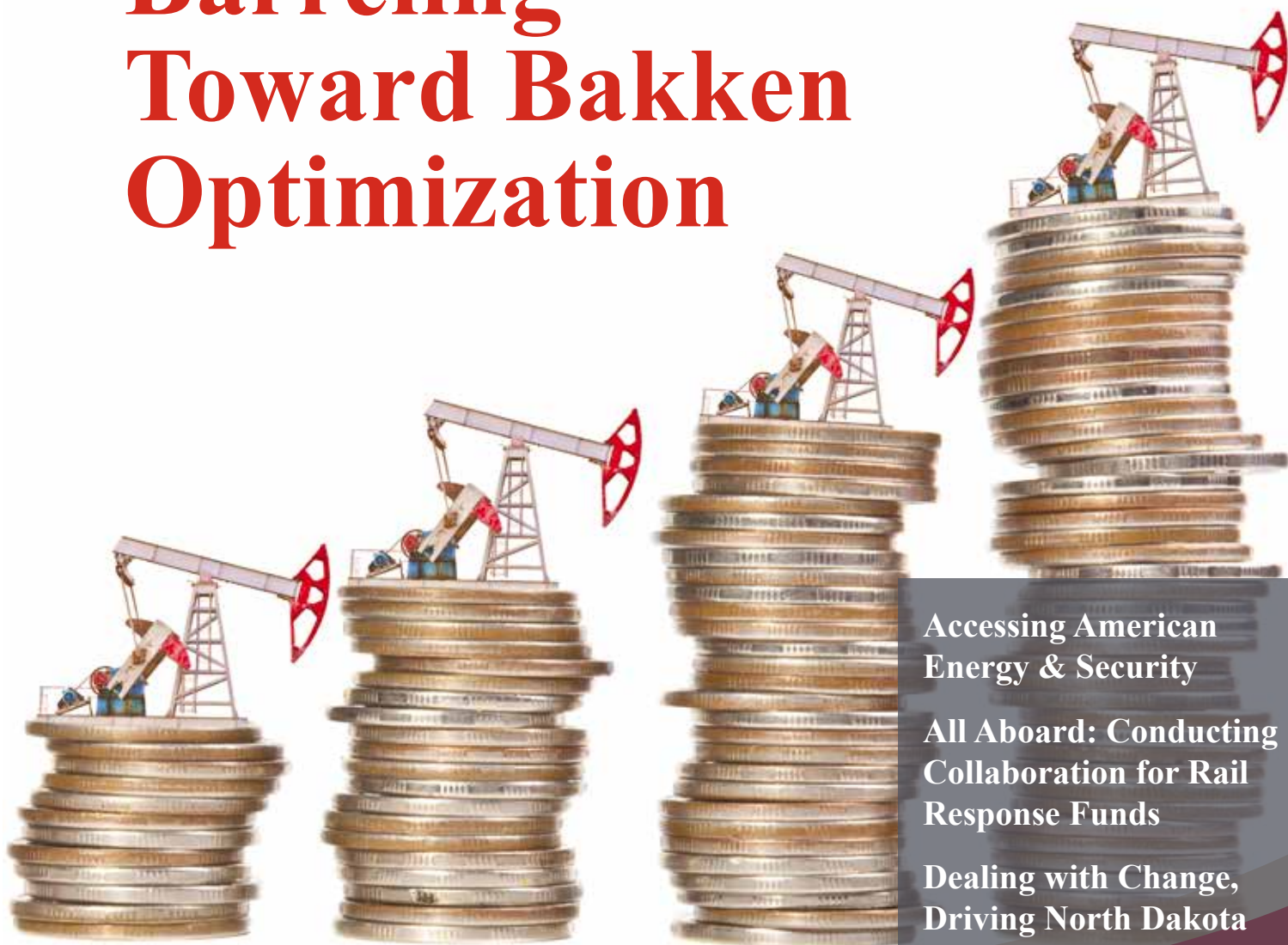


Fall 2016

BASIN BITS

The Official Publication of the North Dakota Association of Oil & Gas Producing Counties

Barreling Toward Bakken Optimization



Accessing American
Energy & Security

All Aboard: Conducting
Collaboration for Rail
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Dealing with Change,
Driving North Dakota
Forward

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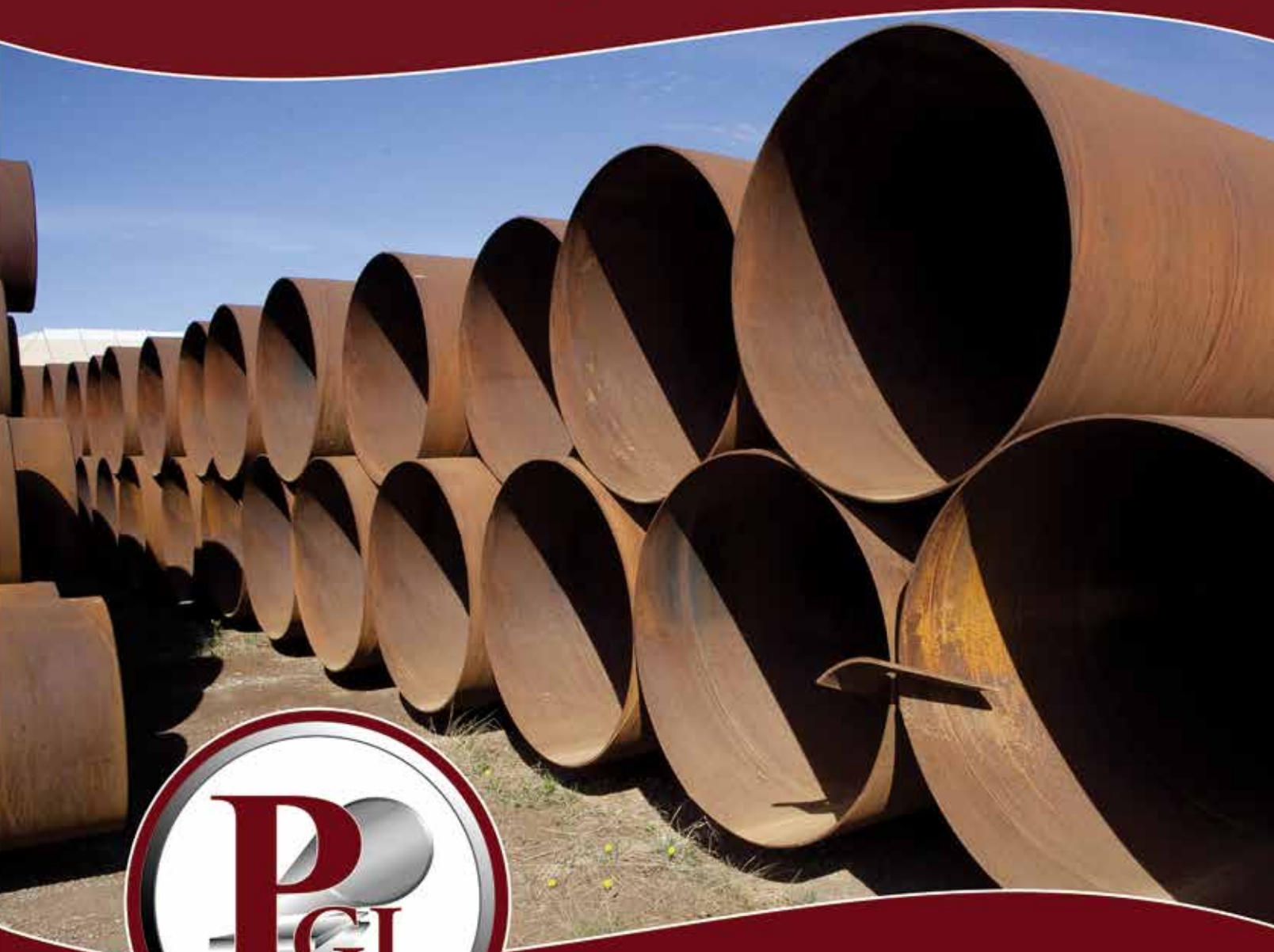
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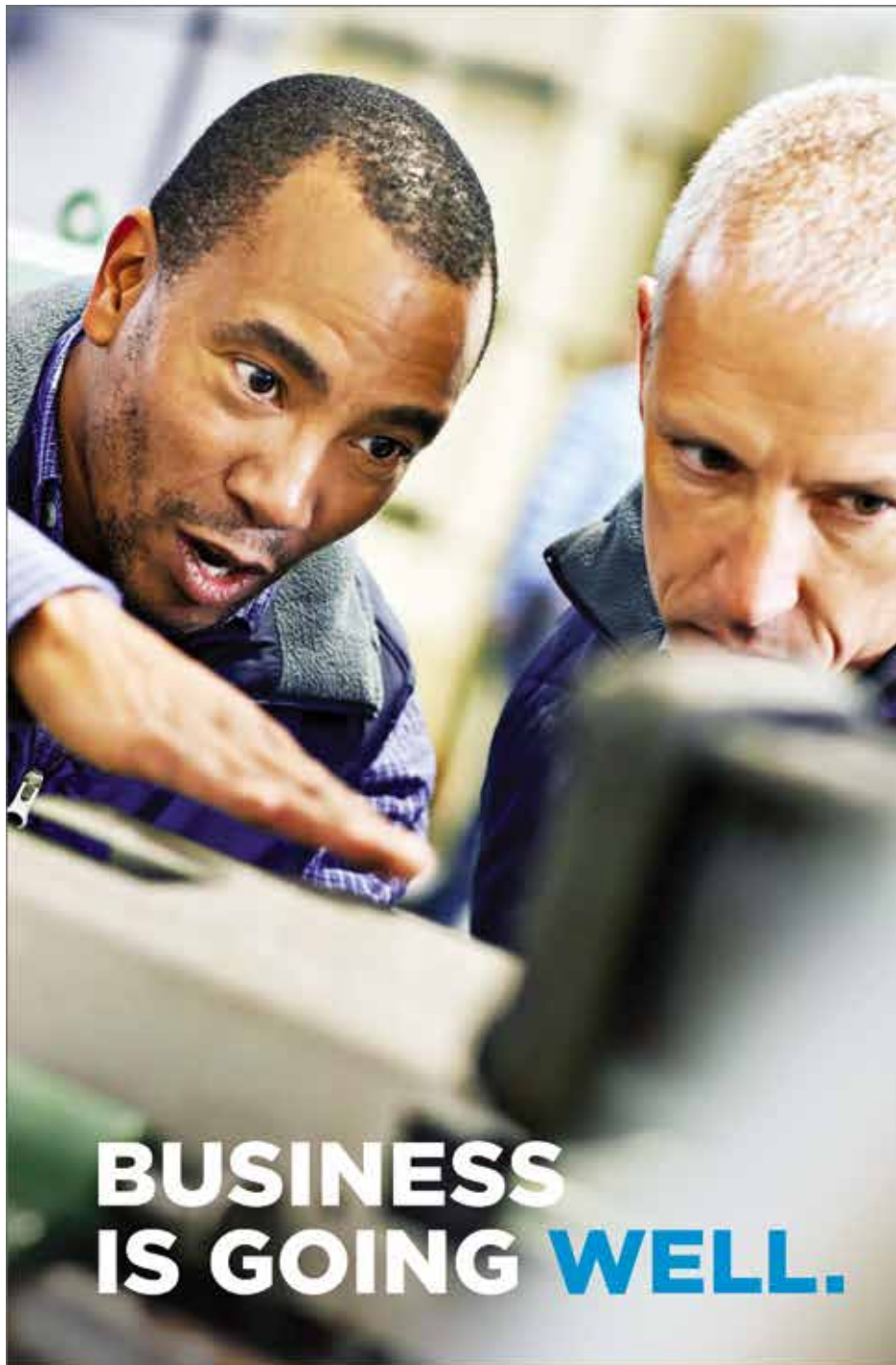
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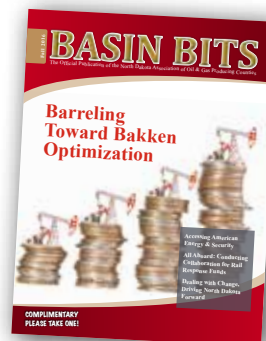
38 BUYER'S DIRECTORY



Welcome Aboard!

Geoff Simon will take the reins in January as executive director after Vicky Steiner's retirement.

Geoff is accomplished in government affairs, lobbying, and community relations, and we're excited to have him on our team!





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From the Desk of the North Dakota Association of Oil & Gas Producing Counties' President



Daryl Dukart

President

North Dakota Association of Oil & Gas Producing Counties

Figuring Out New Ways to Survive and Move Forward

Fifty-dollar oil sounded so good to the ears when I heard that on June 7. Visiting with people, they seemed much happier than they had been and it felt like the hole in the bucket was finally fixed, for this correction challenged the industry, state, cities, counties and so many other businesses that all depended on oil and gas as some part of their revenue source for their 2016 budget year. I read a comment on one of the flights I took in May this year to the western interstate region which caught my attention: Change is part of our future—new normals that last long enough become common and help build the future.

As the state of North Dakota is experiencing a financial crunch as a result of lower sales tax revenues, lower oil and gas values and less production, agriculture values are also staying low, which means a reduced amount of dollars are available to work with as we head into the 2017 budgeting process.

Is this a new adventure for our state, city or county leaders to work with? No—by no means—as they have been challenged before with shortfalls and have always worked through the process, making sure the fiscal strength we have will fit the budgets. Coming off of nearly 10 years of stronger finance every year, we will get through the process, reduction will be made, and we will learn to deal with the lesser amounts in state funds and sales tax revenues available.

Was the trend in this extremely good economic growth period strong enough to make this common and help build the future of our state? I believe it will as the many improvements to our general economy will help us

figure out new ways to survive and move forward, and we will all move forward with the continued building of counties, cities and our great state in 2017.

TIPPING OUR HATS IN THANKS

As many of you already know, Vicky Steiner, who has served the North Dakota Association of Oil & Gas Producing Counties (NDAOGPC) for many years as executive director is retiring at the end of this year. My hat is tipped to you, Vicky, for your years of service to the association. It has been a great pleasure for me to work with you this past year as chairman of the NDAOGPC. I have often requested Vicky's advice on many topics the association has taken on over this past year. Vicky's knowledge of the whos, whats, whys and hows of the NDAOGPC is so great that even a well-planned succession plan would not cover everything she knows about this organization. The association is in the process of reviewing applications and will soon be holding interviews to find the selected candidate. The executive committee of the NDAOGPC has elected to have the new executive director work alongside Vicky for two months before he or she takes over.

The executive committee has been exploring new vision and mission statements and a new strategic plan as it searches for a new name for the NDAOGPC. All of this information will be available before our annual meeting, which will be held in Watford City on October 26, 2016.

Thank you, Vicky Steiner, for your years of service and dedication to the NDAOGPC! 📏

ABOUT THE NORTH DAKOTA ASSOCIATION OF OIL & GAS PRODUCING COUNTIES

The North Dakota Association of Oil & Gas Producing Counties (NDAOGPC) is the trusted and unified voice for the betterment of the citizens of North Dakota and the membership of the NDAOGPC.

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Past President: Supt. Steve Holen, McKenzie County Public School District

Bradley Rinas, Coal Conversion Counties

Dan Brosz, Past President, Bowman County

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Ken Callahan, City of Williston

Shawn Kessel, City of Dickinson

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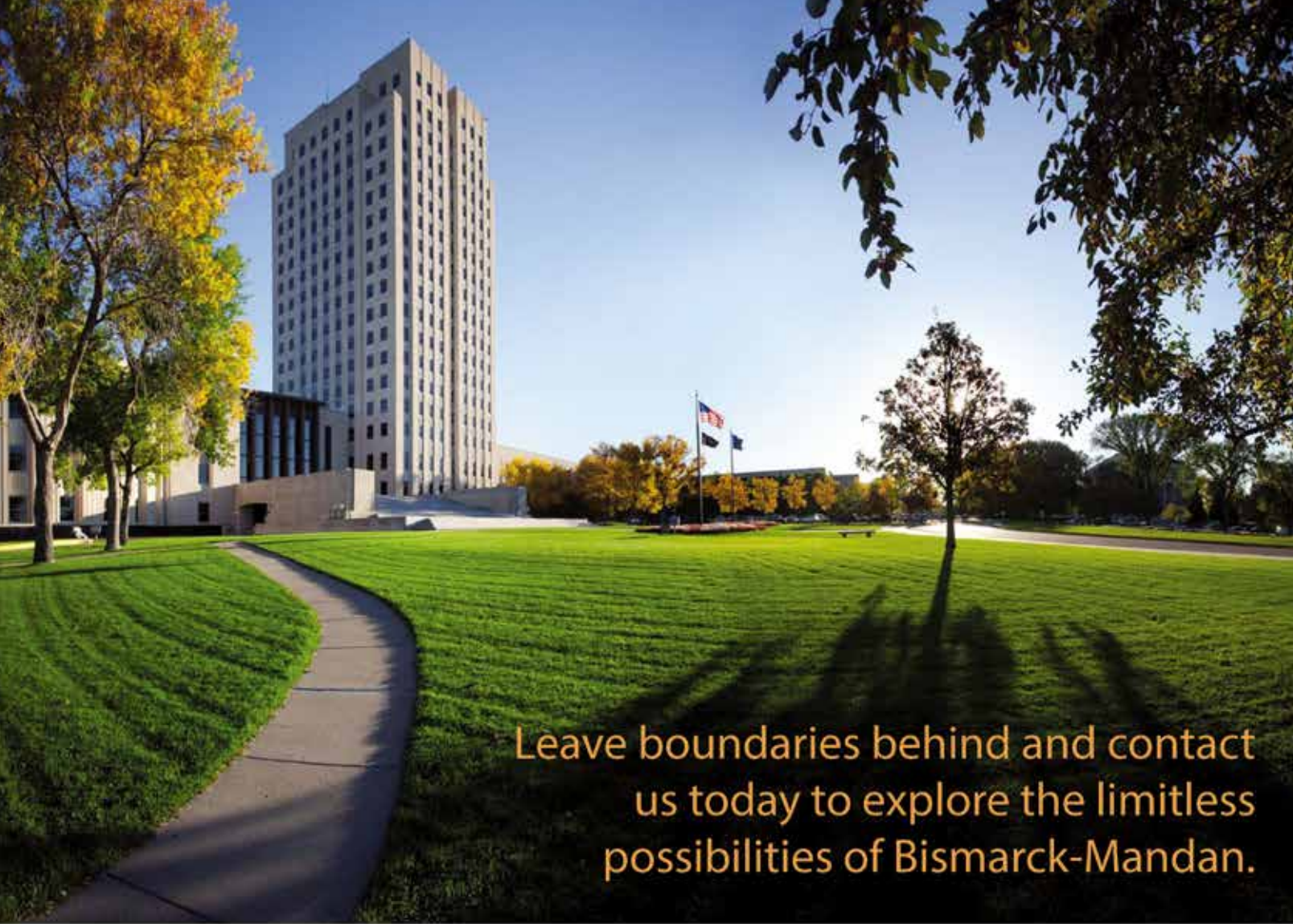
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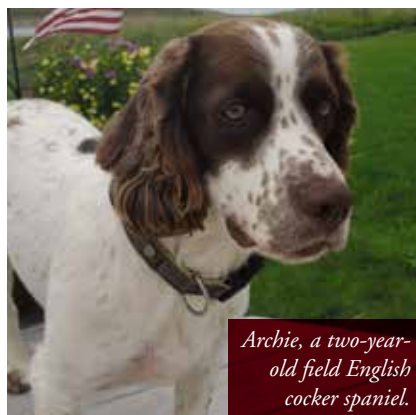
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From the Desk of the North Dakota Association of Oil & Gas Producing Counties' Executive Director



Vicky Steiner
Executive Director
North Dakota Association of
Oil & Gas Producing Counties
North Dakota House Representative
for District 37, Dickinson, ND

Dealing with Change Can be Bittersweet



Archie, a two-year-old field English cocker spaniel.

Change is inevitable. It's as natural as waking up to the coo of the mourning dove, or watching your children hold their own children.

Our youngest daughter—now in physician assistant school rotations in Iowa—asked us to babysit her two-year-old field English cocker spaniel, Archer. Some changes came with that. We now stay at pet-friendly hotels, take turns remembering the dog food, and wake up to a silky, brown and white-spotted body wrapped along the top of our pillows. It's been an enjoyable adjustment watching him chase an "injured" Killdeer that's faking a broken wing or swimming circles in Lake Sakakawea.

This is my last column for *Basin Bits*, and I admit I'm a bit sentimental. I will retire at the end of December. I've worked with the western North Dakota oil counties, cities and schools for 30 years, back when Democrat Gov. George Sinner gave the State of the State address. If you recall, 1987 wasn't North Dakota's best year, so 2017's State of the State doesn't scare me. Budgets can—and do—change.

LEARNING FROM CHANGE

I've enjoyed working with many presidents of the North Dakota Association of Oil & Gas Producing Counties' (NDAOGPC) executive committee. My first president, a feisty rancher from Dunn County, was Albert Sickler. I am grateful to him and former Dunn County Auditor Reinhard Hauck for their leadership. It has been an incredible opportunity for me and my family.

In the beginning, I worked at a vacant wood desk in the old, wooden Dunn county courthouse, which has since been replaced by a modern brick building. Reinhard, retired as auditor, has been elected a Dunn County commissioner. I have since been elected to the legislature. Albert sold the ranch and lives in Dickinson. Change for all of us.

GROWING FROM CHANGE

We created an organization from a group of rugged county commissioners, with a nudge from no-nonsense sheriffs who followed the philosophy *plow ahead until someone stops the horses*. We did move "new prairie," as we created the first uniform county truck permit system of its kind in the country. I have traveled, speaking to oil counties in other states. In Texas, Permian Basin counties couldn't fathom working with Eagle Ford counties, even though they openly acknowledge urban centers, like Dallas, don't understand their oil impacts or fairly distribute road dollars.

In 1986, western county commissioners had a problem. They didn't know when, or where, overweight oilfield trucks might be moving in any given week. They found out, after, the road had damage, so they created a county road permit system, administered by the NDAOGPC, to have information about

who was on their roads. At that time, it was a simple \$10 fee to go into the county, \$10 to get out, self-issuing paper permit that you left on the dash of the truck. We put the data on a new thing called the Apple computer and then sent the permit information by regular mail to the county sheriffs.

Talk about change.

GETTING AHEAD WITH CHANGE

This past spring, the association ended paper permit use and invested over \$100,000 in website improvements so county staff and oilfield trucking companies could communicate on truck routes. Counties have three days to approve or deny a permit in many cases. What used to be recorded by hand is now completely done by computer. The sheriff was the enforcement arm. And often, they serve as chairman of the Uniform County Truck Permit committee.

Today, a county road superintendent can post a closed county road on the association's website, texts go out and the world is immediately notified. We currently provide complimentary text messaging to truckers, but that may change if permit revenues continue to slide. I have been fortunate to work with our dedicated permit operator, Janet Sanford. Her firm provides the association's customer service.

EMBRACING CHANGE

Change is inevitable. At this year's annual meeting in Watford City on October 26, the association will consider a name change—the old name is a bit cumbersome. If you'd like to, join us.

As with all changes, it can be bittersweet. I know Archer will move out next year when our daughter finishes school. We will miss Archie. And I will miss all of you. But, I take comfort knowing we are still indelibly linked. God Bless!

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From the Desk of the North Dakota Petroleum Council's President



Ron Ness
President
North Dakota Petroleum Council

Bakken 2.0: The New Normal in 2017 and Beyond

Oil prices seem to have bottomed out, and the industry appears to be slowly coming out of dormancy. Although market conditions are still short of ideal, the slight uptick of activity is a sign of relief for many in North Dakota.

Many have pointed to the recent down cycle as a traditional “bust,” but for those paying closer attention, what we’ve seen over the past two years is more of a reboot. The industry used the downtime to take a closer look at operations, trim the fat, and find better, more innovative ways to do more using less. Technology and efficiencies have emerged to better define the industry, ushering in a new era of oil and gas development—one that will be less prone to boom and bust cycles and more of a steady mainstay in our state’s economy.

This next era will be among the topics of this year’s North Dakota Petroleum Council Annual Meeting to be held in Minot from September 19 to 21. Industry experts will be on-hand to talk about the latest innovations, including Bakken refracs, and Continental Resources President and COO Jack Stark will give a keynote address outlining his thoughts and visions of the future of the Bakken.

DEALING WITH THREATS TO THE INDUSTRY

But the future of the industry rests on more than its ability to evolve and innovate while facing market headwinds. Today, the greatest threat the industry faces is regulatory overreach from the federal government. The rules, which have come out of the Environmental Protection Agency (EPA) and the Bureau of Land Management, are duplicative and not only usurp the state’s regulatory authority, but would also have the opposite

intended effect, rolling back the progress the industry has made at addressing challenges such as flaring. Furthermore, these rules come at a time when the industry is working to preserve jobs and move toward recovery. According to a docket filed with the EPA, simply gathering the information required under EPA’s proposed rules would cost the industry \$40 million. The rules would also come at a significant cost to the state and impact its ability to administer its oil and gas regulatory program, no doubt causing additional unintended challenges for our state.

TAKING AN INDUSTRY STANCE

With it being an election year, the future of our energy industries and the country they fuel remains uncertain. Americans will have the opportunity to embrace our country’s new role as an energy superpower or revert back to the decades where we were reliant on energy from nations that fund terrorism and would rather do us harm. We will have the choice to continue to fuel a manufacturing renaissance powered by affordable and abundant energy that brought jobs and opportunity back to the U.S., or we can see

those jobs return overseas. We can choose to continue our path forward in fueling our allies and helping ease geopolitical conflicts, or we can return back to our years as hostages of authoritative regimes. This and more is at stake.

SHAPING OUR FUTURE

Annual Meeting attendees will have the opportunity to hear from Consumer Energy Alliance’s executive vice-president, Andrew Browning, on the Campaign for America’s Energy and how the industry and its employees can—and must—motivate its bases to ensure we elect candidates who will stand for a fair regulatory environment. We will also have the opportunity to hear from North Dakota’s gubernatorial candidates on their visions for the future of our great state.

As summer wanes, a new year approaches and we have an opportunity to help write the future for our industry and the state. We look forward to beginning that dialogue at our 2016 Annual Meeting and hope to see many of you there, ready to launch the next era of development and prosperity in North Dakota.

CARTOON CORNER



Brooke Schreiber, www.brookeschreiber.com

Don't Miss the 2016 North Dakota Association of Oil & Gas Producing Counties' Annual Meeting

The annual meeting of the North Dakota Association of Oil & Gas Producing Counties (NDAOGPC) will take place October 26, 2016 at the new Rough Rider Center in Watford City, ND.

Registration is now open on the ND-AOGPC website, www.ndenergy.org. The meeting will provide updates on important western North Dakota issues, like dust control and development of the Bakken and Three Forks formations.

This year's keynote speaker, Lynn Helms, North Dakota Department of Mineral Resources' director, will update attendees on development with a county by county report on past and future oil production potential.

At the meeting, members will also have the opportunity to elect county, city and school district committee members and the representatives on the executive committee.

We look forward to seeing you!



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Your Guide to the 35th North Dakota Petroleum Council Annual Meeting

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MONDAY, SEPTEMBER 19, 2016

1:30 p.m. – 3:00 p.m.	County Uniform Road Permitting Education Session, Brent Bogar & Janet Sanford (Mediterranean Room)
3:00 p.m. – 5:00 p.m.	Bakken Backers Hosts: Bakken 2.0 (Exhibition Room, Free and Open to the Public)
5:30 p.m. – 7:00 p.m.	Social and Hors d'Oeuvres for Registrants (Elevation Restaurant, Minot, ND)

TUESDAY, SEPTEMBER 20, 2016

8:00 a.m.	Registration Opens
10:00 a.m.	Opening Remarks, Ron Ness, NDPC
10:05 a.m.	Welcome to Minot, Mayor Chuck Barney (invited)
10:15 a.m.	Ag & Oil: Leading North Dakota Forward Together, Brock Saewert, FFA
10:25 a.m.	Doug Burgum, Republican Candidate for North Dakota Governor
10:45 a.m.	In the Arena: Why our Great Republic Needs Good Citizens More Than Ever, Pete Hegseth, Concerned Veterans for America
11:30 a.m.	Bakken Completions, Production & Transportation, Justin Kringstad, ND Pipeline Authority
12:00 p.m.	Break
12:15 p.m. – 1:40 p.m.	Lunch Keynote Speaker: Bakken: Yesterday, Today & Tomorrow, Jack Stark, Continental Resources / Marshall Johnson, Mule Deer Foundation Video Greeting, U.S. Congressman Kevin Cramer (invited) / NDPC Outstanding Service Award: Steve Halvorson, Wyoming Casing Service
2:00 p.m.	County Road Permitting & Infrastructure Update, Brent Bogar & Janet Sanford
2:15 p.m.	Campaign for America's Energy, Andrew Browning, Consumer Energy Alliance
3:00 p.m.	Break
3:15 p.m.	Regulatory & Safety Panel, Moderator: Kari Cutting, NDPC / Joel Noyes, Hess Corp. / Dave Glatt, North Dakota Department of Health Dustin Anderson, Oasis Petroleum / Jeff Hume, Continental Resources / Eric Dillé, EOG Resources
4:25 p.m.	Video Greeting, U.S. Senator John Hoeven (invited)
6:00 p.m.	Social (Exhibition Room)
7:00 p.m.	Chairman's Banquet / NDPC Outstanding Service Award: Ron Rauschenberger, Governor's Office NDPC Hall of Fame Award: Al Anderson, Governor's Office / Comedian Mike Green

WEDNESDAY, SEPTEMBER 21, 2016

7:00 a.m.	Buffet Breakfast
7:30 a.m.	Registration Opens
8:00 a.m.	Opening Remarks, Eric Dillé, EOG Resources
8:05 a.m.	Passion: Eight Steps to Reignite Yours, Mark J. Lindquist, Breath is Limited Motivational Speaking
9:00 a.m.	NDPC Year-In-Review, Eric Dillé, NDPC
9:30 a.m.	Rep. Marvin Nelson, Democratic Candidate for North Dakota Governor
9:50 a.m.	Break
10:05 a.m.	Bakken Refracs, Charles Ohlson, Whiting Petroleum Corp.
10:35 a.m.	Three Affiliated Tribes, Mark Fox (invited)
10:55 a.m.	Video Greeting, U.S. Senator Heidi Heitkamp
11:00 a.m.	Andrew Black, Association of Oil Pipe Lines
11:30 a.m.	NDIC Regulatory Update, Lynn Helms, Department of Mineral Resources
12:00 p.m.	Closing Remarks, Ron Ness, NDPC / Meeting Adjourns (No lunch provided)

*Agenda may change. The latest version is available on the NDPC website, www.ndoil.org.

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A recent drop in oil prices brought about a chance for innovation in the industry. From targeting oil-rich rock in lateral sections of horizontal wells, to speeding up pressure pumping systems, to adopting better technologies for bringing wells into production, oil and gas operators continue to look for creative ways to be successful during trying times. Now, as prices are recovering, companies are beginning to implement new approaches and try new technologies to optimize their success.

"The industry is finding new efficiencies at every front out of necessity—the low-price environment dictates the advancement of technology, while the high-price environment allows for the proliferation of technology," says John Harju, vice-president for strategic partnerships at the Energy and Environmental Research Center.

"We need to come up with better and better technology in low-price environments—as they say, necessity is the mother of invention—and then we can really proliferate that technology in high-price environments."

ENHANCING RECOVERY

As co-moderator (along with Lynn Helms, director of the state's Department of Mineral Resources) of the Bakken Optimization panel at the Williston Basin Petroleum Conference

in May, Harju participated in the discussion surrounding the latest in technology developments in the oil and gas industry, relating specifically to the Bakken. One of the main topics included carbon dioxide-enhanced oil recovery, something Harju believes will play an important role in the area over the coming years.

"There are several reasons we feel this is going to be a very important aspect of the future of the Basin," says Harju. "Carbon dioxide, in our lab work, is extremely effective at extracting oil from the middle Bakken, as well as upper and lower Bakken shales.

"We believe that going forward, on a concurrent path, there are tremendous pressures to capture carbon dioxide from large stationary emission sources, such as power-generating facilities and other industrial carbon dioxide emission sources," he continues. "So, in turn, we believe there will be an abundant, relatively low-cost carbon dioxide supply available to conduct carbon dioxide-enhanced oil recovery."

FLOODING THE MARKET

Also in the spotlight at the conference was fracture flooding, a new reservoir flooding method that can be used in consolidated reservoirs, but especially in multi-fractured light tight oil (LTO) reservoirs like the Bakken. The technology uses fractures as injection

and production conduits to increase well fluid injectivity. It was proposed that the industry could revive existing multi-fractured LTO wells to substantial production by increasing injectivity, rather than drilling new wells.

"I think people will be looking at fracture flooding very closely in the coming years, as well as its potential utility," says Harju of the technology that is showing promise for improved recovery.

One of the challenges with recovery factors with all technologies, he notes, is posing the question, "What is the denominator?"

"We often say that in the evaluation of enhanced recovery, you're probably only getting between four and eight percent recovery of the resource with today's prevailing technology, but the recovery factor is inherent on what the denominator is," says Harju.

REFRACKING REVISITED

Interest in the refracturing (refrac) of existing wells is expected to increase as well. Though the Bakken has seen fairly modest application of refrac work to date, Harju predicts there will be more going forward as companies better understand the benefits.

"Refrac is a huge new area of work in which we can expect to see a lot of opportunity," he says. "There has been a lot of use of refracs in some of the tight gas producing basins, and it's proven to be very, very effective."

Barreling Toward Bakken Optimization

By Andrea Danelak



There are two key elements to refrac work, according to Harju. One is the choice of specific technology, examining the level of intensity a company wants to use in a particular refrac. The other important element surrounds candidate selection.

"If an operator has 500 wells, how do you best choose which of those wells are candidates for refrac work?" he says. "Of the ones you have chosen, how do you choose the appropriate technology and intensity choice for each of those refracs?"

An opportunity for research lies in understanding those considerations and the efficacy of refracs, as well as how to evaluate their success rate.

"We've chosen a well, we've conducted a refrac, we've seen an initial bump in fluid production and have sustained it for a period of time, and hopefully there is substantial incremental resource that has been produced and the cost of refrac is substantially lower than the financial benefit to the activity," says Harju. "Hydrocarbon gas (methane, propane, etc.) reinjection and refrac are two areas among the biggest in terms of important aspects that are going to meaningfully change the future of the Bakken system development."

DIRECTING DIVERSION

The application of diversion techniques in the Williston Basin is another area that could see substantial potential and growth.

"Diverters are an interesting concept that could be used in three places: infill drilling, enhanced oil recovery and refracs," says Harju. "When we are doing infill drilling, the use of diverters allows us to direct stimulation energy to previously unstimulated portions of the reservoirs. Similarly, they could be very helpful in augmenting enhanced oil recovery and in the use of refrac."

OPTIMIZING OPPORTUNITY

Developments in fiber-optic technology also offer new opportunities for optimization. The technology is often deployed to the horizontal portion of a well, helping operators comprehend the distribution of fluid flow and providing useful diagnostic information.

"Armed with that information, we're trying to access portions of the reservoir we used to access but are not currently accessing, or portions we have never accessed before," says Harju. "Fiber coil technology helps us understand what portions of the reservoir are not providing hydrocarbon."

In particular, fiber coil evaluation of Bakken fracture simulation could be used innovatively to better understand and even assist with the refrac candidate selection process, optimizing refrac effectiveness.

"Using the same example of 500 wells as we did before, let's say we narrow those 500 wells down to 100 candidates for refrac for a variety of reasons. At that point, something like fiber coil helps us understand the distribution of fluid flow," says Harju. "If we then did fiber coil evaluations of those 100 candidates with that information, we might rule out, hypothetically, 20 wells that might not be good candidates. For the remaining wells, we might have a much better understanding of where we want to direct the energy on these refracs."

REDUCING COSTS THROUGH EFFICIENCY

Finding efficiencies is another key area on which Harju would like to see increased focus in the future. "We've seen a lot of efficiency that's been discovered or achieved in the drilling side of the equation and has dramatically reduced all-in well costs through drilling technology, and we're seeing similar gains in efficiency on the completion side," he notes.

Harju looks forward to seeing continuing research surrounding the topics discussed during the panel.

"It's always exciting to participate in a session like this and look at the innovation that continues within specific areas and the industry as a whole," he says.

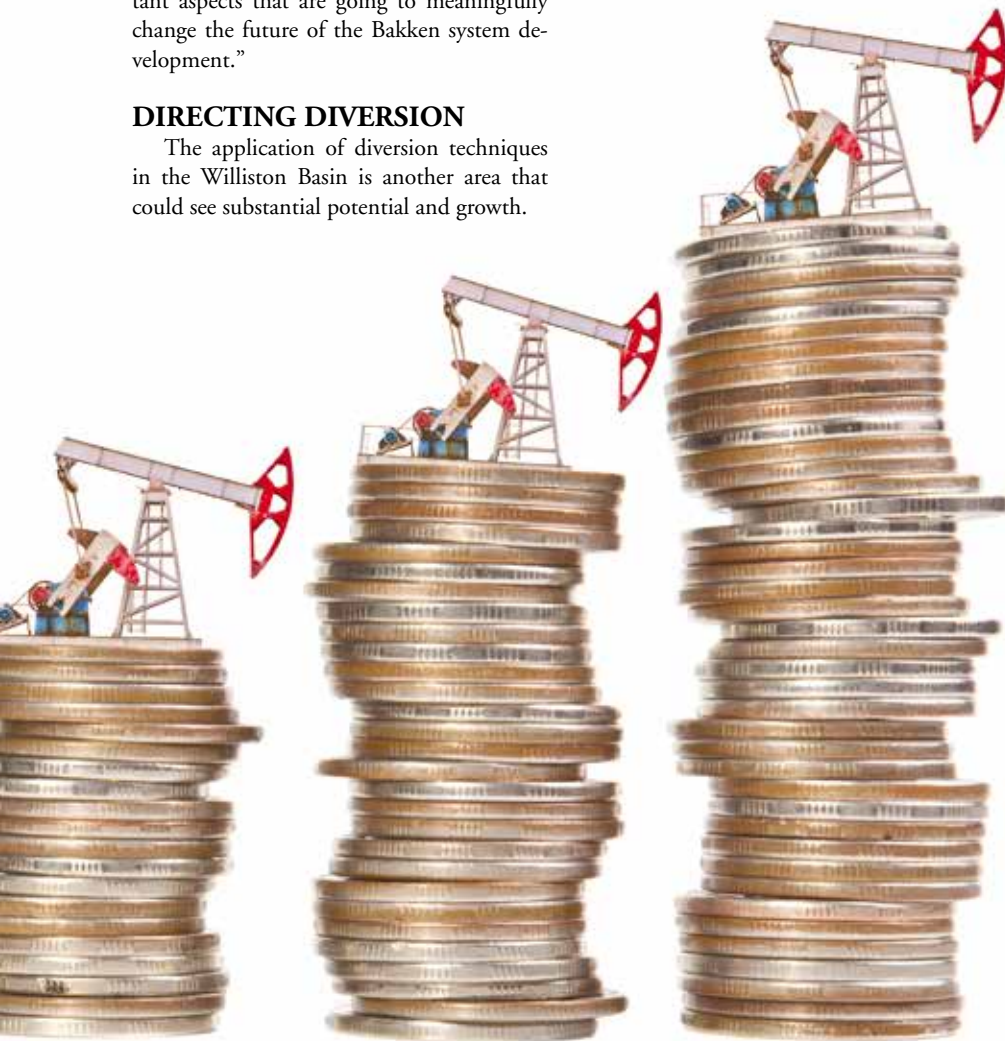
"The Bakken Optimization session was truly an outstanding gathering for myself and others and it was great at illustrating how the industry is advancing because of all of this technology. We'll be ready to deploy a lot of that technology as we continue to see financial recovery in the industry—and then we're going to continue to evolve the technology for decades to come to realize its full potential."

GET TO KNOW THE EXPERT



John A. Harju is the vice-president for strategic partnerships at the Energy and Environmental Research Center (EERC), where he leads efforts to build

and grow dynamic working relationships with industry, government and research entities globally. Prior to his current position, he was the associate director for research at the EERC.



Accessing American Energy & Security

Dakota Access Pipeline a conduit to American energy, jobs and economic and national security

Pipes have been staged at a rail facility outside Richardton, ND for several months in preparation for pipeline construction to begin.

North Dakota's most recent success story of crude oil extraction and development is an example of how commitment to responsible resource development can support the state's development and economic growth and meet the Nation's energy needs and objectives.

North Dakota's natural resources have become one of the most sought after business opportunities in America and are now a cornerstone of America's energy independence strategy. As employees and business owners, North Dakotans have risen to the challenge of balancing the state's ranching and farming heritage with the oil and gas opportunities that lie beneath our feet.

To maintain this positive economic environment, North Dakota needs responsibly constructed energy infrastructure to safely transport domestically produced light sweet crude oil from the Bakken and Three Forks Shale Formations to markets throughout the country. Current infrastructure has been tested during the shale boom, and without construction of pipelines, North Dakota could again be faced with road and rail issues related to oil shipments and would continue to take a substantial discount despite its crude being of high quality.

Following the rampant build-up of success, several companies worked to build pipelines to help take North Dakota crude oil to the markets which would take nearly half of the oil produced in the Bakken-Three Forks where it needs to go: the Great Lakes and Gulf of Mexico refineries equipped to process light, sweet crude. One of those projects, the Dakota Access Pipeline, was recently approved and will serve as a long-term

solution to easing the strain on existing road and rail transportation infrastructure in North Dakota and surrounding states.

Energy Transfer Partners will help get Bakken crude to these markets through the Dakota Access Pipeline, which will start in Stanley, ND, and cross through Mountrail, Williams, McKenzie, Dunn, Mercer, Morton and Emmons counties before crossing into South Dakota and Iowa, where it will cross the Mississippi River before terminating at a hub near Patoka, IL. The 1,168-mile pipeline is currently under construction and expected to be in service by the end of this year.

MEETING TRANSPORTATION NEEDS WHILE PROTECTING RESOURCES, PROPERTY RIGHTS

Building any major infrastructure requires extensive regulatory approvals that are lengthy, thorough, and exacting with different requirements mandated by local, state, and federal authorities. Pipeline construction is subject to these requirements and, often, many more.

For over a year and a half, Dakota Access has engaged North Dakotans, and Energy Transfer Partners (the parent company of Dakota Access) held hundreds of local meetings throughout the state. The company also met nationally with the respective states' Departments of Natural Resources, U.S. Fish and Wildlife, U.S. Army Corps of Engineers, historic preservation associations, state archaeological offices, service commissions and boards.

The approval process across all four states has seen expert testimony on conservation of natural and cultural resources, ensuring agriculture remains protected during construction, from

construction safety consultants, water rights consultants, and native and historical heritage experts.

Energy Transfer Partners worked hard to successfully secure voluntary easements from property owners across the project's path. According to the company, easements have been purchased on 97 percent of the properties along the pipeline route. In North Dakota, Dakota Access has already purchased voluntary easements on 100 percent of the properties along the pipeline route, and no condemnation of property occurred in North Dakota.

"Much of the success with Right of Way acquisition can be attributed to the number of community meetings and breadth outreach Dakota Access has done with landowners and local officials," says Vicki Granado, a spokesperson for Energy Transfer Partners. "Critical to this outreach was the opportunity to work with state officials, labor and business leaders and representatives of the appropriate Native American tribes along the route."

ECONOMIC, JOB BENEFITS ON THE HORIZON

With regulatory and easement work nearly complete, construction has begun all along the route. The project is expected to support up to 4,000 construction jobs in North Dakota alone, all of which will be union labor, with up to 50 percent from local union halls. This includes the Laborers' International Union of North America (LIUNA), which has about 11,000 members in North Dakota and Minnesota. Between 300 and 500 jobs are expected to be created in North Dakota, which, according to Steven Cortina, a representative for the union, "[is] a huge boost."

Michels Pipeline Construction, a division of Michels Corporation and Precision Pipeline will manage the construction and expects between 8,000 and 12,000 jobs to be created across all four states during construction.

"As a Midwest-based company, Precision Pipeline is excited to be part of the Iowa community in building this critical energy infrastructure project," says Steve Rooney, president of Precision Pipeline. "The project will be constructed across the entire state and will

include several communities that will house our warehouse yards and traveling employees. These locations benefit from our business operations that create jobs both on the pipeline and within the local communities."

Jobs and local contracts with union labor are only the beginning of the opportunities surrounding the Dakota Access Pipeline. Dakota Access has also committed to using heavy earthmoving equipment from American and regional companies like Vermeer,

Caterpillar and John Deere, which are headquartered in Iowa and Illinois, respectively.

"Our goal is to be a socially responsible contractor, great neighbor and to provide a lasting positive impact on the local communities and states," says Rooney.

The benefits of the pipeline will go beyond the energy and construction industries and will also trigger the purchase of American-made products or raw materials first over foreign-sourced materials, thanks to Energy Transfer



The Dakota Access Pipeline will accept crude produced in North Dakota from six loading sites near Stanley, Ramberg, Epping, Trenton, Watford City and Johnson's Corner and transport it to a hub in Illinois, where it can then be transported to refineries along the East and Gulf Coasts that are equipped to handle light, sweet crude.

A BOON TO THE ECONOMY

The Dakota Access Pipeline will do more than transport Bakken crude—it will also bring new jobs and economic growth to the state and nation.



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"Pipelines remain the best, most efficient and safest way to transport oil, and this will reduce the rail cars and tanker trucks needed to bring this domestic energy resource to the American people," wrote Evan Whiteford, another LiUNA representative, in a letter to the editor. But the benefits don't stop there. With thousands of people being put to work, the benefits will ripple through the economy, he says.

"These will be good union jobs that will contribute to our tax base, schools, shops and communities," he wrote.


In the small town of Linton, ND, those ripple effects are already being felt. According to an article in the *Bismarck Tribune*, the local grocery store has had trouble keeping up as food flies off the shelves. Tiffany Heer, owner of the Bayside Resort, has had a similar experience. Fifty-five pipeline workers are living in campers at the resort, and Heer has been working 18-hour days to open the store and restaurant and keep her new neighbors fed. But she's not complaining.

"I like the energy that's coming with the pipeline," she told the *Tribune*. "It's such a

nice thing to see happen to our local community."

Other communities along the pipeline's route can expect the same thing. The economic impacts to the state, region and nation are significant. According to the Strategic Economics Group, a regional Iowa-based economic analysis firm, the Dakota Access Pipeline will pay an estimated \$32.9 million in sales tax revenues to North Dakota during the construction phase and an annual property tax payment for each year in service. In the first year of pipeline operation, revenues are expected to total \$13.1 million. This is part of a greater \$156 million to be raised by the states in sales and income taxes along the pipeline. The total cost of the project in North Dakota is estimated at \$1.4 billion, none of which will come from North Dakota's taxpayers.

Despite a downturn in oil prices, North Dakota is poised to remain a top producer of crude oil—not only in the nation, but in the world. Maintaining that production, however, will require adequate infrastructure to transport oil safely and efficiently to market.

Dakota Access has shown a commitment to industry best practices, job creation, and protection of local resources and will continue to work with appropriate authorities to ensure construction is completed in a safe and timely manner. North Dakota has a vested interest in ensuring this project is constructed—our resources should be transported safely and reliably so they continue to benefit our state and the nation as a whole. 

More information about the Dakota Access Pipeline can be found on its website at www.dakotaaccessfacts.com. This article was originally printed in the North Dakota Petroleum Council's Spring 2016 Oil & Gas Tidbits, Volume X, Issue I. It has been republished with permission.

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DAKOTA ACCESS AT A GLANCE

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barrel per day
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cars per day



2,850 semi
loads per day

Waste Not, Want Not: Part III

By Paul Adair

In January 2016, the rules governing the transportation and disposal of radioactive waste in North Dakota were beefed-up, signifying a major increase in oversight for technologically enhanced naturally occurring radioactive materials (TENORM).

North Dakota was lacking in regulations that monitored the safe storage of radioactive waste five picocuries and under, as that limit was clearly demonstrated to be safe. But, after increasing the picocurie limit ten-fold in January, the government felt it was the right time to improve standards on the handling, testing, and disposal of TENORM waste while increasing accountability from service providers.

Even with a higher picocurie limit and the occasional compliance violation, public health and environmental safety is not at risk.

"This conversation has become really more of an emotionally driven issue than one based on the facts," says Scott Radig, director of the division of waste management within the North Dakota Department of Health, Environmental Health Section.

"There is a perception circulating out there that TENORM disposal is a very

high-risk practice and that the public is in terrible danger from it. But, in reality, what we're talking about here is very, very low risk material."

ENSURING COMPLIANCE

The regulations in place now are lengthy and have many requirements the industry must follow. The North Dakota Department of Health has been doing its part to ensure compliance by holding informational seminars for companies throughout the Bakken and by carrying out on-site facility inspections. That being said, the health department has a finite number of staff and, with hundreds of individual operators working the oilpatch, determining the level of state-wide compliance is a long—but necessary—process.

"Only when we go out on inspections and meet with operators to go over the changes can we get to the root of any potential problems," says Radig. "These one-on-one conversations are the best way to do things, though it's certainly not the fastest."

Should the Department of Health uncover an infraction at a facility, it does not always mean a company is purposefully flouting the rules. While some TENORM-generating facilities may purposefully disregard regulations, these are the exceptions and not the norm, and the vast majority of North Dakota's industry strives to ensure it is working within the regulatory parameters it's given. In many cases, violations are determined to simply be following operating procedures that were allowed before the new rules came into place in January.

Continued on 24



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GARY EBEL

Gary Ebel is co-founder and CEO of Buckhorn Energy Services. He has over 20 years of oilfield services and water treatment experience. Previously, he ran his own company, GLE Resources, LLC, which worked with private investors to develop saltwater injection facilities in North Dakota, Colorado and Utah.

Gary graduated with a Bachelor of Science degree in Business Administration and a Minor in Psychology from Dakota Wesleyan University. He later served as the vice-chairman of the Board for the University.



SCOTT RADIG

Scott Radig began working as an environmental engineer for the North Dakota Department of Health's Division of Water Supply and Pollution Control in 1989 before becoming the program manager for the Ground Water Protection Program. In 2005, he became director of the division of waste management.

Before joining the department of health, he worked as a petroleum engineer at North Dakota's Oil and Gas Division. A North Dakota native, Radig earned a Bachelor of Geological Engineering degree from the South Dakota School of Mines and Technology.





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"The North Dakota Department of Health is taking strong action to make sure everybody understands the regulations and are resolving those issues coming out of the misunderstandings and misinterpretations of the rules," says Gary Ebel, CEO at Buckhorn Energy Services. "And when needed, the Department of Health is taking steps to enforce regulations and make sure that bad actors are taken care of."

PAYING THE PRICE FOR NON-COMPLIANCE

Under the radiation control and solid waste guidelines, the maximum penalty allowed by law is \$12,500 per day, although this fine is typically reserved for those facilities deemed to be worst-case offenders, and the Department of Health is permitted some measure of discretionary latitude in its decisions knowing the maximum penalty is not needed for each and every case, particularly when there are mitigating circumstances. Under the department's enforcement policies, regulatory compliance is given a higher priority than the collection of monetary penalties.

"If we see that the current rules aren't being followed, we inform the facility of what's changed and what they need to do to become compliant," says Radig. "If we go back to the same facility at a later date and still see the same non-compliance taking place, then we look at some level of enforcement."

Companies unsure of the recent regulation change and how they impact operations within North Dakota are encouraged to contact the North Dakota Department of Health to learn more.

"When a company calls and says they are trying to do things right and just wants to know how, we are more than happy to sit down and go over any questions they may have," says Radig. "We're always glad to get calls like that."

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All Aboard:

Conducting Collaboration for Rail Response Funds

By Paul Adair

Over the last decade, North Dakota has uncovered itself as one of the world's largest sources of crude oil. Approximately 33 percent of this oil—about 350,000 barrels per day—is transported out-of-state by rail to refineries and terminals along the coast.

The growing reliance on rail and recent incidents in North Dakota, such as the 2013 train collision at Casselton and the 2015 Heimdal derailment, has led to increasing concern about transportation safety.

ASSESSING CRISIS PREPAREDNESS

In December 2015, global crisis and emergency consulting firm Witt O'Brien's prepared the *North Dakota Crude Oil Response Report* for the state's Department of Emergency Services (NDDDES) to look into the transport of crude oil across North Dakota via rail, road and pipeline and to assess the level of the state's emergency response preparedness.

"North Dakota has a lot of capabilities statewide, but there are always areas for improvement," says Phillip Webber,

vice-president of multi-sector preparedness at Witt O'Brien's. "Based on the study we just completed for them, the state's focus has become increasing training for responders at the local level, as all incidents ultimately begin and end locally."

In general, North Dakota is well prepared for future derailments and oil spills, but its capabilities vary depending on region. Areas with higher population and a greater tax base typically have more assets at the local level when compared to more-sparsely populated rural counterparts. Budgets are stretched tight across the state, but those areas with more people will have the capability to respond faster to a crisis simply because they have more resources.

SPEED IS OF THE ESSENCE

"The faster you can respond to a scenario with full resources, the greater level of influence you can have on the outcome of that scenario," says Steve Bakken, business development director for Larson Engineering. "When you can cut down response time for an oil spill or train derailment, you can mitigate a great deal of angst for the population of an affected area."

North Dakota has actively sought different revenue streams to bolster various

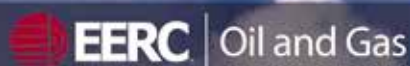
jurisdictions' resources and uses a wide variety of grants passed through the state to local counties and municipalities. Entities such as the NDDDES then leverage the proper grant to increase a particular location's overall emergency preparedness.

"Having a central strategy pays dividends—it can really move things along when you have a single organization like the NDDES that is able to search out grant opportunities and direct several jurisdictions where to focus their attention," says Bakken. "There are a lot of pieces to this puzzle, and it can help when there is just one set of hands putting that puzzle together."

BUILDING A UNIQUE SYSTEM

To its credit—and sometimes its detriment—North Dakota is a diverse and independent state that hopes to build a funding system that works for North Dakotans. For flood mitigation or dealing with energy issues, too often, the one-size solutions offered by the federal government does not fit all, with governmental agencies hamstringing the industry in a system that doesn't offer enough flexibility to effectively maneuver in the marketplace.

"But when you can build your own system of funding and have it work better than



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the Feds', it will tend to keep those oversight organizations off the back of North Dakota," says Bakken. "Grant funding has the potential to be an excellent method to have a mechanism in place for financing response training and emergency services that do not depend on the federal government or its regulatory organizations."

GET TO KNOW OUR EXPERTS



STEVE BAKKEN

Steve Bakken has over 35 years' broadcast and media experience. Formerly the host of several regional talk radio shows, including *Energy Matters* and *What's On Your Mind*, based out of KFVR 550 in Bismarck and various affiliates, Bakken had access to all levels of government, business, associations and industry executives on state, federal and international platforms in the energy industry as well as agriculture and private business.

Bakken is currently business development director for Larson Engineering out of its Bismarck office.



PHILLIP WEBBER

Phillip Webber oversees Witt O'Brien's preparedness and planning consulting services for public and private sector, higher education, and other clients. He is responsible for providing oversight of project approach, staff guidance, project staffing, and coordination of teams to achieve client objectives.

Webber is an emergency management professional with 35 years' experience in disaster preparedness and response, planning, public and private sector safety, disaster mitigation, emergency response and recovery, homeland security, and emergency management. He is a veteran of 20 years' active service duty in the U.S. Coast Guard, he served 12 years as a local director and practitioner of emergency management, and he has worked throughout the country as a consultant for Witt O'Brien's since 2008.

Recent projects include assisting states in their review of the risk and capability needs associated with the increase in crude transport by rail.



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Planning for Infrastructure Development & Growth Projection in the Bakken

By Andrea Danelak

With oil prices on the rise once again, it's anticipated that cities in western North Dakota that are affected by oil and gas activity will continue to see a significant need for services and infrastructure.

Advanced Engineering and Environmental Services, Inc. (AE2S), an environmental and civil engineering consulting firm, along with its sister company AE2S Nexus, is in the process of conducting an in-depth study of six cities in the area—Killdeer, Dickinson, Watford, Tioga, Stanley and Williston—and how they will continue to be impacted by the industry.

"The idea for the study originally came from similar work we had completed for Williston in 2014," says Shawn Gaddie, manager of AE2S Nexus.

PLANNING FOR IMPACT NEEDS

AE2S developed fiscal impact forecasting models for Williston to review a number of different factors relating to the growth and

maturation of the city, including infrastructure needs, associated costs and demands on city departments.

"Through the process of presenting that work to legislators and various state agencies, we received feedback saying we should broaden the work to look at other affected communities in the Bakken, so, working in collaboration with the North Dakota Association of Oil & Gas Producing Counties, we approached the additional five cities to develop similar studies for each," he says. "This study will provide an apples-to-apples comparison of how the six cities are being impacted, and we'll work to report the similarities and differences between the impacts being realized by each community in a consistent fashion."

BUILDING THE STUDY'S FOUNDATION

Much of the study's foundational work will be built upon population forecasts currently in development by Vision West ND and North Dakota State University researchers, which will examine variable forecasts relating to oil pricing and how that will impact the area.

"We'll correlate the anticipated rate of population growth to items like additional infrastructure needs and the expansion of city services required to meet the needs of a growing urban service area, and then we'll take that information and cross-reference it with each city's anticipated plans for items such as population-driven infrastructure facilities (like additional wastewater treatment plant expansions that will be required, for example)," says Gaddie. "When a city reaches certain population milestones, we'll look at how that will drive needs for service expansion and the associated financial impacts that come along with the additional service demands."

FINALIZING FORECASTS

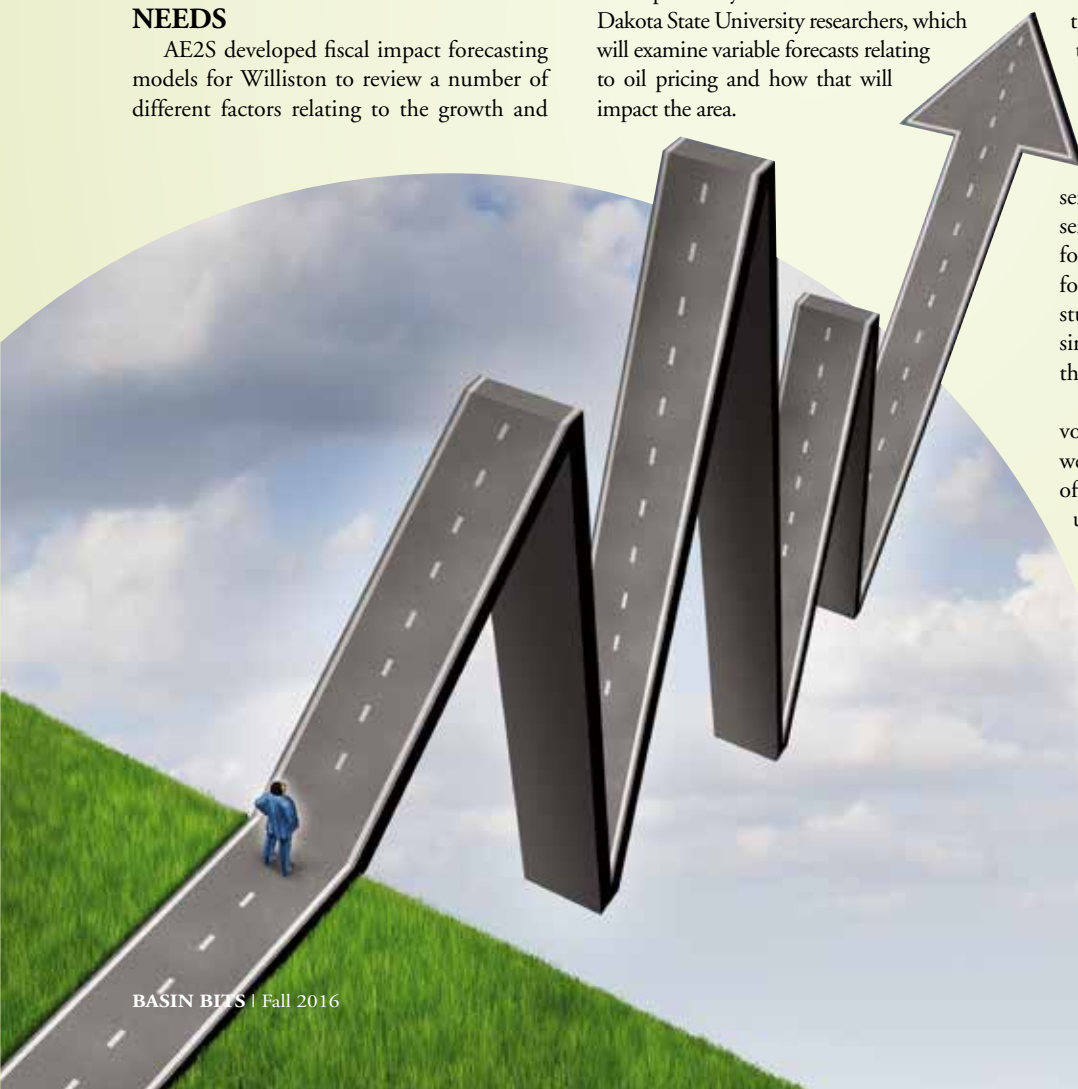
As of the end of July, AE2S had completed approximately 30 percent of the study. Over the summer, the team projected and compared each city's growth to benchmark communities to help formulate the forecasts.

"With the Williston study, we wanted the projections to be based in reality and therefore, we compared Williston growth forecasts to seven communities along that projected growth path," says Gaddie. "We broke down those communities' organizational structures and how they deliver services for their respective populations and service characteristics, which helped us better form our forecasts and anticipated impacts for Williston. For each city in the current study, we're working to develop and expand similar benchmark community data to form the forecasts for each."

Another component of the study involves capital plan improvement analysis, as well as a financial gap analysis. "Refinement of the capital improvement plan will help us understand the timing of certain projects with various population scenarios and trigger points. Beyond that, we'll also be looking at the operational side of things—staffing forecasts, etc.—which will drive additional facility needs and further inform financial demands."

PORING THROUGH INFORMATION

One of the biggest challenges with a study of this magnitude stems from the sheer volume of information required.



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“When you’re looking at six communities, each with their own dynamics, there is not a step-by-step playbook of where to start and what you’re looking for,” says Gaddie. “It’s also a challenge to gather the appropriate information. It requires a lot of information to develop an accurate forecast, as well as a clear understanding of the information we have at hand and how we will look at those future demands.”

REAPING THE BENEFITS

Gaddie anticipates work on the study will be completed around the end of October, after which the cities in question can begin to reap the benefits of the findings and work to present their needs ahead of the next North Dakota Legislative Assembly session, starting in January 2017.

“This study will help demonstrate the needs and inform the decision-making process for each of these cities to see what they’re going to continue to be up against,” he says. “We’re hoping to help inform the cities participating, as well as the state, so each can make better planning decisions as they grow and develop.”



GET TO KNOW OUR EXPERT

Shawn Gaddie is the general manager of AE2S Nexus, a sister company to Advanced Engineering and Environmental Services, Inc. Gaddie joined the AE2S team in November 2005, and prior to his current role, he was AE2S’s operations manager. He was promoted to division manager for AE2S Nexus in 2013.



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In the heart of the Bakken play, McKenzie County still experiences significant oilfield activity in spite of the slump in global markets and continues to house a sizeable number of its oil industry workforce in crew camps and temporary housing.

Temporary housing has been a part of the Bakken since the boom's beginning, particularly along the highways running in and out of the communities comprising McKenzie County. In 2013, the county created a zoning plan to manage future land use and give direction to growth, but because of the quick growth and the fact that this plan was late coming to the table, it was difficult to get a handle on the several camps that had already set up residence in the area.

BUILDING BOOM

The quality and scope of crew camps in McKenzie County has become a housing patchwork, ranging from the orderly,

company-owned camps to the smaller, out-of-date trailers owned by contractors and developers, notorious for their code violations and non-compliance with standards. How this temporary housing is viewed by the county's citizens depends entirely upon the kind of housing you are referring to.

"Since McKenzie County didn't have zoning in place until 2013, it was hard to regulate and became somewhat of a mess in the area," says Sarah Skarda, senior and county housing coordinator for McKenzie County.

"In many ways, the crew camps at the height of the boom were viewed as a necessary—but not-so-attractive—housing option, particularly for the long-time residents of the county."

INCORPORATING CAMPS INTO COMMUNITIES

Realizing that crew camps will not be going away, the county's planning and zoning department set out to improve on them from a health and safety perspective, and to look at some of

the long-term solutions that would incorporate these camps into the community as a whole.

In June, McKenzie County adopted a new comprehensive plan to update and refine the previous plan, which was written back in 2013. Through this new plan, the county has linked growth to infrastructure and has asked that any new development meet specific criteria relating to infrastructure, such as distance to paved roads or distance to water supply. In addition, McKenzie County has targeted specific growth areas around existing communities across the Bakken.

IMPROVING AESTHETICS

Another goal of the comprehensive plan is to improve the attractiveness and aesthetics of McKenzie County itself—not just for tourism but to also attract permanent business and corporate entities to the area. Cleaning up the many ramshackle temporary housing camps along Highway 85 is an important step in meeting that goal.

By Paul Adair

A Comprehensive Plan for Crew Camps in McKenzie County



While nobody wants to see jobs lost, the downturn has surely provided a measure of relief...to address many of the frightening housing situations...

"This new comprehensive plan is a much more concerted effort by McKenzie County to really focus on the management of growth and tying that to infrastructure and utility availability," says Scott Harmstead, associate planner at SRF Consulting Group, Inc.

"They are trying to make the county a vibrant and exciting place to live and a big part of that is improving the aesthetics along the highways and the crew camps that line them."

SLOWDOWN TO CATCH-UP

The dip in oil markets has been a mixed blessing for McKenzie County. While nobody wants to see jobs lost, the downturn has surely provided a measure of relief, opening a window of opportunity for county leaders to address many of the frightening housing situations that had blossomed during the boom.

"The slump has given the jurisdictions the ability to catch up," says Harmstead. "We were all going at a frantic pace during the boom, but now there's time to sit down and work with the industry to come up with an answer that works for everybody, rather than just ramming something through."

GET TO KNOW OUR EXPERTS

SARAH SKARDA



Sarah Skarda is the Senior and County Housing Coordinator for McKenzie County, ND. Born and raised in Devils Lake, she is a 2013 Graduate of the University of North Dakota, where she received a Bachelor of Business Administration.

After graduation, Skarda was employed with IRET Properties and the Grand Forks Housing Authority, where she gained extensive knowledge in both state and federal housing programs. Since August 2015, she has been working on the ever-changing housing needs in

McKenzie County, including affordable workforce housing.

SCOTT HARMSTEAD



Scott Harmstead is an associate planner with SRF Consulting Group, Inc. in Bismarck, ND. He has been a part of SRF's North Dakota Planning Group since 2012 and has worked primarily with cities, counties, and the state's Department of Transportation on various land-use planning, zoning, and environmental documentation projects in western and central North Dakota.

Scott has also provided day-to-day planning and zoning assistance to McKenzie County and currently provides this service to the City of Killdeer and McHenry County.

Prior to his time at SRF, Scott was a planner for seven years with Madera County in Eastern California.

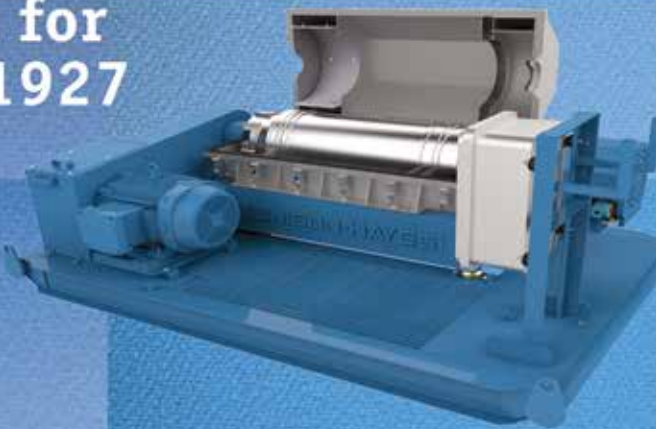
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By Paul Adair



Legislative Line:

Dealing with Change, Driving North Dakota Forward

*The North
Dakota State
Capitol Tower in
Bismarck, ND.*

The volatility of global oil markets in recent years has led to a certain degree of uncertainty in North Dakota's oilfields. Some counties carry on as before while others have seen a sharp decline in the once-booming oil economy. This presents challenges for how North Dakota lawmakers map the future of the state and its relationship with the Bakken.

North Dakota governments have been closely monitoring oil and gas issues since the early 1980s and have become well-versed in the cyclical nature of the industry. Through progressive legislative sessions and careful planning, North Dakota has come to the point where there are no expected major changes to regulations—instead, there is more monitoring of administrative rules to ensure they have their intended effect on North Dakota.

"The difference between boom-bust cycles of years past and where we find ourselves today is that the Bakken has evolved from an exploration play into a mining play," says Sen. Kelly Armstrong (R).

"We know there is oil in the ground and we know we will be putting wells down; the only question is when, and the answer to that is really price and regulatory-driven."

DROP IN PRICE, DROP IN BUDGET

The budget, which is highly dependent on oil and gas revenues, is estimated to be approximately \$1.5 billion less for the 2017-19 biennium than for the previous biennium, affecting the Oil and Gas Gross Production Tax revenue that is sent back to the cities, counties, and school districts. This will, in turn, impact a jurisdiction's ability to fund future infrastructure projects. In addition, the 2015-17 budget also contained \$1.2 billion in one-time "surge" spending, which will not be present in the 2017-2019 biennium.

"We've seen this coming for a while and we knew, at some time, oil markets would start to revert," says Armstrong.

"You simply cannot have 12 percent year-after-year growth forever; it's never worked in the history of any economy, large or small. But in the case of North Dakota, I think we all received a harsh lesson on how commodities tend to over-correct."

The upcoming budget will have cuts in state agency budgets and dedicated funds that currently receive oil tax money, such as the Resources Trust Fund (Water Projects), Energy Impact Fund, and the Strategic Investment and Improvement Fund (Highways and Roads), and will not have the revenue necessary to complete projects that were advanced over the last biennium.

"We will have some difficulty balancing the budget now that we've entered a slowdown," says Senate Minority Leader, Sen. Mac Schneider (D).

"We need to better diversify our economy and instill a measure of budget reform that can allow the legislature to more nimbly respond to changes in specific commodity prices and drops in revenue."

TIME TO FOCUS ON OTHER ISSUES

While a slowdown industry is never desired, the dip in the markets is providing North Dakota and its oil and natural gas industry an opportunity to address key issues that would be more troublesome to work through during peak production times, such as flaring, salt water spills, oil pipeline leaks, and the disposal of technologically enhanced naturally occurring radioactive materials. North Dakota can also take advantage of the down-time to focus on additional research and development and to ensure the state is in a good place to mitigate much of the municipal strain that will return if oil prices rebound.

"During the height of production, we had a difficult time addressing the impacts on such things as schools, emergency services, and health care, and we never properly addressed it at the level that should have been done," says House Minority Leader, Rep. Kenton Onstad (D).

"With some breathing room, we now have the opportunity to invest in sustainable growth that can be managed more than it was before."

Many feel North Dakota is now at the bottom of where oil markets are going to drop, and that the industry is on the verge of a slow upturn. Thanks to the foresight of previous legislative sessions and the timely investment into "rainy day" reserves, North Dakota weathered the worst this slump had to offer—at least, for the time being.

"Overall, we are still doing fine and the sky is not falling in North Dakota," says Rep. Al Carlson (R). "The state is in pretty good shape, fiscally-speaking, and we are going to continue to live within our means while building up our reserves for the future."

LOOMING CHANGES

North Dakota often views the federal government as overreaching its jurisdiction over

environmental issues such as fracking and flaring rules, methane emissions, and water protection within the state. With an election and new president just a few months' away, state lawmakers will keep a close eye on the proceedings to get a measure of things moving forward.

"We will be interested in seeing what happens at the national level when we have an administration change in January," says Rep. Kylie Oversen (D).

"Whoever takes over the White House will have an impact—good, bad, or otherwise—on the state of our energy industry, and there will be a lot to watch to see which direction that takes us when that time comes."

November elections will also bring a new governor to North Dakota, as Jack Dalrymple steps down after a term-and-a-half of service to the state. The two men vying for his job will have big shoes to fill; Dalrymple was known as someone who listened to the people before making a decision and taking action. Whether it was championing K-12 education, supporting funding for flood prevention, or working to diversify the economy and encourage companies to expand into North Dakota, Dalrymple built a reputation of getting things done.

"When a community was in need in western North Dakota during the height of oil activity, Jack Dalrymple was there to listen and help solve the problem," says Sen. Rich Wardner (R).

"As governor, he was always steady and working to help the state and its people. Dalrymple has left the state of North Dakota in a better position than when he took office."

Whichever gubernatorial candidate should win in November, either Doug Burgum (R) or Marvin Nelson (D), they will be facing a number of challenges right out of the gate. From budget woes, to bolstering the economy, to overcoming infrastructure shortfalls, there is rarely a quiet day in the governor's office. 🏠

GET TO KNOW OUR EXPERTS



SEN. RICH WARDNER

BS, DSU; MS, Northern State University. Past-president Pro Tempore of the Senate; Chairman, Sunrise Youth Bureau; Chair, Midwest Legislative Conference; Member, Legislative Management; Elks; Rotary House

1991-1997, Senate since 1999.



REP. AL CARLSON

Contractor; Partner, Up North Recreation. NDSCS; Secondary Education, NDSU.

Past-president, Fargo-Moorehead Home Builders Association; Past-president, North Dakota Association of Builders; State Chairman, State Legislative Leaders Foundation; St. Anthony's Catholic Church. House since 1992.



REP. KYLIE OVERSEN

Attending UND School of Law. BS, Social Work, UND; BA, Social Sciences, UND. House since 2013.



SEN. KELLY ARMSTRONG

A Partner at Reichert Armstrong Law Firm. Psychology, UND; JD, UND School of Law. Vice-president, Armstrong

Corp.; Community Service Award, State Bar Association of ND, 2012; President, Dickinson Baseball Club 2006-2012; Volunteer Fireman. Senate since 2013.



SEN. MAC SCHNEIDER

Attorney. BA, UND; JD, Georgetown University Law Center. Senate since 2009.



REP. KENTON ONSTAD

Business Development, Mountrail Williams Electric Cooperative. BS, Mathematics, DSU Township Supervisor; President, Parshall 2000 Inc.; Director, Mountrail County Job Development Authority. House since 2001.

Meridian Energy Group: Doing Things Right in North Dakota

By Joel Mangin

When it comes to refining oil, Meridian Energy Group, Inc. is doing things right in North Dakota.

From its inception in 2013, Meridian is a deep-rooted North Dakota company. It was established by members of the Davis Family Partners with the objective of managing property rights in oil-rich western North Dakota. The creation of Meridian Energy Group Inc. was a way of managing mineral rights coming from the family's original farmland. With corporate headquarters located in the heart of the Bakken, Meridian is all about North Dakota and the local economy, more specifically in the town of Belfield.

"It bothers us when reports say we are a California company that came to North Dakota. In reality, we've had deep North Dakota roots right from the beginning," says William C. Prentice, Meridian Energy Group CEO.

REFINING OPPORTUNITY

Meridian Energy Group specializes in refining crude oil into liquid fuels. Currently, the company's main focus is the construction of the Davis Refinery in Belfield, ND. With diesel shortages and a limited refining capacity in the Bakken, the Davis refinery will allow for on-site refining of crude oil. Considering approximately 95 percent of the crude oil produced in North Dakota is being shipped to distant refineries, the Davis Refinery will provide a refining option that reduces the need for diesel trucks to transport crude oil out of state.

As of July 2016, Meridian has received zoning and permit approval from Billings County to move ahead with the construction of the Davis Refinery. Land adjacent to the site has been purchased in order to establish a conference and training center for Meridian employees. A new headquarters will be located in the town of Belfield and should be functional by the fall of 2016. With an



Meridian Energy Group CEO William C. Prentice.



The new corporate head office in Belfield, ND, which is near completion and will be up and running this fall.

expected completion date of 2018 or early 2019, the Davis Refinery will bring between 1,500 and 2,500 direct and indirect jobs to the area.

KEEPING IT LOCAL

Through this major development, Meridian Energy Group Inc. has maintained an unwavering desire to provide permanent employment to North Dakota residents and to support the community.

"Because of Meridian's North Dakota roots, very few of the jobs are going to people out of the area. We will train locally and put local residents to work. However, we want to be involved in supporting the

community. It's not fair to add permanent employment to a town the size of Belfield without thinking of the increased demand on municipal services, schools and housing. We want to be there to support the growth," explains Prentice.

Meridian is also a co-founder of Meridian Properties Corp., which focuses on developing residential, commercial and industrial land near the Davis Refinery. With a clear focus on housing, Meridian Properties Corp. will also provide opportunities for the development of recreational and educational facilities. Essential services such as fire, police, sewage and water treatment are also top-of-mind in this project.

Once completed, the Davis Refinery is all but assured success thanks to its proximity to oil production sites and direct access to railway lines, facilitating construction and transportation of crude oil and refined fuels. According to Prentice, "many companies are comfortable with the way they do things. Meridian has raised eyebrows in the industry by building a refinery as a start-up rather than finding a refining company partnership."

EMBRACING NEW TECHNOLOGY

The company prides itself on cutting-edge technology to increase efficiency and produce the cleanest fuels possible. Prentice says this philosophy begins with the construction of a refinery that does not rely on old technology simply to get completed.

"We should all take responsibility in making sure refineries are built properly and in the interest of the environment. We are not developing new technology; rather, we are using the best and cleanest of what's currently available. We are focused on making the smallest environmental footprint possible. EPA mandates will change and we will be in a position to meet them immediately."

Continued on 34

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KEEPING AN EAR TO THE GROUND

As an associate member of the North Dakota Association of Oil & Gas Producing Counties (NDAOGPC), Meridian Energy Group values the association's frequent updates and synthesis of news relevant to the industry and government.

"Our most important relationship is with the town of Belfield and Billings County, and we treat the updates as a way to keep track of important things going on," says Prentice. "I've never found out any important information from sources other than the NDAOGPC. I believe it does a valuable service for communities and companies."

With a clear vision and large-scale construction projects in the near future, it's no surprise Meridian Energy Group is seen as a company on the rise. 

FOR MORE INFORMATION

Meridian Energy Group Inc.

Corporate Headquarters

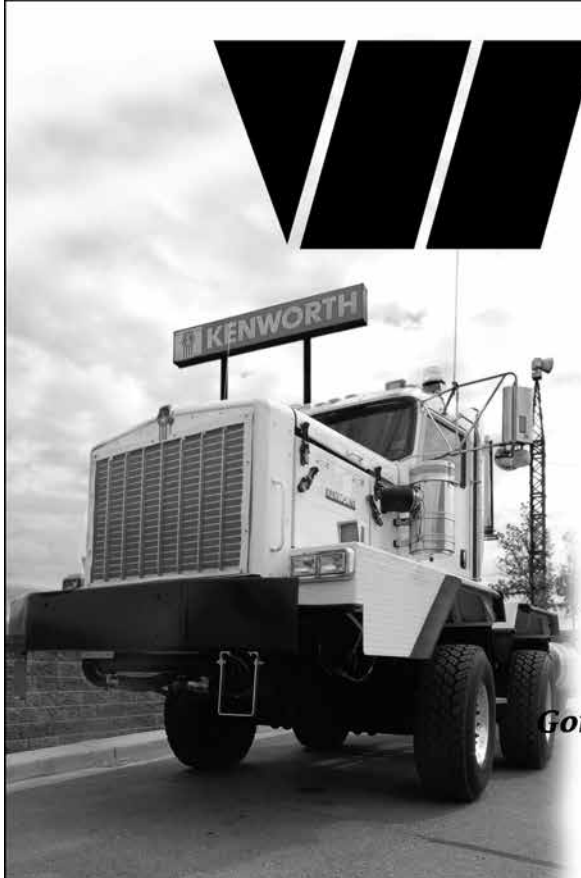
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Regional Roundup

ARNEGARD GETS CLEAN WATER MONEY

Arnegard is one of three cities to get state money from the Clean Water State Revolving Fund Awards Loans, administered by the North Dakota Department of Health.

The CWSRF awarded loans to:

1. Arnegard: \$380,000 toward a \$3,434,077 project to construct a new, three-cell lagoon system, providing adequate treatment of the city's wastewater.
2. Hebron: \$682,000 toward a \$4,140,000 project, financing sanitary sewer pipe, nine manholes, PVC pipe, and service to 70 existing connections, along with replacing storm sewers with concrete pipe, eight catch basins, and two manholes, ensuring the safe conveyance of the city's wastewater and storm water.
3. LaMoure: \$1,425,000 toward a \$5,300,000 project for sanitary sewer pipe replacement, manhole relining or replacement, asphalt and concrete paving, seeding, and site restoration, ensuring the safe conveyance of the city's wastewater.

The U.S. Environmental Protection Agency provides part of the funding for the CWSRF Program, which offers below-market interest rate loans to political subdivisions for financing projects authorized under the *Clean Water Act*. CWSRF programs operate nationwide to provide the funding necessary to maintain and improve the infrastructure that protects our valuable water resources.



LEGISLATORS DEBATE BUDGET CUTS

In August, legislators in the Bismarck Capitol trimmed \$310 million from the state budget. News reports indicated this will balance the budget through June 30, 2017. The legislature goes back into session in early January, so there may be adjustments again at that time.

Immediately following the adjournment of the Senate, OMB director Pam Sharp released the new oil forecast from information generated in July from industry experts. She told legislators to expect 900,000 barrels of oil per day for the 2017 forecast with an estimate of \$42 per barrel.

Legislators used their rainy day fund and budget cuts to balance the budget for 2015-17. The foundation aid stabilization fund kept K-12 schools whole in funding. They also restored some funding to corrections and human services.

Both Republican and Democrat legislators offered other proposals but all were rejected for the original bill, which seemed to have some consensus among most legislators, especially legislators in leadership.



DUNN COUNTY COMMISSION FOCUSES ON GROWTH

The Dunn County Commission is focusing on growth. First, growth of county offices. Courtroom space is so limited there are no jury rooms for trials held in the courthouse. Many of the county offices such as Social Services and Job Development Authority are housed in a substandard, 50-year-old converted store front on Killdeer's Main Street.

County Auditor Tracey Dolezal says the commission is meeting with architects to design an addition to the courthouse in Manning to accommodate a one-location courthouse with expanded court facilities. "We've got to do something with that building, or get a new one," she said. There is no estimate now of costs for the addition, but the money will not come from a mill levy increase on property taxes. She said Federal Mineral Royalty payments will be tapped to pay for the updated facilities.

The commission is working with a consultant to draft a strategic plan for the next three years. The plan will focus on how the county will grow and people will be served in the community, with or without a robust oil economy.

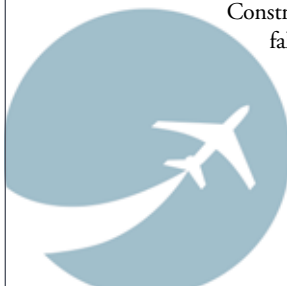
Thanks, in part, to the legislature's "surge funding," a new road will help relieve some of the traffic from Highway 22, west of Dickinson, and north to Highway 200, west of Killdeer. The South Heart Road is a 26-mile stretch in Dunn County that links to about six miles in Stark County and I-94.

WILLISTON AIRPORT PLANNING TAKES OFF

Land purchase agreements have been settled for construction of the new Williston airport.

Construction is now set to begin this autumn and be completed in the fall of 2018. Groundbreaking is set for October 10, 2016. Bidding for some of the early work, such as foundations, is underway now, with hopes of early work being completed by winter.

The city's existing airport saw a ten-fold increase in passengers from 2008 to 2014, due—in large part—to record oil activity. Traffic has fallen off during the current oil slump, falling more than eight percent from 2014 to 2015. The current airport, Sloulin Field, was built to process 10,000 people per year.



Tools of the Trade

ALMATEC® LAUNCHES NEW HIGH-PRESSURE PUMP SERIES AHD/AHS



Almatec launched its new high-pressure pump series AHD/AHS, which is ideal for high-pressure applications up to 15 bar (218 psig). Almatec AHD series pumps are ideal for filter press applications, use an internal pressure booster and feature Almatec's ring-tightening structure. The reinforcement of the drive pressure is over 2:1 by the internal pressure boosting stage, thanks to a maximum drive pressure of seven bar (100 psig), building discharge pressures up to 15 bar (218 psig). AHD series pumps are available in three sizes (AHD 15, 25 and 40) with maximum capacities of four, 10 and 20 m³/h (17, 44 and 87 gpm).

The new AHS series features rugged housing, making it suitable for higher discharge pressures. The drive pressure is transferred to the medium at a ratio of 1:1. This makes the AHS series ideal for applications under heavy load conditions, from low discharge pressures to high-pressure applications up to 15 bar (218 psig). Due to the 1:1 ratio of the drive/discharge pressure, the corresponding air pressure must be supplied from the compressor or an external pressure booster. AHS pumps are available in two sizes (AHS 15 and 25).

Constructed of PE UHMW with corrosion- and abrasion-proof housing, AHD and AHS Series pumps feature specially developed heavy-duty diaphragms for a longer service life; the maintenance-free PERSWING P® air-control system, a reliable ball valve system, and adjustable suction and discharge ports with flange connections. The cheek construction incorporates 12 housing bolts to form a solid basic unit with the fewest possible seats and joints. The housing bolts of the AHD and AHS are tightened against the ring per side, transmitting forces into the housing parts evenly, providing consistent flow of forces and an increased bolt torque.

www.almatec.de

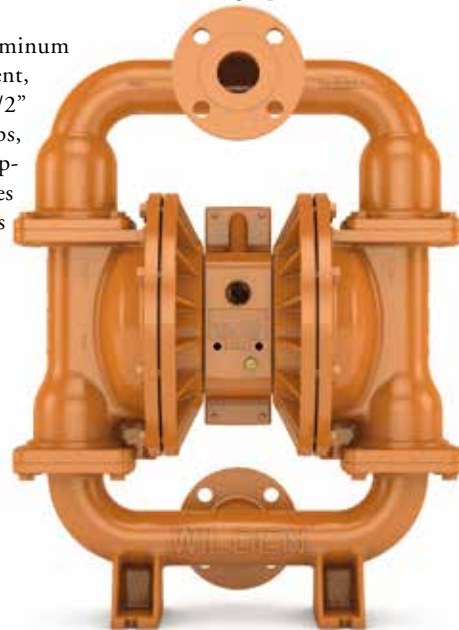
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Wilden® has released the aluminum version of its HS430S Advanced™ FIT High Pressure 1-1/2" (38 mm) AODD Pump. Suited for applications that require high head pressures, the HS430S high-pressure aluminum pump comes equipped with the revolutionary FIT wetted path that minimizes fasteners and allows for single socket reassembly for easier maintenance. The new pump also provides superior flow rates, is easy to maintain, and increases plant profitability beyond any other 1-1/2" (38 mm) high-pressure aluminum AODD pump on the market.

The HS430S FIT high-pressure aluminum pump is designed for superior containment, is a direct replacement for existing 1-1/2" (38 mm) high-pressure aluminum pumps, and does not require re-piping for your application. This high-pressure pump features a "Simplex" design—one liquid chamber is used to pump fluid while the other is used as a pressure amplification chamber. With a 2:1 pressure ratio, this pump generates 17.2 bar (250 psig) and does not require costly external boosters or amplifiers to achieve this discharge pressure.

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As a friction modified lubricant, Clear Gear reduces energy consumption and operating temperature. Clear Gear is available globally in five viscosity grades including light, medium, standard, heavy and extra heavy.

Clear Gear Lubricant (light, medium, heavy and extra heavy) are approved by Metso Minerals for intermittent spray lubrication of open gears and grades medium and heavy are approved by Outotec.

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THE BAKKEN TOP 20

The following are the top 20 oil and gas producers in North Dakota as of June 2016. The list, which shows the cumulative amount of oil and gas that the companies have produced in North Dakota in 2016, was provided by the North Dakota Department of Mineral Resources in August 2016.

As of mid-June 2016, there are 34 active rigs drilling in the North Dakota oil patch, according to the North Dakota Oil & Gas Division of the North Dakota Department of Mineral Resources. This number is up from 31 rigs in July, 28 in June, and 27 in May. The all-time high reached 218 on May 29, 2012. The biggest factor in the drop is falling oil prices, and the slow-down is expected to last into at least the third quarter of this year and possibly into the second quarter of 2017.

The statewide rig count is down 84 percent from the high. The number of producing wells in North Dakota, as of June 2016, is 13,239 (a preliminary, all-time high, with the previous all-time high achieved in October 2015, with 13,190 producing wells). Over 98 percent of drilling still targets the Bakken and Three Forks formations, and 11,129 wells (84 percent) are now unconventional Bakken-Three Forks wells, and 2,110 wells (16 percent) produce from legacy conventional pools.

1. **Whiting Oil & Gas Corp.**
Oil production (2016): 22,516,611 bbls
Gas production (2016): 40,497,110 mcf
Tel: (303) 837-1661
Web: www.whiting.com
2. **Continental Resources, Inc.**
Oil production (2016): 20,181,391 bbls
Gas production (2016): 33,636,265 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 (2016): 17,776,781 bbls
Gas production (2016): 29,590,101 mcf
Tel: (713) 496-4000
Web: www.hess.com
4. **XTO Energy Inc.**
Oil production (2016): 16,337,443 bbls
Gas production (2016): 30,386,392 mcf
Tel: (817) 870-2800
Toll-Free: (800) 299-2800
Web: www.xtoenergy.com
5. **Burlington Resources Oil & Gas Co., LP**
Oil production (2016): 13,893,841 bbls
Gas production (2016): 21,895,154 mcf
Tel: (432) 688-6800
Web: www.br-inc.com
6. **QEP Energy Co.**
Oil production (2016): 10,082,424 bbls
Gas production (2016): 15,659,461 mcf
Tel: (303) 672-6900
Web: www.qepres.com
7. **Oasis Petroleum North America, LLC**
Oil production (2016): 9,920,982 bbls
Gas production (2016): 14,062,076 mcf
Tel: (281) 404-9500
Web: www.oasispetroleum.com
8. **Marathon Oil Co.**
Oil production (2016): 9,415,172 bbls
Gas production (2016): 9,201,594 mcf
Tel: (713) 629-6600
Web: www.marathonoil.com
9. **Statoil Oil & Gas, LP**
Oil production (2016): 8,992,289 bbls
Gas production (2016): 11,063,873 mcf
Tel: (512) 427-3300
Web: www.statoil.com
10. **EOG Resources, Inc.**
Oil production (2016): 8,086,919 bbls
Gas production (2016): 11,342,157 mcf
Tel: (713) 651-7000
Toll Free: (877) 363-3647 (EOGR)
Web: www.eogresources.com
11. **HRC Operating, LLC**
Oil production (2016): 6,050,013 bbls
Gas production (2016): 6,940,149 mcf
Tel: (832) 538-0300
Web: www.halconresources.com
12. **WPX Energy Williston, LLC**
Oil production (2016): 5,635,594 bbls
Gas production (2016): 6,122,232 mcf
Tel: (701) 837-2900
Web: www.wpxenergy.com
13. **Newfield Production Co.**
Oil production (2016): 4,058,605 bbls
Gas production (2016): 10,259,477 mcf
Tel: (281) 210-5100
Web: www.newfld.com
14. **SM Energy Co.**
Oil production (2016): 3,953,489 bbls
Gas production (2016): 5,713,125 mcf
Tel: (406) 245-6248
Web: www.sm-energy.com
15. **Enerplus Resources USA Corp.**
Oil production (2016): 3,898,394 bbls
Gas production (2016): 5,463,857 mcf
Tel: (701) 675-2135
Web: www.enerplus.com
16. **Slawson Exploration Co., Inc.**
Oil production (2016): 3,325,316 bbls
Gas production (2016): 3,238,444 mcf
Tel: (316) 263-3201
Fax: (316) 268-0702
Web: www.slawsoncompanies.com/exploration.html
17. **Petro Hunt, LLC**
Oil production (2016): 3,163,529 bbls
Gas production (2016): 7,122,813 mcf
Tel: (214) 880-8400
Charlson: (701) 675-2467
Web: www.petrohunt.com
18. **Zavanna, LLC**
Oil production (2016): 3,149,501 bbls
Gas production (2016): 7,426,509 mcf
Tel: (303) 595-8004
Web: www.zavanna.com
19. **Lime Rock Resources**
Oil production (2016): 2,963,939 bbls
Gas production (2016): 2,367,572 mcf
Tel: (713) 292-9500
Web: www.limerockresources.com
20. **Triangle USA Petroleum Corp.**
Oil production (2016): 2,030,790 bbls
Gas production (2016): 2,894,452 mcf
Tel: (303) 260-7125
Fax: (303) 260-5080
Web: www.trianglepetroleum.com

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KLJ 28

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Veit 13

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City and County Auditors and Finance Directors are expected to do more with less. AE2S Nexus professionals understand the challenges these positions face first hand. Our staff includes experienced City Auditors and Finance Professionals who have been through numerous budgeting and reporting processes, special assessments, utility rate analysis, and infrastructure financing. **Call Shawn Gaddie, PE at 701-746-8087 or email Shawn.Gaddie@ae2s.com to put our experience and expertise to work for you.**

City Hall Financial Services | Utility Rate Analysis | Project Funding/Financing | Development & Administration | Economic Development | Asset Management



Your Local Williston Cat® Dealer

Two Branches Providing Unrivaled Local Support
WHEN and WHERE You Need Us!



T&E WILLISTON WEST

1. Cat Parts and Service

- Full parts/service support for Cat machinery, Cat generators/engines, and Cat truck engines
- 24/7/365 on-call service
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- 24/7/365 on-line parts ordering
- Now offering complimentary in-town delivery

2. Cat Machinery and Vocational Truck Sales

- Legendary Cat performance/reliability

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3. Cat Generator/Engine Sales

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701-713-2100



T & E



AGRICULTURAL DIVISION

2016

NORTH DAKOTA PETROLEUM COUNCIL ANNUAL MEETING

SEPT. 19-21 ★ HOLIDAY INN RIVERSIDE ★ MINOT, ND



FEATURING

FOX News contributor

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