WOODBURY COUNTY BOARD OF ADJUSTMENT

Monday, November 4, 2024 at 6:00 PM

The Woodbury County Board of Adjustment will hold a public meeting on **Monday, November 4, 2024** at **6:00 PM** in the Board of Supervisors' meeting room in the Basement of the Woodbury County Courthouse, 620 Douglas Street, Sioux City, IA. Please use the 7th St. entrance. Public access to the conversation of the meeting will also be made available during the meeting by telephone. Persons wanting to participate in the public meeting may attend in person or call: **(712) 454-1133** and enter the **Conference ID: 742 346 123#** during the meeting to listen or comment. It is recommended to attend in person as there is the possibility for technical difficulties with phone and computer systems.

AGENDA	
1	**CALL TO ORDER**
2	**ROLL CALL**
3	**PUBLIC COMMENT ON MATTERS NOT ON THE AGENDA**
4	**APPROVAL OF PREVIOUS MEETING MINUTES**
5	**ITEM(S) OF ACTION / BUSINESS**
»	**PUBLIC HEARING: CONDITIONAL USE PERMIT APPLICATION (ACTION ITEM): FOR THE INSTALLATION AND USE OF THREE 100' WIND TURBINES (PARCEL #884420300005). SUMMARY:** Consideration of the Conditional Use Permit application by L & K Tabke Holdings, LLC (Kathy Tabke) for the installation and use of three (3) wind turbines on three (3) 100 FT supporting towers to reduce the electrical costs on the farm. The property is designated as Parcel #884420300005 and is located in T88N R44W (Wolf Creek Township) in Section 20 in the N ½ of the SW ¼. The proposed location is about 5.2 miles southeast of Moville, IA which is on the south side of 195th Street and east of Jasper Avenue. The property is located in the Agricultural Preservation (AP) Zoning District and "Electric wind generator (Private use)" is classified as a "conditional use" in Section 3.03.4 of the Woodbury County Zoning Ordinance. Applicant(s)/Owner(s): L & K Tabke Holdings, LLC (Kathy Tabke), 3112 195th St., Moville, IA 51039.
»	**INFORMATION ITEM: DISCUSSION OF A RECOMMENDATION CONTEMPLATING DECOMMISSIONING REQUIREMENTS AS PART OF A NEW ORDINANCE REGARDING CARBON PIPELINES. SUMMARY:** The Woodbury County Board of Supervisors at their meeting on August 27, 2024 voted to direct the Planning and Zoning Director to work with Planning and Zoning, the Board of Adjustment, and Legal Counsel in order to make a recommendation contemplating decommissioning requirements as part of a new ordinance regarding carbon pipelines.
6	**PUBLIC COMMENT ON MATTERS NOT ON THE AGENDA**
7	**STAFF UPDATE**
8	**BOARD MEMBER COMMENT OR INQUIRY**
9	**ADJOURN**

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Minutes - Woodbury County Board of Adjustment – October 7, 2024

The Board of Adjustment meeting convened on the 7th of October 2024 at 6:00 PM in the Board of Supervisors' meeting room in the Basement of the Woodbury County Courthouse. The meeting was also made available for public access via teleconference.

Meeting Audio:
For specific content of this meeting, refer to the recorded video on the Woodbury County Board of Adjustment "Committee Page" on the Woodbury County website:

- County Website Link:
  - https://www.woodburycountyiowa.gov/committees/board_of_adjustment/
- YouTube Direct Link:
  - https://www.youtube.com/watch?v=QKOuokNTWD0

BA Members Present: Daniel Hair, Doyle Turner, Pam Clark, Tom Thiesen
County Staff Present: Dan Priestley, Dawn Norton
Public Present: Andy Bobrytzke, Kathy Tabke, Kerry Kisslinger

Call to Order
Chair Daniel Hair called the meeting to order at 6:04 PM. Ashley Christensen was absent.

Public Comment on Matters Not on the Agenda
There were no public comments.

Approval of Minutes
The minutes from the September 4, 2024 meeting were approved. Motion to approve by Clark; seconded by Thiesen. Motion carried 4-0.

Public Hearing – Conditional Use Permit Application (Action Item): For the Installation and Use of Three 100' Wind Turbines (Parcel #884420300005).
Hair opened the public hearing and Priestley read the staff report into the record. The Conditional Use Permit application was submitted by L & K Tabke Holdings, LLC (Kathy Tabke) for the installation and use of three 100' wind turbines to reduce electrical costs on the farm.

- **Location:** Parcel #884420300005, T88N R44W (Wolf Creek Township), Section 20, N ½ of SW ¼, approximately 5.2 miles southeast of Moville, IA, on the south side of 195th Street and east of Jasper Avenue.
- **Zoning:** The property is in the Agricultural Preservation (AP) Zoning District, where "Electric wind generator (Private Use)" is classified as a "conditional use" under Section 3.03.4 of the Woodbury County Zoning Ordinance.
- **Applicant/Owner:** L & K Tabke Holdings, LLC, 3112 195th St., Moville, IA 51039.

Priestley introduced an email communication from Kerry at American Windpower and Kathy Tabke and asked that they be included in the record. Motion by Clark to accept additional information into the record; seconded by Thiesen. Motion carried 4-0. (See appendix)

Kerry Kisslinger from American Windpower discussed the project. Clark inquired about similar installations in the area. Kisslinger noted one operating on Kyle Walker's property on Fayette Ave. Turner requested Safety Data Sheets to provide information on distance setbacks and safety considerations, referencing prior discussions at the Board of Supervisors regarding commercial wind turbines. He indicated that previous Safety Data Sheets revealed hazards that had not been disclosed. Tabke stated that the wind turbines were primarily intended to power barns, with excess energy available for net metering.

Hair proposed that if the Conditional Use Permit (CUP) were approved, a disclaimer be added stating that the owner operates at their own risk and that the county would not be liable for safety issues. Kisslinger mentioned that ice throw should not be a concern, as turbines do not start when iced up. Tabke assured that the site was designed to allow access for emergency vehicles.

Turner moved to close the public hearing; seconded by Clark. Motion carried 4-0.

Turner and Hair discussed that Safety Data Sheets should be provided from the manufacturer for safety and liability reasons. Clark inquired if approval could be contingent on receiving the safety data. Priestley clarified that this issue would need to be addressed at the next scheduled meeting.

Turner motioned to table the discussion until the next public meeting on November 4, 2024, with the applicant required to provide Safety Data Sheets from the manufacturer for presentation at that meeting; Clark seconded. Motion carried 4-0.

Public Hearing: Conditional Use Permit application (Action Item): For the Installation and Use of a 250' Self-Support Wireless Communications Tower to Replace an Existing Tower (Parcel #874720400004).
Priestley read the staff report into the record. The Conditional Use Permit application was submitted by Andrew Bobrytzke on behalf of American Tower LLC and the Bradley J. Kobold Trust to construct a 250' self-supporting wireless communications tower to replace an existing tower in the area.

- **Location:** Parcel #874720400004, T87N R47W (Liberty Township), Section 20, SE ¼ of SE ¼, approximately half a mile west of Salix, IA, on the north side of 260th Street and west of Barker Avenue.
- **Zoning:** The property is in the General Industrial (GI) Zoning District, where "Telecommunication towers" are classified as a "conditional use" under Section 3.03.4 of the Woodbury County Zoning Ordinance.
- **Applicant/Owner:** Andrew Bobrytzke on behalf of American Tower LLC, 10 Presidential Way, Woburn, MA 01801, and Bradley Kobold Trust, 211 7th Street, Sergeant Bluff, IA 51054.

Andrew Bobrytzke summarized the project. Clark moved to close the public hearing; seconded by Turner. Motion carried 4-0.

Turner motioned to approve the application; seconded by Clark. Motion carried 4-0.

Information Item: Consideration of a Recommendation Contemplating Decommissioning Requirements as Part of a New Ordinance Regarding Carbon Pipelines.
Priestley summarized the objectives of pursuing an ordinance. The Woodbury County Board of Supervisors voted on August 27, 2024, to direct the Planning and Zoning Director to work with the Zoning Commission, Board of Adjustment, and legal counsel to develop recommendations for decommissioning requirements as part of a new ordinance regarding carbon pipelines. Staff continues to research this topic and encourages board members to investigate options.

Priestley introduced a letter from the U.S. Department of Transportation dated September 15, 2023, addressed to Mr. David Giles, President and COO of Navigator CO2. Turner motioned to receive the letter; seconded by Hair. Motion carried 4-0. Priestley noted that the letter has been forwarded to the County Attorney's office.

Information Item: Potential Permitting of Nuclear Energy Facilities to Included as Part of the Woodbury County Zoning Ordinance.
Priestley summarized the objectives of pursuing nuclear energy. Consideration of the addition of Nuclear Energy Facilities as a land use option in the Woodbury County Zoning Ordinance. Topics include how to approach the permitting of nuclear energy facilities. Possible options include to amend the Land Use Summary Table of Allowed Uses (Section 3.03.4) by adding Nuclear Energy Facilities as a permitted allowed use or a conditional use in all or select county zoning districts. Amendments may also be discussed pertaining to the addition of new sections pertaining to nuclear energy facilities, definitions, the renumbering, and reorganization of content within the zoning ordinance. Discussion will continue at future meetings. Staff will continue information gathering.

No Public Comments on matters not on the agenda.

Staff Update: Staff will continue gathering information on information items. There will be upcoming meetings discussing these issues. Public input is encouraged. Informational items at the meeting will continue while being mindful of the harvest season.

No Board Member Comment or Inquiry

Motion To Adjourn
Thiesen motioned to adjourn; seconded by Clark. Motion carried 4-0. The meeting adjourned at 7:33 PM.

APPENDIX

Daniel Priestley

From: Marketing <kerry@american-windpower.com>
Sent: Friday, October 4, 2024 7:40 AM
To: Daniel Priestley; LANE TABKE
Subject: Fw: Fw: Wind Interconnection
Attachments: Lane Tabke One line.pdf; Interconnection.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Daniel,

Please see attached a one-line drawing, turbine information and application for Kathy Tabke (Lane's widow). I'll have the signed copy to you soon.

Please let me know if you have any questions. Thanks!

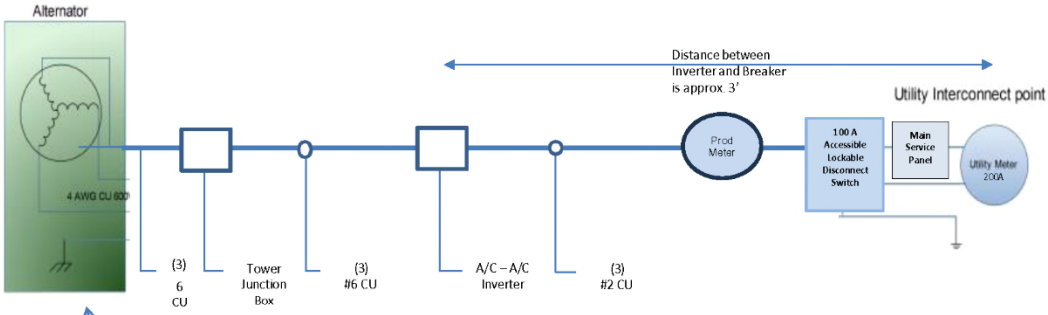
Respectfully,

Kerry
Marketing Department
American Windpower
833.GO4.WIND (833.464.9463)
info@american-windpower.com
www.american-windpower.com

Bergey Wind Turbine One-Line Drawing

Customer: Lane Tabke

Installer: American Windpower
PO Box 1760 Great Bend, KS 67530 (833) 464-9463



Wind Turbine: Bergey Excel 15 with Powersync II Inverter
KW rating: 15 KW
Voltage: 240
Amps: 62
Phase: 1
Frequency: 60Hz

Test Procedure

Test procedures will be used to verify the protection and operation of the utility system. An 'anti-islanding' test will be performed by personnel to verify that system cannot back-feed the utility upon loss of the utility source.

This test will be accomplished by an electrician licensed by the State of Minnesota disrupting the utility power to the turbine and turbine control box by shutting off the utility disconnect and measuring the voltage making certain that it immediately ceases to exist.

The following steps will performed during the anti-islanding test:

1) Voltage will be checked and recorded at the generation side of the of the utility disconnect with an AC volt meter
2) The utility disconnect will be manually shut-off
3) While the disconnect is being shut-off the voltage will be measured by the AC volt meter and observed to immediately go to '0' after the disconnect is shut-off
4) The wind turbine will be observed to make sure it comes to a complete stop and ceases to have voltage output on the AC volt meter when the disconnect is shut-off
5) The disconnect switch will turned-on
6) Voltage will be checked by the AC volt meter to make sure that AC voltage has been restored to the customers service and the volt readings are normal

Site Plan

(see separate attachment)

LEVEL 1
INTERCONNECTION REQUEST APPLICATION FORM AND DISTRIBUTED GENERATION
INTERCONNECTION AGREEMENT
(For Lab-Certified Inverter-Based Distributed Generation Facilities 50 kVA or less)

INSTRUCTIONS:

1. ***Indicates required information.**
2. Mail completed form with $125 application fee to Woodbury County REC. If Woodbury County REC Cooperative performs a witness test the cooperative will charge the interconnected Member-Consumer an additional fee of $125.

INTERCONNECTION MEMBER-CONSUMER CONTACT INFORMATION *(Applicant must be owner or lessee of the facility)*				
*Owner / Company *(Legal Entity Name)* Lane Tabke		* Contact Name Lane Tabke		
* Mailing Address 3112 195th St. Moville, IA 51039		* City Moville	*State IA	*Zip 51039
* Phone No. *(Daytime)* 712-870-1564	Phone No. *(Evening)* 712-870-1564	Facsimile No.	* Email Address Lktabke@watel.net	
ALTERNATE CONTACT INFORMATION *(If different from Member-Consumer Contact Information)*				
Owner / Company *(Legal Entity Name)* *American Windpower*		Contact Name *Cody Buhr;an*		
Mailing Address *PO Box 1760 Great Bend, KS 67530*		City *Great Bend*	*State *KS*	*Zip
Phone No. *(Daytime)* *281-608-9960*	Phone No. *(Evening)* 281-608-9960	Facsimile No.	Email Address info@american-windpower.net	
EQUIPMENT CONTRACTOR				
*Owner / Company Name *American Windpower*		* Contact Name *American Windpower*		
* Mailing Address *PO Box 1760 Great Bend, KS 67530*		* City *Great Bend*	*State *KS*	*Zip *67530*
* Phone No. *(Daytime)* *281-608-9960*	Phone No. *(Evening)* *281-608-9960*	Facsimile No.	* Email Address *Info@american-windpower.net*	
ELECTRICAL CONTRACTOR *(If different from Equipment Contractor)*				
*Owner / Company Name		* Contact Name		
* Mailing Address		* City	*State	*Zip
* Phone No. *(Daytime)*	Phone No. *(Evening)*	Facsimile No.	* Email Address	
License No. *(If applicable)*		Active License? *(If applicable)* ☐ Yes ☐ No		
APPLICANT OWNERSHIP INTEREST *(check one)*				
☒ Owner ☐ Lease ☐ 3rd Party PPA ☐ Other (Please Explain) _____				
THIRD PARTY INFORMATION *(Only complete this section if the facility is to be located on the premise of someone other than the applicant)*				
Location of Proposed Facility		Name of Member-Consumer at said location		
* Mailing Address		* City		
* Phone No. *(Daytime)*	Phone No. *(Evening)*		*State	*Zip

* INTENT OF GENERATION *(check one)*	
☐	Offset Load (Unit will operate in parallel, but will not export power to Cooperative) (If this option is selected, the Cooperative will not purchase any portion of the generation facility output and Attachment 2 is not applicable)
☒	Self-Use and Sales to the Cooperative (Unit will operate in parallel and may export and sell excess power to Cooperative pursuant to the Cooperative's tariff and the terms set forth in Attachment 2)
☐	Back-up Generation (Units that temporarily operate in parallel with the electric distribution system for more than 100 milliseconds) (Note: Back-up units that do not operate in parallel for more than 100 milliseconds do not need an interconnection agreement.)(Under this option, the Cooperative will not purchase any portion of the generation facility output and Attachment 2 is not applicable)
☐	Sale of generation output to member-consumer upon whose premise the facility is located and export and sell any excess power to the Cooperative, which sales may require a separate point of interconnection, metering, and power purchase agreement.
☐	Other: (Please Explain):

DISTRIBUTED GENERATION FACILITY INFORMATION

* Facility Address or Latitude and Longitude	* City	*State	*Zip
3112 195thSt.Moville, IA 51039	*Moville*	*IA*	*51039*

* Cooperative Serving Facility Site	Account No. of Facility Site *(existing member-consumers)*	*Meter No. *(existing member-consumers)*
3112 195th St. Moville, IA 51039	*8307000*	*18039172*

☒ Yes ☐ No — * Is the inverter lab-certified as that term is defined in Iowa Utilities Board Chapter 45 rules on Electric Interconnection of Distributed Generation (199 IAC 45.1)? (If yes, attach manufacturer's technical specifications and label information from a nationally recognized testing laboratory, e.g., UL.)

* Generation Facility Nameplate Rating (AC): *15* (kW) *15* (kVA) *240* (AC Volts)

* Energy Source

☒ Wind ☐ Solar ☐ Biomass ☐ Hydro ☐ Diesel ☐ Natural Gas ☐ Fuel Oil ☐ Other _____

If Solar: Number of Inverters_____ Number of Panels_____ Tilt (degrees) _____ Azimuth (180° is South facing) _____

Array Type: ☐ Fixed ☐ Single Axis ☐ Dual Axis

* Energy Converter Type

☒ Wind Turbine ☐ Photovoltaic Cell ☐ Fuel Cell ☐ Reciprocating Engine ☐ Other _____

Commissioning Test Date: *Novemeber 1st 2024* *(If the Commissioning Test Date changes, the interconnection member-consumer must inform the Cooperative as soon as it is aware of the changed date.)*

Disconnection Device: Identify type and location of disconnection device:

Lockable Disconnect adjacent from meter on turbine

Is the generation facility a qualifying facility as defined under Public Utilities Regulatory Policy Act (18 CFR Part 292, Subpart B)?

☒ Yes ☐ No

*INFORMATION FOR INVERTER-BASED FACILITIES

Inverter Information

*Manufacturer	*Model
bergy Windpower	*PowerSync II*

* Type	*Rated Output
☐ Forced Commutated ☒ Line Commutated	*15KW* Watts *240* Volts

* Efficiency	*Power Factor	*Inverter UL1741 Listed
99%	*99%*	☒ Yes ☐ No

DC Source/Prime Mover

Rating (kW)	Rating (kVA)	Rated Voltage	Open Circuit Voltage *(if applicable)*

Rated Current (Amps)	Short Circuit Current (Amps) *(if applicable)*

*INSURANCE DISCLOSURE

The attached terms and conditions contain provisions related to liability and indemnification and should be carefully considered by the interconnection member-consumer. **The interconnection member-consumer shall carry general liability insurance coverage, such as, but not limited to, homeowner's insurance.** The interconnection customer shall provide the utility with proof that it has a current homeowner's insurance policy or other general liability policy.

Proof of Insurance attached: ☒ Yes

*OTHER FACILITY INFORMATION

One-Line Diagram - A basic drawing of an electric circuit in which one or more conductors are represented by a single line and each electrical device and major component of the installation, from the generator to the point of interconnection, are noted by symbols.

One-Line Diagram attached: ☒ Yes

Plot Plan - A map or sketch showing the distributed generation facility's location in relation to streets, alleys, or other geographic markers (i.e. section pin, corner pin, buildings, permanent structures, etc.).

Plot Plan attached: ☒ Yes

*MEMBER-CONSUMER SIGNATURE

I hereby certify that: (1) I have read and understand the terms and conditions, which are attached hereto by reference; (2) I hereby agree to comply with the attached terms and conditions; and (3) to the best of my knowledge, all of the information provided in this application request form is complete and true.

Applicant Signature *(signature must reflect Contact Name under section Interconnection Applicant Contact Information)*	Date:

Printed Name:	Title:
Kathy Tabke	*Owner*

This Application Form and Interconnection Agreement is comprised of: 1) the Level 1 Standard Application Form and Interconnection Agreement; 2) the Attachment 1 setting forth the Terms and Conditions for Interconnection; 3) the Attachment 2 setting forth the terms for purchases by the Cooperative from the distributed generation facility, when applicable; and 4) the Certificate of Completion, which shall be completed and returned to the utility when installation is complete and final electric inspector approval has been obtained.

NOTE: If the Certificate of Completion is not completed and returned to the Cooperative within 12 months following the Cooperative's dated conditional agreement to interconnect below, this Application Form and Interconnection Agreement will automatically terminate and be of no further force and effect.

FOR COOPERATIVE USE ONLY

Date Received:	Project ID:

*CONDITIONAL AGREEMENT TO INTERCONNECT DISTRIBUTED GENERATION FACILITY

Receipt of the application fee, if any, is acknowledged and, by its signature below, the Cooperative has determined the interconnection request is complete. Interconnection of the distributed generation facility is conditionally approved contingent upon the attached terms and conditions of this Agreement, the return of the attached Certificate of Completion, duly executed verification of electrical inspection and successful witness test. Note that to the extent the Interconnection Member-Consumer wishes the Cooperative to purchase any output from the interconnected generation facility, a separate power purchase agreement shall be required.

Cooperative Representative's Signature	Date

Printed Name:	Title:

NIPCO Representative's Signature	Date

Printed Name:	Title:

ATTACHMENT 1
Level 1: Distributed Generation Interconnection Agreement

Terms and Conditions for Interconnection

1. Construction of the Distributed Generation Facility. The interconnection member-consumer may proceed to construct (including operational testing not to exceed 2 hours) the distributed generation facility, once the conditional Agreement to interconnect a distributed generation facility has been signed by the Cooperative.

2. Final Interconnection and Operation. The interconnection member-consumer may operate the distributed generation facility and interconnect with the Cooperative's electric distribution system after all of the following have occurred:

    a. Electrical Inspection: Upon completing construction, the interconnection member-consumer shall cause the distributed generation facility to be inspected by the local electrical inspection authority who shall establish that the distributed generation facility meets local code requirements.
    b. Certificate of Completion: The interconnection member-consumer shall provide the Cooperative with a copy of the Certificate of Completion with all relevant and necessary information fully completed by the interconnection member-consumer, as well as an inspection form from the local electrical inspection authority demonstrating that the distributed generation facility passed inspection.
    c. The Cooperative has completed its witness test as per the following:
        i. The interconnection member-consumer shall provide the Cooperative at least 15 business days' notice of the planned commissioning test for the distributed generation facility. Within 10 business days after the commissioning test, the Cooperative may, upon reasonable notice and at a mutually convenient time, conduct a witness test of the distributed generation facility to ensure that all equipment has been appropriately installed and operating as designed and in accordance with the requirements of IEEE 1547.
        ii. If the Cooperative does not perform the witness test within the 10 business days after the commissioning test or such other time as is mutually agreed to by the Parties, the witness test is deemed waived, unless the Cooperative cannot do so for good cause. In these cases, upon Cooperative request, the interconnection member-consumer shall agree to another date for the test within 10 business days after the original scheduled date.
    d. Executed Certificate of Completion: The utility has signed, executed and transmitted to the interconnection member-consumer the Certificate of Completion provided by the interconnection member-consumer in 2 b

3. IEEE 1547. The distributed generation facility shall be installed, operated and tested in accordance with the requirements of The Institute of Electrical and Electronics Engineers, Inc. (IEEE), 3 Park Avenue New York, NY 10016-5997, Standard 1547 (2003) "Standard for Interconnecting Distributed Resources with Electric Power Systems," as well as any applicable federal, state, or local laws, regulations, codes, ordinances, orders, or similar directives of any government or other authority having jurisdiction.

4. Access. The Cooperative must have access to the disconnection device and metering equipment of the distributed generation facility at all times. When practical, the Cooperative shall provide notice to the member-consumer prior to using its right of access.

5. Inspections and testing. The operator of the distributed generation facility shall adopt a program of inspection and testing of the generator and its appurtenances and the interconnection facilities in order to determine necessity for replacement and repair. Such a program shall include all periodic tests and maintenance prescribed by the manufacturer. If the periodic testing of interconnection-related protective functions is not specified by the manufacturer, periodic testing shall occur at least once every five years. All interconnection-related protective functions shall be periodically tested, and a system that depends upon a battery for trip power shall be checked and logged. The operator shall maintain test reports and shall make them available upon request by the electric Cooperative. Representatives of the Cooperative shall have access at all reasonable hours to the interconnection equipment specified in 199 IAC 45.3(2) for inspection and testing with reasonable prior notice to the applicant.

6. Metering. Any required metering shall be installed pursuant to the Cooperative's metering rules filed with the Iowa Utilities Board under subrule 199 IAC 20.2(5).

7. Disconnection. The Cooperative may disconnect the distributed generation facility upon any of the following conditions, but must reconnect the distributed generation facility once the condition is cured:

    a. For scheduled outages, provided that the distributed generation facility is treated in the same manner as Cooperative's load member-consumers;
    b. For unscheduled outages or emergency conditions;
    c. If the distributed generation facility does not operate in the manner consistent with this Agreement or the applicable requirements of 199 IAC Chapters 15 or the Cooperative's tariff;
    d. Improper installation or failure to pass the witness test;
    e. If the distributed generation facility is creating a safety, reliability, or a power quality problem;

f. The interconnection equipment used by the distributed generation facility is de-listed by the Nationally Recognized Testing Laboratory that provided the listing at the time the interconnection was approved;
g. Unauthorized modification of the interconnection facilities or the distributed generation facility; or
h. Unauthorized connection to the Cooperative's electric system.

8. Indemnification. The interconnection member-consumer shall indemnify and defend the Cooperative and the Cooperative's directors, officers, employees, and agents from all claims, damages and expenses, including reasonable attorney's fees, to the extent resulting from the interconnection member-consumer's negligent installation, operation, modification, maintenance, or removal of its distributed generation facility or interconnection facilities, or the interconnection member-consumer's willful misconduct or breach of this Agreement. The Cooperative shall indemnify and defend the interconnection member-consumer and the interconnection member-consumer's directors, officers, employees, and agents from all claims, damages, and expenses, including reasonable attorney's fees, to the extent resulting from the Cooperative's negligent installation, operation, modification, maintenance, or removal of its interconnection facilities or electric distribution system, or the Cooperative's willful misconduct or breach of this Agreement.

9. Insurance. The interconnection member-consumer shall provide the Cooperative with proof that it has a current homeowner's insurance policy or other general liability policy. The interconnection member-consumer agrees to provide the Cooperative with at least 30 calendar days' advance written notice of cancellation, reduction in limits, or non-renewal of any insurance policy required by this Agreement and may be required to show proof of insurance on an annual basis.

10. Limitation of Liability. Each Party's liability to the other Party for any loss, cost, claim, injury, liability, or expense, including reasonable attorney's fees, relating to or arising from any act or omission in its performance of this Agreement, shall be limited to the amount of direct damage actually incurred. In no event shall either Party be liable to the other Party for any indirect, incidental, special, consequential, or punitive damages of any kind whatsoever, provided that in no event shall death, bodily injury or third-party claims be construed as indirect or consequential damages.

11. Termination. This Agreement will remain in effect until terminated and may be terminated under the following conditions:

    a. By interconnection member-consumer - The interconnection member-consumer may terminate this interconnection agreement by providing written notice to the Cooperative. If the interconnection member-consumer ceases operation of the distributed generation facility, the interconnection member-consumer must notify the Cooperative.
    b. By the Cooperative - The Cooperative may terminate this Agreement without liability to the interconnection member-consumer if the interconnection member-consumer fails to remedy a violation of terms of this Agreement within 30 calendar days after notice, or such other date as may be mutually agreed to in writing prior to the expiration of the 30-calendar day remedy period. The termination date may be no less than 30 calendar days after the interconnection member-consumer receives notice of its violation from the Cooperative.

12. Modification of Distributed Generation Facility. The interconnection member-consumer must receive written authorization from the Cooperative before making any changes to the distributed generation facility that could affect the Cooperative's distribution system. If the interconnection member-consumer makes such modifications without the Cooperative's prior written authorization, the Cooperative shall have the right to disconnect the distributed generation facility.

13. Permanent Disconnection. In the event the Agreement is terminated; the Cooperative shall have the right to disconnect its facilities or direct the interconnection member-consumer to disconnect its distributed generation facility.

14. Disputes. Each Party agrees to attempt to resolve all disputes regarding the provisions of this Agreement that cannot be resolved between the two Parties pursuant to the dispute resolution provisions found in Iowa Utilities Board Chapter 45 rules on Electric Interconnection of Distributed Generation Facilities (199 IAC 45.12) and/or dispute resolution provisions adopted by the Cooperative. However, Cooperative's agreement to utilize the dispute resolution provisions of the Chapter 45 rules shall not be construed as an agreement concerning the applicability of the balance of said Chapter.

15. Governing Law, Regulatory Authority, and Rules. The validity, interpretation and enforcement of this Agreement and each of its provisions shall be governed by the laws of the State of Iowa. Nothing in this Agreement is intended to affect any other agreement between the Cooperative and the interconnection member-consumer.

16. Survival Rights. This Agreement shall remain in effect after termination to the extent necessary to allow or require either Party to fulfill rights or obligations that arose under the Agreement.

17. Assignment/Transfer of Ownership of the Distributed Generation Facility. This Agreement shall terminate upon the transfer of ownership of the distributed generation facility to a new owner unless the transferring owner assigns the Agreement to the new owner, the new owner agrees in writing to the terms of this Agreement, and the transferring owner so notifies the Cooperative in writing prior to the transfer of ownership.

18. Definitions. Any term used herein and not defined shall have the same meaning as the defined terms used in Iowa Utilities Board Chapter 45 rules on Electric Interconnection of Distributed Generation Facilities (199 IAC 45.1). However, Cooperative's agreement to utilize the definitions found in the Chapter 45 rules shall not be construed as an agreement concerning the applicability of the balance of said Chapter.

19. Notice. The Parties may mutually agree to provide notices, demands, comments, or requests by electronic means such as e-mail. Absent agreement to electronic communication, or unless otherwise provided in this Agreement, any written notice, demand, or request required or authorized in connection with this Agreement shall be deemed properly given when receipt is confirmed after notices are delivered in person, delivered by recognized national courier service, or sent by first-class mail, postage prepaid, return receipt requested to the person specified below:

    a. If Notice is to Interconnection Member-Consumer: Use the contact information provided in the interconnection member-consumer's application. The interconnection member-consumer is responsible for notifying the Cooperative of any change in the contact party information, including change of ownership.
    b. If Notice is to Cooperative: Use the contact information provided below. The Cooperative is responsible for notifying the interconnection member-consumer of any change in the contact party information.

COOPERATIVE CONTACT INFORMATION					
Name - GENERAL MANAGER					
* Mailing Address - PO BOX 566			* City - MOVILLE	*State - IA	*Zip - 51039
* Phone No. *(Daytime)* *712-873-3125*	Phone No. *(Evening)* *712-873-3125*	Facsimile No.	* Email Address - helpdesk@woodburyrec.com		

20. Interruptions. The Cooperative is not responsible for any lost opportunity or other costs incurred by the interconnection member-consumer as a result of an interruption of service.

21. Operator. The interconnection member-consumer shall designate an operator who will be responsible for day-to-day operations of the distributed generation facility and available for communication on a 24 hour per day/7 day per week basis with Cooperative, G&T, the Local Balancing Authority, Midcontinent Independent System Operator (MISO), Southwest Power Pool (SPP), and other applicable entities with jurisdiction over the operation of the Facility and Cooperative's System.

22. Notification. When the distributed generation facility is placed in service, owners of interconnected distributed generation facilities are required to notify local fire departments via U.S. mail of the location of distributed generation facilities and the associated disconnection device(s). The owner is required to provide any information related to the distributed generation facility as reasonably required by that local fire department including but not limited to:
    a. A site map showing property address; service point from Cooperative; distributed generation facility and disconnect location(s); location of rapid shutdown and battery disconnect(s), if applicable; property owner's or owner's representative's emergency contact information; Cooperative's emergency telephone number; and size of the distributed generation facility.
    b. Information to access the disconnection device.
    c. A statement from the owner verifying that the distributed generation facility was installed in accordance with the current state-adopted National Electrical Code

ATTACHMENT 2
Level 1: Standard Interconnection Agreement

Terms of Cooperative Purchases from Distribution Facility

1. Agreement to Purchase. Cooperative is a member of Northwest Iowa Power Cooperative (G&T or NIPCO) and obtains all of its wholesale power from G&T. The Cooperative and G&T have filed a Joint Implementation Plan with the Federal Energy Regulatory Commission ("FERC") which provides for coordinated implementation of the obligations of G&T and Cooperative relative to qualifying facilities. Pursuant to said Plan, Cooperative agrees to provide to any qualifying facility in its service territory supplementary, backup, maintenance, and interruptible power and G&T agrees to purchase energy and capacity from said facility, all in accordance with the requirements of the Public Utilities Regulatory Policies Act ("PURPA"). In the event the Interconnecting Member-Consumers selects the option of Self-Use and Sales to the Cooperative on the Application Form, then the G&T agrees to purchase from the Interconnection Member-Consumer such excess energy and capacity as may be available for purchase by the Interconnection Member-Consumer's facility and which Interconnection Member-Consumer desires to sell to the Cooperative. Cooperative acknowledges that Interconnection Member-Consumer may utilize some of the energy Interconnection Member-Consumer generates as it is being generated and the Cooperative understands that it will only purchase such excess as Interconnection Member-Consumer delivers to Cooperative.

2. Rates

   Payment for purchases from the member-consumer pursuant to this contract shall be as follows:

   The rate(s) for purchases from qualifying facility (as defined above) and with a design capacity of 150 kilowatts or less will be the Cooperative's avoided cost. Since the Cooperative purchases all of its electric power requirements from Northwest Iowa Power Cooperative (G&T), the Cooperative's avoided cost is similar to that of G&T. Said rate is currently $ 1.347 cents in 2023 per kilowatt hour or may qualify for a G&T special rate, subject to NIPCO Policy in effect and may be subject to change from time to time. This QF currently qualified for a NIPCO special rate $ NA per kilowatt hour. This rate will be consistent with 18 CFR 292.304, and may be subject to change as the Cooperative's avoided cost changes.

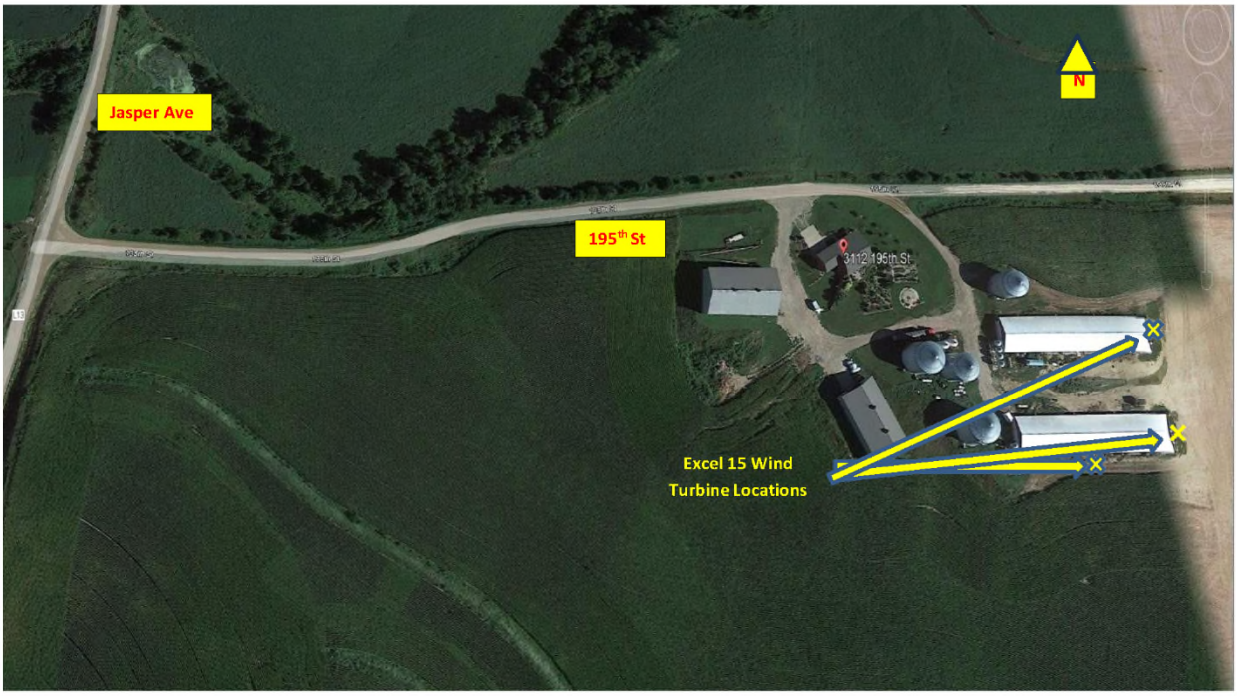
3. Metering. The Cooperative will install metering equipment at the point of service to the QF Facility of one of the following types:
   a. Metering capable of measuring and recording energy flows, on a kWh basis, from the Cooperative to the QF and from the QF to the Cooperative, with each directional energy flow recorded independently and will be billed accordingly.
   b. Metering capable of measuring power flows in each direction on a real-time basis.

   The Cooperative shall have the opportunity to collect all reasonable costs of metering necessary to allow for sales to the Cooperative from the Member-Consumer.

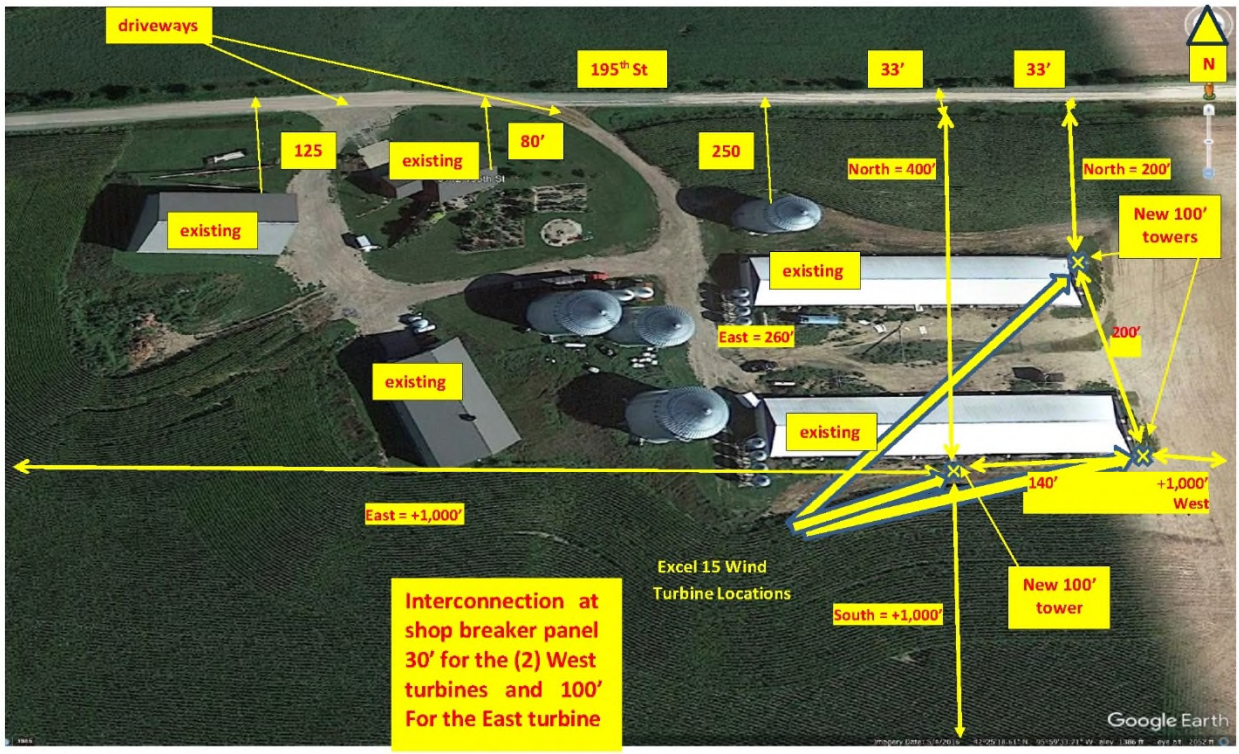
4. The QF shall be responsible for payment of any applicable service charge or other applicable charges approved by the Board of Directors that are not collected on the basis of metered registration.

   For charges collected on the basis of metered registration, the Cooperative shall, for each monthly billing period bill using the standard metering practice as described above.

L&K Tabke Farms LLC Wind Turbine Locations
3112 195th St., Moville, IA

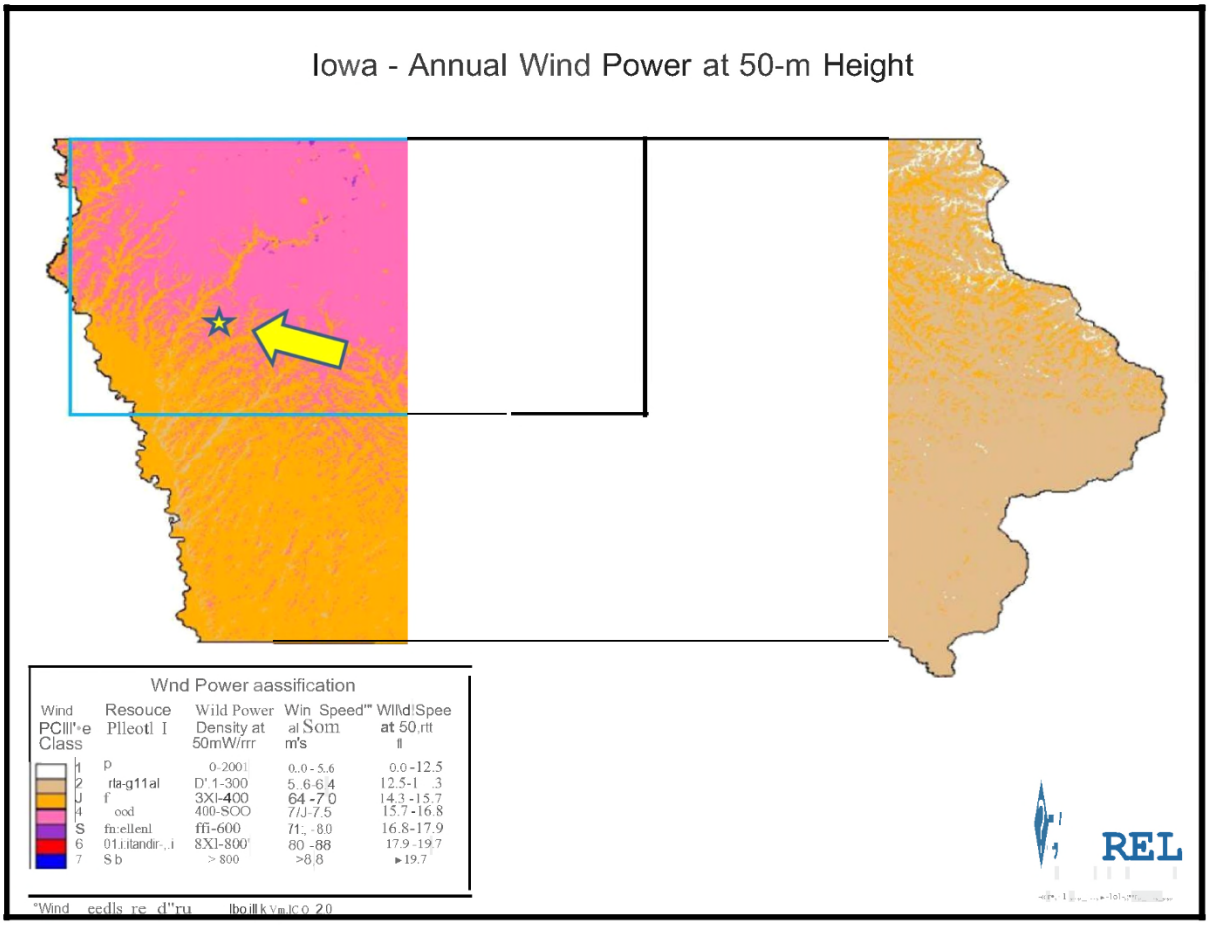


The turbine locations are ideal with wide open unobstructed space in all directions. In particular, the prevailing winds from the North and South are wide-open for miles. The Iowa 50m wind map indicates the area is in the range of 7-7.5 m/s or 15.7-16.8 mph, which for a small turbine like the Excel 15 is an excellent wind resource. This map was compiled by NREL using historical data. The turbine site analysis was performed by Cody Buhrman with American Windpower. Cody has sighted hundreds of wind turbines in his +10-year wind energy career and is acknowledged as a small wind turbine expert.



Approximately 200' from the **North** property line (road) and 260' **+1,000'** from the **West, East** and **South** property lines

The Wind Turbine is the Excel 15 manufactured by Bergey Windpower. It has a rated output of 15KW in an 11 m/s wind speed. The underground electrical wiring is approximately 100', 30' and 30' from the tower bases to the synchronous inverters located in the barns as indicated on the drawing. At the barns the wiring will enter the inverter and then exit into an accessible, lockable disconnect and then into the utility electric meter. The Electric Utility is Woodbury County REC in Moville, IA.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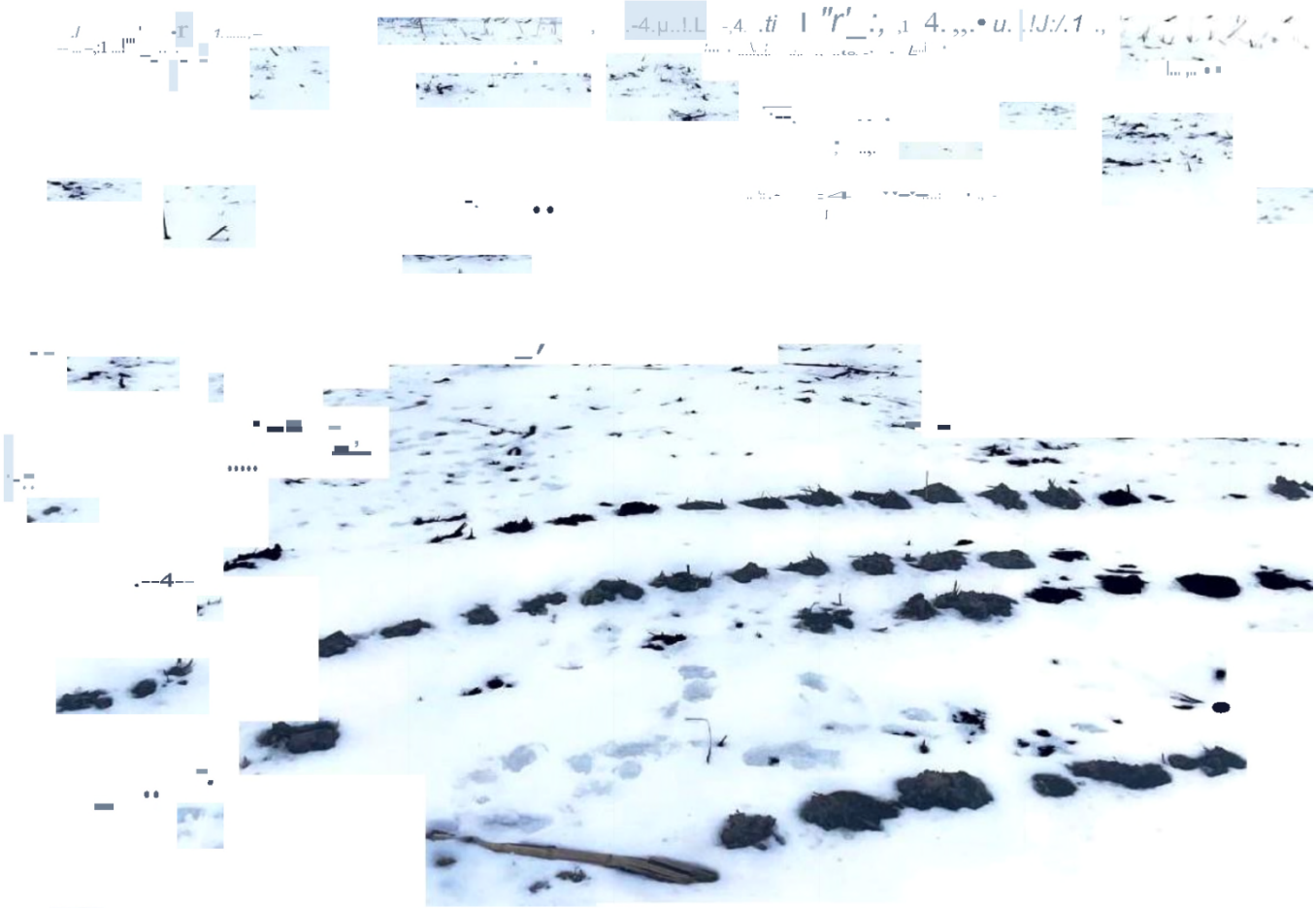
NORTH
Turbine 1

EAST



Turbi-ne 1

SOUTH

WEST

Turbine 1

NORTH

EAST


SOUTH
Turbine 2


WEST
Turbine 2

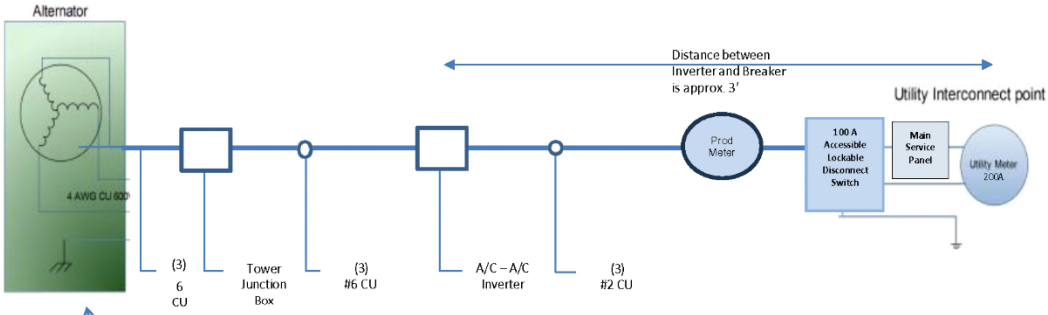
\JHIRD'"'! R-BINE,

PLACEMENT

Bergey Wind Turbine One-Line Drawing

Customer: Lane Tabke

Installer: American Windpower
PO Box 1760 Great Bend, KS 67530 (833) 464-9463



Wind Turbine: Bergey Excel 15 with Powersync II Inverter
KW rating: 15 KW
Voltage: 240
Amps: 62
Phase: 1
Frequency: 60Hz

Test Procedure

Test procedures will be used to verify the protection and operation of the utility system. An 'anti-islanding' test will be performed by personnel to verify that system cannot back-feed the utility upon loss of the utility source.

This test will be accomplished by an electrician licensed by the State of Minnesota disrupting the utility power to the turbine and turbine control box by shutting off the utility disconnect and measuring the voltage making certain that it immediately ceases to exist.

The following steps will performed during the anti-islanding test:

1) Voltage will be checked and recorded at the generation side of the of the utility disconnect with an AC volt meter
2) The utility disconnect will be manually shut-off
3) While the disconnect is being shut-off the voltage will be measured by the AC volt meter and observed to immediately go to '0' after the disconnect is shut-off
4) The wind turbine will be observed to make sure it comes to a complete stop and ceases to have voltage output on the AC volt meter when the disconnect is shut-off
5) The disconnect switch will turned-on
6) Voltage will be checked by the AC volt meter to make sure that AC voltage has been restored to the customers service and the volt readings are normal

Site Plan

(see separate attachment)

WOODBURY COUNTY PLANNING & ZONING

620 Douglas Street, Sixth Floor, Sioux City, Iowa 51101
712.279.6609 – 712.279.6530 (Fax)

Daniel J. Priestley, MPA – Zoning Coordinator
dpriestley@woodburycountyiowa.gov

Dawn Norton – Senior Clerk
dnorton@woodburycountyiowa.gov

REVISED REPORT – OCTOBER 30, 2024

THREE PRIVATE WIND TURBINES – CONDITIONAL USE PERMIT PROPOSAL

APPLICATION DETAILS

Applicant(s)/Owner(s):	L & K Tabke Holdings LLC
Application Type:	Conditional Use Permit
Zoning District:	Agricultural Preservation (AP)
Total Acres:	76.02
Current Use:	Agricultural
Proposed Use:	Agricultural (Wind Power)
Pre-application Meeting:	August, 2024
Application Date:	September 1, 2024
Legal Notice Date:	September 21, 2024, October 19, 2024
Neighbor(s) Notice Date:	September 18, 2024, October 18, 2024
Stakeholder(s) Notice Date:	September 4, 2024
Zoning Commission Review:	September 23, 2024
Board of Adjustment Public Hearing:	October 7, 2024, November 4, 2024

PROPERTY DETAILS

Parcel(s):	884420300005
Township/Range:	T88N R44W (Wolf Creek)
Section:	20
Quarter:	N ½ of the SW 1/4
Zoning District:	Agricultural Preservation (AP)
Floodplain:	Zone X (Not in floodplain)
Property Address:	3112 195th St., Moville, IA 51039 (Abutting Parcel)

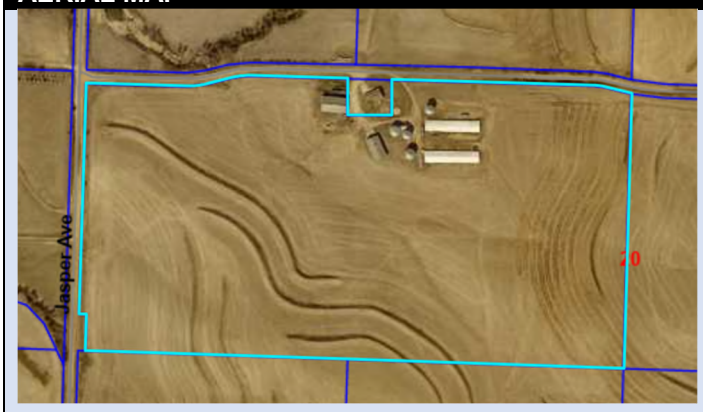
CONTENTS

Summary
Aerial Map / Site Plan Excerpt
Review Requirements
Review Criteria
Application Materials
Legal Notification
Public Comments
Stakeholder Comments
Supporting Information

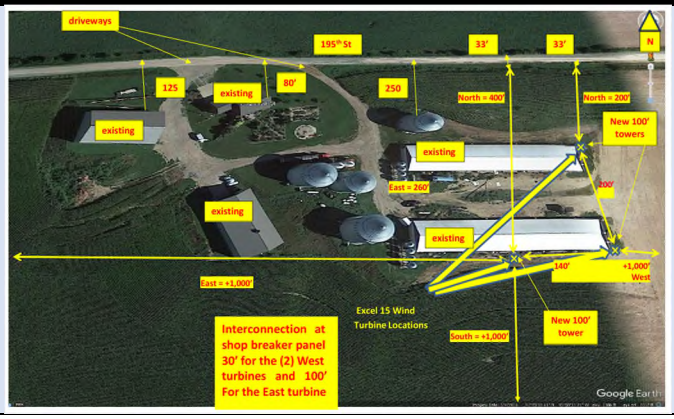
SUMMARY

L & K Tabke Holdings, LLC (Kathy Tabke) has submitted a conditional use permit application to install and operate three wind turbines on 100-foot supporting towers to reduce electricity costs on the farm. The proposed turbine sites are approximately 5.2 miles southeast of Moville, on the south side of 195th Street and east of Jasper Avenue. The property lies within the Agricultural Preservation (AP) Zoning District, where "Electric wind generator (Private use)" is classified as a "conditional use" under Section 3.03.4 of the Woodbury County Zoning Ordinance. This classification makes the proposal eligible for review by the Zoning Commission and consideration for approval by the Board of Adjustment. The public was informed through the Sioux City Journal's legal section on September 21, 2024 and October 19, 2024. Neighbors within 500 feet were sent notification letters dated September 18, 2024, for the October 7, 2024 Board of Adjustment hearing, and on October 19, 2024 for the November 4, 2024 hearing. Additionally, relevant government agencies, utilities, and organizations were invited to comment. Based on received feedback and the requirements of the Zoning Ordinance, the proposal can meet the approval criteria for a conditional use permit. Following their review session on September 23, 2024, the Zoning Commission voted 4-0 to recommend approval to the Board of Adjustment.

AERIAL MAP



SITE PLAN EXCERPT



ZONING COMMISSION AND STAFF RECOMMENDATION

Based on the information received and the requirements set forth in the Zoning Ordinance, it is the opinion of staff that the proposal can meet the criteria for approval of the conditional use permit.

The Zoning Commission voted 4-0 to recommend approval to the Board of Adjustment following their review session on September 23, 2024.

WOODBURY COUNTY
ZONING COMMISSION
WOODBURY COUNTY COURTHOUSE
620 DOUGLAS STREET
SIOUX CITY, IA 51101

Woodbury County Board of Adjustment
620 Douglas Street
Sioux City, Iowa 51101

RE: Zoning Commission Recommendation to the Board of Adjustment:

CONDITIONAL USE PERMIT APPLICATION DETAILS:

Applicant(s)/Owner(s):	L & K Tabke Holdings LLC
Application Type:	Conditional Use Permit
Zoning District:	Agricultural Preservation (AP)
Total Acres:	76.02
Current Use:	Agricultural
Proposed Use:	Agricultural (Wind Power)
Parcel(s):	884420300005
Township/Range:	T88N R44W (Wolf Creek)
Section:	20
Quarter:	N ½ of the SW 1/4
Zoning District:	Agricultural Preservation (AP)
Floodplain:	Zone X (Not in floodplain)
Property Address:	3112 195th St., Moville, IA 51039 (Abutting Parcel)

Dear Board of Adjustment:

This letter is to inform you that the Woodbury County Zoning Commission reviewed the conditional use permit application submitted by L & K Tabke Holdings, LLC (Kathy Tabke) for the installation and use of three (3) 100' wind turbines to reduce the electrical costs on the farm on the property as referenced above on September 23, 2024.

The Commission voted 4-0 with the recommendation to approve the conditional use permit application.

Please refer to the draft copy of the Zoning Commission minutes for details about the Commission's recommendation.

Dated this 23 day of Sept, 2024

Christine Zellmer Zant, Chair
Woodbury County Zoning Commission

SEE ENCLOSED ZONING COMMISSION DRAFT MINUTES

Minutes - Woodbury County Zoning Commission – September 23, 2024

The Zoning Commission (ZC) meeting was held on September 23, 2024 at 5:00 PM in the Board of Supervisors' meeting room, located in the basement of the Woodbury County Courthouse at 620 Douglas Street, Sioux City, IA. The meeting was also accessible via teleconference.

Meeting Audio:
For specific content of this meeting, refer to the recorded video on the Woodbury County Zoning Commission "Committee Page" on the Woodbury County website:

- County Website Link:
  - https://www.woodburycountyiowa.gov/committees/zoning_commission/
- YouTube Direct Link:
  - https://www.youtube.com/watch?v=1mQWufHt3x0

ZC Members Present:
Corey Meister, Chris Zellmer Zant, Tom Bride, Jeff Hanson

County Staff Present:
Dan Priestley, Dawn Norton

Public Present:
Dan Bittinger, Andy Bobrytzke, Joel Vos, Elbert Baker, Kathy Tabke, Brad Tabke, Jimmie Colyer

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CALL TO ORDER:
Chair Chris Zant called the meeting to order at 5:00 p.m. Barb Parker was absent.

PUBLIC COMMENT ON MATTERS NOT ON THE AGENDA:
Priestley presented material about grain bins received from MidAmerican Energy. Bride made a motion to accept the material into the record, which Hanson seconded. The motion passed 4-0. See appendix.

APPROVAL OF MINUTES:
Bride and Hanson were absent at the previous meeting and abstained from the vote. Bride moved to defer the approval of the August 26, 2024 minutes, with Meister seconding. The motion passed 4-0.

PUBLIC HEARING (ACTION ITEM): ZONING MAP AMENDMENT (REZONE) FROM AGRICULTURAL PRESERVATION (AP) TO AGRICULTURAL ESTATES (AE) ZONING DISTRICT (PARCEL #884726200002):
Priestley read the staff report into the record. The Sandra K. Baker Revocable Trust (Applicant: Sandra K. Baker) and Jimmie L. and Renee T. Colyer (Owners) submitted an application to rezone a 1.14-acre portion of property (Parcel #884726200002) from the Agricultural Preservation (AP) District to the Agricultural Estates (AE) District. This portion will be combined with Lot 1 of the Baker Acres subdivision through the Woodbury County Assessor's combination process. A survey conducted by Al Fagan Land Surveying P.C. provides the legal description of the land to be conveyed to the Sandra K. Baker Revocable Trust. This triangular 1.14-acre portion is not eligible for development as a standalone lot, as it does not meet the requirements of the Zoning and Subdivision Ordinance. In the purchase agreement, Baker acknowledges that the property being acquired is "not a legal lot for building purposes" and must be combined with the adjacent parcel, Lot One (1) of Baker's Acres. The rezoning is requested to match the zoning of Lot 1, facilitating the combination into a single parcel for tax purposes. This proposal was properly noticed in the Sioux City Journal Legals Section on September 12, 2024. Neighbors within 1000 feet were notified via a September 9 letter about the public hearing on September 23, 2024, and stakeholders including government agencies, utilities, and organizations have been requested to comment. No objections were received. Staff recommends approval as the proposal meets the criteria for approval. Bride moved to close the public hearing, seconded by Hanson. The motion carried 4-0. Hanson then moved to approve the zoning ordinance map amendment from AP to AE, with the condition that the portion be combined with Lot 1 of Baker's Acres subdivision, seconded by Meister. The motion carried 4-0, and the application will be forwarded to the Board of Supervisors.

PUBLIC HEARING (ACTION ITEM): CONSIDERATION OF NUCLEAR ENERGY FACILITIES IN THE WOODBURY COUNTY ZONING ORDINANCE:
At the request of the Board of Supervisors, the Commission held a public hearing to discuss the potential incorporation of nuclear energy facilities into the zoning ordinance. No public comments were offered. This follows the Board's directive on July 2, 2024, to explore nuclear energy as a county option. No formal proposals have been submitted by companies, and few public comments have been received up to this point. Bride suggested seeking input from MidAmerican Energy regarding future power sources, and a town hall meeting after the harvest season was proposed to discuss nuclear energy with residents. Bride moved to revisit this topic next month, seconded by Hanson. The motion was approved 4-0.

REVIEW OF CONDITIONAL USE PERMIT APPLICATION (ACTION ITEM): INSTALLATION OF THREE 100-FOOT WIND TURBINES (PARCEL #884420300005):
Priestley read the staff report into the record. L & K Tabke Holdings, LLC (Kathy Tabke) submitted a conditional use permit application to install three 100-foot wind turbines to reduce electrical costs on the farm. The proposed locations are approximately 5.2 miles southeast of Moville, on the south side of 195th Street and east of Jasper Avenue. The property is located in the Agricultural Preservation (AP) Zoning District, where "Electric wind generator (Private use)" is classified as a conditional use eligible for review by the Zoning Commission and consideration by the Board of Adjustment. This proposal was properly noticed in the Sioux City Journal's legal section on September 21, 2024. Neighbors within 500 feet were notified via a September 18, 2024 letter about the October 7, 2024 Board of Adjustment public hearing. Stakeholders have been requested to comment. Based on the information received and the requirements of the Zoning Ordinance, the proposal meets the criteria for approval. Bride emphasized that the turbines are for private use. Priestley discussed setback concerns from other structures on the premises per the zoning ordinance. The property owner assumes all risks for any malfunctions or tower collapses. Meister moved to close the public hearing, seconded by Bride. The motion carried 4-0. Based on the information provided and zoning criteria, Meister moved to recommend approval of the conditional use permit, seconded by Hanson. The motion carried 4-0, and the application will be forwarded to the Board of Adjustment.

REVIEW OF CONDITIONAL USE PERMIT APPLICATION (ACTION ITEM): INSTALLATION OF 250-FOOT WIRELESS COMMUNICATIONS TOWER (PARCEL #874720400004):
Priestley read the staff report into the record. Andrew Bobrytzke, on behalf of American Towers LLC and the Bradley J. Kobold Trust, has filed a conditional use permit application to construct a 250-foot self-support wireless communications tower to replace an existing tower on Parcel #874720400004. The proposed location is about half a mile west of Salix, on the north side of 260th Street and west of Barker Avenue. The parcel is located in the General Industrial (GI) Zoning District, where "telecommunication towers" are classified as conditional uses eligible for review by the Zoning Commission and for consideration by the Board of Adjustment. This proposal was noticed in the Sioux City Journal's legal section on September 21, 2024. Neighbors within one mile were notified via a September 18, 2024 letter about the October 7, 2024 Board of Adjustment public hearing. Appropriate stakeholders have been requested to comment. Based on the information received and zoning requirements, the proposal meets the criteria for approval. Staff recommends approval. Hanson moved to close the public hearing, seconded by Bride. Bride then moved to recommend approval of the tower construction and use on the specified parcel, seconded by Meister. The motion carried 4-0, and the application will be forwarded to the Board of Adjustment.

INFORMATION ITEM: CONSIDERATION OF DECOMMISSIONING REQUIREMENTS FOR CARBON PIPELINES:
Priestley provided an update on the Board of Supervisors' August 27, 2024, decision to direct county staff to explore decommissioning requirements for carbon pipelines as part of a new ordinance. While federal regulations govern pipeline decommissioning, staff are reviewing local regulations from other counties and states. The Zoning Commission and Board of Adjustment will be involved in researching and offering recommendations. Bride noted that pipeline easements remain in place even if a pipeline is no longer in use.

STAFF UPDATE:
Priestley updated the Commission on the proposed amendments to Ordinance 56, which regulates Commercial Wind Energy Conversion Systems. He discussed the three-step public hearing process and referenced safety information obtained from safety data sheets for a Nordex system submitted to the Ohio Public Utilities Commission.

PUBLIC COMMENT ON MATTERS NOT ON THE AGENDA:
None.

COMMISSIONER COMMENT OR INQUIRY:
None.

ADJOURNMENT:
Meister moved to adjourn the meeting, seconded by Hanson. The meeting adjourned at 6:02 p.m.

APPENDIX:

Received from MidAmerican Energy (September 13, 2024)

MIDAMERICAN ENERGY COMPANY

MidAmerican Energy Company
P.O. Box 657
Des Moines, IA 50306-0657

September 13, 2024

WOODBURY COUNTY
PLANNING AND ZONING COMMISSION
620 DOUGLAS ST
SIOUX CITY IA 51101

Dear WOODBURY COUNTY:

MidAmerican Energy is committed to the safety of our customers and contractors working within our service territory. The enclosed brochure provides facts and useful information to consider when issuing permits or long-range planning involving grain storage, grain bin modification. This information is drawn from the Iowa Administrative Code, American National Standards Institute, and the National Electric Safety Code. If you or the residents of your city have additional questions, please contact us at **888-427-5632**. More information about farming and working safely around electricity and natural gas lines is available online at: **MidAmericanEnergy.com/farm-safety**.

Sincerely,

Shane Emmert
General Manager, Electric Distribution Engineering
MidAmerican Energy

Attachment

YOUR SAFETY MATTERS
GRAIN BIN CLEARANCE

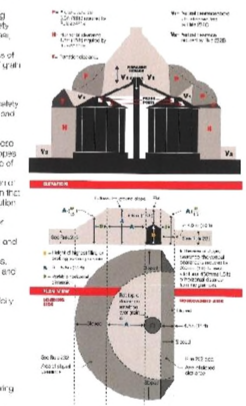
MidAmerican Energy is committed to providing important information to help ensure your safety when working near electrical facilities. Each year, we notify farmers, farm lenders, grain bin merchants, and city and county zoning officials of the hazards and standards for construction of grain bins near overhead power lines.

The Iowa Administrative Code (IAC) Section 199-25.2(3)b requires that specific minimum safety clearances be maintained between grain bins and electrical lines in accordance with American National Standards Institute (ANSI) C2-2017 National Electrical Safety Code, Rule 234F. These diagrams show the minimum clearance envelopes from electrical lines. It's vital that you are aware of these clearance requirements, because constructing or operating a grain bin in violation of these standards creates a hazardous condition that may lead to a risk of burns, shock or electrocution.

If you or your customer are planning to build or modify a grain bin, please contact us at 888-427-5632 to discuss the possible location and to determine if MidAmerican can assist in any possible conflicts with nearby electrical facilities. Your assistance and attention are appreciated and will help ensure that grain bins are properly positioned and safe to operate. For more information about farming safely around electricity and natural gas lines, visit **MidAmericanEnergy.com/farm-safety**.

Sincerely,

Shane Emmert
General Manager, Electric Distribution Engineering
MidAmerican Energy Company



888-427-5632 MidAmericanEnergy.com

MIDAMERICAN ENERGY COMPANY.

BOARD OF ADJUSTMENT ACTION ON
OCTOBER 7, 2024 (EXCERPT FROM DRAFT MINUTES)

Public Hearing – Conditional Use Permit Application (Action Item): For the Installation and Use of Three 100' Wind Turbines (Parcel #884420300005).
Hair opened the public hearing and Priestley read the staff report into the record. The Conditional Use Permit application was submitted by L & K Tabke Holdings, LLC (Kathy Tabke) for the installation and use of three 100' wind turbines to reduce electrical costs on the farm.

- Location: Parcel #884420300005, T88N R44W (Wolf Creek Township), Section 20, N ½ of SW ¼, approximately 5.2 miles southeast of Moville, IA, on the south side of 195th Street and east of Jasper Avenue.
- Zoning: The property is in the Agricultural Preservation (AP) Zoning District, where "Electric wind generator (Private Use)" is classified as a "conditional use" under Section 3.03.4 of the Woodbury County Zoning Ordinance.
- Applicant/Owner: L & K Tabke Holdings, LLC, 3112 195th St., Moville, IA 51039.

Priestley introduced an email communication from Kerry at American Windpower and Kathy Tabke and asked that they be included in the record. Motion by Clark to accept additional information into the record; seconded by Thiesen. Motion carried 4-0. (See appendix)

Kerry Kisslinger from American Windpower discussed the project. Clark inquired about similar installations in the area. Kisslinger noted one operating on Kyle Walker's property on Fayette Ave. Turner requested Safety Data Sheets to provide information on distance setbacks and safety considerations, referencing prior discussions at the Board of Supervisors regarding commercial wind turbines. He indicated that previous Safety Data Sheets revealed hazards that had not been disclosed. Tabke stated that the wind turbines were primarily intended to power barns, with excess energy available for net metering.

Hair proposed that if the Conditional Use Permit (CUP) were approved, a disclaimer be added stating that the owner operates at their own risk and that the county would not be liable for safety issues. Kisslinger mentioned that ice throw should not be a concern, as turbines do not start when iced up. Tabke assured that the site was designed to allow access for emergency vehicles.

Turner moved to close the public hearing; seconded by Clark. Motion carried 4-0.

Turner and Hair discussed that Safety Data Sheets should be provided from the manufacturer for safety and liability reasons. Clark inquired if approval could be contingent on receiving the safety data. Priestley clarified that this issue would need to be addressed at the next scheduled meeting.

Turner motioned to table the discussion until the next public meeting on November 4, 2024, with the applicant required to provide Safety Data Sheets from the manufacturer for presentation at that meeting; Clark seconded. Motion carried 4-0.

Following the First Public Hearing

As noted in the email exchange (see content provided below), the Board of Adjustment tabled the private wind turbine conditional use permit application, requesting additional information, specifically the material safety data sheets (MSDS) for the three proposed BWC Excel 15 systems from Bergey Windpower Co.

In response to the request on October 7, 2024, Michael Bergey, President and CEO of the Bergey Windpower Company provided chemical compound safety data sheets. However, there were no turbine safety data sheets available for the Excel 15 wind energy system as referenced in his October 17, 2024 email (see below). Mr. Bergey stated that "we do not recommend any set-back distances and there are no 'emergency response' recommendations. Our turbine will be the strongest structure in the area (engineered for winds up to 140 mph) and it does not require any intervention for storm protection."

The Woodbury County Zoning Ordinance does not have setbacks enumerated specifically for electric wind generators (private use). The ordinance does have controlling zoning district dimensional standards (setbacks) for each district including the Agricultural Preservation (AP) Zoning District. The setbacks for this district includes 100 FT from the front right of way line, and 10 FT from the side yard, rear yard, and 10 FT from other structures. However, without a direct setback enumeration for electric wind generators, the Board of Adjustment must evaluate each application/proposal on a case-by-case basis to determine whether it is compatible with the property and surrounding properties. Thus, to grant a conditional use, the Board of Adjustment must determine that:

Standards

- The conditional use requested is authorized as a conditional use in the zoning district within which the property is located and that any specific conditions or standards described as part of that authorization have been or will be satisfied.

- The proposed use and development will be in harmony with the general purpose and intent of this ordinance and the goals, objectives and standards of the general plan.
- The proposed use and development will not have a substantial or undue adverse effect upon adjacent property, the character of the neighborhood, traffic conditions, parking, utility facilities, and other factors affecting the public health, safety and general welfare.
- The proposed use and development will be located, designed, constructed and operated in such a manner that it will be compatible with the immediate neighborhood and will not interfere with the orderly use, development and improvement of surrounding property.
- Essential public facilities and services will adequately serve the proposed use or development.
- The proposed use or development will not result in unnecessary adverse effects upon any significant natural, scenic or historic features of the subject property or adjacent properties.

Other Considerations

Also, in its review of the conditional use request, the Board of Adjustment shall consider whether, and to what extent:

- The proposed use or development, at the particular location is necessary or desirable to provide a service or facility that is in the public interest or will contribute to the general welfare of the neighborhood or community.
- All possible efforts, including building and site design, landscaping and screening have been undertaken to minimize any adverse effects of the proposed use or development.

In their final determination, the Board may decide to do one of the following:

- Approve
- Approve with conditions or limitations
- Deny the requested conditional use

Reasonable conditions or limitations could be used to address any potential deficiencies in the application or proposal's compatibility with the standards and other considerations of a conditional use permit.

The following content is from Section 2.02.9 of the Zoning Ordinance

Limitations

- The Board of Adjustment may set a time limit for establishment of the use authorized by a conditional use permit as a condition for approval. If the use has not been established within that time, the Board of Adjustment may consider revocation of the conditional use permit.
- If the use or development for which the conditional use permit was granted ceases to exist for a period of ninety days, the certificate of occupancy shall be terminated. The use or development shall not be reinstated unless the Board of Adjustment issues another conditional use permit.

Appeal of the actions of the Board of Adjustment.

- Any interested party may appeal a decision of the Board of Adjustment as provided by the Code of Iowa. Such appeal suspends the effect of the action of the Board of Adjustment until the appeal has been resolved.

Successive applications (Section 2.02.1(5))

- New application barred. If any application, appeal or other request pursuant to this ordinance (the Zoning Ordinance) has been denied, no new application for similar action may be initiated within one year.
- Exception. If the administrative official or body which originally decided the issue determines that either conditions have changed; new or additional information is available; or a mistake of law or fact was made, a new application may be considered.

Zoning Ordinance Hyperlink:
https://www.woodburycountyiowa.gov/files/community_economic_development/zoning_ordinance_86604.pdf

Daniel Priestley

From: Daniel Priestley
Sent: Tuesday, October 8, 2024 9:34 AM
To: LANE TABKE; Marketing
Subject: Board of Adjustment Decision (Conditional Use Permit)

Importance: High

Kathy and Kerry,

This is a follow-up to last evening's Board of Adjustment meeting. As you know, the Board tabled the private wind turbine conditional use permit application, requesting additional information, specifically the material safety data sheets (MSDS) for the three proposed BWC Excel 15 systems from Bergey Windpower Co. The Board emphasized the importance of this information in evaluating the application based on the standards and considerations for conditional use, which are included below.

The Board will make its final decision after the public hearing scheduled for November 4 at 6:00 PM. Their review is based on the following standards:

STANDARD #1
The conditional use requested is authorized as a conditional use in the zoning district within which the property is located and that any specific conditions or standards described as part of that authorization have been or will be satisfied.

STANDARD #2
The proposed use and development will be in harmony with the general purpose and intent of this ordinance and the goals, objectives and standards of the general plan.

STANDARD #3
The proposed use and development will not have a substantial or undue adverse effect upon adjacent property, the character of the neighborhood, traffic conditions, parking, utility facilities, and other factors affecting the public health, safety and general welfare.

STANDARD #4
The proposed use and development will be located, designed, constructed and operated in such a manner that it will be compatible with the immediate neighborhood and will not interfere with the orderly use, development and improvement of surrounding property.

STANDARD #5
Essential public facilities and services will adequately serve the proposed use or development.

STANDARD #6
The proposed use or development will not result in unnecessary adverse effects upon any significant natural, scenic or historic features of the subject property or adjacent properties.

OTHER CONSIDERATION #1
The proposed use or development, at the particular location is necessary or desirable to provide a

service or facility that is in the public interest or will contribute to the general welfare of the neighborhood or community.

OTHER CONSIDERATION #2
All possible efforts, including building and site design, landscaping and screening have been undertaken to minimize any adverse effects of the proposed use or development.

The request for the MSDS aligns with these standards, particularly concerning public health, safety, and environmental impact.

At this time, I would appreciate it if you would work on acquiring and providing the MSDS. It would be ideal to receive those documents before **October 23, 2024**.

Please reach out with any questions or concerns at 712-279-6609. We will keep you updated as we approach the November hearing.

Respectfully and sincerely,

Daniel J. Priestley, MPA
Woodbury County Zoning Coordinator
620 Douglas Street #609
Sioux City, IA 51101

Phone: 712-279-6609
Fax: 712-279-6530
Website: WoodburyCountyIowa.gov

Daniel Priestley

From: LANE TABKE <LKTABKE@WIATEL.NET>
Sent: Thursday, October 10, 2024 9:18 AM
To: Daniel Priestley
Subject: MSDS

Good Morning Daniel,

Do you have a safety data sheet specific to towers? I am ultimately the person that needs to make sure you have the requested information before the 23rd and I have absolutely no clue what a safety data sheet it needs to include. Everything I have found on my search of the internet is always specific to chemicals and paints and that does not inform me of anything. Is it an OSHA type form the directors are requesting?

Thank you,

Kathy Tabke

Daniel Priestley

From: Daniel Priestley
Sent: Thursday, October 10, 2024 9:46 AM
To: LANE TABKE
Subject: RE: MSDS

Good morning, Kathy,

The Safety Data Sheets (SDS) for your turbines and towers should be available directly from the manufacturers. I recommend reaching out to them and requesting the SDS specific to your proposed models, explaining that you need them as part of the county's conditional use permit process.

SDSs are important documents that provide key safety information about the materials used in wind turbines. For example, they detail any hazardous substances like lubricants or coatings, which could pose risks such as flammability or toxicity. Having this information helps you understand how to safely handle, store, and maintain the turbines.

Beyond that, SDSs also contain emergency response guidelines, which are essential if there's ever a weather-related event, chemical spill, fire, or collapse. They outline the steps you need to take in such situations, helping to ensure safety. Additionally, the SDS will recommend protective gear, like gloves or goggles, when working with certain components, so you can avoid accidents or health risks.

In short, these documents are not just a formality—they provide the necessary information to safely operate and maintain your wind turbine system, while also meeting the safety regulations required for the permit.

Let me know if you have any questions.

Respectfully and sincerely,

Daniel J. Priestley, MPA
Woodbury County Zoning Coordinator
620 Douglas Street #609
Sioux City, IA 51101

Phone: 712-279-6609
Fax: 712-279-6530
Website: WoodburyCountyIowa.gov

-----Original Message-----
From: LANE TABKE <LKTABKE@WIATEL.NET>
Sent: Thursday, October 10, 2024 9:18 AM
To: Daniel Priestley <dpriestley@woodburycountyiowa.gov>
Subject: MSDS

Good Morning Daniel,

Do you have a safety data sheet specific to towers? I am ultimately the person that needs to make sure you have the requested information before the 23rd and I have absolutely no clue what a safety data sheet it needs to include. Everything I have found on my search of the internet is always specific to chemicals and paints and that does not inform me of anything. Is it an OSHA type form the directors are requesting?

Thank you,

Kathy Tabke

Daniel Priestley

From: Michael Bergey <mbergey@bergey.com>
Sent: Thursday, October 17, 2024 6:42 AM
To: Daniel Priestley
Cc: Lktabke@wiatel.net; Marketing
Subject: MSDS Documents for Bergey Excel 15 Wind Turbine
Attachments: Priestley_Woodbury Co._IA_10.14.24.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Mr. Priestley,

Please find attached the MSDS's for the Bergey Excel 15 wind turbine per the request of the Board of Adjustment. We have created one document, but would be happy to send the three MSDS's as separate files if that would be more convenient for you.

Please let me know if Bergey Windpower can be of further assistance.

Best Regards,

Mike Bergey
President & CEO
Bergey Windpower Co.
2200 Industrial Blvd.
Norman, OK USA
Tel: 405-364-4212
E-mail: mbergey@bergey.com
Web: www.bergey.com

Bergey Windpower Co.
2200 Industrial Blvd.
Norman, OK 73069
Tel: 405-364-4212
Fax: 405-364-2078

Daniel J. Priestley, MPA
Woodbury County Zoning Coordinator
620 Douglas Street #609
Sioux City, IA 51101

October 14, 2024

Dear Mr. Priestley,

Bergey Windpower is pleased to be of assistance in the consideration of the L&K Tabke Farms' conditional use permit for the installation of our small wind turbines. The Board of Adjustments has requested information on MSDS's associated with our wind turbines. We three compounds in the turbine as shipped that have MSDS's:

1. SKF LGMT 2 ball bearing grease, inside four sealed ball bearings (two for the alternator and two for the yaw axis pintle), ~ 8 oz. total per turbine.
2. Vibra-Lite threadlocker compound packet, 0.06 oz supplied for assembly of the turbine
3. Vibra-Lite Nickel Anti-Sieze Compound packet, 0.06 oz supplied for assembly of the turbine

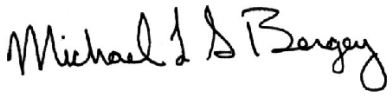
One of the turbine bearings and the Vibra-Lite packets are shown in the following photo:

MSDS's for these compounds are attached. None of them would be considered hazardous materials.

I will also comment that I have reviewed the proposed siting of the three turbines for L&K Tabke Farms and we have no issues of concern. The use of tall towers allows turbine placements within farmsteads without suffering reduced performance from turbulence caused by the buildings and other structures.

We hope that the Board will rule favorably on the Tabke conditional use permit.

Sincerely,



Michael L.S. Bergey
President & CEO
mbergey@bergey.com

Safety Data Sheet

LGMT 2

Replaces date: 23/02/2021

Revision date: 27/09/2022
Version: 4.3.0

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name: LGMT 2

Unique Formula Identifier (UFI): 0ER8-N1QE-8Y10-8QAC

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended uses: Lubricant.

1.3. Details of the supplier of the safety data sheet

Supplier

Company:	SKF MPT
Address:	Meidoornkade 14
Zip code:	3992 AE
City:	AE Houten
Country:	NETHERLANDS
E-mail:	support.mpt@skf.com
Phone:	+31 30 6307200
Homepage:	www.skf.com

1.4. Emergency Telephone Number

Members of the public: 111 (NHS 111 (Scotland: NHS 24)).

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

CLP-classification: Skin Sens. 1;H317

Most serious harmful effects: May cause an allergic skin reaction.

2.2. Label elements

Pictograms

Signal word: Warning

Contains

Substance: Naphthenic acids, zinc salts, basic;

Hazard Statements

H317 May cause an allergic skin reaction.

Precautionary statements

P280 Wear protective gloves.

2.3. Other hazards

The product does not contain any PBT or vPvB substances.
Endocrine disrupting properties: None known.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Substance	CAS No./ EC No./ REACH Reg. No.	Concentration	Notes	CLP-classification
Naphthenic acids, zinc salts, basic	84418-50-8 282-762-6 01-2119988500-34	< 1.2 %		Skin Sens. 1;H317 Eye Irrit. 2;H319 Aquatic Chronic 3;H412 LD50 (Acute toxicity - oral): > 2000 mg/kg bw
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene	68411-46-1 270-128-1 01-2119491299-23	< 0.25 %		Repr. 2;H361f Aquatic Chronic 3;H412 LD50 (Acute toxicity - oral): > 2000 mg/kg bw LD50 (Acute toxicity - dermal): > 2000 mg/kg bw

Please see section 16 for the full text of H- / EUH-phrases.

Ingredient comments: The mineral oils in the product contain <3% DMSO extract(IP 346).

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation: Seek fresh air. Seek medical advice in case of persistent discomfort.

Ingestion: Wash out mouth thoroughly and drink 1-2 glasses of water in small sips. Seek medical advice in case of discomfort.

Skin contact: Remove contaminated clothing. Wash skin with soap and water. Seek medical advice in case of persistent discomfort.

Eye contact: Flush with water (preferably using eye wash equipment) until irritation subsides. Seek medical advice if symptoms persist.

General: When obtaining medical advice, show the safety data sheet or label.

4.2. Most important symptoms and effects, both acute and delayed

May cause sensitisation by skin contact. Symptoms include reddening, swelling, blistering and ulceration - often slowly developing.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptoms. No special immediate treatment required.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media: Extinguish with powder, foam, carbon dioxide or water mist. Use water or water mist to cool

non-ignited stock.

Unsuitable extinguishing media: Do not use water stream, as it may spread the fire.

5.2. Special hazards arising from the substance or mixture

Not flammable, but combustible. Product decomposes in fire conditions or when heated to high temperatures, and inflammable and toxic gases may be released.

5.3. Advice for firefighters

Move containers from danger area if it can be done without risk. Avoid inhalation of vapour and flue gases - seek fresh air. Wear Self-Contained Breathing Apparatus (SCBA) with a chemical protection suit only where personal (close) contact is likely.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: Stay upwind/keep distance from source. Wear safety goggles if there is a risk of eye splash. Wear gloves.

For emergency responders: In addition to the above: Protective suit equivalent to EN 368, type 3, is recommended.

6.2. Environmental precautions

Prevent spillage from entering drains and/or surface water.

6.3. Methods and material for containment and cleaning up

Contain and absorb spill with sand or other absorbent material and transfer to suitable waste containers. Wipe up minor spills with a cloth.

6.4. Reference to other sections

See section 8 for type of protective equipment. See section 13 for instructions on disposal.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

The product should be used under well-ventilated conditions and preferably under process ventilation. Running water and eye wash equipment must be available. Wash hands before breaks, before using restroom facilities, and at the end of work.

7.2. Conditions for safe storage, including any incompatibilities

Store safely, out of reach of children and away from food, animal feeding stuffs, medicines, etc. Keep in tightly closed original packaging. Do not store with the following: Strong oxidisers. Do not expose to heat (e.g. sunlight).

7.3. Specific end use(s)

None.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limit: Contains no substances subject to reporting requirements

Measuring methods: Compliance with occupational exposure limits may be checked by occupational hygiene

measurements.

Legal basis: EH40/2005 Workplace exposure limits. Last amended January 2020.

8.2. Exposure controls

Appropriate engineering controls: Wear the personal protective equipment specified below.

Personal protective equipment, eye/face protection: Wear safety goggles if there is a risk of eye splash. Eye protection must conform to EN 166.

Personal protective equipment, hand protection: Wear gloves. Type of material: Nitrile rubber. Breakthrough time has not been determined for the product. Change gloves often. Gloves must conform to EN 374.
The suitability and durability of a glove is dependant on usage, e.g. frequency and duration of contact, glove material thickness, functionality and chemical resistance. Always seek advice from the glove supplier.

Personal protective equipment, respiratory protection: Not required.

In case of risk of formation of spray mist, wear respiratory protective equipment with P2 filter. Respiratory protection must conform to one of the following standards: EN 136/140/145.

Environmental exposure controls: Ensure compliance with local regulations for emissions.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Parameter	Value/unit
State	Paste / Fat.
Colour	Red
Odour	No data
Solubility	Not miscible with the following: Water.

Parameter	Value/unit	Remarks
Odour threshold	No data	
Melting point	No data	
Freezing point	No data	
Initial boiling point and boiling range	No data	
Flammability (solid, gas)	No data	
Flammability limits	No data	
Explosion limits	No data	
Flash Point	> 150 °C	
Auto-ignition temperature	No data	
Decomposition temperature	No data	
pH (solution for use)	No data	
pH (concentrate)	No data	
Kinematic viscosity	> 20.5 mm2/s	(40 °C)
Viscosity	No data	
Partition coefficient n-octonol/water	No data	
Vapour pressure	No data	
Density	< 1000 kg/m3	(25 °C)
Relative density	No data	

Vapour density	No data	
Relative density (sat. air)	No data	
Particle characteristics	No data	

9.2. Other information

Parameter	Value/unit	Remarks
Explosive properties		Non-explosive
VOC (Volatile organic compounds):	0.01	

SECTION 10: Stability and reactivity

10.1. Reactivity

Reacts with the following: Strong oxidisers.

10.2. Chemical stability

The product is stable when used in accordance with the supplier's directions.

10.3. Possibility of hazardous reactions

None known.

10.4. Conditions to avoid

Avoid heating and contact with ignition sources.

10.5. Incompatible materials

Strong oxidisers.

10.6. Hazardous decomposition products

Product decomposes in fire conditions or when heated to high temperatures, and inflammable and toxic gases may be released.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity - oral

LGMT 2

Organism	Test Type	Exposure time	Value	Conclusion	Test method	Source
	ATE		4996.50 mg/kg		Calculated	

Naphthenic acids, zinc salts, basic, cas-no 84418-50-8

Organism	Test Type	Exposure time	Value	Conclusion	Test method	Source
	LD50		> 2000 mg/kg bw			

Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene, cas-no 68411-46-1

Organism	Test Type	Exposure time	Value	Conclusion	Test method	Source
Rat	LD50		> 2000 mg/kg bw			

The product does not have to be classified. Based on existing data, the classification criteria are deemed not to have been met. Ingestion may cause discomfort.

Acute toxicity - dermal

LGMT 2

Organism	Test Type	Exposure time	Value	Conclusion	Test method	Source
	LD50		4689.60 mg/kg		Calculated	

Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene, cas-no 68411-46-1

Organism	Test Type	Exposure time	Value	Conclusion	Test method	Source
Rat	LD50		> 2000 mg/kg bw			

The product does not have to be classified. Based on existing data, the classification criteria are deemed not to have been met.

Acute toxicity - inhalation: The product does not have to be classified. Test data are not available.

Skin corrosion/irritation: The product does not have to be classified. Test data are not available. May irritate the skin - may cause reddening.

Serious eye damage/eye irritation: The product does not have to be classified. Test data are not available. Temporary irritation.

Respiratory sensitisation or skin sensitisation: May cause sensitisation by skin contact. Symptoms include reddening, swelling, blistering and ulceration - often slowly developing.

Germ cell mutagenicity: The product does not have to be classified. Test data are not available.

Carcinogenic properties: The product does not have to be classified. Test data are not available.

Reproductive toxicity: The product does not have to be classified. Test data are not available.

Single STOT exposure: The product does not have to be classified. Test data are not available.

Repeated STOT exposure: The product does not have to be classified. Test data are not available.

Aspiration hazard: The product does not have to be classified. Test data are not available.

11.2. Information on other hazards

Endocrine disrupting properties: None known.

Other toxicological effects: None known.

SECTION 12: Ecological information

12.1. Toxicity

The product does not have to be classified. Test data are not available. The product contains small quantities of environmentally hazardous substances.

12.2. Persistence and degradability

Not expected to be biodegradable. Test data are not available.

12.3. Bioaccumulative potential

No bioaccumulation expected. Test data are not available.

12.4. Mobility in soil

Not expected to be mobile in soil. Test data are not available.

12.5. Results of PBT and vPvB assessment

The product does not contain any PBT or vPvB substances.

12.6. Endocrine disrupting properties

None known.

12.7. Other adverse effects

Oil products may cause soil and water pollution.

German water pollution classification (WGK): 1

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Avoid discharge to drain or surface water. If this product as supplied becomes a waste, it does not meet the criteria of a hazardous waste (Dir. 2008/98/EU). Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements. Empty, cleansed packaging should be disposed of for recycling. Uncleansed packaging is to be disposed of via the local waste-removal scheme.

Category of waste: EWC code: Depends on line of business and use, for instance 13 08 99* wastes not otherwise specified

Absorbent/cloth contaminated with the product: EWC code: 15 02 03 absorbents, filter materials, wiping cloths and protective clothing other than those mentioned in 15 02 02

SECTION 14: Transport information

14.1. UN number or ID number:	Not applicable.	**14.4. Packing group:**	Not applicable.
14.2. UN proper shipping name:	Not applicable.	**14.5. Environmental hazards:**	Not applicable.
14.3. Transport hazard class(es):	Not applicable.		

14.6. Special precautions for user

None.

14.7. Maritime transport in bulk according to IMO instruments

Not applicable.

Other Information: The product is not covered by the rules for transport of dangerous goods.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Special Provisions: Special care should be applied for employees under the age of 18. Young people under the age of 18 may not carry out any work causing harmful exposure to this product.

Covered by:
Council Directive (EC) on the protection of young people at work.

15.2. Chemical Safety Assessment

REACH Reg. No.	Substance name

01-2119491299-23	Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene
01-2119988500-34	Naphthenic acids, zinc salts, basic

SECTION 16: Other information

Version history and indication of changes

Version	Revision date	Responsible	Changes
4.3.0	27/09/2022	Bureau Veritas HSE/ SRU	1-3, 7, 9, 11-13, 15-16

Abbreviations:
PBT: Persistent, Bioaccumulative and Toxic
vPvB: Very Persistent and Very Bioaccumulative
STOT: Specific Target Organ Toxicity

Other Information:
This safety data sheet has been prepared for and applies to this product only. It is based on our current knowledge and the information that the supplier was able to provide about the product at the time of preparation. The safety data sheet complies with applicable law on preparation of safety data sheets in accordance with Regulation 1907/2006/EC "The Registration, Evaluation and Authorization of Chemicals" as amended by the stationary UK REACH etc. (EU Exit) as subsequently changed.

Training advice:
A thorough knowledge of this safety data sheet should be a prerequisite condition.

Classification method:
Calculation based on the hazards of the known components.

List of relevant H-statements

H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H361f	Suspected of damaging fertility.
H412	Harmful to aquatic life with long lasting effects.

Country:
GB

Safety Data Sheet
acc. to OSHA HCS

Printing date 03/06/2019 *Reviewed on 02/28/2019*

1 Identification

- ***Product identifier***
  - ***Trade name:*** Vibra-TITE® Threadlocker
    - ***Synonyms:*** 121 Medium Strength Threadlocker
    - ***Part number:*** VT121
    - ***Application of the substance / the mixture*** Thread Locking
- ***Details of the supplier of the safety data sheet***
  - ***Manufacturer/Supplier:***

ND Industries, Inc
1000 North Crooks Road
Clawson, MI 48017
USA
Telephone: +1-248-288-0000
Email: info@ndindustries.com
Website: www.ndindustries.com

  - ***Information department:*** Product safety department
  - ***Emergency telephone number:***
United States: 1-800-424-9300
International: +1-703-527-3887

2 Hazard(s) identification

- ***Classification of the substance or mixture***

GHS08 Health hazard

Carc. 2	H351	Suspected of causing cancer.
STOT RE 2	H373	May cause damage to organs through prolonged or repeated exposure.

GHS07

Skin Irrit. 2	H315	Causes skin irritation.
Eye Irrit. 2A	H319	Causes serious eye irritation.
Skin Sens. 1	H317	May cause an allergic skin reaction.
STOT SE 3	H335	May cause respiratory irritation.

- ***Label elements***
  - ***GHS label elements*** The product is classified and labeled according to the Globally Harmonized System (GHS).
    - ***Hazard pictograms***

GHS07 GHS08

    - ***Signal word*** Warning
    - ***Hazard-determining components of labeling:***
2-(2-methylprop-2-enoyloxy)ethyl 2-methylprop-2-enoate
methacrylic acid, monoester with propane-1,2-diol
dimethylbenzyl hydroperoxide
2'-phenylacetohydrazide
    - ***Hazard statements***
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.
H351 Suspected of causing cancer.
H335 May cause respiratory irritation.
H373 May cause damage to organs through prolonged or repeated exposure.
    - ***Precautionary statements***

P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P261	Avoid breathing dust/fume/gas/mist/vapors/spray
P264	Wash face, hands and any exposed skin thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.

(Contd. on page 2)

Safety Data Sheet
acc. to OSHA HCS

(Contd. of page 1)

P272	Contaminated work clothing must not be allowed out of the workplace.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P280	Wear protective gloves.
P280	Wear eye protection / face protection.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P312	Call a poison center/doctor if you feel unwell.
P314	Get medical advice/attention if you feel unwell.
P362+P364	Take off contaminated clothing and wash it before reuse
P332+P313	If skin irritation occurs: Get medical advice/attention.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P321	Specific treatment (see on this label).
P337+P313	If eye irritation persists: Get medical advice/attention.
P363	Wash contaminated clothing before reuse.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

- ***Classification system:***
  - ***NFPA ratings (scale 0 - 4)***

Health = 2
Fire = 1
Reactivity = 0

  - ***HMIS-ratings (scale 0 - 4)***

Health = *2
Fire = 1
Reactivity = 0

- ***Other hazards***
  - ***Results of PBT and vPvB assessment***
    - ***PBT:*** Not applicable.
    - ***vPvB:*** Not applicable.

3 Composition/information on ingredients

- ***Chemical characterization: Mixtures***
  - ***Description:*** Mixture of the substances listed below with nonhazardous additions.
  - ***Dangerous components:***

CAS: 25852-47-5	2-(2-methylprop-2-enoyloxy)ethyl 2-methylprop-2-enoate Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT SE 3, H335	50 – 59%
CAS: 27813-02-1	methacrylic acid, monoester with propane-1,2-diol Eye Irrit. 2A, H319; Skin Sens. 1, H317	5 – 9%
CAS: 67762-90-7	Amorphous Silica Combustible Dust	1 – 4%
CAS: 80-15-9	dimethylbenzyl hydroperoxide Self-react. F, H242; Org. Perox. E, H242; Acute Tox. 3, H311; STOT RE 2, H373; Asp. Tox. 1, H304; Eye Dam. 1, H318; Acute Tox. 4, H302; STOT SE 3, H335; Flam. Liq. 4, H227	1 – 4%
CAS: 114-83-0	2'-phenylacetohydrazide Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2A, H319; Skin Sens. 1, H317; STOT SE 3, H335	≤ 1%
CAS: 98-82-8	cumene Flam. Liq. 3, H226; Carc. 2, H351; Asp. Tox. 1, H304; Acute Tox. 4, H302; STOT SE 3, H335	≤ 1%

4 First-aid measures

- ***Description of first aid measures***
  - ***After inhalation:***
    In case of unconsciousness place patient stably in side position for transportation.
    Supply fresh air; consult doctor in case of complaints.
  - ***After skin contact:*** Immediately wash with water and soap and rinse thoroughly.
  - ***After eye contact:*** Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
  - ***After swallowing:*** If symptoms persist consult doctor.
  - ***Information for doctor:***
    - ***Most important symptoms and effects, both acute and delayed*** No further relevant information available.
    - ***Indication of any immediate medical attention and special treatment needed***
      No further relevant information available.

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Trade name: Vibra-TITE® Threadlocker

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5 Fire-fighting measures

- ***Extinguishing media***
  - ***Suitable extinguishing agents:***
    CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
    CO2, sand, extinguishing powder. Do not use water.
  - ***For safety reasons unsuitable extinguishing agents:*** Water
- ***Special hazards arising from the substance or mixture*** No further relevant information available.
- ***Advice for firefighters***
  - ***Protective equipment:***
    Wear self-contained respiratory protective device.
    Wear fully protective suit.

6 Accidental release measures

- ***Personal precautions, protective equipment and emergency procedures***
  Wear protective equipment. Keep unprotected persons away.
  Ensure adequate ventilation
  Wear protective clothing.
- ***Environmental precautions:*** Do not allow to enter sewers/ surface or ground water.
- ***Methods and material for containment and cleaning up:***
  Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  Ensure adequate ventilation.
  Do not flush with water or aqueous cleansing agents
  Dispose of the collected material according to regulations.
- ***Reference to other sections***
  See Section 7 for information on safe handling.
  See Section 8 for information on personal protection equipment.
  See Section 13 for disposal information.

7 Handling and storage

- ***Handling:***
  - ***Precautions for safe handling***
    Ensure good ventilation/exhaustion at the workplace.
    Prevent formation of aerosols.
    No special precautions are necessary if used correctly.
  - ***Information about protection against explosions and fires:***
    Keep ignition sources away - Do not smoke.
    Protect against electrostatic charges.
- ***Conditions for safe storage, including any incompatibilities***
  - ***Storage:***
    - ***Requirements to be met by storerooms and receptacles:*** No special requirements.
    - ***Information about storage in one common storage facility:*** Not required.
    - ***Further information about storage conditions:***
      Keep receptacle tightly sealed.
      Store in cool, dry conditions in well sealed receptacles.
- ***Specific end use(s)*** No further relevant information available.

8 Exposure controls/personal protection

- ***Additional information about design of technical systems:*** No further data; see item 7.
- ***Control parameters***
  - ***Components with limit values that require monitoring at the workplace:***
    The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit.
    At this time, the other constituents have no known exposure limits.

CAS: 80-15-9 dimethylbenzyl hydroperoxide	
WEEL	Long-term value: 6 mg/m³, 1 ppm Skin
CAS: 98-82-8 cumene	
PEL	Long-term value: 245 mg/m³, 50 ppm Skin
REL	Long-term value: 245 mg/m³, 50 ppm Skin
TLV	Long-term value: (246) NIC-0.5 mg/m³, (50) NIC-0.1 ppm NIC-A3

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- ***Additional information:*** The lists that were valid during the creation were used as basis.

- ***Exposure controls***
  - ***Personal protective equipment:***
    - ***General protective and hygienic measures:***
      Keep away from foodstuffs, beverages and feed.
      Immediately remove all soiled and contaminated clothing.
      Wash hands before breaks and at the end of work.
      Avoid contact with the eyes and skin.
    - ***Breathing equipment:***
      Not required.
      In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
    - ***Protection of hands:***

      Protective gloves

      The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
      Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
      - ***Material of gloves***
        The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
        Nitrile rubber, NBR
      - ***Penetration time of glove material***
        The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
    - ***Eye protection:***

      Tightly sealed goggles

    - ***Body protection:*** Protective work clothing

9 Physical and chemical properties

- ***Information on basic physical and chemical properties***	
- ***General Information***	
- ***Appearance:***	
- ***Form:***	Liquid
- ***Color:***	Blue
- ***Odor:***	Characteristic
- ***Odor threshold:***	Not determined.
- ***pH-value:***	Not determined.
- ***Change in condition***	
- ***Melting point/Melting range:***	Undetermined.
- ***Boiling point/Boiling range:***	≥ 200 °C (≥ 392 °F)
- ***Flash point:***	95 °C (203 °F)
- ***Flammability (solid, gaseous):***	Not applicable.
- ***Decomposition temperature:***	Not determined.
- ***Auto igniting:***	Product is not selfigniting.
- ***Danger of explosion:***	Product does not present an explosion hazard.
- ***Explosion limits:***	
- ***Lower:***	Not determined.
- ***Upper:***	Not determined.
- ***Vapor pressure at 20 °C (68 °F):***	n.a. hPa
- ***Density at 20 °C (68 °F):***	~ 1.07 g/cm³ (~ 8.92915 lbs/gal)
- ***Relative density***	Not determined.
- ***Vapor density***	Not determined.
- ***Evaporation rate***	Not determined.

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Trade name: Vibra-TITE® Threadlocker

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- ***Solubility in / Miscibility with***	
- ***Water:***	Not miscible or difficult to mix.
- ***Partition coefficient (n-octanol/water):*** Not determined.	
- ***Viscosity:***	
- ***Dynamic:***	Not determined.
- ***Kinematic:***	Not determined.
- ***Solvent content:***	
- ***Organic solvents:***	0.6 %
- ***Water:***	1.3 %
- ***VOC content:***	0.64 % ~ 6.8 g/l / ~ 0.06 lb/gal
- ***Solids content:***	86.5 %
- ***Other information***	No further relevant information available.

10 Stability and reactivity

- ***Reactivity*** No further relevant information available.
- ***Chemical stability***
- ***Thermal decomposition / conditions to be avoided:*** No decomposition if used according to specifications.
- ***Possibility of hazardous reactions*** No dangerous reactions known.
- ***Conditions to avoid*** No further relevant information available.
- ***Incompatible materials:*** No further relevant information available.
- ***Hazardous decomposition products:***
Aldehyde
Hydrocarbons

11 Toxicological information

- ***Information on toxicological effects***
- ***Acute toxicity:***
- ***LD/LC50 values that are relevant for classification:***

ATE (Acute Toxicity Estimate)		
Oral	LD50	5,991 mg/kg (rat)
Dermal	LD50	29,467 mg/kg (rat)
Inhalative	LC50/4 h	12,966 mg/l (rat)

CAS: 80-15-9 dimethylbenzyl hydroperoxide		
Oral	LD50	382 mg/kg (rat)
Dermal	LD50	500 mg/kg (rat)
Inhalative	LC50/4 h	220 mg/l (rat)
CAS: 114-83-0 2'-phenylacetohydrazide		
Oral	LD50	270 mg/kg (mouse)
CAS: 98-82-8 cumene		
Oral	LD50	1,400 mg/kg (rat)
Dermal	LD50	12,300 mg/kg (rabbit)
Inhalative	LC50/4 h	24.7 mg/l (mouse)

- ***Primary irritant effect:***
- ***on the skin:*** Irritant to skin and mucous membranes.
- ***on the eye:*** Irritating effect.
- ***Sensitization:*** Sensitization possible through skin contact.
- ***Additional toxicological information:***
The product shows the following dangers according to internally approved calculation methods for preparations:
Irritant
- ***Carcinogenic categories***
- ***IARC (International Agency for Research on Cancer)***

CAS: 98-82-8	cumene	2B
CAS: 13463-67-7	titanium dioxide	2B
CAS: 111-76-2	2-butoxyethanol	3

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Trade name: Vibra-TITE® Threadlocker

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- ***NTP (National Toxicology Program)***		
CAS: 98-82-8	cumene	R
CAS: 130-15-4	1,4-naphthoquinone	R

- ***OSHA-Ca (Occupational Safety & Health Administration)***
None of the ingredients is listed.

12 Ecological information

- ***Toxicity***
  - ***Aquatic toxicity:*** No further relevant information available.
- ***Persistence and degradability*** No further relevant information available.
- ***Behavior in environmental systems:***
  - ***Bioaccumulative potential*** No further relevant information available.
  - ***Mobility in soil*** No further relevant information available.
- ***Additional ecological information:***
  - ***General notes:***
    Water hazard class 1 (Self-assessment): slightly hazardous for water
    Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- ***Results of PBT and vPvB assessment***
  - ***PBT:*** Not applicable.
  - ***vPvB:*** Not applicable.
- ***Other adverse effects*** No further relevant information available.

13 Disposal considerations

- ***Waste treatment methods***
  - ***Recommendation:*** Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- ***Uncleaned packagings:***
  - ***Recommendation:*** Disposal must be made according to official regulations.

14 Transport information

- ***UN-Number***	
- ***DOT, ADN, IMDG, IATA***	not regulated
- ***UN proper shipping name***	
- ***DOT, ADN, IMDG, IATA***	not regulated
- ***Transport hazard class(es)***	
- ***DOT, ADN, IMDG, IATA***	
- ***Class***	not regulated
- ***Packing group***	
- ***DOT, IMDG, IATA***	not regulated
- ***Environmental hazards:***	
- ***Marine pollutant:***	No
- ***Special precautions for user***	Not applicable.
- ***Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code***	Not applicable.
- ***UN "Model Regulation":***	not regulated

* 15 Regulatory information

- ***Safety, health and environmental regulations/legislation specific for the substance or mixture***
  - ***Sara***

- ***Section 355 (extremely hazardous substances):***
None of the ingredients is listed.

- ***Section 313 (Specific toxic chemical listings):***	
CAS: 80-15-9	dimethylbenzyl hydroperoxide
CAS: 98-82-8	cumene
CAS: 111-76-2	2-butoxyethanol

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Trade name: Vibra-TITE® Threadlocker

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- ***TSCA (Toxic Substances Control Act):***

2-(2-methylprop-2-enoyloxy)ethyl 2-methylprop-2-enoate
Tetraethylene glycol hexoate
methacrylic acid, monoester with propane-1,2-diol
Amorphous Silica
dimethylbenzyl hydroperoxide
Saccharin
propane-1,2-diol
2'-phenylacetohydrazide
cumene
2-Phenyl-2-propanol
titanium dioxide
tetrasodium ethylenediaminetetraacetate
N-isopropylhydroxylamine
1,4-naphthoquinone
Colorant
Alumina Trihydrate
2-Propanone, oxime
2,4,7,9-tetramethyldec-5-yne-4,7-diol
2-butoxyethanol
Deionized water

- ***TSCA new (21st Century Act): (Substances not listed)***

CAS: 25852-47-5	2-(2-methylprop-2-enoyloxy)ethyl 2-methylprop-2-enoate
CAS: 114-83-0	2'-phenylacetohydrazide

- ***Hazardous Air Pollutants***

CAS: 98-82-8	cumene
CAS: 130-15-4	1,4-naphthoquinone

- ***Proposition 65***

- ***Chemicals known to cause cancer:***

CAS: 98-82-8	cumene

- ***Chemicals known to cause reproductive toxicity for females:***

None of the ingredients is listed.

- ***Chemicals known to cause reproductive toxicity for males:***

None of the ingredients is listed.

- ***Chemicals known to cause developmental toxicity:***

None of the ingredients is listed.

- ***Carcinogenic categories***

- ***EPA (Environmental Protection Agency)***

CAS: 98-82-8	cumene	D, CBD
CAS: 111-76-2	2-butoxyethanol	NL

- ***TLV (Threshold Limit Value established by ACGIH)***

CAS: 13463-67-7	titanium dioxide	A4
CAS: 111-76-2	2-butoxyethanol	A3

- ***NIOSH-Ca (National Institute for Occupational Safety and Health)***

CAS: 13463-67-7	titanium dioxide

- ***Chemical safety assessment:*** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- ***Department issuing SDS:*** ND Industries, Inc. - Safety, Health and Environmental Affaires
- ***Contact:*** Safety, Health and Environmental Affaires
- ***Date of preparation / last revision*** 03/06/2019 / 59
- ***Abbreviations and acronyms:***

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists

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Trade name: Vibra-TITE® Threadlocker

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EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Flam. Liq. 3: Flammable liquids – Category 3
Flam. Liq. 4: Flammable liquids – Category 4
Self-react. F: Self-reactive substances and mixtures – Type E/F
Org. Perox. E: Organic peroxides – Type E/F
Acute Tox. 4: Acute toxicity – Category 4
Acute Tox. 3: Acute toxicity – Category 3
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
Skin Sens. 1: Skin sensitisation – Category 1
Carc. 2: Carcinogenicity – Category 2
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
Asp. Tox. 1: Aspiration hazard – Category 1

- **** Data compared to the previous version altered.***

- ***Disclaimer***

The information set forth is based on information that ND Industries, Incorporated believes to be accurate. No warranty, expressed or implied, is intended. The information is provided solely for your information and consideration and ND Industries Inc. assumes no legal responsibility for use or reliance thereon. In the event of a discrepancy between the information on the non-English document and its English counterpart, the English version shall supersede.

Safety Data Sheet
according to HPR, Schedule 1

Printing date 01/29/2024 *Reviewed on 01/29/2024*

1 Identification

- ***Product identifier***
  - ***Trade name:*** Vibra-TITE® Anti-Seize
    - ***Synonyms:*** 9072 Nickel Anti-Seize
    - ***Part number:*** VT9072
    - ***Application of the substance / the mixture*** Lubricant
- ***Details of the supplier of the safety data sheet***
  - ***Manufacturer/Supplier:***
    ND Industries, Inc
    1000 North Crooks Road
    Clawson, MI 48017
    USA
    Telephone: +1-248-288-0000
    Email: info@ndindustries.com
    Website: www.ndindustries.com
  - ***Information department:*** Product Safety Department
  - ***Emergency telephone number:***
    United States: 1-800-424-9300
    International: +1-703-527-3887

*

2 Hazard identification

- ***Classification of the substance or mixture***


GHS08 Health hazard

Specific Target Organ Toxicity - Repeated Exposure - Category 1 H372 Causes damage to the respiratory system through prolonged or repeated exposure. Route of exposure: Inhalation.


GHS07

Skin Sensitizer - Category 1 H317 May cause an allergic skin reaction.

- ***Label elements***
  - ***GHS label elements*** The product is classified and labeled according to the Globally Harmonized System (GHS).
    - ***Hazard pictograms***


GHS07 GHS08

    - ***Signal word*** Danger
    - ***Hazard-determining components of labeling:***
      Nickel
    - ***Hazard statements***
      H317 May cause an allergic skin reaction.
      H372 Causes damage to the respiratory system through prolonged or repeated exposure. Route of exposure: Inhalation.
    - ***Precautionary statements***
      P260 Do not breathe dust/fume/gas/mist/vapours/spray.
      P264 Wash thoroughly after handling.
      P270 Do not eat, drink or smoke when using this product.
      P272 Contaminated work clothing should not be allowed out of the workplace.
      P280 Wear protective gloves.
      P302+P352 If on skin: Wash with plenty of water.
      P314 Get medical advice/attention if you feel unwell.
      P362+P364 Take off contaminated clothing and wash it before reuse.
      P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
      P321 Specific treatment (see on this label).
      P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

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Safety Data Sheet
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Printing date 01/29/2024 *Reviewed on 01/29/2024*

Trade name: Vibra-TITE® Anti-Seize

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*
3 Composition/Information on ingredients

- ***Chemical characterization: Mixtures***
  - ***Description:*** Mixture of the substances listed below with nonhazardous additions.
  - ***Dangerous components:***

CAS: 7440-02-0	Nickel Flammable Solids - Category 2, H228; Carcinogenicity – Category 2, H351; Specific Target Organ Toxicity - Repeated Exposure - Category 1, H372; Skin Sensitizer - Category 1, H317	≥ 5 – ≤ 30% w/w
CAS: 7429-90-5	aluminium powder (stabilized) Flammable Solids - Category 1, H228; Substances and Mixtures Which, in Contact with Water, Emit Flammable Gases - Category 2, H261	≥ 1 – ≤ 5% w/w

4 First-aid measures

- ***Description of first aid measures***
  - ***General information:***
    Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
  - ***After inhalation:***
    Supply fresh air and to be sure call for a doctor.
    In case of unconsciousness place patient stably in side position for transportation.
    Supply fresh air; consult doctor in case of complaints.
  - ***After skin contact:*** Immediately wash with water and soap and rinse thoroughly.
  - ***After eye contact:*** Rinse opened eye for several minutes under running water.
  - ***After swallowing:*** If symptoms persist consult doctor.
  - ***Information for doctor:***
    - ***Most important symptoms and effects, both acute and delayed*** No further relevant information available.
    - ***Indication of any immediate medical attention and special treatment needed***
      No further relevant information available.

*
5 Fire-fighting measures

- ***Extinguishing media***
  - ***Suitable extinguishing agents:*** Use fire fighting measures that suit the environment.
- ***Special hazards arising from the substance or mixture*** No further relevant information available.
- ***Advice for firefighters***
  - ***Protective equipment:***
    Wear self-contained respiratory protective device.
    Wear fully protective suit.

6 Accidental release measures

- ***Personal precautions, protective equipment and emergency procedures***
  Ensure adequate ventilation
  Wear protective clothing.
- ***Environmental precautions:*** Do not allow to enter sewers/ surface or ground water.
- ***Methods and material for containment and cleaning up:***
  Dispose contaminated material as waste according to section 13.
  Dispose of the collected material according to regulations.
- ***Reference to other sections***
  See Section 7 for information on safe handling.
  See Section 8 for information on personal protection equipment.
  See Section 13 for disposal information.

7 Handling and storage

- ***Handling:***
  - ***Precautions for safe handling*** No special measures required.
  - ***Information about protection against explosions and fires:*** No special measures required.
- ***Conditions for safe storage, including any incompatibilities***
  - ***Storage:***
    - ***Requirements to be met by storerooms and receptacles:*** No special requirements.
    - ***Information about storage in one common storage facility:*** Not required.
    - ***Further information about storage conditions:*** None.
- ***Specific end use(s)*** No further relevant information available.

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Safety Data Sheet
according to HPR, Schedule 1

Printing date 01/29/2024 *Reviewed on 01/29/2024*

Trade name: Vibra-TITE® Anti-Seize

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*
8 Exposure controls/ Personal protection

- ***Additional information about design of technical systems:*** No further data; see section 7.

- ***Control parameters***

- ***Components with limit values that require monitoring at the workplace:***	
CAS: 7440-02-0 Nickel	
EL (Canada)	TWA: 0.05 mg/m³ ACGIH A1, IARC 2B
EV (Canada)	TWA: 1 mg/m³ Inhalable fraction
PEL (USA)	TWA: 1 mg/m³
REL (USA)	TWA: 0.015 mg/m³ as Ni; See Pocket Guide App. A
TLV (USA)	TWA: 1.5* mg/m³ elemental, *inhalable fraction, A5, BEI
CAS: 7429-90-5 aluminium powder (stabilized)	
EL (Canada)	TWA: 1.0 mg/m³ respirable, as Al
EV (Canada)	TWA: 5 mg/m³ aluminium-containing (as aluminium)
PEL (USA)	TWA: 15*; 5** mg/m³ *Total dust; ** Respirable fraction
REL (USA)	TWA: 10* 5** mg/m³ as Al*Total dust**Respirable/pyro powd./welding f.
TLV (USA)	TWA: 1* mg/m³ as Al; *as respirable fraction, A4

- ***Ingredients with biological limit values:***	
CAS: 7440-02-0 Nickel	
BEI (USA)	5 µg/L Medium: urine Time: post-shift at end of workweek Parameter: Nickel (background) 30 µg/L Medium: urine Time: post-shift at end of workweek Parameter: Nickel (background)

- ***Additional information:*** The lists that were valid during the creation were used as basis.

- ***Exposure controls***
  - ***Personal protective equipment:***
    - ***General protective and hygienic measures:***
      Keep away from foodstuffs, beverages and feed.
      Immediately remove all soiled and contaminated clothing.
      Wash hands before breaks and at the end of work.
    - ***Protection of hands:***

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- ***Material of gloves***
  The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
  Nitrile rubber, NBR
- ***Penetration time of glove material***
  The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- ***Body protection:*** Protective work clothing

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Safety Data Sheet
according to HPR, Schedule 1

Printing date 01/29/2024 *Reviewed on 01/29/2024*

Trade name: Vibra-TITE® Anti-Seize

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* 9 Physical and chemical properties

- ***Information on basic physical and chemical properties***	
- ***General Information***	
- ***Appearance:***	
- ***Form:***	Pasty
- ***Color:***	Silver grey
- ***Odor:***	Mild
- ***Odor threshold:***	Not determined.
- ***pH-value:***	Not applicable.
- ***Change in condition***	
- ***Melting point/Melting range:***	Undetermined.
- ***Boiling point/Boiling range:***	≥ 2,730 °C
- ***Flash point:***	218.3 °C
- ***Flammability (solid, gaseous):***	Not determined.
- ***Decomposition temperature:***	Not determined.
- ***Ignition temperature:***	Product is not selfigniting.
- ***Danger of explosion:***	Product does not present an explosion hazard.
- ***Explosion limits:***	
- ***Lower:***	Not determined.
- ***Upper:***	Not determined.
- ***Vapor pressure:***	Not applicable.
- ***Density at 20 °C:***	≥ 2.05435 – ≤ 30.015 g/cm³
- ***Relative density***	Not determined.
- ***Vapor density***	Not applicable.
- ***Evaporation rate***	Not applicable.
- ***Solubility in / Miscibility with***	
- ***Water:***	Insoluble.
- ***Partition coefficient (n-octanol/water):***	Not determined.
- ***Viscosity:***	
- ***Dynamic:***	Not applicable.
- ***Kinematic:***	Not applicable.
- ***Solvent content:***	
- ***VOC content:***	0.00 %
- ***Solids content:***	100.0 %
- ***Other information***	No further relevant information available.

10 Stability and reactivity

- ***Reactivity*** No further relevant information available.
- ***Chemical stability***
  - ***Thermal decomposition / conditions to be avoided:*** No decomposition if used according to specifications.
- ***Possibility of hazardous reactions*** No dangerous reactions known.
- ***Conditions to avoid*** No further relevant information available.
- ***Incompatible materials:*** No further relevant information available.
- ***Hazardous decomposition products:*** No dangerous decomposition products known.

* 11 Toxicological information

- ***Information on toxicological effects***
  - ***Acute toxicity:***

- ***LD/LC50 values that are relevant for classification:***		
Oral	LD50	> 9,000 mg/kg (rat)

- ***Primary irritant effect:***
  - ***on the skin:*** No irritant effect.
  - ***on the eye:*** No irritating effect.
- ***Sensitization:*** Sensitization possible through skin contact.

(Contd. on page 5)

Safety Data Sheet
according to HPR, Schedule 1

Printing date 01/29/2024 *Reviewed on 01/29/2024*

Trade name: Vibra-TITE® Anti-Seize

(Contd. of page 4)

- ***Additional toxicological information:***
The product shows the following dangers according to internally approved calculation methods for preparations:
Irritant

- ***Carcinogenic categories***

- *IARC (International Agency for Research on Cancer)*		
CAS: 7440-02-0	Nickel	2B

- *NTP (National Toxicology Program)*		
CAS: 7440-02-0	Nickel	R

12 Ecological information

- ***Toxicity***
  - ***Aquatic toxicity:*** No further relevant information available.
- ***Persistence and degradability*** No further relevant information available.
- ***Behavior in environmental systems:***
  - ***Bioaccumulative potential*** No further relevant information available.
  - ***Mobility in soil*** No further relevant information available.
- ***Additional ecological information:***
  - ***General notes:***
  Water hazard class 2 (Self-assessment): hazardous for water
  Do not allow product to reach ground water, water course or sewage system.
  Danger to drinking water if even small quantities leak into the ground.
- ***Results of PBT and vPvB assessment***
  - ***PBT:*** Not applicable.
  - ***vPvB:*** Not applicable.
- ***Other adverse effects*** No further relevant information available.

13 Disposal considerations

- ***Waste treatment methods***
  - ***Recommendation:*** Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- ***Uncleaned packagings:***
  - ***Recommendation:*** Disposal must be made according to official regulations.

* 14 Transport information

- ***UN-Number***	
- ***DOT/TDG, ADR, IMDG, IATA***	not regulated
- ***UN proper shipping name***	
- ***DOT/TDG, ADR, IMDG, IATA***	not regulated
- ***Transport hazard class(es)***	
- ***DOT/TDG, ADR, ADN, IMDG, IATA***	
- ***Class***	not regulated
- ***Packing group***	
- ***DOT/TDG, ADR, IMDG, IATA***	not regulated
- ***Environmental hazards:***	
- ***Marine pollutant:***	No
- ***Special precautions for user***	Not applicable.
- ***Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code***	Not applicable.
- ***UN "Model Regulation":***	not regulated

* 15 Regulatory information

- ***Safety, health and environmental regulations/legislation specific for the substance or mixture***
No further relevant information available.
  - ***Sara***

- *Section 355 (extremely hazardous substances):*
None of the ingredients is listed.

(Contd. on page 6)

Safety Data Sheet
according to HPR, Schedule 1

Printing date 01/29/2024 *Reviewed on 01/29/2024*

Trade name: Vibra-TITE® Anti-Seize

(Contd. of page 5)

- ***Section 313 (Specific toxic chemical listings):***

All ingredients are listed.

- ***TSCA (Toxic Substances Control Act):***

All components have the value ACTIVE.

- ***Canadian substance listings:***

- ***Canadian Domestic Substances List (DSL)***

CAS: 7440-02-0 Nickel

- ***Canadian Non-Domestic Substances List (NDSL)***

None of the ingredients is listed.

- ***Canadian Ingredient Disclosure list (limit 0.1%)***

CAS: 7440-02-0 Nickel

- ***Canadian Ingredient Disclosure list (limit 1%)***

None of the ingredients is listed.

- ***Chemical safety assessment:*** A Chemical Safety Assessment has not been carried out.

* 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- ***Department issuing SDS:*** ND Industries, Inc. - Safety, Health and Environmental Affaires
- ***Contact:*** Safety, Health and Environmental Affaires
- ***Classification System:***
  - ***HMIS-ratings (scale 0 - 4)***

Health = 0
Fire = 1
Reactivity = 0

  - ***NFPA ratings (scale 0 - 4)***

Health = 0
Fire = 1
Reactivity = 0

  - ***Date of the latest revision of the safety data sheet*** 01/29/2024
  - ***Abbreviations and acronyms:***

IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative

  - **** Data compared to the previous version altered.***

  - ***Disclaimer***

The information set forth is based on information that ND Industries, Incorporated believes to be accurate. No warranty, expressed or implied, is intended. The information is provided solely for your information and consideration and ND Industries Inc. assumes no legal responsibility for use or reliance thereon. In the event of a discrepancy between the information on the non-English document and its English counterpart, the English version shall supersede.

Daniel Priestley

From: Daniel Priestley
Sent: Thursday, October 17, 2024 3:37 PM
To: Michael Bergey
Cc: Lktabke@wiatel.net; Marketing
Subject: RE: MSDS Documents for Bergey Excel 15 Wind Turbine

Importance: High

Dear Mr. Bergey, Kerry, and Kathy,

Thank you for the information and your cooperation and assistance with addressing this matter. After an initial review, I request additional clarification specific to the wind turbine and tower's safety distances from other structures and properties.

As discussed at the October 7, 2024, Woodbury County Board of Adjustment meeting, the Board requested the manufacturer's safety data sheets for the turbines and towers, particularly regarding appropriate separation distances, including setbacks from structures and property lines. Could you please provide these data for the Bergey Excel 15 Wind Turbines and towers?

The safety data sheets are essential for identifying potential hazards to the property owner, existing structures, and surrounding areas. They should also outline protocols for safety separation distances and setbacks, especially in case of equipment failures. The safety data sheets should detail emergency response procedures for weather-related events, chemical spills, fires, or collapses. These documents typically include guidelines for protective equipment, such as gloves and goggles, to prevent accidents and health risks. It is crucial that they specify safety measures and distances to protect the public in the event of failure.

As an example, the Nordex system's safety data sheets, available at the following link: https://dis.puc.state.oh.us/ViewImage.aspx?CMID=A1001001A19L04B45214J00458 contain key safety information, including regulations, risk protocols, equipment use, and emergency procedures for natural disasters such as thunderstorms and fires. For example, the Nordex sheets (pages 103-177) recommend maintaining a 3,280 ft (1 km) distance during storms and a 1,640 ft (500 m) distance in case of fire, with setbacks outlined on pages 160-161.

Do you have similar safety information on file for the Bergey Excel 15 Wind Turbines and towers, including recommended separation distances, setbacks, and emergency response zones?

Providing these safety data sheets will help the Board evaluate the conditional use permit's alignment with public health, safety, and community welfare standards. They will also guide the property owner in implementing the manufacturer's recommended safety measures to protect their own property and their neighbors.

Please provide safety data sheets as to the manufacturer's appropriate separation distances, including setbacks from structures and property lines.

Again, thank you for your cooperation and assistance with addressing this matter. Please let me know if you have questions about this request.

Respectfully and sincerely,

Daniel J. Priestley, MPA
Woodbury County Zoning Coordinator

620 Douglas Street #609
Sioux City, IA 51101

Phone: 712-279-6609
Fax: 712-279-6530
Website: WoodburyCountyIowa.gov

From: Michael Bergey <mbergey@bergey.com>
Sent: Thursday, October 17, 2024 6:42 AM
To: Daniel Priestley <dpriestley@woodburycountyiowa.gov>
Cc: Lktabke@wiatel.net; Marketing <kerry@american-windpower.com>
Subject: MSDS Documents for Bergey Excel 15 Wind Turbine

Dear Mr. Priestley,

Please find attached the MSDS's for the Bergey Excel 15 wind turbine per the request of the Board of Adjustment. We have created one document, but would be happy to send the three MSDS's as separate files if that would be more convenient for you.

Please let me know if Bergey Windpower can be of further assistance.

Best Regards,

Mike Bergey
President & CEO
Bergey Windpower Co.
2200 Industrial Blvd.
Norman, OK USA
Tel: 405-364-4212
E-mail: mbergey@bergey.com
Web: www.bergey.com

Daniel Priestley

From: Michael Bergey <mbergey@bergey.com>
Sent: Thursday, October 17, 2024 4:40 PM
To: Daniel Priestley
Cc: Lktabke@wiatel.net; Marketing
Subject: Re: MSDS Documents for Bergey Excel 15 Wind Turbine

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Mr. Priestley,

There are no turbine or tower safety data sheets for our Excel 15 wind energy system. Nor am I aware of any such documents for any small wind systems - which are very different from the utility scale turbine you reference. We have never been asked for such documentation.

We do not recommend any set-back distances and there are no "emergency response" recommendations. Our turbine will be the strongest structure in the area (engineered for winds up to 140 mph) and it does not require any intervention for storm protection.

Bergey Windpower has had roughly 5,000 systems installed in the U.S. and some have been in operation for over 40 years. While we have maintained significant liability insurance for over 40 years we have never had a liability claim and no one has ever claimed an injury.

The long perfect track record of safety speaks for itself. A Bergey 15 kW wind system will not present potential hazards to its owners and their neighbors that should warrant a rejection of its beneficial use.

Respectfully,

Mike Bergey
President & CEO
Bergey Windpower Co.
2200 Industrial Blvd.
Norman, OK USA
Tel: 405-364-4212
E-mail: mbergey@bergey.com
Web: www.bergey.com

On Thu, Oct 17, 2024 at 3:49 PM Daniel Priestley <dpriestley@woodburycountyiowa.gov> wrote:

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Again, thank you for your cooperation and assistance with addressing this matter. Please let me know if you have questions about this request.

Respectfully and sincerely,

Daniel J. Priestley, MPA

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Best Regards,

Mike Bergey

President & CEO

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2200 Industrial Blvd.

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Tel: 405-364-4212

E-mail: mbergey@bergey.com

Web: www.bergey.com

ZONING ORDINANCE CRITERIA FOR BOARD APPROVAL

Conditional Use Permits are determined by a review of the following criteria by the Zoning Commission (ZC) and Board of Adjustment (BOA). The ZC makes a recommendation to the BOA which will decide following a public hearing before the Board.

APPLICANT'S DESCRIPTION OF THE PROPOSED CONDITIONAL USE:

Applicant wishes to install (3) 100' wind turbine towers to reduce the electrical costs on his farm.

MAP DRAWN TO SCALE, SHOWING THE SUBJECT PROPERTY, ALL STRUCTURES AND OTHER IMPROVEMENTS, WITH THE PROPOSED CONDITIONAL USE IDNTIFIED PER STRUCTURE OF IMPROVEMENT, PROVID BY ATTACHMENT

Attached.

CRITERIA 1: The conditional use requested is authorized as a conditional use in the zoning district within which the property is located and that any specific conditions or standards described as part of that authorization have been or will be satisfied (Woodbury County Zoning Ordinance, Sec. 2.02-9).

APPLICANT RESPONSE:

The land is zoned Ag and the applicant is surrounded by several hundred acres of his own farm land as can be seen from the abstract. The closest turbine is 200' from the nearest road and it appears that it meets the standard for approval of a conditional use permit.

STAFF ANALYSIS:

The Land Use Summary Table (Section 3.03.4) of the Woodbury County Zoning Ordinance includes the Agricultural Preservation (AP) Zoning District as a location authorized for a conditional use pending review by the Zoning Commission and approval by the Board of Adjustment.

CRITERIA 2: The proposed use and development will be in harmony with the general purpose and intent of this ordinance and the goals, objectives and standards of the general plan (Woodbury County Zoning Ordinance, Sec. 2.02-9).

APPLICANT RESPONSE:

This use and development promotes the use of renewable energy and helps us protect our environment for future generations without imposing any burden on surrounding neighbors.

STAFF ANALYSIS:

The proposed use of the three (3) wind turbines on the 100 FT support tower is compatible with the Woodbury County's Comprehensive Plan 2040 including to "support landowners' individual choices to implement renewable energy infrastructure for personal and private use" (p. 127).

(https://www.woodburycountyiowa.gov/files/community_economic_development/woodbury_county_comprehensive_plan_2040_89417.pdf)

CRITERIA 3: The proposed use and development will not have a substantial or undue adverse effect upon adjacent property, the character of the neighborhood, traffic conditions, parking, utility facilities, and other factors affecting the public health, safety and general welfare (Woodbury County Zoning Ordinance, Sec. 2.02-9).

APPLICANT RESPONSE:

Due to the rural location and the sparse population nearby the project will have no adverse affect on public health, safety and general welfare.

STAFF ANALYSIS:

Based on the site plan and information presented, this project does not appear to have significant impacts on adjacent properties, the character of the neighborhood, traffic conditions, parking, utilities, an other factors affecting public health, safety, and the general welfare of the public.

CRITERIA 4: The proposed use and development will be located, designed, constructed and operated in such a manner that it will be compatible with the immediate neighborhood and will not interfere with the orderly use, development and improvement of surrounding property (Woodbury County Zoning Ordinance, Sec. 2.02-9).

APPLICANT RESPONSE:

By locating the turbines on 100' towers they are able to take advantage of the higher winds aloft and also avoid turbulence from any nearby buildings or trees and will not interfere with the surrounding property.

	STAFF ANALYSIS: There does not appear to be significant impacts to the immediate neighborhood including impacts to the orderly use, development and improvement of surrounding property.

CRITERIA 5: Essential public facilities and services will adequately serve the proposed use or development (Woodbury County Zoning Ordinance, Sec. 2.02-9).	
	APPLICANT RESPONSE: The towers and turbines do not consume any public services and will actually offset approximately 100,000 gallons of water annually that would otherwise be used in the generation of electricity that the turbines will save.
	STAFF ANALYSIS: The property owner(s) will need to work out the details with the local utility in terms of their respective interconnection agreement.

CRITERIA 6: The proposed use or development will not result in unnecessary adverse effects upon any significant natural, scenic or historic features of the subject property or adjacent properties (Woodbury County Zoning Ordinance, Sec. 2.02-9).	
	APPLICANT RESPONSE: There are no nearby natural, scenic or historic features
	STAFF ANALYSIS: There does not appear to be any significant impact determined.

OTHER CONSIDERATION 1: The proposed use or development, at the particular location is necessary or desirable to provide a service or facility that is in the public interest or will contribute to the general welfare of the neighborhood or community (Woodbury County Zoning Ordinance, Sec. 2.02-9).	
	STAFF ANALYSIS: This proposed conditional use is an optional feature that has been added to the property for the benefit of the property owner(s).

OTHER CONSIDRATION 2: All possible efforts, including building and site design, landscaping and screening have been undertaken to minimize any adverse effects of the proposed use or development (Woodbury County Zoning Ordinance, Sec. 2.02-9).	
	STAFF ANALYSIS: The appearance of a private wind turbine tower speaks for itself. At a height of 100 FT, there likely is no level of building, site design, landscaping, and screening available to conceal its effects.

WOODBURY COUNTY COMMUNITY AND ECONOMIC DEVELOPMENT

Zoning Ordinance
Section 2.02(9)
Page 1 of 6

CONDITIONAL USE PERMIT APPLICATION

Owner Information: L&K Tabke Holdings, L.L.C.

Owner: Lane Tabke
Address: 3112 195th St., Moville, IA 51039
Phone: 712-870-1564

Applicant Information: Kathy Tabke

Applicant: SAME
Address:
Phone:

We, the undersigned, hereby apply to the Woodbury County Board of Adjustment for permission to:

Install 3 - 100' wind turbine towers

Property Information:

Property Address or Address Range: N1/2 SW 1/4(EX COMM NW COR THEC E1272' TO POB THEC E210',S207. 43' W210,& N 207.43')

Quarter/Quarter: Sec: Twnshp/Range:

Parcel ID # 884420300005 GIS #: Total Acres: 76.02

Current Use: AP Proposed Use: Wolf Creek

Current Zoning: Ag

The filing of this application is required to be accompanied with all items and information required pursuant to section 2.02(9)(C)(2) through (C)(4) of Woodbury County's zoning ordinances (see attached pages of this application for a list of those items and information).

A formal pre-application meeting is recommended prior to submitting this application.

Pre-app mtg. date: 8/13/24 Staff present: Dan Priestley

The undersigned is/are the owners(s) of the described property on this application, located in the unincorporated area of Woodbury County, Iowa, assuring that the information provided herein is true and correct. I hereby give my consent for the Woodbury County Community and Economic Development staff, Zoning Commission and Board of Adjustment members to conduct site visits and photograph the subject property.

This Conditional Use Permit Application is subject to and shall be required, as a condition of final approval, to comply with all applicable Woodbury County ordinances, policies, requirements and standards that are in effect at the time of final approval.

Owner: ~~Lane Tabke~~ Applicant: ~~Lane Tabke~~ Kathy Tabke 9-4-24

Date: 5/23/2024 Kathy Tabke 9/4/24 Date:

Fee: $300* **Case #:** 7019

Check #: 1811 @9.4.24

Receipt #:

Date Received

L&K Tabke Holdings, L.L.C.

RECEIVED
SEP 4 2024
WOODBURY COUNTY
COMMUNITY & ECONOMIC DEVELOPMENT

PER SECTION 2.02(9)(C)(2 (d) PROVIDE A SPECIFIC DESCRIPTION OF THE PROPOSED CONDITIONAL USE: (Tab at the end of each line to continue)

Applicant wishes to install (3) 100' wind turbine towers to reduce the electrical costs on his farm.

PER SECTION 2.02(9) (C)(2)(e) PROVIDE A MAP DRAWN TO SCALE, SHOWING THE SUBJECT PROPERTY, ALL STRUCTURES AND OTHER IMPROVEMENTS, WITH THE PROPOSED CONDITIONAL USE IDENTIFIED PER STRUCTURE OR IMPROVEMENT . PROVIDE BY ATTACHMENT. Attached

PER SECTION 2.02(9) (C)(2)(e) PROVIDE A STATEMENT IN RESPONSE TO EACH OF SIX BELOW CRITEREA AND STANDARDS FOR APPROVAL OF CONDITIONAL USES AS LISTED IN SECTION 2.02(9)F OF THE ORDINANCES. (Tab at the end of each line to continue)

(a) Provide a statement to why you feel the conditional use requested is authorized as a conditional use in the zoning district within which the property is located and that any specific conditions or standards described as part of that authorization have been or will be satisfied.

The land is zoned Ag and the applicant is surrounded by several hundred acres of his own farm land as can be seen from the abstract. The closest turbine is 200' from the nearest road and it appears that it meets the standard for approval of a conditional use permit.

(b) Provide a statement to why the proposed use and development will be in harmony with the general purpose and intent of this ordinance and the goals, objectives and standards of the general plan.

This use and development promotes the use of renewable energy and helps us protect our environment for future generations without imposing any burden on surrounding neighbors.

(c) Provide a statement to why the proposed use and development will not have a substantial or undue adverse effect upon adjacent property, the character of the neighborhood, traffic conditions, parking, utility facilities, and other factors affecting the public health, safety and general welfare. Due to the rural location and the sparse population nearby the project will have no adverse affect on public health, safety and general welfare.

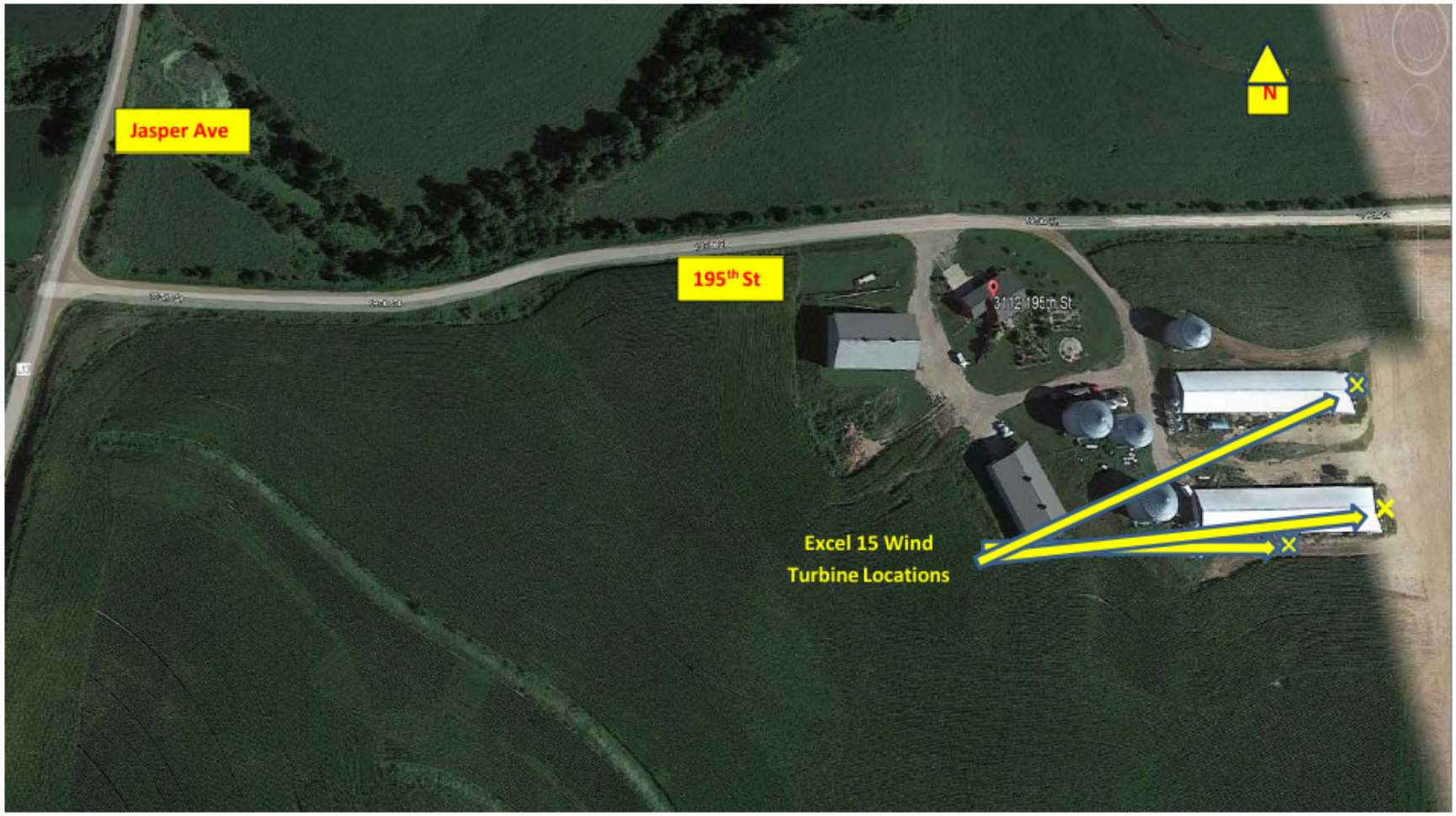
(d) Provide a statement to why the proposed use and development will be located, designed, constructed and operated in such a manner that it will be compatible with the immediate neighborhood and will not interfere with the orderly use, development and improvement of surrounding property. By locating the turbines on 100' towers they are able to take advantage of the higher winds aloft and also avoid turbulence from any nearby buildings or trees and will not interfere with the surrounding property.

(e) Provide a statement to why essential public facilities and services will adequately serve the proposed use or development. The towers and turbines do not consume any public services and will actually offset approximately 100,000 gallons of water annually that would otherwise be used in the generation of electricity that the turbines will save.

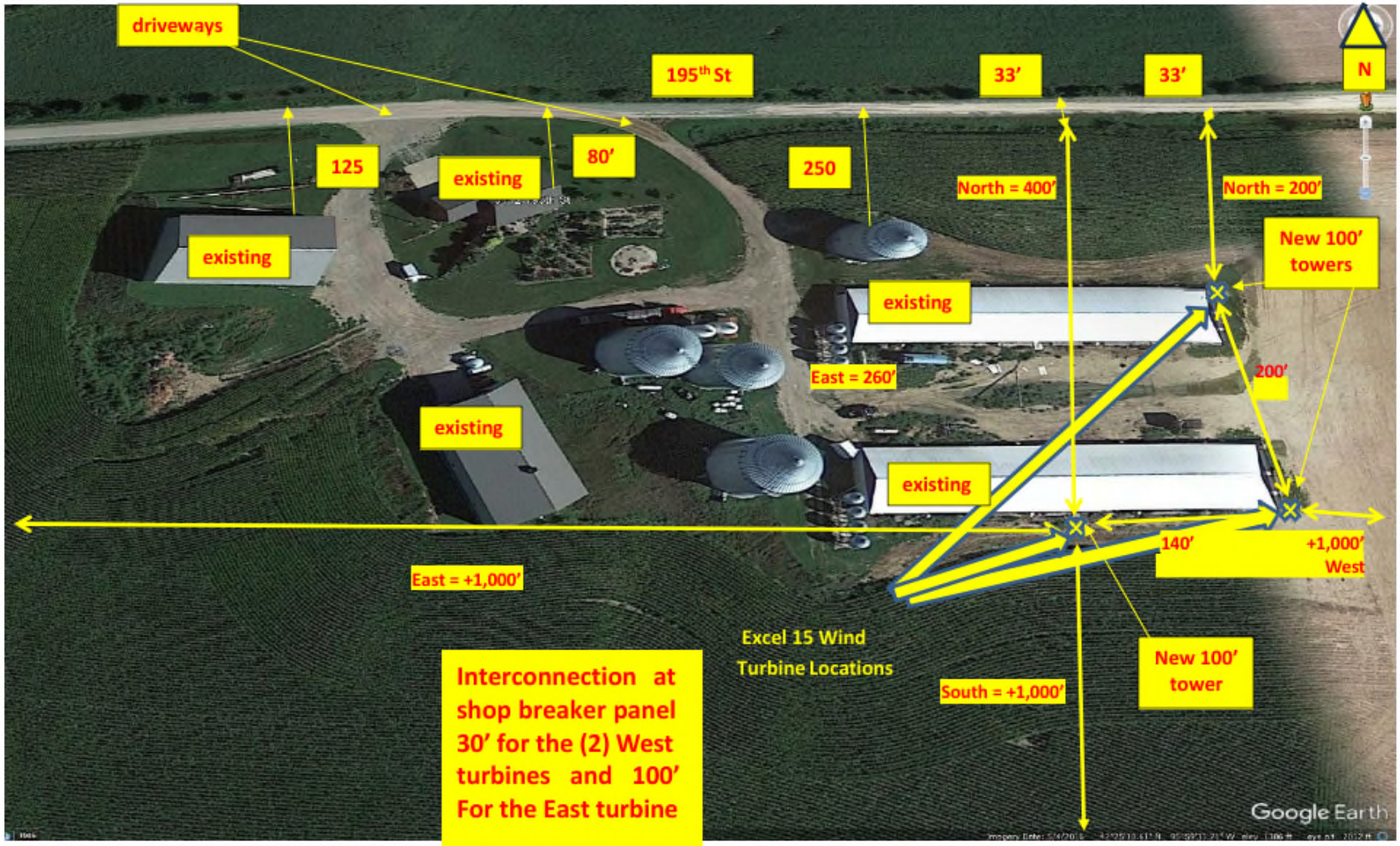
(f) Provide a statement to why the proposed use or development will not result in unnecessary adverse effects upon any significant natural, scenic or historic features of the subject property or adjacent properties. There are no nearby natural, scenic or historic features

L&K Tabke Farms LLC Wind Turbine Locations

3112 195th St., Moville, IA



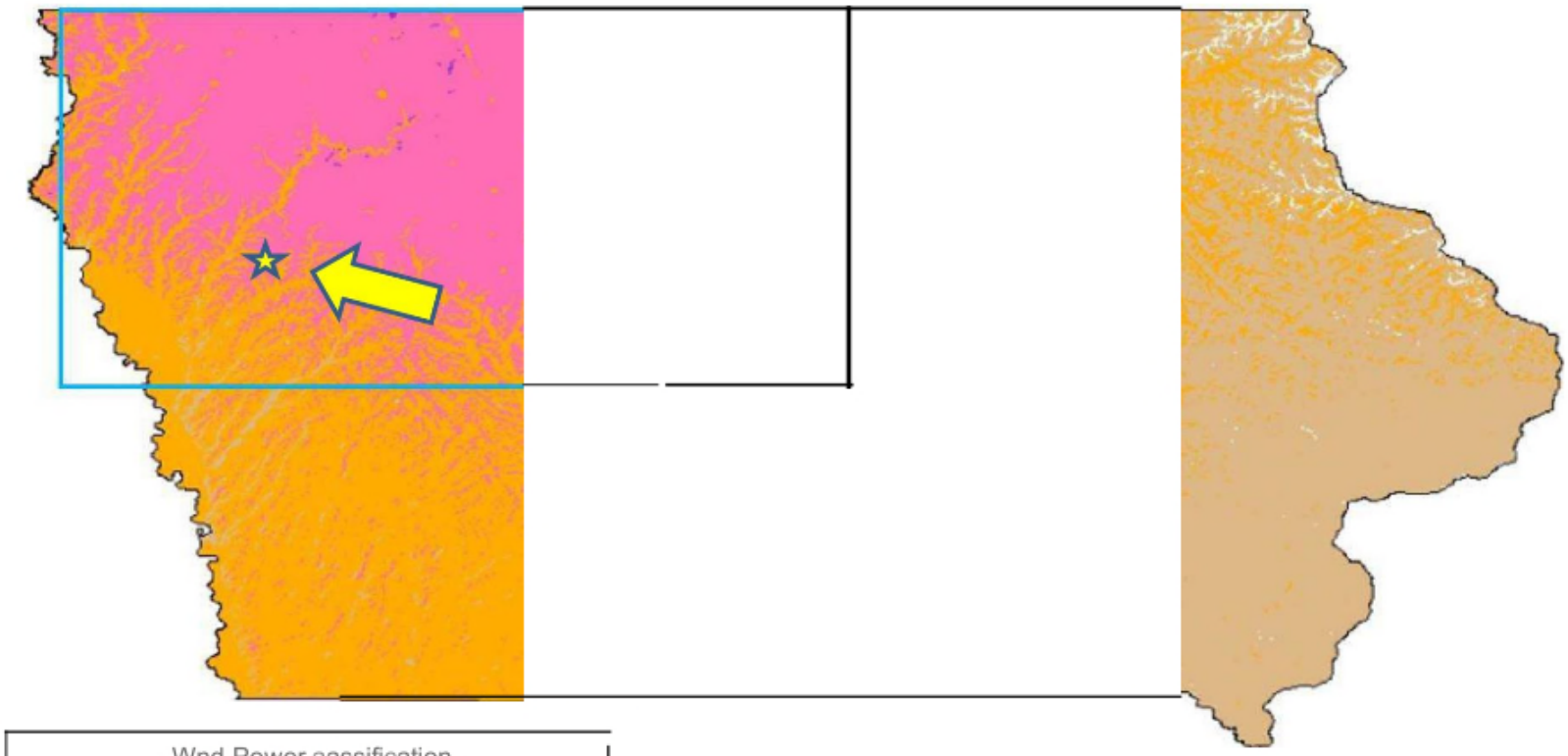
The turbine locations are ideal with wide open unobstructed space in all directions. In particular, the prevailing winds from the North and South are wide-open for miles. The Iowa 50m wind map indicates the area is in the range of 7-7.5 m/s or 15.7-16.8 mph, which for a small turbine like the Excel 15 is an excellent wind resource. This map was compiled by NREL using historical data. The turbine site analysis was performed by Cody Buhrman with American Windpower. Cody has sighted hundreds of wind turbines in his +10-year wind energy career and is acknowledged as a small wind turbine expert.



Approximately 200' from the **North** property line (road) and 260' **+1,000'** from the **West, East** and **South** property lines

The Wind Turbine is the Excel 15 manufactured by Bergey Windpower. It has a rated output of 15KW in an 11 m/s wind speed. The underground electrical wiring is approximately 100', 30' and 30' from the tower bases to the synchronous inverters located in the barns as indicated on the drawing. At the barns the wiring will enter the inverter and then exit into an accessible, lockable disconnect and then into the utility electric meter. The Electric Utility is Woodbury County REC in Moville, IA.

Iowa - Annual Wind Power at 50-m Height



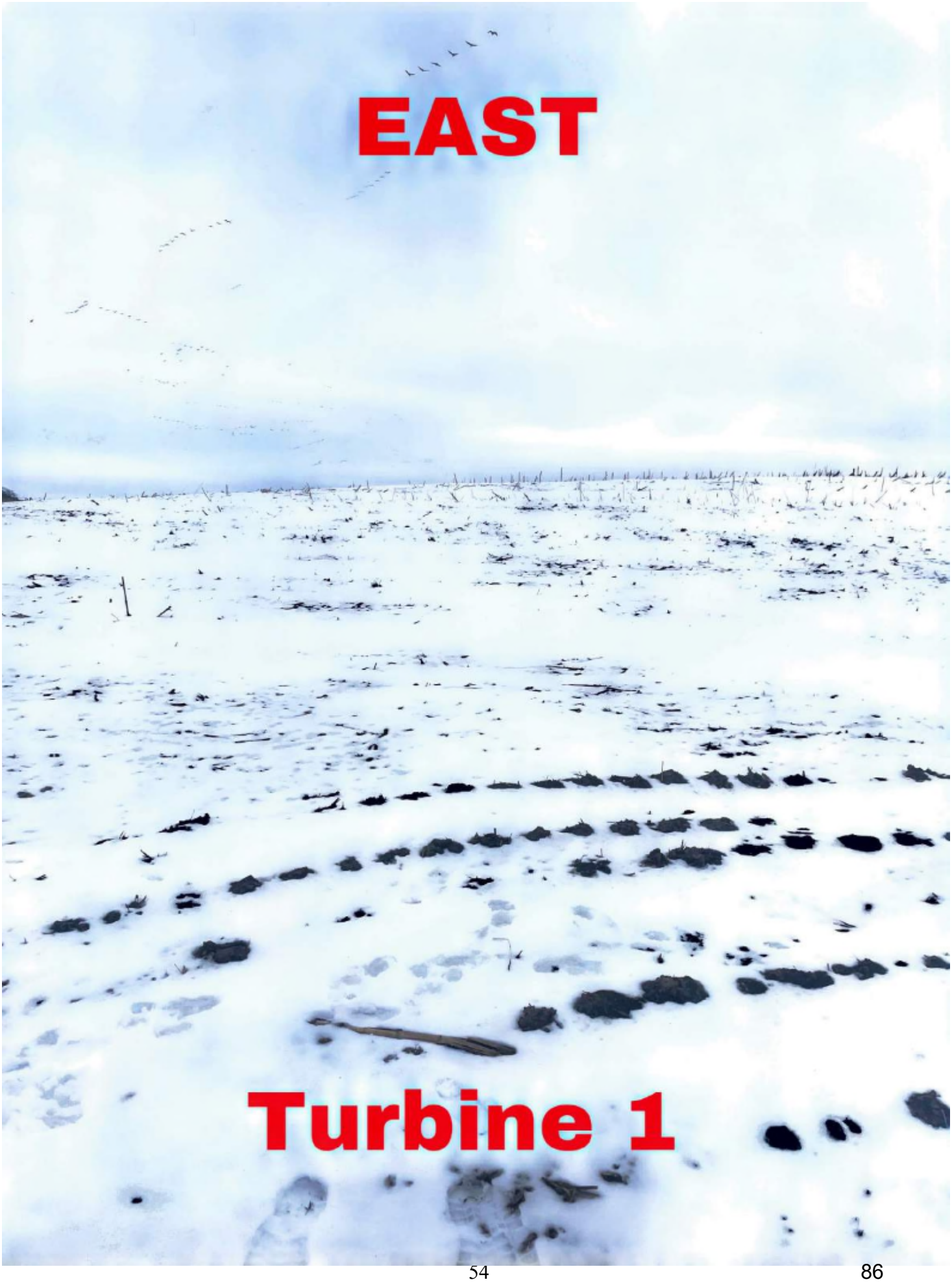
Wnd Power aassification

Wind PCIll'•e Class	Resouce Plleotl I	Wild Power Density at 50mW/rrr	Win Speed™ al Som m's	Wll\d Spee at 50 rtt fl
1	p	0-2001	0..0 - 5..6	0.0 -12.5
2	rta-g11al	D'.1-300	5..6-6.4	12.5-1 .3
J	f	3XI-400	64 -7'0	14.3 -15.7
4	ood	400-SOO	7/J-7.5	15.7 -16.8
S	fn:ellenl	ffi-600	71:, - 8.0	16.8-17.9
6	01.i:itandir-,.i	8XI-800'	80 -88	17.9 -19.7
7	S b	> 800	>8,8	►19.7

°Wind eedls re d"ru Jbo.ill k Ym.IC O 2.0

REL


NORTH
Turbine 1


EAST
Turbine 1


SOUTH
Turbine 1

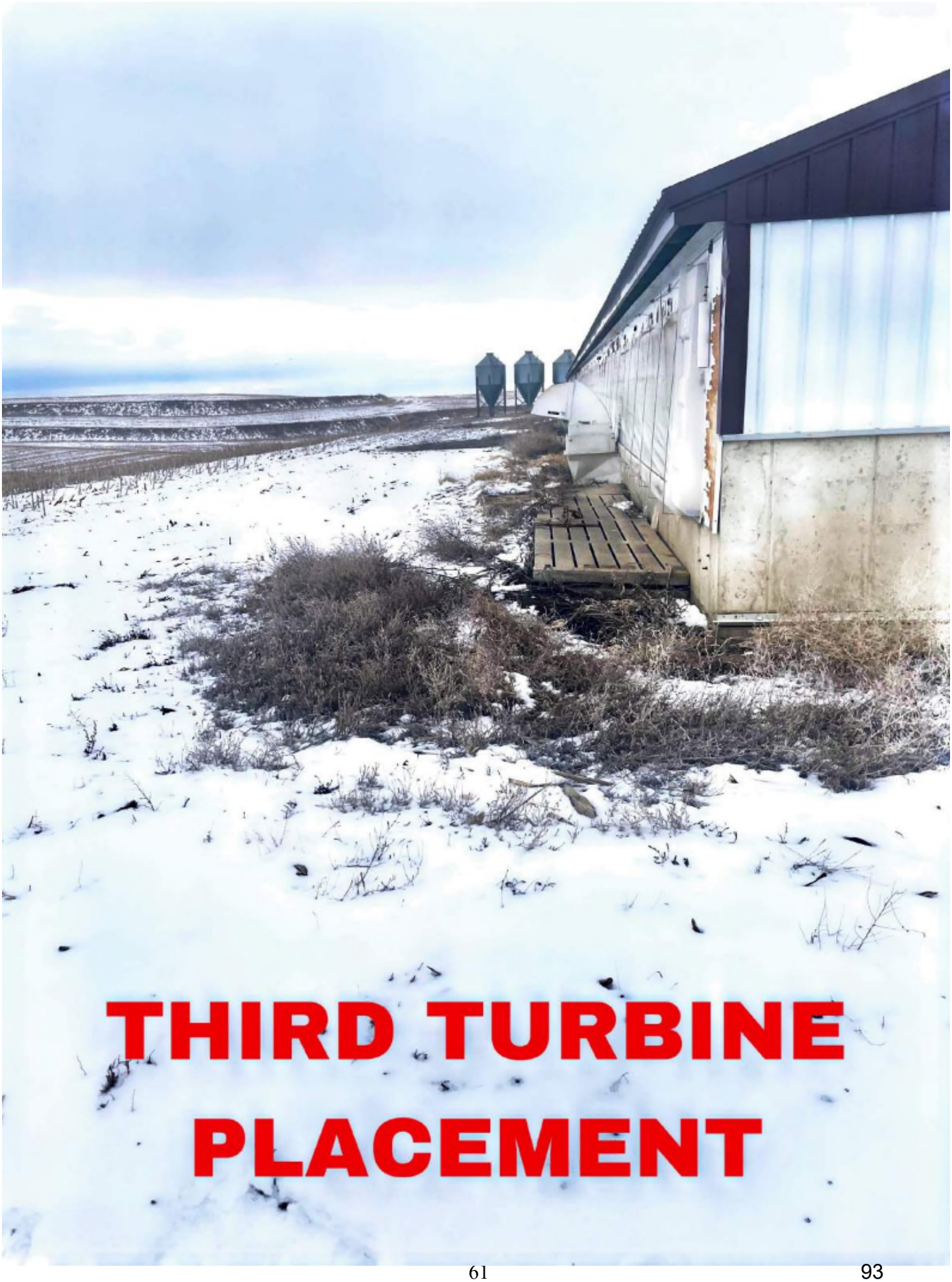

WEST
Turbine 1


NORTH
Turbine 2


EAST
Turbine 2


SOUTH
Turbine 2


WEST
Turbine 2


THIRD TURBINE
PLACEMENT

Received by:

WOODBURY COUNTY, IOWA
APPLICATION FOR BUILDING PERMIT

For Office Use: **Case No.** _____

Zoning District AP Date Approved _____ Denied _____ By _____

Floodplain District X Map # _____ Fee _____ Ck/Rct # _____

GIS # 884420300005 Mail _____ Pick up _____

In accordance with the Woodbury County Zoning Ordinance, the undersigned hereby applies for a building permit: L+K Tabke Holdings, L.L.C. (Kathy Tabke)

Landowner's name: Lane Tabke Phone: _____

Mailing Address: 3112 195th St City: Moville Zip: 51039

Structure will be built at (address): same

Occupied by: Lane Tabke

N1/2 SW 1/4(EX COMM NW COR THEC E1272' TO POB THEC E210',S207. 43' W210,& N 207.43')

Quarter/quarter _____ Section _____ Civil Township _____

or

Subdivision _____ Block _____ Lot(s) _____

Name of Contractor: American Windpower Phone: 833-464-9463

Address of Contractor: PO Box 1760 Great Bend, KS 67530

Anticipated start date of construction: (month/day/year): June 15, 2024

Type of structure: Wind Turbine -3 Will this be used for business purposes? Yes

Structure's Value: $300,000 Size of parcel in acres: 160

Remarks: Towers take up an 11' triangle

PLEASE READ CAREFULLY.

I, the undersigned, hereby understand and state that the land and building listed herein SHALL NOT BE OCCUPIED OR USED in whole or in part for any purpose whatsoever until the structure has been completed and reported as such to the County Office of Planning and Zoning; and to do so constitutes a violation of the Woodbury County Zoning Ordinance subject to misdemeanor charges. I further state that I have read the foregoing application and attachments and know the contents therein, and the facts contained are true and accurate.

Signature Lane Tabke Kathy Tabke L+K Tabke Holdings, L.L.C

This _____ day of _____, 20_____. 9/4/24

_____

Notary Public in and for Woodbury County, Iowa

AFTER THE APPLICATION HAS BEEN APPROVED AND THE PERMIT ISSUED, THE PERMIT BECOMES NULL AND VOID IF CONSTRUCTION HAS NOT COMMENCED WITHIN 120 DAYS AND IN ANY EVENT ONE YEAR.

Sioux City Journal

AFFIDAVIT OF PUBLICATION

Sioux City Journal
2802 Castles Gate Drive
Sioux City 51106
(712) 293-4250

State of New Jersey, County of Hudson, ss:

Laquansay Nickson Watkins, being first duly sworn, deposes and says: That (s)he is a duly authorized signatory of Column Software, PBC, duly authorized agent of Sioux City Journal, printed and published by Journal Communications, in Sioux City in Woodbury County and issued daily and Sunday and that this affidavit is Page 1 of 1 with the full text of the sworn-to notice set forth on the pages that follow, and the hereto attached:

PUBLICATION DATES:
Sep. 21, 2024

NOTICE ID: wKhGCoFU7NPROrbSsrau
PUBLISHER ID: COL-IA-500806
NOTICE NAME: BOA_Tower_Turbine_10-7-24
Publication Fee: $50.97

(Signed) Laquansay Nickson Watkins

VERIFICATION

State of New Jersey
County of Hudson

SHANNEA H HOLMES
NOTARY PUBLIC
STATE OF NEW JERSEY
My Commission Expires August 1, 2026

Subscribed in my presence and sworn to before me on this: 09/23/2024

Shannea H. Holmes

Notary Public
Notarized remotely online using communication technology via Proof.

NOTICE OF PUBLIC HEARINGS BEFORE THE WOODBURY COUNTY BOARD OF ADJUSTMENT

The Woodbury County Board of Adjustment will hold public hearings on the following items hereafter described in detail on October 7, 2024 at 6:00 PM or as soon thereafter as the matters may be considered. Said hearings will be held in the Board of Supervisors' meeting room in the Basement of the Woodbury County Courthouse, 620 Douglas Street, Sioux City, Iowa. Copies of said items may now be examined at the office of the Woodbury County Community and Economic Development, on the 6th Floor of said courthouse by any interested persons. All persons who wish to be heard in respect to the matters should appear at the aforesaid hearings in person or call: 712-454-1133 and enter the Conference ID: 742 346 123# during the meeting to listen or comment. However, it is recommended to attend in person as there is the possibility for technical difficulties with phone and computer systems. Questions or comments can be directed to Daniel Priestley, Woodbury County Zoning Coordinator, 6th Floor, Woodbury County Courthouse, 620 Douglas St., Sioux City, IA 51101 or at 712-279-6609 or via email at: dpriestley@woodburycountyiowa.gov.

Item One (1)

Pursuant to Section 335 of the Code of Iowa, the Woodbury County Board of Adjustment will hold a public hearing to consider the Conditional Use Permit application by L & K Tabke Holdings, LLC (Kathy Tabke) for the installation and use of three (3) 100' wind turbines to reduce the electrical costs on the farm. The property is designated as Parcel #884420300005 and is located in T88N R44W (Wolf Creek Township) in Section 20 in the N ½ of the SW ¼. The proposed location is about 5.2 miles southeast of Moville, IA which is on the south side of 195th Street and east of Jasper Avenue. The property is located in the Agricultural Preservation (AP) Zoning District and "Electric wind generator (Private use)" is classified as a "conditional use" in Section 3.03.4 of the Woodbury County Zoning Ordinance. Applicant(s)/Owner(s): L & K Tabke Holdings, LLC (Kathy Tabke), 3112 195th St., Moville, IA 51039.

Item Two (2)

Pursuant to Section 335 of the Code of Iowa, the Woodbury County Board of Adjustment will hold a public hearing to consider the Conditional Use Permit application by Andrew Bobrytzke on behalf of American Tower LLC and the Bradley J. Kobold Trust who have filed the conditional use permit application to request to construct a 250' self-support wireless communications tower to replace an existing tower from the area. The property is designated as Parcel #874720400004 in T87N R47W (Liberty Township) in Section 20 in the SE ¼ of the SE ¼. The proposed location is about one (1) half mile west of the Salix, IA which is on the north side of 260th Street and west of Barker Avenue. The property is located in the General Industrial (GI) Zoning District and "Telecommunication towers" are classified as a "conditional use" in Section 3.03.4 of the Woodbury County Zoning Ordinance. Applicant(s)/Owner(s): Andrew Bobrytzke on behalf of American Tower LLC, 10 Presidential Way, Woburn, MA 01801 / Bradley J. Kobold Trust, 211 7th Street, Sergeant Bluff, IA 51054.
COL-IA-500806

Sioux City Journal

AFFIDAVIT OF PUBLICATION

Sioux City Journal
2802 Castles Gate Drive
Sioux City 51106
(712) 293-4250

State of Pennsylvania, County of Lancaster, ss:

Yuade Moore, being first duly sworn, deposes and says: That (s)he is a duly authorized signatory of Column Software, PBC, duly authorized agent of Sioux City Journal, printed and published by Journal Communications, in Sioux City in Woodbury County and issued daily and Sunday and that this affidavit is Page 1 of 1 with the full text of the sworn-to notice set forth on the pages that follow, and the hereto attached:

PUBLICATION DATES:
Oct. 19, 2024

NOTICE ID: ufGmc9I6EC3nFnaBR2Yi
PUBLISHER ID: COL-IA-500931
NOTICE NAME: BoA_Tabke_Wind_Turbines
Publication Fee: $31.11

Yuade Moore

(Signed)_____

VERIFICATION

State of Pennsylvania
County of Lancaster

Commonwealth of Pennsylvania - Notary Seal
Nicole Burkholder, Notary Public
Lancaster County
My commission expires March 30, 2027
Commission Number 1342120

Subscribed in my presence and sworn to before me on this: 10/21/2024

Nicole Burkholder

Notary Public
Notarized remotely online using communication technology via Proof.

NOTICE OF PUBLIC HEARING BEFORE THE WOODBURY COUNTY BOARD OF ADJUSTMENT

The Woodbury County Board of Adjustment will hold a public hearing on the following item hereafter described in detail on November 4, 2024 at 6:00 PM or as soon thereafter as the matter may be considered. Said hearing will be held in the Board of Supervisors' meeting room in the Basement of the Woodbury County Courthouse, 620 Douglas Street, Sioux City, Iowa. Copies of said item may now be examined at the office of the Woodbury County Community and Economic Development, on the 6th Floor of said courthouse by any interested persons. All persons who wish to be heard in respect to the matter should appear at the aforesaid hearing in person or call: 712-454-1133 and enter the Conference ID: 742 346 123# during the meeting to listen or comment. However, it is recommended to attend in person as there is the possibility for technical difficulties with phone and computer systems.

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COL-IA-500931

PROPERTY OWNER(S) NOTIFICATION

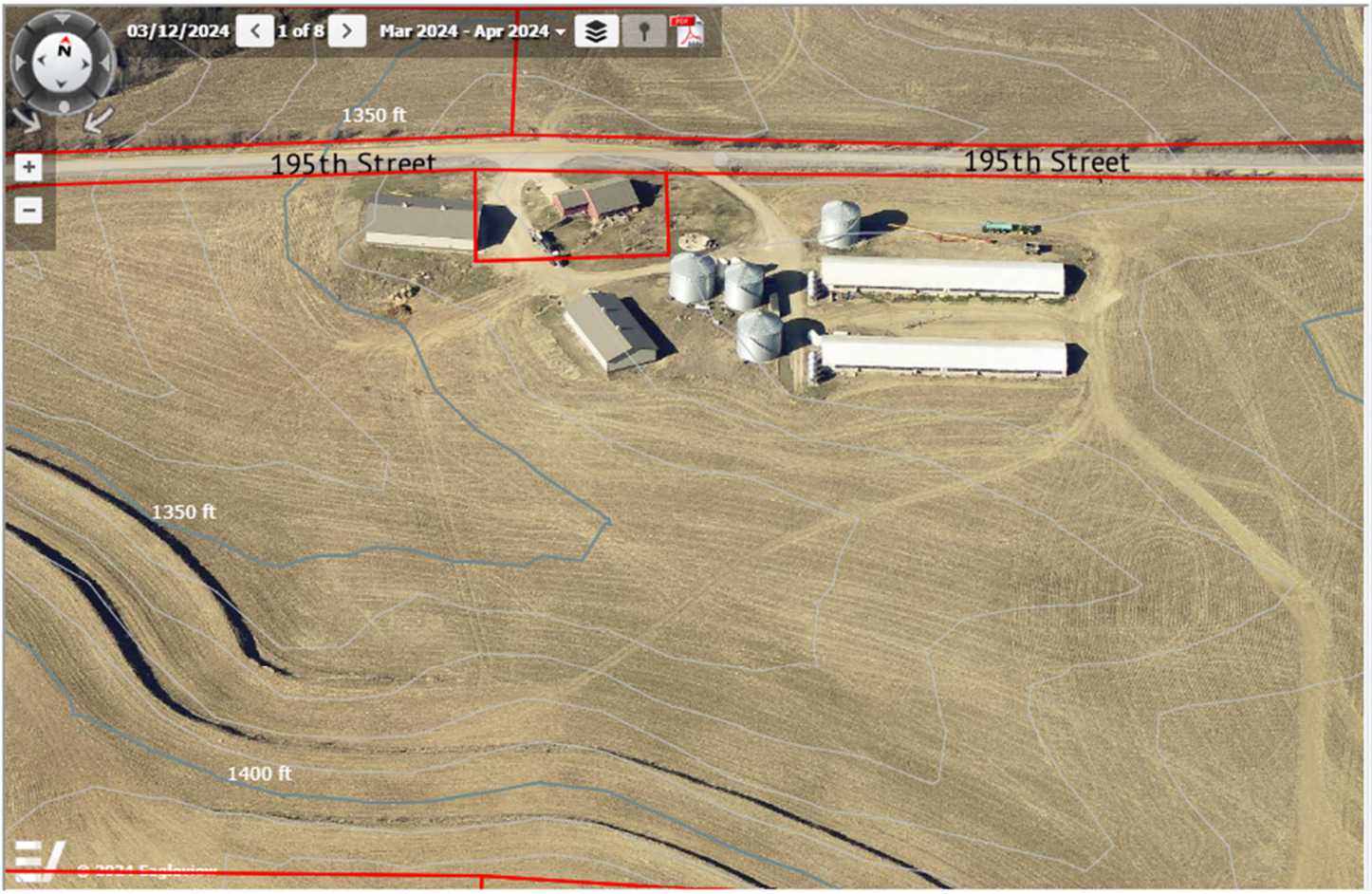
Property Owners within 500 Feet:	7
Notification Letter Date:	September 18, 2024, October 18, 2024
Public Hearing Board:	Board of Adjustment
Public Hearing Date:	October 7, 2024, 6:00 PM, November 4, 2024
Phone Inquiries:	2 (Anthony Ashley, Jeanette M. Kummer)
Written Inquiries:	0
The names of the property owners are listed below.	
When more comments are received after the printing of this packet, they will be provided at the meeting.	

PROPERTY OWNER(S)	MAILING ADDRESS				COMMENTS
Kathy J. Tabke Revocable Trust & Lane D. Tabke Revocable Trust	3112 195th Street	Moville	IA	51039-8120	No comments received.
L & K Tabke Holdings LLC	3112 195th St.	Moville	IA	51039-8120	No comments received.
Delbert D. Spink Revocable Trust	16796 Birchview Road	Park Rapids	MN	56470	No comments received.
2B, LLC C/O Greg Brandt	839 Meadow Dr.	Moville	IA	51039	No comments received.
Jeanette M. Kummer	1977 Jasper Ave.	Moville	IA	51039-8191	Phone inquiry: asked about location of the turbines relative to her propriety and height. Had no objections (9/24/24).
Todd Tabke	34679 C70	Kingsley	IA	51028	No comments received.
Anthony Ashley	3346 170th St.	Correctionville	IA	51016	Phone Inquiry: question about the CUP process for private turbine. (9/16/24).

STAKEHOLDER COMMENTS

911 COMMUNICATIONS CENTER:	No comments received.
FIBERCOMM:	No comments received.
IOWA DEPARTMENT OF NATURAL RESOURCES (IDNR):	No comments received.
IOWA DEPARTMENT OF TRANSPORTATION (IDOT):	No comments received.
LOESS HILLS NATIONAL SCENIC BYWAY:	No comments received.
LOESS HILLS PROGRAM:	No comments received.
LONGLINES:	No comments received.
LUMEN:	No comments received.
MAGELLAN PIPELINE:	No comments received.
MIDAMERICAN ENERGY COMPANY (Electrical Division):	I have reviewed the attached proposal for MEC electric and we have no conflicts. – Casey Meinen, 9/4/24.
MIDAMERICAN ENERGY COMPANY (Gas Division):	No comments received.
NATURAL RESOURCES CONSERVATION SERVICES (NRCS):	No comments received.
NORTHERN NATURAL GAS:	No comments received.
NORTHWEST IOWA POWER COOPERATIVE (NIPCO):	Have reviewed this zoning request. NIPCO has no issues with this request. – Jeff Zettel, 9/10/24.
NUSTAR PIPELINE:	No comments received.
SIOUXLAND DISTRICT HEALTH DEPARTMENT:	No comments received.
WIATEL:	No comments received.
WOODBURY COUNTY ASSESSOR:	No comments received.
WOODBURY COUNTY CONSERVATION:	No comments received.
WOODBURY COUNTY EMERGENCY MANAGEMENT:	No comments received.
WOODBURY COUNTY EMERGENCY SERVICES:	No comments received.
WOODBURY COUNTY ENGINEER:	No comments received.
WOODBURY COUNTY RECORDER:	No comments received.
WOODBURY COUNTY RURAL ELECTRIC COOPERATIVE (REC):	No comments received.
WOODBURY COUNTY SOIL AND WATER CONSERVATION DISTRICT:	The WCSWCD has no comments regarding this application. – Neil Stockfleth, 9/5/24.
WOODBURY COUNTY TREASURER:	No comments received.

PICTOMETRY


03/12/2024
1 of 8
Mar 2024 - Apr 2024
1350 ft
195th Street
195th Street
1350 ft
1400 ft

Woodbury County, IA / Sioux City

Summary

Parcel ID	884420300005
Alternate ID	799757
Property Address	N/A
Sec/Twp/Rng	20-88-44
Brief	WOLFCREEK TOWNSHIP N 1/2 SW 1/4 (EX TCT COMM NW COR THEC E 1272 FT TO POB; THEC E 210 FT, S 207.43 FT, W 210 FT, & N 207.43 FT)
Tax Description	20-88-44 (Note: Not to be used on legal documents)
Deed Book/Page	742-2436 (7/24/2015)
Gross Acres	76.02
Net Acres	76.02
Adjusted CSR Pts	428.7 0.5
Zoning	AP - AGRICULTURAL PRESERVATION
District	0056 WOLF CREEK/WD-C
School District	WOODBURY CENTRAL
Neighborhood	N/A

Owner

Deed Holder
L & K TABKE HOLDINGS LLC
31 12 195TH ST
MOVILLE IA 51039
Contract Holder
Mailing Address
TABKE LANE & KATHY JEAN
31 12 195TH ST
MOVILLE IA 51039-8120

Land

Lot Area 76.02 Acres ;3,311,431 SF

Agricultural Buildings

Plot #	Type	Description	Width	Length	Year Built	Building Count
	Steel Utility Building	MACH SHED	70	120	2014	1
	Steel Utility Building		54	105	2014	1
	Con nement - Custom-Built		50	260	2014	2
	Bin - Grain Storage (Bushel)		48	34	2014	2
	Bin - Grain Storage (Bushel)		42	34	2014	2
	Concrete Pit - 4 Ft Depth		50	260	2014	2
	Steel Bulk Feed Tank		8	6	2015	8

Yard Extras

#1 - (2) Hopper Bin Welded Steel, 0 BU, 12' Sidewall Ht, 12' Diameter, 35 Tons, Built 2014

Permits

Permit #	Date	Description	Amount
5696	06/20/2013	New Bldg	100,000
5439	08/22/2011	New Bldg	60,000
4460	06/21/2004	New Dwlg	0
0211 1001 224 121	09/20/2002	New Bldg	0
	07/24/2000	New Bldg	0

Valuation

	Classi cation	2024	2023	2022	2021	2020
+	Assessed Land Value	Agriculture $143,100	Agriculture $143,100	Agriculture $111,170	Agriculture $111,170	Agriculture $105,100
+	Assessed Building Value	$374,640	$374,640	$290,790	$290,790	$265,510
+	Assessed Dwelling Value	$0	$0	$0	$0	$0
=	**Gross Assessed Value**	**$517,740**	**$517,740**	**$401,960**	**$401,960**	**$370,610**
-	Exempt Value	$0	$0	$0	$0	$0
=	**Net Assessed Value**	**$517,740**	**$517,740**	**$401,960**	**$401,960**	**$370,610**

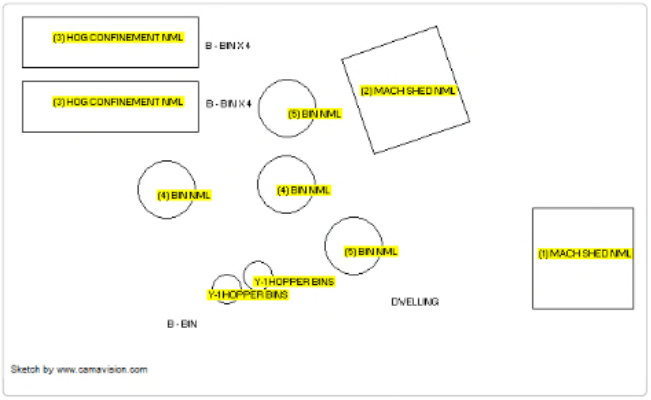
Sioux City Special Assessments and Fees

Click here to view special assessment information for this parcel.

Woodbury County Tax Credit Applications

Apply for Homestead, Military or Business Property Tax Credits

Sketches



No data available for the following modules: Residential Dwellings, Commercial Buildings, Sales, Sioux City Tax Credit Applications, Sioux City Board of Review Petition, Photos.

Last Data Upload: 8/31/2024, 12:49:27 AM

Contact Us

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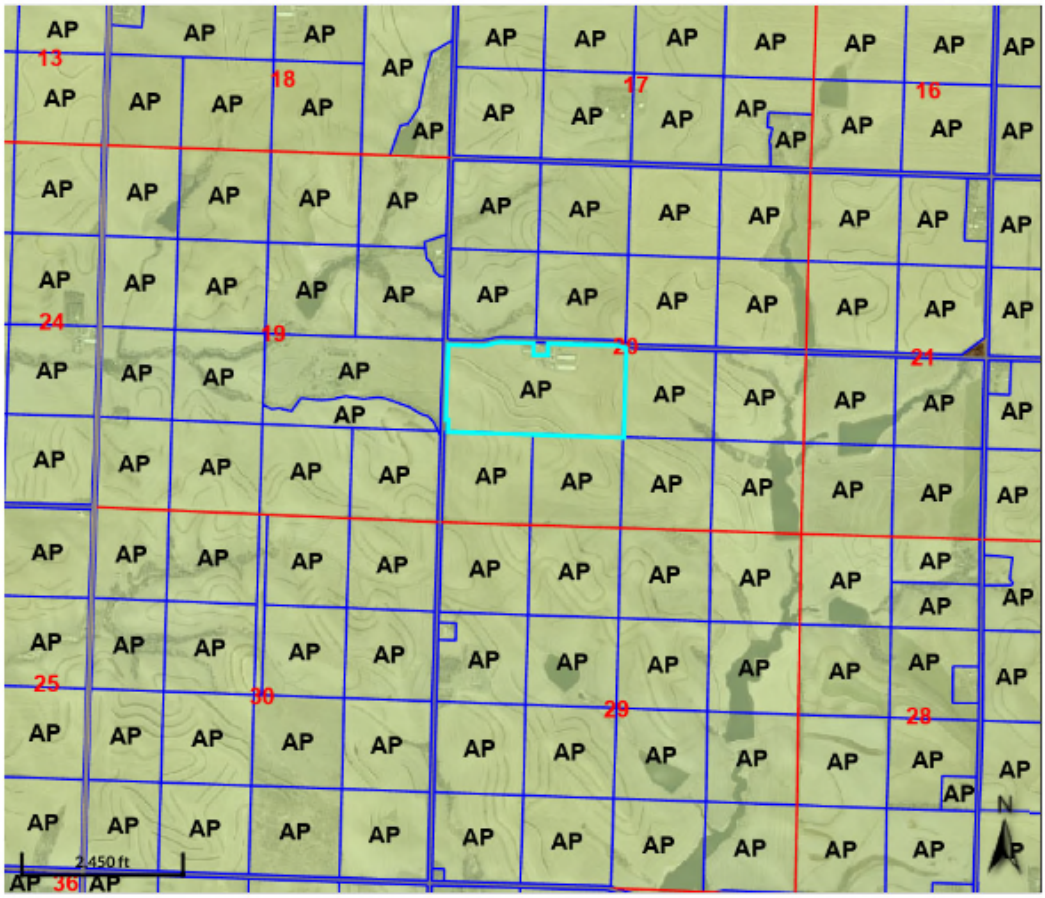
Beacon™ Woodbury County, IA / Sioux City



Overview

Legend

- Roads
- Corp Boundaries
- Townships
- Sections
- Parcels

County Zoning

- AE
- AP
- GC
- GC-PD
- GI
- LI
- LI-PD
- SR
- WR

Parcel ID	884420300005	**Alternate ID**	799757	**Owner Address**	L & K TABKE HOLDINGS LLC
Sec/Twp/Rng	20-88-44	**Class**	A		3112 195TH ST
Property Address		**Acreage**	76.02		MOVILLE, IA 51039
District	0056				

Brief Tax Description WOLFCREEK TOWNSHIP N 1/2 SW 1/4 (EX TCT COMM NW COR THEC E 1272 FT TO POB; THEC E 210 FT, S 207.43 FT, W 210 FT, & N 20 7.43 FT) 20-88-44
(Note: Not to be used on legal documents)

Date created: 8/31/2024
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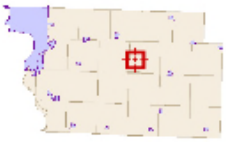
Beacon™ Woodbury County, IA / Sioux City

Overview



Legend

- Roads
- Corp Boundaries
- Townships
- Parcels

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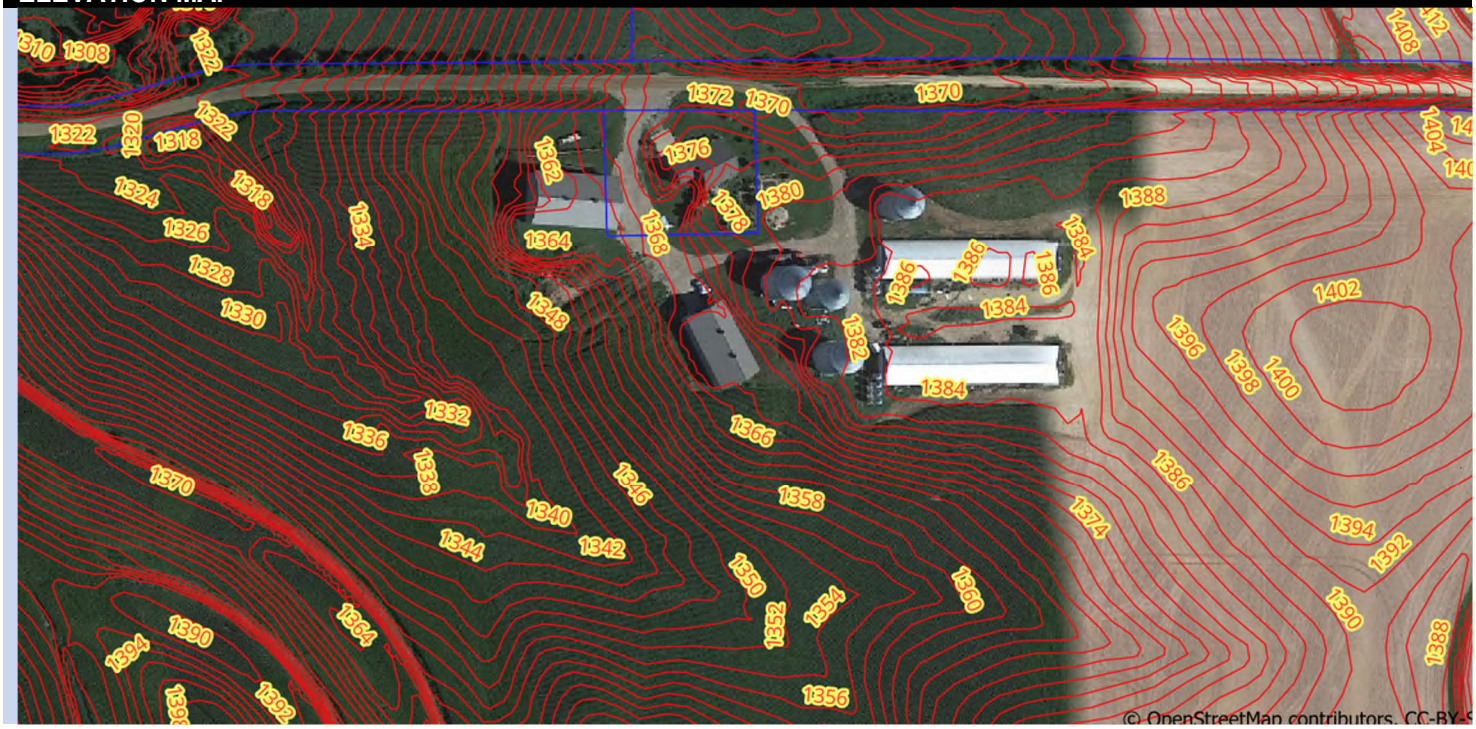
ELEVATION MAP



SOIL REPORT(S)

Woodbury County, IA / Sioux City

Summary

Parcel ID	884420300005	
Gross Acres	76.02	
ROW Acres	0.00	
Gross Taxable Acres	76.02	
Exempt Acres	0.00	
Net Taxable Acres	76.02	*(Gross Taxable Acres - Exempt Land)*
Average Unadjusted CSR2	59.86	*(4550.3 CSR2 Points / 76.02 Gross Taxable Acres)*

Agland Active Con g *2017 CSR2*

Sub Parcel Summary

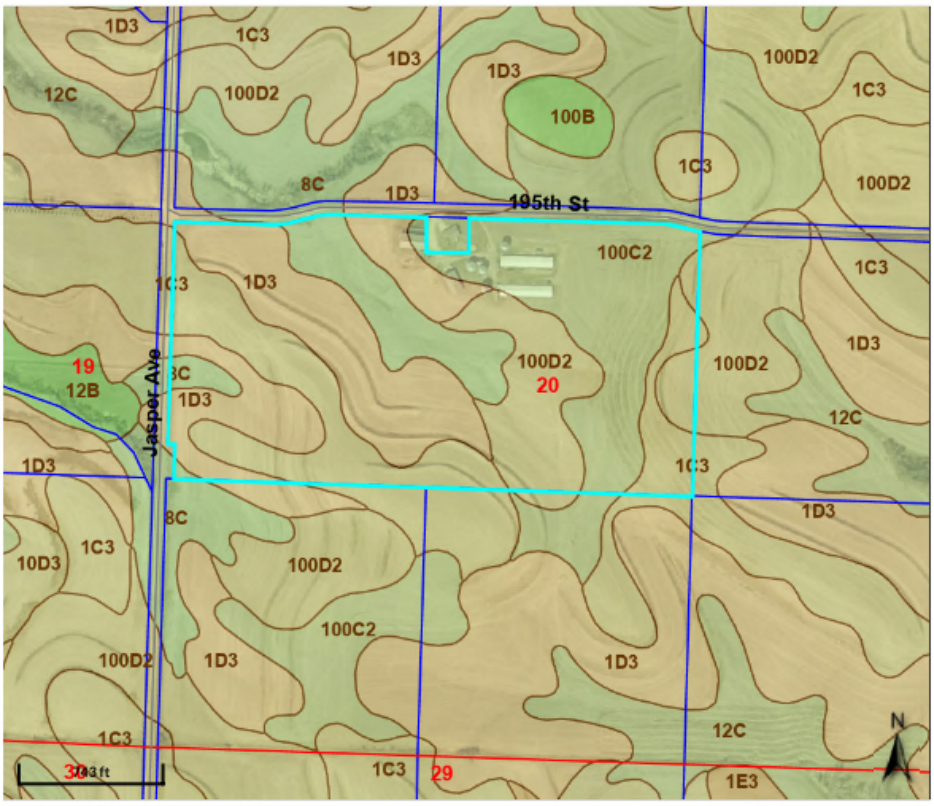
Description	Acres	CSR2	Unadjusted CSR2 Points	Adjusted CSR2 Points
100% Value	71.01	58.85	4,179.02	4,179.02
Non-Crop	5.01	74.11	371.28	211.46
Total	**76.02**		**4,550.30**	**4,390.48**

Soil Summary

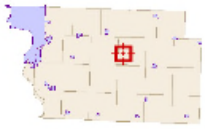
Description	SMS	Soil Name	CSR2	Adjusted Acres	Unadjusted CSR2 Points	Adjusted CSR2 Points
100% Value	8C	JUDSON SILTY CLAY LOAM, 5 TO 9 PERCENT SLOPES	86.00	8.76	753.36	753.36
100% Value	100C2	MONONA SILTY CLAY LOAM, 5 TO 9 PERCENT SLOPES, MODERATELY ER	85.00	13.74	1,167.90	1,167.90
100% Value	100D2	MONONA SILTY CLAY LOAM, 9 TO 14 PERCENT SLOPES, MODERATELY E	60.00	10.69	641.40	641.40
100% Value	1C3	IDA SILT LOAM, 5 TO 9 PERCENT SLOPES, SEVERELY ERODED	58.00	15.62	905.96	905.96
100% Value	1D3	IDA SILT LOAM, 9 TO 14 PERCENT SLOPES, SEVERELY ERODED	32.00	22.20	710.40	710.40
Non-Crop	100C2	MONONA SILTY CLAY LOAM, 5 TO 9 PERCENT SLOPES, MODERATELY ER	85.00	3.88	329.80	174.76
Non-Crop	100D2	MONONA SILTY CLAY LOAM, 9 TO 14 PERCENT SLOPES, MODERATELY E	60.00	0.19	11.40	7.32
Non-Crop	1D3	IDA SILT LOAM, 9 TO 14 PERCENT SLOPES, SEVERELY ERODED	32.00	0.94	30.08	29.38
Total				**76.02**	**4,550.30**	**4,390.48**

SOIL MAP(S)

Beacon™ Woodbury County, IA / Sioux City



Overview



Legend

- Roads
- Soils
  - 0.000000 - 5.000000
  - 5.000001 - 20.000000
  - 20.000001 - 30.000000
  - 30.000001 - 40.000000
  - 40.000001 - 50.000000
  - 50.000001 - 60.000000
  - 60.000001 - 70.000000
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OWNERS MANUAL RECEIVED ON SEPTEMBER 25, 2024 AFTER A STAFF REQUEST – NOT INCLUDED WITH ORIGINAL ZONING COMMISSION MATERIALS

Owner's Manual

BWC EXCEL 15

Wind Turbine &
Powersync III
Grid-Intertie Inverter

Rev. 0
August 2018

BERGEY WINDPOWER

Bergey Windpower Co.
2200 Industrial Blvd.
Norman, OK 73069 USA
TEL: 405-364-4212
FAX: 405-364-2078
E-mail: sales@bergey.com
Web Site:www.bergey.com

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I. INTRODUCTION

This manual contains important information concerning your Bergey EXCEL 15 wind turbine system and its operational characteristics. We strongly recommend that you read and familiarize yourself with its contents.

At several points in this manual items of special interest or significant impact are highlighted by one of the following indicators:

DANGER: Hazards or unsafe practices that could cause personal injury or death.

WARNING: Hazards or unsafe practices which could cause product damage.

NOTE Significant points of interest.

Serial Numbers

Each Bergey EXCEL 15 wind turbine has a serial number located on the tower adapter. The turbine serial number can also be found on the outside of the shipping crate and on the warranty registration card. The blade serial numbers are located on the root pad and also the shipping crate. We recommend that the serial number be copied to this manual for possible future reference.

Bergey EXCEL 15 Serial No.: _____

Bergey EXCEL 15 Blades Serial Numbers: _____

The Powersync III inverter has a serial number label on its right side. We recommend that this serial number also be copied to this manual.

Powersync III Serial No.: _____

II. EXCEL 15 SPECIFICATIONS

PERFORMANCE

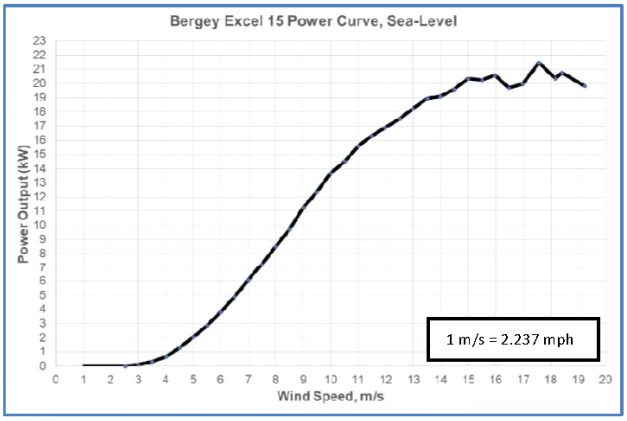
START-UP WIND SPEED	9 mph (4 m/s)
CUT-IN WIND SPEED	6 mph (2.5 m/s)
RATED WIND SPEED	24.6 mph (11 m/s)
AWEA RATED POWER (at 11 m/s or 25 mph)	15.6 kW
AWEA ANNUAL ENERGY (at 5 m/s average	29,800 kWh
CUT-OUT WIND SPEED	none
MAXIMUM DESIGN WIND SPEED	134 mph (60m/s)
MAXIMUM POWER	22.6 kW
ROTOR SPEED	0-150 RPM

MECHANICAL

TYPE	3-Blade Upwind, Horizontal-Axis
ROTOR DIAMETER	31.5 ft. (9.2 m)
WEIGHT	1,400 lb. (636 kg)
GEARBOX	none
BLADE PITCH CONTROL	none
OVERSPEED PROTECTION	Blade stall
TEMPERATURE RANGE	-40 to 140 deg. F (-40 to 60 deg. C)

ELECTRICAL

OUTPUT FORM	240VAC, 1-Phase, 60Hz
GENERATOR	Permanent Magnet Alternator
POWER PROCESSOR	Powersync III Inverter



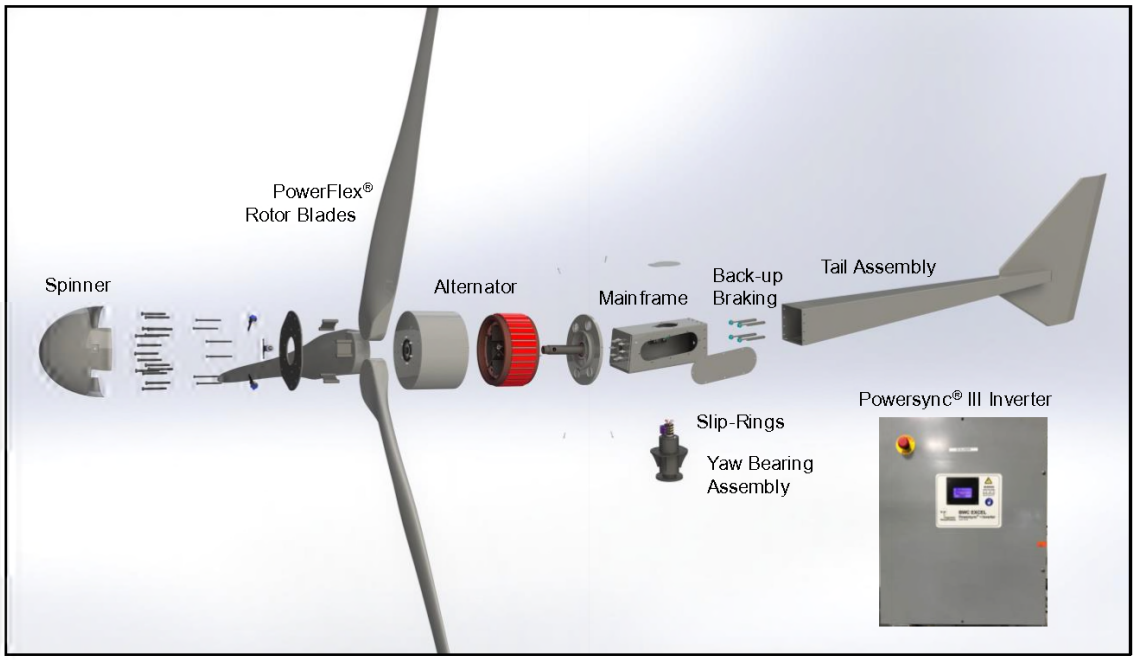
Power Output (AC kW)

Wind Speed (m/s) at Hub Height

III. SYSTEM DESCRIPTION

The Bergey EXCEL 15 is an upwind horizontal-axis wind turbine designed for distributed generation applications, connected to the power grid on the customer's side of the utility meter. The complete unit consists of the following major components, as shown in the figure below:

1. Spinner
2. PowerFlex® Rotor Blades
3. Alternator
4. Mainframe
5. Back-up Braking
6. Tail Assembly
7. Slip-Rings
8. Yaw Bearing Assembly
9. Powersync® III Inverter
10. Auxiliary Load (not shown)



A. SPINNER

The spinner (nose cone) is purely cosmetic.

B. ROTOR SYSTEM

The rotor system consists of three high-technology carbon-fiber PowerFlex® blades. Acting like aircraft wings, the blades convert the energy of the wind into rotational forces that drive the alternator. The PowerFlex® blades are rigidly attached to the alternator and they are fixed pitch. The Excel 15 rotor blades have proprietary airfoils, which were custom designed to provide high efficiency and low noise.

Each blade has a serial number inscribed on its root pad at the inboard end.

C. ALTERNATOR

The alternator converts the rotational energy of the rotor into electricity. The alternator utilizes permanent magnets and has an inverted configuration in that the outside housing rotates, while the internal windings are stationary. It was specifically designed for the Bergey EXCEL 15 and produces power at low speeds, eliminating the need for a speed-increasing gearbox. Since it uses permanent magnets, the alternator is generating voltage whenever the rotor is turning.

DANGER The output wiring of the EXCEL 15 presents a shock hazard whenever the rotor is turning. Caution must be exercised at all times to avoid electrical shock.

D. MAINFRAME

The mainframe is the structural backbone of the wind turbine. It serves as the attachment point for the rotor/alternator assembly, the tail assembly, the yaw bearing assembly. It also houses the yaw-axis slip-ring assembly and the controls for the back-up braking system.

E. BACK-UP BRAKING

The back-up braking system is an added safety system that prevents rotor overspeed in the event of a failure of the primary speed control system (inverter and dump load).

F. TAIL ASSEMBLY

The tail assembly keeps the rotor aligned into the wind.

G. SLIP-RING ASSEMBLY

The slip-rings and brushes conduct the electricity generated in the alternator from the moving (as it orients with the direction) wind turbine to the fixed tower wiring. The slip-rings are enclosed in the steel mainframe housing to help protect them from the weather and lightning.

H. YAW BEARING ASSEMBLY

The yaw bearing assembly allows the turbine to freely align itself to the wind direction.

I. POWERSYNC III INVERTER

The Powersync III inverter converts the "variable AC" from the Bergey EXCEL 15 turbine into utility grade electricity so that it can be connected to the wiring in your home or business. This conversion requires sophisticated electronics and is designed to operate automatically. The Powersync III has a digital display that provides information on the status of the system, its current output power, and its cumulative energy production.

The system also includes an auxiliary load bank that absorbs excess wind energy during strong wind gusts.

IV. SYSTEM OPERATION

A. NORMAL OPERATION

The Bergey EXCEL 15 produces utility compatible power in the form of 240VAC, 60 Hz, single phase electricity (other voltage options are available). It is connected through the Powersync® III inverter to the utility distribution network in the same manner as household appliances or electrical machinery. When the wind speed is too low to operate the wind turbine, all of the electrical power needed for the home or business will be supplied by the utility company. During these idle periods the Powersync® III will consume approximately 0.3 kilowatt-hours of electricity per day.

When the system begins producing power, the amount of power which must be purchased from the utility is reduced by an amount equal to the output of the wind system. From the perspective of the utility company the wind system output reduces the electrical load they have to supply, just as if you turned off lights and appliances. The output of the wind system fluctuates with the speed of the wind so the instantaneous amount of electricity being saved will be constantly changing. Quite often your home will be served simultaneously by the utility and your Bergey wind turbine.

When the output of the wind system exceeds the power requirements of the house the excess electricity is sent back to the utility. Both the consumer's right to interconnect a wind system and the utilities obligation to purchase excess power are prescribed by federal law (PURPA, Section 210). The amount you will be credited or paid for this excess production varies state-to-state and sometimes utility-to-utility. If your utility company offers "net metering" then your meter is allowed to turn backwards so that you essentially bank energy, at full value, for less windy periods. This banking can be done over a month or over a year depending on the policy of your state or your utility. If you do not get "net metering" then you will have a second utility meter to register excess production and your utility will pay or credit you for this, typically at less than the rate you pay when you purchase their electricity.

If your utility experiences an outage (blackout) the wind system will cease to produce power so that it does not present an electrical safety hazard to utility repair crews. During a power outage the Excel 15 turbine will come to a stop. When utility power is restored, the Powersync III will automatically return the wind system to full working status following a five minute delay and then a two minute countdown. These time delays are dictated in the UL standards required by the utilities.

The rotor of the EXCEL 15 should begin to rotate when the wind speed reaches approximately 9 mph (4 m/s). Once started, the rotor may continue to turn in winds below 5 mph (2.2 m/s), but the system will not be producing power below this wind speed.

NOTE All operational wind speeds given assume steady winds, sea-level conditions and moderate temperatures. Hot weather, high altitude, turbulence and gusting winds will reduce system performance.

NOTE The Excel 15 may exhibit poor start-up performance in light steady winds. The design of the blades is optimized for efficiency and storm protection, which necessitated some sacrifice in start-up characteristics.

The rotor speed will increase with increasing wind speed and the system will produce a higher output. This output increases rapidly because the energy available in the wind varies as the third power (cube) of the wind speed. For example, if the wind speed increased form 5 mph to 10 mph, a factor of two, the energy in the wind would increase from one unit to eight units, a factor of eight (2 to the 3rd power). One result of this relationship is that there is very little energy available in light winds. For the average site, winds in the range of 12-20 mph (5.5 – 9 m/s) will provide most of the system's energy production on an annual basis.

The Excel 15 will operate at variable speed up to about 20 mph (9 m/s) and about 150 RPM. The speed of the rotor is controlled to limit at about 150 RPM.

B. HIGH WINDS

Unlike previous Bergey wind turbines, the Excel 15 does not furl (rotor turned away from the wind). The Excel 15 controls speed and protects itself from high winds by stalling the rotor progressively as wind speeds increase. In sustained high winds the rotor speed is reduced to limit power surges during strong gusts.

C. PROBLEMS WITH POWER GRID

If an abnormal condition occurs on the utility line, such as a voltage fluctuation or a complete interruption, the Powersync III inverter will automatically disconnect the wind turbine from the power grid and bring the rotor to a stop.

D. EMERGENCY SHUTDOWN

The Bergey EXCEL 15 is designed for unattended operation over an extended period of time. Exceptional situations may occur, however, in which the wind turbine should be shutdown. These situations include:

1. **EXCESSIVE VIBRATION -** Uneven ice build-up, ice shedding, or blade damage may cause the wind turbine to experience excessive vibration. Always shut the turbine down as soon as an increase in vibration is detected. Any new or excessive vibration in the turbine when ice is not present should be investigated immediately.

2. **UNUSUAL SOUND -** If the turbine begins making clinking, growling, or other unusual sound it

should be shut down and fully inspected as soon as possible.

3. **INSPECTION AND MAINTENANCE -** Whenever someone must climb the tower the wind turbine must be shut down.

Shut down of the EXCEL 15 is accomplished by operating (pressing) the red Emergency Stop button on the Powersync III inverter.

To release the Emergency Stop, turn the red button clockwise until it snaps outward. This will resume automatic operation of the wind turbine.

WARNING: Do not open the disconnect switch on the tower during shutdown. This would allow the turbine to restart and if the turbine tried to overspeed it would trigger the back-up braking system.

E. BACK-UP BRAKING SYSTEM

If the primary overspeed protection system fails, the Excel 15 has a back-up braking system located on the wind turbine. It detects an overspeed situation and applies a dynamic brake to bring the rotor to a near stop. You can tell this has occurred if the Powersync III display says "Waiting for wind" and there's plenty of wind [greater than 15 mph (6.7 m/s)], but the rotor does not turn.

It will automatically reset if the wind drops below 2 m/s (4.5 mph). Otherwise, you can manually restart the turbine by activating and then restoring the Emergency Stop button on the Powersync III inverter.

If activation of the Back-up Brake occurs repeatedly we strongly recommend that you contact your dealer or the Service Department at BWC.

V. POWERSYNC III INVERTER

The Powersync III inverter is connected to the household or building electrical circuits through a dedicated circuit breaker. Before opening the Powersync III enclosure, the breaker must be turned off and the turbine Emergency Stop must be activated, to avoid electrical shock.

DANGER Electric Shock Hazard. Failure to comply will result in death or serious injury. Disconnect all power to the inverter before servicing. Wait at least 5 minutes before opening the inverter door.

Using the utility grid as a reference, the Powersync III inverter converts the output of the wind turbine into utility-compatible power (AC). The Powersync III inverter has been designed for automatic, unattended operation and it is programmed to provide maximum performance from your Bergey EXCEL 15 wind turbine. It is also programmed to safely disconnect the wind turbine in the event of a problem with the utility power and to automatically reconnect the turbine after the problem is remedied.

The LCD digital display on the front of the Powersync III provides information on the status of your Bergey EXCEL 15 wind turbine. The contrast can be adjusted UP or DOWN using hidden buttons on the right side of the display.

In normal operation the Powersync III will show the status as "Running" and will display the instantaneous Output Power in Watts.

A. INVERTER SPECIFICATIONS

Input – From Turbine

Input Voltage Maximum (3 Phase Input)	480 VAC
Input Start Voltage Minimum	270 VAC
Input Operating Voltage Range	270 to 480 VAC
Input Frequency Maximum	47 Hz
Input Current Maximum	34 Amps

Output – To Utility

Model	PSIII-240	PSIII-208
Continuous Output Power Maximum	22600 W	18800 W
Continuous Output Power Tolerance	±10%	
Output Voltage Nominal (Single Phase) Line-Line	240 VAC	208 VAC
Operating Voltage Range Line-Line	212-264	184-228
Output Voltage Nominal (Single Phase) Line-Neutral	120 VAC	
Operating Voltage Range Line-Neutral	106-132 VAC	
Continuous Output Current Maximum	90 Amps	
Continuous Output Current Tolerance	± 10%	
Voltage Measurement Tolerance	± 10 VAC	
Operating Frequency Nominal	60 Hz	
Operating Frequency Range	59.3 to 60.5 Hz	
Operating Frequency Measurement Tolerance	± 0.5 Hz	
Output Power Factor	0.95 ± 0.05	
Temperature Range Normal Operation	-4°F to 113ºF (-20ºC to 45ºC)	
Output Over-Current Protection Maximum	100 Amps	
Synchronization In-Rush Current Maximum	6.3 Amps	
Utility Interconnection Trip Time	100 msec	
Time Measurement Tolerance	± 85 msec	

B. Other Specifications

Dimensions	32.2"H x 24.3"W x 9" D 817 x 607 x 230 mm
Weight	153 lbs. / 64 Kg
Enclosure	NEMA Type 1

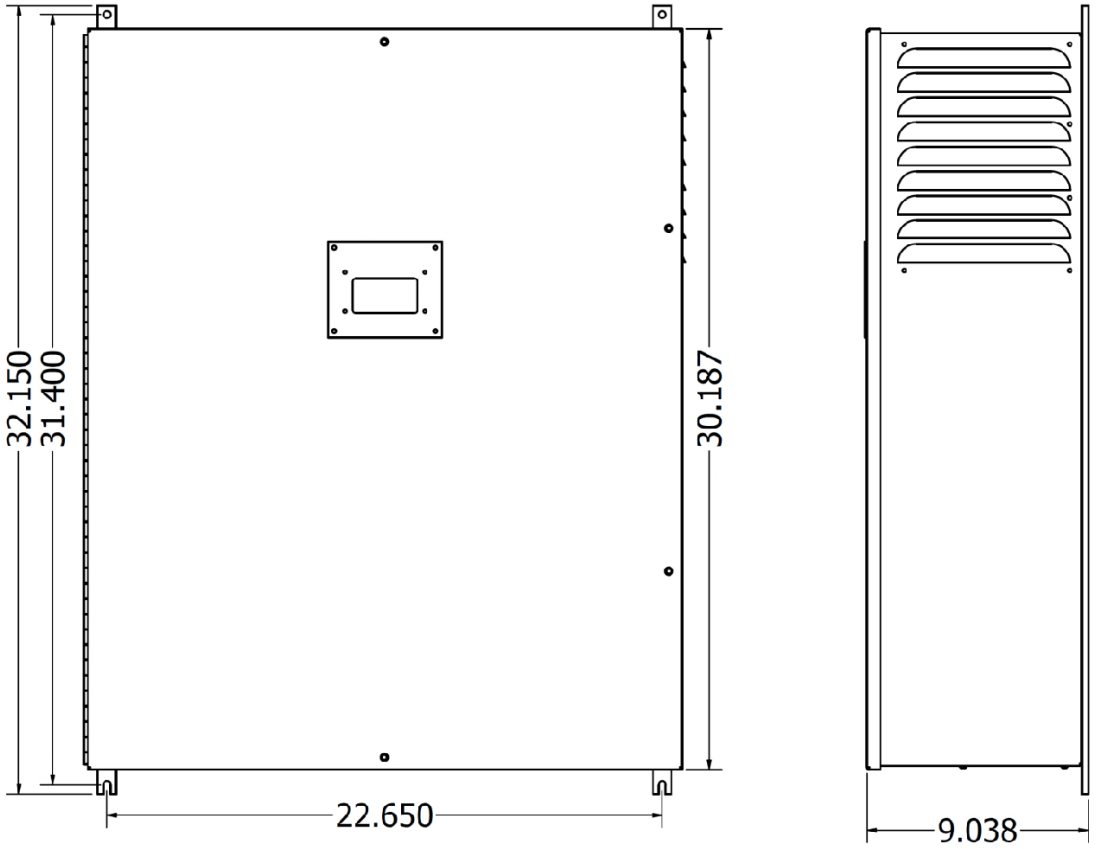
NEMA 1 indicates that the enclosure is constructed for indoor use only. It provides protection to personnel against incidental contact with the enclosed equipment.

C. Important Inverter Safety Instructions

SAVE THESE INSTRUCTIONS This manual contains important instructions for Models PSIII-240 and PSIII-208 that shall be followed during installation and maintenance of the inverter.
The output field wiring terminal can be used for connection of a maximum of: One 1/0 AWG wire per terminal (1 wire for each line)
The input field wiring terminal can be used for connection of a maximum of: One 2 AWG wire per terminal (1 wire per phase per terminal provided).
The field-wiring terminals shall be connected using the following wire types: Copper Conductors Only (Input connection) Use No. 8 - 2 AWG, 90 °C copper wire only Copper, Aluminum or Copper-Clad Aluminum Conductors Only (Output connection) Use No. 6 – 1/0 AWG, 90 °C Copper Conductors Use No. 4 – 1/0 AWG, 90 °C Copper Clad Aluminum, or Aluminum Conductors.
The following symbols are used as markings on this product with the following meanings: Equipment grounding conductor – 
This inverter is intended for operation in an indoor NEMA 1 compatible environment having a maximum ambient temperature of 45° C (113° F).
This unit or system is provided with fixed trip limits and shall not be aggregated above 30 kW on a single Point of Common Connection
CAUTION To reduce the risk of fire, connect only to a circuit provided with 100 amperes maximum branch-circuit over-current protection in accordance with the National Electrical Code, ANSI/NFPA 70.
 Hot surfaces – To reduce the risk of burns – Do not touch The enclosure and the rear heatsink can exceed 70° C (150° F).
Note that the input and output circuits are isolated from the enclosure. In accordance with Clause 15.2.1.1 of CAN/CSA-C22.2 No. 107.1, system grounding, when required by the *Canadian Electrical Code, Part I,* is the responsibility of the installer.

D. Installation

1. Dimensions



2. Locating

- The inverter must be installed in a weather protected environment.
- The inverter emits audible noise when operating. Do not locate the inverter in living spaces or on walls directly connected to living spaces.
- For maximum energy production, avoid installing in direct sunlight or in locations that are likely to exceed 45°C (113°F) local ambient temperature.

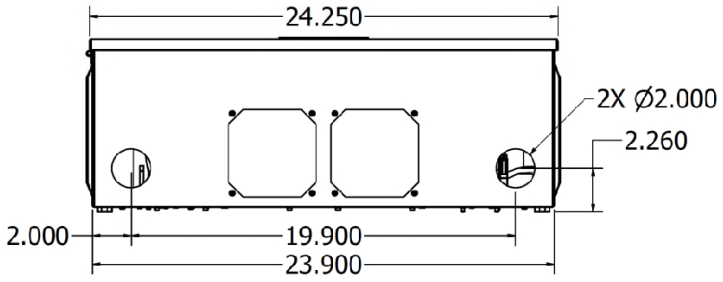
- The inverter will automatically shut down if the temperature is below -20°C (-4°F). Protect from extreme cold exposure if this is undesirable.
- Enclosure ventilation is to be provided such that the following guidelines are satisfied.
  - Provide a minimum of 12 inches clearance to the bottom air inlet filters.
  - Provide a minimum of 6 inches clearance to the outlet side vents.
  - Use in a well-ventilated area within the maximum ambient temperature rating.
- If the inverter is installed in a small structure or out building, the structure must be provided with top and bottom venting of at least 100 square inches at each opening.

3. Mounting

- The enclosure, having a NEMA 1 rating, is designed for indoor installation.
- The enclosure is provided with four mounting feet with 0.281" dia. mounting holes.
- For mounting to a 0.10" thick metal surface, use M6, ¼-20 or ¼-28 bolts grade 3 or higher with nuts and flat washers.
- For mounting to concrete, use M6 or ¼" bolts using concrete anchors with an 800 pound or greater tension rating.
- The required bolt length is such that the internal threads need to be 100% engaged.
- The enclosure is to be oriented with the conduit openings facing toward the floor.

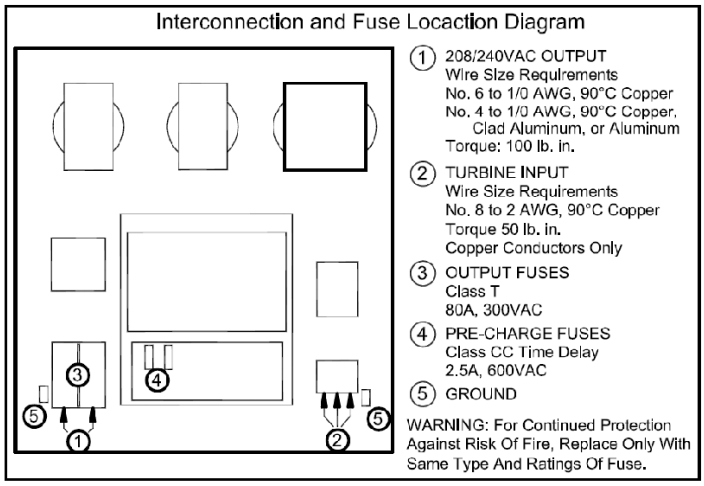
4. Electrical Connections

- Connections are made to the unit via the holes in the bottom of the enclosure.
- **Holes are sized for 1.5" rated conduit**. Wiring methods in accordance with the National Electrical Code, ANSI/NFPA 70 are to be used.
- It is recommended that at least 12" of flexible conduit be used below the inverter to make alignment easier.
- Cutting additional holes in the enclosure is not recommended and voids the warranty on the enclosure against corrosion and water damage. Any damage to the electronics caused by the modification will be **your** responsibility.



5. AC Output Connection

- The AC output is single phase and not bonded to ground.
- Connect the two single phase 240VAC or 208VAC wires from the distribution panel to the dual fuse block located on the lower left side of the enclosure.
- Tightening torque, allowable wire size, and type, for the Field-Wiring Terminals:
- 6 AWG to a maximum of 1/0 AWG for Copper Conductors Only
- 4 AWG to a maximum of 1/0 AWG for Aluminum Or Copper-Clad Aluminum Conductors Only
- Wire rated 90°C minimum
- 100 lbf-in tightening torque maximum



6. AC Input Connection (Turbine)

- Connect the three phase turbine wires to the terminal block located on the lower right side of the enclosure.
- The inverter's wind turbine input must be connected to a 3-phase "delta" or "wye" connection with the neutral not connected to earth ground (left floating).
- The inverter must be provided with 3, UL listed fuses rated, 400 VAC minimum, 50 Amp maximum for proper protection from the wind turbine input to the unit as well as an appropriate UL listed fuse holder to accommodate the fuses.
- Tightening torque, allowable wire size, and type, for the Field-Wiring Terminals:
- 50 lbf-in tightening torque
- 8 AWG - to a maximum of 2 AWG for Copper Conductors Only
- Wire rated 90°C minimum.

7. Earth Ground Connection

- Earth ground is to be connected to the two terminals provided inside the enclosure indicated by the earth ground equipment marking.
- Allowable wire size range is 8 AWG – 4 AWG.
- 50 lbf-in tightening torque
- The inverter's earth ground connections available on both the input and output terminals must be bonded directly to the service entrance's earth ground which in turn is bonded to neutral. With a second bond, the inverter's earth ground

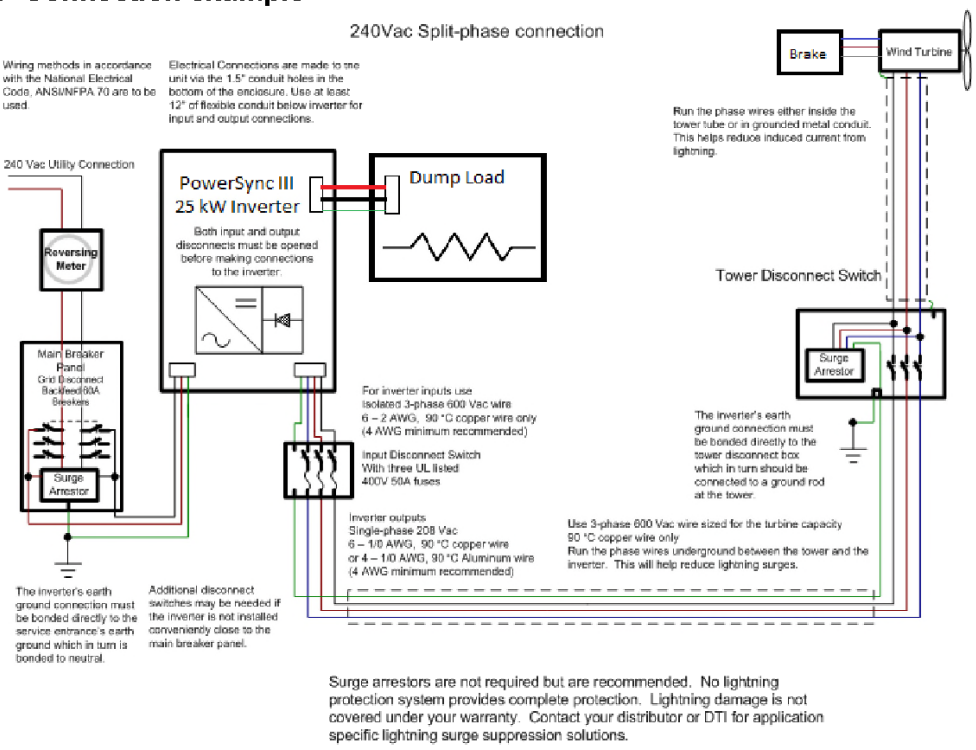
connection must be bonded directly to the tower disconnect ground lug which in turn is bonded to the tower's ground rod.

- The input and output circuits are isolated from the enclosure. System grounding when required by the *Canadian Electrical Code, Part I,* is the responsibility of the installer.

8. Fuse replacement

- **Warning:** For continued protection against risk of fire, replace only with same type and ratings of fuse.
- Two output fuses are located in the dual fuse block on the lower left side of the enclosure.
- Class T 80A, 300VAC
- Two pre-charge fuses are located on the Input/Output PCB board.
- Class CC Time Delay, 2.5A, 600VAC
- Three input fuses are located in a separate fuse box provided by the installer. Fuse type may vary, but must be UL listed fuses rated, 400 VAC minimum, 50 Amp maximum

9. Connection example



As typically the tallest structure in the area, lightning damage is a concern to most inverter customers; especially those customers in areas with frequent cloud to ground lighting. BWC's warranty does not cover lightning damage to the inverter. A direct lightning strike can easily be in excess of 100kV at 100kA. Proper grounding of the turbine to the tower and running the input wires down the tower in grounded metal

conduit will take care of most of this energy. The standard inverter is capable of withstanding input line to ground surges of about 6kV at 3kA. Contact your distributor or BWC for application specific lightning surge suppression solutions.

E. Inverter Operation

This equipment is a UL 1741 certified[1] Utility Interactive Inverter and complies with the requirements of IEEE1547 which is the standard for interconnecting distributed resources with electric power systems. It will not operate in an off-grid or backup power configuration.

The normal operation of the inverter is as follows: When single phase utility power is applied to the output of the inverter, the display will power up and a message stating that the unit is initializing is shown. If there are no faults, i.e. grid voltage and frequency are in tolerance, a countdown timer set for 5 minutes (300 seconds) starts before the inverter is ready to transfer power to the utility grid. The inverter will automatically transfer power to the utility when AC voltages in the range of 30VAC to 600VAC are present at the Turbine input.

As the heatsink heats up after exporting significant power for a period of time the internal cooling fans will activate. The inverter is be able to operate at full power continuously if provided with adequate ventilation and the local ambient temperature stays below 45°C (113°F). If the ventilation is compromised or the heatsink temperature exceeds 60°C, the inverter will automatically reduce its output power.

F. Touch Screen Display

The touch screen display located on the front panel of the enclosure provides manual over-ride and status of the inverter's operation. The touch screen display also provides a Stop and a Reset button. The Stop button is used when it is desired to disconnect the inverter from the power grid and the wind turbine. After Stop is pressed the inverter will remain in a powered-up stand-by mode until Reset is pressed or Grid voltage is removed. When Reset is pressed the inverter will resume normal operation.

The status of the inverter's operation is shown on the lines one and two of the display. The following table lists the status messages that may appear.

Status Message	Description
Waiting Initializing	The inverter has been reset or that the 5 minute countdown delay is in progress
Waiting For Wind	The voltage from the turbine is lower than the factory set auto-start voltage threshold
AC Running	The active rectifier is regulating the internal DC Boost voltage
Running	The inverter is transferring power to the utility grid
Fault	A fault has occurred. See fault messages

[1] Pending

Manual Stop Press Reset	The manual stop button has been pressed
Fault Limit Press Reset	Three faults have occurred in an hours time
Disconnected	Indicates that a communication problem exists between the display and the inverter. Check for bad cable connection.
OV Power Limit	The inverter has detected that the output voltage is approaching the over voltage limit and is reducing its output to compensate for the less than ideal current carrying ability of grid connection.

Using the Up and DOWN arrows you can scroll through the additional Powersync III information available, as shown below.

Parameter	Description
Grid Voltage	Magnitude of the connected single phase grid voltage
Grid Frequency	Frequency of the connected single phase grid voltage
Bus Voltage	Magnitude of the DC link bus voltage
DC Current	Averaged value of the DC current
Turbine Volts	Averaged value of the rectified DC voltage from the Input
Output Power	Output power displayed in Watts
Accumulated Energy	Output Energy (kW hours) accumulated over time of operation
VREF	Used for factory/installer setup
IREF	Used for factory/installer setup
Last Fault	Displays the last fault that occurred since the inverter was powered up along with a fault code that may be useful when troubleshooting.
Unit Code Rev	Indicates the firmware revision of the control DSP
Disp Code Rev	Indicates the firmware revision of the LCD display DSP

A hidden feature of the display is the contrast adjustment. The right side of the display has invisible up and down arrows that can be used to increase and decrease the contrast of the display.

Grid Voltage
This the voltage measured line to line on the output of the inverter. The voltage must be between 212 to 264Vac (184 to 228Vac for 208V units) for the inverter to operate. The line to neutral voltage is important as well, although it is not reported on the LCD screen. It must be between 106 and 142Vac for both 240V and 208V units.

Grid Frequency
This is the frequency of the grid and determined by the utility. The frequency must be between 59.4 and 60.4 Hz for the inverter to operate.

Bus Voltage
This is the voltage of the boosted DC link bus that is used to generate the output sine wave. This voltage should stay between 200 and 570 Vdc but will not trip off until it reaches 680Vdc.

Auxiliary Load Current
This is the current going to the auxiliary load to control the speed of the turbine.

Turbine Volts
This is the DC voltage of the input measured after the 3-phase AC input is rectified. The inverter will begin exporting power when this voltage exceeds 85Vdc. This voltage should never exceed 690Vdc.
Vdc = Vac * 1.41

Output Power
This is how much real power in Watts the inverter is currently producing or consuming if it is waiting for wind. Standby power while waiting for wind is about -10W. This measurement is not completely accurate and may not agree with an external meter.

Accumulated Power
This is how much real power the inverter has produced or consumed since it was last calibrated at BWC. This measurement is not completely accurate and may not agree with an external meter.

VREF
VREF is the input rectified voltage as a raw value. VREF = Vdc * 2.52.
Vref is used as an index look-up into a virtual table used for a customizable 32 point power curve table.

IREF
IREF is the current request in counts for a given DC input voltage tracked by VREF. Using this configuration the inverter can be adjusted to provide any power curve required. IREF = Idc * 9

Last Fault
Fault messages are displayed when a fault occurs and when the last fault parameter is selected. The following table is a list of possible faults that may be displayed.

G. Inverter Fault Codes

Fault Message	Fault Code	Description
INTERNAL ERROR	10	IGBT or control logic fault. An occurrence of this fault requires that the unit be completely powered down to reset it. Frequent code 10 faults indicate that the unit should be returned to BWC for service.
DC OVER VOLT 1	1000	The DC Bus voltage has exceeded its maximum threshold. This occurs if the input power exceeds the output power. This may occur in exceptionally high winds especially if the OV Power limit is active or temperature throttling is occurring.
DC OVER VOLT 2	1500	The DC Input voltage has exceeded its maximum threshold. This may occur in exceptionally high wind conditions.
DC UNDER VOLT	1250	The internal DC Boost voltage has dropped below its minimum threshold. This usually indicates a configuration problem and is normally never seen.
AC OVER VOLT	2030	The AC line voltage has exceeded its maximum threshold. This occurs if OV limiting was not able to influence the high grid voltage. If this happens routinely consider increasing the output wire gage or making arrangements with the utility to upgrade their distribution transformer.
AC UNDER VOLT	2280	The AC line voltage has dropped below its minimum threshold. It is normal to see this when the inverter has been disconnected from the grid. It may also occur momentarily when large equipment is turned on nearby.
TURBINE PHASE	2500	Indicates that there is a problem with one or more of the turbine input phases. Bad connection, shorted or missing phase. When the inverter detects excessive ripple on the DC input, it shuts down to protect the turbine from destructive vibration.
OVER CURRENT	3000	Phase A line current sensed by the converter module has exceeded its maximum current threshold. This may indicate that current is returning on the earth ground wire.
OVER CURRENT	3020	Phase C line current sensed by the converter module has exceeded its maximum current threshold. This may indicate that current is returning on the earth ground wire.
OVER CURRENT	3050	The DC Boost phase of the converter module has exceeded its maximum current threshold. Indicates a loss of boost control.

OVER TEMP	4000	The internal high temperature threshold has been exceeded. Check that unit has adequate ventilation, that the intake and exhaust vents are not obstructed, and that the cooling fans are operating.
UNDER TEMP	4250	The internal low temperature threshold has been exceeded. Avoid exposing the unit to temperatures below -20°C (-4°F).
GROUND FAULT	7000	An input phase appears to be shorted to chassis ground. It may require a high voltage measurement device such as a Megger to confirm the fault.
AC OVER FREQ	8000	The frequency of the utility grid voltage went out of range. The upper range threshold was crossed. If supported (Unit Rev 1005 or greater) this code is also used to indicate that the ROCOF threshold was reached. ROCOF might occur when large equipment is switched on or off.
AC UNDER FREQ	8100	The frequency of the utility grid voltage went out of range. The lower range threshold was crossed.

++

When the Powersync III is starting up after initialization, or after the RESET button has been pushed, or after a power outage, it will go through a 300 second (5 minute) countdown that is required by UL 1741. This UL standard also dictates high and low limits for utility voltage and frequency, outside of which the inverter is required to shut down until they return to the acceptable range. This is called a FAULT condition.

There are a number of possible FAULT conditions during which the Powersync III will be protecting itself or the power grid. When a FAULT occurs the Powersync II will shut down (no power production) and a Fault Code will be displayed on the digital display. A list of the Fault Codes can be found in the detailed instructions for the Powersync II inverter provided in the Appendix. FAULTS will reset themselves automatically; assuming the underlying cause of the fault has been cleared, unless the inverter experiences three (3) FAULTS of any type in a one hour period. In this case a manual RESET is required on the digital display.

CAUTION If a manual reset is required we highly recommend that you check the FAULT CODE list for indications that there is an equipment or wiring problem that needs addressing.

One unique feature of the Powersync III inverter is its Soft Grid power limiting capability that can reduce the number of nuisance FAULTS on weak power lines during periods of high turbine power output. On a weak power line the EXCEL 15 wind turbine can, on a

windy day, raise the local utility voltage above the UL 1741 threshold, causing a FAULT. The Soft Grid feature tries to prevent these FAULTS by reducing power output from the wind turbine. When the Powersync II is in this mode the digital display will show "Soft Grid".

The STOP pad on the digital display will shut down the Powersync III inverter. Press the RESET pad to restart (which will start the 300 sec. countdown).

If the circuit breaker in your home or business load center (circuit breaker panel) trips, it should be reset by first switching it to the OFF position and then to the ON position. If the breaker trips again immediately, or if it continues to trip after brief periods of normal operation, switch the breaker OFF and contact your Bergey dealer for assistance.

The following recommendations will help ensure the safe operation of the Powersync III inverter:

1. Keep all sources of moisture away from the Powersync III enclosure.
2. Do not work near the Powersync III with gasoline, paint thinner, or any material which produces flammable vapor. Do not store flammable materials near the Powersync III enclosure.
3. Do not open the Powersync III enclosure unless the circuit breaker and Accessible Disconnect Switch (ADC) at the base of the tower have been switched OFF. **Note that even with the circuit breaker and ADC switched OFF, a shock hazard will still be present inside the Powersync III enclosure for approximately 15 minutes (as the capacitor voltage drains down).**
4. Do not block airflow around the Powersync III enclosure in any way. A six-inch clearance must be maintained around the sides, top, and bottom of the enclosure for adequate air circulation.

VI. TURBINE INSTALLATION

Please use the following instructions in assembling and commissioning your system. If you need any additional information, please contact us.

A. BWC EXCEL WIND TURBINE and TOWER

Please refer to the BWC EXCEL 15 Installation Manual, and any addendum for the specific tower design, for instructions on installing the wind turbine and tower.

B. FUSED DISCONNECT SWITCH

The electrical output of the wind turbine is a three-phase alternating current (AC). We strongly recommend the installation of a fused three-phase AC disconnect switch between the wind turbine and the Powersync II, as shown in the drawing on Page 26. This switch is commonly referred to as an Accessible Disconnect Switch (ADC) and most utilities will require one to be installed. A 60A weather-tight switch box with 45A fuses for the 240 VAC, 60Hz or 220VAC, 50Hz system is recommended. The fuses will help protect the alternator in the event of a wiring, controller, or load short circuit. The fused disconnect switch is normally installed at the base of the tower.

CAUTION Do not install a permanent "short circuiting switch" that will provide dynamic braking of the alternator. These switches can be easily misused, leading to serious damage to the alternator. Such damage is not covered by the BWC warranty.

C. WIRE RUN AND WIRE SIZES

Please refer to the BWC EXCEL 15 Installation Manual for recommended wire and conduit sizes for the tower-to-Powersync III wire run. Refer to the row labeled "BWC Excel 15" for appropriate wire sizes.

D. POWERSYNC III INVERTER

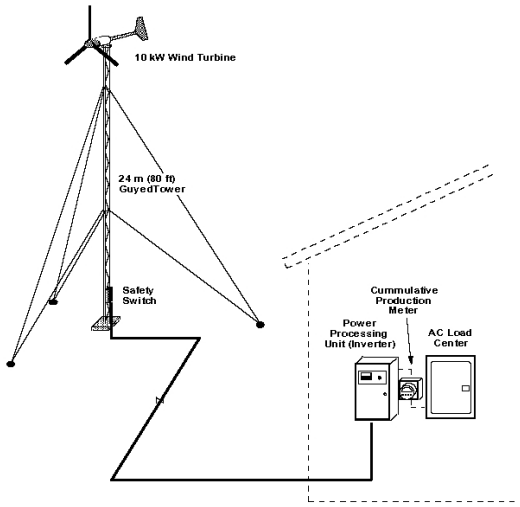
The Powersync III inverter should be installed indoors, near the main breaker enclosure if possible. The Powersync III is designed to operate in a clean environment and should never be installed outdoors as it is not weatherproof and will be damaged by rain. A minimum of six inches of clearance is required on the top, bottom and sides of the Powersync III to ensure adequate air flow through the enclosure.

The Powersync III should be connected to a dedicated 125A two-pole breaker installed in the main breaker box. System grounding is accomplished by attaching a wire, # 8 AWG minimum, from the grounding lug inside the Powersync III enclosure to the panel ground inside the main breaker box. Additionally, the tower "bond" ground wire should be connected to the grounding lug inside the Powersync III enclosure. A typical system wiring schematic for the Bergey EXCEL 15 is shown below. The three AC connections from the wind turbine can be connected to the Powersync II terminals in any order; there is no required phase orientation.

DANGER Do not attempt to make the Powersync III connections with energized leads. Always have the wind turbine fully disconnected and the circuit breaker switched to "off" before making the Powersync III connections.

All wiring should conform to the National Electric Code or other governing local electrical code. The use of electrical conduit for wiring between components is highly recommended. All terminations should be coated with an anti-oxidation compound to prevent corrosion.

CAUTION All loads should be equipped with fuses or circuit breakers to avoid hazards from accidental short circuits.



VII. INSPECTIONS AND MAINTENANCE

The Bergey EXCEL 15 turbine and tower should be inspected once 90 - 180 days after installation to ensure that no hardware was missed and there are no issues with the turbine.

Following this post-installation inspection, the complete system should be inspected every four years and after any particularly severe weather. Inspections should be done on days when the wind is below 20 mph (9 m/s).

Check List for Inspections

1. On guyed towers inspect each of the anchor points. Ensure that all hardware is secure and the guy wires are properly tensioned. Check to ensure that no strands are broken and the turnbuckle safety cables are in place.

WARNING: Loose guy wires or unsecured turnbuckles can lead to tower failure.

2. Disconnect the inverter at the breaker panel, which will bring the turbine to a stop. Climb the tower. Always use proper safety climbing gear and safe climbing practices.

DANGER Only qualified personnel with proper safety equipment should climb the tower. Never climb the tower when the rotor is turning.

3. Inspect the blades for:
   A. Cracks in the inner 4 ft. of each blade. This is the most highly stressed portion of the blade.
   B. Leading or trailing edge damage. Pay particular attention to the leading edge near the tip of each blade.
   C. Condition of the paint.

4. Remove the spinner and hang it from the machine. Check the marker lines on each of the blade attachment and torque plate bolts, retorquing and remarking any bolts that have loosened. Check the front bearing for seal integrity and excessive grease loss. Reattach the spinner and check that it is secure.

5. Open the cover plate on the mainframe. Inspect the slip-rings and brushes. Inspect the back-up brake circuit boards.

6. Check the rear alternator bearing for seal integrity and excessive grease loss.

7. Inspect the mainframe for cracks.

8. Check for cracks or loose hardware on the tail boom and fin.

9. Check for corrosion on the alternator. Clean and repaint as needed.

10. While descending the tower, inspect the following:
    A. Check that the tower wiring is properly secure.
    B. Check all fasteners.
    C. Look for any cracks in the tower structure.
    D. Check the condition of the guy wire attachment (guyed towers).

11. Check the connection on all ground rods and hardware.

12. Check the disconnect switch.

13. Inspect the wire run, particularly all electrical connections.

14. Check condition of all wiring connections into and out of the Powersync II.

15. Check the fan filters on the Powersync III.

16. Switch the turbine breaker in the breaker panel to ON. Move to a spot where you can observe the turbine. Listen to the sound of the machine as it speeds up. No mechanical sounds, such as a "clunking" or "banging," should be heard. Also watch for any new or significant vibration. The turbine operation should be smooth.

VIII. Trouble-Shooting Problems

The following guide can help to pin-point the cause of operational problems with the Bergey EXCEL 15 wind turbine and the Powersync III inverter For problems or symptoms not found in the following listing please contact the Service Department at Bergey Windpower Co. at Tel. No. 1-405-364-4212, Telefax No. 1-405-364-2078, or E-mail: service@bergey.com

Problem	Cause(s)	Diagnosis	Remedy
Turbine makes an unusual blade sound, such as whistling or buzzing	1. Damaged blade leading edge 2. Blade structural damage	1. Have leading edge inspected 2. Have blades inspected. Cracks outboard of the hub can lead to blade failure.	1. Consult Bergey Service Department 2. If blade damage is suspected, the turbine should be stopped until it is inspected. Contact your dealer.
Rotor is unbalanced, causing the turbine to move slightly back and forth as it spins	1. Uneven ice build-up on blades 2. Blade damage	1. Ice on turbine and tower. Turbine ran smoothly before ice storm. Slow rotor speed. 2. No ice. Turbine ran smoothly before	1. Do nothing – ice will dislodge in a few days. No not approach the tower. 2. If blade damage is suspected, the turbine should be stopped until it is inspected. Contact your dealer.

Problem	Cause(s)	Diagnosis	Remedy
Turbine makes a banging or rattling sound once per revolution, particularly at low speeds	1. Loose spinner	1. Sound is once per revolution. Inspect spinner.	1. Have spinner inspected
	2. Alternator rear bearing ring fasteners loose or missing	2. Sound is once per revolution. Inspect rear of alternator	2. Have alternator inspected
	3. Alternator bearings	3. Excessive grease leakage. Squeaking sounds at low speed.	3. Have alternator inspected
Turbine makes a "fog horn" sound at certain, typically low, wind speeds	Electro-mechanical interaction between alternator and inverter that causes transient vibrations in the turbine	Sound comes and goes, but occurs at the same wind speed(s)	This is normal, but contact your dealer or the Bergey Service Department if the noise is excessive
Turbine makes a continuous growling or rumbling sound, which reduces at higher wind speeds		Switch fused disconnect on tower to OFF. If growling disappears an electrical problem is indicated. If growling continues a mechanical problem is indicated	
	1. Wiring fault	1. Check fuses. Check wiring for continuity, phase-to-phase fault, or short to ground.	1. Repair or replace as needed
	2. Inverter fault	2. After completing the wiring check, disconnect the inverter and reconnect wiring to the turbine. If the noise disappears an inverter problem is indicated.	2. Contact your dealer
	3. Alternator bearings	3. Check for excessive grease loss	3. Have the alternator inspected

Problem	Cause(s)	Diagnosis	Remedy
Rotor turns slowly and does not speed up in higher winds	1. Ice build-up on blades	1. Check for ice	1. Do nothing – ice will dislodge in a few days. No need to furl the turbine.
	2. Short circuit in wiring or inverter	2. Open tower disconnect. If turbine spins freely an electrical system problem is indicated	2. Contact your dealer
	3. Short circuit in tower wiring, slip-rings, or alternator	3. The most likely problem is a shorted alternator.	3. Contact your dealer
Rotor does not turn at all	Mechanical failure inside alternator	Rotor does not turn even when winds exceed 15 mph (6.7 m/s)	Contact your dealer
Powersync III display not functioning	1. No power to inverter 2. Display or other inverter component not functioning properly		1. Turn off utility power to inverter, using the dedicated breaker in your breaker panel, for a minimum of 20 seconds. Then turn power back on using the breaker. Wait 300 seconds (5 minutes). If inverter does not resume operation, with full display functionality, contact your dealer

IX. Appendix

5 Year Limited Warranty

Excel 15 Wind Turbine

Bergey Windpower Company

Excel 15 wind turbines, their associated electronics and towers supplied by Bergey Windpower Company (BWC) are warranted against defects in design, material and workmanship under normal use for which intended. BWC Excel 15 wind turbines and blades carry a five (5) year warranty after date of installation. Electronic components and towers supplied by BWC also carry a five (5) year warranty after date of installation. During the warranty period BWC will repair or replace, at its discretion, defective components or assemblies. BWC will also pay one-way shipping charges. For customers not in the USA, shipping and insurance charges will be pre-paid to the port of entry into the customer's country. This limited warranty is transferable.

Warranty coverage is extended only to customers who have submitted a properly completed BWC Warranty Registration Form and acceptable proof of correct system installation as requested in the BWC Registration Form. Customer must also perform and document recommended inspections and any maintenance tasks that may be identified during inspections.

This limited warranty does not cover:

1. **Normal wear and tear and corrosion;**
2. **Towers and equipment, materials or supplies not manufactured or supplied by BWC;**
3. **Damage or loss caused by installation errors or deficiencies;**
4. **BWC equipment that has been modified without prior factory approval;**
5. **Repairs performed by personnel not authorized by BWC;**
6. **Damage resulting from use of equipment not supplied by BWC;**
7. **Damage resulting from the use of towers not supplied or approved by BWC;**
8. **Equipment not installed within three (3) years of shipment from factory;**
9. **Damage or loss of function sustained during periods when wind speed exceeds 60 m/s (135 mph);**
10. **Acts of God (including lightning);**
11. **Incidental or consequential damages.**

This limited warranty is in lieu of all other BWC guarantees or warrantees expressed or implied. No employee, agent, dealer, or other person is authorized to offer warranties on behalf of BWC. BWC reserves the right to make design changes, improvements and additions to its products without obligation to install such in products previously manufactured.

RETURN THIS CARD TO BWC ALONG WITH PHOTOS DOCUMENTING INSTALLATION
NOTE: DIGITAL PHOTOGRAPHS PREFERRED IF AVAILABLE)

Rev. 0 – 6.25.2018
Return to: Bergey Windpower Company
2200 Industrial Blvd.
Norman, Oklahoma 73069
(405) 364-4212

BWC EXCEL 15 WIND TURBINE WARRANTY REGISTRATION CARD

OWNER NAME _____

Address _____ _____

City, State _____

Postal Code, Country _____

Phone (____) _____

E-mail _____

DEALER NAME _____

Address _____

City, State _____

Postal Code, Country _____

Phone (____) _____

LOCAL UTILITY COMPANY INFORMATION (if grid-connected system)

Name of Utility _____

Net Metering? ☐ Yes ☐ No

HYBRID SYSTEM (If applicable)

Is turbine part of hybrid wind-PV-diesel system? ☐ Yes ☐ No

PV array? ☐ Yes ☐ No PV Power rating _____ kW

Diesel Gen-set? ☐ Yes ☐ No Generator rating _____ kW

Wind Turbine Model: **Excel 15**

Serial No. (e.g. 2018-0012; near top of yaw tube)

_____

Controller: ☐ PowerSync III ☐ Other _____

Controller Serial No._____

Blade Serial Numbers (e.g. 10080025; stamped on blade root pad)

_____ _____ _____

Tower Type _____ Height _____

Anchor Type _____

Wiring Run Length (Tower-to-Controller): _____ ft

Wire Size _____ gauge

Wire Type ☐ Copper ☐ Aluminum

BATTERY BANK INFORMATION (if applicable)

Battery Manufacturer & Model _____

Battery Bank Voltage ☐24V ☐48V ☐120V ☐240V

Battery Bank Amp Hours _____

Number of Battery Strings _____

Inverter Manufacturer and Model_____

OWNER'S or DEALER'S SIGNATURE _____

DATE SYSTEM INSTALLED _____

WARRANTY REPAIR IS PERFORMED ONLY AFTER FACTORY AUTHORIZATION. PLEASE RETURN THIS CARD AND PHOTOGRAPHS OF INSTALLATION PROMPTLY IN ORDER TO ASSURE COVERAGE.

Required Photographs

1. Complete tower - turbine system view
2. Distance photos showing terrain and obstructions
3. Anchor photos including all anchor hardware
4. Photos showing all grounding connections
5. Turnbuckle photos showing safety cables
6. Controller location and environment
7. Controller interior showing wiring connections
8. Interior of tower-base disconnect switch showing fuses and wiring connections

WOODBURY COUNTY BOARD OF SUPERVISORS AGENDA ITEM(S) REQUEST FORM

Date: 8/16/2024 Weekly Agenda Date: 8/27/2024

ELECTED OFFICIAL / DEPARTMENT HEAD / CITIZEN: Supervisors J. Taylor/M. Nelson

WORDING FOR AGENDA ITEM:

Direction for Planning and Zoning Director to Work with Planning and Zoning, the Board of Adjustment Commission, and Legal Counsel in Order to Make a Recommendation Contemplating Decommissioning Requirements as a Part of a New Ordinance Regarding Carbon Pipelines

ACTION REQUIRED:

Approve Ordinance ☐ Approve Resolution ☐ Approve Motion ☑

Public Hearing ☐ Other: Informational ☐ Attachments ☐

EXECUTIVE SUMMARY:

When something as powerful as eminent domain is used and emplacement of a new carbon pipeline is completed, a key question must be asked: after these new technologies have reaped the benefit of federal tax credits and the subsidiary energy used, what is to become of the land? This something that we have engaged in dozens of times regarding the alternative energies of wind and solar. Woodbury County adopted at our urging an energy resolution and has urged officials to look at new technologies that do not degrade farmland for future generations, respect private property rights, and leave the land in the spirit of stewardship better than we found out.

If the Summit plan to expand carbon pipeline through 300 miles that were abandoned by Navigator's C02 pipeline maintains IUB commission approval by approvals in South and North Dakota and survives any lawsuit (if parties so file), then it is incumbent upon us to ask a key question: what decommissioning will be required to leave the land as outside companies found it?

While publicly elected officials to include seven other Iowa counties have appropriately focused mainly on setback distances and the use of eminent domain, this approach has an integral and reasonable, "If...then..." measure to protect our land for future generations.

BACKGROUND:

Decommissioning refers to the process of taking a line out of service safely and permanently. We are currently exploring changes to decommissioning with wind energy. Why? Because federal policy can dramatically change the viability of alternative energies. We realize the "shelf life" of such technologies may vacillate with financial viability. Afterwards with solar, wind, and carbon pipeline, there is a dramatic effect on the land with in the amount of concrete, pipe, metal over thousands of acres of land. Lest 100 years from now Iowa becomes a spotted terrain of a patchwork not just of corn and soybeans but of once lucrative abandoned energy projects, we must demand a fair process to restore the land to how it was found, a key principle of who we are as a people.

Decommissioning can include leaving piping in place or removal, disconnecting the line from systems and segmenting where necessary, cleaning the line, addressing stability and soil/slope disturbance, contracting or obligating the monitoring responsibility of the decommissioned line. A key consideration in the decommissioning process is to minimize disturbance to farmlands, roadways, wetlands, green spaces, livestock operations, and residences. This would also entail the responsibility for looking after the line by maintaining protection from corrosion, right of way monitoring and maintenance, signage and contact info, maintaining profile and survey information for "call before dig" areas. In some cases a bond or other financial obligation is required as part of a decommissioning process.

The hoped for agenda item asks the Planning and Zoning Director to work collaboratively with P&Z, the BoA, our county attorney's office, and even outside legal counsel that we have already engaged in order to make sure that this process is well-detailed, legal, reasonable, and fair.

While setbacks for safety and eminent domain for private property rights have understandably and in many ways (rightly) dominated the debate, we want to move the discussion to a process wherein we are asked as a county, "If we are to build pipeline through hundreds of miles of farmland, near neighborhoods, under right of way and roads, what do you all require us to do in order to make things right for future generations?" Should a carbon pipeline be implemented, our answer to that will not only be to the major corporations who seek to use the land but will be realized by our children and Iowans for generations to come.

FINANCIAL IMPACT:

IF THERE IS A CONTRACT INVOLVED IN THE AGENDA ITEM, HAS THE CONTRACT BEEN SUBMITTED AT LEAST ONE WEEK PRIOR AND ANSWERED WITH A REVIEW BY THE COUNTY ATTORNEY'S OFFICE?

Yes ☐ **No** ☐

RECOMMENDATION:

Direction for Planning and Zoning Director to Work with Planning and Zoning, the Board of Adjustment Commission, and Legal Counsel in Order to Make a Recommendation Contemplating Decommissioning Requirements as a Part of a New Ordinance Regarding Carbon Pipelines

ACTION REQUIRED / PROPOSED MOTION:

Direction for Planning and Zoning Director to Work with Planning and Zoning, the Board of Adjustment Commission, and Legal Counsel in Order to Make a Recommendation Contemplating Decommissioning Requirements as a Part of a New Ordinance Regarding Carbon Pipelines

Approved by Board of Supervisors April 5, 2016.