



### **Air Quality Analysis for Sulfur Dioxide (SO<sub>2</sub>)**

The following information is for the ambient air monitors operated by the state and by industrial sources. The information is uploaded to the U.S. Environmental Protection Agency (EPA) Air Quality System database. The monitoring information provided in the charts below highlights air pollutant levels that are in violation of the National Ambient Air Quality Standards (NAAQS).

In June 2010, EPA established a new one-hour primary sulfur dioxide (SO<sub>2</sub>) standard of 75 parts per billion. The revised SO<sub>2</sub> standard includes a new “form.” The form is the air quality statistic that is compared to the standard to determine if an area meets the standard. The new form is the three-year average of the 99th percentile of the annual distribution of daily maximum one-hour average concentrations.

EPA is promulgating designations under this standard for areas throughout the nation in multiple phases. In the initial round, EPA designated portions of Jackson and Jefferson counties as nonattainment for the 2010 SO<sub>2</sub> primary NAAQS, effective October 4, 2013, based on 2010-2012 monitoring data from existing monitors showing a violation of the NAAQS. The air program developed and submitted to EPA Nonattainment Area (NAA) State Implementation Plan (SIP) revisions for each of the nonattainment areas.

Subsequent rounds of designations are prescribed by a consent decree agreed upon by EPA, the Sierra Club and the Natural Resource Defense Council. These entities signed the decree, which was entered by the court on March 2, 2015. The decree specifies a schedule for the EPA to complete SO<sub>2</sub> designations for the rest of the country in three additional rounds:

- Second round by July 2, 2016;
- Third round by December 31, 2017; and
- Final round by December 31, 2020.

The EPA has developed a strategy for identifying and addressing unhealthy levels of SO<sub>2</sub> in areas outside the initial nonattainment areas to meet these additional designations rounds. This strategy recognizes that existing SO<sub>2</sub> monitors may not adequately characterize air quality around many of the largest SO<sub>2</sub> sources across the country. Accordingly, the strategy presents a process and timetable by which states would characterize air quality in these areas, either through expanded air quality monitoring or air quality modeling techniques. For more information about implementation of the one-hour SO<sub>2</sub> standard, visit [epa.gov/airquality/sulfurdioxide/implement.html](http://epa.gov/airquality/sulfurdioxide/implement.html).



# 1-HOUR Sulfur Dioxide (SO<sub>2</sub>) Design Values<sup>a</sup>

Annual Summary through 10/15/2017

Sites	County	99th Percentile					CV - 75	No. of Exceedances 75 ppb (2010 Std) 2016 <sup>c</sup>	Design Value		
		1-hour Average (ppb)							Year-to-Date		
		2013	2014	2015	2016	2017 <sup>d</sup>			13-15	14-16	15-17 <sup>c</sup>
<b>St. Louis</b>											
<i>State Sites</i>											
Herculaneum, Mott	Jefferson	143	18	38	13	18	177	0	66	23	23
Blair Street	St. Louis City	42	41	24	9	11	195	0	36	25	15
Margaretta	St. Louis City	20	22	17	9	9	202	0	20	16	12
Rider Trail, I-70 <sup>^^^</sup>	St. Louis Co.	-	-	-	14	11	N/A	0	***	***	***
<i>Ameren Missouri, Labadie Sites</i>											
Northwest <sup>^</sup>	St. Charles	-	-	28	27	21	173	0	***	***	25
Southwest*	Franklin	-	-	-	-	21	N/A	0	-	-	***
North*	St. Charles	-	-	-	-	30	N/A	0	-	-	***
Valley <sup>^</sup>	Franklin	-	-	34	22	25	172	0	***	***	27
<i>Ameren Missouri, Rush Island Sites</i>											
Natchez <sup>^^</sup>	Jefferson	-	-	24	23	23	181	0	-	-	23
Weaver <sup>^^</sup>	Jefferson	-	-	13	27	28	188	0	-	-	23
Fults, IL <sup>^^^</sup>	Monroe, IL	-	-	-	19	20	N/A	0	-	-	***
<b>Kansas City</b>											
<i>State Sites</i>											
Troost	Jackson	156	125	142	9	18	77	0	141	92	56
<b>Springfield</b>											
<i>State Sites</i>											
South Charleston†	Greene	31	33	14	4	†	210	0	26	17	†
<i>City Utilities of Springfield Sites</i>											
James River South†	Greene	27	33	16	3	†	209	0	25	17	†
<b>Outstate</b>											
<i>State Sites</i>											
Buick Northeast	Iron	85	52	42	43	46	143	0	60	46	44
Mark Twain State Park	Monroe	8	9	6	6	5	216	0	8	7	6
<i>Doe Run Buick Sites</i>											
Hwy. 32 Northeast*	Iron	-	-	-	-	54	N/A	0	-	-	***
West Entrance*	Iron	-	-	-	-	48	N/A	0	-	-	***
County Road 75*	Iron	-	-	-	-	47	N/A	2	-	-	***
<i>Magnitude 7 Metals Sites (M7M)</i>											
Site #1 AECl Water Tower Location*	New Madrid	-	-	-	-	13	N/A	0	-	-	***
Site #2 East Graveyard*	New Madrid	-	-	-	-	5	N/A	0	-	-	***
Site #3 West Entrance*	New Madrid	-	-	-	-	7	N/A	0	-	-	***

<sup>a</sup>Quality assured data through December 31, 2016.

<sup>c</sup>Year-to-date preliminary data. Do not quote, do not cite.

<sup>d</sup>For 2017, the 1-hour SO<sub>2</sub> concentrations are the 4<sup>th</sup> highest daily maximum 1-hour SO<sub>2</sub> average concentration measured year-to-date.

\*Monitoring began on 1/1/2017 (Data Requirement Rule Site).

^Monitoring began on 4/22/2015 (Data Requirement Rule Site).

^^Monitoring began on 12/12/2015 (Weaver) and on 12/13/2015 (Natchez).

^^^Monitoring began on 4/24/2016.

^^^^Monitoring began on 5/20/2016 (Special Purpose Monitor).

†Monitoring discontinued on 12/31/2016.

\*\*\*3-year design value can not be calculated. Design value in red and bold is a violation of the NAAQS.

### CV - 75:

The Critical Value (CV) is the current year's 99<sup>th</sup> percentile which, if monitored, could yield a violation of the SO<sub>2</sub> NAAQS for the most current three year period. (CV = 228ppb – Last year's 95<sup>th</sup> percentile – previous year's 95<sup>th</sup> percentile).

The highlighted field indicates that the data set does not meet the completeness criteria of 40 CFR Part 50 Appendix T, Section 3 for the given site. Use of incomplete data for designation purposes is subject to EPA approval consistent with 40 CFR Part 50 Appendix T, 3. (d).

### Data Disclaimer:

Recent monitoring data is raw data. It has not been validated and may contain errors.

- The data is obtained from automated, continuous instruments; no human has reviewed or checked the accuracy of recent data.
- The recent data has been subject to only preliminary automated quality assurance procedures.
- Special conditions such as power outages and equipment malfunction can produce data that is invalid.
- This data is made available for the purpose of public awareness and should not be used in any medical or other scientific study and should not be relied on for any particular regulatory purpose.
- Data rounding differences may exist between this report and reports generated by EPA's Air Quality System (AQS). In most cases historical data should be close to values calculated in AQS but differences are possible.
- Quality assured data can be obtained by contacting the Missouri Department of Natural Resources Air Pollution Control Program. Typically, quality assured data is available in EPA's AQS System 90 days after the calendar quarter in which the data was measured. Ambient air monitoring data for a given year is not typically certified in AQS until May 1<sup>st</sup> of the following year. (e.g. For data monitored from January 1, 2016 through December 31, 2016, the data will not be certified in AQS until May 1, 2017).

2017<sup>c</sup>

**Four Highest 1-Hour SO<sub>2</sub> Values Year-To-Date**

**St. Louis**

*State Sites*

Herculaneum, Mott  
Blair Street  
Margaretta  
Rider Trail, I-70<sup>^^^</sup>

1 <sup>st</sup> High	2 <sup>nd</sup> High	3 <sup>rd</sup> High	4 <sup>th</sup> High
25	22	20	18
15	14	11	11
19	16	10	9
15	15	13	11

*Ameren Missouri, Labadie Sites*

Northwest<sup>^</sup>  
Southwest\*  
North\*  
Valley<sup>^</sup>

34	23	22	21
26	23	22	21
44	32	32	30
43	29	25	25

*Ameren Missouri, Rush Island Sites*

Natchez<sup>^^</sup>  
Weaver<sup>^^</sup>  
Fults, IL<sup>^^^</sup>

29	26	26	23
53	38	29	28
29	27	23	20

**Kansas City**

*State Sites*

Troost

49	45	32	18
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**Springfield**

*State Sites*

South Charleston<sup>†</sup>

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*City Utilities of Springfield Sites*

James River South<sup>†</sup>

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**Outstate**

*State Sites*

Buick Northeast  
Mark Twain State Park

52	48	47	46
7	7	5	5

*Doe Run Buick Sites*

Hwy. 32 Northeast\*  
West Entrance\*  
County Road 75\*

73	63	56	54
67	49	49	48
183	77	57	47

*Magnitude 7 Metals Sites (M7M)*

Site #1 AECI Water Tower Location\*  
Site #2 East Graveyard\*  
Site #3 West Entrance\*

16	14	14	13
8	8	7	5
10	8	8	7

<sup>c</sup>Year-to-date preliminary data. Do not quote, do not cite.

\*Monitoring began on 1/1/2017 (Data Requirement Rule Site).

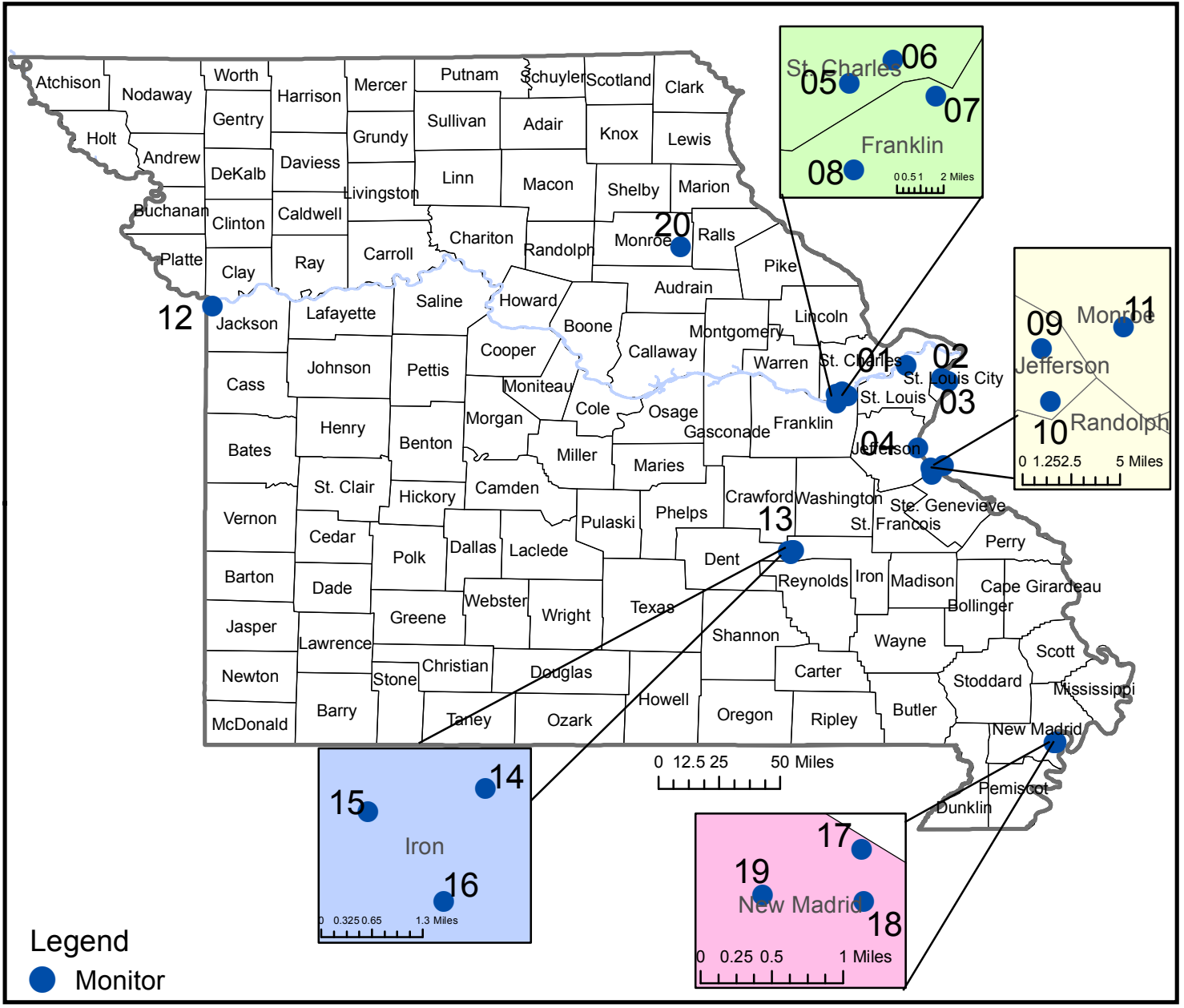
<sup>^</sup>Monitoring began on 4/22/2015 (Data Requirement Rule Site).

<sup>^^</sup>Monitoring began on 12/12/2015 (Weaver) and on 12/13/2015 (Natchez).

<sup>^^^</sup>Monitoring began on 4/24/2016.

<sup>^^^</sup>Monitoring began on 5/20/2016 (Special Purpose Monitor).

# Statewide Sulfur Dioxide (SO2) Monitoring Network, 2017



Legend  
 Monitor

**St. Louis Area MO & IL**

- 01. Rider Trail, I-70"~
- 02. Margaretta
- 03. Blair Street
- 04. Herculaneum, Mott Street
- 05. Ameren-Northwest\*~ ^^
- 06. Ameren-North\*+^^
- 07. Ameren-Valley\*~ ^^
- 08. Ameren-Southwest\*+^^
- 09. Ameren-Weaver & Hwy AA\*~
- 10. Ameren-Natchez\*~
- 11. Ameren-Fults, IL\*~

**Kansas City Area, MO**

- 12. Troost
- Outstate Area, MO**
- 13. Buick NE
  - 14. Hwy 32 Northeast\*+^^
  - 15. County Road 75 \*+^^
  - 16. West Entrance\*+^^

**Outstate Area, MO**

- 17. M7M Site #1-AECI Water Tower\*+^^
- 18. M7M Site #2- East Graveyard\*+^^
- 19. M7M Site #3- West Entrance\*+^^
- 20. Mark Twain State Park

*"Special Purpose Monitor*  
*\*Industry Monitor*  
*~Less than 3 years in operation*  
*+Began Monitoring in 2017*  
*^^Data Requirement Rule Sites*  
**M7M: Magnitude 7 Metals**

