1.0 Identification of Available PM Control Technologies

1.1 Available PM Control Technologies

PM control technologies that were identified as available for retrofit at SJGS are listed below. Only post-combustion control is available for PM control. A short summary of each technology is included in the following sub-sections:

– Pulse Jet Fabric Filter

– Wet Electrostatic Precipitator (WESP)

1.1.1 Pulse Jet Fabric Filter (PJFF)

As part of the consent decree environmental upgrade project, a PJFF system will be installed on each of the four units at SJGS. The PJFFs will be installed downstream of the existing hot-side ESPs and air heaters, and upstream of the wet flue gas desulfurization (FGD) system. After the commissioning of the PJFF, the hot-side ESP will be de-energized.

In addition to particulate removal, the PJFF system being installed is also part of the emission control system for Hg emission reduction. Activated carbon will be injected into the flue gas downstream of the air heater for adsorption of Hg in the flue gas. The PJFF is used to capture the Hg-laden activated carbon and other PM.

The PJFF outlet will be connected to the existing wet FGD system for SO_2 emissions removal from flue gas. The wet FGD system is equipped with mist eliminators for the removal of entrained moisture droplet, which might also contain unreacted reagent (limestone particle in the slurry) from the FGD or byproduct particulates (calcium sulfite or calcium sulfate). These are also known as re-entrained scrubber solids.

While the control effectiveness of the PJFF is usually defined by vendors at the outlet ductwork of the PJFF, the BART determination is based on the control effectiveness for particulate matter at the stack outlet. Therefore, the particulate matter emission rate has to take into account both the removal efficiency of the PJFF and the impacts of the wet FGD operation, where there is a potential for additional re-entrainment of scrubber solids into the flue gas, which increases the stack outlet particulate matter emission concentration. In this BART determination for particulate matter, the control effectiveness defined for the PJFF installed at SJGS for consent decree requirements, takes into account the impacts of operating the wet FGD system. The overall particulate matter emissions will be the cumulative removal efficiency of the consent decree PJFF and the mist eliminators of the wet FGD.

1.1.2 Wet Electrostatic Precipitator (WESP)

A WESP collects particles on the same theoretical basis as a dry ESP: negatively charged particles are collected on positively charged surfaces. However, the collecting surfaces are wet instead of dry and are flushed with water to remove the particulate. Typically, a WESP is installed downstream of an existing wet FGD system where the flue gas is already saturated, so the amount of added water is minimized. The particulate collection efficiency is enhanced by a lack of re-entrainment after contact with the wet walls (as contrasted with re-entrainment due to rapping on a dry ESP). Therefore, the WESP can remove fine particulate or acid mist applications because it reduces opacity, sulfuric acid mist (H_2SO_4), and other aerosols.

A WESP can be installed in either horizontal or vertical gas flow orientation. In a horizontal gas flow orientation, a WESP is similar to a common dry ESP, and is located on the grade elevation of the plant. Vertical gas flow WESPs are usually of the tubular collection plate type, and is typically used if installed as part of the wet FGD absorber module. Since the existing wet FGD system at SJGS consists of a multiple absorber tower arrangement, the vertical flow wet ESP was not selected as it is more suited for retrofit on wet FGD systems with a single absorber tower. The horizontal flow wet ESP is therefore considered as the baseline design for this analysis.

The WESP will be installed downstream of the existing wet FGD system with the consent decree PJFF in operation to remove a significant amount of particulate matter prior to the flue gas entering the wet FGD system. The moisture saturated flue gas at the wet FGD outlet will then be flowed through the WESP for additional particulate matter removal. In addition to PM, condensible particulate matter (including acid mist), will be effectively removed at the WESP.

An alternative WESP arrangement where it is located upstream of the wet FGD system with the consent decree PJFF decommissioned was not considered for the following reasons. The inlet ductwork into the WESP would need to have a quenching system to saturate flue gas with moisture. The WESP casing would also have to be larger as more electrical fields would be needed for the higher particulate loading. A larger quantity of collected particulate matter from the WESP would also have to be removed from the collector plate wash water. Due to the increase in WESP casing size and retrofit complexity of the additional flue gas quenching and wash water treatment system, this arrangement for the WESP was not considered. In addition to that, the treated flue gas from the WESP will flow through the wet FGD system, where impacts of the wet FGD operations, as described in Subsection 1.1.1 will increase the stack outlet PM emission concentration.

2.0 Technical Feasibility of PM Control Technologies

2.1 Technically Feasible PM Control Technologies

In the process of eliminating technically infeasible alternatives, it is necessary to demonstrate that a technology is not applicable or not available for application at the source. This demonstration is made by showing that the technology is commercially unavailable and/or there are insurmountable technical difficulties with applying the technology to the applicable unit. Other factors that are considered when determining the technical feasibility of a technology include the following:

- Size of the unit.
- Location of the proposed technology.
- Operating problems after retrofit of technology.
- Space constraints.
- Reliability.
- Adverse effects on the rest of the facility.
- Adverse community impacts.

Additionally, a technology is technically infeasible if its level of emissions control does not achieve the required permit emissions limit applied to the source by the regulating agency. Finally, if there are multiple control technologies that have an equivalent level of control, the BART procedure allows for the consideration of the less costly control technology, therefore eliminating the need to evaluate higher cost technologies.

For all the PM control technologies identified as available, a determination was made regarding the technical feasibility of the technology at the SJGS site on the basis of the criteria highlighted above.

2.1.1 PJFF

The PJFF is currently being installed at SJGS for the consent decree environmental upgrade project. Therefore, this technology combination is technically feasible for the reduction of PM emissions.

2.1.2 WESP

The WESP technology is based on the fundamentals of the ESP technology. WESP have also been installed in flue gas streams downstream of a Wet FGD for the removal of PM. Therefore, this technology is technically feasible.

2.2 Technical Feasibility Summary

Table 2-1
Technically Feasible PM Control Technology Alternatives

Pollutant	Philosophy	Technology	Technically Feasible and Applicable?	Remarks/Reasons for Technical Infeasibility
PM	Control Technologies:	PJFF	Yes	In the process of being installed in response to the Consent Decree with existing wet FGD system in operation.
		WESP	Yes	Technically feasible arrangement includes operating the Consent Decree PJFF and existing wet FGD system.

3.0 Evaluation of Technically Feasible Retrofit PM Emissions Control Technologies

This section discusses the control effectiveness evaluation of technically feasible PM control technologies beyond that achieved currently by the newly installed PJFF for the consent decree.

3.1 Control Effectiveness

The evaluation process in Step 3 determines the control effectiveness of the technically feasible PM control technologies. Control effectiveness is expressed in a common metric based on the amount of pollutant generated per unit of heat input (lb/MBtu). The evaluation of the control effectiveness was translated into an hourly rate (lb/h) for each pollutant, according to the design basis heat input data for each SJGS unit. The evaluation of control effectiveness was based on information indicated in Subsection 1.2.3.

Table 3-1 indicates the control effectiveness of each PM control technology. This control effectiveness was calculated from the consent decree values established for front half, filterable particulate matter at 0.015 lb/MBtu.

The control effectiveness for each technology is also summarized in the Design Concept Definition tables in ***Appendix B***.

Table 3-1
Control Effectiveness for PM Control Technology Alternatives (Annual Average Emissions Rates)

Unit	SJGS 1			SJGS 2			SJGS 3			SJGS 4		
Design Basis Heat Input Data, MBtu/h	3,707			3,688			5,758			5,649		
PM Emissions Cases	lb/MBtu	lb/h	ton/yr	lb/MBtu	lb/h	ton/yr	lb/MBtu	lb/h	ton/yr	lb/MBtu	lb/h	ton/yr
PJFF (consent decree)	0.015	55.6	207	0.015	55.3	207	0.015	86.4	321	0.015	84.7	315
WESP	0.010	37.1	138	0.010	36.9	137	0.010	57.6	214	0.010	56.5	210

Notes:
1. Emissions levels (lb/MBtu) shown are on an annual average basis, front-half filterable PM only.
2. Emissions (lb/h) calculations were based on the emissions level (lb/MBtu) and design basis heat input.
3. Emissions levels listed were based on performance guarantees provided by the equipment vendor.
4. Yearly emissions (ton/yr) calculations were based on an annual unit capacity of 85 percent.

4.0 Cost-Effectiveness of PM Control Technologies

This section discusses the cost-effectiveness for PM control technologies considered in this BART analysis.

4.1 Cost-Effectiveness

The cost-effectiveness of each control technology was calculated from the cost of compliance and the amount of pollutant reduced. The cost-effectiveness is defined as the cost of control per amount of pollutant removed. The cost of control takes into account the impact analyses performed. The reduced emissions were estimated on a yearly basis according to the reduction from the consent decree emissions level shown in Table 3-1. Both the consent decree emissions level and the additional control technology alternative emissions level are documented in Table 3-1 and in the Design Concept Definition tables (***Appendix B***).

The cost-effectiveness values were based on 2007 dollars.

4.2 Impact Analysis and Cost-Effectiveness Results

An impact analysis was performed for all the identified technically feasible control technologies. A summary of the calculated impact analysis is presented in ***Appendix C***. The impact analysis of WESP includes auxiliary energy to power the WESP and fans, and an estimate of the additional water consumption requirements when operating the WESP. Water is consumed when collector plate wash water is re-entrained into the flue gas flow, as well as waste water discharged from WESP through the blow down process to maintain the wash water chemical properties. The cost of this impact is significant due to the scarcity of water in the region where SJGS is located.

For all the additional PM control technologies evaluated, a summary table was developed for the impact analysis performed and the resultant cost-effectiveness. Table 4-1 presents the final evaluations for all four units. The expected post-control emissions levels are also included in the table.

Table 4-1
Impact Analysis and Cost-Effectiveness Results of PM Control Technologies

All Feasible Technologies	Emission Performance Level (lb/MBtu)	Expected Emission Rate (lb/h)	Expected Emission Rate (ton/yr)	Expected Emission Reduction (ton/yr)	Total Capital Investment (TCI) (1,000$)	Total Annualized Cost (TAC) (1,000$)	Incremental Cost Effectiveness ($/ton)	Energy Impacts (1,000$)	Non-Air Impacts (1,000$)
SJGS Unit 1									
WESP (see note 8)	0.010	37.1	138	69	99,308	11,855	171,797	1,112	--
PJFF (see note 9)	0.015	55.6	207	--	67,072	10,427	--	4,488	--
SJGS Unit 2									
WESP (see note 8)	0.010	36.9	137	69	99,663	11,895	173,265	1,112	--
PJFF (see note 9)	0.015	55.3	206	--	69,840	10,764	--	4,488	--
SJGS Unit 3									
WESP (see note 8)	0.010	57.6	214	107	129,565	15,558	145,151	1,728	--
PJFF (see note 9)	0.015	86.4	322	--	72,696	12,454	--	6,895	--
SJGS Unit 4									
WESP (see note 8)	0.010	56.5	210	105	130,012	15,609	148,436	1,728	--
PJFF (see note 9)	0.015	84.7	315	--	73,328	12,527	--	6,895	--

Notes:

1. All costs are in 2007$.
2. Expected emission rates (ton/yr) calculations were based on 85 percent unit capacity factor (referer to Appendix A Design Basis).
3. Expected emission reduction (ton/yr) calculations were based on the consent decree upgrades control effectiveness as shown in Table 4-1.
4. TCI and TAC are referenced from Appendix C Cost Analysis Summary.
5. Cost-effectiveness ($/ton) is defined as ratio of TAC over Expected Emission Reduction (ton/yr).
6. Expected emission reduction is based on annual emission reduction from consent decree upgrade emission levels (Table 4-1).
7. Incremental cost effectiveness are based on increments in expected emission reduction (ton/yr).
8. WESP scenario includes operating consent decee PJFF and existing wet FGD system.
9. PJFF scenario includes operating existing wet FGD system.

4.2.1 Cost-Effectiveness Comparison

The Total Capital Investment (TCI) and Total Annualized Cost (TAC) for the consent decree PJFF at SJGS as shown in Table 4-1 are based on the values submitted in the June 6, 2007 BART application. The emission performance level of the consent decree PJFF at 0.015 lb/MBtu for front-half, filterable PM is the contract guarantee emission level for the on-going consent decree required environmental upgrade project at SJGS. This emission performance level is based on measuring PM emissions at the stack, which takes into account the impacts of operating the wet FGD system downstream of the newly-installed consent decree PJFF. The TCI for the consent decree PJFF ranges from $67 million to $73 million per SJGS unit.

The WESP technology when operated downstream of the consent decree PJFF and existing wet FGD system will achieve an expected emission performance level of 0.010 lb/MBtu for front-half, filterable PM. The corresponding TCI for the WESP ranges from $99 million to $130 million per SJGS unit.

The increment cost effectiveness to improve PM emission level from the consent decree level of 0.015 lb/MBtu to 0.010 lb/MBtu utilizing the WESP technology in addition to operating the consent decree PJFF and wet FGD system ranges from $145 to $173 million per additional ton of PM.

5.0 Visibility Impacts

Visibility impact is the fifth step to consider in the engineering analysis required under the EPA BART guidelines. This step addresses the degree of improvement in visibility that may reasonably be anticipated to result from the use of the ‘‘best control technology’’ for sources subject to BART. Visibility impact analysis is achieved through a two phase process. First, the model was run using the pre-BART conditions to establish a baseline. For this analysis, the baseline consisted of the technologies and unit operations associated with the consent degree. Second, model runs were conducted for the WESP PM control technology identified for each unit during the BART engineering analysis.

In the June 18, 2008 meeting between the Public Service Company of New Mexico (PNM), Black & Veatch (B&V), and the New Mexico Environment Department – Air Quality Bureau (NMED), the NMED requested additional analyses be performed for the particulate control technology that could meet a lower limit than 0.015 lb/MBtu. The objective of this modeling analysis is to evaluate visibility impacts for the WESP control technology selected using the first four steps of the BART analysis (as discussed in the previous sections) for PNM’s SJGS Units 1, 2, 3, and 4. The following sections discuss the modeling methodology in greater detail.

5.1 Visibility Analysis

Subsequent to the June 6, 2007 submittal, PNM further investigated additional refinements to the BART CALPUFF air dispersion modeling analyses which included nitrate repartitioning and more realistic ammonia background concentrations based on monitored values at several western Class I areas. These additional modeling options are considered more realistic and therefore will again form the basis of this analysis.

To date, PNM has previously submitted four BART modeling analyses in addition to the additional Nalco Mobotec analyses being submitted separately but coincident with this analysis. To clarify the contents of these analyses, as well as for this submittal, a summary of each has been provided:

June 6, 2007

Modeling analysis were performed to provide SJGS plant-wide regional haze (visibility) impacts at 16 Class I areas. The analyses were based on a constant 1 ppb background ammonia concentration and no nitrate repartitioning. The NO_x control technologies analyzed were the Selective Catalytic Reduction (SCR) and SNCR/SCR Hybrid.

November 6, 2007

Modeling analysis were performed to provide SJGS plant-wide regional haze (visibility) impacts at 16 Class I areas. The analysis was based on refinements which included using the nitrate repartitioning methodology and monthly variable background ammonia concentrations. Again, the NO_x control technologies analyzed were the SCR and SNCR/SCR Hybrid.

March 31, 2008

Two main modeling analyses were performed to provide SJGS plant-wide and unit specific regional haze (visibility) impacts at 16 Class I areas for the SCR NO_x control technology only. One of the analyses, believed to be the more representative of ammonia chemistry of the area, was based on the November 6, 2007 refinements which included using the nitrate repartitioning methodology and monthly variable background ammonia concentrations. The other analyses included nitrate repartitioning and a constant background ammonia concentration as requested by the NMED.

May 30, 2008

Two modeling analyses were performed to provide SJGS plant-wide and unit specific regional haze (visibility) impacts at 16 Class I areas for the SNCR NO_x control technology only. Similar to the March 31, 2008 analyses, one of the analyses was based on the November 6, 2007 refinements which included using the nitrate repartitioning methodology and monthly variable background ammonia concentrations. The other analyses included nitrate repartitioning and a constant background ammonia concentration. It should be noted that all vendors of SNCR (including Fuel Tech and Nalco Mobotec) have been modeled together as one technology called SNCR. This is the same approach that is used for modeling SCR control technology, where all vendors are modeled generically as SCR.

August 29, 2008

Four modeling analyses were performed to provide SJGS plant-wide and unit specific regional haze (visibility) impacts at 16 Class I areas for the ROFA with Rotamix, Rotamix, and ROFA NO_x and WESP PM control technologies (the NO_x and PM analyses were submitted separately. Similar to the May 30, 2008 analyses, these analyses were also based on the November 6, 2007 refinements which included using

the nitrate repartitioning methodology and monthly variable background ammonia concentrations.

The modeling refinements contained in this submittal using nitrate repartitioning and the variable ammonia background as well as the previous November 2007, March 2008, and May 30, 2008 submittals supersedes the original June 2007 BART modeling analyses as PNM believes these analyses are more representative of regional conditions in the modeling domain, as well as, allow for a more representative visibility analysis. Information pertinent to these two refinements has been included in detail in the previous four submittals. Furthermore, at the June 18, 2008 meeting NMED indicated that based on a current ammonia monitoring study conducted by Mark E. Sather of EPA Region VI, the previous analyses provided utilizing the variable ammonia were representative of the surrounding background. Therefore, no other analyses were performed using nitrate repartitioning and constant background ammonia.

5.2 Visibility Summary

Based on the refinements methodology consisting of representative background ammonia concentrations and nitrate repartitioning, CALPUFF visibility modeling was performed for three cases; pre-consent decree, consent decree (which represents SJGS's BART baseline scenario), and WESP PM control technology scenarios. The modeling summarized in this report is for the SJGS on a plant-wide basis and for each of the four SJGS units on an individual unit basis. It is important to note that all other modeling options as described in the BART application were unchanged. For simplicity, the following results discuss the differences between the consent decree scenario and the WESP control technology scenarios. Additionally, the updated NPS particulate speciation is contained in Appendix D, the stack outlet conditions are contained in Appendix E, and the visibility modeling results are contained in Appendix F.

5.2.1 SJGS Facility Visibility Summary with Nitrate Repartitioning and Variable Ammonia

The results of the refined visibility modeling for the SJGS plant, assuming the same control technology is installed on all four units, are illustrated in Tables 1 through 4 of Appendix F. These tables summarize the scenarios and the maximum visibility (deciview) impact seen at any of the 16 Class I areas at any time over the 2001 to 2003 period. The results of this analysis, using the aforementioned refinements, indicates a minimal improvement in visibility impact (less than 0.5 dv) at each of the 16 Class I

areas when compared to the baseline (consent decree) scenario, with the exception of Mesa Verde, which shows a visibility improvement of 0.62 dv.

The maximum visibility (deciview) improvement seen at any of the 16 Class I areas at any time over the 2001 to 2003 period is illustrated in Table 4 for each scenario. The expected degree of visibility improvement for each control scenario for each unit (on a plant-wide basis) was determined by the difference in the maximum visibility improvement for each receptor at each of the sixteen Class I areas. Again, it is important to note that the control technology associated with the consent decree formulated the SJGS's baseline case, as well as the baseline case for the individual unit analyses described later. Additionally, the cost-effectiveness for the potential BART control technologies from the BART application were used to calculate visibility improvement cost-effectiveness in $/deciview ($/dv). Three major scenarios are shown in the visibility improvement cost effectiveness summary in Table 4 for each control technology:

- Pre-consent decree to consent decree.
- Consent decree to additional WESP control technology alternative scenario.
- Pre-consent decree to additional WESP control technology alternative scenario.

These maximum visibility improvements between the consent decree and the WESP control technology scenario range from 0.02 dv to 0.62 dv of expected visibility improvement above the consent decree scenario.

The results indicate that adding additional WESP control technology beyond the consent decree does yield visibility improvement greater than 0.5 dv at the Mesa Verde Class I area. However, this visibility improvement is an isolated incident as no other Class I area's visibility improvement is greater than 0.5 dv. The next highest visibility improvement is 0.14 dv.

Based on the visibility improvement modeled and the total annual cost evaluated in the impact analysis stage of the BART application document, the cost-effectiveness for visibility improvement (annual cost per improvement in visibility, $/dv), was determined for SJGS over the aforementioned range of visibility improvement. The resulting cost for installation of WESP control technology for all four units ranges from $2,496 million/dv to $89 million/dv.

Appendix F contains a SJGS plant-wide summary of the 98th percentile visibility impact for the WESP modeled technology scenarios (i.e., Pre-Consent Decree, Consent Decree, and WESP scenario), provides information on the number of days above 0.5 dv

threshold for specific scenarios, and indicates the contribution of each pollutant associated with the 98th percentile visibility impact for each class I area.

5.2.2 Unit Specific Visibility Summary with Nitrate Repartitioning and Variable Ammonia

The results of the refined visibility modeling for Unit 1, Unit 2, Unit 3, and Unit 4 are illustrated in Tables 5-8, 9-12, 13-16, and 17-20 of Appendix F, respectively. These tables summarize the scenarios and the maximum visibility (deciview) impact seen at any of the 16 Class I areas at any time over the 2001 to 2003 period. Similar to results seen for the SJGS facility, the visibility impacts at Mesa Verde represent the maximum visibility impact at any of the 16 Class I areas. In addition, this analysis indicates a minimal improvement in visibility impact (less than 0.5 dv) at each of the 16 Class I areas when compared to the baseline (consent decree) scenario.

The maximum visibility (deciview) improvement seen at any of the 16 Class I areas at any time over the 2001 to 2003 period is illustrated in Tables 8, 12, 16, and 20. Again, the expected degree of visibility improvement for each control scenario for each unit was determined by the difference between the consent decree's maximum visibility improvement for each receptor at each of the sixteen Class I areas and the specific WESP control technology scenario's maximum visibility improvement for each receptor at each of the sixteen Class areas. Furthermore, the same methodology previously described for the SJGS's cost-effectiveness in ($/dv) was used here for each unit.

These maximum visibility improvements between the consent decree and the WESP control scenario for each unit are similar to that of the combined SJGS. The visibility improvements for each scenario are summarized below.

<u>WESP</u>

- Unit 1 improvements range from less than 0.01 dv to 0.07 dv
- Unit 2 improvements range from less than 0.01 dv to 0.07 dv
- Unit 3 improvements range from less than 0.01 dv to 0.21 dv
- Unit 4 improvements range from less than 0.01 dv to 0.21 dv

The results again indicate that adding additional PM control technology beyond the consent decree consisting of WESPs does not yield visibility improvement greater than 0.5 dv at any Class I area. Based on the visibility improvement modeled and the total annual cost evaluated in the impact analysis stage of the BART application document, the cost-effectiveness for visibility improvement (annual cost per improvement in visibility, $/dv), was determined for each unit for each Class I area. The

resulting cost for installation of additional control technology for each unit is summarized below.

WESP

- Unit 1 cost range is $2,964 million/dv to $174 million/dv.
- Unit 2 cost range is $2,974 million/dv to $172 million/dv.
- Unit 3 cost range is $2,222 million/dv to $76 million/dv.
- Unit 4 cost range is $3,902 million/dv to $75 million/dv.

Appendix F also includes a unit specific summary of the 98th percentile visibility impact for the three modeled technology scenarios (i.e., Pre-Consent Decree, Consent Decree, WESP scenarios), includes the number of days above 0.5 dv threshold for specific scenarios, and indicates the contribution of each pollutant associated with the 98th percentile visibility impact for each class I area.

6.0 Conclusion

As noted in this document, PNM's further investigation of additional refinements to the June 2007 BART CALPUFF air dispersion modeling analyses to yield more realistic regional haze impacts was warranted. These analyses included nitrate repartitioning and more realistic ammonia background concentrations based on monitored values at several western Class I areas, as well as, the additional ammonia study being conducted by EPA in New Mexico. The conclusion of this study re-iterates and further supports the overall findings of the original June 2007, as well as, the three aforementioned additional submittals, that installation of additional WESP PM control technology systems at the SJGS provide minimal visibility improvements and would require significant capital expenditure and modifications that will impact many areas of the plant including boiler draft systems and ash handling. The results from the analyses further substantiate that the addition of WESP PM control technology does not yield a benefit nor meet the intended goal of BART. Specifically, these analyses indicate:

- The addition of WESP PM control technology on a plant-wide or individual unit basis shows less than a 0.5 dv improvement for all Class I areas including the four Class I areas located in New Mexico. (Plant wide showed a 0.62 dv improvement at Mesa Verde.)
- The minimal visibility improvements discussed in this document do not merit the large capital expenditure required to install WESP PM control technology. Both the total annual costs evaluated and the cost-effectiveness ($/dv) are extremely prohibitive given the minimal improvements realized.

Therefore, as previously noted, given the minimal visibility improvement to the class I areas in the BART analysis, the recommended PM BART control for SJGS is the PJFF.

Appendix A
(Previously Submitted in June 6, 2007 BART Analysis)

Appendix B
Design Concept Definitions

Design Concept Definition

Site Name	San Juan Generating Station	**Units**	1, 2, 3, 4
Client Name	PNM	**Process Technology**	Pulse Jet Fabric Filter (PJFF)

Process Description	PJFF for particulate matter removal upstream of Wet FGD system. This is the process technology applied to meet Consent Decree requirements.				
	Pollutant	PM (Unit 1)	PM (Unit 2)	PM (Unit 3)	PM (Unit 4)
	Inlet Emissions				
	lb/MBtu	17.6	17.6	17.6	17.6
	lb/h	65,144	64,810	101,187	99,271
	Controlled Emissions				
	lb/MBtu	0.015	0.015	0.015	0.015
	lb/h	55.6	55.3	86.4	84.7
	Inlet Flow Basis, acfm	1,571,717	1,563,662	2,441,313	2,395,099
	Pressure Drop Added, in. wg	NA			
	Coal Source and Type	New Mexico, Subbituminous			
	Capacity Factor	85.0%			
Consumables	Reagent	None.			
	Energy (kW)	4,488	4,488	6,895	6,895
	Maintenance	3% of direct material cost.			
Byproduct	Description	None.			
	Other	None.			

Location of Major Process Equipment	PJFF casing located in back-end of plant. Refer to Consent Decree environmental upgrade project plant arrangement.
Inlet/Outlet Connections and Interconnecting Ducts	Inlet ductwork connection downstream of de-energize hot-side ESP and outlet ductwork connection upstream of modified ID fan inlet.
Reagent Storage	None.
Control System Modifications	PJFF control system tie into plant control system.
Fan Modifications	ID fan modifications.
Power Supply/Aux Power Modifications	Minor aux electric system modification required for PJFF and ID fans.
Enclosures Requirements	Enclosures included with PJFF casing required.
Demolition or Relocation Requirements	Demolition of ductwork for retrofit, demolition and relocation of existing site structures/equipment to locate PJFF casing and ductwork routing.
Major Constructability Issues	Accessibility to the back-end area of the plant.
Significant Issues or Challenges	None.

Other Assumptions

- No major impact on plant availability.
- The site has sufficient area available to accommodate construction activities including, but not limited to, offices, laydown, and staging.
- Retrofit project is completed/in progress as part of the Consent Decree environmental upgrade project.

State of Availability	Available.
State of Applicability	Applicable.
Technical Feasibility	Currently installed or under construction.

Design Concept Definition

Site Name	San Juan Generating Station	**Units**	1, 2, 3, 4
Client Name	PNM	**Process Technology**	Wet Electrostatic Precipitator (WESP)

Process Description	Install a WESP downstream of Wet FGD for additional particulate matter collection.				
	Pollutant	PM (Unit 1)	PM (Unit 2)	PM (Unit 3)	PM (Unit 4)
	Inlet Emissions				
	lb/MBtu	0.015	0.015	0.015	0.015
	lb/h	55.6	55.3	86.4	84.7
	Controlled Emissions				
	lb/MBtu	0.010	0.010	0.010	0.010
	lb/h	37.1	36.9	57.6	56.5
	Inlet Flow Basis, acfm	1,323,494	1,316,710	2,055,753	2,016,837
	Pressure Drop Added, in. wg	NA			
	Coal Source and Type	New Mexico, Subbituminous			
	Capacity Factor	85.0%			
Consumables	Make-up Water (gpm)	100	100	100	100
	Energy (kW)	1,112	1,112	1,728	1,728
	Maintenance	3% of direct material cost.			
Byproduct	Description	None.			
	Other	None.			

Location of Major Process Equipment	Conceptual layout of WESP at the back-end of plant, in the same general location as consent decree PJFF.
Inlet/Outlet Connections and Interconnecting Ducts	Inlet ductwork connection downstream of Wet FGD and outlet ductwork connection into stack breeching.
Reagent Storage	None.
Control System Modifications	New stand-alone control system, tie in to plant DCS control system.
Fan Modifications	FGD booster fan modifications required to overcome additional pressure drop.
Power Supply/Aux Power Modifications	Aux electric system modification required for WESP electrical systems and FGD booster fan modifications.
Enclosures Requirements	Enclosures included with WESP casing required.
Demolition or Relocation Requirements	Demolition of ductwork for retrofit, demolition and relocation of existing site structures/equipment to locate WESP casing and ductwork routing.
Major Constructability Issues	Accessibility to the back-end area of the plant.
Significant Issues or Challenges	None.

Other Assumptions

- No major impact in plant availability.
- The site has sufficient area available to accommodate construction activities including, but not limited to, offices, laydown, and staging.
- Demolition and relocation of existing site structures/equipment are based on a conceptual layout approach.

State of Availability	Available.
State of Applicability	Applicable.
Technical Feasibility	Technically feasible.

Appendix C
Cost Analysis Summary

Technology: Pulse Jet Fabric Filter - SJGS Unit 1 **Date:** 4/25/2007

Cost Item	$	Remarks/Cost Basis			
CAPITAL COST					
Direct Costs					
Purchased equipment costs					
PJFF system scope	$9,020,000	PNM environmental upgrade cost			
Ductwork	$812,000	PNM environmental upgrade cost			
Ash handling system scope	$1,155,000	PNM environmental upgrade cost			
Booster fan modifications	$3,434,000	PNM environmental upgrade cost			
Balance of plant modifications	$3,938,000	PNM environmental upgrade cost			
Subtotal capital cost (CC)	$18,359,000				
Gross Receipt Tax	$2,855,000	PNM environmental upgrade cost			
Total purchased equipment cost (PEC)	$21,214,000				
Direct installation costs					
PJFF construction cost	$7,543,000	PNM environmental upgrade cost			
Ductwork construction cost	$10,958,000	PNM environmental upgrade cost			
Ash handling construction cost	$475,000	PNM environmental upgrade cost			
Booster fan construction cost	$1,283,000	PNM environmental upgrade cost			
Balance of plant construction cost	$8,099,000	PNM environmental upgrade cost			
Total direct installation costs (DIC)	$28,358,000				
Total direct costs (DC) = (PEC) + (DIC)	$49,572,000				
Indirect Costs					
Engineering	$2,304,000	PNM environmental upgrade cost			
Owner's cost	$1,479,000	PNM environmental upgrade cost			
Construction management	$4,957,000	(DC) X	10.0%		
Start-up and spare parts	$744,000	(DC) X	1.5%		
Performance test	$100,000	Engineering estimate			
Contingencies	$3,289,000	PNM environmental upgrade cost			
Total indirect costs (IC)	$12,873,000				
Interest During Construction (IDC)	$4,627,000	[(DC)+(IC)] X	7.41%	2 years (project time length X 1/2)	
Total Capital Investment (TCI) = (DC) + (IC) + (IDC)	**$67,072,000**				
ANNUAL COST					
Direct Annual Costs					
Fixed annual costs					
Maintenance labor and materials	$1,487,000	(DC) X	3.0%		
Total fixed annual costs	$1,487,000				
Variable annual costs					
Bag replacement cost	$296,000	2,957	bags and	100 $/bag	B&W bag offerings, 3 yr replacements
Cage replacement cost	$74,000	1,478	cages and	50 $/cage	B&W cage offerings, 6 yr replacements
ID fan power	$1,828,000	4,028	kW and	0.06095 $/kWh	B&W guarantees, 15 in. H_2O d.p.
Auxiliary power	$209,000	460	kW and	0.06095 $/kWh	Engineering estimate
Total variable annual costs	$2,407,000				
Total direct annual costs (DAC)	$3,894,000				
Indirect Annual Costs					
Cost for capital recovery	$6,533,000	(TCI) X	9.74%	CRF at 7.41% interest & 20 year life	
Total indirect annual costs (IDAC)	$6,533,000				
Total Annual Cost (TAC) = (DAC) + (IDAC)	**$10,427,000**				

Technology: Pulse Jet Fabric Filter - SJGS Unit 2 **Date:** 4/25/2007

Cost Item	$	Remarks/Cost Basis			
CAPITAL COST					
Direct Costs					
Purchased equipment costs					
PJFF system scope	$8,658,000	PNM environmental upgrade cost			
Ductwork	$904,000	PNM environmental upgrade cost			
Ash handling system scope	$1,155,000	PNM environmental upgrade cost			
Booster fan modifications	$3,434,000	PNM environmental upgrade cost			
Balance of plant modifications	$4,072,000	PNM environmental upgrade cost			
Subtotal capital cost (CC)	$18,223,000				
Gross Receipt Tax	$2,977,000	PNM environmental upgrade cost			
Total purchased equipment cost (PEC)	$21,200,000				
Direct installation costs					
PJFF construction cost	$7,412,000	PNM environmental upgrade cost			
Ductwork construction cost	$13,335,000	PNM environmental upgrade cost			
Ash handling construction cost	$472,000	PNM environmental upgrade cost			
Booster fan construction cost	$1,283,000	PNM environmental upgrade cost			
Balance of plant construction cost	$8,139,000	PNM environmental upgrade cost			
Total direct installation costs (DIC)	$30,641,000				
Total direct costs (DC) = (PEC) + (DIC)	$51,841,000				
Indirect Costs					
Engineering	$2,238,000	PNM environmental upgrade cost			
Owner's cost	$1,541,000	PNM environmental upgrade cost			
Construction management	$5,184,000	(DC) X	10.0%		
Start-up and spare parts	$778,000	(DC) X	1.5%		
Performance test	$100,000	Engineering estimate			
Contingencies	$3,340,000	PNM environmental upgrade cost			
Total indirect costs (IC)	$13,181,000				
Interest During Construction (IDC)	$4,818,000	[(DC)+(IC)] X	7.41%	2 years (project time length X 1/2)	
Total Capital Investment (TCI) = (DC) + (IC) + (IDC)	**$69,840,000**				
ANNUAL COST					
Direct Annual Costs					
Fixed annual costs					
Maintenance labor and materials	$1,555,000	(DC) X	3.0%		
Total fixed annual costs	$1,555,000				
Variable annual costs					
Bag replacement cost	$296,000	2,957	bags and	100 $/bag	B&W bag offerings, 3 yr replacements
Cage replacement cost	$74,000	1,478	cages and	50 $/cage	B&W cage offerings, 6 yr replacements
ID fan power	$1,828,000	4,028	kW and	0.06095 $/kWh	B&W guarantees, 15 in. H_2O d.p.
Auxiliary power	$209,000	460	kW and	0.06095 $/kWh	Engineering estimate
Total variable annual costs	$2,407,000				
Total direct annual costs (DAC)	$3,962,000				
Indirect Annual Costs					
Cost for capital recovery	$6,802,000	(TCI) X	9.74%	CRF at 7.41% interest & 20 year life	
Total indirect annual costs (IDAC)	$6,802,000				
Total Annual Cost (TAC) = (DAC) + (IDAC)	**$10,764,000**				

Technology: Pulse Jet Fabric Filter - SJGS Unit 3 **Date:** 4/25/2007

Cost Item	$	Remarks/Cost Basis			
CAPITAL COST					
Direct Costs					
Purchased equipment costs					
PJFF system scope	$10,901,000	PNM environmental upgrade cost			
Ductwork	$1,364,000	PNM environmental upgrade cost			
Ash handling system scope	$977,000	PNM environmental upgrade cost			
Booster fan modifications	$2,871,000	PNM environmental upgrade cost			
Balance of plant modifications	$4,733,000	PNM environmental upgrade cost			
Subtotal capital cost (CC)	$20,846,000				
Gross Receipt Tax	$3,183,000	PNM environmental upgrade cost			
Total purchased equipment cost (PEC)	$24,029,000				
Direct installation costs					
PJFF construction cost	$11,089,000	PNM environmental upgrade cost			
Ductwork construction cost	$9,007,000	PNM environmental upgrade cost			
Ash handling construction cost	$706,000	PNM environmental upgrade cost			
Booster fan construction cost	$1,403,000	PNM environmental upgrade cost			
Balance of plant construction cost	$9,286,000	PNM environmental upgrade cost			
Total direct installation costs (DIC)	$31,491,000				
Total direct costs (DC) = (PEC) + (DIC)	$55,520,000				
Indirect Costs					
Engineering	$2,535,000	PNM environmental upgrade cost			
Owner's cost	$1,655,000	PNM environmental upgrade cost			
Construction management	$5,552,000	(DC) X	10.0%		
Start-up and spare parts	$833,000	(DC) X	1.5%		
Performance test	$100,000	Engineering estimate			
Contingencies	$1,486,000	PNM environmental upgrade cost			
Total indirect costs (IC)	$12,161,000				
Interest During Construction (IDC)	$5,015,000	[(DC)+(IC)] X	7.41%	2 years (project time length X 1/2)	
Total Capital Investment (TCI) = (DC) + (IC) + (IDC)	**$72,696,000**				
ANNUAL COST					
Direct Annual Costs					
Fixed annual costs					
Maintenance labor and materials	$1,666,000	(DC) X	3.0%		
Total fixed annual costs	$1,666,000				
Variable annual costs					
Bag replacement cost	$462,000	4,620	bags and	100 $/bag	B&W bag offerings, 3 yr replacements
Cage replacement cost	$116,000	2,310	cages and	50 $/cage	B&W cage offerings, 6 yr replacements
ID fan power	$2,856,000	6,294	kW and	0.06095 $/kWh	B&W guarantees, 15 in. H_2O d.p.
Auxiliary power	$273,000	601	kW and	0.06095 $/kWh	Engineering estimate
Total variable annual costs	$3,707,000				
Total direct annual costs (DAC)	$5,373,000				
Indirect Annual Costs					
Cost for capital recovery	$7,081,000	(TCI) X	9.74%	CRF at 7.41% interest & 20 year life	
Total indirect annual costs (IDAC)	$7,081,000				
Total Annual Cost (TAC) = (DAC) + (IDAC)	**$12,454,000**				

Technology: Pulse Jet Fabric Filter - SJGS Unit 4 **Date:** 4/25/2007

Cost Item	$	Remarks/Cost Basis				
CAPITAL COST						
Direct Costs						
Purchased equipment costs						
PJFF system scope	$12,572,000	PNM environmental upgrade cost				
Ductwork	$1,479,000	PNM environmental upgrade cost				
Ash handling system scope	$932,000	PNM environmental upgrade cost				
Booster fan modifications	$2,870,000	PNM environmental upgrade cost				
Balance of plant modifications	$5,040,000	PNM environmental upgrade cost				
Subtotal capital cost (CC)	$22,893,000					
Gross Receipt Tax	$3,212,000	PNM environmental upgrade cost				
Total purchased equipment cost (PEC)	$26,105,000					
Direct installation costs						
PJFF construction cost	$10,937,000	PNM environmental upgrade cost				
Ductwork construction cost	$7,946,000	PNM environmental upgrade cost				
Ash handling construction cost	$685,000	PNM environmental upgrade cost				
Booster fan construction cost	$1,406,000	PNM environmental upgrade cost				
Balance of plant construction cost	$8,856,000	PNM environmental upgrade cost				
Total direct installation costs (DIC)	$29,830,000					
Total direct costs (DC) = (PEC) + (DIC)	$55,935,000					
Indirect Costs						
Engineering	$2,645,000	PNM environmental upgrade cost				
Owner's cost	$1,670,000	PNM environmental upgrade cost				
Construction management	$5,594,000	(DC) X	10.0%			
Start-up and spare parts	$839,000	(DC) X	1.5%			
Performance test	$100,000	Engineering estimate				
Contingencies	$1,486,000	PNM environmental upgrade cost				
Total indirect costs (IC)	$12,334,000					
Interest During Construction (IDC)	$5,059,000	[(DC)+(IC)] X	7.41%	2 years (project time length X 1/2)		
Total Capital Investment (TCI) = (DC) + (IC) + (IDC)	**$73,328,000**					
ANNUAL COST						
Direct Annual Costs						
Fixed annual costs						
Maintenance labor and materials	$1,678,000	(DC) X	3.0%			
Total fixed annual costs	$1,678,000					
Variable annual costs						
Bag replacement cost	$462,000	4,620	bags and	100	$/bag	B&W bag offerings, 3 yr replacements
Cage replacement cost	$116,000	2,310	cages and	50	$/cage	B&W cage offerings, 6 yr replacements
ID fan power	$2,856,000	6,294	kW and	0.06095	$/kWh	B&W guarantees, 15 in. H_2O d.p.
Auxiliary power	$273,000	601	kW and	0.06095	$/kWh	Engineering estimate
Total variable annual costs	$3,707,000					
Total direct annual costs (DAC)	$5,385,000					
Indirect Annual Costs						
Cost for capital recovery	$7,142,000	(TCI) X	9.74%	CRF at 7.41% interest & 20 year life		
Total indirect annual costs (IDAC)	$7,142,000					
Total Annual Cost (TAC) = (DAC) + (IDAC)	**$12,527,000**					

Technology: Wet ESP - Unit 1 **Date:** 7/24/2008

Cost Item	$	Remarks/Cost Basis			
CAPITAL COST					
Direct Costs					
Purchased equipment costs					
WESP system includes casing, electrical sys., penthouse blower & heater, access provisions	$19,289,000	from B&V reference cost database			
Ductwork	$812,000	from B&V reference cost database			
Booster fans	$2,400,000	from B&V reference cost database			
Electrical system upgrades	$2,318,000	New transformer and electrical upgrades			
Subtotal capital cost (CC)	$24,819,000				
Instrumentation and controls	$1,539,000	(CC) X	6.2%		
Freight	$1,241,000	(CC) X	5.0%		
Total purchased equipment cost (PEC)	$27,599,000				
Direct installation costs					
Foundation & supports	$8,280,000	(PEC) X	30.0%		
Handling & erection	$8,280,000	(PEC) X	30.0%		
Electrical	$4,140,000	(PEC) X	15.0%		
Piping	$828,000	(PEC) X	3.0%		
Insulation	$552,000	(PEC) X	2.0%		
Painting	$276,000	(PEC) X	1.0%		
Demolition	$8,280,000	(PEC) X	30.00%		
Relocation	$2,760,000	(PEC) X	10.00%		
Total direct installation costs (DIC)	$33,396,000				
Site preparation	$1,000,000	Engineering estimate			
Buildings	$0	N/A			
Total direct costs (DC) = (PEC) + (DIC)	$61,995,000				
Indirect Costs					
Engineering	$4,340,000	(DC) X	7.0%		
Owner's cost	$3,100,000	(DC) X	5.0%		
Construction management	$6,200,000	(DC) X	10.0%		
Start-up and spare parts	$1,240,000	(DC) X	2.0%		
Performance test	$100,000	Engineering estimate			
Contingencies	$12,399,000	(DC) X	20.0%		
Total indirect costs (IC)	$27,379,000				
Allowance for Funds Used During Construction (AFDC)	$9,934,000	[(DC)+(IC)] X	7.41%	3 years (project time length X 1/2)	
Total Capital Investment (TCI) = (DC) + (IC) + (AFDC)	**$99,308,000**				
ANNUAL COST					
Direct Annual Costs					
Fixed annual costs					
Maintenance materials and labor	$1,860,000	(DC) X	3.0%		
Operating labor	$100,000	1 FTE and	100000 $/year	Estimated level	
Total fixed annual costs	$1,960,000				
Variable annual costs					
Auxiliary power	$113,000	248 kW and	0.061 $/kWh	Estimated level	
ID fan power	$392,000	864 kW and	0.061 $/kWh	Estimated level	
Service water	$15,000	100 gpm and	0.33 $/kgal	Estimated level	
Total variable annual costs	$520,000				
Total direct annual costs (DAC)	$2,480,000				
Indirect Annual Costs					
Cost for capital recovery	$9,375,000	(TCI) X	9.44%	CRF at 7% interest & 20 year life	
Total indirect annual costs (IDAC)	$9,375,000				
Total Annual Cost (TAC) = (DAC) + (IDAC)	**$11,855,000**				

Technology: Wet ESP - Unit 2 **Date:** 7/24/2008

Cost Item	$	Remarks/Cost Basis			
CAPITAL COST					
Direct Costs					
Purchased equipment costs					
WESP system includes casing, electrical sys., penthouse blower & heater, access provisions	$19,289,000	from B&V reference cost database			
Ductwork	$904,000	from B&V reference cost database			
Booster fans	$2,400,000	from B&V reference cost database			
Electrical system upgrades	$2,318,000	New transformer and electrical upgrades			
Subtotal capital cost (CC)	$24,911,000				
Instrumentation and controls	$1,544,000	(CC) X	6.2%		
Freight	$1,246,000	(CC) X	5.0%		
Total purchased equipment cost (PEC)	$27,701,000				
Direct installation costs					
Foundation & supports	$8,310,000	(PEC) X	30.0%		
Handling & erection	$8,310,000	(PEC) X	30.0%		
Electrical	$4,155,000	(PEC) X	15.0%		
Piping	$831,000	(PEC) X	3.0%		
Insulation	$554,000	(PEC) X	2.0%		
Painting	$277,000	(PEC) X	1.0%		
Demolition	$8,310,000	(PEC) X	30.00%		
Relocation	$2,770,000	(PEC) X	10.00%		
Total direct installation costs (DIC)	$33,517,000				
Site preparation	$1,000,000	Engineering estimate			
Buildings	$0	N/A			
Total direct costs (DC) = (PEC) + (DIC)	$62,218,000				
Indirect Costs					
Engineering	$4,355,000	(DC) X	7.0%		
Owner's cost	$3,111,000	(DC) X	5.0%		
Construction management	$6,222,000	(DC) X	10.0%		
Start-up and spare parts	$1,244,000	(DC) X	2.0%		
Performance test	$100,000	Engineering estimate			
Contingencies	$12,444,000	(DC) X	20.0%		
Total indirect costs (IC)	$27,476,000				
Allowance for Funds Used During Construction (AFDC)	$9,969,000	[(DC)+(IC)] X	7.41%	3 years (project time length X 1/2)	
Total Capital Investment (TCI) = (DC) + (IC) + (AFDC)	**$99,663,000**				
ANNUAL COST					
Direct Annual Costs					
Fixed annual costs					
Maintenance materials and labor	$1,867,000	(DC) X	3.0%		
Operating labor	$100,000	1 FTE and	100000 $/year	Estimated level	
Total fixed annual costs	$1,967,000				
Variable annual costs					
Auxiliary power	$113,000	248 kW and	0.061 $/kWh	Estimated level	
ID fan power	$392,000	864 kW and	0.061 $/kWh	Estimated level	
Service water	$15,000	100 gpm and	0.33 $/kgal	Estimated level	
Total variable annual costs	$520,000				
Total direct annual costs (DAC)	$2,487,000				
Indirect Annual Costs					
Cost for capital recovery	$9,408,000	(TCI) X	9.44%	CRF at 7% interest & 20 year life	
Total indirect annual costs (IDAC)	$9,408,000				
Total Annual Cost (TAC) = (DAC) + (IDAC)	**$11,895,000**				

Technology: Wet ESP - Unit 3 **Date:** 7/24/2008

Cost Item	$	Remarks/Cost Basis			
CAPITAL COST					
Direct Costs					
Purchased equipment costs					
WESP system includes casing, electrical sys., penthouse blower & heater, access provisions	$25,123,000	from B&V reference cost database			
Ductwork	$1,364,000	from B&V reference cost database			
Booster fans	$3,600,000	from B&V reference cost database			
Electrical system upgrades	$2,427,000	New transformer and electrical upgrades			
Subtotal capital cost (CC)	$32,514,000				
Instrumentation and controls	$2,016,000	(CC) X	6.2%		
Freight	$1,626,000	(CC) X	5.0%		
Total purchased equipment cost (PEC)	$36,156,000				
Direct installation costs					
Foundation & supports	$10,847,000	(PEC) X	30.0%		
Handling & erection	$10,847,000	(PEC) X	30.0%		
Electrical	$5,423,000	(PEC) X	15.0%		
Piping	$1,085,000	(PEC) X	3.0%		
Insulation	$723,000	(PEC) X	2.0%		
Painting	$362,000	(PEC) X	1.0%		
Demolition	$10,847,000	(PEC) X	30.00%		
Relocation	$3,616,000	(PEC) X	10.00%		
Total direct installation costs (DIC)	$43,750,000				
Site preparation	$1,000,000	Engineering estimate			
Buildings	$0	N/A			
Total direct costs (DC) = (PEC) + (DIC)	$80,906,000				
Indirect Costs					
Engineering	$5,663,000	(DC) X	7.0%		
Owner's cost	$4,045,000	(DC) X	5.0%		
Construction management	$8,091,000	(DC) X	10.0%		
Start-up and spare parts	$1,618,000	(DC) X	2.0%		
Performance test	$100,000	Engineering estimate			
Contingencies	$16,181,000	(DC) X	20.0%		
Total indirect costs (IC)	$35,698,000				
Allowance for Funds Used During Construction (AFDC)	$12,961,000	[(DC)+(IC)] X	7.41%	3 years (project time length X 1/2)	
Total Capital Investment (TCI) = (DC) + (IC) + (AFDC)	**$129,565,000**				
ANNUAL COST					
Direct Annual Costs					
Fixed annual costs					
Maintenance materials and labor	$2,427,000	(DC) X	3.0%		
Operating labor	$100,000	1 FTE and	100000 $/year	Estimated level	
Total fixed annual costs	$2,527,000				
Variable annual costs					
Auxiliary power	$175,000	386 kW and	0.061 $/kWh	Estimated level	
ID fan power	$610,000	1,342 kW and	0.061 $/kWh	Estimated level	
Service water	$15,000	100 gpm and	0.33 $/kgal	Estimated level	
Total variable annual costs	$800,000				
Total direct annual costs (DAC)	$3,327,000				
Indirect Annual Costs					
Cost for capital recovery	$12,231,000	(TCI) X	9.44%	CRF at 7% interest & 20 year life	
Total indirect annual costs (IDAC)	$12,231,000				
Total Annual Cost (TAC) = (DAC) + (IDAC)	**$15,558,000**				

Technology: Wet ESP - Unit 4 **Date:** 7/24/2008

Cost Item	$	Remarks/Cost Basis			
CAPITAL COST					
Direct Costs					
Purchased equipment costs					
WESP system includes casing, electrical sys., penthouse blower & heater, access provisions	$25,123,000	from B&V reference cost database			
Ductwork	$1,479,000	from B&V reference cost database			
Booster fans	$3,600,000	from B&V reference cost database			
Electrical system upgrades	$2,427,000	New transformer and electrical upgrades			
Subtotal capital cost (CC)	$32,629,000				
Instrumentation and controls	$2,023,000	(CC) X	6.2%		
Freight	$1,631,000	(CC) X	5.0%		
Total purchased equipment cost (PEC)	$36,283,000				
Direct installation costs					
Foundation & supports	$10,885,000	(PEC) X	30.0%		
Handling & erection	$10,885,000	(PEC) X	30.0%		
Electrical	$5,442,000	(PEC) X	15.0%		
Piping	$1,088,000	(PEC) X	3.0%		
Insulation	$726,000	(PEC) X	2.0%		
Painting	$363,000	(PEC) X	1.0%		
Demolition	$10,885,000	(PEC) X	30.00%		
Relocation	$3,628,000	(PEC) X	10.00%		
Total direct installation costs (DIC)	$43,902,000				
Site preparation	$1,000,000	Engineering estimate			
Buildings	$0	N/A			
Total direct costs (DC) = (PEC) + (DIC)	$81,185,000				
Indirect Costs					
Engineering	$5,683,000	(DC) X	7.0%		
Owner's cost	$4,059,000	(DC) X	5.0%		
Construction management	$8,119,000	(DC) X	10.0%		
Start-up and spare parts	$1,624,000	(DC) X	2.0%		
Performance test	$100,000	Engineering estimate			
Contingencies	$16,237,000	(DC) X	20.0%		
Total indirect costs (IC)	$35,822,000				
Allowance for Funds Used During Construction (AFDC)	$13,005,000	[(DC)+(IC)] X	7.41%	3 years (project time length X 1/2)	
Total Capital Investment (TCI) = (DC) + (IC) + (AFDC)	**$130,012,000**				
ANNUAL COST					
Direct Annual Costs					
Fixed annual costs					
Maintenance materials and labor	$2,436,000	(DC) X	3.0%		
Operating labor	$100,000	1 FTE and	100000 $/year	Estimated level	
Total fixed annual costs	$2,536,000				
Variable annual costs					
Auxiliary power	$175,000	386 kW and	0.061 $/kWh	Estimated level	
ID fan power	$610,000	1,342 kW and	0.061 $/kWh	Estimated level	
Service water	$15,000	100 gpm and	0.33 $/kgal	Estimated level	
Total variable annual costs	$800,000				
Total direct annual costs (DAC)	$3,336,000				
Indirect Annual Costs					
Cost for capital recovery	$12,273,000	(TCI) X	9.44%	CRF at 7% interest & 20 year life	
Total indirect annual costs (IDAC)	$12,273,000				
Total Annual Cost (TAC) = (DAC) + (IDAC)	**$15,609,000**				

Appendix D
NPS Particulate Speciation for the WESP

Unit 1 Baseline (Consent Decree)
Controlled PM10 Speciation from AP-42 Tables 1.1-5 & 1.1-6
Dry Bottom Boiler burning Pulverized Coal using FGD+FF for Emissions control

assumes heating value of **9,692** Btu/lb and a sulfur content of **0.77** % and an ash content of **21.29** % and a heat inpu **3,707** mmBtu/hr and f(RH) = **1**

	Controlled PM10 Emissions (**Bold** values from Table 1.1-5.)																
Boiler	Total PM10	Filterable	Coarse	Ext.	Fine	Fine Soil	Ext.	Fine EC	Ext.		Condensible	CPM IOR	Particle		CPM OR	Particle	
Type	(lb/mmBtu)	(lb/mmBtu)	(lb/mmBtu)	Coef.	(lb/mmBtu)	(lb/ton)	Coef.	(lb/mmBtu)	Coef.		(lb/mmBtu)	(lb/mmBtu)	Type	Ext.Coef.	(lb/mmBtu)	Type	Ext.Coef.
PC-DB	0.0420	0.0220	0.0110	0.6	0.0110	0.0106	1	0.00041	10		**0.020**	**0.016**	SO4	3*f(RH)	**0.004**	SOA	4

	Controlled PM10 Emissions (**Bold** Values from Table 1.1-6.)																
Boiler	Total PM10	Filterable	Coarse	Ext.	Fine	Fine Soil	Ext.	Fine EC	Ext.		Condensible	CPM IOR	Particle		CPM OR	Particle	
Type	(lb/ton)	(lb/ton)	(lb/ton)	Coef.	(lb/ton)	(lb/ton)	Coef.	(lb/ton)	Coef.		(lb/ton)	(lb/ton)	Type	Ext.Coef.	(lb/ton)	Type	Ext.Coef.
PC-DB	0.813	**0.426**	0.213	0.6	**0.213**	0.205	1	0.0079	10		0.388	0.310	SO4	3*f(RH)	0.078	SOA	4

	Controlled PM10 Emissions																
Boiler	Total PM10	Filterable	Coarse	Ext.	Fine	Fine Soil	Ext.	Fine EC	Ext.		Condensible	CPM IOR	Particle		CPM OR	Particle	
Type	(% of Total)	(% of Total)	(% of Total)	Coef.	(% of Total)	(% of Total)	Coef.	(% of Total)	Coef.		(% of Total)	(% of Total)	Type	Ext.Coef.	(% of Total)	Type	Ext.Coef.
PC-DB	100%	52.3%	26.2%	0.6	26.2%	25.2%	1	1.0%	10		47.7%	38.1%	SO4	3*f(RH)	9.5%	SOA	4

If you are given Total PM10 emissions in lb/hr:

	Controlled PM10 Emissions (**Bold** Value is **Input** by user.)																
Boiler	Total PM10	Filterable	Coarse	Ext.	Fine	Fine Soil	Ext.	Fine EC	Ext.		Condensible	CPM IOR	Particle		CPM OR	Particle	
Type	(lb/hr)	(lb/hr)	(lb/hr)	Coef.	(lb/hr)	(lb/hr)	Coef.	(lb/hr)	Coef.		(lb/hr)	(lb/hr)	Type	Ext.Coef.	(lb/hr)	Type	Ext.Coef.
PC-DB	**70.8**	37.1	18.5	0.6	18.5	17.8	1	0.7	10		33.8	27.0	SO4	3	6.8	SOA	4
		Weighted Extinction		11.1			17.8		6.9					81.0			27.0	2.0

If you are given Total PM10 emissions in lb/mmBtu:

	Controlled PM10 Emissions (**Bold** Value is **Input** by user.)																
Boiler	Total PM10	Filterable	Coarse	Ext.	Fine	Fine Soil	Ext.	Fine EC	Ext.		Condensible	CPM IOR	Particle		CPM OR	Particle	
Type	(lb/mmBtu)	(lb/mmBtu)	(lb/mmBtu)	Coef.	(lb/mmBtu)	(lb/mmBtu)	Coef.	(lb/mmBtu)	Coef.		(lb/mmBtu)	(lb/mmBtu)	Type	Ext.Coef.	(lb/mmBtu)	Type	Ext.Coef.
PC-DB	**0.02**	0.010	0.01	0.6	0.01	0.00	1	0.0002	10		0.01	0.01	SO4	3	0.00	SOA	4

	Controlled PM10 Emissions (**Bold** values from Table 1.1-5 and from Table 6 of EPA's January 2002 DRAFT "Catalog of Global Emissions Inventories and Emission Inventory Tools for Black Carbon.")																
Boiler	Total PM10	Filterable	Coarse	Ext.	Fine	Fine Soil	Ext.	Fine EC	Ext.		Condensible	CPM IOR	Particle		CPM OR	Particle	
Type	(% of Total)	(% of Total)	(% of Filterable)	Coef.	(% of Filterable)	(% of Filterable)	1	(% of Filterable)	Coef.		(% of Total)	(% of Condensible)	Type	Ext.Coef.	(% of Condensible)	Type	Ext.Coef.
PC-DB	100%	52.3%	50.0%	0.6	50.0%	48.2%	1	1.9%	10		47.7%	**80.0%**	SO4	3	**20.0%**	SOA	4
						(% of Fine)	Coef.	(% of Fine)	Coef.								
						96.3%	1	**3.7%**	10								

If you are given Filterable PM10 emissions in lb/hr:

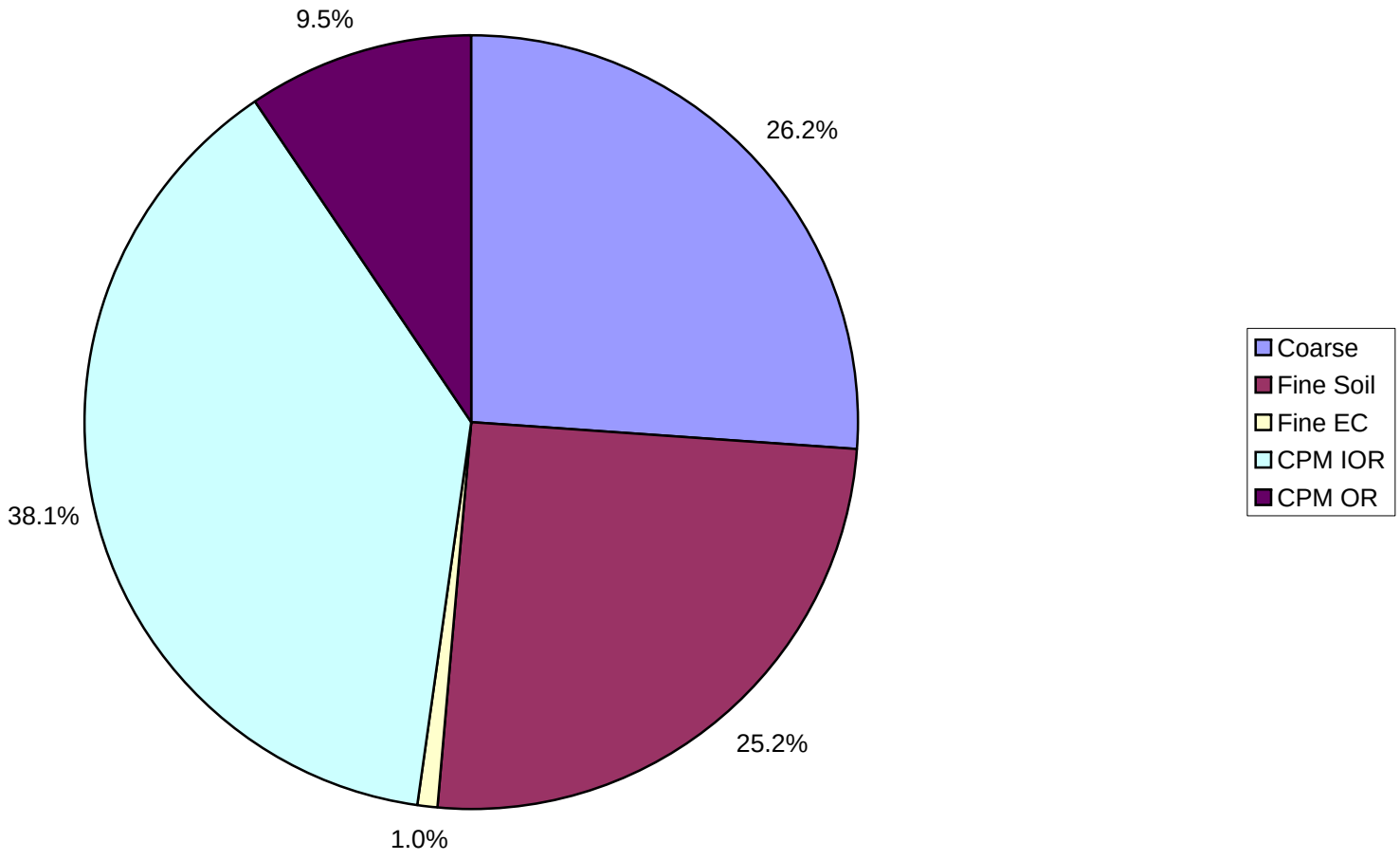
	Controlled PM10 Emissions (**Bold** Value is **Input** by user.)																
Boiler	Total PM10	Filterable	Coarse	Ext.	Fine	Fine Soil	Ext.	Fine EC	Ext.		Condensible	CPM IOR	Particle		CPM OR	Particle	
Type	(lb/hr)	(lb/hr)	(lb/hr)	Coef.	(lb/hr)	(lb/hr)	Coef.	(lb/hr)	Coef.		(lb/hr)	(lb/hr)	Type	Ext.Coef.	(lb/hr)	Type	Ext.Coef.
PC-DB	70.8	**37.1**	18.5	0.6	18.5	17.8	1	0.7	10		33.8	27.0	SO4	3	6.8	SOA	4

If you are given Filterable PM10 emissions in lb/mmBtu:

	Controlled PM10 Emissions (**Bold** Value is **Input** by user.)																
Boiler	Total PM10	Filterable	Coarse	Ext.	Fine	Fine Soil	Ext.	Fine EC	Ext.		Condensible	CPM IOR	Particle		CPM OR	Particle	
Type	(lb/mmBtu)	(lb/mmBtu)	(lb/mmBtu)	Coef.	(lb/mmBtu)	(lb/mmBtu)	Coef.	(lb/mmBtu)	Coef.		(lb/mmBtu)	(lb/mmBtu)	Type	Ext.Coef.	(lb/mmBtu)	Type	Ext.Coef.
PC-DB	0.02	**0.010**	0.01	0.6	0.01	0.00	1	0.0002	10		0.01	0.01	SO4	3	0.00	SOA	4

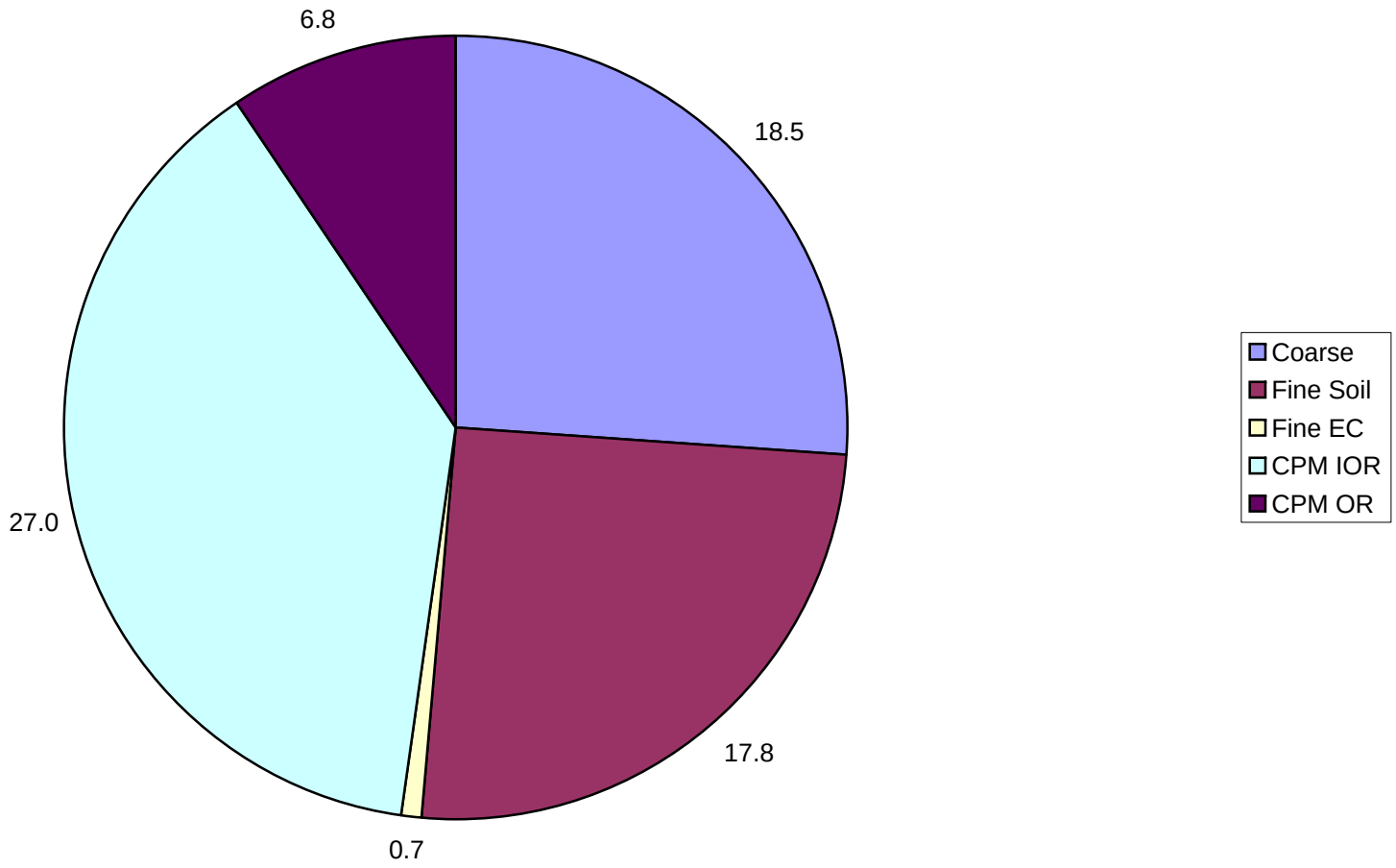
Coarse	26.2%	Coarse	18.5
Fine Soil	25.2%	Fine Soil	17.8
Fine EC	1.0%	Fine EC	0.7
CPM IOR	38.1%	CPM IOR	27.0
CPM OR	9.5%	CPM OR	6.8
	100.0%		70.8

Dry-Bottom PC Boiler w FGD + FF PM10 Speciation Profile



Unit 1

Dry-Bottom PC Boiler w FGD + FF PM10 Emissions (lb/hr)



Unit 1

PC with FGD + Fabric Filter
from AP-42 Table 1.1-6
(User inputs **filterable** emission rate in lb/hr)

Particle Size (um)	Cumulative Mass < Stated Size **FF**	Fraction of PM10 < Stated Size (%)	Particle Size Range (um)	Emissions by size (lb/hr)
10	92%	100%	10-6	6.0
6	77%	84%	6-2.5	9.7
2.5	53%	58%	2.5-1.25	8.9
1.25	31%	34%	1.25-1.0	2.4
1	25%	27%	1.0-625	4.4
0.625	14%	15%	0.625-0	5.6

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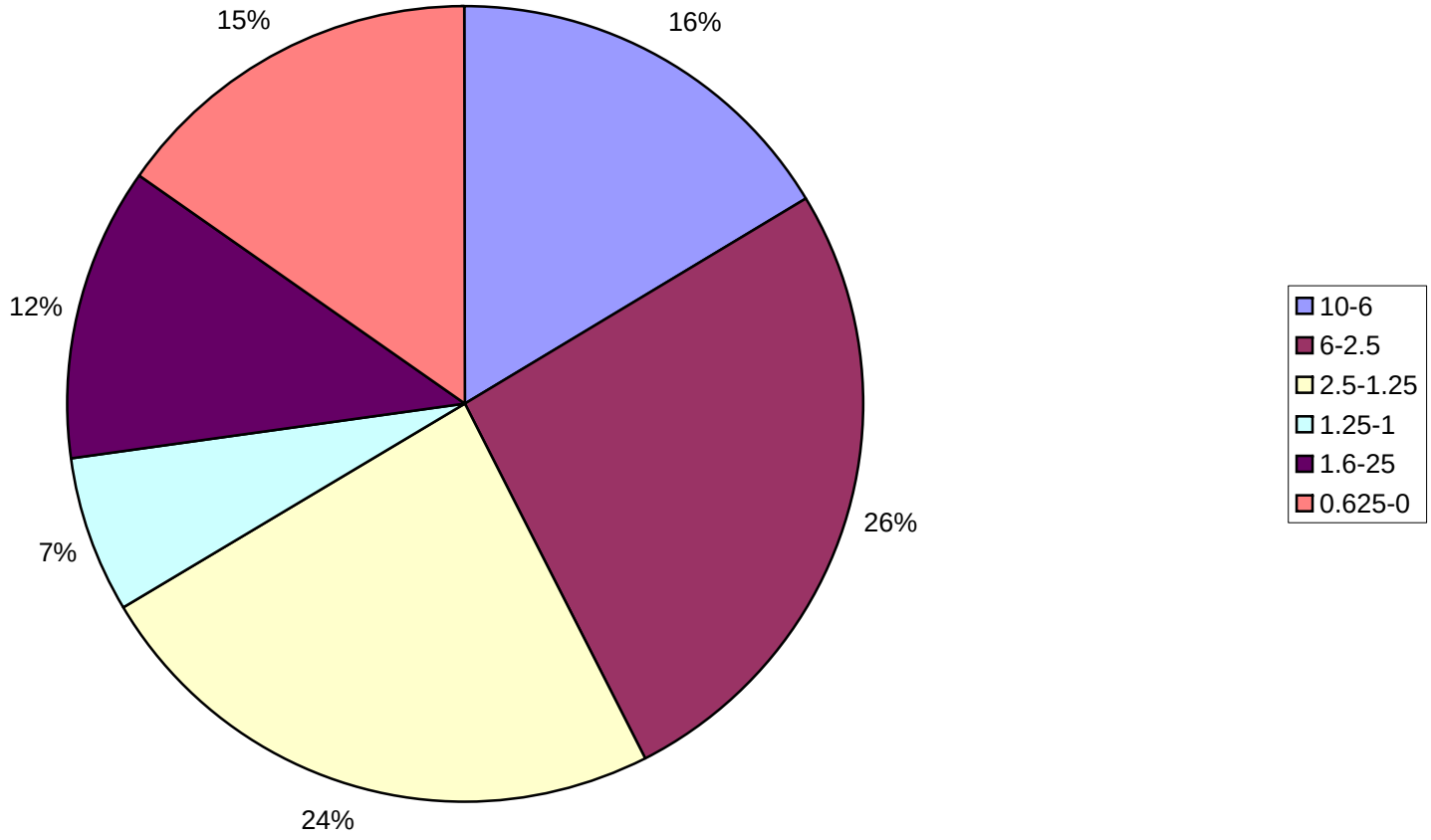
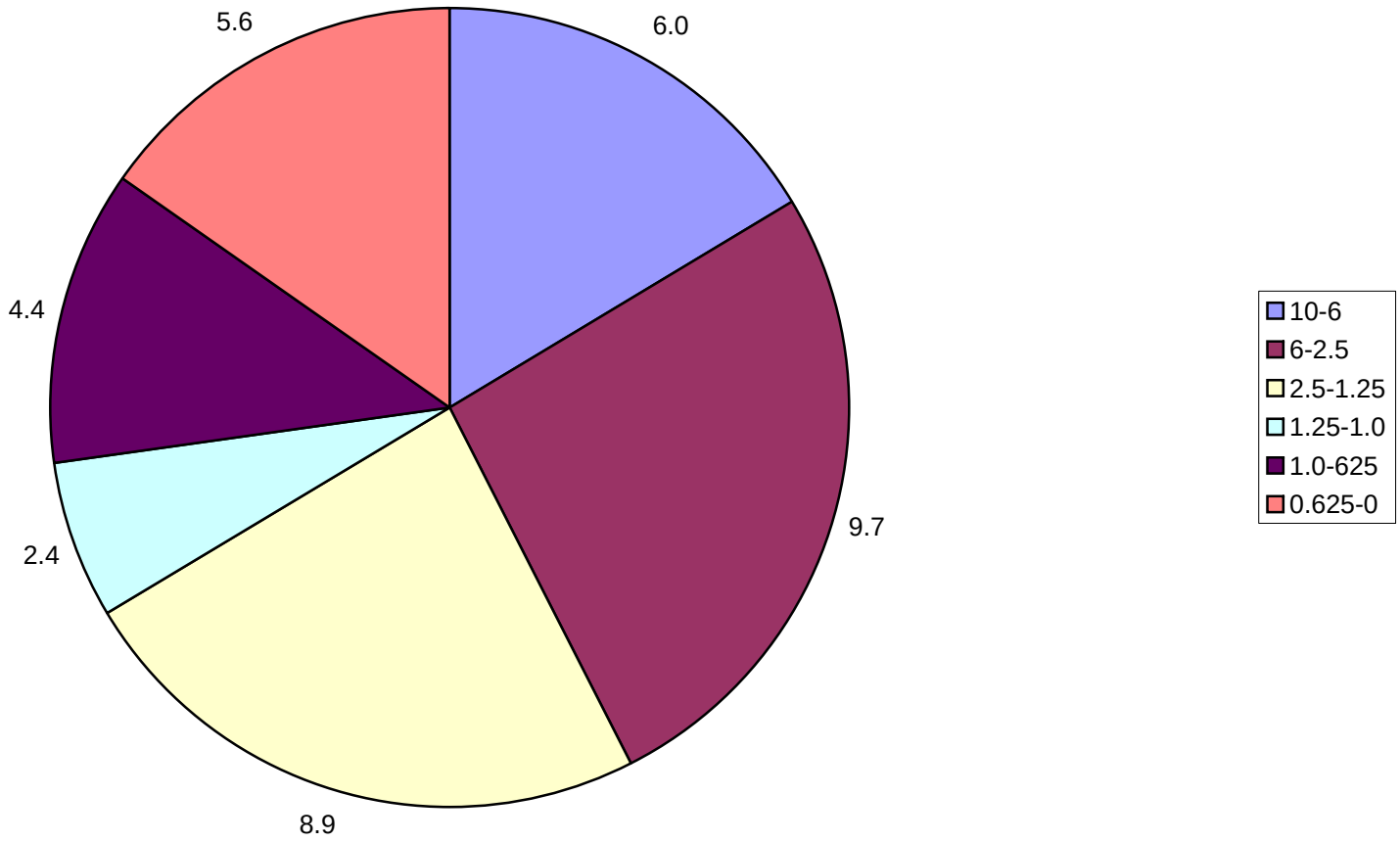
Particle Size (um)	Particle Size Range (um)	Fraction (% of Total)	**Filterable** Emissions (lb/hr)	Extinction Coef.	**Filterable** Emissions (g/sec)	
8	10-6	16%	6.0	0.6	0.76	
4.25	6-2.5	26%	9.7	0.6	1.22	42% Coarse >/= 2.5 micron
1.88	2.5-1.25	24%	8.9	1	1.12	58% Fine Soil </= 2.5 micron
1.25	1.25-1	7%	2.4	1	0.30	
0.813	1.6-25	12%	4.4	1	0.56	
0.625	0.625-0	15%	5.6	1	0.62	
				10	0.09	3.7% of Fine is EC
	Totals	100%	37.1		4.67	

Dry-Bottom PC Boiler w FGD + FF Fraction of Filterable PM10



Unit 1

Dry-Bottom PC Boiler w FGD + FF Filterable PM10 Emissions (lb/hr) in Each Size Range



Unit 1

Unit 2 Baseline (Consent Decree)
Controlled PM10 Speciation from AP-42 Tables 1.1-5 & 1.1-6
Dry Bottom Boiler burning Pulverized Coal using FGD+FF for Emissions control

assumes heating value of **9,692** Btu/lb and a sulfur content of **0.77** % and an ash content of **21.29** % and a heat inpu **3,688** mmBtu/hr and f(RH) = **1**

	Controlled PM10 Emissions (**Bold** values from Table 1.1-5.)																
Boiler	Total PM10	Filterable	Coarse	Ext.	Fine	Fine Soil	Ext.	Fine EC	Ext.		Condensible	CPM IOR	Particle		CPM OR	Particle	
Type	(lb/mmBtu)	(lb/mmBtu)	(lb/mmBtu)	Coef.	(lb/mmBtu)	(lb/ton)	Coef.	(lb/mmBtu)	Coef.		(lb/mmBtu)	(lb/mmBtu)	Type	Ext.Coef.	(lb/mmBtu)	Type	Ext.Coef.
PC-DB	0.0420	0.0220	0.0110	0.6	0.0110	0.0106	1	0.00041	10		**0.020**	**0.016**	SO4	3*f(RH)	**0.004**	SOA	4

	Controlled PM10 Emissions (**Bold** Values from Table 1.1-6.)																
Boiler	Total PM10	Filterable	Coarse	Ext.	Fine	Fine Soil	Ext.	Fine EC	Ext.		Condensible	CPM IOR	Particle		CPM OR	Particle	
Type	(lb/ton)	(lb/ton)	(lb/ton)	Coef.	(lb/ton)	(lb/ton)	Coef.	(lb/ton)	Coef.		(lb/ton)	(lb/ton)	Type	Ext.Coef.	(lb/ton)	Type	Ext.Coef.
PC-DB	0.813	**0.426**	0.213	0.6	**0.213**	0.205	1	0.0079	10		0.388	0.310	SO4	3*f(RH)	0.078	SOA	4

	Controlled PM10 Emissions																
Boiler	Total PM10	Filterable	Coarse	Ext.	Fine	Fine Soil	Ext.	Fine EC	Ext.		Condensible	CPM IOR	Particle		CPM OR	Particle	
Type	(% of Total)	(% of Total)	(% of Total)	Coef.	(% of Total)	(% of Total)	Coef.	(% of Total)	Coef.		(% of Total)	(% of Total)	Type	Ext.Coef.	(% of Total)	Type	Ext.Coef.
PC-DB	100%	52.3%	26.2%	0.6	26.2%	25.2%	1	1.0%	10		47.7%	38.1%	SO4	3*f(RH)	9.5%	SOA	4

If you are given Total PM10 emissions in lb/hr:

	Controlled PM10 Emissions (**Bold** Value is **Input** by user.)																
Boiler	Total PM10	Filterable	Coarse	Ext.	Fine	Fine Soil	Ext.	Fine EC	Ext.		Condensible	CPM IOR	Particle		CPM OR	Particle	
Type	(lb/hr)	(lb/hr)	(lb/hr)	Coef.	(lb/hr)	(lb/hr)	Coef.	(lb/hr)	Coef.		(lb/hr)	(lb/hr)	Type	Ext.Coef.	(lb/hr)	Type	Ext.Coef.
PC-DB	**70.5**	36.9	18.4	0.6	18.4	17.8	1	0.7	10		33.6	26.9	SO4	3	6.7	SOA	4
		Weighted Extinction		11.1			17.8		6.8					80.6			26.9	2.0

If you are given Total PM10 emissions in lb/mmBtu:

	Controlled PM10 Emissions (**Bold** Value is **Input** by user.)																
Boiler	Total PM10	Filterable	Coarse	Ext.	Fine	Fine Soil	Ext.	Fine EC	Ext.		Condensible	CPM IOR	Particle		CPM OR	Particle	
Type	(lb/mmBtu)	(lb/mmBtu)	(lb/mmBtu)	Coef.	(lb/mmBtu)	(lb/mmBtu)	Coef.	(lb/mmBtu)	Coef.		(lb/mmBtu)	(lb/mmBtu)	Type	Ext.Coef.	(lb/mmBtu)	Type	Ext.Coef.
PC-DB	**0.02**	0.010	0.01	0.6	0.01	0.00	1	0.0002	10		0.01	0.01	SO4	3	0.00	SOA	4

	Controlled PM10 Emissions (**Bold** values from Table 1.1-5 and from Table 6 of EPA's January 2002 DRAFT "Catalog of Global Emissions Inventories and Emission Inventory Tools for Black Carbon.")																
Boiler	Total PM10	Filterable	Coarse	Ext.	Fine	Fine Soil	Ext.	Fine EC	Ext.		Condensible	CPM IOR	Particle		CPM OR	Particle	
Type	(% of Total)	(% of Total)	(% of Filterable)	Coef.	(% of Filterable)	(% of Filterable)	1	(% of Filterable)	Coef.		(% of Total)	(% of Condensible)	Type	Ext.Coef.	(% of Condensible)	Type	Ext.Coef.
PC-DB	100%	52.3%	50.0%	0.6	50.0%	48.2%	1	1.9%	10		47.7%	**80.0%**	SO4	3	**20.0%**	SOA	4
						(% of Fine)	Coef.	(% of Fine)	Coef.								
						96.3%	1	**3.7%**	10								

If you are given Filterable PM10 emissions in lb/hr:

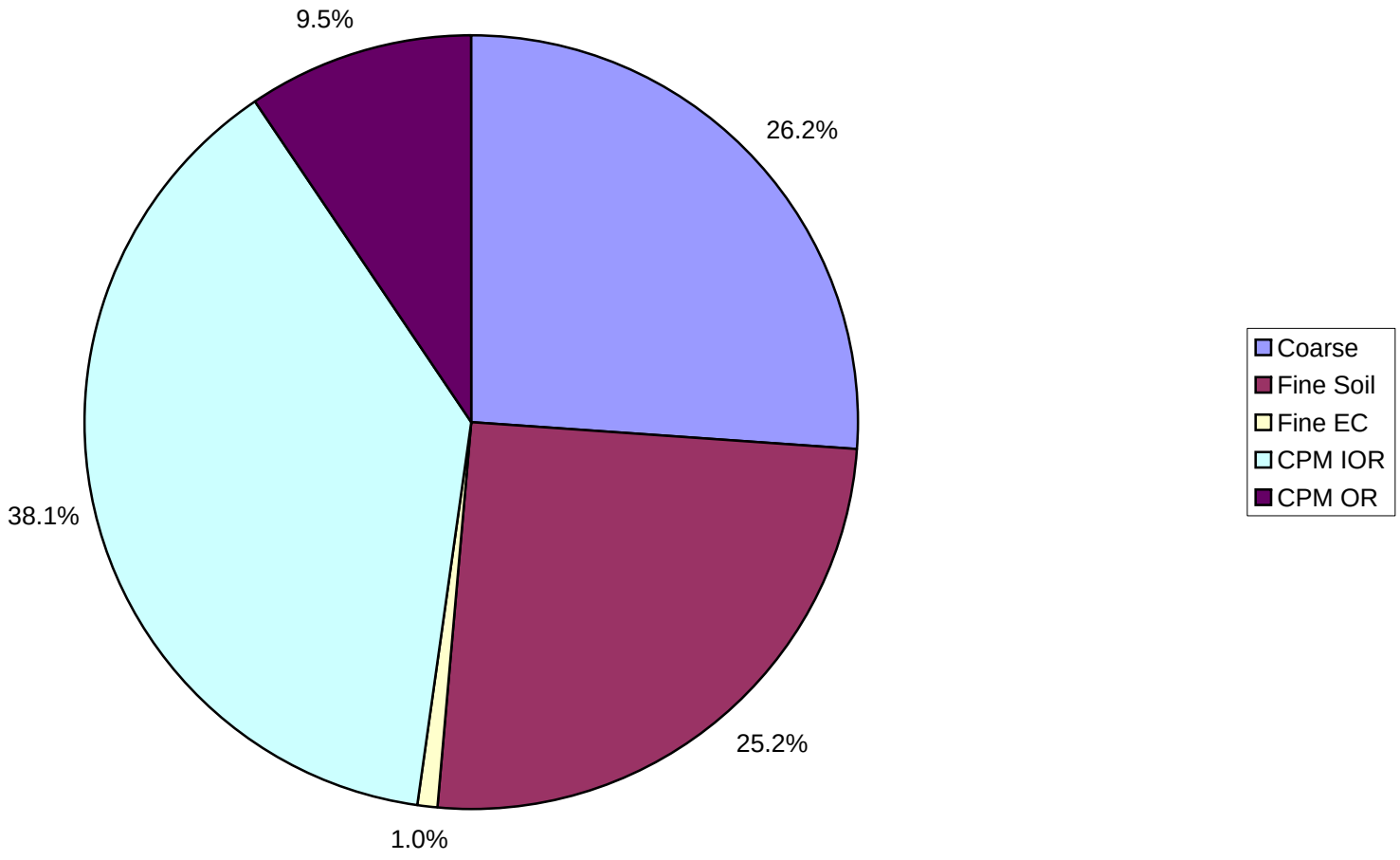
	Controlled PM10 Emissions (**Bold** Value is **Input** by user.)																
Boiler	Total PM10	Filterable	Coarse	Ext.	Fine	Fine Soil	Ext.	Fine EC	Ext.		Condensible	CPM IOR	Particle		CPM OR	Particle	
Type	(lb/hr)	(lb/hr)	(lb/hr)	Coef.	(lb/hr)	(lb/hr)	Coef.	(lb/hr)	Coef.		(lb/hr)	(lb/hr)	Type	Ext.Coef.	(lb/hr)	Type	Ext.Coef.
PC-DB	70.5	**36.9**	18.4	0.6	18.4	17.8	1	0.7	10		33.6	26.9	SO4	3	6.7	SOA	4

If you are given Filterable PM10 emissions in lb/mmBtu:

	Controlled PM10 Emissions (**Bold** Value is **Input** by user.)																
Boiler	Total PM10	Filterable	Coarse	Ext.	Fine	Fine Soil	Ext.	Fine EC	Ext.		Condensible	CPM IOR	Particle		CPM OR	Particle	
Type	(lb/mmBtu)	(lb/mmBtu)	(lb/mmBtu)	Coef.	(lb/mmBtu)	(lb/mmBtu)	Coef.	(lb/mmBtu)	Coef.		(lb/mmBtu)	(lb/mmBtu)	Type	Ext.Coef.	(lb/mmBtu)	Type	Ext.Coef.
PC-DB	0.02	**0.010**	0.01	0.6	0.01	0.00	1	0.0002	10		0.01	0.01	SO4	3	0.00	SOA	4

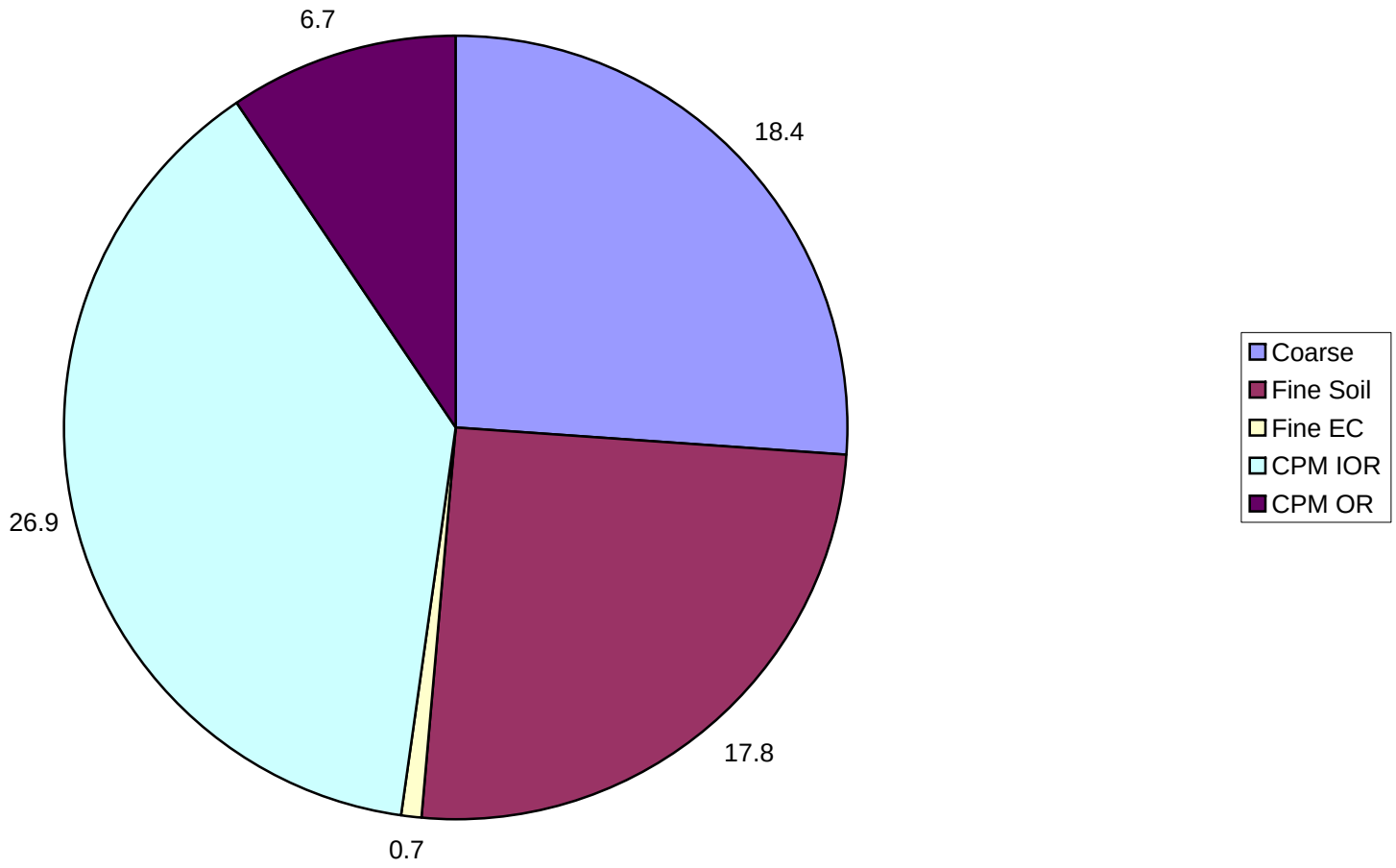
Coarse	26.2%	Coarse	18.4
Fine Soil	25.2%	Fine Soil	17.8
Fine EC	1.0%	Fine EC	0.7
CPM IOR	38.1%	CPM IOR	26.9
CPM OR	9.5%	CPM OR	6.7
	100.0%		70.5

Dry-Bottom PC Boiler w FGD + FF PM10 Speciation Profile



Unit 2

Dry-Bottom PC Boiler w FGD + FF PM10 Emissions (lb/hr)



Unit 2

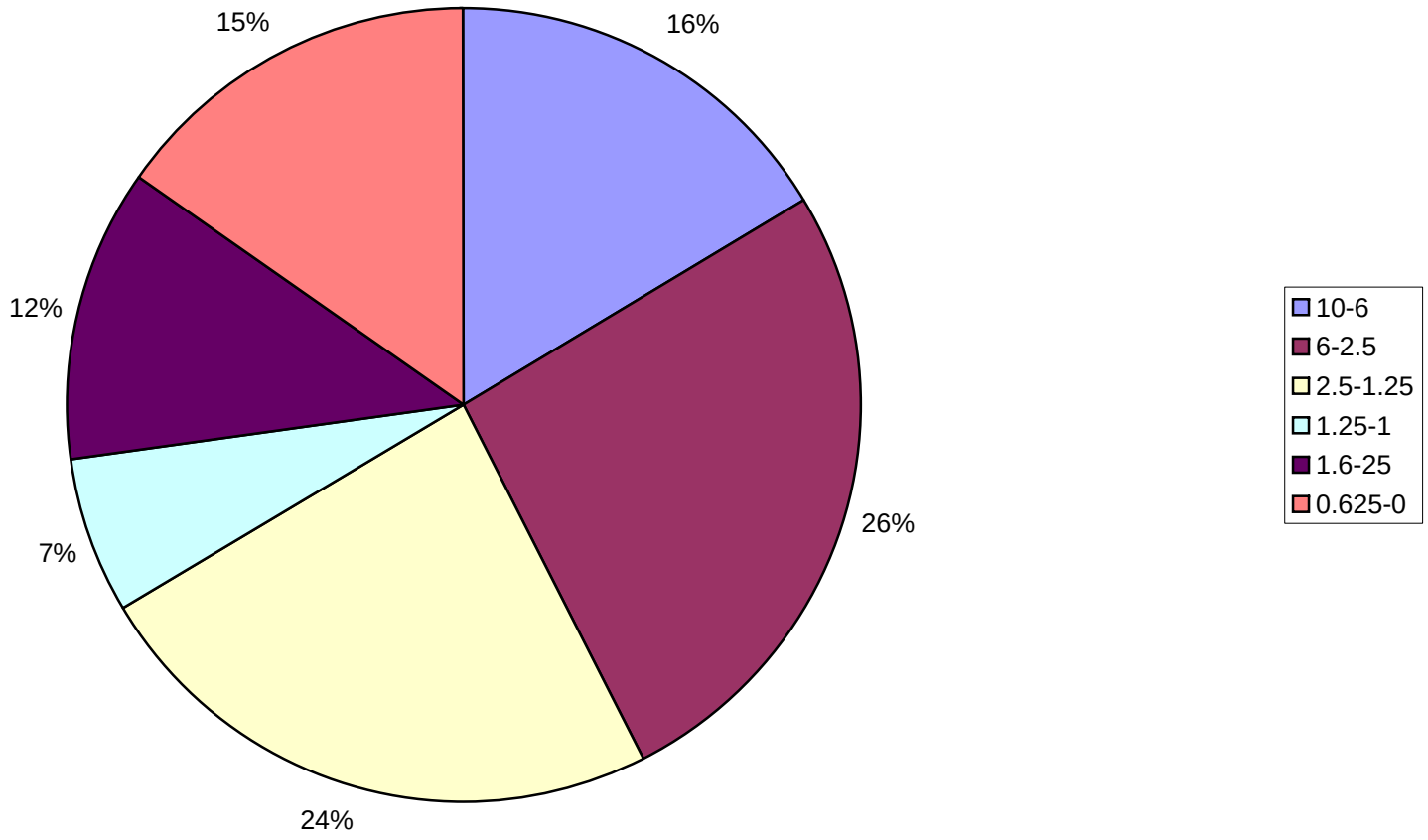
PC with FGD + Fabric Filter
from AP-42 Table 1.1-6
(User inputs **filterable** emission rate in lb/hr)

Particle Size (um)	Cumulative Mass < Stated Size **FF**	Fraction of PM10 < Stated Size (%)	Particle Size Range (um)	Emissions by size (lb/hr)
10	92%	100%	10-6	6.0
6	77%	84%	6-2.5	9.6
2.5	53%	58%	2.5-1.25	8.8
1.25	31%	34%	1.25-1.0	2.4
1	25%	27%	1.0-625	4.4
0.625	14%	15%	0.625-0	5.6

CALPUFF

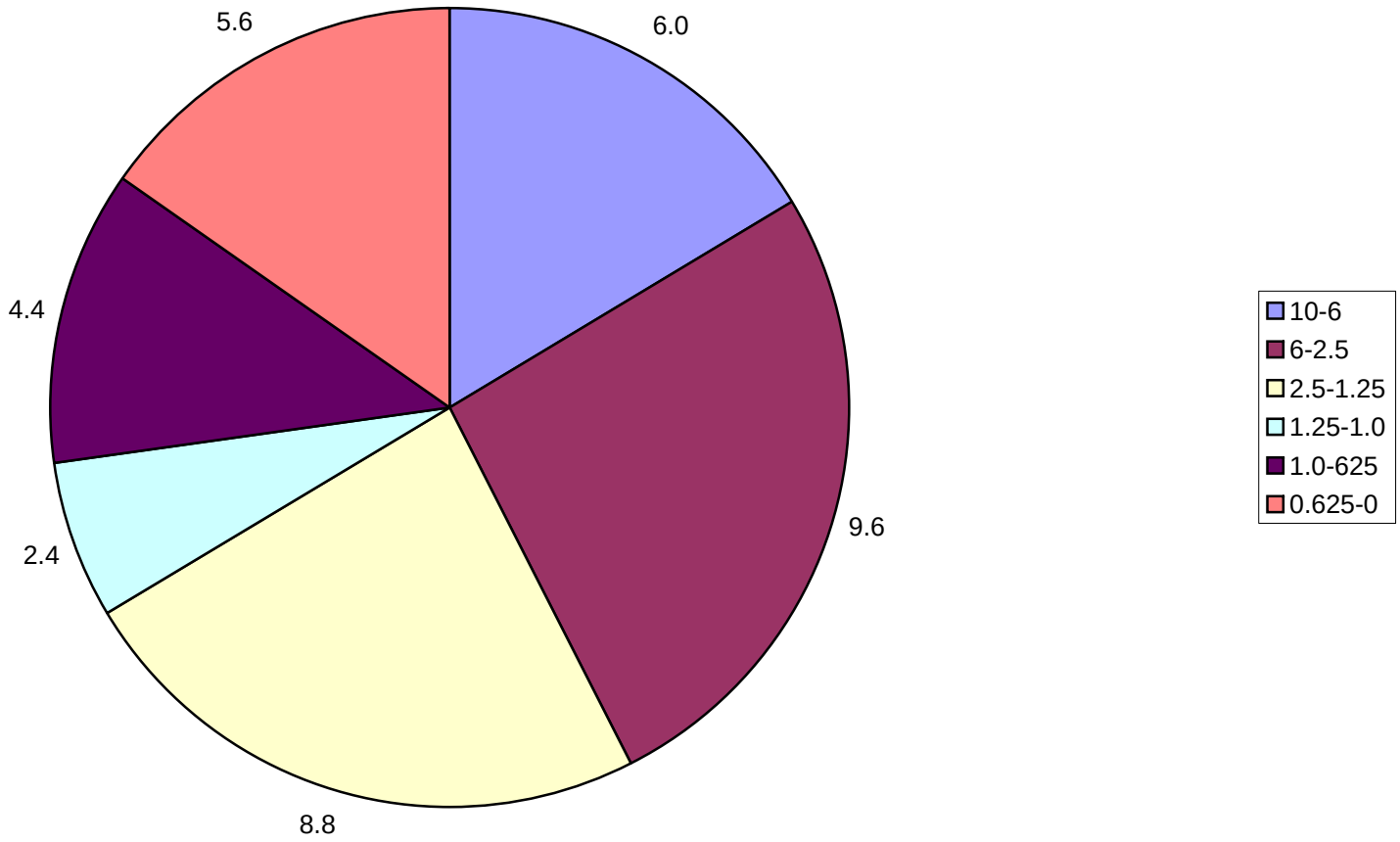
Particle Size (um)	Particle Size Range (um)	Fraction (% of Total)	**Filterable** Emissions (lb/hr)	Extinction Coef.	**Filterable** Emissions (g/sec)	
8	10-6	16%	6.0	0.6	0.76	
4.25	6-2.5	26%	9.6	0.6	1.21	42% Coarse >/= 2.5 micron
1.88	2.5-1.25	24%	8.8	1	1.11	58% Fine Soil </= 2.5 micron
1.25	1.25-1	7%	2.4	1	0.30	
0.813	1.6-25	12%	4.4	1	0.56	
0.625	0.625-0	15%	5.6	1	0.62	
				10	0.09	3.7% of Fine is EC
	Totals	100%	36.9		4.65	

Dry-Bottom PC Boiler w FGD + FF Fraction of Filterable PM10



Unit 2

Dry-Bottom PC Boiler w FGD + FF Filterable PM10 Emissions (lb/hr) in Each Size Range



Unit 2

Unit 3 Baseline (Consent Decree)
Controlled PM10 Speciation from AP-42 Tables 1.1-5 & 1.1-6
Dry Bottom Boiler burning Pulverized Coal using FGD+FF for Emissions control

assumes heating value of **9,692** Btu/lb and a sulfur content of **0.77** % and an ash content of **21.29** % and a heat inpu **5,758** mmBtu/hr and f(RH) = **1**

	Controlled PM10 Emissions (**Bold** values from Table 1.1-5.)																
Boiler	Total PM10	Filterable	Coarse	Ext.	Fine	Fine Soil	Ext.	Fine EC	Ext.		Condensible	CPM IOR	Particle		CPM OR	Particle	
Type	(lb/mmBtu)	(lb/mmBtu)	(lb/mmBtu)	Coef.	(lb/mmBtu)	(lb/ton)	Coef.	(lb/mmBtu)	Coef.		(lb/mmBtu)	(lb/mmBtu)	Type	Ext.Coef.	(lb/mmBtu)	Type	Ext.Coef.
PC-DB	0.0420	0.0220	0.0110	0.6	0.0110	0.0106	1	0.00041	10		**0.020**	**0.016**	SO4	3*f(RH)	**0.004**	SOA	4

	Controlled PM10 Emissions (**Bold** Values from Table 1.1-6.)																
Boiler	Total PM10	Filterable	Coarse	Ext.	Fine	Fine Soil	Ext.	Fine EC	Ext.		Condensible	CPM IOR	Particle		CPM OR	Particle	
Type	(lb/ton)	(lb/ton)	(lb/ton)	Coef.	(lb/ton)	(lb/ton)	Coef.	(lb/ton)	Coef.		(lb/ton)	(lb/ton)	Type	Ext.Coef.	(lb/ton)	Type	Ext.Coef.
PC-DB	0.813	**0.426**	0.213	0.6	**0.213**	0.205	1	0.0079	10		0.388	0.310	SO4	3*f(RH)	0.078	SOA	4

	Controlled PM10 Emissions																
Boiler	Total PM10	Filterable	Coarse	Ext.	Fine	Fine Soil	Ext.	Fine EC	Ext.		Condensible	CPM IOR	Particle		CPM OR	Particle	
Type	(% of Total)	(% of Total)	(% of Total)	Coef.	(% of Total)	(% of Total)	Coef.	(% of Total)	Coef.		(% of Total)	(% of Total)	Type	Ext.Coef.	(% of Total)	Type	Ext.Coef.
PC-DB	100%	52.3%	26.2%	0.6	26.2%	25.2%	1	1.0%	10		47.7%	38.1%	SO4	3*f(RH)	9.5%	SOA	4

If you are given Total PM10 emissions in lb/hr:

	Controlled PM10 Emissions (**Bold** Value is **Input** by user.)																
Boiler	Total PM10	Filterable	Coarse	Ext.	Fine	Fine Soil	Ext.	Fine EC	Ext.		Condensible	CPM IOR	Particle		CPM OR	Particle	
Type	(lb/hr)	(lb/hr)	(lb/hr)	Coef.	(lb/hr)	(lb/hr)	Coef.	(lb/hr)	Coef.		(lb/hr)	(lb/hr)	Type	Ext.Coef.	(lb/hr)	Type	Ext.Coef.
PC-DB	**110.0**	57.6	28.8	0.6	28.8	27.7	1	1.1	10		52.4	41.9	SO4	3	10.5	SOA	4
		Weighted Extinction		17.3			27.7		10.7					125.8			41.9	2.0

If you are given Total PM10 emissions in lb/mmBtu:

	Controlled PM10 Emissions (**Bold** Value is **Input** by user.)																
Boiler	Total PM10	Filterable	Coarse	Ext.	Fine	Fine Soil	Ext.	Fine EC	Ext.		Condensible	CPM IOR	Particle		CPM OR	Particle	
Type	(lb/mmBtu)	(lb/mmBtu)	(lb/mmBtu)	Coef.	(lb/mmBtu)	(lb/mmBtu)	Coef.	(lb/mmBtu)	Coef.		(lb/mmBtu)	(lb/mmBtu)	Type	Ext.Coef.	(lb/mmBtu)	Type	Ext.Coef.
PC-DB	**0.02**	0.010	0.01	0.6	0.01	0.00	1	0.0002	10		0.01	0.01	SO4	3	0.00	SOA	4

	Controlled PM10 Emissions (**Bold** values from Table 1.1-5 and from Table 6 of EPA's January 2002 DRAFT "Catalog of Global Emissions Inventories and Emission Inventory Tools for Black Carbon.")																
Boiler	Total PM10	Filterable	Coarse	Ext.	Fine	Fine Soil	Ext.	Fine EC	Ext.		Condensible	CPM IOR	Particle		CPM OR	Particle	
Type	(% of Total)	(% of Total)	(% of Filterable)	Coef.	(% of Filterable)	(% of Filterable)	1	(% of Filterable)	Coef.		(% of Total)	(% of Condensible)	Type	Ext.Coef.	(% of Condensible)	Type	Ext.Coef.
PC-DB	100%	52.3%	50.0%	0.6	50.0%	48.2%	1	1.9%	10		47.7%	**80.0%**	SO4	3	**20.0%**	SOA	4
						(% of Fine)	Coef.	(% of Fine)	Coef.								
						96.3%	1	**3.7%**	10								

If you are given Filterable PM10 emissions in lb/hr:

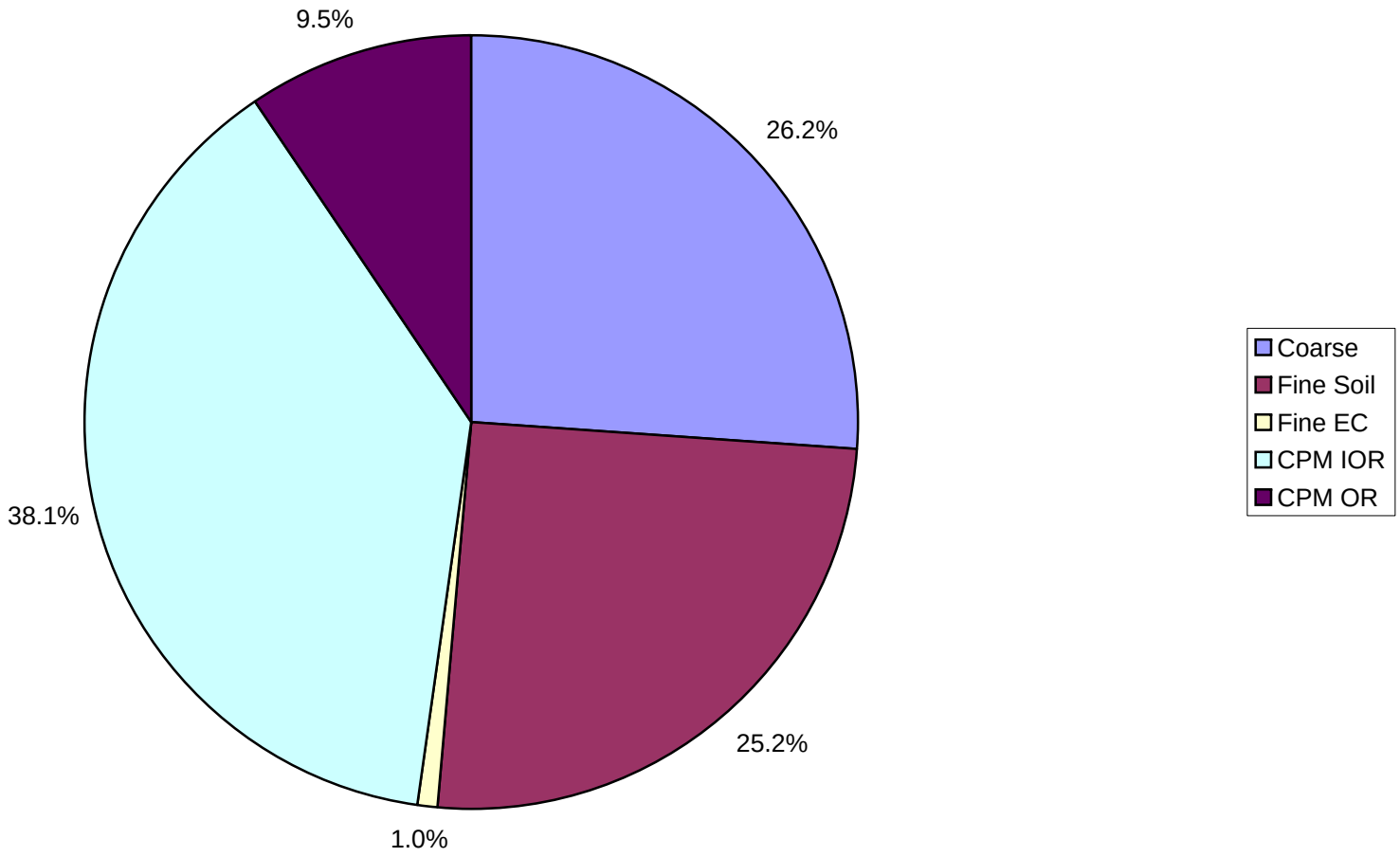
	Controlled PM10 Emissions (**Bold** Value is **Input** by user.)																
Boiler	Total PM10	Filterable	Coarse	Ext.	Fine	Fine Soil	Ext.	Fine EC	Ext.		Condensible	CPM IOR	Particle		CPM OR	Particle	
Type	(lb/hr)	(lb/hr)	(lb/hr)	Coef.	(lb/hr)	(lb/hr)	Coef.	(lb/hr)	Coef.		(lb/hr)	(lb/hr)	Type	Ext.Coef.	(lb/hr)	Type	Ext.Coef.
PC-DB	110.0	**57.6**	28.8	0.6	28.8	27.7	1	1.1	10		52.4	41.9	SO4	3	10.5	SOA	4

If you are given Filterable PM10 emissions in lb/mmBtu:

	Controlled PM10 Emissions (**Bold** Value is **Input** by user.)																
Boiler	Total PM10	Filterable	Coarse	Ext.	Fine	Fine Soil	Ext.	Fine EC	Ext.		Condensible	CPM IOR	Particle		CPM OR	Particle	
Type	(lb/mmBtu)	(lb/mmBtu)	(lb/mmBtu)	Coef.	(lb/mmBtu)	(lb/mmBtu)	Coef.	(lb/mmBtu)	Coef.		(lb/mmBtu)	(lb/mmBtu)	Type	Ext.Coef.	(lb/mmBtu)	Type	Ext.Coef.
PC-DB	0.02	**0.010**	0.01	0.6	0.01	0.00	1	0.0002	10		0.01	0.01	SO4	3	0.00	SOA	4

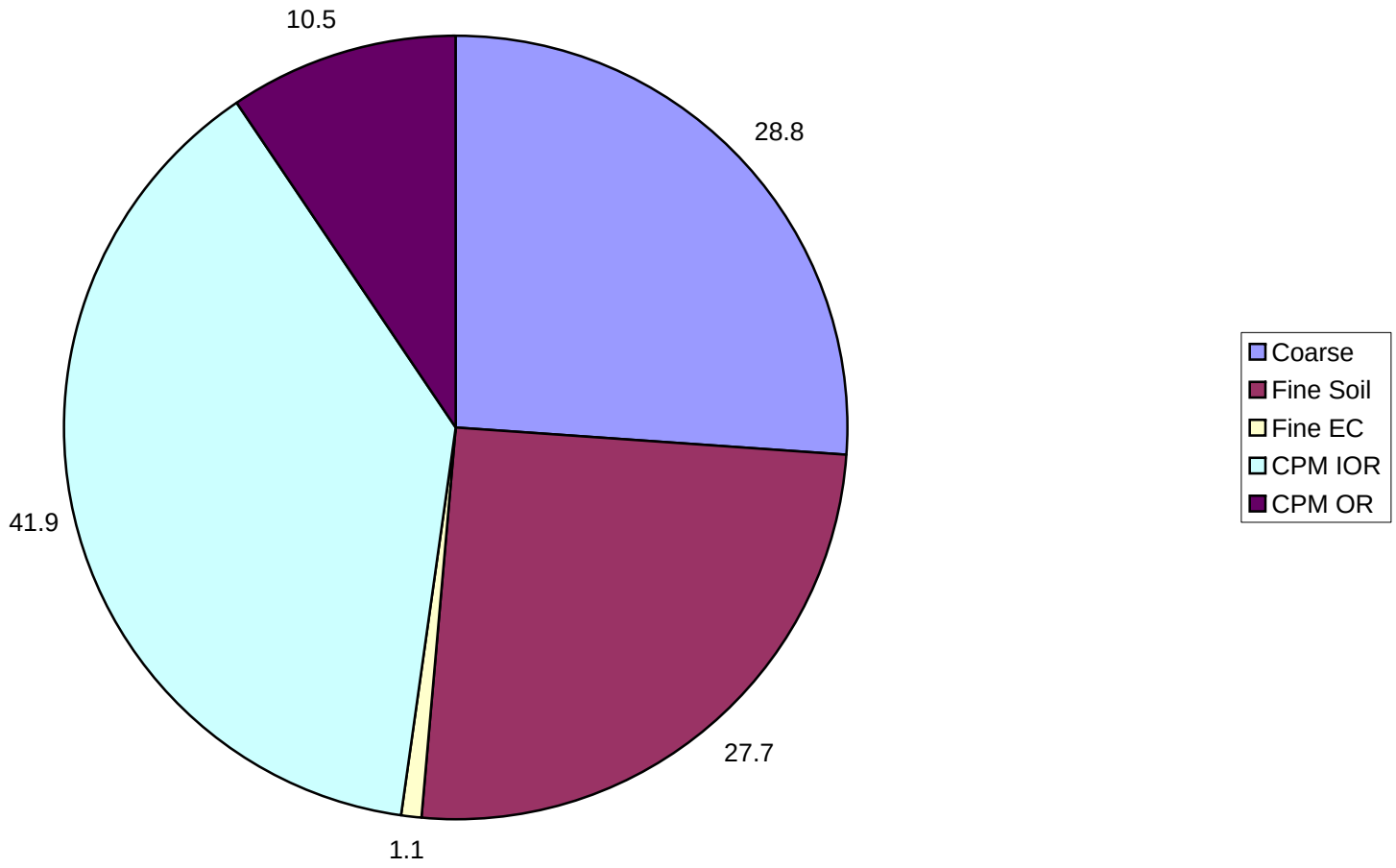
Coarse	26.2%	Coarse	28.8
Fine Soil	25.2%	Fine Soil	27.7
Fine EC	1.0%	Fine EC	1.1
CPM IOR	38.1%	CPM IOR	41.9
CPM OR	9.5%	CPM OR	10.5
	100.0%		110.0

Dry-Bottom PC Boiler w FGD + FF PM10 Speciation Profile



Unit 3

Dry-Bottom PC Boiler w FGD + FF PM10 Emissions (lb/hr)



Unit 3

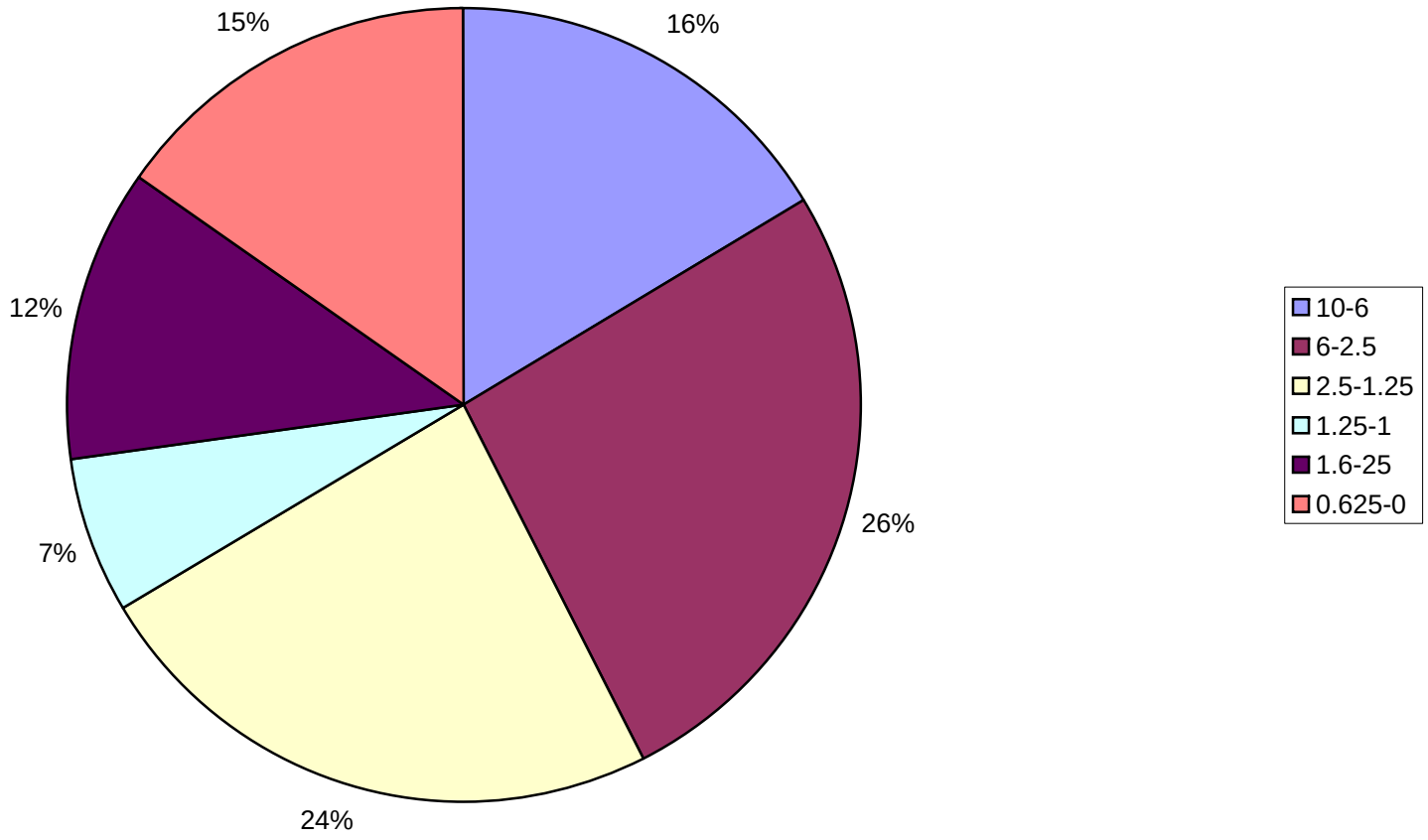
PC with FGD + Fabric Filter
from AP-42 Table 1.1-6
(User inputs **filterable** emission rate in lb/hr)

Particle Size (um)	Cumulative Mass < Stated Size **FF**	Fraction of PM10 < Stated Size (%)	Particle Size Range (um)	Emissions by size (lb/hr)
10	92%	100%	10-6	9.4
6	77%	84%	6-2.5	15.0
2.5	53%	58%	2.5-1.25	13.8
1.25	31%	34%	1.25-1.0	3.8
1	25%	27%	1.0-625	6.9
0.625	14%	15%	0.625-0	8.8

CALPUFF

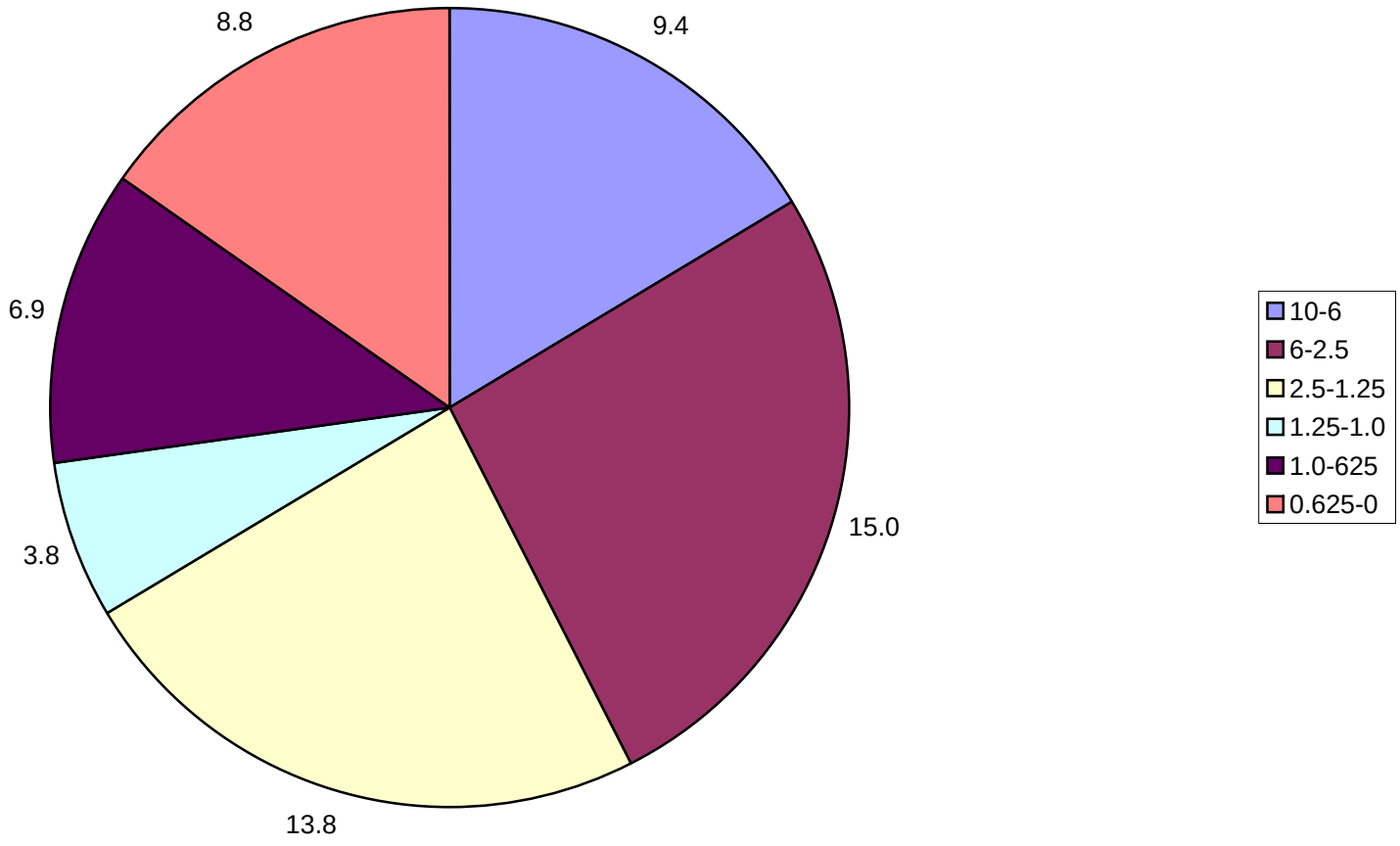
Particle Size (um)	Particle Size Range (um)	Fraction (% of Total)	**Filterable** Emissions (lb/hr)	Extinction Coef.	**Filterable** Emissions (g/sec)	
8	10-6	16%	9.4	0.6	1.18	
4.25	6-2.5	26%	15.0	0.6	1.89	42% Coarse >/= 2.5 micron
1.88	2.5-1.25	24%	13.8	1	1.74	58% Fine Soil </= 2.5 micron
1.25	1.25-1	7%	3.8	1	0.47	
0.813	1.6-25	12%	6.9	1	0.87	
0.625	0.625-0	15%	8.8	1	0.97	
				10	0.13	3.7% of Fine is EC
	Totals	100%	57.6		7.26	

Dry-Bottom PC Boiler w FGD + FF Fraction of Filterable PM10



Unit 3

Dry-Bottom PC Boiler w FGD + FF Filterable PM10 Emissions (lb/hr) in Each Size Range



Unit 3

Unit 4 Baseline (Consent Decree)
Controlled PM10 Speciation from AP-42 Tables 1.1-5 & 1.1-6
Dry Bottom Boiler burning Pulverized Coal using FGD+FF for Emissions control

assumes heating value of **9,692** Btu/lb and a sulfur content of **0.77** % and an ash content of **21.29** % and a heat inpu **5,649** mmBtu/hr and f(RH) = **1**

	Controlled PM10 Emissions (**Bold** values from Table 1.1-5.)																
Boiler	Total PM10	Filterable	Coarse	Ext.	Fine	Fine Soil	Ext.	Fine EC	Ext.		Condensible	CPM IOR	Particle		CPM OR	Particle	
Type	(lb/mmBtu)	(lb/mmBtu)	(lb/mmBtu)	Coef.	(lb/mmBtu)	(lb/ton)	Coef.	(lb/mmBtu)	Coef.		(lb/mmBtu)	(lb/mmBtu)	Type	Ext.Coef.	(lb/mmBtu)	Type	Ext.Coef.
PC-DB	0.0420	0.0220	0.0110	0.6	0.0110	0.0106	1	0.00041	10		**0.020**	**0.016**	SO4	3*f(RH)	**0.004**	SOA	4

	Controlled PM10 Emissions (**Bold** Values from Table 1.1-6.)																
Boiler	Total PM10	Filterable	Coarse	Ext.	Fine	Fine Soil	Ext.	Fine EC	Ext.		Condensible	CPM IOR	Particle		CPM OR	Particle	
Type	(lb/ton)	(lb/ton)	(lb/ton)	Coef.	(lb/ton)	(lb/ton)	Coef.	(lb/ton)	Coef.		(lb/ton)	(lb/ton)	Type	Ext.Coef.	(lb/ton)	Type	Ext.Coef.
PC-DB	0.813	**0.426**	0.213	0.6	**0.213**	0.205	1	0.0079	10		0.388	0.310	SO4	3*f(RH)	0.078	SOA	4

	Controlled PM10 Emissions																
Boiler	Total PM10	Filterable	Coarse	Ext.	Fine	Fine Soil	Ext.	Fine EC	Ext.		Condensible	CPM IOR	Particle		CPM OR	Particle	
Type	(% of Total)	(% of Total)	(% of Total)	Coef.	(% of Total)	(% of Total)	Coef.	(% of Total)	Coef.		(% of Total)	(% of Total)	Type	Ext.Coef.	(% of Total)	Type	Ext.Coef.
PC-DB	100%	52.3%	26.2%	0.6	26.2%	25.2%	1	1.0%	10		47.7%	38.1%	SO4	3*f(RH)	9.5%	SOA	4

If you are given Total PM10 emissions in lb/hr:

	Controlled PM10 Emissions (**Bold** Value is **Input** by user.)																
Boiler	Total PM10	Filterable	Coarse	Ext.	Fine	Fine Soil	Ext.	Fine EC	Ext.		Condensible	CPM IOR	Particle		CPM OR	Particle	
Type	(lb/hr)	(lb/hr)	(lb/hr)	Coef.	(lb/hr)	(lb/hr)	Coef.	(lb/hr)	Coef.		(lb/hr)	(lb/hr)	Type	Ext.Coef.	(lb/hr)	Type	Ext.Coef.
PC-DB	**107.9**	56.5	28.2	0.6	28.2	27.2	1	1.0	10		51.4	41.1	SO4	3	10.3	SOA	4
		Weighted Extinction		16.9			27.2		10.5					123.4			41.1	2.0

If you are given Total PM10 emissions in lb/mmBtu:

	Controlled PM10 Emissions (**Bold** Value is **Input** by user.)																
Boiler	Total PM10	Filterable	Coarse	Ext.	Fine	Fine Soil	Ext.	Fine EC	Ext.		Condensible	CPM IOR	Particle		CPM OR	Particle	
Type	(lb/mmBtu)	(lb/mmBtu)	(lb/mmBtu)	Coef.	(lb/mmBtu)	(lb/mmBtu)	Coef.	(lb/mmBtu)	Coef.		(lb/mmBtu)	(lb/mmBtu)	Type	Ext.Coef.	(lb/mmBtu)	Type	Ext.Coef.
PC-DB	**0.02**	0.010	0.01	0.6	0.01	0.00	1	0.0002	10		0.01	0.01	SO4	3	0.00	SOA	4

	Controlled PM10 Emissions (**Bold** values from Table 1.1-5 and from Table 6 of EPA's January 2002 DRAFT "Catalog of Global Emissions Inventories and Emission Inventory Tools for Black Carbon.")																
Boiler	Total PM10	Filterable	Coarse	Ext.	Fine	Fine Soil	Ext.	Fine EC	Ext.		Condensible	CPM IOR	Particle		CPM OR	Particle	
Type	(% of Total)	(% of Total)	(% of Filterable)	Coef.	(% of Filterable)	(% of Filterable)	1	(% of Filterable)	Coef.		(% of Total)	(% of Condensible)	Type	Ext.Coef.	(% of Condensible)	Type	Ext.Coef.
PC-DB	100%	52.3%	50.0%	0.6	50.0%	48.2%	1	1.9%	10		47.7%	**80.0%**	SO4	3	**20.0%**	SOA	4
						(% of Fine)	Coef.	(% of Fine)	Coef.								
						96.3%	1	**3.7%**	10								

If you are given Filterable PM10 emissions in lb/hr:

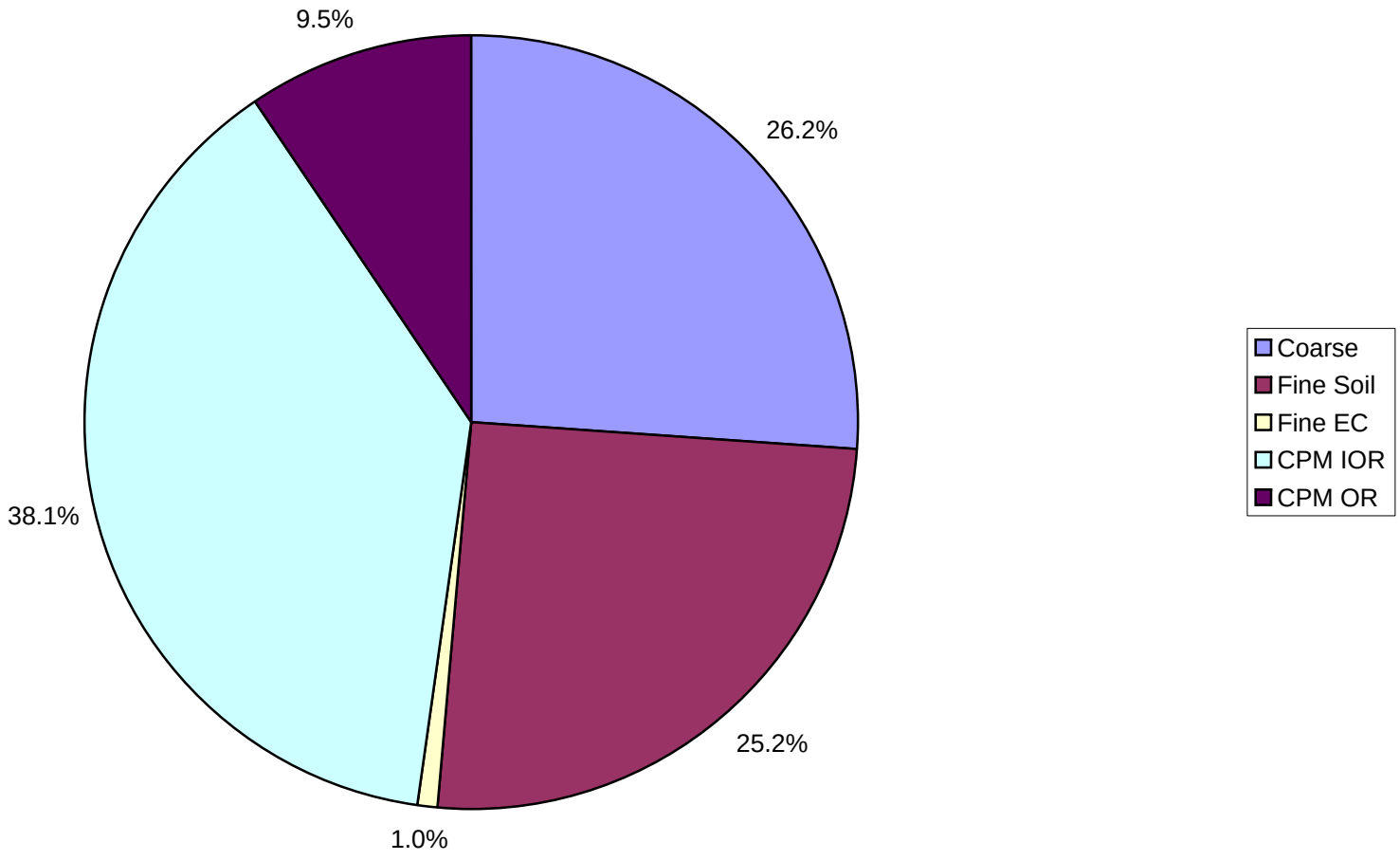
	Controlled PM10 Emissions (**Bold** Value is **Input** by user.)																
Boiler	Total PM10	Filterable	Coarse	Ext.	Fine	Fine Soil	Ext.	Fine EC	Ext.		Condensible	CPM IOR	Particle		CPM OR	Particle	
Type	(lb/hr)	(lb/hr)	(lb/hr)	Coef.	(lb/hr)	(lb/hr)	Coef.	(lb/hr)	Coef.		(lb/hr)	(lb/hr)	Type	Ext.Coef.	(lb/hr)	Type	Ext.Coef.
PC-DB	107.9	**56.5**	28.2	0.6	28.2	27.2	1	1.0	10		51.4	41.1	SO4	3	10.3	SOA	4

If you are given Filterable PM10 emissions in lb/mmBtu:

	Controlled PM10 Emissions (**Bold** Value is **Input** by user.)																
Boiler	Total PM10	Filterable	Coarse	Ext.	Fine	Fine Soil	Ext.	Fine EC	Ext.		Condensible	CPM IOR	Particle		CPM OR	Particle	
Type	(lb/mmBtu)	(lb/mmBtu)	(lb/mmBtu)	Coef.	(lb/mmBtu)	(lb/mmBtu)	Coef.	(lb/mmBtu)	Coef.		(lb/mmBtu)	(lb/mmBtu)	Type	Ext.Coef.	(lb/mmBtu)	Type	Ext.Coef.
PC-DB	0.02	**0.010**	0.01	0.6	0.01	0.00	1	0.0002	10		0.01	0.01	SO4	3	0.00	SOA	4

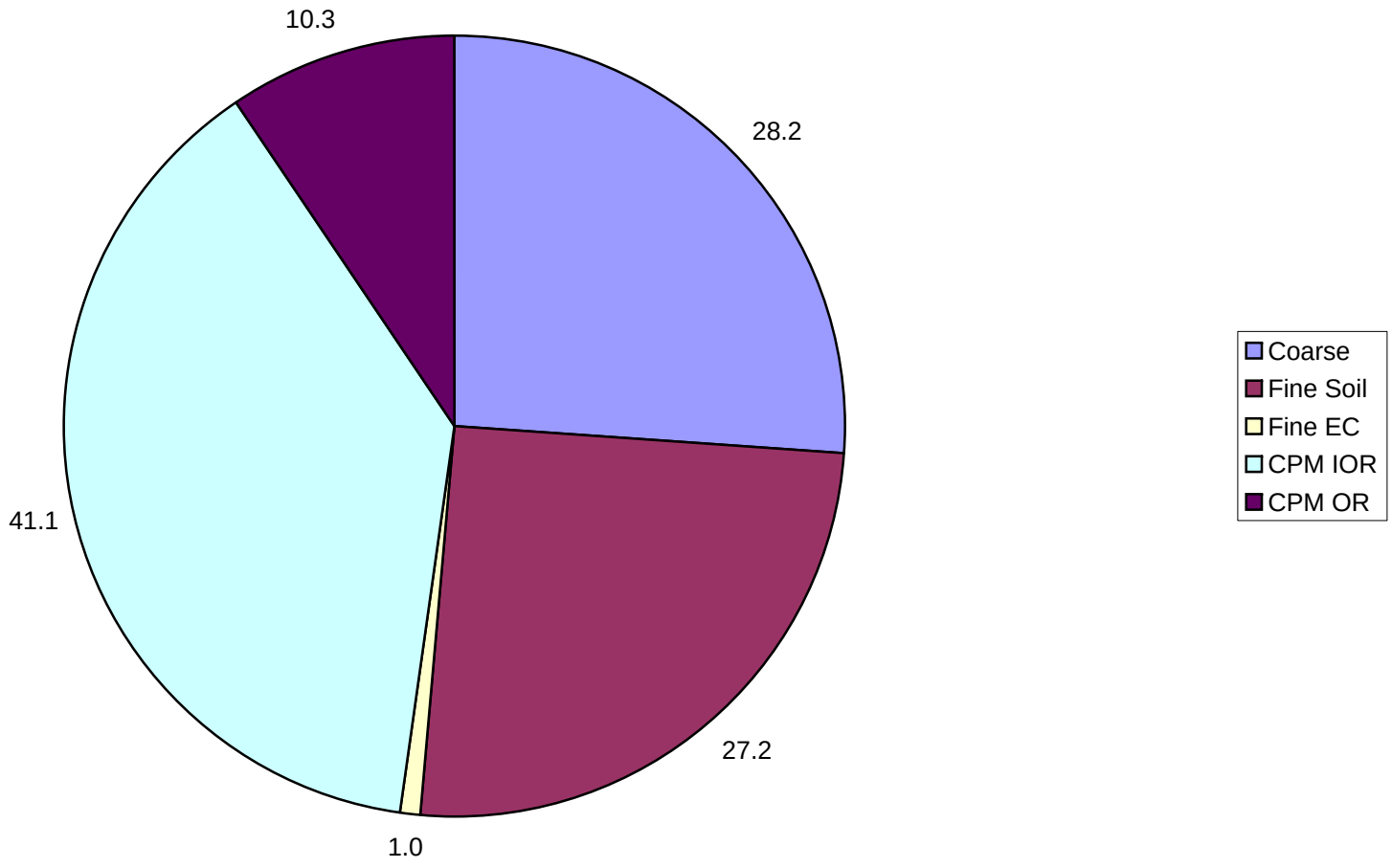
Coarse	26.2%	Coarse	28.2
Fine Soil	25.2%	Fine Soil	27.2
Fine EC	1.0%	Fine EC	1.0
CPM IOR	38.1%	CPM IOR	41.1
CPM OR	9.5%	CPM OR	10.3
	100.0%		107.9

Dry-Bottom PC Boiler w FGD + FF PM10 Speciation Profile



Unit 4

Dry-Bottom PC Boiler w FGD + FF PM10 Emissions (lb/hr)



Unit 4

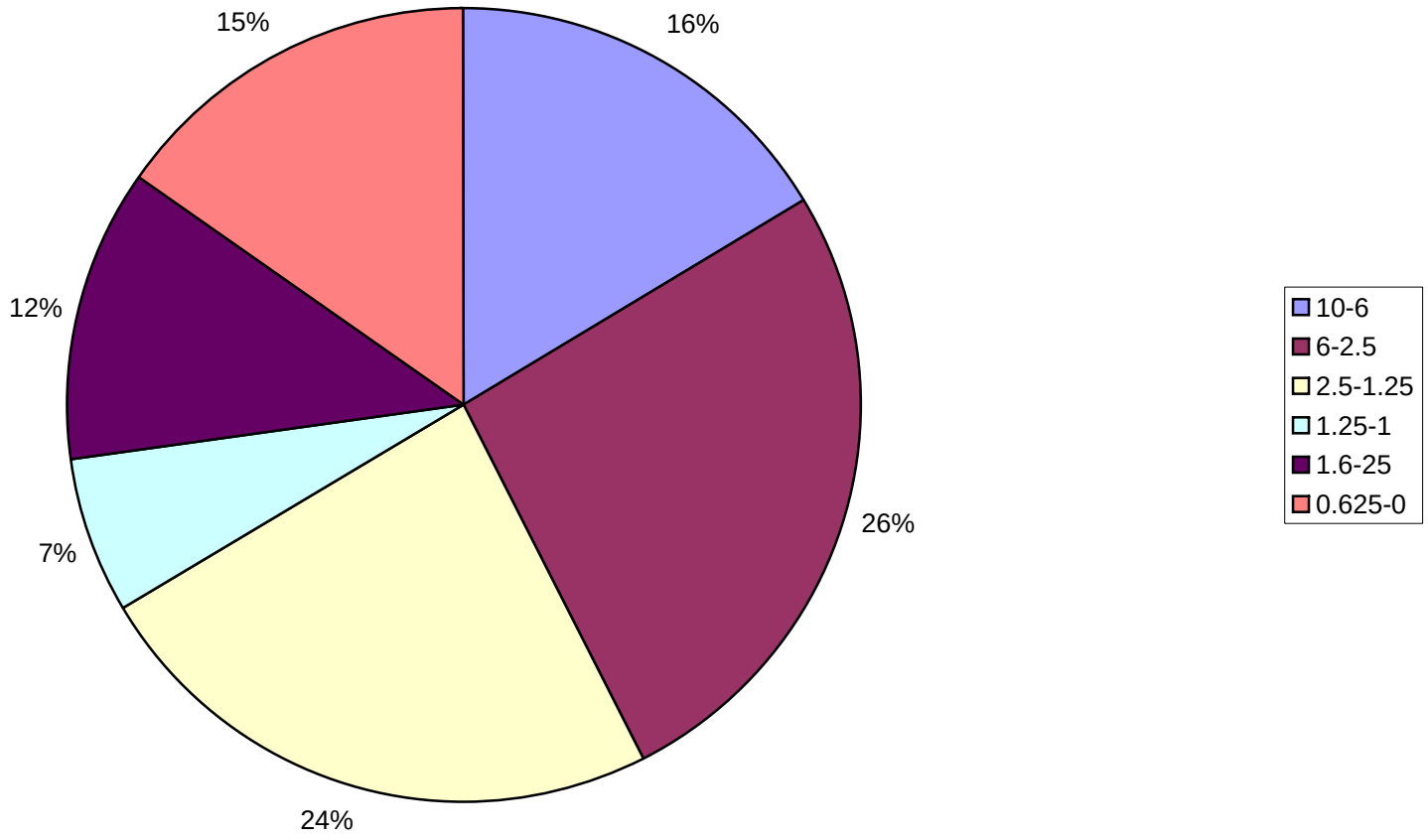
PC with FGD + Fabric Filter
from AP-42 Table 1.1-6
(User inputs **filterable** emission rate in lb/hr)

Particle Size (um)	Cumulative Mass < Stated Size **FF**	Fraction of PM10 < Stated Size (%)	Particle Size Range (um)	Emissions by size (lb/hr)
10	92%	100%	10-6	9.2
6	77%	84%	6-2.5	14.7
2.5	53%	58%	2.5-1.25	13.5
1.25	31%	34%	1.25-1.0	3.7
1	25%	27%	1.0-625	6.8
0.625	14%	15%	0.625-0	8.6

CALPUFF

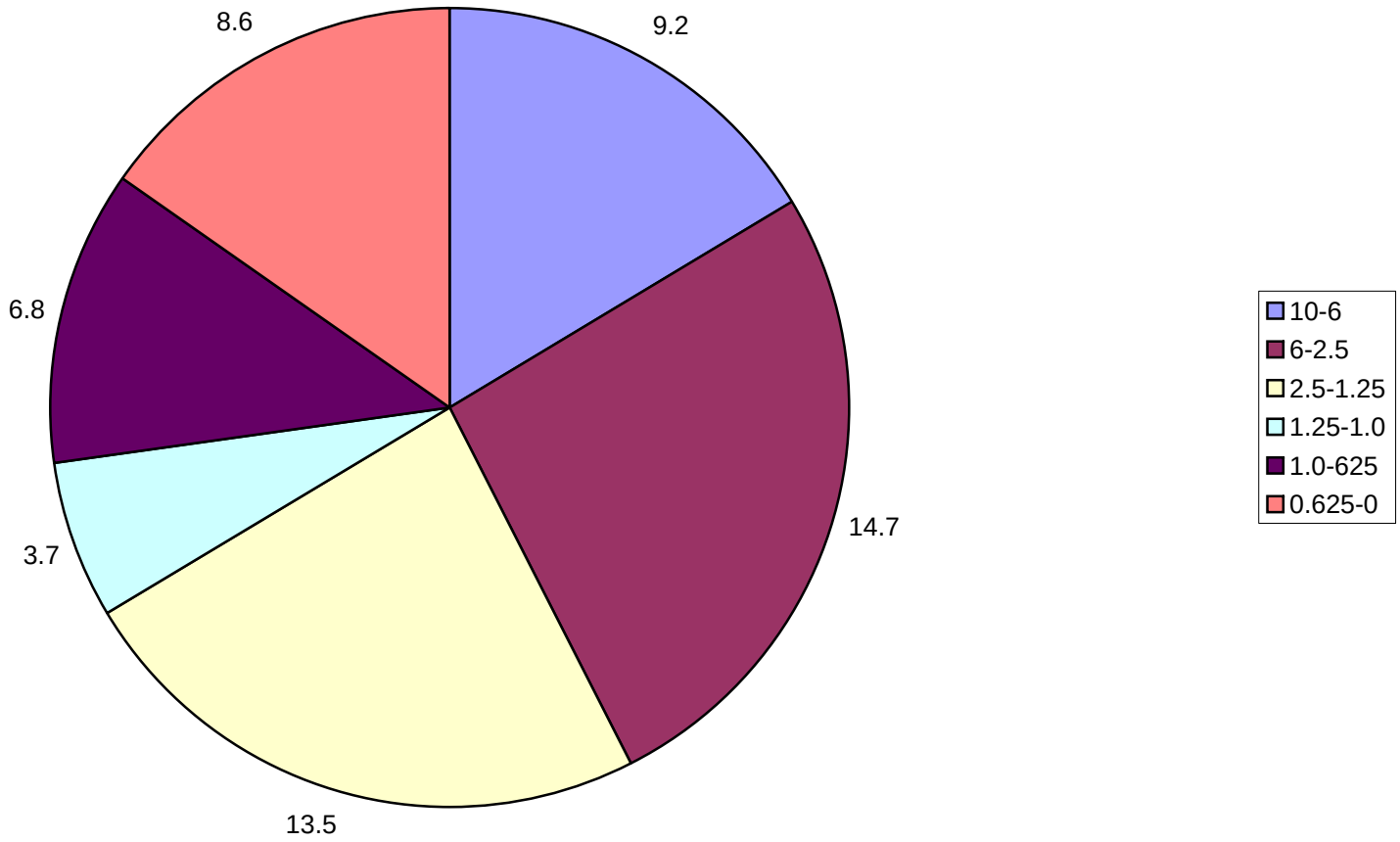
Particle Size (um)	Particle Size Range (um)	Fraction (% of Total)	**Filterable** Emissions (lb/hr)	Extinction Coef.	**Filterable** Emissions (g/sec)	
8	10-6	16%	9.2	0.6	1.16	
4.25	6-2.5	26%	14.7	0.6	1.86	42% Coarse >/= 2.5 micron
1.88	2.5-1.25	24%	13.5	1	1.70	58% Fine Soil </= 2.5 micron
1.25	1.25-1	7%	3.7	1	0.46	
0.813	1.6-25	12%	6.8	1	0.85	
0.625	0.625-0	15%	8.6	1	0.95	
				10	0.13	3.7% of Fine is EC
	Totals	100%	56.5		7.12	

Dry-Bottom PC Boiler w FGD + FF Fraction of Filterable PM10



Unit 4

Dry-Bottom PC Boiler w FGD + FF Filterable PM10 Emissions (lb/hr) in Each Size Range



Unit 4

Appendix E
Stack Outlet Conditions for Visibility Modeling

Public Service Company of New Mexico (PNM) - San Juan Generating Station (SJGS) Unit 1
Best Available Retrofit Technology (BART) Engineering Analysis
Stack Outlet Conditions for Visibility Modeling (24-hour Average Emission Rates) Rev. 7

SJGS Unit 1, Heat Input (HHV) = 3,707 MBtu/hr

Stack Outlet Conditions	Flow (acfm)	Stack Velocity (ft/s)	Temperature (°F)	Pressure (in, wg)	NO_x (lb/MBtu)	NO_x (lb/hr)	SO_2 (lb/MBtu)	SO_2 (lb/hr)	PM (lb/MBtu)	PM (lb/hr)	SO_3 (lb/MBtu)	SO_3 (lb/hr)	NH_3 Slip (ppm)	NH_3 Slip (lb/hr)
Pre-Consent Decree Operation	1,406,021	74	145.00	-0.20	0.43	1,592.0	0.24	877.8	0.050	185.4	0.013	50.0	NA	NA
Visibility Modeling Baseline Case														
Post-Consent Decree Upgrades (LNB/OFA, PJFF)	1,323,494	70	121.42	0.01	0.33	1,223.3	0.18	667.3	0.015	55.6	0.011	40.5	NA	NA
With additional PM Control Technologies														
1. WESP	1,323,494	70	121.42	0.01	0.33	1,223.3	0.18	667.3	0.010	37.1	0.007	27.0	NA	NA

Notes

1. Emission levels (lb/MBtu) shown are on a 24-hour average basis.
2. Emission in (lb/hr) is calculated based on the emission level (lb/MBtu) and design basis heat input.
3. Emission levels on a 24-hour average basis are assumed to be similar to the annual average basis.
4. Pre-consent decree operation emission level (lb/MBtu) are based on annual averages from year 2001 to 2003.
5. Post-consent decree upgrades emissions for visibility modeling purpose are based on information provided by PNM, 4/19/2007.
6. Stack velocity is calculated based upon volumetric flowrate and 6.10 m stack diameter.
7. All flow conditions are based on the coal as shown in the Design Basis document.
8. All SO_3 emissions are reported as Sulfuric Acid Mist (H_2SO_4).
9. SO_3 emissions for the pre- and post-consent decree cases are determined using the National Park Service calculation formula.
10. SO_3 emissions for the additional NO_x control technologies with catalyst accounts for an additional 1.0% SO_2 to SO_3 conversion (based on design basis economizer outlet SO_2 levels) and 0% SO_3 removal in PJFF.
11. Pre-CD flue gas flow, temperature, pressure properties were referenced from PM test reports for year 2001 to 2003.

Public Service Company of New Mexico (PNM) - San Juan Generating Station (SJGS) Unit 2
Best Available Retrofit Technology (BART) Engineering Analysis
Stack Outlet Conditions for Visibility Modeling (24-hour Average Emission Rates) Rev. 7

SJGS Unit 2, Heat Input (HHV) = 3,688 MBtu/hr

Stack Outlet Conditions	Flow (acfm)	Stack Velocity (ft/s)	Temperature (°F)	Pressure (in, wg)	NO_x (lb/MBtu)	NO_x (lb/hr)	SO_2 (lb/MBtu)	SO_2 (lb/hr)	PM (lb/MBtu)	PM (lb/hr)	SO_3 (lb/MBtu)	SO_3 (lb/hr)	NH_3 Slip (ppm)	NH_3 Slip (lb/hr)
Pre-Consent Decree Operation	1,444,718	77	148.00	-0.16	0.45	1,649.3	0.23	844.0	0.050	184.4	0.013	49.7	NA	NA
Visibility Modeling Baseline Case														
Post-Consent Decree Upgrades (LNB/OFA, PJFF)	1,316,710	70	121.42	0.01	0.33	1,217.0	0.18	663.8	0.015	55.3	0.011	40.3	NA	NA
With additional PM Control Technologies														
1. WESP	1,316,710	70	121.42	0.01	0.33	1,217.0	0.18	663.8	0.010	36.9	0.007	26.9	NA	NA

Notes

1. Emission levels (lb/MBtu) shown are on a 24-hour average basis.
2. Emission in (lb/hr) is calculated based on the emission level (lb/MBtu) and design basis heat input.
3. Emission levels on a 24-hour average basis are assumed to be similar to the annual average basis.
4. Pre-consent decree operation emission level (lb/MBtu) are based on annual averages from year 2001 to 2003.
5. Post-consent decree upgrades emissions for visibility modeling purpose are based on information provided by PNM, 4/19/2007.
6. Stack velocity is calculated based upon volumetric flowrate and 6.10 m stack diameter.
7. All flow conditions are based on the coal as shown in the Design Basis document.
8. All SO_3 emissions are reported as Sulfuric Acid Mist (H_2SO_4).
9. SO_3 emissions for the pre- and post-consent decree cases are determined using the National Park Service calculation formula.
10. SO_3 emissions for the additional NO_x control technologies with catalyst accounts for an additional 1.0% SO_2 to SO_3 conversion (based on design basis economizer outlet SO_2 levels) and 0% SO_3 removal in PJFF.
11. Pre-CD flue gas flow, temperature, pressure properties were referenced from PM test reports for year 2001 to 2003.

Public Service Company of New Mexico (PNM) - San Juan Generating Station (SJGS) Unit 3
Best Available Retrofit Technology (BART) Engineering Analysis
Stack Outlet Conditions for Visibility Modeling (24-hour Average Emission Rates) Rev. 7

SJGS Unit 3, Heat Input (HHV) = 5,758 MBtu/hr

Stack Outlet Conditions	Flow (acfm)	Stack Velocity (ft/s)	Temperature (°F)	Pressure (in, wg)	NO_x (lb/MBtu)	NO_x (lb/hr)	SO_2 (lb/MBtu)	SO_2 (lb/hr)	PM (lb/MBtu)	PM (lb/hr)	SO_3 (lb/MBtu)	SO_3 (lb/hr)	NH_3 Slip (ppm)	NH_3 Slip (lb/hr)
Pre-Consent Decree Operation	2,075,452	56	143.00	-0.22	0.42	2,405.5	0.28	1,591.1	0.050	287.9	0.013	77.7	NA	NA
Visibility Modeling Baseline Case														
Post-Consent Decree Upgrades (LNB/OFA, PJFF)	2,055,753	56	121.42	0.01	0.33	1,900.1	0.18	1,036.4	0.015	86.4	0.011	62.9	NA	NA
With additional PM Control Technologies														
1. WESP	2,055,753	56	121.42	0.01	0.33	1,900.1	0.18	1,036.4	0.010	57.6	0.007	41.9	NA	NA

Notes

1. Emission levels (lb/MBtu) shown are on a 24-hour average basis.
2. Emission in (lb/hr) is calculated based on the emission level (lb/MBtu) and design basis heat input.
3. Emission levels on a 24-hour average basis are assumed to be similar to the annual average basis.
4. Pre-consent decree operation emission level (lb/MBtu) are based on annual averages from year 2001 to 2003.
5. Post-consent decree upgrades emissions for visibility modeling purpose are based on information provided by PNM, 4/19/2007.
6. Stack velocity is calculated based upon volumetric flowrate and 6.10 m stack diameter.
7. All flow conditions are based on the coal as shown in the Design Basis document.
8. All SO_3 emissions are reported as Sulfuric Acid Mist (H_2SO_4).
9. SO_3 emissions for the pre- and post-consent decree cases are determined using the National Park Service calculation formula.
10. SO_3 emissions for the additional NO_x control technologies with catalyst accounts for an additional 1.0% SO_2 to SO_3 conversion (based on design basis economizer outlet SO_2 levels) and 0% SO_3 removal in PJFF.
11. Pre-CD flue gas flow, temperature, pressure properties were referenced from PM test reports for year 2001 to 2003.

Public Service Company of New Mexico (PNM) - San Juan Generating Station (SJGS) Unit 4
Best Available Retrofit Technology (BART) Engineering Analysis
Stack Outlet Conditions for Visibility Modeling (24-hour Average Emission Rates) Rev. 7

SJGS Unit 4, Heat Input (HHV) = 5,649 MBtu/hr

Stack Outlet Conditions	Flow (acfm)	Stack Velocity (ft/s)	Temperature (°F)	Pressure (in, wg)	NO_x (lb/MBtu)	NO_x (lb/hr)	SO_2 (lb/MBtu)	SO_2 (lb/hr)	PM (lb/MBtu)	PM (lb/hr)	SO_3 (lb/MBtu)	SO_3 (lb/hr)	NH_3 Slip (ppm)	NH_3 Slip (lb/hr)
Pre-Consent Decree Operation	2,093,240	57	137.00	-0.21	0.42	2,399.6	0.29	1,662.4	0.050	282.5	0.013	76.2	NA	NA
Visibility Modeling Baseline Case														
Post-Consent Decree Upgrades (LNB/OFA, PJFF)	2,016,837	55	121.42	0.01	0.33	1,864.2	0.18	1,016.8	0.015	84.7	0.011	61.7	NA	NA
With additional PM Control Technologies														
1. WESP	2,016,837	55	121.42	0.01	0.33	1,864.2	0.18	1,016.8	0.010	56.5	0.007	41.1	NA	NA

Notes

1. Emission levels (lb/MBtu) shown are on a 24-hour average basis.
2. Emission in (lb/hr) is calculated based on the emission level (lb/MBtu) and design basis heat input.
3. Emission levels on a 24-hour average basis are assumed to be similar to the annual average basis.
4. Pre-consent decree operation emission level (lb/MBtu) are based on annual averages from year 2001 to 2003.
5. Post-consent decree upgrades emissions for visibility modeling purpose are based on information provided by PNM, 4/19/2007.
6. Stack velocity is calculated based upon volumetric flowrate and 6.10 m stack diameter.
7. All flow conditions are based on the coal as shown in the Design Basis document.
8. All SO_3 emissions are reported as Sulfuric Acid Mist (H_2SO_4).
9. SO_3 emissions for the pre- and post-consent decree cases are determined using the National Park Service calculation formula.
10. SO_3 emissions for the additional NO_x control technologies with catalyst accounts for an additional 1.0% SO_2 to SO_3 conversion (based on design basis economizer outlet SO_2 levels) and 0% SO_3 removal in PJFF.
11. Pre-CD flue gas flow, temperature, pressure properties were referenced from PM test reports for year 2001 to 2003.

Appendix F
Visibility Modeling Result Tables

Appendix F
Visibility Modeling Result Tables

Table 1
Pre-Consent Decree Modeling Results - Facility
Variable Ammonia Background and Nitrate Repartitioning
98th Percentile Impact for Each Year (dv)

Class I Area	2001	2002	2003	Average	Maximum
Arches	1.92	1.76	1.82	1.83	1.92
Bandelier	1.31	1.86	1.51	1.56	1.86
Black Canyon	1.14	1.34	1.40	1.29	1.40
Canyonlands	2.59	2.04	2.00	2.21	2.59
Capitol Reef	1.97	1.16	1.34	1.49	1.97
Grand Canyon	1.14	0.93	0.81	0.96	1.14
Great Sand Dunes	0.85	1.00	0.82	0.89	1.00
La Garita	1.15	1.30	1.14	1.20	1.30
Maroon Bells	0.67	0.78	0.63	0.70	0.78
Mesa Verde	4.20	4.09	4.85	4.38	4.85
Pecos	1.40	1.33	1.26	1.33	1.40
Petrified Forest	1.13	0.79	0.74	0.88	1.13
San Pedro	1.78	2.37	1.96	2.04	2.37
West Elk	0.99	1.15	0.94	1.03	1.15
Weminuche	1.51	1.85	1.69	1.69	1.85
Wheeler Peak	1.00	0.95	1.05	1.00	1.05
Overall				**1.53**	**4.85**

Table 2
Baseline (Consent Decree) Visibility Modeling Results - Facility
Variable Ammonia Background and Nitrate Repartitioning
98th Percentile for Each Year (dv)

Class I Area	2001	2002	2003	Average	Maximum
Arches	1.69	1.65	1.49	1.61	1.69
Bandelier	1.04	1.56	1.20	1.27	1.56
Black Canyon	0.95	1.15	1.07	1.05	1.15
Canyonlands	2.26	1.73	1.68	1.89	2.26
Capitol Reef	1.81	0.82	1.05	1.23	1.81
Grand Canyon	0.97	0.76	0.57	0.77	0.97
Great Sand Dunes	0.63	0.71	0.64	0.66	0.71
La Garita	0.86	0.94	0.90	0.90	0.94
Maroon Bells	0.54	0.56	0.51	0.54	0.56
Mesa Verde	3.38	3.53	3.80	3.57	3.80
Pecos	1.05	1.09	1.00	1.05	1.09
Petrified Forest	0.82	0.60	0.53	0.65	0.82
San Pedro	1.40	2.01	1.56	1.66	2.01
West Elk	0.80	0.91	0.83	0.85	0.91
Weminuche	1.15	1.48	1.34	1.33	1.48
Wheeler Peak	0.75	0.86	0.89	0.83	0.89
Overall				**1.24**	**3.80**

Table 3
WESP Visibility Modeling Results - Facility
Variable Ammonia Background and Nitrate Repartitioning
98th Percentile Impact for Each Year (dv)

Class I Area	2001	2002	2003	Average	Maximum
Arches	1.63	1.61	1.45	1.56	1.63
Bandelier	1.01	1.50	1.12	1.21	1.50
Black Canyon	0.92	1.12	1.04	1.03	1.12
Canyonlands	2.17	1.69	1.60	1.82	2.17
Capitol Reef	1.71	0.79	1.02	1.17	1.71
Grand Canyon	0.95	0.74	0.54	0.74	0.95
Great Sand Dunes	0.61	0.69	0.62	0.64	0.69
La Garita	0.83	0.90	0.85	0.86	0.90
Maroon Bells	0.53	0.54	0.50	0.52	0.54
Mesa Verde	2.71	3.18	2.92	2.94	3.18
Pecos	1.01	1.07	0.97	1.02	1.07
Petrified Forest	0.79	0.58	0.51	0.63	0.79
San Pedro	1.30	1.87	1.49	1.55	1.87
West Elk	0.78	0.88	0.79	0.82	0.88
Weminuche	1.10	1.39	1.30	1.26	1.39
Wheeler Peak	0.73	0.83	0.84	0.80	0.84
Overall				**1.16**	**3.18**

Table 4
SJGS Facility Visibility Improvement Cost Effectiveness for Each Class 1 Area (Based on Maximum Visibility Modeling Results)
Variable Ammonia Background and Nitrate Repartitioning

	Maximum Visibility Modeling Results (dv) (98th Percentile, see Note 1)			Visibility Improvements (dv) Calculated from Maximum Visibility Results (for each Class 1 Area)			Improvement ($/dv) (see Note 4)		
Class 1 Area	Pre-Consent Decree	Consent Decree	WESP	Pre-Consent Decree to Consent Decree	Consent Decree to WESP	Pre-Consent Decree to WESP	Pre-Consent Decree to Consent Decree	Consent Decree to WESP	Pre-Consent Decree to WESP
Arches	1.92	1.69	1.63	0.23	0.06	0.29	201,624,454	871,698,413	346,195,205
Bandelier	1.86	1.56	1.50	0.31	0.06	0.36	150,397,394	998,490,909	279,251,381
Black Canyon	1.40	1.15	1.12	0.26	0.03	0.28	181,066,667	1,961,321,429	357,204,947
Canyonlands	2.59	2.26	2.17	0.33	0.10	0.42	142,067,692	572,052,083	240,116,390
Capitol Reef	1.97	1.81	1.71	0.16	0.10	0.26	286,782,609	554,717,172	388,803,846
Grand Canyon	1.14	0.97	0.95	0.17	0.02	0.19	273,207,101	2,288,208,333	523,777,202
Great Sand Dunes	1.00	0.71	0.69	0.29	0.02	0.31	160,878,049	2,745,850,000	329,280,130
La Garita	1.30	0.94	0.90	0.36	0.04	0.40	128,255,556	1,277,139,535	250,841,191
Maroon Bells	0.78	0.56	0.54	0.22	0.02	0.24	211,798,165	2,496,227,273	421,204,167
Mesa Verde	4.85	3.80	3.18	1.06	0.62	1.68	43,682,119	88,862,460	60,351,642
Pecos	1.40	1.09	1.07	0.31	0.03	0.33	150,888,889	2,112,192,308	304,484,940
Petrified Forest	1.13	0.82	0.79	0.31	0.02	0.34	148,463,023	2,288,208,333	301,758,209
San Pedro	2.37	2.01	1.87	0.36	0.14	0.50	128,255,556	386,739,437	201,372,510
West Elk	1.15	0.91	0.88	0.24	0.03	0.27	194,000,000	1,615,205,882	371,650,735
Weminuche	1.85	1.48	1.39	0.37	0.09	0.46	124,452,830	631,229,885	220,718,341
Wheeler Peak	1.05	0.89	0.84	0.16	0.05	0.21	290,389,937	1,056,096,154	479,094,787

Notes:

1. Maximum of 2001, 2002 and 2003 visibility data.
2. NI = No Improvement
3. NA = Not Applicable
4. Total Annualized Costs used in calculating Improvement are as follows (in $1,000):

Pre-Consent Decree to Consent Decree	$46,172
Consent Decree to WESP	$54,917
Pre-Consent Decree to WESP	$101,089

Table 5
Pre-Consent Decree Modeling Results - Unit 1
Variable Ammonia Background and Nitrate Repartitioning
98th Percentile Impact for Each Year (dv)

Class I Area	2001	2002	2003	Average	Maximum
Arches	0.82	0.68	0.60	0.70	0.82
Bandelier	0.31	0.49	0.54	0.45	0.54
Black Canyon	0.35	0.37	0.38	0.37	0.38
Canyonlands	1.10	0.84	0.71	0.88	1.10
Capitol Reef	0.76	0.23	0.32	0.44	0.76
Grand Canyon	0.31	0.21	0.16	0.23	0.31
Great Sand Dunes	0.18	0.20	0.17	0.18	0.20
La Garita	0.26	0.28	0.29	0.28	0.29
Maroon Bells	0.18	0.16	0.16	0.17	0.18
Mesa Verde	1.51	1.79	1.67	1.66	1.79
Pecos	0.29	0.31	0.35	0.32	0.35
Petrified Forest	0.25	0.16	0.14	0.18	0.25
San Pedro	0.61	0.73	0.63	0.66	0.73
West Elk	0.27	0.28	0.25	0.27	0.28
Weminuche	0.37	0.54	0.45	0.45	0.54
Wheeler Peak	0.24	0.25	0.26	0.25	0.26
Overall				**0.47**	**1.79**

Table 6
Baseline (Consent Decree) Visibility Modeling Results - Unit 1
Variable Ammonia Background and Nitrate Repartitioning
98th Percentile for Each Year (dv)

Class I Area	2001	2002	2003	Average	Maximum
Arches	0.69	0.54	0.52	0.58	0.69
Bandelier	0.24	0.40	0.37	0.34	0.40
Black Canyon	0.29	0.29	0.28	0.29	0.29
Canyonlands	1.00	0.65	0.57	0.74	1.00
Capitol Reef	0.57	0.18	0.23	0.33	0.57
Grand Canyon	0.27	0.16	0.12	0.18	0.27
Great Sand Dunes	0.14	0.14	0.14	0.14	0.14
La Garita	0.19	0.21	0.21	0.20	0.21
Maroon Bells	0.14	0.12	0.11	0.12	0.14
Mesa Verde	1.35	1.40	1.27	1.34	1.40
Pecos	0.23	0.24	0.27	0.25	0.27
Petrified Forest	0.19	0.13	0.11	0.14	0.19
San Pedro	0.44	0.59	0.50	0.51	0.59
West Elk	0.22	0.20	0.20	0.21	0.22
Weminuche	0.31	0.43	0.35	0.36	0.43
Wheeler Peak	0.19	0.17	0.20	0.19	0.20
Overall				**0.37**	**1.40**

Table 7
WESP Visibility Modeling Results - Unit 1
Variable Ammonia Background and Nitrate Repartitioning
98th Percentile Impact for Each Year (dv)

Class I Area	2001	2002	2003	Average	Maximum
Arches	0.66	0.52	0.49	0.56	0.66
Bandelier	0.23	0.38	0.35	0.32	0.38
Black Canyon	0.28	0.28	0.27	0.27	0.28
Canyonlands	0.97	0.63	0.55	0.71	0.97
Capitol Reef	0.55	0.17	0.22	0.32	0.55
Grand Canyon	0.26	0.16	0.12	0.18	0.26
Great Sand Dunes	0.13	0.14	0.14	0.13	0.14
La Garita	0.19	0.17	0.20	0.19	0.20
Maroon Bells	0.13	0.11	0.10	0.11	0.13
Mesa Verde	1.33	1.31	1.16	1.27	1.33
Pecos	0.22	0.24	0.26	0.24	0.26
Petrified Forest	0.18	0.12	0.11	0.14	0.18
San Pedro	0.42	0.56	0.47	0.48	0.56
West Elk	0.21	0.19	0.20	0.20	0.21
Weminuche	0.28	0.41	0.31	0.33	0.41
Wheeler Peak	0.18	0.16	0.19	0.18	0.19
Overall				**0.35**	**1.33**

Table 8
Unit 1 Visibility Improvement Cost Effectiveness for Each Class 1 Area (Based on Maximum Visibility Modeling Results)
Variable Ammonia Background and Nitrate Repartitioning

	Maximum Visibility Modeling Results (dv) (98th Percentile, see Note 1)			Visibility Improvements (dv) Calculated from Maximum Visibility Results (for each Class 1 Area)			Improvement ($/dv) (see Note 4)		
Class 1 Area	Pre-Consent Decree	Consent Decree	WESP	Pre-Consent Decree to Consent Decree	Consent Decree to WESP	Pre-Consent Decree to WESP	Pre-Consent Decree to Consent Decree	Consent Decree to WESP	Pre-Consent Decree to WESP
Arches	0.82	0.69	0.66	0.13	0.03	0.16	80,207,692	408,793,103	140,138,365
Bandelier	0.54	0.40	0.38	0.14	0.02	0.16	74,478,571	697,352,941	141,923,567
Black Canyon	0.38	0.29	0.28	0.09	0.01	0.10	115,855,556	846,785,714	214,250,000
Canyonlands	1.10	1.00	0.97	0.10	0.03	0.13	104,270,000	359,242,424	167,533,835
Capitol Reef	0.76	0.57	0.55	0.19	0.02	0.21	54,878,947	623,947,368	106,612,440
Grand Canyon	0.31	0.27	0.26	0.04	0.01	0.05	260,675,000	1,077,727,273	436,901,961
Great Sand Dunes	0.20	0.14	0.14	0.06	0.00	0.06	173,783,333	2,963,750,000	348,156,250
La Garita	0.29	0.21	0.20	0.08	0.01	0.09	130,337,500	1,317,222,222	250,359,551
Maroon Bells	0.18	0.14	0.13	0.04	0.01	0.05	260,675,000	1,693,571,429	474,085,106
Mesa Verde	1.79	1.40	1.33	0.39	0.07	0.46	26,735,897	174,338,235	48,650,655
Pecos	0.35	0.27	0.26	0.08	0.01	0.09	130,337,500	1,481,875,000	253,204,545
Petrified Forest	0.25	0.19	0.18	0.06	0.01	0.07	173,783,333	1,317,222,222	322,927,536
San Pedro	0.73	0.59	0.56	0.14	0.03	0.17	74,478,571	348,676,471	128,057,471
West Elk	0.28	0.22	0.21	0.06	0.01	0.07	173,783,333	1,317,222,222	322,927,536
Weminuche	0.54	0.43	0.41	0.11	0.02	0.13	94,790,909	623,947,368	172,728,682
Wheeler Peak	0.26	0.20	0.19	0.06	0.01	0.07	173,783,333	1,481,875,000	327,676,471

Notes:

1. Maximum of 2001, 2002 and 2003 visibility data.
2. NI = No Improvement
3. NA = Not Applicable
4. Total Annualized Costs used in calculating Improvement are as follows (in $1,000):

Pre-Consent Decree to Consent Decree	$10,427
Consent Decree to WESP	$11,855
Pre-Consent Decree to WESP	$22,282

Table 9
Pre-Consent Decree Modeling Results - Unit 2
Variable Ammonia Background and Nitrate Repartitioning
98th Percentile Impact for Each Year (dv)

Class I Area	2001	2002	2003	Average	Maximum
Arches	0.83	0.64	0.58	0.68	0.83
Bandelier	0.32	0.50	0.54	0.45	0.54
Black Canyon	0.36	0.37	0.39	0.37	0.39
Canyonlands	1.07	0.83	0.72	0.87	1.07
Capitol Reef	0.78	0.23	0.31	0.44	0.78
Grand Canyon	0.31	0.20	0.16	0.22	0.31
Great Sand Dunes	0.19	0.21	0.17	0.19	0.21
La Garita	0.26	0.29	0.29	0.28	0.29
Maroon Bells	0.18	0.16	0.16	0.17	0.18
Mesa Verde	1.49	1.82	1.66	1.66	1.82
Pecos	0.29	0.31	0.36	0.32	0.36
Petrified Forest	0.25	0.16	0.14	0.18	0.25
San Pedro	0.63	0.73	0.64	0.67	0.73
West Elk	0.27	0.29	0.26	0.27	0.29
Weminuche	0.38	0.56	0.44	0.46	0.56
Wheeler Peak	0.24	0.26	0.26	0.25	0.26
Overall				**0.47**	**1.82**

Table 10
Baseline (Consent Decree) Visibility Modeling Results - Unit 2
Variable Ammonia Background and Nitrate Repartitioning
98th Percentile for Each Year (dv)

Class I Area	2001	2002	2003	Average	Maximum
Arches	0.69	0.54	0.52	0.58	0.69
Bandelier	0.23	0.40	0.37	0.33	0.40
Black Canyon	0.28	0.29	0.28	0.28	0.29
Canyonlands	0.99	0.65	0.57	0.74	0.99
Capitol Reef	0.57	0.18	0.23	0.33	0.57
Grand Canyon	0.27	0.16	0.12	0.18	0.27
Great Sand Dunes	0.14	0.14	0.14	0.14	0.14
La Garita	0.19	0.21	0.21	0.20	0.21
Maroon Bells	0.14	0.11	0.11	0.12	0.14
Mesa Verde	1.35	1.40	1.26	1.34	1.40
Pecos	0.23	0.24	0.27	0.25	0.27
Petrified Forest	0.19	0.13	0.11	0.14	0.19
San Pedro	0.44	0.58	0.50	0.51	0.58
West Elk	0.22	0.20	0.20	0.21	0.22
Weminuche	0.31	0.42	0.35	0.36	0.42
Wheeler Peak	0.18	0.17	0.20	0.18	0.20
Overall				**0.37**	**1.40**

Table 11
WESP Visibility Modeling Results - Unit 2
Variable Ammonia Background and Nitrate Repartitioning
98th Percentile Impact for Each Year (dv)

Class I Area	2001	2002	2003	Average	Maximum
Arches	0.66	0.51	0.49	0.55	0.66
Bandelier	0.22	0.38	0.35	0.32	0.38
Black Canyon	0.27	0.27	0.27	0.27	0.27
Canyonlands	0.96	0.62	0.55	0.71	0.96
Capitol Reef	0.55	0.17	0.22	0.31	0.55
Grand Canyon	0.26	0.16	0.12	0.18	0.26
Great Sand Dunes	0.13	0.14	0.14	0.13	0.14
La Garita	0.19	0.20	0.20	0.20	0.20
Maroon Bells	0.13	0.11	0.10	0.11	0.13
Mesa Verde	1.33	1.31	1.15	1.26	1.33
Pecos	0.21	0.24	0.26	0.24	0.26
Petrified Forest	0.18	0.12	0.10	0.14	0.18
San Pedro	0.42	0.55	0.47	0.48	0.55
West Elk	0.21	0.19	0.20	0.20	0.21
Weminuche	0.27	0.41	0.31	0.33	0.41
Wheeler Peak	0.18	0.16	0.19	0.18	0.19
Overall				**0.35**	**1.33**

Table 12
Unit 2 Visibility Improvement Cost Effectiveness for Each Class 1 Area (Based on Maximum Visibility Modeling Results)
Variable Ammonia Background and Nitrate Repartitioning

	Maximum Visibility Modeling Results (dv) (98th Percentile, see Note 1)			Visibility Improvements (dv) Calculated from Maximum Visibility Results (for each Class 1 Area)			Improvement ($/dv) (see Note 4)		
Class 1 Area	Pre-Consent Decree	Consent Decree	WESP	Pre-Consent Decree to Consent Decree	Consent Decree to WESP	Pre-Consent Decree to WESP	Pre-Consent Decree to Consent Decree	Consent Decree to WESP	Pre-Consent Decree to WESP
Arches	0.83	0.69	0.66	0.14	0.03	0.17	76,885,714	371,718,750	131,738,372
Bandelier	0.54	0.40	0.38	0.14	0.02	0.16	76,885,714	626,052,632	142,509,434
Black Canyon	0.39	0.29	0.27	0.10	0.02	0.12	107,640,000	743,437,500	195,336,207
Canyonlands	1.07	0.99	0.96	0.08	0.03	0.11	134,550,000	440,555,556	211,766,355
Capitol Reef	0.78	0.57	0.55	0.21	0.02	0.23	51,257,143	540,681,818	97,668,103
Grand Canyon	0.31	0.27	0.26	0.04	0.01	0.05	269,100,000	991,250,000	435,750,000
Great Sand Dunes	0.21	0.14	0.14	0.07	0.00	0.07	153,771,429	2,973,750,000	306,202,703
La Garita	0.29	0.21	0.20	0.08	0.01	0.09	134,550,000	1,982,500,000	263,476,744
Maroon Bells	0.18	0.14	0.13	0.04	0.01	0.05	269,100,000	1,486,875,000	472,062,500
Mesa Verde	1.82	1.40	1.33	0.42	0.07	0.49	25,628,571	172,391,304	46,337,423
Pecos	0.36	0.27	0.26	0.09	0.01	0.10	119,600,000	1,321,666,667	228,878,788
Petrified Forest	0.25	0.19	0.18	0.06	0.01	0.07	179,400,000	1,189,500,000	323,700,000
San Pedro	0.73	0.58	0.55	0.15	0.03	0.18	71,760,000	440,555,556	128,016,949
West Elk	0.29	0.22	0.21	0.07	0.01	0.08	153,771,429	1,189,500,000	283,237,500
Weminuche	0.56	0.42	0.41	0.14	0.01	0.15	76,885,714	1,081,363,636	150,059,603
Wheeler Peak	0.26	0.20	0.19	0.06	0.01	0.07	179,400,000	1,321,666,667	328,391,304

Notes:

1. Maximum of 2001, 2002 and 2003 visibility data.
2. NI = No Improvement
3. NA = Not Applicable
4. Total Annualized Costs used in calculating Improvement are as follows (in $1,000):

Pre-Consent Decree to Consent Decree	$10,764
Consent Decree to WESP	$11,895
Pre-Consent Decree to WESP	$22,659

Table 13
Pre-Consent Decree Modeling Results - Unit 3
Variable Ammonia Background and Nitrate Repartitioning
98th Percentile Impact for Each Year (dv)

Class I Area	2001	2002	2003	Average	Maximum
Arches	1.04	0.81	0.72	0.86	1.04
Bandelier	0.53	0.81	0.71	0.68	0.81
Black Canyon	0.58	0.53	0.59	0.57	0.59
Canyonlands	1.44	1.04	0.96	1.15	1.44
Capitol Reef	1.10	0.38	0.52	0.67	1.10
Grand Canyon	0.48	0.33	0.26	0.36	0.48
Great Sand Dunes	0.28	0.33	0.27	0.29	0.33
La Garita	0.40	0.44	0.43	0.42	0.44
Maroon Bells	0.24	0.25	0.25	0.25	0.25
Mesa Verde	1.92	2.18	2.14	2.08	2.18
Pecos	0.48	0.52	0.58	0.53	0.58
Petrified Forest	0.43	0.25	0.24	0.31	0.43
San Pedro	0.88	1.03	0.88	0.93	1.03
West Elk	0.38	0.42	0.38	0.39	0.42
Weminuche	0.59	0.82	0.65	0.69	0.82
Wheeler Peak	0.37	0.39	0.37	0.38	0.39
Overall				**0.66**	**2.18**

Table 14
Baseline (Consent Decree) Visibility Modeling Results - Unit 3
Variable Ammonia Background and Nitrate Repartitioning
98th Percentile for Each Year (dv)

Class I Area	2001	2002	2003	Average	Maximum
Arches	0.89	0.65	0.66	0.73	0.89
Bandelier	0.39	0.57	0.61	0.52	0.61
Black Canyon	0.44	0.41	0.46	0.44	0.46
Canyonlands	1.15	0.85	0.79	0.93	1.15
Capitol Reef	0.86	0.26	0.36	0.49	0.86
Grand Canyon	0.35	0.24	0.19	0.26	0.35
Great Sand Dunes	0.21	0.24	0.21	0.22	0.24
La Garita	0.29	0.33	0.33	0.32	0.33
Maroon Bells	0.20	0.18	0.18	0.19	0.20
Mesa Verde	1.56	1.90	1.74	1.73	1.90
Pecos	0.35	0.36	0.42	0.38	0.42
Petrified Forest	0.29	0.18	0.17	0.21	0.29
San Pedro	0.70	0.81	0.72	0.74	0.81
West Elk	0.30	0.33	0.35	0.33	0.35
Weminuche	0.44	0.64	0.50	0.53	0.64
Wheeler Peak	0.28	0.31	0.28	0.29	0.31
Overall				**0.52**	**1.90**

Table 15
WESP Visibility Modeling Results - Unit 3
Variable Ammonia Background and Nitrate Repartitioning
98th Percentile Impact for Each Year (dv)

Class I Area	2001	2002	2003	Average	Maximum
Arches	0.88	0.62	0.62	0.70	0.88
Bandelier	0.37	0.52	0.59	0.49	0.59
Black Canyon	0.41	0.40	0.45	0.42	0.45
Canyonlands	1.12	0.82	0.74	0.89	1.12
Capitol Reef	0.84	0.24	0.33	0.47	0.84
Grand Canyon	0.34	0.23	0.18	0.25	0.34
Great Sand Dunes	0.20	0.23	0.20	0.21	0.23
La Garita	0.28	0.31	0.31	0.30	0.31
Maroon Bells	0.19	0.18	0.17	0.18	0.19
Mesa Verde	1.39	1.70	1.57	1.55	1.70
Pecos	0.33	0.34	0.40	0.36	0.40
Petrified Forest	0.28	0.18	0.16	0.21	0.28
San Pedro	0.67	0.77	0.68	0.71	0.77
West Elk	0.29	0.31	0.33	0.31	0.33
Weminuche	0.42	0.59	0.47	0.49	0.59
Wheeler Peak	0.27	0.30	0.27	0.28	0.30
Overall				**0.49**	**1.70**

Table 16
Unit 3 Visibility Improvement Cost Effectiveness for Each Class 1 Area (Based on Maximum Visibility Modeling Results)
Variable Ammonia Background and Nitrate Repartitioning

	Maximum Visibility Modeling Results (dv) (98th Percentile, see Note 1)			Visibility Improvements (dv) Calculated from Maximum Visibility Results (for each Class 1 Area)			Improvement ($/dv) (see Note 4)		
Class 1 Area	Pre-Consent Decree	Consent Decree	WESP	Pre-Consent Decree to Consent Decree	Consent Decree to WESP	Pre-Consent Decree to WESP	Pre-Consent Decree to Consent Decree	Consent Decree to WESP	Pre-Consent Decree to WESP
Arches	1.04	0.89	0.88	0.15	0.02	0.17	83,026,667	1,037,200,000	169,769,697
Bandelier	0.81	0.61	0.59	0.20	0.03	0.23	62,270,000	622,320,000	124,497,778
Black Canyon	0.59	0.46	0.45	0.13	0.02	0.15	95,800,000	1,037,200,000	193,186,207
Canyonlands	1.44	1.15	1.12	0.29	0.03	0.32	42,944,828	518,600,000	87,537,500
Capitol Reef	1.10	0.86	0.84	0.24	0.02	0.26	51,891,667	777,900,000	107,738,462
Grand Canyon	0.48	0.35	0.34	0.13	0.01	0.14	95,800,000	1,196,769,231	195,888,112
Great Sand Dunes	0.33	0.24	0.23	0.09	0.01	0.10	138,377,778	1,414,363,636	277,346,535
La Garita	0.44	0.33	0.31	0.11	0.02	0.13	113,218,182	818,842,105	217,147,287
Maroon Bells	0.25	0.20	0.19	0.05	0.01	0.06	249,080,000	1,555,800,000	466,866,667
Mesa Verde	2.18	1.90	1.70	0.28	0.21	0.49	44,478,571	75,892,683	57,756,701
Pecos	0.58	0.42	0.40	0.16	0.02	0.18	77,837,500	676,434,783	153,071,038
Petrified Forest	0.43	0.29	0.28	0.14	0.01	0.15	88,957,143	2,222,571,429	190,557,823
San Pedro	1.03	0.81	0.77	0.22	0.04	0.26	56,609,091	398,923,077	108,154,440
West Elk	0.42	0.35	0.33	0.07	0.02	0.09	177,914,286	972,375,000	325,720,930
Weminuche	0.82	0.64	0.59	0.18	0.05	0.23	69,188,889	324,125,000	122,859,649
Wheeler Peak	0.39	0.31	0.30	0.08	0.01	0.09	155,675,000	1,944,750,000	318,318,182

Notes:

1. Maximum of 2001, 2002 and 2003 visibility data.
2. NI = No Improvement
3. NA = Not Applicable
4. Total Annualized Costs used in calculating Improvement are as follows (in $1,000):

Pre-Consent Decree to Consent Decree	$12,454
Consent Decree to WESP	$15,558
Pre-Consent Decree to WESP	$28,012

Table 17
Pre-Consent Decree Modeling Results - Unit 4
Variable Ammonia Background and Nitrate Repartitioning
98th Percentile Impact for Each Year (dv)

Class I Area	2001	2002	2003	Average	Maximum
Arches	1.05	0.84	0.74	0.88	1.05
Bandelier	0.54	0.81	0.71	0.69	0.81
Black Canyon	0.58	0.54	0.59	0.57	0.59
Canyonlands	1.47	1.06	0.97	1.17	1.47
Capitol Reef	1.11	0.38	0.53	0.67	1.11
Grand Canyon	0.48	0.34	0.27	0.36	0.48
Great Sand Dunes	0.29	0.34	0.27	0.30	0.34
La Garita	0.40	0.45	0.43	0.43	0.45
Maroon Bells	0.24	0.25	0.24	0.24	0.25
Mesa Verde	1.94	2.18	2.15	2.09	2.18
Pecos	0.48	0.52	0.59	0.53	0.59
Petrified Forest	0.44	0.27	0.25	0.32	0.44
San Pedro	0.89	1.04	0.88	0.94	1.04
West Elk	0.38	0.43	0.39	0.40	0.43
Weminuche	0.59	0.81	0.65	0.68	0.81
Wheeler Peak	0.37	0.41	0.38	0.39	0.41
Overall				**0.67**	**2.18**

Table 18
Baseline (Consent Decree) Visibility Modeling Results - Unit 4
Variable Ammonia Background and Nitrate Repartitioning
98th Percentile for Each Year (dv)

Class I Area	2001	2002	2003	Average	Maximum
Arches	0.88	0.65	0.63	0.72	0.88
Bandelier	0.38	0.56	0.60	0.51	0.60
Black Canyon	0.42	0.42	0.44	0.43	0.44
Canyonlands	1.14	0.85	0.78	0.92	1.14
Capitol Reef	0.86	0.26	0.35	0.49	0.86
Grand Canyon	0.36	0.24	0.18	0.26	0.36
Great Sand Dunes	0.21	0.23	0.21	0.22	0.23
La Garita	0.28	0.32	0.32	0.31	0.32
Maroon Bells	0.20	0.19	0.18	0.19	0.20
Mesa Verde	1.55	1.89	1.73	1.72	1.89
Pecos	0.34	0.35	0.41	0.37	0.41
Petrified Forest	0.29	0.18	0.17	0.21	0.29
San Pedro	0.69	0.80	0.69	0.73	0.80
West Elk	0.30	0.33	0.33	0.32	0.33
Weminuche	0.43	0.63	0.49	0.52	0.63
Wheeler Peak	0.28	0.30	0.28	0.29	0.30
Overall				**0.51**	**1.89**

Table 19
WESP Visibility Modeling Results - Unit 4
Variable Ammonia Background and Nitrate Repartitioning
98th Percentile Impact for Each Year (dv)

Class I Area	2001	2002	2003	Average	Maximum
Arches	0.87	0.61	0.59	0.69	0.87
Bandelier	0.36	0.51	0.57	0.48	0.57
Black Canyon	0.40	0.40	0.43	0.41	0.43
Canyonlands	1.10	0.82	0.73	0.89	1.10
Capitol Reef	0.84	0.24	0.32	0.47	0.84
Grand Canyon	0.35	0.23	0.17	0.25	0.35
Great Sand Dunes	0.19	0.23	0.19	0.20	0.23
La Garita	0.28	0.30	0.30	0.29	0.30
Maroon Bells	0.19	0.18	0.17	0.18	0.19
Mesa Verde	1.40	1.68	1.56	1.55	1.68
Pecos	0.32	0.34	0.39	0.35	0.39
Petrified Forest	0.28	0.17	0.16	0.20	0.28
San Pedro	0.66	0.76	0.64	0.69	0.76
West Elk	0.29	0.32	0.32	0.31	0.32
Weminuche	0.41	0.59	0.46	0.49	0.59
Wheeler Peak	0.27	0.30	0.26	0.28	0.30
Overall				**0.48**	**1.68**

Table 20
Unit 4 Visibility Improvement Cost Effectiveness for Each Class 1 Area (Based on Maximum Visibility Modeling Results)
Variable Ammonia Background and Nitrate Repartitioning

	Maximum Visibility Modeling Results (dv) (98th Percentile, see Note 1)			Visibility Improvements (dv) Calculated from Maximum Visibility Results (for each Class 1 Area)			Improvement ($/dv) (see Note 4)		
Class 1 Area	Pre-Consent Decree	Consent Decree	WESP	Pre-Consent Decree to Consent Decree	Consent Decree to WESP	Pre-Consent Decree to WESP	Pre-Consent Decree to Consent Decree	Consent Decree to WESP	Pre-Consent Decree to WESP
Arches	1.05	0.88	0.87	0.17	0.01	0.18	73,688,235	1,114,928,571	152,913,043
Bandelier	0.81	0.60	0.57	0.21	0.03	0.24	59,652,381	578,111,111	118,717,300
Black Canyon	0.59	0.44	0.43	0.15	0.01	0.16	83,513,333	1,419,000,000	174,757,764
Canyonlands	1.47	1.14	1.10	0.33	0.04	0.37	37,960,606	433,583,333	76,874,317
Capitol Reef	1.11	0.86	0.84	0.25	0.02	0.27	50,108,000	743,285,714	103,822,878
Grand Canyon	0.48	0.36	0.35	0.12	0.01	0.13	104,391,667	1,560,900,000	216,430,769
Great Sand Dunes	0.34	0.23	0.23	0.11	0.00	0.11	113,881,818	3,902,250,000	246,807,018
La Garita	0.45	0.32	0.30	0.13	0.02	0.15	96,361,538	867,166,667	190,108,108
Maroon Bells	0.25	0.20	0.19	0.05	0.01	0.06	250,540,000	1,951,125,000	485,103,448
Mesa Verde	2.18	1.89	1.68	0.29	0.21	0.50	43,196,552	75,405,797	56,611,670
Pecos	0.59	0.41	0.39	0.18	0.03	0.21	69,594,444	624,360,000	137,248,780
Petrified Forest	0.44	0.29	0.28	0.15	0.01	0.16	83,513,333	1,300,750,000	173,679,012
San Pedro	1.04	0.80	0.76	0.24	0.04	0.28	52,195,833	380,707,317	100,128,114
West Elk	0.43	0.33	0.32	0.10	0.01	0.11	125,270,000	1,560,900,000	255,781,818
Weminuche	0.81	0.63	0.59	0.18	0.04	0.22	69,594,444	354,750,000	125,607,143
Wheeler Peak	0.41	0.30	0.30	0.11	0.00	0.11	113,881,818	3,902,250,000	246,807,018

Notes:

1. Maximum of 2001, 2002 and 2003 visibility data.
2. NI = No Improvement
3. NA = Not Applicable
4. Total Annualized Costs used in calculating Improvement are as follows (in $1,000):

Pre-Consent Decree to Consent Decree	$12,527
Consent Decree to WESP	$15,609
Pre-Consent Decree to WESP	$28,136

PNM SJGS BART Modeling - All Units
Nitrate Repartitioning - Monthly Varying NH3 Background
2001

Pre-Consent Decree

Class I Area	No. of Days > 0.5 dv	98th Percentile	%_SO4	%_NO3	%_OC	%_EC	%_PMC	%_PMF	%_Total
ARCH	59	1.92	71.14	23.07	1.46	0.89	1.08	2.36	100
BAND	70	1.31	35.48	59.51	1.32	0.81	0.83	2.06	100
BLCA	40	1.14	52.26	45.03	0.71	0.44	0.43	1.13	100
CANY	80	2.59	65.05	28.99	1.51	0.92	1.08	2.44	100
CARE	31	1.97	51.54	43.71	1.15	0.71	1.06	1.83	100
GRCA	14	1.14	42.20	54.25	0.90	0.55	0.65	1.45	100
GRSA	23	0.85	77.31	14.03	2.38	1.46	1.09	3.75	100
LAGA	35	1.15	42.48	54.54	0.77	0.47	0.50	1.24	100
MABE	16	0.67	41.50	54.30	1.08	0.66	0.76	1.70	100
MEVE	184	4.20	84.29	1.94	3.21	1.97	3.57	5.03	100
PECO	53	1.40	43.19	52.60	1.08	0.66	0.76	1.71	100
PEFO	18	1.13	84.94	9.80	1.30	0.79	1.11	2.06	100
SAPE	111	1.78	79.88	8.73	2.70	1.65	2.83	4.20	100
WEEL	34	0.99	40.76	54.57	1.20	0.73	0.85	1.89	100
WEMI	74	1.51	26.70	66.76	1.53	0.94	1.66	2.40	100
WHPE	37	1.00	32.06	63.10	1.28	0.78	0.76	2.02	100

Baseline - Consent Decree

Class I Area	No. of Days > 0.5 dv	98th Percentile	%_SO4	%_NO3	%_OC	%_EC	%_PMC	%_PMF	%_Total
ARCH	47	1.69	33.57	62.13	1.88	0.48	0.48	1.46	100
BAND	49	1.04	30.40	66.83	1.26	0.32	0.23	0.97	100
BLCA	26	0.95	37.13	57.66	2.28	0.58	0.58	1.76	100
CANY	67	2.26	55.66	38.57	2.53	0.65	0.62	1.98	100
CARE	28	1.81	52.95	42.68	1.91	0.49	0.48	1.49	100
GRCA	12	0.97	38.14	59.75	0.93	0.24	0.19	0.75	100
GRSA	14	0.63	38.82	54.18	3.18	0.81	0.53	2.47	100
LAGA	20	0.86	38.38	59.80	0.81	0.21	0.15	0.65	100
MABE	10	0.54	69.46	25.41	2.29	0.59	0.43	1.83	100
MEVE	157	3.38	75.39	9.84	6.26	1.60	2.09	4.82	100
PECO	35	1.05	80.51	15.41	1.83	0.47	0.36	1.43	100
PEFO	14	0.82	27.95	69.41	1.18	0.30	0.25	0.92	100
SAPE	93	1.40	39.89	53.93	2.71	0.69	0.68	2.09	100
WEEL	19	0.80	37.76	60.62	0.70	0.18	0.19	0.55	100
WEMI	53	1.15	28.74	65.59	2.44	0.62	0.72	1.88	100
WHPE	27	0.75	30.82	66.18	1.36	0.35	0.23	1.06	100

WESP

Class I Area	No. of Days > 0.5 dv	98th Percentile	%_SO4	%_NO3	%_OC	%_EC	%_PMC	%_PMF	%_Total
ARCH	45	1.63	62.82	32.85	1.87	0.48	0.54	1.45	100
BAND	47	1.01	27.51	70.57	0.87	0.22	0.16	0.67	100
BLCA	24	0.92	25.38	72.64	0.90	0.23	0.16	0.69	100
CANY	63	2.17	66.43	31.20	1.05	0.27	0.22	0.83	100
CARE	27	1.71	50.35	46.55	1.36	0.35	0.34	1.05	100
GRCA	12	0.95	35.80	62.76	0.64	0.16	0.13	0.51	100
GRSA	13	0.61	31.43	67.21	0.62	0.16	0.09	0.48	100
LAGA	19	0.83	58.25	38.59	1.43	0.37	0.25	1.11	100
MABE	9	0.53	63.52	33.00	1.56	0.40	0.29	1.24	100
MEVE	146	2.71	71.64	15.63	5.41	1.38	1.80	4.14	100
PECO	34	1.01	38.97	59.21	0.82	0.21	0.16	0.64	100
PEFO	14	0.79	25.59	72.59	0.81	0.21	0.17	0.63	100
SAPE	88	1.30	34.19	61.37	1.96	0.50	0.49	1.50	100
WEEL	18	0.78	36.47	62.42	0.48	0.12	0.13	0.37	100
WEMI	49	1.10	24.27	71.74	1.72	0.44	0.51	1.32	100
WHPE	25	0.73	49.56	48.24	1.01	0.26	0.14	0.80	100

PNM SJGS BART Modeling - All Units
Nitrate Repartitioning - Monthly Varying NH3 Background
2002

Pre-Consent Decree

Class I Area	No. of Days > 0.5 dv	98th Percentile	%_SO4	%_NO3	%_OC	%_EC	%_PMC	%_PMF	%_Total
ARCH	46	1.76	43.87	46.41	2.37	1.45	2.20	3.70	100
BAND	87	1.86	44.28	49.89	1.45	0.89	1.18	2.31	100
BLCA	54	1.34	35.37	59.23	1.36	0.83	1.04	2.17	100
CANY	67	2.04	83.50	1.79	3.67	2.25	3.05	5.74	100
CARE	24	1.16	33.88	63.47	0.67	0.41	0.49	1.09	100
GRCA	15	0.93	89.85	2.03	2.09	1.28	1.45	3.30	100
GRSA	28	1.00	82.39	12.99	1.20	0.73	0.78	1.90	100
LAGA	63	1.30	81.37	13.32	1.40	0.86	0.81	2.24	100
MABE	20	0.78	28.96	63.27	2.15	1.32	0.80	3.49	100
MEVE	184	4.09	34.40	60.73	1.18	0.72	1.11	1.87	100
PECO	62	1.33	53.02	40.33	1.81	1.11	0.89	2.85	100
PEFO	16	0.79	90.95	1.94	1.81	1.11	1.31	2.89	100
SAPE	125	2.37	71.74	23.38	1.23	0.75	0.94	1.96	100
WEEL	43	1.15	35.15	60.78	1.03	0.63	0.76	1.65	100
WEMI	117	1.85	57.89	29.83	2.89	1.77	3.13	4.49	100
WHPE	40	0.95	55.69	38.20	1.67	1.02	0.74	2.67	100

Baseline - Consent Decree

Class I Area	No. of Days > 0.5 dv	98th Percentile	%_SO4	%_NO3	%_OC	%_EC	%_PMC	%_PMF	%_Total
ARCH	32	1.65	49.70	47.38	1.28	0.33	0.30	1.01	100
BAND	61	1.56	37.39	59.91	1.19	0.30	0.27	0.93	100
BLCA	30	1.15	31.11	65.99	1.28	0.33	0.28	1.02	100
CANY	57	1.73	52.51	43.96	1.55	0.40	0.35	1.23	100
CARE	18	0.82	91.30	1.66	3.11	0.79	0.69	2.46	100
GRCA	10	0.76	44.30	54.26	0.64	0.16	0.12	0.52	100
GRSA	17	0.71	28.48	69.87	0.74	0.19	0.13	0.60	100
LAGA	40	0.94	26.32	71.29	1.07	0.27	0.22	0.84	100
MABE	11	0.56	84.39	12.71	1.31	0.33	0.23	1.03	100
MEVE	162	3.53	85.08	5.44	4.14	1.06	1.04	3.24	100
PECO	41	1.09	41.87	56.64	0.66	0.17	0.13	0.53	100
PEFO	9	0.60	28.65	69.64	0.76	0.19	0.13	0.62	100
SAPE	109	2.01	46.15	47.36	2.82	0.72	0.76	2.19	100
WEEL	24	0.91	30.66	67.44	0.86	0.22	0.14	0.68	100
WEMI	83	1.48	57.20	35.77	3.02	0.77	0.91	2.32	100
WHPE	20	0.86	47.51	47.27	2.35	0.60	0.43	1.84	100

WESP

Class I Area	No. of Days > 0.5 dv	98th Percentile	%_SO4	%_NO3	%_OC	%_EC	%_PMC	%_PMF	%_Total
ARCH	29	1.61	46.70	51.30	0.88	0.22	0.21	0.69	100
BAND	55	1.50	40.32	57.22	1.09	0.28	0.24	0.85	100
BLCA	27	1.12	27.57	70.45	0.88	0.22	0.19	0.70	100
CANY	52	1.69	48.49	49.10	1.06	0.27	0.24	0.84	100
CARE	17	0.79	28.97	70.10	0.41	0.10	0.10	0.32	100
GRCA	9	0.74	43.17	55.84	0.44	0.11	0.08	0.36	100
GRSA	15	0.69	26.74	72.12	0.51	0.13	0.09	0.41	100
LAGA	35	0.90	19.19	78.22	1.18	0.30	0.20	0.91	100
MABE	11	0.54	24.53	71.85	1.68	0.43	0.18	1.34	100
MEVE	151	3.18	27.60	70.85	0.68	0.17	0.15	0.54	100
PECO	34	1.07	40.71	58.27	0.46	0.12	0.09	0.36	100
PEFO	9	0.58	27.22	71.61	0.52	0.13	0.09	0.42	100
SAPE	97	1.87	30.41	65.41	1.85	0.47	0.45	1.41	100
WEEL	23	0.88	22.74	75.15	0.92	0.23	0.24	0.71	100
WEMI	74	1.39	51.69	43.31	2.16	0.55	0.65	1.65	100
WHPE	18	0.83	41.56	54.84	1.62	0.41	0.29	1.26	100

PNM SJGS BART Modeling - All Units
Nitrate Repartitioning - Monthly Varying NH3 Background
2003

Pre-Consent Decree

Class I Area	No. of Days > 0.5 dv	98th Percentile	%_SO4	%_NO3	%_OC	%_EC	%_PMC	%_PMF	%_Total
ARCH	39	1.82	38.16	50.64	2.67	1.63	2.75	4.15	100
BAND	77	1.51	40.84	49.83	2.33	1.43	1.94	3.63	100
BLCA	30	1.40	29.26	67.79	0.76	0.46	0.52	1.21	100
CANY	57	2.00	64.92	31.30	0.94	0.58	0.72	1.53	100
CARE	25	1.34	43.68	49.81	1.57	0.96	1.51	2.47	100
GRCA	11	0.81	91.83	0.94	1.83	1.12	1.34	2.94	100
GRSA	26	0.82	50.03	45.62	1.12	0.68	0.79	1.76	100
LAGA	40	1.14	25.27	67.60	2.02	1.24	0.66	3.22	100
MABE	15	0.63	36.60	57.88	1.53	0.94	0.65	2.41	100
MEVE	174	4.85	69.32	17.06	3.27	2.00	3.22	5.14	100
PECO	63	1.26	49.00	43.40	1.87	1.15	1.66	2.93	100
PEFO	17	0.74	88.02	6.36	1.46	0.90	0.89	2.36	100
SAPE	127	1.96	80.84	9.41	2.36	1.45	2.22	3.73	100
WEEL	31	0.94	25.57	71.56	0.70	0.43	0.61	1.12	100
WEMI	87	1.69	40.63	54.52	1.17	0.72	1.13	1.84	100
WHPE	48	1.05	48.42	48.68	0.78	0.48	0.39	1.25	100

Baseline - Consent Decree

Class I Area	No. of Days > 0.5 dv	98th Percentile	%_SO4	%_NO3	%_OC	%_EC	%_PMC	%_PMF	%_Total
ARCH	27	1.49	30.95	67.01	0.89	0.23	0.21	0.71	100
BAND	57	1.20	77.97	17.21	2.11	0.54	0.52	1.65	100
BLCA	21	1.07	27.98	70.17	0.82	0.21	0.17	0.65	100
CANY	48	1.68	70.45	24.81	2.07	0.53	0.49	1.65	100
CARE	23	1.05	52.60	45.24	0.94	0.24	0.20	0.77	100
GRCA	9	0.57	93.89	1.17	2.19	0.56	0.46	1.74	100
GRSA	15	0.64	27.42	70.94	0.76	0.19	0.09	0.60	100
LAGA	28	0.90	23.76	71.98	1.99	0.51	0.18	1.58	100
MABE	8	0.51	27.63	69.59	1.22	0.31	0.28	0.97	100
MEVE	159	3.80	41.19	53.18	2.41	0.62	0.72	1.88	100
PECO	50	1.00	51.25	46.75	0.89	0.23	0.18	0.70	100
PEFO	9	0.53	32.43	65.01	1.15	0.29	0.18	0.93	100
SAPE	97	1.56	37.04	56.49	2.78	0.71	0.83	2.15	100
WEEL	22	0.83	28.10	67.91	1.74	0.44	0.44	1.36	100
WEMI	63	1.34	36.23	61.45	1.00	0.26	0.29	0.77	100
WHPE	27	0.89	91.09	5.38	1.60	0.41	0.26	1.25	100

WESP

Class I Area	No. of Days > 0.5 dv	98th Percentile	%_SO4	%_NO3	%_OC	%_EC	%_PMC	%_PMF	%_Total
ARCH	26	1.45	29.24	69.35	0.62	0.16	0.15	0.49	100
BAND	50	1.12	77.83	18.71	1.52	0.39	0.37	1.18	100
BLCA	21	1.04	26.30	72.43	0.57	0.14	0.11	0.45	100
CANY	46	1.60	67.06	29.60	1.46	0.37	0.34	1.16	100
CARE	22	1.02	50.54	47.97	0.65	0.17	0.14	0.53	100
GRCA	9	0.54	95.23	1.26	1.56	0.40	0.32	1.23	100
GRSA	13	0.62	25.64	73.23	0.52	0.13	0.06	0.41	100
LAGA	21	0.85	19.56	77.45	1.40	0.36	0.12	1.11	100
MABE	7	0.50	24.53	73.55	0.84	0.21	0.19	0.66	100
MEVE	145	2.92	78.37	3.17	7.90	2.01	2.49	6.04	100
PECO	44	0.97	28.35	69.19	1.11	0.28	0.22	0.85	100
PEFO	8	0.51	73.07	24.23	1.21	0.31	0.21	0.97	100
SAPE	93	1.49	30.00	65.46	1.96	0.50	0.58	1.50	100
WEEL	20	0.79	23.85	73.36	1.22	0.31	0.31	0.95	100
WEMI	59	1.30	34.09	64.30	0.69	0.18	0.20	0.53	100
WHPE	26	0.84	91.75	5.74	1.14	0.29	0.19	0.88	100

PNM SJGS BART Modeling - Unit 1
Nitrate Repartitioning - Monthly Varying NH3 Background
2001

Pre-Consent Decree

Class I Area	No. of Days > 0.5 dv	98th Percentile	%_SO4	%_NO3	%_OC	%_EC	%_PMC	%_PMF	%_Total
ARCH	16	0.82	25.92	68.87	1.30	0.79	1.06	2.06	100
BAND	1	0.31	41.96	53.16	1.24	0.75	0.94	1.95	100
BLCA	2	0.35	31.77	66.43	0.47	0.29	0.29	0.75	100
CANY	28	1.10	43.62	52.48	0.91	0.55	1.03	1.41	100
CARE	12	0.76	26.38	71.01	0.64	0.38	0.58	1.01	100
GRCA	5	0.31	31.06	66.09	0.72	0.44	0.52	1.17	100
GRSA	0	0.18	87.77	6.73	1.38	0.83	1.12	2.17	100
LAGA	1	0.26	36.35	60.88	0.72	0.44	0.46	1.16	100
MABE	0	0.18	23.69	72.07	1.08	0.65	0.82	1.69	100
MEVE	55	1.51	47.09	35.97	3.88	2.35	4.67	6.04	100
PECO	2	0.29	24.39	68.71	1.72	1.04	1.48	2.67	100
PEFO	2	0.25	84.76	11.37	0.99	0.60	0.69	1.59	100
SAPE	10	0.61	26.56	68.07	1.32	0.80	1.20	2.05	100
WEEL	2	0.27	31.55	66.50	0.52	0.31	0.29	0.82	100
WEMI	3	0.37	22.71	69.34	1.89	1.14	1.99	2.93	100
WHPE	2	0.24	27.68	69.49	0.76	0.46	0.42	1.20	100

Baseline - Consent Decree

Class I Area	No. of Days > 0.5 dv	98th Percentile	%_SO4	%_NO3	%_OC	%_EC	%_PMC	%_PMF	%_Total
ARCH	14	0.69	25.34	71.69	1.31	0.33	0.31	1.03	100
BAND	1	0.24	43.57	53.42	1.34	0.34	0.29	1.04	100
BLCA	2	0.29	23.45	74.26	0.99	0.25	0.26	0.78	100
CANY	22	1.00	38.19	59.52	1.01	0.26	0.23	0.80	100
CARE	11	0.57	26.93	71.52	0.67	0.17	0.17	0.53	100
GRCA	4	0.27	30.85	67.43	0.76	0.19	0.15	0.61	100
GRSA	0	0.14	21.45	76.75	0.80	0.20	0.17	0.63	100
LAGA	0	0.19	28.88	69.14	0.89	0.23	0.16	0.70	100
MABE	0	0.14	20.45	75.64	1.73	0.44	0.40	1.34	100
MEVE	38	1.35	35.69	59.62	2.00	0.51	0.63	1.55	100
PECO	1	0.23	25.62	70.23	1.82	0.47	0.44	1.41	100
PEFO	2	0.19	25.42	72.19	1.06	0.27	0.23	0.84	100
SAPE	7	0.44	27.36	69.47	1.39	0.36	0.35	1.08	100
WEEL	0	0.22	33.65	63.73	1.17	0.30	0.22	0.93	100
WEMI	2	0.31	30.63	61.38	3.48	0.89	0.91	2.70	100
WHPE	2	0.19	28.38	69.83	0.81	0.21	0.13	0.64	100

WESP

Class I Area	No. of Days > 0.5 dv	98th Percentile	%_SO4	%_NO3	%_OC	%_EC	%_PMC	%_PMF	%_Total
ARCH	13	0.66	21.99	75.92	0.92	0.24	0.21	0.71	100
BAND	1	0.23	41.99	55.90	0.94	0.25	0.20	0.72	100
BLCA	2	0.28	21.30	77.10	0.70	0.18	0.18	0.54	100
CANY	20	0.97	35.55	62.86	0.70	0.18	0.16	0.55	100
CARE	10	0.55	25.06	73.87	0.47	0.12	0.12	0.36	100
GRCA	3	0.26	29.07	69.74	0.53	0.14	0.11	0.42	100
GRSA	0	0.13	30.98	64.24	2.19	0.57	0.36	1.67	100
LAGA	0	0.19	27.29	71.34	0.62	0.16	0.11	0.48	100
MABE	0	0.13	16.66	80.54	1.25	0.33	0.28	0.95	100
MEVE	32	1.33	29.21	67.58	1.37	0.36	0.43	1.04	100
PECO	1	0.22	37.84	60.38	0.80	0.21	0.16	0.62	100
PEFO	2	0.18	23.42	74.91	0.75	0.20	0.16	0.58	100
SAPE	7	0.42	24.48	73.27	0.99	0.26	0.24	0.75	100
WEEL	0	0.21	31.38	66.78	0.83	0.22	0.15	0.64	100
WEMI	2	0.28	25.04	68.96	2.64	0.69	0.68	2.00	100
WHPE	2	0.18	26.68	72.08	0.57	0.15	0.09	0.44	100

PNM SJGS BART Modeling - Unit 1
Nitrate Repartitioning - Monthly Varying NH3 Background
2002

Pre-Consent Decree

Class I Area	No. of Days > 0.5 dv	98th Percentile	%_SO4	%_NO3	%_OC	%_EC	%_PMC	%_PMF	%_Total
ARCH	11	0.68	24.06	72.39	0.91	0.55	0.63	1.46	100
BAND	7	0.49	50.26	40.84	2.33	1.41	1.50	3.66	100
BLCA	4	0.37	19.24	76.63	0.99	0.60	0.99	1.55	100
CANY	16	0.84	30.14	66.46	0.85	0.51	0.67	1.36	100
CARE	4	0.23	29.36	68.45	0.54	0.33	0.45	0.87	100
GRCA	1	0.21	42.87	54.86	0.58	0.35	0.37	0.97	100
GRSA	0	0.20	27.46	69.95	0.68	0.41	0.39	1.10	100
LAGA	0	0.28	23.68	72.69	0.93	0.56	0.66	1.48	100
MABE	0	0.16	27.20	65.28	2.09	1.27	0.76	3.40	100
MEVE	73	1.79	37.50	56.98	1.29	0.78	1.40	2.05	100
PECO	3	0.31	38.08	53.60	2.22	1.34	1.25	3.51	100
PEFO	2	0.16	28.11	69.15	0.71	0.43	0.44	1.17	100
SAPE	27	0.73	26.46	67.64	1.45	0.88	1.29	2.29	100
WEEL	1	0.28	23.98	70.42	1.36	0.82	1.31	2.11	100
WEMI	9	0.54	43.96	46.81	2.18	1.32	2.34	3.39	100
WHPE	0	0.25	30.07	67.71	0.57	0.35	0.39	0.92	100

Baseline - Consent Decree

Class I Area	No. of Days > 0.5 dv	98th Percentile	%_SO4	%_NO3	%_OC	%_EC	%_PMC	%_PMF	%_Total
ARCH	9	0.54	23.97	72.89	1.37	0.35	0.35	1.07	100
BAND	4	0.40	31.04	66.80	0.95	0.24	0.22	0.75	100
BLCA	1	0.29	25.16	72.63	0.98	0.25	0.20	0.78	100
CANY	13	0.65	23.43	73.82	1.20	0.31	0.31	0.94	100
CARE	3	0.18	31.45	66.94	0.71	0.18	0.15	0.57	100
GRCA	1	0.16	43.73	54.87	0.62	0.16	0.11	0.51	100
GRSA	0	0.14	27.52	70.87	0.72	0.19	0.12	0.58	100
LAGA	0	0.21	25.77	71.45	1.20	0.31	0.33	0.94	100
MABE	0	0.12	26.89	71.16	0.87	0.22	0.16	0.69	100
MEVE	52	1.40	60.18	31.05	3.70	0.95	1.26	2.86	100
PECO	3	0.24	40.91	57.63	0.65	0.17	0.13	0.52	100
PEFO	0	0.13	28.41	69.90	0.75	0.19	0.13	0.62	100
SAPE	16	0.59	26.83	69.85	1.45	0.37	0.35	1.14	100
WEEL	0	0.20	24.64	72.13	1.40	0.36	0.38	1.09	100
WEMI	6	0.43	24.32	73.64	0.90	0.23	0.19	0.72	100
WHPE	0	0.17	31.55	67.09	0.60	0.15	0.12	0.49	100

WESP

Class I Area	No. of Days > 0.5 dv	98th Percentile	%_SO4	%_NO3	%_OC	%_EC	%_PMC	%_PMF	%_Total
ARCH	9	0.52	32.86	65.72	0.62	0.16	0.15	0.49	100
BAND	4	0.38	29.10	69.40	0.66	0.17	0.15	0.51	100
BLCA	1	0.28	22.79	75.67	0.69	0.18	0.14	0.54	100
CANY	12	0.63	20.90	77.17	0.84	0.22	0.21	0.65	100
CARE	2	0.17	30.05	68.83	0.49	0.13	0.10	0.39	100
GRCA	1	0.16	42.66	56.37	0.43	0.11	0.08	0.35	100
GRSA	0	0.14	25.84	73.05	0.50	0.13	0.08	0.40	100
LAGA	0	0.17	32.85	63.61	1.54	0.39	0.42	1.19	100
MABE	0	0.11	23.93	72.54	1.64	0.43	0.17	1.30	100
MEVE	43	1.31	51.89	41.79	2.69	0.70	0.90	2.03	100
PECO	2	0.24	39.78	59.21	0.45	0.12	0.09	0.35	100
PEFO	0	0.12	26.98	71.85	0.52	0.14	0.09	0.42	100
SAPE	9	0.56	23.72	73.92	1.04	0.27	0.25	0.80	100
WEEL	0	0.19	21.65	76.06	1.00	0.26	0.26	0.76	100
WEMI	3	0.41	21.96	76.61	0.63	0.17	0.13	0.50	100
WHPE	0	0.16	30.26	68.80	0.42	0.11	0.08	0.33	100

PNM SJGS BART Modeling - Unit 1
Nitrate Repartitioning - Monthly Varying NH3 Background
2003

Pre-Consent Decree

Class I Area	No. of Days > 0.5 dv	98th Percentile	%_SO4	%_NO3	%_OC	%_EC	%_PMC	%_PMF	%_Total
ARCH	9	0.60	28.75	65.62	1.35	0.81	1.33	2.14	100
BAND	8	0.54	22.07	72.47	1.34	0.81	1.23	2.09	100
BLCA	2	0.38	34.19	62.97	0.72	0.43	0.54	1.15	100
CANY	14	0.71	29.97	59.10	2.54	1.54	2.91	3.94	100
CARE	3	0.32	86.40	1.13	3.02	1.83	2.88	4.74	100
GRCA	0	0.16	51.56	42.85	1.42	0.86	1.00	2.30	100
GRSA	1	0.17	19.79	77.41	0.69	0.42	0.59	1.10	100
LAGA	2	0.29	36.29	60.25	0.89	0.54	0.59	1.44	100
MABE	0	0.16	31.87	65.36	0.70	0.42	0.53	1.12	100
MEVE	60	1.67	38.31	45.74	3.66	2.22	4.38	5.69	100
PECO	3	0.35	51.53	42.28	1.61	0.98	1.01	2.59	100
PEFO	0	0.14	31.20	64.81	1.05	0.64	0.58	1.73	100
SAPE	13	0.63	34.16	60.15	1.34	0.81	1.43	2.10	100
WEEL	0	0.25	23.83	70.37	1.42	0.86	1.27	2.25	100
WEMI	4	0.45	21.90	69.56	2.19	1.33	1.52	3.49	100
WHPE	1	0.26	22.07	72.11	1.47	0.89	1.11	2.34	100

Baseline - Consent Decree

Class I Area	No. of Days > 0.5 dv	98th Percentile	%_SO4	%_NO3	%_OC	%_EC	%_PMC	%_PMF	%_Total
ARCH	9	0.52	29.53	67.07	1.47	0.38	0.40	1.16	100
BAND	3	0.37	23.82	72.96	1.41	0.36	0.36	1.10	100
BLCA	0	0.28	25.40	72.77	0.80	0.20	0.19	0.64	100
CANY	12	0.57	38.31	60.22	0.65	0.17	0.14	0.52	100
CARE	2	0.23	31.26	65.22	1.53	0.39	0.39	1.20	100
GRCA	0	0.12	52.37	44.18	1.52	0.39	0.31	1.22	100
GRSA	1	0.14	27.01	70.46	1.12	0.29	0.22	0.89	100
LAGA	0	0.21	20.74	75.52	1.71	0.44	0.17	1.41	100
MABE	0	0.11	33.14	63.55	1.53	0.39	0.19	1.20	100
MEVE	48	1.27	41.93	48.61	4.01	1.03	1.33	3.10	100
PECO	1	0.27	46.70	51.27	0.91	0.23	0.15	0.73	100
PEFO	0	0.11	31.59	65.92	1.12	0.29	0.18	0.91	100
SAPE	7	0.50	26.74	68.42	2.08	0.53	0.62	1.61	100
WEEL	0	0.20	20.88	76.49	1.15	0.30	0.29	0.90	100
WEMI	3	0.35	45.71	42.80	4.96	1.27	1.43	3.84	100
WHPE	0	0.20	22.74	73.74	1.56	0.40	0.34	1.23	100

WESP

Class I Area	No. of Days > 0.5 dv	98th Percentile	%_SO4	%_NO3	%_OC	%_EC	%_PMC	%_PMF	%_Total
ARCH	7	0.49	49.52	49.25	0.55	0.14	0.12	0.43	100
BAND	3	0.35	20.72	76.99	1.01	0.26	0.25	0.76	100
BLCA	0	0.27	23.68	75.05	0.56	0.15	0.13	0.44	100
CANY	11	0.55	42.01	55.79	0.97	0.25	0.23	0.76	100
CARE	2	0.22	28.24	69.26	1.09	0.29	0.28	0.84	100
GRCA	0	0.12	51.18	46.39	1.08	0.28	0.22	0.85	100
GRSA	1	0.14	24.39	73.84	0.80	0.21	0.15	0.62	100
LAGA	0	0.20	33.19	65.12	0.75	0.20	0.18	0.57	100
MABE	0	0.10	30.29	67.35	1.10	0.29	0.13	0.84	100
MEVE	43	1.16	34.79	62.53	1.14	0.30	0.37	0.87	100
PECO	1	0.26	23.34	74.67	0.90	0.23	0.17	0.68	100
PEFO	0	0.11	29.95	68.31	0.78	0.21	0.12	0.63	100
SAPE	7	0.47	23.38	73.47	1.36	0.36	0.39	1.04	100
WEEL	0	0.20	34.71	64.16	0.50	0.13	0.11	0.39	100
WEMI	3	0.31	28.56	69.85	0.70	0.18	0.15	0.55	100
WHPE	0	0.19	19.02	78.46	1.12	0.29	0.24	0.86	100

PNM SJGS BART Modeling - Unit 2
Nitrate Repartitioning - Monthly Varying NH3 Background
2001

Pre-Consent Decree

Class I Area	No. of Days > 0.5 dv	98th Percentile	%_SO4	%_NO3	%_OC	%_EC	%_PMC	%_PMF	%_Total
ARCH	16	0.83	25.00	69.90	1.28	0.78	1.04	2.02	100
BAND	1	0.32	25.12	71.09	1.01	0.61	0.61	1.57	100
BLCA	3	0.36	23.37	71.60	1.28	0.78	0.99	1.98	100
CANY	27	1.07	40.57	55.69	0.86	0.53	1.00	1.35	100
CARE	12	0.78	25.24	72.22	0.62	0.38	0.56	0.99	100
GRCA	5	0.31	29.84	67.36	0.71	0.43	0.51	1.15	100
GRSA	0	0.19	32.82	57.23	2.66	1.62	1.52	4.16	100
LAGA	0	0.26	34.98	62.29	0.71	0.43	0.46	1.14	100
MABE	0	0.18	19.11	76.53	1.10	0.67	0.86	1.73	100
MEVE	56	1.49	45.92	37.44	3.81	2.32	4.60	5.92	100
PECO	2	0.29	84.16	9.33	1.63	0.99	1.33	2.56	100
PEFO	2	0.25	23.63	72.55	0.97	0.59	0.72	1.54	100
SAPE	11	0.63	25.41	69.31	1.29	0.79	1.19	2.01	100
WEEL	1	0.27	30.10	67.99	0.51	0.31	0.29	0.80	100
WEMI	3	0.38	31.78	59.74	2.05	1.25	1.98	3.19	100
WHPE	2	0.24	26.23	70.99	0.74	0.45	0.42	1.17	100

Baseline - Consent Decree

Class I Area	No. of Days > 0.5 dv	98th Percentile	%_SO4	%_NO3	%_OC	%_EC	%_PMC	%_PMF	%_Total
ARCH	14	0.69	25.31	71.71	1.31	0.34	0.31	1.02	100
BAND	1	0.23	43.57	53.42	1.34	0.34	0.29	1.03	100
BLCA	2	0.28	23.45	74.26	1.00	0.26	0.26	0.77	100
CANY	22	0.99	38.13	59.58	1.01	0.26	0.23	0.80	100
CARE	10	0.57	26.92	71.52	0.68	0.17	0.17	0.53	100
GRCA	4	0.27	30.84	67.43	0.76	0.20	0.15	0.61	100
GRSA	0	0.14	21.45	76.75	0.80	0.21	0.17	0.62	100
LAGA	0	0.19	28.87	69.14	0.89	0.23	0.16	0.70	100
MABE	0	0.14	20.45	75.64	1.74	0.44	0.40	1.33	100
MEVE	38	1.35	35.54	59.78	2.00	0.51	0.63	1.53	100
PECO	1	0.23	25.62	70.23	1.83	0.47	0.44	1.40	100
PEFO	2	0.19	25.42	72.18	1.07	0.27	0.23	0.83	100
SAPE	7	0.44	27.35	69.47	1.40	0.36	0.35	1.07	100
WEEL	0	0.22	33.65	63.72	1.18	0.30	0.22	0.92	100
WEMI	2	0.31	30.63	61.38	3.50	0.90	0.91	2.69	100
WHPE	2	0.18	28.38	69.83	0.82	0.21	0.13	0.64	100

WESP

Class I Area	No. of Days > 0.5 dv	98th Percentile	%_SO4	%_NO3	%_OC	%_EC	%_PMC	%_PMF	%_Total
ARCH	13	0.66	21.98	75.94	0.91	0.24	0.21	0.71	100
BAND	1	0.22	42.00	55.91	0.93	0.25	0.20	0.72	100
BLCA	2	0.27	21.31	77.10	0.69	0.18	0.18	0.54	100
CANY	20	0.96	35.51	62.91	0.69	0.18	0.16	0.55	100
CARE	10	0.55	25.06	73.87	0.46	0.12	0.12	0.37	100
GRCA	3	0.26	29.07	69.74	0.52	0.14	0.11	0.42	100
GRSA	0	0.13	90.48	7.15	1.04	0.28	0.24	0.81	100
LAGA	0	0.19	27.29	71.34	0.61	0.16	0.11	0.48	100
MABE	0	0.13	16.68	80.54	1.22	0.33	0.28	0.95	100
MEVE	32	1.33	29.12	67.71	1.34	0.36	0.43	1.04	100
PECO	1	0.21	37.85	60.38	0.79	0.21	0.16	0.62	100
PEFO	2	0.18	23.43	74.91	0.73	0.20	0.16	0.58	100
SAPE	7	0.42	24.49	73.28	0.97	0.26	0.24	0.75	100
WEEL	0	0.21	31.39	66.78	0.81	0.22	0.15	0.64	100
WEMI	2	0.27	25.06	68.98	2.59	0.69	0.68	2.00	100
WHPE	2	0.18	26.69	72.08	0.56	0.15	0.09	0.44	100

PNM SJGS BART Modeling - Unit 2
Nitrate Repartitioning - Monthly Varying NH3 Background
2002

Pre-Consent Decree

Class I Area	No. of Days > 0.5 dv	98th Percentile	%_SO4	%_NO3	%_OC	%_EC	%_PMC	%_PMF	%_Total
ARCH	11	0.64	26.15	67.85	1.45	0.89	1.39	2.27	100
BAND	7	0.50	48.55	42.63	2.30	1.40	1.49	3.62	100
BLCA	4	0.37	18.38	77.59	0.97	0.59	0.97	1.51	100
CANY	15	0.83	28.77	67.90	0.83	0.51	0.66	1.33	100
CARE	4	0.23	27.98	69.89	0.53	0.32	0.44	0.85	100
GRCA	1	0.20	40.86	56.90	0.57	0.35	0.37	0.95	100
GRSA	0	0.21	26.11	71.35	0.67	0.41	0.39	1.08	100
LAGA	0	0.29	22.65	73.82	0.90	0.55	0.64	1.44	100
MABE	0	0.16	26.26	66.39	2.05	1.25	0.74	3.32	100
MEVE	72	1.82	36.41	58.08	1.29	0.79	1.39	2.04	100
PECO	3	0.31	36.65	55.19	2.17	1.32	1.23	3.43	100
PEFO	2	0.16	26.72	70.61	0.69	0.42	0.43	1.13	100
SAPE	28	0.73	25.48	68.66	1.43	0.87	1.28	2.26	100
WEEL	1	0.29	22.95	71.57	1.32	0.81	1.29	2.06	100
WEMI	9	0.56	18.60	76.08	1.26	0.77	1.32	1.97	100
WHPE	0	0.26	28.49	69.36	0.55	0.33	0.38	0.89	100

Baseline - Consent Decree

Class I Area	No. of Days > 0.5 dv	98th Percentile	%_SO4	%_NO3	%_OC	%_EC	%_PMC	%_PMF	%_Total
ARCH	9	0.54	23.96	72.89	1.38	0.35	0.35	1.07	100
BAND	4	0.40	31.03	66.81	0.95	0.24	0.22	0.74	100
BLCA	1	0.29	25.16	72.63	0.98	0.25	0.20	0.78	100
CANY	13	0.65	23.42	73.82	1.20	0.31	0.31	0.93	100
CARE	3	0.18	31.45	66.94	0.71	0.18	0.15	0.57	100
GRCA	1	0.16	43.73	54.87	0.62	0.16	0.11	0.51	100
GRSA	0	0.14	27.52	70.87	0.73	0.19	0.12	0.58	100
LAGA	0	0.21	25.77	71.45	1.21	0.31	0.33	0.93	100
MABE	0	0.11	26.89	71.16	0.88	0.22	0.16	0.69	100
MEVE	52	1.40	60.02	31.23	3.71	0.95	1.25	2.84	100
PECO	3	0.24	40.91	57.63	0.65	0.17	0.13	0.52	100
PEFO	0	0.13	28.41	69.90	0.75	0.19	0.13	0.61	100
SAPE	16	0.58	26.82	69.85	1.46	0.37	0.35	1.14	100
WEEL	0	0.20	24.64	72.13	1.41	0.36	0.38	1.08	100
WEMI	6	0.42	24.31	73.65	0.91	0.23	0.19	0.72	100
WHPE	0	0.17	31.55	67.09	0.61	0.16	0.12	0.48	100

WESP

Class I Area	No. of Days > 0.5 dv	98th Percentile	%_SO4	%_NO3	%_OC	%_EC	%_PMC	%_PMF	%_Total
ARCH	9	0.51	32.86	65.72	0.61	0.16	0.15	0.49	100
BAND	4	0.38	29.10	69.41	0.65	0.17	0.15	0.51	100
BLCA	1	0.27	22.80	75.66	0.68	0.18	0.14	0.54	100
CANY	12	0.62	20.91	77.17	0.83	0.22	0.21	0.65	100
CARE	2	0.17	30.06	68.84	0.48	0.13	0.10	0.39	100
GRCA	1	0.16	42.67	56.37	0.42	0.11	0.08	0.35	100
GRSA	0	0.14	25.84	73.05	0.50	0.13	0.08	0.40	100
LAGA	0	0.20	23.14	74.92	0.84	0.22	0.23	0.65	100
MABE	0	0.11	23.95	72.54	1.61	0.43	0.17	1.30	100
MEVE	43	1.31	51.80	41.94	2.63	0.71	0.90	2.03	100
PECO	2	0.24	39.79	59.21	0.44	0.12	0.09	0.36	100
PEFO	0	0.12	26.99	71.85	0.51	0.14	0.09	0.42	100
SAPE	9	0.55	23.73	73.93	1.02	0.27	0.25	0.80	100
WEEL	0	0.19	21.66	76.07	0.98	0.26	0.26	0.76	100
WEMI	3	0.41	21.97	76.62	0.62	0.17	0.13	0.50	100
WHPE	0	0.16	30.27	68.80	0.41	0.11	0.08	0.33	100

PNM SJGS BART Modeling - Unit 2
Nitrate Repartitioning - Monthly Varying NH3 Background
2003

Pre-Consent Decree

Class I Area	No. of Days > 0.5 dv	98th Percentile	%_SO4	%_NO3	%_OC	%_EC	%_PMC	%_PMF	%_Total
ARCH	9	0.58	26.09	65.91	1.91	1.16	1.95	2.97	100
BAND	8	0.54	21.18	73.48	1.31	0.80	1.19	2.04	100
BLCA	3	0.39	31.74	65.45	0.70	0.43	0.55	1.12	100
CANY	13	0.72	29.11	60.16	2.49	1.52	2.85	3.87	100
CARE	3	0.31	86.04	1.21	3.09	1.88	2.94	4.84	100
GRCA	0	0.16	49.96	44.45	1.42	0.86	1.00	2.29	100
GRSA	1	0.17	25.45	72.07	0.69	0.42	0.28	1.09	100
LAGA	1	0.29	19.38	74.87	1.61	0.98	0.49	2.66	100
MABE	0	0.16	31.67	65.36	0.73	0.45	0.63	1.16	100
MEVE	60	1.66	38.26	45.78	3.66	2.23	4.39	5.68	100
PECO	3	0.36	20.30	74.98	1.21	0.74	0.82	1.96	100
PEFO	0	0.14	69.40	24.51	1.58	0.96	0.97	2.58	100
SAPE	13	0.64	24.73	67.13	1.92	1.17	2.07	2.99	100
WEEL	0	0.26	22.86	71.46	1.39	0.85	1.25	2.20	100
WEMI	4	0.44	37.67	57.85	1.06	0.65	1.12	1.65	100
WHPE	1	0.26	32.19	65.39	0.61	0.37	0.45	0.98	100

Baseline - Consent Decree

Class I Area	No. of Days > 0.5 dv	98th Percentile	%_SO4	%_NO3	%_OC	%_EC	%_PMC	%_PMF	%_Total
ARCH	9	0.52	29.52	67.08	1.47	0.38	0.40	1.15	100
BAND	3	0.37	23.81	72.96	1.42	0.36	0.36	1.09	100
BLCA	0	0.28	25.40	72.77	0.80	0.21	0.19	0.64	100
CANY	12	0.57	38.31	60.22	0.65	0.17	0.14	0.52	100
CARE	2	0.23	31.25	65.23	1.54	0.39	0.39	1.20	100
GRCA	0	0.12	52.36	44.18	1.53	0.39	0.31	1.22	100
GRSA	1	0.14	27.01	70.46	1.13	0.29	0.22	0.89	100
LAGA	0	0.21	20.74	75.52	1.72	0.44	0.17	1.40	100
MABE	0	0.11	33.14	63.55	1.54	0.39	0.19	1.19	100
MEVE	48	1.26	41.89	48.65	4.03	1.03	1.33	3.08	100
PECO	1	0.27	46.68	51.28	0.92	0.24	0.15	0.73	100
PEFO	0	0.11	72.61	23.59	1.70	0.44	0.30	1.37	100
SAPE	7	0.50	26.73	68.43	2.09	0.53	0.62	1.60	100
WEEL	0	0.20	20.87	76.49	1.16	0.30	0.29	0.89	100
WEMI	3	0.35	45.70	42.79	4.98	1.28	1.43	3.82	100
WHPE	0	0.20	22.74	73.73	1.56	0.40	0.34	1.22	100

WESP

Class I Area	No. of Days > 0.5 dv	98th Percentile	%_SO4	%_NO3	%_OC	%_EC	%_PMC	%_PMF	%_Total
ARCH	7	0.49	49.51	49.26	0.54	0.14	0.12	0.43	100
BAND	3	0.35	20.73	77.00	0.99	0.26	0.25	0.77	100
BLCA	0	0.27	23.69	75.06	0.55	0.15	0.13	0.44	100
CANY	10	0.55	42.00	55.81	0.95	0.25	0.23	0.76	100
CARE	2	0.22	28.25	69.27	1.07	0.29	0.28	0.84	100
GRCA	0	0.12	51.19	46.39	1.06	0.28	0.22	0.85	100
GRSA	1	0.14	24.40	73.84	0.78	0.21	0.15	0.62	100
LAGA	0	0.20	33.20	65.12	0.73	0.20	0.18	0.57	100
MABE	0	0.10	30.31	67.35	1.08	0.29	0.13	0.84	100
MEVE	43	1.15	34.74	62.60	1.12	0.30	0.36	0.87	100
PECO	1	0.26	23.35	74.68	0.88	0.24	0.17	0.68	100
PEFO	0	0.10	29.96	68.32	0.77	0.21	0.12	0.63	100
SAPE	7	0.47	23.36	73.52	1.34	0.36	0.39	1.03	100
WEEL	0	0.20	34.72	64.16	0.49	0.13	0.11	0.39	100
WEMI	3	0.31	28.58	69.84	0.69	0.19	0.15	0.55	100
WHPE	0	0.19	19.03	78.47	1.10	0.29	0.24	0.87	100

PNM SJGS BART Modeling - Unit 3
Nitrate Repartitioning - Monthly Varying NH3 Background
2001

Pre-Consent Decree

Class I Area	No. of Days > 0.5 dv	98th Percentile	%_SO4	%_NO3	%_OC	%_EC	%_PMC	%_PMF	%_Total
ARCH	18	1.04	37.90	59.89	0.56	0.35	0.41	0.89	100
BAND	9	0.53	76.32	16.85	1.73	1.07	1.30	2.73	100
BLCA	10	0.58	27.65	66.71	1.42	0.87	1.14	2.21	100
CANY	35	1.44	35.63	61.86	0.63	0.39	0.48	1.02	100
CARE	17	1.10	29.96	67.35	0.65	0.40	0.61	1.03	100
GRCA	7	0.48	30.18	67.22	0.65	0.40	0.53	1.03	100
GRSA	1	0.28	76.24	15.49	2.27	1.39	1.03	3.58	100
LAGA	4	0.40	39.72	57.57	0.70	0.43	0.45	1.13	100
MABE	1	0.24	35.97	61.92	0.56	0.35	0.32	0.89	100
MEVE	100	1.92	53.68	38.69	1.83	1.12	1.82	2.86	100
PECO	6	0.48	51.34	44.27	1.13	0.69	0.80	1.77	100
PEFO	5	0.43	86.46	10.06	0.89	0.55	0.62	1.42	100
SAPE	31	0.88	30.39	63.58	1.46	0.90	1.41	2.26	100
WEEL	6	0.38	37.70	56.66	1.47	0.91	0.92	2.33	100
WEMI	9	0.59	26.83	67.21	1.46	0.90	1.33	2.28	100
WHPE	5	0.37	29.53	67.67	0.74	0.45	0.44	1.17	100

Baseline - Consent Decree

Class I Area	No. of Days > 0.5 dv	98th Percentile	%_SO4	%_NO3	%_OC	%_EC	%_PMC	%_PMF	%_Total
ARCH	18	0.89	35.30	62.84	0.82	0.21	0.17	0.66	100
BAND	3	0.39	26.98	70.54	1.12	0.28	0.21	0.87	100
BLCA	4	0.44	25.68	71.04	1.46	0.37	0.33	1.12	100
CANY	29	1.15	32.46	66.00	0.68	0.17	0.15	0.54	100
CARE	14	0.86	26.87	71.56	0.68	0.17	0.18	0.54	100
GRCA	5	0.35	27.44	70.95	0.71	0.18	0.17	0.56	100
GRSA	0	0.21	36.16	57.33	2.97	0.75	0.50	2.30	100
LAGA	1	0.29	25.67	70.62	1.64	0.42	0.37	1.27	100
MABE	0	0.20	33.23	64.11	1.21	0.30	0.21	0.95	100
MEVE	64	1.56	52.43	37.30	4.36	1.10	1.46	3.35	100
PECO	3	0.35	87.02	9.06	1.73	0.44	0.41	1.34	100
PEFO	2	0.29	85.92	11.67	1.07	0.27	0.21	0.85	100
SAPE	18	0.70	27.84	68.80	1.47	0.37	0.39	1.13	100
WEEL	4	0.30	34.05	62.90	1.38	0.35	0.24	1.08	100
WEMI	6	0.44	21.26	75.66	1.32	0.33	0.40	1.03	100
WHPE	2	0.28	27.58	70.65	0.80	0.20	0.14	0.63	100

WESP

Class I Area	No. of Days > 0.5 dv	98th Percentile	%_SO4	%_NO3	%_OC	%_EC	%_PMC	%_PMF	%_Total
ARCH	18	0.88	32.73	66.01	0.56	0.14	0.12	0.45	100
BAND	3	0.37	81.21	15.56	1.44	0.35	0.32	1.12	100
BLCA	4	0.41	22.23	75.47	1.03	0.25	0.24	0.79	100
CANY	25	1.12	30.80	68.15	0.47	0.11	0.10	0.37	100
CARE	12	0.84	24.95	73.98	0.47	0.12	0.12	0.37	100
GRCA	5	0.34	25.77	73.13	0.48	0.12	0.11	0.38	100
GRSA	0	0.20	90.27	7.37	1.05	0.26	0.24	0.82	100
LAGA	1	0.28	27.05	71.55	0.63	0.16	0.11	0.50	100
MABE	0	0.19	31.00	67.14	0.84	0.21	0.15	0.66	100
MEVE	57	1.39	64.22	27.86	3.38	0.83	1.10	2.60	100
PECO	2	0.33	40.97	57.12	0.87	0.21	0.16	0.67	100
PEFO	2	0.28	86.23	12.11	0.74	0.18	0.15	0.59	100
SAPE	15	0.67	24.67	73.00	1.02	0.25	0.27	0.79	100
WEEL	4	0.29	31.39	66.47	0.97	0.24	0.17	0.76	100
WEMI	5	0.42	22.20	75.31	1.09	0.27	0.28	0.84	100
WHPE	2	0.27	25.88	72.91	0.55	0.14	0.09	0.43	100

PNM SJGS BART Modeling - Unit 3
Nitrate Repartitioning - Monthly Varying NH3 Background
2002

Pre-Consent Decree

Class I Area	No. of Days > 0.5 dv	98th Percentile	%_SO4	%_NO3	%_OC	%_EC	%_PMC	%_PMF	%_Total
ARCH	15	0.81	31.17	63.37	1.30	0.80	1.33	2.03	100
BAND	20	0.81	28.33	63.99	1.89	1.16	1.69	2.94	100
BLCA	9	0.53	21.84	73.75	1.06	0.65	1.04	1.65	100
CANY	22	1.04	23.62	71.52	1.13	0.70	1.26	1.76	100
CARE	5	0.38	34.41	62.98	0.66	0.40	0.48	1.07	100
GRCA	3	0.33	45.95	51.86	0.55	0.34	0.36	0.92	100
GRSA	3	0.33	82.46	13.08	1.16	0.71	0.76	1.83	100
LAGA	5	0.44	25.09	67.37	1.91	1.17	1.50	2.97	100
MABE	0	0.25	28.79	63.57	2.12	1.30	0.81	3.42	100
MEVE	95	2.18	50.54	42.30	1.67	1.03	1.84	2.63	100
PECO	8	0.52	43.31	54.53	0.56	0.34	0.37	0.89	100
PEFO	5	0.25	91.13	1.98	1.75	1.08	1.27	2.80	100
SAPE	43	1.03	34.16	58.88	1.69	1.04	1.59	2.64	100
WEEL	5	0.42	34.33	58.68	1.81	1.11	1.22	2.86	100
WEMI	23	0.82	31.35	66.25	0.58	0.36	0.54	0.92	100
WHPE	3	0.39	33.90	60.27	1.53	0.94	0.95	2.41	100

Baseline - Consent Decree

Class I Area	No. of Days > 0.5 dv	98th Percentile	%_SO4	%_NO3	%_OC	%_EC	%_PMC	%_PMF	%_Total
ARCH	12	0.65	29.26	66.96	1.65	0.42	0.45	1.27	100
BAND	10	0.57	52.51	41.86	2.54	0.64	0.47	1.97	100
BLCA	5	0.41	28.10	70.16	0.78	0.20	0.14	0.62	100
CANY	17	0.85	30.97	66.94	0.92	0.23	0.21	0.73	100
CARE	5	0.26	91.08	1.83	3.13	0.79	0.70	2.47	100
GRCA	3	0.24	42.65	55.95	0.62	0.16	0.12	0.51	100
GRSA	0	0.24	27.92	70.46	0.73	0.18	0.12	0.58	100
LAGA	1	0.33	22.49	73.90	1.64	0.41	0.29	1.26	100
MABE	0	0.18	27.59	70.65	0.80	0.20	0.13	0.63	100
MEVE	76	1.90	42.51	53.81	1.58	0.40	0.48	1.23	100
PECO	5	0.36	30.99	66.44	1.17	0.30	0.18	0.91	100
PEFO	3	0.18	28.46	69.86	0.75	0.19	0.13	0.61	100
SAPE	34	0.81	28.26	67.95	1.66	0.42	0.43	1.29	100
WEEL	4	0.33	32.22	63.43	1.95	0.49	0.38	1.52	100
WEMI	16	0.64	31.41	61.73	2.93	0.74	0.94	2.25	100
WHPE	0	0.31	44.36	54.39	0.55	0.14	0.11	0.44	100

WESP

Class I Area	No. of Days > 0.5 dv	98th Percentile	%_SO4	%_NO3	%_OC	%_EC	%_PMC	%_PMF	%_Total
ARCH	12	0.62	28.98	69.76	0.56	0.14	0.12	0.44	100
BAND	10	0.52	50.03	45.88	1.85	0.46	0.34	1.44	100
BLCA	4	0.40	26.53	72.28	0.54	0.13	0.10	0.42	100
CANY	17	0.82	28.88	69.68	0.64	0.16	0.14	0.50	100
CARE	5	0.24	28.14	70.97	0.39	0.10	0.09	0.31	100
GRCA	2	0.23	41.56	57.49	0.42	0.10	0.08	0.35	100
GRSA	0	0.23	26.25	72.64	0.50	0.12	0.09	0.40	100
LAGA	1	0.31	19.05	78.41	1.16	0.29	0.20	0.89	100
MABE	0	0.18	26.46	72.13	0.63	0.15	0.12	0.50	100
MEVE	72	1.70	39.82	50.06	4.30	1.06	1.46	3.30	100
PECO	4	0.34	39.02	60.01	0.43	0.11	0.08	0.34	100
PEFO	3	0.18	27.04	71.81	0.52	0.13	0.09	0.42	100
SAPE	30	0.77	24.64	72.70	1.17	0.29	0.30	0.91	100
WEEL	4	0.31	24.93	73.89	0.53	0.13	0.09	0.42	100
WEMI	12	0.59	33.30	58.88	3.35	0.82	1.07	2.58	100
WHPE	0	0.30	43.48	55.67	0.38	0.09	0.08	0.30	100

PNM SJGS BART Modeling - Unit 3
Nitrate Repartitioning - Monthly Varying NH3 Background
2003

Pre-Consent Decree

Class I Area	No. of Days > 0.5 dv	98th Percentile	%_SO4	%_NO3	%_OC	%_EC	%_PMC	%_PMF	%_Total
ARCH	14	0.72	30.15	61.20	2.06	1.26	2.13	3.19	100
BAND	15	0.71	23.24	69.03	1.92	1.18	1.63	2.99	100
BLCA	9	0.59	23.67	72.71	0.88	0.54	0.82	1.38	100
CANY	19	0.96	32.66	55.96	2.65	1.63	2.99	4.11	100
CARE	9	0.52	48.88	48.12	0.75	0.46	0.56	1.23	100
GRCA	3	0.26	91.93	1.11	1.76	1.08	1.29	2.83	100
GRSA	3	0.27	49.52	46.33	1.06	0.65	0.76	1.68	100
LAGA	5	0.43	22.09	71.73	1.75	1.07	0.58	2.78	100
MABE	0	0.25	27.57	67.94	1.12	0.69	0.91	1.76	100
MEVE	92	2.14	70.75	6.38	5.19	3.19	6.44	8.05	100
PECO	12	0.58	54.64	39.46	1.53	0.94	0.97	2.45	100
PEFO	1	0.24	88.09	6.50	1.41	0.87	0.86	2.28	100
SAPE	34	0.88	39.44	54.36	1.46	0.90	1.58	2.27	100
WEEL	4	0.38	22.78	73.96	0.83	0.51	0.60	1.31	100
WEMI	15	0.65	30.94	64.97	1.04	0.64	0.76	1.65	100
WHPE	4	0.37	24.02	69.82	1.56	0.96	1.20	2.46	100

Baseline - Consent Decree

Class I Area	No. of Days > 0.5 dv	98th Percentile	%_SO4	%_NO3	%_OC	%_EC	%_PMC	%_PMF	%_Total
ARCH	9	0.66	29.12	65.81	2.19	0.55	0.65	1.68	100
BAND	8	0.61	31.91	64.13	1.75	0.44	0.40	1.36	100
BLCA	7	0.46	33.18	65.04	0.79	0.20	0.18	0.62	100
CANY	14	0.79	32.64	60.84	2.79	0.70	0.88	2.14	100
CARE	4	0.36	91.10	1.19	3.36	0.85	0.90	2.60	100
GRCA	0	0.19	52.76	43.76	1.54	0.39	0.32	1.23	100
GRSA	1	0.21	23.53	72.94	1.57	0.40	0.34	1.22	100
LAGA	3	0.33	21.25	74.88	1.79	0.45	0.16	1.47	100
MABE	0	0.18	22.58	74.94	1.09	0.27	0.27	0.85	100
MEVE	64	1.74	43.30	46.82	4.20	1.06	1.40	3.22	100
PECO	5	0.42	34.27	62.29	1.50	0.38	0.39	1.16	100
PEFO	1	0.17	72.31	23.90	1.69	0.43	0.30	1.36	100
SAPE	18	0.72	27.03	68.03	2.14	0.54	0.62	1.64	100
WEEL	2	0.35	23.08	74.48	1.07	0.27	0.28	0.83	100
WEMI	7	0.50	30.19	67.61	0.97	0.25	0.20	0.78	100
WHPE	2	0.28	90.86	5.64	1.60	0.40	0.26	1.24	100

WESP

Class I Area	No. of Days > 0.5 dv	98th Percentile	%_SO4	%_NO3	%_OC	%_EC	%_PMC	%_PMF	%_Total
ARCH	9	0.62	24.83	71.54	1.57	0.39	0.46	1.21	100
BAND	8	0.59	20.02	77.64	1.03	0.25	0.27	0.79	100
BLCA	7	0.45	31.56	67.22	0.54	0.13	0.12	0.43	100
CANY	13	0.74	45.26	52.57	0.95	0.23	0.22	0.76	100
CARE	3	0.33	29.34	68.04	1.15	0.28	0.30	0.89	100
GRCA	0	0.18	51.56	46.01	1.08	0.27	0.22	0.86	100
GRSA	1	0.20	20.44	77.08	1.11	0.27	0.24	0.86	100
LAGA	3	0.31	35.26	63.25	0.67	0.17	0.12	0.54	100
MABE	0	0.17	20.01	78.27	0.76	0.19	0.19	0.59	100
MEVE	55	1.57	37.08	55.36	3.22	0.79	1.07	2.47	100
PECO	5	0.40	31.09	66.50	1.06	0.26	0.27	0.82	100
PEFO	1	0.16	72.09	25.25	1.19	0.29	0.21	0.96	100
SAPE	16	0.68	22.31	74.18	1.52	0.38	0.44	1.17	100
WEEL	1	0.33	20.44	77.87	0.74	0.18	0.19	0.58	100
WEMI	5	0.47	19.12	77.02	1.74	0.43	0.33	1.37	100
WHPE	2	0.27	91.52	6.01	1.13	0.28	0.19	0.88	100

PNM SJGS BART Modeling - Unit 4
Nitrate Repartitioning - Monthly Varying NH3 Background
2001

Pre-Consent Decree

Class I Area	No. of Days > 0.5 dv	98th Percentile	%_SO4	%_NO3	%_OC	%_EC	%_PMC	%_PMF	%_Total
ARCH	18	1.05	38.73	59.14	0.54	0.33	0.40	0.86	100
BAND	9	0.54	77.25	16.22	1.66	1.02	1.24	2.61	100
BLCA	10	0.58	27.97	66.50	1.39	0.86	1.12	2.16	100
CANY	35	1.47	36.32	61.24	0.61	0.38	0.47	0.99	100
CARE	18	1.11	30.71	66.66	0.64	0.39	0.59	1.01	100
GRCA	7	0.48	31.01	66.45	0.63	0.39	0.51	1.00	100
GRSA	1	0.29	76.95	15.10	2.18	1.34	1.00	3.43	100
LAGA	4	0.40	40.66	56.73	0.68	0.42	0.44	1.09	100
MABE	1	0.24	69.36	25.32	1.36	0.84	0.94	2.18	100
MEVE	97	1.94	55.06	37.27	1.83	1.13	1.84	2.87	100
PECO	6	0.48	32.92	63.69	0.95	0.58	0.38	1.49	100
PEFO	5	0.44	29.28	67.84	0.68	0.42	0.71	1.07	100
SAPE	33	0.89	31.06	63.04	1.43	0.88	1.38	2.22	100
WEEL	6	0.38	38.50	56.07	1.42	0.88	0.88	2.25	100
WEMI	10	0.59	27.20	66.98	1.42	0.88	1.30	2.23	100
WHPE	5	0.37	30.24	67.03	0.72	0.44	0.43	1.14	100

Baseline - Consent Decree

Class I Area	No. of Days > 0.5 dv	98th Percentile	%_SO4	%_NO3	%_OC	%_EC	%_PMC	%_PMF	%_Total
ARCH	18	0.88	35.06	63.08	0.82	0.21	0.17	0.66	100
BAND	3	0.38	26.97	70.54	1.12	0.29	0.20	0.87	100
BLCA	4	0.42	25.63	71.10	1.45	0.37	0.33	1.12	100
CANY	29	1.14	32.53	65.94	0.68	0.17	0.15	0.54	100
CARE	13	0.86	26.89	71.54	0.68	0.18	0.18	0.54	100
GRCA	5	0.36	27.72	70.68	0.70	0.18	0.16	0.55	100
GRSA	0	0.21	36.09	57.39	2.96	0.76	0.50	2.30	100
LAGA	1	0.28	36.17	62.10	0.77	0.20	0.14	0.61	100
MABE	0	0.20	33.07	64.29	1.19	0.31	0.21	0.94	100
MEVE	64	1.55	71.87	17.66	4.45	1.15	1.45	3.43	100
PECO	2	0.34	87.02	9.05	1.73	0.45	0.41	1.35	100
PEFO	2	0.29	85.93	11.66	1.07	0.28	0.21	0.85	100
SAPE	18	0.69	27.73	68.93	1.46	0.38	0.39	1.12	100
WEEL	4	0.30	33.81	63.19	1.36	0.35	0.23	1.07	100
WEMI	6	0.43	21.27	75.64	1.32	0.34	0.40	1.03	100
WHPE	2	0.28	27.76	70.47	0.80	0.21	0.13	0.63	100

WESP

Class I Area	No. of Days > 0.5 dv	98th Percentile	%_SO4	%_NO3	%_OC	%_EC	%_PMC	%_PMF	%_Total
ARCH	17	0.87	32.51	66.24	0.56	0.14	0.12	0.44	100
BAND	3	0.36	81.19	15.57	1.44	0.36	0.33	1.11	100
BLCA	3	0.40	22.20	75.50	1.03	0.26	0.23	0.78	100
CANY	25	1.10	30.87	68.08	0.47	0.12	0.10	0.37	100
CARE	12	0.84	24.97	73.95	0.47	0.12	0.12	0.37	100
GRCA	5	0.35	26.06	72.84	0.48	0.12	0.11	0.38	100
GRSA	0	0.19	90.27	7.36	1.05	0.26	0.24	0.81	100
LAGA	1	0.28	34.69	64.13	0.53	0.13	0.10	0.42	100
MABE	0	0.19	30.86	67.31	0.83	0.21	0.15	0.65	100
MEVE	56	1.40	63.25	28.94	3.34	0.83	1.08	2.55	100
PECO	2	0.32	40.94	57.14	0.87	0.22	0.16	0.67	100
PEFO	2	0.28	86.24	12.10	0.74	0.19	0.15	0.58	100
SAPE	14	0.66	24.58	73.10	1.02	0.26	0.27	0.78	100
WEEL	4	0.29	31.17	66.73	0.96	0.24	0.16	0.74	100
WEMI	5	0.41	29.56	68.46	0.85	0.21	0.28	0.65	100
WHPE	2	0.27	26.07	72.71	0.55	0.14	0.09	0.43	100

PNM SJGS BART Modeling - Unit 4
Nitrate Repartitioning - Monthly Varying NH3 Background
2002

Pre-Consent Decree

Class I Area	No. of Days > 0.5 dv	98th Percentile	%_SO4	%_NO3	%_OC	%_EC	%_PMC	%_PMF	%_Total
ARCH	15	0.84	33.46	63.61	0.73	0.45	0.58	1.17	100
BAND	20	0.81	53.16	38.54	2.16	1.33	1.41	3.39	100
BLCA	10	0.54	22.21	73.48	1.04	0.64	1.01	1.62	100
CANY	22	1.06	24.09	71.18	1.10	0.68	1.23	1.72	100
CARE	5	0.38	35.19	62.28	0.64	0.39	0.47	1.04	100
GRCA	3	0.34	47.06	50.82	0.54	0.33	0.35	0.90	100
GRSA	2	0.34	83.04	12.72	1.10	0.68	0.71	1.74	100
LAGA	4	0.45	81.97	13.16	1.28	0.79	0.74	2.05	100
MABE	0	0.25	28.95	63.55	2.07	1.28	0.79	3.36	100
MEVE	96	2.18	51.65	41.36	1.63	1.00	1.80	2.56	100
PECO	8	0.52	44.34	53.57	0.54	0.33	0.36	0.86	100
PEFO	5	0.27	91.57	1.90	1.66	1.02	1.20	2.65	100
SAPE	43	1.04	34.95	58.17	1.67	1.03	1.57	2.61	100
WEEL	5	0.43	35.21	57.78	1.81	1.12	1.23	2.86	100
WEMI	25	0.81	32.08	65.59	0.56	0.35	0.53	0.90	100
WHPE	4	0.41	34.54	59.79	1.49	0.92	0.93	2.35	100

Baseline - Consent Decree

Class I Area	No. of Days > 0.5 dv	98th Percentile	%_SO4	%_NO3	%_OC	%_EC	%_PMC	%_PMF	%_Total
ARCH	12	0.65	29.14	67.09	1.64	0.42	0.45	1.27	100
BAND	10	0.56	52.56	41.80	2.54	0.65	0.47	1.98	100
BLCA	4	0.42	20.20	77.31	1.08	0.28	0.30	0.83	100
CANY	17	0.85	30.88	67.04	0.92	0.24	0.20	0.73	100
CARE	5	0.26	91.06	1.83	3.12	0.81	0.70	2.47	100
GRCA	3	0.24	42.57	56.03	0.62	0.16	0.12	0.51	100
GRSA	0	0.23	28.00	70.38	0.73	0.19	0.12	0.58	100
LAGA	1	0.32	22.47	73.91	1.64	0.42	0.29	1.27	100
MABE	0	0.19	28.63	66.47	2.26	0.58	0.24	1.82	100
MEVE	75	1.89	42.10	54.26	1.56	0.40	0.47	1.22	100
PECO	5	0.35	30.81	66.63	1.17	0.30	0.18	0.91	100
PEFO	3	0.18	28.47	69.84	0.75	0.19	0.13	0.61	100
SAPE	34	0.80	28.16	68.06	1.65	0.42	0.42	1.29	100
WEEL	4	0.33	24.93	71.68	1.47	0.38	0.41	1.13	100
WEMI	13	0.63	31.35	61.78	2.92	0.75	0.93	2.26	100
WHPE	0	0.30	44.20	54.55	0.55	0.14	0.11	0.44	100

WESP

Class I Area	No. of Days > 0.5 dv	98th Percentile	%_SO4	%_NO3	%_OC	%_EC	%_PMC	%_PMF	%_Total
ARCH	11	0.61	29.00	69.74	0.56	0.14	0.12	0.44	100
BAND	10	0.51	50.09	45.81	1.86	0.46	0.34	1.43	100
BLCA	4	0.40	17.31	80.97	0.75	0.19	0.21	0.58	100
CANY	16	0.82	28.80	69.77	0.64	0.16	0.14	0.50	100
CARE	5	0.24	28.13	70.98	0.39	0.10	0.09	0.31	100
GRCA	2	0.23	41.47	57.57	0.42	0.11	0.08	0.35	100
GRSA	0	0.23	24.30	73.50	1.00	0.25	0.19	0.77	100
LAGA	1	0.30	19.03	78.42	1.17	0.29	0.20	0.89	100
MABE	0	0.18	26.45	72.15	0.63	0.16	0.12	0.49	100
MEVE	72	1.68	24.68	72.78	1.11	0.28	0.31	0.85	100
PECO	4	0.34	28.38	69.85	0.81	0.20	0.12	0.63	100
PEFO	2	0.17	27.05	71.79	0.52	0.13	0.09	0.42	100
SAPE	29	0.76	24.57	72.78	1.16	0.29	0.30	0.90	100
WEEL	4	0.32	21.79	75.83	1.04	0.26	0.29	0.79	100
WEMI	11	0.59	33.16	59.04	3.35	0.84	1.07	2.55	100
WHPE	0	0.30	43.32	55.83	0.38	0.09	0.08	0.30	100

PNM SJGS BART Modeling - Unit 4
Nitrate Repartitioning - Monthly Varying NH3 Background
2003

Pre-Consent Decree

Class I Area	No. of Days > 0.5 dv	98th Percentile	%_SO4	%_NO3	%_OC	%_EC	%_PMC	%_PMF	%_Total
ARCH	14	0.74	30.46	60.93	2.04	1.26	2.14	3.18	100
BAND	15	0.71	23.48	68.94	1.88	1.16	1.60	2.93	100
BLCA	9	0.59	37.08	55.34	1.83	1.13	1.78	2.84	100
CANY	20	0.97	32.92	55.93	2.59	1.60	2.93	4.03	100
CARE	9	0.53	49.90	47.20	0.72	0.45	0.54	1.19	100
GRCA	3	0.27	92.31	1.07	1.68	1.03	1.22	2.69	100
GRSA	3	0.27	24.99	69.23	1.46	0.90	1.12	2.30	100
LAGA	5	0.43	22.20	71.74	1.71	1.06	0.56	2.72	100
MABE	0	0.24	24.98	71.07	0.97	0.60	0.87	1.52	100
MEVE	93	2.15	71.14	6.46	5.08	3.13	6.31	7.88	100
PECO	12	0.59	55.50	38.80	1.48	0.91	0.94	2.37	100
PEFO	1	0.25	88.57	6.28	1.34	0.83	0.81	2.17	100
SAPE	35	0.88	28.38	62.72	2.09	1.29	2.27	3.25	100
WEEL	5	0.39	23.21	73.59	0.82	0.50	0.58	1.29	100
WEMI	15	0.65	31.61	64.42	1.01	0.63	0.73	1.61	100
WHPE	4	0.38	24.18	69.77	1.52	0.94	1.18	2.41	100

Baseline - Consent Decree

Class I Area	No. of Days > 0.5 dv	98th Percentile	%_SO4	%_NO3	%_OC	%_EC	%_PMC	%_PMF	%_Total
ARCH	9	0.63	28.93	66.06	2.16	0.56	0.63	1.67	100
BAND	8	0.60	23.30	73.35	1.46	0.38	0.38	1.13	100
BLCA	7	0.44	33.38	64.83	0.79	0.20	0.18	0.62	100
CANY	13	0.78	32.54	60.94	2.78	0.72	0.88	2.14	100
CARE	4	0.35	91.08	1.19	3.35	0.86	0.90	2.61	100
GRCA	0	0.18	52.85	43.67	1.54	0.40	0.32	1.23	100
GRSA	1	0.21	23.53	72.93	1.57	0.41	0.34	1.23	100
LAGA	3	0.32	21.23	74.90	1.79	0.46	0.16	1.47	100
MABE	0	0.18	22.92	75.41	0.73	0.19	0.18	0.57	100
MEVE	63	1.73	44.56	45.24	4.32	1.11	1.44	3.33	100
PECO	5	0.41	52.81	43.33	1.73	0.45	0.31	1.38	100
PEFO	1	0.17	31.86	65.63	1.13	0.29	0.18	0.92	100
SAPE	17	0.69	26.79	68.32	2.10	0.54	0.62	1.62	100
WEEL	1	0.33	23.22	75.05	0.76	0.19	0.19	0.59	100
WEMI	6	0.49	30.25	67.54	0.97	0.25	0.20	0.78	100
WHPE	2	0.28	90.85	5.63	1.59	0.41	0.26	1.24	100

WESP

Class I Area	No. of Days > 0.5 dv	98th Percentile	%_SO4	%_NO3	%_OC	%_EC	%_PMC	%_PMF	%_Total
ARCH	9	0.59	24.69	71.73	1.56	0.39	0.45	1.19	100
BAND	8	0.57	19.99	77.67	1.03	0.26	0.27	0.79	100
BLCA	6	0.43	31.77	67.01	0.54	0.14	0.12	0.43	100
CANY	13	0.73	45.13	52.70	0.96	0.24	0.22	0.76	100
CARE	3	0.32	29.23	68.16	1.14	0.29	0.30	0.88	100
GRCA	0	0.17	51.66	45.91	1.08	0.27	0.22	0.86	100
GRSA	1	0.19	20.43	77.08	1.11	0.28	0.24	0.86	100
LAGA	1	0.30	17.42	79.84	1.27	0.32	0.11	1.04	100
MABE	0	0.17	21.31	77.54	0.50	0.13	0.13	0.39	100
MEVE	55	1.56	37.16	55.25	3.24	0.81	1.07	2.47	100
PECO	5	0.39	50.97	46.29	1.23	0.31	0.22	0.97	100
PEFO	1	0.16	72.11	25.23	1.20	0.30	0.21	0.96	100
SAPE	16	0.64	22.14	74.38	1.51	0.38	0.44	1.15	100
WEEL	1	0.32	21.56	77.25	0.52	0.13	0.13	0.41	100
WEMI	4	0.46	19.09	77.05	1.74	0.43	0.33	1.36	100
WHPE	2	0.26	40.37	58.46	0.54	0.13	0.08	0.42	100