AirData Download Files Documentation

Version 3.0.0, December 01, 2015

Table of Contents

1. Introduction

This document describes the contents of the pre-generated files that can be downloaded from http://www3.epa.gov/airquality/airdata/ad_data.html.

The file download page contains seven types of files

- Site Descriptions
- Monitor Descriptions
- Annual Summary Data
- Daily and Daily Summary Data
- Hourly Data
- 8-Hour Average Data
- Blanks Data

The contents and formats of these files will be described in turn.

All of this data comes from EPA's Air Quality System (AQS). Data collection agencies report their data to EPA via this system and it calculates several types of aggregate (summary)

data for EPA internal use. This includes daily and annual summaries, but not monthly summaries, as these are not routinely needed by EPA.

All files are comma separated variable (CSV) format that are compressed to save space. Each type of file has different content (columns) that are described in this document.

There are two concepts about how EPA stores data that are useful in understanding the data files: monitors and pollutant standards. These are described in the sections below.

1.1. Monitors

For the purposes of AQS, a monitor does not refer to a specific piece of equipment. Instead, it reflects that a given pollutant (or other parameter) is being measured at a given site.

Identified by:

- The site (state + county + site number) where the monitor is located AND
- The pollutant code AND
- POC – Parameter Occurrence Code. Used to uniquely identify a monitor if there is more than one device measuring the same pollutant at the same site.

For example monitor IDs are usually written in the following way:

```
SS-CCC-NNNN-PPPPP-Q
```

where `SS` is the State FIPS code, `CCC` is the County FIPS code, and `NNNN` is the Site Number within the county (leading zeroes are always included for these fields), `PPPPP` is the AQS 5-digit parameter code, and `Q` is the POC. For example:

```
01-089-0014-44201-2
```

is Alabama, Madison County, Site Number 14, ozone monitor, POC 2.

1.2. Pollutant Standards

An important concept to understand in interpreting summary data is that of a "pollutant standard". The national ambient air quality standards (NAAQS, http://www3.epa.gov/ttn/naaqs/criteria.html) all have an averaging time and a form. Furthermore, each pollutant may have several applicable standards based on the date of issuance, the duration of the sample, and a primary or secondary standard.

When comparing data to a NAAQS, EPA must aggregate the data according to the rules of the applicable pollutant standard. In order to do this, we must summarize the same data various ways. So the annual and daily summary files will (possibly) contain multiple records that have been calculated using different rules and starting metrics. These are differentiated by the Pollutant Standard. (The Annual Summary file also contains a Metric Used column indicating the metric reflected in the summary calculations.)

For an example of metric, consider ozone. Its standard form is the "annual fourth-highest daily maximum 8-hr concentration". So we first calculated 8-hour averages. Then we calculate the daily maximum of these 8-hour averages. Then, in the annual summary record, all metrics (mean, maxes, percentiles) are based on the daily maximum 8-hour average, not the individual sample values.

1.3. Changes Since Last Version

Changes implemented in December 2015 update.

- Additional parameters added to VOC list; all VOC files regenerated.
- Site and Monitor description formats added.
- Minor editorial changes.

Changes implemented in June 2015 update (All files were regenerated to include the new columns).

- Annual Summary - Completeness Indicator added as column #19.
- Daily Summary - Method Code added as column #21.
- Hourly Data - Method Code added as column #20.

2. Site Description File

2.1. Content

Each unique geographic location that contains monitors is called a "site" in AQS. Information about the geographic setting is store in the site record, which are presented here. A unique site is identified by the combination of state code, county code, and site number (within county). It can also be identified by the latitude and longitude.

2.2. Format

The file is comma separated variables (CSV) with a header row.

Field Position	Field Name	Description
1	State Code	The FIPS code of the state in which the monitor resides.
2	County Code	The FIPS code of the county in which the monitor resides.
3	Site Number	A unique number within the county identifying the site.
4	Latitude	The monitoring site’s angular distance north of the equator measured in decimal degrees.
5	Longitude	The monitoring site’s angular distance east of the prime meridian measured in decimal degrees.
6	Datum	The Datum associated with the Latitude and Longitude measures.
7	Elevation	The elevation of the ground at the site in meters above mean sea level.
8	Land Use	A category describing the predominant land use within a 1/4 mile radius of the site.
9	Location Setting	A description of the setting within which the monitoring site is located. E.g., rural, urban, etc.

Field Position	Field Name	Description
10	Site Established Date	The date when the site began operating.
11	Site Closed Date	The date on which the operating agency indicated that all operations ceased at this site.
12	Met Site State Code	Where sites are required to collect meteorological data, they may be able to list a surrogate site from where the meteorological data will be used. If a "met" site is listed this contains the AQS State Code identifier for that site.
13	Met Site County Code	Where sites are required to collect meteorological data, they may be able to list a surrogate site from where the meteorological data will be used. If a "met" site is listed this contains the AQS County Code identifier for that site.
14	Met Site Site Number	Where sites are required to collect meteorological data, they may be able to list a surrogate site from where the meteorological data will be used. If a "met" site is listed this contains the AQS Site Number for that site.
15	Met Site Type	Where sites are required to collect meteorological data, they may be able to list a surrogate site from where the meteorological data will be used. If a "met" site is listed this contains the type of surrogate site. E.g., AQS site, National Weather Service site, etc.
16	Met Site Distance	Where sites are required to collect meteorological data, they may be able to list a surrogate site from where the meteorological data will be used. If a "met" site is listed this contains the distance from this site to the met site in meters.
17	Met Site Direction	Where sites are required to collect meteorological data, they may be able to list a surrogate site from where the meteorological data will be used. If a "met" site is listed this contains the direction from this site to the met site (true, not magnetic, direction).
18	GMT Offset	The time difference (in hours) between local standard time at this site and GMT.
19	Owning Agency	The name of the agency that owns or controls the land at the site.
20	Local Site Name	The name of the site (if any) given by the State, local, or tribal air pollution control agency that operates it.
21	Address	The approximate street address of the monitoring site.
22	Zip Code	The postal zip code in which the monitoring site resides.
23	State Name	The name of the state where the monitoring site is located.

Field Position	Field Name	Description
24	County Name	The name of the county where the monitoring site is located.
25	City Name	The name of the city where the monitoring site is located. This represents the legal incorporated boundaries of cities and not urban areas.
26	CBSA Name	The name of the core bases statistical area (metropolitan area) where the monitoring site is located.
27	Tribe Name	If this site resides on tribal lands and the tribe has chosen to identify the site with tribal identifiers, this is the name of the tribe that owns the site.
28	Extraction Date	The date on which this data was retrieved from the AQS Data Mart. This does not mean that all data is valid as of this date. Once site information is entered by the owning agency, it may not be updated as values change (e.g., location setting evolves from urban to suburban).

3. Monitor Description File

3.1. Content

Each parameter that is measured at a site is considered a "monitor" in AQS. (So a "monitor" does not necessarily correspond to a physical instrument/sampler.) AQS tracks administrative information about monitors including who operates them, the methods being used, the networks they belong to, etc. That information is available in this file. A unique monitor is identified by the combination of state code, county code, site number (within county), parameter code, and parameter occurrence code ("POC", used to differentiate when a parameter is measured more than once at a site).

3.2. Format

The file is comma separated variables (CSV) with a header row.

Field Position	Field Name	Description
1	State Code	The FIPS code of the state in which the monitor resides.
2	County Code	The FIPS code of the county in which the monitor resides.
3	Site Number	A unique number within the county identifying the site.
4	Parameter Code	The AQS code corresponding to the parameter measured by the monitor.

Field Position	Field Name	Description
5	Parameter Name	The name or description assigned in AQS to the parameter measured by the monitor. Parameters may be pollutants or non-pollutants.
6	POC	This is the “Parameter Occurrence Code” used to distinguish different instruments that measure the same parameter at the same site.
7	Latitude	The monitoring site’s angular distance north of the equator measured in decimal degrees.
8	Longitude	The monitoring site’s angular distance east of the prime meridian measured in decimal degrees.
9	Datum	The Datum associated with the Latitude and Longitude measures.
10	First Year of Data	The year in which the earliest sample from this site is available in AQS.
11	Last Sample Date	The date on which the most recent sample from this site is available in AQS. This is often the best way to determine if a monitor is still operating. Note that the reporting deadlines to AQS are generally lengthy - about 6 months for most parameters.
12	Monitor Type	An administrative or regulatory classification for the monitor.
13	Networks	A list of the monitoring networks (groups of monitors with common goals and procedures) to which the monitor belongs. If the monitor belongs to more than one network, the names will be separated with semicolons.
14	Reporting Agency	The name of the agency responsible for reporting data to AQS.
15	PQAO	The name of the Primary Quality Assurance Organization for the monitor. Monitors of the same parameter belonging to the same PQAO must meet aggregate quality assurance requirements.
16	Collecting Agency	The name of the agency responsible for collecting data from the monitor.
17	Exclusions	If the agency operating the monitor has requested that data from this monitor be excluded from NAAQS calculations and the governing EPA regional office has agreed, the NAAQS standard(s) and the years of exclusion are listed.
18	Monitoring Objective	Identification of the reason for measuring air quality by the monitor.

Field Position	Field Name	Description
19	Last Method Code	A three digit code representing the measurement method used by the monitor for its most recent sample (methods can change, but often do not). A method code is only unique within a parameter (that is, method 111 for ozone is not the same as method 111 for benzene).
20	Last Method	The full description of the measurement method used by the monitor for its most recent sample (methods can change, but often do not).
21	NAAQS Primary Monitor	A flag indicating if this monitor is part of a collocated set of monitors at the site and it is the primary data source for NAAQS data comparisons.
22	QA Primary Monitor	A flag indicating if this monitor is part of a collocated set of monitors at the site and it is the primary monitor for making quality assurance comparisons.
23	Local Site Name	The name of the site (if any) given by the State, local, or tribal air pollution control agency that operates it.
24	Address	The approximate street address of the monitoring site.
25	State Name	The name of the state where the monitoring site is located.
26	County Name	The name of the county where the monitoring site is located.
27	City Name	The name of the city where the monitoring site is located. This represents the legal incorporated boundaries of cities and not urban areas.
28	CBSA Name	The name of the core bases statistical area (metropolitan area) where the monitoring site is located.
29	Tribe Name	If this monitor resides on tribal lands and the tribe has chosen to identify the site with tribal identifiers, this is the name of the tribe that owns the site.
30	Extraction Date	The date on which this data was retrieved from the AQS Data Mart. This does not mean that all data is valid as of this date. Once monitor information is entered by the reporting agency, it may not be updated as values change (e.g., location setting evolves from urban to suburban).

4. Annual Summary Files

4.1. Content

Each annual summary file contains data for every monitor (sampled parameter) in our database for the year. These files are relatively small and did not warrant being broken

down by parameter, etc.

The annual summary files contain (at least) one record for each monitor that reported data for the given year. There will be multiple records for the monitor if:

- There are calculated sample durations for the pollutant. For example, PM2.5 is sometimes reported as 1-hour samples and EPA calculates 24-hour averages.
- There are multiple standards for the pollutant (q.v. pollutant standards).
- There were exceptional events associated with some measurements that the monitoring agency has or may request be excluded from comparison to the standard.

4.2. Format

The file is comma separated variables (CSV) with a header row.

Field Position	Field Name	Description
1	State Code	The FIPS code of the state in which the monitor resides.
2	County Code	The FIPS code of the county in which the monitor resides.
3	Site Num	A unique number within the county identifying the site.
4	Parameter Code	The AQS code corresponding to the parameter measured by the monitor.
5	POC	This is the “Parameter Occurrence Code” used to distinguish different instruments that measure the same parameter at the same site.
6	Latitude	The monitoring site’s angular distance north of the equator measured in decimal degrees.
7	Longitude	The monitoring site’s angular distance east of the prime meridian measured in decimal degrees.
8	Datum	The Datum associated with the Latitude and Longitude measures.
9	Parameter Name	The name or description assigned in AQS to the parameter measured by the monitor. Parameters may be pollutants or non-pollutants.
10	Sample Duration	The length of time that air passes through the monitoring device before it is analyzed (measured). So, it represents an averaging period in the atmosphere (for example, a 24-hour sample duration draws ambient air over a collection filter for 24 straight hours). For continuous monitors, it can represent an averaging time of many samples (for example, a 1-hour value may be the average of four one-minute samples collected during each quarter of the hour).

Field Position	Field Name	Description
11	Pollutant Standard	A description of the ambient air quality standard rules used to aggregate statistics. (See description at beginning of document.)
12	Metric Used	The base metric used in the calculation of the aggregate statistics presented in the remainder of the row. For example, if this is Daily Maximum, then the value in the Mean column is the mean of the daily maximums.
13	Method Name	A short description of the processes, equipment, and protocols used in gathering and measuring the sample.
14	Year	The year the annual summary data represents.
15	Units of Measure	The unit of measure for the parameter. QAD always returns data in the standard units for the parameter. Submitters are allowed to report data in any unit and EPA converts to a standard unit so that we may use the data in calculations.
16	Event Type	Indicates whether data measured during exceptional events are included in the summary. A wildfire is an example of an exceptional event; it is something that affects air quality, but the local agency has no control over. No Events means no events occurred. Events Included means events occurred and the data from them is included in the summary. Events Excluded means that events occurred but data form them is excluded from the summary. Concurred Events Excluded means that events occurred but only EPA concurred exclusions are removed from the summary. If an event occurred for the parameter in question, the data will have multiple records for each monitor.
17	Observation Count	The number of observations (samples) taken during the year.
18	Observation Percent	The percent representing the number of observations taken with respect to the number scheduled to be taken during the year. This is only calculated for monitors where measurements are required (e.g., only certain parameters).
19	Completeness Indicator	An indication of whether the regulatory data completeness criteria for valid summary data have been met by the monitor for the year. Y means yes, N means no or that there are no regulatory completeness criteria for the parameter.
20	Valid Day Count	The number of days during the year where the daily monitoring criteria were met, if the calculation of the summaries is based on valid days.
21	Required Day Count	The number of days during the year which the monitor was scheduled to take samples if measurements are required.

Field Position	Field Name	Description
22	Exceptional Data Count	The number of data points in the annual data set affected by exceptional air quality events (things outside the norm that affect air quality).
23	Null Data Count	The count of scheduled samples when no data was collected and the reason for no data was reported.
24	Primary Exceedance Count	The number of samples during the year that exceeded the primary air quality standard.
25	Secondary Exceedance Count	The number of samples during the year that exceeded the secondary air quality standard.
26	Certification Indicator	An indication whether the completeness and accuracy of the information on the annual summary record has been certified by the submitter. Certified means the submitter has certified the data (due May 01 the year after collection). Certification not required means that the parameter does not require certification or the deadline has not yet passed. Uncertified (past due) means that certification is required but is overdue. Requested but not yet concurred means the submitter has completed the process, but EPA has not yet acted to certify the data. Requested but denied means the submitter has completed the process, but EPA has denied the request for cause. Was certified but data changed means the data was certified but data was replaced and the process has not been repeated.
27	Num Obs Below MDL	The number of samples reported during the year that were below the method detection limit (MDL) for the monitoring instrument. Sometimes these values are replaced by 1/2 the MDL in summary calculations.
28	Arithmetic Mean	The average (arithmetic mean) value for the year.
29	Arithmetic Standard Dev	The standard deviation about the mean of the values for the year.
30	1st Max Value	The highest value for the year.
31	1st Max DateTime	The date and time (on a 24-hour clock) when the highest value for the year (the previous field) was taken.
32	2nd Max Value	The second highest value for the year.
33	2nd Max DateTime	The date and time (on a 24-hour clock) when the second highest value for the year (the previous field) was taken.
34	3rd Max Value	The third highest value for the year.

Field Position	Field Name	Description
35	3rd Max DateTime	The date and time (on a 24-hour clock) when the third highest value for the year (the previous field) was taken.
36	4th Max Value	The fourth highest value for the year.
37	4th Max DateTime	The date and time (on a 24-hour clock) when the fourth highest value for the year (the previous field) was taken.
38	1st Max Non Overlapping Value	For 8-hour CO averages, the highest value of the year.
39	1st NO Max DateTime	The date and time (on a 24-hour clock) when the first maximum non overlapping value for the year (the previous field) was taken.
40	2nd Max Non Overlapping Value	For 8-hour CO averages, the second highest value of the year that does not share any hours with the 8-hour period of the first max non overlapping value.
41	2nd NO Max DateTime	The date and time (on a 24-hour clock) when the second maximum non overlapping value for the year (the previous field) was taken.
42	99th Percentile	The value from this monitor for which 99 per cent of the rest of the measured values for the year are equal to or less than.
43	98th Percentile	The value from this monitor for which 98 per cent of the rest of the measured values for the year are equal to or less than.
44	95th Percentile	The value from this monitor for which 95 per cent of the rest of the measured values for the year are equal to or less than.
45	90th Percentile	The value from this monitor for which 90 per cent of the rest of the measured values for the year are equal to or less than.
46	75th Percentile	The value from this monitor for which 75 per cent of the rest of the measured values for the year are equal to or less than.
47	50th Percentile	The value from this monitor for which 50 per cent of the rest of the measured values for the year are equal to or less than (i.e., the median).
48	10th Percentile	The value from this monitor for which 10 per cent of the rest of the measured values for the year are equal to or less than.
49	Local Site Name	The name of the site (if any) given by the State, local, or tribal air pollution control agency that operates it.
50	Address	The approximate street address of the monitoring site.
51	State Name	The name of the state where the monitoring site is located.

Field Position	Field Name	Description
52	County Name	The name of the county where the monitoring site is located.
53	City Name	The name of the city where the monitoring site is located. This represents the legal incorporated boundaries of cities and not urban areas.
54	CBSA Name	The name of the core bases statistical area (metropolitan area) where the monitoring site is located.
55	Date of Last Change	The date the last time any numeric values in this record were updated in the AQS data system.

5. Daily Summary Files

5.1. Content

Each daily summary file contains data for every monitor (sampled parameter) in our database for each day. These files are separated by parameter (or parameter group) to make the sizes more manageable.

This file will contain a daily summary record that is:

1) The aggregate of all sub-daily measurements taken at the monitor.

2) The single sample value if the monitor takes a single, daily sample (e.g., there is only one sample with a 24-hour duration). In this case, the mean and max daily sample will have the same value.

The daily summary files contain (at least) one record for each monitor that reported data for the given day. There may be multiple records for the monitor if:

- There are calculated sample durations for the pollutant. For example, PM2.5 is sometimes reported as 1-hour samples and EPA calculates 24-hour averages.
- There are multiple standards for the pollutant (q.v. pollutant standards).
- There were exceptional events associated with some measurements that the monitoring agency has or may request be excluded from comparison to the standard.

5.2. Format

The file is comma separated variables (CSV) with a header row.

Field Position	Field Name	Description
1	State Code	The FIPS code of the state in which the monitor resides.
2	County Code	The FIPS code of the county in which the monitor resides.
3	Site Num	A unique number within the county identifying the site.

Field Position	Field Name	Description
4	Parameter Code	The AQS code corresponding to the parameter measured by the monitor.
5	POC	This is the “Parameter Occurrence Code” used to distinguish different instruments that measure the same parameter at the same site.
6	Latitude	The monitoring site’s angular distance north of the equator measured in decimal degrees.
7	Longitude	The monitoring site’s angular distance east of the prime meridian measured in decimal degrees.
8	Datum	The Datum associated with the Latitude and Longitude measures.
9	Parameter Name	The name or description assigned in AQS to the parameter measured by the monitor. Parameters may be pollutants or non-pollutants.
10	Sample Duration	The length of time that air passes through the monitoring device before it is analyzed (measured). So, it represents an averaging period in the atmosphere (for example, a 24-hour sample duration draws ambient air over a collection filter for 24 straight hours). For continuous monitors, it can represent an averaging time of many samples (for example, a 1-hour value may be the average of four one-minute samples collected during each quarter of the hour).
11	Pollutant Standard	A description of the ambient air quality standard rules used to aggregate statistics. (See description at beginning of document.)
12	Date Local	The calendar date for the summary. All daily summaries are for the local standard day (midnight to midnight) at the monitor.
13	Units of Measure	The unit of measure for the parameter. QAD always returns data in the standard units for the parameter. Submitters are allowed to report data in any unit and EPA converts to a standard unit so that we may use the data in calculations.

Field Position	Field Name	Description
14	Event Type	Indicates whether data measured during exceptional events are included in the summary. A wildfire is an example of an exceptional event; it is something that affects air quality, but the local agency has no control over. No Events means no events occurred. Events Included means events occurred and the data from them is included in the summary. Events Excluded means that events occurred but data form them is excluded from the summary. Concurred Events Excluded means that events occurred but only EPA concurred exclusions are removed from the summary. If an event occurred for the parameter in question, the data will have multiple records for each monitor.
15	Observation Count	The number of observations (samples) taken during the day.
16	Observation Percent	The percent representing the number of observations taken with respect to the number scheduled to be taken during the day. This is only calculated for monitors where measurements are required (e.g., only certain parameters).
17	Arithmetic Mean	The average (arithmetic mean) value for the day.
18	1st Max Value	The highest value for the day.
19	1st Max Hour	The hour (on a 24-hour clock) when the highest value for the day (the previous field) was taken.
20	AQI	The Air Quality Index for the day for the pollutant, if applicable.
21	Method Code	An internal system code indicating the method (processes, equipment, and protocols) used in gathering and measuring the sample. The method name is in the next column.
22	Method Name	A short description of the processes, equipment, and protocols used in gathering and measuring the sample.
23	Local Site Name	The name of the site (if any) given by the State, local, or tribal air pollution control agency that operates it.
24	Address	The approximate street address of the monitoring site.
25	State Name	The name of the state where the monitoring site is located.
26	County Name	The name of the county where the monitoring site is located.
27	City Name	The name of the city where the monitoring site is located. This represents the legal incorporated boundaries of cities and not urban areas.
28	CBSA Name	The name of the core bases statistical area (metropolitan area) where the monitoring site is located.

Field Position	Field Name	Description
29	Date of Last Change	The date the last time any numeric values in this record were updated in the AQS data system.

6. Hourly Data Files

6.1. Content

These files contain the hourly data (sometimes called measurements, samples, etc). These files are separated by parameter (or parameter group) to make the sizes more manageable.

EPA does get sample data reported at durations other than hourly. For example, some SO2 is reported as 5-minute samples and some toxic substances are reported as 3-hour samples (and most PM speciation data is reported as 24-hour samples). These samples have not been included in these hourly files but their aggregates are included in the daily files, and the sample data is available on request.

If a particular file is empty (record count = 0) that means that no hourly data was collected for that parameter or group.

To keep the size of the raw data files smaller, less geographic descriptive information has been included. If you need the Local Site Name, CBSA, etc. you can find that in the Annual Summary file for the same monitor.

6.2. Format

The file is comma separated variables (CSV) with a header row.

Field Position	Field Name	Description
1	State Code	The FIPS code of the state in which the monitor resides.
2	County Code	The FIPS code of the county in which the monitor resides.
3	Site Num	A unique number within the county identifying the site.
4	Parameter Code	The AQS code corresponding to the parameter measured by the monitor.
5	POC	This is the “Parameter Occurrence Code” used to distinguish different instruments that measure the same parameter at the same site.
6	Latitude	The monitoring site’s angular distance north of the equator measured in decimal degrees.
7	Longitude	The monitoring site’s angular distance east of the prime meridian measured in decimal degrees.

Field Position	Field Name	Description
8	Datum	The Datum associated with the Latitude and Longitude measures.
9	Parameter Name	The name or description assigned in AQS to the parameter measured by the monitor. Parameters may be pollutants or non-pollutants.
10	Date Local	The calendar date of the sample in Local Standard Time at the monitor.
11	Time Local	The time of day that sampling began on a 24-hour clock in Local Standard Time.
12	Date GMT	The calendar date of the sample in Greenwich Mean Time.
13	Time GMT	The time of day that sampling began on a 24-hour clock in Greenwich Mean Time.
14	Sample Measurement	The measured value in the standard units of measure for the parameter.
15	Units of Measure	The unit of measure for the parameter. QAD always returns data in the standard units for the parameter. Submitters are allowed to report data in any unit and EPA converts to a standard unit so that we may use the data in calculations.
16	MDL	The Method Detection Limit. The minimum sample concentration detectable for the monitor and method. Note: if samples are reported below this level, they may have been replaced by 1/2 the MDL.
17	Uncertainty	The total measurement uncertainty associated with a reported measurement as indicated by the reporting agency.
18	Qualifier	Sample values may have qualifiers that indicate why they are missing or that they are out of the ordinary. Types of qualifiers are: null data, exceptional event, natural events, and quality assurance. The highest ranking qualifier, if any, is described in this field.
19	Method Type	An indication of whether the method used to collect the data is a federal reference method (FRM), equivalent to a federal reference method, an approved regional method, or none of the above (non-federal reference method).
20	Method Code	An internal system code indicating the method (processes, equipment, and protocols) used in gathering and measuring the sample. The method name is in the next column.
21	Method Name	A short description of the processes, equipment, and protocols used in gathering and measuring the sample.
22	State Name	The name of the state where the monitoring site is located.

Field Position	Field Name	Description
23	County Name	The name of the county where the monitoring site is located.
24	Date of Last Change	The date the last time any numeric values in this record were updated in the AQS data system.

7. 8-Hour Average Files

7.1. Content

Ozone and CO have NAAQS in the form of an 8-hour average. (Note that the ozone time stamp is at the begin hour of an 8-hour period and CO is at the end hour.) For convenience, we are posting the EPA calculated 8-hour averages.

These files are also at the monitor level. An 8-hour average is calculated for every clock hour. Only complete data (e.g., with 6 or more valid hourly samples in the 8 hour block, or 75% completeness) is included in these files.

7.2. Format

The file is comma separated variables (CSV) with a header row.

Field Position	Field Name	Description
1	State Code	The FIPS code of the state in which the monitor resides.
2	County Code	The FIPS code of the county in which the monitor resides.
3	Site Num	A unique number within the county identifying the site.
4	Parameter Code	The AQS code corresponding to the parameter measured by the monitor.
5	POC	This is the “Parameter Occurrence Code” used to distinguish different instruments that measure the same parameter at the same site.
6	Latitude	The monitoring site’s angular distance north of the equator measured in decimal degrees.
7	Longitude	The monitoring site’s angular distance east of the prime meridian measured in decimal degrees.
8	Datum	The Datum associated with the Latitude and Longitude measures.
9	Parameter Name	The name or description assigned in AQS to the parameter measured by the monitor. Parameters may be pollutants or non-pollutants.

Field Position	Field Name	Description
10	Date Local	The calendar date of the average in Local Standard Time at the monitor.
11	Time Local	The time of day for the average on a 24-hour clock in Local Standard Time.
12	Date GMT	The calendar date of the average in Greenwich Mean Time.
13	Time GMT	The time of day for the average on a 24-hour clock in Greenwich Mean Time.
14	Sample Duration	The averaging period. Will always be 8-hours for these files, but the fact that the ozone time stamp is at the begin hour of an 8-hour period and CO is at the end hour is reiterated.
15	Pollutant Standard	A description of the ambient air quality standard rules used to aggregate statistics. (See description at beginning of document.)
16	Units of Measure	The unit of measure for the parameter. QAD always returns data in the standard units for the parameter. Submitters are allowed to report data in any unit and EPA converts to a standard unit so that we may use the data in calculations.
17	Observation Count	The total number of observations (samples) taken during the 8-hour period.
18	Observations with Events	The number of observations (samples) during the 8-hour period that were flagged by the data submitter as having been affected by an exceptional event.
19	Null Observations	The number of observations (samples) during the 8-hour period that were missed (and reported as Null by the data submitter).
20	Mean Including All Data	The average (arithmetic mean) value including all data reported in the 8-hour block.
21	Mean Excluding All Flagged Data	The average (arithmetic mean) value excluding all data flagged by the data submitter as having been affected by an exceptional event.
22	Mean Excluding All Concurred Flags	The average (arithmetic mean) value excluding data flagged by the data submitter as having been affected by an exceptional event and that the EPA has concurred should be excluded from NAAQS calculations.
23	Date of Last Change	The date the last time any numeric values in this record were updated in the AQS data system.

8. Blanks Data Files

8.1. Content

These files contain the field, trip, and lab blanks measurements. Blanks are collection media that are not used to collect sample data but are analyzed to determine possible contamination paths and levels in normal samples.

8.2. Format

The file is comma separated variables (CSV) with a header row.

Field Position	Field Name	Description
1	State Code	The FIPS code of the state in which the monitor resides.
2	County Code	The FIPS code of the county in which the monitor resides.
3	Site Num	A unique number within the county identifying the site.
4	Parameter Code	The AQS code corresponding to the parameter measured by the monitor.
5	POC	This is the “Parameter Occurrence Code” used to distinguish different instruments that measure the same parameter at the same site.
6	Latitude	The monitoring site’s angular distance north of the equator measured in decimal degrees.
7	Longitude	The monitoring site’s angular distance east of the prime meridian measured in decimal degrees.
8	Datum	The Datum associated with the Latitude and Longitude measures.
9	Parameter Name	The name or description assigned in AQS to the parameter measured by the monitor. Parameters may be pollutants or non-pollutants.
10	Blanks Type	The type of blank analyzed.
11	Date Local	The calendar date the blank was exposed in Local Standard Time at the monitor.
12	Time Local	The time of day the blank was exposed on a 24-hour clock in Local Standard Time.
13	Sample Measurement	The measured value in the standard units of measure for the parameter.
14	Units of Measure	The unit of measure for the parameter. QAD always returns data in the standard units for the parameter. Submitters are allowed to report data in any unit and EPA converts to a standard unit so that we may use the data in calculations.

Field Position	Field Name	Description
15	Duration	The length of time the blank was exposed.
16	MDL	The Method Detection Limit. The minimum sample concentration detectable for the monitor and method. Note: if samples are reported below this level, they may have been replaced by 1/2 the MDL.
17	Uncertainty	The total measurement uncertainty associated with a reported measurement as indicated by the reporting agency.
18	Method Type	An indication of whether the method used to collect the data is a federal reference method (FRM), equivalent to a federal reference method, an approved regional method, or none of the above (non-federal reference method).
19	Method Name	A short description of the processes, equipment, and protocols used in gathering and measuring the sample.
20	State Name	The name of the state where the monitoring site is located.
21	County Name	The name of the county where the monitoring site is located.
22	Date of Last Change	The date the last time any numeric values in this record were updated in the AQS data system.
23	Qualifier 1	Sample values may have qualifiers that indicate why they are missing or that they are out of the ordinary. Types of qualifiers are: null data, exceptional event, natural events, and quality assurance. The highest ranking qualifier, if any, is described in this field.
24	Qualifier 2	The second qualifier affecting this sample, if any, is described in this field.
25	Qualifier 3	The third qualifier affecting this sample, if any, is described in this field.
26	Qualifier 4	The fourth qualifier affecting this sample, if any, is described in this field.
27	Qualifier 5	The fifth qualifier affecting this sample, if any, is described in this field.
28	Qualifier 6	The sixth qualifier affecting this sample, if any, is described in this field.
29	Qualifier 7	The seventh qualifier affecting this sample, if any, is described in this field.
30	Qualifier 8	The eighth qualifier affecting this sample, if any, is described in this field.

Field Position	Field Name	Description
21	Qualifier 9	The ninth qualifier affecting this sample, if any, is described in this field.
32	Qualifier 10	The tenth qualifier affecting this sample, if any, is described in this field.

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