



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

JAN 31 2025

MINERAL RESOURCES

Permit No. 970335	
Shot Hole Operations	*Non-Explosive Operations Towed Electromagnetic

SECTION 1

Geophysical Contractor UND ENERGY & ENVIRONMENTAL RESEARCH CENTER	
Project Name and Number BASIN ELECTRIC RESEARCH PROJECT - TOWED EM	County(s) MERCER
Township(s) 145N	Range(s) 88W
Drilling and Plugging Contractors n/a	
Date Commenced October 9, 2024	Date Completed October 9, 2024

SECTION 2

First S.P. #						Last S.P. #					
Loaded Holes (Undetonated Shot Points)											
S.P. #'s											
Charge Size											
Depth											
Reasons Holes Were Not Shot											

SECTION 3

Flowing Holes and/or Blowouts S.P. #'s
Procedure for Plugging Flowing Holes and/or Blowouts
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).



GEOPHYSICAL EXPLORATION AFFIDAVIT OF COMPLETION REPORT - FORM GE 6B
INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 51456 (03-2011)

RECEIVED

JAN 31 2025

MINERAL RESOURCES

PERMIT NAME (Required): Basin Electric Research Project - Towed EM

PERMIT NUMBER: 970335

AFFIDAVIT OF COMPLETION (GEOPHYSICAL CONTRACTOR)

STATE OF North Dakota)

)

COUNTY OF Grand Forks)

Before me, Cindy R. Savage, a Notary Public in and for the said

County and State, this day personally appeared Brian P. Kalk

who being first duly sworn, deposes and says that (s)he is employed by the University of North Dakota

Energy & Environmental Research Center, that (s)he has read North Dakota

Century Code Section 38-08.1, that the foregoing seismic project has been completed in

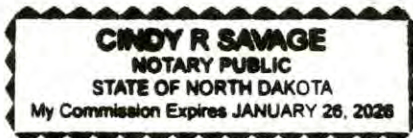
accordance with North Dakota Administrative Code Rule 43-02-12 and that the statements on

the reverse side of this document are true.



Geophysical Contractor Representative

Subscribed in my presence and sworn before me this 29th day of January, 2025.



Notary Public

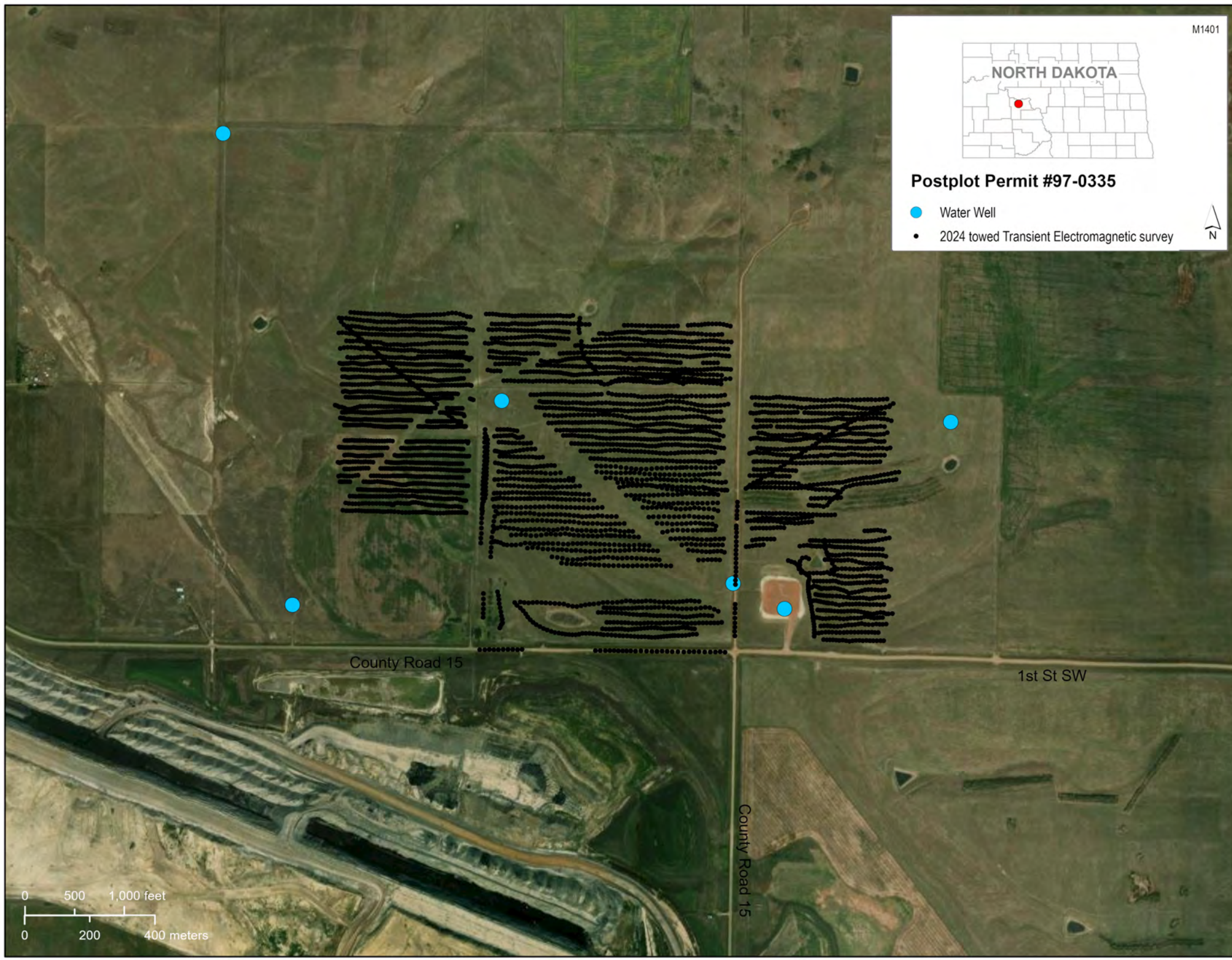


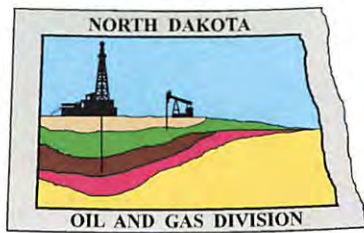
My Commission Expires January 26, 2026



Postplot Permit #97-0335

- Water Well
- 2024 towed Transient Electromagnetic survey





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/

October 3, 2024

Trevor Richards
Assistant Director - Geophysics
UND Energy & Environmental Research Center
15 N. 23rd 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: tlorstenson@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 University of North Dakota EERC		Address 15 N 23rd St, Stop 9018, Grand Forks, ND 58202-9018	
Contact Trevor Richards		Telephone (701) 777-5052	Fax
Security Company Bonding Agent Bank of ND		Bond Amount \$25,000	Bond Number GEO 308
2) a. Subcontractor(s)		Address	Telephone
b. Subcontractor(s)		Address	Telephone
3) Party Manager César Barajas-Olalde		Address (local) Same as above	Telephone (local) (701) 777-5414
4) Project Name or Line Numbers Basin Electric Research Project - Towed EM			
5) Exploration Method (Shot Hole, Non-Explosive, 2D, 3D, Other) n/a towed electromagnetic			
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 n/a	Amt of Charge n/a	Depth n/a	Source points per sq. mi. n/a
Size of Hole 2-D	Amt of Charge	Depth	Source points per ln. mi.
8) Approximate Start Date October 1, 2024		Approximate Completion Date October 13, 2024	

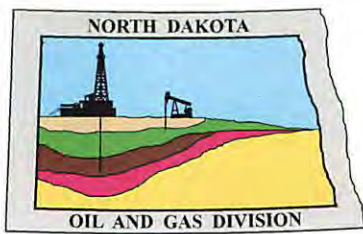
THE COMMISSION MUST BE NOTIFIED AT LEAST 24 HOURS IN ADVANCE OF COMMENCEMENT OF GEOPHYSICAL OPERATIONS

9) Location of Proposed Project - County Mercer County			
Section(s), Township(s) & Range(s)	Section 1, 2, 3	T 145N	R. 88W
	Section	T.	R.
	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 Trevor Richards	Title Assistant Director - Geophysics	
Email Address(es) trichards@undeerc.org			

(This space for State office use)		Permit Conditions * 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.
Permit No 97-0335	Approval Date 10/4/24	
Approved by 		
Title Mineral Resources Permit Manager		

*See Instructions On Reverse Side



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/

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,

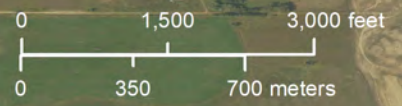
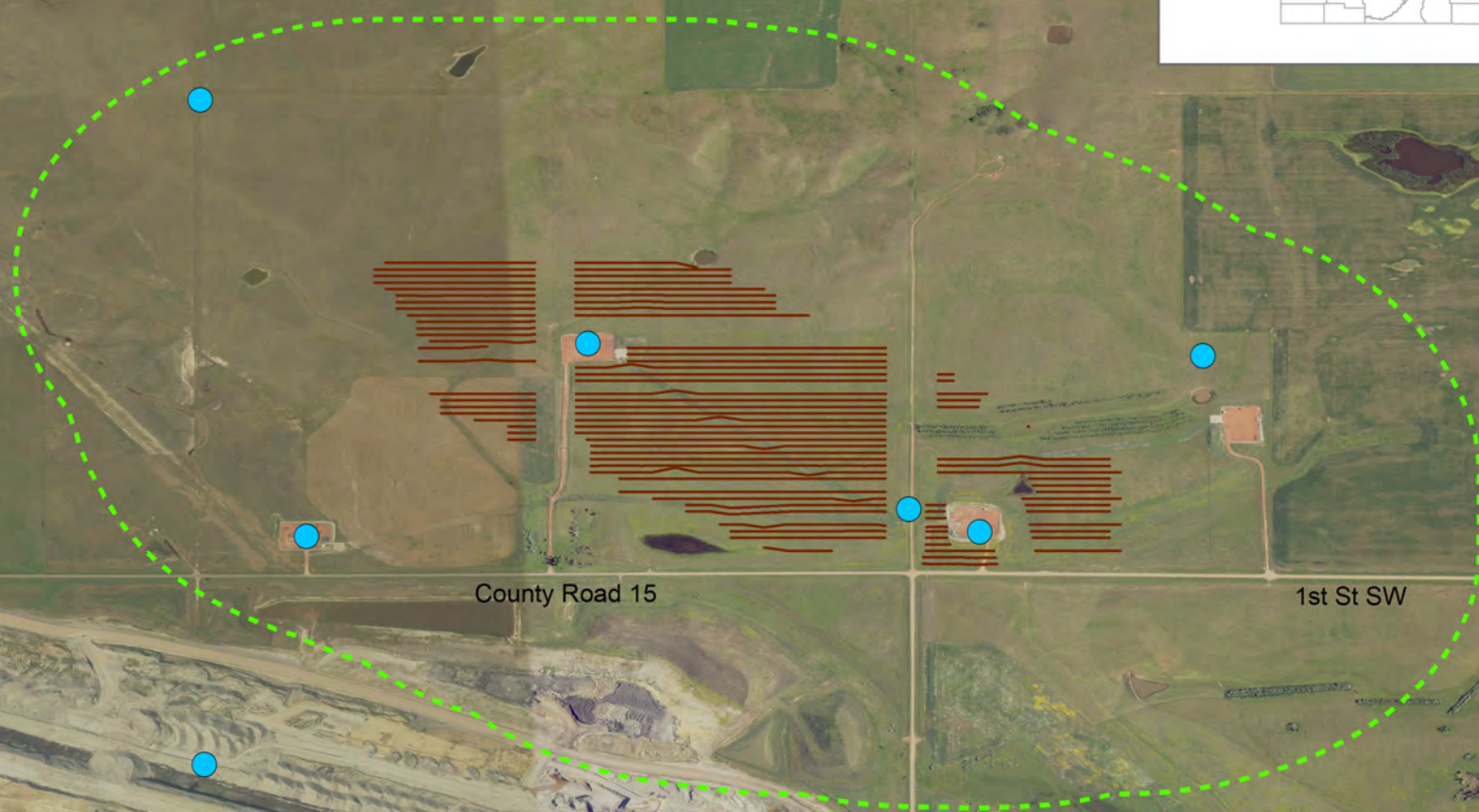
Todd L. Holweger

Permit Manager/Geophysical Supervisor

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



M1220



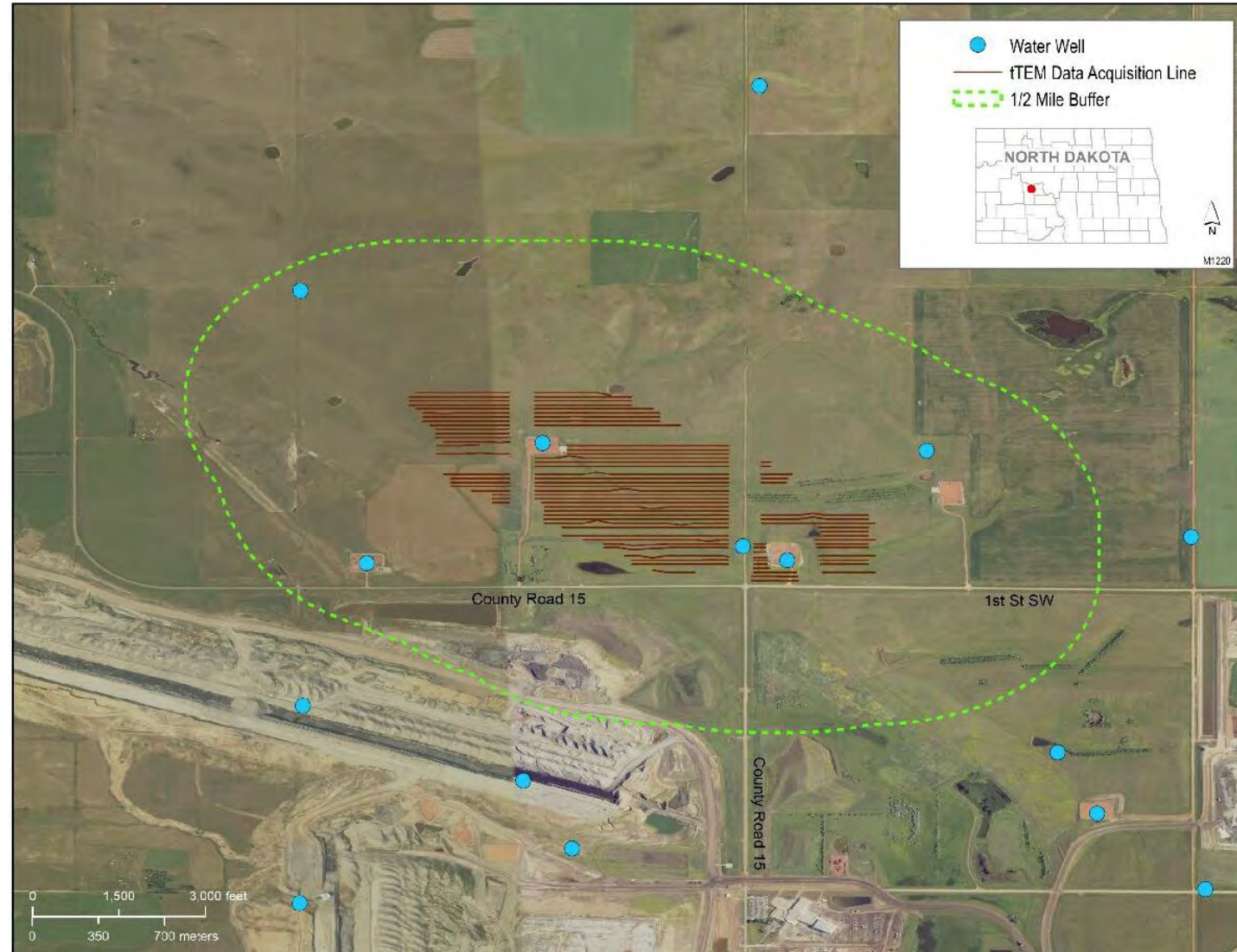


Energy & Environmental Research Center (EERC)

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 geo-electrical 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

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701.777.5000 (phone)
701.777.5181 (fax)

A wide-angle photograph of a university campus at sunset. The sun is low on the left, casting a warm glow over the scene. In the foreground, there are trees with yellowing leaves. In the background, there are several large, multi-story brick buildings and a parking lot filled with cars.

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.

Sincerely,

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

