Monitoring Site Information File

Introduction

The U.S. Environmental Protection Agency's (EPA) nationwide, voluntary program, AirNow (www.airnow.gov), provides real-time air quality data and forecasts to protect public health across the United States, Canada, and parts of Mexico. AirNow receives real-time ozone and $PM_{2.5}$ data from over 2,500 monitors and collects air quality forecasts for more than 500 cities.

As part of the Global Earth Observation System of Systems (GEOSS) program, the AirNow API system broadens access to AirNow data and data products. AirNow API produces data products in several standard data formats and makes them available via FTP and web services. This document describes the monitoring site information file format.

All data provided by AirNow API are made possible by the efforts of more than 150 local, state, tribal, provincial, and federal government agencies (https://www.airnow.gov/partners/). These data are not fully verified or validated; they should be considered preliminary and are subject to change. Data and information reported to AirNow from federal, state, local, and tribal agencies are for the express purpose of reporting and forecasting the Air Quality Index (AQI). Therefore, they should not be used to formulate or support regulation, trends, guidance, or any other government or public decision making. Official regulatory air quality data must be obtained from EPA's Air Quality System (AQS) (https://www.epa.gov/aqs). See the AirNow Data Exchange Guidelines at http://airnowapi.org/docs/DataUseGuidelines.pdf.

About the Air Quality Index

The EPA developed the AQI, which reports levels of ozone, particle pollution, and other common air pollutants on the same scale. An AQI reading of 101 corresponds to a level that is above the national air quality standard—the higher the AQI rating, the greater the health impact.

The AQI is divided into color-coded categories, and each category is identified by a simple informative descriptor. The descriptors are intended to convey information to the public about how air quality within each category relates to public health. The table below defines the AQI categories.

AQI Numbers	AQI Category (Descriptor)	AQI Color	Color Formulas (RGB)	(CMYK)
0 - 50	Good	Green	0,228,0	40,0,100,0
51 - 100	Moderate	Yellow	255,255,0	0,0,100,0
101 - 150	Unhealthy for Sensitive Groups	Orange	255,126,0	0,52,100,0
151 - 200	Unhealthy	Red	255,0,0	0,100,100,0
201 - 300	Very Unhealthy	Purple	143,63,151	51,89,0,0
301 - 500	Hazardous	Maroon	126,0,35	30,100,100,30

File Format Specifications

Data are stored in an ASCII file that contains the latest available descriptive and geographical information about monitoring sites contained in the AirNow database. These files are updated twice hourly (at 25 and 55 minutes past the hour). A separate record is created for each site-parameter combination.

For example, if a site delivers ozone (O_3) and $PM_{2.5}$ data, the site will have two records in the file. File specifications are as follows:

File name format:	monitoring_site_locations.dat
Update frequency:	sub-hourly (:25 and :55 minutes past the hour)
Field delimiter:	| (ASCII character 124)
Field specifications:	see table on the next page

Location of files: The latest available file can be found in the today directory

Address:	https://files.airnowtech.org
Directory:	/?prefix=airnow/today/

The last file produced each day is available in that day's directory at the following URL

Address:	https://files.airnowtech.org
Directory:	/?prefix=airnow/YYYY/YYYYMMDD/

Report units: None.

Sample record:

AQSID|parameter name|site code|site name|status|agency id|agency name|EPA region|latitude|longitude|elevation|GMT offset|country code|MSA code|MSA name|state code|state name|county code|county name

For Data Field Definitions, see the table on the next page.

Sample records:

060410001|O3|0001|San Rafael|Active|CA2|San Francisco Bay Area AQMD|R9|37.972200|-122.518900|0.900|-8.00|US|||41860| San Francisco-Oakland-Fremont, CA |06|CA|06041|MARIN||

800090072|O3|0072|UAM Iztapalapa|Active|MXC|Red de Monitoreo de la Calidad del Aire de la Ciudad de Mexico|MX|19.360700|-99.073800|2222.200|-6.00|MX|||||80|MX|80009|DISTRITO FEDERAL||

271453052|PM2.5|3052|St. Cloud|Active|MN1|Minnesota Pollution Control Agency|R5|45.550000|-94.133300|0.000|-6.00|US|||33460| Minneapolis-St. Paul-Bloomington, MN-WI |27|MN|27145|STEARNS||

040191030|PM10|1030|Green Valley|Inactive|AZ3|Pima County Department of Environmental Quality|R9|31.879400|-110.996400|0.000|-7.00|US|||46060| Tucson, AZ |04|AZ|04019|PIMA||

484530014|NOX|0014|Austin Northwest C3|Active|TX1|Texas Commission on Environmental Quality|R6|30.354200|-97.760002|256.200|-6.00|US|||12420| Austin-Round Rock, TX |48|TX|48453|TRAVIS||

150012020|WS|2020|Ocean View|Active|HI1|Hawaii State Dept. of Health|R9|19.117561|-155.778137|70.200|-10.00|US|||25900| Hilo, HI |15|HI|15001|HAWAII||

Field Specifications

Field Name	Characters	Units/Format	Description	Sample
AQSID	9	Numeric	Nine-digit EPA AQS identifier.	060410001
Parameter name	8	Text	Parameter measured at site.	O3
Site code	4	Numeric	Four-digit site code from the AQSID.	0001
Site name	20	Text	AirNow site name.	San Rafael
Status	8	Text	Site operational status.	Active
Agency ID	3	Text	Three-character Agency ID assigned by AirNow.	CA2
Agency name	60	Text	Name of agency delivering data from the site.	San Francisco Bay Area AQMD
EPA region	2	Text	EPA region number in which site is located.	R9
Latitude	9	Degrees	Eight-digit latitude of site location.	37.972500
Longitude	11	Degrees	Nine-digit longitude of site location.	-122.518900
Elevation	8	Meters	Elevation of site location.	0.900
GMT offset	6	Hours	Number of hours to add to the time to convert to the local time zone. For example: ET=-5.00, CT=-6.00, MT=-7.00, PT=-8.00.	-8.00
Country code	2	Text	Two-character, alphabetic FIPS country code.	US
MSA code	5	Numeric	Five-digit FIPS code for the metropolitan statistical area (MSA), if applicable.	41860
MSA name	50	Text	Name of MSA in which site is located. Blank if the site is not located within an MSA.	San Francisco-Oakland-Fremont, CA
State code	2	Numeric	Two-digit FIPS state code.	06
State name	2	Text	Abbreviated name of state in which site is located.	CA
County code	5	Numeric	Five-digit GNIS Feature ID of the named populated place in which site is located.	06041
County name	25	Text	Name of county in which site is located.	MARIN

FIPS = Federal Information Processing Standards   GNIS = Geographic Names Information Systems, USGS GNIS

Contacts

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