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July 25, 2014

Via Hand Delivery

Mr. Darrell Nitschke
Executive Director
NORTH DAKOTA PUBLIC
SERVICE COMMISSION
600 E. Boulevard Avenue, Dept. 408
Bismarck, ND 58505-0480

In re: Thunder Spirit Wind, LLC
Case No. PU-11-601

Dear Mr. Nitschke:

Enclosed for filing in the above captioned matter are the original and ten copies of Thunder Spirit Wind, LLC's Response to Request for Public Hearing.

Please call should you have any questions. Thank you.

Very truly yours,



Brian R. Bjella

lc
Enc.

**STATE OF NORTH DAKOTA
PUBLIC SERVICE COMMISSION**

**Thunder Spirit Wind, LLC
150 MW Wind Energy Project – Adams County
Siting Application**

Case No. PU-11-601

RESPONSE OF THUNDER SPIRIT TO REQUEST FOR PUBLIC HEARING

By letter dated July 18, 2014, Bruce Secrest and Nancy Secrest requested a hearing before the North Dakota Public Service Commission pursuant to a Notice of Filing, Notice of Informal Hearing and pursuant to a Notice of Opportunity for Hearing dated June 11, 2014.

The Secrests live at 304 3rd Ave NE, Hettinger, ND 58639. They present two primary issues as reasons for their hearing request – anticipated noise at their residence and the effect of the project on current property values.

It is Thunder Spirit's position that no such hearing is required. Complete and thorough evidence has already been submitted to the Commission addressing both issues. All regulatory guidelines, at both the county and state levels, have been strictly adhered to in the siting of the project's infrastructure.

Attached hereto as Exhibit A dated May 29, 2014 is the Thunder Spirit revised acoustic modeling analysis filed as part of the Amendment to Application for Certificate of Site Compatibility filed May 30, 2014 with the Commission, docket entry number 62. This acoustic modeling analysis was also discussed in detail at the Commission's informal hearing on June 25, 2014.

The analysis indicates that the revised turbine locations will "generate sound levels below the EPA guidelines, the North Dakota noise limit, and the Adam's County zoning ordinance at all noise sensitive receptors."

As with most environmental impact analyses, where the consequences of underestimating potential impacts are greater than overestimating such impacts, the methodology used in the Thunder Spirit noise analysis was extremely conservative. Estimated sound levels at all noise receptor may thus be considered "worst case." Despite the conservatism used in this modeling, projected sound levels from the 2014 optimized layout of 43 Nordex turbines at the Secrest residence are well below noise-maximum thresholds of EPA guidelines (48.6 dBA), PSC requirements (50 dBA within 100ft of residence), and Adams Co. (70 dBA at night and 80 dBA during the day).

Importantly, sound levels at the Secrest house from the 2014 optimized Nordex layout are also projected to be *lower than the worst case projected sound levels presented in the*

original Thunder Spirit application for a Certificate of Site Compatibility. Below, for example, is a comparison of worst case projected sound levels for the 43 turbine Nordex layout (total Nordex turbine height = 426 ft) and sound levels had the Acciona turbine been selected for the project (total Acciona turbine height = 492 ft).

Turbine	Max sound power level (dBA)	Estimated sound level at the Secrest home (dBA)		
		Cut-in speed	Max rotation	Anomalous conditions
Nordex 2.5 MW (2014 layout)	106	29	40.2	42.4
Acciona 3.0 MW (2013 layout)	107.4	39	40	43

Not only will potential turbine noise be lower at the Secrest residence with the 43 Nordex turbine layout but so too will potential noise from the collector substation. As demonstrated by the Hearing Attendance sheet attached hereto as Exhibit B, both Bruce and Nancy Secrest attended the public hearing on September 19, 2013. Due to concerns raised by the Secrests, as part of the 2014 optimized layout revisions Thunder Spirit voluntarily moved the project substation 450 feet further from their home. Thus, Thunder Spirit has been very accommodating to their concerns about noise issues and the overall anticipated impacts from the revised layout are demonstrably less than the already-permitted layout.

It should also be pointed out that shadow flicker, another common nuisance concern at wind power projects, is projected to occur for zero hours per year at the Secrest residence, given the distance and direction from the nearest turbine.

In regard to the Secrest's general dissatisfaction about the revised size, location and overall arrangement of turbines and how this arrangement might contribute to sound and visual impacts, it should be stated that the flexible nature of the Thunder Spirit layout was much discussed in both the 2013 application and at the PSC hearings. Not only does the existing Site Permit allow for a buildout of 50-75 turbines (arranged according to how wake/turbulence losses of different sized machines might best be minimized), but the ability of Thunder Spirit to "reclaim" locations with disputed airspace constraints was also discussed.

At the public hearing held in Adam's County on September 19, 2013, Mr. Dan Albano, representing Thunder Spirit, testified with respect to the initial Federal Aviation Administration Determinations of Presumed Hazard issued for many of the newly proposed wind turbine locations (Commission hearing at 1 hour 44 minutes). He stated

that consultants for Thunder Spirit were preparing a position paper and working in conjunction with the Hettinger Airport to petition the FAA to relax its initial determination rejecting turbines at the requested locations. That petition was filed and ultimately successful. All turbine locations were given a Determination of No Hazard by the FAA and, in addition, have been approved in an amended application to Adams County. These locations are now the subject of Thunder Spirit's revised Commission application.

The second major issue raised by the Secrests is an assertion that their property values could be decreased. As they point out in their letter, however, the closest turbine will still be 0.74 miles away, which is approximately 3,900 feet. For siting of turbines Thunder Spirit has followed the very restrictive zoning ordinance of Adams County which requires turbines to be located no closer than one half mile from a residence, which is 2,640 feet. Thus, the closest turbine to the Secrests is approximately an additional 1,300 further feet away than as mandated by this very restrictive zoning ordinance. Thus, the siting of this revised turbine location remains in full compliance with North Dakota Public Service Commission and Adam's County setback restrictions.

The Secrests assert that the revised turbine locations would decrease their property values. However, this becomes a land rights issue when the wind farm is in full compliance with all land use restrictions. To deny placement of the turbines at the revised locations would be to deny adjacent land owners their rights to develop their property by agreeing to placement of wind turbines on their land. The Adams County zoning ordinance mandates that turbines be placed no less that 2.5 times the rotor diameter of the wind turbine from the project perimeter without a waiver from the adjoining owner. Thus, Adams County, after great discussion and deliberation, made the determination as to what setbacks are adequate to protect adjoining landowners and their property values.

It is also important to note that the project boundary has never changed, as demonstrated by Exhibit C. The first page of Exhibit C is the original proposed turbine array, and the second page is the revised turbine array. As the project boundary has never changed, the Secrests had notice that the turbines could potentially be placed anywhere within the project boundary as long they met all appropriate setback requirements. As a result, any concerns that the Secrests may have had about property values existed at the time of the hearing on September 19, 2013.

The North Dakota siting act sets forth a Statement of Policy which provides in part that "the legislative assembly hereby declares it to be the policy of the state to site energy conversion facilities in an orderly manner compatible with environmental preservation and the efficient use of resources. In accordance with this policy, sites and routes shall be chosen which minimize adverse human and environmental impact while ensuring continuing system reliability and integrity and ensuring that energy needs are met and fulfilled in an orderly and timely fashion." North Dakota Century Code § 49-22-02.

A reading of the siting act indicates that the potential for impacts to property values is not an issue which the Public Service Commission can consider in a siting act case. A

review of the Public Service Commission's Criteria set forth in North Dakota Administrative Code Chapter 69-06-08 further demonstrates such issues as property values are not listed as factors to be considered in siting. The goals of the siting act are to ensure that the environment and human welfare are protected, and that cultural resources which are significant are preserved. If the Secretsts believe their property values may be affected, this issue should have been raised and addressed before the planning and zoning commission and the county commission of Adams County; where this Thunder Spirit project has been considered and approved on several occasions.

The Adams County zoning ordinance with respect to wind energy facilities provides in part as follows: "The purpose of the provision is to provide a regulatory framework for the siting, construction and operation of wind energy facilities in the county, subject to reasonable restrictions, which will preserve the safety and well being of the residents, while allowing equitable and orderly development of wind energy facilities." Section 6.11.1. By enactment of this zoning ordinance, which includes the one-half mile set back from residences, Adams County has taken a very proactive approach to regulating the wind energy facilities. Concerns with respective property values should have been raised at the Adam's County planning and zoning and county commission meetings.

North Dakota Century Code § 49-22-13(2) provides in part that "If requested by any interested person and good cause has been shown therefore, the commission shall hold a public hearing." Thus, the Secretsts must not only be considered to be interested persons, but they must also have good cause in order for a hearing request to be granted.

While the Secretsts may qualify as interested persons due to their proximity to the project, they have not demonstrated good cause to justify holding a third public hearing. Their concerns with respect to noise have already been addressed and shown to be a non factor by the scientific studies filed by Thunder Spirit with the Public Service Commission. The issue they raise with respect to property values is not one that the Public Service Commission appears to have jurisdiction to consider under the siting act. The Secretsts should have raised this issue in the Adams County zoning process. In any event, the benefit they receive by the very generous setback requirement of Adams County of one-half mile negates any such concern.

It should also be noted that the Secretsts had the opportunity to appear in person or by telephone at the informal hearing held by the Commission on June 25, 2014 to discuss this revised turbine array; but they chose not to make any type of appearance.

As the Secretsts have failed to demonstrate good cause to have a public hearing, Thunder Spirit respectfully requests the Public Service Commission deny the Secretsts request for another public hearing.

Dated this 25th day of July, 2014.

Respectfully submitted,

THUNDER SPIRIT WIND, LLC

CROWLEY FLECK PLLP

Attorneys for Applicant

100 West Broadway, Suite 250

Post Office Box 2798

Bismarck, North Dakota 58502-2798

Phone: 701-223-6585

By: 

BRIAN R. BJELLA, ND Bar ID #03549



BUSINESS CONFIDENTIAL
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To: Wind Works Power Corporation and Thunder Spirit Wind, LLC
From: Tetra Tech, Inc.
Subject: Thunder Spirit Wind Farm – Revised Acoustic Modeling Analysis (Optimized)
Date: May 29, 2014

Wind Works Power Corporation and Thunder Spirit Wind, LLC (Thunder Spirit) are proposing to construct and operate the Thunder Spirit Wind Farm (the "Project") in Adams County, North Dakota. Tetra Tech submitted an acoustic analysis on September 10, 2013 for a Project layout consisting of 78 wind turbine generators (WTGs) and a supporting collector substation. Since that time the Project layout was modified to include 43 WTGs (i.e., the Optimized layout) and a new collector substation layout. An updated acoustic analysis was completed to include the new Optimized layout and the new collector substation layout (both dated May 27, 2014). The most recent noise sensitive receptor (NSR) locations were incorporated in the updated analysis, which included 35 residences surrounding the Project area. After consideration of several WTG types the Nordex N100 2.5MW turbine was selected and used in the updated acoustic analysis. Tetra Tech evaluated the new Project layout configuration using the same methodology used in the September 10th, 2013 submittal. This memo provides the results of the revised modeling analysis and an assessment of Project compliance with the U.S. Environmental Protection Agency (EPA) noise guidelines used in the previous analysis as well as the North Dakota noise regulations for wind energy projects and the Adams County Zoning Ordinance requirements.

Applicable Noise Criteria

Tetra Tech completed a regulatory review, which identified the Adams County Zoning Ordinance noise requirements and the EPA guidelines as applicable to the Project. The Adams County Zoning Ordinance prescribes a daytime and nighttime noise limit of 80 and 70 dBA, respectively. Recently adopted at the state level, North Dakota Chapter 69-06-08-01(4) specifies noise requirements:

"Additional avoidance areas for wind energy conversion facilities. A wind energy conversion facility site must not include a geographic area where, due to operation of the facility, the sound levels within one hundred feet of an inhabited residence or a community building will exceed fifty dBA. The sound level avoidance area criteria may be waived in writing by the owner of the occupied residence or the community building."

The EPA noise guidelines are slightly more conservative than the North Dakota regulations; therefore, adherence to the EPA thresholds, or received sound levels of no more than 48.6 dBA L_{eq} at NSRs, also results in compliance with the State's noise regulations, or 50 dBA L_{eq} at NSRs.

Acoustic Model Results

Using the Optimized Case Project layout dated May 27, 2014, acoustic modeling was completed to address multiple operating scenarios; 1) cut-in (onset of WTG operation), 2) maximum rotation (full power), and 3) maximum rotation under anomalous meteorological conditions (i.e., full power during atypical conditions that affect long range propagation). Table 1 summarizes the number of NSRs within selected sound pressure level ranges under each of the identified operational conditions. The tabulated results are independent of the existing acoustic environment, (i.e. are representative of expected Project-generated sound levels only). In

addition, in consideration of the North Dakota noise regulation, the analysis included a 100 foot buffer around each residential structure.

Table 1. Summary of Project Received Sound Levels at NSRs for the Nordex N100 2.5MW WTG

Sound Level (dBA)	Number of NSRs Exceeding Sound Level Ranges		
	Cut-in	Maximum	Maximum - Anomalous
>70 Adams County	0	0	0
> 50 North Dakota	0	0	0
> 48.6 EPA	0	0	1
>= 50	0	0	0
45 to 50	0	2	3
40 to 45	0	12	12
35 to 40	1	5	4
< 35	34	16	16

Table 1 presents the modeling results and indicates that received sound levels under maximum rotation and maximum rotation during anomalous events may potentially exceed the most stringent noise threshold for the Project (i.e., the EPA 48.6 dBA guideline) at only one NSR. There are no exceedances of the North Dakota noise regulation or the Adams County Zoning Ordinance noise limits. The EPA guidelines are just that, guidelines and not regulatory limits; however, the State's wind energy noise regulations require Project compliance. With respect to the EPA guidelines, there were no exceedances at cut-in wind speed, no exceedances at maximum rotation, and only 1 marginal exceedance at maximum rotation under anomalous meteorological condition. However, this exceedance occurred at NSR ID 183, which has been identified as an abandoned residence and a vacant farm, which is situated near a transmission line. With respect to the North Dakota regulation, all NSRs are in compliance. Attachment 1 presents the tabular results for all 35 NSRs analyzed as well as sound contour figures for the maximum rotation under anomalous meteorological condition.

In conclusion, the acoustic modeling analysis, demonstrates the Project has been adequately designed inclusive of a number of conservative assumptions to generate sound levels below the EPA guidelines, the North Dakota noise limit, and the Adams County zoning ordinance at all occupied NSRs.

ATTACHMENT 1

Tabulated Results and Sound Contour Figure

Received Sound Levels by NSR for the Nordex N100 2.5MW WTG

NSR ID	Residence Status	Landowner Status	UTM Coordinates		Received Sound Level (dBA)		
			Eastling (m)	Northing (m)	Cut-in	Maximum	Anomalous Meteorological Conditions
1	Occupied	Signed Easement	684417	5101848	31.8	43.0	44.9
2	Occupied	Not Signed	684186	5105014	33.4	44.6	45.6
3	Occupied	Not Signed	683913	5107467	29.1	40.3	41.6
4	Occupied	Not Signed	684451	5109984	20.6	31.8	34.2
5	Occupied	Not Signed	687010	5112982	12.7	23.9	26.5
6	Occupied	Signed Easement	689550	5106924	26.7	37.9	39.5
7	Occupied	Not Signed	691200	5107045	20.0	31.2	33.6
8	Occupied	Signed Easement	691878	5107932	16.6	27.8	30.3
9	Occupied	Not Signed	691131	5105359	21.1	32.3	34.6
10	Occupied	Signed Easement	688659	5103520	31.3	42.5	43.4
11	Occupied	Signed Easement	688595	5103125	30.7	41.9	42.9
12	Occupied	Not Signed	685925	5100457	29.0	40.2	42.4
13	Occupied	Not Signed	683758	5108307	25.4	36.6	38.6
14	Occupied	Not Signed	682164	5106780	31.3	42.5	43.0
15	Occupied	Signed Easement	681853	5106609	30.4	41.6	42.3
16	Occupied	Not Signed	683789	5102031	29.6	40.8	42.5
17	Occupied	Not Signed	683711	5100496	29.4	40.6	43.4
18	Occupied	Not Signed	679297	5105954	18.7	29.9	32.3
19	Occupied	Not Signed	680477	5103897	20.5	31.7	34.0
20	Occupied	Not Signed	681862	5101126	19.1	30.3	32.8
21	Occupied	Not Signed	680937	5101114	15.7	26.9	29.5
22	Occupied	Not Signed	693510	5107659	10.0	21.2	23.8
23	Occupied	Not Signed	693669	5103124	13.1	24.3	26.9
24	Occupied	Not Signed	690307	5099887	17.5	28.7	31.3
25	Occupied	Not Signed	684022	5099229	25.4	36.6	39.4
26	Occupied	Not Signed	685692	5100065	34.5	45.7	48.4
27	Occupied	Not Signed	692068	5099438	11.5	22.7	25.4
28	Occupied	Signed Easement	688638	5102441	27.8	39.0	40.6
29	Occupied	Not Signed	692214	5104878	17.4	28.6	31.0
30	Occupied	Signed Easement	688431	5107000	29.3	40.5	41.8
67	Abandoned	Signed Easement	685223	5108470	26.5	37.7	39.5
166	Abandoned	Not Signed	693657	5102971	12.9	24.1	26.7
169	Abandoned	Not Signed	693696	5102962	12.8	24.0	26.6
183	Abandoned	Not Signed	685531	5100343	35.4	46.6	49.1
190	Occupied	Not Signed	684117	5099602	29.5	40.7	43.5

NOTE: Bolded value indicates an exceedance

Figure 1. Received Sound Levels – Nordex N100 2.5MW WTG at Maximum Rotational Wind Speed under Anomalous Conditions

Hearing Attendance Sheet

Case Number PU-11-601Date 9/19/2013Thunder Spirit Wind

<u>Name</u>	<u>Address</u>	<u>Phone</u>	<u>Testifying? Yes/No</u>
Steven Turner	Box 286	567-6651	No
Eugene Burren	103 7th Ave NW	567-2996	No
Richard Ketterling	104-4th Ave S, W	567-2032	NO
Boyer Johnson	Hettinger	567-2093	no
mon daly		11	
Richard Johnson	129 Highway 8 South	567-2085	ND
Bruce Selness			
Earleen Frig	808 N 3rd St	567-3102	NO
Jim Gopson	1802 3rd Ave S	567-2523	NO
Adam Hill	405 10th Ave N	567-5281	if needed
Heather Ebert	Box 8, Hettinger	567-2327	no
Connie Emerson	PO Box 1091 Hettinger, ND	567-2702	NO
Codi Harm	610 Christy Ct. Hettinger, ND	567-2259	NO
Norris A. Erickson, Jr	610 Christy Ct, Hettinger, ND	58639	Yes
Kim Markegard	511 10th Ave N Hettinger, ND		YES
NORRIS E ERICKSON Sr	307 N MAIN Hettinger ND	58639	Yes
Bruce S. Erickson	205 9th Ave NE Hettinger		no
Cynthia K. Erickson	205 9th Ave NE Hettinger	58639	no
Keith Kampeniel	9005 151st Ave SW Bowman	58623	if time yes
Chuck Christman	209 24th St NE Lemmon SD	57638	YES
Pam Weaver	310 2nd St NE Hettinger ND	58639	NO
John Weaver	310 2nd St N.E. Hettinger ND	701-567-3812 58639	NO
Dale Stogger	202 5th Ave NW Hettinger ND	58639	NO
Maury Dearost	304 3rd Ave NW Hettinger, ND	58639	701-567-2622 no
Bruce Dearost	304 3rd Ave NW Hettinger ND	58639	701-567-2622 Yes
Larry Slater	709 7th St NE Hettinger ND	58639	Yes

Please do not write below this line

Hearing Attendance Sheet

Case Number PU-11-601

Date 9/19/2013

Name Address Phone Testifying? Yes/No

Kathy L. Niemi 305 16th St. NE Lemmon, SD 701-376-5108 NO
Norval Nelson 106 8th St. S Hettinger, ND 701-567-4157 NO
Jamie Spunkovic By 945 Hollister 567-2424 NO
Walter A. Kordam 210 Lakewood Dr 567-4418 YES
Dan Christman 501 HWY 12 E Hettinger, ND 567-3082

Please do not write below this line

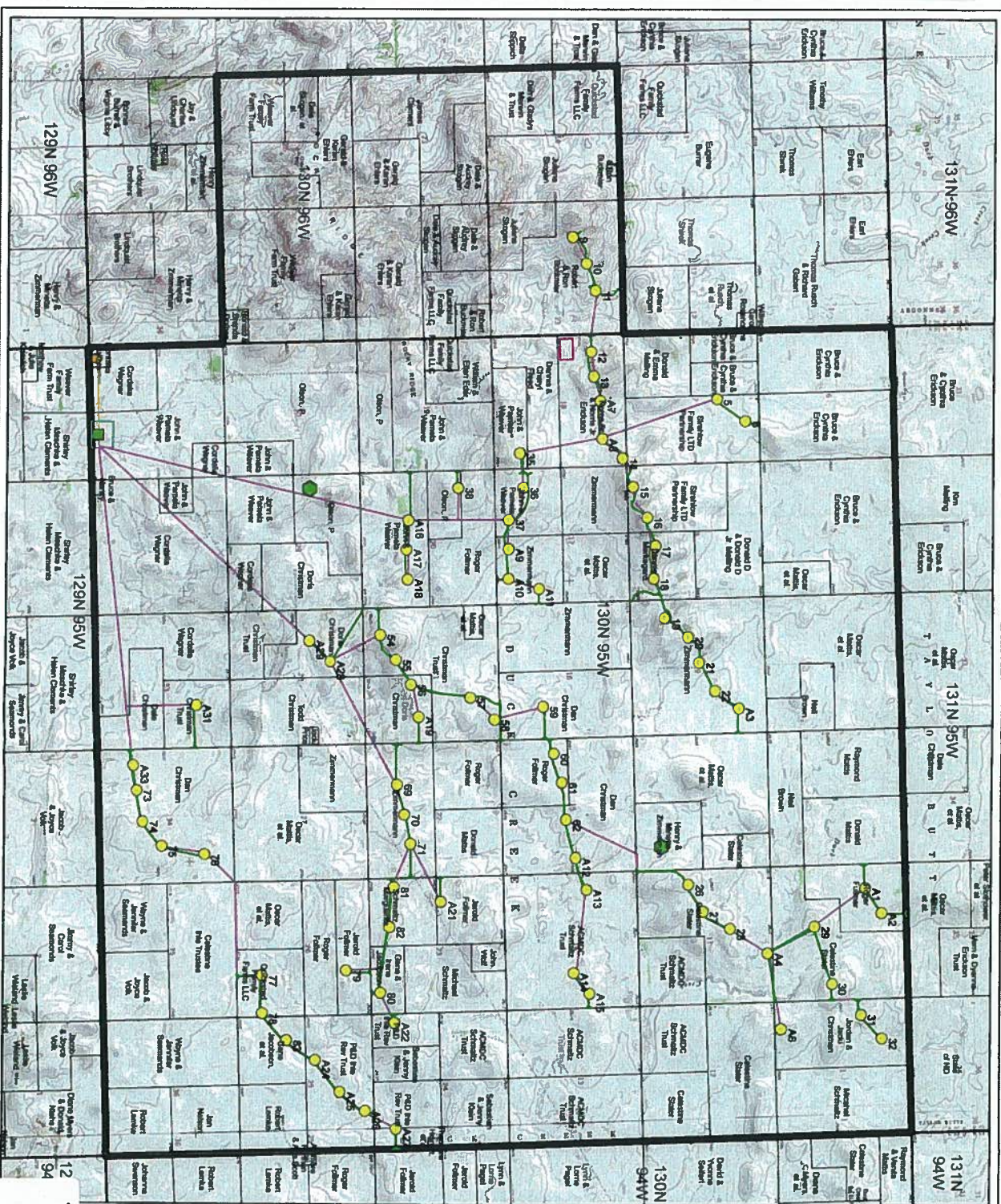
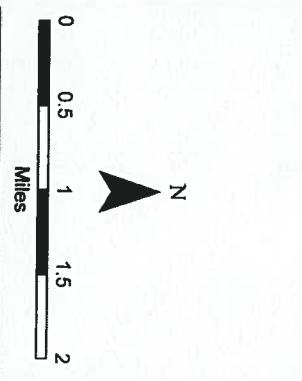


Exhibit 1
2013 Permitted Turbine Layout with
Landowner Parcels

Thunder Spirit Wind Energy Project
Thunder Spirit Wind, LLC
Adams County, North Dakota

June 2014

- 2013 Permitted Turbine Layout
- Mail Tower Location
- Approximate POI
- Proposed Collector Substation (S272014)
- Proposed Access Road
- Proposed Collection Line
- Overhead Line (S272014)
- Parcel Boundary
- Construction Laydown Area (10 Acres)
- Collection Substation, O&M Facility, and Additional Laydown Area
- Project Area (4/28)
- Township Boundary



Tera Tech, Inc.
 Tracy Dabique, P.E.
 PU-11-501 Filed 7/1/2014 Pages 1
 Exhibit 1

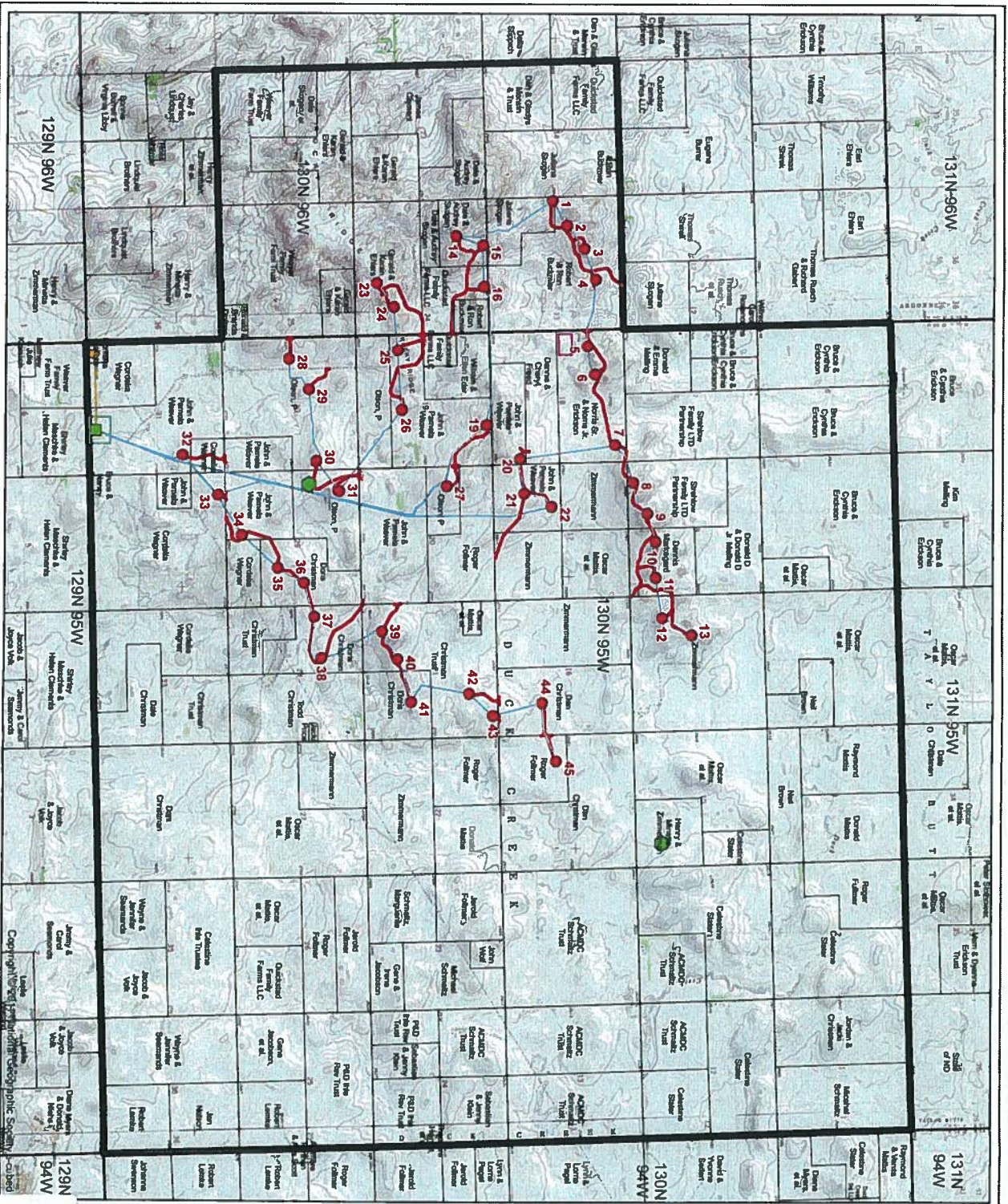


Exhibit 2
Optimized Layout with
Landowner Parcels

Thunder Spirit Wind Energy Project
Thunder Spirit Wind, LLC
Adams County, North Dakota

June 2014

- Met Tower Location
- Approximate POI
- Proposed Collector Substation (S2772014)
- Optimized Turbine Location (S2772014)
- Access Road (S2772014)
- Collection Line (S2772014)
- Overhead Line (S2772014)
- Parcel boundary
- Construction Laydown Area (10 Acres)
- Collection Substation, O&M Facility, and Additional Laydown Area
- Project Area (4/28)
- Township Boundary



REFERENCE MAP



**BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF NORTH DAKOTA**

**Thunder Spirit Wind, LLC
150 MW Wind Energy Project – Adams County
Siting Application**

Case No. PU-11-601

AFFIDAVIT OF SERVICE BY MAIL

STATE OF NORTH DAKOTA)
)§
COUNTY OF BURLEIGH)

Lisa Crowley, being first duly sworn on oath, deposes and says: That she is a citizen of the United States over the age of eighteen years and not a party to, nor interested in, the above entitled action.

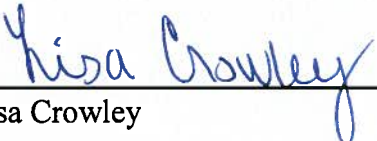
That on the 25th day of July, 2014, this affiant did deposit in the United States Post office at Bismarck, North Dakota, a true and correct copy of the following documents:

RESPONSE OF THUNDER SPIRIT TO REQUEST FOR PUBLIC HEARING

That the document with postage prepaid was mailed, directed to the person to be served at their last known post office address as follows:

Bruce and Nancy Secret
P.O. Box 188
304 3rd Avenue NE
Hettinger, ND 58639

To the best of affiant's knowledge, the address above given is the actual post office address of the party intended to be served.



Lisa Crowley

Subscribed and sworn to before me this 25th day of July, 2014.

Lisa Herberholz

Lisa Herberholz, Notary Public
Burleigh County, North Dakota
My Commission Expires:

