TABLES

TABLE 2-1

BASELINE (2003-2005) 24-HOUR MAXIMUM EMISSION RATES

Year	NOx (lb/hr)		SO_2 (lb/hr)		PM_{10} (lb/hr)	
	Unit 1	Unit 2	Unit 1	Unit 2	Unit 1	Unit 2
2003	2,474	2,293	1,898	1,783	91	57
2004	2,440	2,510	2,062	2,460	91	90
2005	2,415	2,496	740	1,135	98	144
Max Rate Used	2,474	2,510	2,062	2,460	98	144
Date of Max	02/28/03	06/17/04	10/13/04	10/13/04	12/16/05	7/12/05
MMBtu/hr on Max day	8,201	8,198	7,516	7,295	8,175	8,461
lb/MMBtu on Max Day	0.302	0.306	0.274	0.337	0.012	0.017

TABLE 2-2

2006 – 2007 24-HOUR MAXIMUM EMISSION RATES

	NOx		SO_2		PM_{10} [1]	
	Unit 1	Unit 2	Unit 1	Unit 2	Unit 1	Unit 2
Emission Rate (lb/hr)	2,318	2,268	706.6	908.5	98	144
lb/MMBtu	0.300	0.297	0.097	0.148	0.012	0.017

1. PM_{10} emission rates based on maximum 24-hour emission rate during baseline.

TABLE 2-3

BART NOX EMISSION RATES

Case	Emission Factor (lb/MMBtu)	Heat Demand (MMBtu/hr)	Unit 1 NOx (lb/hr)	Unit 2 NOx (lb/hr)
2006-2007	0.300 / 0.297	7,727 / 7,638	2,318	2,268
Flex Fuels	0.240	8,200	1,968	1,968
SNCR	0.228	8,200	1,869	1,869
Presumptive	0.150	8,200	1,230	1,230
SCR	0.070	8,200	574	574

1. 2006-2007 rates are based on CAMD data. NOx emission rate for SNCR is based on 75% of 2003 -2005 rate.

TABLE 2-4

BART EMISSION RATES BY CASE, TOTAL FOR BOTH UNITS

Case	NOx (lb/hr)	SO_2 (lb/hr)	PM_{10} (lb/hr)
Pre-NOx Control [1]	7,683	32,425	321
Baseline [2]	4,984	4,522	242
2006-2007 [3]	4,586	1,615	242
Flex Fuels	3,936	4,522	242
SNCR [4]	3,738	4,522	242
Presumptive [5]	2,460	4,522	242
SCR [6]	1,148	4,522	242

1. Pre-NOx Control emission rates are based on data from the RACT Technical Support Document. NOx emissions use 0.545 lb/MMBtu and 7,049 MMBtu/hr. SO_2 emissions are based on the 1000 ppm emission limit and a combined flow of 5,469,000 acfm. PM_{10} emissions are based on the same flow rate and maximum grain loading from 1996 source tests.
2. Maximum actual 24-hour emissions during 2003-2005.
3. Maximum actual 24-hour NOx and SO_2 emissions during 2006-2007; PM_{10} is from Baseline.
4. NOx emissions controlled by SNCR (75 percent of 2003 – 2005); SO_2 and PM_{10} are from Baseline.
5. NOx based on EPA Presumptive BART emission limit (0.15 lb NOx/MMBtu at 8,200 MMBtu/hr); SO_2 and PM_{10} from Baseline.
6. NOx emissions controlled by SCR (0.07 lb NOx/MMBtu at 8,200 MMBtu/hr); SO_2 and PM_{10} from Baseline.

TABLE 3-3
STACK PARAMETERS

Case	Stack Location xlcc (km)[1]	Stack Location ylcc (km)[1]	Base Elevation (m)[3]	Stack Height (m)	Diameter (m)	Velocity (m/s)	Temperature (K)
Pre-NOx Control [2]	-136.702	-239.551	108.6	143.3	7.32 [4]	29.2	449.8
All Others	-136.702	-239.551	108.6	143.3	12.82 [5]	15.0 [6]	332.3 [6]

1 Lambert Conic Conformal (LCC) coordinates with reference Latitude 49 North and reference Longitude 121 West.

2 Stack parameters from: Vimont, J.C., 1996. *Modeling Analysis of the Centralia Power Plant*. National Park Service, Air Resources Division, PO Box 25287, Denver, CO 80225, September 1996

3 Source elevation based on bilinear interpolation of the 4-km mesh size terrain used by CALMET

4 The units were simulated as a release from a single stack. The flows were not combined as the actual stacks were separated by more than one stack diameter.

5 The units were simulated as a release from a single stack. The two stacks are next to one another and the flows were combined using an equivalent diameter calculated from the combined area of the two stacks

6 Velocity and temperature are based on the average measured data from 2003-2005

TABLE 3-1

PM10 SPECIATION

Case	$(NH_4)_2SO_4$	NH_4NO_3	OC	PMC	PMF	EC
Pre-NOx Control [1]	43.96%	0.00%	10.99%	25.03%	19.28%	0.74%
Baseline [2]	22.68%	0.00%	5.67%	39.81%	30.67%	1.18%
2006 – 2007 [2]	22.68%	0.00%	5.67%	39.81%	30.67%	1.18%
Flex Fuels	22.68%	0.00%	5.67%	39.81%	30.67%	1.18%
SNCR [2]	22.68%	0.00%	5.67%	39.81%	30.67%	1.18%
Presumptive [2]	22.68%	0.00%	5.67%	39.81%	30.67%	1.18%
SCR [2]	22.68%	0.00%	5.67%	39.81%	30.67%	1.18%

1. NPS PM_{10} profile for Dry Bottom Boiler burning pulverized coal with ESP assuming a sulfur content of 0.92%, an ash content of 14.9%, and a heat content of 7,961 Btu/lb

2. NPS PM_{10} profile for Dry Bottom Boiler burning pulverized coal with FGD and ESP assuming a sulfur content of 0.92%, an ash content of 14.9%, and a heat content of 7,961 Btu/lb

TABLE 3-2

CALPUFF EMISSION RATES, TOTAL FOR BOTH UNITS

	Maximum 24-hour Emission Rates (lb/hr)								
Case	**SO_2**	**SO_4**	**NOx**	**HNO_3**	**NO_3**	**OC [1]**	**PMC**	**PMF**	**EC**
Pre-NOx Control	32,375.2	102.6	7,683.0	0.0	0.0	35.3	80.3	61.9	2.4
Baseline	4,522.0	40.0	4,984.0	0.0	0.0	13.7	96.4	74.3	2.9
2006-2007	1,615.0	40.0	4,586.0	0.0	0.0	13.7	96.4	74.3	2.9
Flex Fuels	4,522.0	40.0	3,936.0	0.0	0.0	13.7	96.4	74.3	2.9
SNCR	4,522.0	40.0	3,738.0	0.0	0.0	13.7	96.4	74.3	2.9
Presumptive	4,522.0	40.0	2,460.0	0.0	0.0	13.7	96.4	74.3	2.9
SCR	4,522.0	40.0	1,148.0	0.0	0.0	13.7	96.4	74.3	2.9

1. OC emissions were actually labeled secondary organic aerosols (SOA) in the CALPUFF input files to facilitate post-processing with CALPOST. This assumes all OC emitted forms SOA with the same molecular weight.

TABLE 4-1

NUMBER OF DAYS WITH PREDICTED CHANGE TO THE HAZE INDEX GREATER THAN 0.5 DECIVIEWS

		Number of Days in 2003-2005 with Delta HI > 0.5 dv						
Area of Interest	**Period**	**Pre-NOx Control**	**Baseline**	**2006-2007**	**Flex Fuels**	**SNCR**	**Pre-sumptive**	**SCR**
Alpine Lakes Wilderness	2003-2005	569	432	377	407	404	353	285
Glacier Peak Wilderness	2003-2005	467	275	221	253	250	206	160
Goat Rocks Wilderness	2003-2005	509	414	368	393	388	353	290
Mt. Adams Wilderness	2003-2005	443	329	284	306	301	272	224
Mt. Hood Wilderness	2003-2005	344	224	182	201	197	178	138
Mt. Jefferson Wilderness	2003-2005	268	130	97	121	119	95	74
Mt. Rainier National Park	2003-2005	611	505	471	488	484	455	405
Mt. Washington Wilderness	2003-2005	232	101	66	88	86	66	50
N. Cascades National Park	2003-2005	407	206	149	178	174	139	102
Olympic National Park	2003-2005	340	254	223	238	234	212	183
Pasayten Wilderness	2003-2005	332	141	98	119	116	86	51
Three Sisters Wilderness	2003-2005	235	105	72	92	90	75	51
CRGNSA	2003-2005	397	245	185	201	194	173	120
Overall	Min	232	101	66	88	86	66	50
	Mean	396	259	215	237	234	205	164
	Max	611	505	471	488	484	455	405

TABLE 4-2

PREDICTED CHANGE TO THE 98TH PERCENTILE DAILY HAZE INDEX FOR 2003-2005

		98th Percentile Daily Delta HI (dv) [1]						
Area of Interest	**Period**	**Pre-NOx Control**	**Baseline**	**2006-2007**	**Flex Fuels**	**SNCR**	**Pre-sumptive**	**SCR**
Alpine Lakes Wilderness	2003-2005	10.458	4.346	3.278	3.918	3.844	3.249	2.531
Glacier Peak Wilderness	2003-2005	7.357	2.622	2.100	2.348	2.294	1.955	1.562
Goat Rocks Wilderness	2003-2005	9.886	4.286	3.429	3.802	3.708	3.078	2.385
Mt. Adams Wilderness	2003-2005	8.683	3.628	2.819	3.236	3.152	2.595	1.934
Mt. Hood Wilderness	2003-2005	7.659	2.830	2.186	2.457	2.388	1.978	1.543
Mt. Jefferson Wilderness	2003-2005	5.531	1.888	1.379	1.643	1.596	1.332	1.061
Mt. Rainier National Park	2003-2005	11.999	5.489	4.597	4.854	4.743	3.958	3.275
Mt. Washington Wilderness	2003-2005	4.743	1.414	0.944	1.275	1.248	1.079	0.855
N. Cascades National Park	2003-2005	6.395	2.212	1.614	1.940	1.887	1.539	1.183
Olympic National Park	2003-2005	9.813	4.024	3.144	3.546	3.456	2.973	2.339
Pasayten Wilderness	2003-2005	4.912	1.482	1.093	1.353	1.318	1.093	0.864
Three Sisters Wilderness	2003-2005	4.789	1.538	1.089	1.361	1.328	1.115	0.902
CRGNSA	2003-2005	6.027	2.353	1.797	2.008	1.942	1.578	1.182
Overall	Min	4.743	1.414	0.944	1.275	1.248	1.079	0.855
	Mean	7.558	2.932	2.267	2.595	2.531	2.117	1.663
	Max	11.999	5.489	4.597	4.854	4.743	3.958	3.275

1. Based on the 22nd highest on a Class I area basis

TABLE 4-3

YEARLY PREDICTED CHANGE TO THE 98TH PERCENTILE DAILY HAZE INDEX

		98th Percentile Delta HI (dv) [1]						
Area of Interest	**Year**	**Pre-NOx Control**	**Baseline**	**2006-2007**	**Flex Fuels**	**SNCR**	**Pre-sumptive**	**SCR**
Alpine Lakes Wilderness	2003	8.664	3.599	2.723	3.176	3.094	2.537	1.936
	2004	12.374	4.871	3.888	4.469	4.393	3.698	3.057
	2005	8.631	3.856	3.153	3.349	3.251	2.765	2.001
Glacier Peak Wilderness	2003	5.875	2.070	1.522	1.823	1.773	1.466	1.150
	2004	9.397	3.615	2.573	3.282	3.209	2.643	2.036
	2005	6.040	2.554	2.021	2.233	2.172	1.749	1.376
Goat Rocks Wilderness	2003	8.749	4.207	3.310	3.673	3.564	2.907	2.075
	2004	11.059	4.993	3.978	4.538	4.398	3.757	3.137
	2005	9.096	3.826	3.107	3.398	3.314	2.787	2.081
Mt. Adams Wilderness	2003	8.858	3.667	2.880	3.236	3.152	2.595	1.976
	2004	9.560	3.628	2.806	3.259	3.188	2.695	1.984
	2005	8.081	3.379	2.685	2.988	2.914	2.330	1.842
Mt. Hood Wilderness	2003	6.963	2.773	2.099	2.450	2.388	1.978	1.582
	2004	8.836	3.471	2.512	3.119	3.051	2.605	2.082
	2005	6.015	2.159	1.588	1.916	1.870	1.528	1.131
Mt. Jefferson Wilderness	2003	5.076	1.570	1.158	1.376	1.338	1.103	0.851
	2004	6.274	2.079	1.524	1.832	1.784	1.505	1.159
	2005	4.269	1.182	0.908	1.014	0.982	0.805	0.636
Mt. Rainier National Park	2003	11.999	5.552	4.712	4.865	4.754	4.083	3.138
	2004	13.157	5.447	4.581	4.878	4.774	4.088	3.359
	2005	11.129	5.373	4.374	4.757	4.613	3.705	2.779
Mt. Washington Wilderness	2003	4.622	1.374	1.011	1.201	1.168	0.982	0.828
	2004	6.014	2.027	1.395	1.799	1.756	1.475	1.170
	2005	3.012	0.945	0.654	0.861	0.845	0.713	0.569
N. Cascades National Park	2003	4.654	1.557	1.275	1.330	1.296	1.073	0.838
	2004	8.333	2.821	1.979	2.548	2.496	2.152	1.658
	2005	5.448	1.811	1.519	1.620	1.583	1.257	0.975
Olympic National Park	2003	8.376	3.848	3.011	3.433	3.328	2.758	2.428
	2004	10.557	4.645	3.394	4.130	4.040	3.391	2.506
	2005	9.167	3.629	3.028	3.124	3.031	2.544	2.026

1. Based on the 8th highest on a Class I area basis

TABLE 4-3 (Continued)

YEARLY PREDICTED CHANGE TO THE 98TH PERCENTILE DAILY HAZE INDEX

		98th Percentile Delta HI (dv) [1]						
Area of Interest	**Year**	**Pre-NOx Control**	**Baseline**	**2006-2007**	**Flex Fuels**	**SNCR**	**Pre-sumptive**	**SCR**
Pasayten Wilderness	2003	4.291	1.131	0.841	0.981	0.953	0.779	0.615
	2004	5.740	1.954	1.383	1.737	1.701	1.439	1.160
	2005	4.045	1.172	0.869	1.038	1.012	0.850	0.688
Three Sisters Wilderness	2003	4.730	1.538	1.089	1.361	1.328	1.115	0.904
	2004	6.101	2.172	1.402	1.956	1.910	1.511	1.172
	2005	3.218	1.071	0.698	0.921	0.891	0.698	0.561
CRGNSA	2003	5.995	2.431	1.840	2.111	2.049	1.644	1.189
	2004	6.795	2.545	1.873	2.250	2.193	1.768	1.347
	2005	5.206	1.714	1.408	1.439	1.386	1.200	0.944
Overall	Min	3.012	0.945	0.654	0.861	0.845	0.698	0.561
	Mean	7.344	2.878	2.225	2.551	2.486	2.069	1.614
	Max	13.157	5.552	4.712	4.878	4.774	4.088	3.359

1. Based on the 8th highest on a Class I area basis