Lein, Jerry R.

From: Emery, Sarah [Sarah.Emery@iberdrolaren.com]
Sent: Monday, December 27, 2010 4:07 PM
To: Lein, Jerry R.
Cc: Emery, Sarah; Powers, Keith; Seck, Timothy; Dewitz, Neal; Pickle, Joyce E.; Bartunek, Tina
Subject: PU-05-305 - Rugby Wind Farm - Tree Memo - year 1
Attachments: RugbyTreeSurveyFinal_2010.pdf

Jerry,
Attached is a tree survey report prepared by HDR Engineering, Inc. for the Rugby Wind Farm that identifies trees removed due to construction of the facility and trees planted. Overall, 289 trees were removed due to construction of the Project. At a 2:1 replacement ratio that is 578 trees. Through November 2010, we have planted 563 trees (97% completion). Due to the weather, we were unable to complete planting in 2010 and meet the landowner's request. We plan to plant the remaining trees in spring 2011.

Please let me know if you have any questions.

Thank you,

Sarah

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RENEWABLES

NEW EMAIL - sarah.emery@iberdrolaren.com

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Senior Permitting Manager
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Telephone (612) 259-7749
Cellular (612)309-2713

Please be advised that email addresses for Iberdrola Renewables personnel have changed to *first.last@iberdrolaREN.com* effective Aug. 16, 2010. Please make a note. Thank you.

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Memo

To:	Sarah Emery Iberdrola Renewables 701 4th Avenue South, Suite 1010 Minneapolis, MN 55415
From:	Bruce Moreira, Joyce Pickle
Project:	Rugby Wind Project
CC:	Keith Powers, Iberdrola Renewables, 201 King of Prussia Road, Suite 500, Radnor, PA 19087
Date:	November 30, 2010
Job No:	87220

RE: Tree Survey for Rugby Wind Project, Pierce County, North Dakota

HDR Engineering, Inc. (HDR) completed a tree survey in the summer and fall of 2008 and spring of 2009 of the Iberdrola Renewables (IBR) Rugby Wind Project, a 150 MW wind facility and associated 230 kV transmission line in Pierce County, North Dakota. The tree survey was requested by the North Dakota Public Services Commission (PSC) to determine the number of trees required for replacement under the PSC Order #16, which states:

> Trees or other woody vegetation must be replaced with saplings that are two or more years old at a rate of two for every one removed. Landowners shall be given the option of having replacement trees or shrubs planted on the landowner's property or waiving that requirement in writing and allowing IBR to plant the replacement trees or shrubs elsewhere. IBR shall inspect tree replacements once a year for three years and send a report on or before October 1 of each year to the Commission documenting work completion and condition of woodlands planting. The Commission may order additional plantings if survival rates are less than 75%.

Land use at the Project site is primarily tilled agricultural land and pasture. Data collection points and the wooded area boundaries were mapped with a Trimble ProXH Global Positioning System (GPS), providing a permanent record of tree locations in the Project area. Final cleared tree numbers were provided by field staff after construction had been completed.

Tree removal was necessary at twelve locations within the Project area (Figure 1). Out of the twelve locations, nine of the sites were planted tree rows between tilled fields. The remaining three locations were naturally occurring aspen (*Populus tremuloides*) or green ash (*Fraxinus pennsylvanica*) woodlands. Tree removal was necessary to construct overhead transmission lines, underground collector lines and access roads for the Project. Overall, 289 trees were removed due to construction of the Project.

Table 1 describes the landowner, location, and number of trees removed at each of the removal sites. The table also identifies the number of replacement trees planted for each landowner.

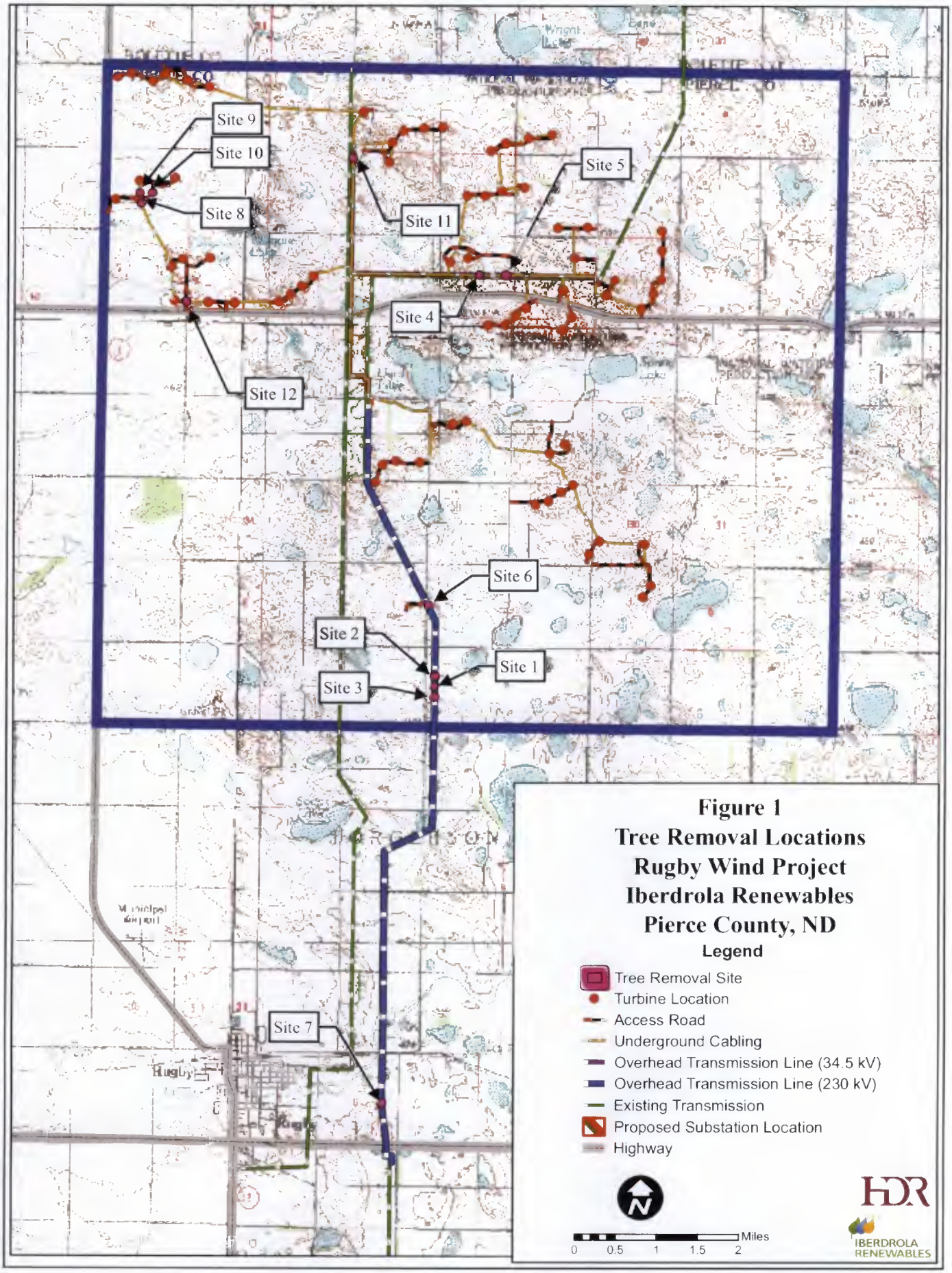
The replacement species recommendations are based on communications with Randy Myers, District Technician at the Pierce County NRCS office. Green ash and American elm (*Ulmus americana*) trees are not currently recommended for plantings in Pierce County, ND. Hackberry (*Celtis occidentalis*) or bur oak (*Quercus macrocarpa*) are recommended as alternatives. The affected landowners were also consulted and requested plantings of different species within their property. The species planted are shown in Table 1; photos of the replacement planting areas are included at the end of this memorandum.

HDR completed a survey of the planted replacement trees on September 15 and October 12 and 13, 2010. Through coordination with the affected landowners, the replacement trees were planted in six locations, as shown on Figure 2 and referenced in Table 1. By October 13, 2010, 507 replacement trees were planted, 503 of which were living at the time of the field surveys. After HDR's site visits, 60 additional trees were planted in two locations (Areas B and E) on November 4, 2010. HDR received gps points and photos for these additional trees, which are included at the end of this memorandum. These additional plantings result in a total of 563 trees. At a replacement ratio of 2:1, this represents 97% of total replacement.

563 (live replacement trees)
578 (289 trees removed x 2) = 97%.

At the time of this memorandum, up to 20 trees on the Kukla property (Area F) remain to be planted. HDR understands that the landowner prefers that 15 Ponderosa pine and 5 golden willow be planted at this location. The final planting will occur as soon as possible in the 2011 growing season.

Table1. Summary of Tree Removal Locations and Replacement Numbers as of November 30, 2010						
Landowner	Trees Removed				Trees Replaced	
	Location (Site on Figure 1)	Construction Activity	Number of Trees Removed		Location (Replacement Area on Figure 2)	Number and Type of Trees Replaced
Ferguson	S10 T157N R72W (Site 1)	Overhead Transmission	6 Green Ash	27 total	S10 T157N R72W (Area A)	56 Hackberry – all live
	S10 T157N R72W (Site 2)	Overhead Transmission	12 Green Ash			
	S10 T157N R72W (Site 3)	Overhead Transmission	9 Green Ash			
Gronvold	S15 T158N R72W (Site 4)	Overhead Transmission	26 Aspen	115 total	S15 T158N R72W (Area B)	236 Aspen – all live
	S15 T158N R72W (Site 5)	Overhead Transmission	89 Aspen			
Halvorson	S3 T157N R72W (Site 6)	Overhead Transmission	5 American Elm, 36 Green Ash	41 total	S2 T157N R72W (Area C)	82 Hackberry – all live
Koble	S6 T156N R72W (Site 7)	Overhead Transmission	4 American Elm, 42 Green Ash	46 total	S6 T156N R72W (Area D)	92 Hackberry – all live
Kraft	S12 T158N R73W (Site 8)	Underground Cabling	4 Green Ash	35 total	S13 T158N R73W (Area E)	71 Blue Spruce – 68 live, 3 dead
	S12 T158N R73W (Site 9)	Underground Cabling	10 Green Ash			
	S12 T158N R73W (Site 10)	Access Road	21 Green Ash			
Kukla	S18 T158N R72W (Site 11)	Overhead Transmission	10 Green Ash	25 total	S13 T158N R73W (Area F)	30 Lilacs – 29 live, 1 dead
	S18 T158N R73W (Site 12)	Access Road	5 Evergreens 5 Choke Cherry, 5 Willow			
Total	289 Trees Removed				563 Live Trees Replaced, 4 Dead Trees	



Map Document: (\\mspe-g-s-file\GISProj\9624.aprs\2008SiteVisits\Rugby_TreeSurveyFigure2.mxd)
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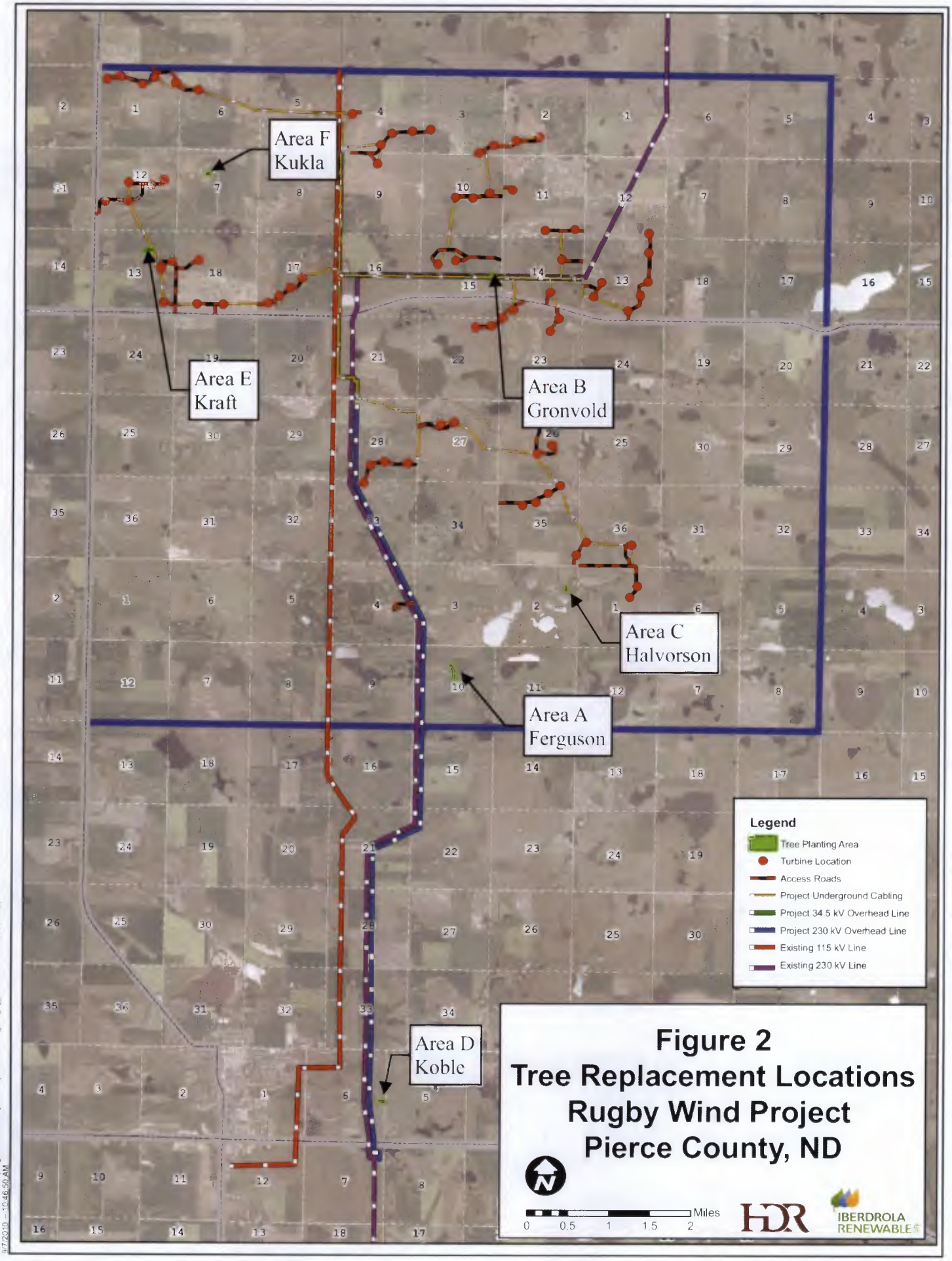

Figure 2
Tree Replacement Locations
Rugby Wind Project
Pierce County, ND

Map Document: (\\mspe-gis-file\GISProj\96241aprs\FinalSiting\Rugby_FinalConsIndex2008.mxd)
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Photo 1: Hackberry Trees on Ferguson Property

2010 Tree Planting Memo
Rugby Wind Project, Pierce County, ND

Photo 2: Hackberry Trees on Halvorson Property

2010 Tree Planting Memo
Rugby Wind Project, Pierce County, ND

October planting

November planting

Photos 3 & 4: Aspen Trees on Gronvold Property

2010 Tree Planting Memo

Rugby Wind Project, Pierce County, ND

Photo 5: Hackberry Trees on Koble Property

2010 Tree Planting Memo
Rugby Wind Project, Pierce County, ND

Photo 6: Lilac Trees on Kukla Property

2010 Tree Planting Memo
Rugby Wind Project, Pierce County, ND

October Planting

November Planting

Photos 7 & 8: Colorado Blue Spruce on Kraft Property

2010 Tree Planting Memo
Rugby Wind Project, Pierce County, ND