



**DRAFT**  
**2006 Regional SO<sub>2</sub> Emissions and Milestone Report**

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## **DRAFT**

### **2006 Regional SO<sub>2</sub> Emissions and Milestone Report**

#### **Executive Summary**

Under Section 309 of the federal Regional Haze Rule, nine western states and tribes within those states have the option of submitting plans to reduce regional haze emissions that impair visibility at 16 Class I national parks and wilderness areas on the Colorado Plateau. Five states -- Arizona, New Mexico, Oregon, Utah, and Wyoming -- initially exercised this option by submitting plans to EPA by December 31, 2003. Oregon elected to cease participation in the program in 2006. The tribes were not subject to the deadline and still can opt into the program at any time. Under the Section 309 plans, these four states have begun to track the emissions of the applicable stationary sources as part of the pre-trigger portion of the SO<sub>2</sub> Milestone and Backstop Trading Program. The Western Regional Air Partnership (WRAP) is assisting these states with the implementation and management of the regional emission reduction program.

As part of this program, the participating states must submit an annual Regional Sulfur Dioxide (SO<sub>2</sub>) Emissions and Milestone Report that compares emissions to milestones. A milestone is a maximum level of annual emissions for a given year. The first report was submitted in 2004 for the calendar year 2003.

The milestone for 2006 was set at 420,194 tons for the four-state region. To determine whether or not the milestone was met, the 2004, 2005, and 2006 adjusted emissions were averaged, and this average was compared to the 2006 milestone. Oregon's emissions were removed from the 2004 and 2005 emission totals before the average was calculated, to stay consistent with the 2006 emissions total. The adjustments to reported emissions were required to allow the current emissions estimates to be comparable to the emissions monitoring or calculation method used in the base year inventory (1999 for utilities and 1998 for all other sources).

The states of Arizona, New Mexico, Utah, and Wyoming reported 260,392 tons of SO<sub>2</sub> emissions for the calendar year 2006. The total emissions increased to 279,134 tons of SO<sub>2</sub> after making adjustments to account for changes in monitoring and calculation methods. The adjustments result in an additional 18,742 tons of SO<sub>2</sub> emissions, which is about 7% of the reported total emissions. Adjustments required for changes in Part 75, Acid Rain Program, flow monitor quality assurance methods account for about 17,772 tons (95%) of the increase in the estimate, with the remaining 970 tons from other types of monitoring and calculation method changes. The adjusted emissions values for 2004 and 2005 were 320,045 tons and 288,040 tons, respectively. The 2006 adjusted emissions total of 279,134 tons was lower than the 2005 adjusted emissions total of 288,040 tons. The average of 2004, 2005, and 2006 adjusted emissions is 295,740 tons.

Based on this average adjusted annual emissions estimate, a preliminary determination

**Based on the adjusted milestone and emissions data, the average of 2004, 2005, and 2006 emissions is about 30% below the 2006 four state regional milestone.**

has been made that the four states have met the 2006 regional SO<sub>2</sub> milestone of 420,194 tons. The 420,194 ton milestone was determined as described in Section 51.309(h)(1)(i) and the 309 State Implementation Plans (SIPs). The milestone includes an adjustment to the base milestone to subtract emissions for western states not participating. The SIPs contain additional provisions to adjust the milestones to reflect variations in smelter operations, and to account for enforcement actions (to reduce the milestones where an enforcement action identified that emissions in the baseline period were greater than allowable emissions). Based on emissions data received from the states and SIP requirements regarding adjustments to the milestones, the 2006 period does not require a smelter adjustment, or adjustments for enforcement actions.

The SIPs also require that the annual report identify changes in the source population from year to year and significant changes in a source's emissions from year to year. The significant emissions changes from 2005 to 2006 are included in Section 7 of this report. A list of facilities added to or removed from the list of subject sources included in the base year inventories is included in Appendix B.

**Table ES-1**  
**Overview of 2006 Regional Milestone and Emissions for Section 309 Participating States**

<b><u>2006 Sulfur Dioxide Milestone</u></b>	
Base Regional 2006 Milestone*	682,000 tons
Adjustments**	
States and Tribes not Participating in the Program	-261,806 tons
Smelter Operations	0 tons
Enforcement	0 tons
Adjusted Four-State 2006 Milestone	420,194 tons
<b><u>2006 Sulfur Dioxide Emissions</u></b>	
Reported Four -State 2006 Emissions	260,392 tons
Adjustments***	
Part 75 Flow Rate Procedures	17,772 tons
Other Emission Monitoring and Calculation Methods	970 tons
Adjusted Four -State 2006 Emissions	279,134 tons
<b><u>Average Sulfur Dioxide Emissions (2004, 2005 &amp; 2006)</u></b>	
Adjusted Four -State 2006 Emissions	279,134 tons
Adjusted Four -State 2005 Emissions	288,040 tons
Adjusted Four -State 2004 Emissions	320,045 tons
Average of 2004, 2005 & 2006 Adjusted Four -State Emissions	295,740 tons
<b><u>Comparison of Emissions to Milestone</u></b>	
Average of 2004, 2005 & 2006 Adjusted Four -State Emissions	295,740 tons
Adjusted Four -state 2006 Milestone	420,194 tons
Difference (negative value = emissions < milestone)	-124,454 tons
2004 - 2006 Emissions Average as Percent of 2006 Milestone	70%

\* See 40 CFR 51.309(h)(1), Table 1, Column 3, and the Regional Milestones section of each state's 309 SIP. (Applies if neither the BHP San Manuel nor the Phelps Dodge smelter facilities resume operation.)

\*\* See 40 CFR 51.309(h)(1)(i), and (ii), and (v)-(viii), and the Regional Milestones section of each state's 309 SIP.

\*\*\* See 40 CFR 51.309(h)(1)(iii) and (iv), and the Annual Emissions Report section of each state's 309 SIP.

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## 2006 Regional SO<sub>2</sub> Emissions and Milestone Report

### 1.0 Introduction

#### 1.1 Background

Under Section 309 of the federal Regional Haze Rule (40 CFR Part 51), nine western states and the tribes within those states have the option of submitting plans to reduce regional haze emissions that impair visibility at 16 Class I national parks and wilderness areas on the Colorado Plateau. Five states -- Arizona, New Mexico, Oregon, Utah, and Wyoming -- and the city of Albuquerque, New Mexico exercised this option by submitting plans to EPA by December 1, 2003. Oregon has since elected to cease participation in the SO<sub>2</sub> Milestone and Backstop Trading Program by not resubmitting a Section 309 SIP. The tribes were not subject to this deadline and still can opt into the program at any time.

Under the Section 309 State Implementation Plans (SIPs), these four states have begun to track emissions under the pre-trigger requirements of the SO<sub>2</sub> Milestone and Backstop Trading Program. The Western Regional Air Partnership (WRAP) is assisting these states with the implementation and management of this regional emission reduction program.

Under the milestone phase of the program, the states have established annual SO<sub>2</sub> emissions targets (from 2003 to 2018). These voluntary emissions reduction targets represent reasonable progress in reducing the emissions that contribute to regional haze. If the participating sources fail to meet the milestones through this voluntary program, then the states will trigger the backstop trading program and implement a regulatory emissions cap for the states, allocate emissions allowances (or credits) to the affected sources based on the emissions cap, and require the sources to hold sufficient allowances to cover their emissions each year.

This report is the fourth annual report for the milestone phase of this program. The report provides background on regional haze and the Section 309 program, the milestones established under the program, and the emissions reported for 2006. Based on the first four years, the voluntary milestone phase of the program is working, and emissions are well below the target levels.

#### What is Regional Haze?

Regional haze is air pollution that is transported long distances and reduces visibility in national parks and wilderness areas across the country. Over the years, this haze has reduced the visual range from 145 kilometers (90 miles) to 24-50 kilometers (15-31 miles) in the East, and from 225 kilometers (140 miles) to 56-145 kilometers (35-90 miles) in the West. The pollutants that create this haze are sulfates, nitrates, organic carbon, elemental carbon, and soil dust. Human-caused haze sources include industry, motor vehicles, agricultural and forestry burning, and windblown dust from roads and farming practices.

### What U.S. EPA Requirements Apply?

In 1999, the Environmental Protection Agency (EPA) issued regulations to address regional haze in 156 national parks and wilderness areas across the country. These regulations were published in the Federal Register on July 1, 1999 (64 FR 35714). The goal of the Regional Haze Rule (RHR) is to eliminate human-caused visibility impairment in national parks and wilderness areas across the country. It contains strategies to improve visibility over the next 60 years, and requires states to adopt implementation plans.

EPA's RHR provides two paths to address regional haze. One is 40 CFR 51.308 (Section 308), and requires most states to develop long-term strategies out to the year 2064. These strategies must be shown to make "reasonable progress" in improving visibility in Class I areas inside the state and in neighboring jurisdictions. The other is 40 CFR 51.309 (Section 309), and is an option for nine states -- Arizona, California, Colorado, Idaho, Nevada, New Mexico, Oregon, Utah, and Wyoming -- and the 211 tribes located within these states to adopt regional haze strategies for the period from 2003 to 2018. These strategies are based on recommendations from the Grand Canyon Visibility Transport Commission (GCVTC) for protecting the 16 Class I areas on the Colorado Plateau. Adopting these strategies constitutes reasonable progress until 2018. These same strategies can also be used by the nine western states and tribes to protect the other Class I areas within their own jurisdictions.

### How Have the WRAP States Responded to EPA Requirements?

Of the nine states (and tribes within those states) that have the option under Section 309 of participating in a regional strategy to reduce SO<sub>2</sub> emissions, five states had originally submitted Section 309 SIPs to EPA. These states are Arizona, New Mexico, Oregon, Utah, and Wyoming. Oregon has opted out of submitted a Section 309 SIP, which leaves four participating states. In addition, the City of Albuquerque has also submitted a Section 309 SIP. To date, no tribes have opted to participate under Section 309, and the other four states of the original nine opted to submit SIPs under Section 308 of the Regional Haze Rule.

The following summarizes a few key elements of the Section 309 process for the four states:

1. Section 309(d)(4)(i) requires SO<sub>2</sub> milestones in the SIP. Section 309(h)(1) contains the actual SO<sub>2</sub> milestones for each year from 2003 to 2018, and includes provisions for making adjustments to these milestones if necessary.
2. Section 309(d)(4)(ii) requires monitoring and reporting of stationary source SO<sub>2</sub> emissions in order to ensure the SO<sub>2</sub> milestones are met. The SIP must commit to reporting to the WRAP as well as to EPA. Section 309(h)(2) specifies that monitoring and reporting starts in 2003, and applies to all sources with reported SO<sub>2</sub> emissions over 100 tons per year. Section 309(h)(2) also contains provisions on how to document emission calculations, conduct recordkeeping, and comply with other reporting requirements.



3. Section 309(d)(4)(iii) requires that a SIP contain criteria and procedures for activating the trading program within 5 years if an annual milestone is exceeded. A Section 309 SIP also must provide assessments in 2008, 2013, and 2018. Section 309(h)(3) describes the mechanism for comparing emissions to the milestones using annual emission reports, and allows for a regional planning organization like the WRAP to assist in performing this function. It also includes requirements for public and independent review.

This report responds to Item 3, above, and provides the annual report that compares the 2006 emissions against the milestones for the states that have submitted Section 309 SIPs to EPA.

#### What Elements Must the Regional SO<sub>2</sub> Emissions and Milestone Report Contain?

To facilitate compliance with the Section 309 SIPs, the WRAP has committed to compiling a regional report on emissions for each year. In accordance with the SIPs, the WRAP will compile the individual state emission reports into a summary report that includes:

1. Reported regional SO<sub>2</sub> emissions (tons/year).
2. Adjustments to account for:
  - Changes in flow rate measurement methods;
  - Changes in emissions monitoring or calculation methods; or
  - Enforcement actions or settlement agreements as a result of enforcement actions.
3. As applicable, average adjusted emissions for the last three years (which are compared to the regional milestone). Since this is the fourth report, 2004, 2005, and 2006 emissions are averaged.
4. Regional milestone adjustments to account for states/tribes not participating in the program and the operational status of certain smelters.

#### How Is Compliance with the SO<sub>2</sub> Milestone Determined?

While the WRAP assists with the preparation of this report, each state reviews the information in the report, and proposes a draft determination that the regional SO<sub>2</sub> milestone has either been met or exceeded. The draft determination is then submitted for public review and comment during the first part of 2008, culminating in a final report sent to EPA by March 31, 2008.

## 1.2 Report Organization

This report presents the regional SO<sub>2</sub> emissions and milestone information required by the 309 SIPs for the four states. The report is divided into the following sections, including two appendices:

- Reported SO<sub>2</sub> Emissions in 2006;
- Monitoring Methodology Emissions Adjustments;
- Three-year Average Emissions;
- Enforcement Milestone Adjustments;
- Smelter Milestone Adjustments;
- Quality Assurance (including Source Change information);
- Preliminary Milestone Determination;
- Appendix A - Facility Emissions and Emissions Adjustments; and
- Appendix B - Changes to SO<sub>2</sub> Emissions and Milestone Source Inventory.

## 2.0 Reported SO<sub>2</sub> Emissions in 2006

All stationary sources with reported emissions of 100 tons or more per year in 2000 or any subsequent year are required to report annual SO<sub>2</sub> emissions. Table 1 summarizes the annual reported emissions from applicable sources in each state. The 2006 reported SO<sub>2</sub> emissions for each applicable source are listed in Appendix A, Table A-1.

**Table 1**  
**Reported 2006 SO<sub>2</sub> Emissions by State**

State	Reported 2006 SO <sub>2</sub> Emissions (tons/year)
Arizona	71,684
New Mexico	31,068
Utah	44,175
Wyoming	113,465
TOTAL	260,392

## 3.0 Monitoring Methodology Emissions Adjustments

The annual emissions reports for each state include proposed emissions adjustments to ensure consistent comparison of emissions to the milestones. The adjustments account for any differences in emissions that result from changes in the monitoring or calculation methodology used in 2006 as compared to the methodology used to calculate baseline year emissions. The adjustments described in the following sections will also be performed in subsequent reports until the milestones are revised in the SIPs.

### 3.1 Changes in Part 75 Flow Rate Methodology

The 309 SIPs and Section 51.309(h)(1)(iv) spell out three specific methods for adjusting Part 75 Acid Rain Program electric generating unit emissions due to changes in quality assurance procedures for the flow monitor component of SO<sub>2</sub> continuous emission monitoring systems. These changes involve the use of new flow reference methods in the Relative Accuracy Test Audit (RATA), which were not available in the 1999 baseline year. The use of these new methods (reference methods 2F, 2G, 2H, and 2J) are expected to result in a decrease in the SO<sub>2</sub> emissions measurement.

The three methods in the SIPs for adjusting for flow RATA reference method changes are outlined below:

1. Directly determine the difference in flow rate through a side-by-side comparison of data collected with the new and old flow reference methods during a RATA test.
2. Compare the annual average heat rate using Acid Rain heat input data (mmBtu) and total generation (MWhrs) as reported to the federal Energy Information Administration (EIA). Under this approach, the flow adjustment factor shall be calculated using the following ratio:

$$\frac{\text{Heat input/MW for first full year of data using new flow rate method}}{\text{Heat input/MW for last full year of data using old flow rate method}}$$

3. Compare the standard CFM per MW before and after the new flow reference method based on CEM data submitted in the Acid Rain Program, as follows:

$$\frac{\text{SCF/Unit of Generation for first full year of data using new flow rate method}}{\text{SCF/Unit of Generation for last full year of data using old flow rate method}}$$

New Mexico, Utah, Arizona, and Wyoming provided adjusted emissions for changes in the Part 75 flow RATA reference method for several plants: the Public Service Corp of New Mexico San Juan plant and the Tri-State Escalante plant in New Mexico; the PacifiCorp Carbon, Hunter, and Huntington plants and the Intermountain Power Service Corporation plant in Utah; the AEPCO Apache Station and Pinnacle West - Cholla Generating Station in Arizona; and the Pacifcorp Dave Johnston, Jim Bridger, Naughton, and Wyodak plants in Wyoming. Changes in the RATA flow reference method result in an upward adjustment for the 2006 SO<sub>2</sub> emissions of 17,772 tons.

The adjustment for each of these plants is listed below in Table 2. The Appendix table A-1 provides additional information on the flow RATA reference method changes, and which adjustment method was used for each plant.

**Table 2**  
**Adjustments for Changes in Part 75 Flow RATA**

State	Source	Reported 2006 SO <sub>2</sub> Emissions (tons)	Flow RATA Adjustment (tons)	Adjusted 2006 SO <sub>2</sub> Emissions (tons)
AZ	AEPCO - Apache Station	3,019	15	3,034
AZ	Pinnacle West - Cholla Generating Station	21,147	119	21,266
NM	Public Service Co of New Mexico/San Juan Generating Station	14,998	2,437	17,435
NM	Tri-State Gen & Transmission/Escalante Station	970	403	1,373
UT	Intermountain Power Service Corporation - Intermountain Generation Station	4,241	21	4,262
UT	PacifiCorp - Carbon Power Plant	6,779	1,074	7,853
UT	PacifiCorp - Hunter Power Plant	7,339	1,058	8,397
UT	PacifiCorp - Huntington Power Plant	17,402	2,932	20,334
WY	PacifiCorp - Dave Johnston	22,268	4,574	26,842
WY	PacifiCorp - Jim Bridger	20,055	1,556	21,611
WY	PacifiCorp - Naughton	20,664	3,192	23,856
WY	PacifiCorp - Wyodak	6,514	391	6,905

### 3.2 Changes in Emissions Monitoring and Calculation Methodology

In addition to the specific flow reference method related requirement for Part 75 program sources, there is also a general requirement to account for any changes in emissions monitoring or calculation methods. The reported emissions are adjusted so that the adjusted emissions levels are comparable to the levels that would result if the state used the same emissions monitoring or calculation method that was used in the base year inventory (1999 for utilities and 1998 for all other sources). The net impact throughout the region as a result of these adjustments is an increase of 889 tons from the reported 2006 emissions. Table 3 summarizes these results, and Appendix A provides additional source information. Some key aspects of the adjustments include:

- Utah adjusted their emissions downward by 25 tons.
- Wyoming adjusted their emissions downward by 82 tons.

- Arizona did not report any emissions adjustments.
- The city of Albuquerque, New Mexico reported that plant baseline emissions were incorrect for two facilities, which should not have been included in milestone calculations. In each case, the 1998 baseline emissions were based on the facility potential to emit, and not on reported emissions, which were less than 100 tons per year in 1998 and in each year since then. Thus, their emissions would not typically be included in this report, but until the milestones can be revised in the next SIP revision to correct the baseline error, these sources will be included and adjusted up to their potential to emit so that "paper decreases" in emissions are not counted towards meeting the milestones.
- New Mexico did not have information on the baseline year emissions calculation and monitoring methodologies, and thus did not make any adjustments for facilities under the state's jurisdiction. The 1998 baseline year corresponded to a period when New Mexico's inventory relied on the sources to calculate and report emissions. Also, during that period, New Mexico prepared an emissions inventory every other odd year (1997 and 1999).

**Table 3**  
**Adjustments for Changes in Monitoring Methodology**  
**(Utah, Wyoming, and Albuquerque, New Mexico)**

State	Source	Reported 2006 SO <sub>2</sub> Emissions (tons)	Adjusted 2006 SO <sub>2</sub> Emissions (tons)	Monitoring Methodology Adjustment (tons)	Comment
NM	GCC Rio Grande Cement	16	1,087	1,071	Facility potential to emit was used for the baseline year calculation. Adjustment is equal to the difference between reported and potential emissions.
NM	Southside Water Reclamation Plant	57	63	6	Facility potential to emit was used for the baseline year calculation. Adjustment is equal to the difference between reported and potential emissions.

(cont.)

**Table 3**  
**Adjustments for Changes in Monitoring Methodology**  
**(Utah, Wyoming, and Albuquerque, New Mexico) (cont.)**

State	Source	Reported 2006 SO <sub>2</sub> Emissions (tons)	Adjusted 2006 SO <sub>2</sub> Emissions (tons)	Monitoring Methodology Adjustment (tons)	Comment
UT	Chevron Products Co. - Salt Lake Refinery	1,174	793	-381	AP42 emission factor changed. In calculating flares, method changed from AP42 to engineering data.
UT	Graymont Western US Inc. - Cricket Mountain Plant	34	423	389	AP42 emission factors changed. Method of calculating kiln emissions changed from permit limit to stack test.
UT	Tesoro West Coast - Salt Lake City Refinery	940	905	-35	Reported emissions include SO <sub>3</sub> . SO <sub>3</sub> was not included in 1998.
UT	Holly Ref. - Phillips Refinery	478	480	2	Changed the estimation method from AP42 in 1998 to CEM.
WY	American Colloid Mineral Co - East Colony	73	71	-2	Dryer SO <sub>2</sub> emissions were calculated using a sulfur content of 0.34% and a control efficiency of 65%.
WY	American Colloid Mineral Co - West Colony	53	58	5	Dryer SO <sub>2</sub> emissions were calculated using a sulfur content of 0.34% and a control efficiency of 65%.
WY	Anadarko E&P Co LP - Brady Gas Plant	89	170	81	Emissions calculated using emission test, permitted allowable emissions, and mass balance.
WY	University of Wyoming - Heat Plant	69	135	66	Stack tests conducted on the boilers in 2006. AP42 emission factors were used in past years.
WY	Solvay Minerals - Soda Ash Plant	64	102	38	Change in calculation method from base year.
WY	Sinclair Oil Company - Sinclair Refinery	1,260	990	-270	FCC unit used stack test and hours of operation in 1998; went to CEM in 2004.

#### 4.0 Three-Year Average Emissions (2004, 2005, and 2006)

The SIPs require multi-year averaging of emissions from 2004 to 2017 for the milestone comparison. From 2005 to 2017, a three-year average (which includes the reporting year and the two previous years) will be calculated to compare with the milestone. The average of the three years' emissions from 2004 to 2006 is 295,740 tons, which is less than the 2006 adjusted milestone of 420,194 tons. Table 4 shows the adjusted emissions for each year and three year average emissions. The following report sections describe the adjusted milestone determination.

**Table 4**  
**Average Sulfur Dioxide Emissions (2004, 2005 & 2006)**

Year	Adjusted SO <sub>2</sub> Emissions (tons/year)
2004	320,045
2005	288,040
2006	279,134
Three Year Average (2004, 2005, 2006)	295,740

#### 5.0 Enforcement Milestone Adjustments

The SIPs require that each state report on proposed milestone adjustments that are due to enforcement actions, which affect baseline year emissions. The purpose of this adjustment is to remove emissions that occurred above the allowable level in the baseline year from the baseline and the annual milestones. The enforcement milestone adjustments require an approved SIP revision before taking effect (see Section 51.309(h)(1)(v) of the Regional Haze Rule).

##### Enforcement Milestone Adjustment

There were no proposed enforcement action related milestone adjustments reported for 2006.

#### 6.0 Smelter Milestone Adjustments

##### Smelter Adjustment Scenarios

There are two general milestone adjustment scenarios for smelters in the 309 SIPs and 40 CFR 51.309(h)(1)(ii). First, if either the BHP San Manuel (Arizona) or Phelps Dodge Hidalgo (New Mexico) smelter resumes operation, the milestones will be increased. Once the adjustments have been made for each smelter, the milestones would not be changed due to future suspensions or changes in plant operations, except as specifically provided in the regulations. At this point, neither of these smelters has resumed operation, so this type of adjustment does not apply for the 2006 period.

The second type of adjustment applies to the operations at the remaining smelters. If one or both of the BHP San Manuel or Phelps Dodge Hidalgo smelters do not resume operation, the state or tribe will determine the amount of facility specific set-aside, if any, that will be added to the milestone to account for operational increases at the remaining smelters. This set-aside is only available for use if the annual sulfur input and emissions from the copper smelters are above the baseline levels listed in the applicable SIP. The increase to the milestone is based on a smelter's proportional increase above its baseline sulfur input.

### 2006 Smelter Adjustment

A comparison of smelter 2006 emissions to baseline levels in Table 3B of Section 51.309 is provided in Table 5, and shows that none of the operating smelters reported 2006 SO<sub>2</sub> emissions that exceed the baseline emissions. Therefore, the milestone adjustment from the facility-specific set-asides does not apply in 2006.

**Table 5**  
**Smelter 2006 SO<sub>2</sub> Emissions and Baseline SO<sub>2</sub> Emissions**

State	Source	Reported 2006 SO <sub>2</sub> Emissions (tons)	SO <sub>2</sub> Baseline Emissions (tons)
AZ	BHP San Manuel	0	16,000
AZ	Asarco Hayden	16,088	23,000
AZ	Phelps Dodge Miami	6,383	8,000
NM	Phelps Dodge Hurley	0	16,000
NM	Phelps Dodge Hidalgo	0	22,000
UT	Kennecott Salt Lake	737	1,000

## 7.0 Quality Assurance

The states provided 2006 emissions data based on their state emissions inventories. For this report, additional quality assurance (QA) procedures were used to supplement the normal QA procedures the states follow for their emissions inventories. First, each state submitted a source change report, and second, the states compared their inventory data for utility sources against 40 CFR Part 75 Acid Rain Program monitoring data.

### 7.1 Source Change Report

Section 51.309(v) and the SIPs require that this annual SO<sub>2</sub> emissions and milestone report include a description of source changes or exceptions report to identify:

- Any new sources that were not contained in the previous calendar year's emissions report, and an explanation of why the sources are now included in the program;



- Identification of any sources that were included in the previous year's report and are no longer included in the program, and an explanation of why this change has occurred; and
- An explanation for emissions variations at any applicable source that exceeds  $\pm 20$  percent from the previous year.

No sources were added to the program inventory in 2006. Phelps Dodge Hidalgo smelter and Phelps Dodge Hurley smelter/concentrator were both closed in 2006, but are being included in the inventory for the smelter adjustment. A list of sources that were added or removed from the program inventory in previous reporting years is provided in Appendix B. Table 6 provides explanations for the emissions variations from 2005 to 2006 that are greater than 20 percent. Plants with variations greater than 20 percent, but reported emissions of less than 20 tons, are not included in Table 6. Information on these plants is provided in Appendix A.

**Table 6**  
**Sources with an Emissions Change of > ±20% from the Previous Year**

State	County FIPS Code	State Facility ID	Reported 2005 SO <sub>2</sub> Emissions (tons)	Reported 2006 SO <sub>2</sub> Emissions (tons)	Facility Name	Reason for Change
AZ	017	1807	1,516	1,895	Abitibi - Snowflake Pulp Mill	Usage of lower quality coal to reduce fuel costs.
AZ	007	2435	12,723	16,088	ASARCO - Hayden Smelter	Increased operations without increase in capacity.
AZ	003	2148	755	996	CLC - Douglas Lime Plant	Increased operations without increase in capacity.
AZ	001	4477	10,480	13,520	SRP - Coronado Generating Station	Increased operations without increase in capacity.
AZ	019		3,713	2,672	TEP - Irvington Generating Station	Less coal burned and fewer megawatts generated.
AZ	001	3222	9,882	4,903	TEP - Springerville Generating Station	New applicable permit caps.
NM	350150010		102	160	Navajo Refining Co/Artesia Refinery	Added four heaters, increased overall throughput of facility, adjusted fuel gas data.
NM	350150011		528	162	Duke Energy Field Services/Artesia Gas Plant	Acid Gas Injection system installed and running for nine months of 2006 thus lowering emissions significantly.
NM	350150024		1,936	263	Agave Energy/Agave Dagger Draw Gas Plant	Acid Gas Injection system installed.
NM	350250007		771	1,125	J L Davis Gas Processing/Denton Plant	New wells went online, which increased throughput.

(cont.)

**Table 6**  
**Sources with an Emissions Change of > ±20% from the Previous Year (cont.)**

State	County FIPS Code	State Facility ID	Reported 2005 SO <sub>2</sub> Emissions (tons)	Reported 2006 SO <sub>2</sub> Emissions (tons)	Facility Name	Reason for Change
NM	350250044		305	1,178	Duke Energy Field Services/Eunice Gas Plant [Old name: GPM GAS EUNICE GAS PLANT]	The 2005 EI incorrectly established SO <sub>2</sub> emissions for the sulfur incinerator as 0.06 tpy. Correct emissions were 960 tpy.
NM	350250060		2,567	2,041	Targa Midstream Services/Eunice Gas Plant[Old names: Dynegy Midstream Services/Eunice Gas Plant; WARREN PETROLEUM/EUNICE GAS PLANT]	Better maintenance, decrease in upset emissions.
NM	350250063		358	545	Targa Midstream Services/Saunders Plant [Old names: Dynegy Midstream Services/Saunders Plant; WARREN PETROLEUM/SAUNDERS PLANT]	Better maintenance, decrease in upset emissions.
NM	350310032		1,293	970	Tri-State Gen & Transmission/Escalante Station	Extended outage and additional maintenance time required on turbine.
UT	011	10119	2,201	1,174	Chevron Products Co. - Salt Lake Refinery	Company added a tail gas treating unit and a vacuum gas oil hydro treating unit to their process.

(cont.)

**Table 6**  
**Sources with an Emissions Change of > ±20% from the Previous Year (cont.)**

State	County FIPS Code	State Facility ID	Reported 2005 SO <sub>2</sub> Emissions (tons)	Reported 2006 SO <sub>2</sub> Emissions (tons)	Facility Name	Reason for Change
UT	037	10034	293	118	EnCana Oil & Gas (USA) Incorporated (was Tom Brown Incorporated) - Lisbon Natural Gas Processing Plant	The company had a decrease in natural gas consumption.
UT	027	10313	8	34	Graymont Western US Inc. - Cricket Mountain Plant	AP42 emission factors changed. Method of calculating Kiln emissions changed from permit limit to stack test. Fuel throughputs increased.
UT	29	10007	229	451	Holcim-Devil's Slide Plant	Increase in production and fuel usage.
WY	011	0002	211	73	American Colloid Mineral Co - East Colony	Unsure of how the 2005 Ch. 14 SO <sub>2</sub> emissions were calculated since the company reported only 58.1 total tons of SO <sub>2</sub> on the Title V 2005 emissions inventory. Based on the Title V emission inventories for 2005 and 2006, there was a 4.55% increase in SO <sub>2</sub> emissions from the facility.
WY	011	0003	180	53	American Colloid Mineral Co - West Colony	Unsure of how the 2005 Ch. 14 SO <sub>2</sub> emissions were calculated since the company reported only 44.0 total tons of SO <sub>2</sub> on the Title V 2005 emissions inventory. Based on the Title V emission inventories for 2005 and 2006, there was a 0.80% decrease in SO <sub>2</sub> emissions from the facility.

(cont.)

**Table 6**  
**Sources with an Emissions Change of > ±20% from the Previous Year (cont.)**

State	County FIPS Code	State Facility ID	Reported 2005 SO <sub>2</sub> Emissions (tons)	Reported 2006 SO <sub>2</sub> Emissions (tons)	Facility Name	Reason for Change
WY	037		250	145	Anadarko E&P Co LP - Table Rock Gas Plant	The majority of SO <sub>2</sub> emissions are from flaring as a result of plant upsets. Anadarko recently installed a system to automatically shut-in wells during a plant upset. As a result, wells are shut-in more quickly resulting in reduced gas flaring.
WY	005	0063	498	633	Black Hills Corporation - Neil Simpson II	Black Hills Corporation burned nearly 50,000 additional tons of coal in 2006 compared to 2005. Additionally, the coal sulfur content increased by 0.03% in 2006.
WY	041	0012	3,590	2,257	BP America Prod. Co. - Whitney Canyon Gas Plant	The difference is due to a reduction in the amount of gas processed in 2006 compared to 2005.
WY	013	0028	1,232	1,715	Burlington Resources - Lost Cabin Gas Plant	Emissions from the two plant flares increased by 492 tons due to plant upsets.
WY	041	0009	1,122	205	Chevron USA - Carter Creek Gas Plant	The turn-around in 2005 resulted in a large amount of acid gas bypassing the two-stage Clause Unit and going directly to the incinerator. A lower throughput of gas to the plant resulted in lower SO <sub>2</sub> emissions.

(cont.)

**Table 6**  
**Sources with an Emissions Change of > ±20% from the Previous Year (cont.)**

State	County FIPS Code	State Facility ID	Reported 2005 SO <sub>2</sub> Emissions (tons)	Reported 2006 SO <sub>2</sub> Emissions (tons)	Facility Name	Reason for Change
WY	037		0	269	Chevron USA - Table Rock Field	The difference is due to no field flaring occurring in 2005 but field flaring occurring in 2006.
WY	041		385	219	Chevron USA - Whitney Canyon/Carter Creek Field	The difference is due to a reduction in the amount of gas flared in 2006 compared to 2005.
WY	013		47	57	Devon Gas Services, L.P. - Beaver Creek Field	Increased activity associated with the Tensleep Battery, which averaged 17.5 tons of SO <sub>2</sub> per month from June through October from its flare.
WY	013	0008	59	102	Devon Gas Services, L.P. - Beaver Creek Gas Plant	Increased SO <sub>2</sub> emissions due to plant upsets and acid gas routed to the flare.
WY	023		20	119	Exxon Mobil Corporation - LaBarge Black Canyon Facility	The difference is due to an increase in the amount of gas processed in 2006 compared to 2005.
WY	037	0049	54	161	FMC Wyoming Corporation - Granger Soda Ash Plant	The difference is due to an increase in the amount of coal burned in the two boilers: 43,197 tons in 2005 and 163,485 tons in 2006.

(cont.)

**Table 6**  
**Sources with an Emissions Change of > ±20% from the Previous Year (cont.)**

State	County FIPS Code	State Facility ID	Reported 2005 SO <sub>2</sub> Emissions (tons)	Reported 2006 SO <sub>2</sub> Emissions (tons)	Facility Name	Reason for Change
WY	021	0001	1,438	973	Frontier Oil & Refining Company - Cheyenne Refinery	A flare gas recovery system was installed on the Coker unit in late 2005. As a result of this process, all acid gas during the steam-to-blow down process, which used to be routed to the Coker Flare is now routed back to the refinery for further processing. As a result, there are minimal SO <sub>2</sub> emissions from the flare.
WY	043	0003	109	141	Hiland Partners, LLC - Hiland Gas Plant	Increased activity resulted in a higher amount of acid gas being routed to the Acid Gas Flare.
WY	029	0007	328	447	Marathon Oil Co - Oregon Basin Gas Plant	The increase in emissions is due to a boiler being down for 17 days in January and a plant turnaround for five days in July. During this time, the acid gas is routed to the Incinerator instead of being treated to remove the sulfur.
WY	001	0002	139	92	Mountain Cement Company - Laramie Plant	SO <sub>2</sub> emissions decreased due to a change in the operation of Kiln #2.
WY	007	0001	1,740	1,260	Sinclair Oil Company - Sinclair Refinery	A Tail Gas Treatment Unit (TGTU) was constructed to treat emissions from the Sulfur Recovery Units (SRUs) which substantially reduced SO <sub>2</sub> emissions.
WY	001	0005	150	69	University of Wyoming - Heat Plant	Testing conducted showed actual emission rates to be lower from the Stoker Coal fired boilers than the AP-42 emission factors used in the past.

## **7.2 Part 75 Data**

Federal Acid Rain Program emissions monitoring data (required by 40 CFR Part 75) were used to check reported power plant emissions, and whether or not a monitoring method adjustment was required for changes in Part 75 quality assurance procedures as described in section 3.1 of this report.

Sources in the region subject to Part 75 emitted about 69% of the region's reported emissions in 2006. EPA's Data and Maps website was queried to obtain power plant SO<sub>2</sub> emissions in the four states, which were then compared to totals reported by each state for those plants. The regional haze rule requires the use of Part 75 methods for Part 75 sources, so the reported emissions should match.

EPA's database for the Acid Rain Program also was queried to obtain the flow reference method used in the RATAs reported by the plants since the 1999 baseline year. This information was used to check if there had been a change in flow reference methods since the 1999 baseline year.

## **8.0 Milestone Determination**

The average of 2004, 2005 and 2006 adjusted emissions were determined to be 295,740 tons. Therefore, the participating states have met the adjusted regional 2006 milestone of 420,194 tons.

The 2006 milestone for the four participating states was determined as provided in Section 51.309(h)(1) of the rule and the Section 309 SIPs. First, the 682,000 ton milestone in Table 1 (column 3) of the rule is adjusted for states and tribes that have not opted to participate in the 309 program by subtracting the amount, as provided in Section 51.309(h)(1)(i), Table 2, for each state or tribe. The milestone does not need to be adjusted to account for changes in smelter operations or enforcement actions. This results in an adjusted milestone of 420,194 tons. Table 7 shows each element of the 2006 milestone calculation.



**Table 7**  
**Regional 2006 SO<sub>2</sub> Emissions Milestone for the Four States**

<b>Base Regional 2006 Milestone*</b> .....	682,000 tons
<b>Milestone Adjustments**</b>	
States and Tribes not participating in the backstop program:	
California .....	-37,784 tons
Colorado .....	-98,897 tons
Idaho .....	-18,016 tons
Nevada .....	-20,187 tons
Oregon .....	-26,268 tons
Shoshone-Bannock Tribe of the Fort Hall Reservation .....	-4,994 tons
Navajo Nation .....	-53,147 tons
Ute Indian Tribe of the Uintah and Ouray Reservation .....	-1,129 tons
Wind River Reservation .....	-1,384 tons
Smelter Set-Aside*** .....	0 tons
Enforcement .....	0 tons
<b>Adjusted Four-State 2006 Milestone</b>	
(Arizona, New Mexico, Utah, Wyoming) .....	420,194 tons

\* See 40 CFR 51.309(h)(1), Table 1, Column 3, and the Regional Milestones section of each state's 309 SIP (applies if neither the BHP San Manuel nor the Phelps Dodge smelter facilities resume operation).

\*\* See 40 CFR 51.309(h)(1)(i), and (ii), and (v)-(viii), and the Regional Milestones section of each state's 309 SIP.

\*\*\* The potential Smelter Set-Aside is 38,000 tons

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## Appendix A

### Table A-1 2006 Reported and Adjusted Emissions for Sources Subject to Section 309 - Regional Haze Rule

State Abbreviation	County FIPS	State Facility Identifier	ORIS	Plant Name	Plant SIC	Plant NAICS	Reported 2006 SO <sub>2</sub> Emissions (tons)	Adjusted 2006 SO <sub>2</sub> Emissions (tons)	Part 75 Flow RATA Emission Adjustment (tons)	General New Monitoring Calculation Method Adjustment (tons)	Description/ Comments
AZ	017	1807		Abitibi - Snowflake Pulp Mill	2621	322121	1,895	1,895			Reduced operations & low sulfur coal used.
AZ	003	3532	160	AEPCO - Apache Generating Station	4911	221112	3,019	3,034	15		Low sulfur coal used.
AZ	019	2869		Arizona Portland Cement	3241	32731	7	7			Unexplained baseline year emissions based on test factor.
AZ	007	2435		ASARCO - Hayden Smelter	3331	331411	16,088	16,088			Reduced operations.
AZ	021	15582		BHP - San Manuel Smelter	3331	331411	0	0			Facility has been shut down.
AZ	003	2148		CLC - Douglas Lime Plant	3274	32741	996	996			Facility operating at capacity.
AZ	015	5992		CLC - Nelson Lime Plant	3274	32741	1,047	1,047			Facility operating at capacity.
AZ	007	5129		Phelps Dodge - Miami Smelter	3331	331411	6,383	6,383			Increased production due to shut down of BHP smelter.
AZ	025	2393		Phoenix Cement	3241	32731	7	7			Old Kiln shut down. New Kiln in operation.

(cont.)

**Table A-1  
2006 Reported and Adjusted Emissions for Sources Subject to Section 309 - Regional Haze Rule (cont.)**

State Abbreviation	County FIPS	State Facility Identifier	ORIS	Plant Name	Plant SIC	Plant NAICS	Reported 2006 SO <sub>2</sub> Emissions (tons)	Adjusted 2006 SO <sub>2</sub> Emissions (tons)	Part 75 Flow RATA Emission Adjustment (tons)	General New Monitoring Calculation Method Adjustment (tons)	Description/Comments
AZ	017	447	113	Pinnacle West - Cholla Generating Station	4911	221112	21,147	21,266	119		
AZ	001	4477	6177	SRP - Coronado Generating Station	4911	221112	13,520	13,520			Low sulfur coal used.
AZ	019		126	TEP - Irvington Generating Station	4911	221112	2,672	2,672			
AZ	001	3222	8223	TEP - Springerville Generating Station	4911	221112	4,903	4,903			New permit limits.
NM	015	350150024		Agave Energy/Agave Dagger Draw Gas Plant	1311	211111	263	263			Agave Gas Plant and Duke Dagger Draw merged to form Agave Dagger Draw.
NM	015	350150002		BP America Production/Empire Abo Plant [Old name: Arco Permian/Empire Abo Plant]	1321	211112	307	307			
NM	025	350150138		Duke - Magnum/Pan Energy - Burton Flats	1321	211112	0	0			No longer a major source.
NM	015	350150011		Duke Energy Field Services/Artesia Gas Plant	1321	211112	162	162			New Owner - DCP Midstream.

(cont.)

A-2

**Table A-1  
2006 Reported and Adjusted Emissions for Sources Subject to Section 309 - Regional Haze Rule (cont.)**

State Abbreviation	County FIPS	State Facility Identifier	ORIS	Plant Name	Plant SIC	Plant NAICS	Reported 2006 SO <sub>2</sub> Emissions (tons)	Adjusted 2006 SO <sub>2</sub> Emissions (tons)	Part 75 Flow RATA Emission Adjustment (tons)	General New Monitoring Calculation Method Adjustment (tons)	Description/ Comments
NM	025	350250044		Duke Energy Field Services/Eunice Gas Plant [Old name: GPM GAS EUNICE GAS PLANT]	1321	211112	1,178	1,178			New Owner - DCP Midstream.
NM	025	350250035		Duke Energy Field Services/Linam Ranch Gas Plant [Old name: GPM GAS/LINAM RANCH GAS PLANT]	1321	211112	1,558	1,558			New Owner - DCP Midstream.
NM	015	350150285		Duke Energy/Dagger Draw Gas Plant	1321	211112	0	0			Agave Gas Plant and Duke Dagger Draw merged to form Agave Dagger Draw.
NM	025	350250060		Dynegy Midstream Services/Eunice Gas Plant [Old name: WARREN PETROLEUM/EUNICE GAS PLANT]	1321	211112	2,041	2,041			
NM	025	350250051		Dynegy Midstream Services/Eunice South Gas Plant	1321	211112	0	0			Eunice South Gas Plant is now owned by Versado Gas Processors, LLC and operated by Targa Midstream Services, LP. No longer a major source.

(cont.)

**Table A-1  
2006 Reported and Adjusted Emissions for Sources Subject to Section 309 - Regional Haze Rule (cont.)**

State Abbreviation	County FIPS	State Facility Identifier	ORIS	Plant Name	Plant SIC	Plant NAICS	Reported 2006 SO <sub>2</sub> Emissions (tons)	Adjusted 2006 SO <sub>2</sub> Emissions (tons)	Part 75 Flow RATA Emission Adjustment (tons)	General New Monitoring Calculation Method Adjustment (tons)	Description/Comments
NM	025	350250061		Dynergy Midstream Services/Monument Plant [Old name: WARREN PETROLEUM/MONUMENT PLANT]	1321	211112	1,179	1,179			New Owner - Versado Gas Processors, LLC and operated by Targa Midstream Services, LP.
NM	025	350250063		Dynergy Midstream Services/Saunders Plant [Old name: WARREN PETROLEUM/SAUNDERS PLANT]	1321	211112	545	545			New Owner - Versado Gas Processors, LLC and operated by Targa Midstream Services, LP.
NM	025	350250004		Frontier Field Services/Maljamar Gas Plant	1321	211112	2,430	2,430			
NM	001	00008		GCC Rio Grande Cement	3241	327310	16	1,087		1,071	Facility potential to emit was used for the baseline year calculation. Adjustment is equal to the difference between potential and reported emissions.
NM	031	350310008		Giant Industries/Ciniza Refinery [Old name: GIANT REFINING/CINIZA]	2911	32411	840	840			

(cont.)

**Table A-1  
2006 Reported and Adjusted Emissions for Sources Subject to Section 309 - Regional Haze Rule (cont.)**

State Abbreviation	County FIPS	State Facility Identifier	ORIS	Plant Name	Plant SIC	Plant NAICS	Reported 2006 SO <sub>2</sub> Emissions (tons)	Adjusted 2006 SO <sub>2</sub> Emissions (tons)	Part 75 Flow RATA Emission Adjustment (tons)	General New Monitoring Calculation Method Adjustment (tons)	Description/Comments
NM	045	350450023		Giant Industries/San Juan Refinery (Bloomfield) [old name: GIANT INDUSTRIES/BL OOMFIELD REF]	2911	32411	385	385			
NM	025	350250007		J L Davis Gas Processing/Denton Plant	1311	211111	1,125	1,125			
NM	015	350150008		Marathon Oil/Indian Basin Gas Plant	1321	211112	809	809			
NM	015	350150010		Navajo Refining Co/Artesia Refinery	2911	32411	160	160			
NM	023	350230003		Phelps Dodge Hidalgo Smelter	3331	331411	0	0			
NM	017	350170001		Phelps Dodge Hurley Smelter/Concentrator	3331	331411	0	0			
NM	045	350450902	2451	Public Service Co of New Mexico/San Juan Generating Station	4911	221112	14,998	17,435	2,437		

(cont.)

**Table A-1  
2006 Reported and Adjusted Emissions for Sources Subject to Section 309 - Regional Haze Rule (cont.)**

State Abbreviation	County FIPS	State Facility Identifier	ORIS	Plant Name	Plant SIC	Plant NAICS	Reported 2006 SO <sub>2</sub> Emissions (tons)	Adjusted 2006 SO <sub>2</sub> Emissions (tons)	Part 75 Flow RATA Emission Adjustment (tons)	General New Monitoring Calculation Method Adjustment (tons)	Description/Comments
NM	007	350070001		Raton Pub. Service/Raton Power Plant	4911	221112	149	149			
NM	025	350250008		Sid Richardson Gasoline/Jal #3	1321	211112	1,435	1,435			
NM	001	00145		Southside Water Reclamation Plant	4952	22132	57	63		6	Facility potential to emit was used for the baseline year calculation. Adjustment is equal to the difference between potential and reported emissions.
NM	031	350310032	87	Tri-State Gen & Transmission/Escalante Station	4911	221112	970	1,373	403		
NM	045	350450247		Western Gas Resources/San Juan River Gas Plant	1321	211112	461	461			
UT	049	10790		Brigham Young University - Main Campus	8221	611310	154	154			
UT	027	10311		Brush Resources Inc. - Delta Mill	1099	212299	0	0			Fuel changed from #5 fuel oil to natural gas and #2 diesel (no adjustment made and emissions < 0.5 tons).
UT	011	10119		Chevron Products Co. - Salt Lake Refinery	2911	324110	1,174	793		-381	AP42 emission factor change. Change from AP42 emission factor to engineering data in calculating flares.

(cont.)



**Table A-1  
2006 Reported and Adjusted Emissions for Sources Subject to Section 309 - Regional Haze Rule (cont.)**

State Abbreviation	County FIPS	State Facility Identifier	ORIS	Plant Name	Plant SIC	Plant NAICS	Reported 2006 SO <sub>2</sub> Emissions (tons)	Adjusted 2006 SO <sub>2</sub> Emissions (tons)	Part 75 Flow RATA Emission Adjustment (tons)	General New Monitoring Calculation Method Adjustment (tons)	Description/Comments
UT	037	10034		EnCana Oil & Gas (USA) Incorporated (was Tom Brown Incorporated) - Lisbon Natural Gas Processing Plant	2911	211111	118	118			
UT	011	10122		Flying J Refinery - (Big West Oil Company)	2911	324110	341	341			
UT	049	10796		Geneva Steel - Steel Manufacturing Facility	3312	331221	0	0			Source has closed down.
UT	027	10313		Graymont Western US Inc. - Cricket Mountain Plant	1422	212312	34	423		389	AP42 emission factors changed. Method of calculating kiln emissions changed from permit limit to stack test.
UT	029	10007		Holcim-Devil's Slide Plant	3241	327310	451	451			
UT	011	10123		Holly Refining and Marketing Co.-Phillips Refinery	2911	324110	478	480		2	The company changed the estimation method from AP42 in 1998 to CEM.
UT	027	10327	6481	Intermountain Power Service Corporation-Intermountain Generation Station	4911	221112	4,241	4,262	21		Wall Adjustment Factor (WAF) of 0.995 used on Flow RATA.

(cont.)

**Table A-1  
2006 Reported and Adjusted Emissions for Sources Subject to Section 309 - Regional Haze Rule (cont.)**

State Abbreviation	County FIPS	State Facility Identifier	ORIS	Plant Name	Plant SIC	Plant NAICS	Reported 2006 SO <sub>2</sub> Emissions (tons)	Adjusted 2006 SO <sub>2</sub> Emissions (tons)	Part 75 Flow RATA Emission Adjustment (tons)	General New Monitoring Calculation Method Adjustment (tons)	Description/Comments
UT	035	10572		Kennecott Utah Copper Corp. - Power Plant/Lab/Tailings Impoundment	1021	212234	2,955	2,955			
UT	035	10346		Kennecott Utah Copper Corp. - Smelter & Refinery	3331	331411	737	737			
UT	007	10081	3644	PacifiCorp-Carbon Power Plant	4911	221112	6,779	7,853	1,074		The RATA method changed from method 2 in 1999 to method 2FH. The Flow Adjustment Factor calculated is 1.17 for unit 1 and 1.15 for unit 2.
UT	015	10237	6165	PacifiCorp-Hunter Power Plant	4911	221112	7,339	8,397	1,058		Two RATA methods were used in 1999, 2 and 2FH. The RATA method changed to method 2FH for the entire year. The Flow Adjustment Factor calculated is 1.09 for unit 1, 1.21 for unit 2, and 1.15 for unit 3.
UT	015	10238	8069	PacifiCorp-Huntington Power Plant	4911	221112	17,402	20,334	2,932		Two RATA methods were used in 1999, 2 and 2FH. The RATA method changed to method 2FH for the entire year. The Flow Adjustment Factor calculated is 1.11 for unit 1 and 1.18 for unit 2.

(cont.)

**Table A-1**  
**2006 Reported and Adjusted Emissions for Sources Subject to Section 309 - Regional Haze Rule (cont.)**

State Abbreviation	County FIPS	State Facility Identifier	ORIS	Plant Name	Plant SIC	Plant NAICS	Reported 2006 SO <sub>2</sub> Emissions (tons)	Adjusted 2006 SO <sub>2</sub> Emissions (tons)	Part 75 Flow RATA Emission Adjustment (tons)	General New Monitoring Calculation Method Adjustment (tons)	Description/ Comments
UT	007	10096		Sunnyside Cogeneration Associates- Sunnyside Cogeneration Facility	4911	221112	858	858			AP42 emission factor changed from 157S to 142S (<0.5 ton change).
UT	035	10335		Tesoro West Coast-Salt Lake City Refinery	2911	324110	940	905		-35	The actual emissions included SO <sub>3</sub> in 2005. SO <sub>3</sub> was not included in the 1998 emissions.
UT	043	10676		Utelite Corporation - Shale processing	3295		174	174			
WY	011	0002		American Colloid Mineral Co - East Colony	1459	212325	73	71		-2	Dryer SO <sub>2</sub> Emissions were calculated using a Sulfur Content of 0.34% & a Control Efficiency of 65%.
WY	011	0003		American Colloid Mineral Co - West Colony	1459	212325	53	58		5	Dryer SO <sub>2</sub> Emissions were calculated using a Sulfur Content of 0.34% & a Control Efficiency of 65%.
WY	037	0008		Anadarko E&P Co LP - Brady Gas Plant	1321	211112	89	170		81	Calculation Methods (Emission Test, Permitted Allowable, and Mass Balance).
WY	037			Anadarko E&P Co LP - Table Rock Gas Plant	1321		145	145			Calculation Methods (CEM Monitoring, & Mass Balance).
WY	023	0001		Astaris Production - Coking Plant	2999	324199	0	0			Plant is permanently shut down.

(cont.)

**Table A-1  
2006 Reported and Adjusted Emissions for Sources Subject to Section 309 - Regional Haze Rule (cont.)**

State Abbreviation	County FIPS	State Facility Identifier	ORIS	Plant Name	Plant SIC	Plant NAICS	Reported 2006 SO <sub>2</sub> Emissions (tons)	Adjusted 2006 SO <sub>2</sub> Emissions (tons)	Part 75 Flow RATA Emission Adjustment (tons)	General New Monitoring Calculation Method Adjustment (tons)	Description/Comments
WY	031	0001	6204	Basin Electric - Laramie River Station	4911	221112	11,532	11,532			
WY	003	0012		Big Horn Gas Proc - Big Horn/Byron Gas Plant	1311	22121	0	0			Switched to sweet gas in Feb. 2001, and continues to process only sweet gas.
WY	005	0002	4150	Black Hills Corporation - Neil Simpson I	4911	22112	1,055	1,055			Calculation Method: Chemical Mass Balance
WY	005	0063	7504	Black Hills Corporation - Neil Simpson II	4911	22112	633	633			
WY	045	0005	4151	Black Hills Corporation - Osage Plant	4911	22112	3,183	3,183			Calculation Method: 1998 Base Year & 1988 Stack Test.
WY	005	0146	55479	Black Hills Corporation - Wygen 1	4911	22112	626	626			
WY	041			BP America Production Company - Whitney Canyon WellField	1311		0	0			No flaring at wellsite in 2006.
WY	041	0012		BP America Production Company - Whitney Canyon Gas Plant & Field	1311	211111	2,257	2,257			Calculation Methods: CEM Data, Metered Flow, & Emissions Testing.

(cont.)

**Table A-1  
2006 Reported and Adjusted Emissions for Sources Subject to Section 309 - Regional Haze Rule (cont.)**

State Abbreviation	County FIPS	State Facility Identifier	ORIS	Plant Name	Plant SIC	Plant NAICS	Reported 2006 SO <sub>2</sub> Emissions (tons)	Adjusted 2006 SO <sub>2</sub> Emissions (tons)	Part 75 Flow RATA Emission Adjustment (tons)	General New Monitoring Calculation Method Adjustment (tons)	Description/Comments
WY	013			Burlington Resources - Bighorn Wells	1311		0	0			No flaring at wellsite in 2006.
WY	013	0028		Burlington Resources - Lost Cabin Gas Plant	1311	211111	1,715	1,715			Emission volumes based upon data submitted in LCGP Quarterly Reports, same as base year.
WY	041	0009		Chevron USA - Carter Creek Gas Plant	1311	211111	205	205			Turnaround in August 2005 & a change in the Operating Plan.
WY	037			Chevron USA - Table Rock Field	1311		269	269			Flaring at wellsites in 2006.
WY	041			Chevron USA - Whitney Canyon/Carter Creek Wellfield	1311		219	219			SO <sub>2</sub> Calculation in Chapter 6, Section 2, page B14.
WY	013			Devon Energy Production Co., L.P. - Beaver Creek Gas Field			57	57			Tons H <sub>2</sub> S (flared) * 1.8797 = SO <sub>2</sub> emitted.
WY	013	0008		Devon Gas Services, L.P. - Beaver Creek Gas Plant	1311	211111	102	102			Tons H <sub>2</sub> S (flared) * 1.8797 = SO <sub>2</sub> emitted.
WY	023			Exxon Mobil Corporation - LaBarge Black Canyon Facility	1311		119	119			Calculation Method: AP-42 and actual volumes.

(cont.)

**Table A-1  
2006 Reported and Adjusted Emissions for Sources Subject to Section 309 - Regional Haze Rule (cont.)**

State Abbreviation	County FIPS	State Facility Identifier	ORIS	Plant Name	Plant SIC	Plant NAICS	Reported 2006 SO <sub>2</sub> Emissions (tons)	Adjusted 2006 SO <sub>2</sub> Emissions (tons)	Part 75 Flow RATA Emission Adjustment (tons)	General New Monitoring Calculation Method Adjustment (tons)	Description/Comments
WY	023	0013		Exxon Mobil Corporation - Shute Creek	1311	211111	2,205	2,205			Turbines in operation since 2004; therefore, not a change in methodology. (CEMS & AP42)
WY	037	0048		FMC Corp - Green River Sodium Products (Westvaco facility)	2812	327999	4,579	4,579			SO <sub>2</sub> Emissions from two emission points: (NS-1A & NS -1B). CEM lb/mmbtu * Annual heat input.
WY	037	0049		FMC Wyoming Corporation - Granger Soda Ash Plant	1474	212391	161	161			Boilers #1 & #2 operated a combined 13,749 hours in 2006.
WY	021	0001		Frontier Oil & Refining Company - Cheyenne Refinery	2911	32411	973	973			Source 43 Coker Flare had a wet gas compressor installed in January 2006, which routes coker off-gas back into the refinery fuel gas system.
WY	037	0002		General Chemical - Green River Plant (Facility Name:General Chemical)	1474	327999	5,456	5,456			SO <sub>2</sub> Emissions from two emission points: (C Boiler & D Boiler). Fuel use, fuel heat value, CEM.
WY	043	0003		Hiland Partners, LLC - Hiland Gas Plant	1321	48621	141	141			SO <sub>2</sub> Emissions from Acid Gas; Process & Safety Flares. Gas flow measurement, H <sub>2</sub> S conc. & engineering calculations.
WY	029	0012		Howell Petroleum Corp - Elk Basin Gas Plant	1311	211111	1,429	1,429			SO <sub>2</sub> Emissions from two emission points: (SRU & F-1). CEM and Mass Balance.

(cont.)

**Table A-1  
2006 Reported and Adjusted Emissions for Sources Subject to Section 309 - Regional Haze Rule (cont.)**

State Abbreviation	County FIPS	State Facility Identifier	ORIS	Plant Name	Plant SIC	Plant NAICS	Reported 2006 SO <sub>2</sub> Emissions (tons)	Adjusted 2006 SO <sub>2</sub> Emissions (tons)	Part 75 Flow RATA Emission Adjustment (tons)	General New Monitoring Calculation Method Adjustment (tons)	Description/Comments
WY	029	0007		Marathon Oil Co - Oregon Basin Gas Plant	1321	211112	447	447			Oregon Basin went to a mass CEM in 2002, but used a Mass Balance Calculation in the Base Year. However, they no longer keep adequate records of inlet gas concentration to utilize the mass balance method. SO <sub>2</sub> Emissions from three emission points: Gas Incinerator, Sour Gas & Field Flares.
WY	029			Marathon Oil Co - Oregon Basin Wellfield			265	265			Flaring at wellsites in 2006.
WY	001	0002		Mountain Cement Company - Laramie Plant	3241	23571	92	92			SO <sub>2</sub> Emissions from two emission points: Kiln #1 & Kiln #2. CEM.
WY	037	0003		P4 Production, L.L.C. - Rock Springs Coal Calcining Plant	3312	331111	706	706			New stack test results used for emission calculation do not represent a change in methodology.
WY	009	0001	4158	Pacificorp - Dave Johnston Plant	4911	221112	22,268	26,842	4,574		SO <sub>2</sub> Emissions from four emission points: BW41, BW42, BW43 & BW44 & Flow Adjustment Factors: 1.11, 1.23, 1.19 & 1.28.
WY	037	1002	8066	Pacificorp - Jim Bridger Plant	4911	221112	20,055	21,611	1,556		SO <sub>2</sub> Emissions from four emission points: (BW71, BW72, BW73 & BW74 & Flow Adjustment Factors: 1.04, 1.13, 1.03 & 1.13).

(cont.)

**Table A-1  
2006 Reported and Adjusted Emissions for Sources Subject to Section 309 - Regional Haze Rule (cont.)**

State Abbreviation	County FIPS	State Facility Identifier	ORIS	Plant Name	Plant SIC	Plant NAICS	Reported 2006 SO <sub>2</sub> Emissions (tons)	Adjusted 2006 SO <sub>2</sub> Emissions (tons)	Part 75 Flow RATA Emission Adjustment (tons)	General New Monitoring Calculation Method Adjustment (tons)	Description/ Comments
WY	023	0004	4162	Pacificorp - Naughton Plant	4911	221112	20,664	23,856	3,192		SO <sub>2</sub> Emissions from three emission points: 1, 2, & 3 & Flow Adjustment Factors: 1.05, 1.14, & 1.29.
WY	005	0046	6101	Pacificorp - Wyodak Plant	4911	221112	6,514	6,905	391		SO <sub>2</sub> Emissions from one emission point (BW91) & a Flow Adjustment Factor of 1.06.
WY	037	0022		Simplot Phosphates LLC - Rock Springs Plant	2874	325312	2,219	2,219			Source Test x Op Hours, AP-42 estimates, & AP-42 x Op Hours.
WY	025	0005		Sinclair Wyoming Refining Company - Casper Refinery	2911	32411	691	691			SO <sub>2</sub> Emissions from 23 emission points. Calculation Method is the same as the Base Year.
WY	007	0001		Sinclair Oil Company - Sinclair Refinery	2911	32411	1,260	990		-270	FCC Unit used Stack Test x Hours in 1998; went to a CEM in 2004.
WY	037			Solvay Chemicals - Soda Ash Plant (Green River Facility)	1474		64	102		38	SO <sub>2</sub> Emissions from five emission points: AQD #18, #19, #33, #73 & #89. Calculation Methods: lb/MMBtu x MMBtu & pph stack test x hr/yr. The base year for AQD #18 & #19 were calculated with pph stack test x hr/yr.
WY	015	0001		The Western Sugar Cooperative - Torrington Plant	2063	311313	143	143			Coal Fired Sterling Boilers #3, #4, #5, & #6 had an increase in operating hours.

(cont.)



**Table A-1  
2006 Reported and Adjusted Emissions for Sources Subject to Section 309 - Regional Haze Rule (cont.)**

State Abbreviation	County FIPS	State Facility Identifier	ORIS	Plant Name	Plant SIC	Plant NAICS	Reported 2006 SO <sub>2</sub> Emissions (tons)	Adjusted 2006 SO <sub>2</sub> Emissions (tons)	Part 75 Flow RATA Emission Adjustment (tons)	General New Monitoring Calculation Method Adjustment (tons)	Description/ Comments
WY	001	0005		University of Wyoming - Heat Plant	8221	61131	69	135		66	SO <sub>2</sub> Emissions from five emission points: #1 thru #4 Boilers & a Diesel Generator. Stack tests conducted on the boilers in 2006.
WY	045	0001		Wyoming Refining - Newcastle Refinery	2911	32411	732	732			Base year was based upon Tutweiler Samples. The Base Year method is no longer available.

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## Appendix B

**Table B-1**  
**Sources Added to the SO<sub>2</sub> Emissions and Milestone Report Inventory**

State	County FIP Code	State Facility ID	Facility Name	Report Year of Change
UT	043	10676	Utelite Corporation - Shale processing	2003
WY	011	0002	American Colloid Mineral Company - East Colony	2003
WY	011	0003	American Colloid Mineral Company - West Colony	2003
WY	037		Anadarko E&P Company LP - Table Rock Gas Plant	2003
WY	005	0146	Black Hills Corporation - Wygen 1	2003
WY	041		BP America Production Company - Whitney Canyon Well Field	2003
WY	013		Burlington Resources - Bighorn Wells	2003
WY	037		Chevron USA - Table Rock Field	2003
WY	041		Chevron USA - Whitney Canyon/Carter Creek Wellfield	2003
WY	013	0008	Devon Energy Corp. - Beaver Creek Gas Plant	2003
WY	035		Exxon Mobil Corporation - Labarge Black Canyon Facility (also identified as Black Canyon Dehy Facility)	2003
AZ	019	2869	Arizona Portland Cement	2004
WY	013		Devon Energy Corp. - Beaver Creek Gas Field	2004

**Table B-2**  
**Sources Removed from the SO<sub>2</sub> Emissions and Milestone Report Inventory**

<b>State</b>	<b>County FIP Code</b>	<b>State Facility ID</b>	<b>Facility Name</b>	<b>Baseline Emissions (tons/year)</b>	<b>Reason for Change</b>	<b>Report Year of Change</b>
WY	043	0001	Western Sugar Company - Worland	154	Emissions did not meet 100 TPY program criteria.	2003
WY	017	0006	KCS Mountain Resources - Golden Eagle	942	Emissions did not meet 100 TPY program criteria.	2003
WY	003	0017	KCS Mountain Resources - Ainsworth	845	Closed since 2000.	2003
WY	017	0002	Marathon Oil - Mill Iron	260	Emissions did not meet 100 TPY program criteria.	2003
AZ	021	15582	BHP - San Manuel Smelter	10,409	Facility is permanently closed.	2004
UT	049	10796	Geneva Steel - Steel Manufacturing Facility	881	Plant is shut down and disassembled.	2004
WY	023	0001	Astaris Production - Coking Plant	1,454	Plant is permanently shut down and dismantled.	2004