

# Oil and Gas Division

Nathan D. Anderson-Director      Mark F. Bohrer - Assistant Director

**North Dakota Industrial Commission**

**Department of Mineral Resources**

Nathan D. Anderson-Director

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

October 3, 2024

Trevor Richards  
Assistant Director - Geophysics  
UND Energy & Environmental Research Center  
15 N. 23<sup>rd</sup> Street, Stop 9018  
Grand Forks, ND 58202-9018

RE:    BASIN ELECTRIC RESEARCH PROJECT – Towed EM  
      GEOPHYSICAL EXPLORATION PERMIT #97-0335  
      MERCER COUNTY  
      NON-EXPLOSIVE METHODS

Dear Mr. Richards:

Be advised that your Geophysical Exploration permit is conditionally approved; effective for one year from October 3, 2024.

## **PERMIT STIPULATIONS:**

- **UND-EERC must contact seismic inspector Tom Torstenson at (701) 290-1546 72 hours prior, to arrange a start-up meeting. Also, a copy of the entire permit is required for all contractors at the start up meeting.**
- **UND-EERC must contact Tom Torstenson at (701) 290-1546 24 hours prior to conducting any geophysical activities.**
- **Pursuant to NDAC 43-02-12-05 (DISTANCE RESTRICTION) Non-explosive exploration methods may not be conducted less than 300 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. 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.
2. 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: [tstenson@nd.gov](mailto:tstenson@nd.gov) with all source and receiver points,
3. 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.
  4. 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/>
  5. 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 our office.

Sincerely,



Todd L. Holweger  
Permit Manager/Geophysical Supervisor



**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

SEP 27 2024

ND Oil & Gas  
 Division

1) a. Company <b>University of North Dakota EERC</b>		Address <b>15 N 23rd St, Stop 9018, Grand Forks, ND 58202-9018</b>			
Contact <b>Trevor Richards</b>		Telephone <b>(701) 777-5052</b>		Fax	
<del>Surety Company</del> <b>Bonding Agent</b> <b>Bank of ND</b>		Bond Amount <b>\$ 25,000</b>		Bond Number <b>GEO 308</b>	
2) a. Subcontractor(s)		Address		Telephone	
b. Subcontractor(s)		Address		Telephone	
3) Party Manager <b>César Barajas-Olalde</b>		Address (local) <b>Same as above</b>		Telephone (local) <b>(701) 777-5414</b>	
4) Project Name or Line Numbers <b>Basin Electric Research Project - Towed EM</b>					
5) Exploration Method (Shot Hole, Non-Explosive, 2D, 3D, Other) <b>n/a towed electromagnetic</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 type="checkbox"/> 660 feet - Shot Hole - Distance setbacks apply to water wells, buildings, underground cisterns, pipelines, and flowing springs.					
7) Size of Hole 3-D	Amt of Charge n/a	Depth n/a	Source points per sq. mi. n/a	No. of sq. mi. <b>0.39</b>	
Size of Hole 2-D	Amt of Charge	Depth	Source points per ln. mi.	No. of ln. mi.	
8) Approximate Start Date <b>October 1, 2024</b>			Approximate Completion Date <b>October 13, 2024</b>		

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

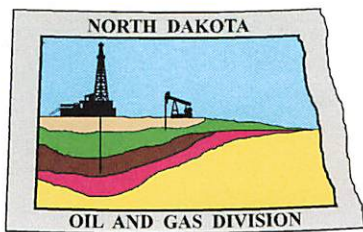
9) Location of Proposed Project - County <b>Mercer County</b>			
Section(s), Township(s) & Range(s)	Section	T.	R.
	<b>1, 2, 3</b>	<b>145N</b>	<b>88W</b>
	Section	T.	R.
	Section	T.	R.
	Section	T.	R.
	Section	T.	R.

I hereby swear or affirm that the information provided is true, complete and correct as determined from all available records. Date **9/27/24**

Signature 	Printed Name <b>Trevor Richards</b>	Title <b>Assistant Director - Geophysics</b>
Email Address(es) <b>trichards@undeerc.org</b>		

(This space for State office use)		<p align="center"><b>Permit Conditions</b></p> <p>* Permit in hand required at pre-program meeting with field inspector and be aware of all NDIC Rules and Regulations (i.e. distance restrictions).</p> <p>* See attached letter.</p>
Permit No <b>97-0335</b>	Approval Date <b>10/4/24</b>	
Approved by 	Title <b>Mineral Resources Permit Manager</b>	

\*See Instructions On Reverse Side



# Oil and Gas Division

Nathan D. Anderson-Director      Mark F. Bohrer - Assistant Director

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

October 3, 2024

The Honorable Carmen Reed  
Mercer County Auditor  
P.O. Box 39  
Stanton, ND 58571-0039

RE:      Geophysical Exploration  
         Permit Number 97-0335

Dear Ms. Reed:

Pursuant to Section 38-08.1-04.2 of the North Dakota Century Code, please be advised that the UND Energy & Environmental Research Center was issued the above captioned permit on October 3, 2024, 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,

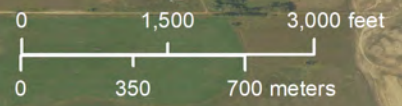
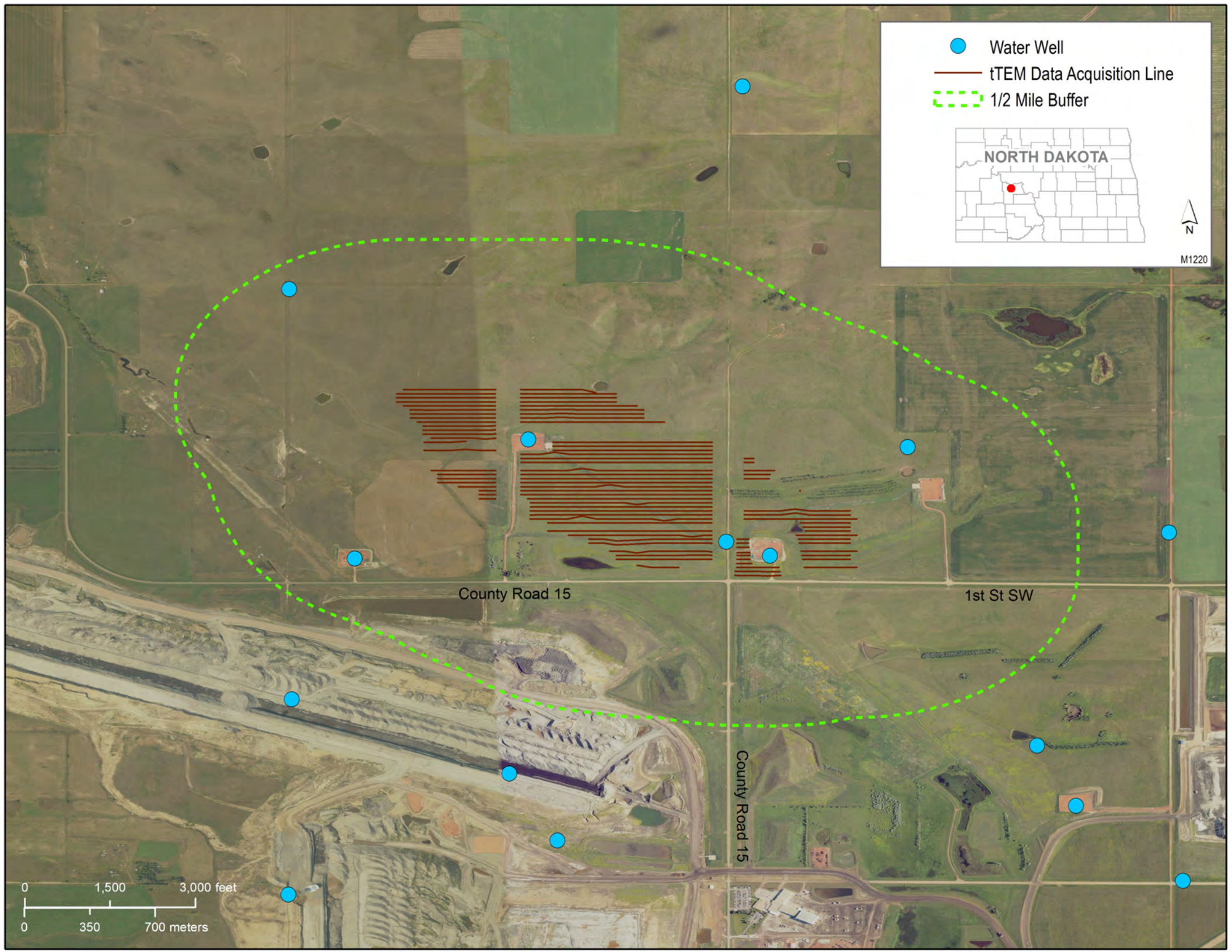
Todd L. Holweger

Permit Manager/Geophysical Supervisor

- Water Well
- tTEM Data Acquisition Line
- - - 1/2 Mile Buffer



↑ N  
M1220





Energy & Environmental Research Center (EERC)

# Basin Electric Research Project Towed Transient EM (tTEM)

# Towed Transient EM (tTEM)

- Equipment will be pulled with UTV for tTEM data collection along routes on the map to collect near surface EM data
- The EM transmitter and receiver will be towed by a Utility Task Vehicle (UTV) along East-West lines previously defined in the GPS of the tTEM data acquisition system.
- The spacing between lines is 22 m (approximately 72 ft). These lines cover a similar area as the passive seismic survey conducted in December 2023.
- The data acquisition is continuous while the tTEM equipment is moving.



# Towed Transient EM (tTEM)

- **Purpose:** The tTEM data will be used to complement processing of passive seismic data collected at this site.
- tTEM is a rapid reconnaissance, 3D geoelectrical method for examining geologic layer thickness and lithology across large areas. It is a time-domain electromagnetic method that utilizes a receiver and transmitter towed behind an all-terrain vehicle to acquire densely spaced resistivity data across the area of interest. Depth of exploration for the tTEM methods is dependent on geologic conditions varying between 220 to 300+ feet below ground level.

<https://www.gehriginc.com/geophysical-methods#methods-towed-transient-electromagnetic-method>







**Trevor Richards**  
**Assistant Director**  
trichards@undeerc.org  
701.777.5052 (phone)

**Energy & Environmental  
Research Center**  
University of North Dakota  
15 North 23rd Street, Stop 9018  
Grand Forks, ND 58202-9018

www.undeerc.org  
701.777.5000 (phone)  
701.777.5181 (fax)

**THANK YOU**

Critical Challenges. Practical Solutions.



September 27, 2024

Mr. Todd Holweger  
Permit Manager/Geophysical Supervisor  
ND Industrial Commission Oil & Gas Division  
600 East Boulevard Ave, Dept 405  
Bismarck ND 58505

Subject: Geophysical Exploration Permits

Dear Mr. Holweger:

All landowners within one-half mile of the proposed 2024 Basin Electric Research Project area have been notified of the schedule and location of the Towed Transient Electromagnetic (tTEM), Passive Seismic deployment and Seismic Station install activities estimated to take place in October and November and have been provided a written copy of the North Dakota Century Code (NDCC) Section 38-08.1-04.1 (Exploration Permit) and NDCC Chapter 38-11.1 (Oil & Gas Production Damage Compensation) as required by NDCC Section 38-08.1-04.1. There was a total of 4 private landowners and 3 industry landowners that were provided the required notification. The permits will be submitted by the University of North Dakota Energy and Environmental Research Center.

We look forward to working with you further with regard to this proposed geophysical project. Please contact me with any questions by phone at 701.557.5454 or by email at [mmurray@bepc.com](mailto:mmurray@bepc.com).

Sincerely,

Mike Murray, SR/WA, R/W-NAC  
Directory of Property & Right of Way

