20,946	1,973	78%	-	7
McKenzie	Burlington Res	5x Merton #21-15MBH	21,734	4,513	77%	-	6
McKenzie	Burlington Res	Merton #21-15TFH	22,336	4,252	78%	-	7
McKenzie	Burlington Res	Merton #21-15TFH-3NH	22,481	4,346	77%	46.2°	7
McKenzie	Statoil O&G	Cheryl 17-20 #6TFH	21,460	2,770	71%	-	14
McKenzie	Statoil O&G	3x Cheryl 17-20 XE #1H	21,590	5,953	71%	-	14
McKenzie	Statoil O&G	Richard 8-5 XE #1H	21,777	6,270	64%	-	14
Mountrail	EOG Resources	Shell #40-3229H	16,443	1,026	95%	-	15
Mountrail	EOG Resources	4x Shell #42-3229H	17,149	895	93%	-	14
Mountrail	EOG Resources	Shell #44-3229H	14,762	875	95%	-	15
Mountrail	EOG Resources	Shell #46-3229H	16,524	1,391	97%	-	15
Williams	Hess Corp	2x BL-Davidson #155-96-0211H-5	19,032	1,172	82%	45.5°	15
Williams	Hess Corp	CA-Russell Smith #155-96-2425H-7	20,004	877	79%	41.6°	15
Williams	XTO Energy	Sara #41X-13D	19,967	667	79%	-	15
Williams	XTO Energy	3x Sara #41X-13G	19,750	507	78%	-	15
Williams	XTO Energy	Sara #41X-13H	19,931	736	71%	-	15

Order This Data Online, PLS Offers Our Stats Electronically

**Bakken Quick News**

- There are 30 oil rigs running in the Bakken region this issue, down from 65 YOY.
- There are 11 rigs running in Dunn County, North Dakota, down from 12 YOY.
- There are 10 rigs running in McKenzie County, North Dakota, down from 25 YOY.
- The North Dakota leg of Energy Transfer Partners' four-state Dakota Access pipeline was 87% complete at the end of September, up from 68% in August, according to the monthly construction report filed with the state Public Service Commission on Sept. 5.
- Taxable sales and purchases in North Dakota fell to their lowest Q2 level since 2010, as reduced oil activity and low commodity prices continued to push the key economic indicator to pre-oil boom levels. The state saw a 67% YOY drop in the mining and extraction sector to \$284 million, the largest decrease in that sector since the oil boom began.
- Shell has abandoned a plan to build a train-unloading terminal near Anacortes, Washington, that would have received 60,000 boe/d from the Bakken. The facility would have been an expansion to the company's March Point refinery.
- SM Energy has 11 of this issue's 30 completions. All are in Divide County, N.D., with three targeting the Three Forks and eight targeting the Bakken. Drilled with 10,000-ft laterals, the Three Forks wells tested at an average of 366 boe/d, while the Bakken wells tested at 380 boe/d.
- Statoil had the two top wells this issue. At Banks field in McKenzie County, N.D., the Richard 8-5 XE #1H and Cheryl 17-20 XE #1H were drilled with ~10,000-ft laterals and flowed 6,000 boe/d each (64% oil).



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**MONTANA PERMITS**

**BLAINE**

**Montana Land & Exp Inc.** 3,538' Permit. ML&E Boves Dome #9-30-32N-20E. 25-005-23822. Boves Field. Oil. 1740' FSL & 943' FEL of Sec 30-32N-20E. Issued 09/27/16.

**CUSTER**

**Highlands Montana Corp.** 5,300' Permit. Helios #5-52 16-22. 25-017-21177. Wildcat. Muddy. Gas. 2065' FNL & 1840' FWL of Sec 16-5N-52E. C/Capster Rig #311. Spud 09/18/16. Issued 09/13/16.

**RICHLAND**

**Continental Resources.** 13,623' Re-issue. Cotesworth #1-20H. 25-083-23134. Wildcat. Bakken. HZ. Oil. 310' FNL & 1925' FEL of Sec 20-23N-52E; PBHL 200' FSL & 1980' FEL of Sec 20. PTVD 9,054'. Issued 09/26/16.

13,948' Re-issue. Ingersoll #1-34H. 25-083-23135. Wildcat. Bakken. HZ. Oil. 270' FSL & 2080' FWL of Sec 34-23N-52E; PBHL 200' FNL & 1980' FWL of Sec 34. PTVD 13,948'. Issued 09/26/16.

**Sinclair O&G.** 18,849' Re-issue. Ralston #2-22H. 25-083-23181. Wildcat. Bakken. HZ. Oil. 250' FSL & 400' FEL of Sec 22-27N-53E; PBHL 210' FNL & 510' FEL of Sec 15. PTVD 8,864'. Issued 09/21/16.

18,987' Re-issue. Schmitz #2-26H. 25-083-23344. Wildcat. Bakken. Horizontal. Oil. 300' FSL & 1750' FEL of Sec 26-27N-53E; PBHL 210' FNL & 2600' FEL of Sec 23. PTVD 9,132'. Issued 09/21/16.

**ROOSEVELT**

**Oasis Petroleum.** 20,720' Re-issue. Jimbo Federal #2759 11-13 3B. 25-085-21957. Wildcat. Bakken. HZ. Oil. 160' FNL & 603' FWL of Sec 13-27N-59E; PBHL 200' FSL & 200' FEL of Sec 23. PTVD 10,579'. Issued 09/15/16.

20,613' Re-issue. Jimbo Federal #2759 11-13 4B. 25-085-21958. Wildcat. Bakken. HZ. Oil. 160' FNL & 702' FWL of Sec 13-27N-59E; PBHL 200' FSL & 1260' FWL of Sec 24. PTVD 10,578'. Issued 09/15/16.

**TOOLE**

**Keesun Corp.** 1,900' Re-issue. State #12A-16. 25-101-24229. Wildcat. Swift. Oil. 1980' FSL & 610' FWL of Sec 16-36N-3W. Issued 09/22/16.

● **Somont Oil.** Completion. Helgerson #3. 25-101-05910. Kevin-Sunburst Field. Swift. Oil. Completed 07/21/16. Orig Permit 07/27/55. 1081' FNL & 325' FWL of Sec 28-35N-1W. C/Somont Rig #3. Spud 06/02/16. TD 1,500'. Form Rec: Swift 1350. Tested 8 bo/d.

**NORTH DAKOTA PERMITS**

**BURKE**

**Petro-Hunt LLC.** Renewal. Farstad #159-94-14A-23-1H. 33-013-01807. North Tioga Field. HZ. Confidential. 275' FNL & 1280' FEL of Sec 14-159N-94W. Issued 09/19/16.

Renewal. Jorgenson #159-93-29B-32-1H. 33-013-01808. East Tioga Field. HZ. Confidential. 425' FNL & 375' FWL of Sec 29-159N-93W. Issued 09/30/16.

**Trendwell Energy.** Re-entry. Matter State #3-17H. 33-013-01534. Woburn Field. Horizontal. Confidential. 200' FNL & 2140' FWL of Sec 17-162N-90W. Spud 03/27/11. Issued 09/21/16.

**DIVIDE**

**Resource Energy.** Renewal. J Adeline #15-31-164-101. 33-023-01274. Colgan Field. Confidential. 250' FSL & 1339' FEL of Sec 31-164N-101W. Issued 09/19/16.

● **SM Energy. 11 Completions.**

■ **Ambrose Field (Bakken)**  
● Completion. Anne #13B-19HS. 33-023-01324. HZ. Oil. Completed 09/09/16. Orig Permit 01/08/05. 330' FSL & 750' FWL of Sec 19-163N-99W; BHL 214' FSL & 822' FWL of Sec 31. C/Nabors #687. Spud 04/29/15. TD 18,396'. TVD 8,187'. KOP 7,680'. Form Rec: BLS 6770'; Ratcliffe 6850'; Mission Canyon 7034'; Lodgepole 7679'; Carrington 8174'; Scallion 8183'; U Bakken 8195' & M Bakken 8237'. Surf Casing 9.625" to 1412'; Int Casing 7" to 8380' & Prod Casing 4.5" to 18363'. Perf'd 8380'-18396'. Tested 174 bo/d & 123 Mcf/d.

■ **Ambrose Field (Three Forks B1)**  
● Completion. Anne #13-19HS. 33-023-01325. HZ. Oil. Completed 09/09/16. Orig Permit 01/08/15. 330' FSL & 700' FWL of Sec 19-163N-99W; BHL 213' FSL & 222' FWL of Sec 31. C/Nabors #687. Spud 04/30/15. TD 18,554'. TVD 8,258'. KOP 7,775'. Form Rec: Carrington 8115'; Scallion 8120'; U Bakken 8127'; M Bakken 8164'; L Bakken 8280' & Three Forks 8410'. Surf Casing 9.625" to 1437'; Int Casing 7" to 8659' & Prod Casing 4.5" to 18530'. Perf'd 8659'-18554'. Tested 285 bo/d & 173 Mcf/d.

■ **Burg Field (M Bakken)**  
● Completion. Stevens #2B-18HN. 33-023-01404. Horizontal. Oil. Completed 07/25/16. Orig Permit 01/26/16. 275' FNL & 2225' FEL of Sec 18-160N-99W; BHL 214' FNL & 2007' FEL of Sec 7. C/Nabors #687. Spud 03/11/16. TD 19,300'. TVD 8,805'. KOP 8,465'. Form Rec: Ratcliffe 7551'; Mission Canyon 7740'; Lodgepole 8842'; Carrington 8978'; Scallion 8988'; U Bakken 8994' & M Bakken 9062'. Surf Casing 9.625" to 1763'; Int Casing 7" to 9270' & Prod Casing 4.5" to 19273'. Perf'd 9270'-19300'. Oil Grav 41.8° API. GOR 846:1. Tested 448 bo/d & 379 Mcf/d. 22 Stgs. 111,626 Bbls Fld 3,423,951 Lbs Prop't 40/70 Sd.

**Top Operators**

(09/13/16 - 10/06/16)

Permits

**MONTANA: Top 6 (9 of 9 Permits)**

Continental Resources	2
Oasis Petroleum	2
Sinclair O&G	2
Highlands Montana Corp	1
Keesun Corp	1
Montana Land & Exp Inc	1

**N. DAKOTA: Top 15 (129 of 141 Permits)**

XTO Energy	20
EOG Resources	14
Newfield Production	14
Burlington Resources	12
QEP Energy	11
Oasis Petroleum	10
Hess Corp	9
Statoil O&G	7
Marathon Oil	6
Slawson Exploration	5
WPX Energy	5
Continental Resources	4
HRC Operating	4
Petro-Hunt LLC	4
Whiting O&G	4

TOTAL 150

Sources: MBOGC & NDIC

**Top Counties**

(09/13/16 - 10/06/16)

Permits

BHI Rigs

**MONTANA: Top 5 (9 of 9 Permits)**

Richland	4	-
Roosevelt	2	-
Blaine	1	-
Custer	1	-
Toole	1	-

**N. DAKOTA: Top 7 (141 of 141 Permits)**

McKenzie	56	10
Williams	35	3
Dunn	22	11
Mountrail	22	3
Burke	3	1
McLean	2	-
Divide	1	1

TOTAL 150 30

Sources: BHI, MBOGC & NDIC



SM Energy

Find more headlines, visit [www.plsx.com/news](http://www.plsx.com/news)

**NORTH DAKOTA PERMITS**

**SM Energy. (continued)**

**Skabo Field (Bakken)**

● Completion. Bronkar #2B-6HS. 33-023-01395. HZ. Oil. Completed 08/03/16. Orig Permit 01/06/16. 275' FNL & 1790' FEL of Sec 6-160N-98W; BHL 203' FSL & 1962' FEL of Sec 7. C/Nabors #108. Spud 03/17/16. TD 18,820'. TVD 8,944'. KOP 8,358'. Form Rec: Lodgepole 8383', Carrington 8922', Scallion 8932', U Bakken 8949' & M Bakken 8990'. Surf Casing 9.625" to 1761', Int Casing 7" to 9110' & Prod Casing 4.5" to 18810'. Perf'd 9110'-18820'. Oil Grav 40° API. GOR 1,004:1. Tested 271 bo/d & 272 Mcf/d. 22 Stgs. 101,918 Bbls Fld 3,427,535 Lbs 40/70 Sd.



**West Ambrose Field (Bakken)**

● Completion. Anne #13B-19HN. 33-023-01323. HZ. Oil. Completed 09/09/16. Orig Permit 01/08/15. 330' FSL & 800' FWL of Sec 19-163N-99W; BHL 216' FNL & 939' FWL of Sec 18. C/Nabors #687. Spud 04/28/15. TD 17,739'. TVD 7,984'. KOP 7,648'. Form Rec: Carrington 8180', Scallion 8186', U Bakken 8200' & M Bakken 8286'. Surf Casing 9.625" to 1421', Int Casing 7" to 8343' & Prod Casing 4.5" to 17725'. Perf'd 8343'-17739'. Tested 451 bo/d & 328 Mcf/d.

● Completion. Jeremy Federal #14B-10HN. 33-023-01373. HZ. Oil. Completed 08/22/16. Orig Permit 07/20/15. 240' FSL & 2150' FWL of Sec 10-163N-100W; BHL 212' FNL & 2020' FWL of Sec 3. C/Nabors #687. Spud 08/24/15. TD 17,814'. TVD 7,780'. KOP 7,480'. Form Rec: Base Last Salt 6590', Ratcliffe 6633', Mission Canyon 6735', Lodgepole 7410', Carrington 7958', Scallion 7968', U Bakken 7980' & M Bakken 8014'. Surf Casing 9.625" to 1355', Int Casing 7" to 8148' & Prod Casing 4.5" to 17784'. Perf'd 8148'-17814'. Oil Grav 40.1° API. GOR 620:1. Tested 526 bo/d & 326 Mcf/d. 30 Stgs. 77,877 Bbls Fld 2,594,383 Lbs Prop't 1,770,774 Lbs 40/70 Sd 581,954 Lbs 30/50 Sd 241,655 Lbs RCS.

**West Ambrose Field (M Bakken)**

● Completion. Inez #1B-16HN. 33-023-01341. HZ. Oil. Completed 08/25/16. Orig Permit 04/16/15. 316' FNL & 401' FEL of Sec 16-163N-100W; BHL 217' FNL & 568' FEL of Sec 4. C/Nabors #108. Spud 06/02/15. TD 18,197'. TVD 7,834'. KOP 7,490'. Form Rec: Base Last Salt 6619', Ratcliffe 6696', Mission Canyon 6859', Lodgepole 7468', Carrington 8025', Scallion 8036', U Bakken 8052' & M Bakken 8092'. Surf Casing 9.625" to 1439', Int Casing 7" to 8228' & Prod Casing 4.5" to 18179'. Perf'd 8228'-18197'. Oil Grav 40.2° API. GOR 449:1. Tested 428 bo/d & 192 Mcf/d. 30 Stgs. 74,292 Bbls Fld 2,556,047 Lbs Prop't 1,747,792 Lbs 40/70 Sd 574,999 Lbs 30/50 Sd 233,256 Lbs 30/50 RCS.

● Completion. Loren #1B-16HS. 33-023-01342. HZ. Oil. Completed 08/25/16. Orig Permit 04/16/15. 297' FNL & 447' FEL of Sec 16-163N-100W; BHL 215' FSL & 638' FEL of Sec 21. C/Nabors #108. Spud 05/31/15. TD 17,615'. TVD 8,062'. KOP 7,448'. Form Rec: Base Last Salt 6614', Ratcliffe 6695', Mission Canyon 6859', Lodgepole 7470', Carrington 8047', Scallion 8056', U Bakken 8076' & M Bakken 8140'. Surf Casing 9.625" to 1437', Int Casing 7" to 8283' & Prod Casing 4.5" to 17585'. Perf'd 8283'-17615'. Oil Grav 40.2° API. GOR 604:1. Tested 318 bo/d & 192 Mcf/d. 30 Stgs. 72,440 Bbls Fld 2,570,173 Lbs Prop't 1,732,644 Lbs 40/70 Sd 233,600 Lbs 30/50 Sd 233,600 Lbs 30/50 RCS.

● Completion. Sandra #14B-10HS. 33-023-01374. HZ. Oil. Completed 08/22/16. Orig Permit 07/20/15. 240' FSL & 2200' FWL of Sec 10-163N-100W; BHL 222' FSL & 2255' FWL of Sec 22. C/Nabors #687. Spud 08/25/15. TD 18,302'. TVD 8,036'. KOP 7,505'. Form Rec: Carrington 7963', Scallion 7968', U Bakken 7987' & M Bakken 8027'. Surf Casing 9.625" to 1354', Int Casing 7" to 8205' & Prod Casing 4.5" to 18275'. Perf'd 8205'-18302'. Oil Grav 40.1° API. GOR 633:1. Tested 120 bo/d & 76 Mcf/d. 30 Stgs. 78,834 Bbls Fld 2,605,423 Lbs Prop't 1,783,353 Lbs 40/70 Sd 586,387 Lbs 30/50 Sd 235,683 Lbs 30/50 RCS.

**West Ambrose Field (Three Forks)**

● Completion. Anne #13-19HN. 33-023-01326. HZ. Oil. Completed 09/09/16. 330' FSL & 650' FWL of Sec 19-163N-99W; BHL 215' FNL & 11' FEL of Sec 13. C/Nabors #687. Spud 05/01/15. TD 17,787'. TVD 8,068'. KOP 7,777'. Form Rec: Carrington 8105', Scallion 8109', U Bakken 8117', M Bakken 8152', L Bakken 8260' & Three Forks 8360'. Surf Casing 9.625" to 1430', Int Casing 7" to 8479' & Prod Casing 4.5" to 17762'. Perf'd 8479'-17787'. Tested 353 bo/d & 185 Mcf/d.

● Completion. Rolie #1-16HN. 33-023-01343. HZ. Oil. Completed 08/25/16. Orig Permit 04/16/15. 275' FNL & 492' FEL of Sec 16-163N-100W; BHL 217' FNL & 1207' FEL of Sec 4. C/Nabors #108. Spud 05/29/15. TD 18,268'. TVD 7,899'. KOP 7,500'. Form Rec: Base Last Salt 6622', Ratcliffe 6701', Mission Canyon 6865', Lodgepole 7473', Carrington 7995', Scallion 8002', U Bakken 8014', M Bakken 8040', L Bakken 8170' & Three Forks 8272'. Surf Casing 9.625" to 1438', Int Casing 7" to 8327' & Prod Casing 4.5" to 18260'. Perf'd 8327'-18268'. Oil Grav 40.2° API. GOR 496:1. Tested 371 bo/d & 184 Mcf/d. 26 Stgs. 70,576 Bbls Fld 2,590,367 Lbs Prop't 1,883,548 Lbs 40/70 Sd 505,426 30/50 Sd 201,393 Lbs 30/50 RCS.

**DUNN**

**Marathon Oil. 4 HZ Permits.**

**McGregory Buttes Field (Three Forks)**

Renewal. Eagle USA #41-5TFH. 33-025-01866. Confidential. 1107' FSL & 1361' FEL of Sec 32-148N-94W. Issued 09/26/16.

**Murphy Creek Field**

Renewal. Archie #14-35PH. 33-025-03006. Confidential. 309' FNL & 979' FEL of Sec 6-144N-96W. Issued 09/26/16.

Renewal. Arnew #44-34PH. 33-025-03008. Confidential. 309' FNL & 1079' FEL of Sec 6-144N-96W. Issued 09/26/16.

Renewal. Erbe #44-34H. 33-025-03007. Confidential. 309' FNL & 1029' FEL of Sec 6-144N-96W. Issued 09/26/16.

● **Petro-Hunt LLC**. Completion. Klatt #145-97-18A-19-2H. 33-025-02394. Little Knife Field. M Bakken. HZ. Oil. Completed 09/01/16. Orig Permit 12/16/13. 285' FNL & 1485' FEL of Sec 18-145N-97W; BHL 1093' FSL & 1665' FEL of Sec 18. C/True #36. Spud 02/08/15. TD 21,148'. TVD 11,041'. KOP 10,585'. Form Rec: Pierre 2165', Greenhorn 4832', Mowry 5287', Dakota 5632', Swift 6127', Rierdon 6568', Opeche 7513', Tyler 8353', Kibbey 8806', Charles 8955', Base of Last Salt 9455', Rival 9642', Lodgepole 10178', U Bakken 11138' & M Bakken 11173'. Surf Casing 9.625" to 2440', Int Casing 7" to 11284' & Prod Casing 4.5" to 21089'. Perf'd 11284'-20831'. Choke 22/64-in. FTP 2,200 PSI. Oil Grav 43.8° API. GOR 644:1. Flowed 1,080 bo/d & 695 Mcf/d. 80 Stgs. 86,902 Bbls 4,413,515 Lbs Prop't.

Renewal. Kostelnak #145-97-32D-29-5H. 33-025-03015. Little Knife Field. HZ. Confidential. 350' FSL & 1572' FEL of Sec 32-145N-97W. Spud 09/01/16. Issued 09/16/16.

**Bakken Rig Count (by County)**

Source: Baker Hughes

	This Wk	Last Wk	Last Month	Last Qtr	6 Mos Ago	Last Year	Δ	%Δ
Dunn, N.D.	11	11	7	9	5	12	-1	-8%
McKenzie, N.D.	10	10	13	11	15	25	-15	-60%
Mountrail, N.D.	3	4	3	4	3	10	-7	-70%
Williams, N.D.	3	3	2	2	2	10	-7	-70%
Burke, N.D.	1	1	1	1	-	1	-	0%
Divide, N.D.	1	1	1	1	1	2	-1	-50%
Stark, N.D.	1	-	-	-	-	1	-	0%
Bottineau, N.D.	-	-	-	-	-	1	-1	-100%
Bowman, N.D.	-	-	-	-	-	1	-1	-100%
Golden Valley, N.D.	-	-	1	-	-	-	-	-
McLean, N.D.	-	-	-	-	1	1	-1	-100%
Roosevelt, Mont.	-	-	-	-	-	1	-1	-100%
<b>TOTALS</b>	<b>30</b>	<b>30</b>	<b>28</b>	<b>28</b>	<b>27</b>	<b>65</b>	<b>-35</b>	<b>-54%</b>

## DEALS FOR SALE

## DANIELS CO., MT ACREAGE SALE

16,100-Net Acres.

BAKKEN &amp; THREE FORKS

Secondary Targets: Madison, Charles, Mission Canyon &amp; Ratcliffe Formations

Target Depths: 6,500 - 6,800 Ft.

100% OPERATED WI: 80% NRI

Offset Production: 50-150 BOPD

Offset Producers: Apache &amp; Continental

Potential Recoverable Rsvs: 60 MBO

20 Months Remaining On Primary Term

L 3756

BAKKEN

Call PLS

## MONTANA BAKKEN ACREAGE

50-Drilling Locations. 16,100-Net Acres.

DANIELS CO., MT

Bakken &amp; Three Forks MultiPay.

100% OPERATED WI: 80% NRI

Near Continental, Apache &amp; More.

Bakken/Three Forks EUR: 1.0 MMBO/Well

~2.5 Yrs Left Primary w/ 3-Year Options.

FULL PRESENTATION AVAILABLE

L 5222DV

BAKKEN

## SHERIDAN CO., MT PROSPECTS

10-Potential Wells. 3-Prospect.

WILLISTON BASIN

MULTIPAY PROSPECTS

Red River. 11,300 Ft.

Mission Canyon &amp; Others. 7,500 Ft.

60% OPERATED WI: 48% NRI

Expected IP (Red River): 375 BOPD

Expected IP (Mission Canyon): 162 BOPD

Well Reserve: 300 MBOE/Well

Project Reserves: 3.0 MMBOE

Drill &amp; Completion Cost: \$3,350,000

DV 3851

DV

MULTIPAY

## ROCKIES OPERATED ACREAGE

7,867-Net Acres.

NORTH DAKOTA &amp; MONTANA

WILLISTON BASIN

Potential: Bakken &amp; Three Forks

6 - 1,280 Acre Spacing Units.

15 - Operated 640 Acre Spacing Units.

Leases Can Deliver Avg 84% NRI

L 5804

WILLISTON

## ADAMS CO., ND PROSPECT

1,732-Net Acres.

WILLISTON BASIN

100% OPERATED WI FOR SALE

DV 8990

DV WILLISTON

## BILLINGS CO., ND PROSPECT

160-Net Acres.

WILLISTON BASIN

100% OPERATED WI AVAILABLE

DV 1668

DV WILLISTON

## NORTH DAKOTA PERMITS

QEP Energy. 6 HZ Permits.

## Heart Butte Field

Renewal. MHA #2-25-36H-148-92. 33-025-03029. Confidential. 619' FSL &amp; 297' FEL of Sec 24-148N-92W. Issued 10/03/16.

Renewal. MHA #4-25-36H-148-92. 33-025-03028.

Confidential. 614' FSL &amp; 325'

FEL of Sec 24-148N-92W. Issued 10/03/16.

Renewal. MHA #6-25-36H-148-92. 33-025-03031. Confidential. 631' FSL &amp; 242' FEL of Sec 24-148N-92W. Issued 10/03/16.

Renewal. MHA #8-25-36H-148-92. 33-025-03030. Confidential. 625' FSL &amp; 270' FEL of Sec 24-148N-92W. Issued 10/03/16.

## Heart Butte Field (M Bakken)

19,505' Permit. MHA #6-04-03H-149-91. 33-025-03221. O&amp;G. 403' FSL &amp; 836' FWL of Sec 4-149N-91W; PBHL 200' FNL &amp; 200' FEL of Sec 10. PTVD 9,949'. Issued 10/05/16.

## Heart Butte Field (Three Forks)

19,614' Permit. MHA #8-04-03H-149-91. 33-025-03222. O&amp;G. 423' FSL &amp; 821' FWL of Sec 4-149N-91W; PBHL 200' FNL &amp; 200' FEL of Sec 3. PTVD 10,019'. Issued 10/05/16.

Whiting O&amp;G. 22,662' Permit. MC MHA #14-11-2H. 33-025-03219. Moccasin Creek Field. M Bakken. Horizontal. O&amp;G. 358' FSL &amp; 1141' FWL of Sec 11-147N-93W; PBHL 219' FNL &amp; 544' FEL of Sec 2. PTVD 10,477'. Issued 09/22/16.

21,944' Permit. MC MHA #14-11-3TFH. 33-025-03220. Moccasin Creek Field. Bakken. HZ. O&amp;G. 375' FSL &amp; 1166' FWL of Sec 11-147N-93W; PBHL 220' FNL &amp; 1118' FEL of Sec 2. PTVD 10,557'. Issued 09/22/16.

XTO Energy. 9 Permits.

## Lost Bridge Field

4x Permits. Deep Creek Federal #44X-5A (thru #44X-5C, #44X-5E). 33-025-03228 (thru 03231). Confidential. Sec 5-148N-96W. Issued 10/06/16.

2x Permits. Jorgenson Federal #44X-5C (#44X-5D). 33-025-03224 (03226). Confidential. Sec 5-148N-96W. Issued 10/05/16.

2x Permits. Jorgenson Federal #44X-5FXG (#44X-5G2). 33-025-03225 (03227). Confidential. Sec 5-148N-96W. Issued 10/05/16.

Permit. Jorgenson Federal #44X-5H. 33-025-03223. HZ. Confidential. 644' FSL &amp; 284' FEL of Sec 5-148N-96W. Issued 10/05/16.



December 31, 2014 • Volume 25, No. 18

**PLS ADTransactions** A&D  
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**Repsol strikes, snapping up Tallman for \$13 billion**  
Expanding on drilling and production assets, a substantial agreement finalized in North America, Repsol has struck a deal to acquire Tallman Energy for \$13 billion. The purchase price consists of \$8.00 billion in cash and \$5 billion in stock. The deal will boost Repsol's production to 2.6 million bbls per day by 2016. The deal also includes significantly expanded exploration portfolios. The combined company will have experience in more than 50 countries with 27,000 employees.

**Whiting seals buyout of Bakken peer Kodiak**  
There is one less publicly listed Bakken producer following the closing of Whiting Petroleum's acquisition of rival Kodiak Oil & Gas. The deal created a combined company with a market cap north of \$6 billion based on the stock price the day before closing. Whiting now has the highest Bakken Three Forks

**Call 713-650-1212**

## MCKENZIE

Burlington Resources. 5 Completions, 12 Horizontal Permits.

## Blue Buttes Field

Permit. Veeder #4E MBH-ULW. 33-053-07805. Confidential. 660' FNL &amp; 1793' FEL of Sec 25-150N-96W. Issued 09/29/16.

## Blue Buttes Field (M Bakken)

Permit. State Veeder #2A MBH. 33-053-07792. Confidential. 271' FSL &amp; 2036' FEL of Sec 36-150N-96W. Issued 09/21/16.

Permit. State Veeder #2C MBH. 33-053-07794. Confidential. 271' FSL &amp; 1946' FEL of Sec 36-150N-96W. Issued 09/21/16.

Permit. State Veeder #3B MBH. 33-053-07790. Confidential. 275' FSL &amp; 740' FEL of Sec 36-150N-96W. Issued 09/21/16.

Permit. Veeder #4C MBH. 33-053-07803. Confidential. 660' FNL &amp; 1883' FEL of Sec 25-150N-96W. Issued 09/29/16.

## Blue Buttes Field (Three Forks)

Permit. State Veeder #2B UTFH. 33-053-07793. Confidential. 271' FSL &amp; 1991' FEL of Sec 36-150N-96W. Issued 09/21/16.

Permit. State Veeder-Kummer #3C UTFH-ULW. 33-053-07791. Confidential. 275' FSL &amp; 695' FEL of Sec 36-150N-96W. Issued 09/21/16.

Permit. Veeder #4B TFH. 33-053-07802. Confidential. 660' FNL &amp; 1928' FEL of Sec 25-150N-96W. Issued 09/29/16.

Permit. Veeder #4D MTFH. 33-053-07804. Confidential. 660' FNL &amp; 1838' FEL of Sec 25-150N-96W. Issued 09/29/16.

## North Fork Field (M Bakken)

- Completion. Jerome #21-15MBH-2SH. 33-053-04871. HZ. Oil. Completed 08/24/16. Orig Permit 03/15/12. 1275' FNL & 2480' FWL of Sec 15-149N-96W; BHL 250' FSL & 1974' FEL of Sec 22. C/H&P #515. Spud 12/21/15. TD 20,691'. TVD 11,085'. KOP 10,515'. Form Rec: Kibbey Lime 8606', Charles 8764', Base Last Salt 9385', Ratcliffe 9460', Mission Canyon 9581', Basal Mission Canyon 10163', Lodgepole 10187', Carrington 11128', Scallion 11138', U Bakken 11164' & M Bakken 11229'. Surf Casing 9.625" to 2220', Int Casing 7" to 11399' & Prod Casing 4.5" to 20681'. Perf'd 11399'-20691'. Flowed 1,776 bo/d & 2,725 Mcf/d.

- Completion. Merton #21-15MBH. 33-053-06598. HZ. Oil. Completed 09/02/16. Orig Permit 12/19/14. 378' FNL & 1980' FWL of Sec 15-149N-96W; BHL 46' FSL & 1839' FWL of Sec 10. C/H&P #492. Spud 12/30/15. TD 21,734'. TVD 10,908'. KOP 10,530'. Form Rec: Kibbey Limestone 8566', Charles 8721', Base Last Salt 9337', Ratcliffe 9408', Mission Canyon 9540', Basal Mission Canyon 10137', Lodgepole 10163', Carrington 11103', Scallion 11110', U Bakken 11142' & M Bakken 11212'. Surf Casing 9.625" to 2147', Int Casing 7" to 11373' & Prod Casing 4.5" to 21723'. Perf'd 10992'-21734'. Flowed 3,487 bo/d & 6,157 Mcf/d.

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**NORTH DAKOTA PERMITS**

**Burlington Resources. (continued)**

**North Fork Field (Three Forks)**

● Completion. Jerome #21-15TFH-35H. 33-053-04873. HZ. Oil. Completed 08/28/16. Orig Permit 03/15/13. 1275' FNL & 2390' FWL of Sec 15-149N-96W; BHL 214' FSL & 2603' FWL of Sec 22. C/Noble Rig #1. Spud 12/25/15. TD 20,946'. TVD 11,190'. KOP 10,672'. Form Rec: Kibbey Limestone 8616'; Charles 8769'; Base Last Salt 9384'; Ratcliffe 9458'; Mission Canyon 9578'; Basal Mission Canyon 10167'; Lodgepole 10193'; Carrington 11051'; Scallion 11058'; U Bakken 11076'; M Bakken 11112'; L Bakken 11180' & Three Forks 11243'. Surf Casing 9.625" to 2234' Int Casing 7" to 11467' & Prod Casing 4.5" to 20946'. Perf'd 11467'-20946'. Flowed 1,536 bo/d & 2,620 Mcf/d.

● Completion. Merton #21-15TFH. 33-053-06597. HZ. Oil. Completed 08/22/16. Orig Permit 12/19/14. 378' FNL & 1935' FWL of Sec 15-149N-96W; BHL 227' FNL & 1185' FWL of Sec 3. C/H&P #492. Spud 12/31/15. TD 22,336'. TVD 10,989'. KOP 11,570'. Form Rec: Kibbey Limestone 8621'; Charles 8792'; Base Last Salt 9412'; Ratcliffe 9484'; Mission Canyon 9612'; Basal Mission Canyon 10201'; Lodgepole 10227'; Carrington 11117'; Scallion 11223'; U Bakken 11144'; M Bakken 11181'; L Bakken 11258'; Pronghorn 11328' & Three Forks 11344'. Surf Casing 9.625" to 2182'; Int Casing 7" to 11570' & Prod Casing 4.5" to 22321'. Perf'd 11570'-22336'. Flowed 3,327 bo/d & 5,552 Mcf/d.

● Completion. Merton #21-15TFH-3NH. 33-053-04872. HZ. Oil. Completed 08/12/16. Orig Permit 03/15/13. 1275' FNL & 2435' FWL of Sec 15-149N-96W; BHL 230' FNL & 2618' FWL of Sec 3. C/Noble Rig #1. Spud 12/23/15. TD 22,481'. TVD 11,001'. KOP 10,610'. Form Rec: Kibbey Limestone 8565'; Charles 8722'; Base Last Salt 9343'; Ratcliffe 9414'; Mission Canyon 9540'; Basal Mission Canyon 10117'; Lodgepole 10141'; Carrington 11007'; Scallion 11015'; U Bakken 11028'; M Bakken 11061'; L Bakken 11131' & Three Forks 11190'. Surf Casing 9.625" to 2179'; Int Casing 7" to 11394' & Prod Casing 4.5" to 22476'. Perf'd 10527'-22476'. Choke 32/64-in. CP 3,900 PSI. Oil Grav 46.2° API. GOR 1,761:1. Flowed 3,360 bo/d & 5,917 Mcf/d. 27 Stgs. 170,682 Bbls Fld 12,177,252 Lbs Prop't 334,820 Lbs 100 Mesh 11,875,380 Lbs 40/70 WH 1,219,480 Lbs 20/40.

**Sand Creek Field (M Bakken)**

Permit. Renegade #24-10 MBH. 33-053-07784. Confidential. 290' FSL & 1931' FWL of Sec 10-153N-97W. Issued 09/20/16.

**Sand Creek Field (Three Forks)**

Permit. Chuckwagon #21-15 TFH. 33-053-07783. Confidential. 290' FSL & 1976' FWL of Sec 10-153N-97W. Issued 09/20/16.

Permit. Renegade #24-10 TFH. 33-053-07785. Confidential. 290' FSL & 1886' FWL of Sec 10-153N-97W. Issued 09/20/16.

**Continental Resources. 4 HZ Permits.**

**Elm Tree Field (Bakken)**

26,682' Permit. Hereford Federal #11-17H. 33-053-07787. O&G. 699' FNL & 235' FWL of Sec 21-153N-94W; PBHL 200' FNL & 1320' FEL of Sec 5. PTVD 10,786'. Issued 09/20/16.

26,599' Permit. Hereford Federal #13-17H. 33-053-07789. O&G. 699' FNL & 325' FWL of Sec 21-153N-94W; PBHL 202' FNL & 660' FEL of Sec 5. PTVD 10,801'. Issued 09/20/16.

**Elm Tree Field (Three Forks B1)**

26,836' Permit. Hereford Federal #10-17H1. 33-053-07786. O&G. 699' FNL & 190' FWL of Sec 21-153N-94W; PBHL 200' FNL & 1650' FEL of Sec 5. PTVD 10,895'. Issued 09/20/16.

**Elm Tree Field (Three Forks B2)**

26,772' Permit. Herford Federal #12-17H2. 33-053-07788. O&G. 699' FNL & 280' FWL of Sec 21-153N-94W; PBHL 202' FNL & 990' FEL of Sec 5. PTVD 10,945'. Issued 09/20/16.

**EOG Resources.** 21,382' Permit. Clarks Creek #75-0719HX. 33-053-07809. Clarks Creek Field. Bakken. HZ. O&G. 223' FSL & 1722' FEL of Sec 7-151N-94W; PBHL 210' FSL & 540' FEL of Sec 19. PTVD 10,674'. Issued 10/03/16.

17,607' Renewal. Mandaree #104-1720H. 33-053-04435. Squaw Creek Field. Bakken. HZ. O&G. 705' FNL & 2413' FWL of Sec 17-149N-94W; PBHL 2419' FNL & 2460' FWL of Sec 20. PTVD 10,987'. Issued 09/27/16.

**HRC Operating.** 20,784' Renewal. Fort Berthold #152-94-13A-24-15H. 33-053-07274. Antelope Field. Sanish. HZ. O&G. 280' FNL & 415' FEL of Sec 13-152N-94W; PBHL 251' FSL & 11' FWL of Sec 19. PTVD 10,595'. Issued 09/19/16.

20,610' Renewal. Fort Berthold #152-94-13A-24-16H. 33-053-07275. Antelope Field. Sanish. HZ. O&G. 280' FNL & 385' FEL of Sec 13-152N-94W; PBHL 250' FSL & 210' FWL of Sec 19. PTVD 10,493'. Issued 09/19/16.

**Marathon Oil.** Renewal. Dragswolf USA 12-14TFH-2B. 33-053-06221. Reunion Bay Field. Three Forks. Horizontal. Confidential. 2621' FSL & 468' FEL of Sec 15-151N-94W. Issued 09/26/16.

Renewal. Shirley Doll USA #13-14TFH. 33-053-06222. Reunion Bay Field. Three Forks. HZ. Confidential. 2582' FSL & 436' FEL of Sec 15-151N-94W. Issued 09/26/16.

**Newfield Production. 14 HZ Permits.**

**Bear Den Field**

Renewal. Moberg Federal #149-95-29-32-14HLW. 33-053-07298. Confidential. 510' FNL & 515' FWL of Sec 29-149N-95W. Issued 10/03/16.

Renewal. Moberg Federal #149-95-29-32-20H. 33-053-07299. Confidential. 510' FNL & 545' FWL of Sec 29-149N-95W. Issued 10/03/16.

**Pembroke Field**

Renewal. Malm #149-98-11-2-12H. 33-053-07229. Confidential. 492' FNL & 714' FWL of Sec 14-149N-98W. Issued 09/19/16.

Renewal. Malm #149-98-11-2-4H. 33-053-07228. Confidential. 492' FNL & 669' FWL of Sec 14-149N-98W. Issued 09/19/16.

Renewal. Malm #149-98-14-23-4H. 33-053-07230. Confidential. 492' FNL & 759' FWL of Sec 14-149N-98W. Issued 09/19/16.

**Siverston Field**

Renewal. Johnsrud Federal #149-98-13-2H. 33-053-06214. Confidential. 330' FSL & 2465' FEL of Sec 13-149-98. Issued 09/19/16.

Renewal. Johnsrud Federal #149-98-13-3H. 33-053-06215. Confidential. 330' FSL & 2510' FEL of Sec 13-149N-98W. Issued 09/19/16.

Renewal. Johnsrud Federal #149-98-13-4H. 33-053-06216. Confidential. 330' FSL & 2555' FEL of Sec 13-149N-98W. Issued 09/19/16.

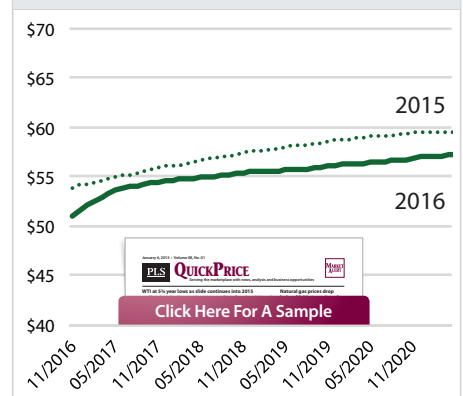
**Tobacco Garden S Field**

**3x** Renewals. Schneiderman #150-99-29-32-2H (thru #150-99-29-32-4H). 33-053-06307 (thru 06309). Confidential. Sec 20-150N-99W. Issued 09/26/16.

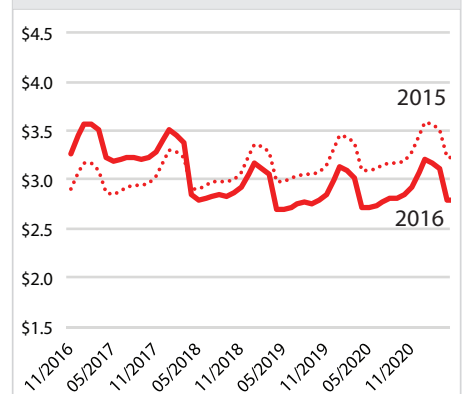
**3x** Renewals. Sturgeon #150-99-18-19-2H (thru #150-99-18-19-4H). 33-053-05338 (thru 05340). Confidential. Sec 7-150N-99W. Issued 09/27/16.



**Crude Forward Curve (\$/Bbl)**



**Natural Gas Curve (\$/Mcf)**



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Sources: Bloomberg & PLS (as of 10/11/16)

**DEALS FOR SALE**

**BOWMAN CO., ND ACREAGE**

~8,000-Total Acres.

RED RIVER FORMATION

Horizontal Drilling

Targets: Cedar Creek Anticline, Red --  
 -- River B & C & Tyler Formation

DV 4296

DV

RED RIVER

**BOWMAN CO., ND PROSPECT**

9,632-Net Acres.

WILLISTON BASIN

100% OPERATED WI FOR SALE

DV 8995

DV

WILLISTON

**GOLDEN VALLEY CO., ND PROSPECT**

480-Net Acres.

WILLISTON BASIN

100% OPERATED WI FOR SALE

DV 8855

DV

WILLISTON

**MCKENZIE CO., ND ACREAGE**

~2,000-Total Acres.

RED RIVER FORMATION

Multiple Production Zones

Primary: Red River C Zone

Secondary: Red River B & Mission Canyon

DV 4387

DV

RED RIVER

**MOUNTRAIL CO., ND PROSPECT**

2,175-Net Acres.

WILLISTON BASIN

100% OPERATED WI FOR SALE

DV 8856

DV

WILLISTON

**NORTH DAKOTA ACREAGE FOR SALE**

~392-Net Mineral Acres. 20-25-Leases.

MCKENZIE, WILLIAMS, DIVIDE, STARK,  
 BURKE, BILLINGS & MOUNTRAIL COS.

Objectives: Bakken & Three Forks

Acreage Held By Production.

Leases Can Deliver 76.25-79% NRI

Operators: XTO, Hess Corp., Whiting, --

-- Oasis Petroleum & Others

L 3944

L

BAKKEN

Call PLS

**NORTH DAKOTA PROSPECTS**

19,206-Net Mineral Acres.

ADAMS, BILLINGS, BOWMAN, DUNN,

-- GOLDEN VALLEY, MOUNTRAIL,

-- RENVILLE & SLOPE COUNTIES

Williston Basin - 8 Separate Prospects.

100% OPERATED WI AVAILABLE

Will Sell Leases Individually.

L 1203DV

L

WILLISTON

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**NORTH DAKOTA PERMITS**

**North Range Resources.** Permit. Placid #28-2V. 33-053-07801. Rough Rider Field. Confidential. 1775' FSL & 265' FEL of Sec 28-146N-100W. Issued 09/27/16.

**Oasis Petroleum. 7 HZ Permits.**

**Siverston Field (Bakken)**

21,313' Permit. Patsy #5198 12-17 8B. 33-053-07798. O&G. 192' FNL & 2066' FWL of Sec 17-151N-98W; PBHL 258' FNL & 2340' FWL of Sec 5. PTVD 11,046'. Issued 09/26/16.

21,655' Permit. Patsy #5198 12-17 10B. 33-053-07800. O&G. 192' FNL & 2132' FWL of Sec 17-151N-98W; PBHL 255' FNL & 2084' FEL of Sec 5. PTVD 11,046'. Issued 09/26/16.

21,352' Permit. Patsy #5198 14-17 11B. 33-053-07806. O&G. 239' FNL & 1126' FEL of Sec 17-151N-98W; PBHL 258' FNL & 1288' FEL of Sec 5. PTVD 11,038'. Issued 09/30/16.

21,440' Permit. Patsy #5198 14-17 13B. 33-053-07808. O&G. 239' FNL & 1060' FEL of Sec 17-151N-98W; PBHL 255' FNL & 552' FEL of Sec 5. PTVD 11,038'. Issued 09/30/16.

**Siverston Field (Three Forks B1)**

21,385' Permit. Patsy #5198 12-17 7T. 33-053-07797. O&G. 192' FNL & 2033' FWL of Sec 17-151N-98W; PBHL 258' FNL & 1918' FWL of Sec 5. PTVD 11,115'. Issued 09/26/16.

21,467' Permit. Patsy #5198 12-17 9T. 33-053-07799. O&G. 192' FNL & 2099' FWL of Sec 17-151N-98W; PBHL 255' FNL & 2536' FEL of Sec 5. PTVD 11,114'. Issued 09/26/16.

21,430' Permit. Patsy #5198 14-17 12T. 33-053-07807. O&G. 239' FNL & 1093' FEL of Sec 17-151N-98W; PBHL 258' FNL & 920' FEL of Sec 5. PTVD 11,107'. Issued 09/30/16.

**Petro-Hunt LLC.** Renewal. Anderson #152-96-35D-26-1HS. 33-053-07269. Clear Creek Field. HZ. Confidential. 418' FSL & 453' FEL of Sec 35-152N-96W. Issued 09/16/16.

**QEP Energy. 5 HZ Permits.**

**Grail Field (M Bakken)**

15,548' Renewal. Moberg #7-18BHD. 33-053-07297. O&G. 366' FSL & 1674' FWL of Sec 18-149N-95W; PBHL 250' FNL & 2617' FWL of Sec 18. PTVD 10,963'. Issued 10/03/16.

**Grail Field (Three Forks B2)**

15,419' Renewal. Moberg #3-18T2HD. 33-053-07296. O&G. 375' FSL & 1650' FWL of Sec 18-149N-95W; PBHL 250' FNL & 2050' FWL of Sec 18. PTVD 11,094'. Issued 10/03/16.

**Grail Field (Three Forks B3)**

15,449' Renewal. Moberg #2-18T3HD. 33-053-07294. O&G. 384' FSL & 1627' FWL of Sec 18-149N-95W; PBHL 250' FNL & 1400' FWL of Sec 18. PTVD 11,156'. Issued 10/03/16.



**Spotted Horn Field (M Bakken)**

21,433' Permit. Vegas #1-36-6-31LL. 33-053-07795. O&G. 673' FNL & 1016' FEL of Sec 12-149N-95W; PBHL 249' FNL of Sec 36. PTVD 10,827'. Issued 09/23/16.

**Spotted Horn Field (Three Forks B1)**

21,476' Permit. Vegas #1-36-6-31TH. 33-053-07796. O&G. 666' FNL & 1040' FEL of Sec 12-149N-95W; PBHL 249' FNL & 200' FEL of Sec 36. PTVD 10,909'. Issued 09/23/16.

**Slawson Exploration. 3 HZ Permits.**

**Elm Tree Field**

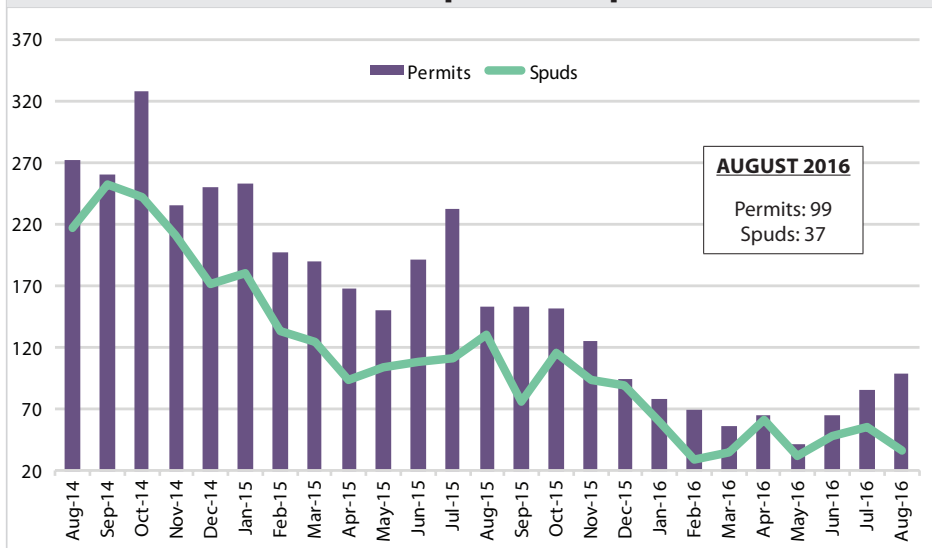
Renewal. Wolverine Federal #3-31-30H. 33-053-04458. Confidential. 350' FSL & 2350' FEL of Sec 31-153N-93W. Issued 10/04/16.

**Elm Tree Field (Three Forks)**

Renewal. Wolverine Federal #6-31-30TFH. 33-053-04457. Confidential. 325' FSL & 2350' FEL of Sec 31-153N-93W. Issued 10/04/16.

Renewal. Wolverine Federal #7-31-30TFH. 33-053-04456. Confidential. 300' FSL & 2350' FEL of Sec 31-153N-93W. Issued 10/04/16.

**North Dakota Permits & Spuds Comparison**



Source: North Dakota Industrial Commission



**Bakken Deals For Sale**

**Listing Codes**

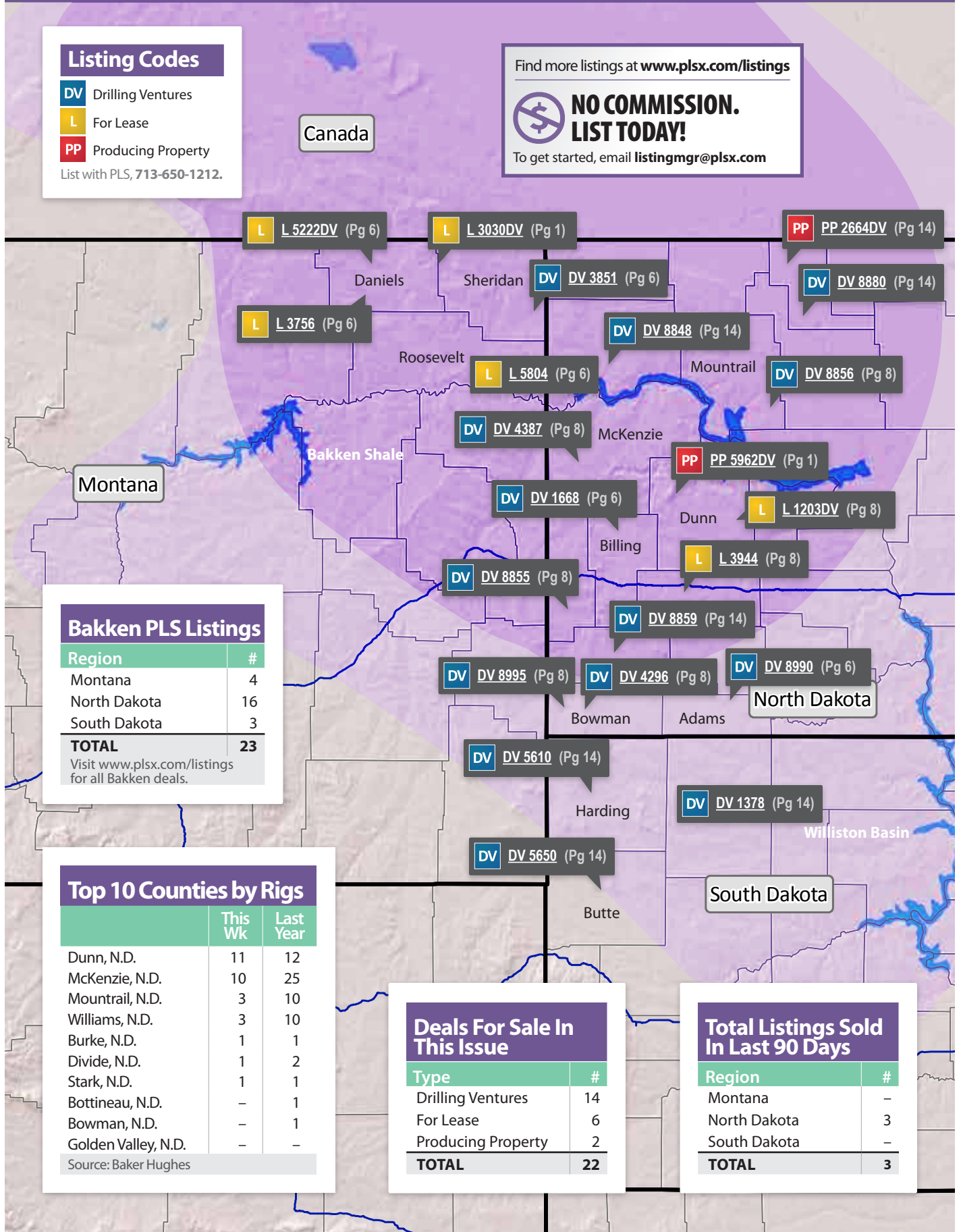
- DV Drilling Ventures
  - L For Lease
  - PP Producing Property
- List with PLS, 713-650-1212.

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**Bakken PLS Listings**

Region	#
Montana	4
North Dakota	16
South Dakota	3
<b>TOTAL</b>	<b>23</b>

Visit [www.plsx.com/listings](http://www.plsx.com/listings) for all Bakken deals.

**Top 10 Counties by Rigs**

	This Wk	Last Year
Dunn, N.D.	11	12
McKenzie, N.D.	10	25
Mountrail, N.D.	3	10
Williams, N.D.	3	10
Burke, N.D.	1	1
Divide, N.D.	1	2
Stark, N.D.	1	1
Bottineau, N.D.	-	1
Bowman, N.D.	-	1
Golden Valley, N.D.	-	-

Source: Baker Hughes

**Deals For Sale In This Issue**

Type	#
Drilling Ventures	14
For Lease	6
Producing Property	2
<b>TOTAL</b>	<b>22</b>

**Total Listings Sold In Last 90 Days**

Region	#
Montana	-
North Dakota	3
South Dakota	-
<b>TOTAL</b>	<b>3</b>

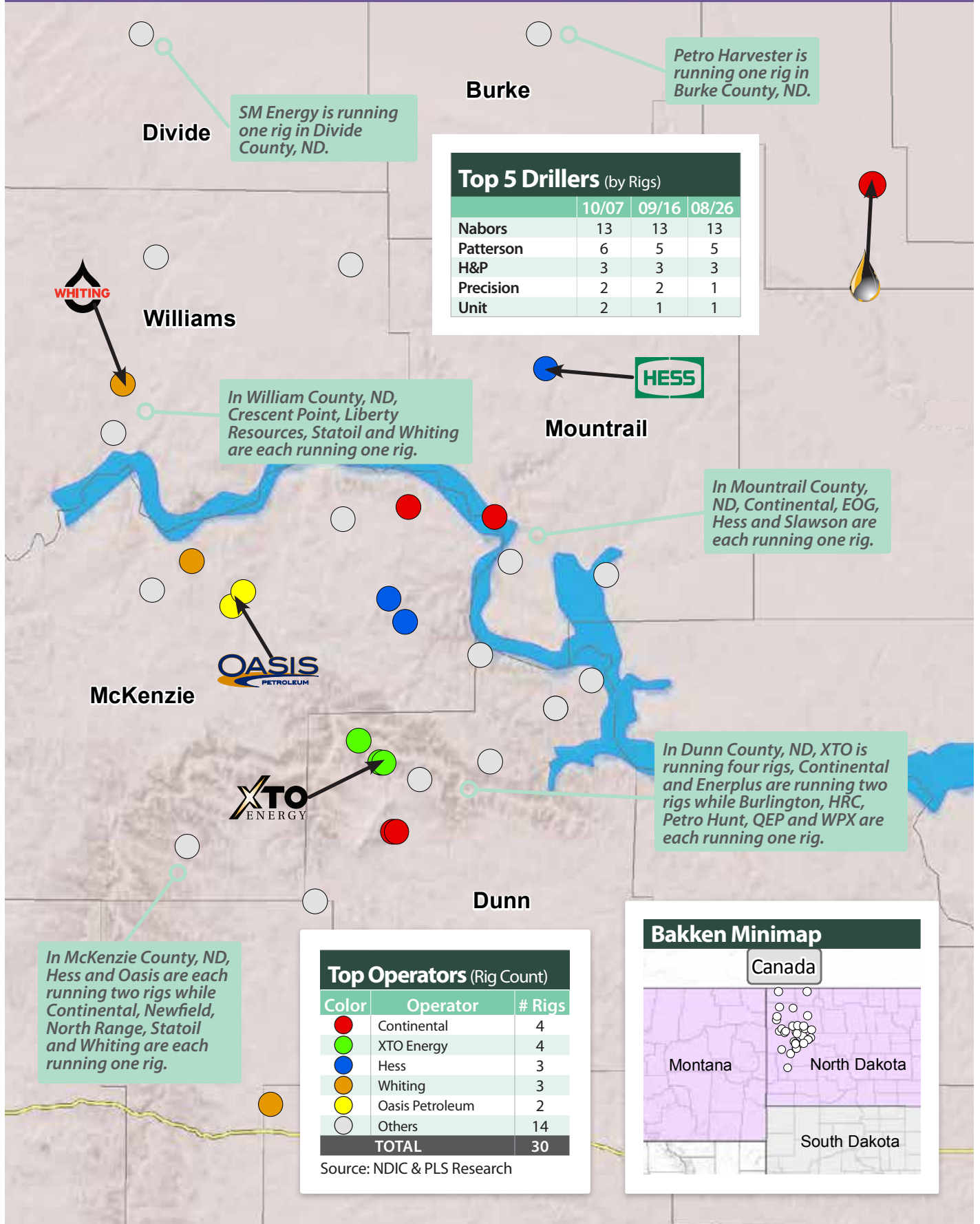
**North Dakota Rig Activity** (as of October 07, 2016)

Source: NDIC

County	Operator	API #	Well Name	Rig	Location	Start Date
Burke	Petro Harvester Op	33-013-01824	FLX1 22-15 #163-91 B	Precision #561	Sec 22-163N-91W	09/25/16
Divide	SM Energy	33-023-01402	Hank Katie #15-20HN	Nabors #687	Sec 20-163N-99W	10/02/16
Dunn	Burlington Resources	33-025-03079	CCU Dakotan #8-2-16 TFH	Precision #578	Sec 16-147N-95W	10/03/16
Dunn	Continental Resources	33-025-03156	Bridger #10-14H2	H&P #640	Sec 14-146N-96W	09/22/16
Dunn	Continental Resources	33-025-03180	Oakdale #10-13H1	H&P #535	Sec 13-146N-96W	10/04/16
Dunn	Enerplus Resources	33-025-03218	Desert Rose #149-92-35A-04H TF	White MT #252	Sec 35-149N-92W	09/25/16
Dunn	Enerplus Resources	33-025-02933	Wooly Torch #149-92-35A-04H	Stoneham #18	Sec 35-149N-92W	09/30/16
Dunn	HRC Operating	33-025-02644	Fort Berthold #148-94-36C-25-12H	Patterson #806	Sec 36-148N-94W	10/07/16
Dunn	Petro Hunt LLC	33-025-02460	Marinenko #145-97-31D-30-2H	True #36	Sec 31-145N-97W	09/08/16
Dunn	QEP Energy	33-025-02128	MHA #4-10-14H-149-91	Unit #404	Sec 10-149N-91W	09/26/16
Dunn	WPX Energy	33-025-02872	Behr #30-31HI	Nabors #B08	Sec 30-150N-93W	09/29/16
Dunn	XTO Energy	33-025-03011	Bang Federal #21X-19AXB	Nabors #B-19	Sec 19-148N-96W	Rigging Up
Dunn	XTO Energy	33-025-03164	Bear Creek #31X-3F2	Nabors #B-10	Sec 3-147N-96W	Rigging Up
Dunn	XTO Energy	33-025-03109	Werre Trust Federal #14X-34E	Nabors #X-10	Sec 34-148N-96W	Rigging Up
Dunn	XTO Energy	33-025-03087	Werre Trust Federal #21X-3B-N	Nabors #X10	Sec 3-147N-96W	08/11/16
McKenzie	Continental Resources	33-053-07554	Tarentaise Federal #11-19H	Nabors #X27	Sec 19-153N-94W	10/03/16
McKenzie	Hess Corp	33-053-06663	BB-Eide- #151-95-3328H-7	Nabors #B05	Sec 33-151N-95W	10/05/16
McKenzie	Hess Corp	33-053-07480	BB-Federal #151-95-1708H-11	Nabors #X28	Sec 18-151N-95W	10/02/16
McKenzie	Newfield Production	33-053-07698	Helsingborg Federal #153-96-27-22-11H	Patterson #344	Sec 27-153N-96W	09/01/16
McKenzie	North Range Resources	33-053-07699	Placid #28-1V	Key NRG #887	Sec 28-146N-100W	09/19/16
McKenzie	Oasis Petroleum	33-053-07527	Oyloe 5199 #43-23 9B	Nabors #B22	Sec 23-151N-99W	09/24/16
McKenzie	Oasis Petroleum	33-053-07644	White 5198 #11-18 8TX	Patterson #286	Sec 18-151N-98W	09/19/16
McKenzie	Statoil O&G	33-053-06330	Heinz 18-19 #4H	Nabors #X13	Sec 7-151N-100W	11/04/16
McKenzie	Whiting O&G	33-053-07521	Koala #31-25-3H	Patterson #280	Sec 25-152N-100W	09/11/16
Mountrail	Continental Resources	33-061-03865	Burr Federal #2-26H	Cyclone #38	Sec 25-153N-93W	10/04/16
Mountrail	EOG Resources	33-061-03858	Van Hook #39-3526H	H & P #492	Sec 35-152N-91W	09/27/16
Mountrail	Hess Corp	33-061-03975	RS-Nelson Farms #156-92-24V-2	Nabors B #4	Sec 24-156N-92W	09/21/16
Mountrail	Slawson Exploration	33-061-03440	Jugard Federal #5-26-35TFH	Unit #123	Sec 26-152N-93W	09/27/16
Stark	Whiting O&G	33-089-00881	3J Trust #24-8-2PH	Patterson #808	Sec 8-140N-99W	10/01/16
Williams	Crescent Point Energy	33-105-04260	Cpeusc Amelia Grace #5-7-6-158N-99W TFH	Extreme #16	Sec 7-158N-99W	09/29/16
Williams	Liberty Resources Mgmt	33-105-04282	Nelson #158-95-20-3MBH	Patterson #345	Sec 17-158N-95W	10/04/16
Williams	Statoil O&G	33-105-04193	Lougheed 2-11 #7H	Nabors #X25	Sec 2-154N-101W	10/03/16
Williams	Whiting O&G	33-105-04263	State #34-36-1H	Pioneer #75	Sec 36-156N-101W	10/03/16

**Bakken Rig Count by Operator**

Sources: Baker Hughes, NDIC & PLS Research



**Divide**  
SM Energy is running one rig in Divide County, ND.

**Burke**  
Petro Harvester is running one rig in Burke County, ND.

**Williams**  
In William County, ND, Crescent Point, Liberty Resources, Statoil and Whiting are each running one rig.

**Mountrail**  
In Mountrail County, ND, Continental, EOG, Hess and Slawson are each running one rig.

**McKenzie**  
In McKenzie County, ND, Hess and Oasis are each running two rigs while Continental, Newfield, North Range, Statoil and Whiting are each running one rig.

**Dunn**  
In Dunn County, ND, XTO is running four rigs, Continental and Enerplus are running two rigs while Burlington, HRC, Petro Hunt, QEP and WPX are each running one rig.

**North Dakota: Wells Released from Tight Hole Status** Date 09/16/16 - 10/06/16 Source: NDIC

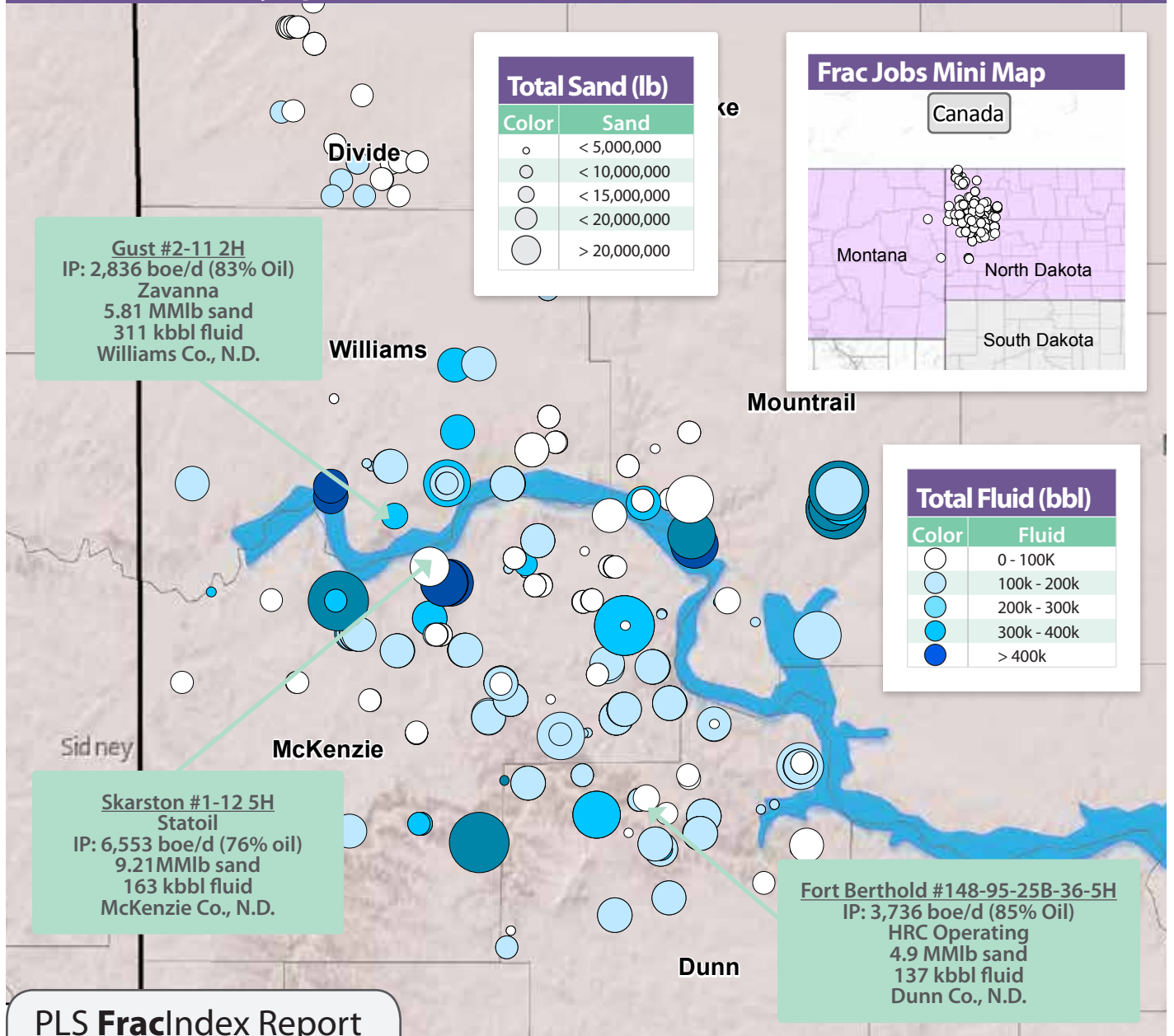
County	Operator	API #	Well Name	Pool	bo/d	Mcf/d	boe/d
Bottineau	Enduro Operating	33-009-02420	NSCU #J-717-H2	Spearfish-Charles	-	-	-
Burke	Cornerstone Natural Res	33-013-01597	Tafelmeyer #C-3625-6490	Bakken	-	-	-
Divide	Resource Energy	33-023-01108	Blanca State #14-36-164-101	Three Forks B1	-	-	-
Divide	Resource Energy <span>3x</span>	33-023-01275	Ekness #4-5N-163-102	Three Forks B1	-	-	-
Divide	Resource Energy	33-023-01272	Jim #16-35-164-102	Three Forks B1	-	-	-
Divide	SM Energy <span>2x</span>	33-023-01396	Bronkar #2-6HN	Three Forks B1	256	230	294
Divide	SM Energy	33-023-01395	Bronkar #2B-6HS	M Bakken	271	272	316
Dunn	Enerplus Resources <span>2x</span>	33-025-01523	Bugle #148-94-13B-4H TF	Three Forks	-	-	-
Dunn	Enerplus Resources	33-025-01524	Trumpet #148-94-13B-3H	Bakken	-	-	-
Dunn	Marathon Oil	33-025-02657	Tucker #44-20TFH	Three Forks B1	-	-	-
Dunn	Petro-Hunt LLC	33-025-03048	Dolezal #146-97-31D-30-2H	M Bakken	-	-	-
Dunn	XTO Energy	33-025-03069	Fbir Blackmedicine #24X-21C	M Bakken	-	-	-
Dunn	XTO Energy	33-025-03071	Fbir Blackmedicine #24X-21CXD	M Bakken	-	-	-
Dunn	XTO Energy <span>4x</span>	33-025-03107	Fbir Blackmedicine #24X-21D	M Bakken	-	-	-
Dunn	XTO Energy	33-025-03070	Fbir Blackmedicine #24X-21H	Three Forks	-	-	-
McKenzie	North Range Resources	33-053-07694	Placid #28-3V	Mission Canyon	-	-	-
McKenzie	Oasis Petroleum <span>2x</span>	33-053-06896	Hysted 5200 11-30 #8B	M Bakken	2,157	916	2,310
McKenzie	Oasis Petroleum	33-053-06895	Hysted 5200 11-30 #9T	Three Forks B1	1,206	569	1,301
McKenzie	SM Energy	33-053-06263	Seattle #14X-35H	Three Forks B1	-	-	-
McKenzie	SM Energy <span>3x</span>	33-053-06262	Seattle Federal #14-35H	Bakken	-	-	-
McKenzie	SM Energy	33-053-06261	Seattle Federal #14X-35H	Three Forks B1	-	-	-
McKenzie	Statoil O&G	33-053-06987	Samson 29-32 #1H-R	M Bakken	-	-	-
McKenzie	Statoil O&G <span>3x</span>	33-053-06988	Samson 29-32 #8TFH	Three Forks B1	-	-	-
McKenzie	Statoil O&G	33-053-06989	Topaz 20-17 #8TFH	Three Forks B1	-	-	-
Mountrail	Hess Corp	33-061-03907	En-Freda #154-94-2635H-9	Three Forks B2	1,026	1,120	1,213
Mountrail	Hess Corp	33-061-03908	En-Freda #154-94-2635H-10	M Bakken	1,638	2,698	2,088
Mountrail	Hess Corp <span>5x</span>	33-061-03909	En-Freda #154-94-2635H-11	Three Forks	-	-	-
Mountrail	Hess Corp	33-061-03910	En-Freda #154-94-2635H-12	M Bakken	-	-	-
Mountrail	Hess Corp	33-061-03911	En-Freda #LW-154-94-2635H-1	Three Forks B1	-	-	-
Mountrail	Marathon Oil	33-061-03841	Ballmeyer Usa #41-17TFH	Three Forks B1	-	-	-
Mountrail	Marathon Oil	33-061-03838	Becky Usa #31-17TFH-2B	Three Forks B2	-	-	-
Mountrail	Marathon Oil <span>5x</span>	33-061-03839	Hans Usa #31-17TFH	Three Forks	-	-	-
Mountrail	Marathon Oil	33-061-03837	Ness Usa #31-17H	Bakken	-	-	-
Mountrail	Marathon Oil	33-061-03840	Post Usa #41-17TFH-2B	Three Forks B2	-	-	-
Mountrail	Slawson Exploration	33-061-03857	Armada {Federal} #9 SLTF2H	Three Forks B2	-	-	-
Mountrail	Slawson Exploration	33-061-03856	Armada Federal #8-14-13TF2H	Three Forks B2	-	-	-
Mountrail	Slawson Exploration	33-061-03855	Neptang #10-15-22TF2H	Three Forks B2	-	-	-
Mountrail	Slawson Exploration	33-061-03854	Neptang #9-15-22TF2H	Three Forks B2	-	-	-
Mountrail	Slawson Exploration	33-061-03829	Pike {Federal} #9 SLTF2H	Three Forks B2	-	-	-
Mountrail	Slawson Exploration	33-061-03697	Rebel Federal #4-32-5TFH	Bakken	-	-	-
Mountrail	Slawson Exploration	33-061-03687	Torpedo Federal #1H	Bakken	-	-	-
Mountrail	Slawson Exploration	33-061-03688	Torpedo Federal #2H	Bakken	-	-	-
Mountrail	Slawson Exploration <span>16x</span>	33-061-03689	Torpedo Federal #3H	Bakken	-	-	-
Mountrail	Slawson Exploration	33-061-03690	Torpedo Federal #4H	Bakken	-	-	-
Mountrail	Slawson Exploration	33-061-03691	Torpedo Federal #5H	Bakken	-	-	-
Mountrail	Slawson Exploration	33-061-03692	Torpedo Federal #6H	Bakken	-	-	-
Mountrail	Slawson Exploration	33-061-03693	Torpedo Federal #7H	Bakken	-	-	-
Mountrail	Slawson Exploration	33-061-03694	Torpedo Federal #8H	Bakken	-	-	-
Mountrail	Slawson Exploration	33-061-03695	Torpedo Federal #9H	Bakken	-	-	-
Mountrail	Slawson Exploration	33-061-03696	Torpedo Federal #10H	Bakken	-	-	-
Renville	Enduro Operating	33-075-01473	NGMU #13-H1	Madison	-	-	-
Williams	Crescent Point Energy <span>2x</span>	33-105-04065	CPEUSC PaoPao #3-35-26-158N-100W	Bakken	-	-	-
Williams	Crescent Point Energy	33-105-04064	CPEUSC PaoPao #4-35-26-158N-100W	Bakken	-	-	-
Williams	Hess Corp	33-105-04209	Ca-Stangeland #155-95-2128H-3PNC	Three Forks B1	-	-	-
Williams	HRC Operating	33-105-03253	Hagbos #2-25-36H	M Bakken	-	-	-

N.D. Results Not Posted

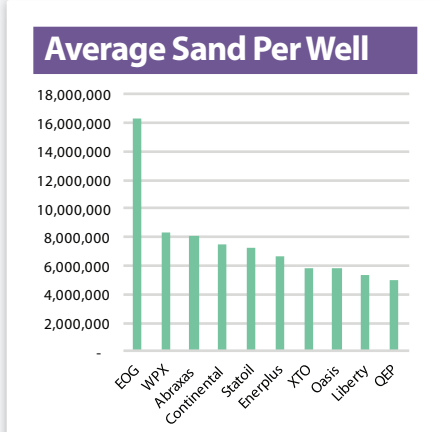
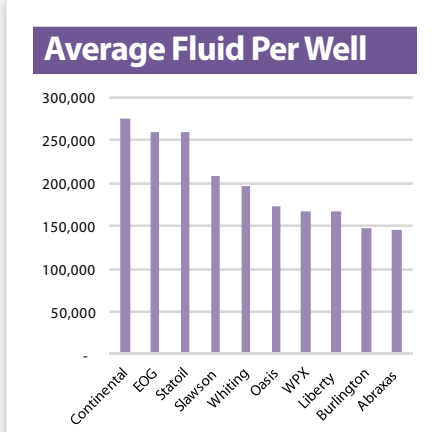
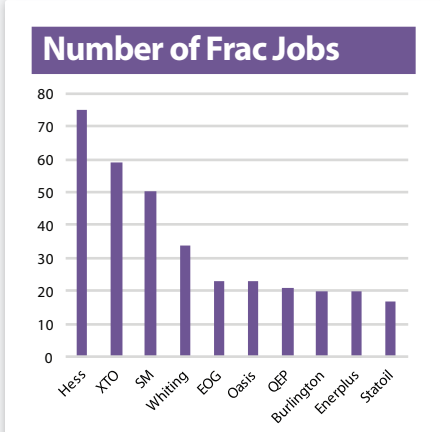
N.D. Results Not Posted

Bakken Frac Jobs by Operator - YTD

Source: PLS FraclIndex



PLS FraclIndex Report



## DEALS FOR SALE

## RENVILLE CO., ND PROPERTY

1,220-Net Acres.  
MOUSE RIVER PARK  
Madison Formation Objective.  
1-HZ Well Awaiting Completion.  
30.5548% NonOperated WI AVAILABLE  
PP 2664DV

PP  
MADISON

## RENVILLE CO., ND PROSPECT

88-Net Acres.  
WILLISTON BASIN  
100% OPERATED WI FOR SALE  
DV 8880

DV  
WILLISTON

## SLOPE CO., ND PROSPECT

3,968-Net Acres.  
WILLISTON BASIN  
100% OPERATED WI FOR SALE  
DV 8859

DV  
WILLISTONCall  
PLS

## WILLIAMS CO., ND PROSPECT

232-Net Acres.  
WILLISTON BASIN  
100% OPERATED WI  
DV 8848

DV  
WILLISTON

## HARDING CO., SD PROSPECT

4,500-Net Acres.  
CEDAR CREEK ANTICLINE  
Primary Target: Red River Formation  
Secondary Targets: A, B, C & D Benches  
Vertical & Horizontal Development  
ACREAGE FOR SALE OR LEASE  
Offset Production: 300 - 750 MBO/Well  
DV 5610

DV  
RED RIVER

## NORTHERN SOUTH DAKOTA LEASE

4,500-Net Acres.  
RED RIVER PLAY  
B, C & D Zones As New Resource Play  
Low-Risk Drilling Inventory.  
100% OPERATED WI: 77% NRI  
Adjacent to 50 MMBO Buffalo Field  
Offsetting Cummed: 300-1,000 MBO/Well  
Expected EUR/Well: 400-600 MBO/Well  
Vertical Drill & Completion: \$1,200,000  
HZ Drill & Complete Cost: \$1.8-\$2.0MM  
DV 1378

DV

RED  
RIVER

## SOUTH DAKOTA PROSPECT

42,000-Net Acres.  
HARDING & BUTTE COUNTIES  
CEDAR CREEK ANTICLINE  
Primary Target: Red River Formation  
100+ Drilling Locations.  
ACREAGE FOR SALE OR LEASE  
Nearby Production: ~500+ MBO/Well  
DV 5650

DV

RED  
RIVER

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## NORTH DAKOTA PERMITS

## Statoil O&amp;G. 3 Completions.

## Banks Field (M Bakken)

● Completion. Cheryl 17-20 XE #1H. 33-053-06900. Horizontal. Oil. Completed 08/17/16. Orig Permit 04/27/15. 691' FSL & 111' FEL of Sec 8-152N-98W; BHL 259' FSL & 45' FWL of Sec 8. C/Nabors #B-24. Spud 05/18/15. TD 21,590'. TVD 11,314'. KOP 10,850'. Form Rec: Lodgepole 10435', False Bakken 11341', Scallion 11350', U Bakken 11377' & M Bakken 11429'. Surf Casing 9.625" to 2302', Int Casing 7" to 11557' & Prod Casing 4.5" to 21590'. Perf'd 11558'-21590'. Flowed 4,209 bo/d & 10,461 Mcf/d.

● Completion. Richard 8-5 XE #1H. 33-053-06818. Horizontal. Oil. Completed 08/26/16. Orig Permit 03/23/15. 691' FSL & 139' FEL of Sec 8-152N-98W; BHL 255' FNL & 48' FEL of Sec 5. C/Nabors #B-24. Spud 05/20/15. TD 21,777'. TVD 11,278'. KOP 10,828'. Form Rec: Lodgepole 10413', False Bakken 11281', Scallion 11285', U Bakken 11308' & M Bakken 11357'. Surf Casing 9.625" to 2259', Int Casing 7" to 11495' & Prod Casing 4.5" to 21777'. Perf'd 11495'-21777'. Flowed 4,040 bo/d & 13,378 Mcf/d.

## Banks Field (Three Forks B1)

● Completion. Cheryl 17-20 #6TFH. 33-053-06899. Horizontal. Oil. Completed 08/31/16. Orig Permit 04/27/15. 691' FSL & 167' FEL of Sec 8-152N-98W; BHL 264' FSL & 573' FEL of Sec 20. C/Nabors #B-24. Spud 05/25/15. TD 21,460'. TVD 11,374'. KOP 10,956'. Form Rec: Charles 9500', Ratcliffe 9738', Mission Canyon 9891', Lodgepole 10460', False Bakken 11306', Scallion 11310', U Bakken 11327', M Bakken 11355', L Bakken 11442' & Three Forks 11527'. Surf Casing 9.625" to 2241', Int Casing 7" to 11684' & Prod Casing 4.5" to 21460'. Perf'd 11684'-21460'. Flowed 1,979 bo/d & 4,743 Mcf/d.

**Whiting O&G.** 21,285' Permit. Mallow #34-8H. 33-053-07811. Pembroke Field. M Bakken. O&G. 330' FSL & 1545' FEL of Sec 8-149N-98W; PBHL 244' FNL & 664' FEL of Sec 5. PTVD 11,308'. Issued 10/04/16.

21,607' Permit. Mallow #34-8TFHU. 33-053-07810. Pembroke Field. Three Forks B1. HZ. O&G. 330' FSL & 1500' FEL of Sec 8-149N-98W; PBHL 247' FNL & 15' FEL of Sec 5. PTVD 11,392'. Issued 10/04/16.

**XTO Energy.** Permit. Dakota Federal #42X-36A. 33-053-07812. Bear Den Field. Confidential. 1520' FNL & 169' FEL of Sec 36-149N-96W. Issued 10/04/16.

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XTO Energy

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## MCLEAN

**SHD O&G.** Renewal. Mufasa #24-30H. 33-055-00174. Deep Water Creek Bay Field. HZ. Confidential. 931' FSL & 1591' FWL of Sec 30-150N-90W. Issued 10/03/16.

Renewal. Rocky #24-30H. 33-055-00173. Deep Water Creek Bay Field. HZ. Confidential. 961' FSL & 1591' FWL of Sec 30-150N-90W. Issued 10/03/16.

## MOUNTRAIL

**EOG Resources.** 4 Completions, 11 Horizontal Permits.

## Parshall Field (Bakken)

● Completion. Shell #42-3229H. 33-061-03658. Horizontal. Oil. Completed 09/15/16. Orig Permit 04/06/15. 536' FSL & 326' FEL of Sec 32-153N-89W; BHL 1692' FSL & 64' FWL of Sec 29. C/H&P #517. Spud 06/01/15. TD 17,149'. TVD 9,173'. KOP 8,677'. Form Rec: L Whitewater 8647', U Virden 8703', L Virden 8806', False Bakken 9067', Scallion 9077', U Bakken 9091' & M Bakken 9111'. Surf Casing 9.625" to 2093', Int Casing 7" to 9523' & Prod Casing 4.5" to 9173'. Perf'd 9696'-17083'. PBTB 17,132'. Gas Lifted 835 bo/d & 357 Mcf/d.

20,382' Renewal. Austin #32-0333H. 33-061-02754. O&G. 1950' FSL & 500' FEL of Sec 3-154N-90W; PBHL 251' FNL & 2451' FWL of Sec 33. PTVD 9,372'. Issued 09/30/16.

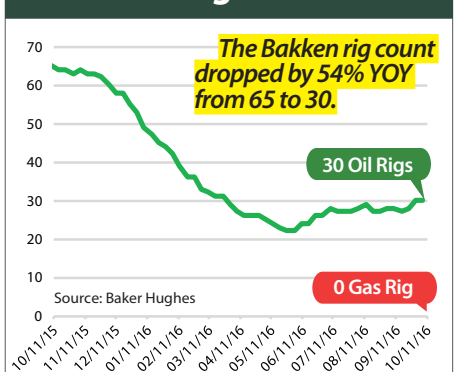
19,414' Renewal. Austin #33-0333H. 33-061-02755. O&G. 2000' FSL & 500' FEL of Sec 3-154N-90W; PBHL 254' FNL & 1899' FEL of Sec 33. PTVD 9,372'. Issued 09/30/16.

21,037' Renewal. Austin #40-3204H. 33-061-02729. O&G. 450' FNL & 2000' FWL of Sec 32-154N-90W; PBHL 1644' FSL & 544' FEL of Sec 4. PTVD 9,620'. Issued 09/19/16.

19,907' Renewal. Austin #41-3204H. 33-061-02727. O&G. 450' FNL & 2100' FWL of Sec 32-154N-90W; PBHL 1155' FNL & 548' FEL of Sec 4. PTVD 9,620'. Issued 09/19/16.

19,019' Renewal. Austin #76-0333H. 33-061-02756. O&G. 2050' FSL & 500' FEL of Sec 3-154N-90W; PBHL 254' FNL & 999' FEL of Sec 33. PTVD 9,372'. Issued 09/30/16.

## Oil &amp; Gas Targets



Source: Baker Hughes

**NORTH DAKOTA PERMITS**

**EOG Resources. (continued)**

**Parshall Field (M Bakken)**

● Completion. Shell #40-3229H. 33-061-03657. HZ. Oil. Completed 09/15/16. Orig Permit 04/06/15. 436' FSL & 326' FWL of Sec 32-153N-89W; BHL 863' FSL & 73' FWL of Sec 29. C/H&P #517. Spud 05/22/15. TD 16,443'. TVD 9,149'. KOP 8,665'. Form Rec: Charles 7176', Base Last Salt 7540', Mission Canyon 7694', Lodgepole 8341', L Whitewater 8650', U Virden 8705', L Virden 8813', False Bakken 9198', Scallion 9230', U Bakken 9284' & M Bakken 9397'. Surf Casing 9.625" to 2053'; Int Casing 7" to 9390' & Prod Casing 4.5" to 16440'. Perf'd 9597'-16378'. Gas Lifted 973 bo/d & 318 Mcf/d.

● Completion. Shell #44-3229H. 33-061-03651. HZ. Oil. Completed 09/16/16. Orig Permit 04/02/15. 2325' FNL & 500' FEL of Sec 32-153N-89W; BHL 2523' FNL & 82' FWL of Sec 29. C/H&P #524. Spud 05/24/15. TD 14,762'. TVD 9,129'. KOP 8,761'. Form Rec: Lodgepole 8313', 3rd Shale Marker 9031', False Bakken 9055', Scallion 9064', U Bakken 9076' & M Bakken 9095'. Surf Casing 9.625" to 2023'; Int Casing 7" to 9475' & Prod Casing 4.5" to 14758'. Perf'd 9802'-14701'. Gas Lifted 828 bo/d & 280 Mcf/d.

● Completion. Shell #46-3229H. 33-061-03652. HZ. Oil. Completed 09/17/16. Orig Permit 04/02/15. 2325' FNL & 400' FEL of Sec 32-153N-89W; BHL 2386' FNL & 366' FWL of Sec 29. C/H&P #524. Spud 05/10/15. TD 16,524'. TVD 9,148'. KOP 8,666'. Form Rec: Base Last Salt 7510', Mission Canyon 7681', Lodgepole 8317', L Whitewater 8628', U Virden 8712', L Virden 8788', False Bakken 9113', Scallion 9131', U Bakken 9165', M Bakken 9217' & L Bakken 16359'. Surf Casing 9.625" to 1979'; Int Casing 7" to 9429' & Prod Casing 4.5" to 16335'. Perf'd 9528'-16273'. Gas Lifted 1,344 bo/d & 284 Mcf/d.

22,132' Permit. Fertile #84-0701H. 33-061-03984. O&G. 500' FSL & 900' FEL of Sec 7-151N-90W; PBHL 1509' FNL & 502' FWL of Sec 1. PTVD 9,657'. Issued 09/16/16.

21,122' Permit. Fertile #85-0701H. 33-061-03983. O&G. 500' FSL & 950' FEL of Sec 7-151N-90W; PBHL 1641' FSL & 504' FWL of Sec 1. PTVD 9,677'. Issued 09/16/16.

22,126' Permit. Fertile #86-0701H. 33-061-03985. O&G. 500' FSL & 850' FEL of Sec 7-151N-90W; PBHL 211' FNL & 1611' FWL of Sec 1. PTVD 9,657'. Issued 09/16/16.

**Parshall Field (Three Forks)**

22,903' Renewal. Liberty LR #107-1109H. 33-061-02281. O&G. 2435' FSL & 2365' FEL of Sec 11-151N-91W; PBHL 2403' FNL & 212' FWL of Sec 9. PTVD 9,838'. Issued 10/03/16.

**Ross Field**

Renewal. Clearwater #28-3202H. 33-061-03846. Confidential. 350' FNL & 1975' FWL of Sec 32-157N-90W. Issued 09/28/16.

Renewal. Clearwater #29-3201H. 33-061-03847. Confidential. 300' FNL & 1975' FWL of Sec 32-157N-90W. Issued 09/28/16.

**Hunt Oil.** Renewal. Oakland #2-18-19H. 33-061-02275. Parshall Field. HZ. Confidential. 300' FNL & 500' FWL of Sec 18-154N-89W. Issued 09/30/16.

**Lime Rock Resources. 3 HZ Permits.**

**Stanley Field (Bakken)**

19,484' Renewal. Dora #15-14-23H. 33-061-03188. O&G. 310' FNL & 230' FEL of Sec 15-155N-91W; PBHL 513' FSL & 2614' FWL of Sec 23. PTVD 9,495'. Issued 09/16/16.

18,064' Renewal. Hansen #18-19-1H RD. 33-061-03266. O&G. 330' FNL & 2314' FWL of Sec 18-155N-91W; PBHL 233' FSL & 1724' FEL of Sec 19. PTVD 9,606'. Issued 09/16/16.

19,806' Renewal. Sandy #18-19-1H RD. 33-061-03267. O&G. 304' FNL & 938' FWL of Sec 18-155N-91W; PBHL 282' FSL & 1719' FWL of Sec 19. PTVD 9,624'. Issued 09/16/16.

**Slawson Exploration.** 20,034' Renewal. Jugard Federal #5-26-35TFH. 33-061-03440. Big Bend Field. Three Forks B1. HZ. O&G. 1130' FN & L 2055' FEL of Sec 26-152N-93W; PBHL 249' FSL & 2209' FWL of Sec 35. PTVD 10,455'. Spud 08/19/15. Issued 09/23/16.

Renewal. Pike Federal #2-3-2H. 33-061-02270. Big Bend Field. HZ. Confidential. 1250' FN & L 360' FWL of Sec 3-151N-92W. Issd 09/26/16.

**WPX Energy. 5 HZ Permits.**

**Reunion Bay Field**

Renewal. Arikara #15-22HB. 33-061-02283. Confidential. 450' FNL & 2603' FWL of Sec 15-150N-93W. Issued 10/04/16.

Renewal. Arikara #15-22HE. 33-061-02286. Confidential. 152' FNL & 2630' FWL of Sec 15-150N-93W. Issued 10/04/16.

Renewal. Arikara #15-22HW. 33-061-02284. Confidential. 401' FNL & 2608' FWL of Sec 15-150N-93W. Issued 10/04/16.

Renewal. Arikara #15-22HX. 33-061-02282. Confidential. 500' FNL & 2599' FWL of Sec 15-150N-93W. Issued 10/04/16.

Renewal. Arikara #15-22HY. 33-061-02285. Confidential. 201' FNL & 2626' FWL of Sec 15-150N-93W. Issued 10/04/16.

**WILLIAMS**

**Crescent Point Energy.** Permit. Cpeusc Keith #16-21-158N-101W. 33-105-04299. Little Muddy Field. Confidential. 233' FNL & 2095' FEL of Sec 16-158N-101W. Issued 10/03/16.

Permit. Cpeusc Keith #2-16-21-158N-101W. 33-105-04300. Little Muddy Field. Confidential. 232' FNL & 2170' FEL of Sec 16-158N-101W. Issued 10/03/16.

**EOG Resources.** 20,443' Renewal. Hardscrabble #16-0409H. 33-105-02830. Painted Woods Field. Bakken. HZ. O&G. 280' FNL & 1320' FEL of Sec 4-153N-103W; PBHL 201' FSL & 1317' FEL of Sec 9. PTVD 10,591'. Issued 10/03/16.

**Hess Corp. 2 Completions, 9 HZ Permits.**

**Beaver Lodge Field (Three Forks B1)**

● Completion. BL-Davidson #155-96-0211H-5. 33-105-04068. HZ. Oil. Completed 03/19/16. Orig Permit 06/05/15. 500' FNL & 1105' FEL of Sec 2-155N-96W; BHL 421' FSL & 1756' FEL of Sec 11. C/Nabors #B4. Spud 09/27/15. TD 19,032'. TVD 9,825'. KOP 9,435'. Form Rec: Pierre 1343', Greenhorn 3866', Mowry 4209', Dakota 4607', Swift 4971', Rierdon 5396', Top Dunham Salt 5917', Base Dunham Salt 5944', Spearfish 5977', Top Pine Salt 6250', Base Pine Salt 6250', Top Opeche Salt 6391', Base Opeche Salt 6427', Amsden 6711', Tyler 6792', Kibbey Lime 7389', Charles 7536', Top Last Salt 8136', Lodgepole 8992', False Bakken 9771', Bakken 9792', M Bakken 9827', Base M Bakken 9946' & Three Forks 10028'. Surf Casing 9.625" to 1832'; Int Casing 7" to 10166' & Prod Casing 4.5" to 19013'. Perf'd 10166'-19032'. Choke 38/64-in. FTP 475 PSI. Oil Grav 45.5° API. GOR 1,317:1. Flowed 961 bo/d & 1,266 Mcf/d. 35 Stgs. 43,849 Bbls 2,459,018 Lbs Prop't 345,163 Lbs 40/70 Sd 2,113,855 Lbs 30/50 Sd.

**Top North Dakota Wells & Frac Details (03/19/16 - 09/09/16)**

County	Operator	Well Name	24-hour IP			Total Fluids (bbl)	Total Sand (lb)
			bo/d	Mcf/d	boe/d		
McKenzie	Statoil O&G	Richard 8-5 XE #1H	4,040	13,378	6,270	446,433	11,492,178
McKenzie	Statoil O&G	Cheryl 17-20 XE #1H	4,209	10,461	5,953	156,184	8,912,072
McKenzie	Burlington	Merton #21-15TFH-3NH	3,360	5,917	4,346	171,436	12,183,314
McKenzie	Statoil O&G	Cheryl 17-20 #6TFH	1,979	4,743	2,770	186,928	5,849,600
Williams	Hess Corp	BL-Davidson #155-96-0211H-5	961	1,266	1,172	44,290	2,427,240
Williams	Hess Corp	CA-Russell Smith #155-96-2425H-7	695	1,093	877	68,826	4,883,788
Williams	XTO Energy	Sara #41X-13H	525	1,263	736	108,941	6,835,877
Williams	XTO Energy	Sara #41X-13D	524	858	667	103,983	6,894,856
Divide	SM Energy	Jeremy Federal #14B-10HN	526	326	580	77,735	2,563,788
Divide	SM Energy	Stevens #2B-18HN	448	379	511	111,626	3,418,125
Williams	XTO Energy	Sara #41X-13G	397	662	507	102,896	6,619,643
Divide	SM Energy	Anne #13B-19HN	451	328	506	72,722	2,551,951

Source: PLS FraclIndex

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## NORTH DAKOTA PERMITS

### Hess Corp. (continued)

#### Capa Field

Renewal. CA-Stangeland- #155-95-2128H-4. 33-105-04208. Confidential. 372' FNL & 293' FEL of Sec 21-155N-95W. Issued 09/23/16.



Renewal. CA-Stangeland- #155-95-2128H-5. 33-105-04207. Confidential. 372' FNL & 326' FEL of Sec 21-155N-95W. Issued 09/23/16.

Renewal. CA-Stangeland- #155-95-2128H-6. 33-105-04206. Confidential. 372' FNL & 359' FEL of Sec 21-155N-95W. Issued 09/23/16.

Renewal. CA-Stangeland- #155-95-2128H-7. 33-105-04205. Confidential. 372' FNL & 392' FEL of Sec 21-155N-95W. Issued 09/23/16.

#### Capa Field (Bakken)

20,210' Renewal. CA-Stangeland- #155-95-2128H-9. 33-105-04202. O&G. 328' FNL & 777' FWL of Sec 21-155N-95W; PBHL 305' FSL & 1760' FWL of Sec 28. PTVD 9,868'. Spud 12/16/15. Issued 09/19/16.

#### Capa Field (Three Forks B1)

● Completion. CA-Russell Smith #155-96-2425H-7. 33-105-04103. HZ. Oil. Completed 07/04/16. Orig Permit 07/06/15. 798' FNL & 2370' FEL of Sec 24-155N-96W; BHL 315' FSL & 1683' FWL of Sec 25. C/Nabors #B6. Spud 10/10/15. TD 20,004'. TVD 9,943'. KOP 9,520'. Form Rec: Pierre 1327', Greenhorn 3838', Mowry 4199', Dakota 4572', Swift 5010', Rierdon 5451', Spearfish 6038', Top Pine Salt 6320', Base Pine Salt 6362', Top Opeche Salt 6481', Base Opeche Salt 6510', Amsden 6851', Tyler 6949', Kibbey Lime 7545', Charles 7707', Top Last Salt 8336', Base Last Salt 8386', Ratcliffe 8430', Rival 8600', Lodgepole 9170', False Bakken 9952', Bakken 9973', M Bakken 10008', Base M Bakken 10114' & Three Forks 10211'. Surf Casing 9.625" to 1804', Int Casing 7" to 10322' & Prod Casing 4.5" to 19993'. Perf'd 10322'-20004'. Choke 42/64-in. FTP 361 PSI. Oil Grav 41.6° API. GOR 1,573:1. Flowed 695 bo/d & 1,093 Mcf/d. 49 Stgs. 69,060 Bbls 4,900,473 Lbs Prop't 484,699 Lbs 40/70 Sd 4,415,773 Lbs 30/50 Sd.

20,248' Renewal. CA-Stangeland- #155-95-2128H-10. 33-105-04203. O&G. 361' FNL & 777' FWL of Sec 21-155N-95W; PBHL 305' FSL & 1385' FWL of Sec 28. PTVD 9,939'. Spud 12/15/15. Issued 09/19/16.

20,334' Renewal. CA-Stangeland- #155-95-2128H-8. 33-105-04201. O&G. 295' FNL & 777' FWL of Sec 21-155N-95W; PBHL 303' FSL & 2135' FWL of Sec 28. PTVD 9,961'. Spud 12/17/15. Issued 09/19/16.

#### Tioga Field

Renewal. TI-Beauty Valley- #158-95-1423H-2. 33-105-03768. Confidential. 308' FNL & 2210' FWL of Sec 14-158N-95W. Issued 09/23/16.

Renewal. TI-Beauty Valley- #158-95-1423H-3. 33-105-03767. Confidential. 341' FNL & 2210' FWL of Sec 14-158N-95W. Issued 09/23/16.

**HRC Operating.** 20,868' Renewal. Borrad #156-101-1B-12-2H. 33-105-03785. Tyrone Field. M Bakken. HZ. O&G. 275' FNL & 1870' FWL of Sec 12. PTVD 10,147'. Issued 09/30/16.

20,529' Renewal. Borrad #156-101-1B-12-3H. 33-105-03784. Tyrone Field. M Bakken. HZ. O&G. 275' FNL & 1900' FWL of Sec 12. PTVD 10,147'. Issued 09/30/16.

**Liberty Resources Mgmt.** 5,260' Renewal. Stomping Horse Service Well #1. 33-105-90344. Temple Field. Dakota. SWD. 225' FNL & 2088' FEL of Sec 18-158N-95W. Issued 10/03/16.

#### Oasis Petroleum. 3 HZ Permits.

##### Missouri Field (Bakken)

20,684' Renewal. Jensen #5501 44-7 9BX. 33-105-04204. O&G. 298' FSL & 268' FEL of Sec 7-155N-101W; PBHL 214' FNL of Sec 6. PTVD 10,710'. Issued 09/19/16.

21,282' Renewal. O M Erickson #5501 44-7 8BX. 33-105-04210. O&G. 298' FSL & 301' FEL of Sec 7-155N-101W; PBHL 206' FSL of Sec 19. PTVD 10,830'. Issued 10/03/16.

##### Willow Creek Field (Three Forks B1)

21,763' Renewal. Hanover Federal #5300 41-11 13TX. 33-105-04200. O&G. 565' FSL & 826' FWL of Sec 11-153N-100W; PBHL 265' FSL & 160' FWL of Sec 23. PTVD 11,028'. Spud 09/01/16. Issued 09/16/16.

#### Statoil O&G. 7 HZ Permits.

##### Todd Field (M Bakken)

20,905' Renewal. Lougheed 2-11 #3H. 33-105-04196. O&G. 234' FNL & 2021' FWL of Sec 2-154N-101W; PBHL 252' FSL & 1753' FEL of Sec 11. PTVD 10,584'. Spud 01/07/16. Issued 09/19/16.

21,468' Renewal. Lougheed 2-11 #5H. 33-105-04198. O&G. 234' FNL & 2077' FWL of Sec 2-154N-101W; PBHL 252' FSL & 2648' FEL of Sec 11. PTVD 10,584'. Spud 01/09/16. Issd 09/16/16.

20,611' Renewal. Lougheed 2-11 #7H. 33-105-04193. O&G. 234' FNL & 1937' FWL of Sec 2-154N-101W; PBHL 250' FSL & 1127' FWL of Sec 11. PTVD 10,584'. Spud 01/06/16. Issd 09/16/16.

20,813' Renewal. Lougheed 2-11 XW #1H. 33-105-04191. O&G. 234' FNL & 1881' FWL of Sec 2-154N-101W; PBHL 250' FSL & 13' FEL of Sec 10. PTVD 10,584'. Spud 01/03/16. Issued 09/16/16.

##### Todd Field (Three Forks B1)

21,289' Renewal. Lougheed 2-11 #4TFH. 33-105-04197. O&G. 234' FNL & 2049' FWL of Sec 2-154N-101W; PBHL 251' FSL & 1153' FEL of Sec 11. PTVD 10,659'. Spud 01/08/16. Issued 09/16/16.

21,005' Renewal. Lougheed 2-11 #8TFH. 33-105-04192. O&G. 234' FNL & 1909' FWL of Sec 2-154N-101W; PBHL 249' FSL & 527' FWL of Sec 11. PTVD 10,659'. Spud 01/04/16. Issued 09/16/16.

Renewal. Lougheed 2-11 XE #1TFH. 33-105-04199. Confidential. 234' FNL & 2105' FWL of Sec 2-154N-101W. Spud 09/01/16. Issued 09/16/16.

#### XTO Energy. 3 Completions, 10 Permits.

##### Grinnell Field (M Bakken)

● Completion. Sara #41X-13D. 33-105-04076. HZ. Oil. Completed 08/20/16. 300' FNL & 1131' FEL of Sec 13-154N-97W; BHL 248' FSL & 1109' FEL of Sec 24. C/Nabors #742. Spud 07/07/15. TD 19,967'. TVD 10,260'. KOP 9,724'. Surf Casing 9.625" to 1524', Int Casing 7" to 10476' & Prod Casing 4.5" to 19922'. Perf'd 10476'-19967'. Flowed 524 bo/d & 858 Mcf/d.

##### Grinnell Field (Three Forks B1)

● Completion. Sara #41X-13G. 33-105-04075. HZ. Oil. Completed 08/22/16. 300' FNL & 1161' FEL of Sec 13-154N-97W; BHL 501' FSL & 1654' FEL of Sec 24. C/Nabors #742. Spud 07/08/15. TD 19,750'. TVD 10,334'. KOP 9,770'. Surf Casing 9.625" to 1521', Int Casing 7" to 10602' & Prod Casing 4.5" to 19700'. Perf'd 10602'-19750'. Flowed 397 bo/d & 662 Mcf/d.

● Completion. Sara #41X-13H. 33-105-04077. HZ. Oil. Completed 08/18/16. 300' FNL & 1101' FEL of Sec 13-154N-97W; BHL 246' FSL & 569' FEL of Sec 24. C/Nabors #742. Spud 07/06/15. TD 19,931'. TVD 10,315'. KOP 9,800'. Surf Casing 9.625" to 1530', Int Casing 7" to 10536' & Prod Casing 4.5" to 19901'. Perf'd 10536'-19931'. Flowed 525 bo/d & 1,263 Mcf/d.

##### Lindhahl Field

2x Renewals. Cindy Blikre #21X-2A (#21X-2AXB). 33-105-04148 (04150). Confidential. Sec 2-158N-95W. Issued 09/26/16.

2x Renewals. Cindy Blikre #21X-2B (#21X-2E). 33-105-04146 (04151). Confidential. Sec 2-158N-95W. Issued 09/26/16.

2x Renewals. Cindy Blikre #21X-2EXF (#21X-2F). 33-105-04147 (04149). Confidential. Sec 2-158N-95W. Issued 09/26/16.

2x Renewals. Lyla #14X-10AXD (#14X-10EXH). 33-105-04156 (04157). Confidential. Sec 10-158N-95W. Issued 09/26/16.

##### McGregor Field

Renewal. Roberta #14X-10AXD. 33-105-04159. Confidential. 300' FSL & 325' FWL of Sec 10-158N-95W. Issued 09/26/16.

Renewal. Roberta #14X-10EXH. 33-105-04158. HZ. Confidential. 330' FSL & 325' FWL of Sec 10-158N-95W. Issued 09/26/16.

## Continental **Continued From Pg 1**

In 2005, Continental completed each well in 10 stages vs. 40 stages now. In the past, the company used 100-200 lb of proppant per ft vs. nearly 1,500 lb per ft of proppant today.

The increased productivity brought on by new technology, strategies and the use of greater material volumes has alleviated some of the pressure from the drop in oil prices. Although a well drilled and completed in 2011 required an oil price of \$70/bbl to create a 40% IRR, the same well drilled and completed today could attain the same IRR at \$50/bbl oil, Stark said. 