Missouri Environmental Public Health Tracking (EPHT) Network

Metadata Record

Air Quality Data for Nitrogen Dioxide

Description

Citation

Titles: NO2 for years 2000 - 2010

Originators: Missouri EPHT Program

Publication date: 06/01/2011

Description

Abstract: These datasets include air monitoring results for Nitrogen dioxide. More information regarding the creation of these data files is available from the U.S. Environmental Protection Agency (EPA) at http://www.epa.gov/mxplorer/index.htm.

Purpose: These datasets are provided as a reference for users of the Missouri EPHT Network.

Supplemental information: These datasets were extracted from the EPA's Air Quality System (AQS) Data Mart available on the internet at: http://www.epa.gov/ttn/airs/aqsdatamart/access.htm.

Point of Contact

Person: Missouri EPHT Program Manager
Organization: Missouri Department of Health and Senior Services
Division of Community and Public Health
Section for Environmental Public Health
Bureau of Environmental Epidemiology

Phone: 573-751-6102
Fax: 573-751-6041
Telecommunications Device or Teletypewriter (TDD/TTY) phone: 800-669-8819
Email: EPHTN@health.mo.gov

Address type: Mailing
Address: PO Box 570
City: Jefferson City
State or Province: MO
Postal code: 65102-0570
County: Cole County

Address type: Physical
Address: 930 Wildwood Drive
City: Jefferson City
State or Province: MO
Postal code: 65109
County: Cole County

Data Type

Native dataset environment: These files were created using Microsoft Excel.

Time Period of Data

Beginning date: 01/01/2000
Ending date: 12/31/2010
Currentness reference: Time Period End Date

Status

Data status: Complete

Update frequency: None

Key Words

Theme:
Keywords: air, air quality, NAAQS, Clean Air Act, national standard, respiratory, monitor, nitrogen dioxide, NO2, ambient, concentration, seasonal, daily, readings, 029, Missouri, MO
Keyword thesaurus: None

Place: Location
Keywords: 029, Missouri, MO
Keyword thesaurus: FIPS 5-2 (State)

Data Access Constraints

Access constraints: Public access

Use constraints:
How should this dataset be used?
Use of this data is restricted for statistical reporting and analysis only.

How should this dataset not be used?
Do not attempt to learn the identity of any person included in the data. Do not disclose or make use of the identity of any person or establishment discovered inadvertently and report the discovery to:

Missouri EPHT Program Manager
Bureau of Environmental Epidemiology
P.O. Box 570
Jefferson City, MO 65102-0570
Phone: 573-751-6102
Email: EPHTN@health.mo.gov

Can it be linked to other datasets?

Do not combine this data with other data for the purpose of matching records to identify individuals. Do not disclose or make use of the identity of any person or establishment discovered inadvertently and report the discovery to:

Missouri EPHT Program Manager
Bureau of Environmental Epidemiology
P.O. Box 570
Jefferson City, MO 65102-0570
Phone: 573-751-6102
Email: EPHTN@health.mo.gov

Can these data be used for commercial purposes?

No.

Can these data be used to form a basis for additional health studies or some remediation actions?

N/A

What are the constraints for data interpretation?

Do not imply or state, either in written or oral form, that interpretations based on the data are those of the original data sources, the Missouri State Government, the Missouri Department of Health and Senior Services, or the Centers for Disease Control and Prevention unless the data user and data sources are formally collaborating and have received written permission to do so. Acknowledge, in all reports or presentations based on these data, the original source of the data, the Missouri Department of Health and Senior Services, the Centers for Disease Control and Prevention, and the United States Environmental Protection Agency.

Data Security Information

Security classification system: Public

Security classification: Unrestricted

Security handling: No security measures have been specified for this dataset.

Spatial Reference Information

Spatial Domain

Bounding Coordinates

In Unprojected coordinates (geographic)

Boundary	Coordinate
West	-95.774699999999996 (latitude)
East	-89.098842000000005 (latitude)

	North	40.613639999999997 (longitude)
	South	35.995479000000003 (longitude)

Data Structure and Attribute Information

Overview

Entity and attribute overview: Under the Clean Air Act, EPA establishes primary air quality standards to protect public health, including the health of "sensitive" populations such as people with asthma, children, and older adults. EPA also sets secondary standards to protect public welfare. This includes protecting ecosystems, including plants and animals, from harm, as well as protecting against decreased visibility and damage to crops, vegetation, and buildings. To get more information regarding national air quality standards, visit http://www.epa.gov/air/criteria.html.

EPA has set national air quality standards for six common air pollutants (also called the criteria pollutants):

- carbon monoxide (CO)
- ozone (O_3)
- lead (Pb)
- nitrogen dioxide (NO_2)
- particulate matter (PM)
- sulfur dioxide (SO_2)

Nitrogen dioxide (NO_2) is one of a group of highly reactive gasses known as "oxides of nitrogen," or "nitrogen oxides (NOx)." Other nitrogen oxides include nitrous acid and nitric acid. While EPA's National Ambient Air Quality Standard covers this entire group of NOx, NO_2 is the component of greatest interest and the indicator for the larger group of nitrogen oxides. NO_2 forms quickly from emissions from cars, trucks and buses, power plants, and off-road equipment. In addition to contributing to the formation of ground-level ozone, and fine particle pollution, NO_2 is linked with a number of adverse effects on the respiratory system.

EPA first set standards for NO_2 in 1971, setting both a primary standard (to protect health) and a secondary standard (to protect the public welfare) at 0.053 parts per million (53 ppb), averaged annually. The Agency has reviewed the standards twice since that time, but chose not to revise the standards at the conclusion of each review. All areas in the U.S. meet the current (1971) NO_2 standards.

More information regarding Nitrogen dioxide is available from the EPA on the Internet at http://www.epa.gov/air/nitrogenoxides/.

Entity and attribute detailed citation: Specific citation information is available from the U.S. EPA on the Internet at http://www.epa.gov/air/index.html. Suggested citation for published findings based on this data, (with the date changed to reflect the save date

on the data file):

US Environmental Protection Agency. Air Quality System Data Mart [internet database] available at http://www.epa.gov/ttn/airs/aqsdatamart. Accessed Month DD, YYYY.

Data Quality and Accuracy Information

General

Logical consistency report: The Clean Air Act, which was last amended in 1990, requires EPA to set National Ambient Air Quality Standards (40 CFR part 50) for pollutants considered harmful to public health and the environment. The Clean Air Act established two types of national air quality standards. Primary standards set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings.

The EPA Office of Air Quality Planning and Standards (OAQPS) has set National Ambient Air Quality Standards for six principal pollutants, which are called "criteria" pollutants. They are listed below. Units of measure for the standards are parts per million (ppm) by volume, parts per billion (ppb - 1 part in 1,000,000,000) by volume, milligrams per cubic meter of air (mg/m^3), and micrograms per cubic meter of air (µg/m^3).

National Ambient Air Quality Standards

	Primary Standards		Secondary Standards	
Pollutant	**Level**	**Averaging Time**	**Level**	**Averaging Time**
Nitrogen Dioxide	53 ppb [3]	Annual (Arithmetic Average)	Same as Primary	
	100 ppb	1-hour [4]	None	

[3] The official level of the annual NO_2 standard is 0.053 ppm, equal to 53 ppb, which is shown here for the purpose of clearer comparison to the 1-hour standard

[4] To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 100 ppb (effective January 22, 2010).

NOTE: Consistent with the new NO2 national air quality standards announced on January 22, 2010, the AQS site now provides data for the daily max 1-hour values, in place of daily mean values, for NO2. In addition, the AQI graphics reflect the new break points for NO2.

Selection Methods: All data matching the parameter codes for the pollutant listed below are retrieved from AQS, regardless of monitoring method. In most cases the data are from Federal Reference (or equivalent) Methods.

Parameter	Code	Averaging Time	Measurement Units
NO2	42602	Daily maximum 1-hour average	parts per billion (ppb)

AQI Calculations: In some displays, pollutant concentrations are shown as AQI (Air Quality Index) values to provide a relevant indicator of air quality (e.g. Good, Moderate, Unhealthy). The AQI calculations follow the Technical Assistance Document for the Reporting of Daily Air Quality.

Design Values: A design value is a statistic that describes the air quality status of a given area relative to the level of the National Ambient Air Quality Standards (NAAQS). Design values are especially helpful when the standard is exceedance-based (e.g. 1-hour ozone, 24-hour PM10, etc.) because they are expressed as a concentration instead of an exceedance count, thereby allowing a direct comparison to the level of the standard.

Design values are defined in the guidance hyperlinked below and are consistent with the NAAQS in CFR Part 50. As such, they are often based on multiple years of data, ensuring a stable indicator. Design values are typically used to classify nonattainment areas, assess progress towards meeting the NAAQS, and develop control strategies. Design values are computed and published annually by EPA's Office of Air Quality Planning and Standards and reviewed in conjunction with the EPA Regional Offices. More information on design values can is available on the Internet at http://www.epa.gov/airtrends/values.html.

Completeness report: Data completeness for each air monitor was based on the availability of samples for a certain number of days during each calendar quarter. Data are only provided for counties with monitors that pass the completeness criterion.

For additional information concerning the technical documentation, contact the Office of Air and Radiation Communications Office within the U.S. EPA at 1200 Pennsylvania Avenue, NW, Washington, DC 20760 or by telephone at 866-411-4EPA (toll-free from anywhere in the United States).

Data Source and Process Information

Process Steps

Process step information

Process Step 1

Process description: Datasets extracted from the EPA's Air Quality System (AQS) Data Mart available on the internet at: http://www.epa.gov/ttn/airs/aqsdatamart/access.htm and downloaded to local machine.
Process date: 06/01/2011

Process Step 2

Process description: Microsoft Excel files created.
Process date: 06/01/2011

Process Step 3

Process description: Microsoft Excel files converted to Comma Separated Values (.csv) format by year.
Process date: 06/01/2011

Process Step 4

Process description: Missouri Metadata record created for the datasets using the Missouri EPHT Metadata Record format then converted to .pdf. The creation of a Missouri Metadata record is completed to assist users by offering the record in a format compatible with electronic reading devices and smart phones.
Process date: 06/01/2011

Data Distribution Information

General

Resource description: CSV file

Distribution liability: These data were provided by the Missouri Department of Health and Senior Services; the findings and conclusions based on these data are the sole responsibility of the author(s) of the study.

Although every effort has been made to ensure the accuracy of the material contained in this dataset and the Missouri EPHT Network Portal, complete accuracy cannot be guaranteed. The Missouri Department of Health and Senior Services is not responsible for any errors or misprints contained herein and cannot accept any responsibility whatsoever for loss or damage occasioned or claimed to have been occasioned, in part or in full, as a consequence of any person acting, or refraining from acting, as a result of a matter contained within the Missouri EPHT Network Portal.

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Custom Order Process

Custom order process: Custom selected data from this data source/set is available from the United States EPA at:

- Office of Air and Radiation Communications Office
  US EPA
  1200 Pennsylvania Avenue, NW
  Washington, DC 20760
- 866-411-4EPA (toll-free from anywhere in the United States)
  This is the EPA Technical Support Center, a general computer system telephone help line, staffed by an EPA contractor. Please state that you are calling about the OAR Web site.
- OAR_Comments@epa.gov

More information on obtaining a custom created Missouri specific health record dataset is available at http://www.health.mo.gov/data/policies.php

Metadata Reference

Metadata Date

Last updated: 06/01/2011

Metadata Point of Contact

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Metadata Access Constraints

Access constraints: None
Use constraints: None

Metadata Standards

Standard name: FGDC Content Standard for Geospatial Metadata