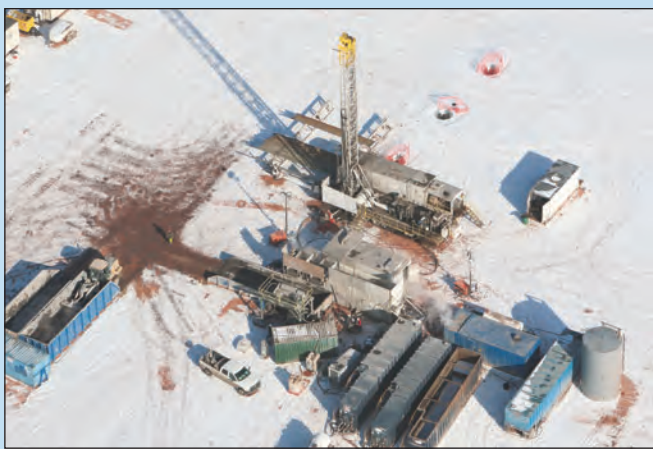




Valentine's Day at Alkali Creek



VERN WHITTEN PHOTOGRAPHY

An Advanced Energy surface hole rig drilling on Feb. 14 in the Alkali Creek field on the north shore of Lake Sakakawea approximately 15 miles northwest of New Town in western Mountrail County, N.D.

North Dakota regulators play 'Whac-a-Mole' to reduce flaring

While attempts to get flaring under control are certainly not child's play, they do resemble a high-action game.

Inclement weather in North Dakota was the biggest culprit for a spike in flaring in recent months, as gas capture was limited by the stalled construction of Hess Corp.'s Tioga gas plant expansion due to extreme cold and snow. The gas plant should be complete at the end of February, and North Dakota Department of Mineral Resources Director Lynn Helms has said that project alone could potentially bring a 5 percent drop in flaring.

But the biggest offenders — those wells that are flaring 60 percent of the total flared gas, more than 300 million cubic

see **FLARING MEASURES** page 19

February infill drilling apps centered in mature Bakken region

As development of the Bakken Petroleum System in North Dakota continues, it comes as no surprise that the focus of infill drilling on operator's drawing boards is on the more mature area of the system in the deep region of the Williston Basin. Specifically, of the numerous drilling applications that the North Dakota Industrial Commission will consider during hearings scheduled for Feb. 26 and 27 in Bismarck, most are concentrated in fields in northern McKenzie, southern Williams, southwestern Mountrail and northern Dunn counties.

Among the operators submitting infill applications is Hess Corp., which is seeking authority to drill up to 17 wells

see **INFILL DRILLING APPS** page 19

Bakken, Eagle Ford driving SM Energy's 33% production growth

SM Energy Co. continued building production in its slice of the Bakken petroleum system during the fourth quarter of 2013, pushing output to an average 16,100 barrels of oil equivalent per day. That was good for another record and to maintain the company's position as a top tier producer in North Dakota's Williston Basin.

The Denver-based E&P independent also set both quarterly and annual production records when tallying output from all of its U.S. producing areas, particularly from the liquids-rich Bakken and



TONY BEST

see **SM GROWTH** page 17

PRODUCTION & RECOVERY

A year of records

2013 saw ups and downs in ND production with weather calling the shots

By **MIKE ELLERD**

For Petroleum News Bakken

It's hard to talk about North Dakota oil production these days without talking about setting records, and December production was no exception. But the record is not of the type people are used to seeing as a decline in output in December marks the largest single drop in average daily production in the state's history.

In November, North Dakota's daily oil production averaged 976,453 barrels per day, a record high, but by the end of December, preliminary



LYNN HELMS

production data indicate the state's daily oil production averaged 923,227 bpd, a drop in production of 53,226 bpd (see chart).

But the drop in December's production came as no surprise to Lynn Helms, director of the North Dakota Department of Mineral Resources, the agency that regulates and monitors oil and gas production in the state.

Following several months of tepid increases, the state's production saw a sharp boost of 30,995 bpd in November, which was a month of moderate weather.

see **YEAR OF RECORDS** page 20

MOVING HYDROCARBONS

Looking beyond Obama

Canadian leaders suggest hopes for XL might be pinned on next U.S. President

By **GARY PARK**

For Petroleum News Bakken

Canadian Prime Minister Stephen Harper and Jim Prentice, one of Canada's top bankers and a former trusted inside member of Harper's cabinet, have a bit of advice for those frustrated with the U.S. government's plodding progress towards a decision on Keystone XL: Be patient, President Barack Obama will be gone in three years.

Harper, who has been openly critical of Obama for "punting" on XL, now says the project is headed



STEPHEN HARPER



JIM PRENTICE

for a "necessary and inevitable victory," if not under Obama than under his successor.

"I can't see how it will be otherwise," given that approval of the pipeline is "clearly and overwhelmingly in the national interest" of the United States, he said.

What is happening now with XL is interfering with a mutually beneficial energy relationship that was established during the Second World War when the U.S. War Department

see **XL HOPES** page 18

ENVIRONMENT & SAFETY

After the wells go dry

North Dakota state leaders don't agree when it comes to reclamation results

By **MAXINE HERR**

For Petroleum News Bakken

North Dakota's oil play brings plenty of benefits, but it also leaves some wondering what the landscape will look like in years to come.

State regulators, industry and commissioners from oil impacted counties met recently to discuss some of the issues that have surfaced since oil development emerged. One that brought some inconsistent reports was reclamation.

North Dakota Department of Mineral Resources, DMR, Public Information Officer Alison Ritter presented photographs and data to the group showing that more than 8,400 wells have been reclaimed over the state's history, and



ALISON RITTER

the reclaimed sites looked fairly untouched. She said the current well pads are better organized, so reclamation should be easier in the years to come. Due to the variations of North Dakota soils, Ritter said reclamation standards are flexible because they need to be site-specific.

"We think our standards work pretty well," Ritter said. "It can take years to reclaim a site, but it's not complete until we look at a site and are satisfied, and the landowner is satisfied."

But the state's chief Department of Health official, Dave Glatt, said he receives daily calls from landowners who speak to the contrary.

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● COMPANY UPDATE

Abraxas focused on Bakken and Eagle Ford

San Antonio-based operator shedding high-cost, gassy barrels and turning attention and capex to high rate-of-return core assets

By STEVE SUTHERLIN

For Petroleum News Bakken

In September 2012, Abraxas Petroleum Corp. announced an initiative to sell off non-core assets, fix its balance sheet and focus on its core assets, said Bob Watson, Abraxas President and CEO.

“Here we are about 18 months later and we’re very pleased it has all worked out,” Watson said Feb. 12 at the Independent Petroleum Association of America Oil & Gas Investment Symposium in Florida.

The transactions have positioned Abraxas for the future.

“We sold about \$160 million in properties, representing about 9 million barrels of oil or about 1,300 barrels per day of production, but what you can’t see by reading between the lines is that a lot of those barrels were very high cost barrels; a lot of those barrels were very gassy barrels,” Watson said. “That combination has led us to a lower loe (lease operating expense) per barrel and a higher boe sales price per barrel and consequently our net-backs have more than doubled.

“What we are left with is the properties with very high rate of return in very specific core areas,” he said.

Watson said Abraxas was listing proved reserves of 21.1 million boe, adding that he expected that number to be substantially higher at year end.

The company’s production stood at 4781 boepd, 67 percent crude oil and liquids weighted by production, Watson said.

Liquidity

Abraxas plans capital spending of \$115 million in 2014, of which 100 percent will be focused on the Bakken and the Eagle Ford.

The budget may rise.

“Don’t be surprised if that doesn’t work its way upward during the year,” Watson said.

The company’s debt has been shaved to \$38 million, down from \$150 million a year ago, Watson said. Although some production was shed, the company’s credit lines were not severely curtailed.

“A new mantra about Abraxas is that we are going to keep our debt levels low,” Watson said. “My personal goal is to keep our debt at one times EBITDA, which is almost unheard of in our industry.”

“The first quarter of 2014 promises to be catalyst rich for Abraxas with numerous high impact and high working interest wells on the horizon in the Eagle Ford and Bakken,” he said.

The Williston

In McKenzie County, N.D., Abraxas drilled and cased the Jore 1H, 2H and 4H in the North Fork field. The three Jore wells are scheduled to be fracked in March, weather permitting, Watson said. The company-owned Raven Rig No. 1 recently mobilized to the Ravin West pad to drill four wells. Abraxas owns a working interest of approximately 76 percent and 51 percent in the Jore and Ravin West pads, respectively.

The company’s progress was impacted by weather in the fourth quarter, and unfortunately the impact continues, Watson said, adding that the company made good progress under the conditions.

“We have our own drilling rig here; we are pad focused and have been for several years; it’s a very efficient operation,”

Watson said. “We’ll put that rig up against any drilling operator on the basin as far as efficiency and cost goes.”

Rate of return

“We are very focused on rate of return,” Watson said. “You will see Abraxas buy small pieces of acreage in very good areas and immediately drill it. That way we maximize the rate of return on our development dollars.

“It would be very unusual to see us buy a big acreage position anywhere because a lot of that acreage just becomes sunk capital with no return on it and therefore your overall rate of return is diminished,” he said.

A substantial non-operated Bakken sale last year cut the company’s acreage position but kept its “operated position in the core core area, and some of the sur-

rounding no-op,” Watson said. Abraxas is looking for bolt-on acquisitions in its core area but it isn’t interested in leases at the fringe; the fringe doesn’t meet the rate of return on the core.

With 1,300-foot spacing between its laterals, Abraxas has about two to three years inventory at current drilling levels, Watson said. Abraxas may increase downspacing, however.

“We have our pads set now so we can drill in between the existing wells if that downspacing is warranted — which would give us about five to six years inventory in front of our drilling rig,” Watson said. “Which is very nice to have.”

Abraxas is pleased with well results in the Bakken, and it’s beating production estimates.

On the eight-well Lillibridge pad drilled last year in the Pershing field, 30-

day production on all wells was much better than expected, Watson said.

“Some of them were actually three times what we had booked; these are very good wells,” he said. “We feel like our drilling and completion strategy has been very successful; we don’t see any reason to change it, and we see no reason we won’t continue to see results like this in our drilling going forward — the rocks are basically the same.”

Long term, Watson said, the company’s most recent wells had production considerably above type curve.

“Consequently,” he said, “we expect to receive an upward revision in Bakken reserves in this yearend reserve report as a consequence to this performance.” ●

Contact Steve Sutherlin at stevepna@hotmail.com

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MOVING HYDROCARBONS

Pendulum swinging back to pipelines

Enbridge sees shift from rail since mid-2013, coinciding with its program to move more Bakken crude with Sandpiper ready to go

By GARY PARK

For Petroleum News Bakken

Enbridge is seeing the first signs of a swing back to pipelines for moving crude out of the Bakken and Western Canada despite another hold up in the Obama administration for one of its projects that is designed to ease transportation bottlenecks.

Steve Wuori, newly appointed as strategic advisor to Chief Executive Officer Al Monaco, said Feb. 14 that partly because of the series of train derailments, uncertainty over pending regulatory changes and more attractive crude price differentials, pipelines have regained favor since mid-2013.

He did not provide any specifics on the trend, which coincides with Enbridge's full slate of new pipeline capacity, including the reversal of its Line 9 to deliver 240,000 barrels per day to Ontario and Quebec refineries from Western Canada and the U.S. Midwest; an extension to its Southern Access system to increase capacity to 560,000 bpd from 400,000 bpd to the Eastern PADD II market; the 2014 startup of Flanagan South from

Pontiac, Ill., to Cushing, Okla., to open a new pathway for Bakken crude; and the 450,000 bpd twinning of the Seaway line from Cushing, Okla., to the Gulf Coast for heavy and light crudes.

Sandpiper moving ahead

Also on the upside is word from Enbridge subsidiary, Enbridge Energy Partners, EEP, that it received sufficient shipper commitment in a recent open season to move ahead with its \$2.6 billion Sandpiper project to move light sweet crude from the Bakken to coastal markets.

Wuori said Feb. 13 that although Sandpiper needs regulatory approvals in North Dakota and Minnesota, the line should be in service by early 2016, running parallel to Enbridge's 210,000 bpd Bakken system, adding 225,000 bpd of capacity between Beaver Lodge, N.D., and Clearbrook, Minn., and offering capacity of 375,000 bpd from Clearbrook to Superior.

EEP President Mark Maki said Sandpiper is a key element of their Light Oil Market Access program that is aimed at offering 1.7 million bpd of pipe transportation to new markets.

Maki said transportation constraints and continued supply growth "have resulted in substantial pricing discounts for crude oil," adding that the access program will address the bottlenecks and

unlock the best markets in the East Coast, Gulf Coast, Midwest and Eastern Canada.

He said Marathon Petroleum will anchor Sandpiper, paying 37.5 percent of construction costs and hold a 27.5 percent stake in Enbridge's North Dakota network.

Greater interest in pipe

Wuori told analysts it is "pretty hard to say exactly what (new regulations) will amount to for rail, but there's no doubt that in terms of a trend there is greater interest in pipe."

Monaco said "there is a good baseload of rail volumes to the Gulf Coast and Eastern Canada should we see a return to pipe if markets are established."

He said the Enbridge pipeline network in the Bakken region "bottomed out" in the second quarter of last year "when rail was in its heyday."

EEP said fourth-quarter volumes on the North Dakota system were close to 200,000 bpd, a slight dip from 206,000 bpd in the third quarter, but better than the 173,000 bpd a year earlier.

Stephen Neyland, EEP's vice president of finance, said that although competition from rail lessened in the second half of 2013 "it still remains a competitor to our pipelines in the region."

But Wuori and Monaco both conceded that rail will continue to offer flexibility, especially to smaller producers, in offering access to California, Washington state and Philadelphia.

"Rail is always the flywheel that people will use to ensure that they move to the markets they see to be the most attrac-

tive," Wuori said.

Delay on Alberta Clipper

In an echo of the stalling on Keystone XL, the biggest barrier to Enbridge's plans is a delay in issuing a presidential permit amendment for an expansion of its Alberta Clipper line from Hardisty, Alberta, to Superior, Wis., raising capacity to 800,000 bpd from 450,000 bpd.

Monaco was unwilling to get drawn into predicting when a permit might be issued beyond saying it won't take years beyond the original target of mid-2014.

"In the environment that we're in, regulatory permitting and the regulatory process generally takes more time," he said.

"There's more questioning by environmental groups, as well as the general public, in ensuring that the right processes are in place. The regulatory authorities are doing their best to work through what they need to."

He said the years of delay in moving Keystone XL through the White House reflects a "lot more questioning and intervention (in the regulatory process)."

Monaco described the Alberta Clipper expansion as a "relatively routine matter," involving mostly additions to pumping horsepower, noting "the pipe is already in the ground."

But he declined to draw conclusions about the impact of the political environment on major pipeline projects because "that's not something we control." ●

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GOVERNMENT

ND relieved by EPA diesel guidance

If anyone felt a strong wind gust blow through North Dakota on Feb. 11, it was likely the collaborative sigh of relief from the oil industry and regulators following the Environmental Protection Agency's issuance of guidance on the use of diesel fuels in hydraulic fracturing.

The nearly two years it took for EPA to receive comments and analyze data allowed the industry to cook up some new recipes that do not use diesel fuel. Lynn Helms, director of the state's Department of Mineral Resources, DMR, said the revised guidance "should not result in any type of moratorium on hydraulic fracturing in North Dakota."

Without knowing how far the EPA would go to regulate hydraulic fracturing, the state legislature had set aside \$1 million during a special session in November 2011, as part of disaster relief legislation, to challenge any EPA regulations that could threaten oil production in the state.

The money will stay in the general fund, earmarked for potential legal action in response to possible federal regulations from other entities, according to the Industrial Commission Executive Director Karlene Fine.

Oasis phased out kerosene

After the EPA guidance was issued, DMR reviewed recent fracturing data provided by operators and found that only one company, Oasis Petroleum, had used kerosene, one of the five chemicals defined as diesel fuel. Oasis had used the chemical 15 times, but only at concentrations less than 0.0004 percent. DMR contacted Oasis and learned the company had already eliminated it from its treatments.

"We are disappointed that EPA did not provide for the ability to use a de minimis amount of diesel such as less than 1 percent," Helms said in a press conference Feb. 14. "However, they reduced the impact a great deal by removing petroleum distillate, synonyms, and 'substantially similar compounds.'"

As reported in the Feb. 16 issue of Petroleum News Bakken, EPA's new guidelines are meant to clarify its underground injection control program, UIC, requirements under the Safe Drinking Water Act, for underground injection of diesel fuels in hydraulic fracturing for oil and gas extraction.

If any operator plans to use one of the five chemicals they are required to obtain a UIC permit which, in North Dakota, would add about 76 days to the process.

—MAXINE HERR

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• DRILLING & COMPLETION

Whiting seeks 25 new spacing units

All are 2,560s and all are in Stark and Billings counties; Continental, Petro-Hunt and Marathon seek a total of 24 new units

By MIKE ELLERD

Petroleum News Bakken

Among the applications that the North Dakota Industrial Commission will consider during hearings scheduled for Feb. 26 and 27 in Bismarck is Whiting Oil and Gas' request that it create 25 new drill spacing units. All 25 are overlapping 2,560-acre units in four contiguous oil fields in far northwest Stark and eastern Billings Counties. Whiting's is the largest request for new spacing units that the commission will consider in February.

Nine of the 2,560s that Whiting requests are in the Bell-Bakken pool in Stark County and another six of the units are in the Park-Bakken pool in Billings County. Four of the units are in the Zenith-Bakken pool in Stark County and three are in the Park- or Bell-Bakken pools in Stark and Billings counties. One of the remaining three units is in the Fryburg-Bakken pool in Billings County, one is in the Fryburg- and/or Bell-Bakken pools, and the last is in the Zenith- and/or Bell-Bakken pools. Whiting is also seeking authorization to drill one horizontal well on each new overlapping unit.

Continental, Petro-Hunt and Marathon

Continental Resources, Petro-Hunt and Marathon followed Whiting in the number of spacing units requested, with Continental at nine, Petro-Hunt at eight and Marathon at seven.

Continental is asking that the commission create four overlapping 2,560-acre spacing units and three overlapping 5,120-acre units in the Elm Tree-Bakken and/or the Antelope-Sanish pools in northeast McKenzie County. On the 2,560-acre units, Continental is also seeking permission to drill up to four wells on or near the section lines between the smaller spacing units making up 2,560 and permission to drill up to eight wells on or near the sections lines in the smaller units within the 5,120s.

In the Alkali Creek-Bakken pool, Continental wants the commission to create one overlapping 5,120-acre unit and asks authorization to drill up to eight wells across the section lines of the smaller spacing units of the 5,120. The 5,120-acre unit is in the southern part of the Alkali Creek field, most of which is in southwest Mountrail County, but some of the acreage crossed into McKenzie County under Lake Sakakawea.

Continental also wants one 2,560-acre unit created in the Charlson and/or Elm Tree-Bakken pool in northeast McKenzie County. The company also wants authorization to drill a horizontal well on or near the section lines of the smaller units inside the 2,560.

Petro-Hunt is asking the commission to create eight 2,560-acre spacing units, five in the Charlson-Bakken pool which extends from northeast McKenzie County north under the lake into Williams County, one that covers parts of the Charleson and the Keen-Bakken pools entirely in McKenzie County, and the other in the Charlson and/or Elm

Tree-Bakken pools, also entirely in McKenzie County. Petro-Hunt wants to drill from one to three horizontal wells on the new units.

In the Murphy Creek-Bakken pool, a large field in south-central Dunn County, Marathon Oil wants seven 2,560-acre spacing units created and is also seeking authorization to drill one or more horizontal wells on each.

Other spacing unit apps

WPX Energy Williston is asking the commission to create one 2,560-acre spacing unit in the Van Hook-Bakken pool in McLean County and authorization to drill up to 14 wells on that 2,560. Most of the Van Hook field is on a peninsula in southwest Mountrail County, but a portion crosses over the county line to the east in McLean County where WPX Energy wants the spacing unit created.

In the McGregor Buttes-Bakken pool in northern Dunn County, WPX Energy wants the commission to create one 640-acre unit and one 1,280-acre unit and to be allowed to drill up to four wells on the 640 and up to seven wells on the 1,280.

And in the Spotted Horn-Bakken pool in northeast McKenzie County, WPX Energy wants the commission to create one 1,280-acre unit and to be allowed to drill up to 14 wells.

QEP Energy filed applications asking the commission to

see DRILL SPACING page 6

MOVING HYDROCARBONS

Wheat farmers squeezed by XL delays

Aside from rising tensions over accidents involving trains carrying crude, a major element of Canada's trade export industry has turned up the heat on energy.

Canadian farmers who export about C\$5 billion a year of grain are paying a price for what they view as the Keystone XL domino effect and the pipeline bottlenecks faced by crude producers in the Bakken and Western Canada's heavy crude sector.

The longer XL is delayed the more crude producers are turning to rail and the greater backlog they are causing in the movement of grain from Prairie provinces to terminals on the British Columbia coast.

Brad Wall, premier of Saskatchewan, one of the world's greatest breadbaskets, has become so concerned that he has appointed a team of cabinet ministers to meet with grain and rail companies to tackle an "urgent matter."

"This grain movement backlog is a very serious situation for the entire province and it is a high priority for our government," Wall said.

"The delays in moving grain have led to lower prices for our producers at the farm gate and are harming our reputation as a reliable supplier of agriculture products throughout the world.

"We want every possible avenue explored to ensure our producers have the ability to market and deliver their grain in a timely manner," he said.

Fines suggested

Wall suggested part of the answer could involve slapping fines on railroads for poor performance and that the movement of grain be given priority over other commodities.

The squeeze on rail capacity that is being driven by the increase in crude shipments is causing a "disproportionate hit on agriculture," he said.

The rapid emergence of crude-by-rail is headed for even greater heights, with a Keystone XL proponent forecasting volumes out of Western Canada will reach 500,000 barrels per day this year and more than 1 million bpd in 2015.

Canadian Pacific and Canadian National, the two big grain movers in Canada, also pin some of the blame on a harsh winter that has forced them to operate shorter trains and reduce speed at a time when they are trying to transport a record grain crop from 2013.

Terry Tyson, grain procurement manager at Grain Millers in Yorkton, Saskatchewan, said there is "no question that a much greater (share) of rail system capacity is being used by oil traffic."

Wade Sobkowich, executive director of Winnipeg-based Western Grain Elevator Association, said there is no doubt that railroads are allocating a larger portion of their space to the oil and gas industry, resulting in a shortfall of 55,000 orders of grain cars since last year's harvest.

He said the agriculture industry is asking only that the railroads increase their locomotives, rolling stock and train crews.

—GARY PARK



BRAD WALL



JAMES CAIRNS

• MOVING HYDROCARBONS

Putting the heat on older rail cars

Irving Oil to voluntary eliminate last of its DOT-111 cars by April; CN Rail offers pricing incentive to those using newer cars

By GARY PARK

For Petroleum News Bakken

Irving Oil, owner of Canada's largest oil refinery and its largest user of Bakken crude from North Dakota, and Canadian National Railway are getting the jump on widely expected moves by transportation regulators to toughen safety standards for DOT-111 rail cars, known in Canada as CTC-111As.

Irving, which processes 320,000 barrels per day of crude at its facility in Saint John, New Brunswick — the intended destination for the crude that derailed in Lac-Mégantic, Quebec, triggering an explosion that killed 47 people — has announced plans to voluntarily convert its DOT111 cars by April 30.

Irving Chief Executive Officer Paul Browning said his company will also ask its crude suppliers to comply by the end of 2014 with specifications recommended by the Association of American Railroads, AAR.

Meanwhile, CN Rail said it will offer pricing incentives to crude shippers who use its newer, safer generation of tank cars rather than the discredited older DOT-111 cars.

Without disclosing the specific rates CN has in mind, James Cairns, vice president of petroleum and chemicals, said the railway

wants to "push the industry to do it now before legislation is issued by the Canadian government."

Browning said in a statement Feb. 17 that Irving has made "substantial progress in converting our fleet of crude-oil rail cars" to meet the AAR "enhanced standard. Safety is paramount to our business and by taking this voluntary leadership position with our own fleet of rail cars we expect to set a standard for the suppliers and marketers who ship crude oil to our facilities to quickly follow our example."

Irving estimated that 88 percent of its own rail cars already comply with the AAR standard.

Older cars at Lac-Mégantic

Investigators said 60 of the 63 cars carrying crude oil that left the tracks in Lac-Mégantic last July spilled their contents because of tank car damage. All were the older model DOT-111s.

Keith Stewart, climate and energy campaign coordinator for Greenpeace Canada, said it is time for the Canadian government to take the advice of its safety experts and end the use of all DOT111s, including those built after 2011.

Cairns told an oil sands conference in Calgary that the newer version cars, known as CPC-1232, will incorporate features to improve the safety of moving crude by rail from Western Canada to U.S. and Canadian refineries.

He said the changes include: Thicker steel; a new head shield to act as a first line of defense to prevent punctures; a remov-

see OLDER RAIL CARS page 6

LEGAL COLUMN

Conservationists can't intervene in suit

Conservation groups' attempt to intervene in federal lawsuit between State of ND, Counties and USA over section line right of ways fails

By **JANNELLE STEGER COMBS**

For Petroleum News Bakken

An action filed under the federal Quiet Title Act of 1972 grabbed the attention of several conservation groups. The state of North Dakota, as well as the North Dakota counties of Billings, Golden Valley, McKenzie and Slope, filed lawsuits in federal court in 2012 to require the United States of America to recognize its statutory section line easement rights in the Dakota Prairie Grasslands. Many operators have attempted to use section line easements to otherwise access inaccessible drilling locations.

The United States offered easements for travel on section lines to the Dakota Territory in 1866. These easements were then codified by statute in the North Dakota Century Code. N.D.C.C. section 24-07-03 provides for public roads in all townships, outside of platted subdivisions and cities, to be open for travel to the width of 33 feet on each side of the section line. Those easements can only be closed through proceedings brought before the county or township.

This action was brought because attempts to use those section lines within the Dakota Prairie Grasslands in western North Dakota were denied by the U.S. Forest Service, which manages those grasslands. The lands at issue were reacquired by the United States from private citizens under the Bankhead-Jones Farm Tenant Act of 1937. McKenzie County also asserts quiet title claims as to six roads legally established prior to the reacquisition of the lands by the United States. None of the lands are within the Theodore Roosevelt National Park or the Theodore Roosevelt National Park Elkhorn Ranch Site.

The United States has already moved to dismiss the claims for lack of subject matter jurisdiction. That issue is ongoing while the parties conduct limited discovery on the jurisdictional issues.

Badlands Conservation Alliance, Sierra



JANNELLE STEGER COMBS

Club and the National Parks Conservation Association filed a motion to intervene in the action. The United States, North Dakota and the counties filed responses all opposing the motion for the conservation groups to intervene.

There are several methods in which a party can intervene in an existing federal court action. Under Federal Rule of Civil Procedure 24, the party must first have standing. The intervenor must show injury in fact; a causal connection between the alleged injury and the conduct being challenged; and that a favorable decision is likely to redress the injury. Injury can be actual or imminent.

The injury claimed by the conservation groups is that if roads are allowed to be built, it would diminish the aesthetic and recreational interests of the members who enjoy the undisturbed nature of the grasslands.

The judge determined that since the action involved the legal validity of the claimed section line easement, not the right to use the public road, then their claims of harm did not relate to the subject matter of the lawsuit. Further the conservation groups had no title defend in this quiet title action and therefore, had no standing.

The judge further noted that even if the easements were found to be valid, there is

no proof of imminent use of them. Many of the areas in the suit are in remote and rugged areas where it is difficult to build a road in a straight line. The six unpaved existing roads claimed by McKenzie County have been in existence since the 1920s.

If standing is established, intervention as a right happens only when the party has a recognized interest in the litigation; that interest might be impaired by the disposition of the lawsuit; and the interest must not be adequately protected by the existing parties. The judge found the claimed interest of the conservation group to the litigation is "remote and peripheral." Further, protecting the interests of the United States is best done by the United States and its lawyers.

The judge would also not grant permissive intervention because of the lack of standing, lack of a legally protected interest in the lawsuit and the potential intervention would cause for delay by raising issues unrelated to title in the quiet title action.

The issue of whether the suit will have jurisdiction over the United States is still an outstanding question. Suing the federal government is incredibly difficult to do, with very limited and specific exceptions. ●

Contact Jannelle Steger Combs at jannelle@stegerlawoffice.com

continued from page 5

DRILL SPACING

create three overlapping 2,560-acre units in Spotted Horn- and/or Blue Buttes-Bakken pools in far northeast McKenzie County. QEP wants to drill one or more horizontal wells on each.

Hess Corp. is asking the commission to create three 2,560-acre units, two in the Robinson Lake-Bakken pool in southwest Mountrail County and one in the Ray-Bakken pool in eastern Williams County. Hess is also seeking authorization to drill one or more horizontal wells on each unit.

Filing as HRC Operating, Halcon Resources is asking that the commission create one 2,560-acre unit in the Antelope-Sanish pool in far northeast McKenzie County on which HRC wants to drill one or more horizontal wells.

Forestar Petroleum wants the commission to create one 1,280-acre spacing unit in

the Bailey, Moccasin Creek and/or Wolf Bay-Bakken pools in central Dunn County and authorization to drill one horizontal well on that unit.

Zavanna is asking the commission to create a 1,280-acre unit in the Patent Gate-Bakken pool field in north-central McKenzie County and authorize the drilling of one wildcat horizontal well on that unit.

One Non-Bakken pool app

Petro Harvester filed an application asking the commission to create two 320-acre units and one 389-acre unit in the Portal-Madison pool in north-central Burke County just below the Canadian border, and is seeking authorization to drill one horizontal Madison Pool well on each of the three units. ●

Contact Mike Ellerd at mellerd@bresnan.net

continued from page 5

OLDER RAIL CARS

able bottom outlet handle; and high-flow safety relief valves.

Those are designed to meet the call by the U.S. and Canadian transportation safety boards to their governments to waste no time in introducing tighter regulatory control in response to a series of fires and explosions over the past eight months resulting from derailments.

Infrastructure improvements

Cairns also said CN plans to spend C\$1 billion this year on improving its track infrastructure, by installing track-

side detectors to identify hairline cracks and defects, while increasing the frequency of track inspections.

He said unit trains are now a reality in Western Canada and CN is certain there will be a surge in crude-by-rail shipments.

Altex Energy Vice President Randy Meyer told the conference that railroads have made sizable gains over several decades in crude-carrying technology, boosting the capacity of tank cars to 600 barrels from 100 barrels, adding the industry is now on the verge of introducing double-hulled cars. ●

Contact Gary Park through publisher@petroleumnews.com

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Bakken **BAKKEN Stats**

Montana well permits and completions

February 7—13, 2014

Abbreviations & parameters

With a few exceptions, the Montana weekly oil activity report includes horizontal well activity in the Bakken petroleum system in the eastern/northeastern part of the state within the Williston Basin. It also includes the Heath play and what is referred to as the South Alberta Bakken fairway in northwestern/west-central Montana, which is at least 175 miles long (north-south) and 50 miles wide (east-west), extending from southern Alberta, where the formation is generally referred to as the Exshaw, southwards through Montana's Glacier, Toole, Pondera, Teton and Lewis & Clark counties. The Southern Alberta Bakken, under evaluation by several oil companies, is not part of the Williston Basin. Following are the abbreviations used in the report and what they mean.

BHL: bottomhole location | **BOPD:** barrels of oil per day | **BWPD:** barrels of water per day
IP: initial production | **MCFPD:** thousand cubic feet per day | **PBHL:** probable bottomhole location
PD: proposed depth | **SHL:** surface hole location | **TD:** total depth

And public land survey system abbreviations:

FNL = from north line | **FEL** = from east line | **FSL** = from south line | **FWL** = from west line

COMPILED BY DARRYL L. FLOWERS

For Petroleum News Bakken

New locations

Minuteman Exploration LLC has been approved to drill four wells, all targeting the Otter formation.

In Fergus County, Minuteman was approved to drill three wells: the Bunker Hill 15-17-21-1 at NE SW 21-15N-17E (2305 FSL/2292 FWL) and having a proposed depth of 2,684 feet; the Concord 14-17-10-1 at NW SE 10-14N-17E (2309 FSL/1956 FEL) and having a proposed depth of 2,373 feet and an SHL at NW SE 10-14N-17E (2309 FSL/1956 FEL) and a PBHL of 2,373 feet at NW SE 10-14N-17E (2314 FSL/2026 FEL); and the Brooklyn 16-16-36-1 at SE NW 36-16N-16E (2310 FNL/2317 FWL) with a proposed depth of 2,681 feet.

In Judith Basin County, Minuteman was approved to drill the Quebec 13-15-5-1, with an SHL at NW SE 5-13N-15E (2022 FSL/2298 FEL) and a PBHL of 3,837 feet at NW SE 5-13N-15E (2271 FSL/2295 FEL).

According to the Montana Board of Oil and Gas Conservation, these are the first wells to be drilled by Minuteman Exploration. The company is based in Billings, Montana.

Re-issued locations

In Richland County, permits were re-issued for two Bakken formation wells. The Elaine 34X-21, operated by XTO Energy Inc has an SHL at SW SE 21-24N-56E (775 FSL/2000 FEL) and a PBHL of 18,708 feet at N2 N2 16-24N-56E (700 FNL/2640 FEL); the Fabian Federal 1-10H has an SHL at SW SW 10-26N-55E (275 FSL/1260 FWL) and a PBHL of 20,104 feet at NE NW 3-26N-55E (200 FNL/1980 FWL).

In Roosevelt County, five re-issued permits were approved for wells operated by Oasis Petroleum North America LLC. All five wells will target the Bakken formation. The Dash Federal 2759 11-13H has an SHL at NW NW 13-27N-59E (250 FNL/660 FWL) and a PBHL of 20,430 feet at SW SW 24-27N-59E (200 FSL/660 FWL); the McCracken 2758 41-10 #6B has an SHL at SW SW 10-27N-58E (550 FSL/300 FWL) and a PBHL of

20,059 feet at SE SE 11-27N-58E (550 FSL/210 FEL); the Azure Sky Federal 2759 41-11B has an SHL at SW SW 11-27N-59E (250 FSL/620 FWL) and a PBHL of 20,427 feet at NW NW 2-27N-59E (250 FNL/1060 FWL); the Beatrice Federal 2759 12-14T has an SHL at NE NW 14-27N-59E (225 FNL/2330 FWL) and a PBHL of 20,909 feet at NE NW 2-27N-59E (250 FNL/2130 FWL); the Dot Federal 2759 11-13B has an SHL at NW NW 13-27N-59E (250 FNL/560 FWL) and a PBHL of 21,042 feet at 1-27N-59E (200 FNL/660 FEL).

Completions

In Fallon County's Pennel field, a completion report was filed for the Unit 44X-18B, operated by Denbury Onshore LLC. The well has an SHL at SE SE 18-7N-60E (450 FSL/1235 FEL) and a BHL of 9,000 feet at SW SE 18-7N-60E (1099 FSL/1981 FEL). The well, which taps the Red River formation, turned in an IP report of 1 BOPD and 190 BWPD.

In Richland County, True Oil LLC filed a completion report for the Anvick 21-3 3-10H. The Bakken formation well has an SHL at NE NW 3-25N-58E (250 FNL/2400 FWL) and three laterals with BHLs of 11,617 feet at SE NW 3-25N-58E (1802 FNL/1978 FWL), 12,807 feet at SE SW 3-25N-58E (2272 FSL/1989 FWL) and 20,125 feet at SE SW 10-25N-58E (234 FSL/2020 FWL). The reported IP was 860 BOPD, 625 MCFPD of gas and 1,770 BWPD.

Expired Permits

In Richland County, the permits for two Bakken formation wells expired. The Westbrook 1-22H, with an SHL at SE SW 22-27N-56E (610 FSL/1800 FWL) was operated by Continental Resources Inc.; the Gladius 1-16-9DLH, with an SHL at NE NE 16-20N-60E (250 FNL/735 FEL) was operated by Slawson Exploration Company Inc. ●

Editor's note: Darryl L. Flowers, a contributor to Petroleum News Bakken, is the publisher of the Fairfield Sun Times in Fairfield, Mont., www.fairfield-suntimes.com, and can be reached at publisher@fairfieldsuntimes.com. The information is derived from the online records of the Montana Board of Oil & Gas Conservation Commission.

BAKKEN STATS COMMENTARY

Hess takes over as North Dakota's No.1 Bakken system oil producer

Hess Corp. was apparently insulated from the winter weather that caused a record drop in North Dakota's average daily production in December. Production data from the North Dakota Industrial Commission for operated, non-confidential wells indicates that Hess' average daily production from the Bakken petroleum system increased by nearly 8,000 barrels per day, pushing Hess into the No. 1 spot on the Top 50 Bakken oil producers list, a position long held by Continental Resources (page 10).

In November, Hess ranked as the state's third largest oil producer at 74,197 bpd, slightly behind Whiting at 74,205 bpd but considerably behind Continental at 81,758 bpd. But in December, Hess' output went up, but Continental's and Whiting's went down; Hess moved to the No. 1 spot averaging 82,108 bpd, Continental moved to second at 74,332 bpd, and Whiting moved to third at 73,132 bpd.

Among the top 15 producers in December, only three besides Hess saw production increases. No. 4 producer EOG Resources' production went up 1,844 bpd to 58,842 bpd; No. 6 Marathon Oil's output went up 3,817 bpd to 45,156 bpd; and No. 13 WPX Energy increased output by 4,301 bpd to 26,210 bpd.

XTO tops IP at 4,435 barrels

This week's Top 10 IP list was limited to three operators with Burlington Resources having seven of the wells on the list, Statoil with two and XTO Energy with one. However, XTO topped the list with a McKenzie County well in the Blue Buttes field at 4,434 barrels (page 8). That is only the second well of 2014 to break the 4,000 barrel mark, the first being a Statoil well in the Banks field in McKenzie County that topped the Jan. 26 list at 4,884 barrels.

Burlington had the No. 2 through No. 7 wells with IPs ranging from 2,544 to 2,976 barrels. Burlington also has the No. 9 well at 2,312 barrels. All seven are McKenzie County wells, six in the Charlson field and one in the Keene field.

Statoil filled the Nos. 8 and 10 spots with Williams County wells coming in at 2,533 and 2,145 barrels, respectively.

—MIKE ELLERD

Among the top 15 producers in December, only three besides Hess saw production increases.

Bakken producers' stock prices

Closing prices as of Feb.19 along with those from previous Wednesday

Company	Exchange	Symbol	Closing price	Previous Wed.
Abraxas Petroleum Corporation	NASDAQ	AXAS	\$3.28	\$3.41
American Eagle Energy Corporation	OTC	AMZG	\$1.82	\$1.82
Arsenal Energy USA, Inc.	TSE	AEI	\$5.20	\$5.07
Baytex Energy USA Ltd	NYSE	BTE	\$36.89	\$37.17
Burlington Resources Co., LP (ConocoPhillips)	NYSE	COP	\$65.00	\$65.22
Continental Resources, Inc.	NYSE	CLR	\$116.86	\$110.83
Crescent Point Energy US Corporation	TSE	CPG	\$38.68	\$38.66
Denbury Onshore, LLC	NYSE	DNR	\$15.78	\$16.34
Emerald Oil, Inc.	NYSEMKT	EOX	\$7.51	\$7.12
Enerplus Resources USA Corporation	NYSE	ERF	\$19.86	\$19.55
EOG Resources, Inc.	NYSE	EOG	\$178.68	\$174.99
Fidelity Exploration & Production (MDU)	NYSE	MDU	\$34.47	\$33.13
Halcon Resources	NYSE	HK	\$3.70	\$3.70
Hess Corporation	NYSE	HES	\$80.71	\$78.03
Kodiak Oil and Gas (USA), Inc.	NYSE	KOG	\$11.70	\$11.62
Legacy Reserves Operating LP	NASDAQ	LGCY	\$27.41	\$27.02
Marathon Oil Company	NYSE	MRO	\$33.34	\$33.27
Mountain Divide, LLC (Mountainview Energy)	CVE	MVW.V	\$0.46	\$0.48
Newfield Production Company	NYSE	NFX	\$25.72	\$24.25
Northern Oil and Gas	NYSE	NOG	\$15.57	\$15.15
Oasis Petroleum North America	NYSE	OAS	\$42.40	\$42.20
Oxy USA, Inc. (Occidental Petroleum)	NYSE	OXY	\$94.94	\$92.19
PetroShale Inc.	CVE	PSH	\$1.35	\$1.35
QEP Energy Company	NYSE	QEP	\$32.01	\$31.61
Resolute Natural Resources Company, LLC	NYSE	REN	\$8.96	\$8.61
Samson Resources Company (KKR & Co)	NYSE	KKR	\$23.95	\$24.36
SM Energy Company	NYSE	SM	\$74.30	\$85.59
Statoil Oil and Gas LP	NYSE	STO	\$26.41	\$25.99
Triangle USA Petroleum Corporation	NYSE	TPLM	\$8.42	\$8.01
Whiting Oil and Gas Corporation	NYSE	WILL	\$61.35	\$59.04
WPX Energy Williston, LLC	NYSE	WPX	\$17.67	\$17.11
XTO Energy, Inc. (ExxonMobil)	NYSE	XOM	\$93.95	\$91.01

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IPs for ND Bakken wells

February 11—17, 2014

This chart contains initial production rates, or IPs, for active wells that were filed as completed with the state of North Dakota from Feb. 11-17, 2014 in the Bakken petroleum system, which includes formations such as the Bakken and Three Forks. The completed wells that did not have an available IP rate (N/A) likely haven't been tested or were awarded confidential (tight-hole) status by the North Dakota Industrial Commission's Department of Minerals. This chart also contains a section with active wells that were released from confidential status during the same period, Feb 11-17. Again, some IP rates were not available (N/A). The information was assembled by Petroleum News Bakken from NDIC daily activity reports and other sources. The name of the well operator is as it appears in state records, with the loss of an occasional Inc., LLC or Corporation because of space limitations. Some of the companies, or their Bakken petroleum system assets, have been acquired by others. In some of those cases, the current owner's name is in parenthesis behind the owner of record, such as ExxonMobil in parenthesis behind XTO Energy. If the chart is missing current owner's names, please contact Ashley Lindly at alindly@petroleumnewsbakken.com.

LEGEND

The well operator's name is on the upper line, followed by individual wells with data in this order: NDIC file number; well name; field; location; spacing; county; geologic target; wellbore type; total depth; IP test date; IP oil flow rate. (IP stands for initial production; in this chart it's the first 24 hours of oil production.)

IPs for completed North Dakota wells

Burlington Resources Oil and Gas (ConocoPhillips)

25962; Archer 34-25TFH; Charlson; SESE 25-153N-95W; 2SEC; McKenzie; Bakken; horizontal; 20,319; 2/2/2014; 2,592 bbl
25960; Archer 44-25TFH; Charlson; SESE 25-153N-95W; 2SEC; McKenzie; Bakken; horizontal; 19,832; 1/31/2014; 2,312 bbl
25891; Blue Ridge 44-31MBH; Keene; SESE 31-153N-95W; 2SEC; McKenzie; Bakken/Three Forks; horizontal; 20,023; 1/31/2014; 2,805 bbl
25679; Washburn 41-36MBH; Charlson; NENE 36-153N-95W; 2SEC; McKenzie; Bakken; horizontal; 20,294; 1/17/2014; 2,800 bbl
25678; Washburn 41-36TFH; Charlson; NENE 36-153N-95W; 2SEC; McKenzie; Bakken; horizontal; 20,148; 1/23/2014; 2,976 bbl
25680; Washburn 42-36TFH; Charlson; SENE 36-153N-95W; 2SEC; McKenzie; Bakken; horizontal; 20,158; 1/20/2014; 2,544 bbl
25665; Washburn 44-36TFH; Charlson; SESE 36-153N-95W; 2SEC; McKenzie; Bakken; horizontal; 20,215; 12/29/2014; 2,952 bbl

Continental Resources

24835; Bice Federal 3-32H; Chimney Butte; SESW 32-146N-95W; 4SEC; Dunn; Bakken; horizontal; 20,753; 12/22/2013; 1,473 bbl

Hess

25425; EN-Nelson 155-94-3328H-2; Alkali Creek; SESW 33-155N-94W; 2SEC; Mountrail; Bakken; horizontal; 20,201; 1/20/2014; 879 bbl
25548; EN-Rudd 154-93-2734H-2; Robinson Lake; SWSE 22-154N-93W; 2SEC; Mountrail; Bakken; horizontal; 21,083; 1/14/2014; 554 bbl

Statoil Oil and Gas

24634; Blanche 27-22 #7H; Painted Woods; NENE 34-154N-102W; 2SEC; Williams; Bakken; horizontal; 1/26/2014; 2,533 bbl
23746; Mark 4-9 2TFH; Williston; LOT1 4-154N-100W; 2SEC; Williams; Bakken; horizontal; 20,524; 1/24/2014; 2,145 bbl

True Oil

23927; Liberty Federal 13-36 36-31H TF1; Red Wing Creek; NWSW 36-148N-101W; 2SEC; McKenzie; Bakken; horizontal; 20,096; 1/31/2014; 558 bbl
26202; True Federal 33-35 2-11MB1; Bowline; NWSE 35-148N-101W; 2SEC; McKenzie; Bakken; horizontal; 15,481; 1/31/2014; 665 bbl

Whiting Oil and Gas

26215; Uran 21-24TFH; Sanish; NENE 24-153N-92W; 2SEC; Mountrail; Bakken; horizontal; 18,257; 2/1/2014; 1,280 bbl

XTO Energy (ExxonMobil)

25551; Marlene 42X-20H; Blue Buttes; SENE 20-150N-95W; 2SEC; McKenzie; Bakken; horizontal; 20,870; 2/8/2014; 4,434 bbl

IPs for ND wells released from confidential status

Burlington Resources Oil and Gas (ConocoPhillips)

25962; Archer 34-25TFH; Charlson; SESE 25-153N-95W; 2SEC; McKenzie; Bakken; horizontal; 20,319; 2/2/2014; 2,592 bbl
25908; CCU Columbian 43-1MBH; Corral Creek; NWSE 1-146N-94W; N/A;

Top 10 Bakken wells by IP rate

XTO Energy (ExxonMobil)

25551; Marlene 42X-20H; Blue Buttes; McKenzie; 4,434 bbl

Burlington Resources Oil and Gas (ConocoPhillips)

25678; Washburn 41-36TFH; Charlson; McKenzie; 2,976 bbl
25665; Washburn 44-36TFH; Charlson; McKenzie; 2,952 bbl
25891; Blue Ridge 44-31MBH; Keene; McKenzie; 2,805 bbl
25679; Washburn 41-36MBH; Charlson; McKenzie; 2,800 bbl
25962; Archer 34-25TFH; Charlson; McKenzie; 2,592 bbl
25680; Washburn 42-36TFH; Charlson; McKenzie; 2,544 bbl

Statoil Oil and Gas

24634; Blanche 27-22 #7H; Painted Woods; Williams; 2,533 bbl

Burlington Resources Oil and Gas (ConocoPhillips)

25960; Archer 44-25TFH; Charlson; McKenzie; 2,312 bbl

Statoil Oil and Gas

23746; Mark 4-9 2TFH; Williston; Williams; 2,145 bbl

Note: This chart contains initial production rates, or IPs, from the adjacent IP chart for active wells that were filed as completed with the state of North Dakota from Feb 11-17, 2014 in the Bakken petroleum system, as well as active wells that were released from tight-hole (confidential) status during the same period. The well operator's name is on the upper line, followed by individual wells; the NDIC file number; well name; field; county; IP oil flow rate in barrels of oil.

Dunn; Bakken; horizontal; N/A; N/A; N/A
25907; CCU Columbian 43-1TFH; Corral Creek; NWSE 1-146N-94W; N/A; Dunn; Bakken; horizontal; N/A; N/A; N/A

Continental Resources

25159; Columbus Federal 2-16H; Baker; SENE 16-153N-101W; N/A; McKenzie; Bakken; horizontal; N/A; N/A; N/A
25814; Salers 1-27H; Antelope; NWNE 27-152N-94W; N/A; McKenzie; Sanish; horizontal; N/A; N/A; N/A
25158; Tallahassee 2-16H; Baker; SENE 16-153N-101W; N/A; McKenzie; Bakken; horizontal; N/A; N/A; N/A

EOG Resources

23062; Bear Den 101-2019H; Spotted Horn; SESE 20-150N-94W; 4SEC; McKenzie; Bakken; horizontal; 21,021; 8/29/2013; 455 bbl

Hess

25701; AN-Evenson 152-95-0310H-2; Antelope; LOT3 3-152N-95W; N/A; McKenzie; Sanish; horizontal; N/A; N/A; N/A
23456; BB-Budahn-150-95-0506H-2; Blue Buttes; SENE 5-150N-95W; N/A; McKenzie; Bakken; horizontal; N/A; N/A; N/A

Hunt Oil

25667; Alexandria 161-100-7-6H-1; Alexandria; NENE 18-161N-100W;

2SEC; Divide; Bakken; horizontal; 19,183; 11/21/2013; 212 bbl

Kodiak Oil and Gas

25500; Smokey 3-17-20-14H3A; Pembroke; NENE 17-149N-98W; 2SEC; McKenzie; Bakken; horizontal; 21,115; 1/2/2014; 1,543 bbl

Marathon Oil

22557; Mink USA 11-15H; Deep Water Creek Bay; NWNW 15-150N-90W; N/A; McLean; Bakken; horizontal; N/A; N/A; N/A
26085; Scott Quale USA 21-29TFH; Reunion Bay; SWSW 20-152N-93W; 4SEC; McKenzie; Bakken; horizontal; 20,645; 12/7/2013; 1,862 bbl
26018; Young 24-23TFH; Chimney Butte; SWSE 23-146N-95W; N/A; Dunn; Bakken; horizontal; N/A; N/A; N/A

Oasis Petroleum

25687; Barman 5693 43-12T; Alger; SWSE 12-156N-93W; 2SEC; Mountrail; Bakken; horizontal; 20,524; 10/2/2013; 1,381 bbl
25520; Bonita 5992 42-22H; Cottonwood; SESW 22-159N-92W; 2SEC; Burke; Bakken; horizontal; 19,170; N/A; N/A
24995; Remington 5992 12-26H; Cottonwood; NENE 26-159N-92W; 2SEC; Burke; Bakken; horizontal; 19,110; 11/23/2013; 93 bbl

Oxy USA (Occidental Petroleum)

22933; Hans Creek 1-30-31H-144-98; Little Knife; NWNE 30-144N-98W; 2SEC; Billings; Bakken; horizontal; 20,795; 6/19/2013; 396 bbl
22895; William Kubischta 2-14-11H-143-96; Fayette; SWSW 14-143N-96W; 2SEC; Dunn; Bakken; horizontal; 19,828; 8/14/2013; 536 bbl
22896; William Kubischta 3-14-11H-143-96; Fayette; SWSW 14-143N-96W; 2SEC; Dunn; Bakken; horizontal; 20,285; 8/14/2013; 592 bbl

QEP Energy

25618; Johnson 3-4-9BH; Grail; LOT4 4-149N-95W; N/A; McKenzie; Bakken; horizontal; N/A; N/A; N/A
25617; Johnson 3-4-9TFH; Grail; LOT4 4-149N-95W; N/A; McKenzie; Bakken; horizontal; N/A; N/A; N/A
25616; Johnson 4-4-9BH; Grail; LOT4 4-149N-95W; N/A; McKenzie; Bakken; horizontal; N/A; N/A; N/A
25615; Johnson 5-8-9LL; Grail; LOT4 4-149N-95W; N/A; McKenzie; Bakken; horizontal; N/A; N/A; N/A

Whiting Oil and Gas

25734; Moen 41-26-2H; Timber Creek; NENE 26-150N-100W; 2SEC; McKenzie; Bakken; horizontal; 21,094; 8/13/2013; 1,253 bbl

WPX Energy

25629; State of ND 10-3HW; Van Hook; NWNW 15-150N-92W; 2SEC; Mountrail; Bakken; horizontal; 20,720; 11/6/2013; 935 bbl

XTO Energy (ExxonMobil)

25415; Rolfsrud State 14X-36A; Sand Creek; SWSW 36-153N-97W; N/A; McKenzie; Bakken; horizontal; N/A; N/A; N/A

—Compiled by Ashley Lindly

Contact Ashley Lindly at
 alindly@petroleumnewsbakken.com



North Dakota oil permit activity

February 11—17, 2014

LEGEND

The county name is on the upper line, the type of permit issued is on the second line, and company names are next, followed by individual wells with data in this order: well name; location; footages; field; geological target; well bore type; elevation; NDIC file number; API number; date permit shows on NDIC website.

Abbreviations

Following are the abbreviations used in the report and what they mean:
 FNL = From North Line | FEL = From East Line
 FSL = From South Line | FWL = From West Line

Billings Co.

Permits issued

Enduro Operating

SND 2-28E; NWSW 28-142N-100W; 1,623' FSL and 1,229' FWL; Tree Top; N/A*; on confidential status; 2,718' ground; 27659; 33-007-01820; 2/11/2014

Whiting Oil and Gas

Pronghorn Federal 11-13PH; NENE 13-140N-100W; 345' FNL and 2,189' FWL; Park; Bakken; horizontal;

2,636' ground; 27691; 33-007-01821; 2/14/2014
Pronghorn Federal 14-12PH; NENE 13-140N-100W; 300' FNL and 2,189' FWL; Park; Bakken; horizontal; 2,636' ground; 27692; 33-007-01822; 2/14/2014

Permits renewed

Continental Resources

GCR 1-24H; NWNE 24-141N-101W; 310' FNL and 2,085' FEL; T.R.; N/A*; on confidential status; 2,507' ground; 22407; 33-007-01727; 2/13/2014

Burke Co.

Permits issued

Oasis Petroleum

Delta 6093 44-15 7B; SESE 15-160N-93W; 822' FSL and 200' FEL; Gros Ventre; Bakken; horizontal; 2,422' ground; 27678; 33-013-01776; 2/12/2014
Delta 6093 44-15 8T; SESE 15-160N-93W; 855' FSL and 200' FEL; Gros Ventre; Bakken; horizontal; 2,420' ground; 27677; 33-013-01775; 2/12/2014

Petro-Hunt

Overlee 160-94-32A-4-1HS; NENE 32-160N-94W; 275' FNL and 350' FEL; North Tioga; N/A*; on confidential status; 2,417' ground; 27669; 33-013-01774; 2/11/2014
Overlee 160-94-32A-30-1HS; NENE 32-160N-94W; 275' FNL and 425' FEL; North Tioga; N/A*; on confidential status; 2,417' ground; 27668; 33-013-01773; 2/11/2014

Divide Co.

Permits issued

Murex Petroleum

Rebecca Ryleigh 21-16H; SWSE 21-161N-101W; 250' FSL and 2,000' FEL; Writing Rock; N/A*; on confidential status; 2,172' ground; 27688; 33-023-01164; 2/13/2014

Permits renewed

Continental Resources

Joanna 2-7H; SWSW 7-161N-95W; 285' FSL and 585' FWL; Sadler; N/A*; on confidential status; 2,391' ground; 25004; 33-023-01011; 2/13/2014

Permits cancelled

Samson Resources (KKR & Co.)

Bonneville 3625-6TFH; SESE 36-163N-100W; 259' FSL and 1,285' FEL; West Ambrose; N/A*; on confidential status; 2,272' ground; 24602; 33-023-00971; 2/12/2014

Dunn Co.

Permits renewed

HRC Operating (Halcon Resources)

Fort Berthold 148-95-24C-13-2H; SWSW 24-148N-95W; 1,312' FSL and 703' FWL; Eagle Nest; N/A*; on confidential status; 2,471' ground; 22504; 33-025-01643; 2/13/2014
Fort Berthold 148-95-25B-36-2H; SWSW 24-148N-

95W; 1,038' FSL and 1,200' FWL; Eagle Nest; N/A*; on confidential status; 2,439' ground; 22503; 33-025-01642; 2/13/2014

McKenzie Co.

Permits issued

Continental Resources

Berlain 2-30H; NENE 30-151N-100W; 270' FNL and 818' FEL; Patent Gate; N/A*; on confidential status; 2,189' ground; 27695; 33-053-05687; 2/14/2014
Berlain 3-30H; NENE 30-151N-100W; 270' FNL and 863' FEL; Patent Gate; N/A*; on confidential status; 2,187' ground; 27694; 33-053-05686; 2/14/2014

Hess

HA-Swenson - 152-95-1819H-6; NWNW 18-152N-95W; 564' FNL and 1,320' FWL; Hawkeye; N/A*; on confidential status; 2,388' ground; 27693; 33-053-05685; 2/14/2014

Whiting Oil and Gas

Roen 34-10-2H; SWSE 10-152N-102W; 300' FSL and 1,750' FEL; Elk; Bakken; horizontal; 2,165' ground; 27687; 33-053-05684; 2/13/2014

XTO Energy (ExxonMobil)

Thompson Federal 41X-17-TF2; NENE 17-153N-95W; 625' FNL and 1,310' FEL; Charlson; N/A*; on con-

see ND PERMIT page 10



North Dakota Pipeline Authority

Monthly update February 2014

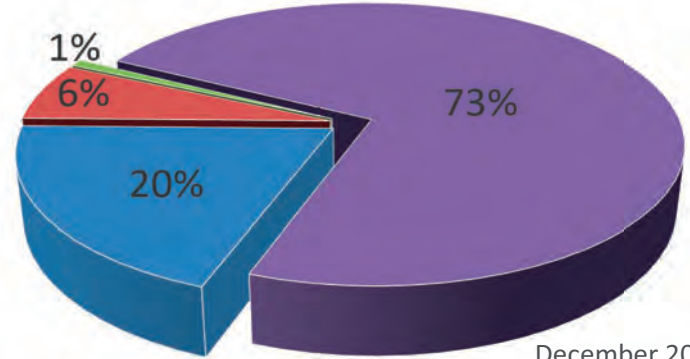
US Williston Basin Oil Production - 2013

MONTH	ND	Eastern MT*	SD	TOTAL
January	739,086	70,598	4,617	814,301
February	781,356	71,861	4,891	858,108
March	786,493	73,406	5,111	865,010
April	793,794	76,027	5,131	874,952
May	812,008	75,058	4,800	891,866
June	823,300	73,547	4,781	901,628
July	874,042	75,881	4,678	954,601
August	912,584	75,813	4,877	993,274
September	933,997	73,821	5,017	1,012,835
October	945,452	72,665	4,643	1,022,760
November	976,453		5,026	--
December	923,227		4,801	--

JJ Kringstad - North Dakota Pipeline Authority

2

Estimated Williston Basin Oil Transportation



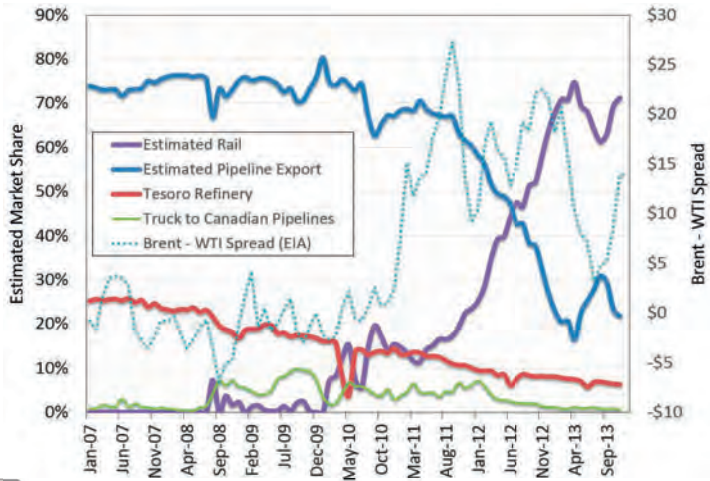
December 2013

■ Estimated Pipeline Export ■ Tesoro Refinery
■ Truck to Canadian Pipelines ■ Estimated Rail

JJ Kringstad - North Dakota Pipeline Authority

3

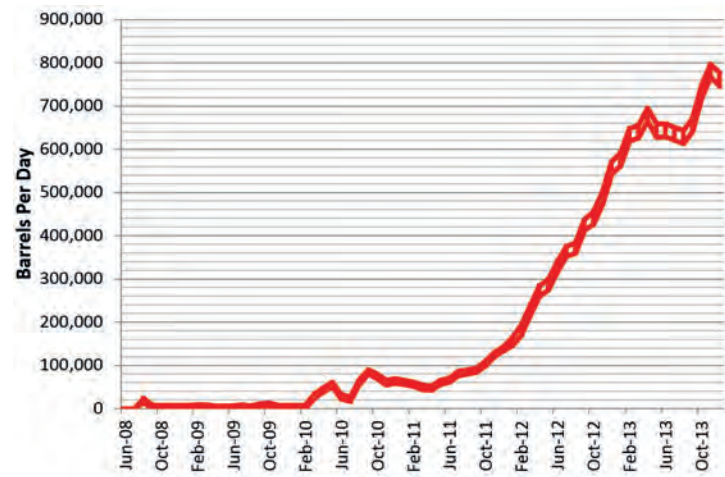
Estimated Williston Basin Oil Transportation



JJ Kringstad - North Dakota Pipeline Authority

4

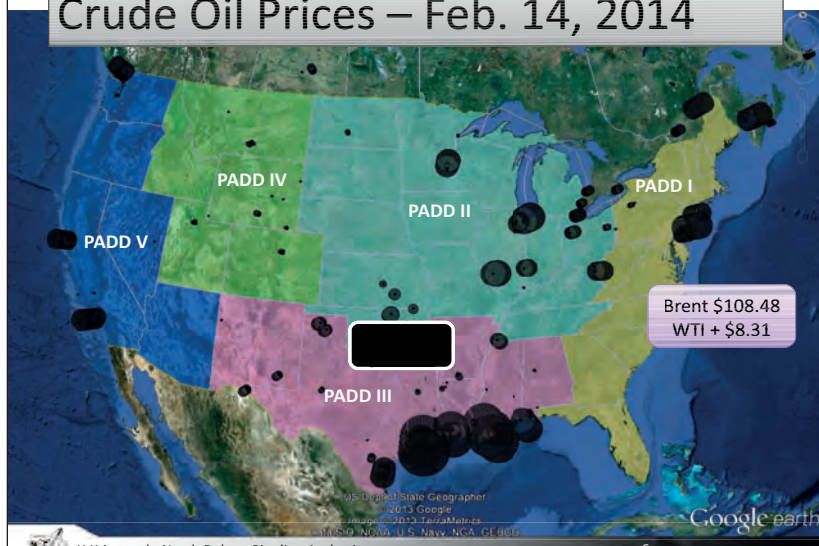
Estimated ND Rail Export Volumes



JJ Kringstad - North Dakota Pipeline Authority

5

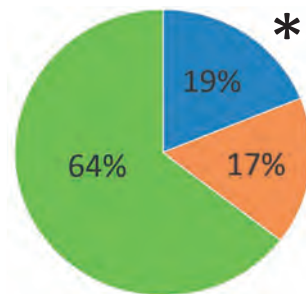
Crude Oil Prices – Feb. 14, 2014



JJ Kringstad - North Dakota Pipeline Authority

6

Solving the Flaring Challenge



* GREEN – % of gas captured and sold
Orange – % flared from wells with at least one mcf sold.
Blue – % flared from zero sales wells

Simple Terms

Orange – Challenges on existing infrastructure
Blue – Lack of pipelines

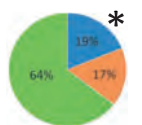
Statewide

December 2013 Data – Non-Confidential Wells

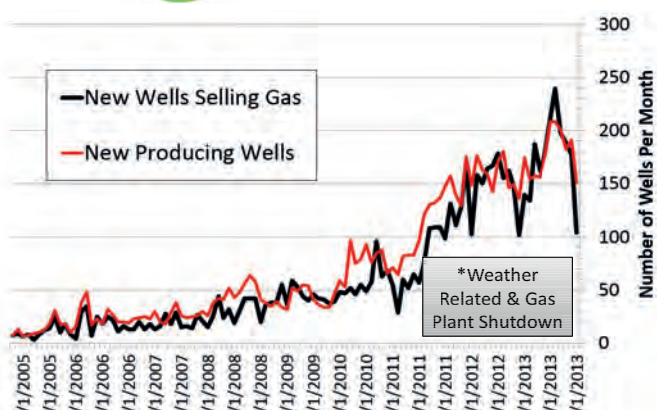
*Hess Tioga Gas Plant shut-in for 140 MMCFD expansion starting in November

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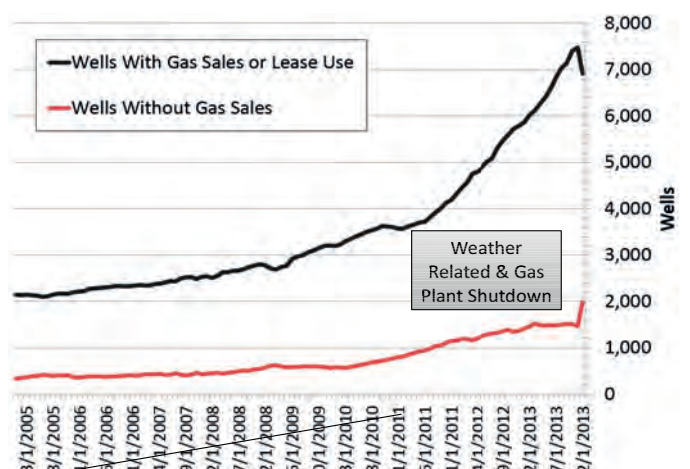
Capturing the 19% Faster Well Connections



JJ Kringstad - North Dakota Pipeline Authority

8

ND Gas Gathering Statistics



JJ Kringstad - North Dakota Pipeline Authority

9



Top 50 North Dakota Bakken oil producers December 2013

Company	BPD*		BPD*
1 Hess Corporation	82,108*	29 American Eagle Energy Corp.	2,966
2 Continental Resources, Inc.	74,332	30 Crescent Point Energy U.S. Corp.	2,414
3 Whiting Oil and Gas Corp.	73,132	31 Sinclair Oil and Gas Company	1,959
4 EOG Resources, Inc.	58,842	32 Emerald Oil, Inc.	1,812
5 XTO Energy Inc. (ExxonMobil)	48,141	33 Arsenal Energy USA Inc.	1,073
6 Marathon Oil Company	45,156	34 Denbury Onshore, LLC	991
7 Statoil Oil & Gas LP	43,797	35 Cornerstone Natural Resources LLC	804
8 Oasis Petroleum North America LLC	37,981	36 True Oil LLC	767
9 Kodiak Oil & Gas (USA) Inc.	37,219	37 Mountain Divide, LLC (Mountainview Energy)	698
10 Burlington Resources Oil & Gas Company LP (ConocoPhillips)	35,858*	38 Armstrong Operating, Inc.	539
11 QEP Energy Company	31,925	39 GMX Resources Inc.	427
12 HRC Operating, LLC (Halcon Resources)	26,470	40 Bakken Hunter, LLC	388
13 WPX Energy Williston, LLC	26,210	41 Gadeco, LLC	249
14 Slawson Exploration Company, Inc.	23,254	42 Windsor Energy Group, LLC	227
15 SM Energy Company	20,688	43 Rim Operating, Inc.	151
16 Oxy USA Inc. (Occidental Petroleum)	16,864	44 Resource Drilling, LLC	147
17 Petro-Hunt, LLC	16,176	45 Legacy Reserves Operating LP	82
18 Newfield Production Company	14,024	46 North Plains Energy, LLC	81
19 Enerplus Resources USA Corp.	12,020	47 SHD Oil & Gas, LLC	75
20 Fidelity Exploration & Production Company	11,200	48 Texakota, Inc.	46
21 Hunt Oil Company	9,152	49 Resolute Natural Resources Company, LLC	44
22 Murex Petroleum Corp.	7,298	50 Petro Harvester Operating Company, LLC	19
23 Triangle USA Petroleum Corp.	7,201		
24 Zavanna, LLC	6,800		
25 Samson Resources Company	6,503		
26 Baytex Energy USA Ltd	4,973		
27 Sequel Energy, LLC	4,840		
28 Abraxas Petroleum Corp.	4,449		

* Note: Hess-owned Hess Bakken Investments production was added to Hess' separate production, so their total output determined their ranking. And ConocoPhillips-owned Burlington production was added to ConocoPhillips' separate production.

Information derived from the preliminary December 2013 Oil & Gas Production Report published by the North Dakota Industrial Commission, Department of Minerals' Oil and Gas Division. This is oil produced by wells operated by these companies; it does not identify the percentage of oil from the Bakken petroleum system (including Bakken, Three Forks, Pronghorn, Sanish, etc.) that is owned by each company AND it does not include production from wells operated by others, in which these companies might hold an interest. It also does not include Bakken system oil production from wells on confidential status and the figures are rounded to the nearest whole.

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continued from page 8

ND PERMIT

Confidential status; 2,406' ground; 27679; 3-053-05683; 2/12/2014

Permits renewed

Wesco Operating

Federal 42-1; SENE 1-145N-104W; 1,595'FNL and 580'FEL; Bicentennial; N/A*; on confidential status; 2,474' ground; 19217; 33-053-03190; 2/13/2014

Permits cancelled

QEP Energy

Johnson 3-4-9BH; LOT4 4-149N-95W; 366'FNL and 585'FWL; Grail; Bakken; horizontal; 2,234' ground; 25618; 33-053-04999; 2/12/2014
Johnson 3-4-9TH; LOT4 4-149N-95W; 366'FNL and 557'FWL; Grail; Bakken; horizontal; 2,234' ground; 25617; 33-053-04998; 2/12/2014
Johnson 4-4-9BH; LOT4 4-149N-95W; 366'FNL and 529'FWL; Grail; Bakken; horizontal; 2,234' ground; 25616; 33-053-04997; 2/12/2014
Johnson 5-8-9LL; LOT4 4-149N-95W; 366'FNL and 501'FWL; Grail; Bakken; horizontal; 2,234' ground; 25615; 33-053-04996; 2/12/2014

Location resurveyed

Triangle Petroleum

Hagen 149-100-9-4-6H; SESE 9-149N-100W; 315'FSL and 900'FEL; Ellsworth; Bakken; horizontal; 2,267' ground; 26909; 33-053-05446; 2/13/2014

Hagen 149-100-9-4-7H; SESE 9-149N-100W; 345'FSL and 800'FEL; Ellsworth; Bakken; horizontal; 2,265' ground; 26910; 33-053-05447; 2/13/2014

Hagen 149-100-9-4-8H; SESE 9-149N-100W; 345'FSL and 800'FEL; Ellsworth; Bakken; horizontal; 2,264' ground; 26911; 33-053-05448; 2/13/2014

McLean Co.

Permits cancelled

Marathon Oil

Mink USA 11-15H; NWNW 15-150N-90W; 355'FNL and 1,199'FWL; Deep Water Creek Bay; Bakken; horizontal; 2,099' ground; 22557; 33-055-00163; 2/13/2014

Mountrail Co.

Permits issued

Hess

EN-Leo E-154-94-2423H-4; NENE 24-154N-94W; 673'FNL and 428'FEL; Alkali Creek; N/A*; on confidential status; 2,286' ground; 27674; 33-061-02969; 2/12/2014

EN-Leo E-154-94-2423H-5; NENE 24-154N-94W; 640'FNL and 428'FEL; Alkali Creek; N/A*; on confidential status; 2,287' ground; 27673; 33-061-02968; 2/12/2014

EN-Leo E-154-94-2423H-6; NENE 24-154N-94W; 607'FNL and 428'FEL; Alkali Creek; N/A*; on confidential status; 2,287' ground; 27672; 33-061-02967; 2/12/2014

EN-Leo E-154-94-2423H-7; NENE 24-154N-94W; 574'FNL and 428'FEL; Alkali Creek; N/A*; on confidential status; 2,287' ground; 27671; 33-061-02966; 2/12/2014

En-Pederson-LW-154-94-0408H-1; SESW 33-155N-94W; 560'FSL and 1,811'FWL; Alkali Creek; N/A*; on confidential status; 2,031' ground; 27680; 33-061-02972; 2/13/2014

En-Pederson-LW-154-94-0408H-2; SESW 33-155N-94W; 511'FSL and 1,822'FWL; Alkali Creek; N/A*; on confidential status; 2,028' ground; 27681; 33-061-02973; 2/13/2014

En-Pederson-LW-154-94-0408H-3; SESW 33-155N-94W; 463'FSL and 1,834'FWL; Alkali Creek; N/A*; on confidential status; 2,025' ground; 27682; 33-061-02974; 2/13/2014

En-Pederson-LW-154-94-0408H-4; SESW 33-155N-94W; 415'FSL and 1,845'FWL; Alkali Creek; N/A*; on confidential status; 2,022' ground; 27683; 33-061-02975; 2/13/2014

Slawson Exploration

Mole 3-20H; NWNW 29-151N-92W; 242'FNL and 1,675'FEL; Big Bend; N/A*; on confidential status; 1,910' ground; 27675; 33-061-02970; 2/12/2014

Whiting Oil and Gas

Brehm 11-4-2H; LOT4 4-152N-92W; 1,590'FNL and 420'FWL; Sanish; Bakken; horizontal; 2,297' ground; 27676; 33-061-02971; 2/12/2014

Uran 11-24-2H; NWNW 24-153N-92W; 417'FNL and 244'FWL; Sanish; Bakken; horizontal; 2,355' ground; 27684; 33-061-02976; 2/13/2014

Location resurveyed

Statoil Oil and Gas

Barstad 23-14 #4TFH; SWSE 23-156N-93W; 450'FSL and 1,575'FEL; Alger; N/A*; on confidential status; 2,320' ground; 21374; 33-061-01856; 2/13/2014

Barstad 23-14 #6TFH; SWSE 23-156N-93W; 450'FSL and 1,515'FEL; Alger; N/A*; on confidential status; 2,319' ground; 21375; 33-061-01857; 2/12/2014

Renville Co.

Permitted For Conversion

Enduro Operating

MRSPU 30-11; NWNW 30-162N-85W; 663'FNL and 650'FWL; Mouse River Park; N/A**; on confidential status; 1,771' ground; 26622; 33-075-01453; 2/11/2014

Williams Co.

Permits issued

Continental Resources

Mercer 1-13H; NENE 13-158N-99W; 295'FNL and 1,700'FWL; Ellisville; N/A*; on confidential status; 2,190' ground; 27663; 33-105-03413;

2/11/2014

Sumner 1-12H; NENE 13-158N-99W; 295'FNL and 1,655'FWL; Ellisville; N/A*; on confidential status; 2,189' ground; 27664; 33-105-03414; 2/11/2014

Oasis Petroleum

Logan 5601 11-26 7B; NWNW 26-156N-101W; 240'FNL and 600'FWL; Tyrone; Bakken; horizontal; 2,102' ground; 27686; 33-105-03419; 2/13/2014

Logan 5601 11-26 8T; NWNW 26-156N-101W; 240'FNL and 633'FWL; Tyrone; Bakken; horizontal; 2,101' ground; 27685; 33-105-03418; 2/13/2014

Logan 5601 13-26 4T; NWNW 26-156N-101W; 275'FNL and 2,400'FWL; Tyrone; Bakken; horizontal; 2,052' ground; 27689; 33-105-03420; 2/13/2014

Logan 5601 13-26 5B; NWNW 26-156N-101W; 275'FNL and 2,367'FWL; Tyrone; Bakken; horizontal; 2,050' ground; 27690; 33-105-03421; 2/13/2014

Whiting Oil and Gas

Olson 31-29H; SESE 20-156N-96W; 400'FSL and 1,020'FEL; Dollar Joe; Bakken; horizontal; 2,198' ground; 27667; 33-105-03417; 2/11/2014

Olson 41-29H; SESE 20-156N-96W; 400'FSL and 930'FEL; Dollar Joe; Bakken; horizontal; 2,203' ground; 27665; 33-105-03415; 2/11/2014

Periot 44-20H; SESE 20-156N-96W; 400'FSL and 975'FEL; Dollar Joe; Bakken; horizontal; 2,200' ground; 27666; 33-105-03416; 2/11/2014

XTO Energy (ExxonMobil)

Star Federal 21X-14E; NENE 14-154N-97W; 225'FNL and 2,279'FWL; Grinnell; N/A*; on confidential status; 1,890' ground; 27660; 33-105-03410; 2/11/2014

Star Federal 21X-14E2; NENE 14-154N-97W; 225'FNL and 2,249'FWL; Grinnell; N/A*; on confidential status; 1,890' ground; 27661; 33-105-03411; 2/11/2014

Star Federal 21X-14A; NENE 14-154N-97W; 225'FNL and 2,219'FWL; Grinnell; N/A*; on confidential status; 1,890' ground; 27662; 33-105-03412; 2/11/2014

*Note - The geologic target for these wells was not listed in its well file because they are tight (confidential) holes, but the following fields produce from the Bakken pool; Alkali Creek, Alger, Bicentennial, Big Bend, Charlson, Eagle Nest, Ellisville, Grinnell, Hawkeye, North Tioga, Patent Gate, Sadler, Tree Top, T.R., West Ambrose, Writing Rock

**Note - The geologic target for this well was not listed in its well file because it is a tight (confidential) hole, but the Mouse River Park field produces from the Madison pool.

—Compiled by Ashley Lindly

Contact Ashley Lindly at
alindly@petroleumnewsbakken.com



North Dakota Bakken oil production by company

December 2013

Derived from the preliminary December 2013 Oil & Gas Production Report published by the North Dakota Industrial Commission, Department of Minerals' Oil and Gas Division. Note this is the oil produced by wells operated by these companies; it does not identify the percentage of oil from the Bakken petroleum system (including Bakken, Three Forks, Pronghorn, Sanish, etc.) that is owned by each company AND it does not include production from wells operated by others, in which these companies might hold an interest. It also does not include Bakken system oil production from wells on confidential status. Consequently, it usually differs from what each company reports for production. The daily average for the individual companies was derived from dividing the total production by the number of days in December, versus the number of days wells were actually producing and rounded to the nearest whole.

LEGEND

Field – pool – county – total monthly oil production.
 Monthly total for all fields.
 Daily average for all fields.
 Numbers represent barrels of oil.

The operator names used in this chart are exactly as they appear in the Oil and Gas Division records, but some of the companies and/or their Bakken assets might be owned by others. The ones we have identified include Burlington Resources Oil & Gas Company, LP, which is owned by ConocoPhillips; Fidelity Exploration & Production, owned by MDU; HRC Operating, owned by Halcon Resources; Mountain Divide, owned by Mountainview Energy; Oxy USA, owned by Occidental Petroleum; Samson Resources Company, owned by KKR & Co.; and XTO Energy, Inc., owned by ExxonMobil. Please let us know if you see others by emailing Ashley Lindly at alindly@petroleumnewsbakken.com.

If you add up all the oil produced by the operators of wells in North Dakota, average Bakken production in December was approximately 802,720 barrels of oil per day, which excludes wells on confidential status. These numbers compare to total North Dakota oil production of 923,227 bpd in December as released by the North Dakota Industrial Commission, approximately 93 percent (862,978 bpd) of which came directly from the Bakken system, including wells on confidential status, with the remaining 7 percent coming from the other systems, such as the largely vertical wells in the Tyler, Mission Canyon, Duperow and Red River plays. The State of North Dakota does not release detailed production information for wells on confidential status, so Petroleum News Bakken is unable to include that data in its monthly company breakdown, including its Top 50 list. The daily average for the individual companies was derived from dividing the total production by the number of days in December, versus the number of days wells were actually producing and rounded to the nearest whole.

Abraxas Petroleum	
Demores – Bakken – Billings	388
North Fork – Bakken – McKenzie	9,426
Pershing – Bakken – McKenzie	127,947
Roosevelt – Bakken – Billings	349
Monthly total:	137,930
Daily average:	4,449
American Eagle Energy	
Colgan – Bakken – Divide	91,950
Daily average:	2,966
Armstrong Operating	
Patterson Lake – Lodgepole – Stark	15,497
Versippi – Lodgepole – N/A	1,214
Monthly total:	16,711
Daily average:	539
Arsenal Energy	
Stanley – Bakken – Mountrail	33,273
Daily average:	1,073
Bakken Hunter	
Ambrose – Bakken – Divide	7,195
Bounty School – Bakken – Divide	1,464
Crosby – Bakken – Divide	996
Paulson – Bakken – Divide	2,363
Monthly total:	12,018
Daily average:	388
Baytex Energy USA	
Ambrose – Bakken – Divide	43,383
Blooming Prairie – Bakken – Divide	22,625
Bluffton – Bakken – Divide	1,921
Burg – Bakken – Divide	5,132
Burg – Bakken – Williams	608
Frazier – Bakken – Divide	5,710
Garnet – Bakken – Divide	5,192
Lone Tree – Bakken – Williams	2,583
Lone Tree Lake – Bakken – Williams	4,331
Moraine – Bakken – Divide	906
Musta – Bakken – Divide	1,612
Plumer – Bakken – Divide	2,899
Skabo – Bakken – Divide	5,139
Smoky Butte – Bakken – Divide	2,741
West Ambrose – Bakken – Divide	6,147
Whiteaker – Bakken – Divide	42,079
Wildcat – Bakken – Williams	1,164
Monthly total:	154,172
Daily average:	4,973
BTA Oil Producers	
Bicentennial – Bakken – Golden Valley	213
Elkhorn Ranch – Bakken – Billings	27
Pierre Creek – Bakken – McKenzie	170
Monthly total:	410
Daily average:	13
Burlington Resources Oil and Gas (ConocoPhillips)	
Bailey – Bakken – Dunn	11,081
Banks – Bakken – McKenzie	3,717
Bennett Creek – Bakken – McKenzie	1,458
Blue Buttes – Bakken – McKenzie	217,944
Bully – Bakken – McKenzie	1,912
Cabernet – Bakken – Dunn	0
Camel Butte – Bakken – McKenzie	14,176
Charlson – Bakken – McKenzie	22,997
Clear Creek – Bakken – McKenzie	97,081
Corral Creek – Bakken – Dunn	90,583
Croff – Bakken – McKenzie	23,828
Crooked Creek – Bakken – Dunn	1,952
Dimmick Lake – Bakken – McKenzie	4,774
Elidah – Bakken – McKenzie	33,179
Fayette – Bakken – Dunn	3,627

Hawkeye – Bakken – McKenzie	111,033
Haystack Butte – Bakken – McKenzie	57,296
Jim Creek – Bakken – Dunn	2,795
Johnson Corner – Bakken – McKenzie	72,012
Keene – Bakken/Three Forks – McKenzie	85,122
Killdeer – Bakken – Dunn	6,492
Little Knife – Bakken – Dunn	20,847
Lone Butte – Bakken – Dunn	3,450
Mondak – Bakken – McKenzie	0
Morgan Draw – Bakken – Golden Valley	0
Murphy Creek – Bakken – Dunn	30,349
North Fork – Bakken – McKenzie	10,893
Pershing – Bakken – McKenzie	22,446
Pierre Creek – Bakken – McKenzie	565
Sand Creek – Bakken – McKenzie	15,780
Twin Valley – Bakken – McKenzie	3,181
Union Center – Bakken – McKenzie	63,083
Westberg – Bakken – McKenzie	66,027
Wildcat – Bakken – McKenzie	2,049
Willmen – Bakken – Dunn	2,194
Monthly total:	1,103,923
Daily average:	35,858
Carl H. Nordstrand	
Pierre Creek – Bakken – McKenzie	121
Daily average:	4
Charger Resources	
Buckhorn – Bakken – McKenzie	58
Johnson Corner – Bakken – McKenzie	108
Pierre Creek – Bakken – McKenzie	0
Monthly total:	166
Daily average:	5
Citation Oil and Gas	
Sadler – Bakken – Divide	106
Daily average:	3
Condor Petroleum	
Hayland – Bakken – Divide	0
Stoneview – Bakken – Divide	57
Daily average:	2
ConocoPhillips	
Dickinson – Lodgepole – N/A	4,673
Duck Creek – Lodgepole – N/A	3,021
West Dickinson – Lodgepole – N/A	0
Monthly total:	7,694
Daily average:	248
Continental Resources	
Alkali Creek – Bakken – Mountrail	40,132
Antelope – Sanish – McKenzie	21,953
Avoca – Bakken – Williams	9,838
Baker – Bakken – McKenzie	0
Baker – Bakken – Williams	191
Banks – Bakken – McKenzie	125,859
Barta – Bakken – Billings	6,384
Battleview – Bakken – Williams	3,963
Baukol Noonan – Bakken – Divide	1,769
Bear Creek – Bakken – Dunn	25,865
Beaver Creek – Bakken – Golden Valley	5,532
Beaver Creek Bay – Bakken – Mercer	169
Beaver Lodge – Bakken – Williams	17,150
Bell – Bakken – Stark	2,690
Bicentennial – Bakken – McKenzie	744
Big Gulch – Bakken – Dunn	6,093
Blacktail – Bakken – Billings	1,165
Bluffton – Bakken – Divide	7,104
Border – Bakken – Burke	8,270
Border – Bakken – Divide	861
Brooklyn – Bakken – Williams	128,464
Bully – Bakken – McKenzie	3,898
Cabernet – Bakken – Dunn	7,752
Camel Butte – Bakken – McKenzie	1,352

Camp – Bakken – McKenzie	75,157
Catwalk – Bakken – Williams	1,802
Cedar Coulee – Bakken – Dunn	27,246
Charlie Bob – Bakken – McKenzie	187
Charlson – Bakken – McKenzie	0
Chimney Butte – Bakken – Dunn	129,074
Corinth – Bakken – Williams	21,375
Corral Creek – Bakken – Dunn	66,029
Crazy Man Creek – Bakken – Williams	30,440
Demores – Bakken – Billings	467
Dimmick Lake – Bakken – McKenzie	6,240
Dollar Joe – Bakken – Williams	108,251
Dolphin – Bakken – Divide	19,159
Dutch Henry Butte – Bakken – Stark	0
East Fork – Bakken – Williams	40,147
Edge – Bakken – McKenzie	835
Elidah – Bakken – McKenzie	25,755
Elk – Bakken – McKenzie	7,343
Elkhorn Ranch – Bakken – Billings	962
Ellisville – Bakken – Williams	2,946
Elm Tree – Bakken – McKenzie	152,789
Epping – Bakken – Williams	18,614
Fairfield – Bakken – Billings	4,584
Fancy Buttes – Bakken – McKenzie	1,302
Forthun – Bakken – Divide	3,064
Frazier – Bakken – Divide	8,623
Glade – Bakken – Billings	236
Glass Bluff – Bakken – McKenzie	3,281
Hamlet – Bakken – Divide	90,351
Hamlet – Bakken – Williams	19,160
Hanson – Bakken – Williams	7,749
Hardscrabble – Bakken – Williams	6,550
Hayland – Bakken – Divide	3,839
Haystack Butte – Bakken – Dunn	3,739
Haystack Butte – Bakken – McKenzie	8,439
Hebron – Bakken – Williams	30,572
Indian Hill – Bakken – McKenzie	15,498
Jim Creek – Bakken – Dunn	64,679
Juno – Bakken – Divide	14,403
Kimberly – Bakken – Divide	1,063
Last Chance – Bakken – McKenzie	7,228
Last Chance – Bakken – Williams	21,962
Lindahl – Bakken – Williams	53,734
Little Knife – Bakken – Dunn	11,221
Little Knife – Bakken – McKenzie	934
Lone Tree Lake – Bakken – Williams	18,129
Long Creek – Bakken – Williams	24,246
Mary – Bakken – McKenzie	0
Mondak – Bakken – McKenzie	3,384
Murphy Creek – Bakken – Dunn	38,770
New Home – Bakken – Williams	6,681
North Tioga – Bakken – Burke	14,654
North Tioga – Bakken – Williams	40,289
North Tobacco Garden – Bakken – McKenzie	31,834
Northwest McGregor – Bakken – Williams	11,641
Oakdale – Bakken – Dunn	188,498
Oliver – Bakken – Williams	48,402
Patent Gate – Bakken – McKenzie	7,444
Pembroke – Bakken – McKenzie	6,024
Pershing – Bakken – McKenzie	10,587
Pleasant Valley – Bakken – Williams	9,605
Poe – Bakken – McKenzie	1,920
Rainbow – Bakken – Williams	5,522
Ranch Coulee – Bakken – McKenzie	2,093
Ranch Creek – Bakken – McKenzie	865
Rattlesnake Point – Bakken – Dunn	20,164
Rosebud – Bakken – Williams	3,209
Ross – Bakken – Mountrail	517
Saddle Butte – Bakken – Billings	2,177
Sadler – Bakken – Divide	12,498
Sauk – Bakken – Divide	2,500
Sauk – Bakken – Williams	18,236
Siverston – Bakken – McKenzie	2,684
South Boxcar – Bakken – McKenzie	327
South Meadow – Bakken – Williams	5,351
Squires – Bakken – Williams	7,756
St. Anthony – Bakken – Dunn	4,886
St. Demetrius – Bakken – Billings	26,687
Stoneview – Bakken – Burke	9,503
Stoneview – Bakken – Divide	67,726
Stoneview – Bakken – Williams	9,564
Temple – Bakken – Williams	4,608
Todd – Bakken – Williams	4,007
Ukraine – Bakken – Billings	1,760
Upland – Bakken – Divide	32,536
Viking – Bakken – Burke	5,270
West Capa – Bakken – Williams	2,607
Westberg – Bakken – McKenzie	6,457
Whitetail – Bakken – Billings	206
Wildcat – Bakken – Billings	4,593
Wildcat – Bakken – McKenzie	1,035
Wildcat – Bakken – Williams	6,663

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ND PRODUCTION

Winner – Bakken – Williams	4,442
Monthly total:	2,304,291
Daily average:	74,332

Cornerstone Natural Resources

Bailey – Bakken – Dunn	3,580
Carter – Bakken – Burke	3,630
Clear Water – Bakken – Burke	1,050
Coteau – Bakken – Burke	2,742
Customs – Bakken – Burke	1,276
Flaxton – Bakken – Burke	3,437
Lignite – Bakken – Burke	400
Lostwood – Bakken – Burke	1,652
Northeast Foothills – Bakken – Burke	1,077
Pickett – Bakken – Burke	809
South Coteau – Bakken – Burke	3,708
Woburn – Bakken – Burke	1,549
Monthly total:	24,910
Daily average:	804

Crescent Point Energy

Alkabo – Bakken – Divide	1,112
Blue Ridge – Bakken – Williams	6,551
Church – Bakken – Williams	2,680
Colgan – Bakken – Divide	3,566
Dublin – Bakken – Williams	3,841
Ellisville – Bakken – Williams	8,183
Gooseneck – Bakken – Divide	1,961
Little Muddy – Bakken – Williams	12,167
New Home – Bakken – Williams	317
West Ambrose – Bakken – Divide	14,181
Wheelock – Bakken – Williams	733
Wildcat – Bakken – Williams	0
Wildrose – Bakken – Divide	1,279
Winner – Bakken – Williams	18,265
Monthly total:	74,836
Daily average:	2,414

Denbury Onshore

Eland – Lodgepole – N/A	18,556
Livestock – Lodgepole – N/A	0
Stadium – Lodgepole – N/A	12,168
Subdivision – Lodgepole – N/A	0
Monthly total:	30,724
Daily average:	991

Eagle Operating

Spiral – Bakken – Burke	45
Daily average:	1.4

Earthstone Energy

Flat Top Butte – Bakken – McKenzie	194
Daily average:	6

Emerald Oil

Boxcar Butte – Bakken – McKenzie	16,110
Charbonneau – Bakken – McKenzie	19,840
Foreman Butte – Bakken – McKenzie	5,834
Wildcat – Bakken – McKenzie	14,392
Monthly total:	56,176
Daily average:	1,812

Encore Energy Partners

Ice Caves – Bakken – Billings	187
North Tioga – Bakken – Burke	91
Tree Top – Bakken – Billings	80
Monthly total:	358
Daily average:	12

Endeavor Energy Resources

Bicentennial – Bakken – McKenzie	0
Enduro Operating	
Hay Draw – Bakken – McKenzie	0
Stoneview – Bakken – Divide	0

Enerplus Resources USA

Antelope – Sanish – McKenzie	28,072
Beicegel Creek – Bakken – McKenzie	0
Eagle Nest – Bakken – Dunn	7,156
Eagle Nest – Bakken – McKenzie	21,284
Four Bears – Bakken – McKenzie	951
Heart Butte – Bakken – Dunn	30,260
Mandaree – Bakken – Dunn	111,304
McGregory Buttes – Bakken – Dunn	98,252
Moccasin Creek – Bakken – Dunn	15,951
South Fork – Bakken – Dunn	11,043
Spotted Horn – Bakken – McKenzie	39,525
Squaw Creek – Bakken – Dunn	3,641
Wildcat – Bakken – Dunn	5,173
Monthly total:	372,612
Daily average:	12,020

EOG Resources

Alger – Bakken – Mountrail	36,103
Antelope – Sanish – McKenzie	59,334
Clarks Creek – Bakken – McKenzie	98,253
Clear Water – Bakken – Burke	12,875
Clear Water – Bakken – Mountrail	102,551
Cottonwood – Bakken – Mountrail	9,380
Eightmile – Bakken – Williams	1,866
Ft. Buford – Bakken – Williams	7,630
Hebron – Bakken – Williams	2,694
Kittleson Slough – Bakken – Mountrail	43,426

Lake Trenton – Bakken – Williams	750
Little Butte – Bakken – Burke	1,020
Mandaree – Bakken – Dunn	6,551
Painted Woods – Bakken – Williams	37,864
Parshall – Bakken – Mountrail	989,809
Rosebud – Bakken – Williams	8,428
Ross – Bakken – Mountrail	40,285
Round Prairie – Bakken – Williams	22,661
Sixmile – Bakken – Williams	6,791
Spotted Horn – Bakken – McKenzie	182,251
Squaw Creek – Bakken – McKenzie	20,988
Squires – Bakken – Williams	2,468
Stanley – Bakken – Mountrail	18,944
Thompson Lake – Bakken – McKenzie	16,305
Van Hook – Bakken – Mountrail	92,876
Vanville – Bakken – Burke	680
Wildcat – Bakken – Williams	1,326
Monthly total:	1,824,109
Daily average:	58,842

Monthly total:

1,824,109

Daily average: 58,842

Evertson Operating

Ray – Bakken – Williams	172
Daily average:	6

Fidelity Exploration and Production (MDU)

Alger – Bakken – Mountrail	19,091
Dickinson – Bakken – Stark	9,063
Dutch Henry Butte – Bakken – Stark	13,754
Green River – Bakken – Stark	7,780
Heart River – Bakken – Stark	28,538
Lehigh – Bakken – Stark	0
New Hradec – Bakken – Stark	6,044
Sanish – Bakken – Mountrail	151,002
Stanley – Bakken – Mountrail	108,754
Zenith – Bakken – Stark	3,182
Monthly total:	347,208
Daily average:	11,200

Monthly total:

347,208

Daily average: 11,200

Filco

Charlson – Bakken – McKenzie	32
Rough Rider – Bakken – McKenzie	22
Monthly total:	54
Daily average:	1.7

Gadeco

Epping – Bakken – Williams	7,725
Daily average:	249

Galaxy Oil

Hamlet – Bakken – Divide	20
Sauk – Bakken – Williams	13
Monthly total:	33
Daily average:	1

GMX Resources

Beicegel Creek – Bakken – McKenzie	3,196
Bennett Creek – Bakken – McKenzie	3,810
Butte – Bakken – McKenzie	1,169
Magpie – Bakken – Billings	835
New Hradec – Bakken – Stark	1,661
Ranch Creek – Bakken – McKenzie	1,950
Tree Top – Bakken – Billings	623
Whitetail – Bakken – Billings	0
Monthly total:	13,244
Daily average:	427

Hess Bakken Investments

Alger – Bakken – Mountrail	136,950
Alkali Creek – Bakken – Mountrail	214,734
Antelope – Sanish – McKenzie	151,453
Antelope Creek – Bakken – McKenzie	4,096
Bailey – Bakken – Dunn	0
Banks – Bakken – McKenzie	4,719
Baskin – Bakken – Mountrail	13,055
Baukol Noonan – Bakken – Divide	481
Bear Creek – Bakken – Dunn	2,692
Beaver Lodge – Bakken – Williams	61,596
Big Butte – Bakken – Mountrail	90,648
Big Gulch – Bakken – Dunn	1,011
Blue Buttes – Bakken – McKenzie	240,077
Capa – Bakken – Williams	22,815
Cedar Coulee – Bakken – Dunn	33,961
Cherry Creek – Bakken – McKenzie	83,589
Clear Water – Bakken – Mountrail	13,209
Cottonwood – Bakken – Mountrail	917
Crazy Man Creek – Bakken – Williams	3,134
Davis Buttes – Bakken – Stark	1,584
Dollar Joe – Bakken – Williams	20,366
East Fork – Bakken – Williams	89,775
East Tioga – Bakken – Mountrail	564
Elk – Bakken – McKenzie	2,442
Ellsworth – Bakken – McKenzie	28,855
Elm Tree – Bakken – McKenzie	10,857
Enget Lake – Bakken – Mountrail	1,460
Forthun – Bakken – Burke	2,110
Glass Bluff – Bakken – McKenzie	5,270
Hans Creek – Bakken – Dunn	0
Hawkeye – Bakken – McKenzie	228,909
Hofflund – Bakken – Williams	89,852
Jim Creek – Bakken – Dunn	1,885
Juniper – Bakken – McKenzie	6,259
Kittleson Slough – Bakken – Mountrail	503
Lake Ilo – Bakken – Dunn	0
Larson – Bakken – Burke	2,714
Little Knife – Bakken – Dunn	159,356
Little Knife – Bakken – McKenzie	1,363
Lone Butte – Bakken – Dunn	3,437
Lone Tree Lake – Bakken – Williams	13,633
Long Creek – Bakken – Williams	2,619
Manitou – Bakken – Mountrail	72,785

Manning – Bakken – Dunn	1,652
Marmon – Bakken – Williams	8,126
Midway – Bakken – Williams	222
Murphy Creek – Bakken – Dunn	39,428
New Home – Bakken – Williams	1,590
Oliver – Bakken – Williams	8,199
Parshall – Bakken – Mountrail	3,292
Pleasant Valley – Bakken – Mountrail	9,600
Rainbow – Bakken – Williams	9,299
Ranch Coulee – Bakken – McKenzie	0
Ray – Bakken – Williams	39,160
Robinson Lake – Bakken – Mountrail	295,343
Ross – Bakken – Mountrail	53,247
Sandrock – Bakken – McKenzie	2,539
Sather Lake – Bakken – McKenzie	5,644
Saxon – Bakken – Dunn	0
Short Creek – Bakken – Burke	778
Siverston – Bakken – McKenzie	30,851
Sorkness – Bakken – Mountrail	4,801
South Meadow – Bakken – Williams	0
South Tobacco Garden – Bakken – McKenzie	2,583
Spencer – Bakken – Ward	527
Stanley – Bakken – Mountrail	2,574
Timber Creek – Bakken – McKenzie	13,537
Tioga – Bakken – Mountrail	7,232
Tioga – Bakken – Williams	2,310
Truax – Bakken – Williams	125,138
Westberg – Bakken – McKenzie	6,336
Wheelock – Bakken – Williams	37,157
White Earth – Bakken – Mountrail	6,062
Wildcat – Bakken – Burke	736
Wildcat – Bakken – McKenzie	1,554
Monthly total:	2,545,252
Daily average:	82,105

Monthly total:

2,545,252

Daily average: 82,105

Hess Corp

Ross – Bakken – Mountrail	107
Daily average:	3

HRC Operating (Halcon Resources)

Antelope – Sanish – McKenzie	225,685
Climax – Bakken – Williams	18,971
Dublin – Bakken – Williams	7,948
Eagle Nest – Bakken – Dunn	176,823
Ellisville – Bakken – Williams	3,234
Flat Top Butte – Bakken – McKenzie	0
Four Bears – Bakken – McKenzie	91,294
Good Luck – Bakken – Williams	11,272
Little Muddy – Bakken – Williams	7,075
Lone Tree Lake – Bakken – Williams	13,756
Marmon – Bakken – Williams	34,302
McGregory Buttes – Bakken – Dunn	121,101
Otter – Bakken – Williams	24,578
Pembroke – Bakken – McKenzie	2,907
Spotted Horn – Bakken – McKenzie	9,951
Strandahl – Bakken – Williams	42,403
Tyrone – Bakken – Williams	12,101
Wildcat – Bakken – Williams	17,183
Monthly total:	820,584
Daily average:	26,470

Monthly total:

820,584

Daily average: 26,470

Hunt Oil

Alexandria – Bakken – Divide	16,973
Antelope Creek – Bakken – McKenzie	8,062
Bailey – Bakken – Dunn	6,320
Bear Butte – Bakken – McKenzie	6,846
Bluffton – Bakken – Divide	6,084
Buffalo Wallow – Bakken – McKenzie	464
Bully – Bakken – McKenzie	1,183
Clear Water – Bakken – Mountrail	8,550
Ellsworth – Bakken – McKenzie	2,375
Frazier – Bakken – Divide	20,630
Lake Ilo – Bakken – Dunn	9,486
Little Tank – Bakken – McKenzie	8,899
Parshall – Bakken – Mountrail	72,956
Ross – Bakken – Mountrail	41,312
Sather Lake – Bakken – McKenzie	11,072
Sioux Trail – Bakken – Divide	8,612
Werner – Bakken – Dunn	19,768
Wolf Bay – Bakken – Dunn	24,460
Zahl – Bakken – Williams	9,672
Monthly total:	283,724
Daily average:	9,152

Monthly total:

283,724

Daily average: 9,152

Jettison

Little Knife – Bakken – Billings	13
Stoneview – Bakken – Burke	414
Monthly total:	427
Daily average:	14

Kodiak Oil and Gas

Banks – Bakken – McKenzie	11,752
Big Stone – Bakken – Williams	2,936
Bully – Bakken – McKenzie	3,087
Corinth – Bakken – Williams	3,024
Cow Creek – Bakken – Williams	3,718
Epping – Bakken – Williams	85,703
Glass Bluff – Bakken – McKenzie	31,206
Grinnell – Bakken – McKenzie	5,247
Heart Butte – Bakken – Dunn	73,741
Mandaree – Bakken – Dunn	24,899
Moccasin Creek – Bakken – Dunn	82,975
Mondak – Bakken – McKenzie	11,961
Pembroke – Bakken – McKenzie	131,696
Pierre Creek – Bakken – McKenzie	3
Poe – Bakken – McKenzie	124,355
Ranch Creek – Bakken – McKenzie	1,841
Sand Creek – Bakken – McKenzie	1,512
South Fork – Bakken – Dunn	38,530
Springbrook – Bakken – Williams	4,799
Stockyard Creek – Bakken – Williams	64,757

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ND PRODUCTION

Truax – Bakken – Williams	311,547
Twin Buttes – Bakken	113,530
Tyrone – Bakken – Williams	16,783
Wildcat – Bakken – McKenzie	3,597
Wildrose – Bakken – Divide	593
Monthly total:	1,153,792
Daily average:	37,219

Legacy Reserves Operating

Ash Coulee – Bakken – Billings	226
Elkhorn Ranch – Bakken – Billings	422
Roosevelt – Bakken – Billings	1,428
South Boxcar – Bakken – McKenzie	0
Squaw Gap – Bakken – McKenzie	464

Monthly total:	2,540
Daily average:	82

Marathon Oil

Antelope – Sanish – McKenzie	19,499
Bailey – Bakken – Dunn	282,762
Big Bend – Bakken – Mountrail	29,841
Chimney Butte – Bakken – Dunn	28,531
Deep Water Creek Bay – Bakken – McLean	35,420
Four Bears – Bakken – McKenzie	7,983
Jim Creek – Bakken – Dunn	706
Killdeer – Bakken – Dunn	92,422
Lake Ilo – Bakken – Dunn	16,993
Lost Bridge – Bakken – Dunn	25,142
McGregory Buttes – Bakken – Dunn	34,201
Moccasin Creek – Bakken – Dunn	13,122
Murphy Creek – Bakken – Dunn	148,103
Murphy Creek – Lodgepole – Dunn	2,182
Reunion Bay – Bakken – McKenzie	68,389
Reunion Bay – Bakken – Mountrail	496,584
Saxon – Bakken – Dunn	1,131
Strandahl – Bakken – Williams	15,226
Van Hook – Bakken – Mountrail	53,955
Werner – Bakken – Dunn	4,409
Wildcat – Bakken – McLean	0
Wolf Bay – Bakken – Dunn	22,012
Zahl – Bakken – Williams	1,230

Monthly total:	1,399,843
Daily average:	45,156

MBI Oil and Gas

Rough Rider – Bakken – McKenzie	45
Tree Top – Bakken – Billings	0

Daily average:	1.4
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Missouri River Royalty

Juniper – Bakken – McKenzie	38
Manitou – Bakken – Mountrail	345

Monthly total:	383
Daily average:	12

Mountain Divide (Mountainview Energy)

Fortuna – Bakken – Divide	20,537
Wildcat – Bakken – Divide	1,093

Monthly total:	21,630
Daily average:	698

Murex Petroleum

Alexander – Bakken – McKenzie	3,756
Beaver Lodge – Bakken – Williams	16,036
Fortuna – Bakken – Divide	9,880
Glass Bluff – Bakken – McKenzie	7,134
Lonesome – Bakken – McKenzie	5,347
McGregor – Bakken – Williams	17,114
Midway – Bakken – Williams	10,981
Rawson – Bakken – McKenzie	6,750
Sandrocks – Bakken – McKenzie	8,003
Sanish – Bakken – Mountrail	52,673
Stanley – Bakken – Mountrail	64,758
Temple – Bakken – Williams	39
Tioga – Bakken – Williams	1,986
West Bank – Bakken – Williams	14,244
West Capa – Bakken – Williams	2,235
West Tioga – Bakken – Williams	1,345
Wildcat – Bakken – Divide	105
Writing Rock – Bakken – Divide	3,849

Monthly total:	226,235
Daily average:	7,298

Newfield Production

Banks – Bakken – McKenzie	4,354
Bear Den – Bakken – McKenzie	12,907
Fertile Valley – Bakken – Divide	4,287
Hanks – Bakken – Williams	2,240
Haystack Butte – Bakken – Dunn	2,389
Haystack Butte – Bakken – McKenzie	13,732
Keene – Bakken/Three Forks – McKenzie	27,423
Lost Bridge – Bakken – Dunn	5,590
Pembroke – Bakken – McKenzie	3,005
Sand Creek – Bakken – McKenzie	14,591
Sandrocks – Bakken – McKenzie	26,711
Siverston – Bakken – McKenzie	101,389
South Tobacco Garden – Bakken – McKenzie	56,121
Tobacco Garden – Bakken – McKenzie	35,231
Westberg – Bakken – McKenzie	124,775

Monthly total:	434,745
Daily average:	14,024

North Plains Energy

Smokey Butte – Bakken – Divide	2,520
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Daily average:	81
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Oasis Petroleum

Alger – Bakken – Mountrail	95,904
Alkali Creek – Bakken – Mountrail	11,015
Assiniboine – Bakken – Mountrail	7,968
Baker – Bakken – McKenzie	18,942
Banks – Bakken – McKenzie	26,449
Black Slough – Bakken	2,381
Bonetrail – Bakken – Williams	15,157
Bull Butte – Bakken – Williams	51,266
Camp – Bakken – McKenzie	163,053
Camp – Bakken – Williams	6,051
Church – Bakken – Williams	2,000
Cottonwood – Bakken – Burke	60,603
Cottonwood – Bakken – Mountrail	65,861
Cow Creek – Bakken – Williams	14,825
Crazy Man Creek – Bakken – Williams	27,376
Dore – Bakken – McKenzie	14,600
Dublin – Bakken – Williams	3,244
Eightmile – Bakken – McKenzie	6,371
Eightmile – Bakken – Williams	3,064
Elidah – Bakken – McKenzie	6,653
Elk – Bakken – McKenzie	5,555
Foothills – Bakken – Burke	3,465
Foreman Butte – Bakken – McKenzie	33,244
Ft. Buford – Bakken – Williams	6,962
Glass Bluff – Bakken – McKenzie	6,635
Gros Ventre – Bakken – Burke	54,619
Harding – Bakken – McKenzie	1,080
Hebron – Bakken – Williams	4,382
Indian Hill – Bakken – McKenzie	8,174
Lake Trenton – Bakken – Williams	6,960
Leaf Mountain – Bakken – Burke	455
Lucy – Bakken – Burke	6,860
Marmon – Bakken – Williams	5,891
Missouri Ridge – Bakken – Williams	13,768
Mondak – Bakken – McKenzie	4,749
Nohly Lake – Bakken – McKenzie	3,982
North Tioga – Bakken – Burke	4,860
North Tobacco Garden – Bakken – McKenzie	5,919
Painted Woods – Bakken – Williams	19,459
Pronghorn – Bakken – McKenzie	5,487
Rawson – Bakken – McKenzie	3,559
Robinson Lake – Bakken – Mountrail	40,361
Rosebud – Bakken – Williams	18,517
Sand Creek – Bakken – McKenzie	770
Sanish – Bakken – Mountrail	70,245
Siverston – Bakken – McKenzie	15,018
Sorkness – Bakken – Mountrail	9,804
Squires – Bakken – Williams	45,109
Strandahl – Bakken – Williams	813
Todd – Bakken – Williams	9,662
Trenton – Bakken – Williams	5,670
Tyrone – Bakken – Williams	44,438
Tyrone – Lodgepole – Williams	0
Wildcat – Bakken – McKenzie	13,353
Wildcat – Bakken – Mountrail	3,516
Wildcat – Bakken – Williams	2,046
Willow Creek – Bakken – Williams	89,254

Monthly total:	1,177,424
Daily average:	37,981

Oxy USA (Occidental Petroleum)

Cabernet – Bakken – Dunn	53,886
Crooked Creek – Bakken – Dunn	9,691
Dimond – Bakken – Burke	36,958
Fayette – Bakken – Dunn	171,140
Hungry Man Butte – Bakken – Billings	5,539
Little Knife – Bakken – Billings	6,031
Little Knife – Bakken – Dunn	8,765
Manning – Bakken – Dunn	58,988
Murphy Creek – Bakken – Dunn	91,773
Russian Creek – Bakken – Dunn	16,453
Saddle Butte – Bakken – Billings	3,405
Simon Butte – Bakken – Dunn	7,166
Snow – Bakken – Billings	3,881
St. Anthony – Bakken – Dunn	15,194
Vanville – Bakken – Burke	4,239
Wildcat – Bakken – Dunn	0
Willmen – Bakken – Billings	172
Willmen – Bakken – Dunn	29,514

Monthly total:	522,795
Daily average:	16,864

Peregrine Petroleum Partners

Buckhorn – Bakken – Billings	158
Covered Bridge – Bakken – McKenzie	17
Flat Top Butte – Bakken – McKenzie	162

Monthly total:	337
Daily average:	11

Petro Harvester Operating

Little Butte – Bakken – Burke	348
Thompson Lake – Bakken – Burke	255

Monthly total:	603
Daily average:	19

Petro-Hunt

Charlson – Bakken – McKenzie	87,306
Clear Creek – Bakken – McKenzie	211,552
East Fork – Bakken – Williams	5,412
East Tioga – Bakken – Burke	3,061
East Tioga – Bakken – Mountrail	14,707
Keene – Bakken/Three Forks – McKenzie	2,078
Kittleson Slough – Bakken – Mountrail	4,689
Little Knife – Bakken – Billings	2,539
Little Knife – Bakken – Dunn	1,265
North Tioga – Bakken – Burke	107,828
Powers Lake – Bakken – Mountrail	1,238
Stockyard Creek – Bakken – Williams	21,514
Stoneview – Bakken – Divide	907

Union Center – Bakken – McKenzie	37,364
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Monthly total:	501,460
Daily average:	16,176

Phillip D. Armstrong

Charlson – Bakken – McKenzie	46
Elm Tree – Bakken – McKenzie	66

Monthly total:	112
Daily average:	4

Pride Energy, an Oklahoma General Partnership

Cartwright – Bakken – McKenzie	126
Elkhorn Ranch – Bakken – Billings	174
Squaw Gap – Bakken – McKenzie	0

Monthly total:	300
Daily average:	10

QEP Energy

Blue Buttes – Bakken – McKenzie	39,276
Croff – Bakken – McKenzie	26,237
Deep Water Creek Bay – Bakken – McLean	42,258
Grail – Bakken – McKenzie	479,624
Heart Butte – Bakken – Dunn	373,657
Spotted Horn – Bakken – McKenzie	10,481
Squires – Bakken – Williams	4,497
Van Hook – Bakken – Mountrail	7,096
Wildcat – Bakken – Dunn	6,553

Monthly total:	989,679
Daily average:	31,925

Ranch Oil

Antelope – Sanish – McKenzie	233
Westberg – Bakken – McKenzie	1

Monthly total:	234
Daily average:	8

Renegade Petroleum (North Dakota)

Wildcat – Bakken – Renville	0
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Resolute Natural Resources

Lone Butte – Bakken – McKenzie	1,176
Ranch Creek – Bakken – McKenzie	199

Monthly total:	1,375
Daily average:	44

Resource Drilling

Clear Water – Bakken – Mountrail	4,550
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Daily average:	147
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Rim Operating

Clayton – Bakken – Burke	564
Little Butte – Bakken – Burke	2,604
Rennie Lake – Bakken – Burke	783
South Coteau – Bakken – Burke	714

Monthly total:	4,665
Daily average:	151

Samson Resources (KKR & Co.)

Ambrose – Bakken – Divide	147,516
Blooming Prairie – Bakken – Divide	18,263
Candak – Bakken – Divide	2,498
West Ambrose – Bakken – Divide	32,798
Wildcat – Bakken – Divide	529

Monthly total:	201,604
Daily average:	6,503

Samuel Gary Jr. and Associates

West Tioga – Bakken – Williams	455
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Daily average:	15
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Sequel Energy

Bull Moose – Bakken – McKenzie	6,909
Cinnamon Creek – Bakken – McKenzie	1,474
Cottonwood – Bakken – Burke	204
Cottonwood – Bakken – Mountrail	0
Flat Top Butte – Bakken – McKenzie	7,448
Hay Draw – Bakken – McKenzie	484
McGregor – Bakken – Williams	86,559
North Tioga – Bakken – Burke	344
North Tioga – Bakken – Divide	4,134
Pierre Creek – Bakken – McKenzie	6,190
Stoneview – Bakken – Burke	122
Stoneview – Bakken – Divide	1,695
Temple – Bakken – Williams	34,475

Monthly total:	150,038
Daily average:	4,840

SHD Oil and Gas

Deep Water Creek Bay – Bakken – McLean	2,311
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Daily average:	75
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Sinclair Oil and Gas

Bully – Bakken – McKenzie	2,826
Little Knife – Bakken – Dunn	8,651
Lone Butte – Bakken – Dunn	13,418
Mary – Bakken – Dunn	3,074
Parshall – Bakken – Mountrail	3,899
Robinson Lake – Bakken – Mountrail	13,566
Sanish – Bakken – Mountrail	15,302

Monthly total:	60,736
Daily average:	1,959

continued from page 13

ND PRODUCTION**Slawson Exploration**

Alger – Bakken – Mountrail	16,086
Arnegard – Bakken – McKenzie	2,129
Baker – Bakken – McKenzie	8,799
Bicentennial – Bakken – McKenzie	0
Big Bend – Bakken – Mountrail	177,244
Boxcar Butte – Bakken – McKenzie	1,986
Bully – Bakken – McKenzie	2,755
Cabernet – Bakken – Dunn	400
Cedar Coulee – Bakken – Dunn	29
Charbonneau – Bakken – McKenzie	569
Elk – Bakken – McKenzie	2,619
Ellsworth – Bakken – McKenzie	3,704
Elm Tree – Bakken – McKenzie	42,743
Kittleson Slough – Bakken – Mountrail	12,467
Mondak – Bakken – McKenzie	3,700
Murphy Creek – Bakken – Dunn	4,967
North Fork – Bakken – McKenzie	43,827
North Tobacco Garden – Bakken – McKenzie	8,835
Painted Woods – Bakken – Williams	3,196
Parshall – Bakken – Mountrail	9,717
Pleasant Hill – Bakken – McKenzie	1,451
Ross – Bakken – Mountrail	15,866
Sanish – Bakken – Mountrail	46,376
Saxon – Bakken – Dunn	2,592
Squaw Gap – Bakken – McKenzie	1,849
Stockyard Creek – Bakken – Williams	0
Tobacco Garden – Bakken – McKenzie	3,221
Trailside – Bakken – McKenzie	2,229
Van Hook – Bakken – Mountrail	300,079
Wildcat – Bakken – Williams	1,116
Winter Butte – Bakken – McKenzie	315
Monthly total:	720,866
Daily average:	23,254

SM Energy

Alexandria – Bakken – Divide	16,319
Ambrose – Bakken – Divide	11,931
Baker – Bakken – McKenzie	6,208
Banks – Bakken – McKenzie	1,546
Bear Den – Bakken – McKenzie	39,184
Bicentennial – Bakken – Golden Valley	1,516
Bicentennial – Bakken – McKenzie	2,371
Camp – Bakken – McKenzie	8,339
Cartwright – Bakken – McKenzie	1,228
Charlson – Bakken – McKenzie	15,582
Colgan – Bakken – Divide	81,346
Croff – Bakken – McKenzie	42,133
Devils Pass – Bakken – McKenzie	38
Dimmick Lake – Bakken – McKenzie	2,049
Elk – Bakken – McKenzie	6,397
Elkhorn Ranch – Bakken – Billings	312
Ft. Buford – Bakken – Williams	14,425
Indian Hill – Bakken – McKenzie	4,664
Mondak – Bakken – McKenzie	1,627
Musta – Bakken – Divide	9,404
Phelps Bay – Bakken – McKenzie	639
Pierre Creek – Bakken – McKenzie	421
Poe – Bakken – McKenzie	135,236
Rough Rider – Bakken – McKenzie	1,677
Siverston – Bakken – McKenzie	8139,648
Sixmile – Bakken – Williams	5,452
West Ambrose – Bakken – Divide	65,652
Wildcat – Bakken – Divide	3,515
Wildcat – Bakken – McKenzie	2,474
Wildcat – Bakken – Stark	0
Monthly total:	641,333
Daily average:	20,688

Statoil Oil and Gas

Alexander – Bakken – McKenzie	9,951
Alger – Bakken – Mountrail	380,713
Avoca – Bakken – Williams	27,386
Banks – Bakken – McKenzie	235,340
Briar Creek – Bakken – McKenzie	56,785
Briar Creek – Bakken – Williams	4,320
Buford – Bakken – Williams	9,215
Bull Butte – Bakken – Williams	16,502
Camp – Bakken – McKenzie	25,375
Catwalk – Bakken – Williams	5,798
Cow Creek – Bakken – Williams	35,921
East Fork – Bakken – Williams	44,543
Elk – Bakken – McKenzie	14,975
Foreman Butte – Bakken – McKenzie	3,364
Glass Bluff – Bakken – McKenzie	1,774
Hardscrabble – Bakken – Williams	2,456
Kittleson Slough – Bakken – Mountrail	7,593
Lake Trenton – Bakken – Williams	930
Last Chance – Bakken – Williams	74,591
Nameless – Bakken – McKenzie	9,241
Painted Woods – Bakken – Williams	65,488
Parshall – Bakken – Mountrail	421
Patent Gate – Bakken – McKenzie	2,591
Poe – Bakken – McKenzie	22,092
Ragged Butte – Bakken – McKenzie	32,828
Rosebud – Bakken – Williams	6,134
Ross – Bakken – Mountrail	171
Sakakawea – Bakken – McKenzie	3,181
Sandricks – Bakken – McKenzie	26,716
Spring Creek – Bakken – McKenzie	8,654
Squires – Bakken – Williams	22,179
Stony Creek – Bakken – Williams	47,004
Sugar Beet – Bakken – Williams	3,232
Todd – Bakken – Williams	133,522
Wildcat – Bakken – Williams	2,614
Williston – Bakken – Williams	14,121
Monthly total:	1,357,722
Daily average:	43,797

Sundance Energy

Spotted Horn – Bakken – McKenzie	527
Daily average:	17
Texakota	
West Tioga – Bakken – Williams	1,440
Daily average:	46
The Triple T	
Glade – Bakken – Billings	11
Daily average:	0.3

Triangle USA Petroleum

Antelope Creek – Bakken – McKenzie	30,552
Buffalo Wallow – Bakken – McKenzie	10,481
Catwalk – Bakken – Williams	63
Elk – Bakken – McKenzie	9,606
Ellsworth – Bakken – McKenzie	7,513
Otter – Bakken – Williams	4,643
Pronghorn – Bakken – McKenzie	40,942
Ragged Butte – Bakken – McKenzie	5,764
Rawson – Bakken – McKenzie	53,442
Rosebud – Bakken – Williams	7,731
Squires – Bakken – Williams	0
Timber Creek – Bakken – McKenzie	24,630
Williston – Bakken – Williams	27,860
Monthly total:	223,227
Daily average:	7,201

True Oil

Bowline – Bakken – McKenzie	16,494
Buffalo Wallow – Bakken – McKenzie	1,647
Bully – Bakken – McKenzie	0
Red Wing Creek – Bakken – McKenzie	5,596
Monthly total:	23,764
Daily average:	767

Wesco Operating

Bicentennial – Bakken – McKenzie	0
Eland – Lodgepole – N/A	0
North Fork – Bakken – McKenzie	13
Daily average:	0.4

Whiting Oil and Gas

Alger – Bakken – Mountrail	19,642
Arnegard – Bakken – McKenzie	11,500
Ash Coulee – Bakken – Billings	1,138
Beaver Creek – Bakken – Golden Valley	8,878
Bell – Bakken – Stark	146,198
Bicentennial – Bakken – Golden Valley	1,672
Bicentennial – Bakken – McKenzie	1,186
Big Stick – Bakken – Billings	7,298
Buckhorn – Bakken – Billings	487
Buckhorn – Bakken – McKenzie	258
Bully – Bakken – McKenzie	20,776
Cartwright – Bakken – McKenzie	2,568
Chateau – Three Forks – Billings	1,400
Cooks Peak – Three Forks – Golden Valley	1,519
Demores – Bakken – Billings	3,481
Dickinson – Bakken – Stark	15,814
Dollar Joe – Bakken – Williams	13,690
Dutch Henry Butte – Bakken – Stark	65,088
Elk – Bakken – McKenzie	4,623
Elkhorn Ranch – Bakken – Billings	9,383
Ellsworth – Bakken – McKenzie	8,034
Estes – Bakken – McKenzie	13,601
Foreman Butte – Bakken – McKenzie	4,239
Four Eyes – Bakken – Billings	190
Fryburg – Bakken – Billings	1,193
Gaylord – Bakken – Billings	2,473
Gaylord – Bakken – Stark	10,007
Glass Bluff – Bakken – McKenzie	7,092
Green River – Bakken – Stark	9,167
Harding – Bakken – McKenzie	4,450
Hay Creek – Bakken – McKenzie	6,059
Heart River – Bakken – Stark	2,602
Hiline – Lodgepole – N/A	1,952
Lonesome – Bakken – McKenzie	13,819
Morgan Draw – Bakken – Billings	531
Morgan Draw – Bakken – Golden Valley	7,204
Nameless – Bakken – McKenzie	1,314
Nelson Bridge – Bakken – McKenzie	2,356
New Hradec – Bakken – Stark	2,110
North Creek – Bakken – Stark	7,347
North Elkhorn Ranch – Bakken – Billings	1,990
Park – Bakken – Billings	47,219
Parshall – Bakken – Mountrail	12,810
Pleasant Hill – Bakken – McKenzie	44,965
Poker Jim – Bakken – McKenzie	134
Pronghorn – Bakken – McKenzie	2,002
Rawson – Bakken – McKenzie	2,720
Ray – Bakken – Williams	4,822
Robinson Lake – Bakken	11,474
Roosevelt – Bakken – Billings	4,602
Rough Rider – Bakken – McKenzie	57
Sanish – Bakken – Mountrail	1,555,446
Sioux – Bakken – McKenzie	14,673
South Heart – Bakken – Stark	9,747
Squaw Gap – Bakken – McKenzie	448
St. Anthony – Bakken – Dunn	6,048
T. R. – Bakken – Williams	517
Timber Creek – Bakken – McKenzie	30,097
Twin Valley – Bakken – McKenzie	15,219
Ukraina – Bakken – Dunn	1,484
Westberg – Bakken – McKenzie	41,847
Wildcat – Bakken – Billings	519
Wildcat – Bakken – McKenzie	5,112
Zenith – Bakken – Stark	10,778
Monthly total:	2,267,105
Daily average:	73,132

Windsor Energy Group

Parshall – Bakken – Mountrail	7,024
Daily average:	227

WPX Energy Williston

Antelope – Sanish – McKenzie	12,077
Eagle Nest – Bakken – Dunn	4,210
Eagle Nest – Bakken – McKenzie	3,696
Heart Butte – Bakken – Dunn	27,196
Mandaree – Bakken – Dunn	52,711
Mandaree – Bakken – McKenzie	4,820
McGregory Buttes – Bakken – Dunn	4,809
Moccasin Creek – Bakken – Dunn	196,865
Reunion Bay – Bakken – Dunn	24,432
Reunion Bay – Bakken – Mountrail	16,707
South Fork – Bakken – Dunn	10,227
Spotted Horn – Bakken – McKenzie	37,343
Squaw Creek – Bakken – McKenzie	29,710
Van Hook – Bakken – Mountrail	387,706
Monthly total:	812,509
Daily average:	26,210

XTO Energy (ExxonMobil)

Alkali Creek – Bakken – Mountrail	33,983
Alkali Creek – Bakken – Williams	9,411
Antelope – Sanish – McKenzie	2,409
Arnegard – Bakken – McKenzie	29,498
Ash Coulee – Bakken – Billings	33
Bear Creek – Bakken – Dunn	16,818
Bear Den – Bakken – McKenzie	23,796
Beaver Lodge – Bakken – Williams	5,522
Bicentennial – Bakken – Golden Valley	405
Big Butte – Bakken – Mountrail	750
Big Meadow – Bakken – Williams	301
Blue Buttes – Bakken – McKenzie	0
Border – Bakken – Burke	698
Boxcar Butte – Bakken – McKenzie	1,238
Buckhorn – Bakken – Billings	285
Bullsnake – Bakken – Billings	386
Camp – Bakken – McKenzie	1,264
Capa – Bakken – Williams	57,644
Cedar Coulee – Bakken – Dunn	0
Charlson – Bakken – McKenzie	55,199
Charlson – Bakken – Williams	5,001
Corral Creek – Bakken – Dunn	1,388
Crazy Man Creek – Bakken – Williams	3,075
Devils Pass – Bakken – McKenzie	14
Dollar Joe – Bakken – Williams	20,133
Elidah – Bakken – McKenzie	223
Elk – Bakken – McKenzie	5,084
Elkhorn Ranch – Bakken – Billings	570
Garden – Bakken – McKenzie	25,185
Glade – Bakken – Billings	81
Glass Bluff – Bakken – McKenzie	7,701
Grinnell – Bakken – McKenzie	3,978
Grinnell – Bakken – Williams	82,247
Haystack Butte – Bakken – Dunn	25,661
Haystack Butte – Bakken – McKenzie	8,325
Heart Butte – Bakken – Dunn	201,887
Hofflund – Bakken – Williams	25,612
Indian Hill – Bakken – McKenzie	7,840
Killdeer – Bakken – Dunn	28,978
Lindahl – Bakken – Williams	1,495
Little Knife – Bakken – Dunn	19,892
Lost Bridge – Bakken – Dunn	98,821
Manitou – Bakken – Mountrail	117
McGregor – Bakken – Williams	1,513
Midway – Bakken – Williams	23,730
Mondak – Bakken – McKenzie	27,420
Morgan Draw – Bakken – Billings	3
Morgan Draw – Bakken – Golden Valley	8
Murphy Creek – Bakken – Dunn	41,541
North Fork – Bakken – McKenzie	20,104
North Tobacco Garden – Bakken – McKenzie	59,497
Poker Jim – Bakken – McKenzie	74
Rough Rider – Bakken – McKenzie	3
Sand Creek – Bakken – McKenzie	12,431
Sheep Butte – Bakken – McKenzie	524
Siverston – Bakken – McKenzie	307,575
Sorkness – Bakken – Mountrail	29,983
Squaw Creek – Bakken – McKenzie	454
Squaw Gap – Bakken – McKenzie	817
St. Demetrius – Bakken – Billings	7,216
Stoneview – Bakken – Burke	295
Stoneview – Bakken – Divide	1,885
Temple – Bakken – Williams	2,827
Tioga – Bakken – Williams	4,157
Tobacco Garden – Bakken – McKenzie	47,425
Truax – Bakken – Williams	17,944
West Bank – Bakken – Williams	1,145
West Capa – Bakken – Williams	69,352
Whitetail – Bakken – Billings	152
Wildcat – Bakken – McKenzie	1,360
Monthly total:	1,492,383
Daily average:	48,141

Zavanna

Boxcar Butte – Bakken – McKenzie	4,153
Crazy Man Creek – Bakken – Williams	5,702
East Fork – Bakken – Williams	13,540
Foreman Butte – Bakken – McKenzie	31,983
Glass Bluff – Bakken – McKenzie	23,497
Long Creek – Bakken – Williams	19,947
Poe – Bakken – McKenzie	4,994
Stockyard Creek – Bakken – Williams	46,593
Stony Creek – Bakken – Williams	54,667
Williston – Bakken – Williams	5,723
Monthly total:	210,799
Daily average:	6,800

Contact Ashley Lindly at
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• GOVERNMENT

Regulators may get tougher on well control

By **MAXINE HERR**

For Petroleum News Bakken

A blowout at a Whiting well south of Watford City, N.D., has been cleaned up and the investigation into what happened has begun, but the incident could merit the resurrection of a technical team that addresses blowouts.

The incident occurred Feb. 13 due to a mechanical failure, according to Whiting Vice President of Operations Rick Ross. Lynn Helms, director of the state's Department of Mineral Resources, DMR, said the blowout brought great concern in terms of human health risk.

"As we investigate, we'll look hard into root causes, and we may ask the industry to reconvene their well control task force," Helms said.

Uncontrolled wells present the greatest risk in the oil and gas industry because when pressurized, often flammable, fluids escape, it creates a significant safety issue, according to Helms. After two large blowouts in December 2012, regulators felt the incidents might warrant changes to rules governing well control. They approached the North Dakota Petroleum Council, NDPC, to form a technical team to

develop best management practices.

The team developed recommendations that include pre-planning of all workover projects, frequent equipment testing and preparing for above-maximum pressure levels. Operators would be required to transfer fluids in an environmentally safe manner and log all pertinent work history.

"No matter the operation or how long the wells have been in service, they should all be treated as 'big wells,'" the report said.

Operators given time to improve practices

North Dakota had more than 20 blowouts last year, according to DMR, and regulators will step in if that trend continues.

"These are self-imposed best practices," Alison Ritter, DMR's public information officer, told Petroleum News Bakken. "The idea is, if they implement the best management practices and it makes a difference, there won't be a need to make a rule. If there continues to be an occurrence and it doesn't seem to be working, there may need to be some sort of rule put into place."

Ritter said the best practices are relatively new, so the

department is giving them time to integrate.

The NDPC told Petroleum News Bakken that the industry has adopted the recommendations made by the task force and implemented them as revisions to their standard operating procedures.

The Whiting well is about seven miles north of the Theodore Roosevelt National Park North Unit, and a mist of oil and water sprayed onto nearby snow and ice covering Cherry Creek. No injuries were reported, and Helms said none of the fluids had contaminated the water.

Ross said crews rushed to control the well. They were "regrouping" on Feb. 17 with plans to return to normal operations and investigate the failure in the days to follow.

"We produced it into storage tanks, and hauled out oil and water during the water control event," Ross told Petroleum News Bakken. "The location was bermed even prior to our operation, and on Friday (Feb. 14), we were estimating somewhere between 40 to 70 barrels of produced water on location." ●

Contact Maxine Herr at maxine606@msn.com

• COMPANY UPDATE

Kodiak's reserves end 2013 up 77 percent

Total proved sitting at 167 MM boe on Dec. 31, giving 2.5 years of drilling backlog; 4Q sales volume up 98 percent over 4Q 2012

By **STEVE SUTHERLIN**

For Petroleum News Bakken

Kodiak Oil & Gas Corp. said its total proved reserves on Dec. 31, 2013, were approximately 167.3 million barrels of oil equivalent, as compared to 94.7 million boe at the end of 2012.

The 2013 total represents a 77 percent increase from its 2012 estimated proved reserves on an equivalent basis, comprised of 138.2 million barrels of crude oil and 174 billion cubic feet of natural gas, the company said in a Feb. 11 preliminary unaudited operational and financial report. The 2013 reserve mix is 83 percent crude oil, along with 17 percent associated natural gas.

Approximately 46 percent of the 2013 total proved reserves are categorized as proved developed producing and approximately 54 percent are classified as proved undeveloped, which represents approximately 2.5 years of future drilling activity,

the company said. Substantially all of Kodiak's estimated proved reserves are in the Williston Basin.

Reserve estimates for 2013 and 2012 were prepared by independent reservoir engineering consultant Netherland, Sewell & Associates Inc., Kodiak said.

"Last year was another exciting year for Kodiak and its shareholders," Lynn Peterson, Kodiak chairman and CEO said. "Our team did a tremendous job of delivering outstanding operating results and reserve growth while, at the same time, we materially expanded our future drilling inventory through downspacing work and an acquisition."

Kodiak said its average daily sales volumes were 36,100 barrels of oil equivalent



LYNN PETERSON

per day for the fourth quarter 2013, a 98 percent increase over sales volumes of 18,200 boepd for the fourth quarter 2012 and a 2 percent increase over third quarter 2013 sales volumes of 35,400 boepd. Crude oil accounted for 89 percent of fourth quarter 2013 sales volumes.

Average daily sales volumes were 29,200 boepd for 2013, representing a 103 percent increase over average daily sales volumes of 14,400 boepd in 2012, Kodiak said.

Kodiak expects its first quarter 2014 sales volumes to average between 36,000 and 38,000 boepd which is on pace to achieve the company's stated full year guidance of 42,000-44,000 boepd.

During the fourth quarter of 2013, Kodiak said it invested approximately \$204 million on drilling and completion operations with an additional \$6 million spent on leasehold and infrastructure.

For the full year of 2013, Kodiak said it

invested approximately \$1 billion in capital expenditures related to drilling and completing new wells, including surface facilities and pipeline connections. The 2013 drilling and completion capital expenditures are in line with Kodiak's previously provided guidance of \$1 billion.

In 2013, Kodiak said, it invested approximately \$672 million on acquisitions net of

see **KODIAK RESERVES** page 17



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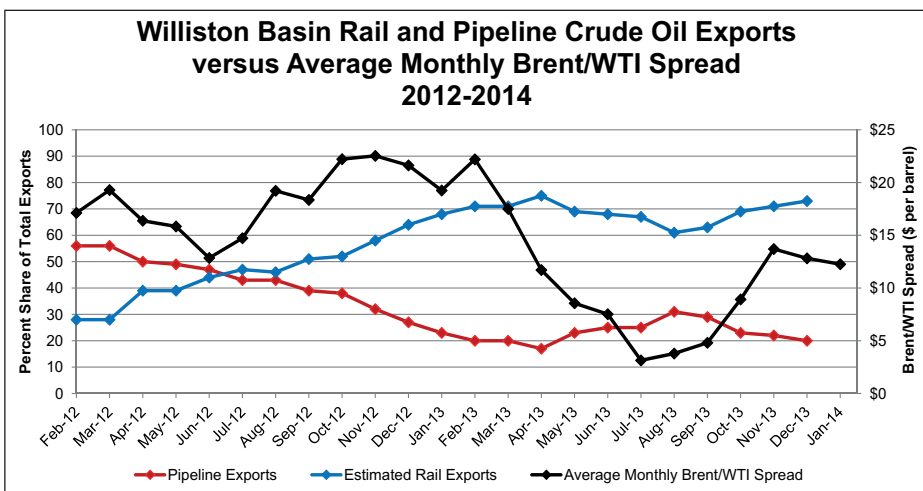
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MOVING HYDROCARBONS

Rail gains on exports amid solid price spread



Crude oil export data source: North Dakota Pipeline Authority
Brent/WTI spread data source: EIA for 2012, Alaska Dept. of Revenue for 2013 and beyond.

By **MIKE ELLERD**

Petroleum News Bakken

Railroads picked up two more Williston Basin crude oil export market share points in December putting rail's share at 73 percent. That increase follows a three month trend during which rail's market share has steadily increased after hitting a 10-month low of 61 percent in August 2013. The 2 percent market share that rails picked up came entirely from pipeline exports, which fell from 22 to 20 percent between November and December (see chart).

Of the remaining 7 percent of Williston Basin crude produced in December, 6 percent went to Tesoro's Mandan refinery and 1 percent was trucked over the border and put into Canadian pipelines.

The rising trend in rail exports follows a steady widening of the Brent/WTI price spread which began in July 2013. In the first half of 2013, the average monthly spread steadily narrowed and pipelines gained export market share going to Midcontinent markets because there was less incentive for producers to ship via rail to the coastal markets for higher Brent-based prices.

What's ahead?

While the average monthly Brent/WTI spread narrowed slightly from \$13.70 in November to \$12.82 in December, the spread was still strong with advantages at coastal markets versus the Midcontinent. "So we saw those barrels continue to move on the rail systems as opposed to

pipeline systems," said Justin Kringstad, North Dakota Pipeline Authority director, in a Feb. 14 monthly press conference.

Looking forward, the average monthly Brent/WTI spread remained strong in January averaging \$12.26 for the month. "The question always is," Kringstad said, "what are things going to do going forward? The first indicator that folks always look at is this Brent/WTI spread."

However, through the first half of February the Brent/WTI spread has been narrowing. As of Feb. 18, Brent was trading at \$110.46 and WTI at \$102.43 for a spread of \$8.03, down from the spread of \$12.38 on Dec. 31.

Other benchmark crudes

Alaska North Slope, a U.S. West Coast benchmark, closed at \$107.92 on Feb. 18 according to the Alaska Department of Revenue. Louisiana Light Sweet, a U.S. Gulf Coast benchmark, closed at \$105.88 according to Argus data posted by CME Group. The western Canadian benchmark Western Canadian Select closed at a \$25.25 per barrel discount relative to WTI on Feb. 18 according to CME Group.

North Dakota Light Sweet, NDL, closed at \$89.50 per barrel on the Flint Hills Resources exchange, a Midcontinent market, on Feb. 18. That closing is a considerable increase over the \$74 per barrel closing on Dec. 31. NDL had been trading in the low- to mid-\$70 per barrel range from early November through January after taking a hit of \$8.75 per barrel on Nov. 1. However, between Jan. 31 and Feb. 2, NDL jumped \$6.50

see **CRUDE EXPORTS** page 20



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COMPANY UPDATE

Emerald Oil sets 2014 capex at \$307M

Denver based Emerald Oil Inc. said Feb. 13 it plans a 2014 capital spending budget of \$307 million with \$182 million allocated to drilling and a \$125 million land budget.

The company projects increasing production throughout 2014, rising from a first quarter average production of 2,750 barrels of oil equivalent per day to a fourth quarter average production of 4,150 boepd. The projected average production for 2014 is 3,550 boepd, and the exit rate is projected to be 4,250 boepd.

Emerald said it is in the process of working with its bank lending group to complete a semi-annual borrowing base re-determination to reflect both the company's recent well completion activities and the reserves and production acquired in recent transactions.

Emerald said its operated activity and the acquisitions are expected to result in a significant increase in its borrowing base at the April 2014 re-determination.

Kodiak deal closed

Emerald also reported that it has closed previously announced acquisitions of core Bakken and Three Forks producing properties and undeveloped leasehold in McKenzie and Williams counties, N.D.

"The two acquisitions follow Emerald's strategy of identifying and acquiring contiguous leasehold in our immediate operating areas," McAndrew Rudisill, Emerald CEO, said Jan. 10 when the acquisition was announced.

The total purchase price for the asset packages is \$75.1 million in cash, Emerald said.

Including the acquisition, Emerald's total Williston Basin leasehold will increase to approximately 85,000 net acres, the company said.

Emerald said the package totaled approximately 20,800 net acres, including approximately 19,500 net acres highly contiguous to Emerald's Low Rider operating area in McKenzie County, purchased from Kodiak Oil and Gas Inc. for \$68.3 million.

Net daily production from the acreage is approximately 300 barrels of oil equivalent per day, the company said.

Emerald said it would gain "19 operated drilling spacing units; 17 DSUs in Low Rider and two DSUs in Easy Rider."

see **EMERALD CAPEX** page 17

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SM GROWTH

Eagle Ford, Texas shale plays.

“Production growth was driven by strong results in the company’s operated Eagle Ford shale and Bakken-Three Forks programs,” SM Energy said, noting that liquids volumes, consisting of high value oil and natural gas liquids, NGLs, have increased 103 percent since 2011. Roughly half of SM Energy’s daily 132,400-barrel average in 2013 was liquids.

The 16,100 boepd Bakken performance in the final quarter of last year alone represents an 8 percent improvement over the 14,900 boepd SM Energy produced from the Williston Basin in the previous quarter, and a 35 percent increase over the 11,900 boepd it produced in the region during the same period a year earlier.

SM Energy is currently ranked 15th among Petroleum News’ Top 50 Williston Basin producers.

The company, which reported 54 million boe of Bakken-Three Forks proved reserves booked at year-end 2013, said its drilling program in the basin is focused on its Raven-Bear Den and Gooseneck prospects in North Dakota. And substantially all of the company’s activity is now centered on production-boosting infill development, SM Energy noted during a Feb. 19 conference call with analysts.

The company is operating three drilling rigs in North Dakota, two of which are located in the Raven-Bear Den prospect and the third in the Gooseneck prospect. In fact, of the company’s 159,000 net acres in the Bakken-Three Forks, 79,000 of them are situated in this focus area.

For this year the company said it has planned various field tests to “maximize program economics” and prove up additional inventory. They include completion design, well spacing, and new intervals.

Well costs down 4 percent

SM Energy made 42 gross flowing completions last year in its operated Bakken-Three Forks program, eight of which were completed in the 2013 fourth quarter. At year-end, 103 net wells were completed and 79 proved undeveloped net locations booked for the program, the company said, adding that during 2013, drilling and completion costs for operated wells decreased by about 4 percent at both Raven-Bear Den and Gooseneck.

From its operated areas of the Eagle Ford, SM Energy reported average 2013 fourth-quarter production of 74,800 boepd, a 10 percent increase over 68,100 boepd in the third quarter and a 65 percent increase compared to 45,200 boepd in the fourth quarter of 2012. The company saw its single biggest increase in NGLs, which jumped to 24,000 bpd in fourth quarter from 15,200 bpd in the year earlier period.

SM Energy made 95 flowing completions in its operated Eagle Ford shale program in 2013, of which 20 were in the fourth quarter. At year-end, the company had 246 net wells producing, 12 proved developed not producing, and 199 proved undeveloped net locations booked for its program. The company had 239 million boe of total proved reserves booked at year-end for this program.

Eagle Ford tests planned

And during 2013, SM Energy said

its wells costs decreased by about 14 percent from 2012 in both the Briscoe and Galvan Ranch portions of its acreage position. This year the company plans to make about 100 flowing completions on its operated acreage, with about 60 percent of the activity in the Galvan Ranch and the balance of activity in Briscoe Ranch. It also has planned various completion design tests throughout its acreage position to maximize program economics.

From its non-operated Eagle Ford acreage, production was 20,000 boepd in the fourth quarter of 2013 compared to 19,800 boepd in the previous quarter and 15,500 boepd in the fourth quarter of 2012. However, details on the production mix were not available.

In the company’s non-operated Eagle Ford program, the operator completed 84 gross wells in the fourth quarter of last year and added one drilling rig, ending the quarter with 10 rigs.

In addition to the Bakken-Three Forks and Eagle Ford, SM Energy has operations in the Permian Basin, Powder River and East Texas.

Yearly output up to 132,400 boepd

In setting a new overall production record, the company produced a total average of 132,400 boepd for full-year 2013, an increase of 33 percent from 99,700 boepd in 2012.

SM Energy averaged 143,800 boepd in the fourth quarter of 2013, a 4 percent increase compared to the prior quarter’s 138,800 boepd and a 31 percent increase compared to 110,000 boepd in the fourth quarter of 2012, also a new record. Production mix for the quarter was 28 percent oil, 22 percent NGLs and 50 percent gas.

Though management did not provide a regional breakdown, including the Bakken-Three Forks, it is forecasting hefty increases in total production for the first quarter and full-year 2014. SM Energy is looking to average 133,000-140,000 boepd in the first quarter and 140,000-147,000 boepd for the year.

“We are in good shape as we head into 2014,” Tony Best, SM Energy’s chief executive officer, told analysts.

Proved reserves hit 428.7 million boe

SM Energy reported 428.7 million boe in total proved reserves as of year-end 2013, an increase of 46 percent from 293.4 million boe at year-end 2012. The reserves are comprised of 126.6 million barrels of oil, 1.189.3 billion cubic feet of natural gas, and 103.9 million barrels of NGLs, the company added.

The before income tax value of the company’s estimated proved reserves was pegged at \$5.5 billion, which is 44 percent greater than the prior year’s value of \$3.8 billion.

SM Energy posted net income in the fourth quarter of 2013 of \$7 million on \$636.7 million in operating revenue, compared to a net loss of \$67.1 million on \$444.3 million in operating revenue for the same period in 2012. However, adjusted net income excluding special, generally one-time items for the fourth quarter was \$85.9 million, compared to adjusted net income of \$30.4 million, for the same period a year earlier.

For full-year 2013, operating revenue was \$2.3 billion compared to \$1.5 billion for 2012, the company reported.

—RAY TYSON

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NATURAL GAS

Flaring up but applications down

Even though flaring of natural gas in North Dakota jumped from 30 percent in November to 36 percent in December (see related story on page 1), the number of flaring applications filed with the North Dakota Industrial Commission decreased substantially in December.

Seven operators submitted applications that the Industrial Commission will consider during hearings on Feb. 26 and 27 seeking permission to flare gas beyond the period allowed by field rules or by statute in a total of seven fields. In contrast, 12 operators filed applications in January to flare wells in 22 oil fields.

Oasis Petroleum, Oxy USA, Baytex Energy, Crescent Point Energy and Hunt Oil are asking to flare gas beyond the 60-60-60 rule until such time as the wells can be connected to gas gathering infrastructure. Under North Dakota’s 60-60-60 rule, operators are allowed to produce a well at an unrestricted rate for only 60 days from initial production; then production has to be restricted to 200 barrels per day for 60 days, then to 150 bpd for another 60 days, then to 100 bpd thereafter. However, flaring is allowed only for one year regardless of production rate. These five operators are asking approval to continue producing their wells at unrestricted rates until the wells can be connected to infrastructure.

Two operators, WPX Energy Williston and Fidelity Exploration and Production, are seeking a different type of flaring exemption. Specifically, under the North Dakota Century Code, the Industrial Commission can grant exemptions to the one-year flaring limit if the operator can demonstrate that connecting a well to gas infrastructure is economically infeasible, such as isolated wells in areas with no gas gathering infrastructure. WPX Energy is seeking this exemption for three wells in the Reunion Bay field in Mountrail County, and Fidelity is seeking the exemption for one Stanley field well, also in Mountrail County.

—MIKE ELLERD

Seven operators submitted applications that the Industrial Commission will consider during hearings on Feb. 26 and 27 seeking permission to flare gas beyond the period allowed by field rules or by statute in a total of seven fields. In contrast, 12 operators filed applications in January to flare wells in 22 oil fields.

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KODIAK RESERVES

divestitures.

Kodiak said its drilling operations continue with seven operated rigs, which it plans to maintain throughout 2014; the company said it will also continue to participate in non-operated drilling activities.

Kodiak said it has one full-time, 24-hour-per-day crew for completion opera-

tions in the Williston Basin, and a second crew being utilized as required by activity level.

During the fourth quarter of 2013, Kodiak said it completed 29 gross (21.9 net) operated wells and 40 gross (four net) non-operated wells bringing the full year total to 99.6 net operated and non-operated wells. ●

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EMERALD CAPEX

Approximately 62 percent of the acreage is held by production, Emerald said.

Emerald said it will fund approximately 50 percent of the acquisition costs through borrowings under its undrawn revolving credit facility and the remainder utilizing cash on hand. The company ended 2013 with approx-

imately \$140 million of cash and \$75 million of undrawn borrowing base under its revolving credit facility.

Emerald has been on a roll with land acquisitions in the Bakken.

In November, Rudisill said the company’s land team had recently completed a long-term leasing effort that added 34,000 net acres.

—STEVE SUTHERLIN

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XL HOPES

got an agreement to build a 600-mile pipeline across Canada's north to supply a military base in Fairbanks.

Since then, in 1988 the Canadian government agreed to terms in the U.S.-Canada Free Trade pact that Canada would not reduce supplies of crude to the U.S. in times of shortages except on a mutual scale.

Prentice, who figures on most lists of contenders to replace Harper when the

prime minister retires, urged Canadians to think beyond the Obama era if they favor elevating cross-border economic integration to a new level.

He said that includes pressing for an end to the logjam on XL, but may require Canada to set its sights on the next U.S. administration.

Once the next president is installed, Canada will have 18 months to capture Washington's attention on bilateral issues.

"We must set our priorities, tailor our agenda and make our preparations with that small window of opportunity in mind,"

Prentice told the Economic Club of Canada on Feb. 11.

He said the "comfortable and familiar relationship (between the U.S. and Canada) in the realm of energy has been radically transformed by North America's supply revolution."

While Canada waits for a new president, it must push forward on pipeline construction, especially to the British Columbia coast for oil sands crude and LNG exports to Asia, he said.

Prentice, whose cabinet postings under Harper included environment, also urged a

greater focus on climate change, not exclusively on moral grounds, but as an economic imperative.

"Around the world, the wave of concern over climate change crested a few years ago, but those who are paying attention can see that the next wave is building," he said.

"The wave will come and Canada needs to be ready for it. If you are in the energy business today, you are in the environment business," Prentice said. ●

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RECLAMATION RESULTS

"The surface looks good, but it's lipstick on a pig," Glatt said. "There are saltwater brine impacts, and we're getting close to where we'll have lawsuits on this."

Questioning reporting accuracy

Glatt said the state needs to go beyond the surface and review the subsurface, and he believes the issues from 30- to 40-year old wells are "coming back to bite us," he said.

"There is a lot of buzz on the brine issue. We get those daily. Farmers are losing productive land and we need to find a way to get that land back into production."

Some Bottineau County commissioners, landowners and the county's emergency manager are some of the people creating that buzz and joined forces last year to get the state's attention.

The group's most recent letter to the Industrial Commission, dated Feb. 12, states they are "very alarmed that the spill quantity and the amount recovered are not accurately being reported."

They cite two large saltwater spills in Renville and Antler townships that are currently being reclaimed. The Renville pipeline break was reported in July 2011 at 300 barrels, with later estimates at 50,000 barrels, but the Department of Health website database does not reflect the change. In

Antler township, analysis shows thousands of barrels were released from a disposal saltwater line break in 2013, yet none were reported.

"If this type of reporting is common across western North Dakota, the consequences to our land and water is devastating and make a mockery of public reported spill statistics," the letter states.

Abandoned wells reclamation fund may not go far

Bottineau County is also home to many of the old, conventional wells, where saltwater spills left soils damaged and were never properly reclaimed.

In 2013, the legislature developed an abandoned oil and gas well plugging and site reclamation fund. Its monies are available April 1, 2014, to pay for those sites that require clean-up but, but the legislation did not identify parties responsible for the reclamation.

Northwest Landowner Association Vice Chairman Troy Coons said he believes many landowners will take advantage of the fund, but since it caps at \$75 million, he doesn't believe it will go very far.

"It was a fight to get to \$75 million," Coons said. "It could be gone so quick in this kind of situation. Saltwater is definitely worse than crude, and it moves so freely



DAVE GLATT

in the soil. Each time it rains, the salt will move, so \$75 million isn't a big number."

Limited ways to deal with brine water

Glatt told Petroleum News Bakken in an email that best management practices have evolved over the years, but methods to deal with spills of North Dakota's high salt-concentrated brine water are limited.

Crews can remove the contaminated soil and dispose of it in a special waste landfill, or they can use natural/physical or chemical methods to drive the salt below the root zone in the soil profile.

"In the natural/physical or chemical application methods, the brine salts stay in the soil profile and are not removed. There have been cases where the contaminated groundwater is removed through pumping of various configurations of wells — this process is time intensive with mixed results to date," Glatt said.

The state is exploring various other reclamation methods, but Glatt urges the focus to be on prevention.

"As for any chemical, the prevention of spills through proper maintenance and operation coupled with robust detection and spill response actions will help to reduce the impact of any unauthorized release," he said.

Researching better ways

Studies are being conducted to find ways to improve reclamation in the state. The Oil and Gas Research Council has earmarked \$500,000 for the University of

North Dakota Energy and Environmental Research Center to work with North Dakota State University, NDSU, on waste reduction, offering an official utilization of drill cuttings from a well, along with water recycling and saltwater remediation or reclamation.

NDSU has also partnered with Alliance Pipeline to conduct a study of native grassland reclamation methods. The \$70,000 Alliance-funded study was launched in November, and spans the Tioga Lateral natural gas pipeline right-of-way area that runs between Tioga and Sherwood. The goal is to find the most effective way to reestablish native vegetation using different application methods for seed mixes. The study will be conducted over the next five years, with each site visited in the spring, summer and fall to document progress.

Ron Ness, president of the North Dakota Petroleum Council, believes these studies, along with any solutions that come from the state's pipeline technology working group or right-of-way task force, will give a better picture of what practices operators should use.

"Whether it's remediation or reclamation, I think the concept is to get folks who understand North Dakota soils to do some research," Ness said. "And then we have to look at our practices and see how they relate to North Dakota soil and Bakken drill cuttings." ●

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FLARING MEASURES

feet, mcmf, per day, are not so easy to snuff out.

Helms told Petroleum News Bakken on Feb. 14 that the map of 200-plus locations the North Dakota Petroleum Council flaring task force presented that were flaring more than 300 mcmf per day is a very significant aspect of the proposal.

While the task force reported 216 locations flaring at that high rate in November 2013, over the six month analysis period from June to November, the number averages closer to 235 locations and the sites with that flaring volume shift continually.

“We need to make people aware that the only opportunity to target those (wells) is as they’re permitted. They talked about 216 wells, but it’s really in the 216 to 270 range, and only 12 of those sites stayed the same,” Helms said. “We’re playing Whac-a-Mole, so the question becomes how do you regulate those?”

One record no one wants to break

In a Feb. 14 press conference, Helms

said flaring of natural gas hit the all-time high of 36 percent — a number the state hasn’t seen since September 2011 — but he said it could have been worse. New gathering systems in Divide and McKenzie counties kept the number from soaring higher.

With the addition of Oneok’s gathering systems, Helms said some counties actually saw a decrease in flaring. Bowman, Dunn and Burke counties’ flaring percentages went down, but the industry experienced some major increases in other counties. McKenzie County hit 21 percent, Mountrail County was at 22 percent, and Williams County almost doubled with a 91 percent increase in flaring due to the inability to use the Tioga gas plant.

“So we’re fortunate the Divide and McKenzie county gathering systems came on and increased capacity or we’d have been, maybe, at 40 percent flaring,” Helms said. “But industry managed to hold it at that record number of 36 percent. That’s very good news.”

Pressure to make significant changes

Though the price of natural gas deliv-

ered to Northern Border at Watford City is up 64 cents, it still brings the price to just \$4.50 per mcmf, resulting in an oil to gas ratio of 18:1. But shareholders still see plenty of value going up in flames, and lawsuits against 14 operators in the state seeking damages for the natural gas flared have investors urging for more aggressive action to fix the problem. With recent solutions offered by industry through the flaring task force, regulators are prepared to make some significant changes.

As reported in the Feb. 9 issue of Petroleum News Bakken, Helms will bring a presentation to the Industrial Commission on March 3 with policy recommendations to encourage greater natural gas capture from the industry. The commission tasked Helms with developing new regulations based on the flaring task force’s proposal.

Winter takes its toll on gas connections

North Dakota produced 30.7 billion cubic feet, bcf, in December, and with flaring at 36 percent, that amounts to 11 bcf flared during the month.

The data Helms reviews to determine a

36 percent flaring rate include confidential wells. Justin Kringstad, director of the North Dakota Pipeline Authority, does not include confidential wells in his data, but shows flaring percentages at 19 percent from wells with no gas sales due to a lack of pipeline connections, and 17 percent from those having sold at least some gas, but flared due to a lack of capacity on existing infrastructure.

Kringstad reports that 104 of the 151 new wells that went on production in December were connected to gas sales, a 69 percent connection rate, down from 93 percent in November.

“Historically, you see dips every winter,” Kringstad said. “The decrease in well connections is directly related to weather conditions.”

DMR reported 10,015 producing wells in December, but some of those wells produce only oil and no gas. Kringstad’s data indicate 8,904 wells were producing natural gas along with oil in December, leaving some 1,111 North Dakota wells that produced only oil.

—MAXINE HERR

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INFILL DRILLING APPS

on an existing 1,280-acre unit in the Sanish field just north of the peninsula in southwestern Mountrail County. Hess is also asking permission to drill up to 13 wells on one 1,280-acre unit and up to 12 wells on another 1,280, both in the neighboring Robinson Lake field. In addition, Hess wants to drill up to 10 wells on one 1,280 in the Alger field and up to four wells on a 1,280 in the Alkali Creek field, both of which neighbor the Sanish field.

In McKenzie County, Hess is asking for the authority to drill up to 10 wells on an existing 2,560-acre unit in the Blue Buttes field in the northeast area of the county just west of the Fort Berthold Indian Reservation. Hess also wants to drill up to eight wells on an existing 1,280-acre unit in the Traux field, most of which lies in far southern Williams County with a small portion extending under Lake Sakakawea into northern McKenzie County.

Burlington Resources submitted applications to grant the ConocoPhillips subsidiary permission to drill up to 28 horizontal Bakken pool wells on existing 2,560-acre spacing units and up to 14 wells on existing 1,280-acre units in the North Fork field in east-central McKenzie County. Burlington also wants authorization to drill up to 14 wells on multiple 1,280-acre spacing units in various spacing zones in the Blue Buttes, Camel Butte and Dimmick Lake fields, all of which are northwest of the North Fork field in northeastern McKenzie County. In the Blue Buttes field, Burlington wants to drill the wells on 1,280s in five separate zones, and in two zones in the Dimmick Lake field, and on one zone in the Camel Butte field.

Other deep basin wells

The highest well density planned among the February applications is in Oasis Petroleum’s application to drill up to 21 horizontal Bakken pool wells on an existing 640-acre spacing unit in the Sanish field in southwestern Mountrail County. Those 21 wells would result in an approximate density of one well for every 30 acres in the spacing unit. In addition, Oasis wants to drill up to 16 wells on an existing 1,280-acre unit in the neighboring Enget Lake field.

The highest well density planned among the February applications is in Oasis Petroleum’s application to drill up to 21 horizontal Bakken pool wells on an existing 640-acre spacing unit in the Sanish field in southwestern Mountrail County.

Continental Resources filed an application seeking authorization to drill up to 14 Bakken pool wells on each existing 1,280-acre spacing unit in each of four spacing zones in the Painted Woods field in southwest Williams County, part of which lies along the Montana border. Continental also wants to drill up to 14 wells in each of three spacing zones in the Ellsville field and in each of two zones in the neighboring Winner field in north-central Williams County. To the southeast, Continental is asking permission to drill up to 14 wells on one 1,280-acre unit in the far southern end of the Alkali Creek field which straddles Mountrail and McKenzie counties.

In far north-central McKenzie County, Petro-Hunt wants permission to drill up to six horizontal wells on each of two existing 1,280-acre units and up to four horizontal wells on one overlapping 3,840-acre spacing unit, all in the Charlson field. Most of the Charlson field lies in far northern McKenzie County but a small portion extends north into Williams County under the lake.

In Dunn County, Marathon Oil is seeking authorization to drill up to 10 horizontal Bakken pool wells on an existing 2,560-acre unit in the McGregory Buttes field on the Fort Berthold Indian Reservation in the northeastern region of the county, and up to eight wells on an existing 1,280-acre unit in the nearby Chimney Butte field in the north-central area of the county.

Other infill apps

In other applications, Whiting Oil and Gas is asking permission to drill up to six Bakken pool wells on each of three existing 1,280-acre units in the Bell field in far northwest Stark County along the Billings County line.

Triangle USA Petroleum submitted an application asking permission to drill up to eight Bakken pool wells on each of two existing 1,280-spacing units in the Buffalo Wallow field in the center of McKenzie County.

Slawson Exploration is asking permission to drill up to seven Bakken pool wells on each of two existing 1,280-acre units, one in the Bully field and the other in the Trailside field, both in south-central McKenzie County.

SM Energy is seeking authority to drill up to seven Bakken pool wells on an existing 640-acre unit in the Bear Den field which borders Dunn County in far eastern McKenzie County.

In non-Bakken pool activity, Zargon Oil is seeking permission to drill up to three horizontal Madison pool wells on an existing 320-acre spacing unit in the Mackabee Coulee field in southwest Renville County near the Ward County line.

—MIKE ELLERD

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The image shows the cover of the February 23, 2014 issue of Petroleum News Bakken. The main headline is "Tensions boil over" with a sub-headline "Canada-US tensions over future of Keystone pipeline government leaders at odds". Other headlines include "How much is too much?" and "Endangered butterfly?". The cover features a photograph of an oil pumpjack and a small inset photo of a butterfly.

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YEAR OF RECORDS

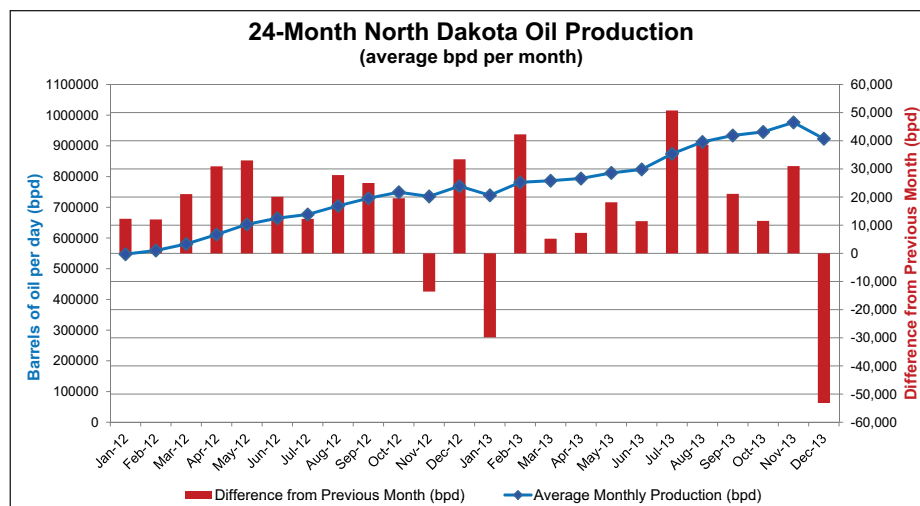
However, by the time the November production data were compiled and released on Jan. 14 Helms knew December was a month of rough weather in North Dakota. In a Jan. 14 press conference discussing the November production data Helms said "If you recall, we've been talking about the fact that November was a very nice month — we had nice warm weather, dry weather — and we expected a significant surge in production, and we got it after having a fairly low production increase in October," but then added "December isn't going to be so nice." Truer words were never spoken.

"Really the big story in December was the weather," Helms said in a Feb. 14 monthly press conference. "We had a significant number of days where we saw 21 to 31 degrees below zero Fahrenheit. We had four big snow events across the northern and central part of the state. We had five big wind events."

Freezing fracks

The most significant impact of weather in December was on hydraulic fracturing. Helms said that at temperatures in the minus 20 to minus 30 degree Fahrenheit range, fresh water used in fracking freezes during frack operations. Helms said some companies have been experimenting with saltwater, but added that at minus 31 degrees Fahrenheit, even salt water freezes. "So they just simply can't pump hydraulic fracturing jobs when you have 21 and 31 degrees below zero. So that's the major impact of the cold."

And with the pace of fracturing slowing significantly due to weather, the backlog of wells awaiting completion increased accordingly with 635 wells now waiting to



Data source: North Dakota Department of Mineral Resources Oil and Gas Division (historic monthly oil production statistics)

be completed, an increase of 125 in the last month. And at this point in the winter, Helms said it could be spring before progress is made on that backlog. "That leaves us with an enormous inventory of wells waiting for fracturing," he said. "So we just have this big, big overhang waiting for hydraulic fracturing and that catch-up may not really come until spring thaw and until load restrictions come off."

Snow and wind

The heavy snow events interfered with the transport of materials used for drilling and completing wells as well as with the transport of oil from wellsites. "Every day there's casing and cement and frack sand and water, oil and salt water moving around out there in the 17 oil and gas producing counties, and so the snow really impacts that," Helms said, adding only 154 wells were spudded in North Dakota in December, the lowest since February 2012.

The strong wind events caused problems with workover rigs setup to complete wells "and they just simply can't work when the wind is blowing more than about 35 or 40 miles an hour," Helms said and added that

there were five days in December when workover rigs couldn't be moved to prepare wells for fracturing due to the wind.

"So the weather really was the big news behind December," Helms said. "It's just one Alberta Clipper after another."

A year of record ups and downs

North Dakota's second largest production decline also occurred in 2013 when output in January fell to 739,086 bpd, a decline of 29,824 bpd from the December 2012 output of 768,910, a 3.9 percent decline. That production drop was due largely to winter storm Gandolf that hit the state in early January and a sub-zero cold snap that hit in late January.

In a year of records, North Dakota also saw its largest monthly production increase in 2013 when output jumped by 50,758 bpd in July following a wet spring and extensive load limit restrictions, an increase of 6.2 percent.

The second largest production increase was in February 2013 when production jumped 42,270 bpd over January to 781,356 bpd. While there was some cold weather in February, it was generally a month of moderate winter weather.

It all goes to show that even with all of the technological advances that have made North Dakota the second largest oil producing state in the U.S. behind Texas, Mother Nature may ultimately have the final say on just how much oil comes out of the ground in North Dakota in any given month.

The December numbers

The adverse weather was also reflected in a number of production statistics, including the average number of days from spudding to initial production for North Dakota wells, which increased by 18 days in December to 132.

The rig count did increase a bit in December standing at 190 compared 184 in November, but at the same time the number of wells completed fell from 138 to 119.

Natural gas production dropped even more than oil production in December averaging 991 million cubic feet per day, a 9.1 percent decline from the 1.09 billion cubic feet produced per day in November. Flaring increased considerably in December rising 6 percent back up to the all-time high of 36 percent (see story on page 1).

In December, there were 10,015 wells producing in North Dakota, down slightly from 10,042 that were producing in November. Of those 10,015 wells, 6,803 or 68 percent are unconventional wells pro-

A bit of North Dakota oil production history

While North Dakota experienced both its largest and second largest declines in average daily oil production in 2013 (see story on page 1), large monthly production fluctuations are nothing new to the state. The state's third largest decline in average daily production dates all the way back to September 1965 when output fell by 22,397 bpd to 54,174 bpd from the 76,571 bpd the state produced in August 1965.

In addition, there were numerous instances dating back to the mid-1950s when production declines were recorded in the range of 10,000 to 18,000 bpd per month. Likewise, there are numerous instances of similar production increases. However, because the average daily production in the earlier years of Williston Basin development was far less than what is seen today, those fluctuations early in the history of North Dakota's oil production constituted a much larger percentage of the average output than today.

For example, during North Dakota's first oil boom, production between August and September 1958 dropped by 18,314 bpd from 45,248 bpd to 26,934 bpd, a 40 percent decline. Then, two months later production in November 1958 increased 81 percent from 23,433 to 42,345 bpd. In contrast, the record-breaking production drop of 53,226 in December of 2013 represents a decrease of only 5.5 percent.

A few other historic North Dakota production statistics are worth mentioning. Since the state's first oil well went on production in April 1951, North Dakota has produced a cumulative total of 2.58 billion barrels of oil through December 2013. Of those 2.58 billion barrels, 1.1 billion or 43 percent were produced in the 10-year period from 2004 through 2013, and at 35 percent, over one-third or 903 million barrels have been produced in the five-year period since 2009.

—MIKE ELLERD

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CRUDE EXPORTS

per barrel to \$83.50 per barrel and has been gaining strength since.

The Feb. 18 closings put NDL at a \$20.96 discount to Brent and \$12.93 below WTI. In contrast, at the end of

2013, NDL was trading \$36.80 below Brent and 24.42 below WTI. At its most recent low on Dec. 2, 2013, NDL closed at \$69.25 per barrel putting it \$42.20 below Brent and \$24.57 below WTI. ●

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