APPENDIX D

Visibility Impacts

List of Tables

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Impacts on Visibility

The Air Quality modeling study conducted for the SEIS provides an analysis of potential impacts at the Class I areas and at sensitive Class II areas in the region. Under the guidance of the Federal Land Managers Air Quality Workgroup (FLAG), the potential impacts were provided using the CALPUFF modeling system and the CALPOST Visibility Method 2 approach.

Visibility potential impacts are based on the highest 24-hour calculated extinction at the indicated source receptors. Potential impacts are based on a presumed pristine background and calculated as a percent increase in extinction (reduced visibility) from that background value. The study tabulated the reduced visibility at the maximum impact receptor in each of the Class I and Class II groups in terms of the maximum reduction on any one 24-hour period, the number of days annually that showed visibility reductions of 5 percent and 10 percent. These reductions are indicated as reductions in deciviews (0.5 and 1 deciview respectively). A significance threshold of 10 percent has been used in this analysis to evaluate the impact from the source groups

Alternative E CBNG sources by themselves are likely to directly degrade visibility within ten mandatory federal PSD Class I Areas. A greater than "just noticeable change" of 1.0 dv was predicted to average up to 4 days per year within the Bridger Wilderness Area (maximum 2.3 Δdv), 3 days per year within the Fitzpatrick Wilderness Area (maximum 2.3 Δdv), 1 day per year within the Fort Peck Indian Reservation (maximum 1.4 Δdv), 6 days per year within the North Absaroka Wilderness Area (maximum 2.5 Δdv), 2 days per year within the Teton Wilderness Area (maximum 1.2 Δdv), 3 days per year within the Theodore Roosevelt National Park (maximum 1.3 Δdv), 6 days per year within the Washakie Wilderness Area (maximum 2.2 Δdv), 1 day per year within the Wind Cave National Park (maximum 1.2 Δdv), 2 days per year within the Yellowstone National Park (maximum 2.4 Δdv), and 235 days within the redesignated PSD Class I Northern Cheyenne Indian Reservation (maximum 15.1 Δdv).

Using Visibility Method 2, Alternative E CBNG sources were predicted to impact visibility greater than 1.0 dv on twelve PSD Class II areas. The model indicated up to 7 days per year within the Absaroka Beartooth Wilderness Area (maximum 5.8 Δdv), 33 days within the Bighorn Canyon National Recreation Area (maximum 6.2 Δdv), 1 day within the Black Elk Wilderness Area (maximum 1.4 Δdv), 17 days per year within the Cloud Peak Wilderness Area (maximum 15.9 Δdv), 274 days per year within the Crow Indian Reservation (maximum 15.4 Δdv), 3 days per year within the Devils Tower National Monument (maximum 1.2 Δdv), 1 day per year within the Fort Belknap Indian Reservation (maximum 1 Δdv), 1 day per year within the Fort Laramie National Historic Site (maximum 1.2 Δdv), 2 days per year within the Jewel Cave National Monument (maximum 1.7 Δdv), 1 day per year within the Mount Rushmore National Monument (maximum 1.3 Δdv), 4 days per year within the Popo Agie Wilderness Area (maximum 1.8 Δdv), and 8 days per year at the Wind River Indian Reservation (maximum 2.7 Δdv).

Note that potential visibility impacts were predicted to occur from Alternative E non-project sources alone in every sensitive area analyzed. When Alternative E project and RFFA sources are included in the cumulative analysis, the average daily visibility impacts increase most in the Northern Cheyenne Indian Reservation (see Table D-1). The maximum Δdv was predicted to be 116.0 at the Wind River Indian Reservation.

For PSD Class II areas, Alternative E Montana CBNG source visibility impacts were predicted to occur in 12 sensitve areas. Cumulative impacts from Montana CBNG with RFFA sources and non-project sources generally added only a few days to the total days of predicted impacts with the exception of the Crow Indian Reservation and the Wind River Indian Reservation, which experienced increases of 318 days and 14 days respectively.

The Alternative E Montana CBNG sources with RFFA sources for the Class II areas are listed in Table D-2. The maximum Δdv was predicted to be 116 at the Wind River Indian Reservation and 65.6 at the Crow Indian Reservation. Note that visibility impacts are due to $PM_{2.5}$, NO_2 and SO_2 emissions from project and non-project sources.

Visibility impacts under Alternative F were generally very similar to those described under Alternative E, with changes in predicted impacts typically of only a few days difference. The areas with the highest visibility impacts were predicted to occur on the Northern Cheyenne Indian Reservation: up to 248 days per year from Montana CBNG sources directly; up to 292 days per year from project and RFFA sources combined; up to 127 days per year from non-project sources; and, up to 326 days per year from all sources cumulatively. The maximum Δdv was

TABLE D-1

ALTERNATIVE E CLASS I AREA POTENTIAL VISIBILITY IMPACTS (METHOD 2)

Location	Contributions Visibility (No. of days >1.0dv/yr)				Maximum Δdv
	Montana CBNG Sources Only	Montana CBNG +RFFA Sources	Non-Project Sources	Cumulative Total	
Badlands WA	0	0	3 to 23	196	38
Bob Marshall WA	0	0	2 to 22	29	7.7
Bridger WA	4	4	9 to 22	146	88.2
Fitzpatrick WA	3	3	7 to 9	104	53.5
Fort Peck IR	1	1	3 to 34	113	36.7
Gates of the Mountains WA	0	0	12 to 37	62	12.8
Grand Teton NP	0	0	2 to 20	101	22.6
N. Absaroka WA	6	6	16 to 45	107	43.9
N. Cheyenne IR	235	279	1 to 84	325	47.6
Red Rock Lakes WA	0	0	1 to 23	50	8.4
Scapegoat WA	0	0	8 to 39	49	20.2
Teton WA	2	2	6 to 25	113	44.2
Theodore Roosevelt NP	3	3	6 to 24	151	48.5
U.L. Bend WA	0	0	4 to 48	98	15.5
Washakie WA	6	6	21 to 41	120	67.5
Wind Cave NP	1	1	27 to 27	218	50.5
Yellowstone NP	2	2	10 to 58	118	41.5

predicted to be 47.6. The following potential visibility impacts were also predicted to occur on the

Crow Indian Reservation: up to 170 days per year from Alternative F Montana CBNG sources directly; up to 189 days per year from project and RFFA sources combined; up to 365 days per year from non-project sources; and up to 365 days per year from all sources cumulatively. The maximum Δdv was predicted to be 65.6. Tables D-3 and D-4 indicate model predicted visibility impacts for Alternative F on Class I and Class II Areas, respectively.

Under Alternative H, potential visibility impacts were predicted to occur on the Crow Indian Reservation: up to 305 days per year from Montana CBNG sources directly; up to 324 days per year from Montana CBNG and RFFA sources combined; up to 359 days per year from non-project sources; and up to 365 days per year from all sources cumulatively. The maximum Δdv was predicted to be 65.6. Additionally, the following potential visibility impacts were predicted to occur on the Northern Cheyenne Indian Reservation: up to 300 days per year from Alternative H Montana CBNG sources directly; up to 344 days per year from Montana CBNG and RFFA sources combined; up to 84 days per year from non-project sources; and, up to 327 days per year from all sources cumulatively. The maximum Δdv was predicted to be 47.6. Tables D-5 and D-6 provide a summary of visibility impacts from Montana CBNG sources (Operation + Construction), RFFA sources, and cumulative sources. Table D-7 provides a depiction of the potential impacts of all sources for each of the proposed alternatives. Data are provided for all receptor areas for all sources for each of the alternatives.

TABLE D-2

ALTERNATIVE E CLASS II AREA POTENTIAL VISIBILITY IMPACTS (METHOD 2)

	Contributions Visibility (No. of days >1.0dv/yr)				
Location	**Montana CBNG Sources Only**	**Montana CBNG +RFFA Sources**	**Non-Project Sources**	**Cumulative Total**	**Maximum Δdv**
Absaroka Beartooth WA	7	17	1 to 85	141	53.9
Agate Fossils Bed NM	0	1	11 to 11	200	31.9
Bighorn Canyon NRA	33	48	28 to 81	295	51.9
Black Elk WA	1	4	25 to 25	187	50.5
Cloud Peak WA	17	69	2 to 51	155	45.7
Crow IR	274	318	58 to 359	365	65.6
Devils Tower NM	3	5	2 to 27	237	38.3
Fort Belknap IR	1	3	8 to 60	106	20.2
Fort Laramie NHS	1	4	9 to 9	208	44.6
Jedediah Smith WA	0	1	22 to 22	102	21.9
Jewel Cave NM	2	5	27 to 27	212	55.1
Lee Metcalf WA	0	2	19 to 95	136	18.6
Mount Naomi WA	0	1	1 to 1	49	26.0
Mount Rushmore NM	1	4	25 to 25	183	48.7
Popo Agie WA	4	8	9 to 23	121	97.2
Soldier Creek WA	0	1	15 to 15	216	32.8
Westville Mountain WA	0	1	0 to 0	38	19.3
Wind River IR	8	14	1 to 46	233	116.0

TABLE D-3

ALTERNATIVE F CLASS I AREA POTENTIAL VISIBILITY IMPACTS (METHOD 2)

	Contributions Visibility (No. of days >1.0dv/yr)				
Location	**Montana CBNG Sources Only**	**Montana CBNG +RFFA Sources**	**Non-Project Sources**	**Cumulative Total**	**Maximum Δdv**
Badlands WA	0	0	3 to 23	197	38
Bob Marshall WA	0	0	2 to 22	29	7.7
Bridger WA	3	3	9 to 22	146	88.1
Fitzpatrick WA	2	2	7 to 9	104	53.4
Fort Peck IR	1	1	3 to 34	113	36.7
Gates of the Mountains WA	0	0	12 to 37	61	12.8
Grand Teton NP	0	0	2 to 20	101	22.6
N. Absaroka WA	5	5	16 to 45	106	43.8
N. Cheyenne IR	248	292	1 to 84	326	47.6
Red Rock Lakes WA	0	0	1 to 23	50	8.4
Scapegoat WA	0	0	8 to 39	49	20.2
Teton WA	2	2	6 to 25	113	44.1
Theodore Roosevelt NP	3	3	6 to 24	150	48.5
U.L. Bend WA	0	0	4 to 48	98	15.5
Washakie WA	6	6	21 to 41	120	67.4
Wind Cave NP	1	1	27 to 27	218	50.5
Yellowstone NP	2	2	10 to 58	118	41.4

TABLE D-4

ALTERNATIVE F CLASS II AREA POTENTIAL VISIBILITY IMPACTS (METHOD 2)

	Contributions Visibility (No. of days >1.0dv/yr)				
Location	**Montana CBNG Sources Only**	**Montana CBNG +RFFA Sources**	**Non-Project Sources**	**Cumulative Total**	**Maximum Δdv**
Absaroka Beartooth WA	7	8	1 to 85	141	53.7
Agate Fossils Bed NM	0	0	11 to 11	200	31.9
Bighorn Canyon NRA	25	28	28 to 81	294	51.8
Black Elk WA	1	1	25 to 25	187	50.5
Cloud Peak WA	15	19	2 to 51	155	45.6
Crow IR	170	189	58 to 359	365	65.6
Devils Tower NM	2	2	2 to 27	236	38.3
Fort Belknap IR	0	0	8 to 60	105	20.2
Fort Laramie NHS	1	1	9 to 9	208	44.6
Jedediah Smith WA	0	0	22 to 22	102	21.9
Jewel Cave NM	2	2	27 to 27	212	55.1
Lee Metcalf WA	0	0	19 to 95	136	18.6
Mount Naomi WA	0	0	1 to 1	49	26.0
Mount Rushmore NM	1	1	25 to 25	183	48.7
Popo Agie WA	4	4	9 to 23	121	97.2

TABLE D-5

ALTERNATIVE H CLASS I AREA POTENTIAL VISIBILITY IMPACTS

	Contributions Visibility (No. of days >1.0dv/yr)				
Location	**Montana CBNG Sources Only**	**Montana CBNG +RFFA Sources**	**Non-Project Sources**	**Cumulative Total**	**Maximum Δdv**
Badlands WA	0	0	3 to 23	197	38
Bob Marshall WA	0	0	2 to 22	29	7.7
Bridger WA	4	4	9 to 22	146	88.2
Fitzpatrick WA	3	3	7 to 9	104	53.5
Fort Peck IR	1	1	3 to 34	115	36.7
Gates of the Mountains WA	0	0	12 to 37	62	12.8
Grand Teton NP	0	0	2 to 20	101	22.6
N. Absaroka WA	6	6	16 to 45	108	43.8
N. Cheyenne IR	300	344	1 to 84	327	47.6
Red Rock Lakes WA	0	0	1 to 23	50	8.4
Scapegoat WA	0	0	8 to 39	49	20.2
Teton WA	1	1	6 to 25	113	44.2
Theodore Roosevelt NP	3	3	6 to 24	151	48.5
U.L. Bend WA	0	0	4 to 48	98	15.5
Washakie WA	5	5	21 to 41	120	67.6
Wind Cave NP	1	1	27 to 27	218	50.5
Yellowstone NP	2	2	10 to 58	118	41.5

TABLE D-6

ALTERNATIVE H CLASS II AREA POTENTIAL VISIBILITY IMPACTS

	Contributions Visibility (No. of days >1.0dv/yr)				
Location	**Montana CBNG Sources Only**	**Montana CBNG +RFFA Sources**	**Non-Project Sources**	**Cumulative Total**	**Maximum Δdv**
Absaroka Beartooth WA	7	8	1 to 85	142	53.9
Agate Fossils Bed NM	0	0	11 to 11	200	31.9
Bighorn Canyon NRA	35	38	28 to 81	295	51.8
Black Elk WA	1	1	25 to 25	187	50.5
Cloud Peak WA	16	20	2 to 51	155	45.6
Crow IR	305	324	58 to 359	365	65.6
Devils Tower NM	2	2	2 to 27	238	38.3
Fort Belknap IR	1	1	8 to 60	106	20.2
Fort Laramie NHS	1	1	9 to 9	208	44.6
Jedediah Smith WA	0	0	22 to 22	102	21.9
Jewel Cave NM	2	2	27 to 27	212	55.1
Lee Metcalf WA	0	0	19 to 95	136	18.6
Mount Naomi WA	0	0	1 to 1	49	26.0
Mount Rushmore NM	1	1	25 to 25	183	48.7
Popo Agie WA	4	4	9 to 23	121	97.2

Table D-7 Visibility Impacts - Method 2 - Future Alternatives

Receptor Set	ALL SOURCES - ALT E			ALL SOURCES - ALT F			ALL SOURCES - ALT H			ALL EDF (same as base year)			ALL MT - ALT E			ALL MT - ALT F			ALL MT - ALT H			ALL OTHER (same as base year)		
	Number of Days > N% Change in B_{ext}		Maximum % Change in B_{ext}	Number of Days > N% Change in B_{ext}		Maximum % Change in B_{ext}	Number of Days > N% Change in B_{ext}		Maximum % Change in B_{ext}	Number of Days > N% Change in B_{ext}		Maximum % Change in B_{ext}	Number of Days > N% Change in B_{ext}		Maximum % Change in B_{ext}	Number of Days > N% Change in B_{ext}		Maximum % Change in B_{ext}	Number of Days > N% Change in B_{ext}		Maximum % Change in B_{ext}	Number of Days > N% Change in B_{ext}		Maximum % Change in B_{ext}
	5%	10%		5%	10%		5%	10%		5%	10%		5%	10%		5%	10%		5%	10%		5%	10%	
CLASS I AREAS																								
Badlands NP Class I	265	196	380	265	197	380	266	197	380	7	1	10	95	40	56	94	40	56	95	40	56	117	65	142
Bob Marshall W Class I	44	29	77	44	29	77	44	29	77	0	0	1	35	26	73	35	26	73	35	26	73	14	8	53
Bridger W Class I	207	146	882	207	146	881	207	146	882	21	5	36	44	31	116	44	31	115	44	31	116	88	48	176
Fitzpatrick W Class I	155	104	535	155	104	534	155	104	535	10	3	36	47	27	127	47	27	125	47	27	127	60	37	152
Fort Peck IR Class I	165	113	367	165	113	367	165	115	367	0	0	5	112	61	67	112	60	66	112	61	67	70	46	358
Gates of the Mountain W Class I	92	62	128	92	61	128	92	62	128	0	0	2	83	51	127	83	51	127	83	51	127	36	17	103
Grand Teton NP Class I	171	101	226	171	101	226	171	101	226	11	2	13	56	30	50	56	29	49	56	30	50	103	51	75
North Absaorka W Class I	168	107	439	168	106	438	168	108	438	5	1	20	115	59	123	115	59	122	118	59	123	65	41	204
North Cheyenne IR Class I	358	325	476	360	326	476	360	327	476	2	0	9	353	306	203	362	326	208	356	309	210	104	72	264
Red Rock Lakes Class I	93	50	84	93	50	84	93	50	84	3	1	16	53	30	38	53	30	37	53	30	38	35	17	35
Scapegoat W Class I	67	49	202	67	49	202	67	49	202	0	0	2	58	42	190	58	42	190	58	42	190	28	13	140
Teton W Class I	169	113	442	169	113	441	169	113	442	5	2	16	66	34	143	66	34	142	66	34	144	83	42	177
Theodore Roosevelt NP Class I	217	151	485	217	150	485	217	151	485	1	0	9	106	51	84	104	51	82	106	51	84	138	89	307
UL Bend W Class I	175	98	155	175	98	155	175	98	155	0	0	4	145	71	59	145	70	58	145	71	59	50	30	128
Washakie W Class I	179	120	675	179	120	674	179	120	676	15	5	33	101	57	165	101	57	164	101	57	165	79	47	197
Wind Cave NP Class I	305	218	505	305	218	505	305	218	505	6	1	11	102	53	46	102	53	45	102	53	46	116	75	278
Yellowstone NP Class I	196	118	415	196	118	414	196	118	415	9	4	18	120	66	92	120	66	91	120	66	92	93	44	163
SENSITIVE CLASS II AREAS																								
Absaorka Beartooth W Class II	216	141	539	215	141	537	216	142	539	4	1	10	184	108	207	183	108	205	186	108	207	84	56	327
Agate Fossil Beds NM Class II	270	200	319	270	200	319	270	200	319	12	4	15	67	26	29	66	26	29	67	26	29	72	41	105
Big Horn Canyon NRA Class II	354	295	519	354	294	517	354	295	518	5	0	8	228	164	282	255	208	282	228	159	275	306	189	355
Black Elk W Class II	288	187	505	288	187	505	288	187	505	6	1	10	89	46	43	89	46	43	89	46	44	113	69	303
Cloud Peak Class II	219	155	457	218	155	453	219	155	456	6	0	8	134	86	277	133	85	273	135	85	276	85	48	178
Crow IR Class II	365	365	656	365	365	655	365	365	656	9	0	8	365	365	649	365	365	649	365	365	649	175	103	372
Devils Tower NM Class II	318	237	383	318	236	383	318	238	383	4	0	9	133	64	62	133	63	61	133	64	62	87	54	274
Fort Belknap IR Class II	180	106	202	178	105	202	180	106	202	0	0	4	150	74	65	150	74	64	150	74	66	50	33	175
Fort Laramie NHS Class II	273	208	446	273	208	446	273	208	446	23	5	20	61	25	42	60	25	41	60	25	42	89	49	124
Jedediah Smith W Class II	166	102	219	166	102	219	166	102	219	8	3	15	53	29	47	53	29	47	53	30	47	104	52	79
Jewel Cave NM Class II	301	212	551	301	212	551	301	212	551	6	1	12	94	51	53	94	51	53	94	51	53	91	63	231
Lee Metcalf W Class II	190	136	186	190	136	186	190	136	186	1	0	9	162	115	172	162	115	172	162	115	172	59	35	120
Mt Naomi W Class II	77	49	260	77	49	260	77	49	260	11	4	38	4	1	23	4	1	23	4	1	23	46	24	94
Mt Rushmore Class II	276	183	487	275	183	487	276	183	487	6	0	9	85	46	40	85	46	40	85	46	40	105	66	304
Popo Agie W Class II	189	121	972	189	121	972	189	121	972	22	8	53	45	33	82	45	33	82	45	33	82	75	41	228
Soldier Creek WA Class II	282	216	328	282	216	328	282	216	328	11	4	14	90	38	51	90	38	50	90	38	51	86	46	132
Wellsville Mountain W Class II	67	38	193	67	38	193	67	38	193	9	2	18	2	1	15	2	1	15	2	1	15	46	24	53
Wind River IR Class II	293	233	1160	292	233	1160	293	233	1160	125	57	79	120	68	174	119	68	173	121	68	175	176	117	258

Table D-7 Continued - Visibility Impacts - Method 2 - Future Alternatives

Receptor Set	ALL WY			Tongue River Railroad			MT CBNG Construction - ALT E			MT CBNG Construction - ALT F			MT CBNG Construction - ALT H			MT CBNG Operation - ALT E			MT CBNG Operation - ALT F			MT CBNG Operation - ALT H		
	Number of Days > N% Change in B_{ext}		Maximum % Change in B_{ext}	Number of Days > N% Change in B_{ext}		Maximum % Change in B_{ext}	Number of Days > N% Change in B_{ext}		Maximum % Change in B_{ext}	Number of Days > N% Change in B_{ext}		Maximum % Change in B_{ext}	Number of Days > N% Change in B_{ext}		Maximum % Change in B_{ext}	Number of Days > N% Change in B_{ext}		Maximum % Change in B_{ext}	Number of Days > N% Change in B_{ext}		Maximum % Change in B_{ext}	Number of Days > N% Change in B_{ext}		Maximum % Change in B_{ext}
	5%	10%		5%	10%		5%	10%		5%	10%		5%	10%		5%	10%		5%	10%		5%	10%	
CLASS I AREAS																								
Badlands NP Class I	191	135	350	0	0	2	0	0	0	0	0	1	0	0	1	10	0	8	9	0	8	9	0	8
Bob Marshall W Class I	9	2	12	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	2
Bridger W Class I	173	109	808	1	0	6	0	0	1	0	0	1	0	0	2	7	4	23	6	3	21	6	4	22
Fitzpatrick W Class I	116	79	399	1	0	6	0	0	1	0	0	1	0	0	2	7	3	23	6	2	22	6	3	23
Fort Peck IR Class I	57	32	101	0	0	3	0	0	1	0	0	1	0	0	3	14	1	14	13	1	13	14	1	14
Gates of the Mountain W Class I	14	6	27	0	0	1	0	0	0	0	0	0	0	0	1	0	0	3	0	0	3	0	0	3
Grand Teton NP Class I	68	47	197	0	0	2	0	0	0	0	0	0	0	0	1	1	0	8	1	0	7	1	0	7
North Absaorka W Class I	74	52	275	0	0	5	0	0	1	0	0	2	0	0	2	9	6	25	9	5	23	9	6	24
North Cheyenne IR Class I	188	127	343	104	44	39	0	0	4	60	13	21	142	37	34	305	235	151	298	229	145	330	263	138
Red Rock Lakes Class I	28	17	53	0	0	1	0	0	0	0	0	0	0	0	1	0	0	4	0	0	3	0	0	4
Scapegoat W Class I	11	7	18	0	0	1	0	0	0	0	0	0	0	0	1	0	0	4	0	0	3	0	0	3
Teton W Class I	90	63	200	0	0	2	0	0	0	0	0	1	0	0	1	4	2	12	4	1	11	4	1	12
Theodore Roosevelt NP Class I	79	52	200	0	0	3	0	0	1	0	0	1	0	0	2	13	3	13	13	2	12	13	3	13
UL Bend W Class I	37	21	71	0	0	2	0	0	0	0	0	1	0	0	1	5	0	8	5	0	8	5	0	8
Washakie W Class I	113	76	436	0	0	4	0	0	1	0	0	1	0	0	2	11	6	22	11	5	20	11	5	22
Wind Cave NP Class I	246	165	383	0	0	2	0	0	0	0	0	1	0	0	1	9	1	12	6	1	12	8	1	12
Yellowstone NP Class I	72	49	250	0	0	5	0	0	1	0	0	2	0	0	2	6	2	24	6	1	22	6	2	23
SENSITIVE CLASS II AREAS																								
Absaorka Beartooth W Class II	72	48	274	1	1	10	0	0	4	0	0	3	0	0	4	15	7	58	11	7	55	15	7	56
Agate Fossil Beds NM Class II	243	173	307	0	0	1	0	0	0	0	0	0	0	0	0	1	0	6	1	0	6	1	0	6
Big Horn Canyon NRA Class II	325	227	285	6	3	15	7	1	12	0	0	4	0	0	3	54	32	62	44	25	58	60	35	61
Black Elk W Class II	214	132	376	0	0	3	0	0	0	0	0	1	0	0	1	8	1	14	7	1	13	8	1	14
Cloud Peak Class II	151	101	361	5	4	52	0	0	3	1	0	6	0	0	5	36	17	159	34	15	153	36	16	157
Crow IR Class II	242	178	415	53	19	44	175	121	114	114	36	33	75	26	41	239	153	154	215	134	149	333	269	257
Devils Tower NM Class II	249	172	230	0	0	2	0	0	1	0	0	1	0	0	1	20	3	12	18	2	12	19	2	12
Fort Belknap IR Class II	35	22	89	0	0	2	0	0	0	0	0	1	0	0	1	4	1	10	4	0	10	4	1	10
Fort Laramie NHS Class II	257	177	381	0	0	3	0	0	0	0	0	1	0	0	0	4	1	12	2	1	11	4	1	12
Jedediah Smith W Class II	60	46	191	0	0	1	0	0	0	0	0	0	0	0	0	1	0	6	1	0	6	1	0	6
Jewel Cave NM Class II	251	166	440	0	0	3	0	0	0	0	0	1	0	0	1	9	2	17	7	2	16	8	2	16
Lee Metcalf W Class II	34	22	65	0	0	2	0	0	1	0	0	1	0	0	3	1	0	8	1	0	8	1	0	8
Mt Naomi W Class II	48	34	235	0	0	1	0	0	0	0	0	0	0	0	0	0	0	3	0	0	2	0	0	2
Mt Rushmore Class II	201	125	350	0	0	3	0	0	0	0	0	1	0	0	1	7	1	13	6	1	12	7	1	12
Popo Agie W Class II	150	100	894	0	0	4	0	0	1	0	0	1	0	0	1	7	4	18	6	4	17	7	4	18
Soldier Creek WA Class II	254	186	301	0	0	1	0	0	0	0	0	0	0	0	1	5	0	6	3	0	6	3	0	6
Wellsville Mountain W Class II	35	20	165	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	2
Wind River IR Class II	264	207	1085	2	0	6	0	0	1	0	0	2	0	0	3	18	8	27	15	8	25	18	8	26

Table D-7 Continued - Visibility Impacts - Method 2 - Future Alternatives

Receptor Set	MT COAL			MT EDF (same as base year)			MT OIL & GAS - Construction			MT OIL & GAS - Operation			MT OTHER (same as base year)			MT Power Plants			WY CBNG - Construction			WY CBNG - Operation		
	Number of Days > N% Change in B_{ext}		Maximum % Change in B_{ext}	Number of Days > N% Change in B_{ext}		Maximum % Change in B_{ext}	Number of Days > N% Change in B_{ext}		Maximum % Change in B_{ext}	Number of Days > N% Change in B_{ext}		Maximum % Change in B_{ext}	Number of Days > N% Change in B_{ext}		Maximum % Change in B_{ext}	Number of Days > N% Change in B_{ext}		Maximum % Change in B_{ext}	Number of Days > N% Change in B_{ext}		Maximum % Change in B_{ext}	Number of Days > N% Change in B_{ext}		Maximum % Change in B_{ext}
	5%	10%		5%	10%		5%	10%		5%	10%		5%	10%		5%	10%		5%	10%		5%	10%	
CLASS I AREAS																								
Badlands NP Class I	0	0	2	0	0	2	0	0	0	0	0	0	8	3	12	61	23	36	3	0	8	15	3	17
Bob Marshall W Class I	0	0	1	0	0	1	0	0	0	0	0	0	8	2	13	31	22	64	0	0	1	0	0	1
Bridger W Class I	1	0	6	1	0	5	0	0	1	0	0	0	16	12	31	38	25	59	8	4	26	16	8	53
Fitzpatrick W Class I	1	0	7	1	0	6	0	0	1	0	0	0	16	9	42	34	22	66	4	3	11	11	4	23
Fort Peck IR Class I	2	0	7	0	0	1	0	0	1	0	0	0	22	3	16	76	34	36	1	0	6	8	1	13
Gates of the Mountain W Class I	0	0	1	0	0	1	0	0	0	0	0	0	26	12	26	67	37	119	0	0	1	0	0	2
Grand Teton NP Class I	0	0	2	0	0	2	0	0	0	0	0	0	4	2	10	46	20	45	0	0	4	3	0	9
North Absaorka W Class I	3	0	8	1	0	6	0	0	1	0	0	0	29	16	46	91	45	58	3	1	10	7	3	21
North Cheyenne IR Class I	53	8	20	0	0	5	13	1	13	0	0	3	47	18	30	151	84	82	31	7	22	72	34	45
Red Rock Lakes Class I	0	0	1	0	0	1	0	0	0	0	0	0	6	1	18	46	23	26	0	0	1	0	0	3
Scapegoat W Class I	0	0	1	0	0	1	0	0	0	0	0	0	21	8	19	50	39	177	0	0	1	0	0	1
Teton W Class I	0	0	5	1	0	8	0	0	1	0	0	0	17	6	57	53	25	58	2	0	6	5	2	11
Theodore Roosevelt NP Class I	2	0	6	0	0	3	0	0	1	0	0	0	16	6	32	64	24	43	1	0	7	6	1	14
UL Bend W Class I	2	0	8	0	0	2	0	0	0	0	0	0	15	4	15	113	48	43	0	0	4	3	0	8
Washakie W Class I	4	0	8	1	0	9	0	0	2	0	0	0	24	21	61	79	41	66	4	1	11	6	4	23
Wind Cave NP Class I	0	0	3	0	0	2	0	0	1	0	0	0	7	0	7	66	27	24	6	1	11	21	6	23
Yellowstone NP Class I	1	0	7	1	0	5	0	0	1	0	0	0	23	10	36	100	58	58	1	0	9	5	1	18
SENSITIVE CLASS II AREAS																								
Absaorka Beartooth W Class II	2	1	18	1	0	5	0	0	3	0	0	0	58	34	61	152	85	159	3	1	12	6	3	25
Agate Fossil Beds NM Class II	0	0	1	0	0	1	0	0	0	0	0	0	1	0	5	36	11	20	4	0	7	16	5	14
Big Horn Canyon NRA Class II	109	81	174	1	0	6	0	0	3	0	0	0	76	28	52	147	81	57	10	7	49	20	11	104
Black Elk W Class II	0	0	3	0	0	2	0	0	1	0	0	0	7	0	7	60	25	29	5	0	10	17	5	20
Cloud Peak Class II	7	2	13	0	0	4	1	0	7	0	0	1	30	7	18	97	51	60	21	10	44	43	21	95
Crow IR Class II	365	359	607	5	0	8	1	0	5	0	0	1	127	58	63	225	120	88	87	43	50	128	86	101
Devils Tower NM Class II	0	0	3	0	0	2	0	0	1	0	0	0	13	2	12	71	27	41	12	1	14	40	13	29
Fort Belknap IR Class II	0	0	3	0	0	2	0	0	1	0	0	0	17	8	23	120	60	40	0	0	5	3	0	9
Fort Laramie NHS Class II	0	0	1	0	0	1	0	0	1	0	0	0	5	0	7	36	9	19	8	2	18	16	8	37
Jedediah Smith W Class II	0	0	2	0	0	1	0	0	0	0	0	0	5	0	9	42	22	46	0	0	4	2	0	8
Jewel Cave NM Class II	0	0	3	0	0	2	0	0	1	0	0	0	7	0	9	60	27	35	6	0	10	23	6	20
Lee Metcalf W Class II	0	0	3	0	0	2	0	0	1	0	0	0	35	19	32	142	95	172	0	0	2	0	0	4
Mt Naomi W Class II	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2	3	1	16	0	0	2	0	0	3
Mt Rushmore Class II	0	0	2	0	0	1	0	0	1	0	0	0	7	0	7	57	25	27	4	0	9	14	4	19
Popo Agie W Class II	0	0	4	0	0	4	0	0	1	0	0	0	15	9	32	38	23	45	10	3	30	16	10	62
Soldier Creek WA Class II	0	0	2	0	0	1	0	0	0	0	0	0	9	0	9	48	15	34	7	0	9	32	8	19
Wellsville Mountain W Class II	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2	1	0	10	0	0	1	0	0	3
Wind River IR Class II	4	0	7	2	1	10	0	0	2	0	0	0	33	22	82	95	46	78	17	9	41	33	17	85

Table D-7 Continued - Visibility Impacts - Method 2 - Future Alternatives

Receptor Set	WY COAL			WY EDF (same as base year)			WY OIL & GAS - Construction			WY OIL & GAS - Operation			WY OTHER (same as base year)			WY Power Plants		
	Number of Days > N% Change in B_{ext}		Maximum % Change in B_{ext}	Number of Days > N% Change in B_{ext}		Maximum % Change in B_{ext}	Number of Days > N% Change in B_{ext}		Maximum % Change in B_{ext}	Number of Days > N% Change in B_{ext}		Maximum % Change in B_{ext}	Number of Days > N% Change in B_{ext}		Maximum % Change in B_{ext}	Number of Days > N% Change in B_{ext}		Maximum % Change in B_{ext}
	5%	10%		5%	10%		5%	10%		5%	10%		5%	10%		5%	10%	
CLASS I AREAS																		
Badlands NP Class I	18	3	16	8	1	16	22	7	27	0	0	0	23	8	34	145	89	239
Bob Marshall W Class I	0	0	1	0	0	1	0	0	2	0	0	0	0	0	1	5	0	7
Bridger W Class I	8	3	39	25	14	63	82	41	141	0	0	1	43	22	108	105	69	440
Fitzpatrick W Class I	5	3	18	18	8	51	50	27	152	0	0	2	26	16	95	71	38	246
Fort Peck IR Class I	3	0	8	0	0	4	6	0	8	0	0	0	2	0	8	42	20	75
Gates of the Mountain W Class I	0	0	1	0	0	2	1	0	6	0	0	0	0	0	3	9	2	19
Grand Teton NP Class I	0	0	5	11	2	22	22	11	25	0	0	0	17	9	38	48	30	151
North Absaorka W Class I	4	0	9	9	2	23	28	18	48	0	0	0	12	8	43	48	32	153
North Cheyenne IR Class I	26	7	24	3	1	10	25	9	20	0	0	0	14	7	22	91	61	264
Red Rock Lakes Class I	0	0	1	3	1	10	5	0	8	0	0	0	6	1	17	21	12	37
Scapegoat W Class I	0	0	1	0	0	1	1	0	5	0	0	0	0	0	2	8	2	12
Teton W Class I	2	0	9	7	3	17	28	16	33	0	0	0	19	6	31	63	40	118
Theodore Roosevelt NP Class I	7	1	12	1	1	10	7	3	18	0	0	0	6	1	23	58	31	149
UL Bend W Class I	2	0	6	0	0	3	3	0	7	0	0	0	3	0	5	24	15	37
Washakie W Class I	4	1	16	12	4	29	47	25	70	0	0	1	21	10	52	75	47	243
Wind Cave NP Class I	27	4	19	9	3	19	28	10	25	0	0	0	35	14	46	167	99	259
Yellowstone NP Class I	2	0	7	9	3	18	21	12	38	0	0	0	20	7	31	51	37	143
SENSITIVE CLASS II AREAS																		
Absaorka Beartooth W Class II	5	0	8	9	2	14	25	7	58	0	0	1	12	5	26	48	25	151
Agate Fossil Beds NM Class II	26	8	19	11	5	24	29	9	35	0	0	0	27	12	46	186	106	179
Big Horn Canyon NRA Class II	10	7	34	7	2	11	109	53	49	0	0	0	272	144	87	73	45	123
Black Elk W Class II	13	3	14	7	3	18	24	9	25	0	0	0	31	13	46	139	83	255
Cloud Peak Class II	10	6	12	7	2	13	42	18	25	0	0	0	21	7	31	92	59	288
Crow IR Class II	39	17	35	9	0	10	84	32	37	0	0	0	41	18	23	92	64	261
Devils Tower NM Class II	70	17	25	5	1	12	26	9	19	0	0	0	26	9	28	139	72	148
Fort Belknap IR Class II	2	0	7	0	0	5	1	1	11	0	0	0	2	1	10	28	14	48
Fort Laramie NHS Class II	28	8	28	21	7	23	46	18	34	0	0	0	43	17	43	186	114	245
Jedediah Smith W Class II	0	0	4	10	2	24	15	8	24	0	0	0	15	8	41	46	29	146
Jewel Cave NM Class II	32	5	18	9	2	22	26	10	29	0	0	0	37	14	53	160	96	296
Lee Metcalf W Class II	0	0	1	3	1	14	7	2	17	0	0	0	6	2	24	25	15	39
Mt Naomi W Class II	0	0	5	11	5	44	12	4	31	0	0	0	16	8	77	32	21	188
Mt Rushmore Class II	13	3	14	7	3	17	21	8	24	0	0	0	28	11	42	131	76	238
Popo Agie W Class II	7	3	45	27	11	93	51	28	117	0	0	1	37	19	149	88	62	493
Soldier Creek WA Class II	44	17	23	15	5	19	36	15	31	0	0	0	29	14	39	200	125	186
Wellsville Mountain W Class II	0	0	3	9	5	20	9	3	18	0	0	0	15	8	31	21	13	120
Wind River IR Class II	21	11	53	121	75	163	174	100	153	0	0	1	137	86	167	133	96	636