
# 2004 Regional $SO_2$ Emissions and Milestone Report

March 31, 2006


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# 2004 Regional $SO_2$ 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 – exercised this option by submitting plans to EPA by December 31, 2003. The tribes were not subject to the deadline and still can opt into the program at any time. Under the Section 309 plans, these five states have begun to track the emissions of the applicable stationary sources as part of the pre-trigger portion of the $SO_2$ 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 ($SO_2$) 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 2004 was set at 448,259 tons for the five-state region. To determine whether or not the milestone was met, the 2003 and 2004 adjusted emissions were averaged, and this average was compared to the 2004 milestone. 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, Oregon, Utah, and Wyoming reported 319,618 tons of $SO_2$ emissions for the calendar year 2004. The total emissions increased to 337,970 tons of $SO_2$ after making adjustments to account for changes in monitoring and calculation methods. The adjustments result in an additional 18,352 tons of $SO_2$ emissions, which is about 6% of the reported total emissions. Adjustments required for changes in Part 75, Acid Rain Program, flow monitor quality assurance methods account for about 16,135 tons (88%) of the increase in the estimate, with the remaining 2,217 tons from other types of monitoring and calculation method changes. The 2004 adjusted emissions total of 337,970 tons was slightly higher than the 2003 adjusted emissions total of 330,679 tons. The average of 2003 and 2004 adjusted emissions is 334,325 tons.

**Based on the adjusted milestone and emissions data, the average of 2003 & 2004 emissions is about 25% below the 2004 five state regional milestone.**

Based on this average adjusted annual emissions estimate, a determination has been made that the five states have met the 2004 regional $SO_2$ milestone of 448,259 tons. The 448,259 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 2004 period requires a 1,356 tons smelter adjustment, but no adjustments at this time 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 2003 to 2004, as well as a list of facilities added to or removed from the list of subject sources included in the base year inventories, are included in Section 7 of this report.

**Table ES-1**
**Overview of 2004 Regional Milestone and Emissions for Section 309 Participating States**

| | |
|---|---|
| **2004 Sulfur Dioxide Milestone** | |
| Base Regional 2004 Milestone* | 682,000 tons |
| Adjustments** | |
| States and Tribes not Participating in the Program | -235,097 tons |
| Smelter Operations | 1,356 tons |
| Enforcement | 0 tons |
| Adjusted 5-State 2004 Milestone | 448,259 tons |
| **2004 Sulfur Dioxide Emissions** | |
| Reported 5-State 2004 Emissions | 319,618 tons |
| Adjustments*** | |
| Part 75 Flow Rate Procedures | 16,135 tons |
| Other Emission Monitoring and Calculation Methods | 2,217 tons |
| Adjusted 5-State 2004 Emissions | 337,970 tons |
| **Average Sulfur Dioxide Emissions (2003 & 2004)** | |
| Adjusted 5-State 2004 Emissions | 337,970 tons |
| Adjusted 5-State 2003 Emissions | 330,679 tons |
| Average of 2003 & 2004 Adjusted 5-State Emissions | 334,325 tons |
| **Comparison of Emissions to Milestone** | |
| Average of 2003 & 2004 Adjusted 5-State Emissions | 334,325 tons |
| Adjusted 5-state 2004 Milestone | 448,259 tons |
| Difference (negative value = emissions < milestone) | -113,934 tons |
| 2003 & 2004 Emissions Average as Percent of 2004 Milestone | 75% |

* 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.

Final Report
March 31, 2006

# 2004 Regional $SO_2$ 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. 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 five states have begun to track emissions under the pre-trigger requirements of the $SO_2$ 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 $SO_2$ 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 second 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 2004. Based on the first two 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 $SO_2$ emissions, five states have submitted Section 309 SIPs to EPA. These states are Arizona, New Mexico, Oregon, Utah, and Wyoming. 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 five states:

1. Section 309(d)(4)(i) requires $SO_2$ milestones in the SIP. Section 309(h)(1) contains the actual $SO_2$ 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 $SO_2$ emissions in order to ensure the $SO_2$ 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 $SO_2$ emissions over 100 tons per year. Section 309(h)(2) also contains provisions on how to document emission calculations, conduct record keeping, 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 2004 emissions against the milestones for the states that have submitted Section 309 SIPs to EPA.

What Elements Must the Regional $SO_2$ 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 $SO_2$ 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 second report, 2003 and 2004 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 $SO_2$ 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 $SO_2$ milestone has either been met or exceeded. The draft determination is then submitted for public review and comment during the first part of 2006, culminating in a final report sent to EPA by March 31, 2006.

## 1.2 Report Organization

This report presents the regional $SO_2$ emissions and milestone information required by the 309 SIPs for the five states. The report is divided into the following sections, including an appendix:

- Reported $SO_2$ Emissions in 2004
- Monitoring Methodology Emissions Adjustments
- Two-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

## 2.0 Reported $SO_2$ Emissions in 2004

All stationary sources with reported emissions of 100 tons or more per year in 2000 or any subsequent year are required to report annual $SO_2$ emissions. Table 1 summarizes the annual reported emissions from applicable sources in each state. The 2004 reported $SO_2$ emissions for each applicable source are listed in Appendix A, Table A-1.

**Table 1**
**Reported 2004 $SO_2$ Emissions by State**

| State | Reported 2004 $SO_2$ Emissions (tons/year) |
|---|---|
| Arizona | 87,642 |
| New Mexico | 50,963 |
| Oregon | 17,923 |
| Utah | 41,525 |
| Wyoming | 121,565 |
| TOTAL | 319,618 |

## 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 2004 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 $SO_2$ 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, and 2H) are expected to result in a decrease in the $SO_2$ 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, and Arizona 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; and the AEPCO Apache Station in Arizona. In addition, the WRAP calculated adjusted emissions for a number of plants in Wyoming for which the state information was incomplete. These include four PacifiCorp plants (Dave Johnston, Jim Bridger, Naughton, and Wyodak) and one Basin Electric plant (Laramie River Station). Changes in the RATA flow reference method result in an upward adjustment for the 2004 $SO_2$ emissions of 16,135 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 2004 $SO_2$ Emissions (tons) | Flow RATA Adjustment (tons) | Adjusted 2004 $SO_2$ Emissions (tons) |
|---|---|---|---|---|
| AZ | AEPCO - Apache Station | 2,920 | 15 | 2,935 |
| NM | Public Service Co of New Mexico/San Juan Generating Station | 16,198 | 2,590 | 18,788 |
| NM | Tri-State Gen & Transmission/Escalante Station | 1,228 | 511 | 1,739 |
| UT | Intermountain Power Service Corporation - Intermountain Generation Station | 3,848 | 19 | 3,867 |
| UT | PacifiCorp - Carbon Power Plant | 5,642 | 888 | 6,530 |
| UT | PacifiCorp - Hunter Power Plant | 5,726 | 866 | 6,592 |
| UT | PacifiCorp - Huntington Power Plant | 16,727 | 2,849 | 19,576 |
| WY | Basin Electric - Laramie River Station | 12,466 | -240 | 12,226 |
| WY | PacifiCorp - Dave Johnston | 18,816 | 3,089 | 21,905 |
| WY | PacifiCorp - Jim Bridger | 22,795 | 2,752 | 25,547 |
| WY | PacifiCorp - Naughton | 21,173 | 2,352 | 23,525 |
| WY | PacifiCorp - Wyodak | 7,862 | 444 | 8,306 |

### 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 2,217 tons from the reported 2004 emissions. Table 3 summarizes these results, and Appendix A provides additional source information. Some key aspects of the adjustments include:

- Oregon adjusted its 2004 $SO_2$ emissions inventory upwards by 2 tons.
- Utah adjusted their emissions downward by 57 tons.

- Wyoming adjusted their emissions upward by 1,083 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**
**(Oregon, Utah, Wyoming, and Albuquerque, New Mexico)**

| State | Source | Reported 2004 $SO_2$ Emissions (tons) | Adjusted 2004 $SO_2$ Emissions (tons) | Monitoring Methodology Adjustment (tons) | Comment |
|---|---|---|---|---|---|
| NM | GCC Rio Grande Cement | 17 | 1,103 | 1,086 | Facility potential to emit was used for the baseline year calculation. Adjustment is equal to the difference between reported and potential. |
| NM | Southside Water Reclamation Plant | 17 | 120 | 103 | Facility potential to emit was used for the baseline year calculation. Adjustment is equal to the difference between reported and potential. |
| OR | Weyerhaeuser Company | 160 | 162 | 2 | State emission factor changed. Methodology did not. |

(cont.)

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

| State | Source | Reported 2004 $SO_2$ Emissions (tons) | Adjusted 2004 $SO_2$ Emissions (tons) | Monitoring Methodology Adjustment (tons) | Comment |
|---|---|---|---|---|---|
| UT | Tesoro West Coast - Salt Lake City Refinery | 893 | 858 | -35 | Reported emissions include $SO_3$. $SO_3$ was not included in 1998. |
| UT | Holly Ref. - Phillips Refinery | 474 | 452 | -22 | Changed from AP42 emission factor to CEM. |
| WY | Anadarko E&P - Brady | 89 | 147 | 58 | Thermal oxidizer used stack test and hours of operation in 1998; went to CEM in 2002. |
| WY | Black Hills - Neil Simpson I | 1,083 | 1,174 | 91 | Mass balance approach replaced the 1990 stack test results used in the baseline year. |
| WY | Frontier Oil & Refining - Cheyenne | 1,565 | 1,557 | -8 | Source 43 coker flare used stack test and coke cycle time for hours in 1998; went to permitted limit and ratio of reported/ permitted throughput in 2001. |
| WY | Solvay Minerals - Soda Ash Plant | 53 | 99 | 46 | Coal boilers used stack test and hours in 1998; went to a CEM in 2002. |
| WY | Sinclair Oil Company - Sinclair Refinery | 2,749 | 3,645 | 896 | FCC unit used stack test and hours of operation in 1998; went to CEM in 2004. |

## 4.0 Two-Year Average Emissions (2003 and 2004)

The SIPs require that the average of the 2003 and 2004 total adjusted emissions be used to determine whether or not average adjusted emissions are greater than or less than the 2004 milestone. The SIPs require multi-year averaging from 2004 to 2017. In 2003, no averaging was done because only one year of data was available. 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 2003 adjusted emissions were 330,679 tons. The 2004 adjusted emissions were 337,970 tons. The average of the two years' emissions is 334,325 tons, which is less than the 2004 adjusted milestone of 448,259 tons.

## 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

New Mexico reported a potential pending adjustment for the Navajo Refining Company's Artesia Refinery. This facility is currently operating under a consent decree entered into with the state of New Mexico and the U.S. EPA. New Mexico is currently in the process of evaluating a potential enforcement milestone adjustment for this facility. The potential adjustment will not affect the 2004 emissions milestones.

## 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 2004 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.

2004 Smelter Adjustment

A comparison of smelter 2004 emissions to baseline levels in Table 3B of Section 51.309 is provided in Table 4, and shows that the Phelps Dodge Miami smelter in Arizona is the only operating smelter with reported 2004 $SO_2$ emissions above the baseline emissions.

**Table 4**
**Smelter 2004 $SO_2$ Emissions and Baseline $SO_2$ Emissions**

| State | Source | Reported 2004 $SO_2$ Emissions (tons) | $SO_2$ Baseline Emissions (tons) |
|---|---|---|---|
| AZ | BHP San Manuel | 0 | 16,000 |
| AZ | Asarco Hayden | 19,395 | 23,000 |
| AZ | Phelps Dodge Miami | 8,754 | 8,000 |
| NM | Phelps Dodge Hurley | 11* | 16,000 |
| NM | Phelps Dodge Hidalgo | 0 | 22,000 |
| UT | Kennecott Salt Lake | 870 | 1,000 |

* Emissions from power plant operation. The smelter processes did not operate in 2004.

The sulfur throughput for the Phelps Dodge Miami smelter in 2004 was 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 5. The adjustment is 1,356 tons, which is less than the available set-aside of 2,000 tons, and thus the entire adjustment is allowable per the Arizona SIP.

**Table 5**
**Phelps Dodge Miami - Smelter Adjustment**

**$SO_2$ Emission Comparison**

2004 Reported Emissions ..... 8,754 tons
Baseline Emissions ..... 8,000 tons
Reported 2004 emissions are 754 tons greater than baseline emissions.

**Sulfur Throughput Comparison**

2004 Sulfur Throughput ..... 244,063 tons
Baseline Sulfur Throughput* ..... 208,700 tons
2004 throughput is 35,363 tons greater than baseline throughput.
2004 Throughput Increase as a Percent of Baseline Throughput ..... 17%

**Smelter Adjustment**

2004 Calculated Adjustment (Baseline Emissions x Percent Throughput Increase)** ..... 1,356 tons
Smelter Set-Aside* ..... 2,000 tons
2004 Adjustment (The lesser of the Calculated Adjustment or Set-aside)** ..... 1,356 tons

* See the Arizona SIP, Table 8-3 (Table 3 in the Model SIP)
** See Arizona SIP, Section 8.1.3(4)(e)

## 7.0 Quality Assurance

The states provided 2004 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 $SO_2$ emissions and milestone report include a description of source changes or exceptions report to identify:

1. 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 (Table 6);

2. 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 (Table 7); and

3. An explanation for emissions variations at any applicable source that exceeds ± 20 percent from the previous year (Table 8). Plants whose emissions variations were greater than 20 percent but less than 20 tons are not listed in Table 8, but are included in Appendix A.

**Table 6**
**Sources Included in This Emissions Report Which Were Not in the 2003 Report**

| State | County FIP Code | State Facility ID | Facility Name | Reported 2004 $SO_2$ Emissions (tons) | Reason for Change |
|---|---|---|---|---|---|
| AZ | 019 | 2869 | Arizona Portland Cement | 107 | No process or capacity change. Possible combustion variability. |
| WY | 013 | | Devon Energy Corp. - Beaver Creek Gas Field | 61 | In previous years, this facility's emissions were included with Beaver Creek Gas Plant's emissions. |

**Table 7**
**Sources Removed from Program**

| State | County FIP Code | State Facility ID | Facility Name | Baseline Emissions (tons/year) | Reason for Change |
|---|---|---|---|---|---|
| AZ | 021 | 15582 | BHP - San Manuel Smelter | 10,409 | Facility is permanently closed. |
| UT | 049 | 10796 | Geneva Steel - Steel Manufacturing Facility | 881 | Plant is shut down and disassembled. |
| WY | 023 | 0001 | Astaris Production - Coking Plant | 1,454 | Plant is permanently shut down and dismantled. |

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

| State | County FIP Code | State Facility ID | Reported 2003 $SO_2$ Emissions (tons) | Reported 2004 $SO_2$ Emissions (tons) | Facility Name | Reason for Change |
|---|---|---|---|---|---|---|
| AZ | 003 | 3532 | 7,899 | 2,920 | AEPCO - Apache Generating Station | Decrease in coal sulfur content. |
| AZ | 003 | 2148 | 0 | 126 | CLC - Douglas Lime Plant | Facility back in operation after temporary shutdown. |
| AZ | 001 | 4477 | 18,820 | 13,950 | SRP - Coronado Generating Station | Combusted low sulfur coal and used backup scrubber for additional control. |
| NM | 015 | 350150002 | 1,956 | 465 | BP America Production/Empire Abo Plant [Old name: Arco Permian/Empire Abo Plant] | In 2004, the facility decreased usage of the amine unit and increased usage of the emergency flares. |
| NM | 015 | 350150008 | 1,228 | 2,565 | Marathon Oil/Indian Basin Gas Plant | In 2004, the facility increased usage of the emergency (utility) flare. |
| NM | 015 | 350150010 | 702 | 142 | Navajo Refining Co/Artesia Refinery | A consent decree had some effect on lower $SO_2$ emissions. However, the decrease is mainly attributed to an $SO_2$ scrubber installed on the FCCU. |
| NM | 015 | 350150285 | 180 | 0 | Duke Energy/Dagger Draw Gas Plant | The facility did not operate in 2004. |
| NM | 025 | 350250004 | 3,574 | 1,818 | Frontier Field Services/Maljamar Gas Plant | The inlet concentration of $H_2S$ has been dropping. |
| NM | 025 | 350250007 | 1,158 | 535 | J L Davis Gas Processing/Denton Plant | An NOV was issued for exceeding the $SO_2$ emissions limit. Engines were replaced as required. Also, there was a short period when no engines operated (after the old engines were shut down and prior to the startup of the new engines), which contributed to lower $SO_2$ emissions. |
| NM | 025 | 350250008 | 1,360 | 1,665 | Sid Richardson Gasoline/Jal #3 | In 2004, the facility increased its usage of the treatment and inlet flares. |

(cont.)

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

| State | County FIP Code | State Facility ID | Reported 2003 $SO_2$ Emissions (tons) | Reported 2004 $SO_2$ Emissions (tons) | Facility Name | Reason for Change |
|---|---|---|---|---|---|---|
| NM | 025 | 350250035 | 3,539 | 7,837 | Duke Energy Field Services/Linam Ranch Gas Plant [Old name: GPM GAS/LINAM RANCH GAS PLANT] | A compliance order was issued for the flares. In 2004, the facility increased usage of amine units. |
| NM | 025 | 350250044 | 1,598 | 8,023 | Duke Energy Field Services/Eunice Gas Plant [Old name: GPM GAS EUNICE GAS PLANT] | A compliance order is in progress. In 2004, the facility increased usage of amine units and flares (inlet gas and plant acid gas) in 2004. |
| NM | 025 | 350250060 | 1,109 | 1,933 | Dynegy Midstream Services/Eunice Gas Plant [Old name: WARREN PETROLEUM/EUNICE GAS PLANT] | In 2004, the facility increased usage of the acid gas (zink) and emergency flares. |
| NM | 025 | 350250061 | 872 | 2,416 | Dynegy Midstream Services/Monument Plant [Old name: WARREN PETROLEUM/MONUMENT PLANT] | In 2004, the facility increased usage of the sulfur incinerator and emergency flare. |
| OR | 007 | 0004 | 1,434 | 878 | Fort James Operating Company | The decrease in $SO_2$ emissions appears to be due to a decrease in production activity. |
| OR | 009 | 1849 | 2,496 | 1,636 | Boise Cascade Corporation | The decrease in $SO_2$ emissions appears to be due to a decrease in production activity. |
| OR | 043 | 3501 | 231 | 528 | Pope & Talbot, Inc. | The increase in $SO_2$ emissions appears to be due to an increase in production activity. |
| OR | 005 | 2145 | 380 | 516 | West Linn Paper Company | The increase in $SO_2$ emissions appears to be due to an increase in production activity. |
| UT | 035 | 10335 | 700 | 893 | Tesoro West Coast - Salt Lake City Refinery | CEM emissions increased for sulfur recovery unit and FCU/CO boiler. |

(cont.)

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

| State | County FIP Code | State Facility ID | Reported 2003 $SO_2$ Emissions (tons) | Reported 2004 $SO_2$ Emissions (tons) | Facility Name | Reason for Change |
|---|---|---|---|---|---|---|
| UT | 029 | 10007 | 58 | 228 | Holcim-Devil's Slide Plant | The kiln ran more hours and different fuels were used. The current stack test increased the emission rate. |
| UT | 027 | 10313 | 345 | 418 | Graymont Western US Inc. - Cricket Mountain Plant | Kilns 1, 2, and 3 ran more hours than in 2003. The amount of coal used in 3 and propane in 1 increased significantly. |
| UT | 037 | 10034 | 1,224 | 795 | EnCana Oil & Gas (USA) Incorporated (was Tom Brown Incorporated) - Lisbon Natural Gas Processing Plant | New gas injection process reduced incinerator emissions. |
| WY | 037 | | 187 | 255 | Anadarko E&P Co LP - Table Rock Gas Plant | Natural process variation: Increased flaring in 2004 due to power failures & equipment malfunction. |
| WY | 005 | 0146 | 432 | 523 | Black Hills Corporation - Wygen 1 | Natural process variation: Increased hours of operation & coal use in 2004. |
| WY | 041 | 0012 | 6,165 | 4,284 | BP America Production Company - Whitney Canyon Gas Plant | Natural process variation: Decreased $SO_2$ emissions from 2003 due to decreases from the main tail gas stack; fuel use at this source decreased proportionately; production decreased by 30% from 2003. |
| WY | 013 | | 3,284 | 2,163 | Burlington Resources - Bighorn Wells | Natural process variation: Reduced flaring in 2004 - different wells are completed in different years. |
| WY | 013 | 0028 | 1,332 | 2,230 | Burlington Resources - Lost Cabin Gas Plant | Natural process variation: Increased Train 3 operation & more upsets in 2004. |
| WY | | | 232 | 0 | Chevron USA - Table Rock Field | Natural process variation: Reduced flaring in 2004 - different wells are completed in different years. |

(cont.)

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

| State | County FIP Code | State Facility ID | Reported 2003 $SO_2$ Emissions (tons) | Reported 2004 $SO_2$ Emissions (tons) | Facility Name | Reason for Change |
|---|---|---|---|---|---|---|
| WY | 013 | 0008 | 70 | 37 | Devon Energy Corp. - Beaver Creek Gas Plant | Natural process variation: Increased operation & more upsets in 2004. |
| WY | 023 | | 241 | 46 | Exxon Mobil Corporation - Black Canyon Dehy | Natural process variation: Increased flaring in 2004 due to equipment malfunction. |
| WY | 043 | 0003 | 161 | 115 | Hiland Partners, LLC - Hiland Gas Plant | Natural process variation: Decreased $SO_2$ emissions from 2003 due to fewer plant upsets & reduced flaring. |
| WY | 025 | 0005 | 1,165 | 870 | Sinclair Oil Company - Casper Refinery | Natural process variation: Decreased $SO_2$ emissions from 2003 due to reduced fuel oil use in heaters (better market for asphalt), installation of a tail gas scrubber system on the SRU, & lower emissions from the FCCU due to a crude slate feedstock difference, including increased use of syncrude. |
| WY | 001 | 0005 | 159 | 204 | University of Wyoming - Heat Plant | Natural process variation: Increased $SO_2$ due to increased 2004 coal sulfur content (0.45%) from 2003 (0.35%). |

### 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 two thirds of the region's reported emissions in 2004. EPA's Data and Maps website was queried to obtain power plant $SO_2$ emissions in the five 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 2003 and 2004 adjusted emissions were determined to be 334,325 tons. Therefore, the participating states have met the adjusted regional 2004 milestone of 448,259 tons.

The 2004 milestone for the five 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 yet 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. Then, the milestone is adjusted to account for both changes in smelter operations and certain enforcement actions. This results in an adjusted milestone of 448,259 tons. Table 8 shows each element of the 2004 milestone calculation.

## 9.0 Public Comments

Each of the states published a draft of this report for public review and comment. One comment was received during the comment period. EnCana Oil and Gas (USA) Incorporated notified the Utah Division of Air Quality that the 2004 $SO_2$ emissions for the Lisbon Natural Gas Processing Plant in Utah had been miscalculated. The emissions for the plant were revised from 1212 tons in the draft report to 795 tons. The revision also resulted in a greater than 20% change from the plant 2003 emissions. The emissions change occurred due to a new gas injection process which reduced incinerator emissions.

## Table 9
## Regional 2004 $SO_2$ Emissions Milestone for the Five States

| | |
|---|---|
| **Base Regional 2004 Milestone*** | 682,000 tons |
| **Milestone Adjustments**** | |
| States and Tribes not participating in the backstop program: | |
| California | -37,343 tons |
| Colorado | -98,897 tons |
| Idaho | -18,016 tons |
| Nevada | -20,187 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*** | 1,356 tons |
| Enforcement | 0 tons |
| **Adjusted 5-State 2004 Milestone** | |
| (Arizona, New Mexico, Oregon, Utah, Wyoming) | 448,259 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

# Table A-1
## 2004 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 2004 $SO_2$ Emissions (tons) | Adjusted 2004 $SO_2$ 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 | 2,020 | 2,020 | | | |
| AZ | 003 | 3532 | 160 | AEPCO - Apache Generating Station | 4911 | 221112 | 2,920 | 2,935 | 15 | | Default wall effects adjustment determined using Method 2H table 2H-2. Current flow rate method is D2H. Flow adjustment determined by using side-by-side comparison of data from new and old flow reference methods during RATA test. |
| AZ | 019 | 2869 | | Arizona Portland Cement | 3241 | 32731 | 107 | 107 | | | Source newly added to program. No capacity or process changes, possible combustion variability. |
| AZ | 007 | 2435 | | ASARCO - Hayden Smelter | 3331 | 331411 | 19,395 | 19,395 | | | |
| 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 | 126 | 126 | | | Facility back in operation since October 2004. |
| AZ | 015 | 5992 | | CLC - Nelson Lime Plant | 3274 | 32741 | 850 | 850 | | | |
| AZ | 007 | 5129 | | Phelps Dodge - Miami Smelter | 3331 | 331411 | 8,754 | 8,754 | | | |
| AZ | 025 | 2393 | | Phoenix Cement | 3241 | 32731 | 6 | 6 | | | New kiln in operation. |
| AZ | 017 | 447 | 113 | Pinnacle West - Cholla Generating Station | 4911 | 221112 | 18,241 | 18,241 | | | |
| AZ | 001 | 4477 | 6177 | SRP - Coronado Generating Station | 4911 | 221112 | 13,950 | 13,950 | | | Combusted low sulfur coal. |
| AZ | 019 | | 126 | TEP - Irvington Generating Station | 4911 | 221112 | 3,297 | 3,297 | | | |
| AZ | 001 | 3222 | 8223 | TEP - Springerville Generating Station | 4911 | 221112 | 17,976 | 17,976 | | | |
| NM | 015 | 350150024 | | Agave Energy/Agave Gas Plant | 1311 | 211111 | 2,320 | 2,320 | | | |
| NM | 015 | 350150002 | | BP America Production/Empire Abo Plant [Old name: Arco Permian/Empire Abo Plant] | 1321 | 211112 | 465 | 465 | | | |
| NM | 025 | 350150138 | | Duke - Magnum/Pan Energy - Burton Flats | 1321 | 211112 | 0 | 0 | | | In 2000, the facility removed the SRU. |
| NM | 015 | 350150011 | | Duke Energy Field Services/Artesia Gas Plant | 1321 | 211112 | 1,210 | 1,210 | | | |
| NM | 025 | 350250044 | | Duke Energy Field Services/Eunice Gas Plant [Old name: GPM GAS EUNICE GAS PLANT] | 1321 | 211112 | 8,023 | 8,023 | | | |
| NM | 025 | 350250035 | | Duke Energy Field Services/Linam Ranch Gas Plant [Old name: GPM GAS/LINAM RANCH GAS PLANT] | 1321 | 211112 | 7,837 | 7,837 | | | |

(cont.)

# Table A-1
## 2004 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 2004 $SO_2$ Emissions (tons) | Adjusted 2004 $SO_2$ Emissions (tons) | Part 75 Flow RATA Emission Adjustment (tons) | General New Monitoring Calculation Method Adjustment (tons) | Description/Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NM | 015 | 350150285 | | Duke Energy/Dagger Draw Gas Plant | 1321 | 211112 | 0 | 0 | | | Facility did not operate in 2004. |
| NM | 025 | 350250060 | | Dynegy Midstream Services/Eunice Gas Plant [Old name: WARREN PETROLEUM/EUNICE GAS PLANT] | 1321 | 211112 | 1,933 | 1,933 | | | |
| NM | 025 | 350250051 | | Dynegy Midstream Services/Eunice South Gas Plant | 1321 | 211112 | 0 | 0 | | | In June 2000, the facility removed the SRU and has operated as a compressor station since then. |
| NM | 025 | 350250061 | | Dynegy Midstream Services/Monument Plant [Old name: WARREN PETROLEUM/MONUMENT PLANT] | 1321 | 211112 | 2,416 | 2,416 | | | |
| NM | 025 | 350250063 | | Dynegy Midstream Services/Saunders Plant [Old name: WARREN PETROLEUM/SAUNDERS PLANT] | 1321 | 211112 | 569 | 569 | | | |
| NM | 025 | 350250004 | | Frontier Field Services/Maljamar Gas Plant | 1321 | 211112 | 1,818 | 1,818 | | | |
| NM | 001 | 00008 | | GCC Rio Grande Cement | 3241 | 327310 | 17 | 1,103 | | 1,086 | 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 | 1,006 | 1,006 | | | |
| NM | 045 | 350450023 | | Giant Industries/San Juan Refinery (Bloomfield) [old name: GIANT INDUSTRIES/BLOOMFIELD REF] | 2911 | 32411 | 364 | 364 | | | |
| NM | 025 | 350250007 | | J L Davis Gas Processing/Denton Plant | 1311 | 211111 | 535 | 535 | | | |
| NM | 015 | 350150008 | | Marathon Oil/Indian Basin Gas Plant | 1321 | 211112 | 2,565 | 2,565 | | | |
| NM | 015 | 350150010 | | Navajo Refining Co/Artesia Refinery | 2911 | 32411 | 142 | 142 | | | |
| NM | 023 | 350230003 | | Phelps Dodge Hidalgo Smelter | 3331 | 331411 | 0 | 0 | | | Facility shut down since September 1999. Permit canceled. |
| NM | 017 | 350170001 | | Phelps Dodge Hurley Smelter/Concentrator | 3331 | 331411 | 11 | 11 | | | Smelter was offline in 2004. Power generation still operational. |
| NM | 045 | 350450902 | 2451 | Public Service Co of New Mexico/San Juan Generating Station | 4911 | 221112 | 16,198 | 18,788 | 2,590 | | Flow adjustment determined by comparing Method 2 to Method 2F results for units 1, 2, and 3. |
| NM | 007 | 350070001 | | Raton Pub. Service/Raton Power Plant | 4911 | 221112 | 196 | 196 | | | |

(cont.)

# Table A-1
## 2004 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 2004 $SO_2$ Emissions (tons) | Adjusted 2004 $SO_2$ Emissions (tons) | Part 75 Flow RATA Emission Adjustment (tons) | General New Monitoring Calculation Method Adjustment (tons) | Description/Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NM | 025 | 350250008 | | Sid Richardson Gasoline/Jal #3 | 1321 | 211112 | 1,665 | 1,665 | | | |
| NM | 001 | 00145 | | Southside Water Reclamation Plant | 4952 | 22132 | 17 | 120 | | 103 | 2004 sulfur not reported from facility, but calculated with hours of operation and emission factors. 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 | 1,228 | 1,739 | 511 | | Flow adjustment determined using ratio of heat input/MW observed during the new vs. old flow rate method. Current method is 2FH. |
| NM | 045 | 350450247 | | Western Gas Resources/San Juan River Gas Plant | 1321 | 211112 | 428 | 428 | | | |
| OR | 045 | 0002 | 54612 | Amalgamated Sugar Company, The | 2063 | 311313 | 775 | 775 | | | |
| OR | 009 | 1849 | | Boise Cascade Corporation | 2611 | 322121 | 1,636 | 1,636 | | | |
| OR | 007 | 0004 | | Fort James Operating Company | 2621 | 322121 | 878 | 878 | | | |
| OR | 041 | 0005 | | Georgia-Pacific West, Inc. | 2631 | 322130 | 418 | 418 | | | |
| OR | 065 | 0001 | | Northwest Aluminum Company, Inc. | 3334 | 331312 | 0 | 0 | | | |
| OR | 051 | 1876 | | Owens-Brockway Glass Container Inc. | 3221 | 327213 | 113 | 113 | | | |
| OR | 043 | 3501 | | Pope & Talbot, Inc. | 2611 | 322121 | 528 | 528 | | | |
| OR | 049 | 0016 | 6106 | Portland General Electric Company | 4911 | 221121 | 12,392 | 12,392 | | | |
| OR | 071 | 6142 | | Smurfit Newsprint Corporation | 2611 | 322122 | 507 | 507 | | | |
| OR | 005 | 2145 | | West Linn Paper Company | 2621 | 322121 | 516 | 516 | | | |
| OR | 043 | 0471 | 54944 | Weyerhaeuser Company | 2621 | 322130 | 160 | 162 | | 2 | State emission factor changed since baseline EI. Methodology did not. |
| UT | 049 | 10790 | | Brigham Young University - Main Campus | 8221 | 611310 | 147 | 147 | | | The percent of sulfur in the fuel changed. |
| UT | 027 | 10311 | | Brush Resources Inc. - Delta Mill | 1099 | 212299 | 0 | 0 | | | Fuel changed from #5 fuel oil to natural gas and #2 diesel. |
| UT | 011 | 10119 | | Chevron Products Co. - Salt Lake Refinery | 2911 | 324110 | 1,365 | 1,365 | | | The CEM emission factor changed. The heating value and sulfur content of fuel changed. |
| UT | 037 | 10034 | | EnCana Oil & Gas (USA) Incorporated (was Tom Brown Incorporated) - Lisbon Natural Gas Processing Plant | 2911 | 211111 | 795 | 795 | | | |
| UT | 011 | 10122 | | Flying J Refinery - (Big West Oil Company) | 2911 | 324110 | 378 | 378 | | | The CEM emission factor changed. |

(cont.)

# Table A-1
## 2004 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 2004 $SO_2$ Emissions (tons) | Adjusted 2004 $SO_2$ Emissions (tons) | Part 75 Flow RATA Emission Adjustment (tons) | General New Monitoring Calculation Method Adjustment (tons) | Description/Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| UT | 049 | 10796 | | Geneva Steel - Steel Manufacturing Facility | 3312 | 331221 | 0 | 0 | | | The source has closed down. |
| UT | 027 | 10313 | | Graymont Western US Inc. - Cricket Mountain Plant | 1422 | 212312 | 418 | 418 | | | The AP42 emission factor changed. |
| UT | 029 | 10007 | | Holcim - Devil's Slide Plant | 3241 | 327310 | 228 | 228 | | | The stack test emission factor changed due to a change in fuel. |
| UT | 011 | 10123 | | Holly Refining and Marketing Co. - Phillips Refinery | 2911 | 324110 | 474 | 452 | | -22 | 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 | 3,848 | 3,867 | 19 | | Default wall effects adjustment determined using Method 2H table 2H-2. Current flow rate method is D2H. Flow adjustment determined by using side-by-side comparison of data from new and old flow reference methods during RATA test. |
| UT | 035 | 10572 | | Kennecott Utah Copper Corp. - Power Plant/Lab/Tailings Impoundment | 1021 | 212234 | 2,955 | 2,955 | | | The stack test emission factor changed for one component. |
| UT | 035 | 10346 | | Kennecott Utah Copper Corp. - Smelter & Refinery | 3331 | 331411 | 870 | 870 | | | |
| UT | 007 | 10081 | 3644 | PacifiCorp - Carbon Power Plant | 4911 | 221112 | 5,642 | 6,530 | 888 | | The RATA method changed from method 2 in 1999 to method 2FH. The flow adjustment factor calculated is 1.17. |
| UT | 015 | 10237 | 6165 | PacifiCorp - Hunter Power Plant | 4911 | 221112 | 5,726 | 6,592 | 866 | | Flow adjustment determined using ratio of heat input/MW observed during the new vs. old flow rate method. |
| UT | 015 | 10238 | 8069 | PacifiCorp - Huntington Power Plant | 4911 | 221112 | 16,727 | 19,576 | 2,849 | | Flow adjustment determined using ratio of heat input/MW observed during the new vs. old flow rate method. |
| UT | 007 | 10096 | | Sunnyside Cogeneration Associates - Sunnyside Cogeneration Facility | 4911 | 221112 | 929 | 929 | | | The percent of sulfur in the fuel changed. |
| UT | 035 | 10335 | | Tesoro West Coast-Salt Lake City Refinery | 2911 | 324110 | 893 | 858 | | -35 | The reported emissions included $SO_3$ in 2004. $SO_3$ was not included in the 1998 emissions. |
| UT | 043 | 10676 | | Utelite Corporation - Shale processing | 3295 | | 130 | 130 | | | |
| WY | 011 | 0002 | | American Colloid Mineral Co - East Colony | 1459 | 212325 | 68 | 68 | | | |
| WY | 011 | 0003 | | American Colloid Mineral Co - West Colony | 1459 | 212325 | 51 | 51 | | | |

(cont.)

# Table A-1
## 2004 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 2004 $SO_2$ Emissions (tons) | Adjusted 2004 $SO_2$ Emissions (tons) | Part 75 Flow RATA Emission Adjustment (tons) | General New Monitoring Calculation Method Adjustment (tons) | Description/Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| WY | 037 | 0008 | | Anadarko E&P Co LP - Brady Gas Plant | 1321 | 211112 | 89 | 147 | | 58 | Thermal oxidizer used stack test and hours of operation in 1998; went to a CEM in 2002. |
| WY | 037 | | | Anadarko E&P Co LP - Table Rock Gas Plant | 1321 | 211112 | 255 | 255 | | | |
| WY | 023 | 0001 | | Astaris Production - Coking Plant | 2999 | 324199 | 0 | 0 | | | Plant is permanently shut down. |
| WY | 031 | 0001 | | Basin Electric - Laramie River Station | 4911 | 221112 | 12,466 | 12,226 | -240 | | Flow method changed for units 2 & 3 to M2H. Flow adjustment determined by using ratio of heat input/MW observed during the new vs. old flow rate method. |
| WY | 003 | 0012 | | Big Horn Gas Proc - Big Horn/Byron Gas Plant | 1311 | 22121 | 0 | 0 | | | |
| WY | 005 | 0002 | 4150 | Black Hills Corporation - Neil Simpson I | 4911 | 22112 | 1,083 | 1,174 | | 91 | Sulfur retention parameter for mass balance calculation adjusted post-2003. |
| WY | 005 | 0063 | 7504 | Black Hills Corporation - Neil Simpson II | 4911 | 22112 | 532 | 532 | | | |
| WY | 045 | 0005 | 4151 | Black Hills Corporation - Osage Plant | 4911 | 22112 | 2,973 | 2,973 | | | |
| WY | 005 | 0146 | 55479 | Black Hills Corporation - Wygen 1 | 4911 | 22112 | 523 | 523 | | | |
| WY | 041 | | | BP America Production Company - Whitney Canyon Gas Field | 1311 | 211111 | 0 | 0 | | | |
| WY | 041 | 0012 | | BP America Production Company - Whitney Canyon Gas Plant | 1311 | 211111 | 4,284 | 4,284 | | | 2004 testing of the inlet field flare confirms essentially zero emissions as assumed in the base year calculations. |
| WY | 013 | | | Burlington Resources - Bighorn Wells | 1311 | 211111 | 2,163 | 2,163 | | | |
| WY | 013 | 0028 | | Burlington Resources - Lost Cabin Gas Plant | 1311 | 211111 | 2,230 | 2,230 | | | |
| WY | 041 | 0009 | | Chevron USA - Carter Creek Gas Plant | 1311 | 211111 | 26 | 26 | | | |
| WY | 037 | | | Chevron USA - Table Rock Field | 1311 | 211111 | 150 | 150 | | | |
| WY | 041 | | | Chevron USA - Whitney Canyon/Carter Creek Wellfield | 1311 | 211111 | 812 | 812 | | | |
| WY | 013 | | | Devon Energy Corp. - Beaver Creek Gas Field | 1311 | 211111 | 61 | 61 | | | Newly added to the program in 2004. In the past, emissions were combined with Beaver Creek Gas Plant. |
| WY | 013 | 0008 | | Devon Energy Corp. - Beaver Creek Gas Plant | 1311 | 211111 | 37 | 37 | | | |
| WY | 023 | | | Exxon Mobil Corporation - Black Canyon Dehy | 1311 | 211111 | 46 | 46 | | | |

(cont.)

# Table A-1
## 2004 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 2004 $SO_2$ Emissions (tons) | Adjusted 2004 $SO_2$ 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 | 1,237 | 1,237 | | | New equipment installed in 2004 is not a change in methodology. |
| WY | 037 | 0048 | | FMC Corp - Green River Sodium Products | 2812 | 327999 | 5,387 | 5,387 | | | |
| WY | 037 | 0049 | | FMC Wyoming Corporation - Granger Soda Ash Plant | 1474 | 212391 | 0 | 0 | | | |
| WY | 021 | 0001 | | Frontier - Cheyenne Refinery | 2911 | 32411 | 1,565 | 1,557 | | -8 | Source 43 coker flare used stack test & coke cycle time for hours in 1998; went to permitted limit and ratio of actual to permitted throughput in 2001. |
| WY | 037 | 0002 | | General Chemical - Green River Plant | 1474 | 327999 | 4,750 | 4,750 | | | |
| WY | 043 | 0003 | | Hiland Partners, LLC - Hiland Gas Plant | 1321 | 48621 | 115 | 115 | | | |
| WY | 029 | 0012 | | Howell Petroleum Corp - Elk Basin Gas Plant | 1311 | 211111 | 1,396 | 1,396 | | | |
| WY | 029 | 0007 | | Marathon Oil Co - Oregon Basin Gas Plant | 1321 | 211112 | 371 | 371 | | | Oregon Basin went to a mass CEM in 2002, but used a mass balance calculation in the base year. They no longer keep adequate records of inlet gas concentration to utilize the mass balance method. |
| WY | 001 | 0002 | | Mountain Cement Company - Laramie Plant | 3241 | 23571 | 197 | 197 | | | |
| WY | 037 | 0003 | | P4 Production, L.L.C. - Rock Springs Plant | 3312 | 331111 | 955 | 955 | | | New stack test results used for emission calculations do not represent a change in methodology. |
| WY | 009 | 0001 | 4158 | Pacificorp - Dave Johnston Plant | 4911 | 221112 | 18,816 | 21,905 | 3,089 | | Flow adjustment determined using ratio of heat input/MW observed during the new vs. old flow rate method. Current flow rate methods are 2F and 2FH. |
| WY | 037 | 1002 | 8066 | Pacificorp - Jim Bridger Plant | 4911 | 221112 | 22,795 | 25,547 | 2,752 | | Flow adjustment determined using ratio of heat input/MW observed during the new vs. old flow rate method. Current flow rate methods are 2F and 2FH. |
| WY | 023 | 0004 | 4162 | Pacificorp - Naughton Plant | 4911 | 221112 | 21,173 | 23,525 | 2,352 | | Flow adjustment determined using ratio of heat input/MW observed during the new vs. old flow rate method. Current flow rate methods are 2F and 2GH. |

(cont.)

## Table A-1
## 2004 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 2004 $SO_2$ Emissions (tons) | Adjusted 2004 $SO_2$ Emissions (tons) | Part 75 Flow RATA Emission Adjustment (tons) | General New Monitoring Calculation Method Adjustment (tons) | Description/Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| WY | 005 | 0046 | 6101 | Pacificorp - Wyodak Plant | 4911 | 221112 | 7,862 | 8,306 | 444 | | Flow adjustment determined using ratio of heat input/MW observed during the new vs. old flow rate method. Current flow rate method is 2F. |
| WY | 037 | 0022 | | Simplot Phosphates - Rock Springs Plant | 2874 | 325312 | 2,236 | 2,236 | | | |
| WY | 025 | 0005 | | Sinclair Oil Company - Casper Refinery | 2911 | 32411 | 870 | 870 | | | |
| WY | 007 | 0001 | | Sinclair Oil Company - Sinclair Refinery | 2911 | 32411 | 2,749 | 3,645 | | 896 | FCC unit used stack test and hours of operation in 1998; went to a CEM in 2004. |
| WY | 037 | | | Solvay Minerals - Soda Ash Plant | 1474 | 212391 | 53 | 99 | | 46 | Coal boilers used stack test and hours of operation in 1998; went to a CEM post-2001. |
| WY | 015 | 0001 | | The Western Sugar Cooperative - Torrington | 2063 | 311313 | 99 | 99 | | | |
| WY | 001 | 0005 | | University of Wyoming - Heat Plant | 8221 | 61131 | 204 | 204 | | | Change in assumed natural gas heat content (Btu/CF) results in negligible change in emissions. |
| WY | 045 | 0001 | | Wyoming Refining - Newcastle Refinery | 2911 | 32411 | 886 | 886 | | | |