SOUTH DAKOTA'S

REGIONAL HAZE

STATE IMPLEMENTATION PLAN

PROPOSED REVISIONS

South Dakota Department of Environment and Natural Resources

7.0 Reasonable Progress

7.2 2018 Projected Visibility Conditions

The reasonable progress goals are interim goals that represent incremental improvement in visibility over time and are compared to the uniform rate of progress for achieving natural visibility by 2064. The first year in determining if states are meeting their reasonable progress goals is 2018. WRAP gathered the reductions that will occur through this timeframe from states and federal regulations and modeled the results to project where states will be at in 2018.

The information WRAP gathered was entered into a CMAQ model for the Class I areas in the WRAP region to project visibility improvements. The CMAQ model was used to estimate 2018 visibility conditions in South Dakota and all Western Class I areas. DENR relied on the results of the CMAQ modeling in determining the reasonable progress achieved by South Dakota, surrounding states, and federal regulations in South Dakota's Class I areas. DENR originally used the modeling results from "Plan02d" to calculate its reasonable progress for the 20% most impaired days and to show no degradation on the 20% least impaired days. WRAP discovered an error in the modeling runs for some of the Class I area, including the Badlands National Park which resulted in a "Plan02d_rev" modeling run. The corrected version, "Plan02d_rev" was used in the final results in Table 7-1 and Figure 7-1.

Table 7-1 provides a summary of WRAP's modeling results and compares the results to the deciview level needed to achieve the 2018 uniform rate of progress for the 20% most impaired days and determine if there is any degradation in the 20% least impaired days in South Dakota's Class I areas. The modeling results indicate the 2018 uniform rate of progress goal for the 20% most impaired days will not be achieved; but there will be no degradation of the 20% least impaired days.

Table** Error! No text of specified style in document.**-1– 2018 Reasonable Progress Summary for South Dakota's Class I Areas
(a) 20% Most Impaired Days

Class I Area	Baseline [1]	Uniform Progress [2]	Reasonable Progress [3]	Uniform Progress Achieved
Badlands	17.16 deciview	14.89 deciview	~~16.50~~ 16.30 deciview	~~29%~~ 38%
Wind Cave	15.93 deciview	13.94 deciview	15.28 deciview	33%

(b) 20% Least Impaired Days

Class I Area	Baseline [1]	Reasonable Progress [3]	Degradation?
Badlands	6.91 deciview	~~6.58~~ 6.64 deciview	No
Wind Cave	5.16 deciview	5.02 deciview	No

[1] – Baseline values derived from Table 3-7;
[2] – Uniform progress derived from Figure 3-5; and
[3] – Reasonable progress derived from WRAP's modeling results.

7.3 Key Pollutants Contributing to Visibility Impairment

As indicated by the 2018 visibility projections using CMAQ modeling, the Class I areas in South Dakota are projected to not meet the uniform rate of progress goal for 2018 for the 20% most impaired days. The CMAQ modeling is conservative in several respects. The CMAQ modeling does not include the BART emissions limits for Otter Tail Power Company's Big Stone I facility. In addition, the CMAQ modeling includes Big Stone II and NextGen emissions, which are two new coal-fired power plants. The Big Stone II facility will no longer be constructed and the NextGen facility is on hold.

In order to determine if there are other contributors to not meeting the reasonable progress goals, it is necessary to break down these results to identify individual pollutants. Figures 7-1 provides a breakdown of individual pollutant contribution (measured by extinction) by showing the glide slope of each pollutant in South Dakota's Class I area from the baseline to 2018, and 2064, for the 20% most impaired days. Below each figure is a table that shows the 2018 projections for each pollutant, and whether the projection is under the 2018 uniform rate of progress goal and the percent improvement toward the 2018 uniform rate of progress goal.

The glide path for the Badlands National Park indicates the air pollutants not achieving the necessary levels for the 2018 uniform progress goal to be achieved are organic carbon mass, ammonia sulfate, ammonia nitrate, and coarse mass. However, ammonia nitrate and coarse mass are very close to the 2018 goal. ~~It's hard to see in the graph but the ammonia sulfate extinction level is equivalent to the organic carbon mass level of 14.7 Mm-1. Organic carbon mass appears to be the greatest concern since its extinction value is furthest from where it needs to be to achieve the uniform rate of progress goal for 2018.~~ Organic carbon mass and ammonia sulfate appear to be the pollutants of most concern in reaching the 2018 goal.

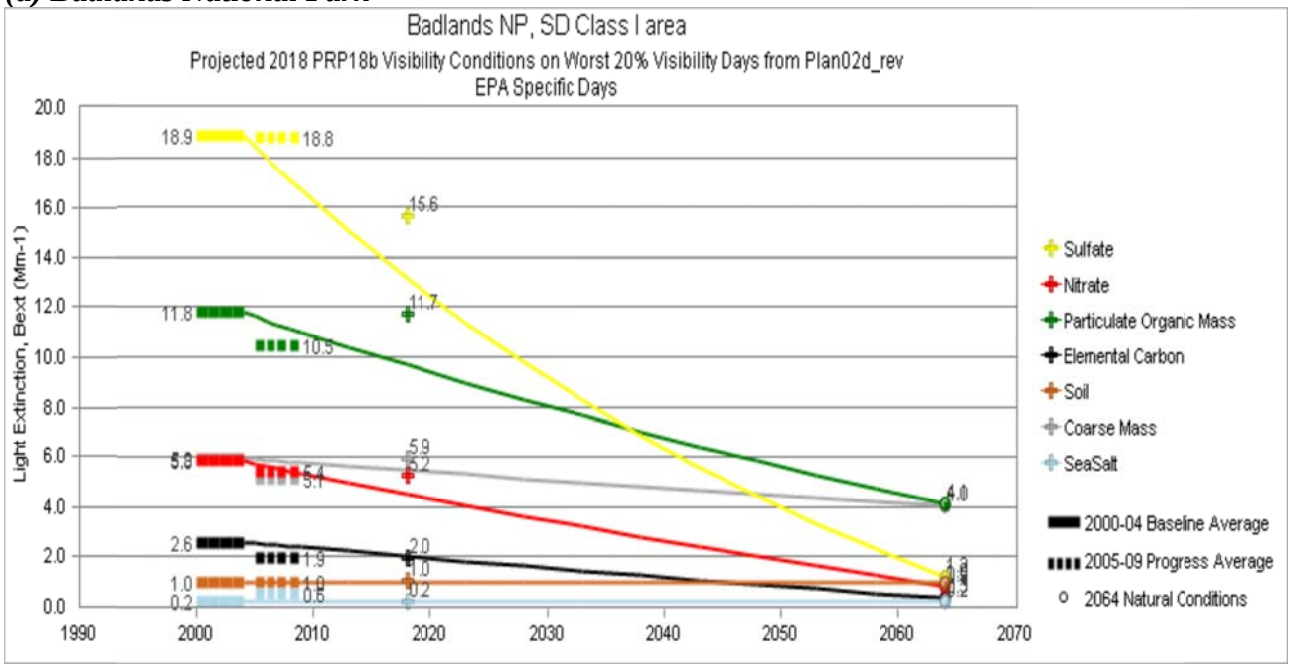
The glide path for the Wind Cave National Park indicates the air pollutants not achieving the necessary levels for the 2018 uniform progress goal to be achieved are organic carbon mass, ammonia sulfate, and ammonia nitrates. At the Wind Cave National Park, it appears organic carbon mass and ammonia sulfate are the greatest concern since the extinction value for both are the furthest from where they need to be to achieve the uniform rate of progress goal for 2018.

Next, DENR reviewed WRAP's attribution analysis to determine the major contributors of ammonia sulfate, organic carbon mass, and ammonia nitrate in South Dakota's two Class I areas. For the Badlands and Wind Cave National Parks, the major contributors of ammonia sulfate are from sources not in South Dakota. South Dakota's ammonia sulfate contribution for 2002 and 2018 is minimal at both national parks at approximately 0.04 micrograms per cubic meter. South Dakota's contribution represents 3% of the ammonia sulfate concentrations for 2018 at both national parks. Of the 3%, approximately 1.5% is generated from point sources and 1.5% is generated from mobile and other sources.

The major contributor of organic carbon mass in both national parks is natural fires with point source contributions being minimal. Organic carbon mass emissions from natural and prescribed fires will be evaluated as part of a smoke management plan which is part of DENR's long term strategy.

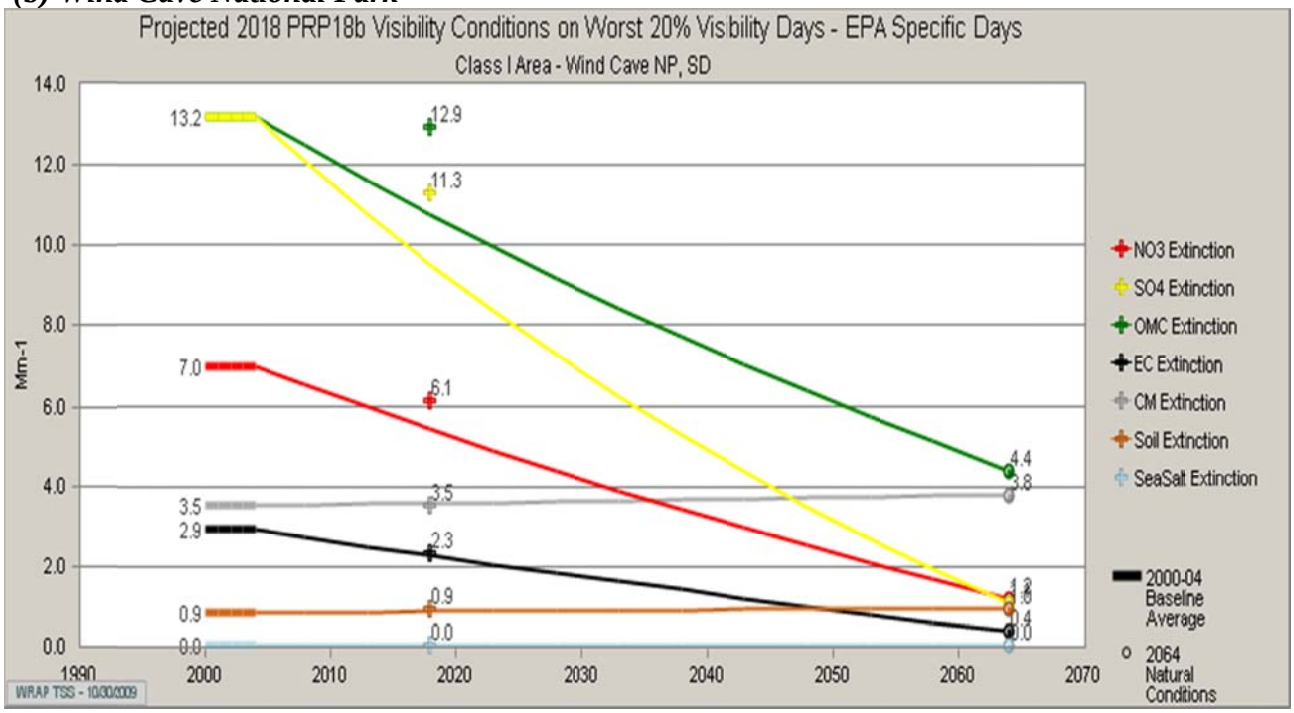
Figure** Error! No text of specified style in document.**-1 – Glide Slope by Pollutant for 20% Worst Visibility Days (Extinction) [1]

(a) Badlands National Park



(WRAP TSS – http://vista.cira.colostate.edu/tss/)

(b) Wind Cave National Park



(WRAP TSS – http://vista.cira.colostate.edu/tss/)

[1] – "NO_3" means nitrates, "SO_4" means sulfates, "OMC" means organic mass carbon, "EC" means elemental carbon, and "CM" means coarse mass.

Ammonia nitrate was only a concern for the Wind Cave National Park since it was on the glide path at the Badlands National Park. The major contributors to ammonia nitrate at the Wind Cave National Park are Canada followed by Wyoming, Outside the Domain, and South Dakota. South Dakota's ammonia nitrate contribution for 2002 and 2018 is approximately 0.135 and 0.105 micrograms per cubic meter, respectively. South Dakota's contribution represents 10% of the ammonia nitrate concentration for 2018 at the Wind Cave National Park. Of the 10%, approximately 4% is generated from point sources and 6% is generated from mobile and other sources.

South Dakota's contribution of ammonia sulfate, organic carbon mass, and ammonia nitrate concentrations is approximately 1.5% for ammonia sulfate, minimal for organic carbon mass, and 4% for ammonia nitrate. Therefore, minimal gain would be encountered from reduction in sulfur dioxide, organic carbon mass, and nitrogen oxide emissions from point sources within South Dakota.

7.4 Four Factor Analysis

7.4.1 Four Factor Analysis – GCC Dacotah

WRAP conducted a four factor analysis for GCC Dacotah's two wet kilns at DENR's request and finalized the document on May 9, 2009 (see Appendix F). After reviewing the calculations in Table 4-2 of the document, DENR determined some of the cost effectiveness values for GCC Dacotah are incorrect. Table 7-2 provides a corrected version of the cost effectiveness of the feasible control options using the emission reduction listed in the document.

WRAP's analysis did not include the analysis of a selective non-catalytic reduction (SNCR) system because at the time, SNCR were not a proven technology for wet kilns at Portland cement plants. EPA commented after the analysis was completed that the review should include a SNCR because the SNCR is being used a wet kilns in Europe and at the Ash Grove Cement plant in Midlothian, Texas. Although DENR does not agree that one plant in the Nation operating a SNCR on a wet kiln for several months constitute the system is capable of using a SNCR, DENR agreed to conduct a four factor analysis for SNCRs. DENR used EPA's November 2007 "Alternative Control Techniques Document Update – NOx Emissions from New Cement Kilns", EPA-453/R-07-006 to estimate the cost of a SNCR system even though this document was developed for the review of dry kilns and not wet kiln.

The "Capital Cost ($1,000)" column represents the capital investment for purchasing the control equipment. The "Annual Cost ($1,000)" is the amortized cost of the capital investment plus the annual cost to operate the control equipment. WRAP based the amortized cost of the capital investment on the control device and/or wet kiln operating 30 years and a 7% interest rate. EPA's cost numbers for a SNCR system was based on 2005 dollars. WRAP's cost numbers were based on 2007 dollars. Therefore, EPA's 2005 cost numbers were updated to 2007 cost numbers by using a 3% annual inflationary rate. The "Cost per Ton" column is based on the "Annual Cost" divided by the "Reductions".

Table** Error! No text of specified style in document.**-2– Four Factor Analysis for GCC Dacotah

Pollutant	Control Option	2002	Control Efficiency		Reductions		Capital Cost	Annual Cost	Cost per Ton Range	
		tpy	%	%	tpy	tpy	($1000)	($1000)	$/ton	$/ton
Wet Kiln #4										
NOx	**LNB (indirect)**	707	30	40	212	283	$526	$129	$608	$456
	LNB (direct)	707	-	40		283	$1873	$331	-	$1,170
	Biosolids Injection	707	-	23		163	-	-	[1]	[1]
	CemStar	707	20	60	141	424	$1,599	$299	$2,121	$705
	Mid-Kiln	707	20	50	141	354	$2,748	-$315	[2]	[2]
	LoTOx ™	707	80	90	566	636	-	-	[1]	[1]
	SCR	707		80		566	$14,813	$4,137		$7,309
	SNCR	707	30	40	212	283	-	$878 [3]	$4,142	$3,102
SO_2	**Wet FGD**	26	90	99	23	26	$9,133	$1,370	$59,565	$52,692
Wet Kiln #5										
NOx	**LNB (indirect)**	388	30	40	116	155	$526	$129	$1,112	$832
	LNB (direct)	388		40	-	155	$1873	$331	-	$2,135
	Biosolids Injection	388		23	-	89	-	-	[1]	[1]
	CemStar	388	20	60	78	233	1599	299	$3,833	$1,283
	Mid-Kiln	388	20	50	78	194	$2,748	-$315	[2]	[2]
	LoTOx ™	388	80	90	310	349	-	-	[1]	[1]
	SNCR	388	30	40	116	155	-	$878 [3]	$7,569	$5,665
	SCR	388		80		310	$14,813	$4,137		$13,345
SO_2	**Wet FGD**	431	90	99	388	427	$9,133	$1,370	$3,531	$3,208

[1] – The document did not list a cost per ton because they did not identify any capital or annual costs; ~~and~~

[2] – DENR did not list a cost per ton because the annual cost was a negative number; and

[3] – EPA's November 2007 update indicates the average annualized cost of an SNCR to an SCR is approximately 1/5 the cost. (Average annualized cost of facility numbers 1, 2, 3, 4, 5, 6, 18, 19, 20, and 31, divided by average annualized cost of facility numbers 36, 37, 40, 43, and 46). Using this ratio, WRAP's estimated annualized cost of $4,137,000, and the inflationary rate, the annualized cost is estimated to be $878,000 ($4,137,000 x 0.2 x 1.0609 = $878,000).

Based on the cost per ton estimates, DENR determined a wet flue gas desulfurization unit for controlling sulfur dioxide emissions from Wet Kiln #4 and a selective catalytic reduction system for controlling nitrogen oxide emissions from Wet Kiln #5 is not cost effective. DENR looked at a biosolids injection system and determined a cheap supply of biosolids was not available in Rapid City and shipping biosolids to GCC Dacotah would make this option economically infeasible especially when looking at only a 23 percent reduction in nitrogen oxide emissions. Based on DENR's research, the CemStar and LoTOx ™ options have not been demonstrated to work for wet cement kilns and the low-NOx burners will not work since the wet kilns are direct

fired. Therefore, DENR does not believe these options are a viable option. That leaves the Mid-Kiln and SNCR as a viable option for controlling nitrogen oxide emissions from both wet kilns, a selective catalytic reduction system for controlling nitrogen oxide emissions from Wet Kiln #4, no viable options for controlling sulfur dioxide emissions from Wet Kiln #5, and a wet flue gas desulfurization system for controlling sulfur dioxide emissions from Wet Kiln #5.

The cost per ton analysis is based on calendar year 2002 air emissions for the two wet kilns which operated on average approximately 8,282 hours per year. In the last five years, the two wet kiln have operated an average of 4,160 hours per year with the last two years not operating. To determine if these control options are still cost effective if the two wet kilns are only operated 4,160 hours per year, DENR calculated the cost per ton for those controls that are viable for each wet kiln and pollutant. The results may be viewed in Table 7-3.

Table** Error! No text of specified style in document.**-3– Four Factor Analysis for GCC Dacotah at 4,160 Hours per Year

Pollutant	Control Option	Annual	Control Efficiency		Reductions		Capital Cost	Annual Cost	Cost per Ton Range	
		tpy	%	%	tpy	tpy	($1000)	($1000)	$/ton	$/ton
Wet Kiln #4										
SO_2	**Wet FGD**	14	90	99	13	14	$9,133	$1,370	$105,385	$97,857
NOx	**SCR**	370	-	80	-	296	$14,813	$4,137	-	$13,976
	SNCR	370	30	40	111	148	-	$878	7,910	5,932
Wet Kiln #5										
SO_2	**Wet FGD**	208	90	99	187	206	$9,133	$1,370	$7,326	$6,650
NOx	**SCR**	187	-	80	-	150	$14,813	$4,137	-	$27,580
	SNCR	208	30	40	62	83	-	$878	14,161	10,578

Based on operating approximately 50% of the time the wet kilns operated in 2002, ~~there is no viable option for controlling nitrogen oxide emissions from both wet kilns and~~ the wet flue gas desulfurization system for Wet Kiln #5 and the SNCR for Wet Kiln #4 are ~~is~~ on the border of being a viable option.

DENR modeled GCC Dacotah's two wet kilns to determine if the emissions reasonably contribute to visibility impairment in the Badlands and Wind Cave national Park. The modeling analysis is based on 2002 actual emissions. The modeling report is located in Appendix G and a summary of the modeling results is displayed in Table 7-4. The modeling results represent the 8th highest reading (deciviews) per year.

Table** Error! No text of specified style in document.**-4– Visibility Impacts from GCC Dacotah (8th Highest)

Year	Badlands	Wind Cave
2002	0.32 deciviews	0.36 deciviews
2006	0.32 deciviews	0.36 deciviews
2007	0.31 deciviews	0.46 deciviews

Based on the modeling results, the current air emissions from GCC Dacotah's wet kilns do not reasonably contribute to visibility impairment in the Badlands and Wind Cave National Parks.

DENR believes the cost of reductions is not reasonable for either wet kiln when considering GCC Dacotah's visibility impact and the remaining useful life used in the analysis is suspect when considering GCC Dacotah has not operated the two wet kilns in the last two years. In addition, EPA promulgated new standards on September 9, 2010, for Portland Cement Manufacturing (Federal Register Volume 75, #174, page 54970) and DENR is unsure what impacts that will have on the useful life of the wet kiln(s).

8.0 Long Term Strategy

8.5 Factors in Developing Long Term Strategy

8.5.1 Emission Reductions from Ongoing Air Pollution Control Programs

In accordance with 40 CFR § 51.308(d)(3)(v)(A), an assessment of emission reductions due to ongoing air pollution control programs is required. Existing air pollution control programs in place which assist in reducing air emissions and help achieve reasonable progress toward the national visibility goal include the following South Dakota air quality rules under ARSD § 74:36 – Air Pollution Control Program are listed below:

1. ARSD § 74:36:01:05 – Applicable requirements of Clean Air Act defined: Subsection (12) states "*Any national ambient air quality standard or increment or visibility requirement under Part C of Title I of the Clean Air Act, but only as it would apply to temporary sources permitted pursuant to § 504(e) of the Clean Air Act*";
2. ARSD § 74:36:01:10 – Modification defined: Subsection (3) states "*The change requires or changes a case-by-case determination of an emission limit or other standard, a source-specific determination for temporary sources of ambient impacts, or a visibility or increment analysis*";
3. ARSD § 74:36:02:01 – Air quality goals: Subsection (3) states one of the goals is "*optimization of visibility*";
4. ARSD § 74:36:04 – Operating permits for minor sources and § 74:36:05 – Operating permits for Part 70 sources: The permits issued under these chapters require sources to meet all applicable emission limits, demonstrate compliance, monitoring, recordkeeping and reporting requirements;
5. ARSD §§ 74:36:06 – Regulated Air Pollutant Emissions; 74:36:07 – New Source Performance Standards; 74:36:08 – National Emission Standards for Hazardous Air Pollutants, and ARSD § 74:36:12 – Control of Visible Emissions: These chapter restricts air emissions from regulated entities that cause visibility impairment and prohibits certain open burning practices such as open burning waste oil, rubber, waste tires, asphalt shingles, railroad ties, etc.;
6. ARSD § 74:36:09 – Prevention of Significant Deterioration: This chapter requires a visibility analysis to prevent sources subject to these requirements from contributing to visibility impairment in Class I Areas;

7. ARSD § 74:36:10 – New Source Review: This chapter requires a visibility analysis to prevent sources subject to these requirements from contributing to visibility impairment in Class I Areas; and
8. ARSD § 74:36:18 – Regulations for State Facilities in the Rapid City Area: This chapter restricts visible emissions from fugitive sources.

The chapters and sections listed above are included in South Dakota's State Implementation Plan.

In addition, EPA implemented a reasonably attributable visibility impact (RAVI) protection program in 1987 with a Federal Implementation Plan (FIP) for South Dakota to meet the general visibility plan requirements and long-term strategies of 40 CFR §§ 51.302 and 51.306, respectively. The existing federal RAVI program is compatible with the regional haze program and no revisions are needed at this time. DENR will coordinate with EPA to conduct joint periodic reviews and revisions of the long-term RAVI strategy as required by 40 CFR § 51.306(c). DENR may consider incorporation of the RAVI program into South Dakota's State Implementation Plan in the future.

8.5.7 Anticipated Net Effect on Visibility Due to Projected Changes

In accordance with 40 CFR § 51.308(d)(3)(v)(G), when developing its long term strategy states are required to consider the anticipated net effect on visibility due to projected changes in point, area, and mobile source emissions over the period addressed by the long term strategy. WRAP projected the net effect on visibility from emission reductions and increases by point, area and mobile sources throughout the WRAP region through 2018. The first emission projection inventory was compiled in 2006. The inventory was revised in 2007 to make preliminary evaluations of reasonable progress towards Class I areas visibility goals. The 2007 inventory focused on the most significant point and area sources of visibility impairing pollution. This effort included updating projections of electric generating units and incorporating known and presumed BART emission levels.

During the spring of 2009, the WRAP once again updated emission inventory projections for point and area sources in the WRAP region to give the most current assessment of reasonable progress towards visibility goals. Again, the updated projection inventory reflected new information about BART determinations and projection of future fossil fuel plants needed to achieve 2018 federal electrical generation demands.

The results of the CMAQ modeling which has already been discussed shows anthropogenic emissions sources generally declining across the West through 2018. However, natural sources such as wildfires and dust, international sources in Mexico and Canada, global transport of emissions and off shore shipping in the Pacific Ocean all appear to offset improvements in visibility from controls on manmade sources. In spite of the large number of growing uncontrollable sources in the WRAP region, however, South Dakota does see a net visibility improvement at the South Dakota Class I areas through 2018. The net effect of all of the reductions in the WRAP region, known at the time of the most recent model run is demonstrated in the WRAP Class I Summary Tables shown below for each of the Class I areas in South

Dakota. Figure 8-1 provides a summary of the results for each Class I area for the 20% most impaired days.

Table** Error! No text of specified style in document.**-5– CMAQ Modeling Visibility Summary for 20% Most Impaired Days
(a) Badlands National Park

	RRF Calculations Method: Specific Days (EPA) Emissions Scenarios: 2000-04 Baseline (plan02d_rev) and 2018 PRPb (prp18b)						
	Monitored	Estimated		Projected			
	2000-04 Baseline Conditions (Mm-1) [1]	2064 Natural Conditions (Mm-1) [2]	2018 Uniform Rate of Progress Target (Mm-1) [3]	2018 Visibility Conditions (Mm-1)	Baseline to 2018 Change In Statewide Emissions (tons/%)	Baseline to 2018 Change In Upwind Weighted Emissions [4] (%)	Baseline to 2018 Change In Anthropogenic Upwind Weighted Emissions [4] (%)
Sulfate	~~18.94~~ 18.85	1.19	13.13	~~14.66~~ 15.61	-8,115 -36%	-30%	-30%
Nitrate	~~5.88~~ 5.85	0.86	4.51	~~4.49~~ 5.23	-26,347 -18%	-27%	-37%
Organic Carbon	~~11.76~~ 11.78	4.10	9.68	~~14.66~~ 11.73	-555 -6%	-3%	-7%
Elemental Carbon	2.59	0.34	2.02	2.13	-2,404 -51%	-30%	-45%
Fine Soil	0.98	0.95	0.97	0.94	1,837 6%	3%	9%
Coarse Material	5.94	4.04	5.48	Not Applicable [5]	25,873 16%	2%	8%
Sea Salt	~~0.00~~ 0.19	0.19	0.19	Not Applicable [5]	Not Applicable	Not Applicable	Not Applicable
Total Light Extinction	~~57.27~~ 57.18	22.67	45.98	~~54.01~~ 52.73	Not Applicable	Not Applicable	Not Applicable
Deciview	~~17.16~~ 17.14	~~7.44~~ 8.06	~~14.89~~ ~~15.02~~	~~16.47~~ 16.32	Not Applicable	Not Applicable	Not Applicable

[1] – Baseline values derived from Table 4.3(b), except for the deciview values. The deciview value was derived from Table 3-7;
[2] – Deciview value derived from Table 3-7;
[3] – 2018 Uniform Rate of Progress Target for Best 20% Days is not defined. The Deciview value was derived from Figure 3-5(a);
[4] – Results based on Weighted Emissions Potential analysis using the 2000-04 Baseline (plan02d_rev) & 2018 PRPb (prp18b) emissions scenarios; and
[5] – Visibility projections not available due to model performance issues.

(b) Wind Cave National Park

	RRF Calculations Method: Specific Days (EPA) Emissions Scenarios: 2000-04 Baseline (plan02d) and 2018 PRPb (prp18b)						
	Monitored	Estimated		Projected			
	2000-04 Baseline Conditions (Mm-1) [1]	2064 Natural Conditions (Mm-1) [2]	2018 Uniform Rate of Progress Target (Mm-1) [3]	2018 Visibility Conditions (Mm-1)	Baseline to 2018 Change In Statewide Emissions (tons/%)	Baseline to 2018 Change In Upwind Weighted Emissions [4] (%)	Baseline to 2018 Change In Anthropogenic Upwind Weighted Emissions [4] (%)
Sulfate	13.32	1.09	9.53	11.33	-8,115 -36%	-21%	-22%
Nitrate	7.07	1.21	5.41	6.12	-26,347 -18%	-24%	-30%
Organic Carbon	13.39	4.4	10.77	12.93	-555 -6%	-1%	-5%
Elemental Carbon	2.96	0.4	2.28	2.32	-2,404 -51%	-21%	-41%
Fine Soil	0.86	0.97	0.88	0.93	1,837 6%	8%	16%
Coarse Material	3.53	3.8	3.59	Not Applicable [5]	25,873 16%	5%	13%
Sea Salt	0.00	0.03	0.03	Not Applicable [5]	Not Applicable	Not Applicable	Not Applicable
Total Light Extinction	51.18	21.90	41.71	47.19	Not Applicable	Not Applicable	Not Applicable
Deciview	15.84	7.41	13.94	15.12	Not Applicable	Not Applicable	Not Applicable

[1] – Baseline values derived from Table 4.4(b), except for Deciview. The Deciview value was derived from Table 3-7;
[2] – Deciview value derived from Table 3-7;
[3] – 2018 Uniform Rate of Progress Target for Best 20% Days is not defined. The Deciview value was derived from Figure 3-5(b);
[4] – Results based on Weighted Emissions Potential analysis using the 2000-04 Baseline (plan02d) & 2018 PRPb (prp18b) emissions scenarios; and
[5] – Visibility projections not available due to model performance issues.

11.0 Periodic Review

11.1 Evaluation and Reassess Every 10 Years

In accordance with 40 CFR § 51.308(f), DENR will review, revise, and submit revisions to South Dakota's State Implementation Plan by July 31, 2018, and every ten years thereafter. The

review shall consist of DENR evaluating and reassessing all of the elements required in 40 CFR § 51.308(d), taking into account improvements in monitoring data collection and analysis techniques, control technologies, and other relevant factors. The evaluation and reassessing shall address at least the following:

1. In accordance with 40 CFR § 51.308(d)(2)(iv)(B), current visibility conditions for the 20% most impaired and 20% least impaired days, and actual progress made towards natural conditions during the previous implementation period. The period for calculating current visibility conditions is the most recent five year period preceding the required date of the implementation plan submittal for which data are available. Current visibility conditions must be calculated based on the annual average level of visibility impairment for the most and least impaired days for each of these five years. Current visibility conditions are the average of these annual values;
2. The effectiveness of the long-term strategy for achieving reasonable progress goals over the prior implementation period(s); and
3. Affirmation of, or revision to, the reasonable progress goal in accordance with the procedures set forth in 40 CFR § 51.308(d)(1). If DENR established a reasonable progress goal for the prior period which provided a slower rate of progress than that needed to attain natural conditions by the year 2064, DENR must evaluate and determine the reasonableness, based on the factors in 40 CFR § 51.308(d)(1)(i)(A), of additional measures that could be adopted to achieve the degree of visibility improvement projected by the analysis contained in the first implementation plan described in 40 CFR § 51.308(d)(1)(i)(B).

DENR will also coordinate with EPA to conduct these reviews jointly to satisfy the requirements of 40 CFR § 51.306(c).