



Ashtabula Wind Transmission Line Post-Construction Inspection Report PU-08-073

Prepared for:

NORTH DAKOTA PUBLIC SERVICE COMMISSION

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Table of Contents

1.0	EXECUTIVE SUMMARY	1-1
2.0	BACKGROUND & SCOPE	2-1
2.1	Introduction	2-1
2.2	Purpose	2-1
2.3	Methods and Scope of Inspection	2-1
2.3.1	Project Specifications Identified.....	2-1
2.3.2	Document Review	2-1
2.3.3	On-Site Inspection.....	2-2
3.0	FINDINGS	3-1
3.1	Siting & Location of Facility.....	3-1
3.1.1	Designated Location.....	3-1
3.1.2	Siting Criteria.....	3-1
3.1.3	Setbacks	3-1
3.1.4	Agricultural Impacts	3-1
3.2	Project Design & Engineering	3-1
3.2.1	Structure Specifications	3-1
3.2.2	Codes and Specifications.....	3-1
3.2.3	As-built Drawings and GIS Files	3-2
3.3	Pre-Construction.....	3-2
3.3.1	PSC-Required Documents	3-2
3.3.2	Pre-Construction Conference/Notice of Intent to Start Construction.....	3-2
3.3.3	PSC Approval of Modifications.....	3-2
3.3.4	Permits and Approvals from Other Agencies.....	3-2
3.4	Cultural Resources	3-2
3.4.1	Reporting.....	3-2
3.5	Natural Resources.....	3-3
3.5.1	Avian Protection.....	3-3
3.5.2	Wetlands	3-3
3.5.3	Native Prairie.....	3-3
3.5.4	Reporting.....	3-3
3.5.5	Reclamation & Reseeding	3-3
3.5.6	Tree & Shrub Mitigation.....	3-3
3.5.7	Wildlife Response Reporting System	3-4
3.6	Construction, Reclamation & Soils.....	3-4
3.6.1	Construction Management & Safety.....	3-4
3.6.2	Erosion & Sedimentation	3-4
3.6.3	Reclamation & Roads	3-4
3.6.4	Restoration and Repairs	3-4
3.7	Operation.....	3-4
3.7.1	Safe Operation and Maintenance	3-4

Table of Contents (Cont.)

3.7.2	Public Relations	3-5
4.0	ISSUES TO RESOLVE AND RECOMMENDATIONS	4-1
4.1	Project Specifications Needing Written Verification	4-1
4.2	Tree and Shrub Mitigation	4-1
5.0	CONCLUSIONS	5-2
6.0	REFERENCES	6-1
7.0	SIGNATURES.....	7-1

TABLES

Table 2-1:	Project Specifications with Written or Site Verification Information	2-3
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FIGURES

Figure 1:	Project Area and Field Observations Map
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APPENDICES

Appendix A:	Photographs
Appendix B:	Field Observation Points

1.0 Executive Summary

The North Dakota Public Service Commission (PSC) retained Wenck Associates, Inc. (Wenck) to complete a construction inspection of the Ashtabula Wind Transmission Line (Project) in Barnes County, North Dakota (ND) owned and operated by Ashtabula Wind, LLC (Ashtabula Wind). Wenck reviewed all Project documents to identify those aspects which required compliance and visually inspected the Project area on 19 November 2012.

The Project was well-maintained and appeared to have been constructed as planned with numerous efforts to minimize impacts. However, there were several issues that may need to be resolved for the Project to be considered complete and in full compliance, including 1) written verification of some items and 2) compliance with Tree and Shrub Mitigation measures. Wenck expects follow-up actions taken by Ashtabula Wind to address these particular issues can be corroborated in writing or photos and will not require a subsequent site visit. Wenck recommends the PSC take the following steps to resolve these issues.

Recommended Action Steps

→Request Now

- As-built engineering design drawings.
- Permit copies, or justification that they were not necessary (none on file; Section 3.3.4).
- Copies of waivers from landowners located within 500ft of the Project.
- Records of a pre-construction conference and intent to start construction.

→Review Internally, Clarify, Then Request if Needed

- Verification of compliance with the National Electric Safety Code
- Verification that no new discoveries of cultural, archeological, or historic sites were found during construction (Section 3.4.2).
- Verification that no threatened or endangered species or bald and golden eagles were encountered during construction (Section 3.5.4).
- Summary or example of WRRS reports so PSC can confirm they are available, if needed.
- Confirmation that no TV or radio interference occurred as a result of the Project.

→Expect Later, Request if Necessary

- 2013 Tree and Shrub Survival Report
- 2014 Tree and Shrub Survival Report

2.0 Background & Scope

2.1 INTRODUCTION

The Ashtabula Wind Transmission Line (Project) was constructed in Barnes County, North Dakota (ND), running from about 2 miles northwest of Pillsbury at the Pillsbury substation to the Ashtabula Wind Energy Center Substations about 6 miles east of Lake Ashtabula (**Figure 1**). The Project is approximately 9.5 miles of 230kV electrical transmission line. The Project is owned and operated by Ashtabula Wind, LLC (Ashtabula Wind). The Project is under the jurisdiction of the North Dakota Public Service Commission (PSC), which issued its Findings of Fact, Conclusions of Law, and Order in Case No. PU-08-073 on May 30, 2008, granting a Certificate of Corridor Compatibility No. 104 and Route Permit No. 114 for the Project.

2.2 PURPOSE

The North Dakota Energy Conversion and Transmission Facility Act (North Dakota Century Code Chapter 49-22) authorizes the Public Service Commission to determine that the location, construction, and operation of jurisdictional energy conversion and transmission facilities will produce minimal adverse effects on the environment and the welfare of citizens of North Dakota. Post-construction inspections ensure that such projects are constructed in compliance with the siting laws (North Dakota Century Code Chapter 49-22) and rules (North Dakota Administrative Code Article 69-06) and the applicable Commission Findings of Fact, Conclusions of Law, and Order (Order). The North Dakota PSC retained Wenck Associates, Inc. (Wenck) to complete a construction inspection of the Project.

2.3 METHODS AND SCOPE OF INSPECTION

2.3.1 Project Specifications Identified

Wenck identified a list of “Project Specifications”, which the company was obligated or responsible to follow and that can be verified either in written documentation or by an on-site inspection. These items were taken from 1) siting laws and rules, 2) Project activities or specifications proposed in the Application, 3) Project plans described in the Findings of Fact, 4) Orders, and 5) recommendations by other agencies. These Project specifications are listed in Table 2.1 within 7 categories: Siting & Location; Project Design & Engineering; Pre-Construction; Cultural Resources; Natural Resources; Construction, Reclamation & Soils; and Operation.

2.3.2 Document Review

Wenck staff reviewed publicly-available Project documents in the PSC Online Case Search (ND PSC 2013) to find written verification of compliance for the Project specifications listed in Table 2.1. If written verification was filed, the findings are described in Section 3 and the source and name of the documentation is listed in Table 2.1, Column 3 (Written Verification). Shaded boxes in the table

represent Project specifications that are potentially non-compliant because they have no written verification.

2.3.3 On-Site Inspection

Luke Toso, Wenck botanist and natural resource scientist, visited the Project site on 19 November 2012. The site was inspected visually by walking the Project area. Digital photographs (Canon Power Shot SD1300 IS, 12 megapixel) were taken showing typical Project infrastructure and documenting problem areas (**Appendix A**). Geographic coordinates were recorded at observation points or potential problem areas using a handheld Global Positioning System (GPS) (Garmin GPSMAP 60CSx; <10m accuracy; NAD83 datum) (**Figure 1; Appendix B**).

If on-site inspection of a Project specification was completed, the findings are described in Section 3 and referenced in Table 2.1, Column 4 (Site Verification). Shaded boxes in the table represent Project specifications that are potentially non-compliant based on site verification.

Table 2-1: Project Specifications with Written or Site Verification Information

Source of Project Specification	Description of Project Specification	Written Verification*	Site Verification*
	SITING & LOCATION		
Findings of Fact 2, 3	The Project would originate at the Ashtabula Wind Energy Center substation and terminate at the Pillsbury substation and consist of approximately 9.5 miles of 230kv transmission line.	N/A	Section 3.1.1
ND Admin. Code Article 69-06-08; Findings of Fact 11; App. p. 2, 18, 19	Siting Criteria analysis – exclusion, avoidance, selection, policy. Avoidance areas: historical resources, woodlands, wetlands.	Docket #4, Application; Docket #6, Revised Application	Section 3.1.2
Findings of Fact 10; App. p. 9; Revised App p. 16	Occupied residences within 500ft of Project would have necessary waivers submitted.	None.	N/A
App. p. 12	Approximately 89% of the Project corridor is agricultural land. About 0.3 acres would be permanently impacted by Project construction.	None.	Section 3.1.4
	PROJECT DESIGN & ENGINEERING		
Findings of Fact 7; Revised App. p. 4	Constructed using single pole steel or wood structures. Each structure 90-120ft in height with an average span of 680ft.	N/A	Section 3.2.1
Findings of Fact 6	Compliance with National Electric Safety Code.	None.	N/A
Order 16	As-built engineering design drawings submitted to PSC within 3 months post-construction.	None.	N/A
	PRE-CONSTRUCTION		
ND Century Code Ch. 49-22-07.1; ND Admin. Code Article 69-06-03	Letter of intent.	Docket #1, Letter of Intent	N/A
ND Century Code Ch. 49-22-08; ND Admin. Code Article 69-06-04	Application for a certificate of site or corridor compatibility.	Docket #4, Application; Docket #6, Revised Application	N/A
ND Century Code Ch. 49-22-07	Certificate of site compatibility or route permit.	Docket #23, Certificate no. 104, Route Permit no. 114	N/A
ND Century Code Ch. 49-22-04; ND Admin. Code Article 69-06-02	Ten-year plan (submit before July 1).	Case No. PU-11-637, 2011 Ten Year Plan	N/A

Source of Project Specification	Description of Project Specification	Written Verification*	Site Verification*
Order 4, 6	Conduct pre-construction conference. Provide notice of intent to start construction.	None.	N/A
Order 18	Inform PSC of plans to modify facility and obtain approval.	PU-08-032, Docket #87, Structure Relocation Summary and Commission Approval of Requested Structure Changes.	Section 3.3.3
Order 5	Obtain permits and approvals from other agencies and provide copies.	None.	N/A
CULTURAL RESOURCES			
Order 9	Report discovery of cultural, archeological, historic sites. Construction stopped, SHPO consulted and clearance required, report to Commission filed.	None reported to date.	N/A
NATURAL RESOURCES			
Findings of Fact 12; App. p. 37; Revised App. p. 19; USFWS (4-14-2008)	Bird safe designs used in accordance with Avian Power Line Interaction Committee recommendations. Flight diverters installed at Goose Lake crossing. USFWS: Above-ground power lines marked and avoid construction during the migratory bird breeding season (Feb 1- July 15).	PU-08-032, Docket #77 start construction July 28, 2008; Docket #107, complete construction August 13, 2008	Section 3.5.1
Findings of Fact 11; App. p. 5; Route App. p. 9, 15, 18-19; NRCS (9-27-2007)	Wetlands avoided by spanning or pole placement. No impacts to surface drainage patterns or groundwater flow patterns. Setbacks of 0.25 miles from WPAs. No machine clearing of vegetation would occur within 50 feet of any river or stream, and ground cover vegetation near rivers or streams will not be disturbed.	N/A	Section 3.5.2
USFWS (4-14-2008); NRCS (9-27-2007)	USFWS, NRCS: Avoid disturbance to native prairie.	N/A	Section 3.5.3
Order 8	Report presence of T+E species, bald or golden eagles during construction and operation.	None reported to date.	N/A
Order 13; App. p. 5; USFWS (4-14-2008)	Reclamation, fertilization, and reseeding done in accordance with NRCS or USFWS unless specified by landowner and approved by Commission.	None.	Section 3.5.5
Order 15	Compliance with "Tree and Shrub Mitigation Specifications".	Docket #31, Tree Mitigation Plan; Docket #35, Tree and Shrub Planting Report; PU-08-032, Docket #316, Annual Tree and Shrub Survival Report	Section 3.5.6

Source of Project Specification	Description of Project Specification	Written Verification*	Site Verification*
App. p. 33; Revised App. p. 19	Wildlife Response Reporting System will be implemented post-construction.	None.	N/A
	CONSTRUCTION, RECLAMATION & SOILS		
Order 6, 11	Provide weekly construction reports. Construction suspended during adverse weather conditions.	PU-11-032, Docket # 77, 80, 83, 84, 88, 92, 95, 103, 107 Plans of the Day for Transmission Line	N/A
Revised App. p. 23; NDDH (2-4-2008)	The ND Department of Health (NDDH) requested that the Project minimize fugitive dust, degradation of waterways, manage stormwater, and noise.	None.	Section 3.6.2
Order 10; Revised App. p. 21	Pre-existing roads restored to satisfactory condition. Temporary roads removed and restored.	None.	Section 3.6.3
Order 12	Reclamation must be continuous and coordinated with construction.	None.	Section 3.6.4
	OPERATION		
Order 7, 14	Construct and operate in accordance with Application and safety requirements. Obligations for reclamation and maintenance of the right-of-way continue throughout the life of the transmission system.	None.	Section 3.7.1
Order 17	Mitigation of TV and radio interference that results from the Project. Work with landowners to determine and implement appropriate damage mitigation measures.	None.	Section 3.7.2

***Note: Shaded boxes represent non-compliance or potential non-compliance issues.**

3.0 Findings

3.1 SITING & LOCATION OF FACILITY

3.1.1 Designated Location

The Project was built as proposed in the designated Project route and corridor described in the Application and Order (**Figure 1**). Maps of the approved corridor and observations of on-the-ground infrastructure during the inspection appeared to coincide (**Appendix A**). There were a few minor adjustments to pole locations, but these were approved by the PSC (See Section 3.3.3 for more details).

3.1.2 Siting Criteria

Siting criteria were analyzed in detail in the Application for the Project (Docket #4, Application; Docket #6, Revised Application). Wenck confirmed during the site inspection that exclusion and avoidance areas were avoided. Historical/cultural resources were not located along the Project route and wetlands were avoided (Section 3.5.2). Cuts were made to woodlands, but replacement trees had been planted (See Section 3.5.6). Wenck also confirmed that impacts to selection and policy criteria were considered and kept at a minimum.

3.1.3 Setbacks

The Project was located in a rural setting, with few occupied dwellings within 500ft. The Application stated that there were four occupied farmsteads within 500ft from the transmission line. Ashtabula Wind stated that it would obtain written waivers from these landowners and submit these waivers to the PSC. No written waivers were on file for the Project. Wenck recommends the PSC request these waivers from Ashtabula Wind.

3.1.4 Agricultural Impacts

The Project was built as proposed within the estimated construction limits and right-of-ways. It appeared that the extent of construction and disturbance were within the maximum acreages estimated in the Application. Crop production did not appear to be reduced surrounding the structure bases (**Appendix A, Photos 6, 10, 11**), indicating that topsoil replacement and soil compaction were satisfactory. Ashtabula Wind staff noted that any issues or landowner concerns related to agricultural or cropland are addressed promptly to maintain good rapport with the community.

3.2 PROJECT DESIGN & ENGINEERING

3.2.1 Structure Specifications

Wood and steel mono-pole structures were observed along the entire transmission line route (**Appendix A**). Span lengths and structure heights appeared to match those specified in the Application.

3.2.2 Codes and Specifications

There was no written verification of compliance with the National Electric Safety Code.

3.2.3 As-built Drawings and GIS Files

No as-built engineering design drawings were on file. Wenck recommends that the as-built drawings, signed and dated by a Registered Land Surveyor, be submitted to the PSC.

3.3 PRE-CONSTRUCTION

3.3.1 PSC-Required Documents

A letter of intent was received on 20 February 2008 (Docket #1). On 27 February 2008, the PSC moved that the one year waiting period between filing the letter of intent and the Application be shortened to one day (Docket #2, Motion Acknowledging Letter of Intent , Shorten Wait, Assess Fee). The Application for Waiver, Corridor Certificate and Route Permit was submitted on 24 March 2008 (Docket #4). A Revised Application for Waiver, Corridor Certificate and Route Permit was submitted on 2 April 2008 (Docket #6). The PSC issued a Certificate of Corridor Compatibility no. 104 and Route Permit no. 114 on 30 May 2008 (Docket #23). There was no Ten Year Plan submitted in 2008 on file with the PSC, but a 2011 Ten Year Plan was on file (PU-11-637, 2011 Ashtabula Wind LLC).

3.3.2 Pre-Construction Conference/Notice of Intent to Start Construction

No records of a pre-construction meeting were on file and there was not a notice of intent to start construction on file.

3.3.3 PSC Approval of Modifications

No plans to modify the facility were filed under the Project docket. However, a modification was filed under a different case number (PU-08-032, Docket #87, Structure Relocation Summary and Commission Approval of Requested Structure Changes). Observations of on-the-ground infrastructure, the approved corridor, and the approved modifications appeared to correspond.

3.3.4 Permits and Approvals from Other Agencies

There were no permits or easements on file for the Project. Potential permits identified for the transmission line under a different case number (PU-08-32) included:

- ND Highway Patrol Overheight/Overweight Permit
- ND Department of Transportation Utility Permit/Risk Management Documents
- Barnes County Conditional Use Permit, Haul Road Agreement, and Utility Permit

Wenck recommends the PSC request from Ashtabula Wind permit and easement copies associated with the Project.

3.4 CULTURAL RESOURCES

3.4.1 Reporting

No new discoveries of cultural, archeological, or historic sites have been reported to the PSC to date. Presumably no new sites were encountered during construction of the Project, but the PSC may want to verify this from Ashtabula Wind.

3.5 NATURAL RESOURCES

3.5.1 Avian Protection

In the Application, Ashtabula Wind stated that the transmission line would comply with recommendations of the Avian Power Line Interaction Committee. No as-built drawings were submitted to confirm compliance with these recommendations, but the NextEra representative stated that these recommendations were followed. The USFWS requested that no construction occur during the migratory bird nesting season (Feb 1-Jul 15). Plans of the day for the transmission line indicate that construction began on 28 July 2008, which complies with this request (PU-08-032, Docket # 77 start construction July 28, 2008; Docket #107, complete construction August 13, 2008)

In the Revised Application, flight diverters were proposed where the transmission line crossed Goose Lake. Flight diverters were noted at this location (**Appendix A, Photos 3**), and at several other locations, notably nearby wetlands (**Appendix A, Photos 3, 5-7, 9, 10**). It appeared that these diverters were installed where planned, and at other areas not in the original Application. Based on this evidence, it appears that Ashtabula Wind considered avian protection as a part of the Project.

3.5.2 Wetlands

There were several areas along the transmission line route that crossed wetland areas (**Figure 1; Appendix A, Photos 3, 4, 7, 8, 9, 11**). It did not appear that vegetation along these wetland margins had been disturbed. No impacts were observed to surface drainage or groundwater flow patterns. The transmission line was located further than 0.25 miles from Wildlife Production Areas (WPAs) as described in the Application. It did not appear that any machine clearing of vegetation occurred near rivers or streams. It appeared that construction of the Project avoided impacts to wetland areas as specified in the Application.

3.5.3 Native Prairie

Most of the transmission line was in cultivated lands and no native prairie was observed along the transmission line route. There was Conservation Reserve Program (CRP) land nearby, but the Project was more than ¼ mile from this area.

3.5.4 Reporting

There were no reports filed to date of the presence of threatened or endangered species and bald or golden eagles present during construction to date. Presumably none were encountered during construction of the Project, but the PSC may want to verify this from Ashtabula Wind.

3.5.5 Reclamation & Reseeding

Construction activities appeared to have had minimal disturbance; only minor reclamation would have been necessary around structure bases. It was not clear if reseeded had occurred following construction because most of the poles were in agricultural land. However, in non-agricultural areas, it appeared that vegetation surrounding poles matched that of the surrounding area (**Appendix A, Photos 3, 5, 8, 9, 12**).

3.5.6 Tree & Shrub Mitigation

No natural woodlands within the Project area were impacted by construction of the Project. It appeared that disturbances to shelterbelts were minimized to the width required for a safe buffer around the transmission line and under the 125ft maximum cut specified in the Order. A Tree and Shrub Mitigation Plan was on file with the PSC (Docket #31) and approved (Docket #33, Commission Motion approving

Tree and Shrub Mitigation Plan). Trees had been planted and documentation was on file (Docket #35, Tree and Shrub Planting Report). An Annual Tree and Shrub Survival Report was on file under a different case number (PU-08-032, Docket #316). The PSC should continue to monitor tree and shrub survival until 2014, three years after the planting, to confirm that survival was satisfactory.

3.5.7 Wildlife Response Reporting System

NextEra on-site staff verbally confirmed that the Wildlife Response Reporting System (WRRS) is in place; any wildlife fatalities observed are recorded and monitored regularly and reports can be obtained if requested.

3.6 CONSTRUCTION, RECLAMATION & SOILS

3.6.1 Construction Management & Safety

Plans of the day were submitted to the PSC under a different case number (PU-08-32, Docket #77, 80, 83, 84, 88, 92, 95, 103, 107). It did not appear that adverse weather conditions occurred during construction activities.

3.6.2 Erosion & Sedimentation

The ND Department of Health (NDDH) requested that Best Management Practices (BMPs) be used to manage stormwater and degradation of waterways. In addition, the Project should minimize fugitive dust and noise. Best Management Practices (BMPs) were used as part of the construction and maintenance of the Project to minimize erosion and control sediment. Plans of the Day remarks indicated when SWPPP inspections were taking place (PU-08-32, example Docket #32, Plan of Day 6-24-2008); photos of erosion control structures (PU-08-32, example Docket #51, Plan of Day 7-10-2008); notes about silt fence installation (PU-08-32, example Docket #61, Plan of Day 7-17-2008); notes about BMP repairs (PU-08-32, example Docket #74, Plan of Day 7-25-2008); and silt fence removal and repairs at the end of construction (PU-08-32, example Docket #237, Plan of Day 11-12-2008). Culverts were installed where necessary to allow for the natural flow of drainage. No erosion problems were noted and infrastructure of the Project area was well-maintained. Fugitive dust and noise were presumably controlled during construction activities.

3.6.3 Reclamation & Roads

Preexisting roads appeared to have been restored and appeared in good condition (**Appendix A, Photos 2-11**). There was no evidence of temporary roads used during construction, so presumably they were restored.

3.6.4 Restoration and Repairs

The Project area appeared to have been successfully restored to previous conditions during the inspection; presumably, restoration occurred continuously with construction.

3.7 OPERATION

3.7.1 Safe Operation and Maintenance

Wenck observed that NextEra has in place an on-going maintenance schedule. Wenck did not observe any areas of exposed soil remaining from construction activity or the on-going operation of the Project that were in need of reclamation. There was no waste, debris, or abandoned equipment observed during the inspection. The site appeared to be regularly maintained.

3.7.2 Public Relations

No complaints of increased TV or Radio interference were reported to the PSC to date. The PSC may want to confirm from Ashtabula Wind that no TV or Radio interference occurred as a result of the Project.

4.0 Issues to Resolve and Recommendations

4.1 PROJECT SPECIFICATIONS NEEDING WRITTEN VERIFICATION

Several components of the Project were asserted in the Application or proposed construction and could be verified in writing, but have not been filed with the PSC. Table 2-1 summarizes these items, which are indicated as those shaded in the “Written Verification” column, indicating no written verification was provided where applicable and necessary. Some of these items could be critical and may be necessary to consider the Project in full compliance. Wenck recommends the PSC request from Ashtabula Wind the following “Necessary Items” and/or “Potential Items”:

Necessary Items

- As-built engineering design drawings.
- Permit copies, or justification that they were not necessary for the Project.
- Copies of waivers from landowners located within 500ft of the Project.

Potential Items

- Records of a Pre-construction conference and intent to start construction.
- Verification of compliance with the National Electric Safety Code.
- Verification that no new discoveries of cultural, archeological, or historic sites were found during construction.
- Verification that no threatened or endangered species or bald and golden eagles were encountered during construction.
- Summary or example of WRRS reports so PSC can confirm they are available, if needed.
- Confirmation that no TV or radio interference occurred as a result of the Project

4.2 TREE AND SHRUB MITIGATION

The replacement of trees and shrubs to mitigate those removed during construction of the Project had been planted in spring 2011. Wenck verified that the replacement plantings were installed. Survival monitoring is required for the following three years until 2014. Wenck recommends that the PSC proceed with its requirement for the full three years of survival monitoring to ensure 75% survival of the replacement planting.

5.0 Conclusions

Overall, the Project appeared to have been constructed as designed with minimal impacts to the surrounding natural or human environment. The Project site was well-maintained and in good condition. However, Wenck noted several issues that may need to be resolved before the Project is considered complete and in full compliance. These included: 1) written documentation of what were considered necessary items, which included as-built engineered drawings, permit and waiver copies, records of a preconstruction meeting and intent to start construction, and construction reports, as well as written documentation of several items which the PSC needs to determine whether they are necessary; 2) confirmation of particular avian protection measures; and 3) continued monitoring of tree and shrub survival. These issues could be critical for Project compliance, but the PSC should determine which are necessary for the company to comply with and then notify the company what actions are required on their part.

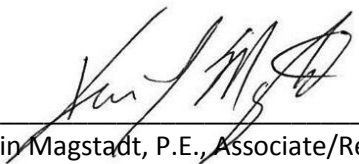
6.0 References

North Dakota Public Service Commission (ND PSC). 2013. Online Case Search. Available from:
http://www.psc.nd.gov/database/company_case_list.php. Accessed February 2013.

7.0 Signatures

The services performed by Wenck scientists for this project have been conducted in a manner consistent with the degree of care and technical skill appropriately exercised by professionals currently practicing in this area under similar time and budget constraints. Recommendations and findings contained in this report represent our professional judgment and are based upon available information and technically accepted practices at the present time and location. Other than this, no warranty is implied or expressed.

Project Manager, Kevin Magstadt and Luke Toso, Botanist/Natural Resources Specialist, prepared this report.



Kevin Magstadt, P.E., Associate/Regional Manager

2/25/2013

Date



Luke Toso, Botanist/Natural Resource Scientist

2/25/2013

Date

Figures

Appendix A

Photographs



Photo 1. Direction: Southeast/East. North end of the transmission line (steel poles) at the Pillsbury substation.



Photo 2. Direction: Southeast. View of the transmission line as it went north-south for approximately 1/4 mile on 126th Ave. SE.



Photo 3. Direction: East/Southeast. View shows the transmission crossing nearby Goose Lake. The landowner appeared to have mowed the wetland vegetation prior to the inspection. The pole on the right of this photo is upland, with no apparent disturbance to wetland vegetation. There were flight diverters along this portion of the route (indicated by black arrows, but faintly visible).



Photo 4. Direction: East. Another view of the transmission line spanning the wetland area south of Goose Lake.



Photo 5. Direction: East. View of the transmission line as it went east-west down 14th St. SE. There were flight diverters along this portion of the route (indicated by black arrows).



Photo 6. Direction: Northwest. View shows the transmission line as it turned north/south down 123rd Ave. SE. There were flight diverters along this portion of the route (indicated by black arrows).



Photo 7. Direction: Southeast. View of wetland crossing along the transmission line route. It appeared the transmission line poles were in upland, with no apparent impacts to the wetland area. There were flight diverters along this portion of the route (indicated by black arrows).



Photo 8. Direction: Northeast. At the intersection of ND Highway 26 and 123rd Ave. SE, two wetlands were spanned in the ditches north and south of the Highway. Poles were in upland with no impacts to the wetland area.



Photo 9. Direction: Southeast. View north of a water body crossing in Section 34, Township 143 North, Range 57 West. Structures were in upland with no impacts to the wetland area. There were flight diverters along this portion of the route (indicated by black arrows, but faintly visible).



Photo 10. Direction: South. View of the transmission line crossing 123rd Ave. SE along 19th St. SE. There were flight diverters along this portion of the route (indicated by black arrows).



Photo 11. Direction: North. Another wetland crossing approximately ½ mile north of the Ashtabula Wind Energy Center Substation. The structure was in upland with no impacts to the wetland area.



Photo 12. Direction: North. South end of the transmission line at the Ashtabula Wind Energy Center substation.

Appendix B

Field Observation Points

Appendix B. Field Observation Points (GPS Coordinates)

Point	Latitude*	Longitude*	Feature Label
1	47.21115	-97.83434	Bird Diverters
2	47.21117	-97.85208	Wetland Crossing
3	47.21125	-97.87615	General Observation Point
4	47.20874	-97.89751	General Observation Point
5	47.20206	-97.89744	Wetland Crossing
6	47.19581	-97.89738	Bird Diverters
7	47.16040	-97.89722	Wetland Crossing
8	47.14255	-97.89711	General Observation Point
9	47.13028	-97.89715	Wetland Crossing
10	47.21275	-97.83132	Substation
11	47.12492	-97.89541	Substation

*NAD 1983 Datum

