

# North Dakota Pipeline Authority



## Annual Report

July 1, 2014 – June 30, 2015

Industrial Commission of North Dakota

Governor Jack Dalrymple, Chairman

Attorney General Wayne Stenehjem

Agriculture Commissioner Doug Goehring

# **North Dakota Pipeline Authority**

## **Annual Report**

### **July 1, 2014 – June 30, 2015**

#### **Overview**

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At the request of the North Dakota Industrial Commission, the Sixtieth Legislature passed House Bill 1128 authorizing the North Dakota Pipeline Authority. It was signed into law on April 11, 2007. The statutory mission of the Pipeline Authority is “to diversify and expand the North Dakota economy by facilitating development of pipeline facilities to support the production, transportation, and utilization of North Dakota energy-related commodities, thereby increasing employment, stimulating economic activity, augmenting sources of tax revenue, fostering economic stability and improving the State’s economy”. As established by the Legislature, the Pipeline Authority is a builder of last resort, meaning private business would have the first opportunity to invest in and/or build additional needed pipeline infrastructure.

By law, the Pipeline Authority membership is comprised of the members of the North Dakota Industrial Commission. Upon the recommendation of the Oil and Gas Research Council, the Industrial Commission authorized the expenditure of up to \$300,000 during the 2013-2015 biennium for the Pipeline Authority with funding being made available from the Oil and Gas Research Fund. On August 1, 2008 the Industrial Commission named Justin J. Kringstad, a consultant, to serve as Director of the North Dakota Pipeline Authority and contracted with him for his services. The North Dakota Pipeline Authority Director works closely with Lynn Helms, Department of Mineral Resources Director, Ron Ness, North Dakota Petroleum Council President and Karlene Fine, Industrial Commission Executive Director. The Pipeline Authority has no other staff and receives no direct General Fund appropriation. The Pipeline Authority Director reports to the Industrial Commission and the Oil and Gas Research Council on a regular basis.

#### **Statutory Authority**

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Statutory authority for the Pipeline Authority is found in Chapter 54-17.7 of the North Dakota Century Code (N.D.C.C.). Section 54-17.7-04 N.D.C.C. delineates the powers of the Pipeline Authority including: 1) making grants or loans or to borrow money; 2) to issue up to \$800 million in revenue bonds; 3) enter into lease-sale contracts; 4) own, purchase, lease, rent and dispose of pipeline facilities or the right to capacity in any pipeline system or systems within or without the State of North Dakota; 5) enter into contracts to construct, maintain and operate pipeline facilities; 6) investigate, plan, prioritize and propose transportation corridors; and 7) participate in regional pipeline organizations.

Before the Pipeline Authority may exercise its power to construct pipeline facilities, it must follow a process defined by statute to ensure public participation and comment. In particular, the Pipeline Authority must publish a notice describing the need for the pipeline project. Entities interested in constructing the facilities or furnishing services to satisfy the identified needs have 180 days to respond by filing a notice of intent. If the Pipeline Authority receives a notice of intent from an interested entity, it may not exercise its powers to construct unless the Pipeline Authority makes a finding that doing so would be in the public interest. In making such a finding, the Pipeline Authority shall consider the economic impact to the state, economic feasibility, technical performance, reliability, past performance, and the likelihood of successful completion and ongoing operation.

## Summary of Activities

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As has been the case since the Pipeline Authority's inception, the 2014-2015 timeframe was filled with many new developments for the producing and midstream industries operating in North Dakota. More efficient drilling rigs and advances in drilling and completion techniques have taken North Dakota oil production to new record highs. During the past year, the Pipeline Authority has been fully engaged in continuing efforts to convert production and development information into oil and natural gas transportation solutions. Working alongside industry to produce crude oil and natural gas production forecasts to quantify future pipeline needs and time frames continues to be one of the principal tasks of the Pipeline Authority. Pipeline companies are conservative by nature and these forecasting exercises proved to be very beneficial in adding the confidence needed to move forward with expansion project planning.

During the year the Pipeline Authority contacted, met with, and shared information with numerous interested parties including the following:

Enbridge Pipeline	Hess Corporation
TransCanada	Tesoro
MDU/WBI Energy	BakkenLink Pipeline
True Companies	RBN Energy
ONEOK	Aux Sable Liquid Products
Alliance Pipeline	BNSF Railway
Northern Border Pipeline	Dakota Prairie Refining
Basin Electric	Corval Group
Gtuit	KLJ Engineering
Plains All American	American Power Group
Houston Engineering	Sequent Energy
Caliber Midstream	WPX
Darsana Capital Partners	Badlands NGLs
Koch Industries	Dresser-Rand
Double M Helicopters	Cenex Harvest States
Ten Code	Energy Transfer Partners

Barr Engineering  
Targa  
Crestwood  
Allete  
AECOM  
Canaccord Genuity  
XTO

Paradigm Midstream  
CRNG Energy  
Whiting  
UBS  
Pembina Pipeline  
Enable Midstream

In addition, the Pipeline Authority worked with a number of state and federal agencies to gather information and provide expertise on pipeline issues. Those agencies and entities included:

North Dakota Public Service Commission	North Dakota Department of Commerce
North Dakota Transmission Authority	Energy and Environmental Research Center
North Dakota Oil and Gas Division	North Dakota Department of Transportation
North Dakota Governor's Office	Federal Railroad Administration
Canadian Consulate	North Dakota Tax Department
North Dakota State University	Wyoming Pipeline Authority
Bank of North Dakota	EmPower North Dakota Commission
US Energy Information Administration	US Government Accountability Office
US Bureau of Land Management	Upper Great Plains Transportation Institute
Pipeline and Hazardous Materials Safety Administration	

The Director of the Pipeline Authority also worked with the following trade associations/groups:

North Dakota Petroleum Council  
North Dakota Petroleum Marketers Association  
North Dakota Association of Counties  
Energy Policy Research Foundation  
NW Landowners Association  
National Governor's Association  
Utility Shareholders of North Dakota  
Upper Great Plains Transportation Institute  
Minot Area Development Corporation  
North Dakota Trade Commission

As noted above, the Pipeline Authority has been facilitating discussions between governmental agencies and companies interested in expanding North Dakota's midstream infrastructure.

In addition, the Director of the Pipeline Authority provided information to citizens and news media on issues related to pipelines.

## **Pipeline Technology Working Group**

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On December 27, 2013, Governor Dalrymple announced the formation of a “Pipeline Technology Working Group” to explore advances in technology that may have a positive impact on more quickly identifying leaks on a pipeline system. Along with several state agencies and industry participants, the Pipeline Authority was a member of the working group and participated in facilitating meetings and drafting a final report that was submitted to the Governor in December 2014. Electronic copies of the report were distributed during the 2015 legislative session and are available from the Pipeline Authority upon request.

Additional pipeline technology research was directed by the North Dakota Legislature during the 2015 session (HB 1358) and is being conducted by the Energy and Environmental Research Center at the University of North Dakota. Results of a portion of the research are anticipated to be available in late 2015 with the entire research work being completed in late 2016.

## **2015 Legislative Session**

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The 2015 legislative session did not make any modifications to the Pipeline Authority statute. Two bills were passed that directly impact the pipeline industry in North Dakota. A brief bill summary is below.

HB 1358: Bill impacting the operating of pipeline systems in North Dakota

SB 2271: Bill creates a new pipeline restoration and reclamation oversight program under the Dept. of Agriculture

## **Natural Gas Flaring**

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While not a regulatory agency, the Pipeline Authority does play a very active role in helping the state reduce the amount of flared natural gas. The Pipeline Authority continually monitors and reports flaring statistics and provides analysis on current and future developments to industry participants, regulators, policy makers, and the public. More information on a comprehensive report published by the Pipeline Authority can be found in the “Industry and Public Communications Activities” portion of this Annual Report.

Two significant actions were taken by the ND Industrial Commission during the 2013-2014 timeframe that have had a positive impact on reducing natural gas flaring. The first was the requirement for operating companies to submit a natural gas capture plan to the Oil & Gas Division to outline how produced natural gas would be sold or utilized on location. The second action was an Industrial Commission order on July 1, 2014 that provides flaring reduction targets out to the year 2020 and provided a means of enforcement at the Oil & Gas Division through the use of production and permitting restrictions.

The Industrial Commission natural gas capture targets for Bakken and Three Forks production are as follows:

- 74% Capture – Q4 2014
- 77% Capture – Q1 2015
- 85% Capture – Q1 2016
- 90-95% Capture – Q4 2020

## **Industry and Public Communications Activities**

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### ***Pipeline Publication***

During the 2014-2015 fiscal year, one *Pipeline Publication* newsletter was published to complete volume 6. Volume 7 of the publication is planned to begin in the fall of 2015. Volume 6 Issue 4 can be found in Appendix A. In lieu of additional newsletters during the fiscal year, the Pipeline Authority used monthly reports, website content, press conferences, and presentations to keep interested parties updated on midstream activity in the region (additional details below).

### **Pipeline Authority Websites**

In an effort to provide industry and public users with the most timely and complete set of information, the Pipeline Authority continues to update the agency websites as new information becomes available. The websites allow the Pipeline Authority to provide users with current Williston Basin oil production data, maps, news, publications, basic pipeline information, pipeline safety information, and links to pipeline mapping systems.

### **Monthly Updates**

During the 2014-2015 fiscal year, the Pipeline Authority produced monthly transportation and production reports to allow interested parties a quick view of how much crude oil and natural gas was produced each month and how each commodity was shipped and/or processed. Information contained in the reports is presented during monthly media events in conjunction with the ND Oil & Gas Division. Monthly reports are placed on the Pipeline Authority website and an email distribution list has been created to circulate the update to interested parties.

### **North Dakota Drilling Economics**

In December 2014, the Pipeline Authority published a series of slides and a video recording exploring the economics of drilling in North Dakota's Bakken/Three Forks Formations. The research was a detailed look at where drilling in North Dakota has been most successful in the past and then predicts where drilling may be concentrated during periods of low oil prices.

Figure 1 below was generated during the drilling economics research to represent the expected after tax rate of return at three different drilling and completion costs. It was discovered that wells used in this research did not receive a 20% rate of return until they were producing an average of 800 barrels of oil per day during the well's peak production month. Maps were also generated to show where the locations of the wells in Figure 1 are located.

# Summary of \$45 Wellhead Oil

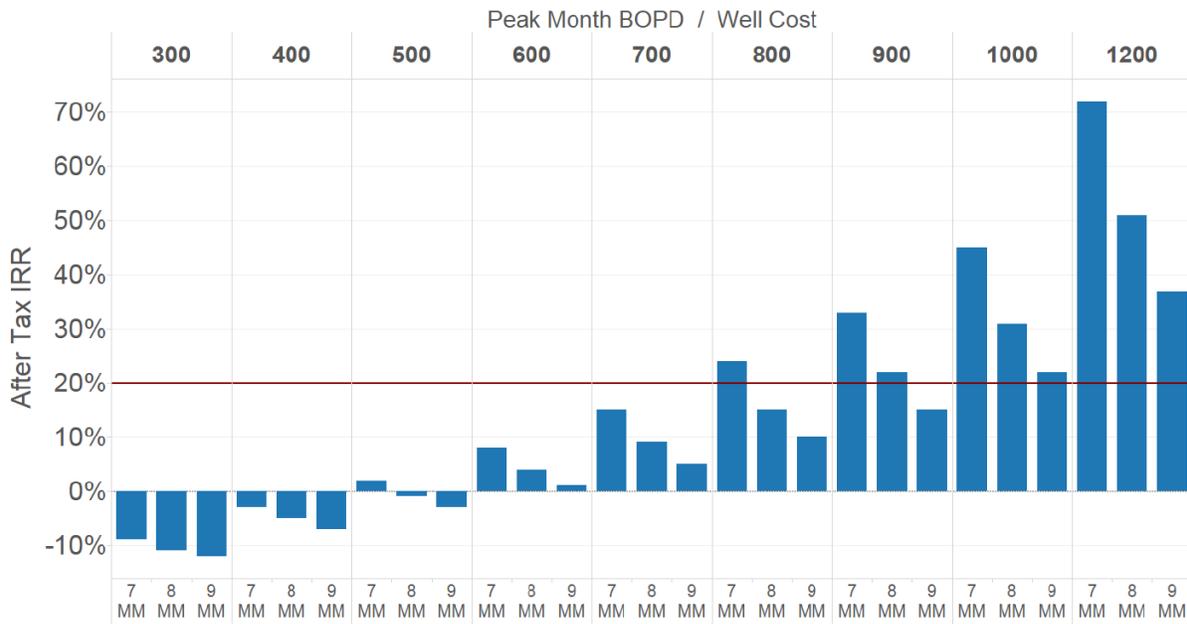


Figure 1. North Dakota Drilling Economics Summary

## Pipeline Presentations

Over the past year, the Pipeline Authority has had the opportunity to make presentations at a variety of industry and public events. Some of those events included:

- |   |                                   |
|---|-----------------------------------|
| Utility Shareholders of North Dakota                      | Lions Club                        |
| Legislative Interim Committees                            | NDPC Teachers Education Seminar   |
| NDPC CookFest Events                                      | Leadership Bismarck-Mandan        |
| Basin Electric  | Motor Carrier's Association       |
| North Dakota Association of Counties                      | Plains Energy Technical Resources |
| Independent Community Banks of North Dakota               |                                   |
| National Active and Retired Federal Employees Association |                                   |

*Slides from major presentations can be found on [www.northdakotapipelines.com](http://www.northdakotapipelines.com)*

## Williston Basin Pipeline Infrastructure

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*For reference, a series of North Dakota pipeline maps can be found in Appendix B*

### **Crude Oil Pipelines, Refining, and Rail Transportation**

**Enbridge Pipelines North Dakota:** Having completed several expansion projects over the past number of years, Enbridge now has the capacity to move 355,000 BOPD on its pipeline system to Clearbrook, MN. Enbridge completed their work to expand north bound capacity of 145,000 BOPD in early 2013 for the larger scale “Bakken Expansion Project”. Oil using the northbound route navigates the Enbridge Saskatchewan system to an interconnect with the Enbridge Mainline at Cromer, MB. Once on the Mainline system, the Williston Basin oil quickly reenters the United States and meets east bound Enbridge oil at Clearbrook, MN.

Enbridge is currently working on further expansion of their Williston Basin system with the “Sandpiper” project. Expected to be complete in 2017, the Sandpiper pipeline will have the capacity to move 225,000 BOPD to markets around the US.

**Bridger, Belle Fourche, and Butte Pipelines:** Bridger and Belle Fourche Pipelines operate as intra-basin pipeline systems moving oil to several pipeline interconnects or rail facilities in the Williston Basin. One such pipeline interconnect is with the Butte Pipeline near Baker, MT. The Butte Pipeline currently has the capacity to move 260,000 BOPD to Guernsey, WY. In Guernsey, WY, the oil is transported to Wood River, IL on the Spectra Platte Pipeline or loaded into rail cars for further transport.

Pending regulatory approval, the Bridger, Belle Fourche, and Butte Pipelines will also deliver up to 100,000 BOPD to the Keystone XL pipeline near Baker, MT. (See TransCanada BakkenLink below)

**Quintana BakkenLink:** After announcing plans in 2010 to offer a pipeline system connecting the Williston Basin to the Keystone XL Pipeline in Eastern Montana, BakkenLink has altered their current project scope. Now in service, the BakkenLink system collects crude oil from various locations along its route south of Lake Sakakawea and delivers the oil to a new rail facility located near Fryburg, ND. BakkenLink will continue to monitor shipper interest to expand the pipeline to an interconnect with the Keystone XL Pipeline near Baker, MT.

**Energy Transfer Partners:** In early 2014, Energy Transfer Partners (ETP) held an open season to solicit interest in a new 30” pipeline from North Dakota to Patoka, IL. In June 2014, ETP announced that they did have sufficient shipper support to move forward with the project. The “Dakota Access” pipeline will collect oil north and south of Lake Sakakawea and have the ability to initially transport 450,000 BOPD. If additional interest exists, the pipeline could be expanded to carry up to 570,000 BOPD. The project is proposed to be complete in late 2016, pending regulatory approval.

**Plains All American Pipeline:** In November 2010, Plains All American Pipeline (Plains) announced plans to construct a new 103 mile, 12 inch, pipeline from Trenton, ND to an interconnect with the existing Wascana Pipeline at the United States-Canada border in northeast Montana. The “Bakken North” pipeline went into service in May 2014, with an initial capacity of 40,000 BOPD, expandable to 75,000 BOPD.

**TransCanada BakkenLink:** On September 13, 2010, TransCanada launched a successful open season for Bakken producers interested in accessing TransCanada’s proposed Keystone XL pipeline project in eastern Montana. The proposed 100,000 BOPD interconnect would be located near Baker, MT and would require new pumps and tanks to accommodate the Bakken oil. Third party shippers, such as True Companies or Quintana’s BakkenLink, would be necessary to move the crude to the Baker facility. After regulatory approval, an updated project timeline will be provided.

**TransCanada Upland Pipeline:** In February 2015, TransCanada announced plans to construct a 20” pipeline connecting North Dakota to the proposed Energy East project. The pipeline is expected to be in service in 2020 with an initial capacity of 220,000 BOPD, expandable to 300,000 BOPD. The TransCanada Energy East project will use a combination of repurposed natural gas pipeline and new construction to move 1,100,000 BOPD to eastern Canada. North Dakota crude oil not processed in eastern Canada could be moved by barge to refineries on the east coast of the US.

**Tesoro Mandan Refinery:** Expanded by 10,000 BOPD in 2012, Tesoro operates a 68,000 BOPD refinery in Mandan, ND. The refinery receives its light sweet feedstock through a network of pipelines in the Williston Basin operated by Tesoro High Plains Co. The Tesoro High Plains Pipeline gathering network continues to evolve and expand, with the most recent announcement being the “Connolly Gathering System” which will collect oil from various points in Dunn County for delivery at the existing Connolly pipeline station in central Dunn County. The project began in mid-2014, with a completion target of late 2015.

Products generated at the refinery are distributed directly from a truck rack at the facility or through the NuStar North Pipeline to Eastern North Dakota and Minnesota.

**Dakota Prairie Refinery:** In May 2015, a joint venture of MDU Resources Group and Calumet Specialty Products Partners, the Dakota Prairie Refinery, began processing 20,000 BOPD at its facility just west of Dickinson, ND. The “diesel topping” refinery produces around 7,000 BPD of diesel fuel for consumption, while the remaining product is transported for further processing or use.

*A map of North Dakota crude oil gathering systems can be found in Appendix C*

**Rail Loading Facilities:** The transportation of crude oil by rail car has played a key role in moving growing volumes of crude oil from the Williston Basin to markets around the United States and Canada. Figure 2 show the estimated Williston Basin market share percentages for rail, pipeline, and local refining. Figure 3 shows the estimated volume of oil moved by rail out of North Dakota. Maps,

capacities, and additional information on the various facilities can be found on the Pipeline Authority websites.

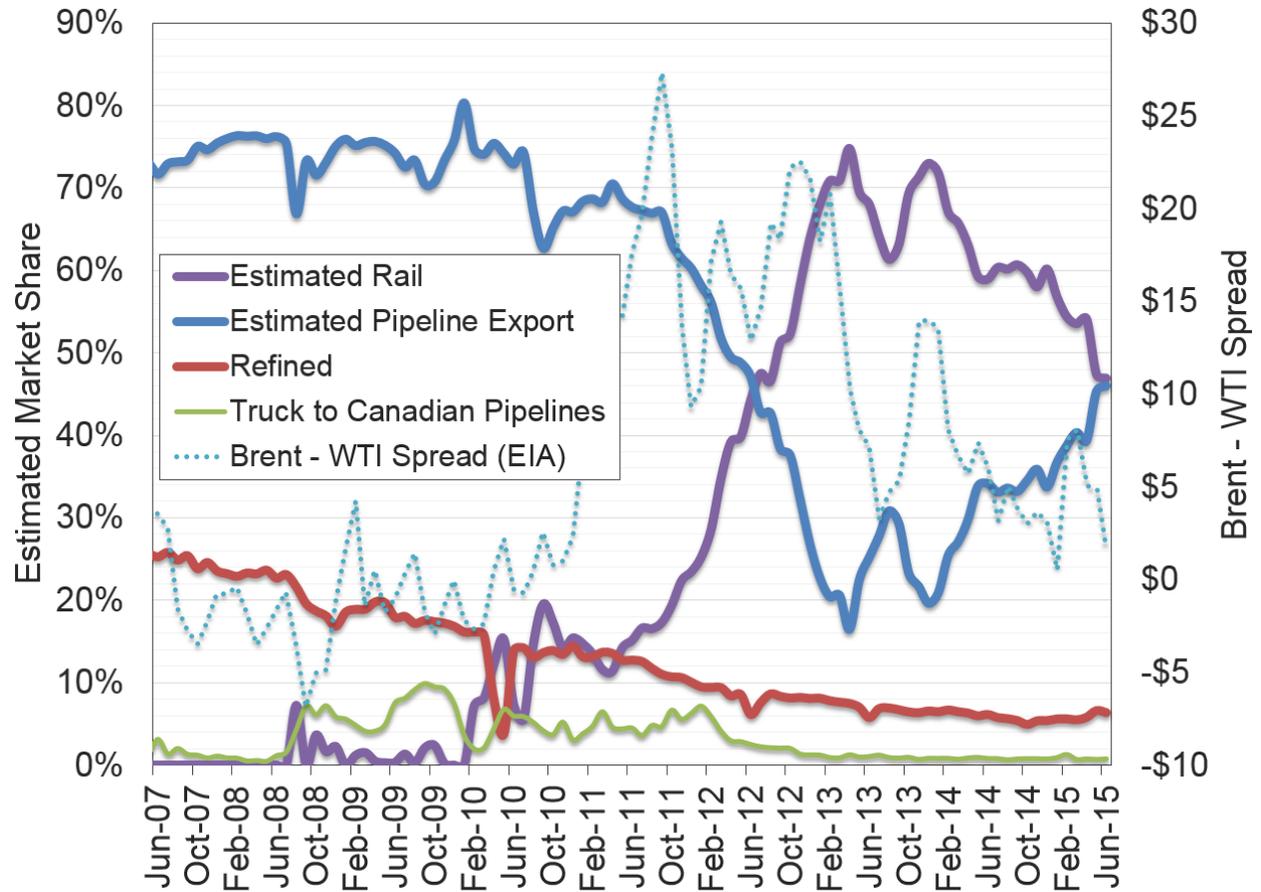


Figure 2. Estimated Oil Transportation by Mode

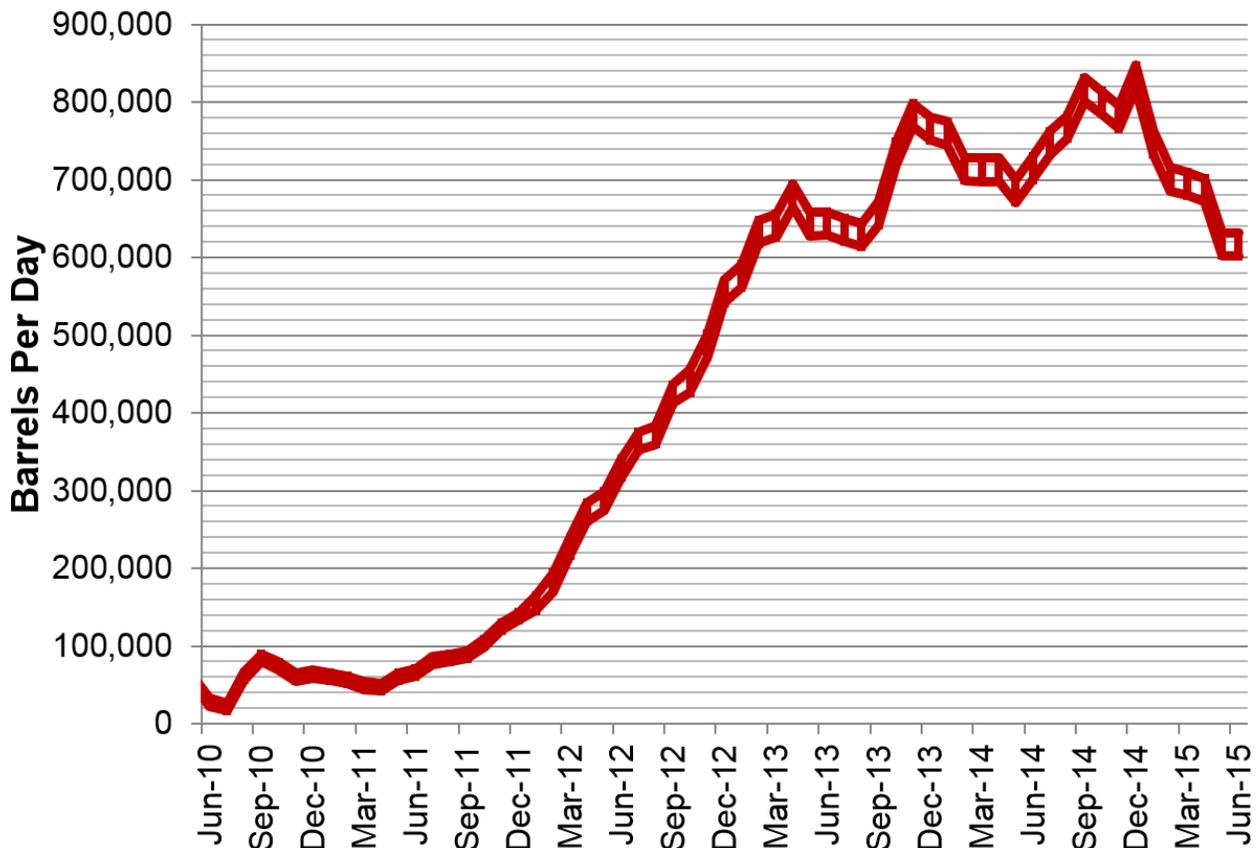


Figure 3. Estimated outbound crude oil rail shipments.

*A map of North Dakota oil rail loading facilities can be found in Appendix D*

### **Natural Gas Pipelines**

**Alliance Pipeline:** The Alliance Pipeline is a high pressure, large diameter natural gas pipeline that originates in British Columbia, Canada and terminates at the Aux Sable gas processing plant near Chicago, IL. The Alliance Pipeline transports “dense gas” or gas that still contains high BTU natural gas liquids, such as propane and butane. In February 2010, the Alliance Pipeline began transporting rich natural gas from North Dakota via a new interconnect with the Prairie Rose Pipeline near Bantry, ND (See Aux Sable below). The 36 inch diameter United States portion of the pipeline has a certified capacity of 1.513 billion cubic feet per day (BCFD). The Alliance Pipeline has one North Dakota delivery point in Hankinson.

In response to growing natural gas production, Alliance Pipeline announced plans on June 22, 2011, to construct a new, 80 mile, natural gas pipeline from the Hess Gas Plant in Tioga, ND to an interconnection point near Sherwood, ND. Commissioned in late 2013, the “Tioga Lateral Pipeline” has the ability to deliver liquids rich, high BTU, natural gas to Chicago, IL for further processing and transportation. The Tioga Lateral has the capacity to transport up to 126 MMCFD.

**Northern Border:** The Northern Border Pipeline, owned by TC Pipelines and ONEOK Partners, is a 1,249 mile pipeline originating at the Port of Morgan in Montana and terminating near North Hayden, Indiana. The pipeline has a system receipt capacity of 2.37 BCFD, a large portion of which is supplied with Canadian natural gas through a receipt point with the Foothills Pipeline at the Port of Morgan. The 42 inch diameter Northern Border Pipeline receives gas deliveries at a total of 12 receipt points in the Williston Basin with ten of those points for North Dakota gas supply. Two additional North Dakota interconnects are expected to go into service in 2015 for a combined capacity of 455 MMCFD.

**WBI Energy Transmission:** Formerly known as Williston Basin Interstate Pipeline Co., WBI Energy Transmission operates more than 3,700 miles of natural gas transmission pipelines throughout North Dakota, Montana, Wyoming, and South Dakota. This network of pipelines plays a vital role in North Dakota's natural gas industry. It contains twelve interconnecting points with other regional pipelines and can also deliver natural gas to local distribution companies or natural gas storage fields. Well positioned throughout western North Dakota, the Williston Basin Interstate Pipeline has been able to expand its operating capabilities to meet growing production volumes.

**Aux Sable:** In June 2011, Aux Sable announced the acquisition of the Prairie Rose Pipeline and condensate recovery facility near Stanley, ND. Originally constructed by Pecan Pipeline, the 75 mile, 12 inch system went into service February 2010 and has the capability to transport over 100 MMCFD of unprocessed natural gas from Mountrail County to an interconnect with the Alliance Pipeline near Bantry, ND.

**Bison Pipeline:** TransCanada placed the 302 mile, 30 inch Bison Pipeline into service in early 2011. The pipeline was built to connect natural gas production in the Powder River Basin of Wyoming to the Northern Border Pipeline in Morton County North Dakota. The pipeline has an initial capacity of 407 MMCFD and could be expanded to 1 BCFD.

### **Natural Gas Liquids Pipelines**

**ONEOK Bakken NGL Pipeline:** On July 26, 2010, ONEOK Partners announced plans to construct a new 12 inch natural gas liquids pipeline capable of moving 60,000 BPD from existing and planned facilities in the Williston Basin to an interconnect with the Overland Pass Pipeline near Cheyenne, WY. The "Bakken NGL Pipeline" was built to address the high volumes of natural gas liquids that are extracted from the rich Bakken gas during processing. The pipeline operates as a Y-grade system, with product fractionation taking place in Bushton, KS. ONEOK announced completion of the pipeline in April 2013 and an expanded capacity of 135,000 BPD in September 2014. Further expansion to 160,000 BPD is scheduled to be complete in the second quarter of 2016.

**Vantage Pipeline:** On July 15, 2010, Mistral Energy announced a new 430 mile liquid ethane pipeline from Tioga, ND to Empress, AB. With an initial capacity of 40,000 BPD, the new "Vantage Pipeline" was built to address the high concentration of ethane found in North Dakota's natural gas. Placed into

service Q2 2014 in conjunction with the Hess Tioga Gas Plant Expansion, the pipeline was constructed of 10 inch pipe. Other than this particular project, the majority of North Dakota's ethane is being left in the natural gas stream after it leaves the gas processing plant.

In September 2014, Pembina Pipeline Corporation purchased the Vantage Pipeline from Mistral Midstream.

On February 10, 2015, Pembina Pipeline announced that the Vantage ethane pipeline would expand to connect to ONEOK's Stateline plants with 50 miles of 8" pipeline. The \$85 million system expansion also included taking the existing mainline capacity from 40,000 bpd to 65,000 bpd.

### **Carbon Dioxide Pipelines**

North Dakota continues to have only one carbon dioxide pipeline in service. The Dakota Gasification Company's, 12-14 inch, 205 mile pipeline went into service in 2000 and transports roughly 150 MMCFD of carbon dioxide to oilfields near Weyburn, SK.

The Pipeline Authority continues to work with interested parties on the development of new carbon dioxide pipelines for capture and sequestration, as well as enhanced oil recovery operations. The Pipeline Authority is an active member of the Plains CO<sub>2</sub> Reduction Partnership through the Energy and Environmental Research Center in Grand Forks, ND.

### **Natural Gas Processing**

*For reference, a North Dakota Gas Processing and Transportation map can be found in Appendix E*

#### **New or Expanding Natural Gas Plants**

Due to the vast footprint of the Bakken resource, natural gas gathering and processing operators in North Dakota have faced difficult challenges in the past to keep pace with faster, more efficient drilling and completion techniques. Despite the daunting task, industry is rising up to reap the great economic reward contained in the rich Bakken gas.

North Dakota currently has twenty-four natural gas processing/conditioning plants operating, with the capability to process roughly 1.6 BCFD. Five new or expanded plants are expected in the next several years and will add over 500 MMCFD of processing capacity (Figure 4). A detailed breakdown of the existing and proposed facilities can be found on the Pipeline Authority website.

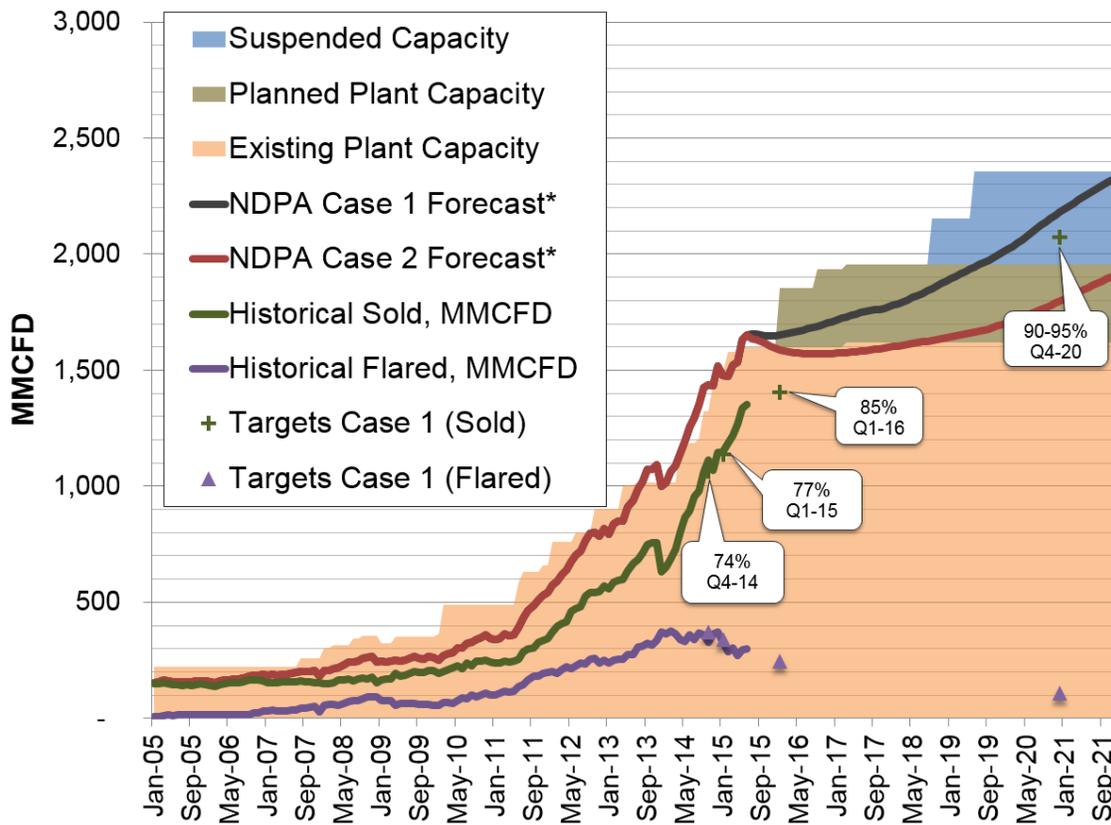


Figure 4. North Dakota natural gas processing plant intake capacity, gas production, gas forecast, and NDIC capture targets.

## Planned Activities

Over the past year, the Pipeline Authority has continued to experience great success by working with industry to quantify future crude oil and natural gas production in order to provide the assurance needed to move forward with various expansion projects. The forecasted petroleum production levels have been modified to reflect the current low price environment and will require continuous updating and review over the next year as technology advances and market prices fluctuate. The Pipeline Authority will continue to utilize new and existing development information to gain a deeper understanding of the crude oil, natural gas, and carbon dioxide pipeline needs in Williston Basin.

Industry and public information distribution will continue with the use of newsletters, presentations, monthly updates, and agency websites. The Pipeline Authority will continue to conduct information presentations to public audiences, legislative groups, and industry representatives at various events throughout the coming year.

APPENDIX A

North Dakota Pipeline Authority's *Pipeline Publication* Newsletter



# the PIPELINE publication

Volume 6 ❖ December 2014

## INDUSTRIAL COMMISSION OF NORTH DAKOTA PIPELINE AUTHORITY

**Governor**  
Jack Dalrymple

**Attorney General**  
Wayne Stenehjem

**Agriculture Commissioner**  
Doug Goehring

**Director**  
Justin J. Kringstad

With 2014 almost behind us, the Pipeline Authority thought it was appropriate to review the activity that North Dakota has experienced during the previous twelve months.

**Energy Transfer Partners:** In June 2014, Energy Transfer Partners announced plans to proceed with construction of the “Dakota Access” pipeline, a 30” crude oil system from western North Dakota to Patoka, IL. The project is designed to have an initial capacity of 450,000 BOPD and is scheduled to be placed into service in late 2016.

**Enterprise Products Partners:** In June 2014, Enterprise proposed the “Bakken to Cushing” pipeline from western North Dakota to Cushing, OK. The project was designed to carry not only Williston Basin crude oil, but also crude oil from developing regions along the route. During the second half of 2014, Enterprise held an open season to secure the required shipper commitments to move forward. However, in December 2014, Enterprise announced that it was no longer proceeding forward with the project.

**North Dakota Pipeline Company Sandpiper:** During the fall of 2014, Enbridge announced the 225,000 BOPD Sandpiper project would be delayed one year due to longer than anticipated regulatory proceedings in the state of Minnesota. The project is now anticipated to be placed into service in early 2017, rather than early 2016 as noted in previous Pipeline Publications.

**Guernsey, WY Hub:** Several projects terminating or originating at the Guernesey, WY crude oil hub were constructed during 2014. The Butte Pipeline expansion, which carries Williston Basin crude oil to Guernsey, WY was placed into service during the fall of 2014. A second pipeline, Hiland’s “Double H” pipeline is scheduled to begin operation near the end of 2014, with full commercial service beginning in January 2015. Combined, the two Williston Basin pipelines can carry 150,000+ barrels each day to the recently converted Tallgrass “Pony Express” pipeline, which operates from Guernsey, WY to Cushing, OK.

*Continued on Back*

## NORTH DAKOTA — Production Numbers

⌘ [www.pipeline.nd.gov](http://www.pipeline.nd.gov)

Average Daily Oil Production, BOPD		
Aug. 2014	Sep. 2014	Oct. 2014
1,132,297	1,186,228	1,182,174

Average Daily Gas Production, MMCFD		
Aug. 2014	Sep. 2014	Oct. 2014
1,343.5	1,413.4	1,429.6

Average Rig Count		
Aug. 2014	Sep. 2014	Oct. 2014
193	195	191

*As of Dec 23, 2014, there are 172 active rigs in North Dakota.*

Continued  
North Dakota Flaring Percent



**Natural Gas Flaring Reduction Efforts:** 2014 saw significant investments in reducing the amount of natural gas flared at well locations in western North Dakota. A handful of natural gas processing facilities were expanded or placed into service throughout the year. The three largest processing facilities are the 250 million cubic feet per day (MMCFD) Hess Tioga plant and the ONEOK Garden Creek II and III facilities which together added 240 MMCFD of processing to the region. With the addition of these processing facilities and associated gas gathering pipeline construction, North Dakota's overall gas capture percentage increased to 78% in October 2014.

Additional natural gas transmission pipeline infrastructure included the commissioning of the Alliance Tioga lateral and the Vantage ethane pipeline in 2014. The Tioga lateral was constructed to deliver natural gas from the Hess Tioga plant to an interconnect with Alliance Pipeline. The Vantage system is North Dakota's only dedicated ethane pipeline and runs from the Hess Tioga plant to Empress, Alberta.

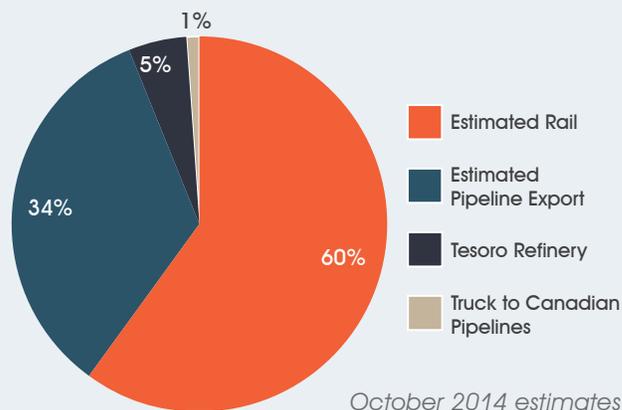
### North Dakota Pipeline Authority

State Capitol, 14<sup>th</sup> Floor  
600 E. Boulevard Ave. Dept. 405  
Bismarck, ND 58505-0840

### PIPELINE FACTOID

In December 2014, the Dakota Prairie Refinery, located west of Dickinson, received its first delivery of crude oil for processing. The 20,000 BOPD "diesel topping" facility will separate the diesel component of the crude for sales into the regional market. The refinery is owned by MDU Resources and Calumet Specialty Products.

### Estimated Williston Basin Oil Transportation



Know what's below.  
Call before you dig.

### North Dakota Pipeline Authority

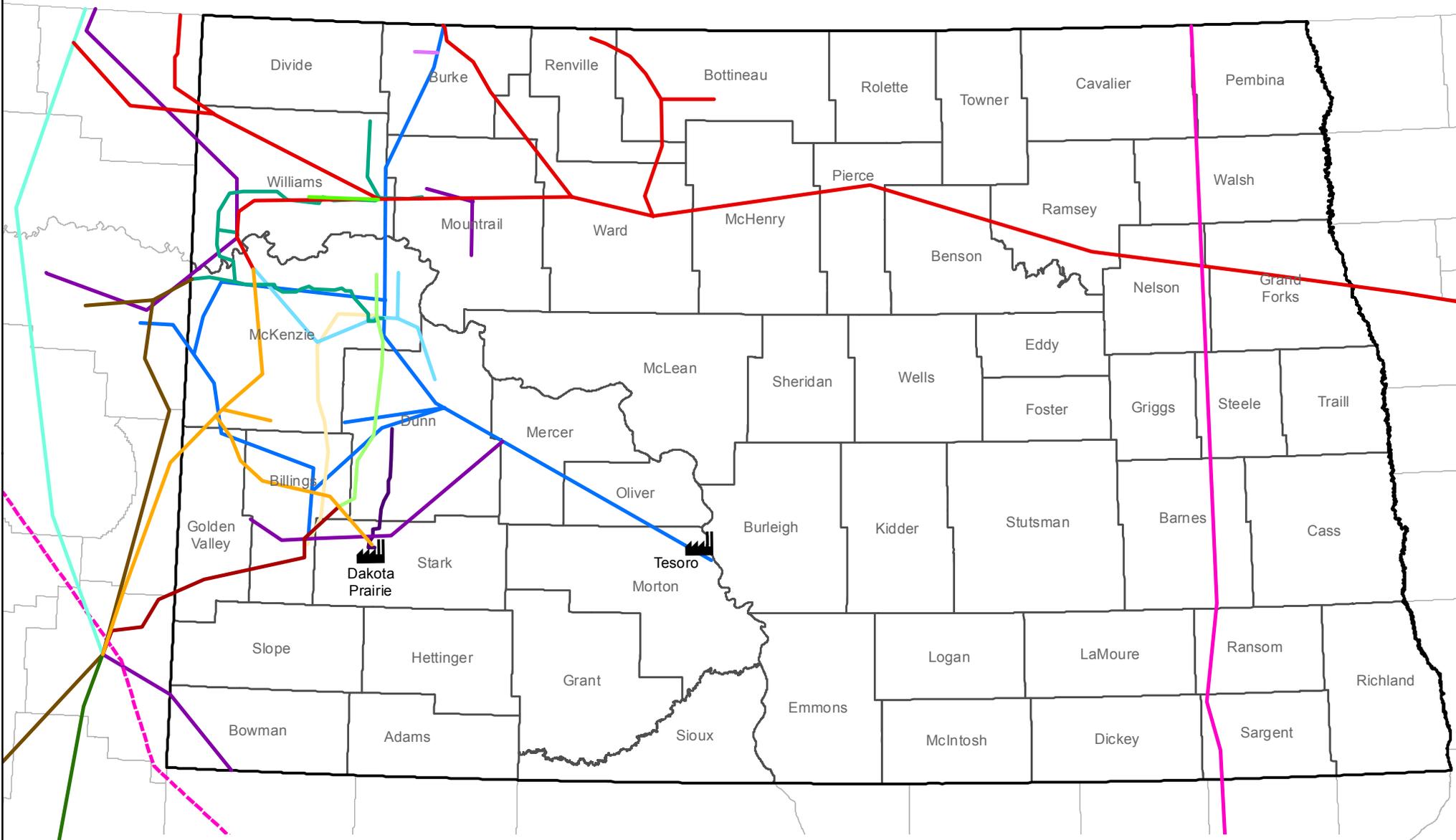
State Capitol 14<sup>th</sup> Floor | 600 E. Boulevard Ave. Dept. 405 | Bismarck, ND 58505-0840

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## APPENDIX B

### North Dakota Pipeline Maps

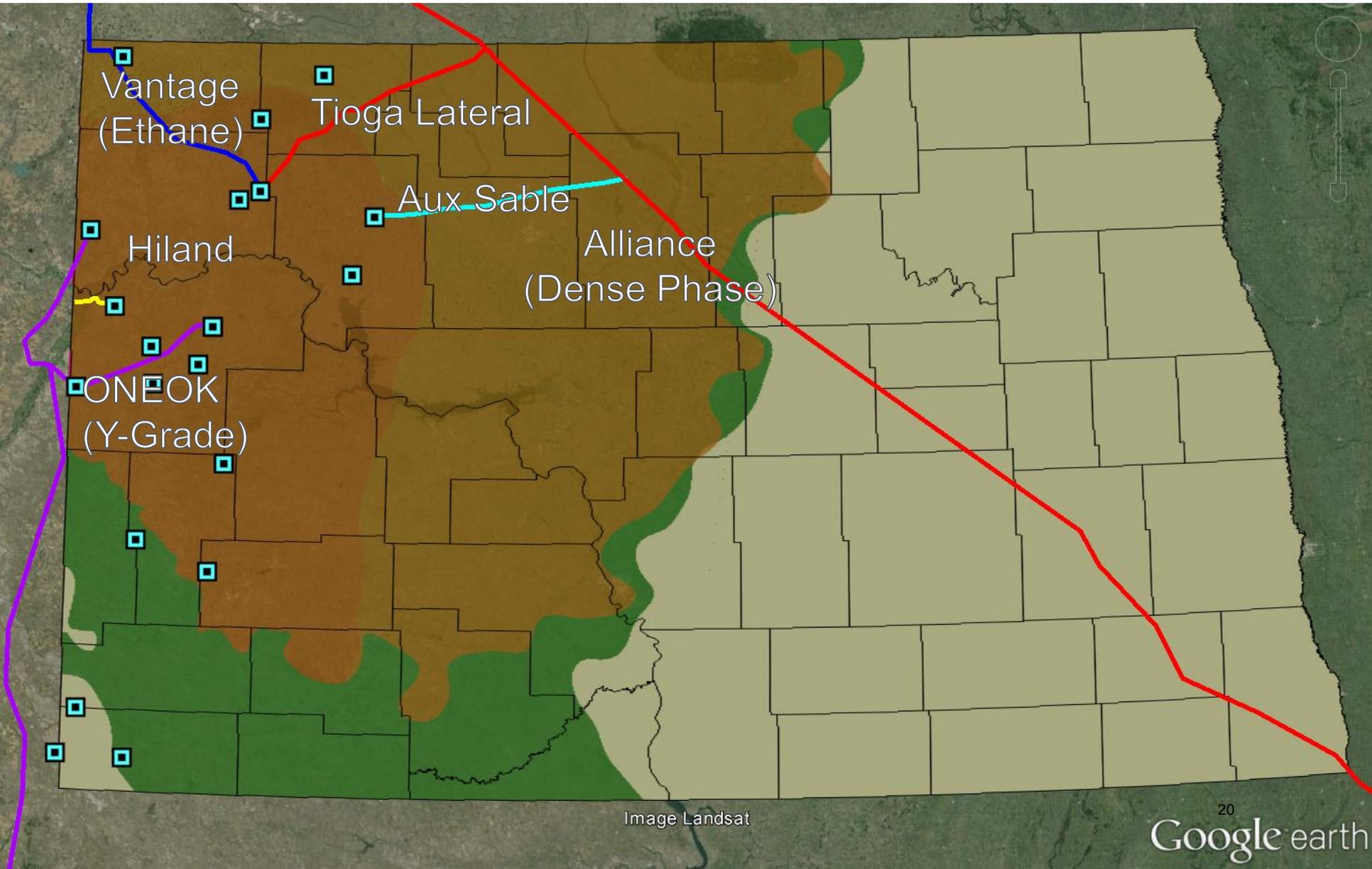
# North Dakota Crude Oil Pipelines



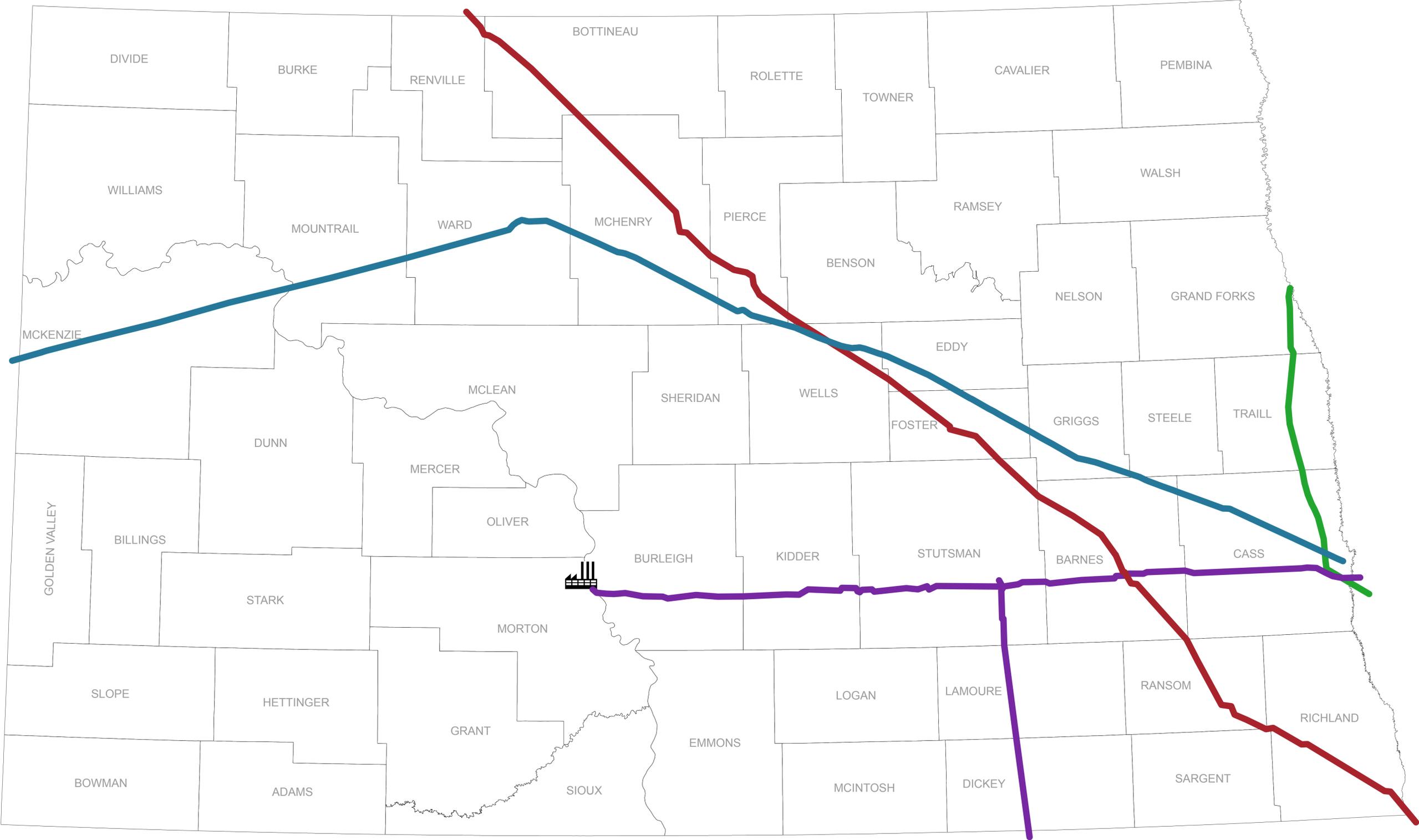
- |  |   |  |  |   |  |
|--|---|--|--|---|--|
|  Refinery           |  Basin Transload |  Butte      |  Enbridge   |  Keystone Pipeline |  Plains |
|  Bakken Oil Express |  Belle Fourche   |  Crestwood |  Four Bears |  Keystone XL       |  Targa  |
|  BakkenLink         |  Bridger         |  Double H  |  Hiland     |  Little Missouri   |  Tesoro |



# North Dakota NGL Pipelines

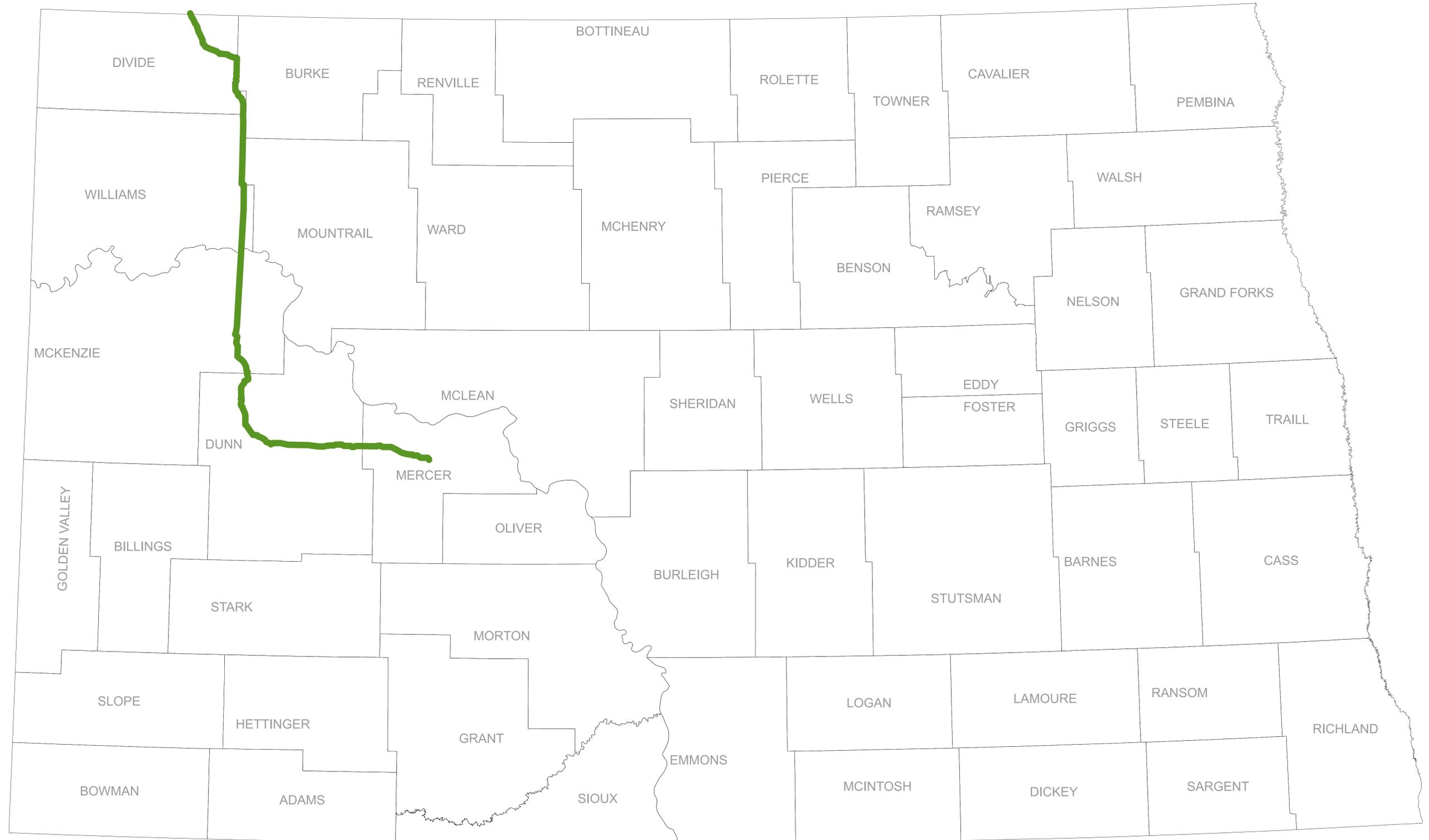


# North Dakota Products Pipelines



— **Cenex Pipeline LLC - Refined Products**    
 — **Magellan Midstream Partners LP - Refined Products**    
 **Tesoro Mandan Refinery**  
— **Kinder Morgan Cochin - Condensate**    
 — **NuStar Energy - Refined Products**

# North Dakota CO<sub>2</sub> Pipeline

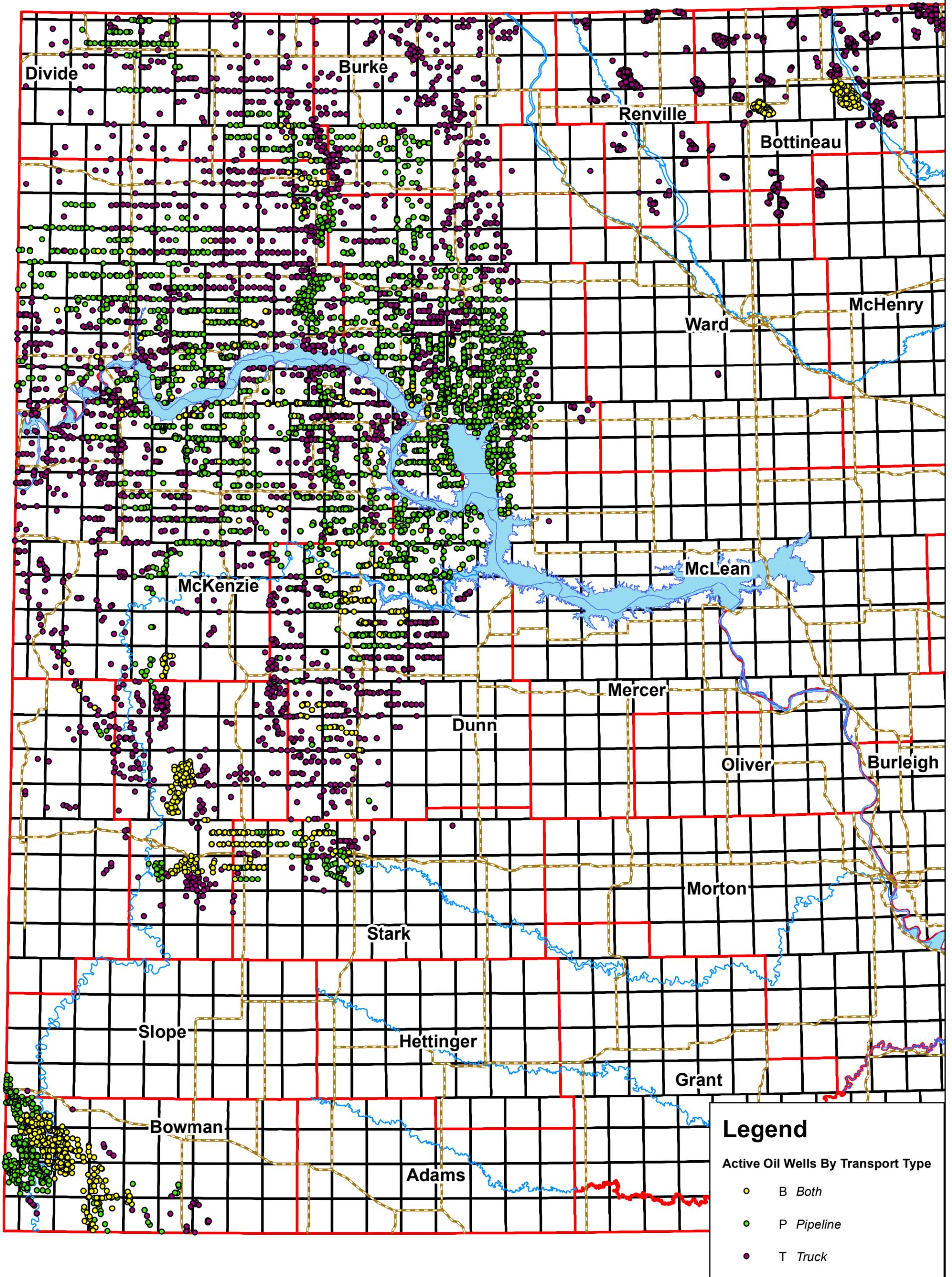


— Dakota Gas

## APPENDIX C

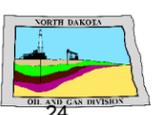
### North Dakota Crude Oil Gathering Map

# Active Oil Wells By Transport Type



Map Data Date : 4/1/2015  
 Map Update Date : 9/11/2015

Disclaimer: Neither the State of North Dakota, nor any agency, officer, or employee of the State of North Dakota warrants the accuracy or reliability of this product and shall not be held responsible for any losses caused by reliance on this product. Portions of the information may be incorrect or out of date. Any person or entity that relies on any information obtained from this product does so at his or her own risk.

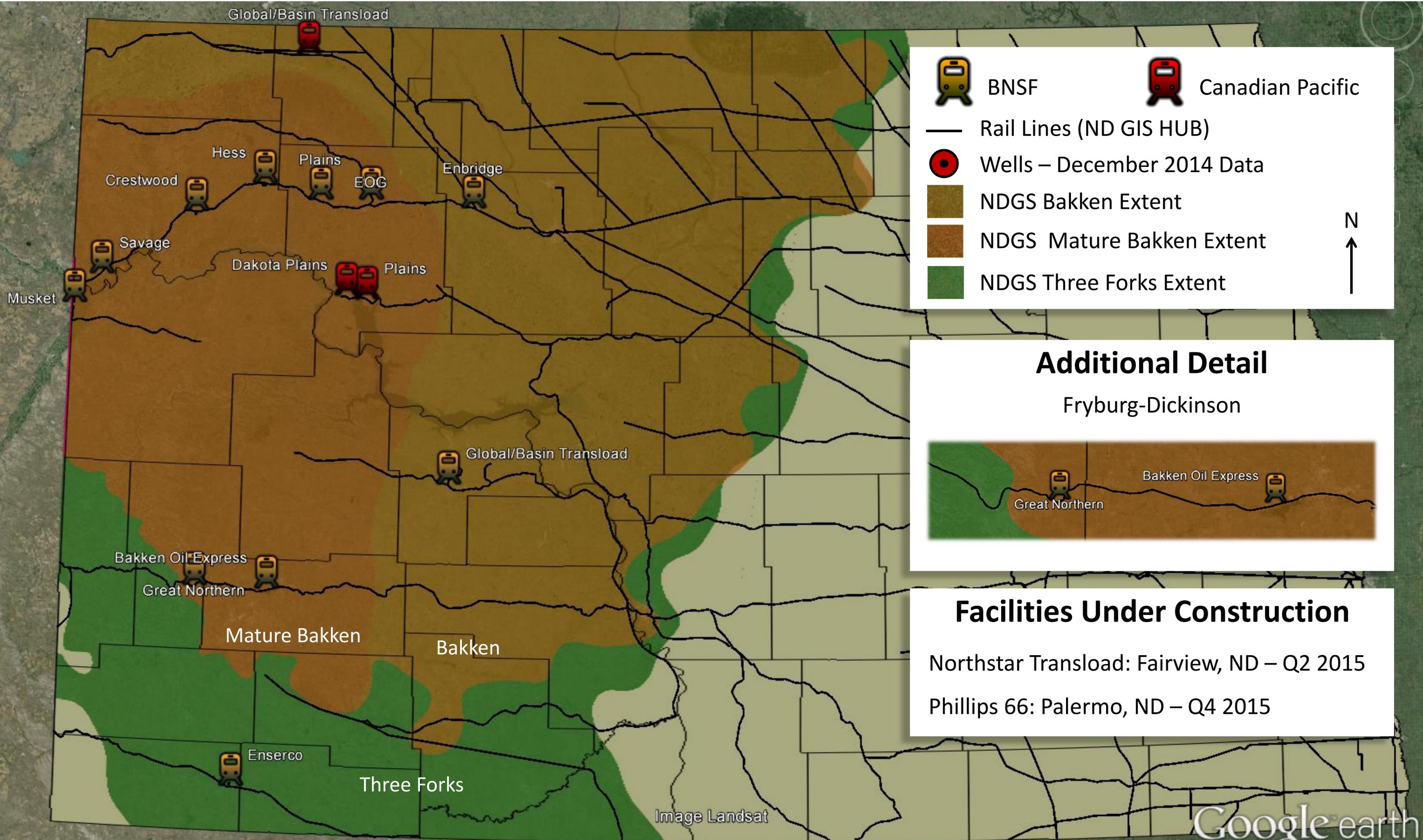


APPENDIX D

North Dakota Crude Oil Rail Loading Map

# North Dakota Crude Oil Rail Loading Facilities In Service

North Dakota Pipeline Authority – February 2015



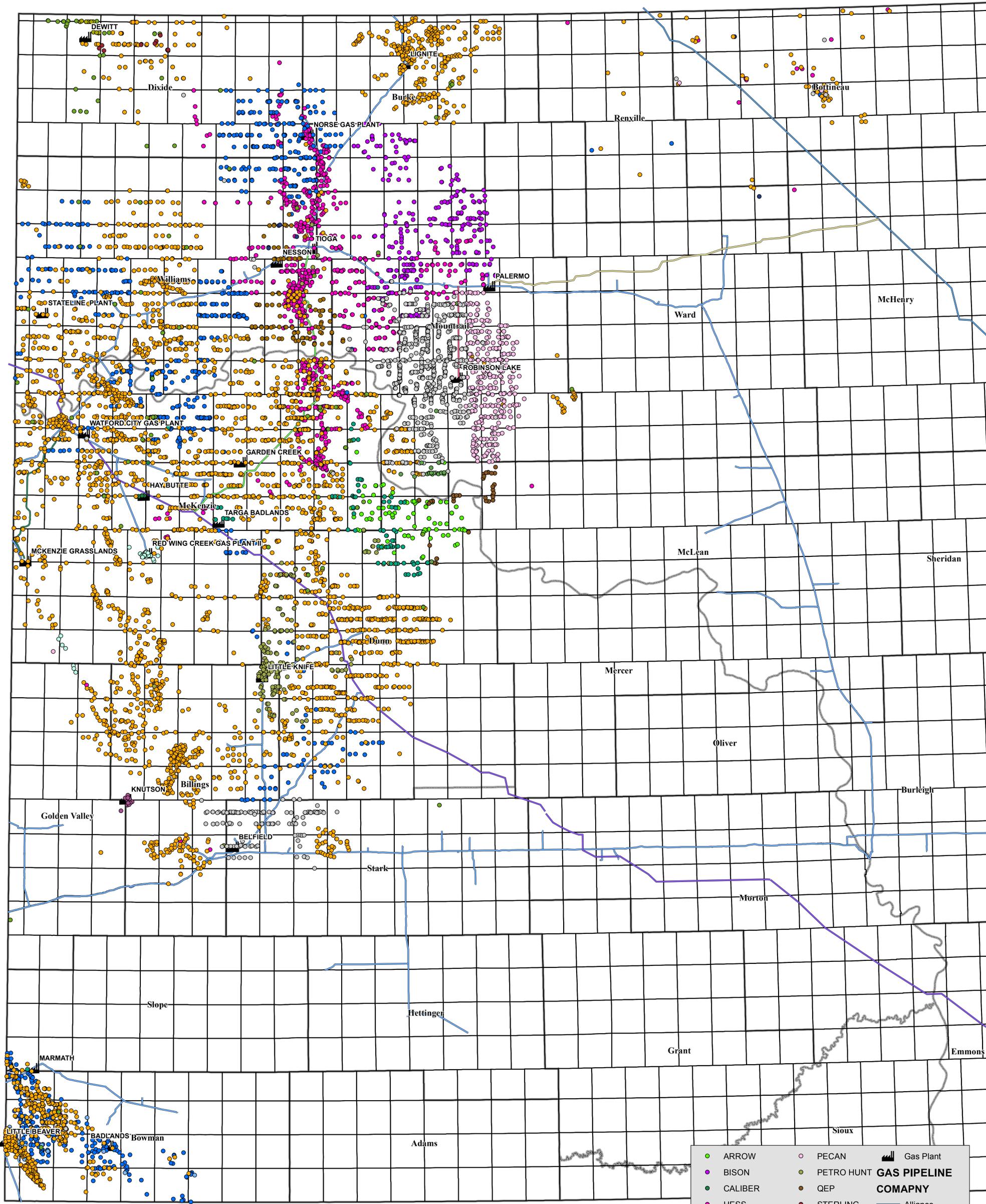
APPENDIX E

North Dakota Gas Processing and Transportation Map

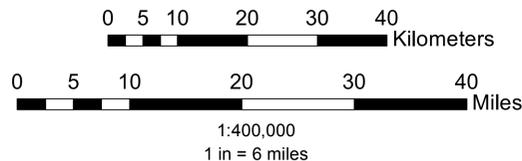
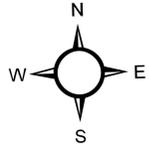
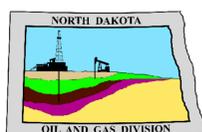
# DRAFT - North Dakota Gas - DRAFT

## Processing and Transportation

### February 2015



GAS PIPELINE COMPANYY		Gas Plant
ARROW	PECAN	Gas Plant
BISON	PETRO HUNT	
CALIBER	QEP	
HESS	STERLING	
HILAND	TARGA	
KNUTSON	TRUE	
LITTLEBEAVER	USG	
NESSON	WHITING	
ONEOK	WPX	
OTHER	XTO	
Oasis		
	Alliance	
	Aux Sable	
	Bear Paw	
	Hess	
	Northern Border	
	Whiting	
	WBIP	





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