ATTACHMENT 5

Table C-1: Crowned Ridge Shadow Flicker Tabular Results Sorted by Receptor ID
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 **200 MW** **300 MW**
Codington County **As Built** **As Filed July 29**

Receptor ID	Participation Status	Easting (m)	Northing (m)	Elevation AMSL (m)	Realistic Case Shadow (hrs/year)	Realistic Case Shadow (hrs/year)	Distance to Nearest Turbine (ft)
CR1-C1-NP	Non-P	656,743.00	4,983,525.00	596.0	0:00	0:00	1,689
CR1-C2-NP	Non-P	658,791.00	4,984,483.00	602.0	0:00	0:00	1,912
CR1-C3-NP	Non-P	657,888.00	4,984,697.00	604.2	4:10	4:12	1,004
CR1-C4-NP	Non-P	659,744.00	4,984,749.00	606.0	0:00	0:00	2,044
CR1-C5-NP	Non-P	659,958.00	4,984,794.00	604.8	0:00	0:00	2,012
CR1-C6-P	Participant	662,989.00	4,995,228.00	599.8	0:00	0:00	1,860
CR1-C7-NP	Non-P	660,893.00	4,984,861.00	593.2	0:00	0:00	1,808
CR1-C9-NP	Non-P	665,352.00	4,985,004.00	609.0	0:00	15:07	3,439
CR1-C10-P	Participant	663,510.00	4,985,195.00	609.0	0:00	29:29	1,992
CR1-C11-P	Participant	664,111.00	4,985,679.00	609.0	0:00	10:30	2,035
CR1-C12-1-NP	Non-P	662,199.00	4,986,047.00	606.0	1:28	17:13	901
CR1-C12-NP	Non-P	662,222.00	4,985,736.00	603.0	0:00	10:38	1,195
CR1-C13-NP	Non-P	663,792.00	4,985,785.00	612.0	0:00	19:04	1,720
CR1-C14-NP	Non-P	657,982.00	4,985,894.00	609.0	9:59	10:02	573
CR1-C15-NP	Non-P	663,291.00	4,986,026.00	615.0	0:00	2:17	1,191
CR1-C16-NP	Non-P	661,960.00	4,986,288.00	606.0	2:19	6:18	807
CR1-C17-P	Participant	658,031.00	4,986,373.00	609.1	27:13	26:48	575
CR1-C18-P	Participant	663,651.00	4,987,157.00	610.4	2:19	6:00	1,047
CR1-C19-P	Participant	659,243.00	4,987,276.00	611.6	22:03	21:25	525
CR1-C20-P	Participant	663,054.00	4,987,455.00	606.0	13:46	14:42	712
CR1-C26-P	Participant	657,767.00	4,988,493.00	597.0	6:37	6:39	1,062
CR1-C27-NP	Non-P	656,876.00	4,988,683.00	583.0	0:00	0:00	1,821
CR1-C28-NP	Non-P	665,429.00	4,988,598.00	590.9	2:43	2:44	1,296
CR1-C29-NP	Non-P	666,572.00	4,988,867.00	575.9	0:00	6:56	1,425
CR1-C30-P	Participant	661,699.00	4,988,957.00	615.0	23:26	23:33	492
CR1-C31-NP	Non-P	665,939.00	4,988,950.00	585.4	0:00	0:00	1,381
CR1-C32-NP	Non-P	655,843.00	4,989,581.00	568.8	0:00	0:00	2,959
CR1-C33-NP	Non-P	656,839.00	4,990,404.00	569.8	0:00	0:00	2,261
CR1-C34-NP	Non-P	658,661.00	4,990,389.00	588.2	8:35	26:12	638
CR1-C35-P	Participant	662,025.00	4,990,475.00	609.0	11:48	11:49	647
CR1-C36-P	Participant	663,181.00	4,990,600.00	615.0	14:31	14:36	467
CR1-C37-NP	Non-P	663,563.00	4,991,342.00	605.1	15:51	15:55	497
CR1-C38-NP	Non-P	660,639.00	4,991,557.00	597.0	5:09	6:06	1,059
CR1-C39-NP	Non-P	660,144.00	4,991,670.00	588.0	2:59	6:57	794
CR1-C40-NP	Non-P	657,865.00	4,991,818.00	583.7	4:38	6:46	820
CR1-C41-NP	Non-P	665,053.00	4,992,084.00	576.1	12:27	12:30	718
CR1-C42-P	Participant	659,458.00	4,992,229.00	580.0	0:00	11:58	1,203
CR1-C44-NP	Non-P	665,076.00	4,993,095.00	578.2	28:16	28:25	657
CR1-C45-NP	Non-P	653,390.00	4,993,503.00	573.2	1:41	1:42	1,729

Table C-1: Crowned Ridge Shadow Flicker Tabular Results Sorted by Receptor ID
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)	200 MW As Built Realistic Case Shadow (hrs/year)	300 MW As Filed July 29 Realistic Case Shadow (hrs/year)	Distance to Nearest Turbine (ft)
CR1-C46-NP	Non-P	655,802.00	4,993,540.00	609.1	25:37	25:44	547
CR1-C47-P	Participant	662,825.00	4,993,508.00	613.9	5:01	5:03	1,143
CR1-C48-P	Participant	664,247.00	4,993,646.00	588.0	3:47	3:48	563
CR1-C49-P	Participant	662,250.00	4,993,731.00	609.0	1:12	1:12	1,569
CR1-C50-P	Participant	656,806.00	4,994,388.00	621.0	28:08	28:38	485
CR1-C51-P	Participant	657,455.00	4,995,160.00	621.0	24:39	24:47	539
CR1-C52-NP	Non-P	654,924.00	4,995,231.00	603.0	6:46	11:16	1,094
CR1-C53-NP	Non-P	663,376.00	4,996,043.00	578.8	0:00	0:00	2,195
CR1-C54-NP	Non-P	663,421.00	4,995,376.00	583.4	0:00	0:00	1,631
CR1-C55-NP	Non-P	660,914.00	4,995,169.00	607.5	2:51	2:52	1,024
CR1-C56-P	Participant	655,953.00	4,995,244.00	606.5	18:13	28:54	601
CR1-C57-P	Participant	656,628.00	4,995,266.00	615.0	9:40	10:38	478
CR1-C58-NP	Non-P	657,781.00	4,996,906.00	615.0	0:00	17:05	2,015
CR1-C59-P	Participant	661,548.00	5,000,754.00	584.2	0:00	7:39	6,053
CR1-C60-NP	Non-P	656,855.00	4,998,565.00	613.5	0:00	14:18	3,782
CR1-C61-NP	Non-P	656,690.00	4,997,831.00	612.0	0:00	42:10	3,039
CR1-C62-NP	Non-P	658,375.00	4,995,138.00	615.0	18:05	18:10	511
CR1-C63-NP	Non-P	658,566.00	4,995,254.00	612.4	10:43	10:46	734
CR1-C64-P	Participant	659,436.00	4,992,174.00	581.0	0:00	19:54	1,234
CR1-C65-NP	Non-P	665,805.00	4,995,305.00	579.0	1:29	1:30	1,184
CR1-C66-NP	Non-P	659,718.00	4,985,032.00	606.0	0:00	0:00	1,768
CR1-C67-NP	Non-P	659,789.00	4,985,057.00	606.0	0:00	0:00	1,765
CR1-C68-P	Participant	662,652.00	4,987,606.00	609.0	6:44	6:46	654
CR1-C69-P	Participant	662,685.00	4,987,619.00	609.0	6:05	6:07	666
CR1-C70-NP	Non-P	665,135.00	4,988,293.00	595.9	12:01	12:05	1,079
CR1-C71-NP	Non-P	665,137.00	4,988,378.00	595.6	7:23	7:25	1,051
CR1-C72-NP	Non-P	665,158.00	4,988,170.00	594.6	7:39	7:41	1,151
CR1-C105-NP	Non-P	658,372.48	5,001,256.80	600.3	0:00	20:05	6,377
CR1-C107-NP	Non-P	656,810.99	4,999,855.15	598.8	0:00	9:58	5,066
CR1-C109-NP	Non-P	653,780.18	4,996,828.35	588.0	0:00	7:03	3,005
CR1-C110-NP	Non-P	654,384.54	4,996,685.57	593.9	0:00	20:47	2,508
CR1-C111-NP	Non-P	653,857.19	4,995,573.17	591.0	0:00	11:42	1,922
CR1-C112-NP	Non-P	660,001.53	4,984,907.81	604.6	0:00	0:44	1,892
CR2-C150-P	Participant	657,178.00	4,985,788.00	612.0	10:18	10:01	500

Table C-1: Crowned Ridge Shadow Flicker Tabular Results Sorted by Receptor ID
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
Grant County
continued

Receptor ID	Participation Status	Easting (m)	Northing (m)	Elevation AMSL (m)	200 MW As Built Realistic Case Shadow (hrs/year)	300 MW As Filed July 29 Realistic Case Shadow (hrs/year)	Distance to Nearest Turbine (ft)
CR1-G12-NP	Non-P	668,229.00	4,989,039.00	575.0	0:00	0:00	1,409
CR1-G13-NP	Non-P	672,216.00	4,989,142.00	558.0	0:00	0:00	1,090
CR1-G14-NP	Non-P	668,156.00	4,989,332.00	574.1	0:00	0:00	1,201
CR1-G15-P	Participant	668,396.00	4,989,607.00	576.0	0:00	0:00	837
CR1-G16-NP	Non-P	668,419.00	4,989,861.00	576.0	0:00	0:00	631
CR1-G18-P	Participant	668,678.00	4,990,722.00	585.0	22:28	22:34	483
CR1-G19-P	Participant	671,018.00	4,990,744.00	570.0	5:42	5:44	633
CR1-G21-P	Participant	666,766.00	4,991,807.00	577.1	29:08	29:12	474
CR1-G22-NP	Non-P	674,670.00	4,991,955.00	527.6	0:00	0:00	1,762
CR1-G23-NP	Non-P	670,471.00	4,992,104.00	560.0	5:10	5:11	666
CR1-G24-P	Participant	673,058.00	4,992,440.00	539.4	0:00	0:00	680
CR1-G25-P	Participant	671,391.00	4,992,858.00	549.0	14:37	14:41	550
CR1-G26-P	Participant	672,589.00	4,993,869.00	531.0	1:45	8:17	1,411
CR1-G27-NP	Non-P	676,630.00	4,994,642.00	480.8	0:00	2:55	4,691
CR1-G28-P	Participant	673,113.00	4,994,772.00	513.9	0:00	23:01	2,118
CR1-G32-P	Participant	669,477.00	4,995,401.00	546.0	19:55	20:01	471
CR1-G33-P	Participant	668,911.00	4,995,550.00	548.7	3:51	3:53	847
CR1-G34-NP	Non-P	671,320.00	4,995,798.00	531.0	1:28	1:28	682
CR1-G36-NP	Non-P	673,559.00	4,996,344.00	498.0	0:00	0:00	2,781
CR1-G37-NP	Non-P	668,998.00	4,996,452.00	549.0	0:00	0:00	1,599
CR1-G38-P	Participant	673,972.00	4,996,493.00	494.5	0:00	0:00	3,218
CR1-G41-P	Participant	671,563.00	4,997,050.00	497.6	0:00	0:00	1,944
CR1-G42-NP	Non-P	670,566.00	4,997,097.00	518.9	0:00	0:00	1,974
CR1-G43-NP	Non-P	661,141.00	5,001,721.00	583.6	0:00	18:26	6,906
CR1-G44-NP	Non-P	661,781.00	5,001,732.00	583.7	0:00	2:50	7,058
CR1-G59-P	Participant	675,755.00	4,994,888.00	487.7	0:00	12:50	4,212
CR1-G60-P	Participant	675,830.00	4,995,687.00	477.0	0:00	5:44	4,823
CR1-G65-P	Participant	671,496.00	4,994,973.00	537.0	29:50	29:59	506
CR1-G66-P	Participant	670,802.00	4,994,681.00	539.7	11:08	16:44	549
CR1-G67-P	Participant	669,597.00	4,993,440.00	556.1	11:55	11:58	642
CR1-G68-NP	Non-P	669,159.00	4,993,632.00	565.6	2:07	2:07	644
CR1-G70-NP	Non-P	677,464.53	4,991,043.11	492.0	0:00	0:00	4,574
CR1-G77-NP	Non-P	676,031.00	4,992,629.00	502.7	0:00	0:00	3,229
CR1-G81-P	Participant	671,478.00	4,997,523.00	508.8	0:00	0:00	2,386
CR1-G105-NP	Non-P	668,696.00	4,998,325.00	549.0	0:00	0:00	3,433
CR1-G108-P	Participant	669,516.00	5,001,186.00	522.2	0:00	11:40	6,068
CR1-G109-NP	Non-P	667,064.00	5,000,425.00	566.2	0:00	0:59	6,006
CR1-G110-NP	Non-P	671,218.00	5,005,064.00	456.2	0:00	0:00	9,887

Table C-1: Crowned Ridge Shadow Flicker Tabular Results Sorted by Receptor ID
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
Grant County
continued

Receptor ID	Participation Status	Easting (m)	Northing (m)	Elevation AMSL (m)	200 MW As Built Realistic Case Shadow (hrs/year)	300 MW As Filed July 29 Realistic Case Shadow (hrs/year)	Distance to Nearest Turbine (ft)
CR1-G113-NP	Non-P	666,228.00	5,005,549.00	537.0	0:00	7:09	11,064
CR1-G114-NP	Non-P	666,214.00	5,006,667.00	521.1	0:00	23:23	12,126
CR1-G115-NP	Non-P	664,933.00	5,006,731.00	544.6	0:00	8:01	12,549
CR1-G117-NP	Non-P	663,801.00	5,005,084.00	581.3	0:00	1:54	10,876
CR1-G124-P	Participant	669,843.00	5,000,605.00	525.0	0:00	19:27	5,472
CR1-G125-NP	Non-P	668,289.00	5,000,643.00	543.0	0:00	15:49	5,757
CR1-G126-P	Participant	672,157.00	5,000,446.00	484.3	0:00	3:22	5,385
CR1-G127-P	Participant	669,534.00	4,999,939.00	533.8	0:00	2:22	4,824
CR1-G128-P	Participant	670,242.00	5,001,314.00	513.0	0:00	15:02	6,186
CR1-G129-P	Participant	673,111.00	4,997,703.00	478.1	0:00	2:25	3,269
CR1-G130-NP	Non-P	668,147.00	5,000,233.00	549.0	0:00	0:00	5,412
CR1-G131-P	Participant	668,466.00	5,005,145.00	505.2	0:00	1:32	10,122
CR1-G132-P	Participant	669,098.00	5,004,948.00	501.0	0:00	7:41	9,852
CR1-G133-P	Participant	669,881.00	5,005,460.00	478.8	0:00	3:27	10,326
CR1-G135-P	Participant	668,616.00	5,005,161.00	504.0	0:00	8:12	10,117
CR1-G136-P	Participant	667,706.00	5,004,861.00	522.0	0:00	10:36	9,985
CR1-G137-P	Participant	666,501.00	5,005,136.00	529.3	0:00	18:42	10,584
CR1-G138-P	Participant	664,809.00	5,006,456.00	549.0	0:00	25:26	12,279
CR1-G139-P	Participant	668,199.00	5,008,062.00	476.2	0:00	8:03	13,048
CR1-G140-P	Participant	664,546.00	5,007,269.00	551.4	0:00	0:00	13,101
CR1-G149-P	Participant	669,284.00	5,003,283.00	503.2	0:00	12:42	8,177
CR1-G600-NP	Non-P	674,300.70	5,005,772.78	393.0	0:00	0:00	11,086

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 **200 MW** **300 MW**
Codington County **As Built** **As Filed July 29**

Receptor ID	Participation Status	Easting (m)	Northing (m)	Elevation AMSL (m)	Realistic Case Shadow (hrs/year)	Realistic Case Shadow (hrs/year)	Distance to Nearest Turbine (ft)
CR1-C44-NP	Non-P	665,076.00	4,993,095.00	578.2	28:16	28:25	2,155
CR1-C50-P	Participant	656,806.00	4,994,388.00	621.0	28:08	28:38	1,591
CR1-C17-P	Participant	658,031.00	4,986,373.00	609.1	27:13	26:48	1,886
CR1-C46-NP	Non-P	655,802.00	4,993,540.00	609.1	25:37	25:44	1,795
CR1-C51-P	Participant	657,455.00	4,995,160.00	621.0	24:39	24:47	1,768
CR1-C30-P	Participant	661,699.00	4,988,957.00	615.0	23:26	23:33	1,614
CR1-C19-P	Participant	659,243.00	4,987,276.00	611.6	22:03	21:25	1,722
CR1-C56-P	Participant	655,953.00	4,995,244.00	606.5	18:13	28:54	1,972
CR1-C62-NP	Non-P	658,375.00	4,995,138.00	615.0	18:05	18:10	1,676
CR1-C37-NP	Non-P	663,563.00	4,991,342.00	605.1	15:51	15:55	1,631
CR1-C36-P	Participant	663,181.00	4,990,600.00	615.0	14:31	14:36	1,532
CR1-C20-P	Participant	663,054.00	4,987,455.00	606.0	13:46	14:42	2,336
CR1-C41-NP	Non-P	665,053.00	4,992,084.00	576.1	12:27	12:30	2,356
CR1-C70-NP	Non-P	665,135.00	4,988,293.00	595.9	12:01	12:05	3,540
CR1-C35-P	Participant	662,025.00	4,990,475.00	609.0	11:48	11:49	2,123
CR1-C63-NP	Non-P	658,566.00	4,995,254.00	612.4	10:43	10:46	2,408
CR2-C150-P	Participant	657,178.00	4,985,788.00	612.0	10:18	10:01	1,640
CR1-C14-NP	Non-P	657,982.00	4,985,894.00	609.0	9:59	10:02	1,880
CR1-C57-P	Participant	656,628.00	4,995,266.00	615.0	9:40	10:38	1,568
CR1-C34-NP	Non-P	658,661.00	4,990,389.00	588.2	8:35	26:12	2,093
CR1-C72-NP	Non-P	665,158.00	4,988,170.00	594.6	7:39	7:41	3,776
CR1-C71-NP	Non-P	665,137.00	4,988,378.00	595.6	7:23	7:25	3,448
CR1-C52-NP	Non-P	654,924.00	4,995,231.00	603.0	6:46	11:16	3,589
CR1-C68-P	Participant	662,652.00	4,987,606.00	609.0	6:44	6:46	2,146
CR1-C26-P	Participant	657,767.00	4,988,493.00	597.0	6:37	6:39	3,484
CR1-C69-P	Participant	662,685.00	4,987,619.00	609.0	6:05	6:07	2,185
CR1-C38-NP	Non-P	660,639.00	4,991,557.00	597.0	5:09	6:06	3,474
CR1-C47-P	Participant	662,825.00	4,993,508.00	613.9	5:01	5:03	3,750
CR1-C40-NP	Non-P	657,865.00	4,991,818.00	583.7	4:38	6:46	2,690
CR1-C3-NP	Non-P	657,888.00	4,984,697.00	604.2	4:10	4:12	3,294
CR1-C48-P	Participant	664,247.00	4,993,646.00	588.0	3:47	3:48	1,847
CR1-C39-NP	Non-P	660,144.00	4,991,670.00	588.0	2:59	6:57	2,605
CR1-C55-NP	Non-P	660,914.00	4,995,169.00	607.5	2:51	2:52	3,360
CR1-C28-NP	Non-P	665,429.00	4,988,598.00	590.9	2:43	2:44	4,252
CR1-C16-NP	Non-P	661,960.00	4,986,288.00	606.0	2:19	6:18	2,648
CR1-C18-P	Participant	663,651.00	4,987,157.00	610.4	2:19	6:00	3,435
CR1-C45-NP	Non-P	653,390.00	4,993,503.00	573.2	1:41	1:42	5,673
CR1-C65-NP	Non-P	665,805.00	4,995,305.00	579.0	1:29	1:30	3,884
CR1-C12-1-NP	Non-P	662,199.00	4,986,047.00	606.0	1:28	17:13	2,956

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)	200 MW As Built Realistic Case Shadow (hrs/year)	300 MW As Filed July 29 Realistic Case Shadow (hrs/year)	Distance to Nearest Turbine (ft)
CR1-C49-P	Participant	662,250.00	4,993,731.00	609.0	1:12	1:12	5,148
CR1-C10-P	Participant	663,510.00	4,985,195.00	609.0	0:00	29:29	6,535
CR1-C11-P	Participant	664,111.00	4,985,679.00	609.0	0:00	10:30	6,676
CR1-C12-NP	Non-P	662,222.00	4,985,736.00	603.0	0:00	10:38	3,921
CR1-C13-NP	Non-P	663,792.00	4,985,785.00	612.0	0:00	19:04	5,643
CR1-C15-NP	Non-P	663,291.00	4,986,026.00	615.0	0:00	2:17	3,907
CR1-C1-NP	Non-P	656,743.00	4,983,525.00	596.0	0:00	0:00	5,541
CR1-C27-NP	Non-P	656,876.00	4,988,683.00	583.0	0:00	0:00	5,974
CR1-C29-NP	Non-P	666,572.00	4,988,867.00	575.9	0:00	6:56	4,675
CR1-C2-NP	Non-P	658,791.00	4,984,483.00	602.0	0:00	0:00	6,273
CR1-C31-NP	Non-P	665,939.00	4,988,950.00	585.4	0:00	0:00	4,531
CR1-C32-NP	Non-P	655,843.00	4,989,581.00	568.8	0:00	0:00	9,708
CR1-C33-NP	Non-P	656,839.00	4,990,404.00	569.8	0:00	0:00	7,418
CR1-C42-P	Participant	659,458.00	4,992,229.00	580.0	0:00	11:58	3,947
CR1-C4-NP	Non-P	659,744.00	4,984,749.00	606.0	0:00	0:00	6,706
CR1-C54-NP	Non-P	663,421.00	4,995,376.00	583.4	0:00	0:00	5,351
CR1-C58-NP	Non-P	657,781.00	4,996,906.00	615.0	0:00	17:05	6,611
CR1-C59-P	Participant	661,548.00	5,000,754.00	584.2	0:00	7:39	19,859
CR1-C5-NP	Non-P	659,958.00	4,984,794.00	604.8	0:00	0:00	6,601
CR1-C60-NP	Non-P	656,855.00	4,998,565.00	613.5	0:00	14:18	12,408
CR1-C61-NP	Non-P	656,690.00	4,997,831.00	612.0	0:00	42:10	9,970
CR1-C64-P	Participant	659,436.00	4,992,174.00	581.0	0:00	19:54	4,049
CR1-C66-NP	Non-P	659,718.00	4,985,032.00	606.0	0:00	0:00	5,800
CR1-C67-NP	Non-P	659,789.00	4,985,057.00	606.0	0:00	0:00	5,791
CR1-C6-P	Participant	662,989.00	4,995,228.00	599.8	0:00	0:00	6,102
CR1-C7-NP	Non-P	660,893.00	4,984,861.00	593.2	0:00	0:00	5,932
CR1-C9-NP	Non-P	665,352.00	4,985,004.00	609.0	0:00	15:07	11,283
CR1-C53-NP	Non-P	663,376.00	4,996,043.00	578.8	0:00	0:00	7,201
CR1-C105-NP	Non-P	658,372.48	5,001,256.80	600.3	0:00	20:05	20,922
CR1-C107-NP	Non-P	656,810.99	4,999,855.15	598.8	0:00	9:58	16,621
CR1-C109-NP	Non-P	653,780.18	4,996,828.35	588.0	0:00	7:03	9,859
CR1-C110-NP	Non-P	654,384.54	4,996,685.57	593.9	0:00	20:47	8,228
CR1-C111-NP	Non-P	653,857.19	4,995,573.17	591.0	0:00	11:42	6,306
CR1-C112-NP	Non-P	660,001.53	4,984,907.81	604.6	0:00	0:44	6,207

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
Grant County
continued

Receptor ID	Participation Status	Easting (m)	Northing (m)	Elevation AMSL (m)	200 MW As Built Realistic Case Shadow (hrs/year)	300 MW As Filed July 29 Realistic Case Shadow (hrs/year)	Distance to Nearest Turbine (ft)
CR1-G65-P	Participant	671,496.00	4,994,973.00	537.0	29:50	29:59	1,660
CR1-G21-P	Participant	666,766.00	4,991,807.00	577.1	29:08	29:12	1,555
CR1-G18-P	Participant	668,678.00	4,990,722.00	585.0	22:28	22:34	1,585
CR1-G32-P	Participant	669,477.00	4,995,401.00	546.0	19:55	20:01	1,545
CR1-G25-P	Participant	671,391.00	4,992,858.00	549.0	14:37	14:41	1,804
CR1-G67-P	Participant	669,597.00	4,993,440.00	556.1	11:55	11:58	2,106
CR1-G66-P	Participant	670,802.00	4,994,681.00	539.7	11:08	16:44	1,801
CR1-G19-P	Participant	671,018.00	4,990,744.00	570.0	5:42	5:44	2,077
CR1-G23-NP	Non-P	670,471.00	4,992,104.00	560.0	5:10	5:11	2,185
CR1-G33-P	Participant	668,911.00	4,995,550.00	548.7	3:51	3:53	2,779
CR1-G68-NP	Non-P	669,159.00	4,993,632.00	565.6	2:07	2:07	2,113
CR1-G26-P	Participant	672,589.00	4,993,869.00	531.0	1:45	8:17	4,629
CR1-G34-NP	Non-P	671,320.00	4,995,798.00	531.0	1:28	1:28	2,238
CR1-G43-NP	Non-P	661,141.00	5,001,721.00	583.6	0:00	18:26	22,657
CR1-G44-NP	Non-P	661,781.00	5,001,732.00	583.7	0:00	2:50	23,156
CR1-G12-NP	Non-P	668,229.00	4,989,039.00	575.0	0:00	0:00	4,623
CR1-G15-P	Participant	668,396.00	4,989,607.00	576.0	0:00	0:00	2,746
CR1-G16-NP	Non-P	668,419.00	4,989,861.00	576.0	0:00	0:00	2,070
CR1-G14-NP	Non-P	668,156.00	4,989,332.00	574.1	0:00	0:00	3,940
CR1-G22-NP	Non-P	674,670.00	4,991,955.00	527.6	0:00	0:00	5,781
CR1-G13-NP	Non-P	672,216.00	4,989,142.00	558.0	0:00	0:00	3,576
CR1-G24-P	Participant	673,058.00	4,992,440.00	539.4	0:00	0:00	2,231
CR1-G77-NP	Non-P	676,031.00	4,992,629.00	502.7	0:00	0:00	10,594
CR1-G27-NP	Non-P	676,630.00	4,994,642.00	480.8	0:00	2:55	15,390
CR1-G28-P	Participant	673,113.00	4,994,772.00	513.9	0:00	23:01	6,949
CR1-G38-P	Participant	673,972.00	4,996,493.00	494.5	0:00	0:00	10,558
CR1-G37-NP	Non-P	668,998.00	4,996,452.00	549.0	0:00	0:00	5,246
CR1-G42-NP	Non-P	670,566.00	4,997,097.00	518.9	0:00	0:00	6,476
CR1-G81-P	Participant	671,478.00	4,997,523.00	508.8	0:00	0:00	7,828
CR1-G41-P	Participant	671,563.00	4,997,050.00	497.6	0:00	0:00	6,378
CR1-G36-NP	Non-P	673,559.00	4,996,344.00	498.0	0:00	0:00	9,124
CR1-G59-P	Participant	675,755.00	4,994,888.00	487.7	0:00	12:50	13,819
CR1-G60-P	Participant	675,830.00	4,995,687.00	477.0	0:00	5:44	15,823
CR1-G105-NP	Non-P	668,696.00	4,998,325.00	549.0	0:00	0:00	11,263
CR1-G108-P	Participant	669,516.00	5,001,186.00	522.2	0:00	11:40	19,908
CR1-G109-NP	Non-P	667,064.00	5,000,425.00	566.2	0:00	0:59	19,704
CR1-G110-NP	Non-P	671,218.00	5,005,064.00	456.2	0:00	0:00	32,437
CR1-G113-NP	Non-P	666,228.00	5,005,549.00	537.0	0:00	7:09	36,299

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
Grant County
continued

Receptor ID	Participation Status	Easting (m)	Northing (m)	Elevation AMSL (m)	200 MW As Built Realistic Case Shadow (hrs/year)	300 MW As Filed July 29 Realistic Case Shadow (hrs/year)	Distance to Nearest Turbine (ft)
CR1-G114-NP	Non-P	666,214.00	5,006,667.00	521.1	0:00	23:23	39,783
CR1-G115-NP	Non-P	664,933.00	5,006,731.00	544.6	0:00	8:01	41,171
CR1-G117-NP	Non-P	663,801.00	5,005,084.00	581.3	0:00	1:54	35,682
CR1-G124-P	Participant	669,843.00	5,000,605.00	525.0	0:00	19:27	17,953
CR1-G125-NP	Non-P	668,289.00	5,000,643.00	543.0	0:00	15:49	18,888
CR1-G126-P	Participant	672,157.00	5,000,446.00	484.3	0:00	3:22	17,667
CR1-G127-P	Participant	669,534.00	4,999,939.00	533.8	0:00	2:22	15,827
CR1-G128-P	Participant	670,242.00	5,001,314.00	513.0	0:00	15:02	20,295
CR1-G129-P	Participant	673,111.00	4,997,703.00	478.1	0:00	2:25	10,725
CR1-G130-NP	Non-P	668,147.00	5,000,233.00	549.0	0:00	0:00	17,756
CR1-G131-P	Participant	668,466.00	5,005,145.00	505.2	0:00	1:32	33,208
CR1-G132-P	Participant	669,098.00	5,004,948.00	501.0	0:00	7:41	32,322
CR1-G133-P	Participant	669,881.00	5,005,460.00	478.8	0:00	3:27	33,878
CR1-G135-P	Participant	668,616.00	5,005,161.00	504.0	0:00	8:12	33,192
CR1-G136-P	Participant	667,706.00	5,004,861.00	522.0	0:00	10:36	32,759
CR1-G137-P	Participant	666,501.00	5,005,136.00	529.3	0:00	18:42	34,724
CR1-G138-P	Participant	664,809.00	5,006,456.00	549.0	0:00	25:26	40,285
CR1-G139-P	Participant	668,199.00	5,008,062.00	476.2	0:00	8:03	42,808
CR1-G140-P	Participant	664,546.00	5,007,269.00	551.4	0:00	0:00	42,982
CR1-G149-P	Participant	669,284.00	5,003,283.00	503.2	0:00	12:42	26,827
CR1-G70-NP	Non-P	677,464.53	4,991,043.11	492.0	0:00	0:00	15,006
CR1-G600-NP	Non-P	674,300.70	5,005,772.78	393.0	0:00	0:00	36,371

Table A-1: Crowned Ridge Wind Farm 200 MW
GE 2.3-116-90 m HH, GE 2.3-116-80 m HH WTG's
Curtailment with LNTE on only 20, 22, 24, 25, 31, 32, 36, 53
UTM NAD83 Zone 14

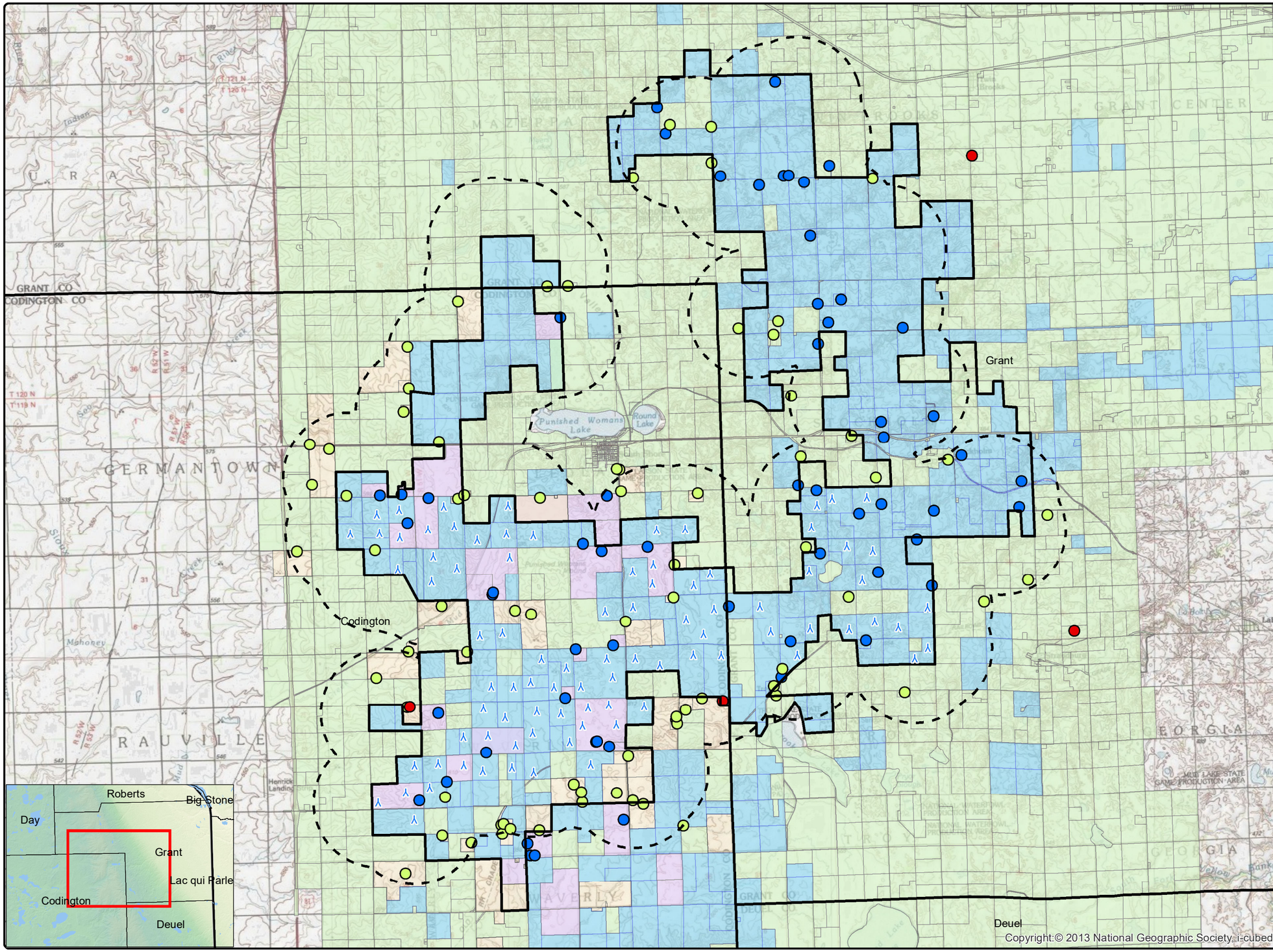
WTG	Type	Turbine Model	Easting (m)	Northing (m)	Base Elev. AMSL (m)	Sound Profile
CRI-20	Primary	GE2.3 116RD 90HH r2.madE	659,920	4,994,924	594.0	Curtailed
CRI-21	Primary	GE2.3 116RD 90HH r2.madE	657,925	4,994,896	617.1	Curtailed
CRI-22	Primary	GE2.3 116RD 90HH r2.madE	656,543	4,994,796	616.5	LNTE
CRI-24	Primary	GE2.3 116RD 90HH r2.madE	655,852	4,994,652	609.0	LNTE
CRI-25	Primary	GE2.3 116RD 90HH r2.madE	658,251	4,994,286	605.5	LNTE
CRI-26	Primary	GE2.3 116RD 90HH r2.madE	665,405	4,994,191	578.5	Normal
CRI-27	Primary	GE2.3 116RD 90HH r2.madE	657,442	4,994,187	621.0	Normal
CRI-28	Primary	GE2.3 116RD 90HH r2.madE	664,517	4,994,168	579.0	Normal
CRI-29	Primary	GE2.3 116RD 90HH r2.madE	655,940	4,994,069	606.9	Curtailed
CRI-30	Primary	GE2.3 116RD 90HH r2.madE	659,871	4,994,052	593.7	Normal
CRI-31	Primary	GE2.3 116RD 90HH r2.madE	655,030	4,994,051	603.0	LNTE
CRI-32	Primary	GE2.3 116RD 90HH r2.madE	660,704	4,993,998	606.0	LNTE
CRI-33	Primary	GE2.3 116RD 90HH r2.madE	656,566	4,993,941	618.0	Curtailed
CRI-34	Primary	GE2.3 116RD 90HH r2.madE	658,966	4,993,856	599.7	Normal
CRI-35	Primary	GE2.3 116RD 90HH r2.madE	657,602	4,993,347	607.4	Normal
CRI-36	Primary	GE2.3 116RD 90HH r2.madE	659,966	4,993,319	594.0	LNTE
CRI-37	Primary	GE2.3 116RD 90HH r2.madE	664,419	4,993,110	587.3	Curtailed
CRI-38	Primary	GE2.3 116RD 90HH r2.madE	658,338	4,992,981	600.5	Normal
CRI-39	Primary	GE2.3 116RD 90HH r2.madE	656,507	4,992,958	609.0	Curtailed
CRI-41	Primary	GE2.3 116RD 90HH r2.madE	663,782	4,992,883	597.7	Normal
CRI-43	Primary	GE2.3 116RD 90HH r2.madE	666,181	4,992,815	577.9	Normal
CRI-44	Primary	GE2.3 116RD 90HH r2.madE	665,665	4,992,460	576.0	Normal
CRI-46	Primary	GE2.3 116RD 90HH r2.madE	664,387	4,992,505	591.0	Curtailed
CRI-48	Primary	GE2.3 116RD 90HH r2.madE	663,794	4,991,782	587.1	Curtailed
CRI-50	Primary	GE2.3 116RD 90HH r2.madE	662,930	4,991,655	612.0	Curtailed
CRI-51	Primary	GE2.3 116RD 90HH r2.madE	666,299	4,991,723	575.3	Normal
CRI-52	Primary	GE2.3 116RD 90HH r2.madE	665,441	4,991,398	575.5	Curtailed
CRI-53	Primary	GE2.3 116RD 90HH r2.madE	659,750	4,990,981	598.7	LNTE
CRI-54	Primary	GE2.3 116RD 90HH r2.madE	665,979	4,990,946	573.7	Normal
CRI-55	Primary	GE2.3 116RD 90HH r2.madE	659,045	4,990,899	597.1	Normal
CRI-58	Primary	GE2.3 116RD 90HH r2.madE	665,663	4,990,303	585.0	Normal
CRI-59	Primary	GE2.3 116RD 90HH r2.madE	666,523	4,990,291	573.0	Normal
CRI-61	Primary	GE2.3 116RD 90HH r2.madE	662,982	4,990,178	612.0	Normal
CRI-62	Primary	GE2.3 116RD 90HH r2.madE	660,954	4,990,170	600.8	Curtailed
CRI-63	Primary	GE2.3 116RD 90HH r2.madE	664,627	4,989,977	588.6	Normal
CRI-64	Primary	GE2.3 116RD 90HH r2.madE	663,858	4,990,188	604.3	Normal
CRI-65	Primary	GE2.3 116RD 90HH r2.madE	661,732	4,989,898	609.0	Normal
CRI-66	Primary	GE2.3 116RD 90HH r2.madE	663,165	4,989,613	614.7	Normal
CRI-69	Primary	GE2.3 116RD 80HH r2.madE	660,621	4,989,453	605.6	Normal
CRI-70	Primary	GE2.3 116RD 90HH r2.madE	662,171	4,989,319	611.0	Normal
CRI-71	Primary	GE2.3 116RD 80HH r2.madE	659,405	4,989,320	607.3	Normal

Table A-1: Crowned Ridge Wind Farm 200 MW
GE 2.3-116-90 m HH, GE 2.3-116-80 m HH WTG's
Curtailment with LNTE on only 20, 22, 24, 25, 31, 32, 36, 53
UTM NAD83 Zone 14
continued

WTG	Type	Turbine Model	Easting (m)	Northing (m)	Base Elev. AMSL (m)	Sound Profile
CRI-72	Primary	GE2.3 116RD 80HH r2.madE	660,087	4,989,309	606.0	Normal
CRI-73	Primary	GE2.3 116RD 90HH r2.madE	661,344	4,989,297	609.8	Curtailed
CRI-74	Primary	GE2.3 116RD 90HH r2.madE	663,041	4,988,744	615.0	Normal
CRI-75	Primary	GE2.3 116RD 90HH r2.madE	664,137	4,988,702	609.0	Curtailed
CRI-76	Primary	GE2.3 116RD 90HH r2.madE	662,399	4,988,667	615.0	Normal
CRI-77	Primary	GE2.3 116RD 80HH r2.madE	659,158	4,988,642	612.0	Normal
CRI-78	Primary	GE2.3 116RD 80HH r2.madE	660,811	4,988,558	604.1	Normal
CRI-80	Primary	GE2.3 116RD 90HH r2.madE	661,552	4,988,481	608.8	Normal
CRI-81	Primary	GE2.3 116RD 90HH r2.madE	659,825	4,988,365	606.8	Normal
CRI-82	Primary	GE2.3 116RD 90HH r2.madE	663,271	4,988,133	613.0	Normal
CRI-83	Primary	GE2.3 116RD 90HH r2.madE	662,227	4,988,103	606.6	Normal
CRI-84	Primary	GE2.3 116RD 80HH r2.madE	660,677	4,987,880	600.6	Normal
CRI-85	Primary	GE2.3 116RD 90HH r2.madE	659,295	4,987,798	612.0	Normal
CRI-86	Primary	GE2.3 116RD 90HH r2.madE	658,534	4,987,759	613.1	Normal
CRI-87	Primary	GE2.3 116RD 90HH r2.madE	661,830	4,987,596	609.0	Normal
CRI-88	Primary	GE2.3 116RD 90HH r2.madE	660,157	4,987,492	603.0	Normal
CRI-89	Primary	GE2.3 116RD 90HH r2.madE	657,758	4,986,926	614.9	Normal
CRI-90	Primary	GE2.3 116RD 90HH r2.madE	658,545	4,986,881	612.0	Normal
CRI-91	Primary	GE2.3 116RD 90HH r2.madE	657,023	4,986,868	612.0	Normal
CRI-92	Primary	GE2.3 116RD 80HH r2.madE	660,039	4,986,804	607.2	Normal
CRI-93	Primary	GE2.3 116RD 80HH r2.madE	659,133	4,986,700	607.9	Normal
CRI-94	Primary	GE2.3 116RD 80HH r2.madE	660,716	4,986,660	600.6	Normal
CRI-95	Primary	GE2.3 116RD 90HH r2.madE	657,488	4,986,184	612.0	Curtailed
CRI-96	Primary	GE2.3 116RD 90HH r2.madE	656,744	4,986,037	609.0	Normal
CRI-97	Primary	GE2.3 116RD 90HH r2.madE	655,899	4,985,715	592.7	Normal
CRI-98	Primary	GE2.3 116RD 90HH r2.madE	657,015	4,985,192	608.9	Normal
CRI-99	Primary	GE2.3 116RD 90HH r2.madE	672,521	4,990,188	556.7	Normal
CRI-100	Primary	GE2.3 116RD 90HH r2.madE	668,885	4,990,286	585.0	Normal
CRI-101	Primary	GE2.3 116RD 90HH r2.madE	672,921	4,990,513	544.6	Normal
CRI-102	Primary	GE2.3 116RD 90HH r2.madE	668,059	4,991,023	581.0	Normal
CRI-103	Primary	GE2.3 116RD 90HH r2.madE	669,279	4,991,115	582.0	Normal
CRI-104	Primary	GE2.3 116RD 90HH r2.madE	672,009	4,991,151	555.0	Normal
CRI-105	Primary	GE2.3 116RD 90HH r2.madE	670,488	4,991,091	571.6	Normal
CRI-106	Primary	GE2.3 116RD 90HH r2.madE	671,278	4,991,335	566.2	Normal
CRI-107	Primary	GE2.3 116RD 90HH r2.madE	667,723	4,991,800	582.0	Normal
CRI-108	Primary	GE2.3 116RD 90HH r2.madE	672,917	4,991,775	541.2	Normal
CRI-109	Primary	GE2.3 116RD 90HH r2.madE	670,897	4,992,616	557.4	Curtailed
CRI-111	Primary	GE2.3 116RD 90HH r2.madE	671,220	4,993,526	550.6	Normal
CRI-112	Primary	GE2.3 116RD 90HH r2.madE	670,419	4,993,665	561.0	Normal
CRI-114	Primary	GE2.3 116RD 90HH r2.madE	669,318	4,994,256	561.0	Curtailed
CRI-117	Primary	GE2.3 116RD 90HH r2.madE	669,488	4,994,930	544.8	Normal

Table A-1: Crowned Ridge Wind Farm 200 MW
GE 2.3-116-90 m HH, GE 2.3-116-80 m HH WTG's
Curtailment with LNTE on only 20, 22, 24, 25, 31, 32, 36, 53
UTM NAD83 Zone 14
continued

WTG	Type	Turbine Model	Easting (m)	Northing (m)	Base Elev. AMSL (m)	Sound Profile
CRI-118	Primary	GE2.3 116RD 90HH r2.madE	669,961	4,995,134	540.4	Normal
CRI-120	Primary	GE2.3 116RD 90HH r2.madE	671,034	4,995,179	536.2	Normal
CRI-Alt2	Primary	GE2.3 116RD 90HH r2.madE	669,250	4,992,900	562.3	Normal
CRI-Alt22	Primary	GE2.3 116RD 90HH r2.madE	662,484	4,986,902	612.1	Normal
CRI-Alt45	Primary	GE2.3 116RD 90HH r2.madE	657,553	4,992,576	599.8	Normal



0 0.75 1.5 3 Mile

EAPC WIND ENERGY

www.eapc.net | 701.775.3000

Crowned Ridge Wind Farm
200 MW
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 #: 20174430

Issue Dates

#	Description	Date
1	Original	2019.1.2

Drawn By: AS *Checked By: JH*

Legend

- Crowned Ridge 200 MW
- 2 km Turbine Buffer
- County Lines
- CR1 Project Boundary
- Intervenors
- Non Participants
- Participants
- Non-Part. Occupied Codington Parcels
- Participating Occupied Codington Parcels
- Non-Participating Parcels
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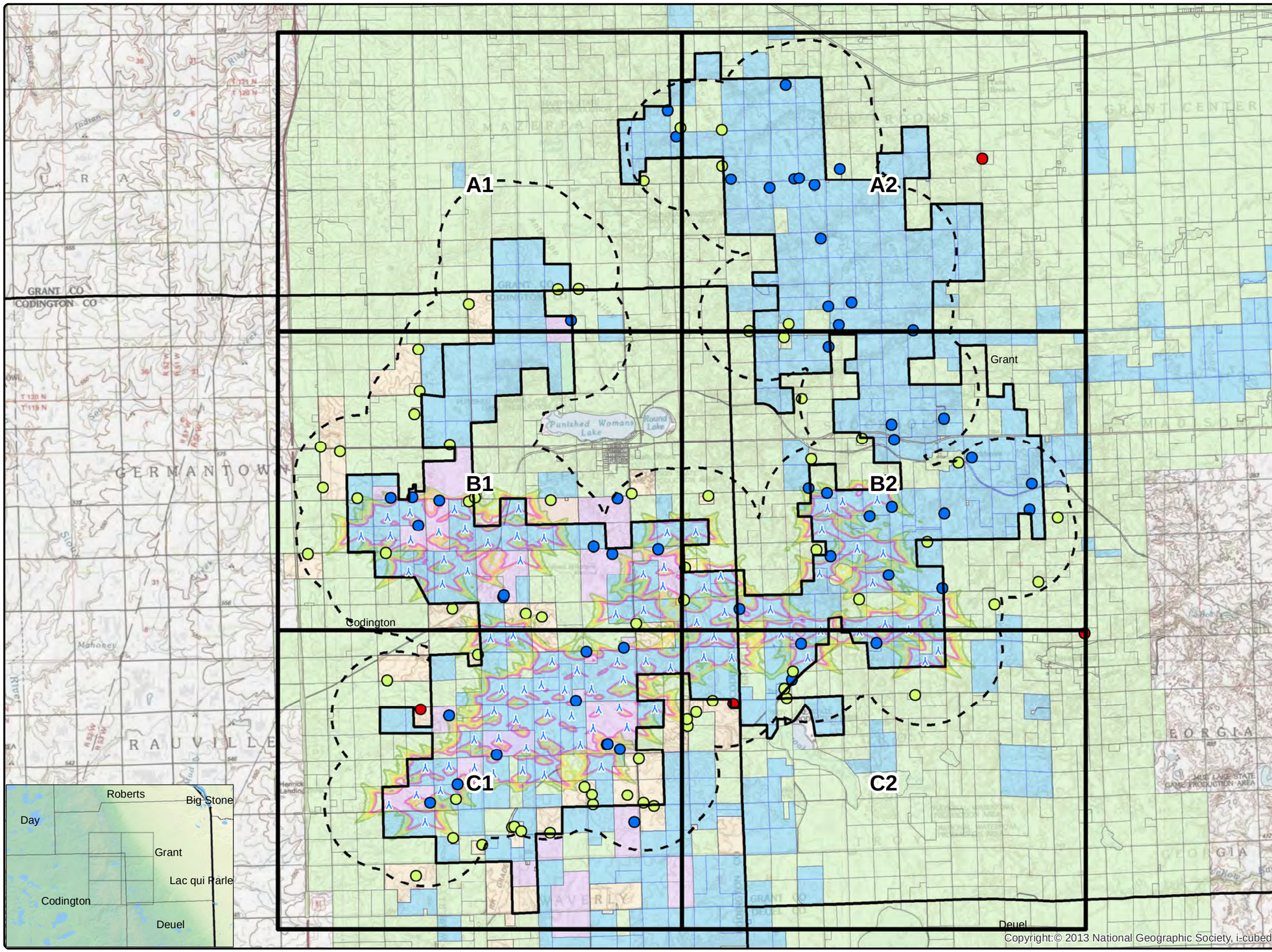

0 0.75 1.5 3 Mile

EAPC WIND ENERGY

www.eapc.net | 701.775.3000

Crowned Ridge Wind Farm
200 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.

Location: Watertown, SD

Project #: 20174430

Issue Dates

#	Description	Date
1	Original	2019.1.2

Drawn By: AS *Checked By: JH*

Legend

- Crowned Ridge 200 MW
- 2 km Turbine Buffer
- County Lines
- CR1 Project Boundary
- Intervenors
- Non Participants
- Participants

Shadow Flicker (hr/yr)

- 10
- 15
- 20
- 25
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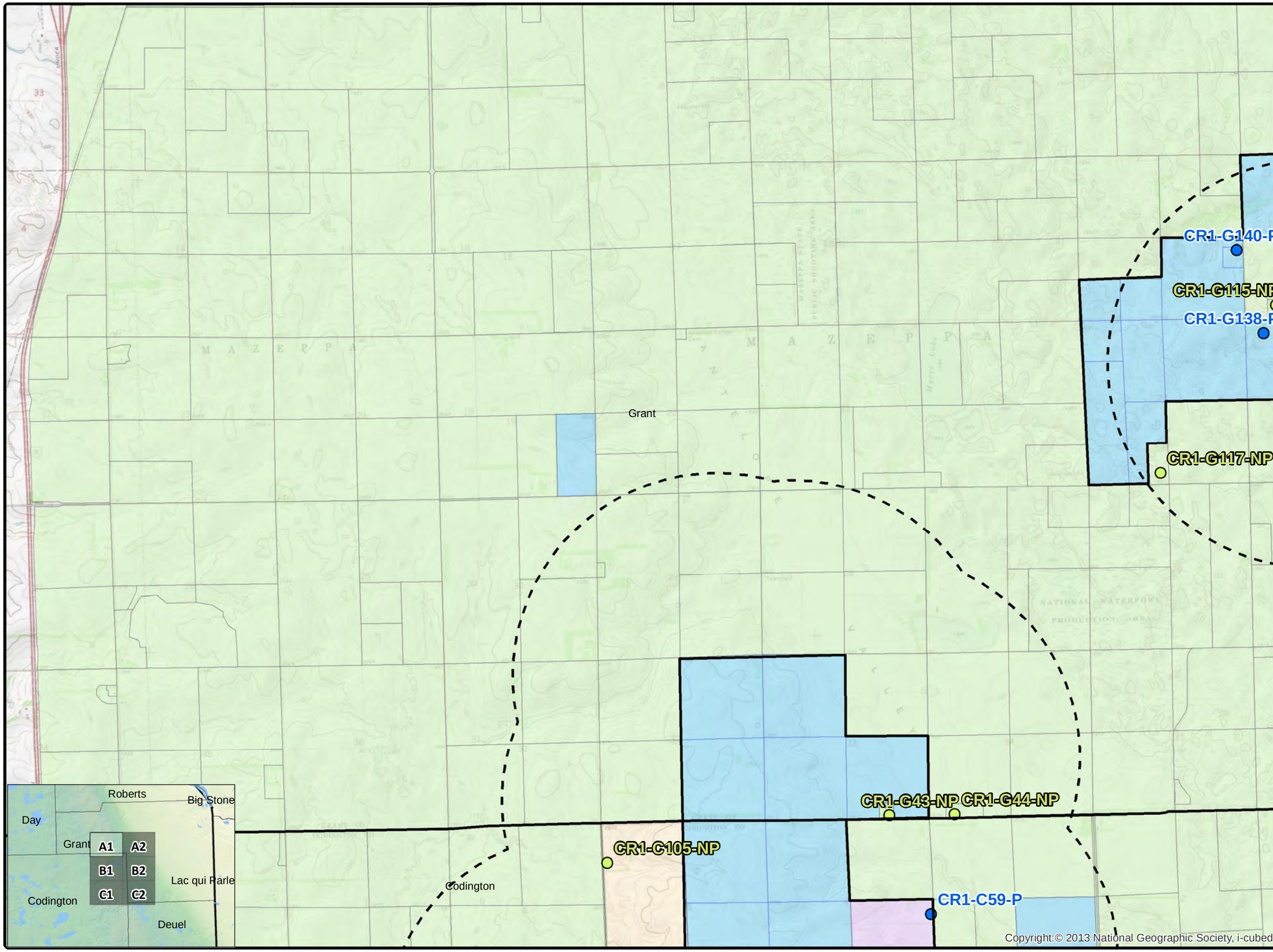

0 0.25 0.5 1 Mile

EAPC WIND ENERGY

www.eapc.net | 701.775.3000

Crowned Ridge Wind Farm
200 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.

Location: Watertown, SD

Project #: 20174430

Issue Dates

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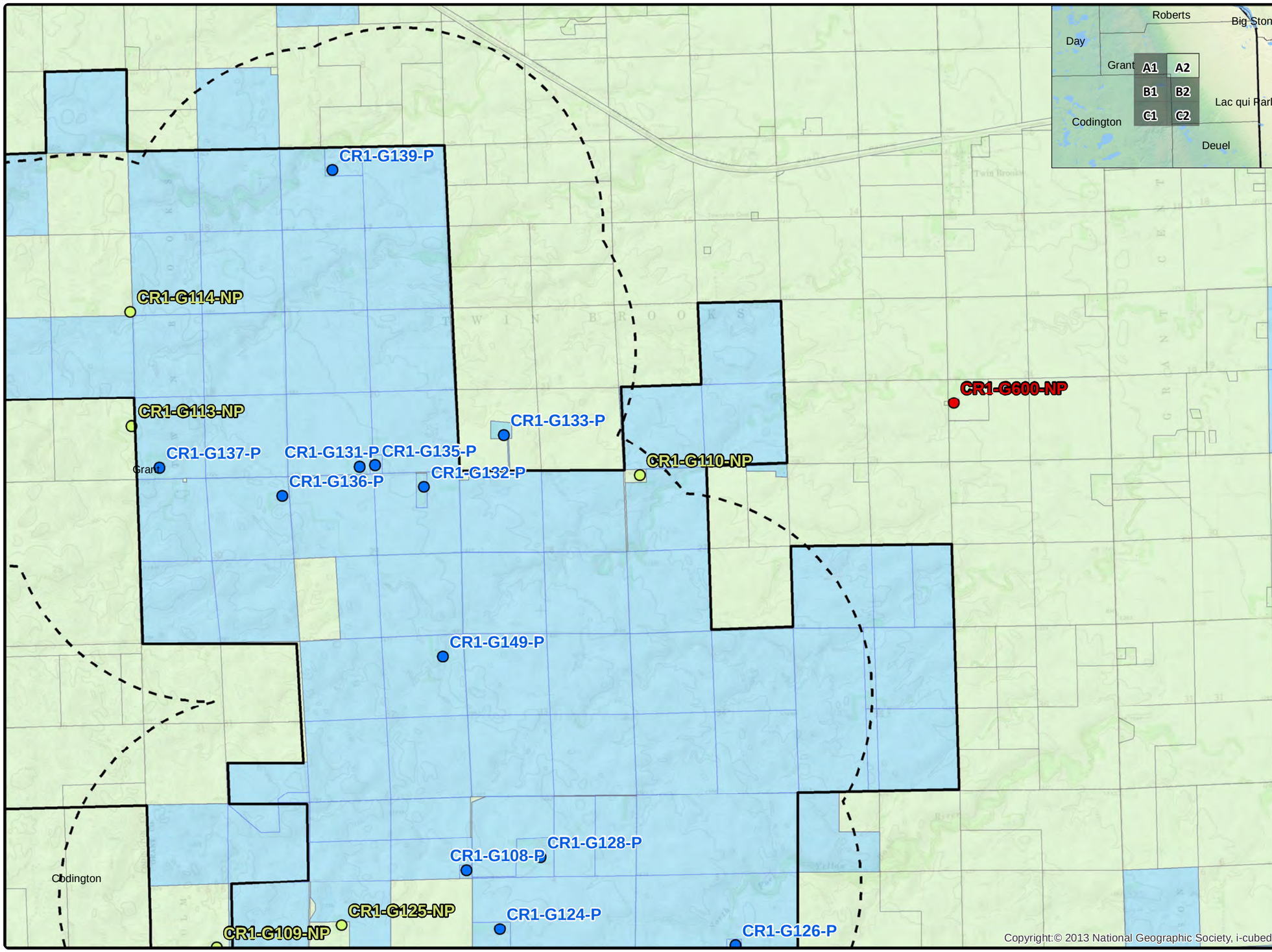

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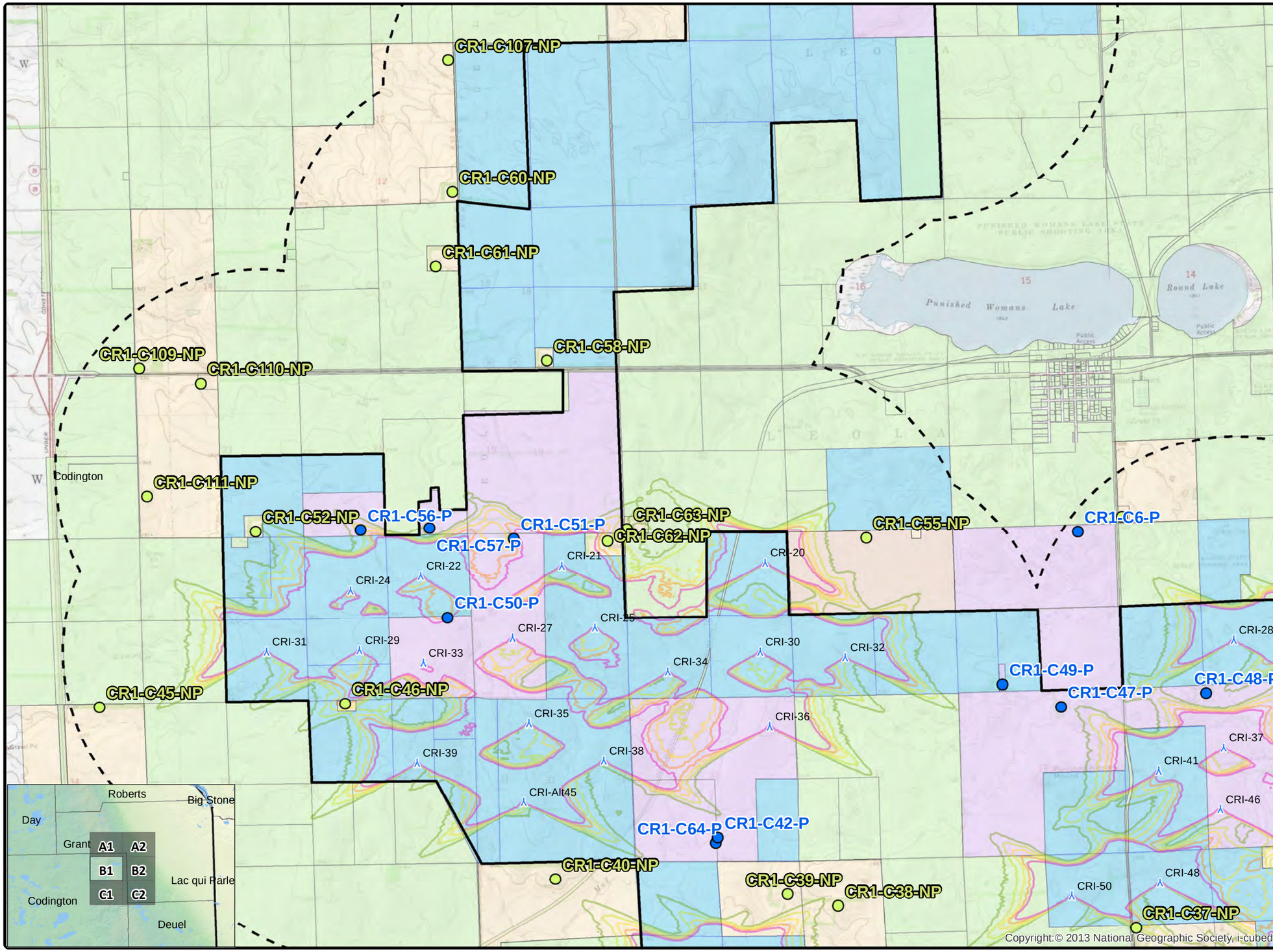

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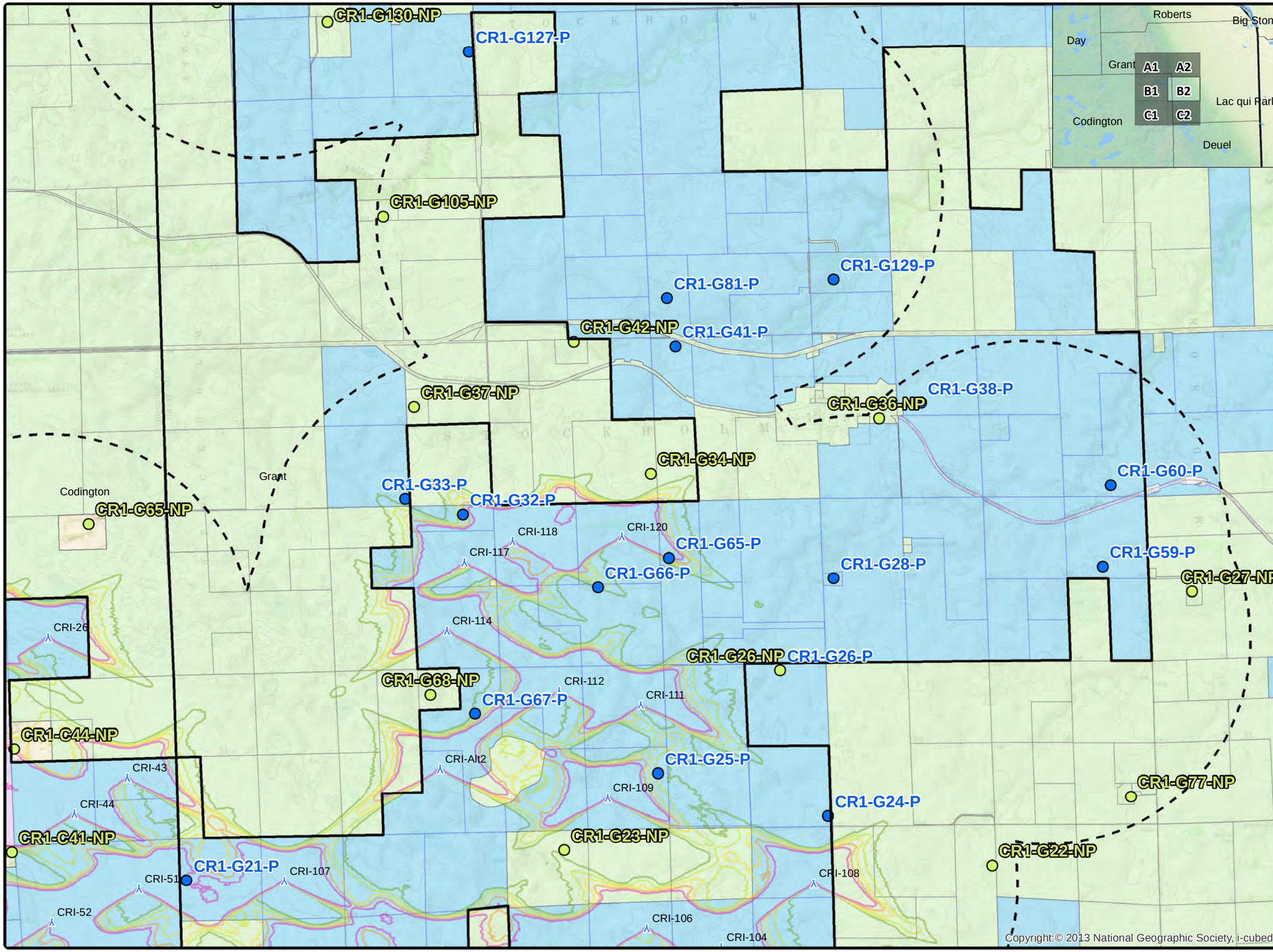

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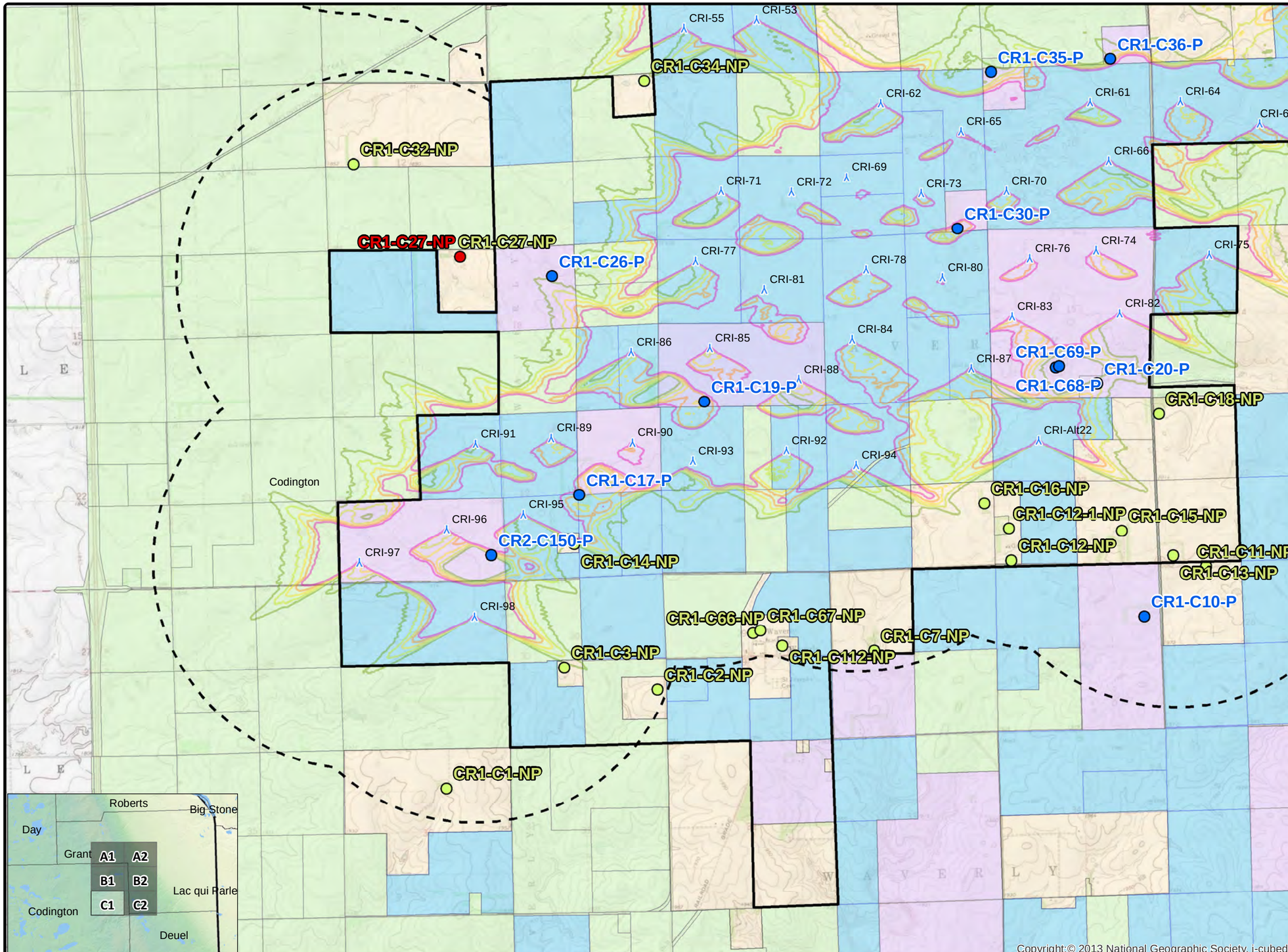

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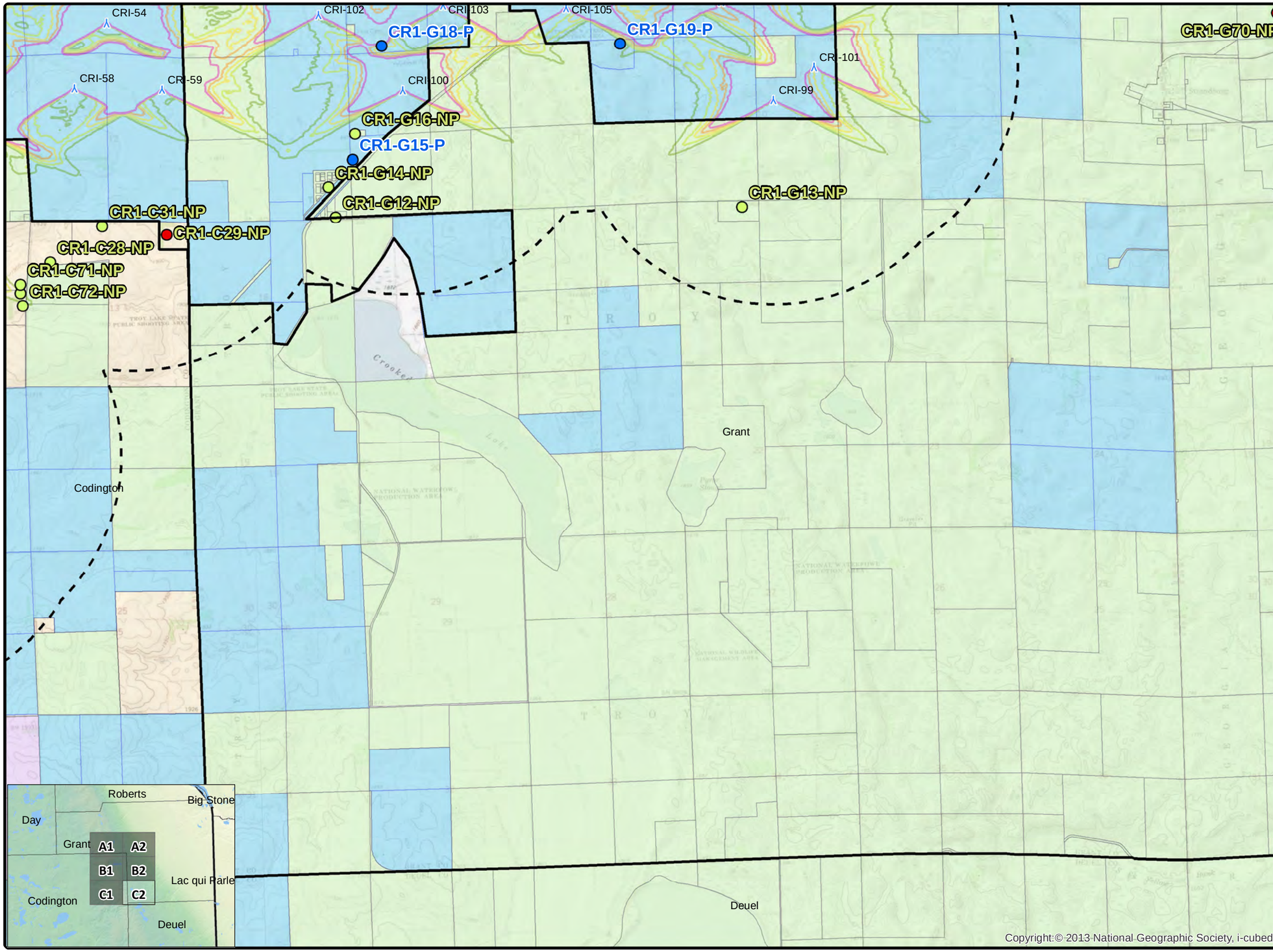

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