

Table C-2: Crowned Ridge Shadow Flicker Tabular Results Sorted by Real Case Shadow Flicker Hours/Year

Realistic case shadow 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

Codrington County

Receptor ID	Participation Status	Easting (m)	Northing (m)	Elevation AMSL (m)	Hessler Case Shadow (hrs/year)	CRW Case Shadow (hrs/year)	Base Case Shadow (hrs/year)	Distance to Nearest Turbine (ft)
CR1-C10-P	Participant	663,510.00	4,985,195.00	609.0	36:47	38:20	38:20	1,634
CR2-C154-P	Participant	660,684.34	4,967,166.18	588.0	30:00	30:00	30:00	2,041
CR2-C38-NP	Non-P	660,874.00	4,966,929.00	585.5	25:57	25:57	25:57	1,906
CR2-C78-P	Participant	665,273.00	4,983,933.00	609.0	25:17	25:17	25:17	1,919
CR1-C79-NP	Non-P	660,452.00	4,983,750.00	595.9	22:38	22:38	0:00	2,037
CR1-C89-P	Participant	662,062.00	4,982,029.00	584.3	21:39	21:39	21:39	2,165
CR2-C98-NP	Non-P	660,155.00	4,976,007.00	582.8	18:45	18:45	32:22	2,336
CR1-C9-NP	Non-P	665,352.00	4,985,004.00	609.0	18:08	18:08	18:08	2,320
CR2-C27-P	Participant	662,985.00	4,968,167.00	582.0	18:06	18:06	18:06	1,726
CR2-C41-P	Participant	660,770.00	4,975,147.00	596.4	17:22	17:22	17:22	1,532
CR1-C12-NP	Non-P	662,222.00	4,985,736.00	603.0	17:08	17:08	17:08	2,201
CR1-C86-P	Participant	662,086.00	4,982,135.00	585.0	16:51	16:51	16:51	2,306
CR1-C13-NP	Non-P	663,792.00	4,985,785.00	612.0	16:19	18:58	18:58	2,589
CR2-C50-P	Participant	661,252.00	4,976,035.00	597.0	15:36	15:36	19:23	1,873
CR1-C20-P	Participant	663,054.00	4,987,455.00	606.0	14:38	14:38	14:38	2,336
CR2-C97-NP	Non-P	660,093.00	4,976,001.00	583.8	14:19	14:19	29:21	2,188
CR2-C34-P	Participant	663,934.00	4,966,991.00	570.1	14:11	14:11	14:11	2,133
CR2-C70-P	Participant	665,521.00	4,970,518.00	588.9	13:57	13:57	13:57	2,215
CR2-C133-P	Participant	666,992.00	4,967,681.00	571.2	13:37	13:37	13:37	2,500
CR2-C60-P	Participant	662,287.00	4,976,800.00	594.0	12:42	12:42	13:54	3,793
CR2-C54-NP	Non-P	662,636.00	4,976,079.00	597.0	12:36	12:36	12:36	2,287
CR2-C42-NP	Non-P	664,887.00	4,975,388.00	597.0	12:14	12:14	12:14	3,566
CR1-C77-P	Participant	661,915.00	4,983,367.00	591.0	12:12	12:12	7:36	1,654
CR1-C70-NP	Non-P	665,135.00	4,988,293.00	595.9	12:01	12:01	12:01	3,540
CR2-C46-NP	Non-P	660,435.00	4,965,627.00	582.0	10:36	10:36	12:08	2,569
CR1-C12-1-NP	Non-P	662,199.00	4,986,047.00	606.0	10:34	10:34	10:34	2,818
CR2-C71-NP	Non-P	665,411.00	4,970,503.00	586.1	10:14	10:14	10:14	2,529
CR2-C131-NP	Non-P	666,732.00	4,984,987.00	591.0	10:06	10:06	10:06	2,287
CR2-C63-P	Participant	665,528.00	4,977,285.00	612.0	9:49	14:41	14:41	2,185
CR2-C37-NP	Non-P	663,037.00	4,974,496.00	606.0	9:34	9:34	9:34	3,537
CR2-C36-NP	Non-P	660,475.00	4,974,426.00	578.6	8:20	8:20	8:20	2,992
CR2-C115-NP	Non-P	663,555.00	4,980,564.00	575.2	8:18	8:18	8:18	2,520
CR1-C24-NP	Non-P	660,176.00	4,983,887.00	601.1	7:45	7:45	0:00	3,038
CR1-C72-NP	Non-P	665,158.00	4,988,170.00	594.6	7:39	7:39	7:39	3,776
CR2-C16-NP	Non-P	665,418.00	4,966,866.00	567.0	7:30	7:30	7:30	2,756
CR1-C71-NP	Non-P	665,137.00	4,988,378.00	595.6	7:23	7:23	7:23	3,448
CR1-C73-NP	Non-P	663,066.00	4,982,530.00	591.0	6:57	6:57	6:57	3,704
CR1-C29-NP	Non-P	666,572.00	4,988,867.00	575.9	6:54	6:54	6:54	2,457
CR1-C68-P	Participant	662,652.00	4,987,606.00	609.0	6:44	6:44	6:44	2,146

Table C-2: Crowned Ridge Shadow Flicker Tabular Results Sorted by Real Case Shadow Flicker Hours/Year

Realistic case shadow 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

Codington County

continued

Receptor ID	Participation Status	Easting (m)	Northing (m)	Elevation AMSL (m)	Hessler Case Shadow (hrs/year)	CRW Case Shadow (hrs/year)	Base Case Shadow (hrs/year)	Distance to Nearest Turbine (ft)
CR1-C78-P	Participant	660,190.00	4,983,788.00	602.3	6:43	6:43	0:00	2,835
CR1-C25-P	Participant	660,189.79	4,983,788.29	602.3	6:43	6:43	0:00	2,838
CR1-C16-NP	Non-P	661,960.00	4,986,288.00	606.0	6:17	6:17	6:17	2,648
CR1-C81-NP	Non-P	660,062.00	4,983,083.00	597.0	6:15	6:15	0:00	3,094
CR2-C26-P	Participant	664,733.00	4,968,915.00	591.0	6:09	6:09	6:09	1,959
CR1-C69-P	Participant	662,685.00	4,987,619.00	609.0	6:05	6:05	6:05	2,185
CR1-C18-P	Participant	663,651.00	4,987,157.00	610.4	5:58	5:58	5:58	3,409
CR2-C47-NP	Non-P	662,200.00	4,975,837.00	594.5	5:56	5:56	9:41	2,821
CR1-C76-NP	Non-P	662,981.00	4,982,580.00	588.3	5:26	5:26	5:26	3,901
CR2-C75-NP	Non-P	664,866.00	4,969,808.00	583.7	5:05	5:05	5:05	4,396
CR2-C57-P	Participant	666,667.00	4,976,162.00	613.8	5:03	5:03	5:03	2,821
CR2-C117-NP	Non-P	664,742.00	4,976,142.00	594.2	4:53	4:53	4:53	3,481
CR2-C116-NP	Non-P	664,640.00	4,976,142.00	591.1	4:50	4:50	4:50	3,533
CR2-C105-NP	Non-P	662,122.00	4,976,029.00	595.3	4:38	4:38	7:46	3,425
CR2-C102-NP	Non-P	662,025.00	4,976,085.00	594.1	4:33	4:33	8:29	3,609
CR2-C103-NP	Non-P	662,046.00	4,976,067.00	594.8	4:32	4:32	8:17	3,547
CR1-C75-NP	Non-P	663,010.00	4,982,658.00	588.0	4:25	4:25	4:25	3,730
CR2-C107-NP	Non-P	662,265.00	4,978,194.00	577.7	4:21	4:21	4:21	4,564
CR2-C61-NP	Non-P	660,630.00	4,976,840.00	582.5	4:15	4:15	12:08	2,402
CR2-C45-P	Participant	664,058.00	4,965,862.00	570.0	4:12	4:12	4:12	3,907
CR1-C87-NP	Non-P	662,628.00	4,982,425.00	585.4	4:09	4:09	4:09	4,258
CR1-C11-P	Participant	664,111.00	4,985,679.00	609.0	3:56	10:27	10:27	1,860
CR2-C76-NP	Non-P	664,747.00	4,969,738.00	584.8	3:53	3:53	3:53	4,560
CR2-C1-NP	Non-P	662,198.00	4,980,622.00	591.0	3:51	3:51	3:51	1,909
CR2-C130-P	Participant	666,727.00	4,966,695.00	591.0	3:42	3:42	3:42	3,350
CR2-C134-NP	Non-P	667,097.00	4,973,011.00	613.0	3:42	3:42	3:42	3,363
CR2-C62-NP	Non-P	666,992.00	4,977,048.00	615.0	3:38	16:54	16:54	3,947
CR2-C129-P	Participant	666,716.00	4,966,751.00	591.0	3:31	3:31	3:31	3,356
CR2-C24-NP	Non-P	661,541.00	4,969,653.00	600.0	3:21	3:21	3:21	3,809
CR2-C65-NP	Non-P	665,217.00	4,977,746.00	609.0	3:07	7:16	7:16	2,139
CR2-C48-NP	Non-P	662,370.00	4,965,588.00	590.3	3:04	3:04	19:13	2,365
CR2-C128-P	Participant	666,636.00	4,966,649.00	589.0	3:00	3:00	3:00	3,671
CR2-C59-P	Participant	664,952.00	4,976,698.00	601.9	2:56	4:30	4:30	1,654
CR1-C28-NP	Non-P	665,429.00	4,988,598.00	590.9	2:43	2:43	2:43	2,831
CR1-C74-NP	Non-P	662,869.00	4,983,122.00	595.7	2:34	2:34	2:34	2,480
CR2-C33-P	Participant	663,878.00	4,967,612.00	576.1	2:28	2:28	2:28	2,999

Table C-2: Crowned Ridge Shadow Flicker Tabular Results Sorted by Real Case Shadow Flicker Hours/Year

Realistic case shadow 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

Codington County

continued

Receptor ID	Participation Status	Easting (m)	Northing (m)	Elevation AMSL (m)	Hessler Case Shadow (hrs/year)	CRW Case Shadow (hrs/year)	Base Case Shadow (hrs/year)	Distance to Nearest Turbine (ft)
CR2-C39-NP	Non-P	664,089.00	4,966,486.00	566.2	2:27	2:27	2:27	2,178
CR2-C123-P	Participant	666,146.00	4,966,653.00	579.4	2:13	2:13	2:13	5,216
CR2-C119-NP	Non-P	665,052.00	4,974,682.00	600.0	2:06	2:06	2:06	4,760
CR2-C118-NP	Non-P	665,014.00	4,974,639.00	600.0	1:57	1:57	1:57	4,947
CR2-C132-NP	Non-P	666,857.00	4,985,021.00	588.2	1:47	1:47	1:47	1,883
CR2-C43-NP	Non-P	664,382.00	4,975,544.00	597.0	1:42	1:42	1:42	4,232
CR2-C126-P	Participant	666,389.00	4,966,670.00	585.0	1:40	1:40	1:40	4,455
CR1-C15-NP	Non-P	663,291.00	4,986,026.00	615.0	1:33	2:16	2:16	2,175
CR2-C77-NP	Non-P	663,865.00	4,969,694.00	597.0	1:28	1:28	1:28	4,406
CR1-C85-NP	Non-P	659,706.00	4,981,419.00	588.0	1:22	1:22	1:22	4,819
CR2-C2-NP	Non-P	662,238.00	4,980,604.00	590.9	1:03	1:03	1:03	1,880
CR1-C22-P	Participant	660,755.00	4,984,082.00	594.0	1:01	1:01	1:01	2,375
CR1-C21-P	Participant	660,756.00	4,984,086.00	594.0	1:00	1:00	1:00	2,388
CR2-C23-NP	Non-P	664,069.00	4,969,661.00	594.0	0:58	0:58	0:58	4,439
CR2-C44-NP	Non-P	659,145.00	4,966,062.00	561.4	0:43	0:43	0:43	4,183
CR1-C80-NP	Non-P	659,351.00	4,983,174.00	604.4	0:40	0:40	0:00	5,308
CR1-C23-P	Participant	660,619.00	4,984,078.00	595.8	0:00	0:00	0:00	2,523
CR1-C31-NP	Non-P	665,939.00	4,988,950.00	585.4	0:00	0:00	0:00	2,126
CR1-C4-NP	Non-P	659,744.00	4,984,749.00	606.0	0:00	0:00	0:00	5,981
CR1-C5-NP	Non-P	659,958.00	4,984,794.00	604.8	0:00	0:00	0:00	5,659
CR1-C66-NP	Non-P	659,718.00	4,985,032.00	606.0	0:00	0:00	0:00	5,800
CR1-C67-NP	Non-P	659,789.00	4,985,057.00	606.0	0:00	0:00	0:00	5,791
CR1-C7-NP	Non-P	660,893.00	4,984,861.00	593.2	0:00	0:00	0:00	3,022
CR1-C84-NP	Non-P	659,607.00	4,982,216.00	594.0	0:00	0:00	0:00	5,856
CR1-C88-NP	Non-P	660,156.00	4,980,595.00	570.9	0:00	0:00	0:00	4,045
CR1-C8-P	Participant	660,532.00	4,984,445.00	599.4	0:00	0:00	0:00	3,740
CR2-C100-NP	Non-P	660,592.00	4,972,602.00	591.0	0:00	0:00	0:00	7,057
CR2-C101-NP	Non-P	660,732.00	4,972,807.00	591.0	0:00	0:00	0:00	6,266
CR2-C104-NP	Non-P	662,109.00	4,972,735.00	604.0	0:00	0:00	0:00	6,608
CR2-C106-NP	Non-P	662,165.00	4,972,711.00	604.7	0:00	0:00	0:00	6,749
CR2-C109-NP	Non-P	662,699.00	4,972,874.00	606.0	0:00	0:00	0:00	7,169
CR2-C10-NP	Non-P	665,189.00	4,966,505.00	570.0	0:00	0:00	0:00	2,438
CR2-C112-NP	Non-P	665,928.00	4,972,630.00	603.0	0:00	0:00	0:00	6,575
CR2-C135-NP	Non-P	667,172.00	4,966,196.00	595.2	0:00	0:00	0:00	2,884
CR2-C136-NP	Non-P	667,209.00	4,966,166.00	595.4	0:00	0:00	0:00	2,887
CR2-C137-NP	Non-P	658,951.00	4,979,194.00	568.2	0:00	0:00	0:00	6,555
CR2-C142-NP	Non-P	656,697.00	4,977,269.00	566.9	0:00	0:00	0:00	8,432
CR2-C143-NP	Non-P	657,016.00	4,977,505.00	553.6	0:00	0:00	0:00	7,444

Table C-2: Crowned Ridge Shadow Flicker Tabular Results Sorted by Real Case Shadow Flicker Hours/Year

Realistic case shadow 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

Codington County

continued

Receptor ID	Participation Status	Easting (m)	Northing (m)	Elevation AMSL (m)	Hessler Case Shadow (hrs/year)	CRW Case Shadow (hrs/year)	Base Case Shadow (hrs/year)	Distance to Nearest Turbine (ft)
CR2-C151-NP	Non-P	663,934.00	4,964,475.00	556.1	0:00	0:00	0:00	6,929
CR2-C28-P	Participant	659,208.00	4,968,159.00	572.8	0:00	0:00	0:00	5,630
CR2-C29-NP	Non-P	661,223.00	4,968,144.00	595.2	0:00	0:00	0:00	4,639
CR2-C30-NP	Non-P	659,100.00	4,968,023.00	568.6	0:00	0:00	0:00	5,502
CR2-C31-P	Participant	663,117.00	4,972,923.00	606.0	0:00	0:00	0:00	7,579
CR2-C32-P	Participant	659,469.00	4,967,984.00	575.2	0:00	0:00	0:00	4,678
CR2-C35-NP	Non-P	658,964.00	4,974,334.00	566.8	0:00	0:00	0:00	4,432
CR2-C3-NP	Non-P	664,345.00	4,964,571.00	556.0	0:00	0:00	0:00	7,497
CR2-C40-NP	Non-P	659,189.00	4,974,765.00	578.3	0:00	0:00	1:38	2,841
CR2-C49-NP	Non-P	660,907.00	4,964,846.00	582.0	0:00	0:00	6:36	3,284
CR2-C51-NP	Non-P	662,977.00	4,964,794.00	584.0	0:00	0:00	4:41	4,852
CR2-C52-NP	Non-P	662,688.00	4,964,792.00	585.9	0:00	0:00	14:32	4,846
CR2-C53-NP	Non-P	662,401.00	4,964,782.00	582.0	0:00	0:00	0:00	4,869
CR2-C55-NP	Non-P	660,765.00	4,964,777.00	582.0	0:00	0:00	4:36	3,655
CR2-C56-NP	Non-P	660,759.00	4,964,737.00	582.0	0:00	0:00	4:54	3,786
CR2-C58-NP	Non-P	660,764.00	4,964,686.00	582.0	0:00	0:00	5:51	3,934
CR2-C64-NP	Non-P	660,901.00	4,964,220.00	582.0	0:00	0:00	0:00	5,285
CR2-C66-NP	Non-P	662,396.00	4,963,954.00	582.0	0:00	0:00	0:00	7,231
CR2-C67-NP	Non-P	660,379.00	4,978,592.00	556.1	0:00	0:00	0:00	5,033
CR2-C68-NP	Non-P	662,517.00	4,963,408.00	579.0	0:00	0:00	0:00	8,973
CR2-C69-NP	Non-P	661,701.00	4,978,792.00	564.0	0:00	0:00	0:00	5,171
CR2-C72-NP	Non-P	663,856.00	4,970,488.00	597.0	0:00	0:00	0:00	6,135
CR2-C74-NP	Non-P	660,687.00	4,969,931.00	586.5	0:00	0:00	0:00	6,732
CR2-C79-NP	Non-P	666,869.00	4,984,663.00	587.9	0:00	0:00	0:00	2,703
CR2-C7-NP	Non-P	665,694.00	4,966,179.00	570.0	0:00	0:00	0:00	4,409
CR2-C80-NP	Non-P	664,705.00	4,972,092.00	597.3	0:00	0:00	0:00	7,684
CR2-C86-NP	Non-P	662,880.00	4,971,302.00	603.0	0:00	0:00	0:00	7,208
CR2-C87-NP	Non-P	662,841.00	4,971,294.00	603.0	0:00	0:00	0:00	7,165
CR2-C89-NP	Non-P	662,244.00	4,971,076.00	603.0	0:00	0:00	0:00	6,489
CR2-C91-NP	Non-P	663,938.00	4,970,546.00	597.0	0:00	0:00	0:00	6,457
CR2-C92-NP	Non-P	663,855.00	4,970,535.00	597.0	0:00	0:00	0:00	6,247
CR2-C93-NP	Non-P	659,203.00	4,973,158.00	584.9	0:00	0:00	0:00	7,792
CR2-C94-NP	Non-P	659,202.00	4,973,052.00	583.9	0:00	0:00	0:00	8,133
CR2-C95-NP	Non-P	659,248.00	4,974,054.00	567.0	0:00	0:00	0:00	4,898
CR2-C96-NP	Non-P	659,316.00	4,974,063.00	570.6	0:00	0:00	0:00	4,813
CR2-C99-P	Participant	660,584.00	4,972,570.00	591.0	0:00	0:00	0:00	7,165
CR2-C22-NP	Non-P	661,202.00	4,972,711.00	597.0	0:00	0:00	0:00	6,247
CR2-C90-NP	Non-P	664,088.41	4,970,672.24	594.0	0:00	0:00	0:00	6,863

Table C-2: Crowned Ridge Shadow Flicker Tabular Results Sorted by Real Case Shadow Flicker Hours/Year

Realistic case shadow 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

Receptor ID	Participation Status	Easting (m)	Northing (m)	Elevation AMSL (m)	Hessler Case Shadow (hrs/year)	CRW Case Shadow (hrs/year)	Base Case Shadow (hrs/year)	Distance to Nearest Turbine (ft)
CR2-D111-P	Participant	671,876.00	4,969,006.00	600.0	29:32	29:32	29:32	2,178
CR2-D21-NP	Non-P	669,517.00	4,978,053.00	596.1	28:59	28:59	28:59	1,985
CR2-D53-P	Participant	670,392.00	4,975,925.00	592.8	27:37	27:37	27:37	1,801
CR2-D108-NP	Non-P	670,354.00	4,965,949.00	594.0	25:37	25:37	25:37	2,198
CR2-D131-P	Participant	669,471.00	4,977,139.00	597.5	25:29	25:29	25:29	2,087
CR2-D50-P	Participant	672,015.00	4,967,209.00	602.8	24:57	24:57	24:57	1,965
CR2-D44-NP	Non-P	670,434.00	4,965,956.00	593.8	24:03	24:03	24:03	2,149
CR2-D15-NP	Non-P	674,387.00	4,968,515.00	588.0	24:01	24:01	24:01	2,297
CR2-D18-NP	Non-P	671,540.00	4,976,154.00	582.0	22:04	22:04	22:04	2,201
CR2-D11-NP	Non-P	669,646.00	4,974,534.00	604.4	5:51	5:51	21:54	4,131
CR2-D123-P	Participant	673,527.00	4,967,015.00	596.7	19:44	19:44	19:44	2,441
CR2-D39-P	Participant	668,443.00	4,974,627.00	614.4	18:50	18:50	18:50	1,706
CR2-D71-NP	Non-P	669,402.00	4,979,216.00	588.0	18:30	18:30	16:15	1,975
CR2-D122-P	Participant	673,601.00	4,967,341.00	594.0	18:17	18:17	18:17	1,886
CR2-D105-NP	Non-P	670,348.00	4,963,826.00	611.7	17:56	17:56	17:56	2,821
CR2-D6-P	Participant	668,762.00	4,967,671.00	591.0	17:17	17:17	17:17	2,844
CR2-D30-NP	Non-P	669,549.00	4,974,233.00	611.9	6:03	6:03	17:10	3,953
CR2-D132-NP	Non-P	669,497.00	4,974,128.00	609.0	6:45	6:45	16:49	3,763
CR2-D119-P	Participant	673,378.00	4,965,126.00	602.6	16:30	16:30	16:30	1,932
CR2-D128-NP	Non-P	668,625.00	4,967,652.00	588.0	15:58	15:58	15:58	2,779
CR2-D5-NP	Non-P	668,781.00	4,964,897.00	603.0	15:51	15:51	15:51	1,923
CR2-D124-P	Participant	671,911.00	4,967,745.00	603.0	15:47	15:47	15:47	2,493
CR2-D221-1-NP	Non-P	670,365.59	4,973,541.32	606.0	14:22	14:22	14:22	1,995
CR2-D22-NP	Non-P	668,798.00	4,963,767.00	603.1	14:21	14:21	14:21	2,142
CR2-D64-P	Participant	669,417.00	4,978,434.00	588.0	14:03	14:03	13:32	2,425
CR2-D19-NP	Non-P	668,870.00	4,964,178.00	606.0	13:59	13:59	13:59	2,034
CR2-D17-NP	Non-P	672,023.00	4,969,597.00	597.0	13:45	13:45	13:45	3,343
CR2-D14-NP	Non-P	670,351.11	4,973,543.31	606.0	13:33	13:33	13:33	2,041
CR2-D221-NP	Non-P	670,351.11	4,973,543.31	606.0	13:33	13:33	13:33	2,041
CR2-D130-NP	Non-P	672,080.49	4,973,212.28	591.0	13:27	13:27	13:27	2,260
CR2-D222-NP	Non-P	672,080.49	4,973,212.28	591.0	13:27	13:27	13:27	2,264
CR2-D125-NP	Non-P	670,404.00	4,966,786.00	597.0	13:11	13:11	13:11	3,422
CR2-D83-NP	Non-P	675,891.00	4,966,810.00	579.0	12:25	12:25	12:25	1,929
CR2-D86-NP	Non-P	673,842.00	4,966,875.00	597.0	12:07	12:07	12:07	1,985
CR2-D121-NP	Non-P	674,461.00	4,966,734.00	594.0	12:06	12:06	12:06	2,316
CR2-D176-P	Participant	673,641.00	4,962,583.00	609.0	12:02	12:02	12:02	3,304
CR2-D62-NP	Non-P	669,355.00	4,974,624.00	609.0	5:02	5:02	10:56	3,697
CR2-D38-P	Participant	667,108.00	4,982,083.00	597.0	9:01	5:02	5:02	1,693

Table C-2: Crowned Ridge Shadow Flicker Tabular Results Sorted by Real Case Shadow Flicker Hours/Year

Realistic case shadow 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

Receptor ID	Participation Status	Easting (m)	Northing (m)	Elevation AMSL (m)	Hessler Case Shadow (hrs/year)	CRW Case Shadow (hrs/year)	Base Case Shadow (hrs/year)	Distance to Nearest Turbine (ft)
CR2-D49-P	Participant	672,024.00	4,974,135.00	583.2	8:42	8:42	8:42	3,537
CR2-D51-NP	Non-P	675,005.00	4,970,131.00	577.8	8:27	8:27	8:27	2,717
CR2-D56-P	Participant	667,119.00	4,977,925.00	612.0	8:10	8:10	8:10	2,110
CR2-D90-NP	Non-P	670,516.00	4,962,327.00	612.0	7:36	7:36	7:36	3,360
CR2-D212-P	Participant	667,211.00	4,969,816.00	608.3	12:55	12:55	12:55	1,686
CR2-D3-NP	Non-P	672,390.00	4,963,482.00	612.0	6:47	6:47	6:47	2,037
CR2-D208-P	Participant	676,741.00	4,964,971.00	579.0	6:43	6:43	6:43	3,205
CR2-D127-NP	Non-P	668,841.00	4,969,858.00	603.0	11:40	11:40	11:40	2,894
CR2-D107-NP	Non-P	670,405.00	4,966,321.00	597.0	6:22	6:22	6:22	3,143
CR2-D77-NP	Non-P	672,044.00	4,966,468.00	600.0	5:58	5:58	5:58	2,444
CR2-D101-NP	Non-P	672,538.00	4,961,910.00	612.8	5:29	5:29	5:29	2,677
CR2-D65-NP	Non-P	670,422.00	4,966,654.00	597.0	5:26	5:26	5:26	3,583
CR2-D16-P	Participant	671,626.00	4,966,693.00	601.7	5:21	5:21	5:21	2,018
CR2-D54-NP	Non-P	672,012.00	4,966,477.00	600.0	5:15	5:15	5:15	2,500
CR2-D104-NP	Non-P	670,443.00	4,961,600.00	613.8	5:06	5:06	5:06	4,058
CR2-D109-NP	Non-P	676,885.00	4,965,806.00	576.0	4:51	4:51	4:51	4,432
CR2-D85-NP	Non-P	669,593.00	4,976,302.00	603.0	4:36	4:36	4:36	1,949
CR2-D129-NP	Non-P	669,645.00	4,973,005.00	606.0	4:30	4:30	4:30	4,682
CR2-D12-NP	Non-P	668,558.00	4,969,840.00	604.7	18:07	18:07	18:07	2,051
CR2-D110-NP	Non-P	670,260.25	4,967,728.02	597.0	3:14	3:14	3:14	2,211
CR2-D220-NP	Non-P	670,260.25	4,967,728.02	597.0	3:14	3:14	3:14	2,211
CR2-D126-NP	Non-P	670,227.27	4,967,454.62	593.3	3:04	3:04	3:04	2,749
CR2-D223-NP	Non-P	670,227.27	4,967,454.62	593.3	3:04	3:04	3:04	2,749
CR2-D20-NP	Non-P	675,261.00	4,968,400.00	579.0	3:00	3:00	3:00	2,313
CR2-D36-NP	Non-P	669,812.00	4,966,746.00	591.0	2:59	2:59	2:59	2,854
CR2-D91-NP	Non-P	667,546.00	4,976,173.00	618.0	2:59	2:59	2:59	4,531
CR2-D120-NP	Non-P	673,401.00	4,964,165.00	609.0	2:19	2:19	2:19	3,110
CR2-D79-NP	Non-P	672,172.00	4,974,737.00	585.0	2:16	2:16	2:16	1,955
CR2-D41-NP	Non-P	670,437.00	4,966,409.00	597.0	2:06	2:06	2:06	3,340
CR2-D115-P	Participant	670,974.00	4,969,938.00	606.0	2:04	2:04	2:04	3,245
CR2-D224-NP	Non-P	669,886.93	4,966,846.04	590.6	1:40	1:40	1:40	3,261
CR2-D46-NP	Non-P	669,797.00	4,966,804.00	591.0	1:23	1:23	1:23	2,972
CR2-D45-NP	Non-P	668,018.00	4,976,064.00	611.5	0:55	0:55	0:55	4,393
CR2-D100-NP	Non-P	668,589.00	4,972,064.00	609.9	0:00	0:00	0:00	4,708
CR2-D103-NP	Non-P	670,588.00	4,961,119.00	615.0	0:00	0:00	0:00	4,606
CR2-D106-NP	Non-P	667,315.00	4,965,297.00	594.0	0:00	0:00	0:00	5,351
CR2-D112-NP	Non-P	667,666.00	4,971,554.00	604.6	0:00	0:00	0:00	3,553
CR2-D113-NP	Non-P	667,774.00	4,971,544.00	606.9	0:00	0:00	0:00	3,537



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Crowned Ridge II Wind Farm 300 MW Overview Map

Client
SWCA Environmental Consultants

Project Description
Wind turbine layout with land parcels within the project footprint and existing occupied structures.

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

Hessler array with 6 alternates.

Location: Watertown, SD
Project #: 20174431


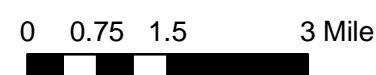
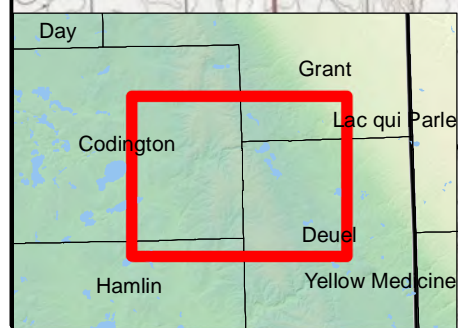
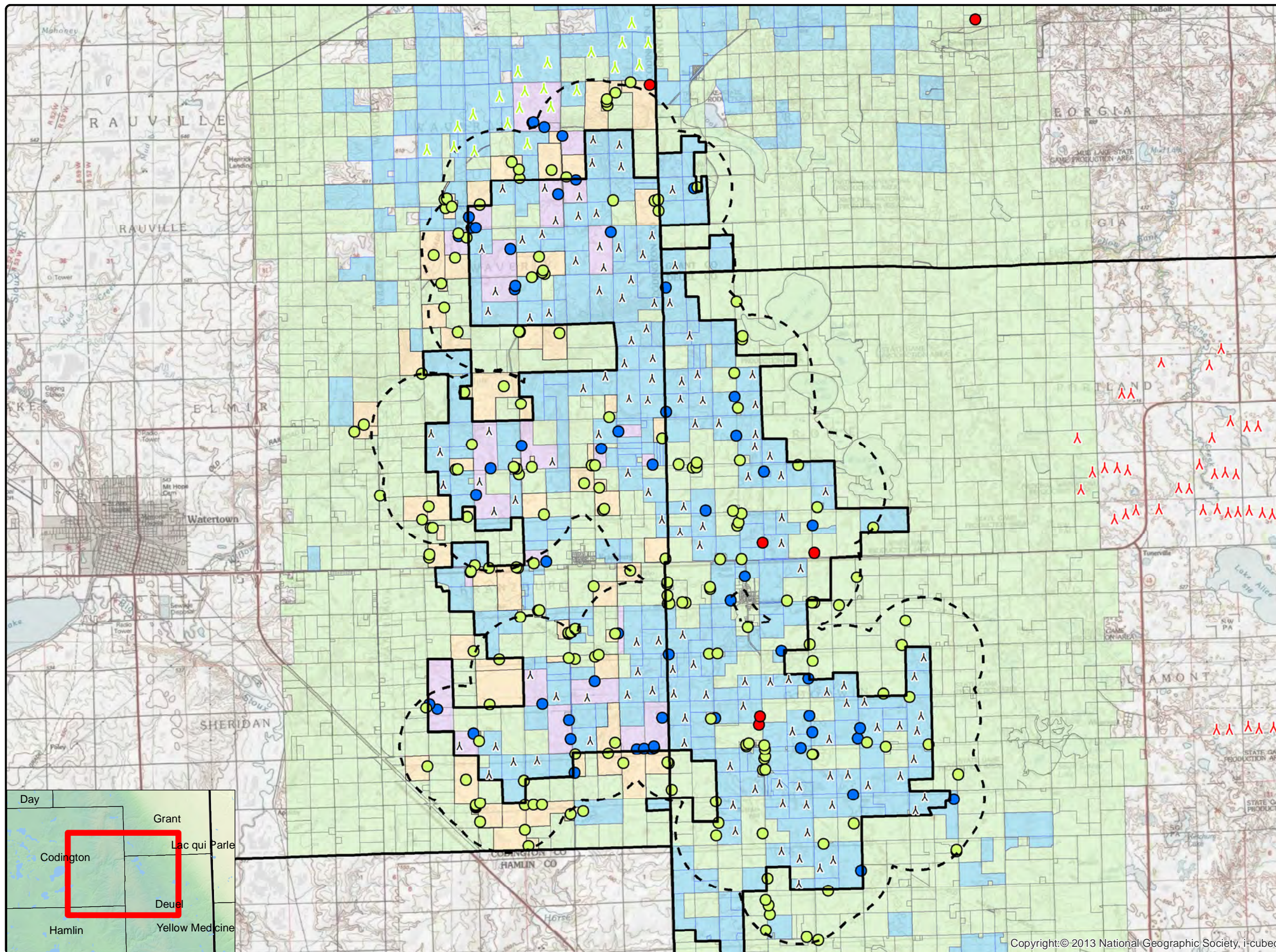
Issue Dates

#	Description	Date
1	Original	2019.12.30

Drawn By: AS Checked By: JH

- Legend**
- ^ Crowned Ridge II Turbines 300 MW
 - ▲ Crowned Ridge Turbines
 - ▲ Deuel Harvest Turbines
 - - - 2 km Turbine Buffer
 - ▭ County Lines
 - ▭ CR II Project Boundary
 - CR II Intervenor
 - Non-Participants Noise
 - Participants Noise
 - Non-Participating Codington Parcels
 - Participating Codington_Parcels
 - Non-Participating Parcels
 - Participating Parcels

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Crowned Ridge II Wind Farm 300 MW Shadow Overview Map

Client
SWCA Environmental Consultants

Project Description
Wind turbine layout with occupied structures within 2 km.

Predicted shadow flicker levels at existing residences.

Hessler array with 6 alternates

Location: Watertown, SD

Project #: 20174431

Issue Dates

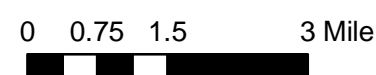
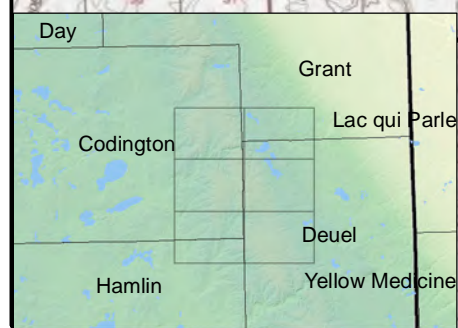
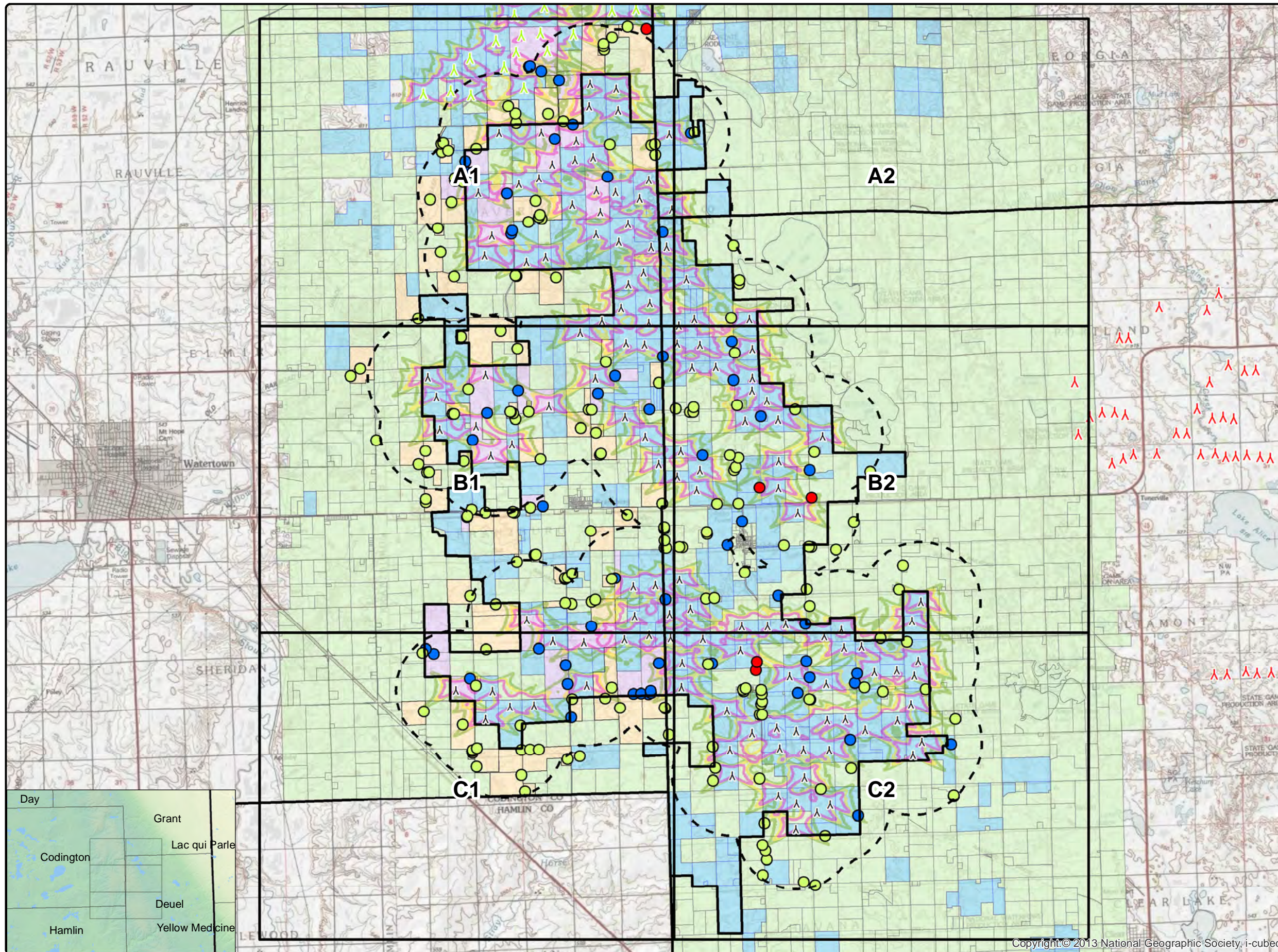
#	Description	Date
1	Original	2019.12.30

Drawn By: AS Checked By: JH

Legend

- ▲ Crowned Ridge II Turbines 300 MW
 - ▲ Crowned Ridge Turbines
 - ▲ Deuel Harvest Turbines
 - 2 km Turbine Buffer
 - County Lines
 - CR II Project Boundary
 - CR II Intervenor
 - Non-Participants Shadow
 - Participants Shadow
- Shadow Flicker (hr/yr)**
- 10
 - 15
 - 20
 - 25
 - 30
- Non-Participating Codington Parcels
 - Participating Codington_Parcels
 - Non-Participating Parcels
 - Participating Parcels

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Crowned Ridge II Wind Farm 300 MW Shadow Flicker Iso-Lines

Client
SWCA Environmental Consultants

Project Description
Wind turbine layout with occupied structures within 2 km.
Predicted shadow flicker levels at existing residences.
Hessler array with 6 alternates

Predicted shadow flicker levels at existing residences.

Hessler array with 6 alternates

Location: Watertown, SD

Project #: 20174431

Issue Dates

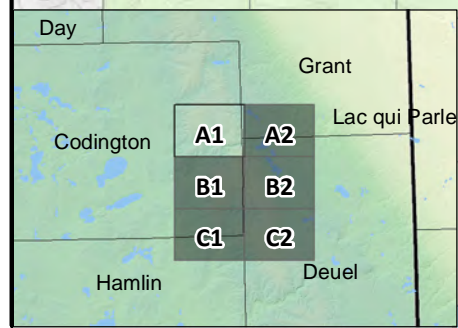
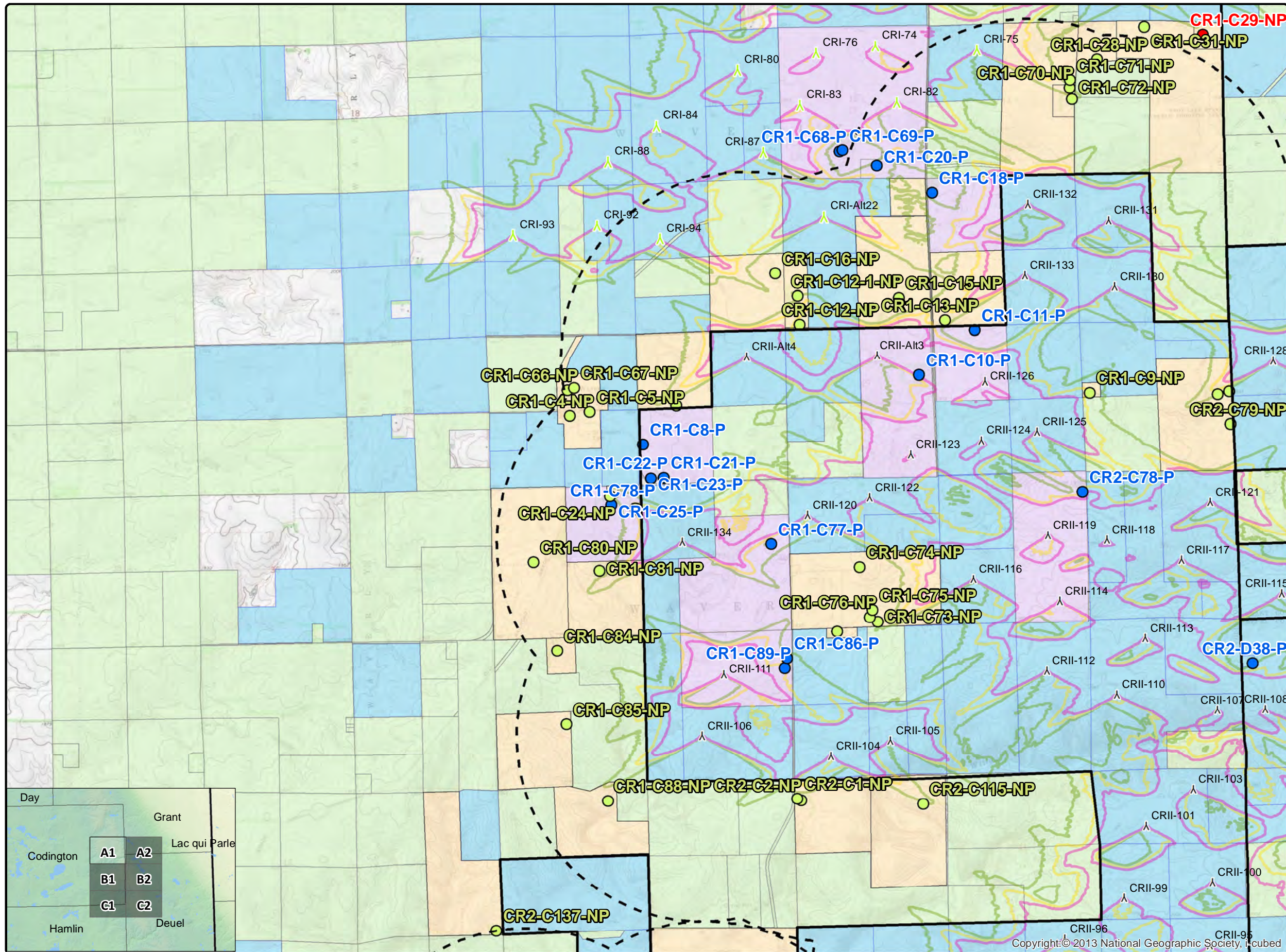
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Drawn By: AS Checked By: JH

Legend

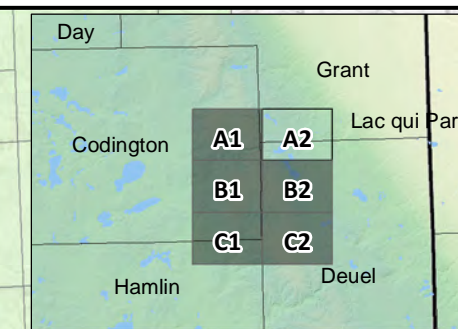
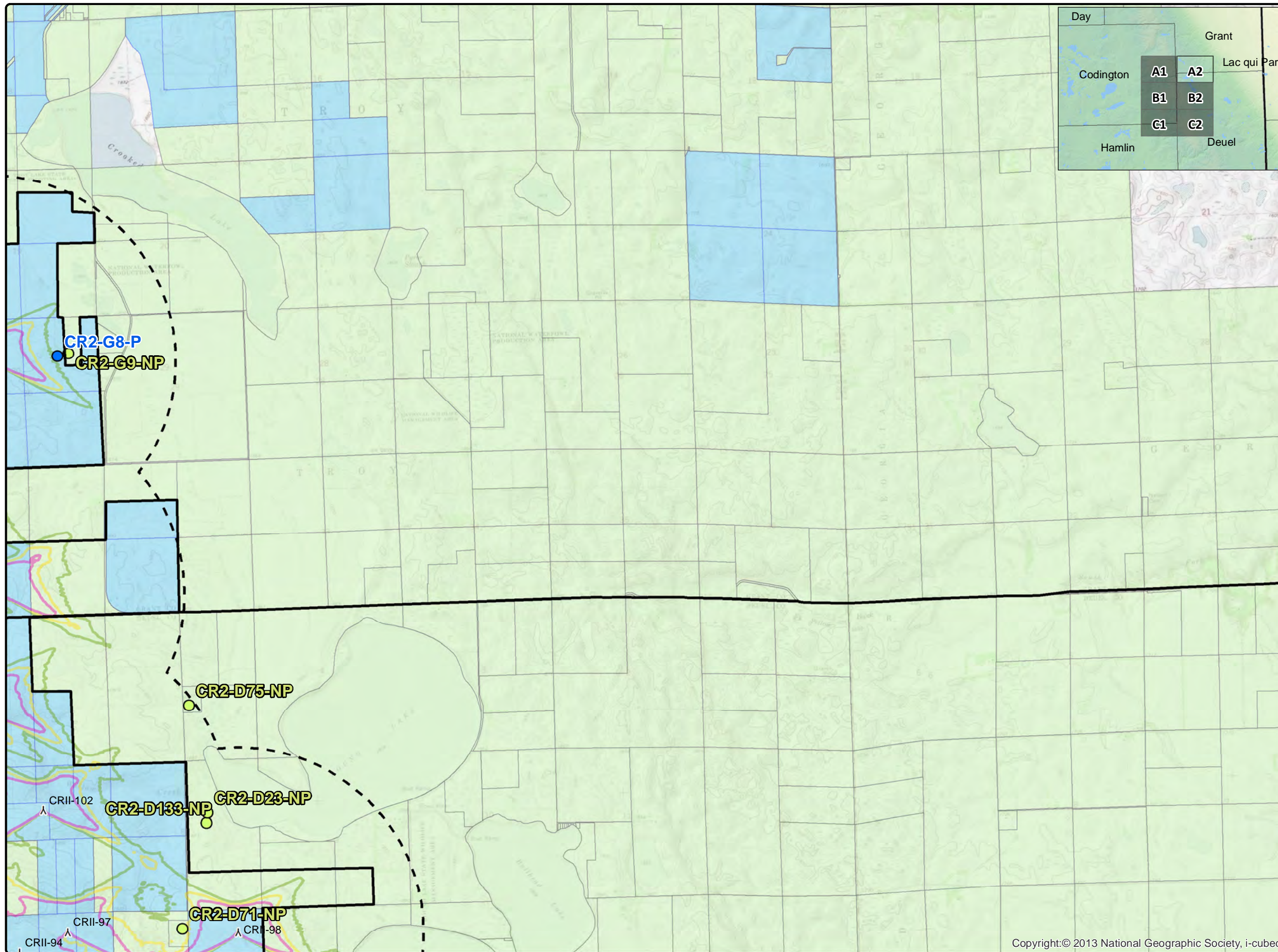
- ▲ Crowned Ridge II Turbines 300 MW
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 - 2 km Turbine Buffer
 - County Lines
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 - CR II Intervenor
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 - Participating Codington_Parcels
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**Crowned Ridge II Wind Farm
300 MW
Shadow Flicker Iso-Lines**

Client
SWCA Environmental Consultants

Project Description
Wind turbine layout with occupied structures within 2 km.

Predicted shadow flicker levels at existing residences.

Hessler array with 6 alternates

Location: Watertown, SD
Project #: 20174431


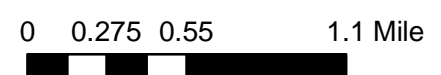
Issue Dates

#	Description	Date
1	Original	2019.12.30

Drawn By: AS Checked By: JH

- Legend**
- ▲ Crowned Ridge II Turbines 300 MW
 - ▲ Crowned Ridge Turbines
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 - - - County Lines
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Crowned Ridge II Wind Farm 300 MW Shadow Flicker Iso-Lines

Client
SWCA Environmental Consultants

Project Description
Wind turbine layout with occupied structures within 2 km.

Predicted shadow flicker levels at existing residences.

Hessler array with 6 alternates

Location: Watertown, SD
Project #: 20174431

Issue Dates

#	Description	Date
1	Original	2019.12.30

Drawn By: AS *Checked By:* JH

Legend

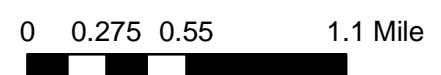
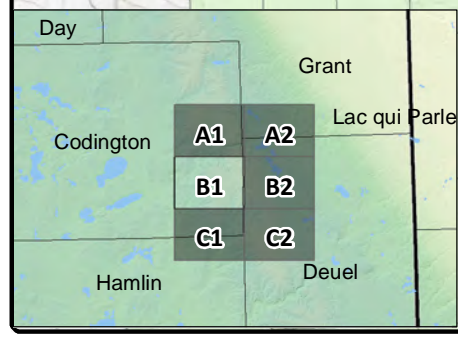
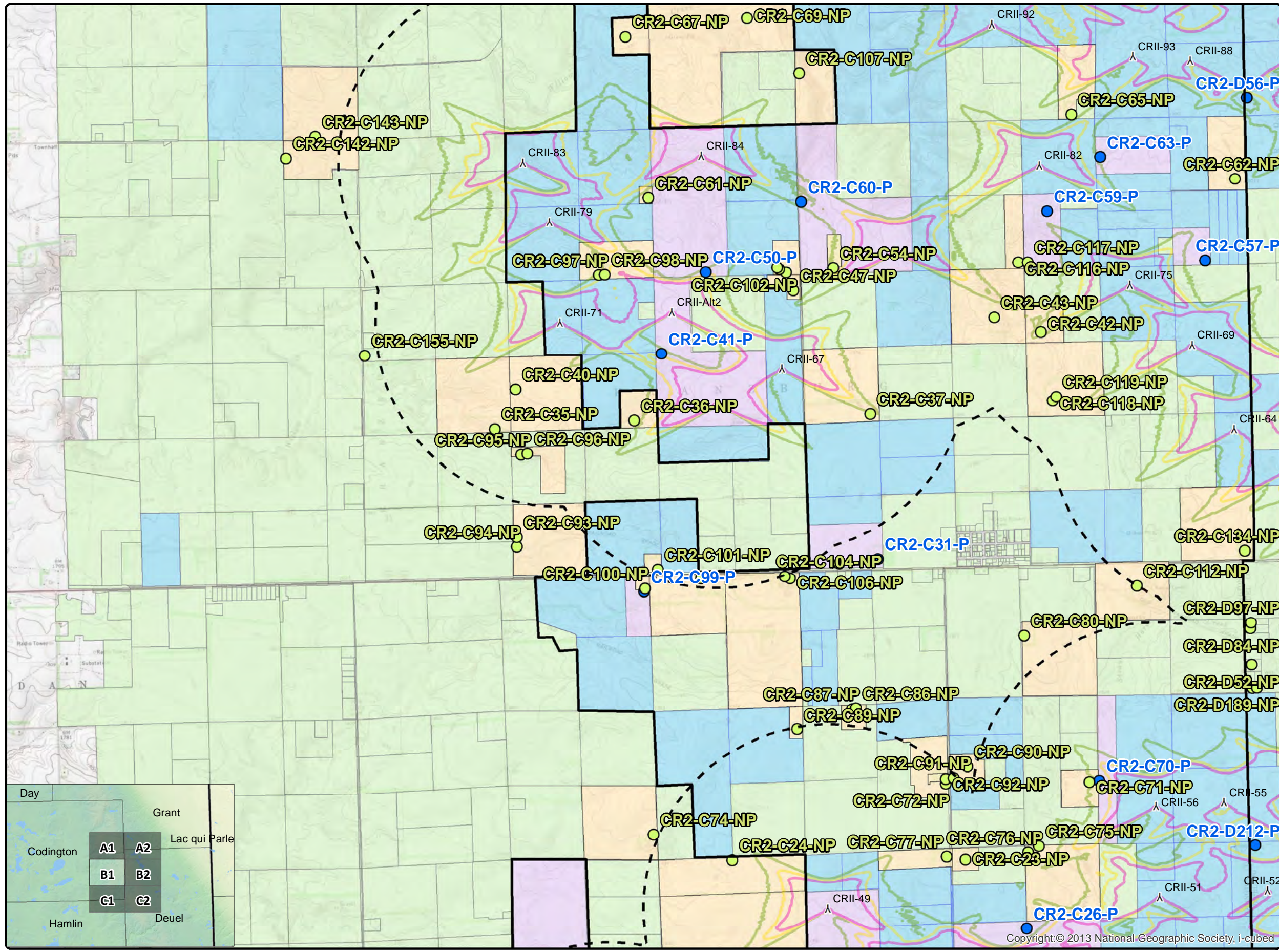
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- ▭ Participating Parcels

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Crowned Ridge II Wind Farm 300 MW Shadow Flicker Iso-Lines

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Project Description
Wind turbine layout with occupied structures within 2 km.

Predicted shadow flicker levels at existing residences.

Hessler array with 6 alternates

Location: Watertown, SD

Project #: 20174431

Issue Dates


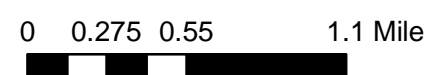
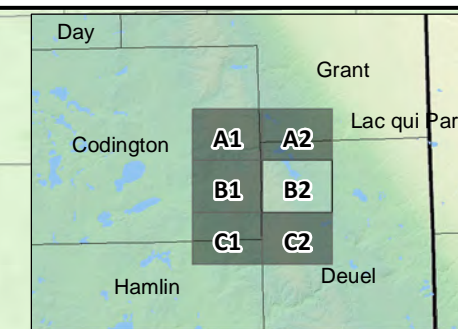
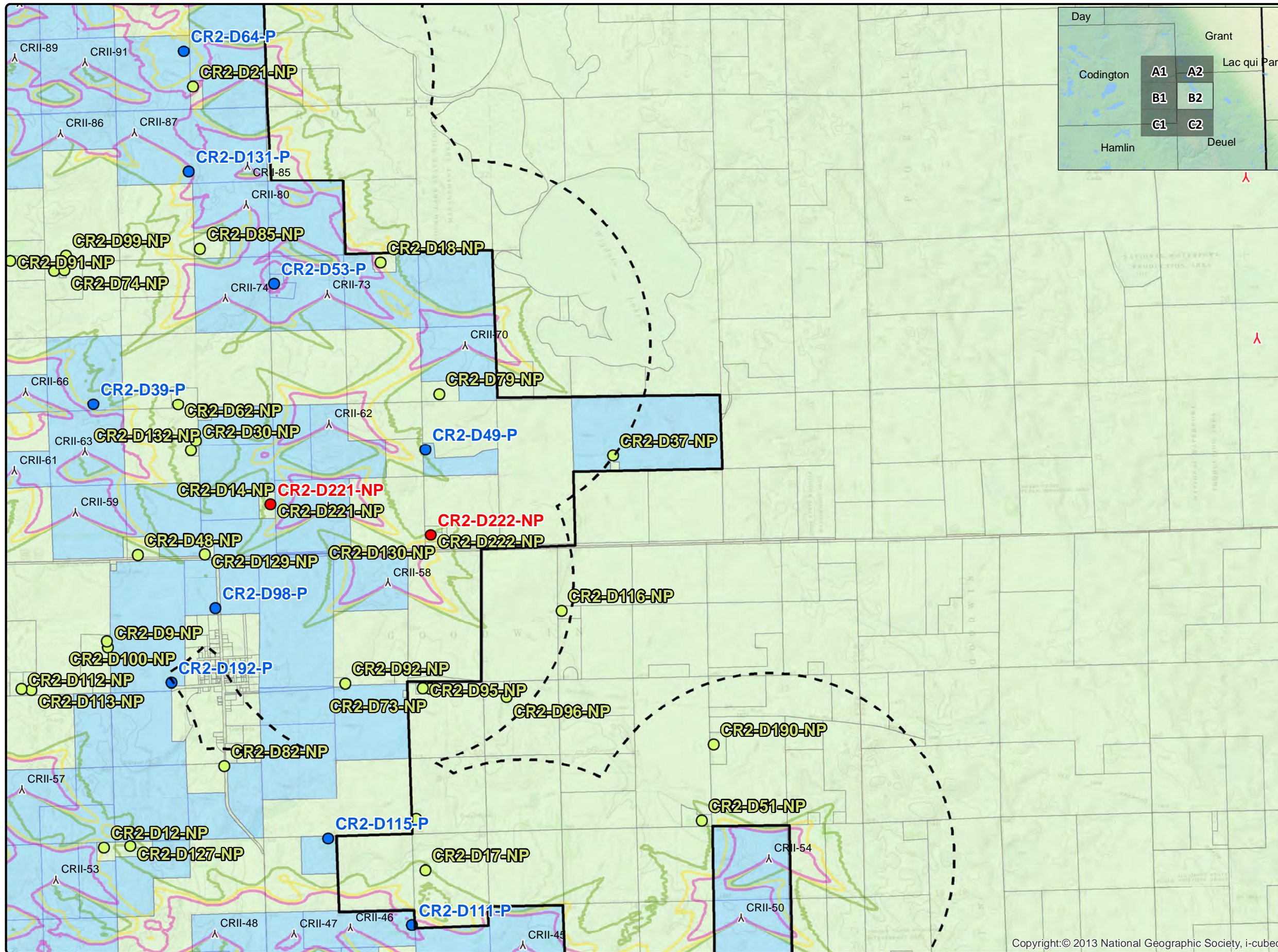
#	Description	Date
1	Original	2019.12.30

Drawn By: AS Checked By: JH

Legend

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Crowned Ridge II Wind Farm 300 MW Shadow Flicker Iso-Lines

Client
SWCA Environmental Consultants

Project Description
Wind turbine layout with occupied structures within 2 km.

Predicted shadow flicker levels at existing residences.

Hessler array with 6 alternates

Location: Watertown, SD

Project #: 20174431

Issue Dates

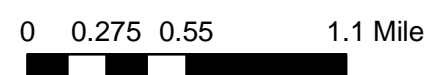
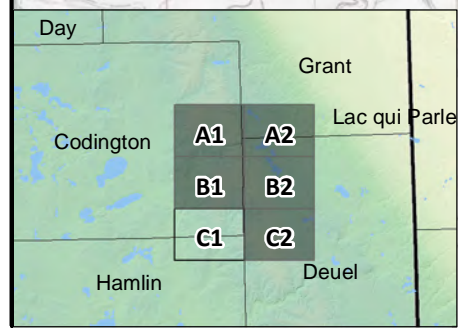
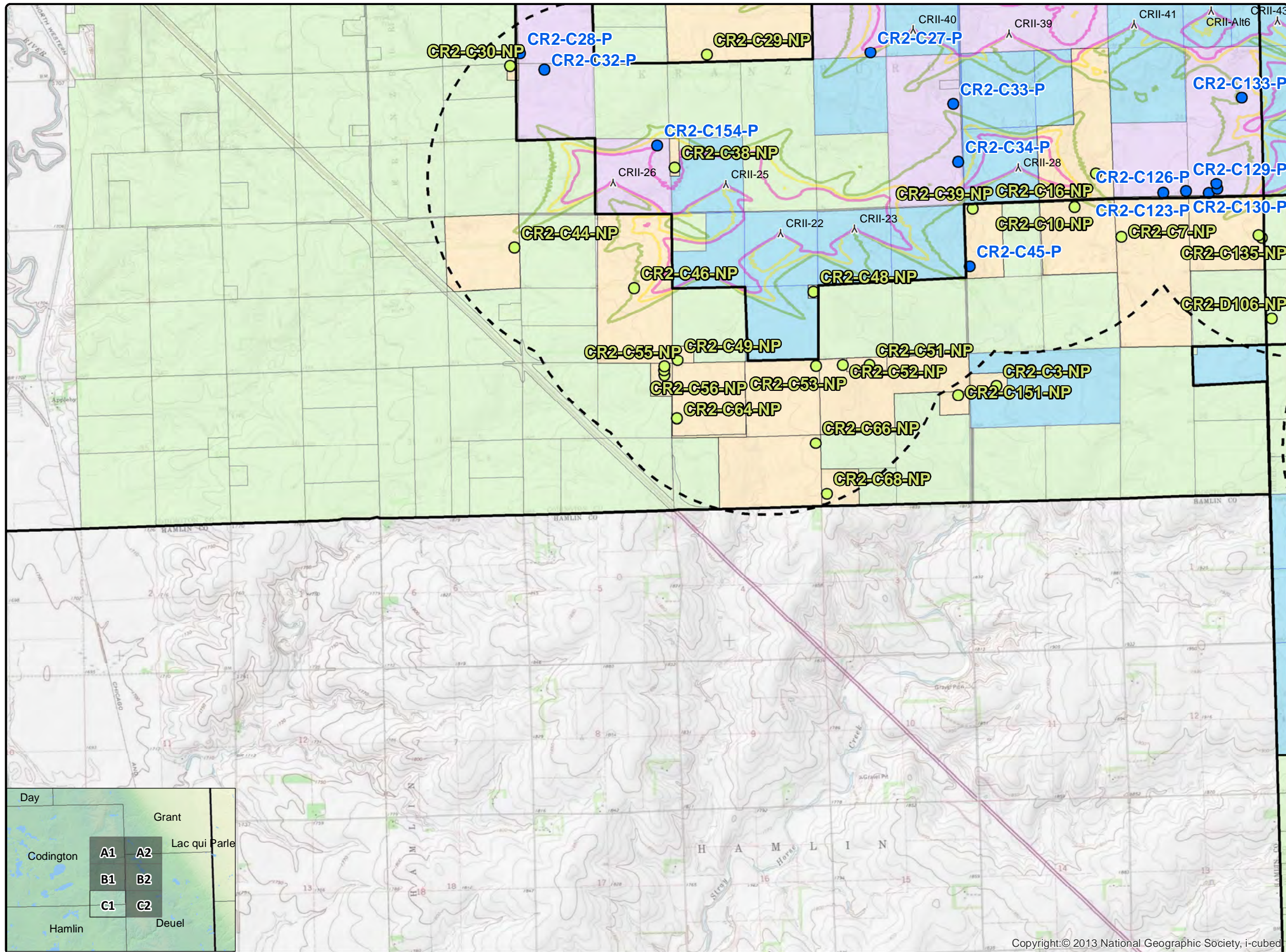
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1	Original	2019.12.30

Drawn By: AS *Checked By:* JH

Legend

- ▲ Crowned Ridge II Turbines 300 MW
- ▲ Crowned Ridge Turbines
- ▲ Deuel Harvest Turbines
- ▭ 2 km Turbine Buffer
- ▭ County Lines
- ▭ CR II Project Boundary
- CR II Intervenor
- Non-Participants Shadow
- Participants Shadow
- Shadow Flicker (hr/yr)**
- 10
- 15
- 20
- 25
- 30
- Non-Participating Codington Parcels
- Participating Codington_Parcels
- Non-Participating Parcels
- Participating Parcels

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Crowned Ridge II Wind Farm 300 MW Shadow Flicker Iso-Lines

Client

SWCA Environmental Consultants

Project Description

Wind turbine layout with occupied structures within 2 km.

Predicted shadow flicker levels at existing residences.

Hessler array with 6 alternates

Location: Watertown, SD

Project #: 20174431

Issue Dates

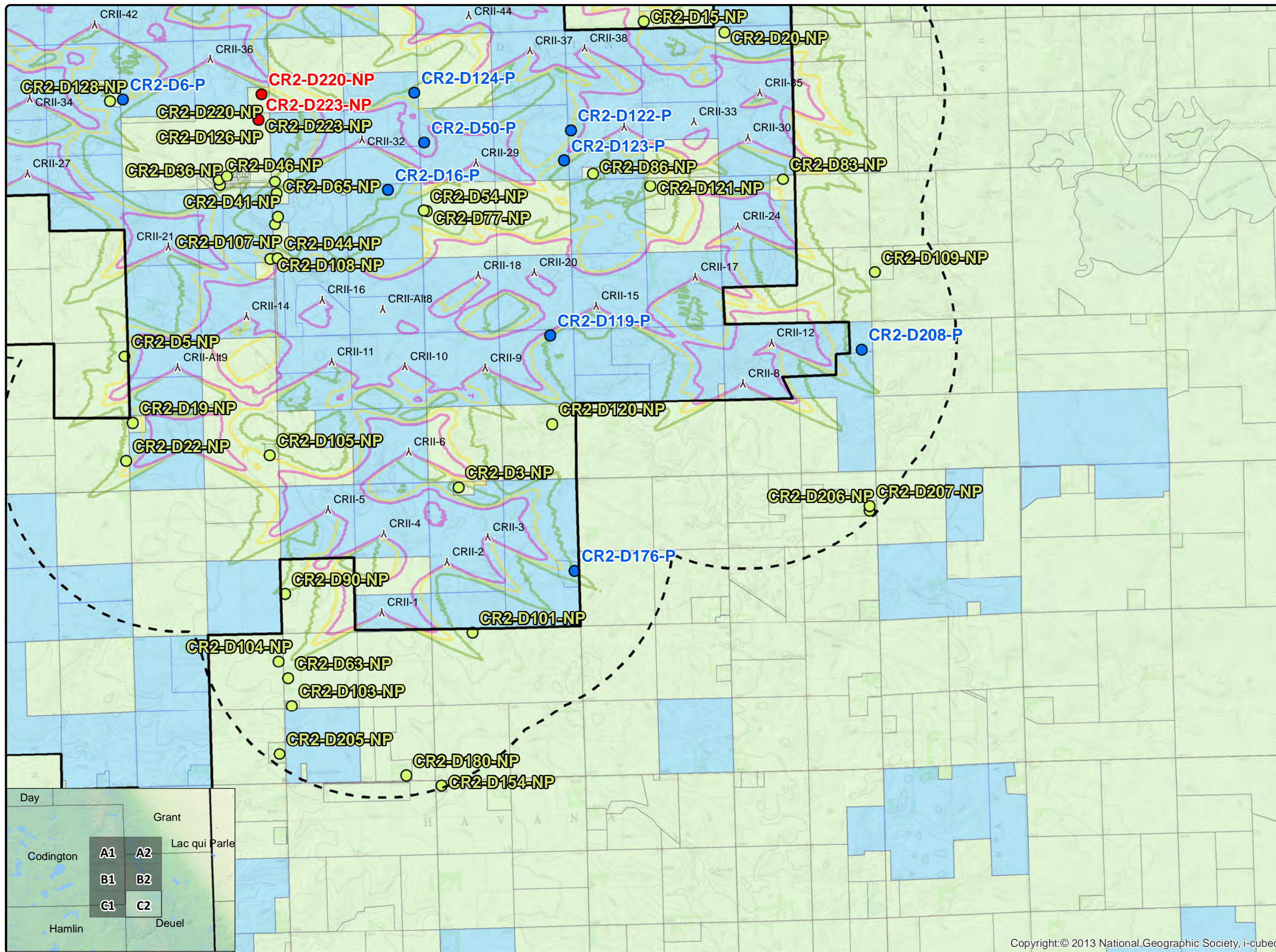
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1	Original	2019.12.30

Drawn By: AS Checked By: JH

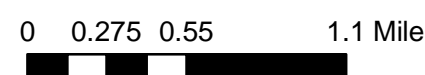
Legend

- ▲ Crowned Ridge II Turbines 300 MW
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 - ▲ Deuel Harvest Turbines
 - 2 km Turbine Buffer
 - County Lines
 - CR II Project Boundary
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Day	Grant		Lac qui Parle
Codington	A1	A2	
	B1	B2	
Hamlin	C1	C2	Deuel



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**Crowned Ridge II Wind Farm
300 MW
Overview Map**

Client
SWCA Environmental Consultants

Project Description
Wind turbine layout with land parcels within the project footprint and existing occupied structures.

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

NEER array with 4 alternates.

Location: Watertown, SD
Project #: 20174431

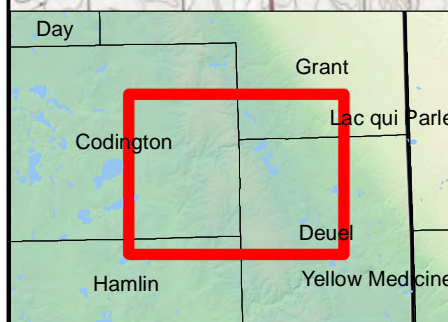
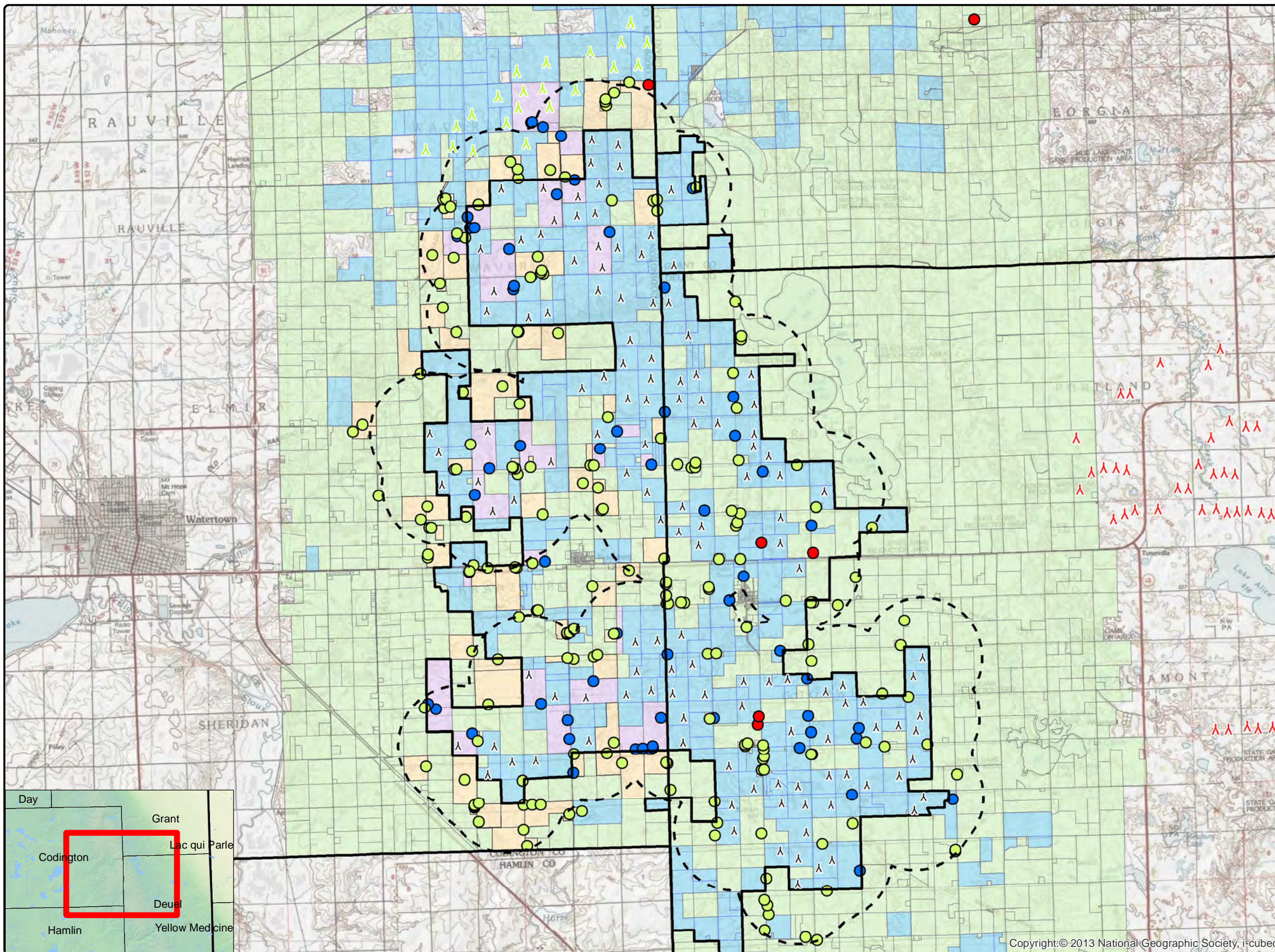
Issue Dates

#	Description	Date
1	Original	2019.12.30

Drawn By: AS Checked By: JH

- Legend**
- ^ Crowned Ridge II Turbines 300 MW
 - ^ Crowned Ridge Turbines
 - ^ Deuel Harvest Turbines
 - - - 2 km Turbine Buffer
 - ▭ County Lines
 - ▭ CR II Project Boundary
 - CR II Intervenor
 - Non-Participants Noise
 - Participants Noise
 - Non-Participating Codington Parcels
 - Participating Codington_Parcels
 - Non-Participating Parcels
 - Participating Parcels

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0 0.75 1.5 3 Mile



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**Crowned Ridge II Wind Farm
300 MW
Shadow Overview Map**

Client
SWCA Environmental Consultants

Project Description
Wind turbine layout with occupied structures within 2 km.

Predicted shadow flicker levels at existing residences.

NEER array with 4 alternates

Location: Watertown, SD
Project #: 20174431

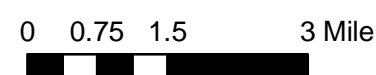
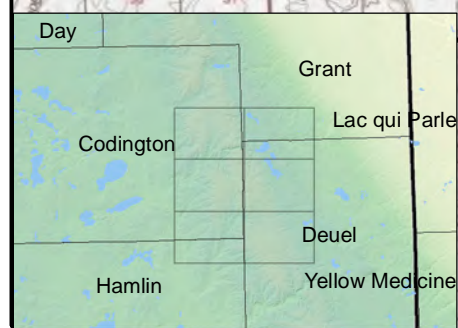
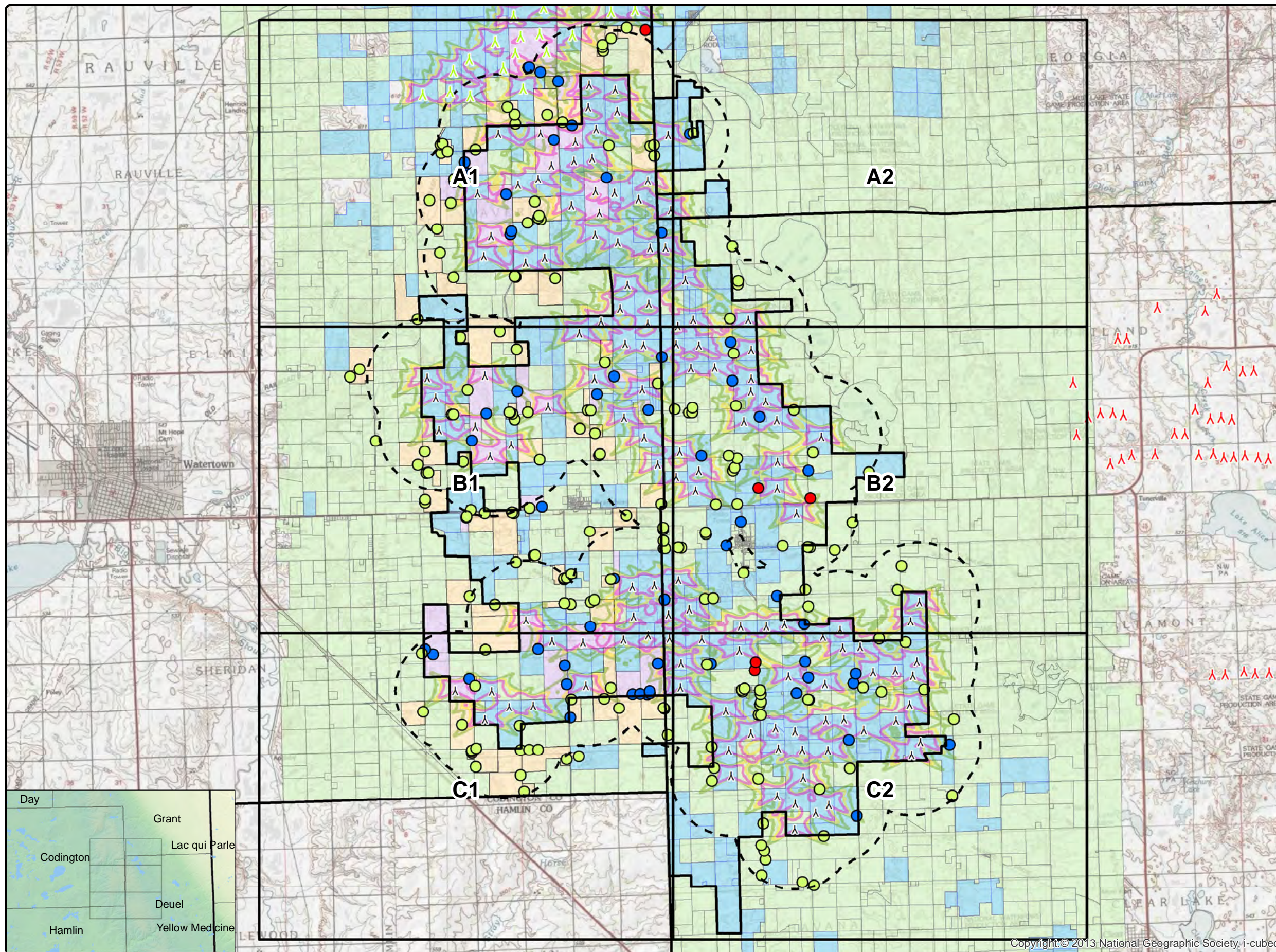
Issue Dates

#	Description	Date
1	Original	2019.12.30

Drawn By: AS *Checked By:* JH

- Legend**
- △ Crowned Ridge II Turbines 300 MW
 - △ Crowned Ridge Turbines
 - △ Deuel Harvest Turbines
 - - - 2 km Turbine Buffer
 - ▭ County Lines
 - ▭ CR II Project Boundary
 - CR II Intervenor
 - Non-Participants Shadow
 - Participants Shadow
- Shadow Flicker (hr/yr)**
- 10
 - 15
 - 20
 - 25
 - 30
- ▭ Non-Participating Codington Parcels
 - ▭ Participating Codington_Parcels
 - ▭ Non-Participating Parcels
 - ▭ Participating Parcels

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Crowned Ridge II Wind Farm 300 MW Shadow Flicker Iso-Lines

Client
SWCA Environmental Consultants

Project Description
Wind turbine layout with occupied structures within 2 km.
Predicted shadow flicker levels at existing residences.

Predicted shadow flicker levels at existing residences.

NEER array with 4 alternates

Location: Watertown, SD
Project #: 20174431


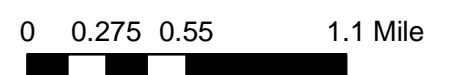
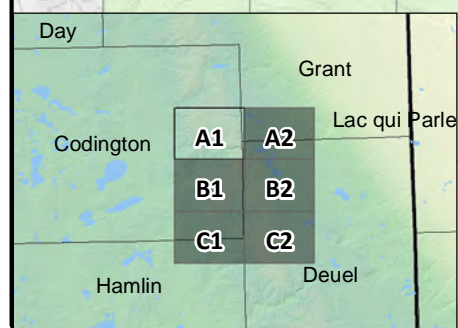
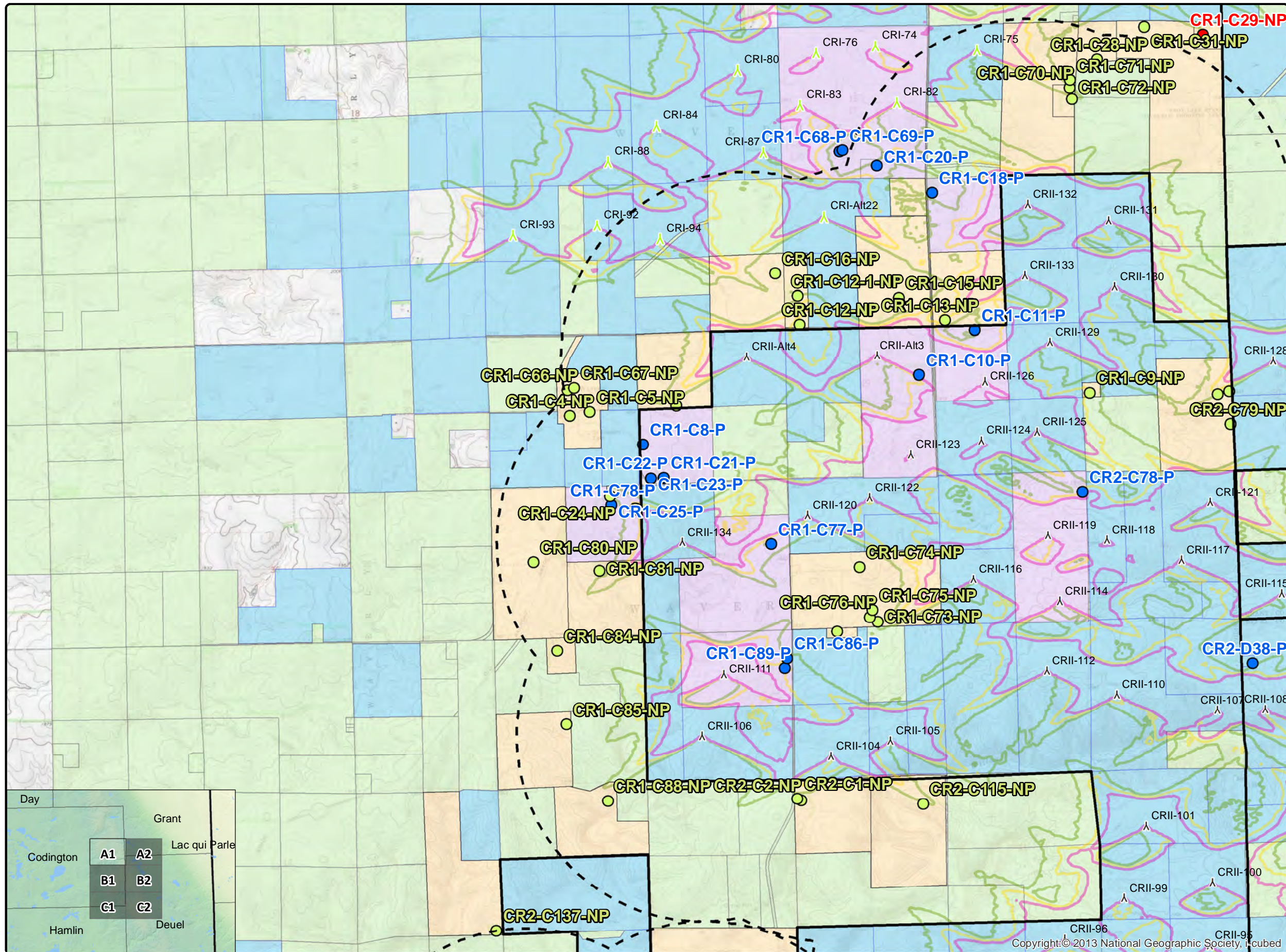
Issue Dates

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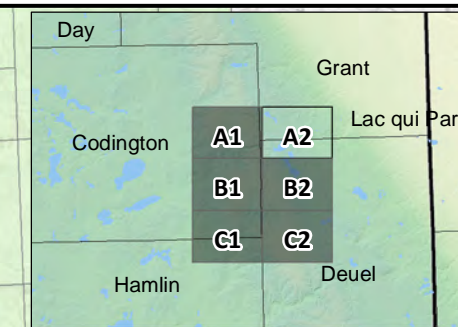
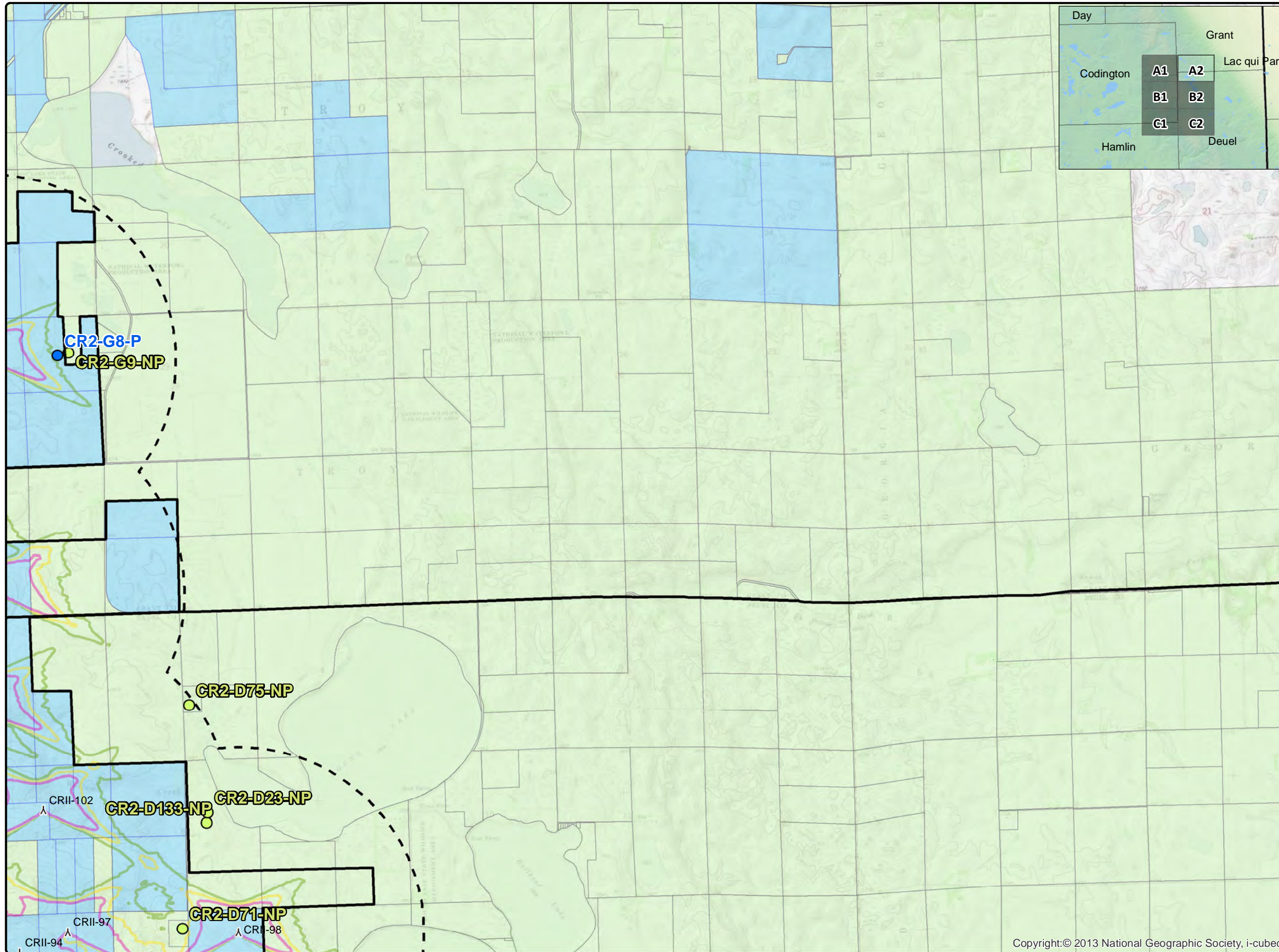
Drawn By: AS Checked By: JH

- Legend**
- ▲ Crowned Ridge II Turbines 300 MW
 - ▲ Crowned Ridge Turbines
 - ▲ Deuel Harvest Turbines
 - 2 km Turbine Buffer
 - County Lines
 - CR II Project Boundary
 - CR II Intervenor
 - Non-Participants Shadow
 - Participants Shadow
- Shadow Flicker (hr/yr)**
- 10
 - 15
 - 20
 - 25
 - 30
- Non-Participating Codington Parcels
 - Participating Codington_Parcels
 - Non-Participating Parcels
 - Participating Parcels

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**Crowned Ridge II Wind Farm
300 MW
Shadow Flicker Iso-Lines**

Client
SWCA Environmental Consultants

Project Description
Wind turbine layout with occupied structures within 2 km.
Predicted shadow flicker levels at existing residences.
NEER array with 4 alternates

Location: Watertown, SD
Project #: 20174431

Issue Dates

#	Description	Date
1	Original	2019.12.30

Drawn By: AS Checked By: JH

Legend


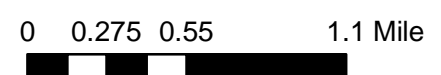
- ▲ Crowned Ridge II Turbines 300 MW
- ▲ Crowned Ridge Turbines
- ▲ Deuel Harvest Turbines
- 2 km Turbine Buffer
- County Lines
- CR II Project Boundary
- CR II Intervenor
- Non-Participants Shadow
- Participants Shadow

Shadow Flicker (hr/yr)

- 10
- 15
- 20
- 25
- 30

- Non-Participating Codington Parcels
- Participating Codington_Parcels
- Non-Participating Parcels
- Participating Parcels

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Crowned Ridge II Wind Farm 300 MW Shadow Flicker Iso-Lines

Client
SWCA Environmental Consultants

Project Description
Wind turbine layout with occupied structures within 2 km.

Predicted shadow flicker levels at existing residences.

NEER array with 4 alternates

Location: Watertown, SD
Project #: 20174431

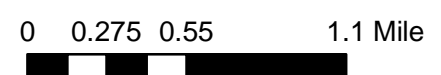
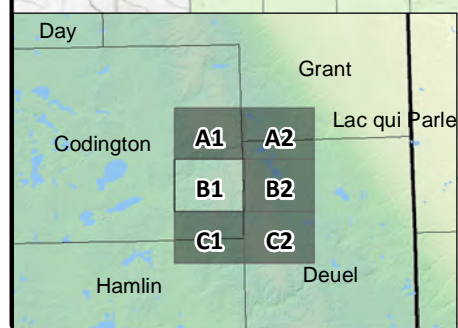
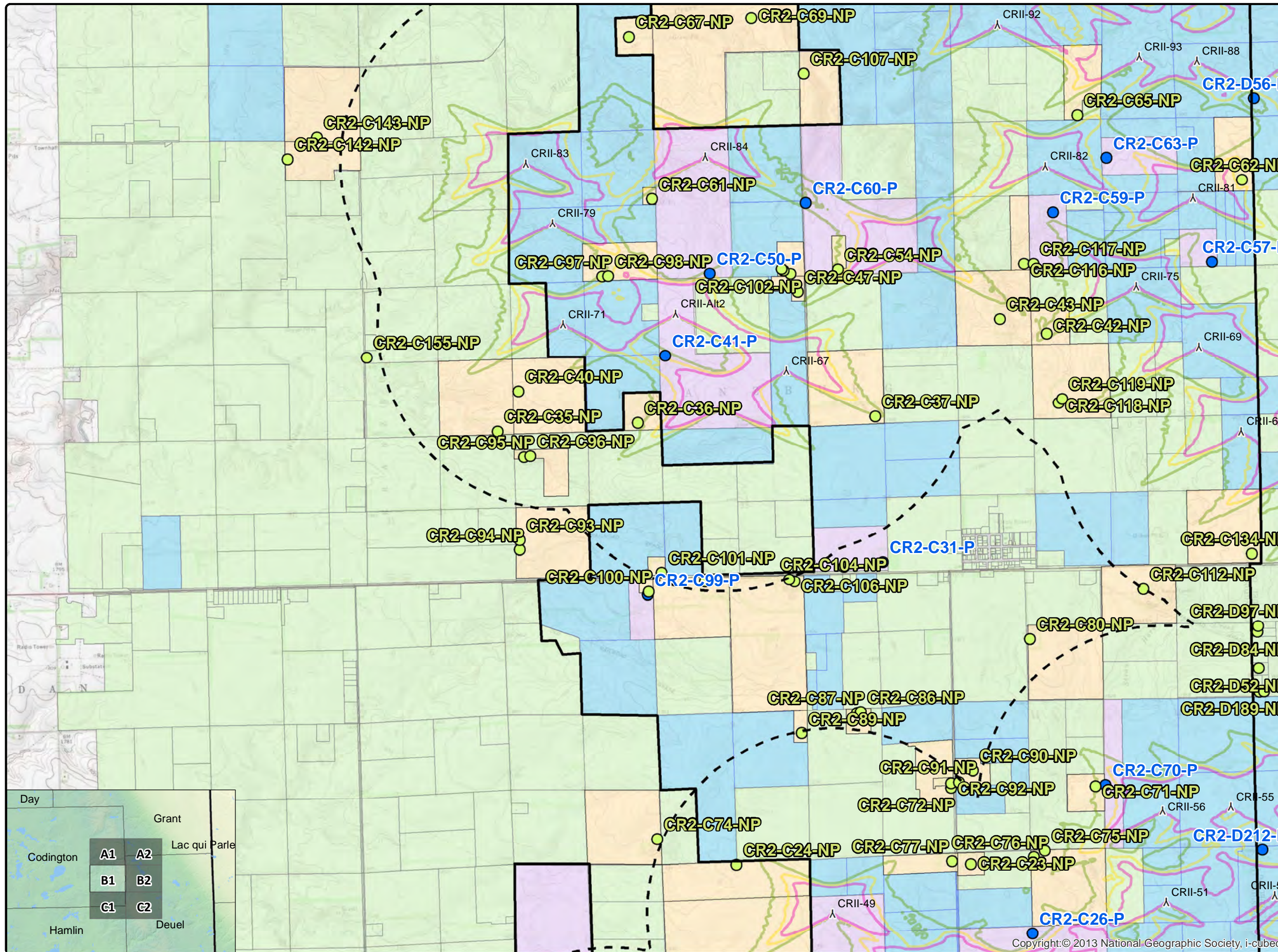
Issue Dates

#	Description	Date
1	Original	2019.12.30

Drawn By: AS Checked By: JH

- Legend**
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 - ▲ Crowned Ridge Turbines
 - ▲ Deuel Harvest Turbines
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 - Non-Participants Shadow
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Crowned Ridge II Wind Farm 300 MW Shadow Flicker Iso-Lines

Client
SWCA Environmental Consultants

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Wind turbine layout with occupied structures within 2 km.
Predicted shadow flicker levels at existing residences.
NEER array with 4 alternates

Location: Watertown, SD
Project #: 20174431


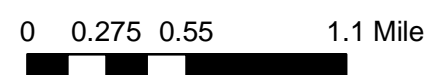
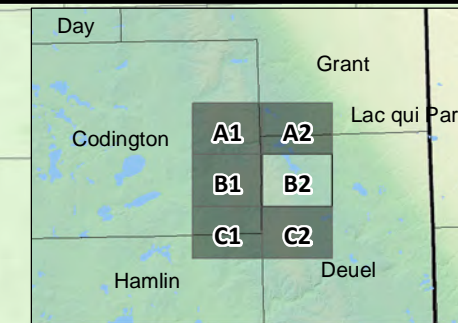
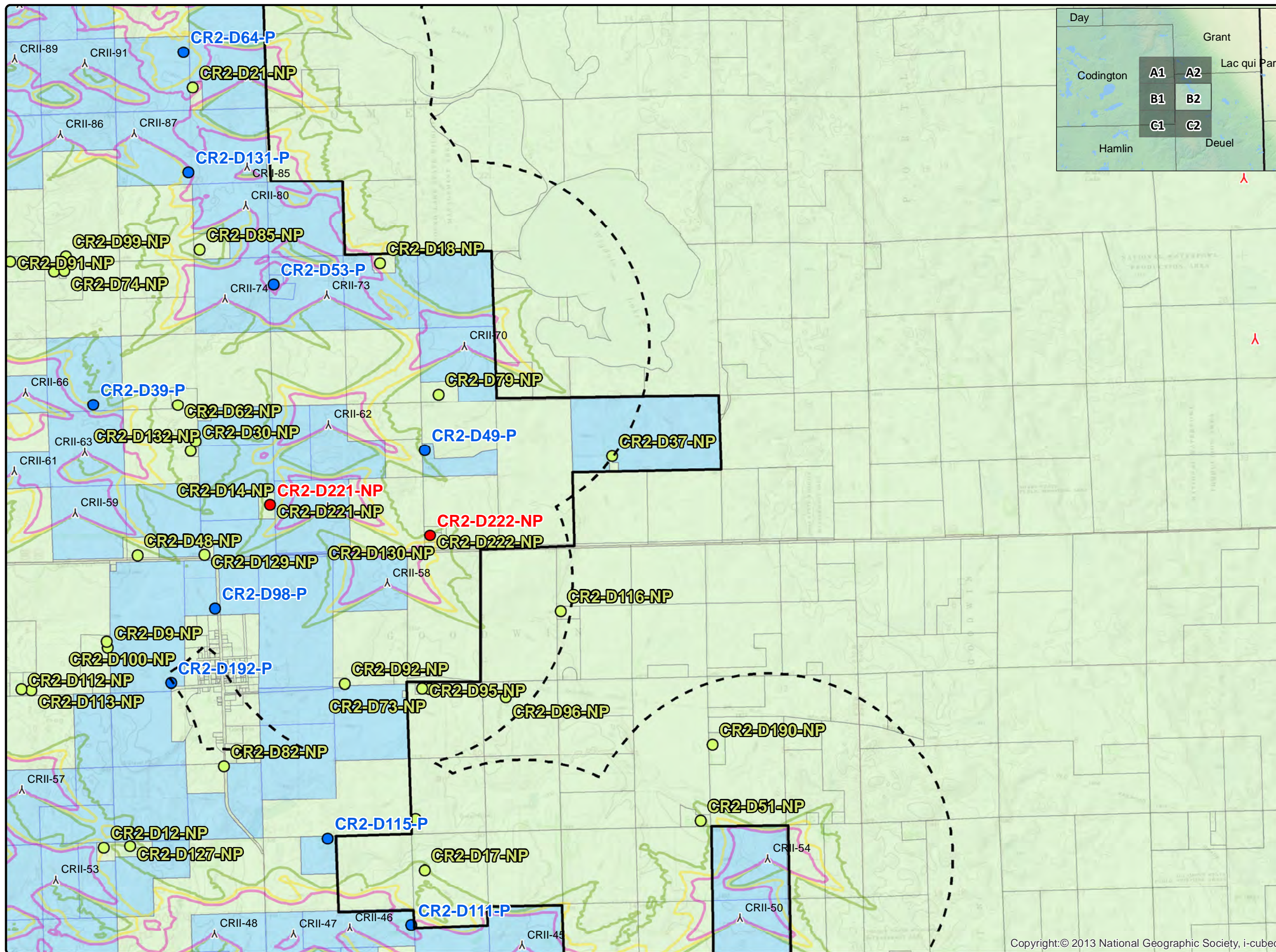
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 - ▭ Participating Parcels

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Crowned Ridge II Wind Farm 300 MW Shadow Flicker Iso-Lines

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SWCA Environmental Consultants

Project Description
Wind turbine layout with occupied structures within 2 km.

Predicted shadow flicker levels at existing residences.

NEER array with 4 alternates

Location: Watertown, SD

Project #: 20174431

Issue Dates

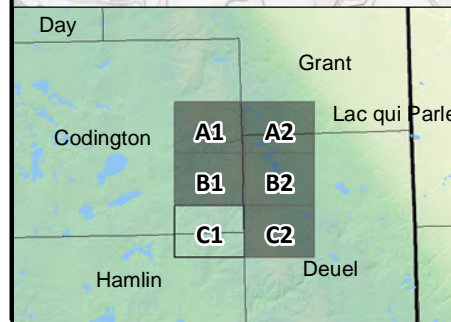
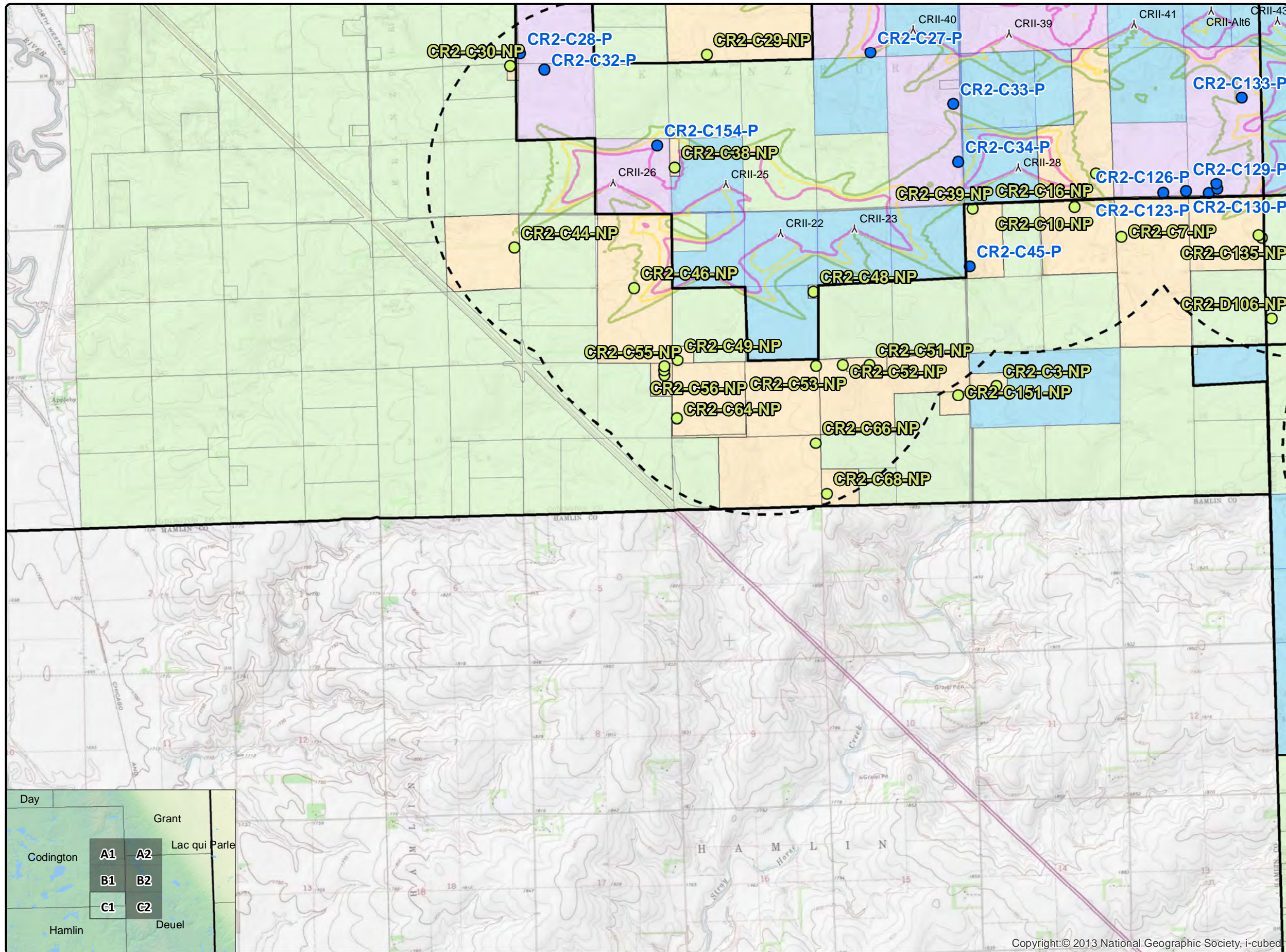
#	Description	Date
1	Original	2019.12.30

Drawn By: AS Checked By: JH

Legend

- ▲ Crowned Ridge II Turbines 300 MW
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0 0.275 0.55 1.1 Mile

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**Crowned Ridge II Wind Farm
300 MW
Shadow Flicker Iso-Lines**

Client

SWCA Environmental Consultants

Project Description

Wind turbine layout with occupied structures within 2 km.

Predicted shadow flicker levels at existing residences.

NEER array with 4 alternates

Location: Watertown, SD

Project #: 20174431

Issue Dates

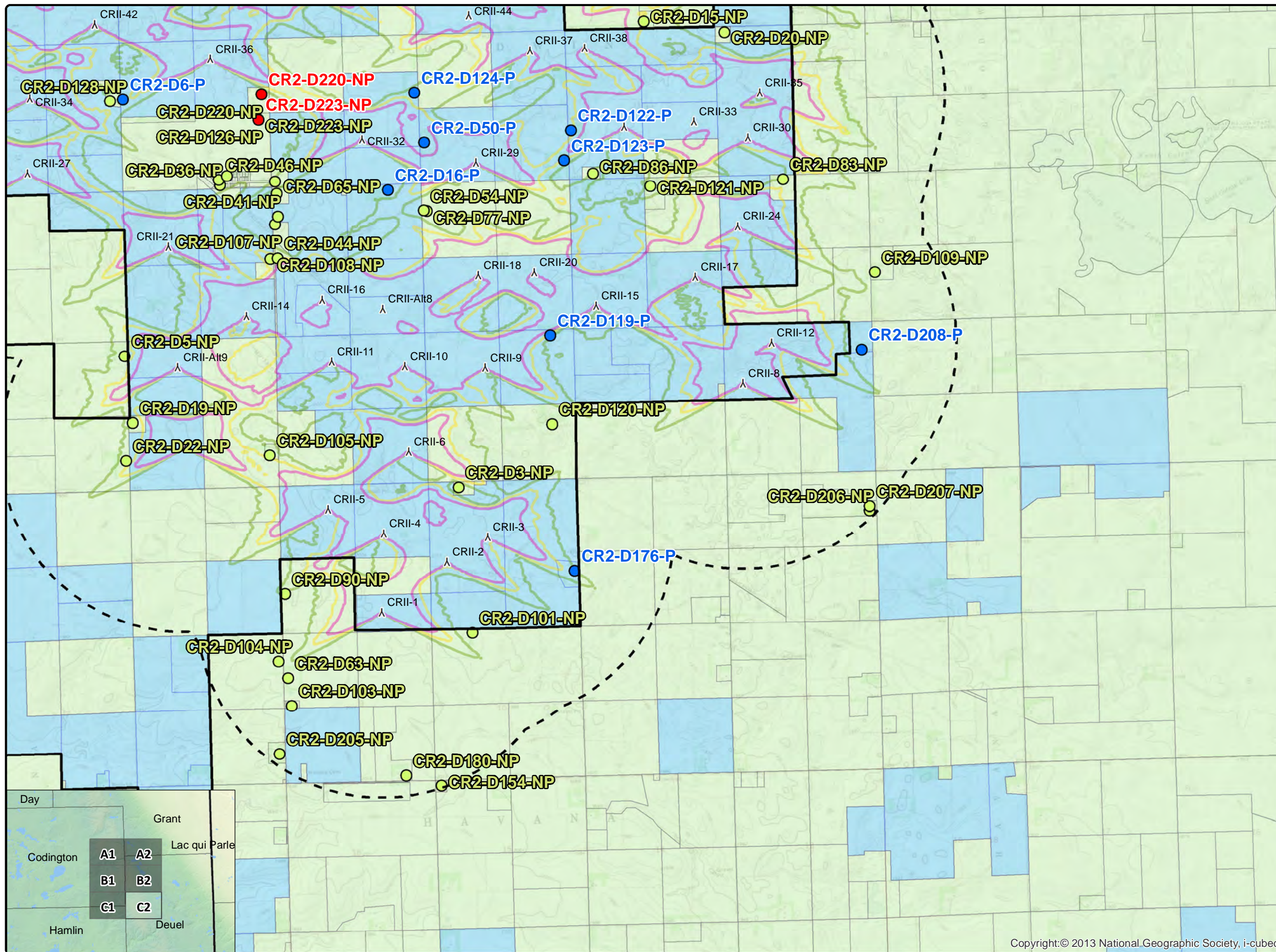
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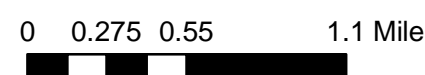
Legend

- ▲ Crowned Ridge II Turbines 300 MW
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Day				
		Grant		
		Lac qui Parle		
Codington	A1	A2		
	B1	B2		
	G1	C2		
Hamlin			Deuel	



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