



TETRA TECH EC, INC.

November 4, 2011

North Dakota Public Service Commission
600 E. Blvd. Dept. 408
Bismarck, ND 58505-0480

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PUBLIC SERVICE COMMISSION

SUBJECT: Tree and Shrub Planting Report, Four Projects

On behalf of NextEra Energy Resources, Inc., Tetra Tech is pleased to provide the Tree and Shrub Planting Report for the following projects:

- Oliver II (PU-06-312)
- Ashtabula I (PU-08-32 and PU-08-73)
- Ashtabula II (PU-08-34 and PU-09-221)
- Ashtabula III (PU-10-147)

The planting plans were all approved earlier this year and an annual survival count will be conducted the summer of 2012, 2013, and 2014. Please add these reports to the respective case files. A CD with electronic files of the four reports is also included.

Please feel free to contact me at (617) 443-7552 or Tracey.Dubuque@tetrattech.com if you have any questions. We look forward to your comments.

Sincerely,

TETRA TECH EC, INCORPORATED

Tracey M. Dubuque, P.E.
Senior Project Manager

35 PU-08-73 Filed: 11/4/2011 Pages: 17
Tree and shrub planting report

Tetra Tech Ec, Inc.
Tracey Dubuque

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Tree and shrub planting report

Tetra Tech Ec, Inc.
Tracey Dubuque

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Tracey Dubuque

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Tree and shrub planting report

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Tree and shrub planting report

Tetra Tech Ec, Inc.
Tracey Dubuque

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Tree and shrub planting report

Tetra Tech Ec, Inc.
Tracey Dubuque

Tree and Shrub Planting Report

Oliver II Wind Project Transmission Line

Prepared for:

NEXTERA ENERGY RESOURCES
Oliver County Wind, LLC
ND PSC Case Number: PU-06-312 (Transmission Line)

Prepared by:

WENCK ASSOCIATES, INC.
301 1st Street NE
Suite 202
Mandan, ND 58554
(701) 751-3370
Wenck File #2602-03

On Behalf of:

TETRA TECH EC, INC
160 Federal Street
3rd Floor
Boston, MA 02110
(617) 443-7500

November 2011

1.0 Introduction & Background

In 2007, Oliver County Wind, LLC (Oliver Wind), a subsidiary of NextEra Energy Resources, LLC, constructed a 542-foot long, 230 kV electric transmission line and associated substation facility in Section 33 of Township 142N, Range 83W in Oliver County, North Dakota. The transmission line was built to connect the Oliver II Wind Energy Center to the existing Square Butte Electric Cooperative Center Substation, owned by Minnkota Power Cooperative, Inc. (Minnkota). Its construction required the removal of trees and shrubs within Project rights-of-way. At the time of permitting and construction of the Project, there were no length thresholds for jurisdiction of transmission lines, so this Project is considered to be under the jurisdiction of the PSC.

The PSC approved a *Tree and Shrub Replacement Plan* for this project in April 2011. This planting report documents the number, species, location and date of planting for the trees and shrubs planted in 2011 for this Project, as outlined in the approved plan. Please refer to the *Tree and Shrub Replacement Plan* for other background details.

Oliver Wind retained Tetra Tech EC, Inc. (Tetra Tech) and Wenck Associates, Inc. (Wenck) to assist in field checks and documentation of the planting.

2.0 Planting Record

The total number of trees and shrubs removed for the Project was 103; the total number to be replaced is 206 based on the 2:1 replacement requirement. At the end of three years, 75% of these planted trees, or 155, will be required to have survived to meet the obligations of the PSC.

Minnkota requested tree replacement on their property. Tree and shrub choices and planting locations were coordinated with J.D. Hanson of the Oliver County Soil Conservation District (SCD) and are described in detail in the *Tree and Shrub Replacement Plan* for the Project.

The plantings were installed in early June 2011 by the Oliver County SCD (**Table 1**). The original planned location for the planting to the west of the Center Substation described in the *Tree and Shrub Replacement Plan* could not be used because of above and below ground power lines in the area (Tony Aman, Foreman, Minnkota, pers. comm. 2011). The revised location of the planting was in the SW $\frac{1}{4}$ of Section 32, Township 142N, Range 83W on the upland along Nelson Lake. Saplings were conservation stock (8-15 inch size) and weed barrier fabric was installed. A total of 224 trees were planted.

Within a month after the trees were planted, a heavy rainstorm occurred and washed out a large portion of the planting, uprooting many of the trees and moving the weed barrier fabric (Tony Aman, Foreman, Minnkota and J.D. Hanson, Oliver County SCD, pers. comm. 2011). A count was taken of the remaining trees: 20 of the evergreen trees (blue spruce) were left in Row 1, 26 of the crabapple trees were left in Row 2, and 46 of the apricot and plum trees/shrubs were left in Row 3 (J.D. Hanson, Oliver County SCD, pers. comm. 2011). This is a total of 92 which is below the required 75% survival rate. The washed out trees, along with any additional trees that do not survive the winter, will need to be replanted next spring. It was too late in the season for the washed out trees to be replanted this year (J.D. Hanson, Oliver County SCD, pers. comm. 2011). Fabric was reapplied this summer to 635 feet of the remaining trees (J.D. Hanson, Oliver County SCD, pers. comm. 2011).

Table 1. Planting Records by Landowner and Location

Landowner	Number of Replacement Trees Planted	Tree/Shrub Species Planted	Weed Fabric (feet)	Date Planted	Location
Minnkota Power Cooperative, Inc.	48	Black Hills Blue Spruce	579	6/9/11	T142N, R83W, Section 32, SW ¼. Planted to the north of 24 th St on the upland along the shore of Lake Nelson.
	37	Siberian Crabapple	297		
	37	Midwest Crabapple	297		
	51	Wild Plum	308		
	51	Apricot	308		
TOTAL	224*				

*Note: Survival as of August 2011 included 20 Blue Spruce, 26 of the mixed row of Siberian and Midwest Crabapple, and 46 of the mixed row of Wild Plum and Apricot, for a total of 92.

Tree and Shrub Planting Report

Ashtabula I Wind Energy Center

Prepared for:

NEXTERA ENERGY RESOURCES
Ashtabula Wind, LLC
ND PSC Case Number: PU-08-32 (Wind Farm)
ND PSC Case Number: PU-08-73 (Transmission Line)

Prepared by:

WENCK ASSOCIATES, INC.
301 1st Street NE
Suite 202
Mandan, ND 58554
(701) 751-3370
Wenck File #2602-01

On Behalf of:

TETRA TECH EC, INC
160 Federal Street
3rd Floor
Boston, MA 02110
(617) 443-7500

November 2011

1.0 Introduction & Background

The Ashtabula Wind Energy Center (Project) was completed in 2008 in Barnes County, North Dakota, within portions of Township 143N, Range 57W, Township 142N, Range 58W, Township 142N, Range 57W, and Township 141N, Range 57W. The Project is operated by Ashtabula Wind, LLC (Ashtabula Wind), a subsidiary of NextEra Energy Resources, LLC, and comprises a 148.5-megawatt (MW) wind generation plant and 230 kV transmission line approximately 9.5 miles long. The Project is under the jurisdiction of the North Dakota Public Service Commission (PSC). Its construction required the removal of trees and shrubs within Project rights-of-way.

The PSC approved a *Tree and Shrub Replacement Plan* for this Project in April 2011. This planting report documents the number, species, location and date of planting for the trees and shrubs planted in 2011 for this Project, as outlined in the approved plan. Please refer to the *Tree and Shrub Replacement Plan* for other details.

Ashtabula Wind retained Tetra Tech EC, Inc. (Tetra Tech) and Wenck Associates, Inc. (Wenck) to assist in field checks and documentation of the planting.

2.0 Planting Record

The total number of trees and shrubs removed for the Project was 292; the total number to be replaced is 584 based on the 2:1 replacement requirement. At the end of three years, 75% of these planted trees, or 438, will be required to have survived to meet the obligations of the PSC. An additional six trees will be required to have survived between this Project and the Ashtabula II Project, for a total of 444, since the landowners for the Ashtabula II Project did not want all of their allotted tree replacements.

Five landowners within the Project area requested replacement on their property. Tree and shrub choices and planting locations were coordinated with the Barnes County Soil Conservation District (SCD) and are described in detail in the *Tree and Shrub Replacement Plan* for the Project.

The plantings were installed in late May and early June 2011 in Sections 8, 9, 10, and 27, Township 142N, Range 57W and Section 14, Township 143N, Range 57W by the Barnes County SCD (**Tables 1 and 2**). Weed barrier fabric was installed if desired by the landowner. Trees were conservation stock (8-15 inch size), unless special arrangements were made with the landowner. A total of 944 trees were planted.

It should be noted that John Molstad desired to handplant his trees himself, however he did not pick them up from the SCD office until June 27, 2011, and according to a follow-up call on August 16, 2011 by Wenck to confirm the trees were planted, he had not yet planted the trees. He said they were being stored in a cool, dry location until he had time to plant them, however the SCD suggested that it would be very unlikely for the trees to survive if planted any later than June. Both the SCD and Wenck personnel made numerous calls to Mr. Molstad in May and early June to arrange a time to pick up the trees in a timely manner. The SCD offered at least twice to handplant the trees for Mr. Molstad. Ashtabula Wind will not be responsible for replacing this allotment of trees, since a reasonable effort was made to ensure their planting and survival. Without the landowner's cooperation it was impossible to avoid the loss of these trees.

It should also be noted that because the 2010 planting for Mark Askerooth had high initial mortality, Ashtabula Wind agreed to provide replacements in spring 2011 instead of waiting until the end of the three-year survival monitoring. Mr. Askerooth preferred to plant the 2011 replacements himself. The 2011 replacement trees and shrubs included buffaloberry, black chokeberry, chokecherry, wild plum, juniper, and silver maple, however the exact number of each type planted was not accurately recorded. Survival of the 2010 planting was also not documented before the 2011 replacements were installed. Therefore the 2011 tree/shrub count is a combination of surviving 2010 replacements and miscellaneous 2011 replacements (**Table 2**). Future survival rates will be based on the combined 2011 count.

Table 1. Planting Records by Landowner and Location

Landowner	Number of Replacement Trees Planted	Tree/Shrub Species Planted	Weed Fabric (feet)	Date Planted	Location
Casey Burchill	57	Colorado Blue Spruce	680	5/19/11	T142N, R57W, Section 8, SW ¼ on the west side of the farmyard. Ashtabula Wind was only responsible for the cost of 64 of these 420 trees.
	57	Black Hills Spruce	680		
	68	Hackberry	680		
	57	American Linden	680		
	68	Black Walnut	680		
	113	Amur Maple	680		
	64	Amount towards total.			
John Molstad	0	N/A	0	Picked up 6/27/11	Not planted as of 8/16/11.
Paul Owen/ Joel Owen/ Jon Owen	48	Black Hills Spruce	660	6/8/11	48 trees were planted on Joel Owen's property, T142N, R57W, Section 27, SE ¼, on the north side of the farmyard. 24 trees were planted on Jon Owen's property, T142N, R57W, Section 10, NW ¼, on the south side of the farmyard.
	25	Black Hills Spruce	350		
Maynard Flatt	37	American Linden	446	6/13/11	T143N, R57W, Section 14, NE ¼, to the north of the farmyard.
	8	Golden Willow	100		
	45	Black Cherry	446		
	20	Laurel Willow	200		
	111	Juneberry	446		
	112	Lilac	446		
	25	Sandbar Willow	100		
TOTAL	495				Exceeds requirement of 2:1 planting ratio.

Table 2. Mark Askerooth Planting Record

Landowner	Number of Replacement Trees Planted 2010	Tree/Shrub Count 2011	Tree/Shrub Species Planted	Weed Fabric (feet)	Date Planted	Location
Mark Askerooth	231	230	Rocky Mountain Juniper	1500	Picked up 5/20/11	T142N, R57W, Section 9, NE ¼, various locations near wetland. Chokecherry and black chokeberry were intermixed within two rows and not possible to tell apart, so their count was combined.
	89	15	Buffaloberry	500		
	41	29	Juneberry	250		
	40	35	Wild Plum	250		
	78	131	Chokecherry/Black Chokeberry Mix	500		
		9	Silver Maple	--		
TOTAL	479	449				Exceeds requirement of 2:1 planting ratio.

Tree and Shrub Planting Report

Ashtabula II Wind Energy Center

Prepared for:

NEXTERA ENERGY RESOURCES
Ashtabula Wind II, LLC
ND PSC Case Numbers: PU-08-34 and PU-09-221
(Wind Farm)

Prepared by:

WENCK ASSOCIATES, INC.
301 1st Street NE
Suite 202
Mandan, ND 58554
(701) 751-3370
Wenck File #2602-01

On Behalf of:

TETRA TECH EC, INC
160 Federal Street
3rd Floor
Boston, MA 02110
(617) 443-7500

November 2011

1.0 Introduction & Background

The Ashtabula II Wind Energy Center (Project) was completed in 2009 in Griggs and Steele Counties, North Dakota, within portions of Township 144N, Range 58W and 57W and Township 145N, Range 57W. The Project is operated by Ashtabula Wind II, LLC (Ashtabula II), a subsidiary of NextEra Energy Resources, LLC, and comprises a 120-megawatt (MW) wind generation plant. The Project is under the jurisdiction of the North Dakota Public Service Commission (PSC). Its construction required the removal of trees and shrubs within Project rights-of-way.

The PSC approved a *Tree and Shrub Replacement Plan* for this project in 2010. This report documents the number, species, location and date of planting for the trees and shrubs planted in 2011 for this Project. Please refer to the *Tree and Shrub Replacement Plan* for other background details.

Ashtabula II retained Tetra Tech EC, Inc. (Tetra Tech) and Wenck Associates, Inc. (Wenck) to assist in field checks and documentation of the planting.

2.0 Planting Record

The total number of trees and shrubs removed for the Project was four; the total number to be replaced is eight based on the 2:1 replacement requirement. At the end of three years, 75% (six total) of the trees planted for this Project will be required to have survived to meet the obligations of the PSC. However, only one landowner requested replacement and the amount requested was only two trees. The six remaining replacement trees were used in the Ashtabula I Project area for landowners requesting more than the required replacement amounts. They will be tracked under the Ashtabula I Project and the *Ashtabula I Tree and Shrub Replacement Plan*.

One landowner within the Project area requested replacement on his property. Tree and shrub choices and planting locations were coordinated with Nathan Johnson of the Griggs County Soil Conservation District (SCD) and are described in detail in the *Tree and Shrub Replacement Plan* for the Project.

The planting was installed May 2011 in Section 14, Township 144N, Range 58W by the Griggs County SCD (**Table 1**). Trees were conservation stock (8-15 inch size). A total of 2 trees were planted.

Table 1. Planting Records by Landowner and Location

Landowner	Number of Replacement Trees Planted	Tree/Shrub Species Planted	Weed Fabric (feet)	Date Planted	Comments
Ira Fuglestad	2	Red Delicious Apple	0	6/9/11	T144N, R58W, Section 14, SE ¼. Planted in yard.
TOTAL	2				

Tree and Shrub Planting Report

Ashtabula III Wind Energy Center

Prepared for:

NEXTERA ENERGY RESOURCES
Ashtabula Wind III, LLC
ND PSC Case Number: PU-10-147 (Wind Farm)

Prepared by:

WENCK ASSOCIATES, INC.
301 1st Street NE
Suite 202
Mandan, ND 58554
(701) 751-3370
Wenck File #2602-04

On Behalf of:

TETRA TECH EC, INC
160 Federal Street
3rd Floor
Boston, MA 02110
(617) 443-7500

November 2011

1.0 Introduction & Background

The Ashtabula III Wind Energy Center (Project) was completed in 2010 in Barnes County, North Dakota, within portions of Township 143N, Range 57W, Township 143N, Range 56W, Township 142N, Range 58W, Township 142N, Range 57W, and Township 141N, Range 58W. The Project is operated by Ashtabula Wind III, LLC (Ashtabula III), a subsidiary of NextEra Energy Resources, LLC, and comprises a 69-megawatt (MW) wind generation plant. The Project is under the jurisdiction of the North Dakota Public Service Commission (PSC). Its construction required the removal of trees and shrubs within Project rights-of-way.

The PSC approved a *Tree and Shrub Replacement Plan* for this project in April 2011. This planting report documents the number, species, location and date of planting for the trees and shrubs planted in 2011 for this Project, as outlined in the approved plan. Please refer to the *Tree and Shrub Replacement Plan* for other background details.

Ashtabula III retained Tetra Tech EC, Inc. (Tetra Tech) and Wenck Associates, Inc. (Wenck) to assist in field checks and documentation of the planting.

2.0 Planting Record

The total number of trees and shrubs removed for the Project was 28; the total number to be replaced is 56 based on the 2:1 replacement requirement. At the end of three years, 75% of these planted trees, or 42, will be required to have survived to meet the obligations of the PSC.

Three landowners within the Project area requested replacement on their property. Tree and shrub choices and planting locations were coordinated with the Barnes County Soil Conservation District (SCD) and are described in detail in the *Tree and Shrub Replacement Plan* for the Project.

The plantings were installed in late May and early June 2011 in Section 17, Township 143N, Range 57W and Section 27, Township 142N, Range 58W by the Barnes County SCD (**Table 1**). Trees/shrubs were typically conservation stock (8-15 inch size), unless special arrangements were made with the landowner. Saplings were hand-planted, so no weed barrier fabric was installed, although tree tubes were requested by some landowners for protection of saplings. A total of approximately 57 trees were planted.

Several issues need to be documented regarding the allotment for Dawn Ihry. There were changes made to the order for Dawn Ihry from what was reported in the *Tree and Shrub Replacement Plan* because some of the species requested were unavailable. The SCD offered to plant the trees in suitable locations for Ms. Ihry, but she preferred to plant the tree/shrub replacements herself and picked them up May 26, 2011 from the SCD office. In a phone conversation between Wenck and Ms. Ihry on August 19, 2011, she stated the trees had been planted in early June. The exact number of some of the replacement trees and shrubs she received were not accurately documented, including Black Hills Spruce, Ponderosa Pine, and Lilac (**Table 1**). She estimated that she received between 6-10 evergreen trees total of both species combined and between 6-10 lilacs. Ms. Ihry also misunderstood that the plantings would need to be monitored for three years for survival. She stated that she gave an estimated 5 of her evergreens and about 5 of her lilacs to a neighbor whom she did not disclose. It should be noted that Wenck had left several phone messages to Ms. Ihry (November 11 and 16, 2010 and

December 8 and 21, 2010) to explain the details of the tree/shrub replacement offer when landowner contacts were being made. The SCD attempted calls in January 2011 and were eventually able to contact her; however apparently some of the details of the replacement planting offer were missed. Of the evergreens and lilacs she kept, Ms. Ihry stated that they were planted in and around the margins of a low-lying slough on the south side of her yard. Wenck made a field visit on August 19, 2011 to the yard to attempt to determine the number of each species that was actually planted. There were pin flags along the slough margin amongst older lilac shrubs, presumably indicating where the new lilac shrubs had been planted. One flag had a bare stick of a shrub beside it which was dead. Unfortunately there were no other lilac remnants and no evergreen remnants visible in or around the slough which would have provided the initial number of saplings planted. Lilacs and evergreens are not able survive in moist soils. Though this was a particularly wet year and the size of the slough had apparently increased from its historical size (as indicated by the live older lilac shrubs on the outer margins of the slough), this variation should have been taken into account when choosing a proper planting site. A reasonable effort was made to ensure the planting and survival of this allotment. Ashtabula Wind will not be responsible for further replacement of the portion of this allotment which included the lilacs and evergreen trees planted near the slough and given to a neighbor.

Table 1. Planting Records by Landowner and Location

Landowner	Number of Replacement Trees Planted	Tree/Shrub Species Planted	Weed Fabric (Feet)	Date Planted	Location
Rodd & Deborah Svenningsen	2	Oak	0	5/20/11	T143N, R57W, Section 17, NE ¼. Planted in various locations in yard.
	14	Poplar			
	2	Pear			
	2	Apple			
Mark & Jody Svenningsen	6	Hackberry	0	5/20/11	T143N, R57W, Section 17, SE ¼. Planted in various locations in yard.
Dawn Ihry	~7	Black Hills Spruce	0	Picked up 5/26/11	T142N, R58W, Section 27, NE ¼. Planted in various locations in yard.
	~4	Ponderosa Pine			
	~12	Lilac			
	1	Bur Oak			
	1	Mountain Ash			
	1	Amur Maple			
	1	Silver Maple			
	1	Apple			
3	Spirea				
TOTAL	~57				