



# GEOPHYSICAL EXPLORATION COMPLETION REPORT - FORM GE 6A

INDUSTRIAL COMMISSION OF NORTH DAKOTA  
OIL AND GAS DIVISION  
600 EAST BOULEVARD DEPT 405  
BISMARCK, ND 58505-0840  
SFN 51456 (03-2011)

Received

AUG 5 2019

Permit No. <b>97-0290</b>		<b>ND Oil &amp; Gas Division</b>
Shot Hole Operations <b>Yes</b>	*Non-Explosive Operations <b>Yes</b>	

## SECTION 1

Geophysical Contractor <b>Breckenridge Exploration Company, LLC</b>	
Project Name and Number <b>Source Test 2-D</b>	County(s) <b>Oliver</b>
Township(s) <b>142N, 141N</b>	Range(s) <b>84W</b>
Drilling and Plugging Contractors <b>Xtreme Drilling, LLC</b>	
Date Commenced <b>July 18, 2019</b>	Date Completed <b>July 21, 2019</b>

## SECTION 2

First S.P. # <b>#1 TST PIT - 1</b>	Last S.P. # <b>#2 TST PIT - 9</b>											
Loaded Holes (Undetonated Shot Points) <b>N/A</b>												
S.P.#s												
Charge Size												
Depth												
Reasons Holes Were Not Shot <b>N/A</b>												

## SECTION 3

Flowing Holes and/or Blowouts S.P.#s <b>N/A</b>
Procedure for Plugging Flowing Holes and/or Blowouts <b>N/A</b>
Include a 7.5 minute USGS topographic quadrangle map or a computer generated post-plot facsimile of the approximate scale displaying each individual shot hole, SP #, line #, and legal location.

\*Non-Explosive Operations - Complete Section 1 and Affidavit (Form GE 6B).



Received

AUG 5 2019

ND Oil & Gas  
 Division

PERMIT NAME (Required): Source Test 2-D

PERMIT NUMBER: 97-0290

**AFFIDAVIT OF COMPLETION (GEOPHYSICAL CONTRACTOR)**

STATE OF Texas )  
 )  
 COUNTY OF Eastland )

Before me, Kellie Spigener, a Notary Public in and for the said

County and State, this day personally appeared Whitney Deubler

who being first duly sworn, deposes and says that (s)he is employed by Breckenridge Exploration, Inc.

\_\_\_\_\_ , that (s)he has read North Dakota

Century Code Section 38-08.1, that the foregoing seismic project has been completed in accordance with North Dakota Administrative Code Rule 43-02-12 and that the statements on the reverse side of this document are true.

Whitney Deubler  
 Geophysical Contractor Representative

Subscribed in my presence and sworn before me this 31<sup>st</sup> day of July, 2019.



Notary Public Kellie Spigener

My Commission Expires 8/26/2020



**GEOPHYSICAL EXPLORATION HOLE PLUGGING REPORT - FORM GE 7A**  
 INDUSTRIAL COMMISSION OF NORTH DAKOTA  
 OIL AND GAS DIVISION  
 600 EAST BOULEVARD DEPT 405  
 BISMARCK, ND 58505-0840  
 SFN 51457 (03-2011)

Received

AUG 5 2019

ND Oil & Gas  
 Division

Geophysical Company <b>Breckenridge Geophysical</b>	Date Plugged <b>July 13, 2019</b>
Hole Plugging Contractor <b>Xtreme Drilling, LLC</b>	Permit No. <b>97-0290</b>
Prospect	Hole Plugger <b>Steve Fetterley / Scott Thomas</b>

Line No.	S.P. No.	Hole Depth	Drill Type *CABP	Wet/ Dry	Bent. Sx	Bent. Capsules	Capsule Size**	Surface Plug Depth	Remarks Hole Bridged, Thick Mud, Etc.
1	<b>#1 Tst Plt</b>	<b>1</b>	<b>90'</b>	<b>Auger</b>	<b>Wet</b>	<b>8 bags</b>		<b>3'</b>	
2		<b>2</b>	<b>120'</b>	<b>A</b>	<b>W</b>	<b>11</b>		<b>3'</b>	
3		<b>3</b>	<b>140'</b>	<b>A</b>	<b>W</b>	<b>15</b>		<b>3'</b>	
4		<b>4</b>	<b>90'</b>	<b>A</b>	<b>W</b>	<b>11</b>		<b>3'</b>	
5		<b>5</b>	<b>120'</b>	<b>A</b>	<b>W</b>	<b>14</b>		<b>3'</b>	
6		<b>6</b>	<b>140'</b>	<b>A</b>	<b>W</b>	<b>4</b>		<b>3'</b>	<b>BRIDGED</b>
7		<b>7</b>	<b>120'</b>	<b>A</b>	<b>W</b>	<b>16</b>		<b>3'</b>	
8		<b>8</b>	<b>140'</b>	<b>A</b>	<b>W</b>	<b>15</b>		<b>2'</b>	
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

\*Conventional-Auger-Buggy-Portable

\*\*Diameter X Length



**GEOPHYSICAL EXPLORATION HOLE PLUGGING REPORT - FORM GE 7A**

INDUSTRIAL COMMISSION OF NORTH DAKOTA  
 OIL AND GAS DIVISION  
 600 EAST BOULEVARD DEPT 405  
 BISMARCK, ND 58505-0840  
 SFN 51457 (03-2011)

Received

AUG 5 2019

ND Oil & Gas  
 Division

Geophysical Company <b>Breckenridge Geophysical</b>	Date Plugged <b>July 14, 2019</b>
Hole Plugging Contractor <b>Xtreme Drilling, LLC</b>	Permit No. <b>97-0290</b>
Prospect	Hole Pluggers <b>Steve Fetterley / Scott Thomas</b>

Line No.	S.P. No.	Hole Depth	Drill Type *CABP	Wet/ Dry	Bent. Sx	Bent. Capsules	Capsule Size**	Surface Plug Depth	Remarks Hole Bridged, Thick Mud, Etc.
1	#2 Tst Pit	1	90'	Auger	Wet	11 bags		3'	
2		2	120'	A	W	13		3'	
3		3	140'	A	W	10		3'	
4		4	90'	A	W	10		3'	
5		5	120'	A	W	12		3'	
6		6	140'	A	W	8		2.5'	BRIDGED
7		7	120'	A	W	5		3'	BRIDGED
8		8	140'	A	W	6		3'	BRIDGED
9		9	60'	A	W	7		3'	
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

\*Conventional-Auger-Buggy-Portable

\*\*Diameter X Length

Received

AUG 5 2019

ND Oil & Gas  
Division



**GEOPHYSICAL EXPLORATION AFFIDAVIT OF PLUGGING  
(HOLE PLUGGER) - FORM GE 7B**

INDUSTRIAL COMMISSION OF NORTH DAKOTA  
OIL AND GAS DIVISION  
600 EAST BOULEVARD DEPT 405  
BISMARCK, ND 58505-0840  
SFN 51457 (03-2011)

PERMIT NAME (Required): Breckenridge Geophysical Source Test 2-D

PERMIT NUMBER: 97-0290

**AFFIDAVIT OF PLUGGING (HOLE PLUGGER)**

STATE OF Colorado )

COUNTY OF Weld )

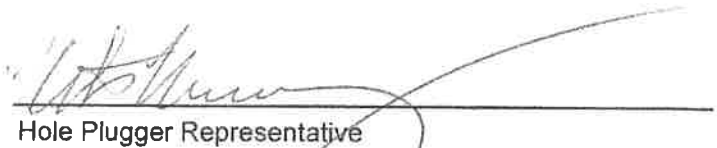
Before me, Karla Harlow a Notary Public in and for the said

County and State, this day personally appeared Michael G Murray

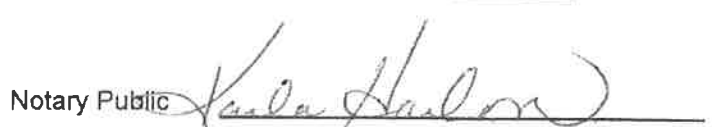
who being first duly sworn, deposes and says that (s)he is employed by

Xtreme Drilling, LLC, that (s)he has read North Dakota

Century Code Section 38-08.1 and that the foregoing seismic project has been plugged in  
accordance with North Dakota Administrative Code Rule 43-02-12 and that the statements on  
the attached documents are true.

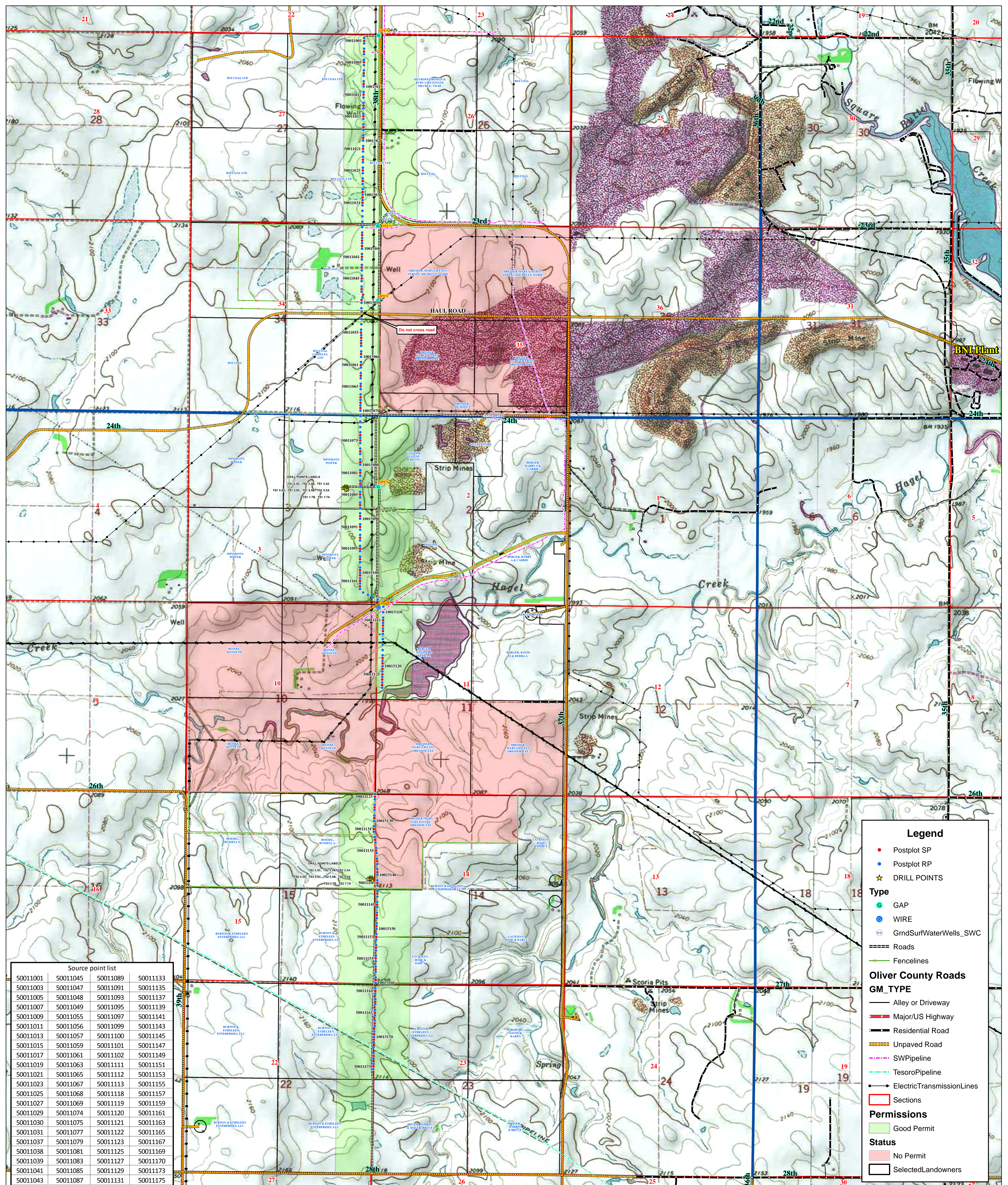
  
Hole Plugger Representative

Subscribed in my presence and sworn before me this 30th day of July, 2019

Notary Public 

My Commission Expires February 5, 2021





Source point list

50011001	50011045	50011089	50011133
50011003	50011047	50011091	50011135
50011005	50011048	50011093	50011137
50011007	50011049	50011095	50011139
50011009	50011055	50011097	50011141
50011011	50011056	50011099	50011143
50011013	50011057	50011100	50011145
50011015	50011059	50011101	50011147
50011017	50011061	50011102	50011149
50011019	50011063	50011111	50011151
50011021	50011065	50011112	50011153
50011023	50011067	50011113	50011155
50011025	50011068	50011118	50011157
50011027	50011069	50011119	50011159
50011029	50011074	50011120	50011161
50011030	50011075	50011121	50011163
50011031	50011077	50011122	50011165
50011037	50011079	50011123	50011167
50011038	50011081	50011125	50011169
50011039	50011083	50011127	50011170
50011041	50011085	50011129	50011173
50011043	50011087	50011131	50011175

### Legend

- Postplot SP
- Postplot RP
- ★ DRILL POINTS

### Type

- GAP
- WIRE
- GrndSurfWaterWells\_SWC
- ==== Roads
- Fencelines

### Oliver County Roads

#### GM\_TYPE

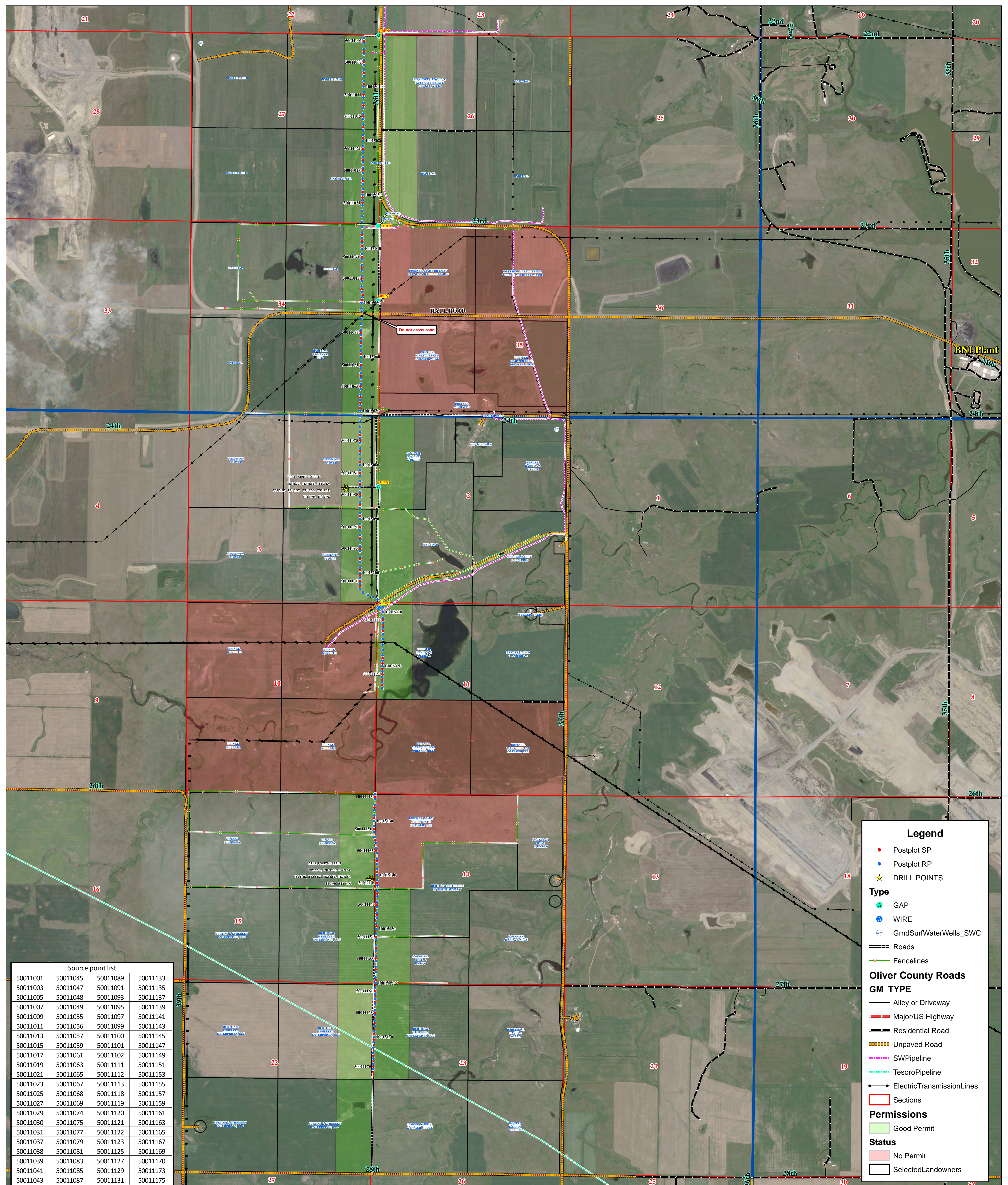
- Alley or Driveway
- Major/US Highway
- Residential Road
- Unpaved Road
- SWPipeline
- TesoroPipeline
- ElectricTransmissionLines

### Permissions

- Good Permit
- No Permit

### Status

- SelectedLandowners



Source point list

50011001	50011045	50011089	50011133
50011003	50011047	50011091	50011135
50011005	50011048	50011093	50011137
50011007	50011049	50011095	50011139
50011009	50011055	50011097	50011141
50011011	50011056	50011099	50011143
50011013	50011057	50011100	50011145
50011015	50011059	50011101	50011147
50011017	50011061	50011102	50011149
50011019	50011063	50011111	50011151
50011021	50011065	50011112	50011153
50011023	50011067	50011113	50011155
50011025	50011068	50011118	50011157
50011027	50011069	50011119	50011159
50011029	50011074	50011120	50011161
50011030	50011075	50011121	50011163
50011031	50011077	50011122	50011165
50011037	50011079	50011123	50011167
50011038	50011081	50011125	50011169
50011039	50011083	50011127	50011170
50011041	50011085	50011129	50011173
50011043	50011087	50011131	50011175

### Legend

- Postplot SP
- Postplot RP
- ★ DRILL POINTS

### Type

- GAP
- WIRE
- GrndSurfWaterWells\_SWC
- ==== Roads
- Fencelines

### Oliver County Roads

#### GM\_TYPE

- Alley or Driveway
- Major/US Highway
- Residential Road
- Unpaved Road
- SWPipeline
- TesoroPipeline
- ElectricTransmissionLines

### Permissions

- Good Permit
- No Permit

### Status

- SelectedLandowners



# GEOPHYSICAL EXPLORATION SUNDRY NOTICE - FORM GE 4

INDUSTRIAL COMMISSION OF NORTH DAKOTA  
OIL AND GAS DIVISION  
600 EAST BOULEVARD DEPT 405  
BISMARCK, ND 58505-0840  
SFN 51458 (03-2011)

Received

PERMIT # 97-0290

JUL 12 2019

ND Oil & Gas  
Division

Project Name  
**Source Test 2-D**

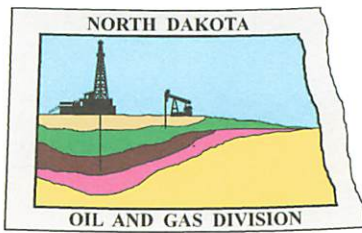
County  
**Oliver**

Supplemental Information  
~~Xtreme Drilling has subcontracted to:~~  
*- Change of Drilling Contractor*  
*R+P Insulation DBA Geothermal Drilling Inc.*  
HOVDE  
Geothermal Drilling Pumping & Spray Polyurethane Foam  
1201 46th Ave NE  
Minot, ND 58703  
  
701-721-4566  
hovde@minot.com  
  
*Band # 0051908*

Company <b>Breckenridge Geophysical</b>		Telephone Number <b>(254) 559-7566</b>	
Address <b>301 E. 18th Street</b>			
City <b>Cisco</b>		State <b>Texas</b>	Zip Code <b>76437</b>
Signature <i>Whitney Deubler</i>		Printed Name <b>Whitney Deubler</b>	
Title <b>Executive Administrator</b>		Date <b>July 12, 2019</b>	
Email Address <b>whitney.deubler@breckex.net</b>			

FOR STATE USE ONLY	
<input type="checkbox"/> Received	<input checked="" type="checkbox"/> Approved
Date <b>7/12/19</b>	
By <i>Arthur Cabel</i>	
Title <b>Petroleum Resource Specialist</b>	





# Oil and Gas Division

Lynn D. Helms - Director

Bruce E. Hicks - Assistant Director

## Department of Mineral Resources

Lynn D. Helms - Director

## North Dakota Industrial Commission

[www.dmr.nd.gov/oilgas/](http://www.dmr.nd.gov/oilgas/)

July 1, 2019

Mr. Mike Lee  
Vice President  
Breckenridge Exploration Company, LLC  
301 East 18<sup>th</sup> Street  
Cisco, TX 76437

RE: SOURCE TEST 2-D  
GEOPHYSICAL EXPLORATION PERMIT #97-0290  
OLIVER COUNTY  
NON EXPLOSIVE & EXPLOSIVE METHODS

Dear Mr. Lee:

Be advised that your Geophysical Exploration permit is conditionally approved; effective for one year from July 1, 2019.

### PERMIT STIPULATIONS:

- **PURSUANT TO NDAC 43-02-12-05 (DISTANCE RESTRICTION)**
  - Nonexplosive exploration methods may not be conducted not less than 300 feet from water wells, buildings, underground cisterns, pipelines, and flowing springs.
  - Explosive exploration methods may not be conducted less than 660 feet from water wells, buildings, underground cisterns, pipelines, and flowing springs.
- **In addition, pursuant to NDAC 43-02-12-06 (NOTIFICATION OF WORK PERFORMED), "The director is authorized to suspend operations of the entire geophysical project, or any portion thereof, if further activity will cause excessive damage to the surface of the land".**

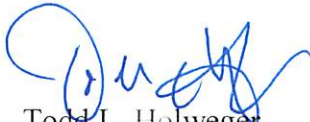
Review the following conditions for your permit:

1. A pre-program meeting with state seismic inspector Tom Torstenson is required. You must contact him at 701-290-1546 (cell) or 701-227-7436 at least 24 hours prior to any exploration operations. Also, a copy of the entire permit is required for all contractors at the pre-program meeting.
2. All variances for distance restrictions are to be furnished, and a pre-plot map displaying any source points that do not comply with the distance restriction rule must be supplied to the inspector.

3. The following information must be submitted within 30 days of the completion of the project by the Geophysical Company:
  - a. Completion Report,
  - b. Completion Affidavit,
  - c. Post Plot Map. It must show all water wells, buildings, underground cisterns, pipelines, and flowing springs that fall within the program area and within one half mile of the perimeter of the program.
  - d. Must provide a GIS layer using NAD83 in an Esri shape file format and an Image file (.img) on a Flash Drive or email: [ttorstenson@nd.gov](mailto:ttorstenson@nd.gov) with all source and receiver points,
4. The permit agent shall notify the operator of the land at least seven days before commencement of any geophysical exploration activity, unless waived by mutual agreement of both parties. The notice must include the approximate time schedule and the location of the planned activity.
5. Information regarding the location of water wells, springs, etc.; refer to the following ND State Water Commission Mapservice website, at: <http://mapservice.swc.state.nd.us/>
6. The entire permit can be viewed, as well as the status of various seismic projects in the state. at: <https://www.dmr.nd.gov/oilgas/seismic/seismicstats.asp>

Should you have any questions regarding this matter, feel free to contact me at 701-328-8020, or Tom Torstenson at the number listed in paragraph 1.

Sincerely,



Todd L. Holweger  
Permit Manager



**GEOPHYSICAL EXPLORATION PERMIT - FORM GE 1**  
 INDUSTRIAL COMMISSION OF NORTH DAKOTA  
 OIL AND GAS DIVISION  
 600 EAST BOULEVARD DEPT 405  
 BISMARCK, ND 58505-0840  
 SFN 51459 (03-2011)

Received

JUN 17 2019

**ND Oil & Gas Division**

1) a. Company <b>Breckenridge Exploration Company, L</b>		Address <b>301 E. 18th Street, Cisco Texas 76437</b>			
Contact <b>Mike Lee</b>		Telephone <b>(432) 528-6930</b>		Fax <b>(254) 559-6337</b>	
Surety Company <b>Tucker &amp; Dunn Bond Agency</b>		Bond Amount <b>\$50,000</b>		Bond Number <b>2283994</b>	
2) a. Subcontractor(s) <b>Elite Seismic Surveys, LLC</b>		Address <b>315 Hector Dr, Alamo, Texas 78516</b>		Telephone <b>(956) 662-8102</b>	
b. Subcontractor(s) <b>Xtreme Drilling, LLC</b>		Address <b>5445 Colorado Blvd, Dacono, CO 8051</b>		Telephone <b>(970) 227-4733</b>	
3) Party Manager <b>Andrew Garza</b>		Address (local) <b>301 E. 18th Street, Cisco Texas 76437</b>		Telephone (local) <b>(254) 559-7566</b>	
4) Project Name or Line Numbers <b>Source Test / 2D</b>					
5) Exploration Method (Shot Hole, Non-Explosive, 2D, 3D, Other) <b>Shot Hole, Non-Explosive, 2D</b>					
6) Distance Restrictions (Must check all that apply)					
<input checked="" type="checkbox"/> 300 feet - NonExplosive - Distance setbacks apply to water wells, buildings, underground cisterns, pipelines, and flowing springs.					
<input checked="" type="checkbox"/> 660 feet - Shot Hole - Distance setbacks apply to water wells, buildings, underground cisterns, pipelines, and flowing springs.					
7) Size of Hole <b>3-D</b>	Amt of Charge	Depth	Source points per sq. mi.	No. of sq. mi.	
Size of Hole <b>2-D 4"</b>	Amt of Charge <b>3.3#, 5.5#, 7.7#</b>	Depth <b>90', 120', 140'</b>	Source points per In. mi. <b>17.6</b>	No. of In. mi. <b>5.00</b>	
8) Approximate Start Date <b>July 1, 2019</b>			Approximate Completion Date <b>July 20, 2019</b>		

THE COMMISSION MUST BE NOTIFIED AT LEAST 24 HOURS IN ADVANCE OF COMMENCEMENT OF GEOPHYSICAL OPERATIONS

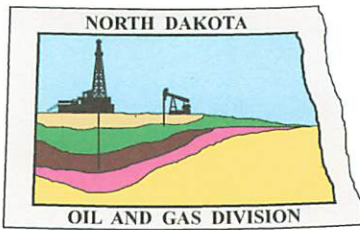
9) Location of Proposed Project - County <b>Oliver County</b>						
Section(s), Township(s) & Range(s)	Section	<b>27,26,34,35</b>	T.	<b>142N</b>	R.	<b>84W</b>
	Section	<b>3,2,10,11,15,14</b>	T.	<b>141N</b>	R.	<b>84W</b>
	Section		T.		R.	
	Section		T.		R.	
	Section		T.		R.	
	Section		T.		R.	

I hereby swear or affirm that the information provided is true, complete and correct as determined from all available records.			Date <b>June 13, 2019</b>
Signature 	Printed Name <b>Whitney Deubler</b>	Title <b>Executive Administrator</b>	
Email Address(es) <b>whitney.deubler@breckex.net</b>			

(This space for State office use)		<b>Permit Conditions</b>
Permit No. <b>92-0290</b>	Approval Date <b>7/1/19</b>	
Approved by 		
Title <b>Mineral Resources Permit Manager</b>		* Permit in hand required at pre-program meeting with field inspector and be aware of all NDIC Rules and Regulations (i.e. distance restrictions).
		* See attached letter.

\*See Instructions On Reverse Side

OK # 8557 @100.-6-17-19



# Oil and Gas Division

Lynn D. Helms - Director

Bruce E. Hicks - Assistant Director

**Department of Mineral Resources**

Lynn D. Helms - Director

**North Dakota Industrial Commission**

[www.dmr.nd.gov/oilgas/](http://www.dmr.nd.gov/oilgas/)

July 1, 2019

The Honorable Judith Hintz  
Oliver County Auditor  
P.O. Box 188  
Center, ND 58530-0188

RE: Geophysical Exploration  
Permit # 97-0290

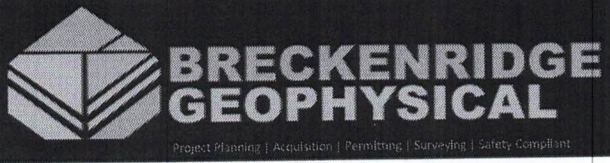
Dear Ms. Hintz:

Pursuant to Section 38-08.1-04.2 of the North Dakota Century Code, please be advised that the Breckenridge Exploration Company was issued the above captioned permit on July 1, 2019 and will remain in effect for a period of one year. The entire permit can be viewed on our website at: <https://www.dmr.nd.gov/oilgas/seismic/seismicstats.asp>

Should you have any questions, please contact our office.

Sincerely,

Todd L. Holweger  
Permit Manager



June 25, 2019

Mr. Todd L. Holweger  
Permit Manager/Geophysical Supervisor  
North Dakota Industrial Commission Oil & Gas Division  
600 East Boulevard Avenue, Department 405  
Bismarck, ND 58505

Dear Mr. Holweger:

Subject: Geophysical Exploration Permit

Breckenridge Geophysical is applying for a geophysical exploration permit to conduct a seismic source test in Oliver County, North Dakota. The test involves a 5-mile-long line of geophones, two vibroseis trucks, and 16 shot holes. The vibroseis trucks will be used every 300 feet along the line. Shot holes will be used at two test sites offset from the line. Eight shot holes covering a 40-foot by 40-foot area will be drilled within each of the two proposed test sites as shown on the attached map. The identified sites delineated are approximated and will be finalized once surveyors arrive on site, which is scheduled for July 9, 2019. Final location of the test site shot holes will be provided in the post-survey documentation. The vibroseis trucks will also be used at these test site locations.

The proposed project will not use vibroseis trucks on the county roadways and associated right-of-ways (ROWs) or place sensors on these properties. The trucks will not vibrate the ground within 300 feet of buildings and other infrastructure. The shot holes will not be located within 660 feet of buildings and other infrastructure. No setback variances were sought for the county roadways, buildings, or other infrastructure.

We look forward to working with you further with regard to this proposed geophysical project. Please contact me with any questions by phone at (254) 246-0766 or by e-mail at [dwhitney.deubler@breckex.net](mailto:dwhitney.deubler@breckex.net).

Sincerely,

*Whitney Deubler*  
Whitney Deubler  
6/27/2019

Executive Administrator

Breckenridge Geophysical

301 E. 18th Street PO Box 1032 Cisco, Texas 76437  
Fax: 817.622.8070 Ph: 254.559.7566  
[www.breckex.com](http://www.breckex.com)

CITY OF CENTER

21

22

23

24

Test Site # 2

3.3lbs	3.3lbs	3.3lbs
5.5 lbs	5.5 lbs	5.5 lbs
7.7 lbs	7.7 lbs	

27

26

25

34

35

36

T142N R84W

T141N R84W

4

3

2

1

Test Site #1

3.3lbs	3.3lbs	3.3lbs
5.5 lbs	5.5 lbs	5.5 lbs
7.7 lbs	7.7 lbs	

9

10

11

12

- Planned Source Points
- Planned Receiver Points
- Shot holes

15

14

13

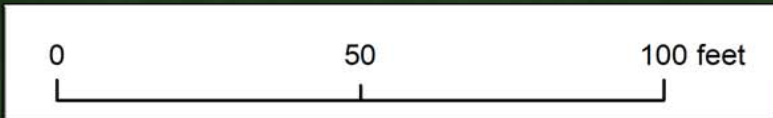
### Test Site 2

- Planned Source Points
- Planned Receiver Points
- Shot holes
- Geophysical Survey Path

- 3.3lbs
- 3.3lbs
- 3.3lbs
- 5.5 lbs
- 5.5 lbs
- 5.5 lbs
- 7.7 lbs
- 7.7 lbs

Sec 3

T142N R84W



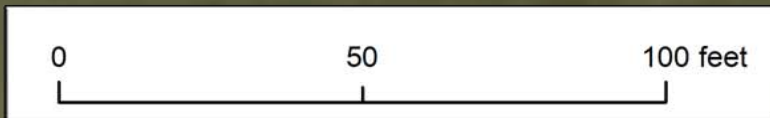
### Test Site 1

- Planned Source Points
- Planned Receiver Points
- Shot holes
- Geophysical Survey Path

3.3lbs   3.3lbs   3.3lbs  
5.5 lbs   5.5 lbs   5.5 lbs  
7.7 lbs   7.7 lbs

Sec 15

T142N R84W





**AFFIDAVIT OF NOTICE**

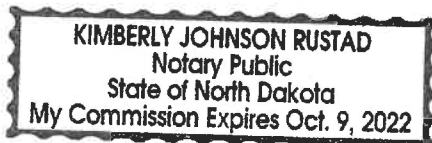
BEFORE ME, the undersigned authority, personally appeared Shannon R. Mikula of Minnkota Power Cooperative, Inc. whose office is located at 5301 32nd Avenue South, Grand Forks, ND 58201 who being duly sworn, upon oath stated and affirmed that:

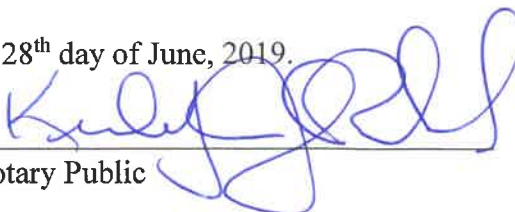
1. My name is Shannon R. Mikula. I am over eighteen years of age. I have personal knowledge of the facts stated by me in this Affidavit and that they are true and correct. I have never been convicted of any felony or of any crime involving moral turpitude and am fully competent to make this Affidavit.
  2. I hold the position of special project counsel for Minnkota Power Cooperative, Inc. ("Minnkota"). By virtue of my position with Minnkota I am authorized to make the representations contained in this affidavit on behalf of Minnkota and Breckenridge Geophysical.
  3. All landowners within 1/2 mile of proposed project area as shown on the attached map have been notified of the approximate schedule for activities and have been provided the North Dakota Century Code section 38-08.1-04.1 and Chapter 38-11-1.
  4. Also attached is the template notification letter and enclosures sent to all landowners within 1/2 mile of the proposed project area.
  5. Representatives from Minnkota also presented information about the proposed project at the Oliver County Commission Meeting on June 6, 2019, which was noticed and open to the public. Only questions of clarification were posed and no concerns were stated.
  6. The proposed project will not use vibroseis trucks on state or county roadways, railways, transmission lines, subsurface pipelines/infrastructure and associated right-of-ways or place sensors on these properties.
  7. No setback variances were sought.
  8. I affirm under penalty of perjury that the representations contained in this affidavit are true, to the best of my knowledge, information, and belief.
  9. Further, the affiant sayeth naught.
- Executed this 28th day of June, 2019.

  
 \_\_\_\_\_  
 Shannon R. Mikula

STATE OF NORTH DAKOTA    )  
   )SS.  
 COUNTY OF GRAND FORKS    )

Subscribed and sworn to before me this 28<sup>th</sup> day of June, 2019.



  
 \_\_\_\_\_  
 Notary Public



North Dakota Industrial Commission  
 Department of Mineral Resources  
 Oil & Gas Division

FORM GE 1

FILING AUTHORIZATION

COMPANY NAME: Breckenridge Exploration Company, Inc.

ADDRESS: 301 E. 18th Street

CITY: Cisco STATE: Tx ZIP: 76424

This form authorizes the person(s) listed below to submit a NDIC Geophysical Exploration Permit – Form GE 1 for approval on behalf of the designated company as listed above.

A new authorization will be required if any changes are to be made to the authorized individuals on the form.

The data submitted from the authorized individuals listed below have been checked and conform to the standards and procedures set forth by the NDIC Department of Mineral Resources.

The authorized individual(s) will ensure that the company, as listed above, and party manager receive a copy of the approved Form GE 1

<u>Authorized Individuals</u>	<u>Phone Number</u>	<u>E-Mail Address</u>
Shannon Mikula	701-795-4000	smikula@minnkota.com

Company Authorized Signature: Whitney Deubler Date: 6/14/19  
 Printed Name: Whitney Deubler Title: Executive Administrator  
 Phone: 254-559-7566 Email Address: whitney.deubler@breckex.net

\*\*\*\*\*  
 Witness Signature: Kellie Spigener Date: 6/14/19  
 Witness Printed Name: Kellie Spigener

## Holweger, Todd L.

---

**From:** Shannon Mikula <[smikula@minnkota.com](mailto:smikula@minnkota.com)>  
**Sent:** Friday, June 28, 2019 3:42 PM  
**To:** Whitney Deubler; Livers, Amanda; Holweger, Todd L.  
**Cc:** James Spigener; csuarez .; mgmxxtreme1@aol.com; Mike Lee  
**Subject:** Affidavit of Landowner Notice  
**Attachments:** Aff of Notice.pdf; Geophysical\_Survey\_FAQs\_6\_4\_19.pdf; North Dakota CarbonSAFE A Feasibility Study Factsheet 2019.pdf; NDCS\_2-DSeismicRoute-ScaleRemove\_2019-06-28\_V001.jpg

**CAUTION:** This email originated from an outside source. Do not click links or open attachments unless you know they are safe.

Good afternoon,

Attached is affidavit certifying notice was provided to all landowners within in ½ mile of the proposed survey area. If there are any questions I am available the remainder of the day as well as July 1 and 2, I am out of the office on July 3 and 5 but available on my cellphone, to which my office line forwards.

Take care,  
Shannon

### Shannon R. Mikula

*Special Projects Counsel*  
Minnkota Power Cooperative  
5301 32<sup>nd</sup> Ave. S.  
Grand Forks, ND 58201  
Office: (701)795-4211  
Email: [smikula@minnkota.com](mailto:smikula@minnkota.com)  
Web: minnkota.com



**From:** Whitney Deubler <[whitney.deubler@breckex.net](mailto:whitney.deubler@breckex.net)>  
**Sent:** Friday, June 28, 2019 9:43 AM  
**To:** Livers, Amanda <[alivers@undeerc.org](mailto:alivers@undeerc.org)>  
**Cc:** James Spigener <[james.spigener@breckex.net](mailto:james.spigener@breckex.net)>; csuarez . <[csuarez@elitesurveysllc.xyz](mailto:csuarez@elitesurveysllc.xyz)>; [mgmxxtreme1@aol.com](mailto:mgmxxtreme1@aol.com);  
Holweger, Todd L. <[tholweger@nd.gov](mailto:tholweger@nd.gov)>; Shannon Mikula <[smikula@minnkota.com](mailto:smikula@minnkota.com)>; Mike Lee <[mike.lee@breckex.net](mailto:mike.lee@breckex.net)>  
**Subject:** [EXTERNAL] Forms, Bonds, Permits - Source Test 2D

**CAUTION: This message originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.**

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Morning!

Cesar is on the survey group and is wanting to make sure all the forms are correct and we need to

make sure everyone has done the right forms/permits to do this job. He will be travelling up there on the 7<sup>th</sup>, arriving on the 9<sup>th</sup>.

I just want to make sure we get it all done by next week since it will be a short week.



**Whitney Deubler**

Executive Administrator

Ph: 817-850-7816 Cell: 254-246-0766 Office: 254-559-7566

301 E. 18<sup>th</sup> St., Cisco, TX 76437 | P.O. Box 1032, Cisco, TX 76437

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NORTH DAKOTA  
CarbonSAFE

# ACTIVITY FAQs

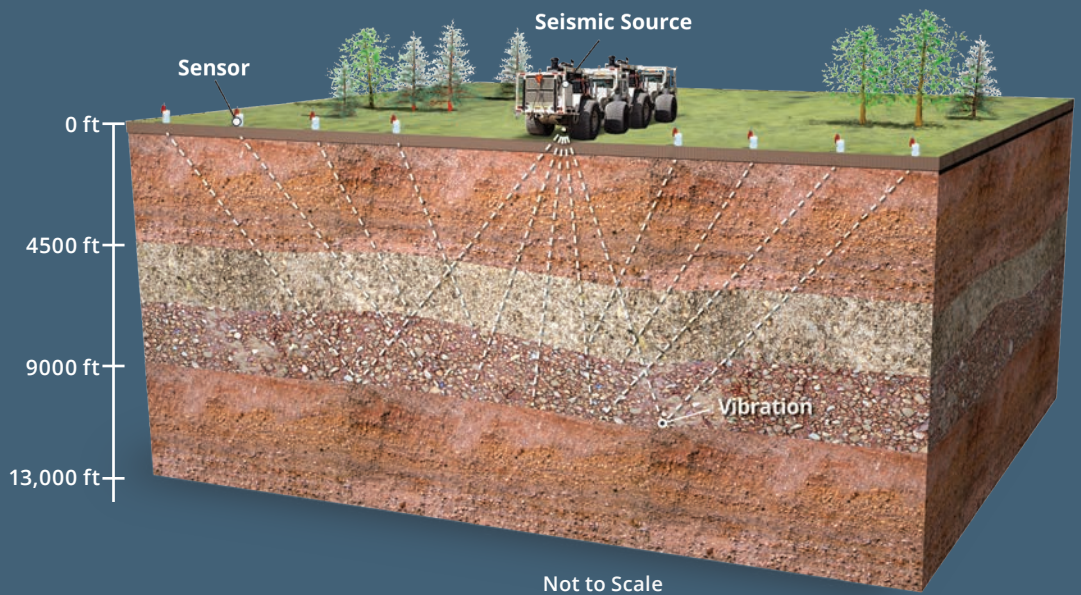
INVESTIGATING SAFE, PERMANENT GEOLOGIC STORAGE OF CO<sub>2</sub> IN NORTH DAKOTA

## Geophysical Survey Source Test near Center, North Dakota

A geophysical survey conducted in September 2017 highlighted the need for a stronger seismic source. Therefore, in summer 2019, a field crew will conduct a geophysical survey source test near Center, North Dakota, to learn about rock layers in the deep subsurface. The test is part of the North Dakota CarbonSAFE project research effort, which is investigating the feasibility of developing safe, permanent, commercial-scale geologic storage for carbon dioxide. The information collected will be assessed by engineers and scientists at the Energy & Environmental Research Center (EERC) and project partners to help determine the potential for permanent CO<sub>2</sub> storage in the area.

### What Is a Geophysical Survey?

A device called a seismic source generates vibrations that travel deep into the earth and are reflected back to the surface. Sensors at the surface record the reflected vibration. Geophysicists decipher these signals to learn about the subsurface rock layers. Frequently, the seismic source is a truck that creates vibrations using a metal plate pressed to the ground and shaken side to side. Deeply buried explosives, such as dynamite, can also create the low-level vibrations needed for a geophysical survey. Both sources will be used in this survey to compare the techniques.



Geophysical surveys are a common data collection tool and have been used in every county in western North Dakota.

### What Is the Benefit of the Survey?

The comparison testing of seismic sources will help determine what type of source will generate adequate vibrations for any future geophysical surveys to be conducted in areas previously mined for coal to evaluate rock layers over 9000 feet below the surface.

### What Is the Community Impact?

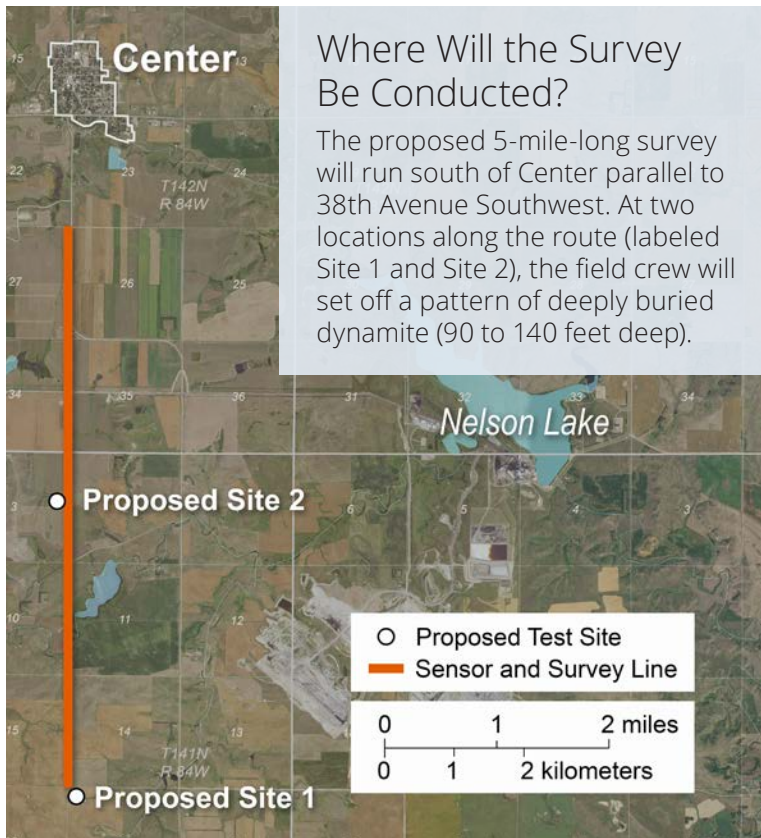
Safety and courtesy are top priorities during this survey. A low-level noise similar to that of a passing truck will be generated at each location from the vibrating truck-mounted plates. A person standing 100 feet from the source will not feel ground vibration. The buried explosive testing taking place at two controlled-access sites will not be felt by the public. Care will be taken to avoid or minimize any environmental impacts and maintain normal traffic flow. The work will be carried out under a permit issued by the North Dakota Industrial Commission.

## What Do Landowners Need to Know?

Project partners Minnkota Power Cooperative, Inc. (Minnkota) and BNI Energy recognize the impact of survey work during the growing season and will contact landowners before the survey work to request permission to place a line of sensors on their land for 7 to 10 days. The sensors are pressed into the ground by hand 150 feet apart by a field crew walking and driving ATVs. The sensors will remain in place until the survey is complete. Vibroseis trucks will travel along the section line near the sensors. The line of testing avoids buildings and other infrastructure, such as water wells and pipelines. Once survey work is complete, project partners will fully reclaim holes used for survey charges. Minnkota and BNI Energy will work with landowners to minimize inconveniences and address concerns.

## Where Will the Survey Be Conducted?

The proposed 5-mile-long survey will run south of Center parallel to 38th Avenue Southwest. At two locations along the route (labeled Site 1 and Site 2), the field crew will set off a pattern of deeply buried dynamite (90 to 140 feet deep).



## How Will the Survey Be Carried Out?

The test involves a 5-mile line of vibrational sensors and two source trucks (called vibroseis trucks). The survey crew drives the vibroseis trucks along the line, stopping every 300 feet to vibrate the ground for 1–2 minutes. The trucks will not vibrate the ground within 300 feet of buildings and other infrastructure. At two points along the line, eight holes drilled from 90 to 140 feet deep will be loaded with explosive charges manufactured for geophysical work. When conditions are safe and clear, the charges will be detonated one by one to test the effect of charge size and depth.



*Vibroseis trucks will follow the section line, stopping to generate vibrations every 300 feet, avoiding buildings and infrastructure.*



*Example of a sensor location showing the sensor, battery pack, and WiFi transmitter at a similar geophysical survey in Montana.*

## What Are the Next Steps?

Based on funding, the next phase of the North Dakota CarbonSAFE project will include additional geophysical survey work and other in-depth characterization of the deep geologic storage zone and overlying sealing formations. Based on the results of the source test, a 3-D geophysical survey may be conducted in late fall 2019. The final report for the current project phase will be available in late 2019.

**The North Dakota CarbonSAFE project** is determining the feasibility of safe, permanent, geologic storage of carbon dioxide. Led by the EERC at the University of North Dakota, partners include the U.S. Department of Energy, the North Dakota Industrial Commission's Lignite Research Program, Basin Electric Power Cooperative, Minnkota Power Cooperative, ALLETE Clean Energy, BNI Energy, and the North American Coal Corporation.

### For More Information:

**Wes Peck**, Project Manager, EERC  
wpeck@undeerc.org, 701.777.5195

**Nikki Massmann**, Director of Communications, EERC  
nmassmann@undeerc.org,  
701.777.5428

**Jay Volk, Ph.D.**, Manager – Health, Safety, & Environmental Services, BNI Coal  
jvolk@bnicoal.com, 701.355.5550 (office)

**Cole Beckel**, Right of Way Agent  
Minnkota Power Cooperative, Inc.  
cbeckel@minnkota.com, 701.795.4336

Learn more at [www.undeerc.org/NDCarbonSAFE](http://www.undeerc.org/NDCarbonSAFE)



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NORTH DAKOTA  
CarbonSAFE

# FACT SHEET

INVESTIGATING SAFE, PERMANENT GEOLOGIC STORAGE OF CO<sub>2</sub> IN NORTH DAKOTA

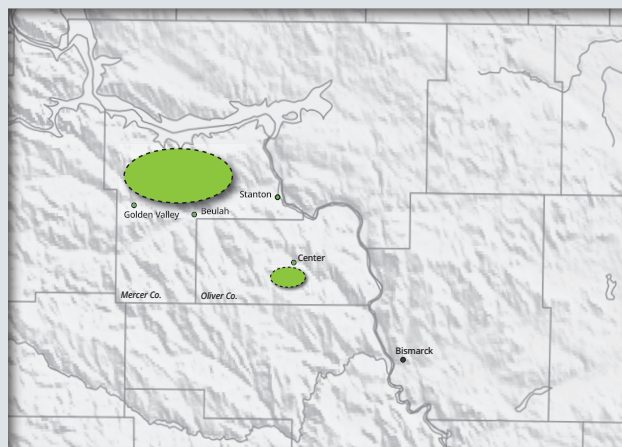
## North Dakota CarbonSAFE – A Feasibility Study

The North Dakota Integrated Carbon Capture and Storage Feasibility Study—North Dakota CarbonSAFE for short—is assessing the feasibility of permanent, commercial-scale geologic storage of carbon dioxide (CO<sub>2</sub>) to manage CO<sub>2</sub> emissions captured from coal-based energy facilities. The project is part of an ongoing effort to ensure clean, affordable energy and the wise use of North Dakota's resources. This feasibility study does not involve CO<sub>2</sub> injection.

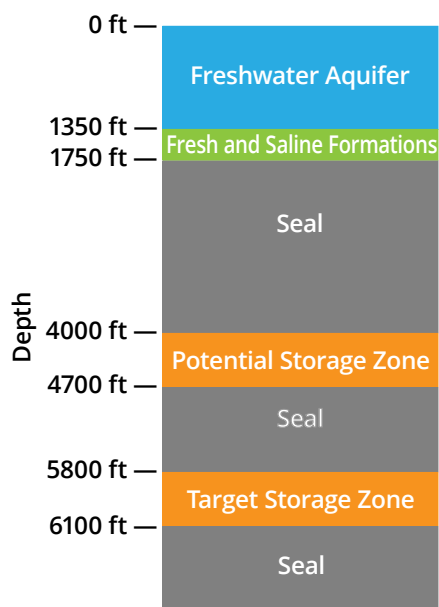
### Carbon Capture and Storage in North Dakota

About 70% of North Dakota's electrical power and nearly half of the state's CO<sub>2</sub> emissions come from coal-based electric generation.<sup>1,2</sup> CCS (carbon capture and storage) is one option to manage those emissions.

CCS captures the CO<sub>2</sub> before it leaves the plant chimney, transports the CO<sub>2</sub> to an injection site (by pipeline), and injects the CO<sub>2</sub> deep underground for safe, permanent storage in a suitable rock layer. CCS is best suited for large stationary facilities such as coal-fired power plants, cement plants, oil and gas refineries, and agricultural processing plants.



The 2-year project has two study sites (shown in green) in western North Dakota near existing coal-based energy facilities.



Rock layers at a depth of about 6000 feet are being evaluated for CO<sub>2</sub> storage.

### Investigating Geology for CCS

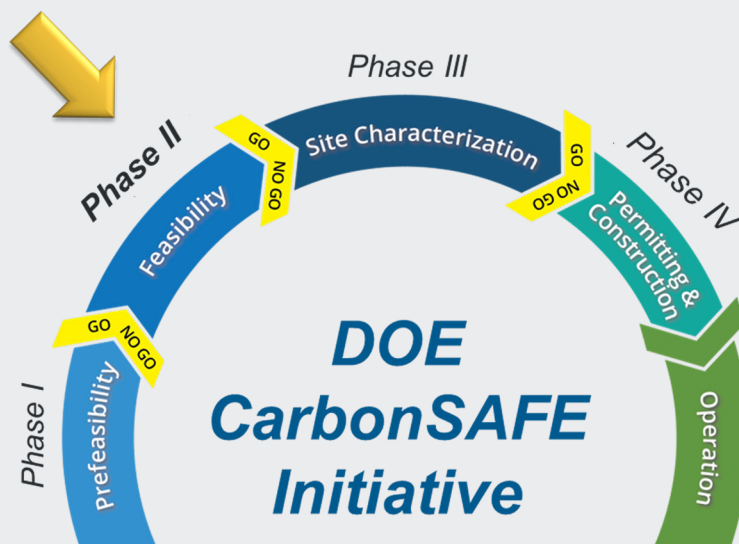
Permanent geologic CO<sub>2</sub> storage requires a deep, porous rock layer to hold the CO<sub>2</sub> and overlying impermeable rock layers to keep the CO<sub>2</sub> in the storage zone. The North Dakota CarbonSAFE project is focused on a 300-foot-thick rock layer more than a mile beneath the surface in Mercer and Oliver Counties. The sandstone layer holds very salty water and has no oil. Thick shale layers above and below the target layer will act as seals to keep the CO<sub>2</sub> in place. In January 2018, researchers extracted cores of rock from the target formation and the overlying seal in two locations, and the samples were tested to determine if they met the criteria for safe, permanent geologic storage of CO<sub>2</sub>. The drilling and coring followed federal and state regulations that require drilling permits and the protection of groundwater resources. The work was done with the collaboration and consent of the landowners. No CO<sub>2</sub> was injected during this operation. After research at the site was completed, both core holes were filled with concrete (plugged), and the two drill sites were restored to their predrilling condition in accordance with state regulations. Computer-based geologic models for simulation scenarios will be constructed based on the data gathered from these cores and from the geophysical testing.

## Practicality—Economic, Regulatory, and Community Considerations

Even if the rock layers are suitable, successful permanent CO<sub>2</sub> storage cannot occur without practical transport, injection, and monitoring systems and community support. North Dakota CarbonSAFE is assessing the economic feasibility of transport and injection of CO<sub>2</sub> into the geologic storage zone as well as considerations vital to permitting and operation. The project is also collecting local public and stakeholder feedback. Project plans and results are available to the community through announcements, meetings, and other outreach activities.

### North Dakota CarbonSAFE and DOE's CarbonSAFE Initiative

The North Dakota project is one of 19 projects funded under the U.S. Department of Energy's (DOE's) CarbonSAFE initiative.<sup>3</sup> DOE's CarbonSAFE initiative supports projects that address key research in the path toward the deployment of CCS technologies, including the development of safe, permanent, commercial-scale geologic storage sites for CO<sub>2</sub>. The North Dakota CarbonSAFE project was awarded by DOE's Office of Fossil Energy through a competitive process.



DOE envisions four phases to have commercial-scale facilities ready to permanently store at least 50 million tonnes of CO<sub>2</sub> by 2025. North Dakota CarbonSAFE is a Phase II effort.

## Project Time Line and Next Steps

The project runs from summer 2017 to summer 2019. If results suggest that a commercial CCS project may be feasible in this area of North Dakota, the next step will be to seek funding for a more detailed examination of the geology at possible specific storage sites.

## References

1. Net generation in 2016. [www.eia.gov/electricity/data/browser](http://www.eia.gov/electricity/data/browser) (accessed July 13, 2017).
2. [www.eia.gov/environment/emissions/state/](http://www.eia.gov/environment/emissions/state/) (accessed July 24, 2017).
3. [www.netl.doe.gov/newsroom/news-releases/news-details?id=8dc33ed0-b938-442b-812e-9c4d453f58fe](http://www.netl.doe.gov/newsroom/news-releases/news-details?id=8dc33ed0-b938-442b-812e-9c4d453f58fe) (accessed July 26, 2017).

**The North Dakota CarbonSAFE project** is determining the feasibility of safe, permanent, geologic storage of carbon dioxide. Led by the EERC at the University of North Dakota, partners include DOE, the North Dakota Industrial Commission's Lignite Research Program, Basin Electric Power Cooperative, Minnkota Power Cooperative, ALLETE Clean Energy, BNI Energy, and the North American Coal Corporation.

#### For more information contact:

**Wes Peck**, Project Manager, (701) 777-5195, [wpeck@undeerc.org](mailto:wpeck@undeerc.org)

Learn more at:

<https://undeerc.org/NDCarbonSafe>



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