

Spring 2017

BASIN BITS

The Official Publication of the Western Dakota Energy Association

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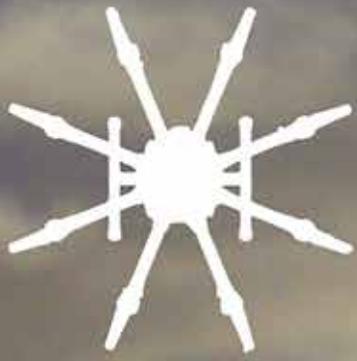
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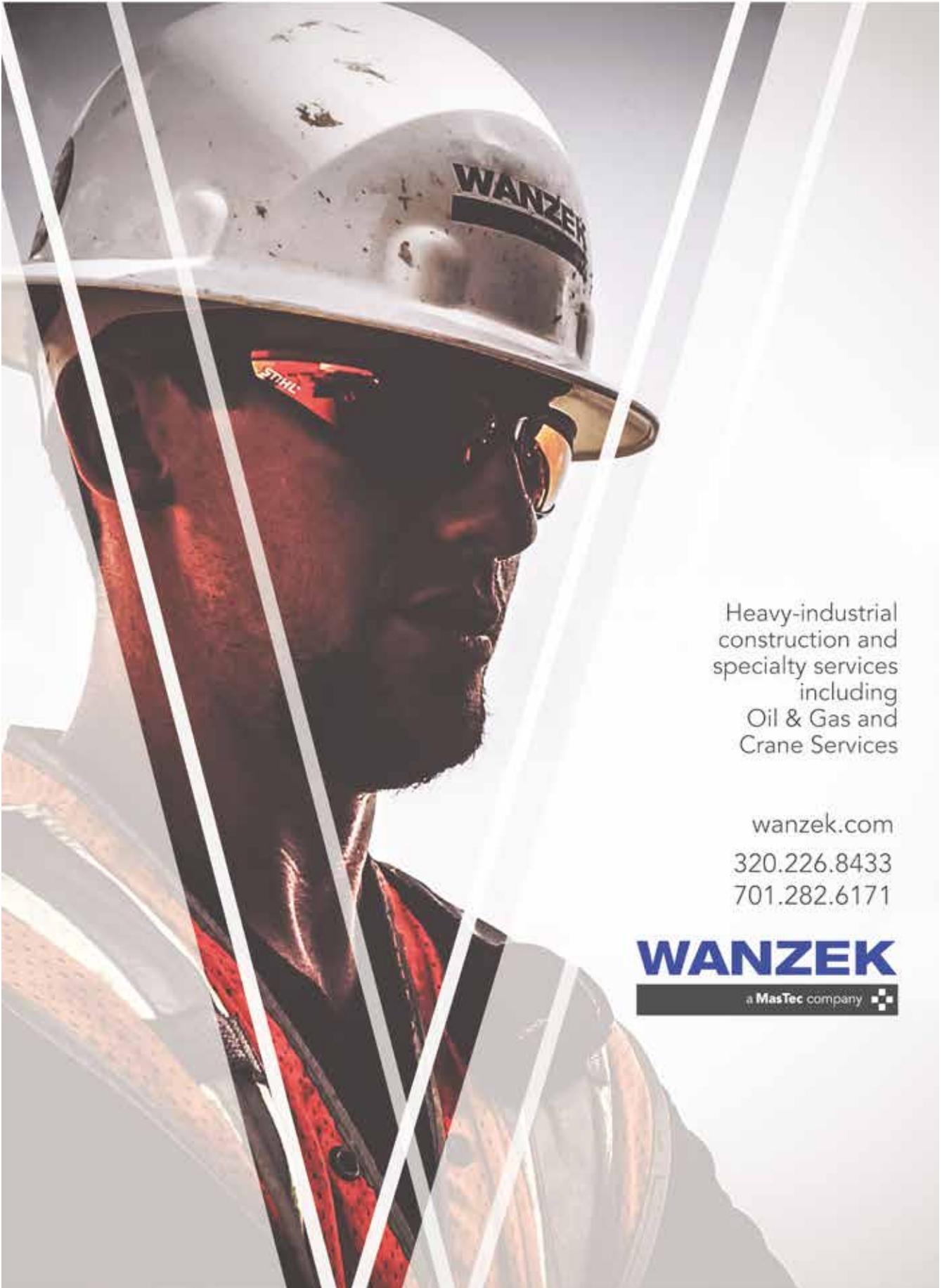
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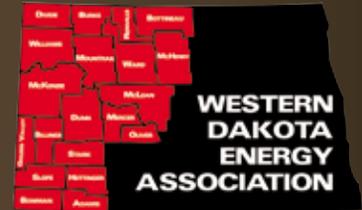


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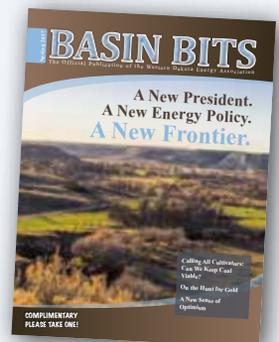
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On the cover: This issue's cover features Richard Angus Ranch (formerly Beaver Creek Ranch), which lays upon almost 22,000 contiguous acres just north of Beach, ND. The state's scenic Badlands can be seen in the background. Photo credit: Mike Kopp, <http://about.me/koppmike>. Printed with permission.





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From the Desk of the Western Dakota Energy Association's President



Daryl Dukart
President
Western Dakota Energy Association

This season, we entered a very challenging winter and it seemed to last a little longer than most of us county commissioners would have liked to see. The periodic breaks in the weather in January and February were very welcome. I am sure the energy industry feels the same, as they too are faced with the many challenges of removing snow, keeping the operation's equipment running and preventing accidents to employees during busy days of work.

In many ways, we have started 2017 off with even more challenges than those created by weather. Earlier in the year, we all wanted to learn more about our new governor and the many new freshman legislative representatives leading us into the 2017 session. Having an abundance of oil tax revenue to address North Dakota's needs is no longer the story, as it had been during the past couple of sessions.

Instead, discussions now center around shortfalls and the belt-tightening adjustment that is needed to sustain this state and the cities and rural communities in North Dakota. Toss an unknown ingredient into the mix—newly-elected President Trump and his new cabinet—and it looks like a recipe for success. If only it were this simple.

I like Gov. Burgum's main street awareness and his encouragement that North Dakotans should look for ways to be creative and use technology to modernize our great state. His comments are positive and I expect possible achievements if we stay focused and keep moving forward.

The message from elected / appointed officials at the national level seems to have a bit of a different approach, but overall it is nearly the same: "Create jobs, build a stronger

Recipe for Success

economy, provide safety to our communities and residents, improve health care and provide quality education for our children and their children."

Will they find broken pavement in the road along the way, windows that need washing, bridges that are functionally obsolete? That much is certain, as is the fact that they will encounter those of us who disagree on certain issues, who will say the recipe is missing something. But we will find a new direction to address these diverse challenges as taxpayers, students, senior citizens and everyday citizens. The state will find its way back to the path of greater success, and the recipe will be near-perfect once again.

Some of this new recipe is percolating already and, yes, some of its ingredients have been in the making for some time. History tells us that improvements tend to happen after a major change in local or national government. Completion of the Dakota Access pipeline, along with improving prospects for the Keystone XL line, provide a cheaper way to transport oil and make life on our highways much safer.

Major investments outside of the energy sector will also have a big impact. There is a new soybean processing plant planned in Spiritwood, ND, there is a urea fertilizer plant being built in association with the Dakota Gasification plant in Beulah, ND, and Northland Community Health Center has significantly expanded its operations. There are so many positive things happening and so many things that are soon to happen. Mix the proper ingredients, people and leadership into the recipe and we once again find success!

As I write this column, we are seeing a very slow but steady increase in the number of rigs in the Bakken and fracking operations are starting to make their way back into the area. With growth come people to work jobs, students into our school systems, and dollars to be spent in rural towns and major cities for lunch, gas, clothing, entertainment, housing, etc., adding more sales tax pennies into our state and local coffers.

We need to remember that even if activity in the oil and gas industry is centered in four

core counties, the scope of activity has grown and will continue to benefit the entire state. Everyone in North Dakota gains from the income the industry produces and the goods and services the state requires, which are often supplied from other areas of the state.

Have a great spring!



ABOUT THE WESTERN DAKOTA ENERGY ASSOCIATION

The Western Dakota Energy Association (WDEA) is the trusted and unified voice for the betterment of the citizens of North Dakota and the membership of WDEA.

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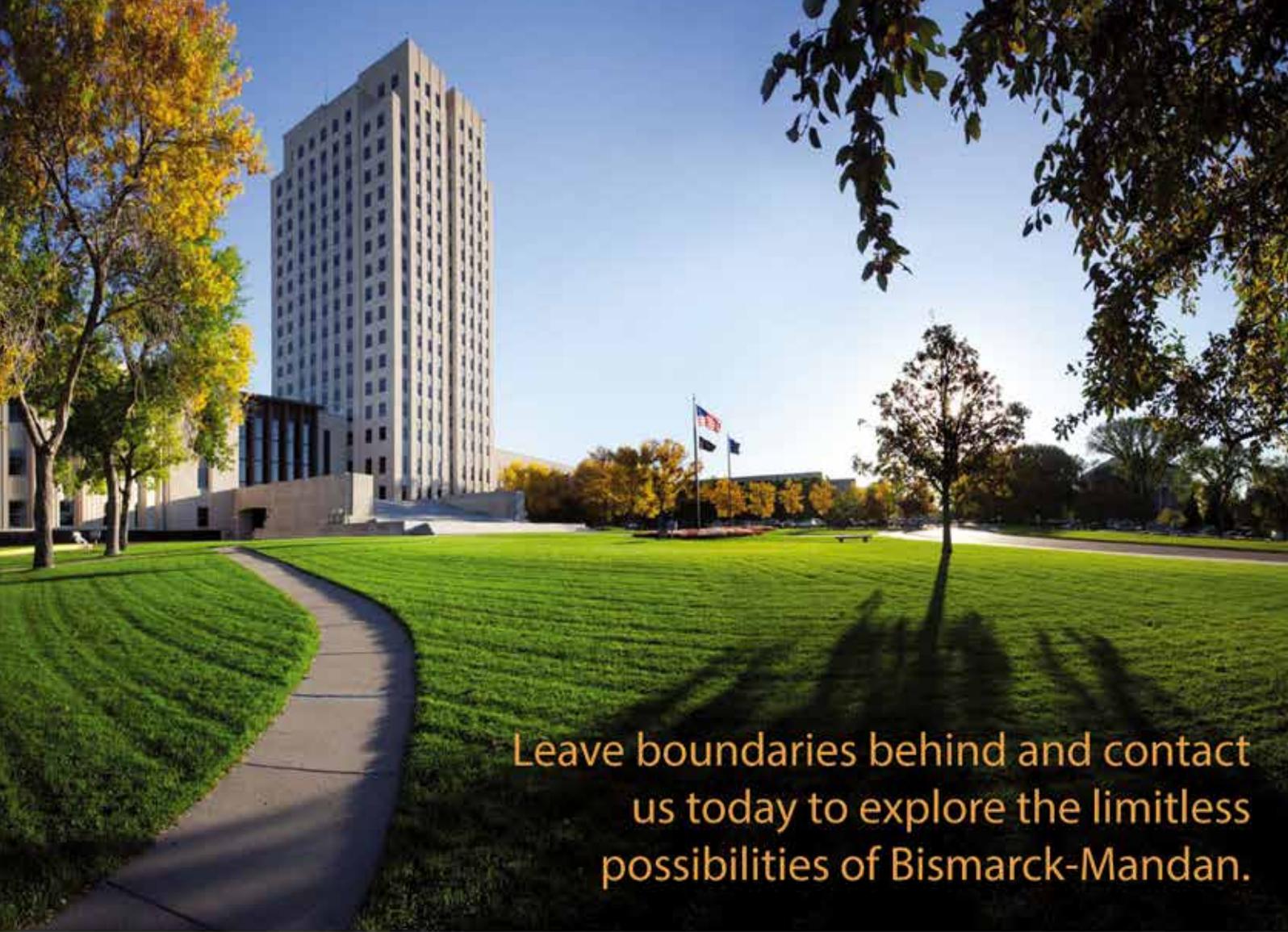
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From the Desk of the Western Dakota Energy Association's Executive Director



Geoff Simon
Executive Director
Western Dakota Energy Association

Please Allow Me to Introduce Myself

On August 24, 2016, I took a trip to Watford City, ND. It's a day I'll never forget. I met with the board of the North Dakota Association of Oil & Gas Producing Counties (now the Western Dakota Energy Association), hoping to convince them I should be its next executive director. The interview was tough. These folks weren't lobbing softballs.

Right off the bat, Doug Nordby fired the first question. He demanded to know, "What are your qualifications for this job and why should we hire you?" I'm sure I had that deer-in-the-headlights look for a couple seconds, but I was ready for the double-barreled question. I gave the board five reasons:

1. I've been a lobbyist and worked with state legislatures for more than 25 years. Lobbying is the most important part of this job, ensuring counties that produce oil tax revenue get their fair share back.
2. I'm a communicator. It's essential in any association to make sure the board and its members are kept informed. I take pride in my writing skills and have no qualms about public speaking.
3. I'm well-acquainted with the association's allies in Bismarck—the Petroleum Council, the Lignite Council, the Association of Counties, and the League of Cities, and I know people at all levels of government.
4. I'm no stranger to administrative responsibilities. I've done plenty of meeting and event planning, and I know how to prepare and stick to a budget.

5. I'm tech-savvy. I understand social media, I've created and maintained websites, and I've used technology to get people engaged in policy matters.

My response to that interview question is a good way to introduce myself to the readers of *Basin Bits*. The job with what is now the Western Dakota Energy Association seemed like a good fit when I applied. And now that I've been at it a few months, it's feeling like a better fit every day. Most of my contacts are with people from rural communities, which takes me back to my youth.

I'M JUST A SMALL TOWN BOY

I lived on a north-central South Dakota farm the first nine years of my life. My father took a job in town after that, and so did I, delivering 37 copies of the *Huron Daily Plainsman*. Dad died in a car accident when I was just 11, and to make ends meet, I kept on working. I eventually quit the paper route, finding other ways to make a buck or two. I shoveled my share of driveways, mowed a few lawns, stacked hay bales on 100° F days, helped build grain bins and pole barns, sacked calf cake and unloaded trucks at a grain elevator, worked as a school janitor, and cleaned out some really disgusting hog barns.

They say hard work keeps you humble, and I hope some of that humility still hangs with me today. I look back on those early years and how they shaped me into the person I am today. I sometimes wish every kid could grow up like I did, living in small town America and working for every dime I spent. I believe there'd be a whole lot less trouble in



Geoff Simon with his older sister, Penny, back in the day, when he was just a small town boy living on a north-central South Dakota farm.

America if they did. And I think most people living in Bakken Country would agree.

BAKKEN PRODUCERS HAVE A GLOBAL IMPACT

I remember the term "peak oil" from my younger days. Some believed the industry was approaching the maximum rate of extraction, after which production was expected to enter a terminal decline. But drilling techniques have changed dramatically over the past dozen years. The days when OPEC largely controlled the world's oil market are gone. One of the main reasons is the technological ingenuity of Bakken producers.

Bakken innovators found ways to produce oil cheaper, better and faster. Horizontal drilling and hydraulic fracturing were just the beginning. Now, there are multi-stage fracks, re-fracks, multi-well pads, 3-D seismic imaging, and telemetry that provides instant feedback as a well is being drilled. Of course, there's a downside to all this success. When supply is abundant, prices are relatively low, hovering around \$50 per

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barrel in recent months. And that over-supply situation is not likely to change anytime soon.

What the world needs is a rebound in growth. More people working, earning money, and producing goods and services. We need resurgent economies around the globe to jumpstart demand for oil. I'm optimistic we're in the beginning stages of that turnaround. Global economic growth has been relatively stagnant the past decade. But Americans now have a businessman in the White House. Love him or hate him, Donald Trump is going to change the way we do business. I think it will be a change for the better. And folks in the Bakken had better be prepared to adapt.

WHAT'S AHEAD FOR WDEA

Our association has been through a lot in its 30-plus-year history, and more changes are on the way. My focus during the first few months on the job was the all-important 2017 North Dakota Legislature, as you'll read about on page 34 of this magazine. But with the session in the books, our attention is turning to other exciting prospects.

Regular readers of WDEA's weekly newsletter know we're examining ways to improve and expand our uniform truck permit system. We're working on a mapping / routing system to further automate things for the truckers who move overweight loads on Bakken roads. With that tool in place, we plan to market the permit system to other counties throughout North Dakota.

We also want to foster new relationships and expand our list of associate members. We plan to do that by making WDEA a go-to source for news and information about events in western North Dakota. We'll be expanding our presence in social media, enhancing our website at www.ndenergy.org, and looking for other communication tools to create a conduit for our members to have greater influence over policy decisions affecting the business climate and quality of life in Bakken communities. 

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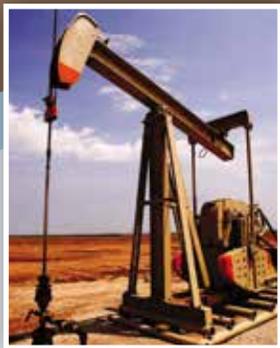
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From the Desk of the Petroleum Technology Research Centre



Norm Sacuta

Communications Manager
Petroleum Technology Research Centre

A certain sense of optimism is creeping back into the Williston Basin these days.

After almost two years of low oil prices, difficulties with getting products to market, and layoffs (in the field, with operators and down the supply chain) activity and spirits seems to be on the rise. You can see it in Estevan, SK, where drill rigs are again dotting the horizon east of town. You can feel it in and around North Dakota, in Bismarck and Williston, in the formerly crowded camps where workers are housed and fed and that are again ramping up. And you can confirm it in the slow rise and stabilization of oil prices, reaching 54 dollars per barrel in late February, which has stemmed the oil company layoffs and even led to a slow hiring of engineers, geologists and managers.

“Let’s face it, the past two years have been tough,” notes Melinda Yurkowski, assistant chief geologist with the Saskatchewan Geological Survey, which is a co-organizer of the 2017 conference. “Both 2015 in Regina and 2016 in Bismarck saw significant drops in booth assignments and conference registrations. And this year’s event won’t likely see an improvement on those numbers. But the upswing has begun, and I think this year’s event will offer significant opportunities for those who do attend.”

Norm Sacuta, communications manager with the Petroleum Technology Research Centre, which is co-organizing the Williston Basin Petroleum Conference, points out that a smaller event doesn’t necessarily mean it has less of an impact.

“I really feel the attendees and businesses at this year’s conference are going to see

Williston Basin Petroleum Conference Ushers in 25 Years

opportunities for networking,” says Sacuta. “Size is no indication of impact, and with fewer companies operating in the Williston Basin—many of those being leaner, meaner and on-the-rise—there will be real chances for making connections.”

The technical conference itself is very strong and is drawing significant interest among registrants. Confirmed speakers from the Colorado School of Mines, the University of Montana, the University of Alberta, the Saskatchewan Research Council, the Saskatchewan Geological Survey, SaskPower, and other companies and organizations are covering topics that discuss many of the major issues in the Bakken and explore most of the important geological formations.

“We’ve got a full slate of presentations that cover most of the main regions in the Williston Basin and beyond,” says Dan Kohlruss, senior geologist at the Saskatchewan Geological Survey. “Topics cover a wide variety of interests, from a look at stratigraphy, re-fracking, enhanced oil recovery (EOR), and faulting in the Basin, to an examination of how hydrogeology impacts production behavior. The topics are definitely of interest to operators and scientists, alike.”

A presentation by Michelle Nicholas of the Manitoba Geological Survey will look at Manitoba’s unexplored oil and gas potential; another, by Professor Michale Hofmann of the University of Montana, will look at the Sappington Formation in southwestern Montana. These are areas which are not often in the spotlight of Williston Basin research and there’s some excitement on their inclusion. Another rising area of interest is the use of carbon dioxide as a fluid in hydraulic fracturing and for EOR in the Bakken, in general. With two major suppliers of carbon dioxide



Attendees at a previous Williston Basin Petroleum Conference at Evraz place in Regina, SK. This year’s event will take place from May 2 to 4, 2017 in the same venue.

in the region—Dakota Gasification and SaskPower—a presentation by David Hanly from SaskPower will look at some of the issues associated with CO₂-EOR.

There’s also a large poster session planned, and the best student poster at the conference will receive a cash prize.

“The conference is continuing its tradition of offering a Core Workshop on the opening day, May 2,” says Yurkowski. “This has always been well-attended and offers several presentations that are of interest to the industry, along with opportunities for attendees to examine core samples from different formations and discuss them with presenters.”

The Core Workshop carries an additional fee of CAD\$150 and attendees must be registered for the WBPC to attend.

“The Bakken has certainly faced its challenges in the last few years,” says Yurkowski, “and the WBPC has felt the effects. But we’re convinced our 25th event, while smaller and more focused, will carry a wallop. We hope to see everyone there.”

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The 25th anniversary of the Williston Basin Petroleum Conference will be held at Evraz Place in Regina, Saskatchewan, Canada from May 2 to 4, 2017, and you will not want to miss it! New in 2017, a free Exhibit Hall Pass gives exhibitors the opportunity to do business with current and potential new clients efficiently and cost-effectively.

TUESDAY, MAY 2, 2017	Subsurface Geological Laboratory, 201 Dewdney Avenue East
8:00 a.m. – 4:30 p.m.	Core Workshop
1:00 p.m.	Conference registration begins, Queensbury Convention Centre, 1700 Elphinstone Street
3:00 p.m. – 7:00 p.m.	Icebreaker: Commercial Exhibit and Poster Areas Open (3:00 p.m. – 7:00 p.m. on Tuesday, 8:00 a.m. – 6:00 p.m. Wednesday, and 8:00 a.m. – 12:00 p.m. Thursday), Queensbury Convention Centre
WEDNESDAY, MAY 3, 2017	Technical Session 1: Outlooks and Updates, Ballroom, Queensbury Convention Centre
8:30 a.m.	Welcoming remarks
8:40 a.m.	Greetings from the Province of Saskatchewan
8:55 a.m.	Greetings from the State of North Dakota
9:10 a.m.	North Dakota Oil and Gas Industry Outlook, Alison Ritter, ND Department of Mineral Resources
9:25 a.m.	Manitoba Oil and Gas Industry Outlook, Speaker TBD
9:40 a.m.	Montana Oil and Gas Industry Outlook, Montana Department of Commerce
9:55 a.m.	Saskatchewan Oil and Gas Industry Outlook, Melinda Yurkowski, Saskatchewan Ministry of the Economy
10:10 a.m. – 10:50 a.m.	Coffee Break
10:50 a.m.	Saskatchewan Regulatory Update, Doug MacKnight, Saskatchewan Ministry of the Economy
11:10 a.m.	Proponent Handbook: Voluntary Engagement with First Nations and Métis Communities to Inform Government's Duty to Consult Process, Karen Bolton, Saskatchewan Government Relations
11:30 a.m.	Overview of Market for CO ₂ in the Williston Basin for EOR in Terms of Demand, Supply of CO ₂ and Barriers to Development, Ian Yeates, SaskPower
11:50 a.m. – 1:20 p.m.	Lunch
12:40 p.m.	Keynote Luncheon Speaker TBD
1:20 p.m.	Concurrent Session – Technical Session 2: Hydrocarbon Exploration, Ballroom, Queensbury Convention Centre
1:20 p.m.	Characteristics of the Great Plains Polygonal Fault System within the Williston Basin, Andy St-Onge, PFS Interpretations Ltd.
1:40 p.m.	Geology of Saltwater Disposal into the Lower Cretaceous of the Williston Basin, North Dakota and Canada, Jeffrey Bader, ND Geological Survey
2:00 p.m.	Tectono-eustatic Controls on the Depositional Setting and Stratigraphic Evolution of the Late Jurassic Vanguard Group, Southwest Saskatchewan, Osman Salad Hersi, University of Regina
2:20 p.m.	An Outcrop Analog for the Williston Basin Bakken Hybrid Play, the Sappington Formation in Southwest Montana: Facies, Stratigraphic Architecture, and Controls on Porosity Distribution, Michael Hofmann, University of Montana
2:40 p.m.	Examination of the Red River (Yeoman-Herald Formations) Petroleum System, Timothy Nesheim, ND Geological Survey
3:00 p.m. – 3:40 p.m.	Coffee Break
3:40 p.m.	Technical Session 3: Emerging Technologies (EOR)
3:40 p.m.	Gaps and Challenges for Light and Tight EOR, Kelvin Knorr, SRC Energy Division
4:00 p.m.	New Approaches and Tools for Light and Tight EOR, Petro Nakutnyy, SRC Energy Division
4:20 p.m.	EOR in Unconventionals, Jim Sorensen, Energy and Environmental Research Center, UND
4:40 p.m. – 6:00 p.m.	Commercial Exhibits and Technical Posters
1:20 p.m.	Concurrent Session – Technical Session 2A: Case Studies, Meeting Room 1, Queensbury Convention Centre
1:20 p.m.	The Intelligent Oilfield and Advanced Production Automation: The Challenge, Fred Czubba, Automation X Engineering and AXE Consulting Ltd.
1:40 p.m.	Geohazard Risk Assessments: A Geomorphic Method, Jen Holmstadt, WSB and Associates
2:00 p.m.	In-Pipe-Turbine Generator System, Bruce Kaiser, Lightning Master Co.
2:20 p.m.	How Slug Flow Mitigation Can Simultaneously Increase Production and Improve Well Production Economics in the Williston Basin, Trystan Wall, Production Plus Energy Services Inc.
2:40 p.m.	Squeezing the Bakken: Successful Scale Squeeze Programs Lead to Shift in Bakken Scale Control, Kevin Spicka, Ecolab Co.
3:00 p.m. – 3:40 p.m.	Coffee Break
3:40 p.m.	Oil Optimism and Real Estate, Michael Elliott, Energy Real Estate Solutions
4:00 p.m.	Technological Advances for Improving Desulfurization of H ₂ S from Sour Crude Oils and Process Waters, Sheldon McKee, AMGAS Services Inc.
4:40 p.m. – 6:00 p.m.	Commercial Exhibits and Technical Posters
THURSDAY, MAY 4, 2017	Technical Session 4: Hydrocarbon Exploration and Production, Ballroom, Queensbury Convention Centre
8:30 a.m.	Trends in Bakken Water and Oil Production, Bethany Kurz, Energy and Environmental Research Center, UND
8:50 a.m.	Hydrogeology of the Bakken Formation and the Relation to Production Behaviour, Daniel J. Skoreyko, University of Alberta
9:10 a.m.	Evaluating Production Performance from Horizontal Well Refracs in Saskatchewan, Michael Nelson, Saskatchewan Ministry of Economy
9:30 a.m.	Bakken Production Optimization Surface Facilities, Chad Wocken, Energy and Environmental Research Center, UND
9:50 a.m.	Sequence Stratigraphy of the Three Forks and Bakken Formations, Williston Basin, Stephen Sonnenberg, Colorado School of Mines
10:10 a.m. – 10:50 a.m.	Coffee Break
10:50 a.m.	Petroleum Geology and the Implementation of a High-Pressure Gas Injection EOR: Alberta Bakken, Milk River Area, Southern Alberta, T. Klatt and D. Griffiths, Granite Oil Corp.
11:10 a.m.	Structural and Stratigraphic Controls on Hydrocarbon Accumulations in the Viking Formation, West-Central Saskatchewan, Dan Kohlruess, Saskatchewan Ministry of Economy
11:30 a.m.	Productivity and Recovery: Type Curves and EURs in Northern Williston Basin, Mark Lenko, Canadian Discovery Ltd.
11:50 a.m.	Closing Remarks

*Agenda may change. The latest version is available on the WBPC website, www.wbpc.ca.

A New President.

A New Energy Policy.



A New Frontier.

By Paul Adair

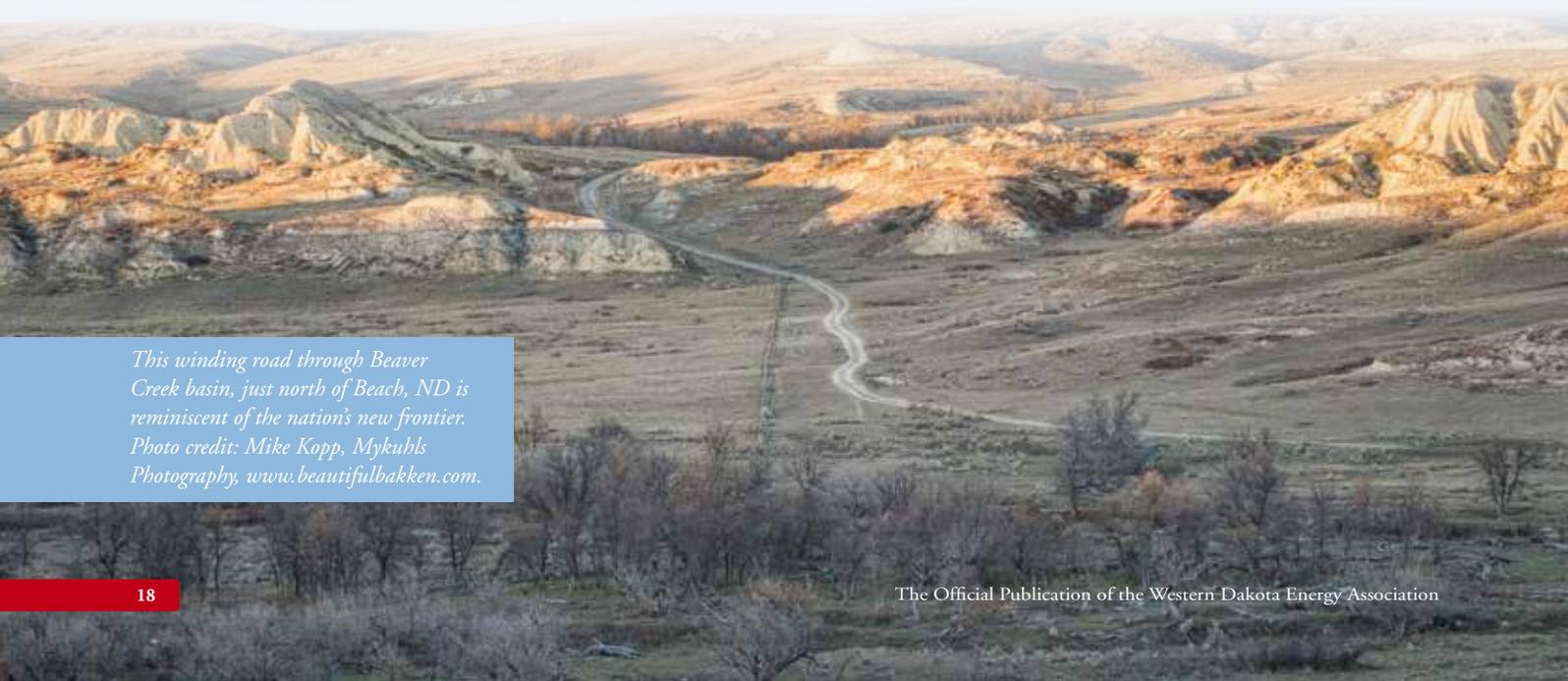
On January 20, 2017, billionaire-business mogul Donald J. Trump took the Oath of Office, completing his somewhat-unorthodox journey to become the 45th President of the United States. And while the specifics of that day were debated, what could not be denied was the frenetic speed at which newly-appointed President Trump has begun to make

good on the promises that helped lead him to the White House.

Less than an hour after the inauguration speech was given, the Trump Administration had already outlined its plans for a new national energy policy, focusing American energy independence and bolstering the nation's stressed energy sector by fully embracing the ongoing potential of the fracking revolution and taking advantage of the approximately \$50 trillion of the country's untapped shale oil and natural gas reserves.

ABOVE: Following the promise to "Make America Great Again," less than an hour after the inauguration speech, the Trump Administration had already outlined its plans for a new national energy policy.

"The Obama Administration was viewed as being very top down and central-controlled and having a distinct anti-fossil fuel agenda," says Lynn Helms, director at the North Dakota Department of Mineral Resources



This winding road through Beaver Creek basin, just north of Beach, ND is reminiscent of the nation's new frontier. Photo credit: Mike Kopp, Mykuhls Photography, www.beautifulbakken.com.

(DMR). “This agenda was certainly not beneficial to North Dakota’s oil and gas industry and, because of this, North Dakota’s energy sector has responded optimistically to the results of November’s election. It sees with Trump an administration that is a lot more business-friendly on all fronts, with a new approach to regulating and governing.”

The early days of the Trump Administration have been largely spent on two separate activities; the issuing of executive orders and the appointment of cabinet members, such as naming Scott Pruitt as Environmental Protection Agency (EPA) Administrator and Rick Perry as Energy Secretary, the very agency that the former Texas Governor once said he wished to dismantle.

“By and large, the stakeholders I connect with across North Dakota approve of Trump’s cabinet appointees,” says Helms. “Most come to the position with a business background and all seem very partial to a states-first way of doing things, regarding the state as the best venue for regulating and overseeing oil and gas operations based on local environment, geography, and geology.”

The direction of the Trump Administration’s energy strategy moving forward has been loosely outlined in the White House document *An America First Energy Plan*, which recognizes that energy is an essential part of the American way of life and a staple of the world economy. Through this document, the administration has made it abundantly clear that it is committed to the singular pursuit of those energy policies that will lower overall costs for Americans and those that will best maximize the use of U.S. energy resources.

In this document, the Trump Administration has also committed itself to investing in clean coal technologies that remove and store carbon dioxide emissions from coal-burning plants. President Trump also reaffirms his desire

to help revive America’s beleaguered coal industry, which found itself increasingly under fire during the Obama years.

“The siege was real and the relief we feel now is real,” says Jason Bohrer, president and CEO of the Lignite Energy Council. “For the last eight years, the previous administration had insulted the people in the coal industry by calling them polluters, deniers, and other derogatory terminology. Now, for the first time in almost a decade, those same people are simply called coal miners and their jobs are again valued.”

The Trump Administration is committed to removing and overturning the many burdensome regulatory barriers faced by the energy sector, such as the *Clean Power Plan* and the *Waters of the U.S.* rule. In supporting—rather than suppressing—energy sector development, the new administration has predicted that American worker wages will be free to increase by more than \$30 billion over the next seven years.

In addition to being a boon for the U.S. economy, the cutting of red tape and the pursuit of greater domestic energy production fits in well with the Trump Administration’s goal of strengthening national security by freeing the nation from the shackles of the OPEC cartel and other countries hostile to American interests. To reach this goal, however, all American energy assets will need to be considered.

“To obtain American energy independence—and I believe the common view is that the government is really referring to North American energy independence—it will require all energy sources to have a place at the table,” says Helms. “While it’s perfectly alright that incentives are used to help support new and renewable energy sources, the federal government must never be in the business of promoting one energy source over another, as has been the case in recent years. The government

needs to level the playing field and support all sources equally with the same degree of effort.”

This February, police began to remove the last of the demonstrators from the Standing Rock protest site, effectively ending the months-long protest over the completion of the Dakota Access Pipeline project (DAPL). This move was taken after President Trump issued executive actions on the matter in January, calling on concluding the construction of the pipeline. This action was seen by the energy sector as a clear indication of the Trump Administration’s willingness to support large-scale pipeline projects and perhaps a sign of things to come for the U.S. oil and gas industry.

“The opening of DAPL was met with overwhelming positive response by the industry, which views pipeline projects, such as DAPL and Keystone XL, as a means of providing cleaner, safer, and cheaper access to oil markets,” says Helms. “The opening of DAPL will have a positive effect on North Dakota oil and gas activity for a long time to come, locking in lower stable transportation costs to all markets across the U.S. and even to the export markets along the Gulf coast.”

The Trump administration is aware that the pursuit of greater national energy independence must not undermine the need for environmental stewardship. The protection of clean air and clean water, conserving natural habitats, and preserving the nation’s natural reserves and resources remains a high priority for the new administration. To accomplish this, President Trump will refocus the EPA away from things like the *Clean Climate Plan* and onto its more essential role of protecting our air and water, a departure from the campaign trail where Trump expressed his desire to eliminate the EPA entirely.

“A brighter future depends on energy policies that stimulate our economy, ensure our security, and protect our health,”



concludes *An America First Energy Plan*. “Under the Trump Administration’s energy policies, that future can become a reality.”

The speed with which the federal government has flipped its national energy policy can present numerous challenges for the country’s oil and gas industry, which completed its 2017 budgets and capital investment plans months before the November election results came in. As a result, the industry did not have time to take full advantage of the Trump victory and subsequent executive orders and will instead need to factor any regulatory changes into their upcoming 2018 budgeting timeline. The North Dakota DMR estimates that once those changes are made, there will be up to a 50 percent increase in well completions in fiscal 2018 over fiscal 2017.

In the months leading up to, and after, his inauguration, President Trump

has made his position on America’s energy future plain to see—gone are the days of stymieing energy sector progress and development. Instead the U.S. will advance its vast and varied energy reserves to the betterment of the American people. That said, it is still early days and the biggest challenges for the Trump Administration are yet to come.

“The first 100 days of the Trump administration have been all about cabinet appointees and executive orders and—so far—these moves have indicated a positive direction for North Dakota’s oil and natural gas industry,” says Helms. “But what comes next in terms of reversing some of the more entrenched policies brought in over the last eight years will take a lot longer. There is still a lot of hard work ahead for President Trump to accomplish.”

GET TO KNOW THE EXPERT LYNN HELMS



Before moving to Bismarck to work in state government, Lynn Helms worked as a production engineer, reservoir engineer and asset team leader on projects across the U.S. and abroad in the United Arab Emirates.

Helms earned his Bachelor of Science degree in Engineering from South Dakota School of Mines and Technology.

When Helms is not working, he enjoys spending his free time with his wife, his college-aged children, and his four horses.

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Welcome to Office, Governor

Last November's elections certainly seemed to be a good day for successful businessmen-turned-politicians. And while the election of President Donald J. Trump may have stolen the attention of the national press, a former Microsoft executive was busy making waves of his own in North Dakota.

Just as President Trump accomplished on the national stage, Doug Burgum was also able to transform his lack of political experience into a positive asset, tapping into North Dakota's general dissatisfaction with the political establishment. Burgum established himself as a grassroots outsider with the business acumen needed to best rein in "wasteful" government spending and reinvigorate the state's sluggish economy.

At the November 8, 2016 gubernatorial election, Burgum ran against Democrat Marvin Nelson, easily winning the election with more than 75 percent of the vote to become the 33rd Governor of North Dakota.

In his first few months, much of the work Burgum had to contend with has been centered on the completion of the \$3.8-billion Dakota Access Pipeline (DAPL) running through his state. The project that is strongly supported by both the governor and President Trump, who signed an executive order in late January directing federal agencies to expedite its review and approval process.

"After months of politically driven and costly delays by the Obama Administration, President Trump has moved this important infrastructure project one step closer to completion," said Gov. Burgum in a press release.



GET TO KNOW THE EXPERT GOV. DOUG BURGUM



Doug Burgum's small-town upbringing and agricultural roots laid the foundation for his shared values of respect for the past, gratitude for the present, and inspiration for the future.

Burgum graduated with a bachelor's degree in university studies from North Dakota State University in 1978. He earned a Master's degree in business administration from the Stanford University Graduate School of Business in 1980.

Burgum is married to Kathryn Helgaas Burgum. He has two sons, Joe and Tom, and a daughter, Jesse.

...the garbage and human waste sitting at the camp is a definite ecological threat to the water quality of the Missouri River system and is a disaster waiting to happen.

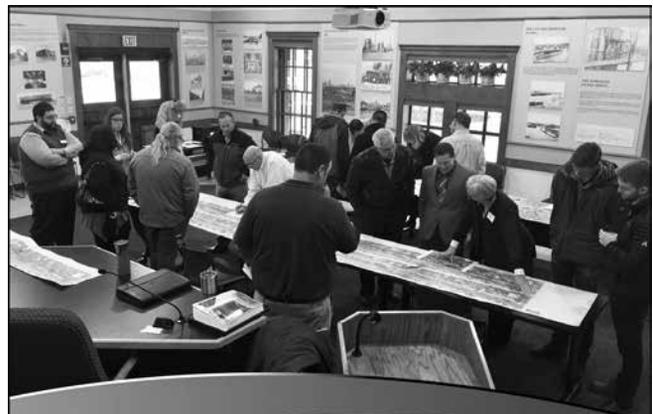
On February 15, 2017, Gov. Burgum issued an evacuation order for the remaining 280 demonstrators at the main Dakota Access protest camp in Morton County, saying that the garbage and human waste sitting at the camp is a definite ecological threat to the water quality of the Missouri River system and is a disaster waiting to happen.

In February, Gov. Burgum also signed four bills into law that made it illegal for adults to wear masks in public and enhanced the penalties associated with criminal trespass and rioting. These bills were designed specifically to protect landowner rights, to expand the ability of the Attorney General to appoint ad hoc special agents who come to North Dakota in response to requests for aid, and to prevent the rising violence of the pipeline protests.

"Peaceful protest is a protected right of all Americans," said Burgum in his State of the State Address. "However, protesters must respect private property rights, court orders and law enforcement personnel. Acts of vandalism, harassment and trespass are not a part of North Dakota's character and will not be tolerated."

By February 23, 2017, the last of the protestors had either moved on from the site or were arrested by law enforcement.

"We all care about clean water in North Dakota but, as this situation has unfolded, it has become a political flashpoint for many causes unrelated to the Standing Rock Sioux Tribe's original concerns," says Gov. Burgum. "Moving ahead, our administration is committed to government-to-government consultation and an inclusive permitting process that represents the viewpoints of all interested parties."



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Calling All Cultivators:

Can We Keep Coal Viable?

During last year's long election campaign, Donald J. Trump pledged to end the ongoing "war on coal" perpetuated by the Obama Administration, a war that watched the coal mining industry shed more than 36,000 jobs and the closing of more than 600 coal mines since 2009.

On February 16, 2017, President Trump began to make good on that campaign promise by signing legislation (*H.J. Res. 38*) to stop the redundant *Stream Protection Rule* from continuing to hamper the American coal sector and the communities that depend on it. Because of this signing, the North Dakota coal sector is optimistic that legislation such as this is a sign of things to come.

"With the *Stream Protection Rule* overturned by Congress, there is hope the Trump Administration will take a more measured approach on regulations," says Jason Bohrer, president and CEO of the Lignite Energy Council. "Instead of a one-size-fits-all approach, regulations may make more sense on a state-by-state basis. After all, producing coal from surface mines on the prairies of North Dakota is much different than mountain-top mining in Appalachia."

Despite the administration's relaxation of regulations that bog down the advancement of the U.S. coal industry, President Trump is still committed to the development of clean coal technologies that remove and store carbon dioxide byproduct resulting from the burning of coal.

One such technology being explored is the Allam Cycle, during which lignite coal is turned into a synthetic gas that can be burned to generate electricity. The carbon dioxide is then used in the place of steam to drive

turbines. Any excess carbon dioxide would be of pipeline quality that could be used in the enhanced oil recovery process.

"Clean coal technology will improve the overall viability of coal, in that we can take the carbon dioxide and turn it into a valuable byproduct, using it to help make the oil and gas industry more efficient," says Bohrer. "In doing so, we will hit a grand slam—we can help solve the carbon dioxide problem, increase the output of the oil and gas industry, while also making electricity cheaper, and we will continue to bring prosperity to this region."

North of the border up into Canada, SaskPower's Boundary Dam Carbon Capture and Storage (CCS) facility has been pioneering the field of clean coal technologies since 2011. These clean coal technologies are able to be replicated on up to 95 percent of the world's coal units, such as at NGR Energy's Petra Nova project outside of Houston, TX.

Petra Nova is America's first large-scale clean coal facility and is now the largest post-combustion carbon dioxide capture system in operation, unseating Boundary Dam for the title. Petra Nova was declared operational in January, with the potential of capturing up to 5,000 tons of carbon dioxide per day—the equivalent of taking approximately 350,000 cars off the road.

"It is an expensive process, so the more people that pursue CCS, such as ourselves and those at Petra Nova, the better," says Ian Yeates, director of supply development at SaskPower. "The costs will be sure to come down with every additional unit built, and we are fairly confident that any future CCS facilities will be substantially less expensive on a megawatt basis than they currently are." 

NGR Energy's Petra Nova project outside of Houston, TX.



GET TO KNOW THE EXPERT



JASON BOHRER

Jason Bohrer is president and CEO of the Lignite Energy Council.

When Life Gives You Lemons:

How Innovative Operators are Making Lemonade



By Jason Spiess

For Patrick Hughes, conferences like the Williston Basin Petroleum Conference (WBPC) have become an energy indicator by marking the passing of time. Hughes, CEO of Prairie Companies, recalls the WBPC in 2014 as a moment in time or milestone for when Prairie Companies started their liquid natural gas business, North Dakota LNG.

“For me, these conferences mark the passing of time,” says Hughes, who has been traveling back and forth from the Bakken and Minneapolis since 2009.

During that time, Hughes has created four businesses under the umbrella of Prairie Companies. In addition to North Dakota LNG, he oversees Prairie Field Services, Flatlands and Prairie Housing.

“Prairie Field Services moves a lot of oil around the Bakken and the Powder River (Basin). Flatland owns salt water disposal wells,” says Hughes.

“Prairie Housing was started to take care of our employees, but there seems to be a lot of housing now, so I don’t think that is as much of a business now—but we do own some real estate. And then we have North Dakota LNG, which is at the tailgate of the Hess Processing plant up in Tioga.”

Expanding into the Powder River Basin was a natural evolution for Hughes, and given the Bakken’s activity as of late, diversity has helped Prairie Companies keep things moving. They are moving oil in conjunction with marketing customers and the producers themselves. Hughes said they have around 35 truck assets in the Powder River and about 60 to 70 employees.

Overall, Hughes is proud of his employees and how Prairie Companies has been able to manage the downturn’s inactivity.



The first cup of liquid natural gas from ND LNG’s plant in Tioga, ND.

ND LNG has been one of the companies allowing oil companies to tighten the fiscal belt and become more efficient in energy extraction.

“I feel like we are doing really well, and so is the work our employees are doing,” says Hughes. “It’s at times like this that you have to focus on the operation of your business. My philosophy is that we are making money every day—we just aren’t getting paid yet.”

While the employees are getting paid, investors are patiently waiting for the time when oil prices will climb back to the energy industry’s comfort level. Until then, Hughes and company continue to figure out ways

to stretch one dollar into five—a fiscal trick many Bakken hopefuls have had to learn over the past several years.

According to Hughes, the North Dakota LNG project was kicked off in the fall of 2014, right before the peak of activity. From that time forward, ND LNG saw its own natural gas peak, as the product began replacing diesel on a number of rigs.

“When you look at what powers a rig, they burn a tremendous amount of diesel

fuel. We can put small pieces of technology into place so they are bi-fuel and then they can burn some diesel fuel but be primarily run on natural gas,” he says.

Bottom line, ND LNG has been one of the companies allowing oil companies to tighten the fiscal belt and become more efficient in energy extraction.

“Let’s say a rig burns 1,000 gallons of diesel fuel per day. We can cut that by about 70 percent,” says Hughes. “And we can make natural gas, which is cheaper, cleaner and, frankly, more efficient. We can displace that much diesel fuel.”

Hughes isn’t discouraged by the decrease in oil rigs over the past several years. Rather, he views the LNG business more as a marathon than a sprint.

“So, there are two ways to look at it: market share and volume. Clearly, we wish there was more volume. But, you know what? We are well-positioned. Like I said, we have had to focus on the operation of the business, so we have gotten much more efficient on how we deliver it,” he says.

As everyone is looking forward to rig counts moving up in the field, Hughes is fielding calls and traveling to meetings as interest in liquefied natural gas continues to become more popular in the shale plays.

“One of the things I didn’t realize about LNG is it is a good leading indicator,” he says. “I can tell you people are kicking tires on fuel contracts. Don’t be surprised to see a few more rigs standing up in the near future.”

Big picture, Hughes said if someone is counting on using natural gas, they really have to look at it as a discount to current fuels, like diesel.

“When they converge, it is hard to make money. And that’s the situation we are in right now,” says Hughes. “But as it starts to

widen back out, I think you are going to see a resurgence in natural gas.”

Like many in the Bakken, Hughes had to ponder how to tackle the uncertainty of a volatile commodity market. Not knowing how long the downturn would last, and with four companies to operate, he had a moment of clarity last holiday season.

“I woke up prior to Christmas and made a decision—we needed to make sure we had the infrastructure, the liquidity and the ability to stay in business for the foreseeable future at the current levels,” explains Hughes. “If you think back over the last year or two, we are talking \$30 to

\$35 oil. We’ve already seen a dramatic improvement.”

Right now, Hughes is focused on selling out the production of ND LNG inventory. Hughes added that although they do a lot of value-added services, the reality of it is they are molecules. Energy molecules. Which means at the end of the day, it is a commodity.

“I’ve come to the conclusion that when you are a commodity business, you have to participate in bad markets, but you also get to participate in good markets,” he says. “And you know what? This is not a good market—and we are going to participate. And when it changes, we are going to profit from it.”

GET TO KNOW THE EXPERT JASON SPIESS

Jason Spiess is an award-winning journalist, talk show host, publisher and executive producer. He is a North Dakota native and North Dakota State University graduate.

Currently, Spiess creates multimedia content for newspapers, magazines and online news services, and he is the host of *Building the Bakken*, *MonDak OilField Review* and *Coffee & Capitalism Radio*. Spiess is also the author of *The Crude Life* eBook series.

For more information or to contact Spiess, you can reach him by email at jason@buildingthebakken.com.

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ACCESS APPROVED!

An Update on the Controversial Dakota Access Pipeline



The pipeline being installed between two farms near New Salem, ND. Photo by Tony Webster.

By Meg Crane

Remaining true to his presidential promise to boost domestic manufacturing by determining a plan of action for expediting approvals for manufacturing and reducing regulatory burdens, President Donald Trump pushed to get the Dakota Access Pipeline (DAPL) back under construction. Only weeks after he stepped up as President of the United States, the pipeline is complete and being used.

This is in stark contrast to delays that plagued the project last year. In August 2016, protest camps formed around a section of the pipeline in North Dakota, halting construction for months.

On January 24, President Trump signed executive orders that he hoped could help complete both the Keystone XL pipeline and DAPL. When protests ended, DAPL was 90 percent complete, with the only stretch unfinished being where camps were set up.

The pipeline is a \$3.8 billion project of Energy Transfer Partners (ETP). Its 1,100 miles of pipeline are designed to carry crude oil from the Bakken and Three Forks oil production areas to oil markets in the U.S. In North Dakota, there are six loading sites: Stanley, Ramberg, Epping, Trenton, Watford City and Johnson's Corner. Crude is



President Donald Trump signing the orders to move forward with construction of Keystone XL and DAPL. Photo by Karl-Ludwig Poggemann.



Protesters halted construction of DAPL in 2016.



One of the camps blocking construction of DAPL.

being shipped to Illinois, where it is transferred to refineries along the East and Gulf Coasts.

HISTORY OF DELAYS

In April 2016, members of the Standing Rock Lakota and other Native American nations set up a spiritual camp called Sacred Stone, a protest against DAPL. The Standing Rock Sioux Tribe feared the project threatened sacred native lands and could contaminate the Missouri River as well as the source of their drinking water, Lake Oahe, which the pipeline runs below.

Other camps emerged nearby, and by late 2016, thousands of people had congregated in the rural area of Cannon Ball, ND. According to *The Guardian*, many activists were concerned the pipeline posed threats similar to Keystone XL but had not garnered the same amount of national attention that had previously defeated the project.

The Standing Rock Tribe also took its fight to court. The tribe argued that the government had failed to do a study of the large-scale impacts of the pipeline, but lost the case in September. In December 2016, it started to look like the tribe could get what it hoped for. The Corps said it would not, at that time, issue the easement needed to complete the final stretch of the pipeline and that the best course of action would be to look for alternate routes.

“This is nothing new from [that] Administration, since over the last four months, the Administration has demonstrated by its action and inaction that it intended to delay a decision in this matter until President Obama is out of office,” said ETP in a news release when the news broke.

“For more than three years now, Dakota Access Pipeline has done nothing but play by the rules. The Corps of Engineers agrees, and has said so publicly and in federal court filings. The Corps’ review process and its decisions have been ratified by two federal courts. The Army Corps *confirmed* this again when it stated its ‘policy decision’ does ‘not alter the Army’s position that the Corps’ prior reviews and actions have comported with legal requirements.’” At the time, ETP plainly stated that it was fully committed to completing the pipeline without additional rerouting.

AN END TO DELAYS

“Construction and operation of lawfully permitted pipeline infrastructure serve the national interest,” said President Trump in a memo to the Secretary of the Army. He instructed the Corps of Engineers to review and approve requests to construct the pipeline in

*The Dakota Access Pipeline under construction.
Photo by Lars Plougmann.*



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an expedited manner, and to consider prior reviews and determinations as satisfying all applicable federal laws.

Meanwhile, there were still protesters blocking construction. On February 15, Gov. Doug Burgum signed an emergency evacuation of the Corps land out of concern for people's safety. With warming temperatures melting snow, the plains were at risk of flooding. The order also protected the Missouri River, as this is where all waste from the camp would have flowed, had it not been cleaned prior to flooding. The Standing Rock Tribal Council had unanimously voted on January 20 to ask

those remaining in the camp to vacate so clean-up could be completed before spring flooding.

Back in late December, Burgum began meeting with tribes in North Dakota to get an understanding of each group's issues and circumstances so they could move forward with greater respect, harmony and prosperity. They looked beyond the pipeline, also discussing education, health and economic development.

"We all care about clean water in North Dakota. As this situation has unfolded, it has become a political flashpoint for many causes unrelated to the Standing Rock

Sioux Tribe's original concerns," said Burgum. "Moving ahead, our administration is committed to government-to-government consultation and an inclusive permitting process that represents the viewpoints of all interested parties. We look forward to a return to collaborative dialogue and improved relations so we can collectively focus our energy on addressing the important issues facing the tribes in our state."

Under direction from President Trump, the once again reviewed the project in early 2017. This time, they issued the easement ETP needed to move forward with construction of the final stretch of pipeline that now runs under Lake Oahe. Immediately following the news, ETP had the debt financing and equity transaction necessary to access the funds needed to finish construction.

On March 18, the Standing Rock and Cheyenne River Sioux Tribes went to an appeals court for an emergency order to prevent the pipeline from being used, just days before it was completed and ready to be used. The court rejected their request, stating they had not met the stringent requirements for the order.

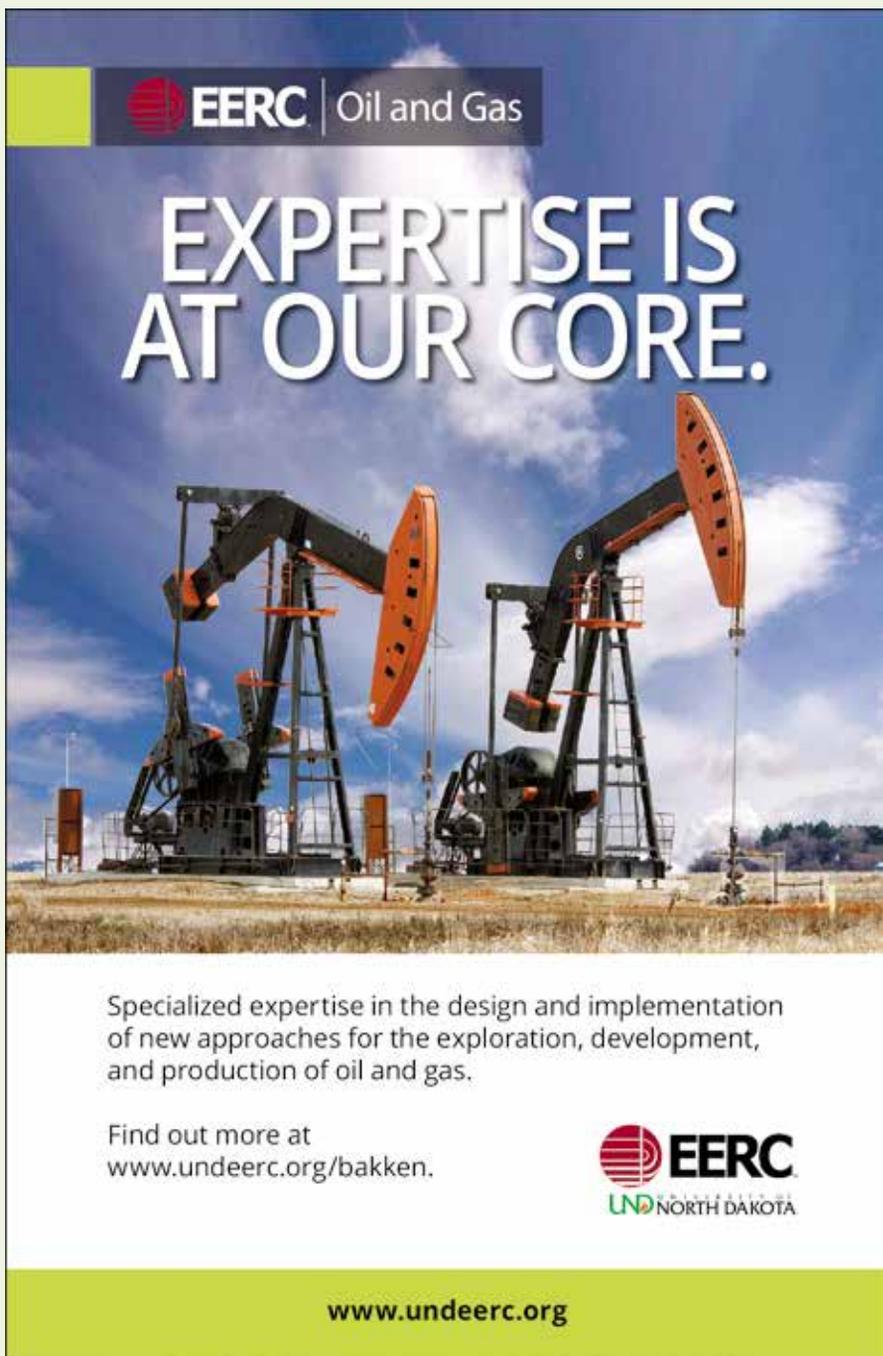
A COMPLETED PIPELINE

After much debate, DAPL is now fully completed and already in full use, with 500,000 barrels of crude flowing through it each day—that's about half of the current total production coming from the Bakken today.

In total, the pipeline eliminates the need for 500 to 740 rail cars and more than 250 trucks to transport crude in the U.S. per day. Due to the reduced risk of explosion, transporting crude via pipeline is safer than transporting it on land. This is especially the case with DAPL, which is one of the safest and most technologically advanced pipelines in the world. The pipeline is also a more inexpensive method to move crude out of the state.

The pipeline created 120,000 jobs during construction and brought hundreds of millions of dollars to the state through investment in heavy equipment. Only 40 permanent jobs were created, but the pipeline now supports an industry that supplies 80,000 jobs to North Dakota. Royalties from production go to landowners, including the state and many Native Americans who have oil and gases leases or production on their reservation property.

Looking forward, Trump is working to ensure delays of this magnitude do not impact similar projects that create jobs and spur economic growth in the U.S. 



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Producing the Bakken: A Cost Analysis

“We are getting more out of less, and that is what is helping preserve the industry in North Dakota.”

After the boom came the bust in the Bakken, and the once meteoric rise of North Dakota's oil industry found itself brought back down to earth, humbled by a global glut in oil commodity. Operators were forced to evolve and adapt under this new market reality, improving their geological knowledge and advancing the technology used to extract the resource to lower costs.

Now that the price of oil appears to have stabilized, North Dakota operators are finding the lessons they learned during the lean years are serving them well as the market begins its slow recovery.

The largest operational costs for the industry in the Bakken remain associated with drilling, proppant use, and a company's

choice of hydraulic fluids. And while these areas were not the best places to make large cuts during the slowdown, they played such a large part in the performance of a well that companies found even superficial cuts provided big savings.

The drilling equipment used today in the Bakken has become more and more specialized for shale oil extraction, even compared to the rigs of five years ago. Rigs are now able to drill multiple wells on the same pad and have become mobile, able to move from well to well to well. Rigs are continuously pushing the envelope in terms of horsepower, which allows them to drill faster, deeper, and further out, leading to an increase in the horizontal feet drilled and the stages fracked. Where operators would once drill 8,000 feet down to traverse 2,000

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MONTE BESLER

Monte Besler is an industry recognized expert in hydraulic fracturing and acidizing and has authored or co-authored 13

published technical articles. He is also a frequent speaker at industry conferences.

He graduated from the South Dakota School of Mines and Technology with a Bachelor of Science degree in Geological Engineering.

Besler has been consulting since 2002 and has been a self-employed owner of FRAC8R Consulting, LLC since 2010.



TIM FISHER

Tim Fisher is CEO and Founder of Bakken Energy Service and Co-Founder of Tuscaloosa Energy Service in Louisiana.

Fisher is the co-host of the weekly radio show *Energy Matters*, which is heard throughout the Bakken and into two southern providences of Canada.

Tim is happily married with five children and seven grandchildren and remains connected to his ranching roots. He is also an internationally ranked javelin thrower in Master Track.

feet horizontally, they are now able to go deeper and more than five times further horizontally in a third of the time and have fracked more than 90 stages that have the potential of producing more oil for longer periods of time.

“The drill heads are much more effective in 2017, and everything that has to do with drilling a well in a shale formation has become so much more efficient,” says Tim Fisher, CEO and founder of Bakken Energy Services. “A well that, at one time, cost \$15 million to drill can now be drilled for about \$5 million and have twice the horizontal and twice the oil production. We are getting more out of less, and that is what is helping preserve the industry in North Dakota.”

Because of these advancements, the current breakeven cost is about half of what it was in 2014, falling to approximately \$29 per barrel and making the Bakken one of the most competitive—if not *the* most competitive—of all major U.S. shale plays.

The lack of infrastructure in the Bakken is traditionally seen as adding to the cost for operators, as is the land-locked location of the basin. Fortunately, the boom brought with it a commitment from all industry and government stakeholders to work together and mitigate the infrastructure deficit to

help lower the costs associated with the set-up and maintenance of wells.

“Sand and ceramic proppant used in fracking is now railed into the Bakken and delivered to the well site more efficiently,” says Fisher. “All over, we have better roads, bridges and fueling locations. The bottom line is that everything and everyone in the industry has just become more efficient.”

That being said, Bakken crude must still flow to the refineries on the East Coast, West Coast, or Gulf Coast, meaning the resource needs to be pumped via pipeline or railed by tanker cars more than 1,000 miles to its destination. The cost of transportation alone can cut as much as 20 percent into the profits of Bakken operators.

However, the development of the “underground economy” beneath the Bakken is revolutionizing the cost savings for operators as it relates to resource transportation. This vast network of pipelines under the basin that connects and transports everything from oil and natural gas to salt water disposals will also be receiving a much-needed upgrade now that the Dakota Access Pipeline is open for business.

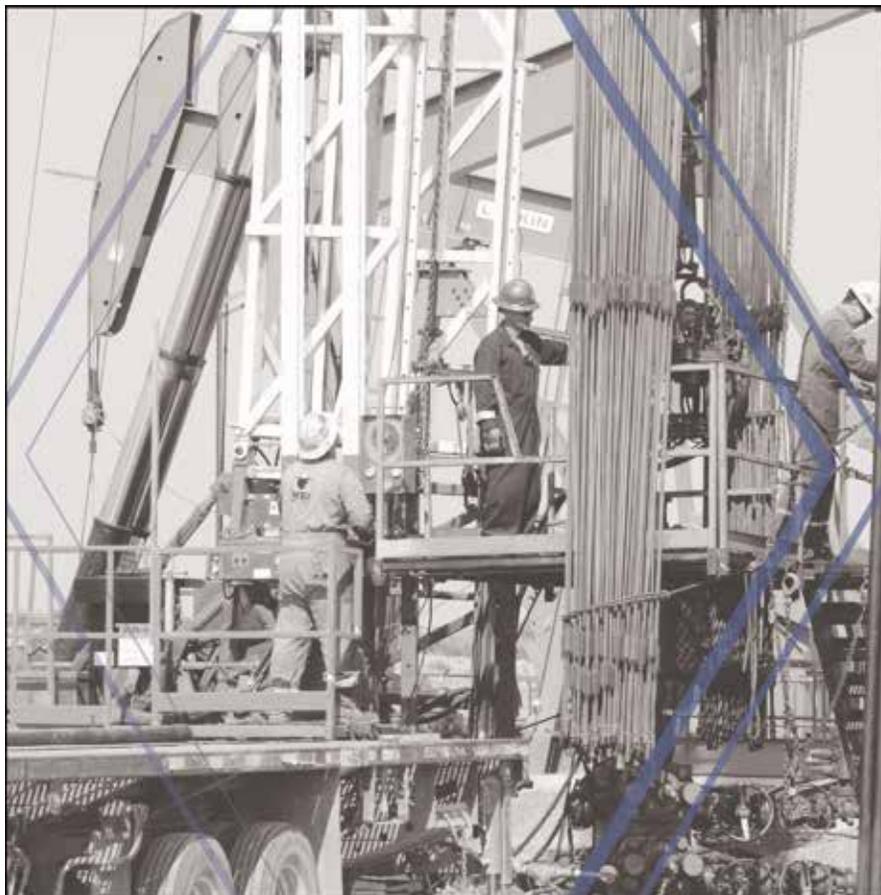
“When the Dakota Access Pipeline starts flowing, it is going to save the Bakken,” says Fisher. “The Dakota Access Pipeline will allow the Bakken to remain

a viable, long-term play for years to come, allowing operators to save six to eight dollars per barrel in transportation costs and then take that money to further invest in wells.”

While production in the Bakken has become cheaper and more streamlined in recent years, the efficiencies developed in the Bakken have come with a cost. The development of new pipelines and better, more advanced drilling systems have resulted in a loss of some jobs that will not be coming back to the region. The jobs that remain, however, require highly skilled people and are in high demand.

And although a slowdown is never desired, it did give an opportunity for the state’s communities and operators to take a breather from the non-stop action and give them time to adequately plan for the future and a possible recovery.

“Whether it was roads, schools, or housing, the slump has allowed infrastructure to finally catch up in the Bakken,” says Monte Besler, completion consultant at FRACN8R Consulting. “It also gave operators and communities a chance to look back to what they had been doing during the boom with a more critical eye and really analyze what was and wasn’t working for them.”



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IOGCC Honors Lynn Helms with Prestigious Award



Lynn Helms accepts the E.W. Marland Award with his wife, Sally.



Lynn Helms addresses the crowd after receiving the E.W. Marland Award.

By Meg Crane

Lynn Helms always hoped he'd have the honor of receiving the Interstate Oil & Gas Compact Commission's (IOGCC) E.W. Marland Award. He's been involved with the industry since he worked in the oilfields 1976, which was before he received his bachelor of science degree in engineering from the South Dakota School of Mines and Technology. In 1998, Helms became the director of the North Dakota Industrial Commission's Oil and Gas Division, and since 2005 he's been director of the state's Department of Mineral Resources.

Helms said receiving the award was gratifying. "IOGCC dates back to 1935, and that's a pretty long tradition of very important professional people making sure that states are regulating the oil and gas industry and doing a good job of it. There's a huge amount of history there, and I guess that's a big deal. I'm part of that history now," says Helms.

The award is just over 20 years old, according to Carol Booth, IOGCC's communications manager, who coordinates the award. It was named after IOGCC's founder, who was a U.S. congressman and the 10th governor of Oklahoma.

"It's the only award like it that recognizes oil and gas regulators in the country. They need just as much recognition as anyone else because the oil and gas industry is probably one of the most scrutinized industries." State regulators who have oversight of this industry also need to review a great deal of material and have extensive knowledge and experience. Booth said it's important to recognize their hard work.

Giving Helms this award was a no-brainer. "I don't think there was any question as to why Lynn was given this award. When we put it to our steering and other official representatives of all the states, this was unanimous," says Booth.

A lot of people have pushed for Helms to get the E.W. Marland Award because of how helpful he is to other states and oil and gas agencies throughout the country. When something is needed, Booth says Helms is always the first one to help out, always willing to provide information, give presentations, or send reports. "He's very helpful to all the states. He's available at all times. He pushes things forward," says Booth.

The E.W. Marland Award is for regulators who go above the call of duty. "That's exactly what Lynn does, he reviews everything in front of him, but he goes beyond that. He usually can think outside of the box and compromise when he needs to. He doesn't let anyone push it the way that they think it needs to be pushed. He thinks about what is best for the environment, what's best for his state, and how best to react," says Booth. "If there's anyone who deserves this award, it's Lynn Helms."

Helms said he first attended an IOGCC meeting in Jackson, Wyoming in 1998. His predecessor told him it would be one of the most important things he would do as a state regulator. "I seriously had my doubts, but he was absolutely right," says Helms.

Receiving the award renewed Helms' dedication to the industry. "One of the things that it's done for me is really kind of reinvigorate or renew my commitment to being the best regulator I can be, so the award sits on my windowsill,

where I see it every day when I open the door," explains Helms.

Leading up to the ceremony, Helms was suspicious he might be the 2016 recipient. "It was tricky trying to get Lynn's spouse there without Lynn catching on as to why," says his colleague, Alison Ritter.

The complete surprise for Helms was who attended. "Quite a few of my former co-workers and friends from North Dakota made the effort to go to Arkansas to be on the stage with me," he says.

North Dakota U.S. Senator John Hoeven, who was an IOGCC chairman when he was governor, presented the award to Helms. 

GET TO KNOW THE EXPERTS



LYNN HELMS

Lynn Helms grew up on a cattle ranch in Harding County, SD, where he learned to appreciate prairie ecology, wildlife conservation and agricultural stewardship. His work in the oil industry began as a roughneck working holidays and summers during college. He is an active member of Mandan Dacotah Lions, Dakota Christian Camp and Bismarck Church of Christ.

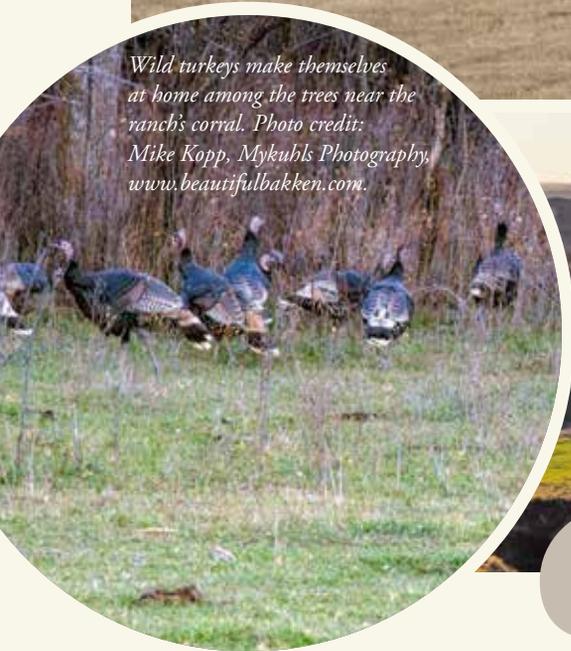
CAROL BOOTH

Carol Booth is communications manager for the Interstate Oil & Gas Compact Commission.

On the Hunt for Gold

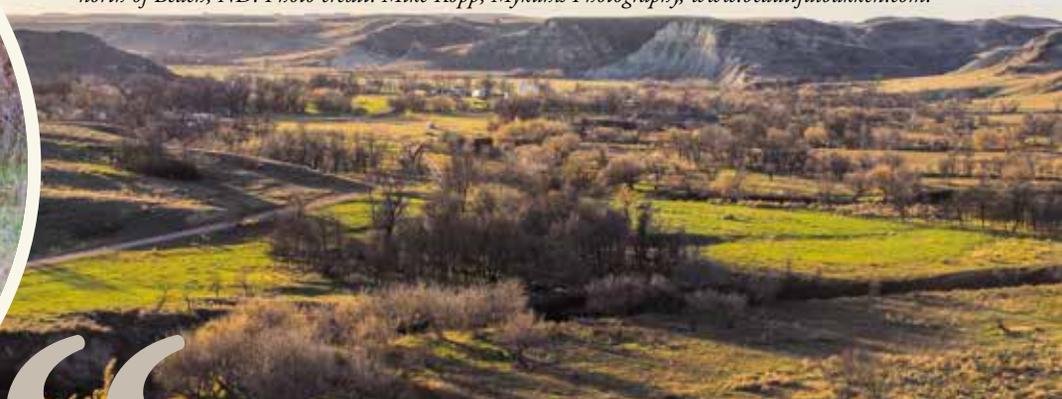


A herd of antelope make their way across a hay field on Richard Angus Ranch. Photo credit: Mike Kopp, Mykuhls Photography, www.beautifulbakken.com.



Wild turkeys make themselves at home among the trees near the ranch's corral. Photo credit: Mike Kopp, Mykuhls Photography, www.beautifulbakken.com.

Richard Angus Ranch (formerly Beaver Creek Ranch) lays upon almost 22,000 contiguous acres just north of Beach, ND. Photo credit: Mike Kopp, Mykuhls Photography, www.beautifulbakken.com.



“The PLOTS program is something Richard would recommend to other landowners who have property conducive to wildlife...”

As the Dr. Brewster Higley poem states, “Oh, give me a home where the buffalo roam and the deer and the antelope play; Where seldom is heard a discouraging word, and the sky is not cloudy all day.”

In 2015, Byron and Kathy Richard found such a wonderful home nestled along North Dakota’s western border.

Formerly the Beaver Creek Ranch, the Richard Angus Ranch lays upon almost 22,000 contiguous acres just north of Beach, ND. The land itself is a microcosm of the state, providing everything North Dakota has to offer in terms of ecology, but compressed to fit within the ranch’s fences. The winding Beaver Creek flows eight miles through the property, cutting through the open plains past rugged coulees,

high buttes, and pristine riparian wetlands. The ranch is also home to a diverse animal population, ranging from elk and mule deer, to grouse, prairie dogs, and antelope.

In early 2015, a \$480,000 North Dakota Outdoor Heritage Fund grant was awarded to the Mule Deer Foundation (MDF) to enhance, improve, or rehabilitate habitats in North Dakota. Portions of that grant were used to enroll the Richard ranch into the North Dakota Game and Fish (NDGF) Department’s Private Land Open to Sportsmen (PLOTS) program for 10 years, the longest and largest of its kind in the history of the program, which helps landowners improve habitat in exchange for allowing public access.

“What makes the Richard Angus Ranch unique within North Dakota is that we have,

in Richard, an owner who is willing to work with us to improve the habitat, seeing a benefit in not only conserving the land as it should be for wildlife, but also improving the productivity for his grazing operations,” says Marshall Johnson, Mule Deer Foundation regional director for North Dakota, South Dakota, and eastern Montana. “This project was truly a win-win situation for everybody involved.”

It was, in fact, a smaller project about 10 miles southeast of Belfield that actually provided the spark of inspiration for the larger Richard PLOTS acquisition.

“A rancher contacted the Game and Fish department, saying he had some ground in the Conservation Reserve Program (CRP) but he didn’t want to dig it up,” says Johnson. “We took our project to his land, re-tilled it, and

then planted native grasses alongside clover and alfalfa. The third-party gentleman who did the work for us turned out to be Byron Richard. He let us know that he was in the process of purchasing some land near Beach and that he was interested in the PLOTS program for his property.”

Experienced with enrolling smaller acreages, the scope of the 22,000-acre Richard project was much larger than the MDF felt comfortable handling on its own, knowing that the vast majority of the Outdoor Heritage Fund would be consumed by this single property. As a result, the MDF and NDGF made the decision to reach out to other partners, including Pheasants Forever (PF), the Rocky Mountain Elk Foundation (RMEF), and the National Wild Turkey Foundation (NWTf), which all had a vested interest in having access to this unique opportunity.

“Of course, all of these groups wanted to be involved because a project like this is just what any conservationist would dream of,” says Johnson.

The RMEF allocated \$125,000 and PF and the NWTf each supplied \$10,000 in donations to help cover the costs associated with the PLOTS agreement. The MDF injected an additional \$80,000 to tear down old fencing, put up new fencing, and lay over five miles of pipeline to provide new sources of water for

cattle—away from the creek. Plans are already in place for additional habitat projects and access enhancements that will also be funded by the MDF and the Outdoor Heritage Fund grant.

“The funds helped us fence out a lot of riparian areas along Beaver Creek with wildlife-friendly fencing. They also allowed us to move forward with food plots for game bird enhancements,” says Richard. “Noxious weed control and debris clean-up, along with the final phase of the water pipeline, is planned for later this summer.”

Because this is a capital investment to his property, Richard is funding up to 50 percent of the work himself.

The PLOTS program is something Richard would recommend to other landowners who have property conducive to wildlife, seeing it as not only another potential revenue stream but a means to make improvements for North Dakota wildlife and agriculture.

“The PLOTS program also creates an alliance with sportsman and urban folk who will get a first-hand look at production agriculture and its importance to our rural way of life,” says Richard. “Moving forward, participating wildlife stakeholders and I will continue to enhance public use opportunities, such as ATV rides and primitive camping opportunities for those who are interested.”

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MARSHALL JOHNSON

Marshall Johnson and his family currently reside in Billings, MT but will be relocating to

Bismarck, ND later this summer.

With the Mule Deer Foundation for the last seven years, Johnson has worked closely with chapters to raise funds for projects and with landowners, state and federal agencies to identify opportunities for habitat and access projects.



BYRON RICHARD

Byron Richard is a third-generation rancher and farmer. He owns 30,000 acres of crop and pasture, with 24,000 acres entered in the PLOTS program to benefit hunting and recreation for the general public.

Richard continues to look for opportunities to partner with wildlife stakeholders to enhance wildlife on his properties for the benefit of the public and to continue a working ranch for his children.

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Legislative Line:

Mixed Results for WDEA's 2017 Legislative Agenda

By Geoff Simon, Executive Director, WDEA

Budget issues dominated the 2017 North Dakota Legislature as the state struggled to make ends meet amidst a triple whammy of significantly lower oil tax revenue, an associated decline in sales tax revenue, and low commodity prices in the agriculture sector. WDEA supported legislation that would have changed the Hub City funding formula to support growth in Dickinson, Minot and Williston, as well as fulfill grant commitments made by the 2015 Legislature to oil-impacted communities. However, due to revenue uncertainties, the legislation was defeated in the House. As this issue of *Basin Bits* was going to press, legislators were continuing to discuss how to address funding needs of local governments in the oil-producing counties.

North Dakota legislators approved a bill that will improve operation of WDEA's Uniform Truck Permit System. HB 1320 will enhance the system's uniformity by requiring townships in a participating county to also participate in the permit system. The provision is intended to address problems oilfield truckers have at times reaching township officials to act on road permit requests. The measure also enables counties to better enforce road restrictions and sets up a notification procedure if permit fee changes are proposed. The bill will help facilitate WDEA's efforts to expand the

system to counties outside the oil-producing region.

A bill that would have given counties the right to appeal a decision of the State Board of Equalization fell just four votes short of passage in the House. HB 1368 was intended to address what some counties believe were errors by the state board in establishing property values for large industrial facilities. If those properties are undervalued, they are also undertaxed and that burden is shifted to other property owners.

WDEA was engaged in negotiating a compromise on a bill that changes the procedure for siting gas and liquid transmission pipelines. SB 2286 would expand the Public Service Commission's siting process to incorporate conditions required by local planning and zoning boards. It essentially consolidates the PSC hearing and county/township hearings into a single proceeding. The bill also requires an interim legislative study to monitor the new siting procedure.

One other interim study sure to generate some interest among oil producers is found in HCR 3027. The resolution asks legislators to study whether the state should offer financial incentives to encourage companies to re-frack Bakken wells.

SB 2045 will allow counties to continue receiving civil penalties when overweight trucks are cited on county roads. That ability was added to state law in 2013 as an incentive for

overweight enforcement on county roads, but because it carried a "sunset" clause, the law was due to expire on June 30, 2017.

WDEA closely followed action on HB 1151, commonly known as the "spill bill." Passage of the legislation means producers will no longer be required to report spills of less than 10 barrels if the spill is contained to a well pad with an impermeable liner. Producers will still have to log smaller spills. That information will be available for review by the surface owner.

Legislators approved SB 2327, which creates a state Department of Environmental Quality (DEQ). The legislation carves out the Environmental Health unit from the state Health Department, making the DEQ a cabinet level position.

Drivers who have had a broken windshield were probably disappointed to see the legislature defeat SB 2341. The bill would have required trucks to have mudflaps covering their rear wheels. Those who opposed the legislation said mudflaps were standard industry practice, so a law wasn't necessary.

Altogether, WDEA tracked close to 100 bills during the 2017 session. An archive of the association's weekly reports can be found online at www.ndenergy.org/news/WDEA-weekly-legislative-report. For bills and other details related to the 2017 North Dakota Legislature, please visit www.legis.nd.gov/assembly/65-2017/regular. 

Powering the Pursuit of Excellence

By Meg Crane

Though only in her sophomore year at the University of North Dakota (UND), where she's studying to be a mechanical engineer, Jennifer Grinsteiner is already making a difference in the state's oil and gas industry.

"I've gotten the opportunity to be super involved at the college. It's been nice getting to know people who have the same passions as me," says Grinsteiner, who does work for the Society of Petroleum Engineering at UND, the Society of Women Engineers (SWE), and the dean's advisory board.

"I'm currently planning an event for SWE where we bring in 30 high school girls for the day and show them what it's like to be an engineering major," she says. Grinsteiner grew up in Bismarck, ND with a family that worked in the oil and gas industry, so her interest in the field developed at a young age. Through SWE, she has been able to show young people the benefits of the industry. "I love getting young girls

involved and piquing people's interest, like mine was," she said.

Grinsteiner is focusing on geography and is particularly interested in exploration. While she hasn't decided exactly where she wants this degree to take her, she hopes to secure a job at a reputable oil company in North Dakota after graduating and plans to work toward getting her masters online.

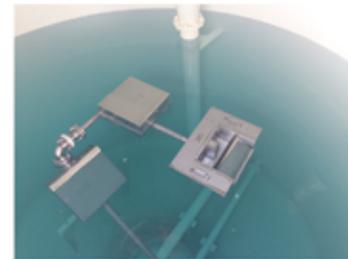
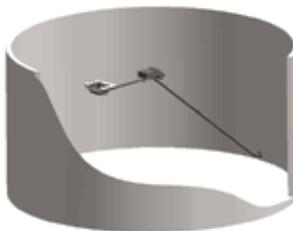
Grinsteiner is one of the recipients of the Western Dakota Energy Association's scholarships, which is awarded based on grade point average and letters of recommendation to students who plan to work in the oil and gas industry in western North Dakota.

Grinsteiner calls the scholarship a blessing that has helped her greatly in working toward her career goals. "My family has had quite a few financial hardships over the past couple of years," she says, "so it's been able to help me a lot with paying for school and releasing that financial burden that comes with paying for tuition."



Jennifer Grinsteiner, a recent recipient of a Western Dakota Energy Association scholarship.

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ONEOK: Dedicated to Creating Value

By Paul Adair

First founded in 1906 as Oklahoma Natural Gas, ONEOK Inc. is based out of Tulsa, OK and, with more than a century of industry experience, the company has evolved to become a true American leader in the gathering, processing, storage, and transportation of natural gas.

ONEOK is the general partner in one of the nation's largest publicly-traded master limited partnerships and owns one of the premier U.S. natural gas liquids (NGL) systems, connecting NGL supply in the Mid-Continent, Permian, and Rocky Mountain regions to prime market centers across the country.

"We operate approximately 37,000 miles of natural gas liquids and natural gas pipelines, 21 natural gas processing plants, including 10 in the Williston Basin, and three NGL fractionation facilities near two major market hubs," says Stephanie Higgins at ONEOK.

The Williston Basin in Montana and North Dakota remains an important region for ONEOK, in terms of long-term volume growth. This NGL-rich basin continues to outperform through a tough time in the industry, showcasing its resiliency and the hinting at the decades-long production life ahead of it.

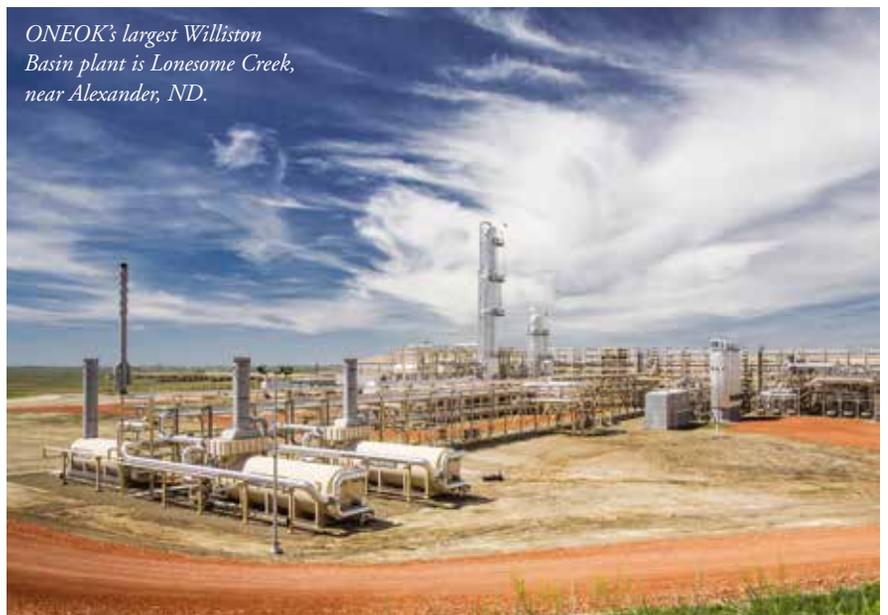
At present, ONEOK has more than 200 million cubic feet per day of natural gas processing capacity available to it across the Williston Basin. As such, the company is well-positioned to capture expected 2017 volumes, as drilling activities increase and uncompleted wells are brought online on ONEOK's more than three million acres of dedication.

"With the August 2016 completion of our Bear Creek plant in Dunn County, our total natural gas processing capacity in the Williston Basin has become nearly a billion cubic feet per day," says Higgins.

"This number helps to underscore our position as the largest independent operator of natural gas gathering and processing facilities in the region."

As a company, ONEOK values diversity and finds individual worth in each of its approximately 2,400 employees, believing whole-heartedly that a diverse and inclusive

ONEOK's largest Williston Basin plant is Lonesome Creek, near Alexander, ND.



workforce is critical to the company's continuing success in the marketplace.

It is also ONEOK's commitment to quality that drives the company to continually improve in its goal for excellence. ONEOK is fully dedicated to creating value for all stakeholders—employees, customers, investors, and communities, alike—by optimizing the development and use of its company-wide resources.

"Our actions are always founded on trust, honesty, and integrity through open communications and adherence to the highest standards of personal, professional, and business ethics," says Higgins. "We provide responsive, flexible service to customers and are committed to preserving the environment, thereby improving the quality of life for employees where they live and work."

ONEOK is faithful in giving back to the communities in which it operates, investing in the regions that support it by fostering steadfast and collaborative relationships between the company, its employees, and the community.

Last year, 146 communities in which ONEOK does business were affected by one or more of the company's investment programs, with a full seven percent of ONEOK's overall giving earmarked for diversity and inclusion-related requests. A ONEOK employee network has helped provide a total of 10,251 hours of volunteerism throughout 2016, at an estimated value of almost a quarter-million dollars. In addition, 50

volunteer service grants were given out to ONEOK employees as part of the company volunteer program, allowing for \$17,500 to be directed towards designated charitable organizations.

"We strategically invest in charitable organizations and causes that align with our company's values by providing valuable services and resources," says Higgins. "Our goal is to enhance the quality of life and economic well-being of our communities while also creating a positive environment in which to do business."

Looking ahead, ONEOK is well-positioned for growth and increasing business, thanks to continuing improvements in producer drilling economics, funding costs, and a long runway of future development potential across America's oil-producing basins. With this line of sight into growth opportunities and improving market fundamentals, ONEOK has between \$1.5 billion and \$2.5 billion of estimated future potential organic growth projects in the development phase. 

FOR MORE INFORMATION

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Regional Roundup

NDPC LAUNCHES NEW CAMPAIGN



The North Dakota Petroleum Council (NDPC) recently unveiled its new promotional campaign, “We Want,” which comprehensively illustrates the benefits from our state’s oil and natural gas. From economic impacts, such as better jobs and careers, to meeting the demands of a technology-driven 21st century, to elevating quality of life, this new campaign is smartly scalable and reminds everyone that “none of it happens without the energy of North Dakota.”

“North Dakotans are very aware of the state’s oil and gas industry, but few realize just how significant it is to our state and nation,” says Ron Ness, president of the NDPC.

“Through this campaign, we want to move people to take ownership of this industry and everything it does to make North Dakota and our lives great, from the many high-paying jobs and careers, to the thousands of amazing things that keep us connected and moving forward.”

The campaign is part of a broader rebranding of the NDPC’s education and outreach platform, Energy of North Dakota, which debuted online in March. Messages are being deployed via a multi-channel approach. Television, digital, radio, social media, and grassroots outreach are integrated along with the same award-winning programs formerly hosted through North Dakota Oil Can!, including Teacher Education Seminar, Bakken Rocks CookFest, Pick Up the Patch and more.

A survey commissioned by the NDPC and conducted by Left Brain Concepts last year showed that 84 percent of North Dakotans statewide support oil and gas development, with 66 percent strongly supporting it. Even more (88 percent) believe the many benefits of oil and gas outweigh impacts. Three out of four North Dakotans also agree that the industry tries to be good environmental stewards.

“We’ve heard from North Dakotans that they want to see continued development of our natural resources, and the career and economic opportunities that come with it,” says Ness. “But we also heard loud and clear that this development must be balanced with respect to our hunting, farming and outdoor heritages. The survey confirmed that the industry is aligned with these North Dakota values, and we are committed to responsibly developing our oil and natural gas resources while protecting the environment and everything we love about our state now and for future generations.”

The campaign was produced by Brothers & Company, an Oklahoma-based firm, and Threefold of Bismarck. The ads feature real people working and living throughout North Dakota. To read more from the campaign, visit www.EnergyOfNorthDakota.com/WeWant.

REGISTRATION OPEN FOR LIGNITE ENERGY COUNCIL’S EDUCATION SEMINAR

Registration is now open for the Lignite Energy Council’s 32nd Annual Lignite Education Seminar: Energy, Economics and Environment.

The four-day seminar gives elementary, middle and high school teachers in North Dakota, Minnesota, South Dakota, Montana and Iowa a first-hand look at North Dakota’s fifth largest industry, lignite mining and related energy production.

The seminar will be held June 12 to 15, 2017 at Bismarck State College’s National Energy Center of Excellence.

Teachers who attend and complete a lesson plan can choose from one of three North Dakota institutions from which to receive their graduate credits: University of North Dakota, North Dakota State University and Minot State University.

The seminar provides instruction on these topics and more: history, geology, land reclamation, environmental protection, and economics of the lignite industry, the need for more workers, energy conservation, and transmission.

The online application for all teachers is available on the Lignite Energy Council website, www.lignite.com/teachers.

MERIDIAN ENERGY GROUP ANNOUNCES MOU REFLECTING TERMS OF PURCHASE OF REFINED PRODUCT FROM THE DAVIS REFINERY

Meridian Energy Group, Inc. recently announced that it has entered into Memorandum of Understanding with local and regional petroleum product distribution firms, under which these firms will purchase and distribute up to 268 million gallons per year of refined products from the Davis Refinery, Meridian’s greenfield refinery proposed for Billings County, near Belfield, ND. This is an important milestone for Meridian, since it represents more than 67 percent of the design capacity of Davis Light, the first phase of the Refinery, and a still-significant portion of the completed 55,000 barrels per day capacity of Davis Refinery. Upon completion, the Davis Refinery will produce more than 800 million gallons of refined products per year. Negotiations of distribution agreements with other firms are proceeding.

In addition, Meridian announced it has completed a letter of intent with Sequent Energy Management L.P. under which Sequent will provide the Davis Refinery with its natural gas requirements.

PSC HOLDS PUBLIC HEARING FOR PROPOSED CRUDE OIL PIPELINE CONVERSION

The North Dakota Public Service Commission (PSC) held a public hearing on March 27 regarding a proposal to convert an existing crude oil gathering pipeline into a transmission line.

Targa Badlands, LLC, has applied to convert its existing gathering pipeline system in McKenzie County and its associated facilities into a transmission line. The pipeline includes two 20,000-barrel-capacity storage tanks at the Johnson’s Corner facility and a single 30,000-barrel -capacity tank at the Alexander facility.

Targa wants to store crude oil before it is transported, and the company

is also planning to flow crude in either direction through the pipeline. To do this, the gathering pipeline system must be converted into a transmission line.

When completed, the pipeline will deliver crude oil from other portions of the Targa gathering system and various production sites across Dunn and McKenzie Counties to the Enbridge terminal near Alexander. The pipeline’s maximum capacity of 50,000 barrels per day will be an increase from 17,550 barrels per day. When completed, the entire system will cost about \$85 million, including initial construction and conversion costs.

TOOLS OF THE TRADE

SKYSKOPES OFFERS DRONE INSPECTION SERVICES FOR GAS, ENERGY INFRASTRUCTURE

SkySkopes, a national leader in drone-based inspection services, has established a presence near the Bakken oil formation and seeks to offer its services to area customers.

Revolutionary drone technology allows SkySkopes to provide unique aerial data that clients can use to improve their operations, make informed decisions, and provide higher quality services to customers. Data is collected by a team of professional pilots flying aircraft outfitted with cutting-edge sensors.

SkySkopes pilots fly a variety of aircraft, including the FreeFly Alta 8, DJI Matrice 600 and the DJI Inspire 1 Pro, that can tackle a variety of jobs. The aircraft can be equipped with thermal, multi-spectral and LiDAR sensors to collect data preferred by clients.

The use of drones for inspection services saves clients time and money, as such inspections can be completed in a shorter amount of time and produce larger amounts of data than manual inspections. Drones also take inspectors out of dangerous situations.



The DJI Matrice 600.

SkySkopes specializes in unmanned aircraft system automated inspections on infrastructure in the national energy grid, ranging from oil derricks to power transmission lines. The company also provides mapping, surveying and agricultural services, and flight training services through its educational arm, SkySkopes Academy.

www.skyskopes.com



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Introducing a new, portable four-gas detector with two-year continuous run time: the Multi Gas Clip Simple. Reliably test for hydrogen sulfide, cobalt, oxygen and combustible gases (LEL) with this simple-to-use and simple-to-maintain detector. No charging ever, no calibrating needed, no maintenance costs. Just turn it on and have worry-free assurance of protection against toxic gases 24/7 for two full years.

What makes this ultra-durable detector able to perform for this long, even under the harshest of conditions? An energy-efficient infrared beam of light inside of the LEL sensor detects the gas. Pellistor / catalytic bead LEL sensors, used in the past, contained a bead and filament that had to be continually heated to detect gas. That process required oxygen to be present and it drained the battery quickly. An infrared LEL sensor doesn't require oxygen and uses very little battery power.

The infrared LEL sensor won't burst if it's suddenly exposed to high levels of gas, it doesn't contain a fragile filament that can easily break, and it is immune to sensor poisons such as hydrogen sulfide or silicones.

Gas Clip Technologies' continued development and refinement of advanced, low-power photometric infrared technology for LEL measurement helps make gas detection simpler than ever in the newest member of the company's gas detector family.

www.gascliptech.com

Talkin' Tools

Do you have an exciting new tool that will change the oil and gas industry in North Dakota? If so, we want to hear from you!

Send press releases and accompanying photos to awalld@matrixgroupinc.net with "Basin Bits" in the subject line for consideration and possible use in a future edition of the publication.

All tools are subject to approval by WDEA and press releases will be edited for spelling, grammar, etc.

THE BAKKEN TOP 20

The following are the top 20 oil and gas producers in North Dakota as of mid-March 2017. The list, which shows the cumulative amount of oil and gas that the companies have produced in North Dakota in 2017, was provided by the North Dakota Department of Mineral Resources in mid-March 2017.

As of mid-March 2017, there were 44 active rigs drilling in the North Dakota oil patch, according to the North Dakota Oil & Gas Division of the state Department of Mineral Resources. This number is up from 40 in December, 38 in January, and 39 in February. The all-time high reached 218 on May 29, 2012. The biggest factor in the drop is falling oil prices, and the slump in prices is anticipated to last into the second quarter of 2017.

The statewide rig count is down 80 percent from the high. The number of producing wells in North Dakota, as of January 2017, is 13,333 (preliminary). The all-time high was achieved in November 2016, with 13,520 producing wells. More than 98 percent of drilling still targets the Bakken and Three Forks formations.

1. **Whiting Oil & Gas Corp.**
Oil production: 3,359,066 bbls
Gas production: 6,740,058 mcf
Tel: (303) 837-1661
Web: www.whiting.com
2. **Continental Resources, Inc.**
Oil production: 3,088,133 bbls
Gas production: 5,321,387 mcf
Tel: (405) 234-9000
Toll-Free: (800) 256-8955
Killdeer: (701) 764-6582
Rhame: (701) 279-6688
Tioga: (701) 664-3001
Web: www.contres.com
3. **Hess Bakken Investments II, LLC**
Oil production: 2,762,041 bbls
Gas production: 5,037,310 mcf
Tel: (713) 496-4000
Web: www.hess.com
4. **Oasis Petroleum North America, LLC**
Oil production: 1,874,693 bbls
Gas production: 3,993,040 mcf
Tel: (281) 404-9500
Web: www.oasispetroleum.com
5. **XTO Energy Inc.**
Oil production: 1,869,218 bbls
Gas production: 3,660,130 mcf
Tel: (817) 870-2800
Toll-Free: (800) 299-2800
Web: www.xtoenergy.com
6. **Burlington Resources Oil & Gas Co., LP**
Oil production: 1,804,370 bbls
Gas production: 2,173,609 mcf
Tel: (432) 688-6800
Web: www.br-inc.com
7. **EOG Resources, Inc.**
Oil production: 1,581,777 bbls
Gas production: 2,128,687 mcf
Tel: (713) 651-7000
Toll Free: (877) 363-3647 (EOGR)
Web: www.eogresources.com
8. **Statoil Oil & Gas, LP**
Oil production: 1,286,710 bbls
Gas production: 1,507,199 mcf
Tel: (512) 427-3300
Web: www.statoil.com
9. **Marathon Oil Co.**
Oil production: 1,284,381 bbls
Gas production: 1,486,941 mcf
Tel: (713) 629-6600
Web: www.marathonoil.com
10. **QEP Energy Co.**
Oil production: 1,245,685 bbls
Gas production: 2,333,257 mcf
Tel: (303) 672-6900
Web: www.qepres.com
11. **WPX Energy Williston, LLC**
Oil production: 1,096,115 bbls
Gas production: 1,046,017 mcf
Tel: (701) 837-2900
Web: www.wpxenergy.com
12. **HRC Operating, LLC**
Oil production: 989,308 bbls
Gas production: 1,208,582 mcf
Tel: (832) 538-0300
Web: www.halconresources.com
13. **Slawson Exploration Co., Inc.**
Oil production: 669,764 bbls
Gas production: 646,528 mcf
Tel: (316) 263-3201
Fax: (316) 268-0702
Web: www.slawsoncompanies.com/exploration.html
14. **Petro Hunt, LLC**
Oil production: 625,938 bbls
Gas production: 1,160,993 mcf
Tel: (214) 880-8400
Charlson: (701) 675-2467
Web: www.petrohunt.com
15. **Newfield Production Co.**
Oil production: 612,070 bbls
Gas production: 1,264,545 mcf
Tel: (281) 210-5100
Web: www.newfld.com
16. **Enerplus Resources USA Corp.**
Oil production: 578,475 bbls
Gas production: 756,364 mcf
Tel: (701) 675-2135
Web: www.enerplus.com
17. **SM Energy Co.**
Oil production: 425,060 bbls
Gas production: 402,596 mcf
Tel: (406) 245-6248
Web: www.sm-energy.com
18. **Zavanna, LLC**
Oil production: 371,186 bbls
Gas production: 1,224,060 mcf
Tel: (303) 595-8004
Web: zavanna.com
19. **Lime Rock Resources**
Oil production: 340,208 bbls
Gas production: 301,580 mcf
Tel: (713) 292-9500
Web: www.limerockresources.com
20. **Denbury Onshore, LLC**
Oil production: 247,580 bbls
Gas production: 78,135 mcf
Tel: (972) 673-2000
Web: www.denbury.com



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SAVE THE DATE

The 2018 Williston Basin Petroleum Conference will take place in Bismarck, North Dakota from May 22 to 24 at the Bismarck Event Center.

Registration will open online on Tuesday, January 30, 2018.

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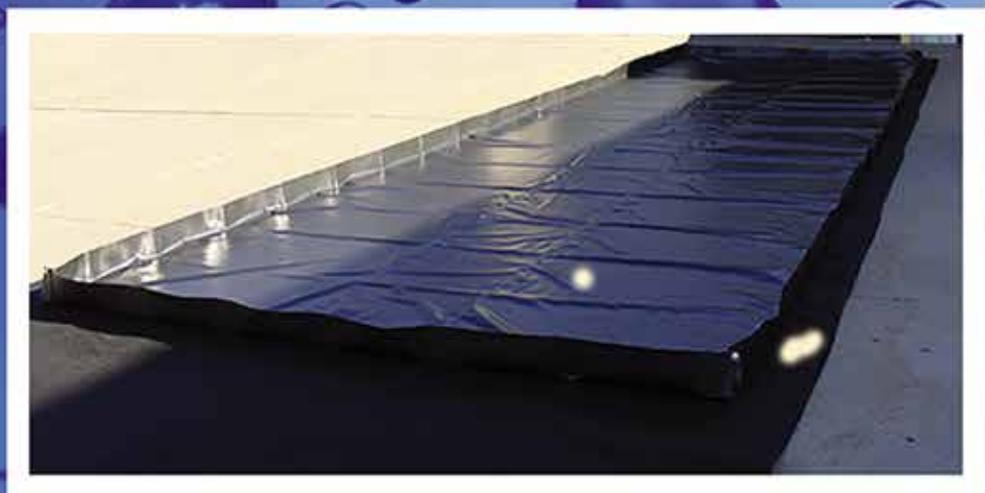
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We North Dakotans embrace a culture of hard work and providing for our families. We farm, engineer, mine, design and cultivate to produce the food, fuel and technology fulfilling every demand and dream imaginable – for our families, our state and our nation.

Even though we are number 47 in population, we are an economic and exporting engine, consistently ranking among the nation's lowest in unemployment and among the highest in average annual fiscal revenue growth. We are America's number 2 oil producer, its number 13 natural gas producer and a top agricultural exporter.

We are Energy of North Dakota

Over the years, you have come to know the NDPC through our public outreach, OilCan!. But as future energy demands become clear, we believe it's time to broaden our mission.

Oil and natural gas are, and will continue to be for the foreseeable future, energy mainstays. The U.S. Energy Information Administration projects world energy consumption to increase by 48 percent by 2040. America is the largest consumer, using 18 percent of the world's energy. Although alternative energy sources show promise, petroleum will still account for nearly two-thirds of our nation's energy use in 2040.

To meet this growing demand, Bakken producers are looking to emerging innovations and technologies through North Dakota's daughters and sons. From Williston to Fargo, and Watford City to Grand Forks, schools are emphasizing STEM curriculum. Our universities and colleges follow suit by continuing to expand technology, electronics, environmental and instrumentation programs.

Through the harshest of winters, we North Dakotans prove time and again that we are people of resilience, with boundless potential and exceptional energy. That's why, as we roll out our next chapter, we champion the Energy of North Dakota.



Ron Hess
President, North Dakota Petroleum Council

