Final Report
Crowned Ridge II Wind Farm
Sound Study
Codington, Deuel and Grant Counties, SD

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March 11,

2019

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Report Update

EAPC bears no responsibility to update this report for any changes occurring subsequent to the final issuance of this report.

Revision History

Revision No.	Revision Purpose	Date	Revised By
0	Original	2/15/2019	J. Haley

Executive Summary

EAPC was hired to provide estimates of the potential sound impacts for a proposed wind turbine layout in Codington, Deuel and Grant Counties of the Crowned Ridge II wind farm project in northeastern South Dakota. The scope of this report includes all proposed turbines included in the Crowned Ridge II wind farm project that will be permitted through the South Dakota Public Utilities Commission. Locations of area existing residences and a wind turbine layout (134 turbines) using a mixture of wind turbines manufactured by General Electric (GE) were provided to EAPC by Crowned Ridge Wind II, LLC. Locations of the adjacent Crowned Ridge wind farm (150 turbines) were supplied to EAPC by Crowned Ridge Wind, LLC. A computer model was built combining digital elevation data with the information supplied by Crowned Ridge Wind II, LLC to generate sound models for the site. The resulting models were then used to perform sound calculations for the 284 turbines. Cumulative sound pressure levels were calculated, including the effects from both wind farms, and site-wide realistic sound maps were produced.

The Crowned Ridge II wind farm project was modeled for all counties within the turbine layout and is described in this report as one project. However, for purposes of organization and because of the differences in compliance criteria, the modeling and results of the study are presented individually for each county. The noise ordinances of Codington, Deuel and Grant Counties are not the same. For Codington County the noise limit is 50 dBA at the property boundary of occupied non-participating landowners. For Deuel County the noise limit is 45 dBA at the perimeter of non-participating occupied structures. For Grant County the noise limit is 45 dBA at a distance of 25 feet from the perimeter of non-participating occupied structures and 50 dBA at participating occupied structures.

The scope of this study also includes sound impacts that are not regulated by county ordinances including participating and non-participating occupied structures and participating parcel boundaries in Codington County, and participating occupied structures in Deuel County. The turbine array was arranged so that the sound pressure level at all non-participating occupied structures in all three counties would be 45 dBA or less and participating occupied structures would be 50 dBA or less. For some turbines, Low Noise Trailing Edge (LNTE) blades were used to reduce the sound pressure levels in order to achieve compliance with county regulations by increasing the flexibility in turbine locations to meet setback requirements.

The model is based on a number of conservative assumptions. It assumes that the wind turbines are always emitting the maximum sound pressure level with an additional 2 dBA added to the wind turbine noise emission profiles. It is also assumed that each wind turbine is always downwind of each receptor and the atmospheric conditions are most favorable for sound transmission. Also in particular for Grant County, the sound pressure level was calculated at a distance of 50 feet from the perimeter of structures instead of 25 feet. This is also a conservative assumption because the sound pressure levels will be higher at 50 feet than at 25 feet.

Crowned Ridge II Codington County Turbines

Codington County's current Ordinance #68, Section 5.22.03.12.a) notes that the applicable sound limit is 50 dBA at an occupied non-participating property line, which is what has been evaluated in this report for Codington County. Codington County does not have a specific ordinance for sound pressure levels at a participating property boundary; although not required by the county, the sound pressure levels at participating property boundaries and occupied structures within 2 kilometers of a wind turbine were also evaluated. There is also no ordinance for sound pressure levels at any participating or non-participating occupied structures.

Within the Crowned Ridge II project, for Codington County, an evaluation of the sound impacts at 108 occupied land parcel boundaries (37 participating and 71 non-participating) within Codington County was performed. The 108 land parcel boundaries were modeled using an area-type sound sensor so that the highest sound pressure level at the property line could be calculated.

In Codington County, the maximum sound pressure level at a non-participating property boundary is 49.7 dBA, therefore, the project, as modeled, is in compliance with Codington County's allowable sound pressure levels as described in Section 5.03, paragraph 12.a) of the Codington County Zoning Ordinance #68, which is 50 dBA. The maximum sound pressure level at a participating property boundary is 53.3 dBA.

There are 152 occupied structures (55 participating and 97 non-participating) in Codington County within 2 kilometers of a wind turbine, which were modeled using a point-type sound sensor so that the highest sound pressure level at the perimeter of the structures could be calculated. In Codington County, the maximum sound pressure level at the perimeter of a non-participating occupied structure was 44.8 dBA. The maximum sound pressure level at a participating occupied structure was 47.9 dBA.

Crowned Ridge II Deuel County Turbines

Deuel County's current Ordinance B2004-01-23B, Section 1215.03 paragraph 13 a.) sets the limit at 45 dBA at the perimeter of non-participating existing residences.

There are 99 occupied structures (39 participating and 60 non-participating) in Deuel County within 2 kilometers of a wind turbine, which were modeled using a point-type sound sensor so that the highest sound pressure level at the perimeter of the structures could be calculated. In Deuel County, the maximum sound pressure level at the perimeter of a non-participating occupied structure was 44.2 dBA, therefore, the project as modeled, is in compliance with Deuel County's allowable sound pressure levels as described in the current Deuel County Ordinance, which is 45 dBA. The maximum sound pressure level at a participating occupied structure was 47.3 dBA.

Crowned Ridge II Grant County Turbines

Grant County's current Ordinance 2016-01C, Section 1211.04, paragraph 14 of the current Grant County Zoning Ordinance sets the limit at 45 dBA at a distance of 25 feet from the perimeter of non-participating occupied structures and 50 dBA for participating occupied structures.

For Grant County, an evaluation of the noise impacts at 2 (1 participating and 1 non-participating) occupied structures within 2 kilometers within Grant County was performed. The 2 occupied structures were modeled using a point-type sound sensor so that the highest sound pressure level 25 feet from the perimeter of the structures could be calculated. In Grant County, the maximum sound pressure level 25 feet from the perimeter of a non-participating occupied structure is 40.3 dBA, and 41.4 dBA for a participating occupied structure.

Based upon the results presented above, the project as modeled, is in compliance with Grant County's allowable sound pressure levels as described in the current Grant County Ordinance, which is 45 dBA at a distance of 25 feet from the perimeter of non-participating occupied structures and 50 dBA at a distance of 25 feet from the perimeter of participating occupied structures.

1. INTRODUCTION

EAPC was hired to conduct sound studies for the Crowned Ridge II wind farm project located in Codington, Deuel and Grant Counties in northeastern South Dakota. The layout consists of 15 GE 2.1 MW wind turbines with a hub height of 80 meters and 119 GE 2.3 MW wind turbines with a hub height of 90 meters (including 2 alternate turbine locations) for a total of 134 wind turbines. The locations of the proposed wind turbines were supplied by Crowned Ridge Wind II, LLC.

From the database of existing residences and coordinates supplied by Crowned Ridge Wind II, LLC, 152 occupied structures (55 participating and 97 non-participating) in Codington County and 99 occupied structures (39 participating and 60 non-participating) in Deuel County and 2 occupied structures (1 participating and 1 non-participating) in Grant County, for a total of 253 occupied structures (95 participating and 158 non-participating) were found to be within 2 kilometers of a wind turbine and were included in the sound models. Additionally, 108 occupied land parcel boundaries (37 participating and 71 non-participating) were found to be within 2 kilometers of a wind turbine in Codington County, in line with the Codington County ordinance (see below). At a distance of 2 kilometers from a turbine base, the sound pressure level will be less than 35 dBA (considerably less than ordinance limits) so there is no need to include land parcels or structures beyond that distance. Land parcels were not modeled for Deuel or Grant County as they are not a part of the respective county ordinances.

The area of interest for this study is located in Codington, Deuel and Grant Counties near the town of Watertown in northeastern South Dakota. The surrounding terrain has a change in elevation across the project site ranging from 569 to 616 meters (1,867 to 2,021 feet) at the wind turbine base. The region's vegetation is comprised primarily of prairie grass and agricultural land. The project overview map can be found in Appendix A.

2. BACKGROUND AND COUNTY REGULATIONS

To determine if the layout provided would be compliant for the Crowned Ridge II project and in line with each county's regulations, detailed sound scenarios were analyzed using a computer model. The scenarios assumed that the wind turbines were operating at a wind speed that resulted in the loudest sound being emitted, which is conservative because the turbines would not actually be operating at maximum sound output levels at all times.

Codington County's current Ordinance #68, Section 5.22.03, paragraph 12.a) prescribes sound limits for wind turbine projects as follows:

"12.a) Noise level generated by wind energy system shall not exceed 50 dBA, average A-weighted sound pressure including constructive interference level effects at the property line of existing off-site non participating residences, businesses, and buildings owned and/or maintained by a governmental entity."

Therefore, Codington County's only applicable sound limit is 50 dBA at an occupied non-participating property line, which is what has been evaluated in this report for Codington County. Although not required by the county, the sound pressure levels at participating property boundaries and participating and non-participating occupied structures (i.e., residences, business, and buildings) within 2 kilometers of a wind turbine were also evaluated.

Deuel County's current ordinance B2004-01-23B, Section 1215.03, paragraph 13 a.) prescribes sound limits for wind turbine projects as follows:

"13. a) Noise level shall not exceed 45 dBA average A-weighted sound pressure at the perimeter of existing residences, for non-participating residences."

Therefore, Deuel County's only applicable sound limit is 45 dBA at the perimeter of existing non-participating residences. For purposes of this report, these residences will be referred to as occupied structures.

Grant County's current Ordinance 2016-01C, Section 1211.04, paragraph 14 prescribes sound limits for wind turbine projects as follows:

"14.) Noise. Noise level shall not exceed 45 dBA, average A-weighted Sound pressure including constructive interference effects measured twenty-five (25) feet from the perimeter of existing off-site non-participating residences, businesses, buildings owned and/or maintained by a governmental entity."

"Noise level shall not exceed 50 dBA, average A-weighted Sound pressure including constructive interference effects measured twenty-five (25) feet from the perimeter of participating residences, businesses, and buildings owned and/or maintained by a governmental entity."

Therefore, Grant County's current applicable sound limit is 45 dBA for all non-participating, and 50 dBA for all participating, existing off-site residences, businesses, and buildings owned and/or maintained by a governmental entity. For purposes of this report, these residences, businesses, and buildings will hereafter be referred to as occupied structures.

3. *STUDY METHODOLOGY*

This sound analysis was performed utilizing windPRO[1], which has the ability to calculate detailed sound maps across an entire area of interest or at site-specific locations using sound sensitive receptors.

[1] windPRO is the world's leading software tool for designing wind farms, including sound analysis.

The analysis used the ISO 9613-2 "Attenuation of sound during propagation outdoors, Part 2" sound calculation model with "General" ground attenuation and an attenuation factor of 0.5, which represents typical mixed vegetation (i.e., prairie grass, weeds, brush) and crop cover. Realistic sound pressure levels were calculated at 1.5 m AGL at the participating and non-participating existing occupied structures and occupied parcel boundaries (Codington County only). The term "realistic" in this case, means that some amount of ground attenuation is accounted for.

The inputs and assumptions for the windPRO sound calculation include the following:

- Turbine Coordinates
- Turbine Specifications
- Turbine Sound Emission Data
- Sound Receptor Coordinates
- Participation Status
- USGS Digital Elevation Model (DEM) (height contour data)
- Uncertainty Factor
- Meteorological Conditions
- Ground Attenuation

Turbine Coordinates: The location of a wind turbine in relation to a sound receptor is one of the most important factors in determining sound impacts. Sound pressure levels drop as they travel farther from the source of emission. The attenuation comes from atmospheric absorption as well as from absorption by the ground cover between the turbine and the receptor. The sound pressure waves can also be reflected by hard or smooth surfaces such as ice or water. Sound is also absorbed by trees and reflected by structures such as buildings or walls, although these effects (trees and buildings) are ignored in the model.

Turbine Specifications: GE Wind turbine specifications from the manufacturer were supplied to EAPC by Crowned Ridge Wind II, LLC. Wind turbine specifications included in the model were the power curves, blade types (standard and low noise), hub heights and operational rotational speed of the rotor. For some turbines, Low Noise Trailing Edge (LNTE) blades were used to reduce the sound pressure levels in order to achieve compliance with county regulations by increasing the flexibility in turbine locations to meet setback requirements.

Turbine Sound Emission Data: Sound emission data including 1/3rd octave data supplied by the manufacture is used assuming the loudest sound pressure levels are being emitted at the hub height of the turbine. A safety margin of 2 dBA was added to the wind turbine noise emission profiles for the analysis in order to produce more conservative results, meaning that the model will predict higher sound pressure levels.

For the GE 2.1-116, the sound emission specifications for the 2.3-116 were used, which is a conservative assumption since the sound emission levels for the 2.1-116 will likely be lower than for the larger 2.3-116. According to the GE sound documentation provided to EAPC by Crowned Ridge Wind II, LLC, the loudest normal operating sound pressure level emitted from the GE 2.3-116 is 107.5 at 10 m/s and higher at hub height. Since the value is reported at hub height, it is the same value for both 80 meter and 90 meter hub-height turbines.

The specifications for the GE wind turbine models used in this study are included in Table 1 below. The table of wind turbine coordinates is included in Appendix B.

Table 1: Crowned Ridge II energy project wind turbine specifications.

Crowned Ridge II energy project wind turbine specifications							
Manufacturer	**Model**	**Hub Height (m)**	**Rotor Dia. (m)**	**Cut-In Wind Speed (m/s)**	**Cut-Out Wind Speed (m/s)**	**Max. Sound Press. Level (dBA)**	**Max. Sound Press. Level LNTE (dBA)**
General Electric	GE 2.3	80	116	3	22	107.5	106
General Electric	GE 2.3	90	116	3	22	107.5	106
General Electric	GE 2.1	80	116	3	22	107.5	106

Sound Receptor Coordinates: As with the wind turbine coordinates, the elevation, and distance of a sound receptor in relation to the wind turbines are the main factors in determining the sound impacts. EAPC was provided with coordinates for all existing residences, and occupied structures found to be located within 2 kilometer of the 134 proposed wind turbine locations by Crowned Ridge Wind II, LLC.

In Grant County, where the point of compliance is 25 feet from the perimeter of the structure, a ring of receptors was modeled 50 feet from the perimeter in order to capture sound levels that would conservatively represent the sound pressure levels 25 feet away from the perimeter.

Receptor Participation Status: A database indicating the participation status of the land parcels and the structures within the wind farm boundary were supplied to EAPC by Crowned Ridge Wind II, LLC.

USGS Digital Elevation Model (DEM) (height contour data): For this study, 3 meter resolution USGS National Elevation Database (NED) DEM's were used to construct 10-foot interval height contour lines for the windPRO sound model. The height contour information is important to the sound calculation since it allows the model to place the wind turbines and the sound receptors at the correct elevations.

Uncertainty Factor: No uncertainty factor was provided by the wind turbine manufacturer. In this situation, it is common practice based on experience and studies to add 2 dBA to the sound pressure levels of each wind turbine. For this analysis, the 2 dBA were added to all wind turbine noise emission profiles.

Meteorological Conditions: A temperature of 10^{o} C (50^{o} F) and a relative humidity of 70% were assumed for the analysis. These conditions represent an atmospheric "worst case" scenario where sound waves will travel farther with less atmospheric absorption. This will lead to more conservative (higher predicted sound levels) results.

All wind turbines are assumed to be operating simultaneously at maximum sound output levels. All turbines are assumed to be downwind of all receptors, which is another conservative (higher predicted sound pressure levels) assumption.

Ground Attenuation: A ground attenuation factor of 0.5 was assumed for this analysis. It represents "mixed ground" consisting of half hard and half soft (porous) ground cover, which is slightly conservative and will result in higher predicted sound levels since the ground cover includes native prairie and agricultural crop land.

No other sources of sound attenuation such as trees, air turbulence or wind shadow effects were assumed in the analysis.

Wind Turbines from Adjacent Projects: The Crowned Ridge II project is adjacent to the Crowned Ridge project. Because sound impacts are cumulative, there will be impacts from the Crowned Ridge project that will be additive to the impacts from the Crowned Ridge II project. The Crowned Ridge wind turbine array was included in the model to capture the full sound impacts on the receptors, which are included in the current Crowned Ridge II tabular results; however, the sound iso-line maps only show the sound emissions from the Crowned Ridge II array. The Dakota Range wind farm, which is adjacent to the Crowned Ridge wind farm, is too far away to have any significant cumulative impacts on the Crowned Ridge II wind farm and therefore is not included in the study. Crowned Ridge Wind II, LLC is not aware of any other operating energy conversion facilities, existing or under construction, or other major industrial facilities under regulation within or adjacent to the Project Area.

4. RESULTS OF ANALYSIS

Although modeled as one project, the noise ordinances of the three counties are not the same. For Codington County, the noise limit is 50 dBA at the property boundary of occupied non-participating landowners. Codington County does not have a specific ordinance for sound pressure levels at a participating property boundary. There is also no ordinance for sound pressure levels at any participating or non-participating occupied structures. Although not required by the county, the sound pressure levels at participating property boundaries and occupied structures within 2 kilometers of a wind turbine were also evaluated.

For Deuel County, the noise limit is 45 dBA at the perimeter of non-participating occupied structures.

For Grant County, the noise limit is 45 dBA at a distance of 25 feet from the perimeter of non-participating occupied structures and 50 dBA at participating occupied structures. Because of the differences in compliance criteria, the results of the study are presented individually for each county.

Crowned Ridge II Codington County Turbines

For the Crowned Ridge II Codington County turbines, the sound study indicates that the highest sound pressure level at a non-participating property boundary is 49.7 dBA. Therefore, the project would be in compliance with Codington County's allowable sound pressure levels as described in Section 5.22.03 paragraph 12.a) of Ordinance #68. Table 2 shows the distribution of sound pressure levels for the project. The maximum sound pressure level at a participating property boundary is 53.3 dBA; however, there is no county ordinance for participating property boundaries. This information is provided for transparency.

Table 2: Codington County property boundary cumulative realistic sound distribution

Realistic Sound (dBA)	Non-Participating Property Boundary	Participating Property Boundary
0 to 25	0	0
25 to 30	0	0
30 to 35	11	0
35 to 40	21	0
40 to 45	18	8
45 to 50	21	13
50+	0	16

Crowned Ridge II Deuel County Turbines

For Deuel County, the sound study indicates that the highest sound pressure level at the perimeter of a non-participating occupied structure is 44.2 dBA. Therefore, the project would be in compliance with Deuel County's allowable sound pressure levels as describes in Section 1215.03, paragraph 13 a.) of the current Deuel County Ordinance B2004-01-23B. Table 3 shows the distribution of sound pressure levels for the project. The maximum sound pressure level at the perimeter of a participating occupied structure is 47.3 dBA; however, there is no county ordinance for participating occupied structures. This information is provided for transparency.

Table 3: Deuel County occupied structure cumulative realistic sound distribution

Realistic Sound (dBA)	Non-Participating Occupied Structures	Participating Occupied Structures
0 to 25	0	0
25 to 30	0	0
30 to 35	5	0
35 to 40	24	6
40 to 45	31	23
45 to 50	0	10
+50	0	0

Crowned Ridge II Grant County Turbines

For Grant County, the sound study indicates that the highest sound pressure level at a distance of 25 feet from the perimeter of a non-participating occupied structure is 40.3 dBA. The highest sound pressure level at a distance of 25 feet from the perimeter of a participating occupied structure is 41.4 dBA. Therefore the project would be in compliance with Grant County's allowable sound pressure levels as described in Section 1211.04, paragraph 14 of the current Grant County Zoning Ordinance 2016-01C. Table 4 shows the distribution of sound pressure levels for the project.

Table 4: Grant County occupied structure cumulative realistic sound distribution

Realistic Sound (dBA)	Non-Participating Occupied Structures	Participating Occupied Structures
0 to 25	0	0
25 to 30	0	0
30 to 35	0	0
35 to 40	0	0
40 to 45	1	1
45+	0	0

Crowned Ridge II Project Summary

The summary results for the Crowned Ridge II project are shown in Table 5 below. The full table of results from the sound study can be found in Appendix C. Table C-1 lists the results sorted by receptor number and Table C-2 lists the results sorted by sound impacts (dBA) from highest to lowest. The tabular results include the cumulative impacts from Crowned Ridge and Crowned Ridge II wind farms. The maps showing the sound impact iso-lines for the Crowned Ridge II wind farm are in Appendix D.

Table 5: Summary of cumulative sound pressure level predictions.

County	Feature	Noise Limit (dBA)	Maximum Predicted (dBA)
Codington	Participating Occupied Structures	N/A	47.9
	Non-Participating Occupied Structures	N/A	44.8
	Participating Occupied Parcel Boundary Lines	N/A	53.3
	Non-participating Occupied Parcel Boundary Lines	50	49.7
Deuel	Participating Occupied Structures	N/A	47.3
	Non-Participating Occupied Structures	45	44.2
Grant	Participating Occupied Structures	50	41.4
	Non-Participating Occupied Structures	45	40.3

5. *CONCLUSIONS*

The conservative results of this sound study indicate that the Crowned Ridge II project is in compliance with Codington, Deuel and Grant County ordinances.

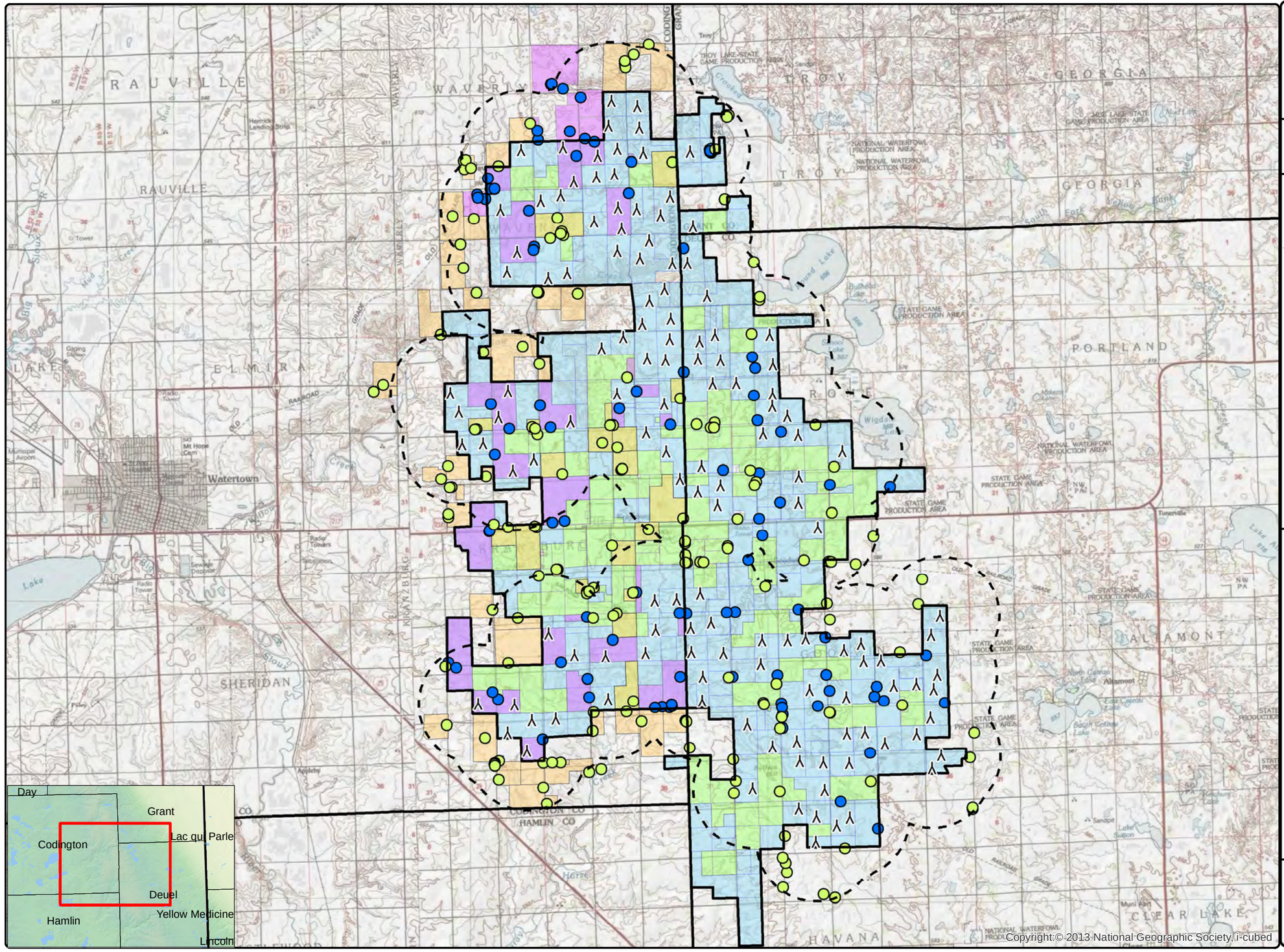
For Codington County, of the 108 property boundaries modeled, the highest sound pressure level at a non-participating property boundary is 49.7 dBA and none measured more than 50 dBA. Therefore the Crowned Ridge II wind farm would be in compliance with Codington County Ordinance #68.

For Deuel County, the sound study indicates that the highest sound pressure level at the perimeter of a non-participating occupied structure is 44.2 dBA. Therefore the project would be in compliance with the current Deuel County Ordinance B2004-01-23B.

For Grant County, the sound study indicates that the highest sound pressure level 25 feet from the perimeter of a non-participating occupied structure is 40.3 dBA. The highest sound pressure level 25 feet from the perimeter of a participating occupied structure is 41.4 dBA. Therefore the project would be in compliance with the current Grant County Ordinance 2016-01C.

The results of this study are inherently conservative due to the fact that the turbines were modeled as though they were always operating at maximum sound emission levels and in all cases, an additional 2 dBA was added to the sound level being emitted by the turbine during the modeling stage and not to the results of the sound modeling. The turbines were also modeled as though they were always downwind of each receptor, and atmospheric conditions were modeled to be most favorable for sound transmission. In addition, the receptors in Grant County were modeled 50 feet from the perimeter of the structures where the ordinance specifies 25 feet. Noise levels will be higher farther away from the perimeter.

APPENDIX A: CROWNED RIDGE II WIND ENERGY PROJECT SITE OVERVIEW MAP



EAPC WIND ENERGY

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Crowned Ridge II Wind Farm Project Overview Map

Client

SWCA Environmental Consultants

Project Description

Wind turbine layout with land parcels within the project footprint and existing occupied strucures.

Codington County land parcels within 2 km of a wind turbine.

Location: Watertown, SD

Project #: 20174431

Issue Dates

#	Description	Date
1	Original	2019.03.06

Drawn By: AS *Checked By: JH*

Legend

- Crowned Ridge II Array
- 2 km Turbine Buffer
- County Lines
- CR II Project Boundary
- Non-Participants
- Participants
- Non-Part. Codington Parcels
- Participating Codington_Parcels
- Non-Participating Land Parcels
- Partcipating Land Parcels

N W E S

APPENDIX B: WIND TURBINE COORDINATES

Crowned Ridge II Wind Farm
GE 2.1-116-80 m HH, GE 2.3-116-90 m HH, GE 2.3-116-80 m HH WTG's
UTM NAD83 Zone 14

WTG	Turbine Type	Easting (m)	Northing (m)	Base Elev. AMSL (m)	Sound Profile
CRII-1	GE2.3 116RD 80HH r2.madE	671,559	4,962,133	612.0	Normal Operation
CRII-2	GE2.3 116RD 80HH r2.madE	672,263	4,962,678	614.9	Normal Operation
CRII-3	GE2.3 116RD 90HH r2.madE	672,701	4,962,945	611.4	Normal Operation
CRII-4	GE2.3 116RD 80HH r2.madE	671,580	4,962,979	614.6	Normal Operation
CRII-5	GE2.3 116RD 80HH r2.madE	670,978	4,963,241	612.0	Normal Operation
CRII-6	GE2.3 116RD 90HH r2.madE	671,848	4,963,864	609.0	Normal Operation
CRII-7	GE2.3 116RD 90HH r2.madE	669,433	4,963,919	609.0	Normal Operation
CRII-8	GE2.3 116RD 80HH r2.madE	675,459	4,964,605	586.7	Normal Operation
CRII-9	GE2.3 116RD 90HH r2.madE	672,673	4,964,773	606.0	Normal Operation
CRII-10	GE2.3 116RD 80HH r2.madE	671,807	4,964,788	605.6	Normal Operation
CRII-11	GE2.3 116RD 80HH r2.madE	671,018	4,964,835	608.5	Normal Operation
CRII-12	GE2.3 116RD 80HH r2.madE	675,767	4,965,047	582.6	Normal Operation
CRII-13	GE2.3 116RD 90HH r2.madE	661,844	4,965,186	585.0	Normal Operation
CRII-14	GE2.3 116RD 90HH r2.madE	670,096	4,965,331	604.9	LNTE
CRII-15	GE2.3 116RD 90HH r2.madE	673,873	4,965,445	594.0	LNTE
CRII-16	GE2.3 116RD 90HH r2.madE	670,913	4,965,509	599.3	Normal Operation
CRII-17	GE2.3 116RD 80HH r2.madE	674,945	4,965,753	589.0	Normal Operation
CRII-18	GE2.3 116RD 80HH r2.madE	672,601	4,965,770	605.9	LNTE
CRII-19	GE2.3 116RD 90HH r2.madE	661,200	4,965,795	588.0	Normal Operation
CRII-20	GE2.3 116RD 90HH r2.madE	673,203	4,965,803	598.1	LNTE
CRII-21	GE2.3 116RD 80HH r2.madE	669,253	4,966,080	599.4	Normal Operation
CRII-22	GE2.3 116RD 90HH r2.madE	662,014	4,966,215	588.0	Normal Operation
CRII-23	GE2.3 116RD 90HH r2.madE	662,811	4,966,264	589.9	Normal Operation
CRII-24	GE2.3 116RD 90HH r2.madE	675,403	4,966,303	585.0	LNTE
CRII-25	GE2.3 116RD 90HH r2.madE	661,425	4,966,745	588.0	Normal Operation
CRII-26	GE2.3 116RD 90HH r2.madE	660,209	4,966,765	576.0	Normal Operation
CRII-27	GE2.3 116RD 90HH r2.madE	667,732	4,966,874	579.0	Normal Operation
CRII-28	GE2.3 116RD 90HH r2.madE	664,581	4,966,932	578.2	LNTE
CRII-29	GE2.3 116RD 90HH r2.madE	672,573	4,966,992	597.0	LNTE
CRII-30	GE2.3 116RD 90HH r2.madE	675,513	4,967,261	581.5	LNTE
CRII-31	GE2.3 116RD 90HH r2.madE	674,175	4,967,380	592.8	LNTE
CRII-32	GE2.3 116RD 90HH r2.madE	671,344	4,967,239	599.0	Normal Operation
CRII-33	GE2.3 116RD 90HH r2.madE	674,929	4,967,436	588.7	Normal Operation
CRII-34	GE2.3 116RD 90HH r2.madE	667,754	4,967,680	580.4	LNTE
CRII-35	GE2.3 116RD 90HH r2.madE	675,641	4,967,746	577.5	LNTE
CRII-36	GE2.3 116RD 90HH r2.madE	669,703	4,968,108	596.8	Normal Operation
CRII-37	GE2.3 116RD 80HH r2.madE	673,159	4,968,199	596.9	LNTE
CRII-38	GE2.3 116RD 90HH r2.madE	673,748	4,968,230	594.0	LNTE
CRII-39	GE2.3 116RD 90HH r2.madE	664,482	4,968,373	585.0	Normal Operation
CRII-40	GE2.3 116RD 90HH r2.madE	663,447	4,968,418	592.5	Normal Operation
CRII-41	GE2.3 116RD 90HH r2.madE	665,827	4,968,475	585.8	Normal Operation

Crowned Ridge II Wind Farm
GE 2.1-116-80 m HH, GE 2.3-116-90 m HH, GE 2.3-116-80 m HH WTG's
UTM NAD83 Zone 14
continued

WTG	Turbine Type	Easting (m)	Northing (m)	Base Elev. AMSL (m)	Sound Profile
CRII-42	GE2.3 116RD 90HH r2.madE	668,455	4,968,482	595.7	Normal Operation
CRII-43	GE2.3 116RD 90HH r2.madE	667,376	4,968,511	586.6	Normal Operation
CRII-44	GE2.3 116RD 90HH r2.madE	672,498	4,968,577	600.0	Normal Operation
CRII-45	GE2.3 116RD 80HH r2.madE	673,072	4,968,788	597.5	Normal Operation
CRII-46	GE2.3 116RD 90HH r2.madE	671,213	4,968,978	600.0	Normal Operation
CRII-47	GE2.3 116RD 80HH r2.madE	670,606	4,968,910	597.8	Normal Operation
CRII-48	GE2.3 116RD 80HH r2.madE	669,752	4,968,912	594.0	Normal Operation
CRII-49	GE2.3 116RD 90HH r2.madE	662,575	4,969,126	594.0	LNTE
CRII-50	GE2.3 116RD 90HH r2.madE	675,428	4,969,085	577.8	Normal Operation
CRII-51	GE2.3 116RD 90HH r2.madE	666,174	4,969,250	597.0	Normal Operation
CRII-52	GE2.3 116RD 90HH r2.madE	667,344	4,969,319	598.2	Normal Operation
CRII-53	GE2.3 116RD 90HH r2.madE	668,037	4,969,495	598.0	Normal Operation
CRII-54	GE2.3 116RD 90HH r2.madE	675,726	4,969,723	570.0	Normal Operation
CRII-55	GE2.3 116RD 90HH r2.madE	666,872	4,970,279	606.0	Normal Operation
CRII-56	GE2.3 116RD 90HH r2.madE	666,135	4,970,237	593.4	Normal Operation
CRII-57	GE2.3 116RD 90HH r2.madE	667,670	4,970,471	608.9	Normal Operation
CRII-58	GE2.3 116RD 90HH r2.madE	671,619	4,972,700	594.0	Normal Operation
CRII-59	GE2.3 116RD 90HH r2.madE	668,248	4,973,458	612.4	Normal Operation
CRII-60	GE2.3 116RD 90HH r2.madE	670,973	4,973,527	597.0	Normal Operation
CRII-61	GE2.3 116RD 90HH r2.madE	667,589	4,973,910	615.0	Normal Operation
CRII-62	GE2.3 116RD 80HH r2.madE	670,983	4,974,414	594.0	Normal Operation
CRII-63	GE2.3 116RD 90HH r2.madE	668,350	4,974,115	615.8	Normal Operation
CRII-64	GE2.3 116RD 90HH r2.madE	666,982	4,974,334	615.0	LNTE
CRII-65	GE2.3 116RD 90HH r2.madE	661,369	4,974,608	600.0	Normal Operation
CRII-66	GE2.3 116RD 90HH r2.madE	667,711	4,974,761	612.8	Normal Operation
CRII-67	GE2.3 116RD 90HH r2.madE	662,077	4,974,986	604.2	LNTE
CRII-69	GE2.3 116RD 90HH r2.madE	666,524	4,975,244	614.7	Normal Operation
CRII-70	GE2.3 116RD 90HH r2.madE	672,450	4,975,264	577.5	Normal Operation
CRII-71	GE2.3 116RD 90HH r2.madE	659,668	4,975,487	579.5	Normal Operation
CRII-72	GE2.3 116RD 90HH r2.madE	660,366	4,975,523	591.0	Normal Operation
CRII-73	GE2.3 116RD 90HH r2.madE	670,963	4,975,812	590.8	Normal Operation
CRII-74	GE2.3 116RD 90HH r2.madE	669,779	4,975,861	603.0	Normal Operation
CRII-75	GE2.3 116RD 90HH r2.madE	665,849	4,975,895	607.7	Normal Operation
CRII-76	GE2.3 116RD 90HH r2.madE	663,309	4,976,260	597.0	Normal Operation
CRII-77	GE2.3 116RD 90HH r2.madE	660,889	4,976,403	594.0	LNTE
CRII-78	GE2.1 116RD 80HH rev2.mad	670,593	4,976,444	594.0	Normal Operation
CRII-79	GE2.3 116RD 90HH r2.madE	659,556	4,976,577	576.0	Normal Operation
CRII-80	GE2.1 116RD 80HH rev2.mad	670,089	4,976,781	597.0	Normal Operation
CRII-81	GE2.3 116RD 90HH r2.madE	666,460	4,976,852	615.0	Normal Operation
CRII-82	GE2.3 116RD 90HH r2.madE	664,868	4,977,195	606.0	Normal Operation
CRII-83	GE2.3 116RD 90HH r2.madE	659,267	4,977,221	569.2	Normal Operation

Crowned Ridge II Wind Farm
GE 2.1-116-80 m HH, GE 2.3-116-90 m HH, GE 2.3-116-80 m HH WTG's
UTM NAD83 Zone 14
continued

WTG	Turbine Type	Easting (m)	Northing (m)	Base Elev. AMSL (m)	Sound Profile
CRII-84	GE2.3 116RD 90HH r2.madE	661,202	4,977,297	585.0	Normal Operation
CRII-85	GE2.1 116RD 80HH rev2.mad	670,104	4,977,199	594.7	LNTE
CRII-86	GE2.1 116RD 80HH rev2.mad	668,086	4,977,549	606.0	Normal Operation
CRII-87	GE2.1 116RD 80HH rev2.mad	668,884	4,977,561	593.6	Normal Operation
CRII-88	GE2.3 116RD 90HH r2.madE	666,503	4,978,327	612.2	Normal Operation
CRII-89	GE2.1 116RD 80HH rev2.mad	667,591	4,978,362	615.0	Normal Operation
CRII-90	GE2.1 116RD 80HH rev2.mad	670,109	4,978,176	589.0	Normal Operation
CRII-91	GE2.1 116RD 80HH rev2.mad	668,348	4,978,315	600.1	LNTE
CRII-92	GE2.3 116RD 80HH r2.madE	664,354	4,978,724	594.9	Normal Operation
CRII-93	GE2.3 116RD 90HH r2.madE	665,882	4,978,374	609.0	Normal Operation
CRII-94	GE2.1 116RD 80HH rev2.mad	667,644	4,978,955	607.9	LNTE
CRII-95	GE2.3 116RD 80HH r2.madE	666,647	4,979,039	615.0	Normal Operation
CRII-96	GE2.3 116RD 90HH r2.madE	665,082	4,979,106	604.6	Normal Operation
CRII-97	GE2.1 116RD 80HH rev2.mad	668,163	4,979,177	586.4	Normal Operation
CRII-98	GE2.1 116RD 80HH rev2.mad	670,003	4,979,175	585.2	Normal Operation
CRII-99	GE2.3 116RD 80HH r2.madE	665,723	4,979,545	607.2	Normal Operation
CRII-100	GE2.3 116RD 80HH r2.madE	666,675	4,979,716	613.8	Normal Operation
CRII-101	GE2.3 116RD 80HH r2.madE	665,960	4,980,327	606.0	Normal Operation
CRII-102	GE2.1 116RD 80HH rev2.mad	667,903	4,980,491	600.0	Normal Operation
CRII-103	GE2.3 116RD 80HH r2.madE	666,467	4,980,722	608.9	Normal Operation
CRII-104	GE2.3 116RD 90HH r2.madE	662,560	4,981,078	588.0	Normal Operation
CRII-105	GE2.3 116RD 90HH r2.madE	663,201	4,981,245	594.0	Normal Operation
CRII-106	GE2.3 116RD 90HH r2.madE	661,170	4,981,296	586.1	Normal Operation
CRII-107	GE2.1 116RD 80HH rev2.mad	666,729	4,981,576	598.5	Normal Operation
CRII-108	GE2.1 116RD 80HH rev2.mad	667,242	4,981,585	592.4	Normal Operation
CRII-110	GE2.3 116RD 90HH r2.madE	665,644	4,981,745	608.3	Normal Operation
CRII-111	GE2.3 116RD 90HH r2.madE	661,513	4,981,963	591.0	Normal Operation
CRII-112	GE2.3 116RD 90HH r2.madE	664,889	4,982,000	612.8	Normal Operation
CRII-113	GE2.3 116RD 90HH r2.madE	665,950	4,982,352	609.8	LNTE
CRII-114	GE2.3 116RD 90HH r2.madE	665,029	4,982,755	613.4	Normal Operation
CRII-115	GE2.1 116RD 80HH rev2.mad	667,423	4,982,834	585.5	Normal Operation
CRII-116	GE2.3 116RD 90HH r2.madE	664,098	4,982,988	603.0	Normal Operation
CRII-117	GE2.3 116RD 90HH r2.madE	666,339	4,983,199	600.0	LNTE
CRII-118	GE2.3 116RD 90HH r2.madE	665,536	4,983,411	608.0	Normal Operation
CRII-119	GE2.3 116RD 90HH r2.madE	664,901	4,983,463	603.4	LNTE
CRII-120	GE2.3 116RD 90HH r2.madE	662,307	4,983,683	592.6	Normal Operation
CRII-121	GE2.3 116RD 90HH r2.madE	666,651	4,983,822	588.7	Normal Operation
CRII-122	GE2.3 116RD 90HH r2.madE	662,977	4,983,870	603.0	Normal Operation
CRII-123	GE2.3 116RD 90HH r2.madE	663,421	4,984,335	606.0	Normal Operation
CRII-124	GE2.3 116RD 90HH r2.madE	664,181	4,984,488	606.0	Normal Operation
CRII-125	GE2.3 116RD 90HH r2.madE	664,784	4,984,583	604.3	Normal Operation

Crowned Ridge II Wind Farm
GE 2.1-116-80 m HH, GE 2.3-116-90 m HH, GE 2.3-116-80 m HH WTG's
UTM NAD83 Zone 14
continued

WTG	Turbine Type	Easting (m)	Northing (m)	Base Elev. AMSL (m)	Sound Profile
CRII-126	GE2.3 116RD 90HH r2.madE	664,219	4,985,199	607.2	Normal Operation
CRII-127	GE2.3 116RD 90HH r2.madE	665,748	4,985,299	600.0	LNTE
CRII-128	GE2.3 116RD 90HH r2.madE	667,329	4,985,347	582.0	Normal Operation
CRII-129	GE2.3 116RD 90HH r2.madE	664,879	4,985,433	609.0	Normal Operation
CRII-130	GE2.3 116RD 90HH r2.madE	665,620	4,986,146	599.4	Normal Operation
CRII-131	GE2.3 116RD 90HH r2.madE	665,556	4,986,863	596.1	Normal Operation
CRII-132	GE2.3 116RD 90HH r2.madE	664,683	4,987,036	606.9	Normal Operation
CRII-134	GE2.3 116RD 90HH r2.madE	660,955	4,983,386	588.5	Normal Operation
CRII-133	GE2.3 116RD 90HH r2.madE	664,584	4,986,211	606.6	Normal Operation
CRII-Alt3	GE2.3 116RD 90HH r2.madE	663,055	4,985,480	610.2	Normal Operation
CRII-Alt4	GE2.3 116RD 90HH r2.madE	661,648	4,985,388	595.8	Normal Operation

APPENDIX C: TABLE OF SOUND RESULTS

Table C-1: Crowned Ridge II Sound Level Tabular Results Sorted by Receptor ID
Realistic case sound results at land parcel boundaries and occupied structures
Results using GE 2.3-116-90 m HH, GE 2.3-116-80 m HH WTG's
UTM NAD83 Zone 14
Codington County

Noise Receptor #	Participation Status	Type	Easting (m)	Northing (m)	Elevation AMSL (m)	Real Case Sound (dB(A))	Distance to Nearest Turbine (ft)
CR2-C1-NP	Non-P	Boundary	662,584	4,980,838	590.6	48.9	791
CR2-C3-NP	Non-P	Boundary	664,056	4,964,720	555.0	34.9	6,506
CR1-C4-NP	Non-P	Boundary	659,890	4,985,620	605.4	40.5	3,914
CR1-C7-NP	Non-P	Boundary	661,266	4,985,387	591.0	46.6	1,253
CR2-C7-NP	Non-P	Boundary	666,417	4,966,621	582.0	38.5	4,393
CR1-C8-P	Participant	Boundary	661,277	4,984,852	597.6	43.1	2,139
CR1-C9-P	Participant	Boundary	665,421	4,985,265	609.0	49.5	1,079
CR2-C10-NP	Non-P	Boundary	664,808	4,966,574	561.0	43.7	1,391
CR1-C10-P	Participant	Boundary	662,869	4,985,477	601.4	52.2	610
CR1-C11-P	Participant	Boundary	664,444	4,985,206	608.6	52.0	738
CR1-C12-P	Participant	Boundary	662,067	4,985,677	604.9	45.3	1,670
CR1-C13-P	Participant	Boundary	664,410	4,986,207	615.0	53.3	574
CR1-C15-P	Participant	Boundary	663,047	4,985,700	612.8	`	722
CR2-C16-NP	Non-P	Boundary	664,794	4,966,949	569.9	49.4	699
CR1-C16-NP	Non-P	Boundary	661,642	4,985,677	597.0	48.8	948
CR1-C18-P	Participant	Boundary	664,126	4,986,525	610.2	52.4	591
CR1-C20-P	Participant	Boundary	662,024	4,987,612	604.8	51.0	640
CR2-C22-NP	Non-P	Boundary	661,457	4,972,769	597.2	34.4	6,040
CR2-C23-NP	Non-P	Boundary	664,177	4,969,547	594.0	39.3	3,980
CR2-C24-NP	Non-P	Boundary	662,346	4,969,319	600.0	46.5	981
CR2-C26-P	Participant	Boundary	664,502	4,968,179	580.9	51.6	640
CR2-C27-P	Participant	Boundary	662,571	4,969,314	587.3	50.3	617
CR1-C28-NP	Non-P	Boundary	665,432	4,989,009	583.9	44.9	1,483
CR2-C28-P	Participant	Boundary	659,999	4,968,048	567.3	36.2	4,265
CR2-C29-NP	Non-P	Boundary	662,350	4,969,119	594.8	48.8	738
CR1-C29-NP	Non-P	Boundary	666,496	4,989,001	573.9	42.7	1,952
CR2-C30-NP	Non-P	Boundary	659,189	4,967,871	566.6	34.3	4,938
CR1-C31-NP	Non-P	Boundary	665,639	4,989,013	584.6	44.5	1,637
CR2-C31-P	Participant	Boundary	662,322	4,974,389	606.0	41.4	2,116
CR2-C32-P	Participant	Boundary	660,020	4,967,239	573.0	43.4	1,673
CR2-C33-P	Participant	Boundary	663,195	4,966,498	577.8	45.0	1,476
CR2-C35-NP	Non-P	Boundary	659,126	4,974,667	557.0	37.6	3,225
CR2-C36-NP	Non-P	Boundary	660,716	4,974,757	580.4	42.6	2,198
CR2-C37-NP	Non-P	Boundary	662,306	4,974,989	606.0	48.9	751
CR2-C38-P	Participant	Boundary	661,602	4,966,757	585.7	52.6	581
CR2-C39-NP	Non-P	Boundary	664,406	4,966,558	559.0	43.9	1,355
CR2-C40-NP	Non-P	Boundary	659,711	4,975,130	583.8	45.6	1,178
CR2-C41-P	Participant	Boundary	661,903	4,974,984	598.5	51.2	571
CR2-C42-NP	Non-P	Boundary	665,527	4,975,894	598.4	47.8	1,056

Table C-1: Crowned Ridge II Sound Level Tabular Results Sorted by Receptor ID
Realistic case sound results at land parcel boundaries and occupied structures
Results using GE 2.3-116-90 m HH, GE 2.3-116-80 m HH WTG's
UTM NAD83 Zone 14
Codington County
continued

Noise Receptor #	Participation Status	Type	Easting (m)	Northing (m)	Elevation AMSL (m)	Real Case Sound (dB(A))	Distance to Nearest Turbine (ft)
CR2-C43-NP	Non-P	Boundary	663,896	4,976,057	597.0	42.4	2,037
CR2-C44-NP	Non-P	Boundary	659,186	4,966,434	555.0	36.9	3,527
CR2-C46-NP	Non-P	Boundary	660,215	4,966,435	582.0	47.3	1,083
CR2-C47-NP	Non-P	Boundary	662,128	4,975,739	595.1	41.1	2,477
CR2-C48-P	Participant	Boundary	661,624	4,965,184	585.0	50.8	722
CR2-C49-NP	Non-P	Boundary	661,059	4,965,032	582.0	42.3	2,546
CR2-C50-P	Participant	Boundary	660,674	4,976,401	574.6	49.6	705
CR2-C51-NP	Non-P	Boundary	662,863	4,964,873	581.6	39.0	3,497
CR2-C52-NP	Non-P	Boundary	662,432	4,964,852	572.4	41.8	2,218
CR2-C53-NP	Non-P	Boundary	661,853	4,964,839	578.5	47.0	1,138
CR2-C54-P	Participant	Boundary	663,491	4,976,273	597.0	52.0	597
CR2-C55-NP	Non-P	Boundary	660,848	4,964,816	582.0	39.6	3,412
CR2-C57-P	Participant	Boundary	666,460	4,976,513	615.0	46.7	1,112
CR2-C59-P	Participant	Boundary	664,882	4,976,884	603.0	48.1	1,024
CR2-C61-P	Participant	Boundary	659,867	4,976,754	580.2	47.4	1,175
CR2-C62-NP	Non-P	Boundary	666,690	4,976,912	612.0	48.9	781
CR2-C63-P	Participant	Boundary	666,292	4,977,116	610.5	47.1	1,027
CR2-C64-NP	Non-P	Boundary	661,628	4,964,834	577.7	45.6	1,355
CR2-C65-P	Participant	Boundary	665,469	4,978,393	606.0	47.3	1,355
CR2-C66-NP	Non-P	Boundary	661,867	4,964,063	571.5	37.2	3,684
CR2-C67-NP	Non-P	Boundary	660,639	4,978,403	556.5	38.0	4,071
CR2-C68-NP	Non-P	Boundary	662,455	4,963,673	579.0	34.4	5,354
CR2-C69-NP	Non-P	Boundary	661,200	4,977,610	571.5	47.7	1,027
CR1-C70-NP	Non-P	Boundary	664,953	4,987,981	596.1	42.7	3,225
CR2-C70-P	Participant	Boundary	665,687	4,970,178	584.1	45.4	1,483
CR1-C71-NP	Non-P	Boundary	664,658	4,987,355	600.0	48.6	1,050
CR2-C71-NP	Non-P	Boundary	665,511	4,970,237	582.0	43.1	2,047
CR2-C72-NP	Non-P	Boundary	663,905	4,970,351	595.8	36.6	5,932
CR1-C73-NP	Non-P	Boundary	663,740	4,982,989	591.8	47.7	1,175
CR2-C74-NP	Non-P	Boundary	660,737	4,969,659	585.4	33.5	6,279
CR2-C75-NP	Non-P	Boundary	665,533	4,969,027	576.5	44.7	2,051
CR1-C77-P	Participant	Boundary	660,965	4,983,217	584.2	52.6	558
CR2-C77-P	Participant	Boundary	663,118	4,969,535	597.5	40.7	2,231
CR2-C78-P	Participant	Boundary	665,321	4,983,408	608.6	52.3	705
CR1-C78-P	Participant	Boundary	660,512	4,983,386	603.0	45.0	1,453
CR2-C79-NP	Non-P	Boundary	666,033	4,985,328	595.6	49.3	938
CR1-C80-NP	Non-P	Boundary	659,702	4,983,540	603.3	38.1	4,140
CR2-C80-NP	Non-P	Boundary	665,496	4,971,451	597.2	37.9	4,501

Table C-1: Crowned Ridge II Sound Level Tabular Results Sorted by Receptor ID
Realistic case sound results at land parcel boundaries and occupied structures
Results using GE 2.3-116-90 m HH, GE 2.3-116-80 m HH WTG's
UTM NAD83 Zone 14
Codington County
continued

Noise Receptor #	Participation Status	Type	Easting (m)	Northing (m)	Elevation AMSL (m)	Real Case Sound (dB(A))	Distance to Nearest Turbine (ft)
CR1-C81-NP	Non-P	Boundary	660,516	4,983,200	595.9	44.5	1,565
CR1-C84-NP	Non-P	Boundary	659,727	4,982,360	601.2	37.5	5,249
CR1-C85-NP	Non-P	Boundary	659,751	4,981,560	587.2	37.2	4,734
CR1-C86-P	Participant	Boundary	661,252	4,981,612	588.9	49.1	1,070
CR2-C87-NP	Non-P	Boundary	662,984	4,971,065	603.0	34.5	6,503
CR1-C88-NP	Non-P	Boundary	660,588	4,980,432	558.0	38.7	3,419
CR2-C89-NP	Non-P	Boundary	662,311	4,971,010	603.0	34.1	6,240
CR2-C91-NP	Non-P	Boundary	664,277	4,970,516	594.0	36.8	6,165
CR2-C92-NP	Non-P	Boundary	663,902	4,970,529	598.8	36.2	6,335
CR2-C93-NP	Non-P	Boundary	659,946	4,973,545	578.4	35.0	5,827
CR2-C95-NP	Non-P	Boundary	659,720	4,974,150	561.0	36.7	4,390
CR2-C97-NP	Non-P	Boundary	660,676	4,976,379	589.5	49.7	702
CR2-C99-P	Participant	Boundary	660,638	4,972,764	578.7	33.8	6,509
CR2-C101-P	Participant	Boundary	660,750	4,973,563	585.9	36.9	3,986
CR2-C102-NP	Non-P	Boundary	661,830	4,976,324	592.3	40.7	3,097
CR2-C104-NP	Non-P	Boundary	661,932	4,972,776	603.0	34.5	6,286
CR2-C107-NP	Non-P	Boundary	662,229	4,977,633	564.3	39.1	3,547
CR2-C112-NP	Non-P	Boundary	666,270	4,972,900	602.5	38.0	5,253
CR2-C115-NP	Non-P	Boundary	663,174	4,980,856	561.8	46.7	1,280
CR2-C116-NP	Non-P	Boundary	664,683	4,976,890	600.0	46.9	1,171
CR2-C118-NP	Non-P	Boundary	665,548	4,975,288	600.2	42.8	2,224
CR2-C123-P	Participant	Boundary	666,399	4,967,425	573.4	40.5	3,924
CR2-C128-P	Participant	Boundary	667,185	4,968,243	579.7	48.2	1,079
CR2-C134-NP	Non-P	Boundary	666,749	4,974,324	611.2	49.3	768
CR2-C135-NP	Non-P	Boundary	667,221	4,966,634	591.0	43.3	1,854
CR2-C137-NP	Non-P	Boundary	659,040	4,979,151	563.8	34.8	6,375
CR2-C142-NP	Non-P	Boundary	657,486	4,977,150	549.0	34.1	5,846
CR2-C143-NP	Non-P	Boundary	657,478	4,977,453	561.4	33.9	5,919
CR2-C151-NP	Non-P	Boundary	663,658	4,964,510	555.9	35.1	6,352
CR2-C153-P	Participant	Boundary	667,124	4,969,320	603.3	51.3	722
CR2-C154-P	Participant	Boundary	660,033	4,966,759	577.9	52.1	577
CR2-C1-NP	Non-P	Structure	662,198	4,980,622	591.0	42.7	1,909
CR2-C2-NP	Non-P	Structure	662,238	4,980,604	591.0	42.8	1,880
CR2-C3-NP	Non-P	Structure	664,345	4,964,571	556.0	34.1	7,497
CR1-C4-NP	Non-P	Structure	659,744	4,984,749	605.9	38.5	5,981
CR1-C5-NP	Non-P	Structure	659,958	4,984,794	605.2	38.8	5,659
CR1-C7-NP	Non-P	Structure	660,893	4,984,861	593.2	41.3	3,022
CR2-C7-NP	Non-P	Structure	665,694	4,966,179	570.1	37.0	4,409

Table C-1: Crowned Ridge II Sound Level Tabular Results Sorted by Receptor ID
Realistic case sound results at land parcel boundaries and occupied structures
Results using GE 2.3-116-90 m HH, GE 2.3-116-80 m HH WTG's
UTM NAD83 Zone 14
Codington County
continued

Noise Receptor #	Participation Status	Type	Easting (m)	Northing (m)	Elevation AMSL (m)	Real Case Sound (dB(A))	Distance to Nearest Turbine (ft)
CR1-C8-P	Participant	Structure	660,532	4,984,445	599.7	40.1	3,740
CR1-C9-P	Participant	Structure	665,352	4,985,004	609.0	47.7	1,621
CR2-C10-NP	Non-P	Structure	665,189	4,966,505	570.0	39.6	2,438
CR1-C10-P	Participant	Structure	663,510	4,985,195	609.0	47.0	1,762
CR1-C11-P	Participant	Structure	664,111	4,985,679	609.0	47.9	1,614
CR1-C12-P	Participant	Structure	662,222	4,985,736	603.0	44.3	2,201
CR1-C12-1-P	Participant	Structure	662,199	4,986,047	606.0	43.6	2,818
CR1-C13-P	Participant	Structure	663,792	4,985,785	612.0	46.9	1,739
CR1-C15-P	Participant	Structure	663,291	4,986,026	615.0	46.1	1,952
CR1-C16-NP	Non-P	Structure	661,960	4,986,288	606.0	43.3	2,736
CR2-C16-NP	Non-P	Structure	665,418	4,966,866	567.0	39.6	2,756
CR1-C18-P	Participant	Structure	663,651	4,987,157	610.5	44.8	2,146
CR1-C20-P	Participant	Structure	663,054	4,987,455	606.0	44.5	2,336
CR1-C21-P	Participant	Structure	660,756	4,984,086	594.8	42.0	2,388
CR2-C22-NP	Non-P	Structure	661,202	4,972,711	597.0	34.2	6,247
CR1-C22-P	Participant	Structure	660,755	4,984,082	594.8	42.0	2,375
CR2-C23-NP	Non-P	Structure	664,069	4,969,661	594.0	38.8	4,439
CR1-C23-P	Participant	Structure	660,619	4,984,078	596.0	41.5	2,523
CR2-C24-NP	Non-P	Structure	661,541	4,969,653	600.0	35.9	3,809
CR1-C24-P	Participant	Structure	660,176	4,983,887	601.0	40.0	3,038
CR1-C25-P	Participant	Structure	660,190	4,983,788	602.4	40.3	2,835
CR2-C26-P	Participant	Structure	664,733	4,968,915	591.0	43.4	1,959
CR2-C27-P	Participant	Structure	662,985	4,968,167	582.0	43.8	1,726
CR1-C28-NP	Non-P	Structure	665,429	4,988,598	590.8	42.1	2,831
CR2-C28-P	Participant	Structure	659,208	4,968,159	572.8	33.6	5,630
CR1-C29-NP	Non-P	Structure	666,572	4,988,867	575.9	41.4	2,457
CR2-C29-NP	Non-P	Structure	661,223	4,968,144	595.1	37.5	4,639
CR2-C30-NP	Non-P	Structure	659,100	4,968,023	568.6	33.6	5,502
CR1-C31-NP	Non-P	Structure	665,939	4,988,950	585.4	43.4	2,126
CR2-C31-P	Participant	Structure	663,117	4,972,923	606.0	34.6	7,579
CR2-C32-P	Participant	Structure	659,469	4,967,984	575.2	35.0	4,678
CR2-C33-P	Participant	Structure	663,878	4,967,612	576.0	41.8	2,999
CR2-C34-P	Participant	Structure	663,934	4,966,991	570.3	41.5	2,133
CR2-C35-NP	Non-P	Structure	658,964	4,974,334	566.8	35.5	4,432
CR2-C36-NP	Non-P	Structure	660,475	4,974,426	578.6	40.1	2,992
CR2-C37-NP	Non-P	Structure	663,037	4,974,496	606.0	38.0	3,537
CR2-C38-P	Participant	Structure	660,874	4,966,929	585.9	44.6	1,906
CR2-C39-NP	Non-P	Structure	664,089	4,966,486	566.1	40.9	2,178

Table C-1: Crowned Ridge II Sound Level Tabular Results Sorted by Receptor ID
Realistic case sound results at land parcel boundaries and occupied structures
Results using GE 2.3-116-90 m HH, GE 2.3-116-80 m HH WTG's
UTM NAD83 Zone 14
Codington County
continued

Noise Receptor #	Participation Status	Type	Easting (m)	Northing (m)	Elevation AMSL (m)	Real Case Sound (dB(A))	Distance to Nearest Turbine (ft)
CR2-C40-NP	Non-P	Structure	659,189	4,974,765	578.3	38.5	2,841
CR2-C41-P	Participant	Structure	660,770	4,975,147	596.1	43.6	1,811
CR2-C42-NP	Non-P	Structure	664,887	4,975,388	597.0	39.7	3,566
CR2-C43-NP	Non-P	Structure	664,382	4,975,544	597.0	39.1	4,232
CR2-C44-NP	Non-P	Structure	659,145	4,966,062	561.0	35.8	4,183
CR2-C45-NP	Non-P	Structure	664,058	4,965,862	570.0	38.1	3,907
CR2-C46-NP	Non-P	Structure	660,435	4,965,627	582.0	41.3	2,569
CR2-C47-NP	Non-P	Structure	662,200	4,975,837	596.2	40.7	2,821
CR2-C48-P	Participant	Structure	662,370	4,965,588	590.4	44.7	2,172
CR2-C49-NP	Non-P	Structure	660,907	4,964,846	582.0	40.1	3,258
CR2-C50-P	Participant	Structure	661,252	4,976,035	597.0	43.5	1,696
CR2-C51-NP	Non-P	Structure	662,977	4,964,794	583.9	38.1	3,934
CR2-C52-NP	Non-P	Structure	662,688	4,964,792	586.2	39.5	3,054
CR2-C53-NP	Non-P	Structure	662,401	4,964,782	582.0	41.5	2,257
CR2-C54-P	Participant	Structure	662,636	4,976,079	597.0	41.8	2,287
CR2-C55-NP	Non-P	Structure	660,765	4,964,777	582.0	38.9	3,632
CR2-C56-NP	Non-P	Structure	660,759	4,964,737	582.0	38.7	3,760
CR2-C57-P	Participant	Structure	666,667	4,976,162	613.6	43.6	2,362
CR2-C58-NP	Non-P	Structure	660,764	4,964,686	582.0	38.4	3,904
CR2-C59-P	Participant	Structure	664,952	4,976,698	601.5	44.6	1,654
CR2-C60-P	Participant	Structure	662,287	4,976,800	594.0	39.9	3,793
CR2-C61-P	Participant	Structure	660,630	4,976,840	582.5	44.5	1,667
CR2-C62-NP	Non-P	Structure	666,992	4,977,048	615.0	43.9	1,860
CR2-C63-P	Participant	Structure	665,528	4,977,285	612.0	43.9	2,185
CR2-C64-NP	Non-P	Structure	660,901	4,964,220	582.0	36.4	4,429
CR2-C65-P	Participant	Structure	665,217	4,977,746	609.0	44.3	2,139
CR1-C66-NP	Non-P	Structure	659,718	4,985,032	606.0	38.9	5,800
CR2-C66-NP	Non-P	Structure	662,396	4,963,954	582.0	35.8	4,429
CR1-C67-NP	Non-P	Structure	659,789	4,985,057	606.0	39.0	5,791
CR2-C67-NP	Non-P	Structure	660,379	4,978,592	556.2	37.1	5,033
CR2-C68-NP	Non-P	Structure	662,517	4,963,408	579.0	33.3	6,237
CR1-C68-P	Participant	Structure	662,652	4,987,606	609.0	45.4	2,146
CR2-C69-NP	Non-P	Structure	661,701	4,978,792	564.0	37.3	5,171
CR1-C69-P	Participant	Structure	662,685	4,987,619	609.0	45.3	2,185
CR1-C70-NP	Non-P	Structure	665,135	4,988,293	595.7	42.0	3,540
CR2-C70-P	Participant	Structure	665,521	4,970,518	588.1	42.3	2,215
CR1-C71-NP	Non-P	Structure	665,137	4,988,378	594.6	42.1	3,448
CR2-C71-NP	Non-P	Structure	665,411	4,970,503	586.0	41.4	2,529

Table C-1: Crowned Ridge II Sound Level Tabular Results Sorted by Receptor ID
Realistic case sound results at land parcel boundaries and occupied structures
Results using GE 2.3-116-90 m HH, GE 2.3-116-80 m HH WTG's
UTM NAD83 Zone 14
Codington County
continued

Noise Receptor #	Participation Status	Type	Easting (m)	Northing (m)	Elevation AMSL (m)	Real Case Sound (dB(A))	Distance to Nearest Turbine (ft)
CR1-C72-NP	Non-P	Structure	665,158	4,988,170	595.2	42.1	3,776
CR2-C72-NP	Non-P	Structure	663,856	4,970,488	597.0	36.3	6,135
CR1-C73-NP	Non-P	Structure	663,066	4,982,530	591.0	42.5	3,704
CR1-C74-NP	Non-P	Structure	662,869	4,983,122	595.9	44.3	2,480
CR2-C74-NP	Non-P	Structure	660,687	4,969,931	586.5	33.1	6,732
CR1-C75-NP	Non-P	Structure	663,010	4,982,658	588.0	42.6	3,730
CR2-C75-NP	Non-P	Structure	664,866	4,969,808	583.5	39.7	4,396
CR1-C76-NP	Non-P	Structure	662,981	4,982,580	588.5	42.4	3,901
CR2-C76-NP	Non-P	Structure	664,747	4,969,738	584.6	39.5	4,560
CR1-C77-P	Participant	Structure	661,915	4,983,367	591.0	45.3	1,654
CR2-C77-P	Participant	Structure	663,865	4,969,694	597.0	38.6	4,406
CR2-C78-P	Participant	Structure	665,273	4,983,933	608.3	47.2	1,919
CR1-C78-P	Participant	Structure	660,190	4,983,788	602.4	40.3	2,835
CR2-C79-NP	Non-P	Structure	666,869	4,984,663	587.9	43.5	2,703
CR1-C79-P	Participant	Structure	660,452	4,983,750	595.9	42.5	2,037
CR1-C80-NP	Non-P	Structure	659,351	4,983,174	604.3	36.9	5,308
CR2-C80-NP	Non-P	Structure	664,705	4,972,092	597.3	35.5	7,684
CR1-C81-NP	Non-P	Structure	660,062	4,983,083	597.0	39.7	3,094
CR1-C84-NP	Non-P	Structure	659,607	4,982,216	594.3	37.0	5,856
CR1-C85-NP	Non-P	Structure	659,706	4,981,419	588.0	36.9	4,819
CR2-C86-NP	Non-P	Structure	662,880	4,971,302	603.0	34.2	7,208
CR1-C86-P	Participant	Structure	662,086	4,982,135	585.0	44.0	1,962
CR1-C87-NP	Non-P	Structure	662,628	4,982,425	585.3	42.1	3,960
CR2-C87-NP	Non-P	Structure	662,841	4,971,294	603.0	34.2	7,165
CR1-C88-NP	Non-P	Structure	660,156	4,980,595	570.9	37.6	4,045
CR2-C89-NP	Non-P	Structure	662,244	4,971,076	603.0	33.9	6,489
CR1-C89-P	Participant	Structure	662,062	4,982,029	584.3	44.5	1,814
CR2-C90-NP	Non-P	Structure	664,088	4,970,672	594.4	36.2	6,863
CR2-C91-NP	Non-P	Structure	663,938	4,970,546	597.0	36.2	6,457
CR2-C92-NP	Non-P	Structure	663,855	4,970,535	597.0	36.2	6,247
CR2-C93-NP	Non-P	Structure	659,203	4,973,158	584.8	32.8	7,792
CR2-C94-NP	Non-P	Structure	659,202	4,973,052	584.0	32.6	8,133
CR2-C95-NP	Non-P	Structure	659,248	4,974,054	567.5	35.3	4,898
CR2-C96-NP	Non-P	Structure	659,316	4,974,063	570.4	35.5	4,813
CR2-C97-NP	Non-P	Structure	660,093	4,976,001	583.8	44.8	1,804
CR2-C98-NP	Non-P	Structure	660,155	4,976,007	582.5	44.8	1,732
CR2-C99-P	Participant	Structure	660,584	4,972,570	591.0	33.4	7,165
CR2-C100-P	Participant	Structure	660,592	4,972,602	591.0	33.4	7,057

Table C-1: Crowned Ridge II Sound Level Tabular Results Sorted by Receptor ID
Realistic case sound results at land parcel boundaries and occupied structures
Results using GE 2.3-116-90 m HH, GE 2.3-116-80 m HH WTG's
UTM NAD83 Zone 14
Codington County
continued

Noise Receptor #	Participation Status	Type	Easting (m)	Northing (m)	Elevation AMSL (m)	Real Case Sound (dB(A))	Distance to Nearest Turbine (ft)
CR2-C101-P	Participant	Structure	660,732	4,972,807	591.0	34.0	6,266
CR2-C102-NP	Non-P	Structure	662,025	4,976,085	594.0	40.3	3,609
CR2-C103-NP	Non-P	Structure	662,046	4,976,067	594.2	40.3	3,547
CR2-C104-NP	Non-P	Structure	662,109	4,972,735	604.0	34.4	6,608
CR2-C105-NP	Non-P	Structure	662,122	4,976,029	595.6	40.3	3,425
CR2-C106-NP	Non-P	Structure	662,165	4,972,711	604.7	34.4	6,749
CR2-C107-NP	Non-P	Structure	662,265	4,978,194	576.0	38.0	4,564
CR2-C109-P	Participant	Structure	662,699	4,972,874	606.0	34.6	7,169
CR2-C112-NP	Non-P	Structure	665,928	4,972,630	603.0	37.0	6,575
CR2-C115-NP	Non-P	Structure	663,555	4,980,564	575.1	42.2	2,520
CR2-C116-NP	Non-P	Structure	664,640	4,976,142	591.0	40.7	3,533
CR2-C117-NP	Non-P	Structure	664,742	4,976,142	594.0	40.9	3,481
CR2-C118-NP	Non-P	Structure	665,014	4,974,639	600.0	38.2	4,947
CR2-C119-NP	Non-P	Structure	665,052	4,974,682	600.0	38.4	4,760
CR2-C123-P	Participant	Structure	666,146	4,966,653	579.6	38.1	5,216
CR2-C126-P	Participant	Structure	666,389	4,966,670	584.8	38.5	4,455
CR2-C128-P	Participant	Structure	666,636	4,966,649	589.1	39.2	3,671
CR2-C129-P	Participant	Structure	666,716	4,966,751	591.0	39.8	3,356
CR2-C130-P	Participant	Structure	666,727	4,966,695	591.0	39.7	3,350
CR2-C131-NP	Non-P	Structure	666,732	4,984,987	591.0	43.8	2,287
CR2-C132-NP	Non-P	Structure	666,857	4,985,021	588.6	44.4	1,883
CR2-C133-P	Participant	Structure	666,992	4,967,681	571.1	43.0	2,500
CR2-C134-NP	Non-P	Structure	667,097	4,973,011	613.0	40.7	3,363
CR2-C135-NP	Non-P	Structure	667,172	4,966,196	594.8	40.0	2,884
CR2-C136-NP	Non-P	Structure	667,209	4,966,166	595.3	39.9	2,887
CR2-C137-NP	Non-P	Structure	658,951	4,979,194	568.2	34.6	6,555
CR2-C142-NP	Non-P	Structure	656,697	4,977,269	566.9	31.7	8,432
CR2-C143-NP	Non-P	Structure	657,016	4,977,505	553.3	32.5	7,444
CR2-C151-NP	Non-P	Structure	663,934	4,964,475	555.8	34.4	6,929
CR2-C153-P	Participant	Structure	666,973	4,969,823	609.0	47.4	1,532
CR2-C154-P	Participant	Structure	660,684	4,967,166	588.0	43.3	2,041

Table C-1: Crowned Ridge II Sound Level Tabular Results Sorted by Receptor ID
Realistic case sound results at occupied structures
Results using GE 2.3-116-90 m HH, GE 2.3-116-80 m HH WTG's
UTM NAD83 Zone 14
Deuel County
continued

Noise Receptor #	Participation Status	Type	Easting (m)	Northing (m)	Elevation AMSL (m)	Real Case Sound (dB(A))	Distance to Nearest Turbine (ft)
CR2-D3-P	Participant	Structure	672,390	4,963,482	612.0	46.1	2,037
CR2-D5-NP	Non-P	Structure	668,781	4,964,897	603.0	39.7	3,855
CR2-D6-P	Participant	Structure	668,762	4,967,671	591.0	43.1	2,844
CR2-D9-NP	Non-P	Structure	668,597	4,971,999	611.5	38.5	4,921
CR2-D11-P	Participant	Structure	669,646	4,974,534	604.5	40.9	4,377
CR2-D12-P	Participant	Structure	668,558	4,969,840	604.8	44.0	2,051
CR2-D14-P	Participant	Structure	670,351	4,973,543	606.0	43.1	2,041
CR2-D15-NP	Non-P	Structure	674,387	4,968,515	588.0	43.2	2,297
CR2-D16-P	Participant	Structure	671,626	4,966,693	601.9	44.1	2,018
CR2-D17-NP	Non-P	Structure	672,023	4,969,597	597.0	41.3	3,343
CR2-D18-P	Participant	Structure	671,540	4,976,154	582.0	43.3	2,201
CR2-D19-NP	Non-P	Structure	668,870	4,964,178	606.0	42.2	2,034
CR2-D20-P	Participant	Structure	675,261	4,968,400	578.8	43.9	2,313
CR2-D21-P	Participant	Structure	669,517	4,978,053	595.7	45.4	1,985
CR2-D22-NP	Non-P	Structure	668,798	4,963,767	603.1	41.5	2,142
CR2-D23-NP	Non-P	Structure	669,671	4,980,468	573.0	38.4	4,380
CR2-D30-NP	Non-P	Structure	669,549	4,974,233	611.8	40.8	3,953
CR2-D36-NP	Non-P	Structure	669,812	4,966,746	591.0	41.9	2,854
CR2-D37-P	Participant	Structure	674,048	4,974,071	573.0	34.1	6,542
CR2-D38-P	Participant	Structure	667,108	4,982,083	597.0	46.9	1,693
CR2-D39-P	Participant	Structure	668,443	4,974,627	614.4	45.6	1,706
CR2-D41-P	Participant	Structure	670,437	4,966,409	597.0	42.2	3,340
CR2-D44-P	Participant	Structure	670,434	4,965,956	593.9	44.3	2,149
CR2-D45-NP	Non-P	Structure	668,018	4,976,064	611.4	41.2	4,393
CR2-D46-NP	Non-P	Structure	669,797	4,966,804	591.0	41.8	2,972
CR2-D48-NP	Non-P	Structure	668,923	4,972,998	609.0	41.4	2,680
CR2-D49-P	Participant	Structure	672,024	4,974,135	583.6	40.7	3,537
CR2-D50-P	Participant	Structure	672,015	4,967,209	602.7	44.6	1,965
CR2-D51-NP	Non-P	Structure	675,005	4,970,131	578.2	40.6	2,717
CR2-D52-NP	Non-P	Structure	667,172	4,971,776	606.0	39.2	4,583
CR2-D53-P	Participant	Structure	670,392	4,975,925	592.5	47.2	1,827
CR2-D54-NP	Non-P	Structure	672,012	4,966,477	600.0	43.6	2,500
CR2-D56-P	Participant	Structure	667,119	4,977,925	612.0	45.9	2,110
CR2-D62-NP	Non-P	Structure	669,355	4,974,624	609.0	41.2	3,697
CR2-D63-NP	Non-P	Structure	670,546	4,961,419	615.0	37.6	4,065
CR2-D64-P	Participant	Structure	669,417	4,978,434	588.1	44.3	2,425
CR2-D65-P	Participant	Structure	670,422	4,966,654	597.0	41.8	3,583
CR2-D71-NP	Non-P	Structure	669,402	4,979,216	587.3	43.2	1,975

Table C-1: Crowned Ridge II Sound Level Tabular Results Sorted by Receptor ID
Realistic case sound results at occupied structures
Results using GE 2.3-116-90 m HH, GE 2.3-116-80 m HH WTG's
UTM NAD83 Zone 14
Deuel County
continued

Noise Receptor #	Participation Status	Type	Easting (m)	Northing (m)	Elevation AMSL (m)	Real Case Sound (dB(A))	Distance to Nearest Turbine (ft)
CR2-D72-NP	Non-P	Structure	671,925	4,970,149	602.9	39.0	4,495
CR2-D73-NP	Non-P	Structure	672,072	4,971,556	600.0	37.6	4,035
CR2-D74-NP	Non-P	Structure	668,130	4,976,068	609.2	41.2	4,505
CR2-D75-NP	Non-P	Structure	669,473	4,981,625	570.0	37.1	6,355
CR2-D77-NP	Non-P	Structure	672,044	4,966,468	600.0	43.7	2,444
CR2-D79-NP	Non-P	Structure	672,172	4,974,737	585.0	43.0	1,955
CR2-D82-NP	Non-P	Structure	669,855	4,970,718	603.0	38.2	5,935
CR2-D83-P	Participant	Structure	675,891	4,966,810	579.0	44.0	1,929
CR2-D84-NP	Non-P	Structure	667,159	4,972,169	598.2	38.7	5,535
CR2-D85-P	Participant	Structure	669,593	4,976,302	603.0	46.6	1,572
CR2-D86-P	Participant	Structure	673,842	4,966,875	597.0	43.8	1,985
CR2-D90-NP	Non-P	Structure	670,516	4,962,327	612.0	41.1	3,360
CR2-D91-NP	Non-P	Structure	667,546	4,976,173	618.0	41.4	4,203
CR2-D92-NP	Non-P	Structure	671,159	4,971,610	597.8	38.2	3,881
CR2-D95-NP	Non-P	Structure	671,994	4,971,562	600.0	37.8	3,930
CR2-D96-P	Participant	Structure	672,899	4,971,469	594.0	36.1	5,827
CR2-D97-NP	Non-P	Structure	667,164	4,972,232	600.0	38.7	5,371
CR2-D98-P	Participant	Structure	669,757	4,972,426	606.0	38.2	5,381
CR2-D99-NP	Non-P	Structure	668,148	4,976,230	608.6	41.3	4,331
CR2-D100-NP	Non-P	Structure	668,589	4,972,064	609.8	38.6	4,708
CR2-D101-NP	Non-P	Structure	672,538	4,961,910	613.1	42.3	2,677
CR2-D103-NP	Non-P	Structure	670,588	4,961,119	615.0	36.4	4,606
CR2-D104-NP	Non-P	Structure	670,443	4,961,600	613.8	37.9	4,058
CR2-D105-NP	Non-P	Structure	670,348	4,963,826	611.8	43.0	2,821
CR2-D106-NP	Non-P	Structure	667,315	4,965,297	594.0	36.6	5,351
CR2-D107-NP	Non-P	Structure	670,405	4,966,321	597.0	42.4	3,143
CR2-D108-NP	Non-P	Structure	670,354	4,965,949	594.0	44.2	2,198
CR2-D109-NP	Non-P	Structure	676,885	4,965,806	576.0	37.8	4,432
CR2-D110-P	Participant	Structure	670,270	4,967,731	596.6	43.6	2,234
CR2-D111-P	Participant	Structure	671,876	4,969,006	600.0	44.4	2,178
CR2-D112-NP	Non-P	Structure	667,666	4,971,554	605.0	39.9	3,553
CR2-D113-NP	Non-P	Structure	667,774	4,971,544	607.1	39.9	3,537
CR2-D115-P	Participant	Structure	670,974	4,969,938	606.0	41.0	3,245
CR2-D116-NP	Non-P	Structure	673,491	4,972,398	577.8	35.0	6,220
CR2-D119-P	Participant	Structure	673,378	4,965,126	602.9	45.1	1,932
CR2-D120-NP	Non-P	Structure	673,401	4,964,165	609.0	41.7	3,110
CR2-D121-NP	Non-P	Structure	674,461	4,966,734	594.0	44.1	2,316
CR2-D122-P	Participant	Structure	673,601	4,967,341	594.0	44.5	1,886

Table C-1: Crowned Ridge II Sound Level Tabular Results Sorted by Receptor ID
Realistic case sound results at occupied structures
Results using GE 2.3-116-90 m HH, GE 2.3-116-80 m HH WTG's
UTM NAD83 Zone 14
Deuel County
continued

Noise Receptor #	Participation Status	Type	Easting (m)	Northing (m)	Elevation AMSL (m)	Real Case Sound (dB(A))	Distance to Nearest Turbine (ft)
CR2-D123-P	Participant	Structure	673,527	4,967,015	596.8	43.4	2,441
CR2-D124-P	Participant	Structure	671,911	4,967,745	603.0	43.7	2,493
CR2-D125-P	Participant	Structure	670,404	4,966,786	597.0	41.7	3,422
CR2-D126-NP	Non-P	Structure	670,230	4,967,445	593.0	42.5	2,779
CR2-D127-P	Participant	Structure	668,841	4,969,858	603.0	42.2	2,894
CR2-D128-NP	Non-P	Structure	668,625	4,967,652	588.4	43.3	2,779
CR2-D129-P	Participant	Structure	669,645	4,973,005	606.0	39.3	4,682
CR2-D130-NP	Non-P	Structure	672,090	4,973,207	591.0	41.8	2,270
CR2-D131-P	Participant	Structure	669,471	4,977,139	597.5	46.1	2,087
CR2-D132-NP	Non-P	Structure	669,497	4,974,128	609.0	40.9	3,763
CR2-D133-NP	Non-P	Structure	669,661	4,980,356	576.0	38.7	4,035
CR2-D154-NP	Non-P	Structure	672,205	4,960,261	610.8	33.8	6,496
CR2-D176-P	Participant	Structure	673,641	4,962,583	609.0	39.6	3,304
CR2-D180-NP	Non-P	Structure	671,823	4,960,368	615.0	34.4	5,856
CR2-D189-NP	Non-P	Structure	667,228	4,971,527	606.0	40.1	3,757
CR2-D190-NP	Non-P	Structure	675,131	4,970,954	573.0	36.4	4,485
CR2-D192-P	Participant	Structure	669,283	4,971,621	607.3	37.7	6,499
CR2-D205-NP	Non-P	Structure	670,455	4,960,601	611.7	34.1	6,194
CR2-D206-NP	Non-P	Structure	676,828	4,963,231	588.0	34.0	6,365
CR2-D207-NP	Non-P	Structure	676,828	4,963,280	588.0	34.1	6,250
CR2-D208-NP	Non-P	Structure	676,741	4,964,971	579.0	39.3	3,205
CR2-D212-P	Participant	Structure	667,211	4,969,816	608.3	47.3	1,686
CR2-D213-NP	Non-P	Structure	667,178	4,971,525	606.0	40.0	3,816

Table C-1: Crowned Ridge II Sound Level Tabular Results Sorted by Receptor ID
Realistic case sound results at occupied structures
Results using GE 2.3-116-90 m HH, GE 2.3-116-80 m HH WTG's
UTM NAD83 Zone 14
Grant County
continued

Noise Receptor #	Participation Status	Type	Easting (m)	Northing (m)	Elevation AMSL (m)	Real Case Sound (dB(A))	Distance to Nearest Turbine (ft)
CR2-G8-P	Participant	Structure	668,054	4,985,395	576.0	41.4	2,385
CR2-G9-NP	Non-P	Structure	668,173	4,985,425	570.8	40.3	2,782

Table C-2: Crowned Ridge II Sound Level Tabular Results Sorted by Sound Level
Realistic case sound results at land parcel boundaries and occupied structures
Results using GE 2.3-116-90 m HH, GE 2.3-116-80 m HH WTG's
UTM NAD83 Zone 14
Codington County

Noise Receptor #	Participation Status	Type	Easting (m)	Northing (m)	Elevation AMSL (m)	Real Case Sound (dB(A))	Distance to Nearest Turbine (ft)
CR2-C97-NP	Non-P	Boundary	660,676	4,976,379	589.5	49.7	702
CR2-C16-NP	Non-P	Boundary	664,794	4,966,949	569.9	49.4	699
CR2-C134-NP	Non-P	Boundary	666,749	4,974,324	611.2	49.3	768
CR2-C79-NP	Non-P	Boundary	666,033	4,985,328	595.6	49.3	938
CR2-C1-NP	Non-P	Boundary	662,584	4,980,838	590.6	48.9	791
CR2-C37-NP	Non-P	Boundary	662,306	4,974,989	606.0	48.9	751
CR2-C62-NP	Non-P	Boundary	666,690	4,976,912	612.0	48.9	781
CR1-C16-NP	Non-P	Boundary	661,642	4,985,677	597.0	48.8	948
CR2-C29-NP	Non-P	Boundary	662,350	4,969,119	594.8	48.8	738
CR1-C71-NP	Non-P	Boundary	664,658	4,987,355	600.0	48.6	1,050
CR2-C42-NP	Non-P	Boundary	665,527	4,975,894	598.4	47.8	1,056
CR1-C73-NP	Non-P	Boundary	663,740	4,982,989	591.8	47.7	1,175
CR2-C69-NP	Non-P	Boundary	661,200	4,977,610	571.5	47.7	1,027
CR2-C46-NP	Non-P	Boundary	660,215	4,966,435	582.0	47.3	1,083
CR2-C53-NP	Non-P	Boundary	661,853	4,964,839	578.5	47.0	1,138
CR2-C116-NP	Non-P	Boundary	664,683	4,976,890	600.0	46.9	1,171
CR2-C115-NP	Non-P	Boundary	663,174	4,980,856	561.8	46.7	1,280
CR1-C7-NP	Non-P	Boundary	661,266	4,985,387	591.0	46.6	1,253
CR2-C24-NP	Non-P	Boundary	662,346	4,969,319	600.0	46.5	981
CR2-C40-NP	Non-P	Boundary	659,711	4,975,130	583.8	45.6	1,178
CR2-C64-NP	Non-P	Boundary	661,628	4,964,834	577.7	45.6	1,355
CR1-C28-NP	Non-P	Boundary	665,432	4,989,009	583.9	44.9	1,483
CR2-C75-NP	Non-P	Boundary	665,533	4,969,027	576.5	44.7	2,051
CR1-C31-NP	Non-P	Boundary	665,639	4,989,013	584.6	44.5	1,637
CR1-C81-NP	Non-P	Boundary	660,516	4,983,200	595.9	44.5	1,565
CR2-C39-NP	Non-P	Boundary	664,406	4,966,558	559.0	43.9	1,355
CR2-C10-NP	Non-P	Boundary	664,808	4,966,574	561.0	43.7	1,391
CR2-C135-NP	Non-P	Boundary	667,221	4,966,634	591.0	43.3	1,854
CR2-C71-NP	Non-P	Boundary	665,511	4,970,237	582.0	43.1	2,047
CR2-C118-NP	Non-P	Boundary	665,548	4,975,288	600.2	42.8	2,224
CR1-C29-NP	Non-P	Boundary	666,496	4,989,001	573.9	42.7	1,952
CR1-C70-NP	Non-P	Boundary	664,953	4,987,981	596.1	42.7	3,225
CR2-C36-NP	Non-P	Boundary	660,716	4,974,757	580.4	42.6	2,198
CR2-C43-NP	Non-P	Boundary	663,896	4,976,057	597.0	42.4	2,037
CR2-C49-NP	Non-P	Boundary	661,059	4,965,032	582.0	42.3	2,546
CR2-C52-NP	Non-P	Boundary	662,432	4,964,852	572.4	41.8	2,218
CR2-C47-NP	Non-P	Boundary	662,128	4,975,739	595.1	41.1	2,477
CR2-C102-NP	Non-P	Boundary	661,830	4,976,324	592.3	40.7	3,097
CR1-C4-NP	Non-P	Boundary	659,890	4,985,620	605.4	40.5	3,914

Table C-2: Crowned Ridge II Sound Level Tabular Results Sorted by Sound Level
Realistic case sound results at land parcel boundaries and occupied structures
Results using GE 2.3-116-90 m HH, GE 2.3-116-80 m HH WTG's
UTM NAD83 Zone 14
Codington County
continued

Noise Receptor #	Participation Status	Type	Easting (m)	Northing (m)	Elevation AMSL (m)	Real Case Sound (dB(A))	Distance to Nearest Turbine (ft)
CR2-C55-NP	Non-P	Boundary	660,848	4,964,816	582.0	39.6	3,412
CR2-C23-NP	Non-P	Boundary	664,177	4,969,547	594.0	39.3	3,980
CR2-C107-NP	Non-P	Boundary	662,229	4,977,633	564.3	39.1	3,547
CR2-C51-NP	Non-P	Boundary	662,863	4,964,873	581.6	39.0	3,497
CR1-C88-NP	Non-P	Boundary	660,588	4,980,432	558.0	38.7	3,419
CR2-C7-NP	Non-P	Boundary	666,417	4,966,621	582.0	38.5	4,393
CR1-C80-NP	Non-P	Boundary	659,702	4,983,540	603.3	38.1	4,140
CR2-C112-NP	Non-P	Boundary	666,270	4,972,900	602.5	38.0	5,253
CR2-C67-NP	Non-P	Boundary	660,639	4,978,403	556.5	38.0	4,071
CR2-C80-NP	Non-P	Boundary	665,496	4,971,451	597.2	37.9	4,501
CR2-C35-NP	Non-P	Boundary	659,126	4,974,667	557.0	37.6	3,225
CR1-C84-NP	Non-P	Boundary	659,727	4,982,360	601.2	37.5	5,249
CR1-C85-NP	Non-P	Boundary	659,751	4,981,560	587.2	37.2	4,734
CR2-C66-NP	Non-P	Boundary	661,867	4,964,063	571.5	37.2	3,684
CR2-C44-NP	Non-P	Boundary	659,186	4,966,434	555.0	36.9	3,527
CR2-C91-NP	Non-P	Boundary	664,277	4,970,516	594.0	36.8	6,165
CR2-C95-NP	Non-P	Boundary	659,720	4,974,150	561.0	36.7	4,390
CR2-C72-NP	Non-P	Boundary	663,905	4,970,351	595.8	36.6	5,932
CR2-C92-NP	Non-P	Boundary	663,902	4,970,529	598.8	36.2	6,335
CR2-C151-NP	Non-P	Boundary	663,658	4,964,510	555.9	35.1	6,352
CR2-C93-NP	Non-P	Boundary	659,946	4,973,545	578.4	35.0	5,827
CR2-C3-NP	Non-P	Boundary	664,056	4,964,720	555.0	34.9	6,506
CR2-C137-NP	Non-P	Boundary	659,040	4,979,151	563.8	34.8	6,375
CR2-C104-NP	Non-P	Boundary	661,932	4,972,776	603.0	34.5	6,286
CR2-C87-NP	Non-P	Boundary	662,984	4,971,065	603.0	34.5	6,503
CR2-C22-NP	Non-P	Boundary	661,457	4,972,769	597.2	34.4	6,040
CR2-C68-NP	Non-P	Boundary	662,455	4,963,673	579.0	34.4	5,354
CR2-C30-NP	Non-P	Boundary	659,189	4,967,871	566.6	34.3	4,938
CR2-C142-NP	Non-P	Boundary	657,486	4,977,150	549.0	34.1	5,846
CR2-C89-NP	Non-P	Boundary	662,311	4,971,010	603.0	34.1	6,240
CR2-C143-NP	Non-P	Boundary	657,478	4,977,453	561.4	33.9	5,919
CR2-C74-NP	Non-P	Boundary	660,737	4,969,659	585.4	33.5	6,279
CR1-C13-P	Participant	Boundary	664,410	4,986,207	615.0	53.3	574
CR1-C77-P	Participant	Boundary	660,965	4,983,217	584.2	52.6	558
CR2-C38-P	Participant	Boundary	661,602	4,966,757	585.7	52.6	581
CR1-C18-P	Participant	Boundary	664,126	4,986,525	610.2	52.4	591
CR2-C78-P	Participant	Boundary	665,321	4,983,408	608.6	52.3	705
CR1-C10-P	Participant	Boundary	662,869	4,985,477	601.4	52.2	610

Table C-2: Crowned Ridge II Sound Level Tabular Results Sorted by Sound Level
Realistic case sound results at land parcel boundaries and occupied structures
Results using GE 2.3-116-90 m HH, GE 2.3-116-80 m HH WTG's
UTM NAD83 Zone 14
Codington County
continued

Noise Receptor #	Participation Status	Type	Easting (m)	Northing (m)	Elevation AMSL (m)	Real Case Sound (dB(A))	Distance to Nearest Turbine (ft)
CR2-C154-P	Participant	Boundary	660,033	4,966,759	577.9	52.1	577
CR1-C11-P	Participant	Boundary	664,444	4,985,206	608.6	52.0	738
CR2-C54-P	Participant	Boundary	663,491	4,976,273	597.0	52.0	597
CR2-C26-P	Participant	Boundary	664,502	4,968,179	580.9	51.6	640
CR2-C153-P	Participant	Boundary	667,124	4,969,320	603.3	51.3	722
CR2-C41-P	Participant	Boundary	661,903	4,974,984	598.5	51.2	571
CR1-C15-P	Participant	Boundary	663,047	4,985,700	612.8	51.1	722
CR1-C20-P	Participant	Boundary	662,024	4,987,612	604.8	51.0	640
CR2-C48-P	Participant	Boundary	661,624	4,965,184	585.0	50.8	722
CR2-C27-P	Participant	Boundary	662,571	4,969,314	587.3	50.3	617
CR2-C50-P	Participant	Boundary	660,674	4,976,401	574.6	49.6	705
CR1-C9-P	Participant	Boundary	665,421	4,985,265	609.0	49.5	1,079
CR1-C86-P	Participant	Boundary	661,252	4,981,612	588.9	49.1	1,070
CR2-C128-P	Participant	Boundary	667,185	4,968,243	579.7	48.2	1,079
CR2-C59-P	Participant	Boundary	664,882	4,976,884	603.0	48.1	1,024
CR2-C61-P	Participant	Boundary	659,867	4,976,754	580.2	47.4	1,175
CR2-C65-P	Participant	Boundary	665,469	4,978,393	606.0	47.3	1,355
CR2-C63-P	Participant	Boundary	666,292	4,977,116	610.5	47.1	1,027
CR2-C57-P	Participant	Boundary	666,460	4,976,513	615.0	46.7	1,112
CR2-C70-P	Participant	Boundary	665,687	4,970,178	584.1	45.4	1,483
CR1-C12-P	Participant	Boundary	662,067	4,985,677	604.9	45.3	1,670
CR1-C78-P	Participant	Boundary	660,512	4,983,386	603.0	45.0	1,453
CR2-C33-P	Participant	Boundary	663,195	4,966,498	577.8	45.0	1,476
CR2-C32-P	Participant	Boundary	660,020	4,967,239	573.0	43.4	1,673
CR1-C8-P	Participant	Boundary	661,277	4,984,852	597.6	43.1	2,139
CR2-C31-P	Participant	Boundary	662,322	4,974,389	606.0	41.4	2,116
CR2-C77-P	Participant	Boundary	663,118	4,969,535	597.5	40.7	2,231
CR2-C123-P	Participant	Boundary	666,399	4,967,425	573.4	40.5	3,924
CR2-C101-P	Participant	Boundary	660,750	4,973,563	585.9	36.9	3,986
CR2-C28-P	Participant	Boundary	659,999	4,968,048	567.3	36.2	4,265
CR2-C99-P	Participant	Boundary	660,638	4,972,764	578.7	33.8	6,509
CR2-C97-NP	Non-P	Structure	660,093	4,976,001	583.8	44.8	1,804
CR2-C98-NP	Non-P	Structure	660,155	4,976,007	582.5	44.8	1,732
CR2-C132-NP	Non-P	Structure	666,857	4,985,021	588.6	44.4	1,883
CR1-C74-NP	Non-P	Structure	662,869	4,983,122	595.9	44.3	2,480
CR2-C62-NP	Non-P	Structure	666,992	4,977,048	615.0	43.9	1,860
CR2-C131-NP	Non-P	Structure	666,732	4,984,987	591.0	43.8	2,287
CR2-C79-NP	Non-P	Structure	666,869	4,984,663	587.9	43.5	2,703

Table C-2: Crowned Ridge II Sound Level Tabular Results Sorted by Sound Level
Realistic case sound results at land parcel boundaries and occupied structures
Results using GE 2.3-116-90 m HH, GE 2.3-116-80 m HH WTG's
UTM NAD83 Zone 14
Codington County
continued

Noise Receptor #	Participation Status	Type	Easting (m)	Northing (m)	Elevation AMSL (m)	Real Case Sound (dB(A))	Distance to Nearest Turbine (ft)
CR1-C31-NP	Non-P	Structure	665,939	4,988,950	585.4	43.4	2,126
CR1-C16-NP	Non-P	Structure	661,960	4,986,288	606.0	43.3	2,736
CR2-C2-NP	Non-P	Structure	662,238	4,980,604	591.0	42.8	1,880
CR2-C1-NP	Non-P	Structure	662,198	4,980,622	591.0	42.7	1,909
CR1-C75-NP	Non-P	Structure	663,010	4,982,658	588.0	42.6	3,730
CR1-C73-NP	Non-P	Structure	663,066	4,982,530	591.0	42.5	3,704
CR1-C76-NP	Non-P	Structure	662,981	4,982,580	588.5	42.4	3,901
CR2-C115-NP	Non-P	Structure	663,555	4,980,564	575.1	42.2	2,520
CR1-C28-NP	Non-P	Structure	665,429	4,988,598	590.8	42.1	2,831
CR1-C71-NP	Non-P	Structure	665,137	4,988,378	594.6	42.1	3,448
CR1-C72-NP	Non-P	Structure	665,158	4,988,170	595.2	42.1	3,776
CR1-C87-NP	Non-P	Structure	662,628	4,982,425	585.3	42.1	3,960
CR1-C70-NP	Non-P	Structure	665,135	4,988,293	595.7	42.0	3,540
CR2-C53-NP	Non-P	Structure	662,401	4,964,782	582.0	41.5	2,257
CR1-C29-NP	Non-P	Structure	666,572	4,988,867	575.9	41.4	2,457
CR2-C71-NP	Non-P	Structure	665,411	4,970,503	586.0	41.4	2,529
CR1-C7-NP	Non-P	Structure	660,893	4,984,861	593.2	41.3	3,022
CR2-C46-NP	Non-P	Structure	660,435	4,965,627	582.0	41.3	2,569
CR2-C117-NP	Non-P	Structure	664,742	4,976,142	594.0	40.9	3,481
CR2-C39-NP	Non-P	Structure	664,089	4,966,486	566.1	40.9	2,178
CR2-C116-NP	Non-P	Structure	664,640	4,976,142	591.0	40.7	3,533
CR2-C134-NP	Non-P	Structure	667,097	4,973,011	613.0	40.7	3,363
CR2-C47-NP	Non-P	Structure	662,200	4,975,837	596.2	40.7	2,821
CR2-C102-NP	Non-P	Structure	662,025	4,976,085	594.0	40.3	3,609
CR2-C103-NP	Non-P	Structure	662,046	4,976,067	594.2	40.3	3,547
CR2-C105-NP	Non-P	Structure	662,122	4,976,029	595.6	40.3	3,425
CR2-C36-NP	Non-P	Structure	660,475	4,974,426	578.6	40.1	2,992
CR2-C49-NP	Non-P	Structure	660,907	4,964,846	582.0	40.1	3,258
CR2-C135-NP	Non-P	Structure	667,172	4,966,196	594.8	40.0	2,884
CR2-C136-NP	Non-P	Structure	667,209	4,966,166	595.3	39.9	2,887
CR1-C81-NP	Non-P	Structure	660,062	4,983,083	597.0	39.7	3,094
CR2-C42-NP	Non-P	Structure	664,887	4,975,388	597.0	39.7	3,566
CR2-C75-NP	Non-P	Structure	664,866	4,969,808	583.5	39.7	4,396
CR2-C10-NP	Non-P	Structure	665,189	4,966,505	570.0	39.6	2,438
CR2-C16-NP	Non-P	Structure	665,418	4,966,866	567.0	39.6	2,756
CR2-C52-NP	Non-P	Structure	662,688	4,964,792	586.2	39.5	3,054
CR2-C76-NP	Non-P	Structure	664,747	4,969,738	584.6	39.5	4,560
CR2-C43-NP	Non-P	Structure	664,382	4,975,544	597.0	39.1	4,232

Table C-2: Crowned Ridge II Sound Level Tabular Results Sorted by Sound Level
Realistic case sound results at land parcel boundaries and occupied structures
Results using GE 2.3-116-90 m HH, GE 2.3-116-80 m HH WTG's
UTM NAD83 Zone 14
Codington County
continued

Noise Receptor #	Participation Status	Type	Easting (m)	Northing (m)	Elevation AMSL (m)	Real Case Sound (dB(A))	Distance to Nearest Turbine (ft)
CR1-C67-NP	Non-P	Structure	659,789	4,985,057	606.0	39.0	5,791
CR1-C66-NP	Non-P	Structure	659,718	4,985,032	606.0	38.9	5,800
CR2-C55-NP	Non-P	Structure	660,765	4,964,777	582.0	38.9	3,632
CR1-C5-NP	Non-P	Structure	659,958	4,984,794	605.2	38.8	5,659
CR2-C23-NP	Non-P	Structure	664,069	4,969,661	594.0	38.8	4,439
CR2-C56-NP	Non-P	Structure	660,759	4,964,737	582.0	38.7	3,760
CR1-C4-NP	Non-P	Structure	659,744	4,984,749	605.9	38.5	5,981
CR2-C40-NP	Non-P	Structure	659,189	4,974,765	578.3	38.5	2,841
CR2-C119-NP	Non-P	Structure	665,052	4,974,682	600.0	38.4	4,760
CR2-C58-NP	Non-P	Structure	660,764	4,964,686	582.0	38.4	3,904
CR2-C118-NP	Non-P	Structure	665,014	4,974,639	600.0	38.2	4,947
CR2-C45-NP	Non-P	Structure	664,058	4,965,862	570.0	38.1	3,907
CR2-C51-NP	Non-P	Structure	662,977	4,964,794	583.9	38.1	3,934
CR2-C107-NP	Non-P	Structure	662,265	4,978,194	576.0	38.0	4,564
CR2-C37-NP	Non-P	Structure	663,037	4,974,496	606.0	38.0	3,537
CR1-C88-NP	Non-P	Structure	660,156	4,980,595	570.9	37.6	4,045
CR2-C29-NP	Non-P	Structure	661,223	4,968,144	595.1	37.5	4,639
CR2-C69-NP	Non-P	Structure	661,701	4,978,792	564.0	37.3	5,171
CR2-C67-NP	Non-P	Structure	660,379	4,978,592	556.2	37.1	5,033
CR1-C84-NP	Non-P	Structure	659,607	4,982,216	594.3	37.0	5,856
CR2-C112-NP	Non-P	Structure	665,928	4,972,630	603.0	37.0	6,575
CR2-C7-NP	Non-P	Structure	665,694	4,966,179	570.1	37.0	4,409
CR1-C80-NP	Non-P	Structure	659,351	4,983,174	604.3	36.9	5,308
CR1-C85-NP	Non-P	Structure	659,706	4,981,419	588.0	36.9	4,819
CR2-C64-NP	Non-P	Structure	660,901	4,964,220	582.0	36.4	4,429
CR2-C72-NP	Non-P	Structure	663,856	4,970,488	597.0	36.3	6,135
CR2-C90-NP	Non-P	Structure	664,088	4,970,672	594.4	36.2	6,863
CR2-C91-NP	Non-P	Structure	663,938	4,970,546	597.0	36.2	6,457
CR2-C92-NP	Non-P	Structure	663,855	4,970,535	597.0	36.2	6,247
CR2-C24-NP	Non-P	Structure	661,541	4,969,653	600.0	35.9	3,809
CR2-C44-NP	Non-P	Structure	659,145	4,966,062	561.0	35.8	4,183
CR2-C66-NP	Non-P	Structure	662,396	4,963,954	582.0	35.8	4,429
CR2-C35-NP	Non-P	Structure	658,964	4,974,334	566.8	35.5	4,432
CR2-C80-NP	Non-P	Structure	664,705	4,972,092	597.3	35.5	7,684
CR2-C96-NP	Non-P	Structure	659,316	4,974,063	570.4	35.5	4,813
CR2-C95-NP	Non-P	Structure	659,248	4,974,054	567.5	35.3	4,898
CR2-C137-NP	Non-P	Structure	658,951	4,979,194	568.2	34.6	6,555
CR2-C104-NP	Non-P	Structure	662,109	4,972,735	604.0	34.4	6,608

Table C-2: Crowned Ridge II Sound Level Tabular Results Sorted by Sound Level
Realistic case sound results at land parcel boundaries and occupied structures
Results using GE 2.3-116-90 m HH, GE 2.3-116-80 m HH WTG's
UTM NAD83 Zone 14
Codington County
continued

Noise Receptor #	Participation Status	Type	Easting (m)	Northing (m)	Elevation AMSL (m)	Real Case Sound (dB(A))	Distance to Nearest Turbine (ft)
CR2-C106-NP	Non-P	Structure	662,165	4,972,711	604.7	34.4	6,749
CR2-C151-NP	Non-P	Structure	663,934	4,964,475	555.8	34.4	6,929
CR2-C22-NP	Non-P	Structure	661,202	4,972,711	597.0	34.2	6,247
CR2-C86-NP	Non-P	Structure	662,880	4,971,302	603.0	34.2	7,208
CR2-C87-NP	Non-P	Structure	662,841	4,971,294	603.0	34.2	7,165
CR2-C3-NP	Non-P	Structure	664,345	4,964,571	556.0	34.1	7,497
CR2-C89-NP	Non-P	Structure	662,244	4,971,076	603.0	33.9	6,489
CR2-C30-NP	Non-P	Structure	659,100	4,968,023	568.6	33.6	5,502
CR2-C68-NP	Non-P	Structure	662,517	4,963,408	579.0	33.3	6,237
CR2-C74-NP	Non-P	Structure	660,687	4,969,931	586.5	33.1	6,732
CR2-C93-NP	Non-P	Structure	659,203	4,973,158	584.8	32.8	7,792
CR2-C94-NP	Non-P	Structure	659,202	4,973,052	584.0	32.6	8,133
CR2-C143-NP	Non-P	Structure	657,016	4,977,505	553.3	32.5	7,444
CR2-C142-NP	Non-P	Structure	656,697	4,977,269	566.9	31.7	8,432
CR1-C11-P	Participant	Structure	664,111	4,985,679	609.0	47.9	1,614
CR1-C9-P	Participant	Structure	665,352	4,985,004	609.0	47.7	1,621
CR2-C153-P	Participant	Structure	666,973	4,969,823	609.0	47.4	1,532
CR2-C78-P	Participant	Structure	665,273	4,983,933	608.3	47.2	1,919
CR1-C10-P	Participant	Structure	663,510	4,985,195	609.0	47.0	1,762
CR1-C13-P	Participant	Structure	663,792	4,985,785	612.0	46.9	1,739
CR1-C15-P	Participant	Structure	663,291	4,986,026	615.0	46.1	1,952
CR1-C68-P	Participant	Structure	662,652	4,987,606	609.0	45.4	2,146
CR1-C69-P	Participant	Structure	662,685	4,987,619	609.0	45.3	2,185
CR1-C77-P	Participant	Structure	661,915	4,983,367	591.0	45.3	1,654
CR1-C18-P	Participant	Structure	663,651	4,987,157	610.5	44.8	2,146
CR2-C48-P	Participant	Structure	662,370	4,965,588	590.4	44.7	2,172
CR2-C38-P	Participant	Structure	660,874	4,966,929	585.9	44.6	1,906
CR2-C59-P	Participant	Structure	664,952	4,976,698	601.5	44.6	1,654
CR1-C20-P	Participant	Structure	663,054	4,987,455	606.0	44.5	2,336
CR1-C89-P	Participant	Structure	662,062	4,982,029	584.3	44.5	1,814
CR2-C61-P	Participant	Structure	660,630	4,976,840	582.5	44.5	1,667
CR1-C12-P	Participant	Structure	662,222	4,985,736	603.0	44.3	2,201
CR2-C65-P	Participant	Structure	665,217	4,977,746	609.0	44.3	2,139
CR1-C86-P	Participant	Structure	662,086	4,982,135	585.0	44.0	1,962
CR2-C63-P	Participant	Structure	665,528	4,977,285	612.0	43.9	2,185
CR2-C27-P	Participant	Structure	662,985	4,968,167	582.0	43.8	1,726
CR1-C12-1-P	Participant	Structure	662,199	4,986,047	606.0	43.6	2,818
CR2-C41-P	Participant	Structure	660,770	4,975,147	596.1	43.6	1,811

Table C-2: Crowned Ridge II Sound Level Tabular Results Sorted by Sound Level
Realistic case sound results at land parcel boundaries and occupied structures
Results using GE 2.3-116-90 m HH, GE 2.3-116-80 m HH WTG's
UTM NAD83 Zone 14
Codington County
continued

Noise Receptor #	Participation Status	Type	Easting (m)	Northing (m)	Elevation AMSL (m)	Real Case Sound (dB(A))	Distance to Nearest Turbine (ft)
CR2-C57-P	Participant	Structure	666,667	4,976,162	613.6	43.6	2,362
CR2-C50-P	Participant	Structure	661,252	4,976,035	597.0	43.5	1,696
CR2-C26-P	Participant	Structure	664,733	4,968,915	591.0	43.4	1,959
CR2-C154-P	Participant	Structure	660,684	4,967,166	588.0	43.3	2,041
CR2-C133-P	Participant	Structure	666,992	4,967,681	571.1	43.0	2,500
CR1-C79-P	Participant	Structure	660,452	4,983,750	595.9	42.5	2,037
CR2-C70-P	Participant	Structure	665,521	4,970,518	588.1	42.3	2,215
CR1-C21-P	Participant	Structure	660,756	4,984,086	594.8	42.0	2,388
CR1-C22-P	Participant	Structure	660,755	4,984,082	594.8	42.0	2,375
CR2-C33-P	Participant	Structure	663,878	4,967,612	576.0	41.8	2,999
CR2-C54-P	Participant	Structure	662,636	4,976,079	597.0	41.8	2,287
CR1-C23-P	Participant	Structure	660,619	4,984,078	596.0	41.5	2,523
CR2-C34-P	Participant	Structure	663,934	4,966,991	570.3	41.5	2,133
CR1-C25-P	Participant	Structure	660,190	4,983,788	602.4	40.3	2,835
CR1-C78-P	Participant	Structure	660,190	4,983,788	602.4	40.3	2,835
CR1-C8-P	Participant	Structure	660,532	4,984,445	599.7	40.1	3,740
CR1-C24-P	Participant	Structure	660,176	4,983,887	601.0	40.0	3,038
CR2-C60-P	Participant	Structure	662,287	4,976,800	594.0	39.9	3,793
CR2-C129-P	Participant	Structure	666,716	4,966,751	591.0	39.8	3,356
CR2-C130-P	Participant	Structure	666,727	4,966,695	591.0	39.7	3,350
CR2-C128-P	Participant	Structure	666,636	4,966,649	589.1	39.2	3,671
CR2-C77-P	Participant	Structure	663,865	4,969,694	597.0	38.6	4,406
CR2-C126-P	Participant	Structure	666,389	4,966,670	584.8	38.5	4,455
CR2-C123-P	Participant	Structure	666,146	4,966,653	579.6	38.1	5,216
CR2-C32-P	Participant	Structure	659,469	4,967,984	575.2	35.0	4,678
CR2-C109-P	Participant	Structure	662,699	4,972,874	606.0	34.6	7,169
CR2-C31-P	Participant	Structure	663,117	4,972,923	606.0	34.6	7,579
CR2-C101-P	Participant	Structure	660,732	4,972,807	591.0	34.0	6,266
CR2-C28-P	Participant	Structure	659,208	4,968,159	572.8	33.6	5,630
CR2-C100-P	Participant	Structure	660,592	4,972,602	591.0	33.4	7,057
CR2-C99-P	Participant	Structure	660,584	4,972,570	591.0	33.4	7,165

Table C-2: Crowned Ridge II Sound Level Tabular Results Sorted by Sound Level
Realistic case sound results at occupied structures
Results using GE 2.3-116-90 m HH, GE 2.3-116-80 m HH WTG's
UTM NAD83 Zone 14
Deuel County
continued

Noise Receptor #	Participation Status	Type	Easting (m)	Northing (m)	Elevation AMSL (m)	Real Case Sound (dB(A))	Distance to Nearest Turbine (ft)
CR2-D108-NP	Non-P	Structure	670,354	4,965,949	594.0	44.2	2,198
CR2-D121-NP	Non-P	Structure	674,461	4,966,734	594.0	44.1	2,316
CR2-D77-NP	Non-P	Structure	672,044	4,966,468	600.0	43.7	2,444
CR2-D54-NP	Non-P	Structure	672,012	4,966,477	600.0	43.6	2,500
CR2-D128-NP	Non-P	Structure	668,625	4,967,652	588.4	43.3	2,779
CR2-D15-NP	Non-P	Structure	674,387	4,968,515	588.0	43.2	2,297
CR2-D71-NP	Non-P	Structure	669,402	4,979,216	587.3	43.2	1,975
CR2-D105-NP	Non-P	Structure	670,348	4,963,826	611.8	43.0	2,821
CR2-D79-NP	Non-P	Structure	672,172	4,974,737	585.0	43.0	1,955
CR2-D126-NP	Non-P	Structure	670,230	4,967,445	593.0	42.5	2,779
CR2-D107-NP	Non-P	Structure	670,405	4,966,321	597.0	42.4	3,143
CR2-D101-NP	Non-P	Structure	672,538	4,961,910	613.1	42.3	2,677
CR2-D19-NP	Non-P	Structure	668,870	4,964,178	606.0	42.2	2,034
CR2-D36-NP	Non-P	Structure	669,812	4,966,746	591.0	41.9	2,854
CR2-D130-NP	Non-P	Structure	672,090	4,973,207	591.0	41.8	2,270
CR2-D46-NP	Non-P	Structure	669,797	4,966,804	591.0	41.8	2,972
CR2-D120-NP	Non-P	Structure	673,401	4,964,165	609.0	41.7	3,110
CR2-D22-NP	Non-P	Structure	668,798	4,963,767	603.1	41.5	2,142
CR2-D48-NP	Non-P	Structure	668,923	4,972,998	609.0	41.4	2,680
CR2-D91-NP	Non-P	Structure	667,546	4,976,173	618.0	41.4	4,203
CR2-D17-NP	Non-P	Structure	672,023	4,969,597	597.0	41.3	3,343
CR2-D99-NP	Non-P	Structure	668,148	4,976,230	608.6	41.3	4,331
CR2-D45-NP	Non-P	Structure	668,018	4,976,064	611.4	41.2	4,393
CR2-D62-NP	Non-P	Structure	669,355	4,974,624	609.0	41.2	3,697
CR2-D74-NP	Non-P	Structure	668,130	4,976,068	609.2	41.2	4,505
CR2-D90-NP	Non-P	Structure	670,516	4,962,327	612.0	41.1	3,360
CR2-D132-NP	Non-P	Structure	669,497	4,974,128	609.0	40.9	3,763
CR2-D30-NP	Non-P	Structure	669,549	4,974,233	611.8	40.8	3,953
CR2-D51-NP	Non-P	Structure	675,005	4,970,131	578.2	40.6	2,717
CR2-D189-NP	Non-P	Structure	667,228	4,971,527	606.0	40.1	3,757
CR2-D213-NP	Non-P	Structure	667,178	4,971,525	606.0	40.0	3,816
CR2-D112-NP	Non-P	Structure	667,666	4,971,554	605.0	39.9	3,553
CR2-D113-NP	Non-P	Structure	667,774	4,971,544	607.1	39.9	3,537
CR2-D5-NP	Non-P	Structure	668,781	4,964,897	603.0	39.7	3,855
CR2-D208-NP	Non-P	Structure	676,741	4,964,971	579.0	39.3	3,205
CR2-D52-NP	Non-P	Structure	667,172	4,971,776	606.0	39.2	4,583
CR2-D72-NP	Non-P	Structure	671,925	4,970,149	602.9	39.0	4,495
CR2-D133-NP	Non-P	Structure	669,661	4,980,356	576.0	38.7	4,035

Table C-2: Crowned Ridge II Sound Level Tabular Results Sorted by Sound Level
Realistic case sound results at occupied structures
Results using GE 2.3-116-90 m HH, GE 2.3-116-80 m HH WTG's
UTM NAD83 Zone 14
Deuel County
continued

Noise Receptor #	Participation Status	Type	Easting (m)	Northing (m)	Elevation AMSL (m)	Real Case Sound (dB(A))	Distance to Nearest Turbine (ft)
CR2-D84-NP	Non-P	Structure	667,159	4,972,169	598.2	38.7	5,535
CR2-D97-NP	Non-P	Structure	667,164	4,972,232	600.0	38.7	5,371
CR2-D100-NP	Non-P	Structure	668,589	4,972,064	609.8	38.6	4,708
CR2-D9-NP	Non-P	Structure	668,597	4,971,999	611.5	38.5	4,921
CR2-D23-NP	Non-P	Structure	669,671	4,980,468	573.0	38.4	4,380
CR2-D82-NP	Non-P	Structure	669,855	4,970,718	603.0	38.2	5,935
CR2-D92-NP	Non-P	Structure	671,159	4,971,610	597.8	38.2	3,881
CR2-D104-NP	Non-P	Structure	670,443	4,961,600	613.8	37.9	4,058
CR2-D109-NP	Non-P	Structure	676,885	4,965,806	576.0	37.8	4,432
CR2-D95-NP	Non-P	Structure	671,994	4,971,562	600.0	37.8	3,930
CR2-D63-NP	Non-P	Structure	670,546	4,961,419	615.0	37.6	4,065
CR2-D73-NP	Non-P	Structure	672,072	4,971,556	600.0	37.6	4,035
CR2-D75-NP	Non-P	Structure	669,473	4,981,625	570.0	37.1	6,355
CR2-D106-NP	Non-P	Structure	667,315	4,965,297	594.0	36.6	5,351
CR2-D103-NP	Non-P	Structure	670,588	4,961,119	615.0	36.4	4,606
CR2-D190-NP	Non-P	Structure	675,131	4,970,954	573.0	36.4	4,485
CR2-D116-NP	Non-P	Structure	673,491	4,972,398	577.8	35.0	6,220
CR2-D180-NP	Non-P	Structure	671,823	4,960,368	615.0	34.4	5,856
CR2-D205-NP	Non-P	Structure	670,455	4,960,601	611.7	34.1	6,194
CR2-D207-NP	Non-P	Structure	676,828	4,963,280	588.0	34.1	6,250
CR2-D206-NP	Non-P	Structure	676,828	4,963,231	588.0	34.0	6,365
CR2-D154-NP	Non-P	Structure	672,205	4,960,261	610.8	33.8	6,496
CR2-D212-P	Participant	Structure	667,211	4,969,816	608.3	47.3	1,686
CR2-D53-P	Participant	Structure	670,392	4,975,925	592.5	47.2	1,827
CR2-D38-P	Participant	Structure	667,108	4,982,083	597.0	46.9	1,693
CR2-D85-P	Participant	Structure	669,593	4,976,302	603.0	46.6	1,572
CR2-D131-P	Participant	Structure	669,471	4,977,139	597.5	46.1	2,087
CR2-D3-P	Participant	Structure	672,390	4,963,482	612.0	46.1	2,037
CR2-D56-P	Participant	Structure	667,119	4,977,925	612.0	45.9	2,110
CR2-D39-P	Participant	Structure	668,443	4,974,627	614.4	45.6	1,706
CR2-D21-P	Participant	Structure	669,517	4,978,053	595.7	45.4	1,985
CR2-D119-P	Participant	Structure	673,378	4,965,126	602.9	45.1	1,932
CR2-D50-P	Participant	Structure	672,015	4,967,209	602.7	44.6	1,965
CR2-D122-P	Participant	Structure	673,601	4,967,341	594.0	44.5	1,886
CR2-D111-P	Participant	Structure	671,876	4,969,006	600.0	44.4	2,178
CR2-D44-P	Participant	Structure	670,434	4,965,956	593.9	44.3	2,149
CR2-D64-P	Participant	Structure	669,417	4,978,434	588.1	44.3	2,425
CR2-D16-P	Participant	Structure	671,626	4,966,693	601.9	44.1	2,018

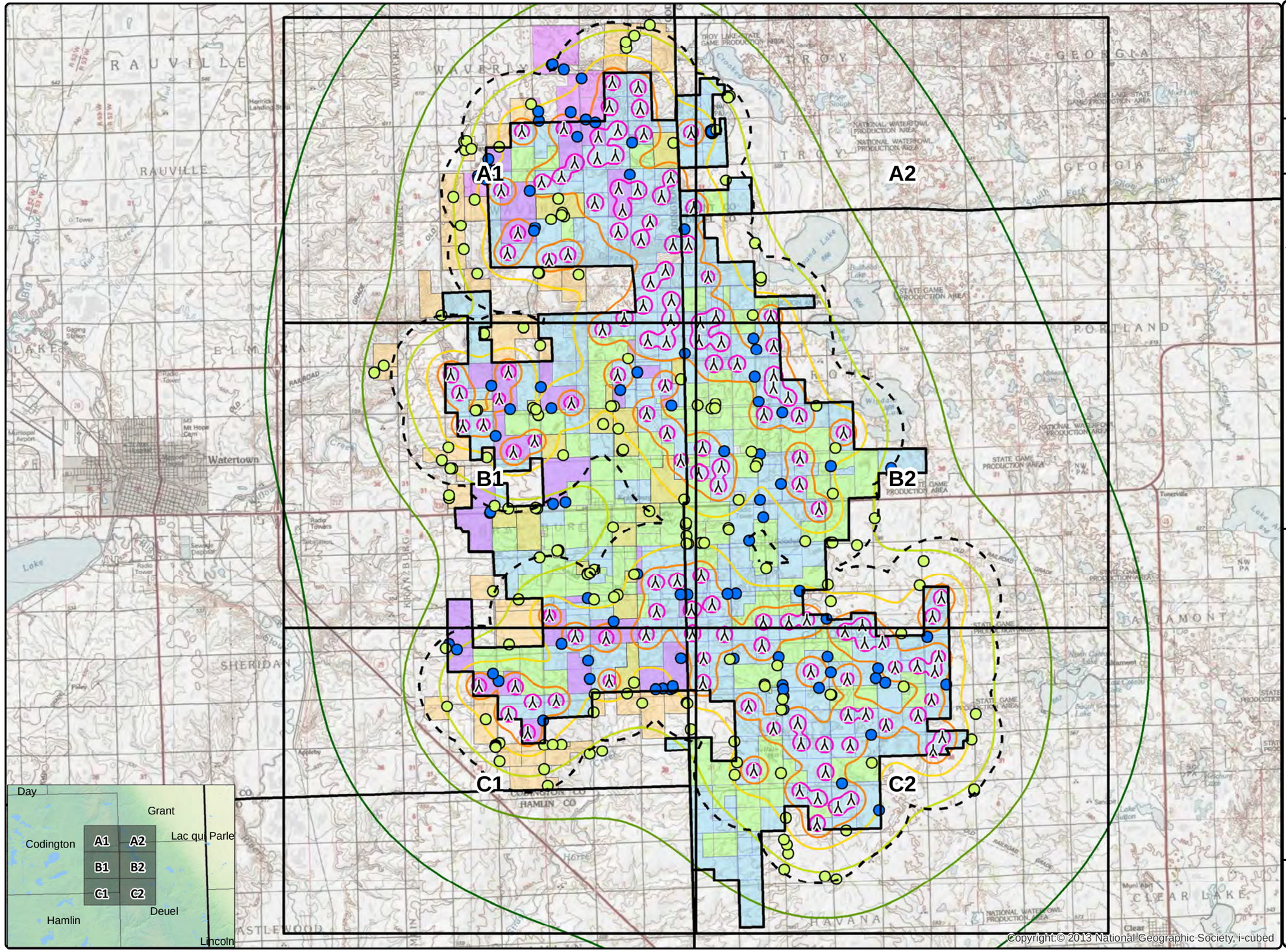
Table C-2: Crowned Ridge II Sound Level Tabular Results Sorted by Sound Level
Realistic case sound results at occupied structures
Results using GE 2.3-116-90 m HH, GE 2.3-116-80 m HH WTG's
UTM NAD83 Zone 14
Deuel County
continued

Noise Receptor #	Participation Status	Type	Easting (m)	Northing (m)	Elevation AMSL (m)	Real Case Sound (dB(A))	Distance to Nearest Turbine (ft)
CR2-D12-P	Participant	Structure	668,558	4,969,840	604.8	44.0	2,051
CR2-D83-P	Participant	Structure	675,891	4,966,810	579.0	44.0	1,929
CR2-D20-P	Participant	Structure	675,261	4,968,400	578.8	43.9	2,313
CR2-D86-P	Participant	Structure	673,842	4,966,875	597.0	43.8	1,985
CR2-D124-P	Participant	Structure	671,911	4,967,745	603.0	43.7	2,493
CR2-D110-P	Participant	Structure	670,270	4,967,731	596.6	43.6	2,234
CR2-D123-P	Participant	Structure	673,527	4,967,015	596.8	43.4	2,441
CR2-D18-P	Participant	Structure	671,540	4,976,154	582.0	43.3	2,201
CR2-D14-P	Participant	Structure	670,351	4,973,543	606.0	43.1	2,041
CR2-D6-P	Participant	Structure	668,762	4,967,671	591.0	43.1	2,844
CR2-D127-P	Participant	Structure	668,841	4,969,858	603.0	42.2	2,894
CR2-D41-P	Participant	Structure	670,437	4,966,409	597.0	42.2	3,340
CR2-D65-P	Participant	Structure	670,422	4,966,654	597.0	41.8	3,583
CR2-D125-P	Participant	Structure	670,404	4,966,786	597.0	41.7	3,422
CR2-D115-P	Participant	Structure	670,974	4,969,938	606.0	41.0	3,245
CR2-D11-P	Participant	Structure	669,646	4,974,534	604.5	40.9	4,377
CR2-D49-P	Participant	Structure	672,024	4,974,135	583.6	40.7	3,537
CR2-D176-P	Participant	Structure	673,641	4,962,583	609.0	39.6	3,304
CR2-D129-P	Participant	Structure	669,645	4,973,005	606.0	39.3	4,682
CR2-D98-P	Participant	Structure	669,757	4,972,426	606.0	38.2	5,381
CR2-D192-P	Participant	Structure	669,283	4,971,621	607.3	37.7	6,499
CR2-D96-P	Participant	Structure	672,899	4,971,469	594.0	36.1	5,827
CR2-D37-P	Participant	Structure	674,048	4,974,071	573.0	34.1	6,542

Table C-2: Crowned Ridge II Sound Level Tabular Results Sorted by Sound Level
Realistic case sound results at occupied structures
Results using GE 2.3-116-90 m HH, GE 2.3-116-80 m HH WTG's
UTM NAD83 Zone 14
Grant County
continued

Noise Receptor #	Participation Status	Type	Easting (m)	Northing (m)	Elevation AMSL (m)	Real Case Sound (dB(A))	Distance to Nearest Turbine (ft)
CR2-G9-NP	Non-P	Structure	668,173	4,985,425	570.8	40.3	2,782
CR2-G8-P	Participant	Structure	668,054	4,985,395	576.0	41.4	2,385

APPENDIX D: STANDARD RESOLUTION SOUND MAPS



EAPC WIND ENERGY

www.eapc.net | 701.775.3000

Crowned Ridge II Wind Farm Sound Pressure Iso-Lines Overview Map

Client

SWCA Environmental Consultants

Project Description

Wind turbine layout with occupied structures and parcel boundaries within 2 km.

Predicted sound pressure levels at existing residences and land parcel boundaries.

Additional 2 dBA added.

Location: Watertown, SD

Project #: 20174431

Issue Dates

#	Description	Date
1	Original	2019.03.06

Drawn By: AS | *Checked By: JH*

Legend

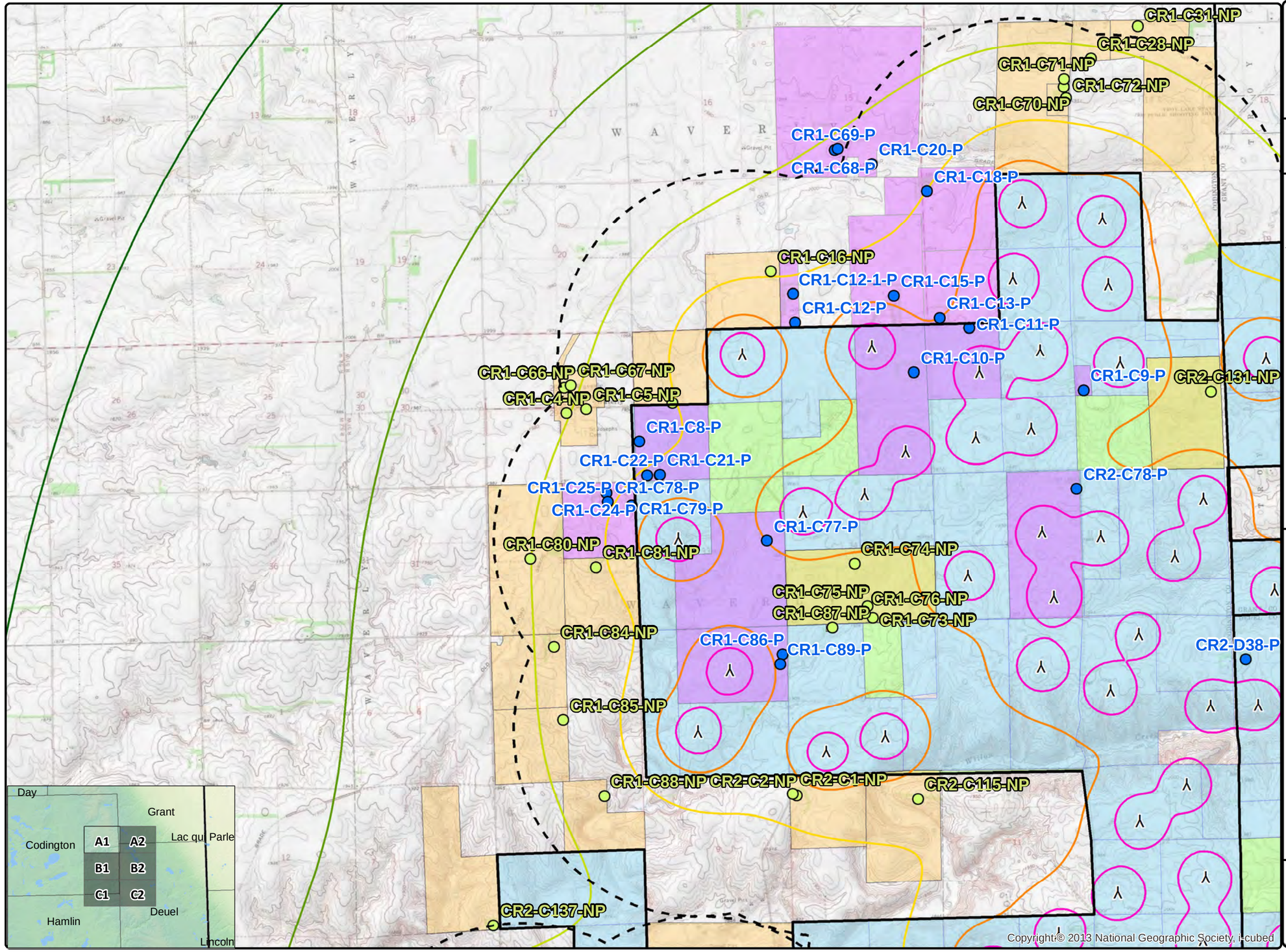
- Crowned Ridge II Array
- 2 km Turbine Buffer
- County Lines
- CR II Project Boundary
- Non-Participants
- Participants

Sound Pressure (dBA)

- 25
- 30
- 35
- 40
- 45
- 50

- Non-Part. Codington Parcels
- Participating Codington_Parcels
- Non-Participating Land Parcels
- Partcipating Land Parcels

N W E S



0 0.275 0.55 1.1 Mile

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Sound Pressure Iso-Lines

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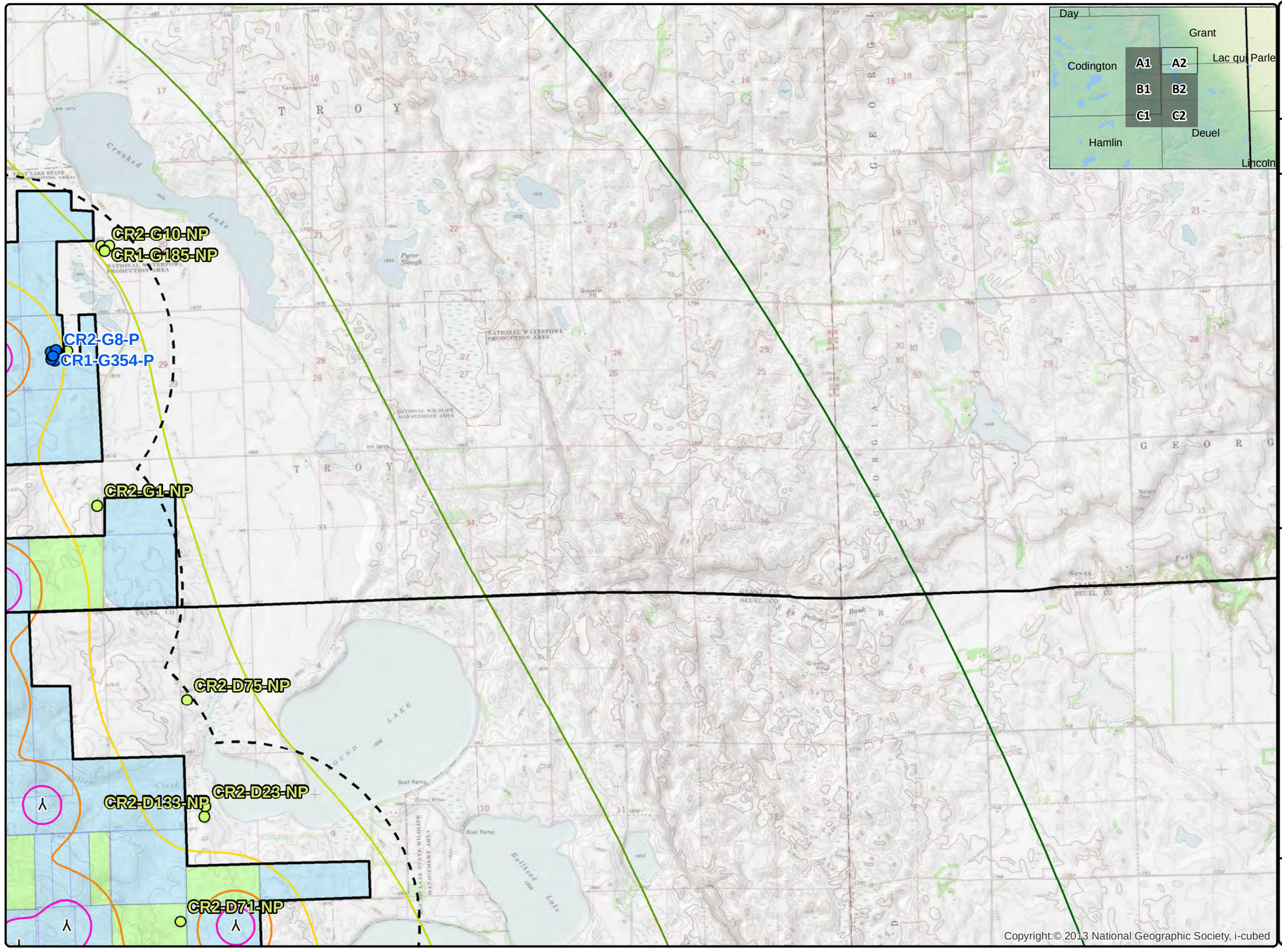

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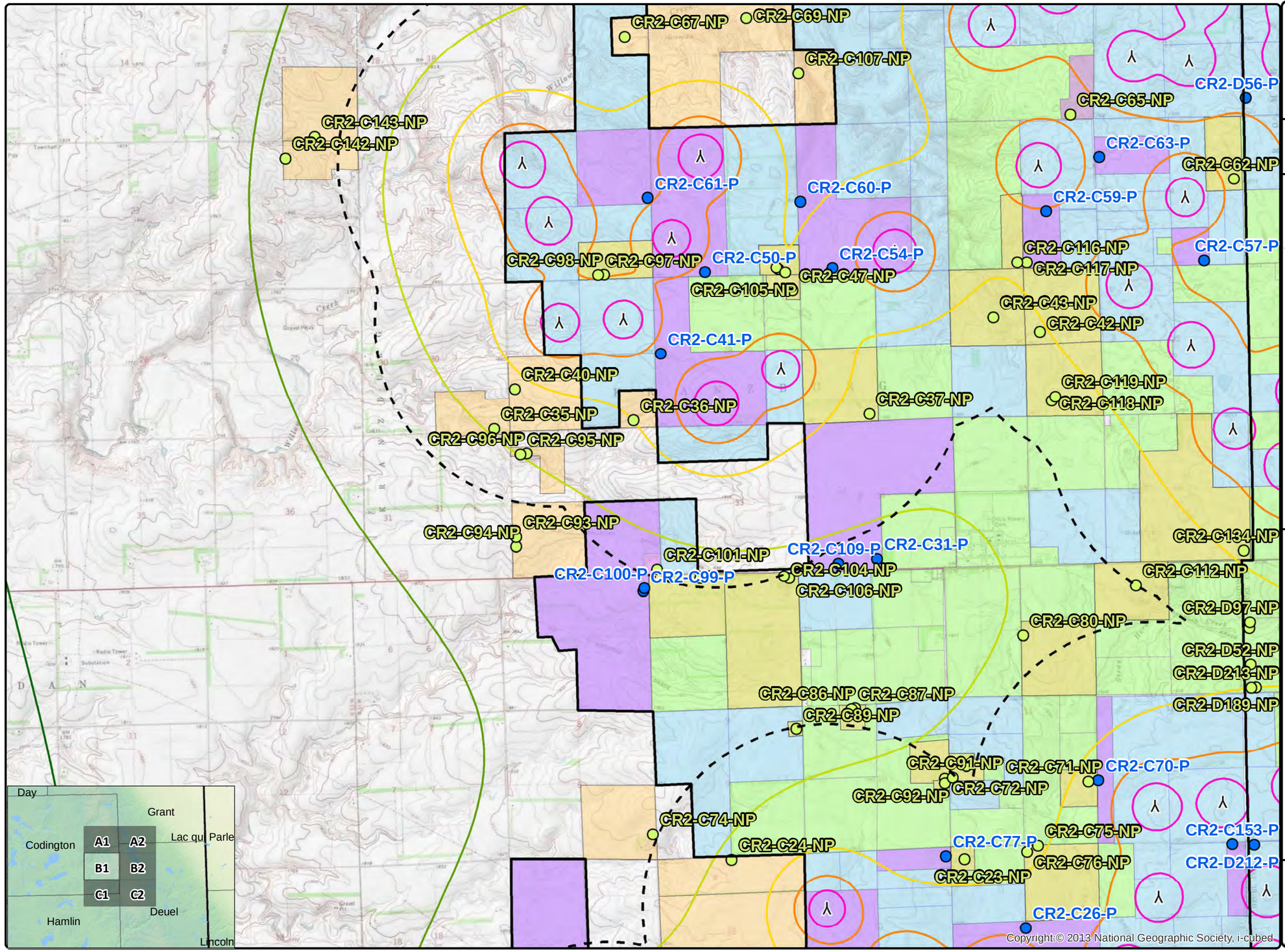

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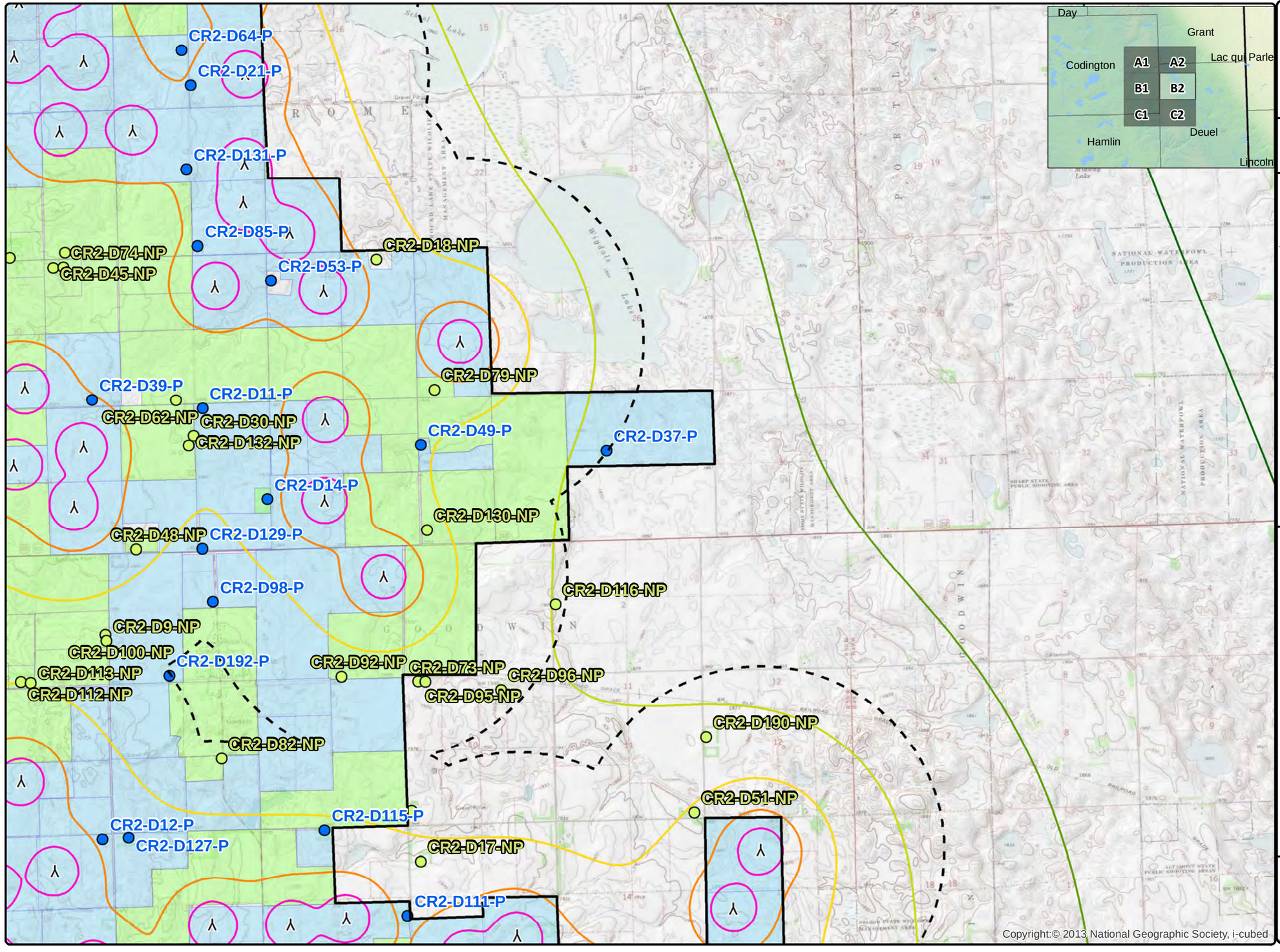

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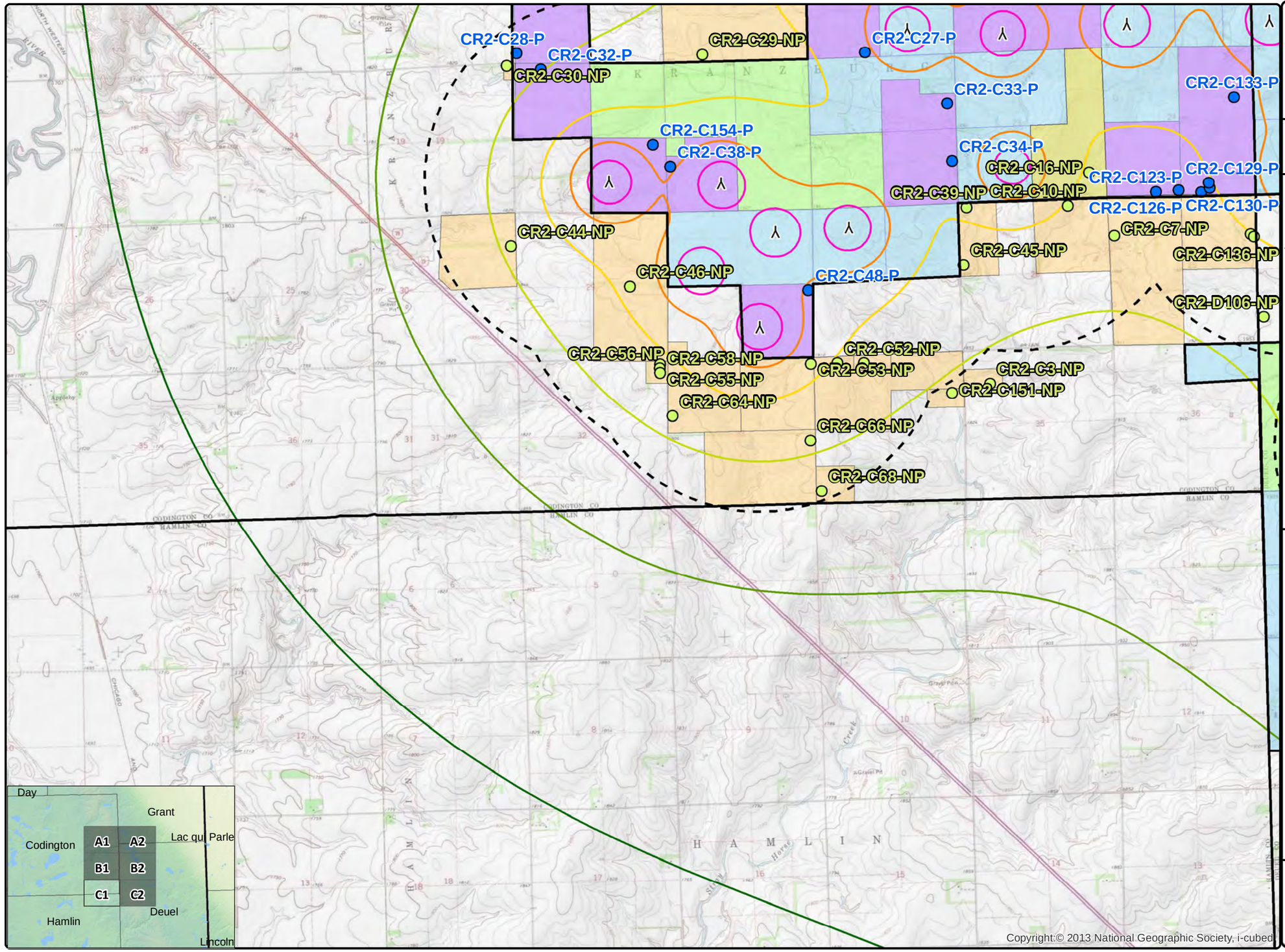

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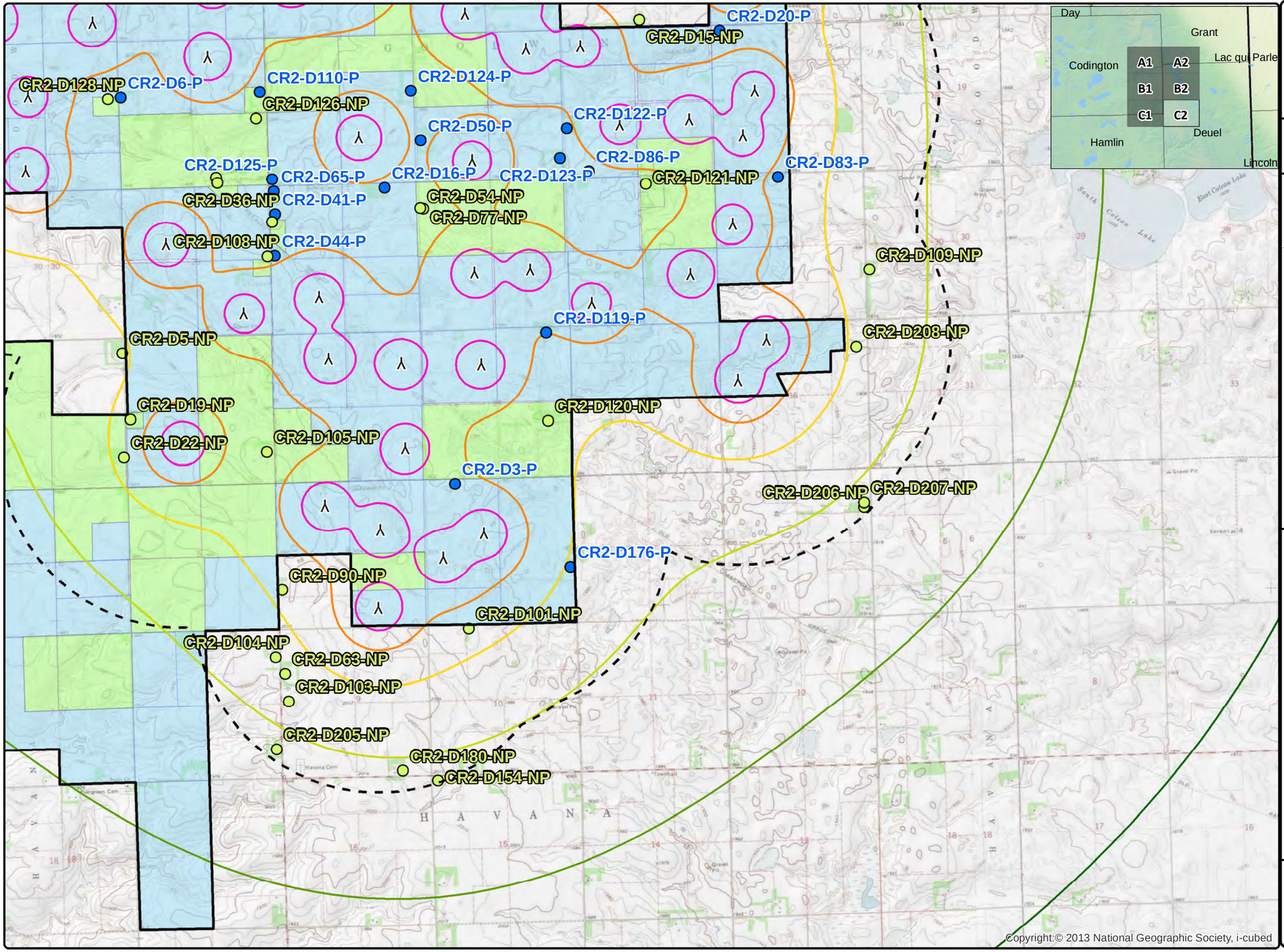

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