STATE OF MISSOURI
Jeremiah W. (Jay) Nixon, Governor • Sara Parker Pauley, Director
DEPARTMENT OF NATURAL RESOURCES
www.dnr.mo.gov

OCT 9 2015

Mr. Mark Hague
Acting Regional Administrator
U.S. EPA, Region VII
11201 Renner Boulevard
Lenexa, KS 66219

Dear Mr. Hague:

The Missouri Department of Natural Resources' Air Pollution Control Program hereby submits the following Missouri State Implementation Plan (SIP) revision for your approval:

10 CSR 10-6.261 Control of Sulfur Dioxide Emissions

This new rule sets enforceable environmental conditions and emission limits necessary to address the U.S. Environmental Protection Agency's (EPA's) 1-hour sulfur dioxide (SO_2) National Ambient Air Quality Standard (NAAQS) of 75 parts per billion (ppb) [75 Federal Register (FR) 35520, June 22, 2010]. The rule is a core component of the Missouri State Implementation Plans (SIPs) for the Jackson County SO_2 nonattainment area. In addition, this proposed rule incorporates all necessary existing provisions from 10 CSR 10-6.260 Restriction of Emission of Sulfur Compounds (i.e., provisions in place prior to the 1-hour SO_2 NAAQS) in order to consolidate SO_2 requirements and reduce confusion for Missouri's SO_2 emission sources.

Nonattainment Area Plan for the 2010 1-Hour Sulfur Dioxide National Ambient Air Quality Standard – Jackson County Sulfur Dioxide Nonattainment Area

The main purpose of this SIP revision is to address Clean Air Act Amendments of 1990 (CAAA) section 172(c) and section 191(a) plan requirements as applicable to the Jackson County 2010 1-Hour Sulfur Dioxide (SO_2) Nonattainment Area (NAA). The plan's main control strategy includes the reduction of SO_2 emissions by 95 percent from the largest source in the NAA. The plan also relies on SO_2 emission limits for several other large sources in the area through federal regulation or state rulemaking. All emission limitations necessary for demonstrating compliance will be enforceable through the Missouri SO_2 rulemaking, 10 CSR 10-6.261, *Control of Sulfur Dioxide Emissions*.

The department is requesting that EPA revise the Missouri SIP to replace rule 10 CSR 10-6.260 with new rule 10 CSR 10-6.261 and include the new plan as meeting the attainment plan requirements of Clean Air Act Section 172(c) for the Jackson County nonattainment area under the 2010 1-Hour Sulfur Dioxide (SO_2) NAAQS.

Recycled Paper

The Missouri Air Conservation Commission adopted the enclosed rule and plan at the August 3, 2015 commission meeting. A public hearing for the proposed plan was held on June 25, 2015. A 30-day public comment period opened by May 22, 2015 and closed on July 2, 2015. During the public comment period for the proposed plan, the program received five sets of comments, as well as comment letters from 78 citizens. A summary of the comments received and our responses are attached.

The commission has full legal authority to develop rules and the Missouri State Implementation Plan pursuant to Section 643.050 of the Missouri Air Conservation Law. The state followed all applicable administrative procedures in proposing and adopting the rule and plan actions. Enclosed are the required SIP submittal elements for determination of plan completeness per 40 CFR Part 51, Appendix V.

In order to comply with Attachment A of the "Regional Consistency for the Administrative Requirements of State Implementation Plan Submittals and the Use of 'Letter Notices'" memo dated April 6, 2011, a searchable pdf version of this document will be emailed to the EPA Regional Office. Within three business days, this complete submittal package will be posted on our website at http://dnr.mo.gov/env/apcp/stateplans.htm.

Also, due to their size, paper copies of the appendices to the plan are not included in this package. The disk(s) included with this package include an electronic copy of the plan and appendices.

Thank you for your attention to this matter. If you have any questions regarding this submittal, please contact Ms. Emily Wilbur with the Missouri Department of Natural Resources' Air Pollution Control Program at P.O. Box 176, Jefferson City, MO 65102 or by telephone at (573) 751-4817.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Kyra L. Moore

Kyra L. Moore
Director

KLM:brc

Enclosures:

Copy of plan (paper copies of the appendices are not included)
Copies of commission signature pages for rule and plan certifying Missouri Air Conservation Commission adoption of rule and plan
Copy of technical support documentation for rule
Copy of public hearing notices
Copies of public hearing transcript introductory statements for rule and plan
Copy of MO Reg proposed rulemaking
Copy of plan recommendation for adoption
Copy of the summary of plan comments and responses
Copy of rule order of rulemaking with comments and responses as filed with Secretary of State's Office
CD with electronic copy of this submittal

c: Missouri Air Conservation Commission
Project# 2010-SO2-3A

Missouri State Implementation Plan Revision

Nonattainment Area Plan for the 2010 1-Hour Sulfur Dioxide National Ambient Air Quality Standard

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Jackson County Sulfur Dioxide Nonattainment Area

Missouri Air Conservation Commission

Adoption
August 3, 2015

Missouri Department of Natural Resources
Division of Environmental Quality
Air Pollution Control Program
P.O. Box 176
1659 East Elm Street
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Project # 2010-SO2-3A

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ACRONYMS & ABBREVIATIONS LIST

AERMET	Aermod Meteorological Preprocessor
AERMOD	AMS/EPA Regulatory Model
AMS	American Meteorological Society
AOC	Administrative Order on Consent
ASOS	Automated Surface Observing Station
BAS	Basic Operating Permit
BPIP PRIME	Building Profile Input Program with Plume Rise Model Enhancements
CAAA	Clean Air Act Amendments of 1990
CEMS	Continuous Emission Monitoring System
CFR	Code of Federal Regulations
CSR	Code of State Regulations
CCVR	Cloud Cover Measurements
department	Missouri Department of Natural Resources
EGU	Electric Generating Unit
EPA	United States Environmental Protection Agency
FR	Federal Register
GEP	Good Engineering Practice (stack height)
IPL	Independence Power & Light
KCPL	Kansas City Power & Light
KDHE	Kansas Department of Health and Environment
km/m	kilometers/meters
MACT	Maximum Achievable Control Technology
MoEIS	Missouri Emissions Inventory System
MTSP	Mark Twain State Park (monitor)
$\mu g/m^3$	micrograms per cubic meter
NAA	Nonattainment Area
NAAQS	National Ambient Air Quality Standard
NAD83	North American Datum of 1983
NED	National Elevation Data
NWS	National Weather Service
P70	Part 70 Operating Permit
PM	Particulate Matter
ppb	parts per billion
PSD	Prevention of Significant Deterioration
QAPP	Quality Assurance Project Plan
RACM	Reasonably Available Control Measures
RACT	Reasonably Available Control Technology
RFP	Reasonable Further Progress
RGS	Richards-Gibaur South (monitor)
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
tpy	tons per year
USGS	United States Geological Survey
UTM	Universal Transverse Mercator

EXECUTIVE SUMMARY

On June 22, 2010, the U.S. Environmental Protection Agency (EPA) established a new 1-hour sulfur dioxide (SO_2) primary National Ambient Air Quality Standard (NAAQS) of 75 parts per billion (ppb), based on the three-year average of the annual 99th percentile of 1-hour daily maximum concentrations (75 FR 35520; June 22, 2010). This new SO_2 standard replaces the previous 24-hour and annual primary SO_2 NAAQS promulgated in 1971 (36 FR 8187; April 30, 1971). Once EPA establishes or revises a NAAQS, EPA must designate as "nonattainment" those areas that violate or contribute to violations of the NAAQS pursuant to section 107(d) of the federal Clean Air Act Amendments of 1990 (CAAA).

On August 5, 2013, the EPA designated a portion of Jackson County, Missouri as nonattainment for the 2010 SO_2 primary NAAQS, effective October 4, 2013. The Jackson County SO_2 Nonattainment Area (NAA) is bounded by I-70 & I-670 to the south, I-435 to the east, the Missouri River to the north, and the state line with Kansas to the west. Air quality data from 2007-2009 as well as monitoring data from 2010-2012 indicated a violation of the NAAQS (78 FR 47191; August 5, 2013). The final boundary designation rule is codified in 40 CFR §81.326 *Missouri*.

The main purpose of this SIP revision is to address CAAA section 172(c) plan requirements applicable to the Jackson County SO_2 NAA. This SIP revision demonstrates attainment for the Jackson County SO_2 NAA using air dispersion modeling that includes the continuation and modification of existing control strategies as well as additional control measures being proposed concurrently with this SIP revision. The main control strategy is the 95% reduction of emissions from the largest SO_2 source in the NAA. Examples of additional controls include fuel switching to burn exclusively natural gas, new lower SO_2 emission limitations, and the delivery of Ultra Low Sulfur Diesel (ULSD) at all facilities currently using diesel fuel (and No.1 or No. 2 distillate fuel oils) that are located within the nonattainment area and throughout Jackson County.

Per section 191(a) of the CAAA, Missouri is required to submit to the EPA a nonattainment area State Implementation Plan (SIP) revision for SO_2 that demonstrates the nonattainment area will reach attainment of the 2010 SO_2 primary NAAQS as expeditiously as practicable, but no later than October 4, 2018, which is five years from the date of the nonattainment designation.

The new emission limits, fuel switches, and fuel sulfur content requirements identified for this SIP revision will be permanent and enforceable through the proposed new state SO_2 rulemaking, 10 CSR 10-6.261 *Control of Sulfur Dioxide Emissions*. The deadline to implement the rule's new requirements is January 1, 2017. This implementation date is required by EPA to demonstrate compliance with the NAAQS prior to the attainment date of October 4, 2018.

This SIP revision also addresses CAAA required elements, including a Reasonably Available Control Measures (RACM) analysis, Reasonable Further Progress (RFP) requirements and contingency requirements. Several iterations resulted in a final compliant model scenario in the determination that the area will demonstrate NAAQS compliance.

1. INTRODUCTION

The federal CAAA require the EPA to establish NAAQS for SO_2 and five other criteria air pollutants impacting public health and the environment. The other criteria pollutants are ozone, particulate matter (including PM_{10} and $PM_{2.5}$), lead, nitrogen dioxide, and carbon monoxide. The CAAA also requires EPA to periodically review the standards and the latest scientific information to ensure they provide adequate health and environmental protection, and to update those standards as necessary.

On June 22, 2010, EPA established a new 1-hour SO_2 NAAQS of 75 ppb, based on the three-year average of the annual 99th percentile of 1-hour daily maximum concentrations (75 FR 35520; June 22, 2010). This new SO_2 standard replaces the previous 24-hour and annual primary SO_2 NAAQS promulgated in 1971 (36 FR 8187; April 30, 1971). Once EPA establishes or revises a NAAQS, EPA must designate as "nonattainment" those areas that violate or contribute to violations of the NAAQS pursuant to section 107(d) of the CAAA.

On August 5, 2013, the EPA designated a portion of Jackson County, Missouri as nonattainment for the 2010 SO_2 primary NAAQS, effective October 4, 2013, based on air quality data from 2007-2009 that indicated a violation of the NAAQS (78 FR 47191; August 5, 2013). This final rule is codified in 40 CFR §81.326 *Missouri*.

Per section 191(a) of the CAAA, Missouri is required to submit to the EPA a nonattainment area SIP revision for sulfur dioxide and to demonstrate the nonattainment area will reach attainment of the 2010 SO_2 primary NAAQS as expeditiously as practicable, but no later than five years from the date of the nonattainment designation.

Clean Air Act Requirements

Section 110 of the CAAA specifies general SIP requirements and Part D of the CAAA includes requirements for nonattainment areas. The department's June 27, 2013 Missouri SO_2 Infrastructure SIP submittal addresses the continued maintenance, or section 110 Infrastructure requirements, of the 2010 SO_2 primary NAAQS for all other portions of the State not designated as nonattainment. This document addresses CAAA Part D requirements for the Jackson County SO_2 Nonattainment area. A separate document, developed concurrent to this one, addresses the Part D SIP requirements for the State's only other SO_2 nonattainment area, called the Jefferson County SO_2 Nonattainment area which includes a portion of Jefferson County, Missouri.

The general Part D nonattainment SIP provisions are delineated in section 172 of the CAAA. Section 172(c) specifies SIPs submitted to satisfy Part D requirements shall, among other things, provide for attainment of the applicable NAAQS via federally enforceable measures and limitations, include Reasonably Available Control Measures (RACM) [which includes Reasonably Available Control Technology (RACT)], provide for Reasonable Further Progress (RFP), include an emissions inventory, require permits for construction and operation of major new or modified stationary sources, contain contingency measures, and satisfy the applicable provisions of section 110(a)(2) of the CAAA related to the general implementation of a new or revised NAAQS. The following sections of this document address the section 172(c) requirements as specified:

Section 2 (monitoring and ambient air quality data)

Section 3 (emissions inventory)

- Addresses section 172(c)(3) inventory

Section 6 (nonattainment area plan control strategy)

- Addresses section 172(c)(6) enforceable emission limitations, control measures along with schedules and timetables for compliance

Section 7 (RACM & RFP)

- Addresses section 172(c)(1) RACM/RACT
- Addresses section 172(c)(2) reasonable further progress

Section 8 (contingency measures, new source review & conformity)

- Addresses section 172(c)(9) contingency measures and section 172(c)(5) permitting requirements for new & modified major sources

Section 9 (public participation)

In addition to the above, section 172(c)(4) requires the SIP to identify and quantify the emissions of pollutants allowed from the construction and operation of major new or modified stationary sources per section 173(a)(1)(B). The SIP must demonstrate the emissions quantified in this regard will be consistent with the achievement of reasonable further progress and will not interfere with attainment of the sulfur dioxide NAAQS by the required attainment date. Section 172(c)(5) requires permits for the construction and operation of new or modified major stationary sources in the nonattainment area be in accordance with section 173.

Missouri administers a New Source Review permitting program for new or modified major sources of sulfur dioxide per Missouri's approved permit program. Among other requirements, permits issued in Missouri require a demonstration that emissions from the new or modified source will not cause or contribute to a NAAQS violation, including the 2010 1-hour SO_2 NAAQS.

This plan conforms to the CAAA requirements and utilizes existing EPA guidance for sulfur dioxide SIPs. More information on EPA's guidance for sulfur dioxide SIPs developed under the 2010 SO_2 NAAQS are found at: http://www.epa.gov/airquality/sulfurdioxide/implement.html.

The compliant modeling scenario in Section 5 of this plan successfully demonstrates attainment of the 2010 SO_2 NAAQS based on implementation of required control measures described in Section 6. Emission rate reductions associated with each of the required emission limitations and control measures is quantified in Appendix F. Each of the required limitations and control measures (existing, modified and new) are required to reduce emission rates sufficiently to demonstrate 2010 SO_2 NAAQS compliance. The emission rate reductions are expected to result in monitored values of 75 ppb [equivalent to 196.725 $\mu g/m^3$] or less.

1.1. BACKGROUND

Sulfur dioxide (SO_2) is one of a group of highly reactive gasses known collectively as "oxides of sulfur." SO_2 is linked with a number of adverse effects on the respiratory system. In order to reduce ambient air concentrations, SO_2 emission sources are typically restricted by emission limits, control devices or other special conditions in a permanent and enforceable document, such as an air permit, regulation or a legally binding agreement such as a consent judgment or an administrative order on consent (AOC). The total of all SO_2 emission limits and special conditions prescribed by state regulation, construction permits and/or legally binding agreements

is established to ensure 2010 SO_2 NAAQS compliance. The corresponding ambient air concentrations are determined by ambient air quality monitors. This data is the primary basis for the strategy developed for this plan.

1.1.A. Health Effects

Current scientific evidence links short-term exposures to SO_2, ranging from 5 minutes to 24 hours, with an array of adverse respiratory effects including bronchoconstriction and increased asthma symptoms. These effects are particularly important for asthmatics at elevated ventilation rates (e.g., while exercising or playing.)

Studies also show a connection between short-term exposure and increased visits to emergency departments and hospital admissions for respiratory illnesses, particularly in at-risk populations including children, the elderly, and asthmatics.

EPA's NAAQS for SO_2 is designed to protect against exposure to the entire group of sulfur oxides (SOx). SO_2 is the component of greatest concern and is used as the indicator for the larger group of gaseous sulfur oxides (SOx). Other gaseous sulfur oxides (e.g. SO_3) are found in the atmosphere at concentrations much lower than SO_2.

Emissions that lead to high concentrations of SO_2 generally also lead to the formation of other SOx. Control measures that reduce SO_2 can generally be expected to reduce people's exposures to all gaseous SOx. This may have the important co-benefit of reducing the formation of fine sulfate particles, which pose significant public health threats.

SOx can react with other compounds in the atmosphere to form small particles. These particles penetrate deeply into sensitive parts of the lungs and can cause or worsen respiratory disease, such as emphysema and bronchitis, and can aggravate existing heart disease, leading to increased hospital admissions and premature death. EPA's NAAQS for particulate matter (PM_{10} and $PM_{2.5}$) are designed to provide protection against these health effects.

1.1.B. Sources

Nationally, the EPA estimates the largest sources of SO_2 emissions are from fossil fuel combustion at power plants (73%) and other industrial facilities (20%). Smaller sources of SO_2 emissions include industrial processes such as extracting metal from ore and the burning of fossil fuels containing sulfur in locomotives, large ships and other non-road equipment applications.

Per 40 CFR § 80.510, Ultra Low Sulfur Diesel (ULSD), with a maximum fuel sulfur content of 15 ppm, is required for land-based nonroad applications beginning June 1, 2010 and for locomotive and marine applications beginning June 1, 2012, specifically for emission units using diesel or other distillate fuel oils. The department maintains ULSD is currently used in practice throughout Missouri. The department also maintains there are currently no known suppliers distributing higher sulfur diesel (and No.1 fuel oil or No. 2 fuel oil) to the Jackson County SO_2 Nonattainment area. The department modeled certain sources currently using diesel or distillate fuel oils as using fuels with a maximum sulfur content equivalent to ULSD. To make this fuel sulfur content SIP enforceable, EPA requires the use of such fuels in a state regulation or other permanent and enforceable mechanism beyond the requirements for ULSD per 40 CFR Part 80. As a result, the proposed new state SO_2 rule 10 CSR 10-6.261 [Appendix I] requires the delivery

of ultra-low sulfur distillate fuel oils with a maximum fuel sulfur content of 15 ppm with compliance beginning January 1, 2017 for all Jackson County sources.

Since the introduction of federal ULSD beginning in 2004 initially for mobile source applications, SO_2 air pollution is ever more characterized mainly by single, discrete stationary sources of SO_2, primarily pertaining to the combustion of fossil fuels (other than ULSD). Because of its physical and chemical properties, SO_2 is not a typical criteria pollutant. Unlike the gaseous and fine particulate criteria pollutants, areas of maximum SO_2 concentrations tend to be relatively localized and the concentrations do not transport long distances. Consequently, SO_2 settles out of the air over a relatively short distance and has a relatively high concentration gradient. In other words, there is a sharp decrease in SO_2 concentrations as the distance from a large SO_2 source(s) increases.

For SO_2 point sources, there are twenty-four small sources located inside the NAA boundary with each emitting less than 5 tons per year (tpy). These sources include hospitals, distribution centers, water treatment plants, and various small businesses. Also located inside the NAA boundary is one large source, a coal-fired steam generation plant, with baseline emissions greater than 100 tpy. Thirteen interactive sources outside the NAA were included in the modeling analysis. These sources include Electric Generating Units (EGUs), hospitals, a university, and industrial sources. Four sources in Kansas were also included in the modeling analysis. Of the four interactive sources located in Kansas, two are coal-fired EGUs. Both of these plants are subject to upcoming federal regulations or other binding agreements. As a result of these regulations, both plants will be dramatically reducing their SO_2 emissions over the next couple years.

1.1.C. Regulatory History

Pursuant to the requirements of the CAAA, the EPA first promulgated a NAAQS for SO_2 on April 30, 1971. Specifically, EPA initially promulgated a 24-hour primary SO_2 standard of 140 parts per billion (ppb) [not to be exceeded more than once per year] and an annual average primary SO_2 standard of 30 ppb (to protect health) [annual arithmetic average]. EPA also initially promulgated a 3-hour average secondary SO_2 standard of 500 ppb (to protect public welfare). On May 22, 1996, EPA completed a review of the primary SO_2 NAAQS and chose not to revise the standards. Historically, there have been no areas designated as nonattainment per these standards in the entire state of Missouri.

On June 22, 2010, EPA revised the primary SO_2 standards by establishing a new 1-hour standard of 75 ppb [three year average of the 99th percentile of the yearly distribution of 1-hour daily maximum SO_2 concentrations]. EPA also revoked the two existing primary SO_2 standards (24-hour and annual primary SO_2 standards) recognizing that the revised 1-hour standard of 75 ppb will have the effect of generally maintaining 24-hour and annual SO_2 concentrations that are below the levels of the associated primary SO_2 standards, respectively.

On April 3, 2012, EPA took final action to retain the current secondary standard for SO_2 of 500 ppb averaged over three hours, not to be exceeded more than once per year.

Based on ambient monitoring data from 2007 - 2009, as well as additional data from 2010 – 2012, areas in a portion of Jackson County (Kansas City area) and a portion of Jefferson County (Herculaneum area) were in violation of the 2010 1-hour SO_2 NAAQS. Based on the violations recorded at the respective monitors, both areas were designated as nonattainment under the 2010 sulfur dioxide standard effective October 4, 2013. As previously stated, this nonattainment area plan addresses only the Jackson County SO_2 Nonattainment Area. Information on Missouri's 2010 1-hour SO_2 NAAQS area boundary designation recommendations may be found at the Air Program's NAAQS boundary designations webpage:
http://dnr.mo.gov/env/apcp/naaqsboundarydesignations.htm#SO2

1.1.D. Description of Nonattainment Area & Topography

EPA designated the portion of Jackson County, not the entire county, as the Jackson County 2010 1-hour SO_2 nonattainment area on August 5, 2013, effective October 4, 2013 (78 FR 47191). Figure 1 depicts a map of the designated nonattainment area with the location of the violating Troost Avenue monitor. The final SO_2 standard designations were based upon air quality monitoring data from calendar years 2010-2012.

The 2010 1-hour SO_2 Designation and Boundary Recommendation, codified in 40 CFR §81.326 "Missouri – 2010 Sulfur Dioxide NAAQS (Primary)", lists the designated area boundaries comprising the Jackson County nonattainment area-

Jackson County (part) SO_2 Nonattainment Area

Jackson County, MO [1] Jackson County (part)
..... 10–4–13 Nonattainment.

The portion of Jackson County bounded by I-70/I-670 and the Missouri River to the north,; and, to the west of I-435 to the state line separating Missouri and Kansas

[1] Excludes Indian country located in each area, if any, unless otherwise specified.

Per the 2010 1-hour SO_2 NAAQS, the unclassifiable/attainment designations for the remainder of the state are not yet finalized by EPA.

In addition to these considerations, topographical characteristics influence wind speed and direction. Micrometeorological effects are influenced by predominant wind patterns in river basins or valleys. Jackson County is influenced by the Missouri River and its floodplain that make up the northern county boundary. The terrain climbs nearly 100 meters in a short distance at the southern edge of the floodplain. Two channels cut into the higher elevation where rivers flow from south to north to meet the Missouri river. The remainder of Jackson County is not in the floodplain and is fairly uniform in elevation. Near the floodplain edge, wind speed and directions may vary significantly due to the terrain. Winds may channel in an east-west fashion along the Missouri river valley on the scale of hours and several miles, and winds may channel north-south in the channels that cut toward the river over smaller time and distance scales. Wind patterns in the rest of Jackson County will follow the prevailing meteorology of the region, aside from microscale impacts of man-made structures.

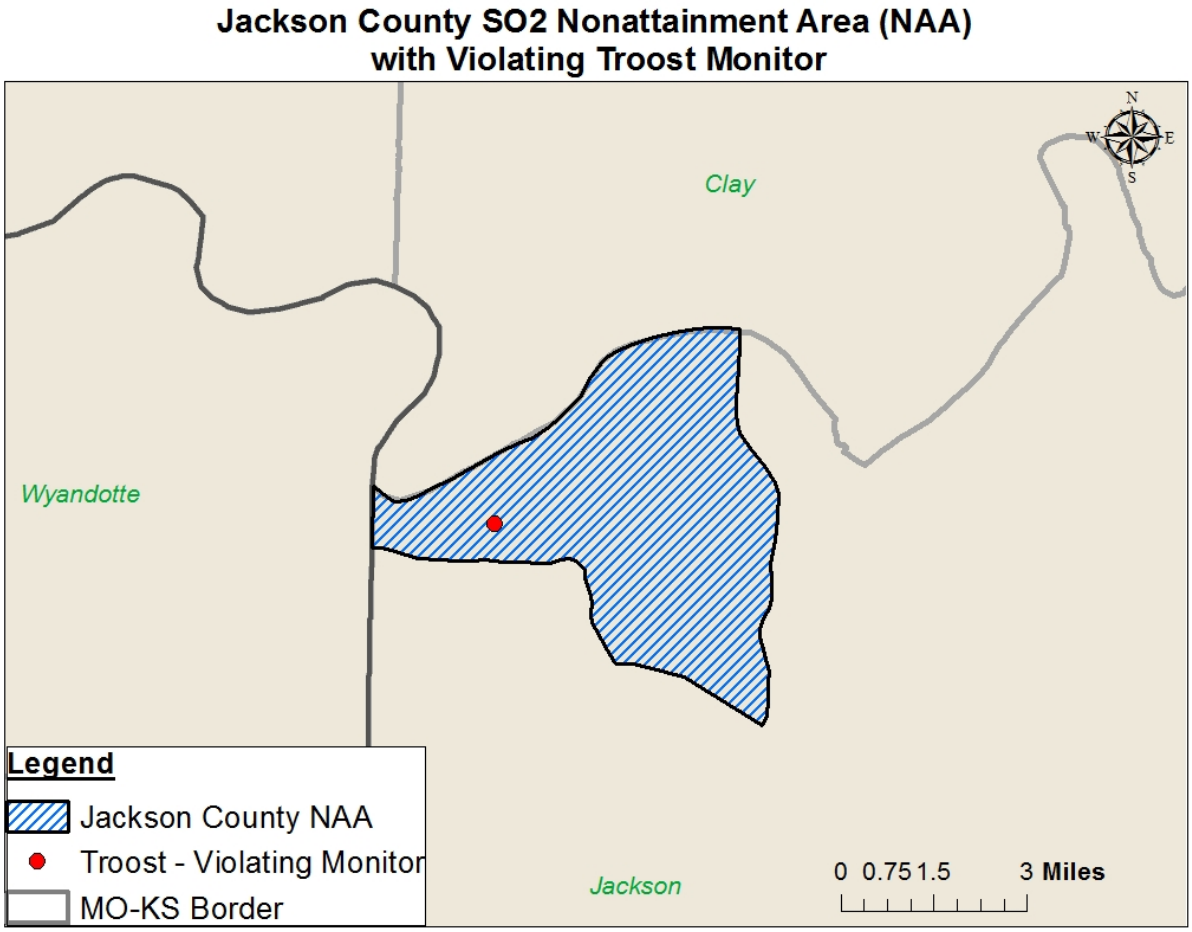

Figure 1 – Jackson County 2010 1-hour SO_2 Nonattainment Area Boundary

2. MONITORING & AMBIENT AIR QUALITY DATA

The ambient air monitoring networks were established under the CAAA to protect and assess air quality. One of the main purposes of collecting air samples is to assess compliance with and progress made towards meeting ambient air quality standards. The department summarizes its statewide monitoring network, and any changes to it, in its annual air quality monitoring network plan in accordance with 40 CFR 58 Part B. Missouri's 2014 air quality monitoring network plan was approved by the EPA in a letter dated October 23, 2014 and is available at: http://dnr.mo.gov/env/apcp/docs/2014monitoringnetworkplan.pdf

Also, visit EPA Region 7's Air Quality Monitoring Network plan site for more information or to review Missouri's previous approved network plans: http://www.epa.gov/region07/air/quality/quality.htm#mo_air

2.1. AIR QUALITY MONITORING NETWORK

The department maintains a monitoring network satisfying all EPA requirements for NAAQS criteria pollutants, including SO_2. As documented in the 2013 SO_2 Infrastructure SIP, there is an active network of state operated air quality monitoring sites, located throughout Missouri, tasked with collecting data on SO_2 in the ambient air. Monitoring is conducted pursuant to a

department-approved Quality Assurance Project Plan (QAPP). Statewide SO_2 monitoring locations are shown in Figure 2.

Prior to the June 22, 2010 promulgation of the 1-hour SO_2 primary NAAQS, all of Missouri maintained compliance with the previous primary and secondary SO_2 NAAQS based on the statewide SO_2 monitoring network operating at the time. In fact, monitored values of the previous primary SO_2 NAAQS (both 3-hour and 24-hour averaging periods) were historically recorded well below the standard which enabled the Air Program to discontinue operation [prior to 2007] of several SO_2 monitoring sites where violations were not an issue. Further, in 2010, five additional SO_2 monitoring sites that were not recording violations of the 2010 1-hour SO_2 NAAQS were temporarily discontinued primarily due to state budgetary concerns. Of these five SO_2 monitoring sites, the Mark Twain State Park (MTSP) site resumed SO_2 monitoring on July 1, 2012. The highest concentration recorded at the MTSP site in all of calendar year 2014 was 13 parts per billion (ppb). The MTSP site is generally considered a good benchmark for background concentrations due to its remote location in the state.

After promulgation of the 2010 1-hour SO_2 standard, a portion of Jackson County was one of two areas in Missouri designated as nonattainment in August 2013. This designation was based on monitoring data from the existing SO_2 monitoring network for calendar years 2007 through 2009, as well as later data from calendar years 2010 through 2012. Monitoring network data is also needed to analyze the performance of the refined dispersion model used to demonstrate NAAQS compliance and track progress toward attainment.

Missouri has operated an air monitor for SO_2 at the Troost Avenue monitor in Kansas City since 1993. Currently, the Troost Avenue location also monitors Nitrogen Dioxide since 2002 and Particulate Matter (PM10 and PM2.5) since 2003.

In addition to Missouri operated monitors, the Kansas Department of Health and Environment (KDHE) operates one SO_2 air quality monitor in the Kansas City area known as the JFK monitor.

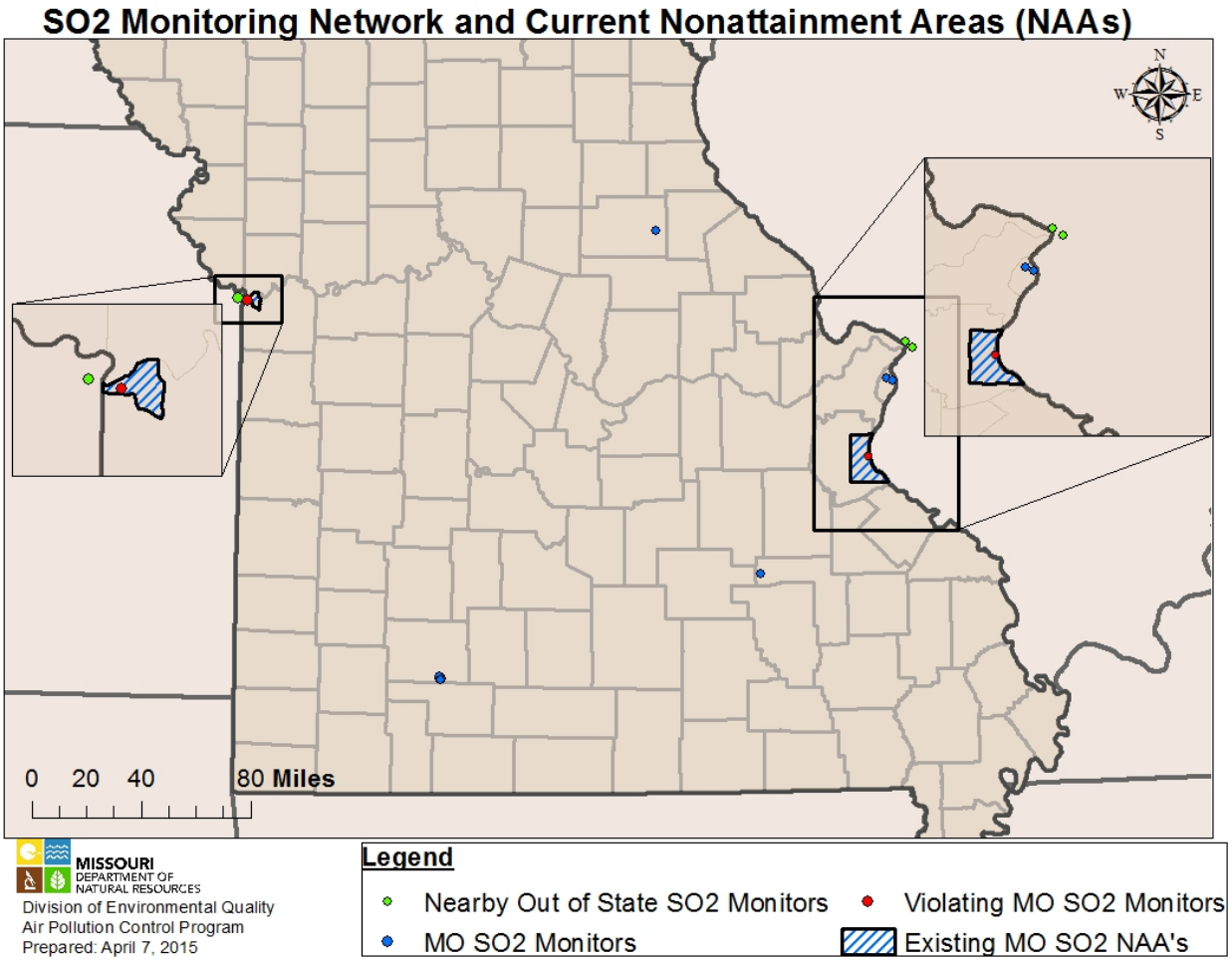

Figure 2 – Monitoring Sites - SO_2 Ambient Monitoring Network Showing Monitors in MO, KS, IL

2.2. MONITORING DATA

Monitored data recorded at the Troost Avenue ambient monitor includes values such that the fourth high (99th percentile of the daily 1-hour maximum) annual SO_2 concentrations have been as high as 308 ppb in calendar year 2004. Further, the three-year design value (2007-2009) for the Troost Avenue monitor at 171 ppb was used in initially assessing the nonattainment status of the Jackson County SO_2 NAA. The Troost Avenue SO_2 monitor's three-year design values for 2010-2012 [157 ppb] and 2011-2013 [162 ppb] and 2012-2014 [150 ppb] are also noncompliant with the 2010 1-hour SO_2 NAAQS.

Based on the recorded monitor values as well as modeled concentrations, SO_2 NAAQS violations at the Troost Avenue monitor are predominantly attributable to several large stationary sources.

Figure 3 displays the fourth high (99th percentile of the daily 1-hour maximum) annual SO_2 concentrations recorded at the Troost Avenue monitor, as well as the corresponding three-year design values based on quality assured data through December 31, 2014 and preliminary data through the development date of this SIP revision submittal. Monitoring data trend information,

starting with 2011, for the violating Troost Avenue monitor is included in Appendix A of this plan. A summary of current preliminary SO_2 monitoring data recorded in 2015 (updated twice monthly) is available at http://dnr.mo.gov/env/apcp/docs/so2monitoringdata.pdf

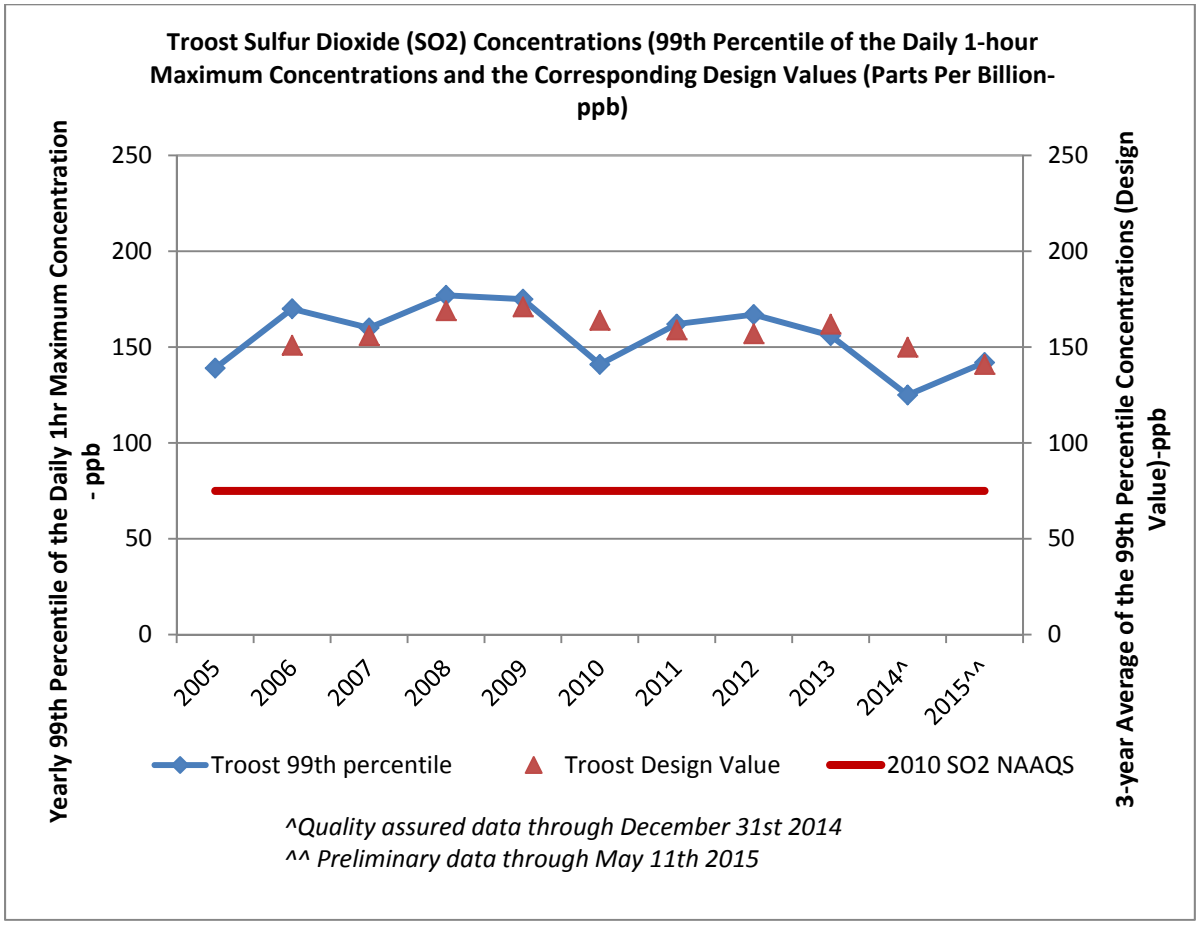

Figure 3 – Troost Avenue SO2 Monitoring Data & Design Values

3. EMISSIONS INVENTORY

The Air Program creates air emission inventories for criteria pollutants and hazardous air pollutants to meet federal reporting requirements under EPA's Air Emissions Reporting Rule, and to provide data that supports the functions of the Air Program, including SIP inventory needs. The SO_2 emissions inventory includes anthropogenic emissions from point source facilities like industrial plants, mobile source emissions from diesel powered vehicles, and nonpoint sources of emissions where many small sources are estimated at the county level (household fuel combustion emissions are combined). Point source facility emissions are reported directly by permitted sources in Missouri, while nonpoint and mobile source emissions are estimated using EPA guidelines and state-specific data.

Nonpoint sources of SO_2 include the small emitting sources that are not inventoried by collecting site specific data; their emissions are estimated based on activity surrogates at the county level. For Jackson county including portions outside the nonattainment area, the most recently available nonpoint inventory in 2011 shows that residential fuel combustion, diesel fuel distribution, open burning, wildfires, and all other emissions of SO_2 total to 92.09 tons. Mobile

sources of SO_2 emissions are piston-driven engines using sulfur containing fuel, and the county total, including areas outside the nonattainment area, is 92.22 tons per year (tpy) of SO_2. The nonpoint and mobile emissions combined (Table 1) are less than 0.66% when compared to point source facility emissions, and they are not modeled as explicit point sources in the modeling demonstration for this SIP revision. Nonpoint and mobile source SO_2 emissions are included as part of the background concentration discussed in Section 4.3.

Table 1 - Jackson County (entire county) 2011 SO_2 Emissions Summary

Emission Category	2011 SO_2 Emissions (tpy)	Percent of Total Point Source Emissions
Point Source Total	27,512.81	100%
Nonpoint Total	92.09	0.33%
Mobile Source Total	92.22	0.33%

SO_2 emissions in the Jackson County SO_2 nonattainment area are driven by point sources, the large stationary industrial sources related to electric generation and other industrial sources using coal and other sulfur containing fuels. These sources are required to obtain construction and/or operating permits from the Air Pollution Control Program, and these permits are subject to the Missouri Emission Inventory Reporting Rule, 10 CSR 10-6.110. The rule requires that sources characterize their total annual actual facility emissions by describing the equipment generating the emissions, emission estimation methods, emission control devices, and release parameters. At a point source facility, emissions are generated by many types of equipment and processes, including but not limited to electric generating units, boilers, and other fossil fuel combustion equipment; emissions are characterized for modeling using their release parameters as stack, vent, or fugitive emissions. These data elements are used in SIPs to characterize current emissions and evaluate future scenarios that may include amended emission limits.

Point source emission data is collected via online submission or paper forms depending on facility choice. Over 90% of facilities choose the online submission of data, though all data, whether received electronically or hard copy, is entered to our emissions database called the Missouri Emissions Inventory System (MoEIS). MoEIS performs the initial quality assurance steps by ensuring minimum data fields are included and data is within acceptable ranges. Additional quality assurance is performed including, but not limited to the following: year-to-year variance, industry-type comparisons, and external data source verification. Corrections are made to emissions data with the acknowledgement of the facility representative.

The sources with a Part 70 (P70) operating permit type characterize their emissions annually by providing updated emission totals based on each year's activity, therefore their emissions vary year-to-year. The sources with a Basic (BAS) operating permit type characterize their emissions by detailing year-specific data only when new permitted equipment starts up or if total emissions change by 5 tons or more from a previous year. Basic permit facilities may show the same emission total if they were not required to fully detail their emissions for each year – they roll forward the emission total.

Two required elements of nonattainment plans are a baseline emission inventory and an attainment year inventory. The 2011 baseline emission inventory is included in Appendix B. The baseline emissions inventory was taken from the 2011 National Emissions Inventory (NEI) database. The Air Program developed a comprehensive statewide emissions inventory for 2011, as described above and as required by the EPA's Air Emissions Reporting Requirements (AERR) rule published December 17, 2008. The inventory was submitted to the National Emissions Inventory (NEI) through the EPA's Emission Inventory System (EIS). The inventory includes point, nonpoint, onroad mobile, and nonroad mobile source emissions. The supporting documentation and sources of information used to develop the 2011 NEI can be found in the associated technical support document and appendices.

October 4, 2018 is the attainment date for the 2010 SO_2 standard; therefore, 2018 was selected as the future year and the projected inventory is being submitted to U.S. EPA with this document to fulfill the projected year emissions inventory requirements under the 2010 SO_2 standard. The 2018 attainment year inventory for this plan submittal is included in Appendix C. Emissions for non-point, area and mobile sources are presented at the county level and are not adjusted for the partial county nonattainment area. The emissions inventory was taken from the 2018 emissions modeling platform developed by the U.S. EPA. The point sources emissions inventory was modified to include the actual reductions of emissions from the new emission limits and requirements implemented by state rule no later than January 1, 2017. The emissions in this inventory reflect what the expected actual emissions will be in the attainment year of 2018.

4. AIR DISPERSION MODELING

As outlined in the preamble of the final 1-hour SO_2 NAAQS rule, dispersion modeling is required to demonstrate compliance with the 1-hour SO_2 NAAQS in nonattainment areas. The U.S. Environmental Protection Agency (EPA) document entitled *"Guidance for 1-hour SO_2 NAAQS SIP Submissions"* recommends the use of the AERMOD modeling system, EPA's preferred near-field dispersion model, for the SO_2 analysis.

As currently formulated, EPA's guideline models yield concentration impacts in units of micrograms per cubic meter (µg/m³) and do not yield results in the dimensionless levels of parts per volume of the NAAQS for gaseous air pollutants (i.e., O3, NO2, SO2, and CO). In all modeling analyses and results contained as part of this attainment demonstration, modeled concentrations are taken at ambient conditions of 25º C. and 760 mm Hg and were converted as: 1 ppb SO_2 = 2.623 µg/m³. [1] Based on the above conversion, the 75 ppb 1-hour standard = 196.725 µg/m³. These estimates originate from the online calculator at http://www.lenntech.com/calculators/ppm/converterparts-per-million.htm

The AERMOD system was developed through a collaborative effort between the American Meteorological Society (AMS) and the EPA. AERMOD is a steady-state plume model that employs Gaussian and bi-Gaussian probability density functions to characterize the structure of the planetary boundary layer. AERMOD can predict the concentration distribution of pollutants

[1] **http://www.epa.gov/region1/communities/pdf/CapeWind/CapeWindModelingReview.pdf**

from surface and elevated releases located within simple or complex terrain. The model allows for the input of multiple sources, terrain elevations, structure effects, various grid receptors, wet and dry depletion calculations, urban or rural terrain, and averaging periods ranging from one hour to one year.

The AERMOD modeling system was used to determine compliance with the 1-hour SO_2 NAAQS. AERMOD is the preferred model for determining pollutant impacts from industrial source complexes where emissions are released from a variety of source types. The most recent version (version 14134) of the AERMOD dispersion model, as well as the preprocessors, was used to perform the air quality analyses necessary to ultimately demonstrate attainment in the designated nonattainment area. AERMOD was also used to determine specific control strategies that result in NAAQS compliance. Staff executed AERMOD and its corresponding preprocessors in a dos windows interface.

The regulatory default options within the modeling system were set through the use of the MODELOPT keyword contained within the control pathway of the air quality model. Staff included terrain elevation data and stack-tip downwash calculations. Urban/rural site determinations were made for the nonattainment area to account for differences in boundary layer concentrations and to employ the 4-hour half-life option for urban SO_2 sources. Department staff considered both land-use and population density procedures to determine the Jackson County NAA is primarily urban in character, rather than rural. Per 40 CFR Part 51, Appendix W, subsection 7.2.3, urban dispersion coefficients were used in all modeling analyses for this NAA plan. The model input files [Appendix D] include details regarding the use of urban dispersion parameters and utilize recent metropolitan population census data.

4.1 MODELING DATABASE DEVELOPMENT

Refined air quality analyses include SO_2 sources contained within the modeling domain that are determined to have an impact within the nonattainment area boundaries that are not included as part of the established background concentration. Sources outside the NAA boundary were evaluated based on proximity to the NAA, as well as the magnitude of potential and actual SO_2 emissions, to determine potential impacts on receptors within the NAA. Department staff developed ambient air quality inputs based upon the criteria outlined in 40 CFR Part 51 Appendix W, "Guideline on Air Quality Models." The following paragraphs outline the procedures that were used to ensure that consistent and comprehensive air quality reviews were conducted. The full modeled source inventory is included in Appendix F.

4.1.A. Site Specific Data Collection

Detailed information characterizing sources deemed as having the potential to impact the nonattainment area was collected from the facilities on an individual basis and verified. This information included but is not limited to the following:

1. Facility wide SO_2 equipment list,
2. Potential to Emit (PTE) and reported actual emission rates for each piece of equipment identified in item #1, including information regarding varying load scenarios, if applicable,

3. A description of equipment usage in order to identify sources that fall into the intermittent source category,
4. Identification of federally enforceable limits contained within construction permits, operating permits, consent decrees or other state and federal rules,
5. Release parameters and source locations for each process unit or stack,
6. Property boundary, and
7. Building locations and heights.

4.1.B. Source Emission Rates

As mentioned previously, the emission rates input into the air quality model reflect current permanent and enforceable emissions for each SO_2 source included in the model unless otherwise noted. EGUs are one of the major source categories of SO_2 emitters, which have different peak concentration impact levels depending on the percent load assumed in the modeled emission rates. After analysis of base load impacts at varying loads, staff determined 100% load would account for the maximum impact for all sources.

4.2 EMISSION RELEASE PARAMETERS

In order to accurately predict the dispersion of pollutants within the atmosphere, the air quality model must have information that describes how the emissions are released into the atmosphere. The document entitled "User's Guide for the AMS/EPA Regulatory Model AERMOD" outlines the source classification system that is used by the AERMOD modeling system in order to characterize emission releases within the input file.

For the SO_2 modeling demonstration, the majority of the emissions releases are stack driven releases with parameters based upon information provided by the facility or obtained from information contained within the Missouri Emissions Inventory System (MoEIS).

If and when stack data was unavailable, the release point was characterized as a volume source within the model input file. Each volume source release was limited to the size of openings from which emissions escape, such as doorways. If no release characteristics were provided, default parameters for volume sources were assigned.

4.2.A. Point Source Release (Stack Driven)

Point source emissions are vented through stacks or isolated vents. Any stack that vents horizontally, is equipped with a rain cap or that does not provide an exit velocity, was modeled with a reduced exit velocity of 0.001 meters per second to account for the restriction of vertical flow. In order to assign the point source release parameters, the facility was requested to provide information regarding the location and the nature of the release as follows:

1. Stack height,
2. Stack exit temperature,
3. Stack exit velocity, and
4. Stack diameter.

4.2.B. Volume Source Release (Non-stack Driven)

Any emission release point that is not routed through a stack was classified as a volume source release. Additionally, any emission release vented inside an enclosed structure, without a stack, was characterized as a volume source with release parameters equivalent to the size of the openings that allow for the escape of fugitive emissions.

In order to assign the volume source release parameters, the facility must provide information regarding the location and the nature of the release. The type of release plays an important role in the calculation of the initial lateral and vertical dimensions that are input into the air quality model. At a minimum, the facility was requested to provide the following data:

1. Description of the release,
2. Release height (center of the volume),
3. X-dimension, and
4. Y-dimension.

The information described above must be provided for each opening from which emissions may escape. If volume source data was unavailable, default release parameters were assumed based on the type of source being modeled.

4.3 MODEL DOMAIN & RECEPTOR GRID

The modeling domain is centered on the nonattainment area boundary. The modeling domain extends a sufficient distance, up to 50 kilometers (km), in an effort to define the impact from any source that may cause or contribute to a violation of the 1-hour SO_2 NAAQS within the nonattainment area. The AERMOD model is a near-field model that does not reliably extend beyond 50 km, which was then used as the absolute maximum distance within which to evaluate interactive sources.

The receptor grid developed for input into the air quality model is a fine resolution grid that adequately identifies the area of maximum impact from fugitive and point source releases and encompasses the full extent of any modeled NAAQS violations. For the nonattainment area, receptors are placed at 100-meter intervals along the perimeter with receptors within the nonattainment boundary also spaced at 100-meter intervals.

When determining compliance with the NAAQS, the EPA requires that, at a minimum, all nearby sources be modeled. All SO_2 emission sources located within the NAA boundary were explicitly modeled. The Air Program evaluated all sources of SO_2 emissions identified in the MoEIS emission reporting system up to 50 km from the border of the NAA. Sources were evaluated based on the level of their potential and actual emissions, as well as proximity to the boundary. A 100 ton per year emissions threshold was used to determine inclusion in the model. Sources with either actual or potential emissions greater than this emissions threshold, depending on proximity to the boundary, were included in the model inventory. For example, sources with potential emissions greater than the threshold within 20 km of the NAA boundary were included unless their actual emissions were less than 1 ton per year based on data collected in MOEIS. Sources included as part of the background concentration were not explicitly included in the modeling analysis. The entire modeled source inventory, based on emission year 2012, is contained in Appendix F.

The data needed to execute the air quality analysis originated from the MoEIS emission reporting system for the state of Missouri. Since the model domain extends beyond the state boundary, an interactive source inventory was obtained from KDHE, and data was incorporated into the air quality analysis.

If and when interactive sources were shown to contribute to a violating receptor within the NAA, they were brought into control option discussions with the department. Further modeling of one or more control scenarios to mitigate this interactive contribution on peak SO_2 concentrations was conducted to facilitate the control option discussions.

4.4 TERRAIN ELEVATIONS

In addition to assigning receptor locations, the receptor options within the AERMOD system allow the user to input information regarding the terrain surrounding the facility. AERMOD is capable of calculating air pollutant concentrations in terrain that can be classified as simple, flat, complex or mountainous land. In order to calculate concentrations in complex or mountainous terrain situations, AERMOD must have information about the surrounding terrain and its features. To aid in the definition of the terrain features, EPA developed a pre-processor, AERMAP (version 11103) to search terrain data for base elevations and features that may influence the dispersion of pollutants within the modeling domain. Outstanding features are assigned an elevation that is referred to as the hill height scale; a value that must be included in the AERMOD input file.

National Elevation Data (NED) in the GeoTIFF format from the United States Geological Survey Seamless Data Server was processed through the AERMAP program in order to obtain the base elevation for each receptor and source within the modeling domain. In addition, the hill height scale for each receptor was extracted as required by the AERMOD system in order to determine terrain influences within the modeling domain.

All source, receptor, and terrain elevation data was converted to UTM Zone 15 in the NAD83 geodetic datum.

4.5 DETERMINATION OF SURFACE CHARACTERISTICS & AIRPORT SELECTION

To accurately calculate the boundary layer parameters in AERMET, the meteorological model must have information about the land use that surrounds the meteorological site: surface roughness, albedo and Bowen ratio. In order to provide a consistent method for determining surface characteristics, the EPA developed a mathematical tool, AERSURFACE, to determine surface roughness, Bowen ratio, and albedo values for input into AERMET. The department executed AERSURFACE (version 13016) using the default values described below:

Bowen ratio

- Ten kilometer by ten kilometer domain centered on the site.

Albedo

- Ten kilometer by ten kilometer domain centered on the site.

Surface roughness length

- Default upwind distance of one kilometer centered on the site.

- Twelve, 30 degree meteorological sectors.

Because these surface characteristics influence the similarity profiles that are utilized by the dispersion model, AERMOD, the user must determine if the surface characteristics at the meteorological site accurately represent the conditions that are present at the facility site. In order to determine if the differences in surface conditions will significantly impact the AERMOD predictions, a direct comparison between the meteorological site and the facility site was necessary.

The department has developed surface characteristics for multiple airports across the State for each moisture condition: average, dry, and wet. The results from the AERSURFACE analysis for each airport have been summarized in an excel template. This template enables the user to input facility/area surface characteristics from AERSURFACE for comparison to each airport based upon characteristics of surface roughness, albedo, Bowen ratio, land use classifications, proximity and aerial photography.

4.6 METEOROLOGICAL DATA

The meteorological data utilized in the air quality model was selected based upon the spatial and temporal characteristics of each nonattainment area. Ultimately, site selection considered the proximity of the collection site to the area of interest, the complexity of the terrain in the area surrounding the monitor, the exposure of the meteorological sensor, and temporal variations in the local climate.

Because AERMOD does not accept raw meteorological data, it must be processed through AERMET (version 14134), the meteorological data pre-processor for the AERMOD modeling system. AERMET extracts and processes meteorological data in order to calculate the boundary layer parameters that are ultimately necessary for the calculation of pollutant concentrations within the atmosphere.

Most NWS stations record 1-minute Automated Surface Observing System (ASOS) wind data. The 1-minute ASOS data was obtained from the National Climatic Data Center in the TD-6405 data format that includes the 2-minute average wind speed and direction for each minute within an hour. The use of 1-minute ASOS data more accurately depicts the average hourly wind flow than single instantaneous readings of wind speed and direction that are used in other air quality modeling analyses. The 1-minute ASOS data is processed through AERMINUTE (v14237) in order to be input into the AERMET processor.

It is important to note that the Bowen ratio characteristics applied in Stage 3 AERMET processing are determined based upon the precipitation totals from the meteorological record for the time period being processed. For example, if the meteorological period reported above-average precipitation totals for 2010, the Bowen ratio values for wet surface moisture are chosen for Stage 3 processing in AERMET for 2010.

The discussion below is based on comparisons of surface characteristics and proximity to the nonattainment area boundary resulting from the AERSURFACE analysis spreadsheet mentioned above.

For upper air data, the Topeka upper air station is closest to the nonattainment area at 100 km and best represents the vertical atmospheric characteristics of the region. The next closest upper air stations are Springfield, MO, at 225 km, and Lincoln, IL, at 450 km.

For surface data, the Kansas City Downtown (1 km), Lee's Summit (15 km), and Kansas City International (23 km) airports are the closest to the nonattainment boundary.

Kansas City Downtown: The surface roughness values for the NAA and Kansas City Downtown are most similar. The driver for similar surface roughness is the similar land cover, with 30% developed cover in the NAA and 44% at Downtown. Similarly, the NAA has 21% water within the 1 km radius, and Downtown has 13%. Albedo's agree within 7% for each season.

Lee's Summit: The surface roughness values differ by 70% in winter and spring, but only differ by 14% in summer and fall. Surface cover is majority planted/cultivated within 1 km of Lee's Summit, but land cover is a distributed mix of water, developed, wetland, and planted/cultivated land cover in the NAA. Albedo's agree within 10% for each season. Bowen ratios agree within 10 to 30% for all precipitation conditions.

Kansas City International: The surface roughness values differ by 75% in winter and spring, and 45% in summer and fall. Surface cover differences include the majority planted/cultivated cover (78%) at KC International, versus a distributed mix of water, developed, wetland, and planted/cultivated land cover in the NAA. Albedo's differ by up to 12%. Bowen ratios differ 10-20% in dry conditions, 10-40% in average conditions, and 20-40% in wet conditions.

The next closest airports (Rosecrans 76 km, Whiteman 90 km) offered no improvement to the comparison of combined surface roughness, albedo, or Bowen ratios than nearby locations. The influence of developed land cover on the 1 km diameters for both the NAA and the Kansas City Downtown airport shows these locations to be comparable for meteorological parameters. Therefore, the Kansas City Downtown airport dataset is most representative of conditions in the NAA.

For the Jackson County NAA, staff selected the Charles B. Wheeler (Kansas City) Downtown Airport as the representative surface station and the Topeka Regional Airport in Kansas as the representative upper air station. The meteorological data used for the Jackson County NAA represents the most recent certified data available for the five year period 2008-2012. The data is collected by National Weather Service (NWS) reporting stations located at the respective airports.

4.7 BUILDING DOWNWASH

Building downwash effects were calculated using the Building Profile Input Program (BPIP) with plume rise model enhancements (PRIME), version 04274. The information needed to execute BPIP PRIME includes the heights and locations of structures, which may contribute to building downwash, and the stack locations in relation to these structures. Based upon the facility configuration, the department determined if a stack is being subjected to wake effects from a surrounding structure(s). If structure wake effects are evident, flags are set to indicate which stacks are affected by building wake zones. Once it is determined that a stack is

influenced by a structure, BPIP calculates the building heights and widths to be included in the dispersion model so that building downwash effects are considered.

Building information was evaluated on a case by case basis. Downwash effects were included in the modeling analysis for the only large source contained in the nonattainment area boundary, Veolia Energy. Appendix D includes downwash values for this source in the model input files.

4.8 GOOD ENGINEERING PRACTICE STACK HEIGHT

Good engineering practice (GEP) stack height refers to the height at which emission releases from isolated stacks or vents will not cause excessive ground level concentrations in the immediate vicinity of a source due to building downwash effects, or complex terrain. Section 123 of the CAA limits the modeling stack height to GEP when performing air quality analyses in an effort to prevent facilities from installing excessively tall stacks to meet ambient air quality and increment standards.

When performing air quality analyses, the EPA has outlined three differing techniques for determining GEP stack height:

1. Stacks less than the 65 meter *de minimis* level; do not have to undergo a GEP determination,
2. GEP is calculated using mathematical formulas that consider nearby building dimensions and building/stack configurations, or
3. GEP is calculated using fluid model studies.

For sources with site specific data available, the department models all stacks at the lesser of their actual stack height or GEP stack height, as determined by the BPIP PRIME preprocessor. Building downwash influences obtained from the BPIP PRIME output were included in the model input file for the air quality dispersion model as deemed necessary on a case-by-case basis. As mentioned above, downwash effects from the Veolia Energy steam plant were included in the modeling analysis. Any stack built prior to December 31, 1970 was modeled based upon the actual stack height per 40 CFR 52.21(h). Prohibited dispersion techniques as outlined in Section 123 of the CAA were not allowed nor considered in the ambient air quality impact analysis.

4.9 BACKGROUND CONCENTRATION

According to 40 CFR Part 51, Appendix W, background concentrations must be considered when determining compliance with the NAAQS. To account for natural source impacts, sources that are not explicitly modeled and unidentified sources, 2010-2012 monitoring data was used to establish background concentrations that were incorporated into the modeled results. To account for nearby sources, staff reviewed existing inventory data in the vicinity of the violating monitor. The following paragraphs outline the procedures used to determine how background concentrations were determined.

4.9.A. Monitor Analysis

EPA guidance notes that ambient air quality data should generally be used to account for background concentrations. Staff used 1-hour design value data for the latest 3-year period (2010-2012) to develop background concentrations and to perform a thorough background analysis using monitored values. Monitored background values are based on the design value of the nearest representative air quality monitor that is the least influenced by nearby SO_2 sources.

Background concentrations include impacts attributable to natural sources, nearby sources (excluding the major sources and interactive sources), and unidentified sources. This derived background concentration includes all sources of SO_2 not already included in the model runs. Emissions from any nearby interactive point source facilities are included in the interactive source model run for each area, and as such, are not included in the background concentration.

In general, the background value was calculated similarly to design values at air quality monitors, in order to be comparable to the SO_2 NAAQS. A monitoring site near but outside the immediate area of source impact, that has SO_2 concentrations and wind direction measurements for the most recent certified three-year period, was selected for further analysis. Threshold concentrations of 5 and 10 parts per billion were chosen to limit the monitored value sample size (and associated back trajectories) in the Jackson County NAA. Statistical analysis including an Excel pivot table and chart were used to visualize the frequency of the measured concentrations from certain wind directions [Figure 4]. This is helpful in targeting a sector with the least amount of monitored days above the threshold concentration, which can most likely be attributed to the major source(s). Using the Linux-based Hybrid Single-Particle Lagrangian Integrated Trajectory (HYSPLIT) model script, back trajectories were plotted to show where certain air parcels originated on days that monitored concentrations are above the threshold concentration. Impacts from sources are evident with groupings of trajectories. A sector with little to no source influence was chosen for further analysis. Considering measured concentrations from the chosen sector, the fourth highest value is chosen as representative of the area's background concentration. The plotted trajectories, pivot chart, and table excerpt used to establish the area background concentration are included below for ease of reference.

Due to the limited number of SO_2 air quality monitoring sites located within Missouri, staff reviewed the regional characteristics within five kilometers of the area to determine what monitoring station best represents the observed land use in and around the nonattainment area.

Since an urban monitor site was selected for background purposes, staff determined which meteorological corridors are not influenced by explicitly modeled sources. The meteorological corridors are defined according to ten degree wind direction sectors. Staff reviewed the 1-hour profile for each meteorological corridor in order to determine a representative background value. Statistical measures were employed in the determination of the background concentration.

4.9.B. Jackson County Nonattainment Area Specific Background Analysis

A background concentration must be included that represents the contribution from natural sources and from sources that are not explicitly modeled. The most recent air quality design value (i.e., the three-year average of the 99th percentile of the daily maximum 1-hour concentrations) of a representative monitoring site should be used as the background concentration for the area.

The JFK air quality monitor on the Kansas side of the Kansas City metropolitan area was chosen as the representative monitor for the Jackson County nonattainment area. It was the least impacted by SO_2 sources in the Kansas City metropolitan area compared to nearby monitors, and therefore is more representative of background concentrations. However, the JFK monitor no longer records hourly wind directional data, so another monitoring site was required to supplement the analysis. The JFK monitor recorded hourly wind direction and wind speed measurements from 1/1/2001 to 12/31/2007. Hourly wind data recorded at Richards-Gebaur South (RGS), an ozone monitor south of the Kansas City area in Cass County, Missouri, was chosen to supplement the background analysis. Missouri maintains that RGS data is representative of meteorological patterns throughout the Kansas City area. Specific monitor site information is included in Table 2.

Table 2 - Background Monitor Information

Monitor Information		
Monitor Name	JFK	Richards-Gebaur South
AQS Site ID	20-209-0021	29-037-0003
County	Wyandotte	Cass
Latitude	+39.1175	+38.75976
Longitude	-94.635556	-94.57997
Area Represented	Kansas City, MO-KS	Kansas City, MO-KS

Monitoring data from the JFK site was obtained for the most recent certified three-year period, 2010-2012. Monitored values above 10 ppb, 15 ppb, and 20 ppb were selected to run back trajectories using the HYSPLIT model. Twenty-four (24) hour back trajectories were plotted for the selected high monitored days to evaluate where air parcels originated/passed through on the days of interest. The trajectories had a starting height of ten (10) meters to be consistent with monitor height. A sector with little to no influence from either Missouri or Kansas SO_2 sources was chosen to represent background concentrations. The sector with the least source influence was chosen as 180-200 degrees. Due North is assumed as zero degrees concerning wind direction. The plotted trajectories are included in Figures 5 and 6. Figure 5 depicts the trajectories and NAA boundary with relation to the background and violating monitors. Figure 6 depicts the trajectories with relation to SO_2 emission sources in the area. Frequency of higher monitored values is plotted by wind direction in Figure 4 below. This aids in identifying sectors with less direct source influence. Once a representative sector was a chosen, the highest monitoring values from that sector were evaluated. The four highest values are included below in Table 3. The fourth high monitored value chosen in the representative sector was 13 ppb. Therefore, an SO_2 concentration of 13 ppb or 34.09 $\mu g/m^3$ was used as the modeled background concentration for all Jackson County SO_2 nonattainment area SIP purposes.

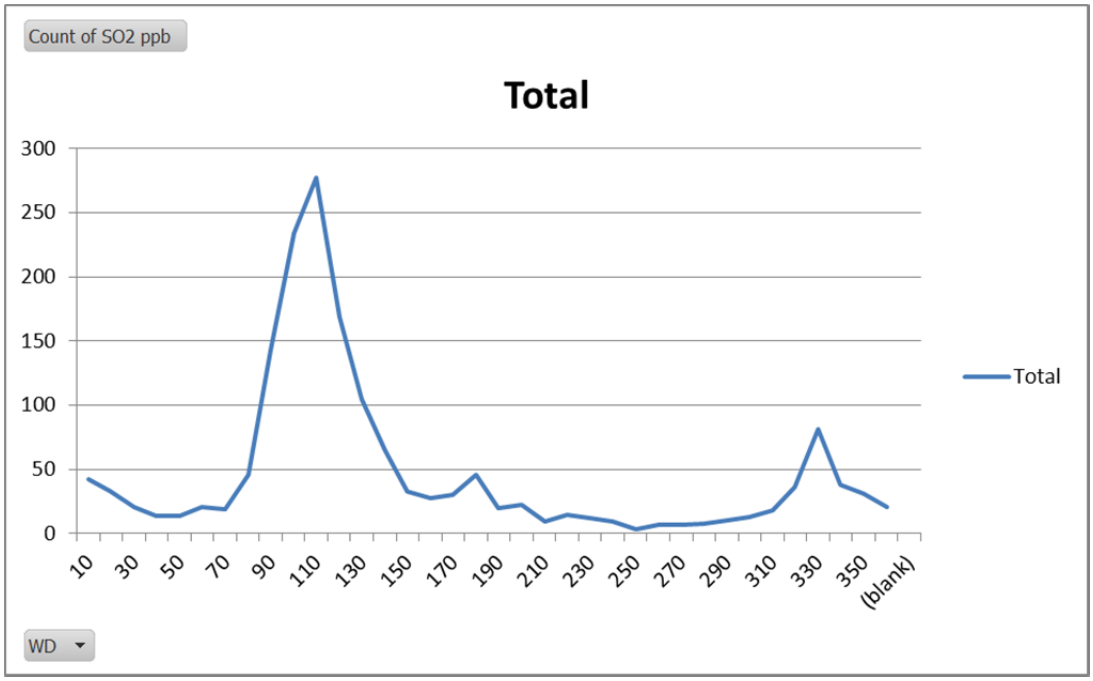

Figure 4 - Chart showing number of hits per 10 degrees in Wind Direction, to depict areas of source influence

Note: The dominant source in the Jackson County NAA, Veolia Energy, is located in the wind sector, 110-115 degrees, from where most of the monitored highs originate, as depicted in the pivot chart [Figure 4] above and the following HYSPLIT plots [Figures 5 and 6].

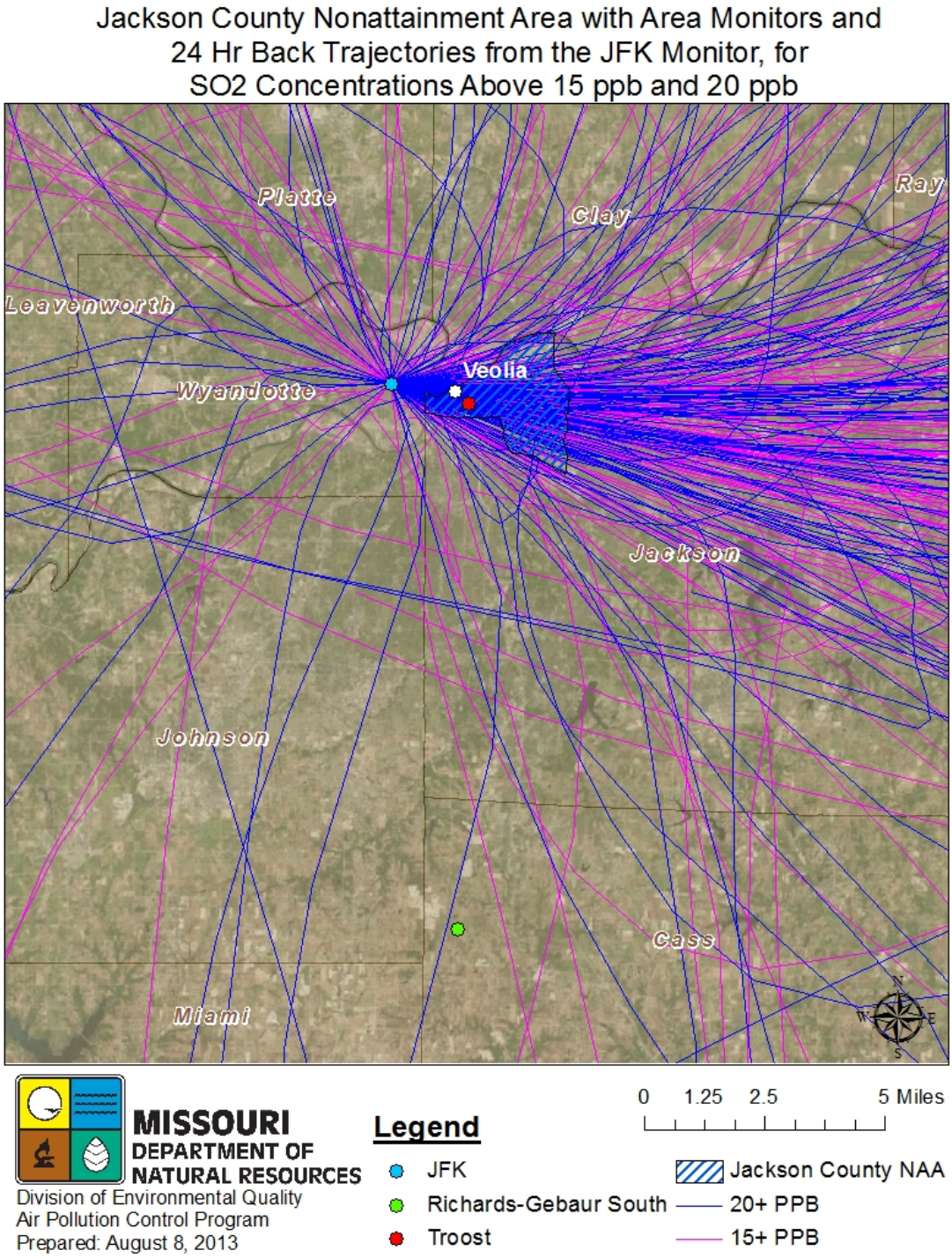

Figure 5 - Plotted Back Trajectories with Jackson County NAA & Monitors used for Background Analysis

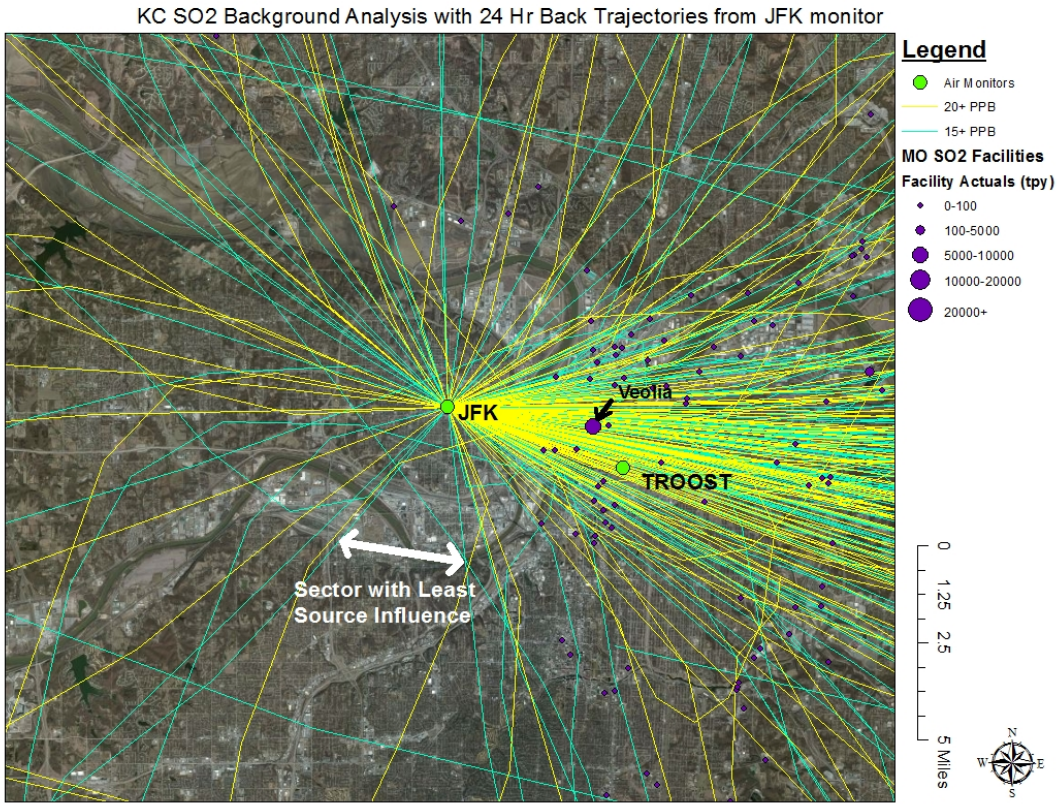

Figure 6 - Plotted Back Trajectories depict areas of source influence and the chosen background sector

Table 3 - Wind and Monitor Data for Chosen Sector (180-200 Degrees) Used to Derive the Fourth High Value to be the Representative Background Concentration for the Area

Date	Start Time	Richards Gebaur-South WD (Degree)	**JFK (Wyandotte) SO_2 Conc. (ppb)**
20100210	17	193	19
20100712	17	184	18
20110104	13	195	13.5
20100818	17	197	13

5. MODELING DEMONSTRATION

Several iterations of modeling scenarios were performed in order characterize the air quality in the NAA and to determine practicable control strategies that demonstrate compliance. All model inputs and associated output files are included in Appendices D & E, respectively.

The modeled compliant scenario employs a 100 m spacing receptor grid that encompasses the entire nonattainment area. The representative meteorological data selected for the area is surface data from the Kansas City Downtown Airport (KMKC) and upper air data from Topeka, KS (KTOP) for the most recent 5 year period, 2008-2012. The receptor grid was broken into six sub-grids [Figure 7] to minimize model runtime. The total number of receptors utilized is 5,787.

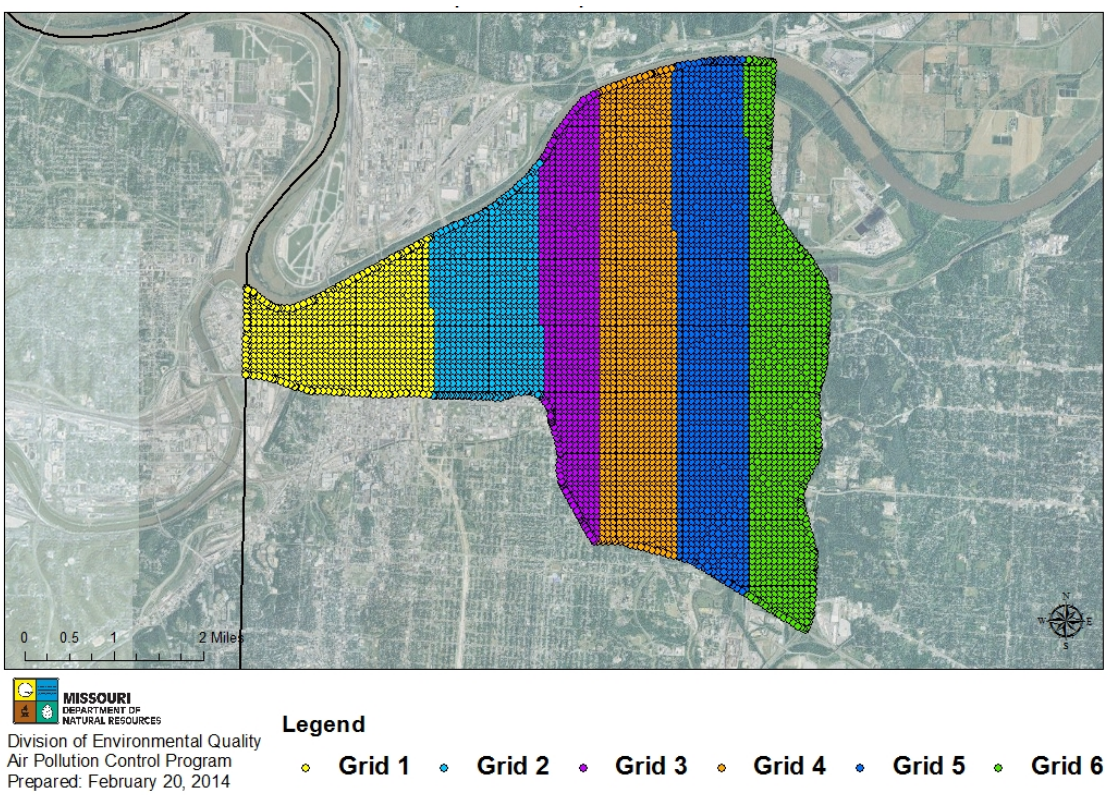

Figure 7 – Jackson County NAA Modeling Sub-grids

The Jackson County SO_2 nonattainment area includes a number of small to medium size SO_2 emitting sources within its geographical boundaries. The largest modeled source contained within the NAA boundary is the Veolia Energy steam plant. Veolia emitted 6,702 tons of SO_2 in 2012, which accounts for 99.95% of all SO_2 emissions reported within the NAA boundary. Veolia is a steam generating plant that combusts coal, oil, and gas, with the capability to cogenerate electricity. Veolia provides centrally produced steam and chilled water to approximately 60 customers in the central business district. Veolia's production capacity includes: 1.3 million pounds of steam per hour, 10,650 tons of chilled water capacity, and 5 megawatts of cogeneration capacity. The distribution network extends 6.5 miles for steam and 2 miles for chilled water pipes.

Of the interactive sources located in Missouri but outside the boundaries of the Jackson County SO_2 Nonattainment Area, four are coal-fired EGUs: Kansas City Power & Light (KCPL)

Hawthorn station, KCPL Sibley station, Independence Power & Light (IPL) Blue Valley station, and IPL Missouri City station. Of these, two are subject to upcoming federal regulations that are not directly included, or needed, as part of this NAA plan. As a result of these federal regulations, both plants will be dramatically reducing their SO_2 emissions over the next couple years. In lieu of requiring compliance with the applicable federal rule as part of this NAA plan, the three units at IPL Blue Valley are required by the proposed new SO_2 rule to use natural gas. The IPL Missouri City station will be permanently shut down. Since the permanent closure of this power plant is scheduled in early 2016, the SO_2 impacts associated with the IPL Missouri City station are not included in the compliant model analysis. The other two coal-fired EGUs are not subject to federal regulations but rather require new emission limitations for this NAA plan in the proposed new SO_2 rule [Appendix I]. All of these reductions will be realized no later than January 1, 2017 as required for initial round SO_2 NAAs per the 1-hour standard. Modeled emission rates for the Missouri SO_2 sources that impact the nonattainment area are included in Table 5.

There are also two large coal-fired power plants located near the state line in Kansas, also located outside the NAA boundary, that are included in the model analysis – as well as two smaller Kansas sources. One power plant is completely switching to natural gas combustion only and the other is installing a wet scrubber. The other two interactive sources located in Kansas include glass and automotive manufacturing companies, whose combined limited emissions are less than 2,500 tpy. These Kansas sources are outside Missouri's jurisdictional boundaries but are included in Missouri's 2010 1-Hour SO_2 NAAQS compliant modeling using information provided by KDHE.

The modeled emission rates and parameters for sources located in Kansas originated with KDHE as well as the EPA's Emission Inventory System. As sources located outside Missouri are not within Missouri's jurisdiction to control, all control strategy discussions including modeled emission rates [Table 4] for those sources have been negotiated with KDHE and/or EPA. The Air Program has been involved in communication with KDHE and EPA regarding these issues.

Table 4 - Modeled Emission Rates for the Two Large Kansas Facilities Included in the Modeling Analysis

Unit	Actual 2010 SO_2 Emissions (tons)	2010 Operating Hours	Actual Avg Emission Rate (lb/hr)	Actual Avg Emission Rate(g/s)	Current Allowable Emission Rate (lb/hr)	Current Allowable Emission Rate (g/s)	Limited Rates (lb/hr)
Nearman 1	6126.365	7831.56	1564.532481	197.12675	2919.72	367.8783	2,920
Quindaro 1	1698.41	7644.77	444.3325306	55.984665	3577.8	450.7949	**780**
Quindaro 2	2201.557	7795.3	564.8421485	71.168542	5514.6	694.8275	**990**
Limited Rates based on Nearman at PTE and Quindaro Units at 75% Above Actuals							

The enforceable mechanism for this plan is the proposed new state rulemaking, 10 CSR 10-6.261, which includes new emission limitations and other requirements for sources located in

Missouri. Through the modeling analysis described, this scenario demonstrates the entire nonattainment area will attain by the attainment date for the 2010 SO_2 NAAQS. This model scenario includes controlled emission rates for the facilities outlined in Table 5.

Table 5 - Modeled Emission Rates for Controlled NAA Sources in Proposed State SO_2 Rule^

Unit	Critical (Modeled) Value (g/s)	Critical (Modeled) Value (lb/hr)	Limit in Rule (lb/hr)	Averaging Time
Veolia Unit 1	0.0629	0.5	0.5	1-Hour
Veolia Unit 2	44.326	351.8	351.8	1-Hour
Veolia Unit 3	0.0629	0.5	0.5	1-Hour
KCPL Hawthorn 5	192.76	1529.88	785	30 day rolling**
KCPL Sibley 1	254.35	2018.69	1468.17	30 day rolling**
KCPL Sibley 2	250.66	1989.44	1447.01	30 day rolling**
KCPL Sibley 3	1759.42	13964.01	10632	30 day rolling**
IPL Blue Valley – All Units	Natural Gas Fuel Switch			Identified in Rule
IPL Missouri City – All Units	Shutdown			Federally Required

**See Table 7 for variability analysis used to establish longer averaging time limits.
^ All other sources are modeled at allowable SO_2 emission rates

All modeling input files are contained in Appendix D and all associated output plotfiles are contained in Appendix E. The highest modeled impacts in the entire nonattainment area yielded by this scenario for the six sub-grids are summarized in Table 6 in both $\mu g/m^3$ and ppb. Figure 8 depicts the modeled concentrations plotted with the NAA boundary showing all receptors as in compliance with the NAAQS.

Table 6 - Highest Modeled Impacts in each Sub-grid of NAA Modeling Analysis

Sub-grid	Highest Modeled Impact	
#	*$\mu g/m^3$*	*ppb*
1	190.55	72.65
2	190.26	72.54
3	183.87	70.10
4	184.66	70.40
5	182.46	69.56
6	192.78	73.50

The modeled compliant scenario includes all explicitly modeled sources within Missouri at permanent and enforceable emission rates. The department modeled certain sources (see Appendix F → 1. "notes/comments" column of model input tables, and 2. the separate ULSD

calculation table [pages F-11 through F-14]) currently using diesel or distillate fuel oils as using fuels with a maximum sulfur content equivalent to ULSD. ULSD calculations provided by KDHE for Kansas BPU facilities are also in the model inventory [pages F-5 through F-10].

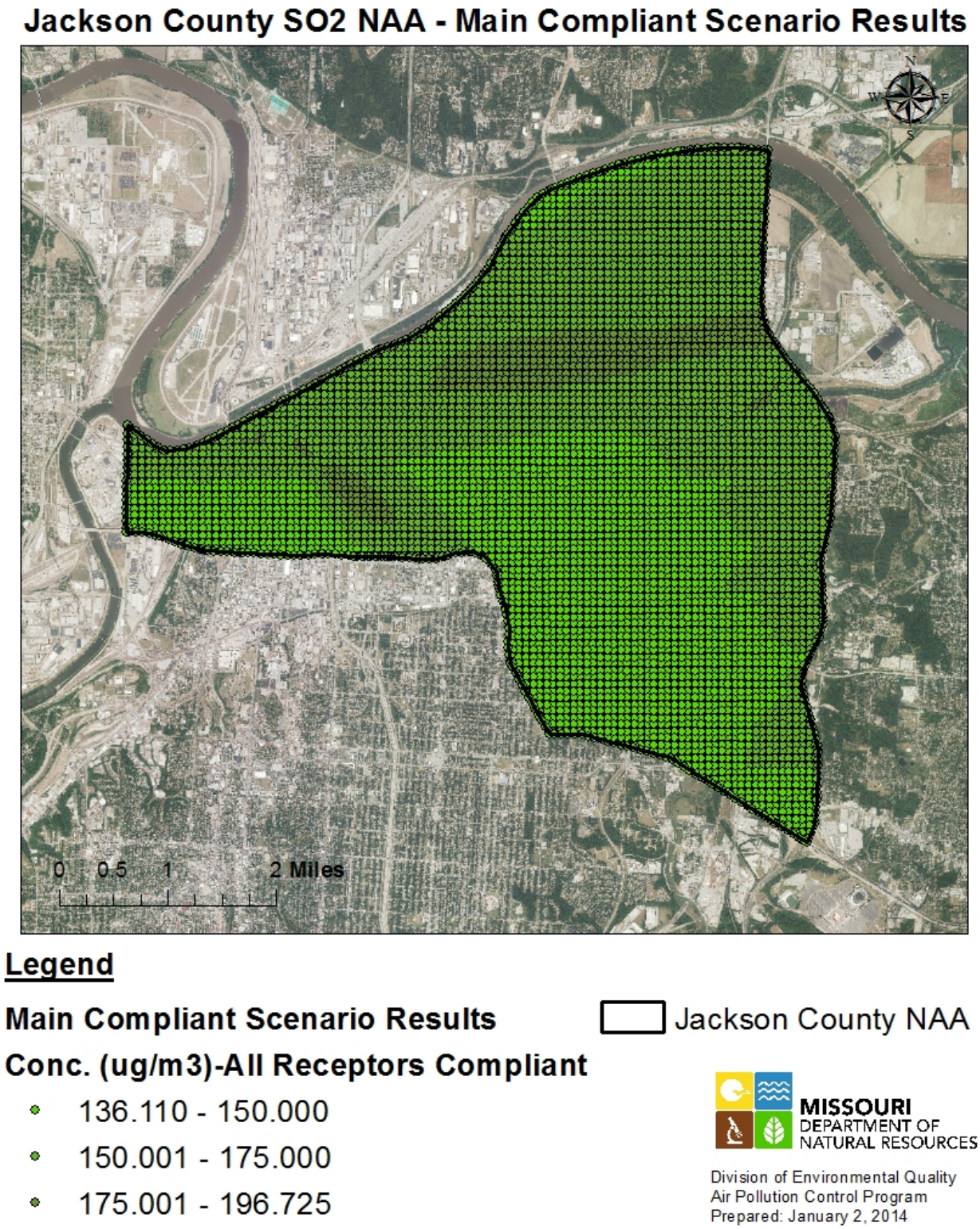

Figure 8 – Jackson County NAA Modeled Receptor Concentrations – All Receptors Modeling Compliance

5.1 DISCUSSION ON LIMITS/VARIABILITY ANALYSIS

Once the final compliant scenario was identified, the critical modeled values, or emission rates that allow for modeled compliance were identified. The limits identified in the proposed new state SO_2 rulemaking, 10 CSR 10-6.261, were based on this critical modeled value. As laid out in the EPA's SO_2 NAA guidance[2], longer averaging times (up to 30 days) may be applied to new emission limitations. Staff followed the methods outlined in the guidance to establish longer averaging time limits for the two KCPL facilities. Staff used recent (2010-2012) hourly recorded emissions [CEMS] to determine variability on the desired averaging time basis and applied the resulting ratio to the modeled compliant value to arrive at the final longer averaging time emission limits that are contained in the proposed new rule. Table 7 contains the modeled values, averages, applied ratios, and resulting longer averaging time limits. This analysis uses data available publicly through EPA's Clean Air Markets Division Database (CAMD)[3].

Table 7 – Variability Analysis Data

KCPL Hawthorn and Sibley's Longer Averaging Time Variability Analysis								
Assuming All Hours Scaled to Full, 2010-2012 CEMS								
Unit	**Critical (Modeled) Value (g/s)**	**Critical (Modeled) Value (lb/hr)**	**Percentile**	**Hourly Average (lb/hr)**	**30-day Average (lb/hr)**	**Ratio**	**30-day (720 Hour) Equiv. Limit (lb/hr)**	**Averaging Time**
Hawthorn 5 (EP6)	192.76	1,529.88	96	1,049.85	536.83	0.5113	782.3*	30 day rolling
Sibley 1 (5A)	254.35	2,018.69	99	1,075.61	782.28	0.73	1,468.17	30 day rolling
Sibley 2 (5B)	250.66	1,989.44	99	1,070.74	778.80	0.73	1,447.01	30 day rolling
Sibley 3 (5C)	1,759.42	13,964.01	99	7,044.07	5,363.30	0.76	10,632.02	30 day rolling
*Hawthorn 5's limit in rule is rounded to an even 785 lb/hr on 30 day rolling basis per facility request. The percentile used in Hawthorn 5's variability analysis is less than 99; therefore, supporting justification provided by the facility is included in Appendix J. The justification details extenuating startup and maintenance conditions associated with installation of new scrubber technology that had not yet been fully optimized.								

[2] EPA Guidance for 1-hour SO_2 Nonattainment Area SIP Submissions, released April 23, 2014. http://www.epa.gov/oaqps001/sulfurdioxide/pdfs/20140423guidance.pdf

[3] EPA's Clean Air Markets Division Air Markets Program Data, http://ampd.epa.gov/ampd/

6. CONTROL STRATEGY

The NAA SIP should provide for attainment of the standard based on SO_2 emission reductions from control measures that are permanent and enforceable [section 110(a)(2)(A) of the CAAA]. Air agencies should consider all RACM/RACT. Section 172(c)(I) of the CAAA provides that "Such plan shall provide for the implementation of all reasonably available control measures as expeditiously as practicable (including such reductions in emissions from existing sources in the area as may be obtained through the adoption, at a minimum, of reasonably available control technology) and shall provide for attainment of the national primary ambient air quality standards" that can be implemented in light of the attainment needs for the affected area. In addition to the modeled control strategy of this NAA plan, the EPA has promulgated other regulatory requirements that it expects will yield substantial reductions in SO_2 emissions that will also contribute to timely attainment of the 2010 SO_2 NAAQS. The federal requirements included in the modeling scenarios of this NAA plan are described in section 4.

Pursuant to section 172(c) of the CAAA, control measures must be permanent and federally enforceable to be used in a SIP to demonstrate attainment. Federal enforceability is demonstrated via a federally approved SIP which may include a SIP-approved rule, construction permit and/or legally binding agreement such as a consent judgment or AOC.

Control measures required to model compliance for the two larger Kansas EGU sources were negotiated with affected facilities by KDHE and EPA.

6.1. PROPOSED STATE SO_2 RULE

The new control measures needed for this proposed SIP revision to demonstrate attainment for the 2010 SO_2 NAAQS in the Jackson County nonattainment area are made enforceable by the proposed new state SO_2 rule, 10 CSR 10-6.261 *Control of Sulfur Dioxide Emissions*.

As previously mentioned, required control measures include: (1) strengthened stack emission limitations for the Veolia Energy steam plant, KCPL Hawthorn station and Sibley station, and a fuel switch to Natural Gas at the IPL Blue Valley station [Section 6.1] with a compliance date of January 1, 2017 as outlined in the proposed new state SO_2 rule [Appendix I]; (2) the permanent closure of the IPL Missouri City station; and (3) the required delivery of ULSD at all facilities currently using diesel fuel (and No.1 or No. 2 distillate fuel oils) that are located within the nonattainment area and throughout Jackson County with a compliance date of January 1, 2017 per the proposed new state SO_2 rule (10 CSR 10-6.261 *Control of Sulfur Dioxide Emissions*) with a projected rule effective date in late 2015.

Once the proposed rule 10 CSR 10-6.261 is final and effective, Missouri intends to submit this NAA plan to the EPA for review and approval as an amendment to the Missouri SIP.

7. REASONABLY AVAILABLE CONTROL MEASURES & REASONABLE FURTHER PROGRESS

7.1. REASONABLY AVAILABLE CONTROL MEASURES (RACM)

Section 172(c)(1) requires SIP provisions to provide for implementation of Reasonably Available Control Measures (RACM) as expeditiously as possible (including such emissions reductions from existing sources obtained through implementation of Reasonably Available Control Technology (RACT) requirements) and provide for attainment of NAAQS.

Missouri performed a RACM analysis in compliance with the RACM Guidance. Missouri analyzed RACM/RACT for all sources in the boundaries of the nonattainment area that emit at least 99% of the nonattainment area's SO_2 emissions. Missouri has determined that no additional RACM/RACT requirements are needed beyond those established in the proposed new state SO_2 rule.

Only one major source that impacts nonattainment is located in the boundaries of the nonattainment area – Veolia Energy. The modeling demonstration discussion [Section 5] details that this plan's control strategy necessitates a 95% reduction in allowable emissions for Veolia Energy. This 95% reduction, which is expressed as unit specific emission rates/limits [Table 5 and Appendix I], also constitutes RACM/RACT for Veolia Energy.

In addition to Veolia Energy which is located in the NAA, only four additional major sources that impact nonattainment are located in the modeled area and also in Missouri [Table 5]. All SO_2 units at one of these four, IPL Missouri City, will cease to burn coal after January 30, 2016 and will be permanently ceasing operations in lieu of installing controls to comply with the requirements of the federal requirements per the Commercial and Industrial Boilers MACT. Therefore, no further RACM analysis is required for IPL Missouri City.

For the three remaining major Missouri sources impacting the NAA, the modeled emission rates [Table 5] are linked to the modeled critical value and represent the combined emission reductions necessary to achieve NAAQS compliance throughout the NAA. Since the modeled emission rates for both KCPL facilities (Hawthorn and Sibley) and IPL Blue Valley are made permanent and enforceable by the proposed new state SO_2 rule {explicitly by either a unit specific emission rate or a unit specific Natural Gas requirement}, the modeled emission rates for these three remaining major Missouri sources address all RACM/RACT requirements.

Missouri analyzed RACM/RACT for all sources within the Jackson County SO_2 NAA (and nearby contributing sources) that emit at least 99% of the NAA's total SO_2 emissions. Further, all remaining modeled Missouri sources were found to not contribute to the nonattainment status of the area and do not necessitate control and/or further RACM analysis.

Missouri maintains that the modeling analysis contained within this NAA plan both provides for attainment of the 2010 1-hour SO_2 NAAQS and constitutes the required RACM analysis. To this end, Missouri has determined that existing controls and practices described above, combined with the requirements and SO_2 limits in Table I of the proposed new rule 10 CSR 10-6.261, constitute RACM.

As previously stated, the department has also promulgated state regulations controlling SO_2 emissions to the atmosphere, some of which pertain to specific installations. Affected SO_2 sources are currently limited by 10 CSR 10-6.260, which is scheduled to be replaced by proposed new state SO_2 rule, 10 CSR 10-6.261 with a projected rule effective date in late 2015. Affected sources are currently meeting the 10 CSR 10-6.260 requirements. Compliance with new emission limits and additional requirements per proposed new rule 10 CSR 10-6.261 is required by January 1, 2017.

7.2. REASONABLE FURTHER PROGRESS (RFP)

Section 172(c)(2) of the CAAA requires areas designated as nonattainment for criteria pollutants to include a demonstration of RFP in nonattainment area plans. Further, Section 171(1) of the CAAA defines RFP as "such annual incremental reductions in emissions of the relevant air pollutant as are required by this part (part D) or may reasonably be required by the EPA for the purpose of ensuring attainment of the applicable NAAQS by the applicable attainment date." EPA has explained that this definition is most appropriate for pollutants that are emitted by numerous and diverse sources, where the relationship between any individual source and the overall air quality is not explicitly quantified, and where the emission reductions necessary to attain the NAAQS are inventory-wide. EPA has exerted that the definition of RFP is generally less pertinent to pollutants like SO_2 that usually have a limited number of sources affecting areas of air quality which are relatively well defined, and emissions control measures for such sources result in swift and dramatic improvement in air quality. That is, for SO_2, there is usually a single "step" between pre-control nonattainment and post-control attainment. Therefore, for SO_2, with its discernible relationship between emissions and air quality, and significant and immediate air quality improvements, EPA explained in the General Preamble that RFP is best construed as "adherence to an ambitious compliance schedule" (74 FR 13547, April 16, 1992) and is appropriate for the implementation of the 2010 SO_2 NAAQS.

As stated in the April 23, 2014 SO_2 SIP submittal guidance, RFP is satisfied by the strict adherence to an ambitious compliance schedule which is expected to periodically yield significant emissions reductions. The emission limitations and fuel requirements included in 10 CSR 10-6.261 have been modeled to demonstrate attainment of the 2010 SO_2 NAAQS at the existing violating monitor and throughout the Jackson County nonattainment area. Compliance with these new regulatory requirements by January 1, 2017 demonstrates significant progress toward attainment of the SO_2 NAAQS and leads to demonstration of attainment with the 2010 SO_2 NAAQS by the 2018 deadline.

8. OTHER NAA PLAN REQUIREMENTS

8.1. CONTINGENCY MEASURES

Section 172(c)(9) of the CAAA defines contingency measures as such measures in a SIP that are to be implemented in the event that an area fails to make RFP, or fails to attain the NAAQS by the applicable attainment date. Contingency measures are to become effective without further action by the state or the EPA, where the area has failed to (1) achieve RFP or, (2) attain the NAAQS by the statutory attainment date for the affected area. These control measures are to consist of other available control measures that are not included in the control strategy for the NAA SIP for the affected area.

To address contingency measures, the EPA has explained that SO_2 presents special considerations. First, for some of the other criteria pollutants, the analytical tools for quantifying the relationship between reductions in precursor emissions and resulting air quality improvements remains subject to significant uncertainties, in contrast with procedures for directly-emitted pollutants such as SO_2. Second, emission estimates and attainment analyses for other criteria pollutants can be strongly influenced by overly optimistic assumptions about control efficiency and rates of compliance for many small sources. In contrast, the control efficiencies for SO_2 control measures are well understood and are far less prone to uncertainty. Since SO_2 control measures are by definition based on what is directly and quantifiably necessary to attain the 2010 SO_2 NAAQS, it would be unlikely for an area to implement the necessary emission controls yet fail to attain the NAAQS.

In addition, Missouri has an active enforcement program to address violations. Missouri will continue to operate a comprehensive program to identify sources of violations of the SO_2 NAAQS and to undertake an aggressive follow-up for compliance and enforcement, including expedited procedures for establishing enforceable consent agreements pending the adoption of revised SIPs. This is consistent with the approach for the implementation of contingency measures to address the 2010 SO_2 NAAQS as described in EPA's April 23, 2014 Guidance for 1-Hour SO_2 Nonattainment Area SIP Submissions.

To supplement this enforcement program, the Air Program developed contingency steps, including action items and associated time frames, for the Jackson County SO_2 NAA. The contingency steps provide for different levels of corrective responses should the 1-hour SO_2 levels exceed or violate the 1-hour SO_2 standard in any year. Consistent with the contingency steps, the Air Program agrees to adopt and implement the necessary corrective actions in the event that violations of the 1-hour SO_2 standard occur within the Jackson County SO_2 NAA. The implementation of contingency measures will take place as expeditiously as practicable, but in no event later than twenty-four (24) months after the Air Program makes a determination that a violation of the appropriate trigger has occurred, based on quality-assured ambient air quality data that has been uploaded to EPA's Air Quality System (AQS). The contingency steps, which detail the Level I and Level II triggers and corresponding actions to be taken, are included in Table 8.

Adoption of contingency control measures is subject to necessary administrative and legal process requirements. This process will include publication of notices, an opportunity for public hearing and comment, and other measures required by Missouri law.

It is noted that EPA does not require a state to implement contingency measures when occasional exceedances are recorded without violation of the standard. The Air Program's voluntary commitment to initiate a Level I response is intended to prevent future violations of the 1-hour SO_2 standard from ever occurring.

Table 8 - Contingency Steps for the Jackson County SO_2 NAA plan

Contingency Measure Trigger	Action to be Taken
LEVEL I TRIGGER	
A single exceedance of the 1-hour SO_2 NAAQS at any monitor located In the Jackson County SO_2 NAA	The Air Program will evaluate the ambient air quality and determine if adverse emission trends are likely to continue. If so, the Air program will determine what and where controls may be required, as well as the level of emission reductions needed to avoid a violation of the 1-hour SO_2 standard. The evaluation will be completed as expeditiously as possible. This action will be taken no later than 24 months after the Air Program determines a Level I trigger has occurred through quality assured monitoring data that has been uploaded to EPA's Air Quality System (AQS).

LEVEL II TRIGGER	
A monitored violation of the 1-hour SO_2 NAAQS at any monitor located In the Jackson County SO_2 NAA	The Air Program will conduct a thorough analysis to determine appropriate measures to address the cause of the violation and prevent reoccurrence. Analysis shall be completed within 6 months. Selected measures shall be implemented as expeditiously as practicable, with consideration for technical and economic feasibility of the selected measure(s) as well as ease of implementation. This action will be taken no later than 24 months after the Air Program determines a Level II trigger has occurred through quality assured monitoring data that has been uploaded to EPA's Air Quality System (AQS).

8.2. NEW SOURCE REVIEW (NSR)

Part D of title I of the CAAA prescribes the procedures and conditions under which a new major stationary source or major modification may obtain a preconstruction permit in an area designated nonattainment for any criteria pollutant. The nonattainment NSR permitting

requirements in section 172(c)(5) and 173 of the CAAA are among "the requirements of this part". Missouri already has a nonattainment NSR permitting program (10 CSR 10-6.060(7)). The program is applicable to any nonattainment area as designated under section 107 of the CAAA (10 CSR 10-6.020(2)(N)(10)). Therefore, this existing program applies to the construction and modification of major stationary sources of SO_2 that would locate in the Jackson County SO_2 nonattainment area and any other/new 2010 1-hour SO_2NAAQS nonattainment area.

Missouri's nonattainment NSR program ensures that the construction and modification of major stationary sources of SO_2 will not interfere with reasonable further progress toward the attainment of the 2010 SO_2 NAAQS. This is accomplished through applicable regulatory requirements that include, but are not limited to:

- The installation of Lowest Achievable Emissions Rate (LAER) control technology [10 CSR 10-6.060(7)(B)(8)];

- The acquisition of emissions reductions to offset new emissions of nonattainment pollutant(s) [10 CSR 10-6.060(7)(B)(3)];

- Documentation that all major sources owned and operated in the state by the same owner are in compliance with all applicable CAAA requirements [10 CSR 10-6.060(7)(B)(6)];

- A demonstration via an analysis of alternative sites, sizes, production processes, and environmental control techniques shows that the benefits of a proposed source significantly outweigh the environmental and social costs imposed as a result of its location, construction, or modification [10 CSR 10-6.060(7)(B)(9) and 10 CSR 10-6.020(2)(A)(42)]; and

- An opportunity for a public hearing and written comment on the proposed permit [10 CSR 10-6.060(7)(F)].

The nonattainment NSR requirements apply on a pollutant-specific basis with respect to each nonattainment pollutant for which a source has the potential to emit in amounts greater than the applicable major source threshold for the pollutant, i.e., in major amounts [40 CFR §51.165(a)(l)(iv)]. For new sources, in areas that are designated nonattainment for the 2010 SO_2 NAAQS, 100 tons per year (tpy) or more of SO_2 represents a major amount. Similarly, SO_2 nonattainment NSR requirements also apply to any existing major stationary source of SO_2 that proposes a major modification, i.e., a physical change or change in the method of operation that results in a significant net emissions increase (40 tpy or more) of SO_2 [40 CFR §51.165(a)(l)(x)(A)].

8.3. CONFORMITY

General conformity is required by CAAA section 176(c). This section of the CAAA requires that actions by federal agencies do not cause new air quality violations, worsen existing violations, or delay timely attainment of the relevant NAAQS or interim reductions and milestones. General conformity applies to any federal action (e.g., funding, licensing, permitting or approving), other than certain highway and transportation projects, if the action takes place in a nonattainment or maintenance area for any of the six criteria pollutants [ozone, PM, $N0_2$, carbon monoxide, lead or SO_2]. Projects that are Federal Highway Administration (FHWA)/Federal Transit Administration (FTA) projects as defined in 40 CFR §93.101, are

generally not subject to general conformity requirements and are instead subject to transportation conformity. However, per 40 CFR §93.101, general conformity requirements do apply to a federal highway and transit project that does not involve title 23 or title 49 funding but requires FHWA or FTA approval, such as is required for a connection to an Interstate highway or for a deviation from applicable design standards.

The EPA's General Conformity Rule (40 CFR §93.150 to 93.165) establishes the criteria and procedures for determining if a federal action conforms to the SIP. With respect to the 2010 SO_2 NAAQS, federal agencies are expected to continue to estimate emissions for conformity analyses in the same manner as they estimated emissions for conformity analyses under the previous NAAQS for SO_2. The EPA's General Conformity Rule includes the basic requirement that a federal agency's general conformity analysis be based on the latest and most accurate emission estimation techniques available 40 CFR §93.159(b). When updated and improved emissions estimation techniques become available, the EPA expects the federal agency to use these techniques.

Transportation conformity is required under CAAA section 176(c) to ensure that federally supported highway and transit project activities are consistent with ("conform to") the purpose of the SIP. Transportation conformity applies to areas that are designated nonattainment, and those areas redesignated to attainment after 1990 ("maintenance areas" with plans developed under CAAA section 175A) for transportation-related criteria pollutants. Due to the relatively small, and decreasing, amounts of sulfur in gasoline and on-road diesel fuel, the EPA' s transportation conformity rules provide that they do not apply to SO_2 unless either the EPA Regional Administrator or the director of the state air agency has found that transportation-related emissions of SO_2 as a precursor are a significant contributor to a PM2.5 nonattainment problem, or if the SIP has established an approved or adequate budget for such emissions as part of the RFP, attainment or maintenance strategy [40 CFR §93.102(b)(l), (2)(v)]. Missouri has not identified SO_2 as a significant contributor to a PM2.5 NAA problem and Missouri has not established an approved or adequate budget for SO_2. Therefore, transportation conformity rules continue to not apply to SO_2 for Missouri.

9. PUBLIC PARTICIPATION

In accordance with section 110(a)(2) of the CAAA, the department is required to hold a public hearing prior to adoption of this SIP revision and the subsequent submittal to the EPA. The department will notify the public and other interested parties of an upcoming public hearing and comment period thirty (30) days prior to holding such hearing for this SIP revision as follows:

- Notice of availability of the nonattainment area plan for Jackson County was posted on the Department of Natural Resources' Air Pollution Control Program website on May 22, 2015: http://www.dnr.mo.gov/env/apcp/stateplanrevisions.htm
- The public hearing to receive comments on this nonattainment area plan was held on June 25, 2015, beginning at 9:00 am at the Governor's Office Building, Conference Room 450, 200 Madison Street, Jefferson City, MO 65101.
- Notification for the public hearing and solicitation for public comment for the nonattainment area plan for Jackson County was posted May 22, 2015, on the department website at http://dnr.mo.gov/env/apcp/public-notices.htm Per standard procedure, notices are posted online at least 30 days prior to public hearing. The

public comment period closed on July 2, 2015, seven (7) days after the public hearing.

Appendix H includes a copy of the notice of availability and a copy of the notification of public hearing and solicitation for public comment. The remaining public participation documents, including but not limited to the transcript from the public hearing and the response to comments, will be included in the SIP submittal package sent to EPA.

10. CONCLUSION

The department hereby asserts that the State has met its CAAA section 191(a) obligation to submit a plan for the Jackson County SO_2 Nonattainment Area SIP under the 2010 SO_2 NAAQS via this SIP submittal. Furthermore, this document demonstrates attainment of the 2010 SO_2 NAAQS though air dispersion modeling of an effective control strategy as well as complying with requirements of section 172(c) in regard to this standard for the Jackson County SO_2 Nonattainment Area.

The Missouri Air Conservation Commission **ADOPTS** the following action on this 3rd day of August, 2015:

Missouri State Implementation Plan Revision: Nonattainment Area Plan for the 2010 1-Hour Sulfur Dioxide National Ambient Air Quality Standard – Jackson County Sulfur Dioxide Nonattainment Area

_____, Chairman

_____, Vice Chairman

_____, Member

_____, Member

_____, Member

_____, Member

_____, Member

_____, Member

Anti-Backsliding Demonstration for the consolidation of
10 CSR 10-6.260 Restriction of Emission of Sulfur Compounds
with new rule
10 CSR 10-6.261 Control of Sulfur Dioxide Emissions

I. Purpose

To streamline requirements and reduce confusion for Missouri's sulfur dioxide (SO_2) emission sources, the Missouri Department of Natural Resources' Air Pollution Control Program (Air Program) is creating a new rule 10 CSR 10-6.261 *Control of Sulfur Dioxide Emissions* that includes all necessary SO_2 requirements, both existing and new. 10 CSR 10-6.261 sets enforceable environmental conditions and limits necessary to comply with the EPA's new 1-hour SO_2 National Ambient Air Quality Standard (NAAQS) and retains necessary emission conditions and limits from 10 CSR 10-6.260 *Restriction of Emission of Sulfur Compounds*. In this document, 10 CSR 10-6.261 is referred to as 10 CSR 10-6.261, and 10 CSR 10-6.260 is referred to as 10 CSR 10-6.260.

This document demonstrates that the consolidation of existing rule 10 CSR 10-6.260 with new rule 10 CSR 10-6.261 will not negatively impact the state's ambient air quality. 10 CSR 10-6.260, which is a rule that consolidated earlier air regulations and has limits that have been in place prior to any sulfur dioxide (SO_2) National Ambient Air Quality Standard (NAAQS), contains requirements for limiting emissions of sulfur compounds. In this consolidation effort, obsolete requirements currently found in 10 CSR 10-6.260 are being eliminated and requirements that cannot be replaced with equivalent or more stringent requirements are being carried forward into the new rule, 10 CSR 10-6.261. In addition, 10 CSR 10-6.261 adds requirements for SO_2 sources impacted by the initial round of nonattainment designations for the 1-hour SO_2 NAAQS. The Air Program intends to rescind 10 CSR 10-6.260 once the new rule is in effect. While the requirements being carried forward from 10 CSR 10-6.260 are not necessarily protective of the 1-hour SO_2 NAAQS, these requirements are necessary to maintain the existing level of SO_2 emissions control in portions of the state outside the SO_2 NAAQS nonattainment areas. The new rule 10 CSR 10-6.261 will then serve as the state's sulfur dioxide rule that can be amended as needed to comply with future phases of implementation of the 1-hour SO_2 NAAQS.

The purpose of this document is to 1) specify which 10 CSR 10-6.260 provisions are being eliminated and which ones are being carried forward as is into 10 CSR 10-6.261 and 2) address the department's obligation under Clean Air Act (CAA) Section 110(l) by demonstrating that 10 CSR 10-6.260 provisions being eliminated would not have an adverse impact on air quality. The State Implementation Plans for the Jackson and

Jefferson County nonattainment areas being submitted in conjunction with this rulemaking demonstrate that the new requirements added to 10 CSR 10-6.261 ensure compliance with the 1-hour SO_2 NAAQS in the nonattainment areas; these 1-hour SO_2 NAAQS requirements are not addressed in this document.

II. Background

In June 2010, the U.S. Environmental Protection Agency (EPA) established a new 1-hour primary sulfur dioxide standard of seventy-five (75) parts-per-billion (ppb). SO_2 is one of EPA's six criteria air pollutants. Criteria pollutants are commonly found air pollutants that, at high enough levels, can harm human health and the environment.

On August 5, 2013, EPA finalized the first round of nonattainment areas per the 2010 1-hour SO_2 NAAQS. In accordance with department's Air Pollution Control Program's final recommendation, portions of Jackson and Jefferson Counties in Missouri are now designated as SO_2 nonattainment areas based on monitored violations of the SO_2 NAAQS during 2007-2009.

The effective date of the August 5, 2013 rule finalizing SO_2 nonattainment area designations is October 4, 2013, a date which triggers the clock for future State Implementation Plan (SIP) submittals. Specifically, the department is required to submit attainment SIPs for the initial SO_2 nonattainment areas by April 6, 2015. These attainment SIPs must demonstrate the nonattainment areas will be in compliance with the 2010 1-hour SO_2 NAAQS no later than the October 4, 2018 attainment deadline. 10 CSR 10-6.261 *Control of Sulfur Dioxide Emissions* sets enforceable environmental conditions and limits for the 1-hour SO_2 standard and will be part of the SIPs for the nonattainment areas.

While Missouri has no history of SO_2 nonattainment areas under any previous SO_2 NAAQS, the Air Pollution Control Program does have an existing rule 10 CSR 10-6.260 *Restriction of Emission of Sulfur Compounds* , most of which is incorporated into the Missouri SIP. 10 CSR 10-6.260 contains requirements for limiting emissions of sulfur compounds, including SO_2, sulfur trioxide, and sulfuric acid. The rule has limits and conditions whose origins date back to the 1960s, prior to the federal CAA, and some of its provisions are outdated. 10 CSR 10-6.260 is not being relied on in the attainment demonstration for the 2010 1-hour SO_2 nonattainment areas.

III. Demonstration

The following is a list of requirements currently found in 10 CSR 10-6.260 that are: A) Not being moved into 10 CSR 10-6.261 since they are no longer necessary or applicable. These include obsolete provisions and those for which equivalent or more stringent SO_2 requirements have been identified, or B) Retained in the new rule since they cannot be replaced with an equivalent or more restrictive requirement. These provisions are not

necessarily protective of the 1-hour SO_2 NAAQS but ensure the existing level of SO_2 control in portions of the state outside SO_2 nonattainment areas.

A) Not being moved into 10 CSR 10-6.261 since they are no longer necessary or applicable. These include obsolete provisions and those for which equivalent or more stringent SO_2 requirements have been identified.

1) Removal of sulfuric acid/sulfur trioxide concentration limits. 10 CSR 10-6.260 sets concentration limits of 70 mg/m^3 of sulfuric acid and sulfur trioxide for existing sources and 35 mg/m^3 for new sources in paragraphs (3)(A)1. and 2. The sulfuric acid and sulfur trioxide limits area attributed to regulations applicable to sulfuric acid plants and kraft pulp mills promulgated under section 111(d) of the CAA. A review of Missouri's inventory shows no existing sources in these categories. While Missouri may have had applicable sources in the past, those sources are no longer operating and Missouri has no record of submitting 111(d) plans for either source category. Title V permits that simply list 10 CSR 10-6.260 as being an applicable regulation since the source has sulfur emissions may, as a result, have set limits for these compounds. However, any reference to these limits in Title V permits is unnecessary. Any new sources in these source categories would be subject to the federal New Source Performance Standards (NSPS) requirements.

In addition to having no sources in Missouri and no 111(d) plan, the sulfuric acid and sulfur trioxide concentration limits are not relied upon in demonstrating compliance with the 1-hour SO_2 NAAQS. For these reasons the sulfuric acid and sulfur trioxide limits are not incorporated into the new rule and removing them will not have an adverse effect on air quality.

Since the sulfuric acid and sulfur trioxide limits fall under section 111(d) and are not approved in the Missouri SIP, the anti-backsliding provisions of CAA section 110(l) do not apply. This discussion is included in this demonstration for completeness.

2) Removal of sources that no longer operate or are covered by another enforceable mechanism. The following is a list of named sources found in Table I or Table II of 10 CSR 10-6.260 that are not being carried over to the new rule. They are removed since they no longer operate or are subject to a state and/or federal SIP enforceable agreement. Should any of these sources that ceased operation choose to restart, they would have to go through the New Source Review process. A copy of, or link to, the consent agreement, consent decree, and related closure documents are included in the Appendix.

Doe Run Company's Glover smelter shut down in 2003. The last actual production occurred in November 2003 and was marked as out of business in January 2009, just over five (5) years after the date of last actual production. Their last EIQ was for 2008. Since it has been in excess of five (5) years since any production occurred at this installation,

Doe Run Company would be required to obtain a construction permit prior to resumption of production.

Source	Reason for removal
City Utilities – James River Plant	SO_2 Consent Agreement – 67 FR 13570
Aquila (St. Joseph Light & Power) – Lake Road Plant	SO_2 Consent Decree – 66 FR 57389
Doe Run Company, Lead Smelter and Refinery - Glover, Missouri	Ceased secondary smelting operation in late 2003
Doe Run Company, Smelter – Herculaneum, Missouri	Ceased operation in December 2013 as described in federal consent decree

3) Compliance, monitoring, reporting, and recordkeeping requirements. 10 CSR 10-6.260 has monitoring, reporting, recordkeeping, and compliance scattered among the various subsections of the rule. The new rule simplifies the requirements for Continuous Emission Monitoring (CEM), reporting, recordkeeping, and expands the list of test methods. The new rule simplifies the requirements in all these areas by placing them into appropriate areas in the rule.

Compliance

Compliance with 10 CSR 10-6.260 is determined in three (3) ways: by source testing, by providing the director such data as s/he may reasonably require, or by other methods approved by the staff director in advance. Source testing to determine compliance with sulfur dioxide emission limits is further directed to 10 CSR 10-6.030(6) *Sampling Methods for Air Pollution Sources*. Section 10 CSR 10-6.030(6) is a reference to 40 CFR part 60, Appendix A Test Methods, Method 6-*Determination of Sulfur Dioxide Emissions from Stationary Sources*.

In 10 CSR 10-6.261, the compliance test methods are expanded to include additional methods beyond just Method 6. The additional test methods allow sources to more accurately determine their sulfur dioxide emissions, especially the inclusion of Methods 6A, 6B, and 6C. The following are the test methods found in the new rule.

Method 1: Sample and velocity traverses for stationary sources;
Method 2: Determination of stack gas velocity and volumetric flow rate (Type S pitot tube);
Method 3: Gas analysis for the determination of dry molecular weight:
Method 4: Determination of moisture content in stack gases;
Method 6: Determination of Sulfur Dioxide Emissions from Stationary Sources;
Method 6A: Determination of Sulfur Dioxide, Moisture, and Carbon Dioxide from Fuel Combustion Sources;
Method 6B: Determination of Sulfur Dioxide and Carbon Dioxide Daily Average Emissions from Fossil Fuel Combustion Sources;
Method 6C: Determination of Sulfur Dioxide Emissions from Stationary Sources (Instrumental Analyzer Procedure); and/or

Method 8: Determination of sulfuric acid mist and sulfur dioxide emissions from stationary sources

In 10 CSR 10-6.260 the director may request sources to furnish data to determine whether compliance is being met. This requirement is carried forward into 10 CSR 10-6.261.

10 CSR 10-6.261 clarifies that the director and U.S. Environmental Protection Agency must approve the method and the method must be incorporated in the SIP.

10 CSR 10-6.260 also requires continuous emission monitoring systems (CEMS) for Ameren's Labadie and Sioux plants and for the lead smelters and refiners. The use of CEMS does not change with the new rule. Those sources will continue to use CEMS for compliance purposes in 10 CSR 10-6.261.

10 CSR 10-6.261 allows the use of fuel delivery records to demonstrate compliance with the rule.

The compliance requirements are equivalent to or stricter than that found in 10 CSR 10-6.260.

Monitoring

10 CSR 10-6.260 requires the use of CEMS for Ameren's Labadie and Sioux plants and for the lead smelters and refiners. The CEMS for Ameren shall be certified in accordance with Performance Specifications 2 and 3, 40 CFR part 60, Appendix B. They shall also be operated and maintained in accordance with 40 CFR 60.13(d) and (e)(2).

In 10 CSR 10-6.261, all CEMS shall follow all the requirements in 40 CFR 75 and/or 40 CFR 60, Appendices B and F. The only exception to this is that CEMS for lead smelters and refiners is copied verbatim from 10 CSR 10-6.260 into the new rule. This monitoring requirement is equivalent to or stricter than that found in 10 CSR 10-6.260.

Reporting

10 CSR 10-6.260 outlines the reporting requirements in section (4). As described in the rule text, only sources subject to subparagraph (3)(B)3.A. and paragraph (3)(C)3. are required to submit written reports of excess emissions. The sources covered are indirect heating sources located in Franklin, Jefferson, St. Louis, St. Charles Counties, or City of St. Louis for installations with a capacity of two thousand (2,000) million or more Btus per hour and the lead smelters. They are only required to report those excess emissions on a quarterly basis. No other sources are required to report, even if they do have excess emissions.

In 10 CSR 10-6.261 all sources subject to the rule are required to report any excess emissions other than startup, shutdown, and malfunction (SSM) emissions already required to be reported under 10 CSR 10-6.050 *Start-Up, Shutdown, and Malfunction Conditions*. Excess emissions not covered under 10 CSR 10-6.050 are to be reported

within thirty (30) days following the end of the quarter. This reporting requirement is more strict than found in 10 CSR 10-6.260.

Recordkeeping

10 CSR 10-6.260 does not require any source to keep records to document changes in a source's operating procedures, performance test results, monitoring results, etc.

In 10 CSR 10-6.261 sources are required in section (4) to keep appropriate records on source activities. This includes maintaining records on: modifications to the sources operating procedures to prevent or minimize excess emissions; records of performance tests, CEM information, and fuel sampling tests; and monitoring data, calibration checks, and adjustments and maintenance to systems. In addition, records are to be maintained on fuel supplier certification information to certify the fuel sulfur content on deliveries. These recordkeeping requirements are more strict than found in 10 CSR 10-6.260.

B) Retained in the new rule since they cannot be replaced with an equivalent or more restrictive requirement. These provisions are not necessarily protective of the 1-hour SO_2 NAAQS but ensure the existing level of SO_2 control in portions of the state outside SO_2 nonattainment areas.

1) Exemption for small sources. 10 CSR 10-6.260 exempts indirect heating sources with a total rated capacity less than or equal to three hundred fifty thousand British thermal units (350,000 Btus) per hour actual heat input. With the removal of the indirect and direct heating sources categories, the exemption is changed so that the exemption applies to all small sources, direct or indirect. Small direct heating sources that now are exempt in 10 CSR 10-6.261 due to their size, would have been subject to the 2,000/500 ppmv concentration limit in 10 CSR 10-6.260. However, as described previously in this demonstration, the Air Program has shown that these small sources are using fuels that result in concentration limits well below 500 ppmv. This exemption in 10 CSR 10-6.261 is equivalent to 10 CSR 10-6.260.

2) Exemption for source units subject to an applicable sulfur dioxide emission limit under 10 CSR 10-6.070 *New Source Performance Regulations*. 10 CSR 10-6.260 exempts from the rule in paragraph (1)(A)1. emission sources subject to an applicable sulfur compound emission limit under 10 CSR 10-6.070 *New Source Performance Regulations*. This exemption is being retained in 10 CSR 10-6.261, but modified to require that the sulfur dioxide be more restrictive to be an exemption and clarified that the exemption is only applicable on a unit by unit basis and does not exempt the entire source. A sulfur-in-fuel limit is also being added to account for an NSPS that contain such provisions. This exemption in 10 CSR 10-6.261 is equivalent to or stricter than 10 CSR 10-6.260 because sources are subject to the more restrictive sulfur dioxide or sulfur-in-fuel limit.

3) Exemption for sources using natural gas and LPG from emission limits. 10 CSR 10-6.260 exempts combustion equipment in paragraph (1)(A)2. that uses exclusively

pipeline grade natural gas as defined in 40 CFR 72.2 or liquefied petroleum gas (LPG) as defined by ASTM or any combination of these fuels. This exemption is retained in 10 CSR 10-6.261 for emission sources with units fueled exclusively with natural gas or LPG. These sources will however be subject to reporting and recordkeeping, and test method requirements. This exemption in 10 CSR 10-6.261 is equivalent to or stricter than 10 CSR 10-6.260 because sources must now maintain fuel delivery and certification records to demonstrate compliance.

4) Distinction between indirect and direct heating sources. 10 CSR 10-6.260 sets separate sulfur dioxide limits based on the source's classification as either a direct or indirect heating source. Per 10 CSR 10-6.020 *Definitions and Common Reference Tables*, an indirect heating source is defined as "A source operation in which fuel is burned for the primary purpose of producing steam, hot water, or hot air, or other indirect heating of liquids, gases, or solids where, in the course of doing so, the products of combustion do not come into direct contact with process materials." Though there is no explicit definition of direct heating source in 6.020, the converse dictates that a direct heating source is implicitly defined as a heating source that does not satisfy the definition of an indirect heating source or a heating source where the products of combustion do come into direct contact with process materials.

Per existing language in 10 CSR 10-6.260, direct heating sources are primarily subject only to the provisions of subsection (3)(A) and indirect heating sources are primarily subject only to the provisions of subsection (3)(B). Subsection (3)(A) of 10 CSR 10-6.260 limits the emission into the atmosphere gases containing no more than 2,000 ppmv of SO_2 for existing direct heating sources and no more than 500 ppmv of SO_2 for new direct heating sources. Indirect heating sources are currently exempt from Subsection (3)(A) of 10 CSR 10-6.260. Subsection (3)(B) limits the emissions of SO_2 from indirect heating sources in pounds of SO_2 per million BTUs. Indirect heating sources are subject to a 2.3 and 8.0 lbs/MMBtu limits in subparagraph (3)(B)2.A., part (3)(B)3.A.(I), and part (3)(B)3.B.(II), depending on the sources location in the state. Named sources found in Table I are subject to specific lbs/MMBtu limits. Direct heating sources are currently exempt from Subsection (3)(B) of 10 CSR 10-6.260. The 10 CSR 10-6.260 limits of 2.3 and 8.0 lbs/MMBtu are being retained in 10 CSR 10-6.261 since an equivalent or more stringent federal or state standard to replace these limits could not be identified. (see discussion *St. Louis and Outstate 2.3 lbs/MMBtu and 8.0 lbs/MMBtu sulfur dioxide emission limits* in this demonstration). This requirement in 10 CSR 10-6.261 is equivalent to 10 CSR 10-6.260.

5) 2,000 and 500 ppmv sulfur dioxide concentration limits. 10 CSR 10-6.260 sets concentration limits of 2,000 and 500 part per million by volume (ppmv) of sulfur dioxide for existing and new sources at paragraphs (3)(A)1. and 2. While Missouri has no history of SO_2 nonattainment areas under any previous SO_2 NAAQS, the Air Pollution Control Program does have an existing rule 10 CSR 10-6.260 *Restriction of Emission of Sulfur Compounds*, most of which is incorporated into the Missouri SIP. 10 CSR 10-6.260 contains requirements for limiting emissions of sulfur compounds, including SO_2, sulfur trioxide, and sulfuric acid. The rule has limits and conditions whose origins date

back to the 1960s, prior to the federal CAA, and some of its provisions are outdated. 10 CSR 10-6.260 is not being relied on in the attainment demonstration for the 2010 1-hour SO_2 nonattainment areas. We will be changing from the use of ppmv limits to a more recognizable emission limit of fuel sulfur content measured in parts per million by weight. This change does not make the limit stricter. The parts per million by weight is a more common form of describing the fuel sulfur content and is consistent with how sulfur content is listed on bills of lading. A bill of lading is one method to demonstrate compliance with the regulation. This requirement in 10 CSR 10-6.261 is equivalent to 10 CSR 10-6.260.

6) St. Louis and Outstate 2.3 lbs/MMBtu and 8.0 lbs/MMBtu sulfur dioxide emission limits. 10 CSR 10-6.260 sets sulfur dioxide emission limits for indirect heating sources at 2.3 lbs/MMBtu and 8.0 lbs/MMBtu in subparagraph (3)(B)2.A., part (3)(B)3.A.(I), and part (3)(B)3.B.(II), for the St. Louis area and outstate area, respectively. These limits have origins dating back to the 1960s, prior to the federal CAA. While these emission limits are not protective of the 1-hour SO_2 NAAQS, the emission limits need to be retained since they are part of the SIP and do provide an upper limit on sulfur dioxide emissions and an equivalent or more stringent federal or state standard to replace these limits could not be identified. The new rule retains the use of those sulfur dioxide emission limits. These limits are applicable to all sources, not just indirect heating sources, as described in the new rule. This requirement in 10 CSR 10-6.261 is stricter than that found in 10 CSR 10-6.260 because it applies to more sources.

7) Two percent (2%) and four percent (4%) sulfur coal and fuel oil limits. 10 CSR 10-6.260 has a 2% and 4% sulfur limit in part (3)(B)3.B.(I) for indirect heating sources located in Franklin, Jefferson, St. Louis, St. Charles Counties, or City of St. Louis with a capacity of less than two thousand (2,000) million Btus per hour. While these limits are not protective of the 1-hour SO_2 NAAQS, these limits are retained in 10 CSR 10-6.261 since an equivalent or more stringent federal or state standard to replace these limits could not be identified. This requirement in 10 CSR 10-6.261 is equivalent to 10 CSR 10-6.260.

8) Named sources retained in 10 CSR 10-6.261. 10 CSR 10-6.260 has named sources with specific SO_2 emission limits found in (3)(B)2.B., (3)(B)3.A.(II), and (3)(C)1. While those emission limits are not necessarily protective of the 1-hour SO_2 NAAQS, the emission limits need to be retained since they are part of the SIP and maintain the existing level of sulfur dioxide emissions control. These sources are listed in Table II of 10 CSR 10-6.261. These sources may be subject to new limits as future rounds of nonattainment designations for the 1-hour SO_2 NAAQS are implemented. If that is the case, then these older emission limits would be replaced with newer, more stringent sulfur dioxide emission limits (i.e., these sources would be removed from Table II and inserted into Table I with a limit necessary to comply with the 1-hour SO_2 NAAQS). This requirement in 10 CSR 10-6.261 is equivalent to 10 CSR 10-6.260.

Source	Averaging Time	Emission Limit per Unit (Pounds Sulfur Dioxide Per Million Btus Actual Heat Input)
Ameren Missouri – Sioux Plant	Daily average	4.8
Doe Run Company – Buick Resource Recycling Facility	1 hour test repeated 3 times	8,650 pounds SO_2/hr
Empire District Electric Company – Asbury Plant	3 hours	12.0
Kansas City Power and Light Co. – Montrose Generating Station	24 hours	3.9
New Madrid Power Plant – Marston (formerly Associated Electric Cooperative)	3 hours	10.0
Thomas Hill Energy Center Power Division – Thomas Hill (formerly Associated Electric Cooperative)	3 hours	8.0
University of Missouri (MU) – Columbia Power Plant	3 hours	8.0
Associated Electric Cooperative, Inc. – Chamois (formerly Central Electric Power Cooperative)	3 hours	6.7

IV. New 1-hour SO_2 NAAQS limits

New, lower limits to address the 1-hour SO_2 NAAQS for named sources located in the nonattainment areas are found in Table I of the new rule. These limits are expected to be either unit specific and/or specific to the entire source and are based upon modeling results. The following existing sources found in 10 CSR 10-6.260 have new 1-hour limits in 10 CSR 10-6.261. The Jackson and Jefferson County nonattainment area SIPs will address the adequacy of the new 1-hour limits.

Source	New 1-hour SO_2 limit (Pounds SO_2 per Hour)	Previous SO_2 limit
Ameren Missouri – Labadie Plant	40,837	4.8 lbs/MMBtu (daily average)
Independence Power and Light – Blue Valley Station Unit 1	Natural gas	6.3lbs/MMBtu (3-hour average)

Unit 2 Unit 3	Natural gas Natural gas	
Kansas City Power and Light Co. – Hawthorn Station Boiler #5 Combustion Turbine 7 Combustion Turbine 8 Combustion Turbine 9	 785 Natural gas Natural gas Natural gas	0.12 lbs/MMBtu (30 day rolling average)
Kansas City Power and Light Co. – Sibley Generating Station Boiler #1 Boiler #2 Boiler #3	 1,468.17 1,447.01 10,632.02	9.0 lbs/MMBtu (3-hour average)
Veolia Energy Kansas City Inc. – Grand Ave. Station Boiler 1A Boiler 6 & 8 Boiler 7	 0.5 351.8 0.5	7.1 lbs/MMBtu (3-hour average)

V. Conclusion

This document demonstrates that the consolidated new rule 10 CSR 10-6.261 maintains existing rule requirements from 10 CSR 10-6.260 that are not being replaced with equivalent or more restrictive requirements. It also justifies removing 10 CSR 10-6.260 rule requirements that are no longer deemed necessary or applicable (e.g. facility shutdowns, requirements superseded by more stringent requirements, etc.). The obsolete provisions from 10 CSR 10-6.260 that are not being carried forward to 10 CSR 10-6.261 will be removed from the Missouri SIP with no adverse impact on air quality.

The new rule 10 CSR 10-6.261 will then serve as the state's sulfur dioxide rule that can be amended as needed to comply with any future SO_2 actions.

Appendix

City Utilities – James River Plant	Springfield	SO_2 Consent Agreement
St. Joseph Light & Power – Lake Road Plant	St. Joseph	SO_2 Consent Decree
Doe Run Company, Lead Smelter And Refinery	Herculaneum	Consent Decree

Bechtel, Cheri

From: Missouri DNR <MODNR@public.govdelivery.com>
Sent: Friday, May 22, 2015 2:33 PM
To: Lovejoy, Victoria; Alexander, Jennifer; Archer, Larry; Moore, Kyra; Bungart, Renee; Bechtel, Cheri; Terlizzi, Gena; Vit, Wendy
Subject: Courtesy Copy: Missouri Air Conservation Commission - June 25, 2015 Public Hearing

This is a courtesy copy of an email bulletin sent by Cheri Bechtel.

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MISSOURI DEPARTMENT OF NATURAL RESOURCES

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MISSOURI AIR CONSERVATION COMMISSION
WILL HOLD PUBLIC HEARING

JEFFERSON CITY, MO -- The Missouri Air Conservation Commission will hold a public hearing on Thursday, June 25, 2015 beginning at 9 a.m. at the Governor Office Building, 200 Madison Street, Conference Room 450, Jefferson City, Missouri. The commission will hear testimony related to the following proposed action(s):

* 10 CSR 10-6.261 (New Rule) Control of Sulfur Dioxide Emissions

This new rule will set enforceable environmental conditions and emission limits necessary to address the U.S. Environmental Protection Agency's 1-hour sulfur dioxide (SO_2) National Ambient Air Quality Standard (NAAQS) of 75 parts per billion (ppb) [75 Federal Register (FR) 35520, June 22, 2010]. The rule is a core component of the Missouri State Implementation Plans (SIPs) for the Jackson and Jefferson County SO_2 nonattainment areas. In addition, this proposed rule incorporates all necessary existing provisions from 10 CSR 10-6.260 Restriction of Emission of Sulfur Compounds (i.e., provisions in place prior to the 1-hour SO_2 NAAQS) in order to consolidate SO_2 requirements and reduce confusion for Missouri's SO_2 emission sources.

* 10 CSR 10-6.260 (Rescission) Restriction of Emission of Sulfur Compounds

This rulemaking will rescind the current rule. The department's Air Pollution Control Program is proposing a new sulfur dioxide (SO_2) rule, 10 CSR 10-6.261 Control of Sulfur Dioxide Emissions, that addresses requirements for sources affected by the U.S. Environmental Protection Agency's initial 1-hr SO_2 National Ambient Air Quality Standard nonattainment designations. That new rule also

carries forward requirements as is from 10 CSR 10-6.260 needed to maintain existing levels of SO_2 control in areas outside nonattainment areas.

The above rule action will be submitted to the U.S. Environmental Protection Agency for removal from the Missouri State Implementation Plan.

* Missouri State Implementation Plan Revision –Nonattainment Area Plan for the 2010 1-Hour Sulfur Dioxide National Ambient Air Quality Standard – Jackson County Sulfur Dioxide Nonattainment Area

The main purpose of this SIP revision is to address Clean Air Act Amendments of 1990 (CAAA) section 172(c) and section 191(a) plan requirements as applicable to the Jackson County 2010 1-Hour Sulfur Dioxide (SO_2) Nonattainment Area (NAA). The plan's main control strategy includes the reduction of SO_2 emissions by 95 percent from the largest source in the NAA. The plan also relies on SO_2 emission limits for several other large sources in the area through federal regulation or state rulemaking. All emission limitations necessary for demonstrating compliance will be enforceable through the Missouri SO_2 rulemaking, 10 CSR 10-6.261, Control of Sulfur Dioxide Emissions.

If the Commission adopts the action(s), it will be the Department's intention to submit the action(s) to the U.S. Environmental Protection Agency to be included in Missouri's State Implementation Plan unless otherwise noted above.

Documents for the above item(s) will be available for review at the Missouri Department of Natural Resources, Air Pollution Control Program, 1659 Elm Street, Jefferson City, (573) 751-4817 and in the Public Notices section of the program web site http://dnr.mo.gov/env/apcp/public-notices.htm. This information will be available at least 30 days prior to the public hearing date.

The Department will accept written or email comments for the record until 5 p.m. on July 2, 2015. Please send written comments to Chief, Air Quality Planning Section, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176. Email comments may be submitted via the program web site noted above. All written and email comments and public hearing testimony will be equally considered.

Citizens wishing to speak at the public hearing should notify the secretary to the Missouri Air Conservation Commission, Missouri Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, Missouri 65102-0176, or telephone (573) 526-3420. The Department requests persons intending to give verbal presentations also provide a written copy of their testimony to the commission secretary at the time of the public hearing.

Persons with disabilities requiring special services or accommodations to attend the meeting can make arrangements by calling the Program directly at (573) 751-4817, the Division of Environmental Quality's toll free number at (800) 361-4827, or by writing two weeks in advance of the meeting to: Missouri Department of Natural Resources, Air Conservation Commission Secretary, P.O. Box 176, Jefferson City, MO 65102. Hearing impaired persons may contact the program through Relay Missouri, (800) 735-2966.

You are subscribed to the Air Public Notices topic for Missouri Department of Natural Resources. This information has recently been updated, and is now available at the link below. Thank you for your interest in the Air Public Notices.

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Rulemakings on Public Notice

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The Missouri Department of Natural Resources filed the following proposed rulemakings with the secretary of state's office and comments are being accepted as noted at the end of the proposed rulemaking under the *Notice of Public Hearing and Notice to Submit Comments* heading. To submit comments electronically, use the links below the rule or to **submit written comments** see the address below.

10 CSR 10-6.261 Control of Sulfur Dioxide Emissions

This new rule will set enforceable environmental conditions and emission limits necessary to address the U.S. Environmental Protection Agency's (EPA's) 1-hour sulfur dioxide (SO_2) National Ambient Air Quality Standard (NAAQS) of 75 parts per billion (ppb) [75 Federal Register (FR) 35520, June 22, 2010]. The rule is a core component of the Missouri State Implementation Plans (SIPs) for the SO_2 nonattainment areas in Jackson and Jefferson counties. In addition, this proposed rule incorporates all necessary existing provisions from 10 CSR 10-6.260 Restriction of Emission of Sulfur Compounds (i.e., provisions in place prior to the 1-hour SO_2 NAAQS) in order to consolidate SO_2 requirements and reduce confusion for Missouri's SO_2 emission sources.

Proposed Rulemaking - Published in May 15, 2015, *Missouri Register*

Fiscal Notes

Rulemaking Detail

Submit comments now
Submit written comments

Comments on this rulemaking will be accepted through close of business July 2, 2015.

10 CSR 10-6.260 Restriction of Emission of Sulfur Compounds

This rulemaking will rescind the current rule. The department's Air Pollution Control Program is proposing a new sulfur dioxide (SO_2) rule, 10 CSR 10-6.261 Control of Sulfur Dioxide Emissions, that addresses requirements for sources affected by the U.S. Environmental Protection Agency's initial 1-hr SO_2 National Ambient Air Quality Standard nonattainment designations. That new rule also carries forward requirements as is from 10 CSR 10-6.260 needed to maintain existing levels of SO_2 control in areas outside nonattainment areas.

Proposed Rulemaking - Published in May 15, 2015, *Missouri Register*

Rulemaking Detail

Submit comments now
Submit written comments

Comments on this rulemaking will be accepted through close of business July 2, 2015.

Submit written comments about any rule development to:
Chief, Air Quality Planning Section
Missouri Department of Natural Resources
Air Pollution Control Program
P.O. Box 176
Jefferson City, MO 65102-0176

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State Plan Actions

On Public Notice

Missouri State Implementation Plan Revision - Infrastructure Elements for the 2012 Annual $PM_{2.5}$ Standard

This plan addresses infrastructure elements for the 2012 Annual Fine Particulate Matter ($PM_{2.5}$) National Ambient Air Quality Standard (NAAQS), as required by Clean Air Act Section 110. The plan provides for the implementation, maintenance, and enforcement of this standard for all areas of the state. Missouri is demonstrating it has adequate resources and authority to implement the 2012 Annual $PM_{2.5}$ NAAQS through state laws and regulations. This plan is administrative in nature and does not establish any new requirements.

Infrastructure Elements for the 2012 Annual $PM_{2.5}$ Standard

Submit Comments Now

A public hearing is scheduled for this plan action on August 27, 2015. Comments about this plan action will be accepted through close of business on September 3, 2015.

Proposed Options for Area Boundary Recommendations for the 2010 1-Hour Sulfur Dioxide Standard: July 2016 Designations

The purpose of this draft document is to solicit public comment on possible recommendations for area designations (e.g., attainment, nonattainment, unclassifiable) for the 2010 1-hour SO_2 standard. This document addresses four parts of the State of Missouri: the areas surrounding the Sikeston Power Station, Sibley Generating Station, Ameren Labadie Energy Center and the SO_2 monitor located in Iron County, Missouri. The proposed options are based on technical evaluations of these areas using air quality modeling and monitoring data. The U.S. Environmental Protection Agency (EPA) identified these four areas as meeting the criteria specified in the March 2, 2015 Federal Consent Decree for the next round of SO_2 designations. The Air Program intends to submit recommendations to the EPA in September 2015, and EPA will make a final decision on designations for these areas by July 2, 2016. This action will not be submitted for inclusion in the Missouri State Implementation Plan.

Proposed Options for Area Boundary Recommendations for the 2010 1-Hour Sulfur Dioxide Standard

Appendix A
Appendix B
Appendix C
Appendix D
Appendix E
Appendix F

Submit Comments Now

A public hearing is scheduled for this plan action on August 27, 2015. Comments about this plan action will be accepted through close of business on September 3, 2015.

Proposed for Adoption

Missouri State Implementation Plan Revision –Nonattainment Area Plan for the 2010 1-Hour Sulfur Dioxide National Ambient Air Quality Standard – Jackson County Sulfur Dioxide Nonattainment Area

The main purpose of this SIP revision is to address Clean Air Act Amendments of 1990 (CAAA) section 172(c) and section 191(a) plan requirements as applicable to the Jackson County 2010 1-

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P.O. Box 176
Jefferson City, MO 65102
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Report an Environmental Concern

Meet the Air Pollution Control Program Director

Hour Sulfur Dioxide (SO_2) Nonattainment Area (NAA). The plan's main control strategy includes the reduction of SO_2 emissions by 95 percent from the largest source in the NAA. The plan also relies on SO_2 emission limits for several other large sources in the area through state rulemaking. All emission limitations necessary for demonstrating compliance will be enforceable through the proposed Missouri SO_2 rulemaking, 10 CSR 10-6.261, *Control of Sulfur Dioxide Emissions* (to be presented for adoption on August 3, 2015).

A public hearing was held for this plan action (as well as the proposed Missouri SO_2 rulemaking mentioned above) on June 25, 2015. Comments about this plan action were accepted through the close of business on July 2, 2015. Revisions to the plan have been made as a result of comments received. The plan will be presented to the Missouri Air Conservation Commission for adoption on August 3, 2015. The revised plan and appendices are listed below along with a summary of the comments received and the corresponding responses from the Department.

Jackson County SO_2 Nonattainment Area Plan
Appendix A
Appendix B
Appendix C
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Appendix I
Appendix J

Summary of Comments and Responses

1 DEPARTMENT OF NATURAL RESOURCES
STATE OF MISSOURI
2 AIR CONSERVATION COMMISSION

In Re:)
3)
10 CSR 10-6.261 (new rule) Control of)
4 Sulfur Dioxide Emissions)
)
5 10 CSR 10-6.260 (rescission) Restriction)
of Emission of Sulfur Compounds)
6)
Missouri State Implementation Plan)
7 Revision-Nonattainment Area Plan for the)
2010 1-Hour Sulfur Dioxide National)
8 Ambient Air Quality Standard-Jackson)
County Sulfur Dioxide Nonattainment Area)
9
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Public Hearing
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14 June 25, 2015
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Implementation Plan Revision - Nonattainment Area Plan for the 2010 One-Hour Sulfur Dioxide National Ambient Air Quality Standard - Jackson County Sulfur Dioxide Nonattainment Area.

The hearing record will close at 5 p.m. on July 2nd, 2015. Anyone who has not been scheduled to appear but wishes to be heard should indicate that you wish to speak on the sign-in sheets available at the door.

Section 643.100 of the Missouri statutes provides that all oral testimony be given under oath. Accordingly, when you are called to testify, please present yourself to the court reporter first to be sworn in.

When you testify, please state your name, business address and your occupation or affiliation. If you have a prepared statement, it will be helpful if you will provide a copy to the Staff Director, court reporter and members of the Commission.

Paul.

(Witness sworn.)

MR. MYERS: Good morning, Commissioners. My name is Paul Myers, and I work as an environmental scientist with the Air

Pollution Control Program located at 1659 East Elm Street in Jefferson City, Missouri.

I'm here to present testimony on proposed rule 10 CSR 10-6.261 Control of Sulfur Dioxide Emissions. The rule text can be found beginning on page 83 of your briefing document.

With the Commission's consent, I would also like to present testimony on the rescission of Rule 10 CSR 10-6.260 Restriction of Emission of Sulfur Compounds, since the two rulemakings are related. Text for that rule can be found on page 95.

Proposed new rule 10 CSR 10-6.261 sets enforceable environmental requirements and emission limits necessary to address the U.S. Environmental Protection Agency's one-hour sulfur dioxide (SO2) National Ambient Air Quality Standard of 75 parts per billion.

The rule is a core component of the Jackson County SO2 Nonattainment Area Plan, which will be presented next on the public hearing agenda.

In addition, this proposed rule incorporates all necessary existing provisions of 10 CSR 10-6.260 in order to consolidate SO2

~~Paul. All right. Next we'll have Bob Randolph with the Missouri State Implementation Plan Revision - Nonattachment Area Plan for the 2010 One-Hour Sulfur Dioxide National Ambient Air Quality Standard - Jackson County Sulfur Dioxide Nonattainment Area.~~

(Witness sworn.)

MR. RANDOLPH: Good morning, Mr. Chairman, members of the Commission. My name is Bob Randolph. I am employed with the Planning Section of the Air Pollution Control Program located at 1659 East Elm Street in Jefferson City, Missouri.

I'm here to present testimony for the proposed State Implementation Plan revision to address the federal Clean Air Act Section 172(c) requirements for the Jackson County sulfur dioxide nonattainment area. Excerpts from the plan revision start on page 105 of your briefing document.

In June 2010, EPA revised the primary sulfur dioxide standard to 75 parts per billion on a one-hour basis to reduce exposure to short-term high concentrations of sulfur dioxide. This was the first revision since the initial sulfur dioxide

standard was issued in 1971. At the same time, EPA revoked both the existing 24-hour and annual standards. This proposed plan addresses the 2010 one-hour sulfur dioxide standard.

The Air Pollution Control Program currently oversees the operation of eight sulfur dioxide monitors throughout Missouri. This map depicts these monitors, represented as blue dots, and the existing sulfur dioxide monitors located in neighboring states, represented as green dots.

For the initial round of designations per the one-hour sulfur dioxide standard, EPA designated two partial-county nonattainment areas in Missouri, which are also shown on this map. Portions of both Jackson County and Jefferson County were designated nonattainment based on 2007 through 2009 monitoring data that showed these areas were violating the one-hour sulfur dioxide standard. For reference, the associated violating monitors are represented as red dots on the map.

The Commission adopted the Jefferson County sulfur dioxide nonattainment area plan on May 28, 2015, and the Air Program submitted the plan to the United States Environmental Protection Agency the following day. The information

presented today addresses only the proposed plan for the Jackson County nonattainment area.

This slide includes the current schedule for the Jackson County sulfur dioxide nonattainment area plan. The plan was made available for review and comment May 22, 2015, and the comment period closes July 2nd, 2015.

The proposed plan will be presented for adoption August 3rd and submitted to the Environmental Protection Agency later this year after the proposed new sulfur dioxide rule 10 CSR 10-6.261 is published in the Code of State Regulations, projected by the end of 2015.

Affected facilities must comply with the control strategy requirements included in the proposed plan no later than January 1st, 2017. This control strategy implementation date is intended to ensure the violating monitor is in compliance with the one-hour sulfur dioxide standard by the attainment date of October 2018.

These compliance dates are firm deadlines set by the Environmental Protection Agency and are not contingent on when the nonattainment area plans are submitted. I note this because the department did not meet the

April 6th deadline for submitting plans for the initial round of sulfur dioxide nonattainment areas due to many factors. EPA is aware of this delay, and we are working to submit the plan as soon as possible.

This map depicts the Jackson County nonattainment area boundary and the violating Troost Avenue monitor. Since sulfur dioxide is a located pollutant, monitors are typically source-oriented, which is the case for the violating monitor in Jackson County.

The Troost Avenue monitor is approximately three-quarters of a mile from Veolia Energy, which is the largest source of sulfur dioxide emissions in the nonattainment area. Veolia operates a district heating and cooling system that provides steam, hot water and/or chilled water to industrial, commercial, governmental and residential facilities in the downtown Kansas City area. Currently, two of the four Veolia boilers combust coal to provide steam for process heating, comfort heating or hot water.

The one-hour sulfur dioxide standard violations at the Troost Avenue monitor are largely attributable to Veolia Energy as well as several

additional large sources in the modeled domain. The Troost Avenue monitor continues to be in violation of the standard with a design value of 150 parts per billion for the three-year period 2012 through 2014.

This chart shows the projected three-year design value for the Troost Avenue monitor based on the preliminary data through May 11, 2015. Based on the modeled control strategy discussed later in this presentation, this monitor is expected to be in compliance with the health-based one-hour sulfur dioxide standard on or before the attainment date of October 2018.

This map depicts the location of the area's largest sulfur dioxide emitting sources located in Missouri, specifically Veolia Energy and the Kansas City Power & Light's Hawthorn and Sibley stations, as well as Independence Power and Light's Blue Valley station. Apart from Veolia Energy, the remaining largest sulfur dioxide sources are electrical generating units.

This map includes the BPU - Quindaro and BPU - Nearman facilities located in Kansas that were also monitored as interactive sources for the Jackson County nonattainment area. The map

indicates the location of each of these modeled sources, in green, with respect to the violating Troost Avenue monitor, in red. Veolia Energy is located within the northwestern corner of the nonattainment area boundary, as represented by the asterisk.

The required control strategy for the Jackson County nonattainment area consists of three elements. The main element is the reduction of allowable sulfur dioxide emissions by 95 percent from Veolia Energy.

Second, the plan relies on new sulfur dioxide emission limits and unit-specific fuel requirements for the Kansas City Power & Light's Hawthorn and Sibley stations and Independence Power & Light's Blue Valley station, made permanent and enforceable through the state rulemaking associated with this plan.

Third, the plan requires the delivery of ultra low sulfur diesel throughout Jackson County. These new limits and requirements are intended to prevent future exceedances of the one-hour sulfur dioxide standard at the Troost Avenue monitor and throughout the nonattainment area.

Modeling results presented in the proposed plan and in the next slide indicate no violations of the one-hour sulfur dioxide standard throughout the nonattainment area. For reference, the one-hour sulfur dioxide standard of 75 parts per billion is equivalent to 196.73 micrograms per cubic meter.

The compliant modeled scenario accounts for the emissions reduction at Veolia Energy, the new limits at the three Missouri EGUs, and the delivery of ultra low sulfur diesel throughout Jackson County, Missouri.

The modeled scenario also includes new sulfur dioxide limits negotiated between the Kansas Department of Health and Environment and two Kansas BPU sources in consultation with the EPA and the department. The Kansas Department of Health and Environment is submitting these requirements to the Environmental Protection Agency separately from this plan.

The color variance in this map shows the concentration gradient in the nonattainment area, but all receptors shown are below the one-hour sulfur dioxide standard of 75 parts per billion or 196.73 micrograms per cubic meter.

Veolia Energy is shown on the map for reference, as well as the violating Troost Avenue monitor. Furthermore, modeling of allowable conditions for all modeled sources shows that there are no violations of the standard throughout the entire Jackson County sulfur dioxide nonattainment area.

The proposed Jackson County sulfur dioxide nonattainment area plan relies on the substantial 95 percent reduction of allowable sulfur dioxide emissions from Veolia Energy. Based on this reduction and the remaining control measures required by January 1st, 2017 for sources impacting the nonattainment area, the Troost Avenue monitor is expected to attain the standard on or before October 2018.

The department asserts the plan's control strategy and analysis are both protective of public health and compliant with the one-hour sulfur dioxide standard.

The proposed Jackson County sulfur dioxide nonattainment area plan includes all required elements for a complete one-hour sulfur dioxide nonattainment area plan.

As the proposed new Missouri sulfur

dioxide rule requirements are implemented, the Air Program plans additional evaluation of data from existing sulfur dioxide monitors as well as additional modeling analyses. These additional data and analyses may result in revisions to this plan as appropriate in the future.

If the Commission adopts this plan, the department intends to submit it to the Environmental Protection Agency for inclusion in the Missouri State Implementation Plan.

Mr. Chairman, this concludes my testimony. I will be happy to address any questions you may have regarding this nonattainment area plan.

CHAIRMAN ZIMMERMANN: Does anybody have any questions?

We have three people that wish to speak on this issue. Steven Whitworth, Senior Director of Ameren.

(Witness sworn.)

MR. WHITWORTH: Good morning, Commissioners, Air Quality staff. My name is Steve Whitworth. I'm employed by Ameren as Senior Director - Environmental Policy and Analysis. I'm here today representing Ameren Missouri to testify

in support of the proposed SO2 rule.

This rule will include new emission limits that are more stringent for our Rush Island, Meramec and Labadie Energy Center, but are consistent, as was mentioned, with our agreement with DNR as part of the Herculaneum, Jefferson County State Implementation Plan, as well as our commitment to maintain air quality emissions levels that will meet and exceed the compliance limitations, this as well as our commitment to install additional air monitoring systems to demonstrate and continue to ensure that the air quality meets the emission standards in compliance with state and federal regulations.

Thank you for your time this morning and allowing me to testify. I'm available for any questions you may have.

CHAIRMAN ZIMMERMANN: Any questions? Thank you.

All right. Next, Sarah Campbell, Sierra Club.

(Witness sworn.)

MS. CAMPBELL: All right. My name is Sarah Campbell. I live in Kansas City, Missouri, in the Jackson County nonattainment zone. I live

downtown in the heart of that nonattainment zone.

I have adult onset asthma and am unable to open my windows, living downtown, and have to have special air purifiers to help me breathe in my apartment.

Downtown Kansas City has a lot of amenities, but -- and people are in a one-year waiting list to move downtown, but they have no -- most of them have no idea of the dangerous air quality downtown.

So with -- there's over 50,000 of us living down there. Jackson County has the highest rates of asthma-related hospitalizations and emergency room visits in the Kansas City region, and both are significantly higher than the region or the rest of the state.

We can't afford to wait until January to wait on Veolia to submit their plan to reduce SO2. People are struggling to breathe now.

Thank you.

CHAIRMAN ZIMMERMANN: Next we have Gretchen Waddell-Barwick from the Sierra Club.

(Witness sworn.)

MS. WADDELL-BARWICK: Good morning. My name is Gretchen Waddell-Barwick. I am with the

Missouri chapter of the Sierra Club. And while I will allow our legal team to provide our formal comments, I'm here to provide petitions from concerned citizens in Kansas City about the state of air quality in Jackson County and specifically Veolia Energy.

Thank you.

CHAIRMAN ZIMMERMANN: Thank you. Do we have anyone else who wishes to speak in open session, or the public hearing? Sorry. If not, is there a motion to close the public hearing?

~~COMMISSIONER PENDERGRASS: So moved.~~

~~COMMISSIONER GARNETT: Second.~~

~~CHAIRMAN ZIMMERMANN: Motion made and seconded to close the public hearing. Anyone on the question? I hear none. All those in favor say aye.~~

~~(All Commissioners responded "aye".)~~

~~CHAIRMAN ZIMMERMANN: Those opposed?~~

~~(No response.)~~

~~CHAIRMAN ZIMMERMANN: Ayes have it.~~

~~(WHEREUPON, the public hearing concluded at 9:25 a.m.)~~

~~Under this heading will appear the text of proposed rules and changes. The notice of proposed rulemaking is required to contain an explanation of any new rule or any change in an existing rule and the reasons therefor. This is set out in the Purpose section with each rule. Also required is a citation to the legal authority to make rules. This appears following the text of the rule, after the word "Authority."~~

~~Entirely new rules are printed without any special symbology under the heading of proposed rule. If an existing rule is to be amended or rescinded, it will have a heading of proposed amendment or proposed rescission. Rules which are proposed to be amended will have new matter printed in boldface type and matter to be deleted placed in brackets.~~

~~An important function of the *Missouri Register* is to solicit and encourage public participation in the rulemaking process. The law provides that for every proposed rule, amendment, or rescission there must be a notice that anyone may comment on the proposed action. This comment may take different forms.~~

~~If an agency is required by statute to hold a public hearing before making any new rules, then a Notice of Public Hearing will appear following the text of the rule. Hearing dates must be at least thirty (30) days after publication of the notice in the *Missouri Register.* If no hearing is planned or required, the agency must give a Notice to Submit Comments. This allows anyone to file statements in support of or in opposition to the proposed action with the agency within a specified time, no less than thirty (30) days after publication of the notice in the *Missouri Register.*~~

~~An agency may hold a public hearing on a rule even though not required by law to hold one. If an agency allows comments to be received following the hearing date, the close of comments date will be used as the beginning day in the ninety- (90-) day-count necessary for the filing of the order of rulemaking.~~

~~If an agency decides to hold a public hearing after planning not to, it must withdraw the earlier notice and file a new notice of proposed rulemaking and schedule a hearing for a date not less than thirty (30) days from the date of publication of the new notice.~~

Proposed Amendment Text Reminder:
Boldface text indicates new matter.
[Bracketed text indicates matter being deleted.]

Title 10—DEPARTMENT OF NATURAL RESOURCES
Division 10—Air Conservation Commission
Chapter 6—Air Quality Standards, Definitions, Sampling and Reference Methods and Air Pollution Control Regulations for the Entire State of Missouri

PROPOSED RESCISSION

10 CSR 10-6.260 Restriction of Emission of Sulfur Compounds. This rule limited the maximum allowable concentration of sulfur compounds in source emissions and in the ambient air. If the commission adopts this rule action, the department intends to submit this rule rescission to the U.S. Environmental Protection Agency for removal from the Missouri State Implementation Plan. The evidence supporting the need for this proposed rulemaking is available for viewing at the Missouri Department of Natural Resources' Air Pollution Control Program at the address listed in the Notice of Public Hearing at the end of this rule. More information concerning this rulemaking can be found at the Missouri Department of Natural Resources' Environmental Regulatory Agenda website, www.dnr.mo.gov/regs/index.html.

PURPOSE: This rulemaking rescinds the current rule, 10 CSR 10-6.260, Restriction of Emission of Sulfur Compounds. The Air Pollution Control Program is proposing a new sulfur dioxide (SO_2) rule, 10 CSR 10-6.261 Control of Sulfur Dioxide Emissions, that addresses requirements for sources affected by the Environmental Protection Agency's initial one (1)-hour SO_2 National Ambient Air Quality Standard nonattainment designations that will carry forward requirements as is from 10 CSR 10-6.260 needed to maintain existing levels of SO_2 control in nondesignated parts of the state (i.e., areas outside nonattainment areas). In addition, the new rule will eliminate 10 CSR 10-6.260 provisions that are obsolete or redundant with other requirements. The rescission is being proposed now because the proposed new sulfur dioxide rule, 10 CSR 10-6.261, is on schedule. Rescinding 10 CSR 10-6.260 is meant to occur at the same time as the adoption of the new rule. The evidence supporting the need for this proposed rulemaking, per 536.016, RSMo, is a June 22, 2010, ***Federal Register*** *rule that established a new one (1)-hour SO_2 standard and an August 5, 2013,* ***Federal Register*** *rule that established one (1)-hour SO_2 nonattainment areas.*

AUTHORITY: section 643.050, RSMo Supp. 2011. Original rule filed Jan. 19, 1996, effective Aug. 30, 1996. Amended: Filed Sept. 29, 2003, effective May 30, 2004. Amended: Filed June 26, 2007, effective Feb. 29, 2008. Amended: Filed Dec. 16, 2008, effective Sept. 30, 2009. Amended: Filed Jan. 31, 2012, effective Sept. 30, 2012. Rescinded: Filed April 10, 2015.

PUBLIC COST: This proposed rescission will not cost state agencies or political subdivisions more than five hundred dollars ($500) in the aggregate.

PRIVATE COST: This proposed rescission will not cost private entities more than five hundred dollars ($500) in the aggregate.

NOTICE OF PUBLIC HEARING AND NOTICE TO SUBMIT COMMENTS: A public hearing on this proposed rescission will begin at 9:00 a.m., June 25, 2015. The public hearing will be held at the Governor Office Building, 200 Madison Street, Jefferson City, Missouri. Opportunity to be heard at the hearing shall be afforded any interested person. Interested persons, whether or not heard, may submit a written or email statement of their views until 5:00 p.m., July 2, 2015. Written comments shall be sent to Chief, Air Quality Planning Section, Missouri Department of Natural Resources' Air Pollution Control Program, PO Box 176, Jefferson City, MO 65102-0176. Email comments shall be sent to apcprulespn@dnr.mo.gov.

Title 10—DEPARTMENT OF NATURAL RESOURCES
Division 10—Air Conservation Commission
Chapter 6—Air Quality Standards, Definitions, Sampling and Reference Methods and Air Pollution Control Regulations for the Entire State of Missouri

PROPOSED RULE

10 CSR 10-6.261 Control of Sulfur Dioxide Emissions. If the commission adopts this rule action, it will be the department's intention to submit this new rule to the U.S. Environmental Protection Agency for inclusion in the Missouri State Implementation Plan. The evidence supporting the need for this proposed rulemaking is available for viewing at the Missouri Department of Natural Resources' Air Pollution Control Program at the address listed in the Notice of Public Hearing at the end of this rule. More information concerning

this rulemaking can be found at the Missouri Department of Natural Resources' Environmental Regulatory Agenda website, www.dnr.mo.gov/regs/index.html.

PURPOSE: This rule establishes requirements for emission units emitting sulfur dioxide (SO_2). These requirements are necessary to comply with the one (1)-hour SO_2 National Ambient Air Quality Standard (NAAQS) and to maintain existing SO_2 regulatory requirements previously found in 10 CSR 10-6.260 that were in place prior to the establishment of the one (1)-hour SO_2 NAAQS. The rule consolidates, streamlines, and updates existing regulatory requirements in accordance with 536.175, RSMo. The evidence supporting the need for this proposed rulemaking, per 536.016, RSMo, is a June 22, 2010, ***Federal Register*** *rule that established a new one (1)-hour SO_2 standard and an August 5, 2013,* ***Federal Register*** *rule that established one (1)-hour SO_2 nonattainment areas.*

(1) Applicability. This rule applies to any source that emits sulfur dioxide (SO_2). The following exceptions apply to any source not listed in Table I of this rule. Owners or operators of units that meet the exception criteria must furnish the director information necessary to confirm the criterion is met.

(A) Individual units fueled exclusively with natural gas (as defined in 40 CFR 72.2) or liquefied petroleum gas as defined by American Society for Testing and Materials (ASTM) International or any combination of these fuels as of December 31, 2016;

(B) Individual indirect heating units with a rated capacity less than or equal to three hundred fifty thousand British thermal units (350,000 Btus) per hour actual heat input; or

(C) Individual units subject to a more restrictive SO_2 emission limit or more restrictive fuel sulfur content limit under –

1. 10 CSR 10-6.070; or
2. Any federally enforceable permit.

(2) Definitions. Definitions of certain terms specified in this rule may be found in 10 CSR 10-6.020.

(3) General Provisions.

(A) SO_2 Emission Limits. No later than January 1, 2017, owners or operators of sources and units listed in Table I of this rule must limit their SO_2 emissions as specified. As of the effective date of this rule, owners or operators of sources listed in Table II of this rule must limit their SO_2 emissions as specified.

Table I – Sources with SO_2 emission limits necessary to address the one (1)-hour SO_2 National Ambient Air Quality Standard*

Source	Source ID	Emission Limit per Source/Unit (Pounds SO_2 per Hour)	Averaging Time
Ameren Missouri — Labadie Energy Center	0710003	40,837	24-hour block average
Ameren Missouri — Meramec Energy Center	1890010	7,371	24-hour block average
Ameren Missouri — Rush Island Energy Center	0990016	13,600	24-hour block average
Independence Power and Light — Blue Valley Station	0950050		
Unit 1		Natural gas	N.A.
Unit 2		Natural gas	N.A.
Unit 3		Natural gas	N.A.
Kansas City Power and Light Co. — Hawthorn Station	0950022		
Boiler #5		785	30-day rolling
Combustion turbine 7		Natural gas	N.A.
Combustion turbine 8		Natural gas	N.A.
Combustion turbine 9		Natural gas	N.A.
Kansas City Power and Light Co. — Sibley Generating Station	0950031		
Boiler #1		1,468.17	30-day rolling
Boiler #2		1,447.01	30-day rolling
Boiler #3		10,632.02	30-day rolling
Veolia Energy Kansas City Inc. — Grand Ave. Station	0950021		
Boiler 1A		0.5	1 hour
Boiler 6 & 8		351.8	1 hour
Boiler 7		0.5	1 hour

*Any Table I source/unit fueled by coal, diesel, or fuel oil shall require an SO_2 Continuous Emission Monitoring System (CEMS) and owners or operators must follow all applicable requirements per subparagraph (3)(E)1.B. of this rule. Any source/unit that is fueled by natural gas (or changes fuels to natural gas no later than January 1, 2017) shall no longer require SO_2 CEMS for such units beginning with the completion date of the fuel change to natural gas.

Table II – Sources subject to SO_2 emission limits in place prior to 2010

Source	Source ID	Emission Limit per Source (Pounds SO_2 per Million Btus Actual Heat Input)	Averaging Time
Associated Electric Coop, Inc. — Chamois Plant	1510002	6.7	3 hours
Empire District Electric Company — Asbury Plant	0970001	12.0	3 hours
New Madrid Power Plant — Marston	1430004	10.0	3 hours
Thomas Hill Energy Center Power Division — Thomas Hill	1750001	8.0	3 hours
University of Missouri (MU) — Columbia Power Plant	0190004	8.0	3 hours
Kansas City Power and Light Co. — Montrose Generating Station	0830001	3.9	24 hours
Ameren Missouri — Sioux Plant	1830001	4.8	Daily average, 00:01 to 24:00
Doe Run Company — Buick Resource Recycling Facility	0930009	8,650 pounds SO_2/hr	1-hour test repeated 3 times

(B) Owners or operators of indirect heating sources with a total capacity, excluding exempt units, greater than three hundred fifty thousand British thermal units (350,000 Btus) per hour actual heat input must limit their SO_2 emissions as follows:

1. For sources located in Missouri, other than in Franklin, Jefferson, St. Louis, St. Charles Counties, or City of St. Louis, no more than eight pounds (8 lbs.) of SO_2 per million Btus actual heat input averaged on any consecutive three (3)-hour time period unless that source is listed in Table I or II of this rule; and

2. For sources located in Franklin, Jefferson, St. Louis, St. Charles Counties, or City of St. Louis, no more than two and three-tenths pounds (2.3 lbs.) of SO_2 per million Btus actual heat input averaged on any consecutive three (3)-hour time period unless —

A. The source is listed in Table I or II of this rule; or

B. The source has a total rated capacity of less than two thousand (2,000) million Btus per hour and then the following restrictions apply.

(I) During the months of October, November, December, January, February, and March of every year, no person shall burn or permit the burning of any coal containing more than two percent (2%) sulfur or of any fuel oil containing more than two percent (2%) sulfur. Otherwise, no person shall burn or permit the burning of any coal or fuel oil containing more than four percent (4%) sulfur.

(II) Part (3)(B)2.B.(I) of this rule shall not apply to any source if it can be shown that emissions of SO_2 from the source into the atmosphere will not exceed two and three-tenths pounds (2.3 lbs.) per million Btus actual heat input to the source.

(C) Owners or operators of sources and units not covered under subsection (3)(A) or (3)(B) of this rule must limit the fuel sulfur content as specified below.

Source or unit	Liquid fuel sulfur content in parts per million (ppm) sulfur	
	Residual	Distillate
New	8,509	8,812
Existing	34,036	35,249

(D) No later than January 1, 2017, owners or operators of sources subject to this rule in Jackson and Jefferson Counties must accept for delivery only ultra-low sulfur distillate fuel oil with a maximum fuel sulfur content of fifteen (15) ppm for use in unit(s) fueled, in whole or in part, by diesel, No. 1 fuel oil and/or No. 2 fuel oil.

(E) Compliance Determination. Compliance must be determined as follows:

1. For sources and/or units listed in Table I of this rule, SO_2 Continuous Emission Monitoring System (CEMS) data.

A. SO_2 CEMS are not required for the following cases:

(I) Units fueled exclusively by natural gas and not using any secondary fuel; or

(II) Units fueled by natural gas and only using fuel oil for less than forty-eight (48) hours annually and only for qualifying situations (e.g., testing, maintenance or operator training). The forty-eight (48)-hour annual limit for the use of fuel oil as a secondary fuel shall not include qualifying curtailment events and compliance must be demonstrated using paragraph (3)(D)3. of this rule;

B. SO_2 CEMS must follow the requirements in 40 CFR 75 and/or 40 CFR 60, Appendices B and F, as incorporated by reference in subsection (5)(B) of this rule;

2. For sources listed in Table II of this rule already subject to a SO_2 CEMS requirement, SO_2 CEMS data; and

3. For sources subject to subsection (3)(B) or (3)(C) of this rule not required to use SO_2 CEMS for compliance and for sources listed in Table II of this rule not required to use SO_2 CEMS for compliance—

A. Fuel delivery records;

B. Fuel sampling and analysis;

C. Performance tests;

D. Continuous emission monitoring; or

E. Other compliance methods approved by the staff director and the U.S. Environmental Protection Agency and incorporated into the state implementation plan.

(4) Reporting and Record Keeping.

(A) Owners or operators of all sources subject to this rule must—

1. Report any excess emissions other than startup, shutdown, and malfunction excess emissions already required to be reported under 10 CSR 10-6.050 to the staff director for each calendar quarter within thirty (30) days following the end of the quarter. In all cases, the notification must be a written report and must include, at a minimum, the following:

A. Name and location of source;

B. Name and telephone number of person responsible for the source;

C. Identity and description of the equipment involved;

D. Time and duration of the period of SO_2 excess emissions;

E. Type of activity;

F. Estimate of the magnitude of the SO_2 excess emissions expressed in the units of the applicable emission control regulation and the operating data and calculations used in estimating the magnitude;

G. Measures taken to mitigate the extent and duration of the SO_2 excess emissions; and

H. Measures taken to remedy the situation which caused the SO_2 excess emissions and the measures taken or planned to prevent the recurrence of these situations;

2. Maintain a list of modifications to the source's operating procedures or other routine procedures instituted to prevent or minimize the occurrence of any excess SO_2 emissions;

3. Maintain a record of data, calculations, results, records, and reports from any SO_2 emissions performance test, SO_2 continuous emission monitoring, fuel deliveries, and/or fuel sampling tests; and

4. Maintain a record of any applicable SO_2 monitoring data, performance evaluations, calibration checks, monitoring system and device performance tests, and any adjustments and maintenance performed on these systems or devices.

(B) Owners or operators of sources using SO_2 CEMS for compliance must also—

1. If SO_2 CEMS is already used to satisfy other requirements (other than only to demonstrate compliance with this rule), continue to follow all correlating SO_2 CEMS requirements; or

2. If SO_2 CEMS is used only to demonstrate compliance with this rule, the SO_2 CEMS and any necessary auxiliary monitoring equipment must follow the requirements in subsection (5)(B) of this rule.

(C) Owners or operators of sources using fuel delivery records for compliance must also maintain the fuel supplier certification information to certify all fuel deliveries. Bills of lading and/or other fuel delivery documentation containing the following information for all fuel purchases or deliveries are deemed acceptable to comply with the requirements of this rule:

1. The name, address, and contact information of the fuel supplier;

2. The type of fuel (bituminous or sub-bituminous coal, diesel, #2 fuel oil, etc.);

3. The moisture content of the coal (if applicable);

4. The sulfur content or maximum sulfur content expressed in percent sulfur by weight or in ppm sulfur; and

5. The heating value of the fuel.

(D) Owners or operators of sources using fuel sampling and analysis for compliance must also follow the requirements in subsection (5)(D) of this rule.

(E) Owners or operators of sources using SO_2 emissions performance tests for compliance must also follow the requirements in subsection (5)(A) of this rule.

(F) All required reports and records must be retained on-site for a minimum of five (5) years and made available within five (5) business days upon written or electronic request by the director.

(G) Owners or operators of sources subject to this rule must furnish the director all data necessary to determine compliance status.

(5) Test Methods.

(A) Owners or operators of sources must use one (1) or more of the following test methods contained in 40 CFR 60, Appendix A, published as of July 1, 2014, and hereby incorporated by reference in this rule, as published by the Office of the Federal Register, U.S. National Archives and Records, 700 Pennsylvania Avenue NW, Washington, DC 20408, to determine compliance with SO_2 emission limits in this rule. This rule does not incorporate any subsequent amendments or additions.

1. Method 1: Sample and velocity traverses for stationary sources;

2. Method 2: Determination of stack gas velocity and volumetric flow rate (Type S pitot tube);

3. Method 3: Gas analysis for the determination of dry molecular weight;

4. Method 4: Determination of moisture content in stack gases;

5. Method 6: Determination of Sulfur Dioxide Emissions from Stationary Sources;

6. Method 6A: Determination of Sulfur Dioxide, Moisture, and Carbon Dioxide from Fuel Combustion Sources;

7. Method 6B: Determination of Sulfur Dioxide and Carbon Dioxide Daily Average Emissions from Fossil Fuel Combustion Sources;

8. Method 6C: Determination of Sulfur Dioxide Emissions from Stationary Sources (Instrumental Analyzer Procedure); and/or

9. Method 8: Determination of sulfuric acid mist and sulfur dioxide emissions from stationary sources.

(B) Owners or operators of sources using a SO_2 CEMS for demonstrating compliance with this rule must follow the requirements in 40 CFR 75 and/or 40 CFR 60, Appendices B and F, published as of July 1, 2014, which are hereby incorporated by reference in this rule, as published by the Office of the Federal Register, U.S. National Archives and Records, 700 Pennsylvania Avenue NW, Washington,

DC 20408. This rule does not incorporate any subsequent amendments or additions.

(C) Owners or operators of secondary lead smelters must operate an SO_2 CEMS as follows:

1. The SO_2 CEMS must be certified by the owner or operator in accordance with 40 CFR 60 Appendix B, Performance Specification 2 and Section 60.13 as is pertinent to SO_2 continuous emission monitors as adopted by reference in 10 CSR 10-6.070.

2. The span of SO_2 continuous emission monitors must be set at an SO_2 concentration of one-fifth percent (0.20%) by volume.

(D) Owners or operators of sources must use fuel sampling and analysis to determine sulfur weight percent, or equivalent, of fuel(s) used to operate fuel emission sources and/or units regulated by this rule in accordance with 10 CSR 10-6.040.

(E) The heating value of the fuel must be determined as specified in 10 CSR 10-6.040. The actual heat input must be determined by multiplying the heating value of the fuel by the amount of fuel burned during the source test period.

(F) Owners or operators of sources may use an alternative test method that provides results at least the same accuracy and precision as the replaced method, and is approved in advance by the staff director, the EPA, and incorporated into the state implementation plan.

AUTHORITY: section 643.050, RSMo Supp. 2013. Original rule filed April 10, 2015.

PUBLIC COST: This proposed rule will not cost state agencies or political subdivisions more than five hundred dollars ($500) in the aggregate. Fiscal notes are provided for this proposed rule to document detailed information and assumptions associated with the economic cost estimates.

PRIVATE COST: This proposed rule will not cost private entities more than five hundred dollars ($500) in the aggregate. Fiscal notes are provided for this proposed rule to document detailed information and assumptions associated with the economic cost estimates.

NOTICE OF PUBLIC HEARING AND NOTICE TO SUBMIT COMMENTS: A public hearing on this proposed rule will begin at 9:00 a.m., June 25, 2015. The public hearing will be held at the Governor Office Building, 200 Madison Street, Jefferson City, Missouri. Opportunity to be heard at the hearing shall be afforded any interested person. Interested persons, whether or not heard, may submit a written or email statement of their views until 5:00 p.m., July 2, 2015. Written comments shall be sent to Chief, Air Quality Planning Section, Missouri Department of Natural Resources' Air Pollution Control Program, PO Box 176, Jefferson City, MO 65102-0176. Email comments shall be sent to apcprulespn@dnr.mo.gov.

~~Title 10—DEPARTMENT OF NATURAL RESOURCES~~
~~Division 25—Hazardous Waste Management Commission~~
~~Chapter 3—Hazardous Waste Management System: General~~

~~PROPOSED AMENDMENT~~

~~**10 CSR 25-3.260 Definitions, Modifications to Incorporations and Confidential Business Information**. The commission is amending sections (1), (2), and (3) of the rule.~~

~~*PURPOSE: There are multiple purposes to this amendment. First of all, the incorporation by reference of 40 CFR part 260 will be updated from the July 1, 2010 edition to the July 1, 2013 edition, plus one (1) additional rule promulgated on July 31, 2013. In doing so, all changes to part 260 during this time period will be incorporated into the state rules. Second, the Department of Natural Resources has identified numerous changes in this rule that are required by section 260.373, RSMo. This section requires the department to identify rules that are inconsistent with the limitation on rulemaking authority established in this section and to make the necessary changes to the rule text by December 31, 2015. Finally, other changes to this rule are proposed as part of the routine process of making corrections to the rule, eliminating outdated rule text, and making the rules easier to understand, which will reduce the burden on both the department and the regulated community.*~~

~~(1) The regulations set forth in 40 CFR part 260, July 1, *[2010]* **2013**, as published by the Office of the Federal Register, National Archives and Records Administration, Superintendent of Documents, Pittsburgh, PA 15250-7954, **and the changes made at 78 FR 0, July 31, 2013,** are incorporated by reference, except for the changes made at 70 FR 53453, September 8, 2005, and 73 FR 64667 to 73 FR 64788, October 30, 2008, subject to the following additions, modifications, substitutions, or deletions. This rule does not incorporate any subsequent amendments or additions.~~

~~(A) Except where otherwise noted in sections (2) and (3) of this rule or elsewhere in 10 CSR 25, any federal agency, administrator, regulation, or statute that is referenced in 40 CFR parts 260–270, 273, and 279, and incorporated by reference in 10 CSR 25, shall be deleted and in its place add the comparable state department, director, rule, or statute. Where conflicting rules exist in 10 CSR 25, the more stringent shall control.~~

~~1. "Director" shall be substituted for "Administrator" or "Regional Administrator" except where those terms are defined in 40 CFR 260.10 incorporated in this rule and where otherwise indicated in 10 CSR 25. *[All applications, approvals, petitions, appeals, or other paperwork associated with the United States Environmental Protection Agency's "National Environmental Performance Track" shall not be submitted to the director in lieu of the administrator or regional administrator.]*~~

~~2. "Missouri Department of Natural Resources" shall be substituted for "EPA," "U.S. EPA," or "U.S. Environmental Protection Agency" except where those terms appear in definitions in 40 CFR 260.10 incorporated in this rule and where otherwise indicated in 10 CSR 25.~~

~~3. "Section 260.395.15, RSMo," shall be substituted for "Section 3005(e) of RCRA."~~

~~4. "Sections 260.375(9), 260.380.1(9), 260.385(7), and 260.390(7), RSMo," shall be substituted for "Section 3007 of RCRA."~~

~~5. "Sections 260.410 and 260.425, RSMo," shall be substituted for "Section 3008 of RCRA."~~

~~6. "10 CSR 25-3.260" shall be substituted for any reference to 40 CFR part 260.~~

~~7. "10 CSR 25-4.261" shall be substituted for any reference to 40 CFR part 261.~~

~~8. "10 CSR 25-5.262" shall be substituted for any reference to 40 CFR part 262.~~

~~9. "10 CSR 25-6.263" shall be substituted for any reference to 40 CFR part 263.~~

~~10. "10 CSR 25-7.264" shall be substituted for any reference to 40 CFR part 264.~~

~~11. "10 CSR 25-7.265" shall be substituted for any reference to 40 CFR part 265.~~

~~12. "10 CSR 25-7.266" shall be substituted for any reference to 40 CFR part 266.~~

~~13. "10 CSR 25-7.268" shall be substituted for any reference to 40 CFR part 268.~~

~~14. "10 CSR 25-7.270" shall be substituted for any reference to 40 CFR part 270.~~

~~15. "10 CSR 25-8.124" shall be substituted for any reference to 40 CFR part 124.~~

~~16. "10 CSR 25-11.279" shall be substituted for any reference to 40 CFR part 279.~~

RECOMMENDATION FOR ADOPTION

PROPOSED REVISION TO

MISSOURI STATE IMPLEMENTATION PLAN – NONATTAINMENT AREA PLAN FOR THE 2010 1-HOUR SULFUR DIOXIDE NATIONAL AMBIENT AIR QUALITY STANDARD – JACKSON COUNTY SULFUR DIOXIDE NONATTAINMENT AREA

On June 25, 2015, the Missouri Air Conservation Commission held a public hearing for a revision to the Missouri State Implementation Plan (SIP) entitled – Nonattainment Area Plan for the 2010 1-Hour Sulfur Dioxide National Ambient Air Quality Standard – Jackson County Sulfur Dioxide Nonattainment Area. A summary of comments received and the Air Program's corresponding responses is included on the following page. Revisions were made to the proposed plan as a result of comments received.

The revised plan has not been reprinted in the briefing document due to its volume. The entire revised plan is available for review at the Missouri Department of Natural Resources' Air Pollution Control Program, 1659 East Elm Street, Jefferson City, Missouri, 65101, (573)751-4817. It is also available online at http://dnr.mo.gov/env/apcp/stateplanrevisions.htm.

The Air Program recommends the commission adopt the plan as revised. If the commission adopts this plan, the department intends to submit it to the U.S. Environmental Protection Agency for inclusion in the Missouri State Implementation Plan.

MISSOURI DEPARTMENT OF NATURAL RESOURCES

COMMENTS AND RESPONSES ON

PROPOSED REVISION TO

MISSOURI STATE IMPLEMENTATION PLAN –

Nonattainment Area Plan for the 2010 1-Hour Sulfur Dioxide National Ambient Air Quality Standard - Jackson County Sulfur Dioxide Nonattainment Area

The public comment period for the proposed revision to the Missouri State Implementation Plan (SIP) for the *Nonattainment Area Plan for the 2010 1-Hour Sulfur Dioxide National Ambient Air Quality Standard - Jackson County Sulfur Dioxide Nonattainment Area* opened on May 22, 2015 and closed on July 2, 2015. Revisions to the proposed plan were made as a result of comments.

The following is a summary of comments received and the Missouri Department of Natural Resources' Air Pollution Control Program's (Air Program's) corresponding responses.

SUMMARY OF COMMENTS: During the public comment period for the proposed plan, the Air Program received oral comments from the following sources: Ameren Missouri, the Missouri Chapter of the Sierra Club, and one citizen. All three oral commenters testified during the public hearing before the Missouri Air Conservation Commission (MACC) on June 25, 2015. Written comments were also received on July 2, 2015 from Ameren Missouri, the U.S. Environmental Protection Agency (EPA), and Washington University School of Law Interdisciplinary Environmental Clinic on behalf of Sierra Club (Washington University). In addition, the Sierra Club submitted letters from 78 citizens on June 25, 2015.

COMMENT #1: EPA commented that the draft Jackson County sulfur dioxide (SO_2) nonattainment area plan does not provide sufficient specificity regarding what the state will do if the area fails to attain the 1-hour SO_2 standard by the attainment date or achieve reasonable and further progress to attainment. EPA recommends that the plan be revised to identify the specific steps the state will take, including a time frame for action if the standard is violated or reasonable further progress is not achieved.

RESPONSE AND EXPLANATION OF CHANGE: As mentioned in the Jackson County SO_2 nonattainment area plan, the Air Program relied on EPA 1-hour SO_2 nonattainment SIP guidance (April 23, 2014) and notes that much of Section 8.1 (Contingency Measures) mirrors EPA guidance. As the guidance states, SO_2 presents special considerations unique to directly-emitted pollutants. The Jackson County SO_2 nonattainment area plan modeling and attainment analyses are based on allowable emissions for all modeled sources. This is a conservative assumption likely to assure attainment without triggering contingency measures.

In addition, the Air Program notes that further plan evaluation (including dispersion modeling and attainment analyses targeting the same, as well as additional, large SO_2 sources near the current Jackson County SO_2 nonattainment area) will be required per the March 2015 federal Consent

Decree and the pending federal Data Requirements Rulemaking. Additional nonattainment area plan revision requirements, permitting requirements, and monitoring requirements will further assure future compliance with the 1-hour SO_2 standard.

New discussion of contingency measures to provide the requested specificity, including a table of contingency triggers and steps, has been added to the Jackson County SO_2 nonattainment area plan as a result of this comment.

COMMENT #2: EPA commented that using a variability analysis of less than 99% in establishing the 30-day rolling average for KCPL – Hawthorn 5 provides the facility a higher emission allowance than contemplated by the methodology which is designed to ensure that the 30-day rolling average is commensurate with the 1-hour emissions that modeled NAAQS compliant ambient air concentrations. EPA recommends the department should follow the approach EPA outlined in guidance for establishing longer than 1-hour averaging periods.

RESPONSE: The approach in the proposed Jackson County SO_2 nonattainment area plan lies within the bounds of EPA guidance. The April 23, 2014 EPA guidance allows for flexibility in establishing longer than 1-hour averaging periods – without a binding requirement to complete variability analyses using only the 99th percentile for establishing 30-day rolling averages. KCPL provided information on their operations documenting the need for a 30-day rolling average. The Air Program reviewed and approved the variable operational data and rationale for the KCPL – Hawthorn 5 variability analysis based on this flexibility discussed in EPA guidance. As an example, EPA guidance states that 1-hour emission limits for SO_2 nonattainment area plans do not always require a level at or below the critical emission value. Specifically, the EPA guidance states, "An hour where emissions are above the critical value does not mean that a NAAQS exceedance is occurring in that hour." This and related discussion per cited EPA guidance allows flexibility to accommodate emissions variability as documented and reviewed for KCPL – Hawthorn 5.

Also, the Air Program will likely be required to evaluate KCPL – Hawthorn (and additional sources) in future rounds of SO_2 area designations as part of the pending federal Data Requirements Rule. To assess air quality impacts, additional evaluations and modeling analyses will include overlapping modeling domains for large and interactive modeled sources in the Kansas City area and beyond. No changes to the plan were made as a result of this comment.

COMMENT #3: Washington University, the Sierra Club, and several citizens commented that the proposed plan does not adequately protect public health in the nonattainment area and that the proposed plan's control strategy should be implemented more quickly than January 1, 2017. In addition, the Sierra Club provided 78 citizen letters calling upon the DNR to create a plan that ensures protection of public health and not to wait until 2017 to see results.

RESPONSE: The Air Program strives to protect health in the development of all state plans, including the Jackson County SO_2 nonattainment area plan. EPA established January 1, 2017 as the date when emission controls, and associated emission reductions, must be fully operational in order to protect public health while allowing affected facilities reasonable time to make needed equipment and operational changes to comply. As detailed in the plan, the control strategy

includes a 95 percent reduction in allowable SO_2 emissions from Veolia Energy. Because Veolia Energy is also subject to the existing source requirements of the federal Industrial, Commercial and Institutional Boiler MACT [40 CFR 63 Subpart 5D], the 95 percent reduction (combined with reductions in air toxics) is expected to occur by the Boiler MACT compliance date of January 31, 2016. Realization of emission reductions in January 2016 from the largest SO_2 source located within the bounds of the Jackson County SO_2 nonattainment area will protect air quality and public health throughout the entire area – particularly within and near the nonattainment area. No changes to the plan were made as a result of these comments.

COMMENT #4: Washington University commented that the emission limits for Ameren Missouri Energy Center sources listed in Table I are not adequate to demonstrate attainment throughout the Jefferson County nonattainment area and that they should be substantially reduced before the rule is adopted. This comment was previously provided during the 60-day comment period on the draft rule text and Regulatory Impact Report as well as during the comment period on the Jefferson County SO_2 nonattainment area plan. Washington University incorporated by reference the previous two sets of comments in their comment letter submitted on the associated proposed new state SO_2 rule, which was presented at the same June 25, 2015 public hearing as the draft Jackson County SO_2 nonattainment area plan.

RESPONSE: The Air Program previously considered and responded to Washington University's comments submitted during the rule development phase of 10 CSR 10-6.261 and the public comment period for the Jefferson County SO_2 nonattainment area plan. The Table 1 SO_2 emission limits for the Ameren Missouri Energy Center sources are the same as those included in the 2015 Consent Agreement as part of the Jefferson County plan, which was adopted by the Air Conservation Commission on May 28, 2015 and submitted to EPA the following day. The SO_2 emission limits at the Ameren power plants are intended to support the continued attainment of the 1-hour SO_2 standard at the violating Mott Street monitor in Jefferson County. These limits, along with the other measures specified in the Jefferson County Plan, are intended to ensure attainment throughout the Jefferson County SO_2 nonattainment area. No changes to the Jackson County SO_2 nonattainment area plan were made as a result of this comment.

COMMENT #5: Ameren Missouri acknowledged that the Jefferson County SO_2 nonattainment area plan has already been submitted to EPA for review and approval on May 29, 2015, but provided additional discussion on various aspects of that plan, as well as on the Regulatory Impact Report for 10 CSR 10-6.261.

RESPONSE: The Air Program has already considered and responded to Ameren's previous sets of comments submitted during the rule development phase of 10 CSR 10-6.261 and the public comment period for the Jefferson County SO_2 nonattainment area plan. No changes to the Jackson County SO_2 nonattainment area plan were made as a result of this comment.

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Title 10 - DEPARTMENT OF NATURAL RESOURCES

Division 10 - Air Conservation Commission

Chapter 6—Air Quality Standards, Definitions, Sampling and Reference Methods and Air Pollution Control Regulations for the Entire State of Missouri

ORDER OF RULEMAKING

By the authority vested in the Missouri Air Conservation Commission under section 643.050, RSMo Supp. 2013, the commission adopts a rule as follows:

10 CSR 10-6.261 is adopted.

A notice of proposed rulemaking containing the text of the proposed rule was published in the *Missouri Register* on May 15, 2015 (40 MoReg 621-626). Those sections with changes are reprinted here. This proposed rule becomes effective thirty (30) days after publication in the *Code of State Regulations*.

SUMMARY OF COMMENTS: The department's Air Pollution Control Program received eight (8) comments from the following seven (7) sources: Kansas City Power & Light Company (KCP&L), The Boeing Company, Washington University School of Law Interdisciplinary Environmental Clinic on behalf of Sierra Club (Washington University), the U.S. Environmental Protection Agency (EPA), Ameren Missouri, Sierra Club, and private citizens.

COMMENT #1: EPA provided comments on the variability analysis performed to support the 30-day rolling average limit for KCP&L's Hawthorn 5 unit. EPA also provided comments requesting more specificity on the contingency measures for the associated Jackson County SO_2 nonattainment area plan.
RESPONSE: Though the 30-day rolling average emission rate limit for KCP&L Hawthorn is listed in Table I of 10 CSR 10-6.261, the variability analysis performed to support the limit is part of the associated Jackson County SO_2 nonattainment area plan. The Air Program followed EPA guidance when developing the 30-day rolling average limits and the contingency measure requirements. These issues are discussed in more detail in the response to comments for the Jackson County SO_2 nonattainment area plan. No changes to the rule were made as a result of this comment.

COMMENT # 2: Washington University, the Sierra Club and several citizens commented that the proposed plan does not adequately protect public health in the nonattainment area and that the proposed plan's control strategy should be implemented more quickly than January 1, 2017. In addition, the Sierra Club provided letters from 78 citizens calling upon the DNR to create a plan that ensures protection of public health and not to wait until 2017 to see results.
RESPONSE: The Air Program strives to protect health in the development of all state plans,

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ADMINISTRATIVE RULES

including the Jackson County SO_2 nonattainment area plan. EPA established January 1, 2017 as the date when emission controls, and associated emission reductions, must be fully operational in order to protect public health while allowing affected facilities reasonable time to make needed equipment and operational changes to comply. As detailed in the plan, the control strategy includes a 95% reduction in allowable SO_2 emissions from Veolia Energy. Realization of emission reductions from the largest SO_2 source located within the bounds of the Jackson County SO_2 nonattainment area will protect air quality and public health throughout the entire area – particularly within and near the nonattainment area. No changes to the rule were made as a result of these comments.

COMMENT #3: Washington University commented that the emission limits for Ameren Missouri Energy Center sources listed in Table I are not adequate to demonstrate attainment throughout the Jefferson County nonattainment area and that they should be substantially reduced before the rule is adopted. This comment was previously provided during the 60-day comment period on the draft rule text and Regulatory Impact Report as well as during the comment period on the Jefferson County SO_2 Nonattainment Area Plan. Washington University incorporated by reference the previous two sets of comments in their comment letter submitted on this proposed new rule, which was presented at the June 25, 2015 public hearing.
RESPONSE: The Air Program previously considered and responded to Washington University's comments submitted during the rule development phase of 10 CSR 10-6.261 and the public comment period for the Jefferson County SO_2 nonattainment area plan. The Table I SO_2 emission limits for the Ameren Missouri Energy Center sources are the same as those included in the 2015 Consent Agreement as part of the Jefferson County plan, which was adopted by the Air Conservation Commission on May 28, 2015 and submitted to EPA the following day. The SO_2 emission limits at the Ameren power plants are intended to support the continued attainment of the 1-hour SO_2 standard at the violating Mott Street monitor in Jefferson County. These limits, along with the other measures specified in the Jefferson County Plan, are intended to ensure attainment throughout the Jefferson County nonattainment area. No changes to the rule were made as a result of this comment.

COMMENT #4: Ameren Missouri provided comments that supported the rule. Ameren believes the proposed new SO_2 rule and state implementation plan will ensure that the ambient air quality standards are being met.
RESPONSE: The Air Program appreciates Ameren Missouri's comments in support of the proposed rule and state plan. No changes to the rule were made as a result of this comment.

COMMENT #5: Ameren Missouri acknowledged that the Jefferson County SO_2 nonattainment area plan has already been submitted to EPA for review and approval on May 29, 2015, but provided additional discussion on various aspects of that plan, as well as on the Regulatory Impact Report for 10 CSR 10-6.261.
RESPONSE: The Air Program has already considered and responded to Ameren's previous sets of comments submitted during the rule development phase of 10 CSR 10-6.261 and the public comment period for the Jefferson County SO_2 nonattainment area plan. No changes to the rule were made as a result of this comment.

COMMENT #6: As listed in Table I of the proposed SO_2 rule 10 CSR 10-6.261, Ameren commented that the Air Program should clarify that the Table I emission limits for the three Ameren Missouri Energy Centers (specifically Labadie, Meramec and Rush Island) are not necessary to achieve or demonstrate compliance with the 1-hour SO_2 standard; rather, the emission limits for these three Ameren Energy Centers are merely safeguards to ensure that attainment is maintained in Jefferson County.
RESPONSE: The requirements of Table I, including SO_2 emission limits, are necessary to address federal Clean Air Act requirements associated with the 1-hour SO_2 standard. The emission limits for the three Ameren Energy Centers in Table I are the same limits required by a 2015 Consent Agreement between Ameren Missouri and the department. Paragraph 6 of the 2015 Consent Agreement states that the parties agree that the Consent Agreement, which includes the emissions limits in Table I, "will be submitted to EPA as part of a State Implementation Plan revision… to demonstrate attainment and maintenance of the 2010 SO_2 NAAQS." No changes to the rule were made as a result of this comment.

COMMENT #7: KCP&L requested that the formatting in Table I, columns 3 and 4 be corrected to match the rows for clarity. KCP&L provided an example of the reformatted table.
RESPONSE AND EXPLANATION OF CHANGE: As a result of this comment, Table I, columns 3 and 4, was reformatted to align the emission limit and averaging time with the corresponding source unit.

COMMENT #8: The Boeing Company commented that the exceptions in the Applicability section appear to place an affirmative duty on owners and operators to notify the department that the exception criterion is met. The natural gas/propane and small heating unit exceptions encompass a great many emission units in Missouri, many of which are located in residential and commercial buildings which are below the thresholds for even a Basic operating permit. Boeing provided a suggested revision to section (1) to prevent such a reading and avoid widespread noncompliance with this provision.
RESPONSE AND EXPLANATION OF CHANGE: As a result of this comment, section (1) was amended to state that, upon request of the director, sources claiming the exception must provide information to confirm the exception criterion is met.

10 CSR 10-6.261 Control of Sulfur Dioxide Emissions

(1) Applicability. This rule applies to any source that emits sulfur dioxide (SO_2). The following exceptions apply to any source not listed in Table I of this rule. Upon request of the director, owners or operators must furnish the director information to confirm that an exception criterion is met.

(3) General Provisions.
  (A) SO_2 Emission Limits. No later than January 1, 2017, owners or operators of sources and units listed in Table I of this rule must limit their SO_2 emissions as specified. As of the effective date of this rule, owners or operators of sources listed in Table II of this rule must limit their SO_2 emissions as specified.

Table I – Sources with SO_2 emission limits necessary to address the one (1)-hour SO_2 National Ambient Air Quality Standard*

Source	Source ID	Emission Limit per Source/Unit (Pounds SO_2 per Hour)	Averaging Time
Ameren Missouri — Labadie Energy Center	0710003	40,837	24-hour block average
Ameren Missouri — Meramec Energy Center	1890010	7,371	24-hour block average
Ameren Missouri — Rush Island Energy Center	0990016	13,600	24-hour block average
Independence Power and Light — Blue Valley Station	0950050		
Unit 1		Natural gas	N.A.
Unit 2		Natural gas	N.A.
Unit 3		Natural gas	N.A.
Kansas City Power and Light Co. — Hawthorn Station	0950022		
Boiler #5		785	30-day rolling
Combustion turbine 7		Natural gas	N.A.
Combustion turbine 8		Natural gas	N.A.
Combustion turbine 9		Natural gas	N.A.
Kansas City Power and Light Co. — Sibley Generating Station	0950031		
Boiler #1		1,468.17	30-day rolling
Boiler #2		1,447.01	30-day rolling
Boiler #3		10,632.02	30-day rolling
Veolia Energy Kansas City Inc. — Grand Ave. Station	0950021		
Boiler 1A		0.5	1 hour
Boiler 6 & 8		351.8	1 hour
Boiler 7		0.5	1 hour

*Any Table I source/unit fueled by coal, diesel, or fuel oil shall require an SO_2 Continuous Emission Monitoring System (CEMS) and owners or operators must follow all applicable requirements per subparagraph (3)(E)1.B. of this rule. Any source/unit that is fueled by natural gas (or changes fuels to natural gas no later than January 1, 2017) shall no longer require SO_2 CEMS for such units beginning with the completion date of the fuel change to natural gas.

Table II – Sources subject to SO_2 emission limits in place prior to 2010

Source	Source ID	Emission Limit per Source (Pounds SO_2 per Million Btus Actual Heat Input)	Averaging Time
Associated Electric Coop, Inc. — Chamois Plant	1510002	6.7	3 hours
Empire District Electric Company — Asbury Plant	0970001	12.0	3 hours
New Madrid Power Plant — Marston	1430004	10.0	3 hours
Thomas Hill Energy Center Power Division — Thomas Hill	1750001	8.0	3 hours
University of Missouri (MU) — Columbia Power Plant	0190004	8.0	3 hours
Kansas City Power and Light Co. — Montrose Generating Station	0830001	3.9	24 hours
Ameren Missouri — Sioux Plant	1830001	4.8	Daily average, 00:01 to 24:00
Doe Run Company — Buick Resource Recycling Facility	0930009	8,650 pounds SO_2/hr	1-hour test repeated 3 times