BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF SOUTH DAKOTA

IN THE MATTER OF THE APPLICATION BY
TATANKA RIDGE WIND, LLC FOR A PERMIT FOR A WIND ENERGY FACILITY
IN DEUEL COUNTY, SOUTH DAKOTA, FOR TATANKA RIDGE WIND FARM

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PRE-FILED DIRECT TESTIMONY OF JANELLE RIELAND,
WESTERN ECOSYSTEMS TECHNOLOGY, INC.,
ON BEHALF OF TATANKA RIDGE WIND, LLC

June 17, 2019

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I. INTRODUCTION AND QUALIFICATIONS

Q. Please state your name, employer, and business address for the record.

A. My name is Janelle Rieland. I am employed by Western EcoSystems Technology Inc. ("WEST"), and my business address is 7575 Golden Valley Road, Golden Valley, Minnesota 55427.

Q. Briefly describe your educational background.

A. I received a Bachelor of Science degree in 2002 from the University of Minnesota, Twin Cities, with a Major in Fisheries and Wildlife, and a minor in Biology.

Q. Briefly describe your professional experience.

A. I have 15 years of experience in the energy industry, specializing in project permitting; consulting with the U.S. Fish and Wildlife Service ("USFWS") under the Endangered Species Act and Bald and Golden Eagle Protection Act; conducting project reviews under the National Environmental Policy Act; and managing surveys for both terrestrial and aquatic species, including species-specific surveys conducted in accordance with USFWS and state agency protocols. My professional specializations are environmental review focusing on wildlife and endangered species as well as project management.

Q. What is your role with respect to the Tatanka Ridge Wind Project ("Project")?

A. WEST was engaged by Tatanka Ridge Wind, LLC ("Tatanka Ridge") to conduct desktop reviews (i.e., Site Characterization Study, Northern Long-eared Bat Habitat Assessment, and Butterfly Habitat Assessment), avian raptor nest surveys, avian use point-count surveys, and northern long-eared bat (*Myotis septentrionalis*) acoustic presence/probable absence surveys for the Project, which I managed.

Q. Have you attached a resume or CV?

A. Yes, my resume is attached.

Q. Have you previously submitted or prepared testimony in this proceeding in South Dakota?

A. No, I have not.

II. PURPOSE OF TESTIMONY

Q. What is the purpose of your direct testimony?

A. The purpose of my direct testimony is to provide information concerning the existing condition of terrestrial and aquatic ecosystems in the area of the proposed Project ("Project Area"); potential impacts of the Project on terrestrial and aquatic ecosystems; and how the Project will avoid, minimize, or mitigate potential impacts.

Q. Which sections of the Application you are sponsoring?

A. I am sponsoring two sections of the Application and the relevant appendices, including:

- Section 9 Terrestrial Ecosystems
- Section 10 Aquatic Ecosystems
- Appendix D Dakota Skipper and Poweshiek Skipperling Survey Report
- Appendix E Protected Species Agency Documentation
- Appendix F Avian Use Report
- Appendix G Eagle and Raptor Nest Survey Reports
- Appendix H Northern Long-eared Bat Habitat Assessments
- Appendix I Northern Long-eared Bat Survey Report
- Appendix J Site Characterization Study

III. ENVIRONMENTAL STUDIES AND SURVEYS CONDUCTED BY WEST

Q. What vegetation is present within the Project Area?

A. As presented in Table 9-1 within the Application, approximately 71 percent of the Project Area is mapped as cultivated crops and 21 percent is mapped as herbaceous (dominated by grass-like species or plants without woody stems). Vegetation within the remaining 8 percent of the Project Area is mapped as developed, hay/pasture, emergent wetlands, and deciduous forest.

A total of 5,874 acres of herbaceous lands are mapped within the Project Area. Herbaceous lands within the Project Area were evaluated using a desktop assessment to identify potentially undisturbed grasslands in the Project Area (intact grassland areas that have either never been tilled, or that may have been tilled in the late nineteenth and early twentieth century using equipment that did not disturb the soils to a depth where the soil profile, topography, and/or grassland potential of the landscape was destroyed). As described in additional detail in Section 9.1.1.1 of the Application, the desktop assessment identified 3,954 acres of herbaceous land within the Project Area that are currently cultivated, planted tree rows, or heavily disturbed livestock corral areas (referred to as Disturbed Grasslands). The remaining 1,920 acres (7 percent of the Project Area) of herbaceous land within the Project Area was classified as potentially undisturbed grasslands.

Areas classified as potentially undisturbed grasslands during the desktop assessment were surveyed in June 2018 (eastern portion of the Project Area) and from late May through

early June 2019 (western portion of the Project Area) in order to determine the quality of the vegetation community and its potential to support federally listed skippers. The results of the grassland surveys, which are described in Section 9.1.1.1 of the Application, determined that 1,906 acres (over 99 percent) are Non-native Undisturbed Grasslands and the remaining 14 acres (less than 1 percent) are Native Undisturbed Grasslands.

Q. How will the Project impact grasslands?

A. A total of 5,899 acres of lands mapped as herbaceous communities are within the area where ground disturbance will occur during Project construction. The Project has been designed to minimize impacts to grasslands to the extent feasible. As a result, no turbines are located within grasslands, and turbines will not be located within 1,383 feet of Native Undisturbed Grasslands. Impacts to grasslands will primarily be limited to the 44.5 acres of Disturbed Grasslands and 15.2 acres of Non-native Undisturbed Grasslands. Impacts from construction of the Project on these low- to moderate-quality grassland communities will be short-term and minor. In addition, collector lines cross 100 feet of Native Undisturbed Grasslands; Tatanka Ridge will minimize ground disturbance within this area and will continue to coordinate with the South Dakota Game, Fish, and Parks to develop measures to minimize impacts to this Native Undisturbed Grassland.

Grassland habitat within the Project Area is highly fragmented, and largely occurs within riparian areas adjacent to waterbodies. As such, additional fragmentation of grassland habitat associated with construction and operation of the Project will be minimal

Q. How will the Project avoid, minimize, or mitigate impacts to vegetation?

A. The Project has been sited to avoid impacts to sensitive vegetation communities to the extent feasible; of the 470.4 acres of vegetation within areas that will be disturbed during construction of the Project, over 87 percent of the impacts will be within cultivated croplands and developed areas.

Forested communities within the Project Area are primarily limited to small woodlots associated with farms and windbreaks. Tatanka Ridge has sited facilities to avoid tree clearing wherever possible; as a result, less than 1 acre of land mapped as forest is within the areas being impacted by construction. Tatanka Ridge will continue to work with the landowners to minimize tree clearing.

Project facilities have been sited to avoid grasslands to the extent feasible. As a result, grasslands impacted by construction of the Project will be limited to 44.5 acres of Disturbed Grasslands, 15.2 acres of Non-native Undisturbed Grasslands, and an approximately 100-foot long collector line crossing of a Native Undisturbed Grassland. If engineering constraints preclude complete avoidance of this Native Undisturbed Grassland, additional minimization measures include limiting vehicle traffic wherever possible in grasslands, replacing soils to follow the original soil profiles in areas where native soils are disturbed, and restoring temporarily disturbed grassland areas based on landowner specifications and/or using a weed-free native plant seed mix, if available. The seed mixes and revegetation plan will be developed as part of the Stormwater Pollution Prevention Plan for the Project.

Q. Have you considered noxious weeds relative to the Project?

A. Yes. Noxious and invasive weeds are regulated at both the state (South Dakota Codified Laws Titles 38–22) and federal (7 Code of Federal Regulations Part 360) level, with the intent being to stop the spread of plants that are detrimental to the environment, crops, livestock, and/or public health. According to the South Dakota Department of Agriculture, a total of 10 noxious weeds are present in Deuel County. Four of these species are designated as State Noxious Weeds and six are designated as Local Noxious Weeds in Deuel County (Table 9-2 in the Application). Two species (musk thistle [*Carduus nutans* – State Noxious Weed] and Canada thistle [*Cirsium arvense* – Local Noxious Weed]) were documented in the Project Area during grassland surveys in June 2018.

Noxious weeds have the potential to spread through a variety of mechanisms. They can be carried on vehicles' undercarriage and tires, and thrive in exposed soil conditions, where they can out-compete native vegetation. Disturbance due to construction has the potential to result in the spread of noxious weeds via work crews, on vehicles, and by introduction to exposed soils from infested areas adjacent to construction activities. The spread of noxious weeds will be avoided or minimized by delivering clean, washed vehicles to the site; using weed-free straw or waddles for erosion control, if readily available; and through the use of weed-free seed mixes, if available, following construction.

Q. How did you determine existing use of the Project Area by terrestrial wildlife?

A. Numerous wildlife studies have been completed for the Project between 2009 and 2019, as described in Table 9-3 of the Application. As often occurs during development of a

wind energy project, the Project Area has been modified since wildlife studies began; this occurs due to identification and avoidance of environmental constraints; conformance with federal, state, and local permitting requirements; and landowner requests. Many of the studies used to inform Project design commenced in 2018. Since that time, the Project boundary has been modified, and is both somewhat larger and shifted westward compared to what is described in some of the survey reports appended to the Application.

In accordance with Tiers 1 and 2 of the USFWS Land-Based Wind Energy Guidelines ("WEG"), a Site Characterization Study was conducted utilizing desktop resources to identify potential sensitive species or habitats that could be located within or near the Project. Resources reviewed included, but were not limited to, the USFWS Information for Planning and Consultation and National Wetlands Inventory; US Geological Survey ("USGS") National Land Cover Database, National Hydrography Dataset, Protected Areas Database of the United States, and Breeding Bird Surveys; South Dakota Natural Heritage Database; South Dakota State University's system for identifying potentially undisturbed land; and aerial imagery. Sensitive resources and habitats identified by the Site Characterization Study were assessed in additional detail during subsequent surveys (described below) and taken into consideration during Project design.

To determine the presence, relative abundance, and relative seasonal use of avian species that occur within the Project Area, several surveys were conducted in accordance with Tier 3 of the WEG; Stage 2 of the Eagle Conservation Plan Guidance ("ECPG"); the

federal regulations regarding eagle permits;[1] and USFWS and South Dakota Game, Fish and Parks guidance. Raptor nest surveys were conducted April 10–12, 2018 and April 2–3, 2019, which documented raptor nests of all species within one mile of the Project Area and bald eagle (*Haliaeetus leucocephalus*) nests within 10 miles of the Project Area (Appendix G of the Application). In addition, one year of eagle/avian use point count surveys occurred monthly between April 2018 and March 2019, the results of which are described in Appendix F of the Application. A second year of eagle/avian use point count surveys began in April 2019 and will continue through March 2020.

Acoustic presence/probable absence surveys were conducted for the federally threatened northern long-eared bat in July 2018 (Appendix I of the Application). Due to the change in the Project boundary, northern long-eared bat acoustic presence/probable absence surveys were conducted in one additional location between May 30 and June 6, 2019 (the results of which will be provided to the South Dakota Public Utilities Commission in a supplemental filing when available).

Grassland surveys conducted in June 2018 documented a total of 41.5 acres of potential Dakota Skipper (*Hesperia dacotae*) / Poweshiek skipperling (*Oarisma poweshiek*) Habitat, of which 39.0 acres is within the current Project Area. Adult occupancy surveys were conducted in accordance with the USFWS 2018 Dakota Skipper North Dakota Survey Protocol for the federally threatened Dakota skipper and federally endangered

[1] *See* Eagle Permits; Revisions to Regulations for Eagle Incidental Take and Take of Eagle Nests; Final Rule. 50 Code of Federal Regulations Parts 13 and 22. Department of the Interior, Fish and Wildlife Service. 81 Federal Register 242: 91494–91554. December 16, 2016.

Poweshiek skipperling from June 23 through 28, 2018 (Appendix D of the Application).[2]. Due to the change in the Project boundary, grassland surveys were conducted within 1,920 acres of potentially undisturbed grasslands in the western portion of the Project between May 28 – June 2, 2019. No Dakota Skipper / Poweshiek Skipperling Habitat was documented within the western portion of the Project Area during grassland surveys (the grassland survey report will be provided to the South Dakota Public Utilities Commission in a supplemental filing when available).

Q. Are any federally listed terrestrial species and/or designated critical habitat, or state-listed terrestrial species present within the Project Area?

A. Neither state- nor federally listed terrestrial species have been documented within the Project Area. An IPaC resource list was generated in May 2019 that identified four federally endangered or threatened terrestrial species that are known or expected to occur near the Project: northern long-eared bat; red knot (*Calidris canutus rufa*); Dakota skipper; and Poweshiek skipperling. The closest designated critical habitat to the Project (Dakota skipper and Poweshiek skipperling, South Dakota Unit 2) is approximately three miles south-southeast of the Project in Brookings County. One state-listed terrestrial wildlife species, the northern river otter (*Lontra canadensis*) has been documented within Deuel County. A SDNHD review of the area within two miles of the Project in May 2019 did not contain records of either state- or federally listed terrestrial species within or near the Project. Both the IPaC resource list and SDNHD review of the Project are included in

[2] The USFWS 2018 Dakota Skipper (*Hesperia dacotae*) North Dakota Survey Protocol has been approved by the USFWS for Dakota skipper and Poweshiek skipperling adult occupancy surveys in South Dakota. A letter from the USFWS granting site-specific authorization per condition F.3 of Federal Endangered Species Permit No. TE64070B-1 was provided to Mr. Jake Powell (Senior Ecologist, SWCA) on June 13, 2018, which is included in Appendix D of the Application.

Appendix E of the Application.

As described above (see previous question), species-specific surveys were conducted for the northern long-eared bat in 2018 and 2019, and for the Dakota skipper and Poweshiek skipperling in 2018. Surveys did not document use of the Project Area by federally listed species. As described in Section 9.2.1.4 of the Application, the potential for the red knot (federally listed as threatened) to occur in the Project Area is minimal due to its overall rarity in the region and because suitable stopover habitat is not present. The northern river otter, state-listed as threatened, is not expected to occur within the Project Area because large, slow-moving waterbodies are not present.

Q. Based on the analyses you have described, what are the anticipated Project impacts on wildlife species?

A. The primary impact to terrestrial wildlife that utilize habitat within the Project Area is expected to be short-term displacement to nearby similar habitat due to habitat modification, increased noise levels, and human activity. As discussed in Section 9.2.2.2 of the Application, Tatanka Ridge has sited Project facilities to minimize impacts to high quality habitat and the wildlife species that utilize them. As a result, the Project will impact less than 1 acre of forest, no turbines will be placed within grasslands, the closest Native Undisturbed Grassland is approximately 1,800 feet from a turbine (Turbine B1), and over 90% of the turbines are at least 300 feet from Non-native Undisturbed Grasslands. Given that there is an adequate amount of similar or higher quality in the vicinity of the Project, displacement associated with construction is likely to have temporary and minor impacts to terrestrial wildlife.

Construction of the Project may also result in the direct mortality of some individuals of less mobile wildlife species (e.g., reptiles and amphibians). Because the Project facilities have been sited outside of sensitive habitats and are largely located within cultivated croplands and developed areas (together accounting for over 87 percent of the impacted area), these impacts are expected to be minor and not have population-level effects. Tatanka Ridge will further reduce impacts to wildlife by instructing construction crews to avoid disturbing or harassing wildlife and by removing trash from the Project Area to avoid attracting scavengers or other wildlife to the construction area.

During operation, the primary concern associated with wind energy facilities relates to potential impacts to birds and bats. These species may be directly impacted by the Project either through loss or avoidance of suitable habitat and/or by collision with turbines. As described in Section 9.2.2 of the Application, the Project has been sited and designed to avoid and minimize impacts to birds and bats, and impacts to these species are likely to be similar to other facilities in the region.

Q. Are any impacts to federally listed terrestrial species and/or designated critical habitat, or state-listed terrestrial species anticipated as a result of the Project?

A. No impacts to listed species or designated critical habitat are anticipated as a result of the Project. As discussed in Sections 9.2.2.4 and 9.2.2.5 of the Application, potentially suitable habitat for listed terrestrial species is absent (i.e., red knot and northern river otter) or limited (i.e., northern long-eared bat, Dakota skipper, and Poweshiek skipperling) within the Project Area. Further, species-specific surveys conducted for the

northern long-eared bat (Appendix I of the Application), and federally listed skippers (Appendix D of the Application) were negative. Therefore, impacts on federally and state-listed species are not anticipated. Because the closest designated critical habitat is three miles from the Project Area, no impacts to critical habitat are anticipated from the Project.

Q. Are any impacts to bald or golden eagles anticipated as a result of the Project?

A. Based on the results of eagle nest surveys and avian use point count surveys, use of the Project by both bald and golden eagles (*Aquila chrysaetos*) are expected to be low and no impacts to bald or golden eagles are anticipated as a result of the Project. The closest known bald eagle nest is 5.4 miles southeast of the Project Area (Appendix G of the Application), and only two bald eagles and two golden eagles were observed during the 178 hours of avian use point count surveys conducted between April 2018 and March 2019 (Appendix F of the Application).

Q. What measures will Tatanka Ridge implement to avoid or minimize impacts to wildlife?

A. As described above, the Project has been sited to avoid or minimize impacts to high quality or sensitive habitats (e.g., forest, Native Undisturbed Grasslands, Dakota Skipper/Poweshiek Skipperling Habitat, wetlands), thereby minimizing impacts to terrestrial wildlife that may occur within these habitats. Following construction, temporarily disturbed areas will be regraded to pre-construction conditions in areas where the native soil has been removed, and disturbed areas will be reseeded with a weed-free native plant seed mixture at an appropriate application rate or in accordance with landowner requests and as available. Prior to construction, Tatanka Ridge will prepare a

Bird and Bat Conservation Strategy ("BBCS") to be implemented during operation of the Project. The BBCS will include standards for minimizing impacts to avian and bat species during operation of the Project and be consistent with the WEG. It will include a description of commitments to Project siting, construction practices and design standards, operational practices, permit compliance, and construction and operation worker training. These are discussed in greater detail in Section 9.2.2 of the Application.

Q. Are aquatic ecosystems present in the Project Area and, if so, what measures will Tatanka Ridge employ to avoid or minimize potential impacts?

A. Yes. Aquatic resources present in the Project Area are described in detail in Section 8.2.1 of the Application. Based on the USGS National Hydrology Database, USFWS National Wetlands Inventory data, and wetland/waterbody delineations, waterbodies within the Project Area are largely intermittent streams and wetlands are almost exclusively composed of small, freshwater emergent wetlands, the majority of which are within the eastern portion of the Project Area. Given the Project's location in eastern South Dakota, many of the wetlands within the Project are digressional wetlands known as prairie potholes and may be cultivated during dryer periods of the year.

In accordance with the United States Army Corps of Engineers' Nationwide Permit General Condition No. 23, the Project will avoid and minimize adverse impacts to waters of the United States to the maximum extent practicable; avoidance and minimization measures designed to minimize impacts to wetlands and waterbodies will also substantially reduce impacts to wildlife that resides within aquatic ecosystems. Tatanka Ridge has avoided siting turbines in both wetlands and waterbodies. When feasible,

access roads, collection lines, and other Project facilities have been sited in upland areas. Where wetlands and waterbodies must be intersected, Tatanka Ridge will either use a trenchless technique or minimize impacts to Nationwide Permit thresholds to the extent practical (discussed in additional detail in Section 8.2.2 of the Application).

The primary potential for impacts to aquatic ecosystems would be from a temporary increase in sedimentation or total suspended solids due to soil erosion during construction activities. The Project will be required to develop and implement a Project-specific Stormwater Pollution Prevention Plan, which will describe Best Management Practices for erosion and sedimentation control. Such measures may include installation and maintenance of silt fences, straw wattles, water bars, vegetative buffers, and other measures to control stormwater run-on and runoff to mitigate erosion and sedimentation. With the implementation of these measures, impacts to aquatic ecosystems associated with sedimentation or total suspended solids are expected to be minimal.

Q. Are any federally or state-listed aquatic species, or designated critical habitat present within the Project Area?

A. Potentially. There is a moderate likelihood of the federally endangered Topeka shiner occurring within the Project Area. Although this species has not been documented within the Project Area, it has been documented near the Project in Peg Munky Run, North Deer Creek, and Hidewood Creek.

There is moderate potential for the northern redbelly dace (*Chrosomus eos*), a state-threatened species, to occur within the Project Area. The northern redbelly dace was

documented within an unnamed intermittent stream in the southeastern corner of the Project in 2002, and has been documented near the southwestern portion of the Project Area in Peg Munky Run as recently as 2012.

There is very low potential for the banded killifish (*Fundulus diaphanus*), a state-endangered species, to occur in the Project Area. Although it historically occurred in Deuel County, this species has not been documented in the county since 2000.

Q. Are any impacts to federally or state-listed aquatic species, or designated critical habitat anticipated as a result of the Project?

A. No. As described in detail in Section 10.2.1 of the Application, Tatanka Ridge will implement numerous measures to avoid impacts to federally and state-listed aquatic species. Due to the moderate likelihood for waterbodies within the western portion of the Project Area (within the Middle Big Sioux watershed) to contain the federally endangered Topeka shiner, no in-water activities will occur within the Middle Big Sioux watershed. Further, disturbance will not occur within 50 feet of waterbodies where listed species have been documented in or near the Project. If intermittent streams are completely dry at the time of construction activities, crane paths may cross these features. If this occurs, the measures described in the USFWS 2014 *Programmatic Biological Opinion for the Issuance of Selected Nationwide Permits Impacting the Topeka shiner in South Dakota* will be implemented, as follows:

1. Erosion and sediment control measures will be installed, monitored, and maintained.
2. Impacts to both the dry waterbody as well as riparian and grassland habitat will

be minimized to the extent feasible.

3. The site will be restored to pre-disturbance condition.

4. Manual revegetation of all disturbed areas will be initiated immediately following construction, or at the first opportunity if outside of the growing season. If outside of the growing season, erosion and sediment control measures will be monitored and maintained until the site is permanently stabilized.

5. Revegetated areas will be monitored, and any failures addressed, until the site is permanently stabilized.

6. Livestock and machinery will both be excluded from the site following disturbance until the site is permanently stabilized.

With the implementation of these measures, impacts to the Topeka shiner, northern redbelly dace, and banded killifish due to the Project are not anticipated.

IV. CONCLUSION

Q. Does this conclude your direct testimony?

A. Yes.

Dated this 17th day of June, 2019.

/s/

Janelle Rieland, for TATANKA RIDGE WIND, LLC