Air Quality Analysis for Nitrogen Dioxide

The following information is for the ambient air monitors operated by the state. Data from these monitors is reported to EPA's Air Quality System database, which constitutes the official record of air quality data. The monitoring information provided in the charts below highlights air pollutant levels (if any) that are in violation of the National Ambient Air Quality Standards.

In February 2010, EPA established a new one-hour primary nitrogen dioxide standard of 100 parts per billion, based on the three-year average of the 98th percentile of the yearly distribution of 1-hour daily maximum concentrations. For a full year of data, the 98th percentile corresponds to the 8th highest 1-hour daily maximum concentration. This standard was established on the basis of the health effects of nitrogen dioxide on the human respiratory system. Nitrogen oxides also contribute to the formation of ground-level ozone and to the formation of fine particulate matter.

No monitors in Missouri have been in nonattainment of this standard, and all counties in Missouri have been designated as unclassifiable/attainment by EPA, based on state recommendation.

The rule that implemented the revised standard also included a new requirement for near-road nitrogen dioxide monitoring to help evaluate the potential impact of motor vehicle exhaust emissions on air quality near busy roadways. The first near-road site in Missouri began operation in January 2013 in St. Louis. The second near-road site, in Kansas City, began operation in July 2013. The third site, in the St. Louis area, began operation in January 2015. The following map shows the locations of nitrogen dioxide monitors in Missouri, including the near-road monitoring sites. The following tables include monitoring data from these sites.

For more information about nitrogen dioxide, see the following EPA website, which includes links to additional information on health effects, standards, implementation and other material: www.epa.gov/airquality/nitrogenoxides/index.html

1-HOUR Nitrogen Dioxide (NO_2) Design Value[a]

Report Date 2/21/2017

Site	County	98th Percentile 1-hour Average (ppb) 2013	2014	2015	2016[b]	Year-to-Date 2017[cd]	CV - 100	# of Exceedances 100 ppb (2010 Std) 2017[c]	Design Value 13-15	14-16[b]	Year-to-Date 15-17[c]
St. Louis											
Forest Park, I-64*	St. Louis City	50.4	50.1	46.1	44.1	34.8	211.3	0	49	47	42
Blair Street**	St. Louis City	41.8	45.5	45.5	44.1	37.1	211.9	0	44	45	42
Margaretta	St. Louis City	50.5	43.3	46.3	44.6	37.9	210.6	0	47	45	43
Rider Trail, I-70****	St. Louis	-	-	43.5	42.3	32.1	215.7	0	***	***	39
OutState											
Mark Twain State Park***	Monroe	-	10.5	9.2	7.8	7.4	284.5	0	***	9	8
Kansas City											
Troost	Jackson	48.1	52.7	52.3	46.4	38.2	202.8	0	51	50	46
Blue Ridge, I-70**	Jackson	40.7	45.6	44.7	38.9	37.9	217.9	0	44	43	41
								0			

[a]Quality assured data through December 31, 2015.

[b]Preliminary data through December 31, 2016. Do not quote, do not cite.

[c]Year-to-date preliminary data. Do not quote, do not cite.

[d]For 2017 the 1-hour NO_2 concentrations are the 8th highest daily maximum 1-hour NO_2 average concentration measured year-to-date.

*Near-Roadway site monitoring began on 1/1/2013.

**NCore and Near-Roadway sites monitoring began on 7/1/2013.

***Mark Twain State Park monitoring began on 7/1/2014.

****Near-Roadway site monitoring began on 1/10/2015.

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

CV - 100: The Critical Value (CV) is the current year's 98th percentile which, if monitored, could yield a violation of the NO_2 NAAQS for the most current three year period. (CV = 301.5ppb – Last year's 98th percentile – previous year's 98th percentile).

The highlighted field indicates that the data set does not meet the completeness criteria of 40 CFR Part 50 Appendix S, 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 S, 3.1 (c).

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

1. The data is obtained from automated, continuous instruments; no human has reviewed or checked the accuracy of recent data.

2. The recent data has been subject to only preliminary automated quality assurance procedures.

3. Special conditions such as power outages and equipment malfunction can produce data that is invalid.

4. 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.

5. 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.

6. 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 1st 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.)

MISSOURI DEPARTMENT OF NATURAL RESOURCES

2/21/2017

2017[c]

Eight Highest 1-Hour NO_2 Values Year-To-Date

ST. LOUIS	1st High	2nd High	3rd High	4th High	5th High	6th High	7th High	8th High
Forest Park, I-64*	43.7	42.7	40.5	39.0	38.3	36.9	36.6	34.8
Blair Street**	46.0	43.5	40.9	39.6	38.8	38.0	37.2	37.1
Margaretta	40.3	40.3	40.2	39.7	39.6	39.3	39.0	37.9
Rider Trail, I-70****	40.2	39.6	38.6	38.5	37.0	32.3	32.2	32.1
OutState								
Mark Twain State Park***	10.4	9.9	9.7	8.7	8.7	8.7	7.8	7.4
Kansas City								
Troost	57.4	49.6	44.8	43.5	42.9	38.9	38.7	38.2
Blue Ridge, I-70**	51.0	47.0	45.3	43.8	41.5	41.1	38.7	37.9

[c]Year-to-date preliminary data. Do not quote, do not cite.

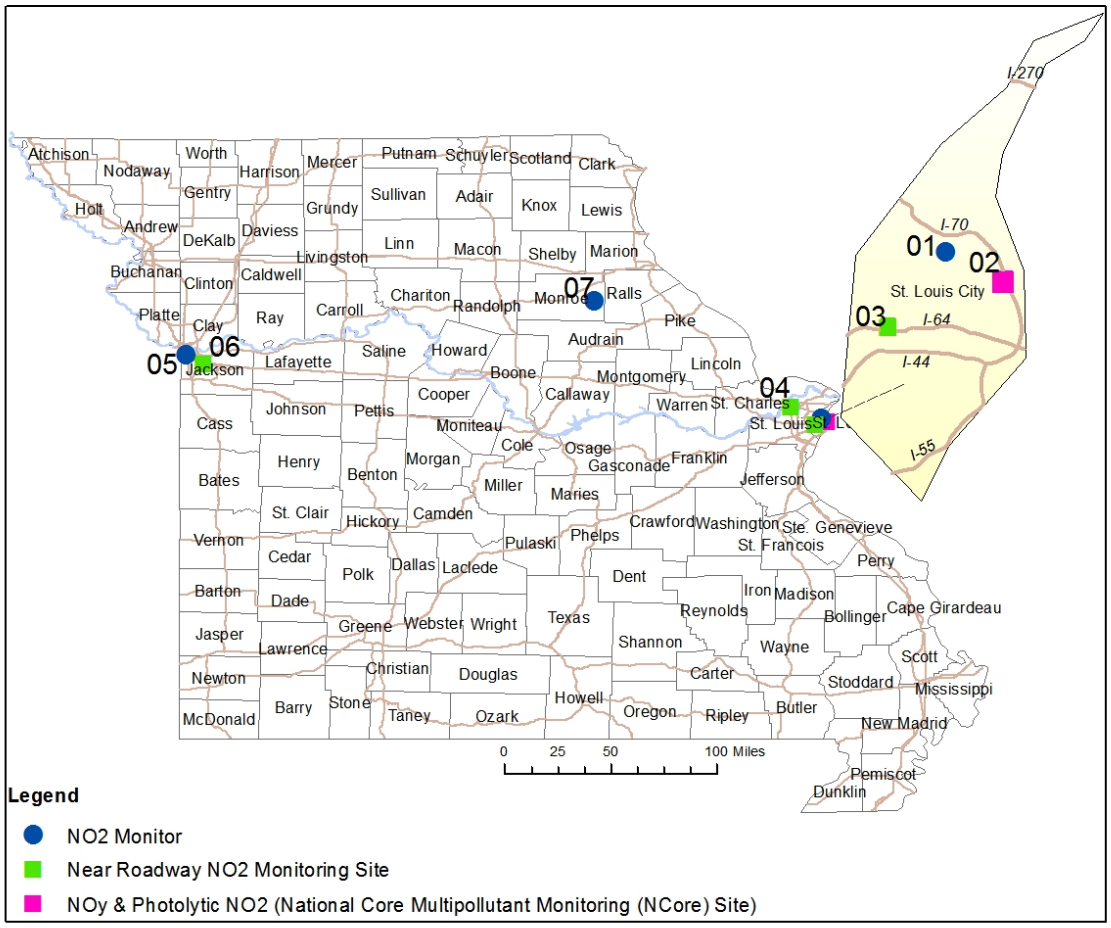
*Near-Roadway site monitoring began on 1/1/2013.

**NCore and Near-Roadway sites monitoring began on 7/1/2013.

***Mark Twain State Park monitoring began on 7/1/2014.

****Near-Roadway site monitoring began on 1/10/2015.

Missouri Statewide Nitrogen Dioxide (NO2) Monitoring Network, 2016



Site#	SiteName
St. Louis Area	
01	Margareta
02	Blair Street^
03	Forest Park, I-64^
04	Rider Trail, I-70^^^
Kansas City Area	
05	Troost
06	Blue Ridge, I-70^
07	Mark Twain State Park^^

^Monitoring Began in 2013
^^Monitoring Began on July 1, 2014
^^^Monitoring Began on January 13, 2015

Missouri
Department of Natural Resources
Air Pollution Control Program
Monitoring Unit, January 2017