



**DRAFT**  
**2007 Regional SO<sub>2</sub> Emissions and Milestone Report**

December 23, 2008

Arizona

Corky Martinkovic  
Arizona Dept. of Environmental Quality  
Air Quality Division, Planning Section  
1110 West Washington Street  
Phoenix, AZ 85007  
Fax: 602-771-2366  
[dam@azdeq.gov](mailto:dam@azdeq.gov)

City of Albuquerque

Dario W. Rocha  
City of Albuquerque  
Air Quality Division  
P.O. Box 1293  
Albuquerque, NM 87103  
Fax: 505-768-1977  
[drocha@cabq.gov](mailto:drocha@cabq.gov)

New Mexico

Ronald Duffy  
New Mexico Environment Department  
Air Quality Bureau  
2048 Galisteo St.  
Santa Fe, NM 87505  
Phone: 505-955-8011  
Fax: 505-827-1543  
[ronald.duffy@state.nm.us](mailto:ronald.duffy@state.nm.us)

Utah

Kimberly Kreykes  
Utah Department of Environmental Quality  
Division of Air Quality  
150 North 1950 West  
Salt Lake City, UT 84114-4820  
Phone: 801-536-4042  
Fax: 801-536-0085  
[kkreykes@utah.gov](mailto:kkreykes@utah.gov)

Wyoming

Brian Bohlmann, P.E.  
Wyoming Department of Environmental  
Quality, Air Quality Division  
Herschler Building, 2-East  
122 West 25th Street  
Cheyenne, Wyoming 82002  
Phone: 307-777-6993  
Fax: 307-777-7682  
[bbohlm@wyo.gov](mailto:bbohlm@wyo.gov)



## **DRAFT**

### **2007 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, the four remaining participating states have tracked 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.

This year, the four participating states have either revised their Section 309 plans or are currently in the process of revising their plans. The revised plans modified the annual regional milestone for 2007. Because two of the four states are currently operating under revised rules, this transition year report compares annual emissions to 2007 milestones under both the revised and 2003 plans. All states are expected to have revised plans by next year's report.

The four-state region milestone for 2007 is 422,194 tons under the original 2003 plans, and 420,637 tons under the revised plans. To determine whether or not the milestone was met, the 2005, 2006, and 2007 adjusted emissions were averaged, and this average was compared to the 2007 milestones. Oregon's emissions were removed from the 2005 emission totals before the average was calculated, to stay consistent with the 2006 and 2007 emissions total. The adjustments to reported emissions were required to allow the current emission estimates to be comparable to the emissions monitoring or calculation method used in the initial base year inventory (1999 for utilities and 1998 for all other sources).

The states of Arizona, New Mexico, Utah, and Wyoming reported 257,234 tons of SO<sub>2</sub> emissions for the calendar year 2007. The total emissions increased to 273,663 tons of SO<sub>2</sub> after making adjustments to account for changes in monitoring and calculation methods. The adjustments result in an additional 16,429 tons of SO<sub>2</sub> emissions, which is about 6% of the reported total emissions. Adjustments required for

**Based on the adjusted milestone and emissions data, the average of 2005, 2006, and 2007 emissions is about 33% below the 2007 four state regional milestones.**

changes in Part 75, Acid Rain Program, flow monitor quality assurance methods account for about 15,225 tons (93%) of the increase in the estimate, with the remaining 1,204 tons from other types of monitoring and calculation method changes. The adjusted emissions values for 2005 and 2006 were 288,040 tons and 279,134 tons, respectively. The 2007 adjusted emissions total of 273,663 tons was lower than both the 2005 and 2006 adjusted annual emissions. The average of 2005, 2006, and 2007 adjusted emissions is 280,279 tons.

Based on this average adjusted annual emissions estimate, a preliminary determination has been made that the four states have met the 2007 regional SO<sub>2</sub> milestone under both the 2003 and revised plans. The plans contain 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 2007 period requires a smelter adjustment under the 2003 plans (increasing the regional milestone by 2,000 tons); no smelter adjustment is required under the revised plans.

The plans 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 emission changes from 2006 to 2007 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 2007 Regional Milestones and Emissions for Section 309 Participating States**

<b><u>2007 Sulfur Dioxide Milestones</u></b>	
<b>Revised SIPs</b>	
Regional 2007 Milestone*	420,637 tons
Smelter-specific Set-aside*	0 tons
Adjusted Four-State 2007 Milestone	420,637 tons
<b>2003 SIPs</b>	
Regional 2007 Milestone*	420,194 tons
Smelter-specific Set-aside*	2,000 tons
Adjusted Four-State 2007 Milestone	422,194 tons
<b><u>2007 Sulfur Dioxide Emissions</u></b>	
Reported Four-State 2007 Emissions	257,234 tons
Adjustments**	
Part 75 Flow RATA Procedures	15,225 ton
Other Emission Monitoring and Calculation Methods	1,204 ton
Adjusted Four-State 2007 Emissions	273,663 ton
<b><u>Average Sulfur Dioxide Emissions (2005, 2006, &amp; 2007)</u></b>	
Adjusted Four-State 2007 Emissions	273,663 tons
Adjusted Four-State 2006 Emissions	279,134 tons
Adjusted Four-State 2005 Emissions	288,040 tons
Average of 2005, 2006, & 2007 Adjusted Four-State Emissions	280,279 tons
<b><u>Comparison of Emissions to Milestone</u></b>	
Average of 2005, 2006, & 2007 Adjusted Four-State Emissions	280,279 tons
Adjusted Four-State 2007 Milestone Revised SIPs	420,637 tons
Adjusted Four-State 2007 Milestone 2003 SIPs	422,194 tons
Difference (negative value = emissions < milestone) Revised SIPs	-140,358 tons
Difference (negative value = emissions < milestone) 2003 SIPs	-141,915 tons
2005 - 2007 Emissions Average as Percent of 2007 Revised SIP Milestone	67%
2005 - 2007 Emissions Average as Percent of 2007 2003 SIP Milestone	66%

\* See the Regional Milestones section of each state's 309 SIP.

\*\* See the Annual Emissions Report section of each state's 309 SIP.

*[This page intentionally left blank.]*

## 2007 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 been tracking emissions under the pre-trigger requirements of the SO<sub>2</sub> Milestone and Backstop Trading Program since 2003. 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 fifth 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 2007. Based on the first five 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.

EPA revised the RHR on July 6, 2005 (70 FR 39104), and again on October 13, 2006 (71 FR 60612) in response to two legal challenges. The October 13, 2006 revisions modified Section 309 to provide a methodology consistent with the Court's decision for regional alternatives like the strategy based on the GCVTC recommendations.

### 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 were Arizona, New Mexico, Oregon, Utah, and Wyoming. In addition, the City of Albuquerque had also submitted a Section 309 SIP. EPA, however, never approved these SIPs due to the legal challenges.

Oregon has opted out of submitting a revised Section 309 SIP under the modified RHR, which leaves four participating states. Utah and Wyoming have already submitted revised SIPs to EPA, and Arizona and New Mexico are in the process of revising their SIPs. 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 RHR.

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, and includes provisions for making adjustments to these milestones if necessary. The milestones must provide for steady and continuing emission reductions through 2018, and provide for greater reasonable progress than the provisions of Section 308.

2. Section 309(d)(4)(iii) 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.
3. Section 309(d)(4)(iv) 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 2013 and 2018.

This report responds to Item 2, above, and provides the annual report that compares the 2007 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 fifth report, 2005, 2006, and 2007 emissions are averaged.
4. Regional milestone adjustments to account for production increases at 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 2009, culminating in a final report sent to EPA by March 31, 2009.

#### SIP Transition Period and Milestones

The revised SIPs modified the annual regional milestone for 2007. Because only two of the four states are operating under revised rules, this report includes comparisons to milestones under both the revised and the 2003 SIPs. All states are expected to have revised SIPs by next year's report.

## 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 2007;
- 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 2007

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 2007 reported SO<sub>2</sub> emissions for each applicable source are in Appendix A, Table A-1.

**Table 1**  
**Reported 2007 SO<sub>2</sub> Emissions by State**

State	Reported 2007 SO <sub>2</sub> Emissions (tons/year)
Arizona	85,922
New Mexico	30,786
Utah	30,733
Wyoming	109,793
TOTAL	257,234

## 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 2007 as compared to the methodology used to calculate baseline year emissions (1998 and 1999). The following sections detail what adjustments apply for 2007. Note that the revised Section 309 SIPs establish new milestones for 2008-2018 using an updated baseline of 2006.

Therefore, the adjustments described in the following sections will not be performed in subsequent reports under the revised SIPs.

### 3.1 Changes in Part 75 Flow Rate Methodology

The Section 309 SIPs 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 Pacificorp Dave Johnston, Jim Bridger, Naughton, and Wyodak plants in Wyoming. Changes in the RATA flow reference method result in an upward adjustment for the 2007 SO<sub>2</sub> emissions of 15,225 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 2007 SO <sub>2</sub> Emissions (tons)	Flow RATA Adjustment (tons)	Adjusted 2007 SO <sub>2</sub> Emissions (tons)
AZ	AEPCO - Apache Station	2,662	2,675	13
AZ	Pinnacle West - Cholla Generating Station	23,522	23,650	128
NM	Public Service Co. of New Mexico/San Juan Generating Station	15,305	17,683	2,378
NM	Tri-State Gen & Transmission/Escalante Station	1,124	1,591	467
UT	Intermountain Power Service Corporation - Intermountain Generation Station	4,764	4,788	24
UT	PacifiCorp - Carbon Power Plant	6,511	7,537	1,026
UT	PacifiCorp - Hunter Power Plant	6,672	7,658	986
UT	PacifiCorp - Huntington Power Plant	4,351	4,931	580
WY	PacifiCorp - Dave Johnston	21,356	25,791	4,435
WY	PacifiCorp - Jim Bridger	19,053	20,486	1,433
WY	PacifiCorp - Naughton	21,588	24,873	3,285
WY	PacifiCorp - Wyodak	7,835	8,305	470

### 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 1,204 tons from the reported 2007 emissions. Table 3 summarizes these results, and Appendix A provides additional source information. Some key aspects of the adjustments include:

- Utah adjusted their emissions upward by 338 tons.
- Wyoming adjusted their emissions downward by 284 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. The adjustment increased emissions by 1,150 tons.
- 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**  
**(Albuquerque, New Mexico, Utah, and Wyoming)**

<b>State</b>	<b>Source</b>	<b>Reported 2007 SO<sub>2</sub> Emissions (tons)</b>	<b>Adjusted 2007 SO<sub>2</sub> Emissions (tons)</b>	<b>Monitoring Methodology Adjustment (tons)</b>	<b>Comment</b>
NM	GCC Rio Grande Cement	16	1,103	1,087	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	120	63	Facility potential to emit was used for the baseline year calculation. Adjustment is equal to the difference between reported and potential emissions.
UT	Chevron Products Co. - Salt Lake Refinery	1,104	1,085	-19	AP42 emission factor changed. In calculating flares, method changed from AP42 to engineering data.
UT	Graymont Western US Inc. - Cricket Mountain Plant	31	415	384	AP42 emission factors changed. Method of calculating kiln emissions changed from permit limit to stack test.
UT	Tesoro West Coast - Salt Lake City Refinery	909	878	-31	Reported emissions include SO <sub>3</sub> . SO <sub>3</sub> was not included in 1998.
UT	Holly Ref. - Phillips Refinery	579	582	3	Changed in the estimation method from AP42 in 1998 to CEM.
WY	Burlington Resources - Lost Cabin Gas Plant	2,461	2,459	-2	Change in the calculation method for emissions from the Train 3 sulfur pit.
WY	Solvay Chemicals - Soda Ash Plant (Green River Facility)	56	104	48	Change in calculation method from base year.
WY	Sinclair Oil Company - Sinclair Refinery	1,035	705	-330	FCC unit used stack test and hours of operation in 1998; went to CEM in 2004.

#### 4.0 Three-Year Average Emissions (2005, 2006, and 2007)

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 2005 to 2007 is 280,279 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 (2005, 2006, & 2007)**

Year	Adjusted SO <sub>2</sub> Emissions (tons/year)
2005	288,040
2006	279,134
2007	273,663
Three Year Average (2005, 2006, 2007)	280,279

#### 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.

##### Enforcement Milestone Adjustment

There were no proposed enforcement action related milestone adjustments reported for 2007.

#### 6.0 Smelter-Specific Set-Aside Milestone Adjustments

##### Smelter Adjustment Scenarios

Each state or tribe determines 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 in the region. This set-aside is only available for use if the annual sulfur input and emissions from the copper smelter is 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.

The revised Section 309 SIPs establish new updated milestones for the years 2008 - 2018. This update revised the baseline year, and also changed the smelter-specific set-aside table. For purposes of this milestone report, both the old and new baseline year and smelter specific set-asides were used to calculate 2007 milestones consistent with both SIP methodologies.

2007 Smelter Adjustment - 2003 SIPs

A comparison of smelter 2007 emissions to baseline levels in the milestone section of the 2003 SIPs is provided in Table 5, and shows that the Phelps Dodge Miami smelter in Arizona is the only operating smelter with reported 2007 SO<sub>2</sub> emissions above the baseline emissions.

**Table 5  
Smelter 2007 SO<sub>2</sub> Emissions and Baseline SO<sub>2</sub> Emissions**

State	Source	Reported 2007 SO <sub>2</sub> Emissions (tons)	SO <sub>2</sub> Baseline Emissions (tons)
AZ	BHP San Manuel	0	16,000
AZ	Asarco Hayden	20,339	23,000
AZ	Phelps Dodge Miami	9,111	8,000
NM	Phelps Dodge Hurley	0	16,000
NM	Phelps Dodge Hidalgo	0	22,000
UT	Kennecott Salt Lake	975	1,000

The sulfur throughput for the Phelps Dodge Miami smelter in 2007 was also greater than the baseline throughput, triggering the smelter adjustment. The emissions and throughput comparisons, and the smelter adjustment calculation for Phelps Dodge Miami are shown in Table 6. The adjustment based on a comparison of 2007 sulfur throughput to baseline sulfur throughput is 2,480 tons. This is greater than the available set-aside of 2,000 tons, and thus only an amount up to the 2,000 tons set-aside is allowable per the Arizona SIP.

**Table 6**  
**Phelps Dodge Miami - Smelter Adjustment**

<b><u>SO<sub>2</sub> Emission Comparison</u></b>	
2007 Reported Emissions.....	9,111 tons
Baseline Emissions.....	8,000 tons
Reported 2007 emissions are 1,111 tons greater than baseline emissions.	
<b><u>Sulfur Throughput Comparison</u></b>	
2007 Sulfur Throughput.....	274,150 tons
Baseline Sulfur Throughput*.....	208,700 tons
2007 Throughput Increase.....	65,450 tons
2007 Throughput Increase as a Percent of Baseline Throughput.....	31%
<b><u>Smelter Adjustment</u></b>	
2007 Calculated Adjustment (Baseline Emissions x Percent Throughput Increase)**.....	2,480 tons
Smelter Set-Aside*.....	2,000 tons
2007 Adjustment (The lesser of the Calculated Adjustment or Set-Aside)**.....	2,000 tons

\* See the Arizona SIP, Table 8-3 (Table 3 in the 2003 Model SIP)

\*\* See Arizona SIP, Section 8.1.3(4)(e)

2007 Smelter Adjustment - Revised SIPs

The smelter baseline has decreased, from 86,000 tons SO<sub>2</sub> in the 2003 SIPs to 24,000 tons SO<sub>2</sub> in the revised SIPs, due to the permanent closure of the BHP San Manuel, Phelps Dodge Chino, and Phelps Dodge Hidalgo smelters. The revised set-aside is only available if sulfur input and emissions from an individual copper smelter is above the baseline level listed in Table 7 in any particular year as a result of increased capacity. The Phelps Dodge Miami smelter is not included in Table 7 because the smelter is currently operating at its permitted limit, and therefore does not have a smelter-specific set-aside.

**Table 7**  
**Revised SIP - Smelter Baselines and Set-Aside**

State	Source	Baseline Sulfur Input (tons S)	Baseline Allocation (tons SO <sub>2</sub> )	Smelter Specific Set-Aside (tons SO <sub>2</sub> )
AZ	Asarco Hayden	235,000	23,000	3,000
UT	Kennecott Salt Lake	340,269	1,000	100
Total		575,269	24,000	3,100

A smelter set-aside is not available for 2007 under the revised SIPs. The 2007 emissions from the Asarco Hayden and Kennecott smelters (see Table 6) are below the baseline allocations in Table 7.

## **7.0 Quality Assurance**

The states provided 2007 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**

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 2007. 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. Appendix B provides a list of all sources added or removed from the program inventory in previous reporting years. Table 8 provides explanations for the emissions variations from 2006 - 2007 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 8. Information on these plants is provided in Appendix A.

**Table 8**  
**Sources with an Emissions Change of > ± 20% from the Previous Year**

State	County FIPS Code	State Facility ID	Reported 2006 SO <sub>2</sub> Emissions (tons)	Reported 2007 SO <sub>2</sub> Emissions (tons)	Facility Name	Reason for Change
AZ	017	1807	1,895	1,504	Abitibi - Snowflake Pulp Mill	Used low sulfur coal.
AZ	019	2869	7	48	Arizona Portland Cement	Emissions based on factor derived from performance test.
AZ	007	2435	16,088	20,339	Asarco - Hayden Smelter	Increase in operations without increase in capacity.
AZ	015	5992	1,047	1,979	CLC - Nelson Lime Plant	Increase in operations without increase in capacity.
AZ	007	5992	6,383	9,111	Phelps Dodge - Miami Smelter	Increase in operations without increase in capacity.
AZ	001	4477	13,520	16,882	SRP - Coronado Generating Station	Scrubber downtime reduced control efficiency.
NM	015	350150024	263	65	Agave Energy/Agave Dagger Draw Gas Plant	Plant burned only sweet gas after back field explosion.
NM	015	350150011	162	68	DCP Midstream/Artesia Gas Plant	Acid Gas Injection system installed in 2006 has significantly lowered emissions.
NM	025	350250035	1,558	253	DCP Midstream/Linam Ranch Gas Plant [Old name: GPM GAS/LINAM RANCH GAS PLANT]	Plant did not have any shut downs, and implemented revised upset procedures.
NM	031	350310008	840	1,278	Giant Industries/Ciniza Refinery [Old name: GIANT REFINING/CINIZA]	Production increased with higher heater and boiler utilization rates. Installed a CEMS on flare gas line which increased ability to monitor SO <sub>2</sub> emissions.
NM	025	350250007	1,125	354	J L Davis Gas Processing/Denton Plant	The reason for the change has not been reported.

(cont.)

**Table 8**  
**Sources with an Emissions Change of > ± 20% from the Previous Year (cont.)**

State	County FIPS Code	State Facility ID	Reported 2006 SO <sub>2</sub> Emissions (tons)	Reported 2007 SO <sub>2</sub> Emissions (tons)	Facility Name	Reason for Change
NM	015	350150010	160	62	Navajo Refining Co/Artesia Refinery	Changes in inlet gas composition, better maintenance, and decrease in plant upsets.
NM	007	350070001	149	0	Raton Pub. Service/Raton Power Plant	Did not operate in 2007.
NM	025	350250008	1,435	2,895	Sid Richardson Gasoline/Jal #3	SRU malfunctions caused significant emission events.
NM	025	350250063	277	335	Targa Midstream Services/Saunders Plant [Old names: Dynegy Midstream Services/Saunders Plant; WARREN PETROLEUM/SAUNDERS PLANT]	SRU was shut down part of the year to change catalyst, and all acid gas was flared during the shut down. Gas composition had higher S content in 2007.
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.
UT	049	10796	118	0	Geneva Steel - Steel Manufacturing Facility	Company has gone out of business, and the plant equipment dismantled.
UT	011	10123	478	579	Holly Refining and Marketing Co. - Phillips Refinery	Source test changed due to a change in the heating value of the fuel, and breakdown emissions also increased.
UT	035	10346	737	976	Kennecott Utah Copper Corp. - Smelter & Refinery	Increase in operational hours of various equipment, and changes in the fuel sulfur content.
UT	015	10238	17,402	4,351	PacifiCorp. - Huntington Power Plant	FGD control installed and operated on Boiler 2. Boiler 2 also increased operation - 1939 more hours than in 2006.

(cont.)

**Table 8**  
**Sources with an Emissions Change of > ± 20% from the Previous Year (cont.)**

State	County FIPS Code	State Facility ID	Reported 2006 SO <sub>2</sub> Emissions (tons)	Reported 2007 SO <sub>2</sub> Emissions (tons)	Facility Name	Reason for Change
UT	007	10096	858	447	Sunnyside Cogeneration Associates - Sunnyside Cogeneration Facility	Source test showed decreased emission rate due to increase in scrubber limestone and decrease in fuel burned.
WY	041	0012	2,257	1,205	BP America - Whitney Canyon Gas Plant	Emissions decreased due to reduced inlet gas rates, and permanent shutdown of the main plant on September 4, 2007.
WY	013	0028	1,715	2,461	Burlington Resources - Lost Cabin Gas Plant	Increased emissions primarily caused by problems with the Train 3 SRU reaction furnace and the SRU combustions air blowers.
WY	041		219	1	Chevron - Whitney Canyon Carter Creek Well Field	Emissions decreased due to decreased field flaring.
WY	041	0009	205	46	Chevron USA - Carter Creek Gas Plant	There was no plant turnaround in 2007, a decrease in maintenance issues, and decrease in flaring.
WY	013		57	6	Devon Energy - Beaver Creek Field	Emissions decreased due to decreased field flaring.
WY	023	0013	2,205	846	Exxon - Shute Creek Treating Facility	Emissions decreased due to shut down of the tail gas incinerators.
WY	037	0010	161	249	FMC Wyoming Corp. - Granger Soda Ash Plant	Increase in emissions due to increased soda ash production.
WY	029	0007	447	348	Marathon Oil Co. - Oregon Basin Gas Plant	Increased length of annual plant turnaround resulted in more untreated acid gas incineration and increase in emissions. Increase offset by decrease due to boiler downtime.
WY	029		265	164	Marathon Oil Co. - Oregon Basin Field	Decreased plant downtime resulted in decreased flaring and emissions.
WY	015	0001	143	202	The Western Sugar Cooperative - Torrington Plant	Increase in emissions due to increased sulfur content of coal.

## **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 67% of the region's reported emissions in 2007. We compared Acid Rain Program power plant emission data from EPA's Data and Maps website to plant totals reported by each state. The SIPs require the use of Part 75 methods for Part 75 sources, so the reported emissions should match.

We also queried EPA's database for the Acid Rain Program 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 Preliminary Milestone Determination**

The 2007 milestone based on the revised SIPs is 420,637 tons. No adjustment is required for changes in smelter operation.

The 2007 milestone was also determined based on the 2003 SIPs. First, the 682,000 ton regional milestone is adjusted for states and tribes that have not opted to participate in the 309 program by subtracting the amount for each state or tribe. The milestone is also adjusted to account for changes in smelter operations. No adjustment is required for enforcement actions. This results in an adjusted milestone of 422,194 tons. Table 9 shows each element of the 2007 milestone calculation under the 2003 SIPs.

The average of 2005, 2006 and 2007 adjusted emissions were determined to be 280,279 tons. Therefore, the participating states have met the milestones in the revised SIPs and 2003 SIPs (420,637 and 422,194 tons respectively).

**Table 9**  
**Regional 2007 SO<sub>2</sub> Emissions Milestone for the Four States - Based on 2003 SIPs**

<b>Base Regional 2007 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* .....	2,000 tons
Enforcement .....	0 tons
<b>Adjusted Four-State 2007 Milestone</b>	
(Arizona, New Mexico, Utah, Wyoming) .....	422,194 tons

\* See the Regional Milestones section of each state's 2003 Section 309 SIP.

## Appendix A

**Table A-1  
2007 Reported and Adjusted Emissions for Sources Subject to Section 309 - Regional Haze Rule**

State	County FIPS	State Facility Identifier	ORIS	Plant Name	Plant SIC	Plant NAICS	Reported 2007 SO <sub>2</sub> Emissions (tons)	Adjusted 2007 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	1,504	1,504			Low sulfur coal used.
AZ	003	3532	160	AEPCO - Apache Generating Station	4911	221112	2,662	2,675	13		Low sulfur coal used.
AZ	019	2869		Arizona Portland Cement	3241	32731	48	48			Unexplained baseline year emissions based on test factor.
AZ	007	2435		Asarco - Hayden Smelter	3331	331411	20,339	20,339			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	963	963			Facility operating at capacity.
AZ	015	5992		CLC - Nelson Lime Plant	3274	32741	1,979	1,979			Facility operating at capacity.
AZ	007	5129		Phelps Dodge - Miami Smelter	3331	331411	9,111	9,111			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.
AZ	017	447	113	Pinnacle West - Cholla Generating Station	4911	221112	23,522	23,650	128		

(cont.)

**Table A-1  
2007 Reported and Adjusted Emissions for Sources Subject to Section 309 - Regional Haze Rule (cont.)**

State	County FIPS	State Facility Identifier	ORIS	Plant Name	Plant SIC	Plant NAICS	Reported 2007 SO <sub>2</sub> Emissions (tons)	Adjusted 2007 SO <sub>2</sub> Emissions (tons)	Part 75 Flow RATA Emission Adjustment (tons)	General New Monitoring Calculation Method Adjustment (tons)	Description/ Comments
AZ	001	4477	6177	SRP - Coronado Generating Station	4911	221112	16,882	16,882			
AZ	019		126	TEP - Irvington Generating Station	4911	221112	2,908	2,908			
AZ	001	3222	8223	TEP - Springerville Generating Station	4911	221112	5,997	5,997			New permit limits.
NM	015	350150024		Agave Energy/Agave Dagger Draw Gas Plant	1311	211111	65	65			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	300	300			
NM	015	350150011		DCP Midstream/Artesia Gas Plant	1321	211112	68	68			New Owner - DCP Midstream.
NM	025	350250044		DCP Midstream/Eunice Gas Plant [Old name: GPM GAS EUNICE GAS PLANT]	1321	211112	1,063	1,063			New Owner - DCP Midstream.
NM	025	350250035		DCP Midstream/Linam Ranch Gas Plant [Old name: GPM GAS/LINAM RANCH GAS PLANT]	1321	211112	253	253			New Owner - DCP Midstream.

(cont.)

A-2

**Table A-1  
2007 Reported and Adjusted Emissions for Sources Subject to Section 309 - Regional Haze Rule (cont.)**

State	County FIPS	State Facility Identifier	ORIS	Plant Name	Plant SIC	Plant NAICS	Reported 2007 SO <sub>2</sub> Emissions (tons)	Adjusted 2007 SO <sub>2</sub> Emissions (tons)	Part 75 Flow RATA Emission Adjustment (tons)	General New Monitoring Calculation Method Adjustment (tons)	Description/ Comments
NM	025	350150138		Duke - Magnum/Pan Energy - Burton Flats	1321	211112	0	0			No longer a major source.
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/EU NICE GAS PLANT]	1321	211112	2,355	2,355			
NM	025	350250004		Frontier Field Services/Maljamar Gas Plant	1321	211112	2,520	2,520			
NM	001	00008		GCC Rio Grande Cement	3241	327310	16	1,103		1,087	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 (Gallup) [Old name: GIANT REFINING/CINIZA]	2911	32411	1,278	1,278			
NM	025	350250007		J L Davis Gas Processing/Denton Plant	1311	211111	354	354			
NM	015	350150008		Marathon Oil/Indian Basin Gas Plant	1321	211112	680	680			

(cont.)

**Table A-1  
2007 Reported and Adjusted Emissions for Sources Subject to Section 309 - Regional Haze Rule (cont.)**

State	County FIPS	State Facility Identifier	ORIS	Plant Name	Plant SIC	Plant NAICS	Reported 2007 SO <sub>2</sub> Emissions (tons)	Adjusted 2007 SO <sub>2</sub> Emissions (tons)	Part 75 Flow RATA Emission Adjustment (tons)	General New Monitoring Calculation Method Adjustment (tons)	Description/ Comments
NM	015	350150010		Navajo Refining Co./Artesia Refinery	2911	32411	62	62			
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	15,305	17,683	2,378		
NM	007	350070001		Raton Pub. Service/Raton Power Plant	4911	221112	0	0			Did not operate in 2007.
NM	025	350250008		Sid Richardson Gasoline/Jal #3	1321	211112	2,895	2,895			
NM	001	00145		Southside Water Reclamation Plant	4952	22132	57	120		63	Facility potential to emit was used for the baseline year calculation. Adjustment is equal to the difference between potential and reported emissions.
NM	025	350250051		Targa 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.
NM	025	350250061		Targa Midstream Services/Monument Plant [Old name: WARREN PETROLEUM/MONUMENT PLANT]	1321	211112	1,235	1,235			New Owner - Versado Gas Processors, LLC and operated by Targa Midstream Services, LP.

(cont.)

A-4

**Table A-1  
2007 Reported and Adjusted Emissions for Sources Subject to Section 309 - Regional Haze Rule (cont.)**

State	County FIPS	State Facility Identifier	ORIS	Plant Name	Plant SIC	Plant NAICS	Reported 2007 SO <sub>2</sub> Emissions (tons)	Adjusted 2007 SO <sub>2</sub> Emissions (tons)	Part 75 Flow RATA Emission Adjustment (tons)	General New Monitoring Calculation Method Adjustment (tons)	Description/ Comments
NM	025	350250063		Targa Midstream Services/Saunders Plant [Old name: WARREN PETROLEUM/SAUNDERS PLANT]	1321	211112	335	335			New Owner - Versado Gas Processors, LLC and operated by Targa Midstream Services, LP.
NM	031	350310032	87	Tri-State Gen & Transmission/Escalante Station	4911	221112	1,124	1,591	467		
NM	045	350450247		Western Gas Resources/San Juan River Gas Plant	1321	211112	393	393			
NM	045	350450023		Western Refining Southwest Inc./San Juan Refinery (Bloomfield) [old name: GIANT INDUSTRIES/BLOOMFIELD REF]	2911	32411	428	428			
UT	049	10790		Brigham Young University - Main Campus	8221	611310	97	97			
UT	027	10311		Brush Resources Inc. - Delta Mill	1099	212299	0	0			
UT	011	10119		Chevron Products Co. - Salt Lake Refinery	2911	324110	1,104	1,085		-19	AP42 emission factor change. Change from AP42 emission factor to engineering data in calculating flares.
UT	037	10034		EnCana Oil & Gas (USA) Incorporated (was Tom Brown Incorporated) - Lisbon Natural Gas Processing Plant	2911	211111	97	97			

(cont.)

**Table A-1  
2007 Reported and Adjusted Emissions for Sources Subject to Section 309 - Regional Haze Rule (cont.)**

State	County FIPS	State Facility Identifier	ORIS	Plant Name	Plant SIC	Plant NAICS	Reported 2007 SO <sub>2</sub> Emissions (tons)	Adjusted 2007 SO <sub>2</sub> Emissions (tons)	Part 75 Flow RATA Emission Adjustment (tons)	General New Monitoring Calculation Method Adjustment (tons)	Description/Comments
UT	011	10122		Flying J Refinery - (Big West Oil Company)	2911	324110	390	390			
UT	027	10313		Graymont Western US Inc. - Cricket Mountain Plant	1422	212312	31	415		384	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	454	454			
UT	011	10123		Holly Refining and Marketing Co. - Phillips Refinery	2911	324110	579	582		3	The company changed the estimation methods from mass balance and AP42 in 1998 to CEM.
UT	027	10327	6481	Intermountain Power Service Corporation - Intermountain Generation Station	4911	221112	4,764	4,788	24		Wall Adjustment Factor (WAF) of 0.995 used on Flow RATA.
UT	035	10572		Kennecott Utah Copper Corp. - Power Plant/Lab/Tailings Impoundment	1021	212234	3,207	3,207			
UT	035	10346		Kennecott Utah Copper Corp. - Smelter & Refinery	3331	331411	976	976			
UT	007	10081	3644	PacifiCorp. - Carbon Power Plant	4911	221112	6,511	7,537	1,026		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.

(cont.)

**Table A-1  
2007 Reported and Adjusted Emissions for Sources Subject to Section 309 - Regional Haze Rule (cont.)**

State	County FIPS	State Facility Identifier	ORIS	Plant Name	Plant SIC	Plant NAICS	Reported 2007 SO <sub>2</sub> Emissions (tons)	Adjusted 2007 SO <sub>2</sub> Emissions (tons)	Part 75 Flow RATA Emission Adjustment (tons)	General New Monitoring Calculation Method Adjustment (tons)	Description/ Comments
UT	015	10237	6165	PacifiCorp. - Hunter Power Plant	4911	221112	6,672	7,658	986		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	4,351	4,931	580		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.
UT	007	10096		Sunnyside Cogeneration Associates- Sunnyside Cogeneration Facility	4911	221112	447	448		1	AP42 emission factor changed from 157S to 142S (< 0.5 change).
UT	035	10335		Tesoro West Coast-Salt Lake City Refinery	2911	324110	909	878		-31	The actual emissions included SO <sub>3</sub> in 2007. SO <sub>3</sub> was not included in the 1998 emissions.
UT	043	10676		Utelite Corporation - Shale Processing	3295		144	144			Added to the inventory in 2003.
WY	011	0002		American Colloid Mineral Co. - East Colony	1459	212325	65	65			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	46	46			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	90	90			Calculation Methods (CEM Monitoring, & Mass Balance).

(cont.)

**Table A-1  
2007 Reported and Adjusted Emissions for Sources Subject to Section 309 - Regional Haze Rule (cont.)**

State	County FIPS	State Facility Identifier	ORIS	Plant Name	Plant SIC	Plant NAICS	Reported 2007 SO <sub>2</sub> Emissions (tons)	Adjusted 2007 SO <sub>2</sub> Emissions (tons)	Part 75 Flow RATA Emission Adjustment (tons)	General New Monitoring Calculation Method Adjustment (tons)	Description/ Comments
WY	037			Anadarko E&P Co. L.P. - Table Rock Gas Plant	1321		153	153			Calculation Methods (CEM Monitoring, & Mass Balance).
WY	031	0001	6204	Basin Electric - Laramie River Station	4911	221112	10,387	10,387			Calculation Method (CEMS Part 75).
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	984	984			Calculation Method (Chemical Mass Balance).
WY	005	0063	7504	Black Hills Corporation - Neil Simpson II	4911	22112	613	613			Calculation Method (CEMS Part 75).
WY	045	0005	4151	Black Hills Corporation - Osage Plant	4911	22112	2,994	2,994			Calculation Method (1998 Base Year & 1988 stack test).
WY	005	0146	55479	Black Hills Corporation - Wygen 1	4911	22112	688	688			Calculation method: (CEMS Part 75).
WY	041	0012		BP America Production Company - Whitney Canyon Gas Plant	1311	211111	1,205	1,205			Calculation methods: CEM Data, Metered Flow, & Emissions Testing.
WY	041			BP America Production Company - Whitney Canyon WellField	1311		3	3			Minimal flaring at well sites in 2007.

(cont.)

**Table A-1  
2007 Reported and Adjusted Emissions for Sources Subject to Section 309 - Regional Haze Rule (cont.)**

State	County FIPS	State Facility Identifier	ORIS	Plant Name	Plant SIC	Plant NAICS	Reported 2007 SO <sub>2</sub> Emissions (tons)	Adjusted 2007 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 well site in 2007.
WY	013	0028		Burlington Resources - Lost Cabin Gas Plant	1311	211111	2,461	2,459		-2	Emission volumes based upon data submitted in quarterly reports, and are same as base year, except for the Train 3 sulfur pit. New method = hours pit vent valve is open x pit emission rate.
WY	041	0009		Chevron USA - Carter Creek Gas Plant	1311	211111	46	46			Turnaround in August 2005 & a change in the operating plan.
WY	037			Chevron USA - Table Rock Field	1311		328	328			Flaring at wellsites in 2007.
WY	041			Chevron USA - Whitney Canyon/Carter Creek Wellfield	1311		1	1			SO <sub>2</sub> calculation in Chapter 6 Section 2 page B14.
WY	013			Devon Energy Production Co., L.P. - Beaver Creek Gas Field			6	6			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	84	84			Tons H <sub>2</sub> S (flared) * 1.8797 = SO <sub>2</sub> emitted.
WY	023			Exxon Mobil Corporation - Labarge Black Canyon Facility	1311		133	133			Calculation Method (AP-42 and actual volumes).
WY	023	0013		Exxon Mobil Corporation - Shute Creek	1311	211111	846	846			Turbines in operation since 2004; therefore, not a change in methodology. (CEMs & AP-42).

(cont.)

**Table A-1  
2007 Reported and Adjusted Emissions for Sources Subject to Section 309 - Regional Haze Rule (cont.)**

State	County FIPS	State Facility Identifier	ORIS	Plant Name	Plant SIC	Plant NAICS	Reported 2007 SO <sub>2</sub> Emissions (tons)	Adjusted 2007 SO <sub>2</sub> Emissions (tons)	Part 75 Flow RATA Emission Adjustment (tons)	General New Monitoring Calculation Method Adjustment (tons)	Description/ Comments
WY	037	0048		FMC Corp. - Green River Sodium Products (Westvaco facility)	2812	327999	4,234	4,234			SO <sub>2</sub> emissions from "2" emission points: (NS-1A & NS -1B). CEM lb/mmbtu * Annual heat input.
WY	037	0049		FMC Wyoming Corporation - Granger Soda Ash Plant	1474	212391	249	249			Boilers #1 & #2 operated a combined 16,012 hours in 2007.
WY	021	0001		Frontier Oil & Refining Company - Cheyenne Refinery	2911	32411	1,033	1,033			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	5,701	5,701			SO <sub>2</sub> emissions from "2" emission points: (C Boiler & D Boiler). Fuel use, fuel heat value, CEM.
WY	043	0003		Hiland Partners, L.L.C. - Hiland Gas Plant	1321	48621	145	145			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	1,309	1,309			SO <sub>2</sub> emissions from "2" emission points: (SRU & F-1). CEM and Mass Balance.
WY	029	0007		Marathon Oil Co. - Oregon Basin Gas Plant	1321	211112	348	348			Using the old methodology, the calculations result in negative emissions. 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.

(cont.)

**Table A-1  
2007 Reported and Adjusted Emissions for Sources Subject to Section 309 - Regional Haze Rule (cont.)**

State	County FIPS	State Facility Identifier	ORIS	Plant Name	Plant SIC	Plant NAICS	Reported 2007 SO <sub>2</sub> Emissions (tons)	Adjusted 2007 SO <sub>2</sub> Emissions (tons)	Part 75 Flow RATA Emission Adjustment (tons)	General New Monitoring Calculation Method Adjustment (tons)	Description/ Comments
WY	029			Marathon Oil Co. - Oregon Basin Wellfield			164	164			Flaring at wellsites in 2007.
WY	001	0002		Mountain Cement Company - Laramie Plant	3241	23571	94	94			SO <sub>2</sub> Emissions from "2" emission points: (Kiln #1 & Kiln #2). CEM.
WY	037	0003		P4 Production, L.L.C. - Rock Springs Coal Calcining Plant	3312	331111	653	653			New stack test results used for emission calculation. Does not represent a change in methodology.
WY	009	0001	4158	PacificCorp. - Dave Johnston Plant	4911	221112	21,356	25,791	4,435		SO <sub>2</sub> emissions from "4" emission points: (BW41, BW42, BW43 & BW44 & Flow Adjustment Factors: 1.11, 1.23, 1.19 & 1.28). SO <sub>2</sub> emissions using EPA accepted values from the Acid Rain EDRs.
WY	037	1002	8066	PacifiCorp. - Jim Bridger Plant	4911	221112	19,053	20,486	1,433		SO <sub>2</sub> emissions from "4" emission points: (BW71, BW72, BW73 & BW74 & Flow Adjustment Factors: 1.04, 1.13, 1.03 & 1.13). SO <sub>2</sub> Emissions using EPA accepted values from the Acid Rain EDRs.
WY	023	0004	4162	PacifiCorp. - Naughton Plant	4911	221112	21,588	24,873	3,285		SO <sub>2</sub> emissions from "3" emission points: (1, 2, & 3 & Flow Adjustment Factors: 1.05, 1.14, & 1.29). SO <sub>2</sub> Emissions using EPA accepted values from the Acid Rain Title IV EDRs.
WY	005	0046	6101	PacifiCorp. - Wyodak Plant	4911	221112	7,835	8,305	470		SO <sub>2</sub> emissions from "1" emission point: (BW91 & a Flow Adjustment Factor of 1.06). SO <sub>2</sub> Emissions using EPA accepted values from the Acid Rain Title IV EDRs.

(cont.)

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

State	County FIPS	State Facility Identifier	ORIS	Plant Name	Plant SIC	Plant NAICS	Reported 2007 SO <sub>2</sub> Emissions (tons)	Adjusted 2007 SO <sub>2</sub> Emissions (tons)	Part 75 Flow RATA Emission Adjustment (tons)	General New Monitoring Calculation Method Adjustment (tons)	Description/ Comments
WY	037	0022		Simplot Phosphates L.L.C. - Rock Springs Plant	2874	325312	2,052	2,052			(Source Test x Op Hours, AP-42 estimates, & AP-42 x Op Hours).
WY	007	0001		Sinclair Oil Company - Sinclair Refinery	2911	32411	1,035	705		-330	FCC Unit used stack test x hours in 1998; went to a CEM in 2004.
WY	025	0005		Sinclair Wyoming Refining Company - Casper Refinery	2911	32411	792	792			SO <sub>2</sub> emissions from "23" emission points. Calculation Method is the same as the Base Year.
WY	037	0010		Solvay Chemicals - Soda Ash Plant (Green River Facility)	1474		56	104		48	SO <sub>2</sub> Emissions from "5" emission points: (AQD #18, #19, #33, #73 & #89). Calculation method: (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	202	202			Coal-fired Sterling Boilers #3, #4, #5, & #6 (increase in operating hours).
WY	001	0005		University of Wyoming - Heat Plant	8221	61131	71	71			SO <sub>2</sub> emissions from "5" emission points: (#1 thru #4 Boilers & a diesel generator).
WY	045	0001		Wyoming Refining - Newcastle Refinery	2911	32411	690	690			Base year emissions estimate was based upon Tutweiler sample analysis. Base year estimate calculations are no longer available.

## 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