



## 2011 Regional SO<sub>2</sub> Emissions and Milestone Report

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## 2011 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 areas on the Colorado Plateau. Five states -- Arizona, New Mexico, Oregon, Utah, and Wyoming -- and Albuquerque-Bernalillo County initially exercised this option by submitting plans to EPA by December 31, 2003. Oregon elected to cease participation in the program in 2006 and Arizona elected to cease participation in 2010. The tribes were not subject to the deadline and still can opt into the program at any time. Under the Section 309 plans, the three participating states and Albuquerque-Bernalillo County 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 and city with the implementation and management of the regional emission reduction program. As used in this document, "Section 309 states" means the states of New Mexico, Utah, and Wyoming and Albuquerque-Bernalillo County.

As part of this program, the Section 309 states must submit an annual Regional Sulfur Dioxide (SO<sub>2</sub>) Emissions and Milestone Report that compares emissions to milestones. A milestone is a maximum level of annual emissions for a given year. The first report was submitted in 2004 for the calendar year 2003.

The milestone for 2011 is 200,722. The 2009, 2010, and 2011 adjusted emissions from the Section 309 states were averaged, and this average was compared to the 2011 milestone to determine whether the milestone was met. The adjustments to reported emissions were required to allow the basis of current emission estimates to be comparable to the emissions monitoring or calculation method used in the most recent base year inventory (2006).

The Section 309 states reported 117,474 tons of SO<sub>2</sub> emissions for the calendar year 2011. The total emissions increased to 117,976 tons of SO<sub>2</sub> after making adjustments to account for changes in monitoring and calculation methods. The adjustments result in an additional 502 tons of SO<sub>2</sub> emissions. The adjusted emissions values for 2009 and 2010 were 143,704 tons and 131,124 tons, respectively. The average of 2009, 2010, and 2011 adjusted emissions is 130,935 tons.

**Based on the adjusted milestone and emissions data, the average of 2009, 2010, and 2011 emissions is about 35% below the 2011 three-state regional milestone.**

Based on this average annual emissions estimate, the Section 309 states determined that emissions in 2011 are below the regional SO<sub>2</sub> milestone for 2011. The plans contain provisions to adjust the milestones 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 plan requirements regarding adjustments to the milestones, no enforcement action adjustment is required.

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 2010 to 2011 are included in Section 6 of this report. A list of facilities added to or removed from the list of subject sources included in the original base year inventories is included in Appendix B.

**Table ES-1  
Overview of 2011 Regional Milestones and Emissions for Section 309 Participating States\***

<b><u>2011 Sulfur Dioxide Milestones</u></b>	
Regional 2011 Milestone**	200,722 tons
Adjusted 2011 Milestone	200,722 tons
<b><u>2011 Sulfur Dioxide Emissions</u></b>	
Reported 2011 Emissions	117,474 tons
Adjustments***	
Emission Monitoring and Calculation Methods	502 tons
Adjusted 2011 Emissions (rounded number)	117,976 tons
<b><u>Average Sulfur Dioxide Emissions (2009, 2010, &amp;2011)</u></b>	
Adjusted 2011 Emissions	117,976 tons
Adjusted 2010 Emissions	131,124 tons
Adjusted 2009 Emissions	143704 tons
Average of, 2009, 2010, & 2011 Adjusted Emissions	130,935 tons
<b><u>Comparison of Emissions to Milestone</u></b>	
Average of 2009, 2010, & 2011 Adjusted Emissions	130,935 tons
Adjusted Three-State 2010 Milestone	200,722 tons
Difference (Negative Value = Emissions < Milestone)	-69,788 tons
2009 – 2011 Emissions Average as Percent of 2011 Milestone	65%

\* Section 309 participating states means the states of New Mexico, Utah, and Wyoming and Albuquerque-Bernalillo County.

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

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

## 2011 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 areas on the Colorado Plateau. Five states -- Arizona, New Mexico, Oregon, Utah, and Wyoming -- and Albuquerque-Bernalillo County exercised this option by submitting plans to EPA by December 1, 2003. In October 2006, when EPA modified Section 309, Oregon elected to cease participation in the SO<sub>2</sub> Milestone and Backstop Trading Program by not resubmitting a Section 309 State Implementation Plan (SIP). In 2010, Arizona elected to cease participation in the Program. The tribes were not subject to this deadline and still can opt into the program at any time.

Under the Section 309 SIPs, these three states and one city 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 Section 309 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 ninth 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 2011. Based on the first nine 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 evaluating the equivalence of alternatives to Best Available Retrofit Technology (BART), such as the alternative Section 309 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, Albuquerque-Bernalillo County had also submitted a Section 309 SIP. EPA, however, never approved these SIPs due to the legal challenges.

Oregon and Arizona have opted out of submitting a revised Section 309 SIP under the modified RHR, which leaves three participating states and Albuquerque-Bernalillo County. 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 participating Section 309 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 greater reasonable progress than BART.
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 five 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 2011 emissions against the milestones for the states and city 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 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 ninth report, 2009, 2010, and 2011 emissions are averaged.

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

While the WRAP assists with the preparation of this report, each Section 309 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 2013, culminating in a final report sent to EPA by March 31, 2013.

## 1.2 Report Organization

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

- Reported SO<sub>2</sub> Emissions in 2011;
- Monitoring Methodology Emissions Adjustments;
- Three-Year Average Emissions;
- Enforcement Milestone Adjustments;
- Quality Assurance (Including Source Change Information);
- 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 2011

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 2011 reported SO<sub>2</sub> emissions for each applicable source are in Appendix A, Table A-1.

**Table 1. Reported 2011 SO<sub>2</sub> Emissions by State**

State	Reported 2011 SO <sub>2</sub> Emissions (tons/year)
New Mexico	19,904
Utah	24,564
Wyoming	73,007
TOTAL	117,474



### 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 milestone. 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 (2006). The net impact throughout the region as a result of these adjustments is an increase of 502 tons from the reported 2011 emissions. Table 2 summarizes the emissions adjustments made for a total of four facilities.

**Table 2. Adjustments for Changes in Monitoring Methodology**

State	Source	Reported 2011 SO <sub>2</sub> Emissions (tons)	Adjusted 2011 SO <sub>2</sub> Emissions (tons)	Monitoring Methodology Adjustment (tons)	Description
NM	Giant Industries/Ciniza Refinery (Gallup) [Old name: GIANT REFINING/CINIZA]	125	259	134	Facility changed emissions calculation methodology from annual usage factors to CEMS
UT	Holcim-Devil's Slide Plant	344	390	46	Facility changed emissions calculation methodology from stack test to CEMS.
UT	Holly Refining and Marketing Co. -- Phillips Refinery	131	440	309	Facility changed emissions calculation methodology from stack test to CEMS.
UT	Chevron Products Co. – Salt Lake Refinery	24	37	13	Now Using CEM Data instead of Stack Tests and H2S Analysis

#### 4.0 Three-Year Average Emissions (2009, 2010, and 2011)

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 2009 to 2011 is 130,935 tons. Table 3 shows the adjusted emissions for each year and three-year average emissions. The following report sections describe the adjusted milestone determination.

**Table 3. Average Sulfur Dioxide Emissions (2009, 2010, & 2011)**

Year	Adjusted SO <sub>2</sub> Emissions (tons/year)
2009	143,704
2010	131,124
2011	117,976
Three-Year Average (2009, 2010, 2011)	130,935

#### 5.0 Enforcement Milestone Adjustments

The SIPs require that each state report on proposed milestone adjustments 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 2011.

#### 6.0 Quality Assurance

The states provided 2011 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.

##### 6.1 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  $\pm 20\%$  from the previous year.

Table 4 provides explanations for the emissions variations from 2010 – 2011 that are greater than 20%. Plants with variations greater than 20%, but reported emissions of less than 20 tons in both 2010 and 2011, are not included in Table 4. Information on these plants is provided in Appendix A.

Appendix B provides a list of all sources added or removed from the program inventory in previous reporting years. One source was added since the 2010 report.

**Table 4. Sources with an Emissions Change of > ±20% from the Previous Year**

State	County FIPS	State Facility Identifier	Plant Name	Reported 2010 SO <sub>2</sub> Emissions (tons)	Reported 2011 SO <sub>2</sub> Emissions (tons)	Description Change > 20% 2010 to 2011
NM	15	350150002	BP America Production/Empire Abo Plant [Old name: Arco Permian/Empire Abo Plant]	786	1,704	Increased plant throughput, Increased field pressures lead to increased flaring events, The Sulfur Recovery Unit froze during the winter of 2011 and required extensive repairs – and increased flaring events
NM	15	350150011	DCP Midstream/Artesia Gas Plant	12	326	Return to normal operations after Unit 12 maintenance activities in 2010.
NM	31	350310008	Giant Industries/Ciniza Refinery (Gallup) [Old name: GIANT REFINING/CINIZA]	430	125	started FCC SO <sub>2</sub> additives trial in July of 2010 which lasted thru December 2011. The trial was successful as the additive chosen greatly reduces SO <sub>2</sub> emissions.
NM	15	350150008	Marathon Oil/Indian Basin Gas Plant	501	133	Sulfur Recovery Unit went out of service on February 2011 due to the low gas volumes going into the plant
NM	25	350250008	Southern Union Gas/Jal #3	1,878	1,319	Decrease in SO <sub>2</sub> emissions due to 2nd AGI was operating in 2011, therefore reducing acid gas to SRU
NM	45	350450023	Western Refining Southwest Inc./San Juan Refinery (Bloomfield) [Old name: GIANT INDUSTRIES/BLOOMFIELD REF]	366	6	The 2010 reported amount was incorrect. It wasn't 366 tpy - actually it was 2.75. In November of 2009, the facility suspended petroleum refining operations
UT	11	10119	Chevron Products Co. -- Salt Lake Refinery	37	24	Decrease in flaring emissions
UT	11	10122	Flying J Refinery -- (Big West Oil Company)	280	192	Decreased throughput / decrease in CEM values
UT	29	10007	Holcim-Devil's Slide Plant	237	344	Increase in hours of operation along with higher CEM value
UT	11	10123	Holly Refining and Marketing Co. -- Phillips Refinery	231	131	Decrease in CEM values
UT	35	10572	Kennecott Utah Copper Corp. -- Power Plant/Lab/Tailings Impoundment	3,046	1,704	Decrease in sulfur throughput due to decrease in coal burned

State	County FIPS	State Facility Identifier	Plant Name	Reported 2010 SO <sub>2</sub> Emissions (tons)	Reported 2011 SO <sub>2</sub> Emissions (tons)	Description Change > 20% 2010 to 2011
UT	37	10034	Patara Midstream LLC (was EnCana Oil & Gas (USA) Incorporated and Tom Brown Incorporated) - Lisbon Natural Gas Processing Plant	82	25	Large decrease in amount of natural gas burned
UT	7	10096	Sunnyside Cogeneration Associates -- Sunnyside Cogeneration Facility	449	544	Increase in amount of coal burned
UT	43	10676	Utelite Corporation -- Shale processing	60	130	Large increase in amount of coal and natural gas burned
WY	5	45	Basin Electric -- Dry Fork Station		279	This facility went 'online' in CY 2011.
WY	45	5	Black Hills Corporation - Osage Plant	1,525	0	The facility shut down in 2010.
WY	5	281	Black Hills Corporation - Wygen III	173	256	CY 2010 was the first year of operation and as such a partial operating year. This explains the >20% increase in 2011 over 2010.
WY	13	0009	Burlington Resources -- Bighorn Wells	0	223	The SO2 emissions increased due to increased flaring. One of the chokes was replaced during the past calendar year. Thus, this led to increased flaring and emissions.
WY	13	28	Burlington Resources -- Lost Cabin Gas Plant	2,386	1,543	The emissions from the Train 2 Incinerator increased from 59 tons in 2010 to 133 tons in 2011. This increase was primarily caused by the Train being fully operational after repair from the 2009 fire in December 2010. The emissions from the Train 3 Flare decreased from 1332 tons in 2010 to 444 tons in 2011. This decrease was primarily caused by a lessening of problems with Reaction Furnace and H2S Compressor shutdowns as well as a decrease in unplanned power outages from the local electricity supplier. The emissions from the Sulfur Tanks normally educted to the Train 1 Tail Gas Incinerator increased from 0.7 tons in 2010 to 1.1 tons in 2011. This increase is due to the decrease in operating hours of the Train 1 Incinerator from 8481 hours in 2010 to 8386 hours in 2011.

State	County FIPS	State Facility Identifier	Plant Name	Reported 2010 SO <sub>2</sub> Emissions (tons)	Reported 2011 SO <sub>2</sub> Emissions (tons)	Description Change > 20% 2010 to 2011
WY	41	9	Chevron USA -- Carter Creek Gas Plant	74	100	The year 2011 SO <sub>2</sub> emissions were 35% higher than the 2010 SO <sub>2</sub> emissions, due to excess emissions events that occurred in December 2011.
WY	37	14	Chevron USA -- Table Rock Gas Plant (Formerly Anadarko E&P Co LP)	82	44	The decrease in emissions from calendar year 2010, was due to reduction in upsets and maintenance events. During the last turnaround, changes were made to reduce maintenance events.
WY	41	0008	Chevron USA -- Whitney Canyon/Carter Creek Wellfield	169	2	The year 2011 SO <sub>2</sub> emissions were 99% lower than the year 2010 SO <sub>2</sub> emissions, due to the 2010 well testing performed on a well with a high H <sub>2</sub> S content (Well #1-17M).
WY	13	0007	Devon Energy Production Co., L.P. -- Beaver Creek Gas Field	1	5	The SO <sub>2</sub> emissions increased due to the acid gas reinjection well that is connected to the plant. The pipeline between the well and plant was blown down for maintenance and some of the emissions occurred on the well itself.
WY	13	8	Devon Gas Services, L.P. -- Beaver Creek Gas Plant	96	158	Devon Gas Services listed three (3) issues that led to increased SO <sub>2</sub> emissions: electrical problems with the Inlet engine compressor during July 2011 (many startups and shutdowns likely affected calculations); The amine treating acid gas compressor had hydrate problems; there were mechanical issues with various engines also.
WY	23	1	Exxon Mobil Corporation -- Labarge Black Canyon Facility	14	156	Every 2 years, the Black Canyon and Shute Creek Facilities undergo a turnaround procedure that results in more flaring. The turnaround occurs on odd calendar years. Thus, SO <sub>2</sub> emissions increased by much more than 20% from 2010 to 2011.
WY	23	13	Exxon Mobil Corporation -- Shute Creek	587	946	Every 2 years, the Black Canyon and Shute Creek Facilities undergo a turnaround procedure that results in more flaring. The turnaround occurs on odd calendar years. Thus, SO <sub>2</sub> emissions increased by much more than 20% from 2010 to 2011.

State	County FIPS	State Facility Identifier	Plant Name	Reported 2010 SO <sub>2</sub> Emissions (tons)	Reported 2011 SO <sub>2</sub> Emissions (tons)	Description Change > 20% 2010 to 2011
WY	37	49	FMC Wyoming Corporation -- Granger Soda Ash Plant	0	189	Total SO2 emissions for FMC Granger increased from 57.9 tons in 2009 to 189.0 tons in 2011, an increase of 226.4%. This was a result of the temporary production curtailment of the FMC Granger facility from April 2009 until June 2011. Production curtailment began in early 2009 and the process was completed by late April 2009. The facility came out of production curtailment in June of 2011. Therefore the coal-fired boilers UIN-14 and UIN-15 hours of operation were significantly higher in 2011.
WY	21	1	Frontier Oil & Refining Company -- Cheyenne Refinery	124	253	Frontier's SO2 emissions increased by more than 100% due to increased emissions in the FCCU Regenerator, the Sulfur Incinerator, and the Gas-Fired Process Heaters. The greatest increase in emissions were due to upsets. For CY 2011, there were power outages, shutdowns, and maintenance activities.
WY	29	0010	Marathon Oil Co -- Oregon Basin Wellfield	125	96	The field flare emissions have reduced by 29.8 tons or 31%. This reduction is the result of increased use of the underground injection of gas that reduces the potential to flare.
WY	37	8	Merit Energy Company - Brady Gas Plant (formerly Anadarko E&P Co LP)	52	209	Reporting year 2011 emissions for the Ucarsol Regenerator Heater (H-100A) and Benfield Regenerator Heater (H-100B) increased more than 20% from 2010 emissions. This is due to calculating emissions based on permit limits, as opposed to AP-42 emission factors (which was the methodology used for 2010). In addition, emissions from the emergency flare (V-1) have increased more than 20% due to increased flaring events at the Brady plant.
WY	37	1002	PacifiCorp -- Jim Bridger Plant	13,654	9,689	Unit 3 Sulfur Dioxide had a decrease of more than 20% emissions from 2010 to 2011 due to the installation of Flue Gas Desulfurization system upgrades per Air Quality permit MD-1552 on Unit 3.
WY	5	46	PacifiCorp -- Wyodak Plant	6,768	2,387	The decrease in emissions from the 2010 to 2011 reporting year was due to the unit being off line for a maintenance overhaul and induced draft fan motor failures. A new Baghouse unit was also placed into service during the 2011 reporting year.

State	County FIPS	State Facility Identifier	Plant Name	Reported 2010 SO <sub>2</sub> Emissions (tons)	Reported 2011 SO <sub>2</sub> Emissions (tons)	Description Change > 20% 2010 to 2011
WY	7	1	Sinclair Oil Company -- Sinclair Refinery	204	505	Sinclair had over 300 tons of excess emissions due to the volume of H <sub>2</sub> S flowing through the vertical flare. The volume was much greater, resulting in more emissions.
WY	15	1	The Western Sugar Cooperative -- Torrington Plant	148	182	The SO <sub>2</sub> emissions increased by +23.5% from 2010 to 2011 due to increased usage of the coal boiler with an additional 5,000 tons of coal burned in 2011. The coal boiler was used more as the natural gas boiler was down for a good portion of 2011.
WY	1	5	University of Wyoming - Heat Plant	74	187	The 2011 SO <sub>2</sub> results were much greater than those from previous years. This is attributed to the 2011 stack testing results, which were accompanied by higher-than-normal level of excess oxygen (approximately 12%). The plant typically operates between 6% and 10% excess oxygen.
WY	45	1	Wyoming Refining -- Newcastle Refinery	535	324	Emissions from the Prefract Heater (H-01) were lower since the average firing rate for 2011 was 26.09 MMBtu/hr. Also, the wet gas scrubber on the Fluidized Catalytic Cracking Unit (FCCU) started on November 12, 2010. Therefore, SO <sub>2</sub> emissions from the FCCU stack (S-21) decreased substantially from the previous year.



## 6.2 Part 75 Data

Federal Acid Rain Program emissions monitoring data (required by 40 CFR Part 75) were used to check reported power plant emissions.

Sources in the region subject to Part 75 emitted 69% of the region's reported emissions in 2011. 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. The reported emissions matched EPA's emission data<sup>a</sup>.

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<sup>a</sup> The reported emissions for Pacificorp's Naughton Plant in WY contain an extra 21 tons of SO<sub>2</sub> emissions due to wastewater ponds that are not included in the acid rain data. The reported emissions for the San Juan Generating Station in NM contain an extra 21 tons of SO<sub>2</sub> emissions due to emission points that are not included in the acid rain data.

## **7.0 Preliminary Milestone Determination**

The Section 309 state 2011 milestone is 200,722 tons SO<sub>2</sub>, which represents the average regional emissions milestone for the years 2009, 2010, and 2011. The average of 2009, 2010, and 2011 adjusted emissions was determined to be 130,935 tons SO<sub>2</sub>. Therefore, the participating states have met the 200,722 tons SO<sub>2</sub> milestone.

## **8.0 Public Comments**

New Mexico, Utah, Wyoming and Albuquerque-Bernalillo County each published a draft of this report for public review and comment. No comments were received.

**Appendix A**

**Table A-1  
2011 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 2011 SO <sub>2</sub> Emissions (tons)	Adjusted 2011 SO <sub>2</sub> Emissions (tons)	2011 General New Monitoring Calculation Method Adjustment (tons)
NM	15	350150024		Agave Energy Co./Agave Dagger Draw Gas Plant	1311	211111	0	0	
NM	15	350150002		BP America Production/Empire Abo Plant [Old name: Arco Permian/Empire Abo Plant]	1321	211112	1,704	1,704	
NM	15	350150011		DCP Midstream/Artesia Gas Plant	1321	211112	326	326	
NM	25	350250044		DCP Midstream/Eunice Gas Plant [Old name: GPM GAS EUNICE GAS PLANT]	1321	211112	2,921	2,921	
NM	25	350250035		DCP Midstream/Linam Ranch Gas Plant [Old name: GPM GAS/LINAM RANCH GAS PLANT]	1321	211112	1,304	1,304	
NM	15	350150138		Duke -- Magnum/Pan Energy -- Burton Flats	1321	211112	0	0	
NM	15	350150285		Duke Energy/Dagger Draw Gas Plant	1321	211112	0	0	
NM	25	350250060		Targa Midstream Services, LP/Eunice Gas Plant [Old name: WARREN PETROLEUM/EUNICE GAS PLANT]	1321	211112	718	718	
NM	25	350250004		Frontier Field Services/Maljamar Gas Plant	1321	211112	2,986	2,986	
NM	31	350310008		Giant Industries/Ciniza Refinery (Gallup) [Old name: GIANT REFINING/CINIZA]	2911	32411	125	259	134

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State	County FIPS	State Facility Identifier	ORIS	Plant Name	Plant SIC	Plant NAICS	Reported 2011 SO <sub>2</sub> Emissions (tons)	Adjusted 2011 SO <sub>2</sub> Emissions (tons)	2011 General New Monitoring Calculation Method Adjustment (tons)
NM	25	350250007		J L Davis Gas Processing/Denton Plant	1311	211111	675	675	
NM	15	350150008		Marathon Oil/Indian Basin Gas Plant	1321	211112	133	133	
NM	15	350150010		Navajo Refining Co/Artesia Refinery	2911	32411	45	45	
NM	45	350450902	2451	Public Service Co of New Mexico/San Juan Generating Station	4911	221112	4,741	4,741	
NM	7	350070001		Raton Pub. Service/Raton Power Plant	4911	221112	0	0	
NM	25	350250008		Southern Union Gas/Jal #3	1321	211112	1,319	1,319	
NM	25	350250051		Targa Midstream Services, LP/Eunice South Gas Plant	1321	211112	0	0	
NM	25	350250061		Targa Midstream Services, LP/Monument Plant [Old name: WARREN PETROLEUM/MONUMENT PLANT]	1321	211112	771	771	
NM	25	350250063		Targa Midstream Services, LP/Saunders Plant [Old name: WARREN PETROLEUM/SAUNDERS PLANT]	1321	211112	251	251	
NM	31	350310032	87	Tri-State Gen & Transmission/Escalante Station	4911	221112	1,257	1,257	
NM	45	350450247		Western Gas Resources/San Juan River Gas Plant	1321	211112	621	621	
NM	45	350450023		Western Refining Southwest Inc./San Juan Refinery (Bloomfield) [Old name: GIANT INDUSTRIES/BLOOMFIELD REF]	2911	32411	6	6	
UT	49	10790		Brigham Young University -- Main Campus	8221	611310	99	99	
UT	11	10119		Chevron Products Co. -- Salt Lake Refinery	2911	324110	24	37	13
UT	11	10122		Flying J Refinery -- (Big West Oil Company)	2911	324110	192	192	

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State	County FIPS	State Facility Identifier	ORIS	Plant Name	Plant SIC	Plant NAICS	Reported 2011 SO <sub>2</sub> Emissions (tons)	Adjusted 2011 SO <sub>2</sub> Emissions (tons)	2011 General New Monitoring Calculation Method Adjustment (tons)
UT	27	10313		Graymont Western US Inc. -- Cricket Mountain Plant	1422	212312	16	16	
UT	29	10007		Holcim-Devil's Slide Plant	3241	327310	344	390	46
UT	11	10123		Holly Refining and Marketing Co. -- Phillips Refinery	2911	324110	131	440	309
UT	27	10327	6481	Intermountain Power Service Corporation -- Intermountain Generation Station	4911	221112	4,934	4,934	
UT	35	10572		Kennecott Utah Copper Corp. -- Power Plant/Lab/Tailings Impoundment	1021	212234	1,704	1,704	
UT	35	10346		Kennecott Utah Copper Corp. -- Smelter & Refinery	3331	331411	696	696	
UT	27	10311		Materion Natural resources - Delta Mill (was Brush Resources)	1099	212299	0	0	
UT	7	10081	3644	PacifiCorp -- Carbon Power Plant	4911	221112	7,740	7,740	
UT	15	10237	6165	PacifiCorp -- Hunter Power Plant	4911	221112	4,661	4,661	
UT	15	10238	8069	PacifiCorp -- Huntington Power Plant	4911	221112	2,529	2,529	
UT	37	10034		Patara Midstream LLC (was EnCana Oil & Gas (USA) Incorporated and Tom Brown Incorporated) - Lisbon Natural Gas Processing Plant	2911	211111	25	25	
UT	7	10096		Sunnyside Cogeneration Associates -- Sunnyside Cogeneration Facility	4911	221112	544	544	
UT	35	10335		Tesoro West Coast -- Salt Lake City Refinery	2911	324110	795	795	
UT	43	10676		Utelite Corporation -- Shale processing	3295	212399	130	130	
WY	11	2		American Colloid Mineral Co -- East Colony	1459	212325	63	63	

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State	County FIPS	State Facility Identifier	ORIS	Plant Name	Plant SIC	Plant NAICS	Reported 2011 SO <sub>2</sub> Emissions (tons)	Adjusted 2011 SO <sub>2</sub> Emissions (tons)	2011 General New Monitoring Calculation Method Adjustment (tons)
WY	11	3		American Colloid Mineral Co -- West Colony	1459	212325	50	50	
WY	5	45		Basin Electric -- Dry Fork Station	4911	22112	279	279	
WY	31	1	6204	Basin Electric -- Laramie River Station	4911	221112	9,402	9,402	
WY	5	2	4150	Black Hills Corporation - Neil Simpson I	4911	22112	789	789	
WY	5	63	7504	Black Hills Corporation - Neil Simpson II	4911	22112	542	542	
WY	45	5	4151	Black Hills Corporation - Osage Plant	4911	22112	0	0	
WY	5	146	55479	Black Hills Corporation - Wygen I	4911	22112	559	559	
WY	5	225		Cheyenne Light Fuel and Power Company -- Wygen II	4911	22112	215	215	
WY	5	281		Black Hills Corporation - Wygen III	4911	221112	256	256	
WY	13	0009		Burlington Resources -- Bighorn Wells	1300	21111	223	223	
WY	13	28		Burlington Resources -- Lost Cabin Gas Plant	1311	211111	1,543	1,543	
WY	41	9		Chevron USA -- Carter Creek Gas Plant	1311	211111	100	100	
WY	37	0177		Chevron USA -- Table Rock Field	1300	21111	0	0	
WY	37	14		Chevron USA -- Table Rock Gas Plant (Formerly Anadarko E&P Co LP)	1321	211111	44	44	
WY	41	0008		Chevron USA -- Whitney Canyon/Carter Creek Wellfield	1300	21111	2	2	
WY	13	0007		Devon Energy Production Co., L.P. -- Beaver Creek Gas Field	1300	21111	5	5	

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State	County FIPS	State Facility Identifier	ORIS	Plant Name	Plant SIC	Plant NAICS	Reported 2011 SO <sub>2</sub> Emissions (tons)	Adjusted 2011 SO <sub>2</sub> Emissions (tons)	2011 General New Monitoring Calculation Method Adjustment (tons)
WY	13	8		Devon Gas Services, L.P. -- Beaver Creek Gas Plant	1311	211111	158	158	
WY	29	12		Encore Operating LP -- Elk Basin Gas Plant	1311	211111	847	847	
WY	23	1		Exxon Mobil Corporation -- Labarge Black Canyon Facility	1300	21111	156	156	
WY	23	13		Exxon Mobil Corporation -- Shute Creek	1311	211111	946	946	
WY	37	48		FMC Corp -- Green River Sodium Products (Westvaco facility)	2812	327999	2,876	2,876	
WY	37	49		FMC Wyoming Corporation -- Granger Soda Ash Plant	1474	212391	189	189	
WY	21	1		Frontier Oil & Refining Company -- Cheyenne Refinery	2911	32411	253	253	
WY	43	3		Hiland Partners, LLC -- Hiland Gas Plant	1321	48621	45	45	
WY	29	7		Marathon Oil Co -- Oregon Basin Gas Plant	1321	211112	247	247	
WY	29	0010		Marathon Oil Co -- Oregon Basin Wellfield	1300	21111	96	96	
WY	37	8		Merit Energy Company - Brady Gas Plant (formerly Anadarko E&P Co LP)	1321	211112	209	209	
WY	41	12		Merit Energy Company -- Whitney Facility	1311	211111	1	1	
WY	41	0002		Merit Energy Company -- Whitney Canyon WellField	1300	21111	0	0	
WY	1	2		Mountain Cement Company -- Laramie Plant	3241	23571	283	283	
WY	37	3		P4 Production, L.L.C. -- Rock Springs Coal Calcining Plant	3312	331111	706	706	
WY	9	1	4158	PacifiCorp - Dave Johnston Plant	4911	221112	11,306	11,306	
WY	37	1002	8066	PacifiCorp -- Jim Bridger Plant	4911	221112	9,689	9,689	

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State	County FIPS	State Facility Identifier	ORIS	Plant Name	Plant SIC	Plant NAICS	Reported 2011 SO <sub>2</sub> Emissions (tons)	Adjusted 2011 SO <sub>2</sub> Emissions (tons)	2011 General New Monitoring Calculation Method Adjustment (tons)
WY	23	4	4162	PacifiCorp -- Naughton Plant	4911	221112	20,461	20,461	
WY	5	46	6101	PacifiCorp -- Wyodak Plant	4911	221112	2,387	2,387	
WY	37	22		Simplot Phosphates LLC -- Rock Springs Plant	2874	325312	1,502	1,502	
WY	7	1		Sinclair Oil Company -- Sinclair Refinery	2911	32411	505	505	
WY	25	5		Sinclair Wyoming Refining Company -- Casper Refinery	2911	32411	241	241	
WY	37	5		Solvay Chemicals -- Soda Ash Plant (Green River Facility)	1474	325181	46	46	
WY	37	2		TATA Chemicals (Soda Ash Partners)-- Green River Plant (formerly General Chemical)	1474	327999	5,098	5,098	
WY	15	1		The Western Sugar Cooperative -- Torrington Plant	2063	311313	182	182	
WY	1	5		University of Wyoming - Heat Plant	8221	61131	187	187	
WY	45	1		Wyoming Refining -- Newcastle Refinery	2911	32411	324	324	



**Appendix B**

**Table B-1  
Sources Added to 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>Report Year of Change</b>
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	0014	Chevron USA (previously owned by Anadarko E&P Company LP) -- Table Rock Gas Plant	2003
WY	005	0146	Black Hills Corporation -- Wygen 1	2003
WY	041	0002	BP America Production Company -- Whitney Canyon Well Field	2003
WY	013	0009	Burlington Resources -- Bighorn Wells	2003
WY	037	0177	Chevron USA -- Table Rock Field	2003
WY	041	0008	Chevron USA -- Whitney Canyon/Carter Creek Wellfield	2003
WY	013	0008	Devon Energy Corp. -- Beaver Creek Gas Plant	2003
WY	035	0001	Exxon Mobil Corporation -- Labarge Black Canyon Facility (also identified as Black Canyon Dehy Facility)	2003
WY	013	0007	Devon Energy Corp. -- Beaver Creek Gas Field	2004
WY	005	0225	Cheyenne Light, Fuel and Power (a subsidiary of Black Hills Corporation) -- Wygen II	2008
WY	005	0281	Black Hills Corporation -- Wygen III	2010
WY	005	0045	Basin Electric -- Dry Fork Station	2011

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

State	County FIP Code	State Facility ID	Facility Name	1998 Baseline Emissions (tons/year)	Reason for Change	Report Year of Change
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
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
ABQ* NM	001	00008	GCC Rio Grande Cement	1,103	Not subject to program after baseline revisions.**	2008
ABQ NM	001	00145	Southside Water Reclamation Plant	120	Not subject to program after baseline revisions.**	2008
NM	023	350230003	Phelps Dodge Hidalgo Smelter	16,000	Facility is permanently closed.	2008
NM	017	350170001	Phelps Dodge Hurley Smelter/Concentrator	22,000	Facility is permanently closed.	2008
WY	003	00012	Big Horn Gas Processing -- Bighorn/Byron Gas Plant	605	Facility is permanently closed and dismantled.	2011

\* ABQ NM means Albuquerque-Bernalillo County.

\*\* 1998 baseline emissions were based on the facilities' potential to emit (PTE), and not actual emissions. Actual annual emissions have always been below 100 tons. Once the year 2006 baseline became effective, these facilities were removed from the inventory.