

November 1, 2014

Ms. Karlene Fine  
North Dakota Industrial Commission  
600 East Boulevard Avenue  
Bismarck, ND 58505

Re: Grant Application for the North Dakota Petroleum Council's Oil Can! Program

Dear Ms. Fine:

Enclosed is a grant application requesting the North Dakota Industrial Commission to approve funding from the Oil and Gas Research Council to help fund the North Dakota Petroleum Council's Oil Can! education and outreach program. This program consists of education, outreach and promotion and marketing efforts consisting of specific components including a Teachers Seminar, Bakken Rocks CookFests, educational sessions, and Power Kids' Futures program, among others.

These components of the Oil Can! program have been very successful and have grown to become powerful tools for industry outreach.

These education efforts successfully partner private industry with state and federal entities to develop and deliver educational materials in a balanced and effective manner to the target audiences. Total project costs are \$1,540,580 for the period extending from January 2015 to December 2016. We are requesting \$736,290 to help fund these educational and outreach programs during that time frame. A \$100 check is enclosed to cover the application fee.

The Petroleum Council is committed to complete the Oil Can! Program components detailed in this grant request. Please contact me if you have any questions or need additional information for the enclosed grant application.

Sincerely,



Ron Ness

Enclosure

Applicant: North Dakota Petroleum Council  
PO Box 1395, Bismarck, ND 58502  
701-223-6380 / 701-226-0006 (fax)

Principal investigator: Tessa Sandstrom, communications manager

Date of application: Nov. 1, 2014

# North Dakota Petroleum Council

## Oil Can! Program

Grant requested from the

North Dakota Oil and Gas Research Council

|                   |              |
|-------------------|--------------|
| Project expenses: | \$ 1,540,580 |
| Amount requested: | \$ 736,290   |
| Grant deadline:   | Nov. 1, 2014 |

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## 1.0 Abstract

The objective of the North Dakota Petroleum Council's Oil Can! program is to open the lines of communication and improve understanding between the petroleum industry of North Dakota and key stakeholder groups such as property owners, royalty owners, policy makers, community leaders, media and the general public. The North Dakota Petroleum Council (NDPC) has been developing, delivering, and engaging in public education of oil and gas for several decades and continues to build upon its successes by enhancing education efforts through improving existing projects and/or events and adding new ones.

The NDPC's Education Program funding request is for January 1, 2015 to December 31, 2016. The total budget for the Oil Can! program during that timeframe is \$1,540,580, of which \$736,290 is requested from the Oil and Gas Research Council (OGRC). The matching funding for Oil Can! comes from the NDPC.

The mission of the OGRC is to promote the growth of the oil and gas industry through research and education. The NDPC's Oil Can! program outlined in this grant request is an effective way for the OGRC to accomplish this mission. These education and outreach initiatives are costly and time-consuming, but the feedback received is always positive and these programs become more critical each year as the oil and gas industry strives to improve its image and maintain healthy partnerships with the people and businesses of North Dakota. To enhance the ability of the NDPC to deliver these projects to the public in a meaningful way, we have several partners, all of which bring unique professional experience to the table, including NDPC members, North Dakota Association of Oil and Gas Producing Counties (NDAOGPC), Department of Mineral Resources (DMR), North Dakota Department of Transportation (NDDOT), North Dakota Highway Patrol (NDHP), UND's Energy and Environmental Research Center (EERC), the North Dakota Pipeline Authority (NDPA), North Dakota State Land Department (NDSLDD), the ND Energy Forum, North Dakota Safety Council, and civic and community groups, among others. Thanks to their help and insight, Oil Can! has been a tremendous success and was nationally recognized by the Interstate Oil and Gas Compact Commission in October 2009 with its Energy Education Stewardship Award as well as in 2013 with the Environmental Partnership Award for the Pick Up the Patch program.

This grant proposal consists of three objectives: education, outreach, and marketing and promotion. Specific components of these three objectives include educational sessions, CookFest, Pick Up the Patch!, Teachers Education Seminar, Energy Career Awareness Partnership (ECAP), Oil Can! Power Kids' Futures Program, advertising, branding and promotion, media & policymaker education & outreach, and website & social media. Discretionary funding is also set aside for potential hot topics or issues that may arise in the next few years. Each of these components is further explained in the following section.

## **2.0 PROJECT DESCRIPTION**

### **Outreach**

#### *Bakken Rocks CookFest*

The Bakken Rocks CookFest, held twice annually in two western North Dakota communities, continues to be one of the most popular Oil Can! events. Because of this, it is an important tool for building goodwill across the western portion of the state. These events give industry operators the opportunity to connect with the people directly impacted by their business on a day-to-day basis. The focus of these events is to provide an evening of food and fun while providing general education regarding the oil industry. This is done through the use of informational booths manned by industry professionals and a Bakken Basics Education Session. This event continues to grow each year. Approximately 3,000 to 3,500 people attended our 2013 and 2014 events and interest only grows for coming years.

#### *Pick Up the Patch*

In November of 2013, the Pick Up the Patch Program was awarded the Environmental Partnership Award by the Interstate Oil and Gas Compact Commission (IOGCC). The award recognized the program's success in bringing industry and non-industry stakeholders together to improve the environment, and it continues to be a popular volunteer effort among NDPC member companies and communities alike.

Since being started in April of 2012, more than 1,200 industry volunteers have collected more than 1,200 bags of trash along 300 miles of North Dakota roadways. NDPC members continue to promote a no

litter culture by encouraging companies to include trash disposal in employee training, providing trash bags in company vehicles, and organizing regular clean-up efforts.

Many companies are conducting these efforts on their own, and their efforts often go unnoticed. To increase awareness about the work they are doing to keep our roadways trash-free, the NDPC will work on behalf of the companies to alert and attract media; provide neon Oil Can! t-shirts to help identify the crews as petroleum industry volunteers and ensure visibility when they are working in ditches for safety; feature companies who help clean up on Facebook, our website, and monthly newsletter; and place ads in local papers thanking member companies for their efforts. This recognition, in turn, should incentivize companies to host events and communicate to us and others their efforts and results.

*Code for the Road (formerly ProgressZone)*

Traffic continues to be a top concern for people statewide. As a means to help remind North Dakotans that cautious driving is important, the NDPC launched ProgressZone in partnership with NDHP and NDDOT on July 22, 2011. The development phases were partially funded by a grant from the National Highway Traffic Safety Administration (NHTSA).

The NDDOT recently launched another public safety campaign called *Code for the Road*, however, which was dedicated to similar messaging. Rather than pursue two different campaigns, the NDPC decided to partner with the NDDOT on its campaign. Billboard slogans were brought up to date, and the NDPC produced a television commercial, which aired the summer of 2014 and will air again going into 2015. The ad is also available on YouTube, Facebook, and on the Oil Can! website and was distributed to NDPC member companies, many of which incorporated it into employee safety meetings. Corresponding radio and online banner ads were also created as a part of the campaign (Appendix A). The television and radio ad and safe driving tips, including a video from the NDHP, are available at the *Oil Can!* website,

[www.northdakotaoilcan.com/solutions/TrafficSafety/](http://www.northdakotaoilcan.com/solutions/TrafficSafety/).

### Educational Sessions

Educating the public about development activity and infrastructure needs, along with regulations and processes involved with the oil and natural gas industry is a tremendous part of building goodwill within the state. Giving people an opportunity to ask questions and hear answers straight from the mouths of industry professionals is the objective of our educational sessions. These meetings had a very good turnout in the past and helped educate people, which was evident based on the growing complexity of questions asked. Over the course of the two years outlined in this grant, we will plan to conduct at least seven educational sessions throughout North Dakota, four of which will be held during the Bakken Rocks CookFest events and at least one of which will be held in Fargo in conjunction with our 2015 Annual Meeting in September. The NDPC will also host at least one (possibly two) educational session in conjunction with the Williston Basin Petroleum Conference and one in conjunction with our 2016 Annual Meeting (location to be determined). Professionals presenting at these events will include employees from the NDPC, DMR, NDPA, EERC and industry representatives including geologists, operators, landmen, and other industry professionals.

### **Education**

#### Teacher Seminar

The objective of the NDPC Teacher Education Seminar (seminar) is to educate teachers about the economic benefits and career opportunities provided by the North Dakota oil and gas industry. This enables the teachers to incorporate lessons about the energy industry in their lesson plans or better advise students on possible career opportunities following graduation. The three-day seminar hosts more than 40 teachers from across the state. Many teachers first need a primer in North Dakota energy and this seminar provides educators an opportunity to learn about North Dakota's oil and gas industry from its prehistoric beginnings to its final product and includes a tour of well sites, a drilling rig, the Mandan Tesoro Refinery, and the North Dakota Heritage Center. Educational sessions focus on a broad spectrum of topics, including history, geology, physics and engineering, as well as the industry's regulatory and social impacts, including

employment needs, policy decisions and impacts of oil tax on state tax revenues and the state's budget surplus.

### Energy Career Awareness Program (ECAP)

The NDPC will also plan the continuation of the Energy Career Awareness Partnership (ECAP). This private/public partnership was initiated with the assistance of former Governor John Hoeven in 2002 and has become a popular program for educators and students across the state. ECAP has been nationally recognized as a program that effectively educates students, teachers, and parents in classrooms and educational venues about the energy industry and the career opportunities that exist in the state. ECAP has reached more than 72,000 North Dakota students, teachers, and parents over the past 12 years.

ECAP activities during the fall months of the academic year tend to center on regional career fairs and work with school counselors preparing juniors and seniors for post-secondary training. Career fair access is made available to most schools throughout North Dakota; ECAP is able to distribute materials about careers, post-secondary training, safety programs, and general energy information. Career fair exposure is not as focused as direct classroom contact but is able to introduce North Dakota's energy industry to far more students than would be available via single classrooms. ECAP continues to be a resource and point of contact for North Dakota's energy industry statewide.

### Energy Explorers

As a supplement to ECAP, the NDPC plans to partner with the Boy Scouts of America to host an energy seminar as part of its Real-World Career Experiences Exploring program (Appendix B). The pilot program will host energy classes providing hands-on activities that relate to real careers in energy development. Although the program is hosted by Boy Scouts, the program is open to all students – boys and girls – ages 14 to 20 and they need not be Scout members. The program is designed to get students interested in careers in the energy industry, and we will seek partnership with our members, as well as the Lignite Energy Council, and will include field trips to a rig, natural gas facility, pipeline project, and the



courthouse, among others. An organizational meeting will be held Nov. 5, 2014, with meetings beginning January 2015.

### *Oil Can! Power Kids' Futures*

During the 2012 and 2014 Williston Basin Petroleum Conference, the NDPC introduced “Oil Can! Power Kids’ Futures,” an educational session for elementary students, teachers and parents that included instruction on the Bakken geology, oil and gas production, products made from crude oil, and jobs and skillsets needed in the oil and gas industry. Students also received a tour of equipment used in the fields that was on display as part of the trade show. The NDPC plans to host this opportunity for teachers and students again at the Williston Basin Petroleum Conference in 2016.

Similar lessons are incorporated within our sponsorship of the North Dakota Wildlife Federation’s Conservation Camp held each August near Garrison. At this camp, our contractors sponsor a full day of activities, including orienteering, canoeing, archery, and obstacle courses. The lessons are tied to skills needed in the oil and gas industry, including safety, teamwork, and oil and gas trivia.

## **Promotion and Marketing**

### *Oil Can! Advertising, Branding, and Promotion*

Development of promotional materials highlighting *Oil Can!* events is an important tool for staying at the forefront in the minds of North Dakotans. This often includes the use of flyers and brochures, website promotions, and newspaper, magazine, radio, and television advertisements. These ads serve to reiterate the benefits of our state’s oil and natural gas industry, including its impact on our economy and the creation of good-paying jobs. The NDPC launched an aggressive media campaign in 2012 for the first time. The campaign included four flights of television, radio, and online advertisements that focused on the petroleum industry’s positive impacts on North Dakota’s economy and job creation. Most recent ads have focused on real-life people and how their lives and businesses have benefitted as a result of oil and gas development. The NDPC will continue to maintain this campaign to further increase awareness about the oil and gas industry and the Oil Can! program.

To help develop key messages and measure the effectiveness and relevancy of our advertising, we conduct a yearly public perception survey of oil and gas development in North Dakota. Respondents will be asked for their opinion on the overall favorability of oil and gas development in the state, the positives of development, the negatives of development, and issues of concern, among important topics. Public perception surveys, however, are not included in the budget for submission and are an expense covered solely by the NDPC.

### Media & Policymaker Education & Outreach

Educating the general public about the petroleum industry means we must also ensure members of the media have a knowledge and understanding of the industry, its impacts, and the efforts on behalf of operators to work with state and local leaders and leaseholders on various issues surrounding development. Through the Oil Can! program, we will develop and maintain media kits that include facts and figures about the industry, infographics and videos about the process of drilling and economic impacts, resources including b-roll and photos, and story ideas to assist media in developing stories.

The NDPC also has two publications it will distribute to help share more information about the oil industry and its impacts and efforts in the community. These include the monthly Oil Can! Newsletter, which highlights members' goodwill efforts in communities and/or achievements and *Oil & Gas Tidbits* (*Tidbits*). *Tidbits* is distributed quarterly to policy-makers and interested parties in the oil and gas industry to keep them informed about technical and educational aspects of the oil industry. *Tidbits* is developed by the NDPC with past editions featuring key issues such as the crude oil transportation bottlenecks, geology of the Bakken, oil and gas economic impacts, Bakken crude characteristics, and numerous other topics (See Appendix D). The NDPC will plan to publish eight issues of *Tidbits* throughout the course of this grant. Lastly, the NDPC will continue to provide op-eds to the Bismarck Tribune's *Bakken Breakout* and the *Bakken Magazine*. These op-eds focus on hot topics, advancements made by the petroleum industry, contributions to the state and impacted communities, and other industry news. Past issues of *Tidbits* and the Monthly Newsletter may be viewed at <http://northdakotaoilcan.com/news/OilandGasTidbits/> and <http://northdakotaoilcan.com/news/newsletters/>, respectively.

## Website & Social Media

The Oil Can! program website, [www.northdakotaoilcan](http://www.northdakotaoilcan), will continue to be a resource for individuals looking to learn more about the oil and natural gas industry in North Dakota. In addition to information about oil and gas drilling operations, the website also contains resource sections for those impacted by development, including as the Royalty Owner Information Center (ROIC), the Frequently Asked Questions section, and the Surface Owner Information Center (SOIC). These sections will be continually updated and expanded as new issues arise.

The NDPC will plan to update and renovate the website in 2015, however. Currently the website is not responsive (it does not automatically sense tablets or mobile phones and adjust its format and layout accordingly for easier viewing). About one quarter of visitors access the website using a mobile phone or tablet, but the site is difficult to navigate in those media. The bounce rate (the percentage of people who leave the website after visiting only one page) is higher on mobile phones and tablets and a responsive website will make browsing the website easier from a tablet or mobile phone, helping lower the bounce rate, and thus retain visitors for a longer period of time.

In addition to a traditional website, the NDPC has substantially grown its Facebook and Twitter followers, thereby increasing the brand's reach and increasing the number of avenues through which stakeholders can connect, interact, and learn more about the petroleum industry. Social networks are important to reaching not only members of the general public, but also members of the media. Journalists increasingly use social media to break news stories and search for story leads. As such, Facebook and Twitter could play a significant role in helping earn positive media and in educating individuals in the media and on a grassroots level about the oil and gas industry. Building this presence requires the ability to generate original content on a frequent basis, which is time-intensive. The NDPC has generated some content, including infographics and videos (Appendix C) to push messages, but may need to consider using a consultant to help update our online media and assist in the production of videos, photos, data visualizations, and infographics that focus on Bakken technology, hydraulic fracturing, and horizontal drilling, among other aspects of the petroleum industry.

## **Emerging Issues**

Although the “shale revolution” has been underway for nearly a decade, it is still relatively new and presents new challenges every day, from social issues like housing and infrastructure to technical topics like flaring and Naturally Occurring Radioactive Material. The NDPC must be ready to respond to these issues by conducting research or creating informational materials to help educate stakeholders about such topics to help prevent misperceptions and myths from arising. Educating policy makers and the general public on emerging issues is important so that matters can be resolved by creating solutions based on a deep understanding of the issue at hand.

### **3.0 STANDARDS OF SUCCESS**

The measuring stick of success in educating the public is difficult, but not impossible, to quantify. The NDPC conducts public opinion surveys annually to gauge the impact of our messaging and outreach efforts, as well as perceptions of the petroleum industry in North Dakota. Four surveys have been conducted since 2010 to measure the overall opinion of oil and gas development in the state, the positives and negatives of development as viewed by respondents, the areas of greatest concern, and their awareness of the NDPC and Oil Can! program, among other issues. These surveys have established that North Dakotans continue to overwhelmingly favor oil development in the state, though many expressed concerns about the impact on housing and infrastructure, among other issues. The NDPC will continue to conduct these surveys on an annual basis to help inform us of new issues or hot topics, as well as a tool to measure any changes in attitudes toward the petroleum industry and the success of our education and outreach programs.<sup>1</sup>

While the Public Perception Survey will help provide an overarching measurement of our education, outreach, and promotion and marketing campaigns, we will also continue to monitor our successes of individual programs targeted to specific issues. Google Analytics and similar tools for social media help us

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<sup>1</sup> These surveys, however, are not an included expense in the grant application and will be an expense covered solely by the NDPC.

measure the reach of our messages online and through social media, and our online advertising can be measured by the number of click-throughs and time spent watching the ads or videos.

The measurement tool used to gauge the effectiveness of goodwill outreach and educational events such as the Bakken Rocks CookFests, town hall meetings, ECAP, and Teacher Seminar is a comparison of the general understanding members of the public had in the initial stages of the oil boom versus the knowledge people have gained after a few years of living within the oil activity. Since the time of the last town hall meetings held in 2008, the complexity of industry-related questions asked by the general public has increased. People are now interested in much more detailed and in-depth information than in prior years. The popularity of the Bakken Rocks CookFest provides an accurate measure of the effectiveness and popularity of that event. Attendance has risen over the past five years from approximately 300 attendees at each event to more than 1,500. In addition, communities are asking to host the event two years in advance. We expect this event to continue to grow more in the future, but we will do a better job of gauging perception at these events by distributing surveys to gather feedback on the events and education session. The Teacher's Seminar also remains a popular and fills up within weeks of registration opening. Throughout the Teacher's Seminar, we also collect evaluations for each day, as well as the overall seminar.

#### **4.0 BACKGROUND / QUALIFICATIONS**

The NDPC is a nonprofit trade association that has represented the industry in North Dakota since 1952. The NDPC represents more than 550 companies involved in all aspects of the oil and gas industry including oil and gas production, refining, pipeline, mineral leasing, consulting, legal work, and oil field service activities in North Dakota, South Dakota, and the Rocky Mountain Region. NDPC members accounted for 98 percent of oil produced in 2013.

The NDPC has been working to educate the public about the oil and gas industry for decades. The council has continually worked to enhance our education programs and communication with the public on issues that impact the communities where daily oil and gas operations are occurring. The projects and events outlined in this grant are core components of the program that have proven successful. Funding support from the OGRC is valuable and critical to their success and continuation.

## **5.0 MANAGEMENT**

The NDPC, under direction of Ron Ness, president, will manage and oversee the projects and events that are part of the Oil Can! program. Tessa Sandstrom, communications manager, implements the Oil Can! program functions, and the Board of Directors will approve the budget and monitor implementation.

The Oil Can! committee and its partners, including DMR, NDDOT, NDPA, EERC and NDHP will continue to play a vital role in providing direction and expertise on Oil Can! outreach efforts. The guidance and expertise of committee members is very valuable and ensures that issues are viewed from a variety of approaches.

## **6.0 TIMETABLE**

The NDPC's Oil Can! program will run from January 1, 2015 through December 31, 2016. Several of the events, such as the Bakken Rocks CookFests and the town hall meetings, take place during the summer and fall months. The NDPC Outreach and Communications Committees meets several times a year to plan these events and discuss additional means of education and outreach on behalf of the industry based on topics of importance. Other components of the program, such as advertising, developing promotional materials and broadening the safety campaign, are year-round commitments, and still other parts of Oil Can!, such as the safety billboards, are multiple year commitments.

## **7.0 PROJECT BUDGET**

The NDPC's Oil Can! program budget for January 1, 2015 - December 31, 2016 is \$1,540,580. The two-year proposal allows for planning, development and implementation of the annual projects and new projects under the umbrella of the Oil Can! program.


| Project Associated Expense       | NDIC's Share | Applicant's Share (Cash) | Applicant's Share (In-Kind) | Other Project Sponsor's Share |
|----------------------------------|--------------|--------------------------|-----------------------------|-------------------------------|
| <b>Outreach</b>                  | \$ 79,040    | \$ 84,040                |                             |                               |
| Code for the Road                | \$ 35,040    | \$ 35,040                |                             | NA* <sup>2</sup>              |
| CookFest                         | \$ 35,000    | \$ 40,000                |                             |                               |
| Pick Up the Patch                | \$ 3,000     | \$ 3,000                 |                             |                               |
| Education Sessions               | \$ 6,000     | \$ 6,000                 |                             |                               |
|                                  |              |                          |                             |                               |
| <b>Education</b>                 | \$ 85,000    | \$ 85,000                | \$ 2,000                    | \$ 46,400                     |
| ECAP                             | \$ 50,000    | \$ 50,000                |                             | \$ 40,000                     |
| Teacher Seminar                  | \$ 20,000    | \$ 20,000                |                             |                               |
| Power Kids' Futures              | \$ 3,000     | \$ 3,000                 |                             |                               |
| Energy Explorers                 | \$ 12,000    | \$ 12,000                | \$ 2,000                    | \$ 6,400                      |
|                                  |              |                          |                             |                               |
| <b>Promotion &amp; Marketing</b> | \$ 552,250   | \$ 557,250               |                             | \$ 10,000                     |
| Advertising                      | \$ 490,250   | \$ 495,250               |                             |                               |
| Creative & Production            | \$ 15,000    | \$ 15,000                |                             |                               |
| Website & social media           | \$ 32,000    | \$ 32,000                |                             |                               |
| Publications & Infographic       | \$ 15,000    | \$ 15,000                |                             | \$ 10,000                     |
|                                  |              |                          |                             |                               |
| <b>Emerging Issues</b>           | \$ 20,000    | \$ 20,000                |                             |                               |
|                                  |              |                          |                             |                               |
|                                  |              |                          |                             |                               |
| <b>TOTAL Oil Can!</b>            | \$ 736,290   | \$ 748,290               |                             | \$ 56,000                     |
|                                  |              |                          |                             |                               |
|                                  |              |                          |                             |                               |
|                                  |              |                          |                             |                               |

|                                 |                 |
|---------------------------------|-----------------|
| <b>TOTAL EXPENSES</b>           | \$ 1,540,580.00 |
| <b>Less Total Grant Request</b> | \$ 736,290.00   |
| <b>Less Other Partner Share</b> | \$ 56,000.00    |
| <b>NDPC CONTRIBUTION</b>        | \$ 748,290.00   |

### 8.0 TAX LIABILITY

I, Jeff Herman, certify that the North Dakota Petroleum Council does not have any outstanding tax liability owed to the State of North Dakota or any of its political subdivisions.

  
 \_\_\_\_\_  
 Jeff Herman

  
 \_\_\_\_\_  
 Date

<sup>2</sup> NDDOT purchases the points for advertising and NDPC covers creative and production of advertising. NDDOT does not have an estimate on a two-year basis, but the match is substantial.

Treasurer, North Dakota Petroleum Council

## **9.0 CONFIDENTIAL INFORMATION**

The NDPC does not request any of the information related to this application be confidential.

## **10.0 PATENTS RIGHTS TO TECHNICAL DATA**

The NDPC does not request to reserve any patent rights to technical data.

## **11.0 APPENDICES**

- A. Code for the Road marketing materials
- B. Explorers Flyer
- C. Infographics



APPENDICES

APPENDIX A – CODE FOR THE ROAD



Code for the Road – Pass on the Pass advertising campaign billboard

Code for the Road – Pass on the Pass advertising campaign: online banner ads

Pass on the Pass Television Commercial, Radio Commercial & Safety Information:

<http://northdakotaoilcan.com/solutions/TrafficSafety/>

## APPENDIX B



### Energy Career Exploring

This program is open to young men and women ages 14 and up with interest in learning more about careers in energy. Energy Exploring is a hands-on program that will expose you to the many career opportunities available in the oil and gas, coal and other energy industries.

The challenge to meet the workforce needs in energy is ever increasing as the world's demand for energy rises and workers currently working in the industry retire. Opportunities for good-paying jobs and careers will be needed for every education level, from skilled trades like mechanics, electricians, welders and boilermakers to four-year degrees, including engineering, geology, business and finance, and more.

#### What will you learn?

You will experience firsthand what it's like to be in this fast-paced and exciting industry, and explore the various stages of energy exploration including:

- » Drilling and Mining
- » Pipeline Construction, Operation and Monitoring
- » Geology and Archaeology
- » Surveying and Reclamation
- » Power Plant Processing and Control
- » Welding, Mechanics and Equipment Operation
- » Well Production, and Much More!

You will have an opportunity to participate in hands-on projects to give you a real feel for whether this career is the right one for you, and network with professionals who work in these careers every day including engineers, researchers, field technician and many others in the engineering & technology fields. You will also have the unique opportunity to visit a drilling site, well production pad, coal mine, processing plant, and more.

You will learn about the educational requirements for a career in energy-related fields and will receive tangible advice on steps you could take now to prepare and position yourself for a successful career in the energy industry.

#### When do meetings take place?

Energy Exploring posts typically meet on a monthly basis during the school year. The organizational meeting will be held Nov. 5, 2014 at 6:30 p.m. in Hess's Goliath Meeting Room located at 3520 N Broadway, Minot.

#### Program Costs:

The Energy Career Exploring program will cost \$40 for the year. Additional fundraising may be required.

*Explorers program flyer distributed to schools*

# APPENDIX C

## ONE MILLION BARRELS

### WHAT IT MEANS TO OUR STATE, NATION AND YOU

In April, North Dakota surpassed one million barrels of daily oil production for the first time, putting the state in an exclusive group of only a few countries, states, provinces and oilfields ever to do so.

#### Only 19 countries

Produce one million barrels per day or more<sup>1</sup>

##### Production by Country (in million barrels)

|               |     |            |     |
|---------------|-----|------------|-----|
| Russia        | 10  | Nigeria    | 2.4 |
| Saudi Arabia  | 9.7 | Venezuela  | 2.3 |
| United States | 7.5 | Brazil     | 2.0 |
| China         | 4.2 | Angola     | 1.8 |
| Canada        | 3.4 | Kazakhstan | 1.6 |
| Iran          | 3.2 | Qatar      | 1.6 |
| Iraq          | 3.1 | Norway     | 1.5 |
| UAE           | 2.8 | Algeria    | 1.5 |
| Kuwait        | 2.7 | Colombia   | 1.0 |
| Mexico        | 2.6 |            |     |

#### Only 5 states

produced at least one million bopd at one time

- Alaska
- California
- Louisiana
- North Dakota
- Texas<sup>2</sup>



Only ten basins have ever surpassed one million barrels of daily oil production. The Permian Basin, Eagle Ford Shale and Bakken Shale are the most recent to reach this milestone because of advancements in horizontal drilling and hydraulic fracturing.<sup>3</sup>

#### National Security

One million barrels of oil production per day meets the needs of:



#### North Dakota Impacts

One million barrels of oil produced each day will contribute \$50 million per day to North Dakota's economy.



One million barrels of oil will deposit more than **\$11 million per day** to North Dakota's coffers in oil and gas extraction and production taxes.



One million barrels of oil could fuel about 48,272 cars with gasoline

##### SOURCES

<http://www.eia.gov/itapps/ipdtablest/IED/index3.cfm?id=53&pid=53&aid=1>  
<http://www.oerideas.org/2013/11/bakken-oil-fields-will-top-1-million-barrels-per-day-in-dec-and-become-3rd-oil-field-to-reach-1-million-barrels-a-day/>  
<http://www.ogs.gov/energy/pressreleases/pdf/OKOilNews.pdf>  
[http://www.eia.gov/data/pef/pef\\_navie\\_impcus\\_02\\_nov\\_09/02\\_m0\\_rebbi\\_m.htm](http://www.eia.gov/data/pef/pef_navie_impcus_02_nov_09/02_m0_rebbi_m.htm)  
[http://americansocietyforenergyindependence.org/ASPE/20FReport/Pef1/Pef1\\_20109%20%20FactSheet%20DoD%20E2%8C%99%20Bisfuel%20Program.pdf](http://americansocietyforenergyindependence.org/ASPE/20FReport/Pef1/Pef1_20109%20%20FactSheet%20DoD%20E2%8C%99%20Bisfuel%20Program.pdf)

##### Compiled by

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# BAKKEN BY THE NUMBERS

OIL & GAS INDUSTRY FACTS & FIGURES

North Dakota has been an oil and gas producing state since 1951. But it's only recently that its geology, particularly horizontal drilling and hydraulic fracturing, has unlocked the potential of the Bakken shale rock formation, making North Dakota a top oil producer for the nation.

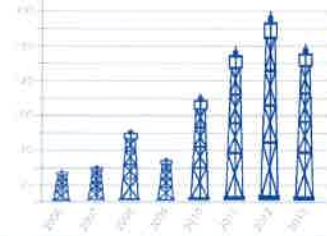
- 1 Texas
- 2 North Dakota
- 3 California

North Dakota would also be with Colorado for the fifth largest oil producer in the world.

## OIL & GAS PRODUCTION

**193 rigs**

An average operated in North Dakota in 2013. This drilling rig count is a prime barometer for measuring oil and gas activity. The oil rig high was 318 in May 29, 2012.



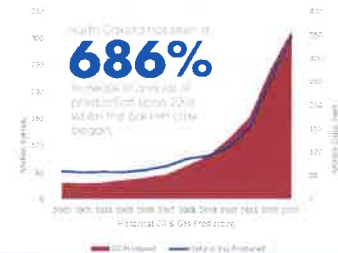
North Dakota produced **1,039,635 barrels** of oil per day (based on May 2013)

**1,191,628 MCF** of natural gas per day in May

The state's average daily production in 2013 was **858,904 bopd** totaling **313.5 million** barrels for the year. This is 20.6 million barrels more than the 2012 total.

**10,892 wells** capable of producing oil in May. 7,506 wells, or 69% were Bakken. Three risks wells were produced from the average well.

In 2013, North Dakota produced **346 billion cubic feet** of natural gas & 491.1 billion cubic feet of natural gas.



The average cost of extracting oil well in North Dakota was **\$8.9 million** in 2012, up from about \$8.5 million in 2011 and \$7.3 million in 2010.

## RESPONSIBLE DEVELOPMENT

The surface impact from a well pad has decreased from **10%** recently to **four-tenths of 1 percent** of the first.

Together with the U.S. Forest Service the petroleum industry has redeveloped **824 well sites** and **243 road miles** in the Little Missouri National Grasslands.

## WHERE DEVELOPMENT OCCURS

**April 4, 1951** First successful oil well in North Dakota was drilled near Ft. Totten, ND, in Williams County. That well, the Oklahoma Number 1, produced oil more than 400,000 barrels of oil in 26 years.

McKenzie County produced **303,849 bopd** in May 10 to become the largest oil-producing county in the state.

McKenzie is **#1** and Mountrail is **#2** in production. Mountrail produced **237,424 bopd** in May 10 to rank as the third largest oil-producing county.

Dolan, Williams, and Divide round out the top 5 producing counties.

There are **17 oil-producing counties** in North Dakota. But oil and gas extraction has occurred in every county in the state except Judd County.

## REFINING & TRANSPORTATION

North Dakota has **1 crude oil refinery... with a 2nd on the way.**

The Arco refinery in Minot, ND, has a daily capacity of 40,000 barrels. A new refinery is being built located near South Fork A-13. That will process 20,000 barrels of North Dakota oil per day. When completed in 2014, it will be the first refinery built since 1927.

**22 gas plants**

operable in ND with an added capacity to process 1.2 billion cubic feet per day of natural gas.

## OIL PATCH EMPLOYMENT

In 2013, an average of **24,012 jobs** were supported by oil and gas activities and direct support activities.

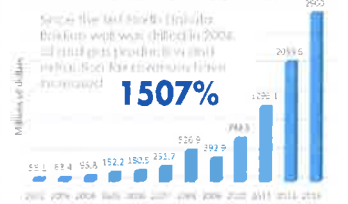
Each drilling rig (with an average of 100 direct and indirect jobs).

In 2013, the average wage in the oil and gas sector in North Dakota was **\$47,779**. That was a 10% increase from the statewide average wage of **\$47,779**.

## OIL & GAS TAX COLLECTIONS

**11.5%** is the average combined federal, state and local tax rate on production in 2013, an increase from past years.

The industry pays a total of **\$2.9 billion** in oil and gas production taxes in 2013, an increase for 50% of all states based on oil.



The tax on oil and gas has consistently increased since 2005.

In 2013, the industry paid \$994 million to the Strategic Investment and Improvement Fund, which is for clean-line expenditures relating to improving state infrastructure of the Bakken to improve the efficiency and effectiveness of state government.

The industry paid a total of **\$332.5 million** to the commonwealth trust fund, as well as 12 other trust funds that managed for the Board of Higher Education. The fund included \$196 million in royalties, \$20 million in bonuses and \$117 in production taxes.

The industry paid a total of **\$184.2 million** in federal income tax on oil and gas revenues to the U.S. Internal Revenue and Bureau of Land Management for directly attributable taxes. \$92.1 million (or 50%) was returned to the state's general fund and is the most money expended for education statewide.

## OIL EXPORTS & IMPORTS

In 2013, production exceeded the largest source of U.S. energy.



In 2013, the U.S. produced an average of 2.3 million barrels of oil per day, a 1% increase from 2.3 million in 2012.

Meanwhile, Oklahoma imports 100,000 barrels of oil per day from 100 million barrels in 2012 for 7 million barrels in 2013.

The U.S. imported about 47% of its total oil needs in 2012. Largest suppliers include:

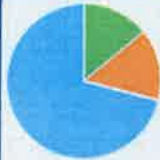


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# FACTS ABOUT FLARING & NATURAL GAS

Natural gas is the cleanest of all fossil fuels. Burning natural gas gives off mostly harmless water vapor and a small amount of carbon dioxide.

While crude oil remains the principal resource being developed in the Bakken shale in North Dakota, natural gas remains a valuable resource that operators are working hard to capture, transport and process.



- 71%** Of natural gas in North Dakota is captured & sold
- 15%** Of gas that is connected but flares intermittently due to challenges with infrastructure
- 14%** Of gas is not connected to infrastructure and is flared

# 87%

Of wells are connected within the first year of production



Flaring is safety mechanism used to burn excess natural gas that cannot be captured at the well head by pipeline and moved to a processing facility. You can't produce oil without natural gas.

## REDUCING FLARING REQUIRES INFRASTRUCTURE LIKE THIS

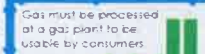
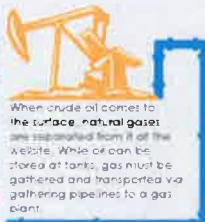
and we're making progress

- » Gathering lines
- » Processing plants
- » Export pipelines

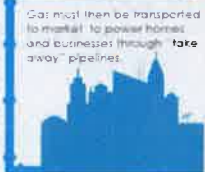
Since 2006, the industry has invested \$6 billion into infrastructure. That's...



Enough to build the **Ralph Engstad Arena**



North Dakota has 18 gas plants that can process more than 1 billion cubic feet of gas per day.



Industry has built 10,000 miles of gathering pipelines, enough to stretch from



Industry has increased gas plant processing capacity by 340% to 1.1 billion cubic feet per day since 2006. That's enough to power



**10,000**  
American homes for a full year

The industry has more than **2 billion cubic feet per day of export capacity** to take gas to market

The North Dakota Petroleum Council has formed a Flaring Task Force to spearhead the industry's efforts to significantly reduce natural gas flaring in the state's Bakken oilfields. For more information about natural gas, flaring and the Flaring Task Force, visit

[WWW.NORTHDAKOTAOILCAN.COM/SOLUTIONS](http://WWW.NORTHDAKOTAOILCAN.COM/SOLUTIONS)



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**value-added:** of, relating to, or being a product whose value has been increased especially by special manufacturing, marketing, or processing.

## Polyethanene from Natural Gas:



**Natural gas** is produced at the well head, separated from oil and water, and transported to a processing facility.



**Ethane** is refined or "cracked" into ethylene.

**Polyethylene** is made, which is used to manufacture an array of products used everyday.

### Intermediate products

» PVC

- » Pipes
- » Bottles & Packaging
- » Windows & doors
- » Liners & bags

» Ethylene glycol

- » Polyester
- » Fabrics
- » Antifreeze
- » Paint

» Styrene

- » Insulation
- » Rubber
- » Medical devices
- » Wind turbine parts

» Polystyrene

- » Food containers
- » Optic fiber
- » Film
- » Instrument lenses