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Office of Air Quality Planning and Standards
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Information Management Group

AQS Data Dictionary

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Prepared for

U.S. ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF AIR QUALITY PLANNING AND STANDARDS
INFORMATION TRANSFER AND PROGRAM INTEGRATION DIVISION
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1 Introduction

1.1 AQS Documentation

This is the AQS Data Dictionary, part of the Documentation set for the Air Quality System (AQS)

AQS Data Dictionary
AQS Data Input Formats (Summary)
AQS Data Coding Manual
AQS User's Guide (in draft)
AQS Data Reports and Retrieval Manual (in draft)

The AQS Data Dictionary presents detailed information about data in the database. Logical groupings of data ("views") are documented, to help with effective use of the data. Field attributes and definitions, and calculation algorithms, are provided as appropriate. This document also provides information on transformed, derived or calculated information presented to the user that does not directly reflect data in the form that it is stored in the database.

AQS Data Input Formats is a small summary document showing the basic requirements for data input. It is intended as a quick reference guide. Detailed information on the various data input formats is contained in the AQS Data Coding Manual.

The AQS Data Coding Manual includes the information a user needs to know to create transactions for loading data into the database. Information in the manual is presented on a transaction by transaction basis. Business rules used by the AQS edit software, as well as the accompanying error messages, are laid out to help build error free transactions, or troubleshoot failed transactions.

The AQS User's Guide, includes information about accessing the system via a web browser, using the on-line interface, and entering data using the on-line data entry screens (Maintenance screens). The process for "loading" the transactions described in AQS Data Coding Manual is explained, including using the "critical review" process, and "posting" the data to the database.

The AQS Data Retrieval Manual, includes information about using the standard report generation software. Information includes the type of reports, the selections available for each report, the data included on the reports, and the on-line report interface. Information about available work file outputs is also included.

1.2 About This Book

This volume, AQS Data Dictionary, describes the views, records, and fields used by AQS. The data dictionary is organized by sections.

This introductory section provides a brief overview of the Air Quality System with a discussion of the structure of the AQS data.

Section 2:

1. Presents basic database concepts,
2. Describes the structure of the AQS
3. Presents data model diagrams that show the relationships between the data.
4. Defines terms used throughout the document, and their meaning in AQS.

Section 3 describes the AQS views. Each view description includes:

5. A narrative explaining its purpose, content, and use;
6. A description of the fields contained in the view.

Section 4 describes the AQS fields. The fields are presented in alphabetic order. Field descriptions include:

7. A narrative describing the field, including its uses;
8. Those parts of AQS that are the source of the data;
9. The data type, length, and whether the field is required;
10. The views in which the field is used;
11. Any rules of value assignment, including algorithms and formulas.

1.3 About AQS

The Air Quality System (AQS) is a computer-based information management system for handling the storage and retrieval of information pertaining to ambient outdoor airborne pollutants and related meteorological data. The AQS database uses Oracle database software; access to the database is provided via web browsers (i.e. Internet Explorer). AQS is administered by the U.S. Environmental Protection Agency (USEPA) Office of Air Quality Planning and Standards (OAQPS) in Research Triangle Park, North Carolina.

The collection and maintenance of air quality data is required to establish and enforce the standards set by the following Federal Acts and Amendments:

1955: Air Pollution Control Act
"An Act to provide research and technical assistance relating to air pollution control"
Reserved for Congress the right to control pollution.
1963: Clean Air Act
Emissions standards for stationary sources
Compliance deadlines for States
1965: Motor Vehicle Air Pollution Control Act
Emissions standards for vehicles
1967: Air Quality Act
Created Air Quality Control Regions (AQCR)
Timetables for State Implementation Plans (SIP)
1970: Amendments to the Clean Air Act
National Ambient Air Quality Standards (NAAQS)
New Source Performance Standards(NSPS)
New motor vehicle standards and compliance timetable
1990: Amendments to the Clean Air Act
Modification of standards and timetables

The monitoring data in AQS are the result of the various Clean Air Act requirements to provide a national database of ambient air pollution data. Criteria pollutant (SO_2, NO_2, O_3, CO, PM_{10}, $PM_{2.5}$ and Pb) data, air toxics data, photochemical assessment data, and meteorological data are reported to AQS. Individual observations, as well as summarized data, are provided. The database contains values from 1957 through the present day. AQS contains hundreds of millions of observations, coming from tens of thousands of monitors.

As regulations broaden to include more pollutants, the AQS system expands. For hazardous air pollutants (HAPS) the USEPA is currently gathering data and has proposed baselines for limiting emissions. There are currently over 1000 pollutants that AQS is prepared to track and additions are made as needed.

In addition to the ambient pollutant concentration data, AQS contains descriptive information about the location of the monitoring site (e.g., address, latitude/longitude, local site name, etc.) where the ambient data are collected as well as information about the types of monitors used to collect the ambient measurements. Quality assurance information is also contained in the AQS.

The air pollution monitoring data residing in the AQS database is submitted directly to the database by many different groups. The State, Tribal and Local air pollution agencies throughout the United States routinely submit monitoring data from the air monitors that they manage. Some Federal agencies, including USEPA, and private companies also supply data directly. The data submitted by these various groups are "owned" by those groups… in other words only the agency responsible for a monitor at a site can maintain that monitor's data. USEPA's OAQPS maintains the administrative data in AQS (e.g. reference tables and codes, security tables, and overall software maintenance).

AQS data are not real time, because observation data are quality assured by the submitting agencies before loading into the database. Agencies generally have 3 months to collect, analyze, compute, and quality assure the values prior to loading the data into AQS. Each year, the monitoring agencies certify to USEPA that the criteria pollutant data values for that year are correctly stored in the database. This data serves as the basis for area designations (e.g. non-attainment designations), among many other uses. In addition to providing data for evaluating conformance to Federal regulations, data from the AQS is used to fulfill air quality information requests from the public.

Summary air quality data is available on AQS from 1957 onward. Detailed data reported from individual monitoring devices are available for the past decade. Older detail data are available as download files from the archive database. See the AQS website for these files. If you do not see the files you need, the website also contains a request form to receive those files. The website address is as follows:

http://www.epa.gov/ttn/airs/airsaqs/detaildata/requestingaqsdata.htm

2 Description of Terms

2.1 Concepts

The AQS is both a repository and a tool.

2.1.1 AQS Repository

As a repository of data the AQS stores air quality information in a computer database. Over the years this data has been stored on various computers in various forms. In the last decade the data has been moved from an IBM system in ADABASE, to a Digital Equipment system in Oracle and will be moving to a faster system in the near future.

The repository contains data from 1957 to the present. In the late 1950s there were a few hundred sites reporting data, that grew to over 5000 sites in the mid 1970s and there are now a little over 3000 sites reporting data today. In 1957 only a few pollutants were monitored at each location. Today there are some sites monitoring over 150 different pollutants so the repository is receiving data from between 50 and 60 thousand data sources each year. Each source reports raw data at different rates, some hour or sub-hourly, some daily, some every few days. There are over 82 million new raw data records added to the repository each year.

With such a large amount of data to work with the repository has been broken into over 100 "tables" of data. This distribution of data is an attempt to improve load and search times and to reduce unnecessary repetition of data values. This distributed data structure is normally concealed. While the repository is perhaps impressive in its complexity, size and scope, the normal user of AQS has no direct contact with it. For users the data is structured into logical "views".

2.1.2 Views Of The Repository.

While the actual data structure of the repository is concealed, the logical structure of the data is very important to understand. In brief form, the structure of AQS can be stated as: "Sites contain monitors which contain raw data, summary data, and precision data and accuracy data."

In order to present the data to the user logically, **views** have been created that collect the data dispersed throughout the database and then present it as a logically structured and unified dataset.

A **site** is logically identified by three elements: State and County codes and Site ID (or alternatively Tribal_Code and Site ID). While multiple sites may be in a County or Tribal area, they each must have a unique site ID. These codes describe the unique identifier of the Site or the **key**. Each site record then contains required data elements such as location data (lat/long or UTM, elevation, address, etc.) Optional information, such as the agency that services the site, associated meteorological site or congressional district are also included in the view of the site.

There are 3 views associated with sites. In addition to the main site view there is a Tangent Road view and an Open Path view. Because there can be multiple roads near a site, each road can be treated as a separate entity associated with the site. Using multiple site views avoids burdening a single view with all the data associated with a site.

The unique ID key elements for a **monitor** are its site elements, plus a pollutant code and a parameter occurrence code (POC). Note: *A "monitor" in AQS represents not a device but the pollutant measured by a device*. A single device that measures multiple pollutants appears as multiple monitors within AQS; each AQS monitor represents one pollutant. Sites may have more than one monitor measuring the same pollutant. Each monitor is uniquely identified with a unique POC. Data elements associated with the monitor include the agency reporting the data, the group responsible for entering the data, data collection frequency, collection method, etc. Different fields are required depending on the pollutant. To fully describe a monitor there are 13 views available.

Raw data values are the pollutant levels reported by a monitor. The logical identifier key for raw data is made up of the site/monitor elements plus Date and Time elements. Raw Data Views described in this Data Dictionary present date/time as a single field in the form of Year, Month, Day, Hour, Minute (YYYMMDDHH:mm). When this same identifier is presented in the AQS tools for data entry and reports, it is usually broken into separate Date and Time fields. The AQS Data Table Fields section of this book includes definitions and descriptions for both the combined and separated fields. (It is in the database as a single field.)

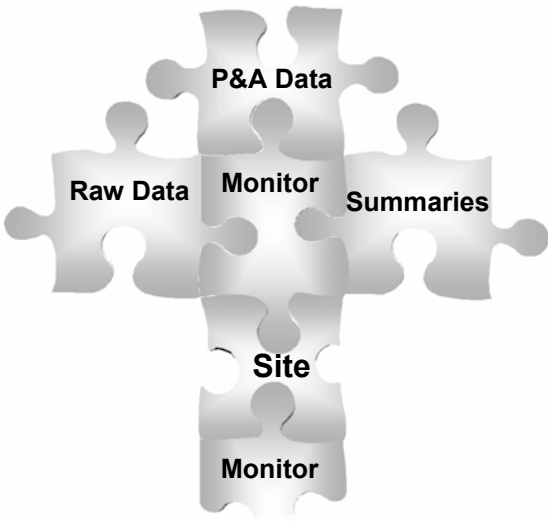
While raw data is linked to a monitor, Qualifiers and Comments are linked to raw data. Qualifier codes represent natural or anthropogenic events that explain high, low or null raw data values.

Precision, Accuracy and Blanks records are logically identified using the same elements used to identify raw data.

Summaries (except for Site Daily Values) are identified with a unique identifier key comprised of the monitor identifier elements, year element, duration element, and qualifier type. Each monitor has summaries pre-calculated from its associated raw data and stored in the repository for each year it is active. There are multiple summaries calculated based on sample durations and with different types of qualifiers included or excluded.

Site Daily Values are uniquely identified by their site identifier elements, parameter, sample day, and exceptional data type. Site Daily Values are calculated from daily summaries associated with either the primary monitor (as determined by Primary Monitor Periods) for the site for each sampled day when available, or from an aggregate of the daily summaries associated with the collocated (non-primary) monitors when the primary monitor data is unavailable. The source (primary or collocated) of the calculated value is indicated as part of the Site Daily Values record.

The illustration below shows the links between logical data elements in AQS.



More illustrations showing the relationships between each of the views are in the Data Model section below.

2.1.3 AQS Tools

It is the AQS tools that make the AQS data in the repository useful and meaningful. The AQS repository is now accessed through web browser interfaces for:

- Loading data,
- Maintaining/correcting data and
- Reporting/extracting data.

AQS tools are described in more detail in the AQS Coding Manual and AQS Users Manual.

2.2 Definitions

Term	Definition
Active Day	A day occurring within a valid sample period.
Air Quality Index	The Air Quality Index (AQI) is a measure for reporting daily air quality. It focuses on health effects that may be experienced within hours or days after breathing polluted air. AQI is calculated from the following major air pollutants regulated by the Clean Air Act: Ozone, PM 2.5, PM 10, carbon monoxide, sulfur dioxide, and nitrogen dioxide. The AQI is a mapping from pollutant concentrations to the common index. The index is based on defining seven levels of concentration/index values that are classified as follows: Good (with AQI values from 0 to 50), Moderate (with AQI values from 51 to 100), Unhealthy for Sensitive Groups (with AQI values from 101 to 150),

Term	Definition
Applicable Standard	Sample measurements flagged for exceptional event exclusion can be concurred with respect to a specific NAAQS standard. For example, ozone measurements flagged for exclusion can be concurred with respect to either the 1997 standard or the 2008 standard or both. Similarly, PM 2.5 data can be concurred with regards to the 24 hour standard or the Annual standard or both.
AQCR	Air Quality Control Region
AQS	Air Quality System
AQS Field Name	The standard term for an AQS data element. When AQS data is presented in a tabular view, the column header would be the field name.
Average	Arithmetic mean
CBSA	Core Based Statistical Area
CEILING	ING function returns the smallest integer higher than, or equal to, the given number. Frequently referred to as "rounding up".
CFR	Code of Federal Regulations
CMSA	Consolidated Metropolitan Statistical Area
CO	Carbon Monoxide
Composite Data	An average pollutant value entered as a single record in the database that is calculated from multiple samples.
CSA	Combined Statistical Area
Creditable Sample / Creditable Day	A value given credit for data completeness. Either a scheduled sample or a make-up sample. Note: This is not affected by flagging for event exclusion and regional concurrence; i.e. all sample measurements on scheduled days or make-up days are creditable samples, independent of whether or not they are affected by an exceptional event.
Database Field Name	The Oracle field name for an AQS data element. The name must conform to Oracle field name constraints, e.g., a maximum of 30 characters, no spaces, no punctuation marks, etc. The database field name will generally be an abbreviated form of the AQS field name.
EDR	Environmental Data Registry
Effective Monitoring Season (for ozone)	The consecutive sub-annual period, during which ozone monitoring is required for NAMS and SLAMS monitors, as listed in the ambient monitoring rule (40CFR58, Appendix D), **extended** to include the earliest and latest exceedances occurring outside that defined season
EPA	Environmental Protection Agency
Exceedance	A sample value measurement that is above the level of the applicable standard.

Term	Definition
Exceptional Data Type	An AQS designation as to how a summary is affected by exceptional events. Possible Values include the following: 0 – No Events: None of the measurement data contributing to the summary (e.g. count, mean, and etc.) has been flagged for exceptional event exclusion. 1 – All Events Excluded: The summary excludes any measurements that have been flagged for exceptional event exclusion independent of whether or not the EPA has concurred with the flagging. 2 – Events Included: Measurements included in the summary have been flagged for exceptional event exclusion. (Note: They are included in the summary independent of whether or not the EPA has concurred with the flagging.) 5 – Concurred Events Excluded: The summary excludes any measurements that have been flagged for exceptional event exclusion **and** the flagging has been concurred by the EPA Regional Office. Note: For any site/monitor and summary time period, either a Type 0 summary will exist (indicating that no data was flagged) or a Type 1, a Type 2, and a Type 5 summary will all exist together.
Exceptional Event	An event that affects air quality, is not reasonably controllable or preventable, is an event caused by human activity that is unlikely to recur at a particular location or a natural event, and is determined by the EPA in accordance with 40 CFR 50.14 to be an exceptional event.

Term	Definition
Field Type (Length)	There are four field types used in AQS: character, numeric, float, and date. The lengths represent the length of the underlying physical field. The physical length is large enough to accommodate the current lengths used plus any future growth. For example, Method Code has a length of 8, which accommodates the 3-digit logical length currently used and any conceivable expansion needed in the future. Character types have maximum lengths associated with them. The lengths of numeric fields are indicated by the number of digits to the left and right of the decimal point. For example, a numeric field with a length of 8.2 has 8 digits to the left of the decimal point, and 2 to the right, for a maximum of 10, i.e., nnnnnnnnn.nn. Date and float types have a fixed length by definition. The date type includes both date and time in that same fixed length; the float type can accommodate numbers in the range of 1.0E-129 through 9.999E125.
Flag for Exceptional Event Exclusion	A State may request EPA to exclude measurement data showing exceedances or violations of the national ambient air quality standard that are directly due to an exceptional event from use in determinations by demonstrating to EPA's satisfaction that such event caused a specific air pollution concentration at a particular air quality monitoring location.
FIPS	Federal Information Processing Standards
FRM	Federal Reference Method
GPS	Global Positioning System
Hourly Sample	A sample whose sample duration, or interval, is one (1) hour.
HQ	EPA Headquarters
ID	Numeric identifier
Key	An indication of whether a field is part of the unique identification of a record in the view. The combination of data elements that uniquely identify a record in the view
LDP	Locational Data Policy
LST	Local Standard Time

Term	Definition
Make-up Day / Make-up Sample	A make-up day/sample for a monitor is a sample to be used in place of a missed scheduled sample. It must meet the following criteria: ▪ It must be prior to the next scheduled sample or exactly one week after the missed sample. ▪ It must be in the same calendar quarter. ▪ PM 2.5: No more than 5 make up samples per quarter are allowed.
MDL	Method detectable limit, i.e., the lowest concentration that can be detected by a sampling instrument and method.
MINIMUM	A MINIMUM function returns the least of a series of numbers.
Monitoring Season (Defined)	: consecutive sub-annual period, defined by state, county, or site, during which ozone monitoring is required for National Air Monitoring Station (NAMS) and Local Air Monitoring Station (SLAMS) monitors, as, listed in the ambient monitoring rule (40CFR58, Appendix D.)
Monitoring Season (Effective)	The defined monitoring season for a National Air Monitoring Station (NAMS) or Local Air Monitoring Station (SLAMS) monitor extended to include the earliest and latest exceedances occurring outside that defined season.
MSA	Metropolitan Statistical Area
NAAQS	National Ambient Air Quality Standards; Sets the levels of air quality for the United States, in the Code of Federal Regulations (40 CFR Part 50), to protect the population's health and the environment
NAMS	National Air Monitoring Station
NO2	Nitrogen Dioxide
O3	Ozone
PAMS	Photochemical Assessment Monitoring System
Parameter	Pollutant measured by a device
Pb	Lead
PEP	Performance Evaluation Program

Term	Definition
Percentile Value	The following is the derivation of the formula used to compute percentile values: Let P be defined to be the the level of the i^{th} percentile (e.g. P=99 for the 99^{th} Percentile) then by definition, the i^{th} percentile for the set, X, is the smallest value of X such that $$100 \times \frac{NumberOfValues \le X}{TotalNumberOfValues} > P$$ For a set with n values, the k^{th} maximum (i.e. the 1^{st} maximum, 2^{nd} maximum, and etc.) is the i^{th} percentile of the set, for the largest value of k, where $$100 \times \frac{(n+1)-k}{n} < P$$ From this it can be seen that $$k = CEIL\left(n - \frac{nP}{100}\right)$$ Where • *CEIL(x)* is function that produces the smallest integer greater than or equal to x; e.g. *CEIL(1.0)* = 1 and *CEIL(1.1)* = 2. • *n* is the number of values (sample measurements or lower-level summaries) ignoring flagging and concurrence. • *P* is the percentile level, e.g. 98 for the 98^{th} perecentile. Note, for the pollutant, PM 2.5, there is an alternative method required for computing the 98^{th} percentile value when seasonal sampling is used.
PM	Particulate Matter
PM10	PM10 – Particles with a nominal mean aerodynamic diameter less than or equal to 10 μm
PM2.5	PM2.5 - Particles with a nominal mean aerodynamic diameter less than or equal to 2.5 μm
POC	Parameter Occurrence Code; an identification number distinguishing multiple instruments that may measure the same pollutant
ppm	Parts Per Million
Primary Standard	Value identified by 40 CFR Part 50 as the "Primary" National Ambient Air Quality Standard for a particular pollutant for protecting public health.

Term	Definition
Raw Data	Parameter level value reported from a single observation. The duration of the sample depends on the device and method of collection.
RCF	Required Collection Frequency
Required	An indication of whether a field always has a value, i.e., not null. It should be noted that an indication that a field value is required does not mean that it must be user-specified; it may be system-generated. Some columns are conditionally user-specified and system generated. For example, for site coordinates the user may specify the latitude and longitude coordinates, and the system will generate the Universe Transverse Mercator (UTM) coordinates, or vice versa.
Row	Collection of data fields that, together, make up a single record in a data table.
Scheduled Day	A scheduled day for a monitor is a day on which sampling is specified to occur, as determined by the applicable Required Collection Frequency and the National Air Monitoring Station (NAMS) schedule. A scheduled day for a site would coincide with a scheduled day for any monitor at the site.
Scheduled Sample	A sample recorded on a Scheduled Day.
Scheduled Stratum	A period of time starting from a Scheduled Day up to, but not including the immediately succeeding Scheduled Day.
Secondary Standard	Value identified by 40 CFR Part 50 as the "Secondary" National Ambient Air Quality Standard for a particular pollutant for protecting the public welfare.
SLAMS	Local Air Monitoring Station
SO2	Sulfur Dioxide
Table	A collection of related data organized into logical rows and columns. The structure that is the repository of data in the computer. See "View"
TSP	Total Suspended Particulate
µg/m^3 LC	micrograms per cubic meter – local conditions
µg/m^3 SC	micrograms per cubic meter – standard conditions
USGS	United States Geological Survey
UTM	Universal Transverse Mercator. A geospatial positioning system that breaks areas of the earth into zones and identifies a location with a pair of numbers (Easting and Northing for US locations)
Valid Daily Maximum	The maximum value recorded, or computed, on a day that meets daily summary criteria.
Valued Stratum	A Scheduled Stratum during which at least one observation was recorded.

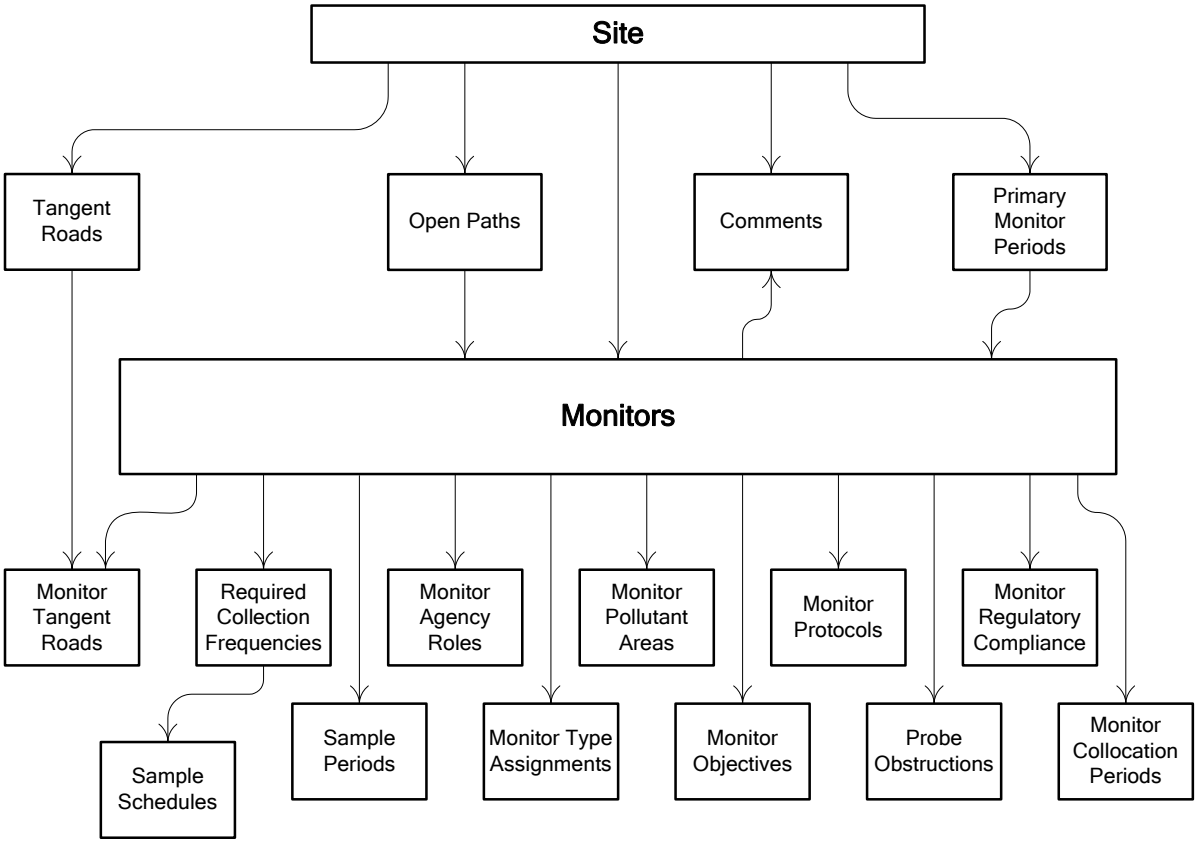
Term	Definition
Value Set	A collection of data values associated together in a table or view. When presented in tabular form, a row or part of a row containing associated values. The ten highest reported pollutant values in a year is a value set in the *Annual Summary* view made up of the fields containing the values, their ranks and the date/time of each value.
View	A logical representation of data, looking like a table, where data elements are grouped, joined or transformed together from one or more tables of data. Views are used, rather than actual data tables, to simplify the AQS database for users.
WGS	World Geodetic Survey

2.3 Data Model

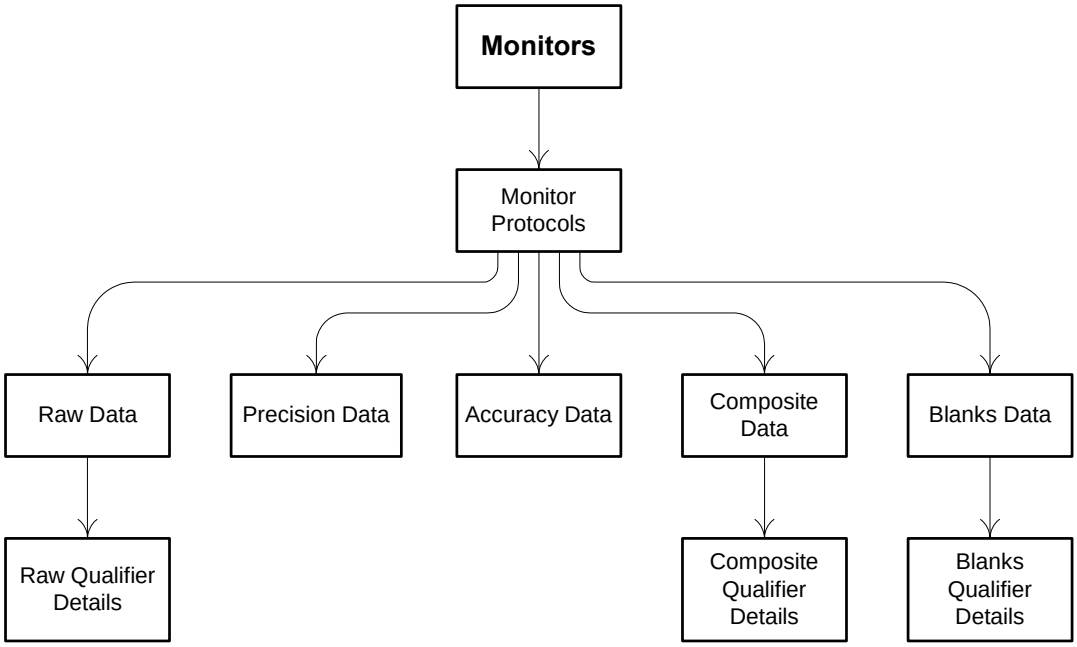
2.3.1 Sites and Monitors

In the data model diagram below the relationships between the logical data views is illustrated. The arrows indicate a Parent>Child relationship.

- A Site record can be a parent to Tangent Roads, Open Paths, Monitors and Comments.
- A Monitor Tangent Road record is the child of BOTH the Tangent Road of a site and the Monitor of the same site. (Sites can be large enough that devices on the site can have significant differences in distance from roads.)
- Monitor views may reference Open Paths defined on the parent site. There is no corresponding monitor open path view.
- Comments may be accessed from a single view and are the children of EITHER a Monitor OR a Site.

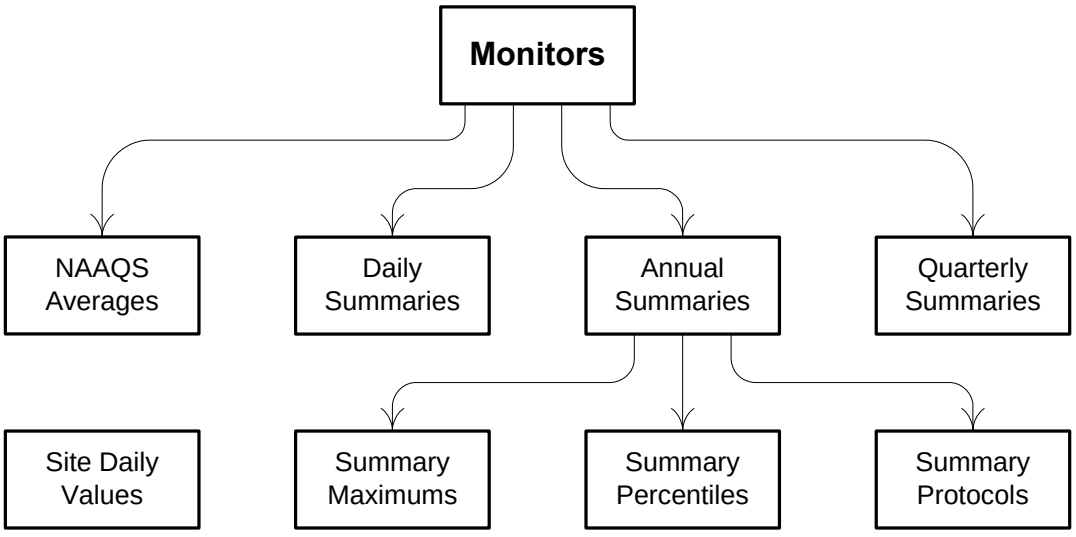


2.3.2 Monitors and Pollutant Data



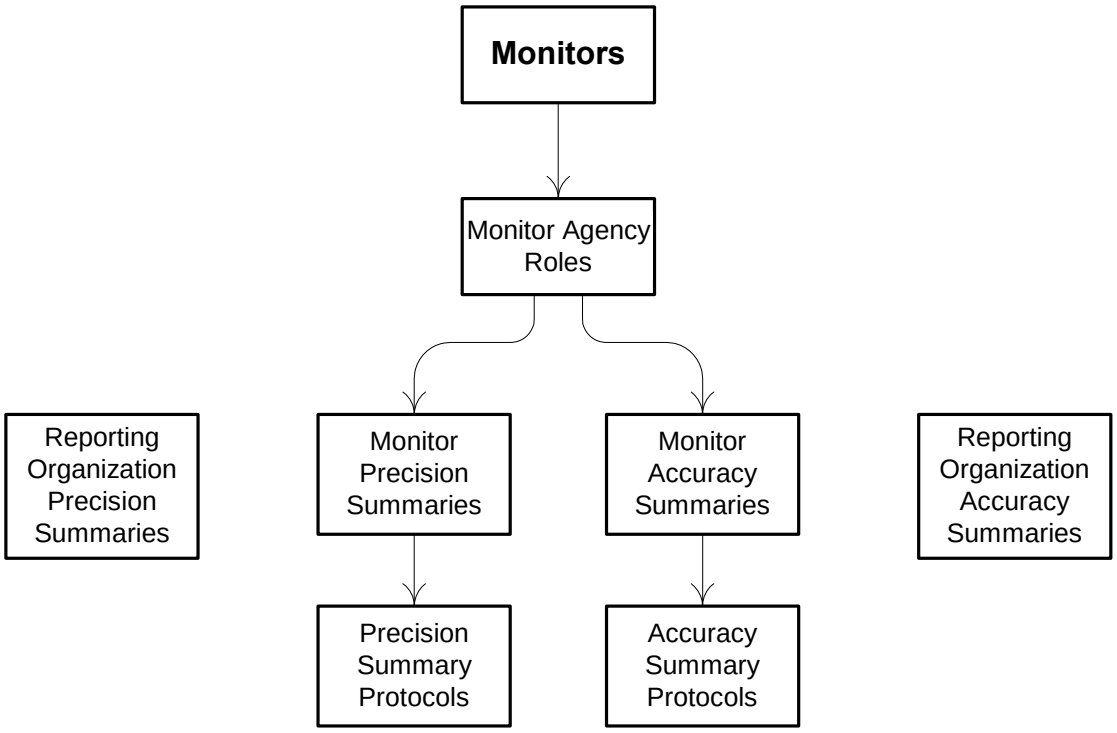
2.3.3 Monitors and Summaries

Site Daily Values may be derived from more than one monitor at a Site and therefore is subordinate to the Sites view and not the Monitors view.



2.3.4 Monitors and Precision & Accuracy Summaries

Note that this diagram shows the subordinate relationships between views and does not show the derivation of the data. A Monitor Precision Summary is subordinate to a Monitor Agency Role within a Monitor. Reporting Organization Summaries contain data from multiple monitors and therefore are not subordinate to a view of a single monitor. (Note: Precision and Accuracy Summaries are only calculated for data collected up to 12/31/2006.)



3 AQS Views

AQS Site Views

3.1 Sites

3.1.1 Description

The Sites view contains information about Air Quality Sites: geographical information, (e.g., latitude and longitude, or Universe Transverse Mercator, i.e., UTM coordinates), historical information, (e.g., established and terminated dates), site location information, (e.g., street address, city, Air Quality Control Region or AQCR), and other general characteristics, (e.g., land use, location setting). In addition, the view contains all information required by the Locational Data Policy. A Sites record is uniquely identified by the combination of state, county, and site ID. Alternative unique identifiers are the latitude-longitude combination, and the UTM coordinates. Its parent is the Counties view; its child views are: Tangent Roads, Open Paths, Monitors, and Comments.

3.1.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Tribal Code	TRIBAL_CODE	CHARACTER (3)		√
State Code	STATE_CODE	CHARACTER (2)	√	√
County Code	COUNTY_CODE	CHARACTER (3)	√	√
Site ID	SITE_ID	CHARACTER (4)	√	√
Status Indicator	STATUS_IND	CHARACTER (1)	√	
Standard Horizontal Datum	STANDARD_HORIZONTAL_DATUM	CHARACTER (120)	√	
Standard Latitude	STANDARD_LATITUDE	NUMBER (2.6)		
Standard Longitude	STANDARD_LONGITUDE	NUMBER (3.6)		
User Latitude	USER_LATITUDE	NUMBER (2.6)		
User Longitude	USER_LONGITUDE	NUMBER (3.6)		
UTM Zone	UTM_ZONE	NUMBER (12)		
UTM Easting	UTM_EASTING	NUMBER (8.2)		
UTM Northing	UTM_NORTHING	NUMBER (8.2)		
User Horizontal Datum	USER_HORIZONTAL_DATUM	CHARACTER (120)	√	
Horizontal Collection Method	LDP_COLL_METHOD_CODE	CHARACTER (8)	√	
Horizontal Accuracy	LDP_HORIZ_ACC_VALUE	NUMBER (8.2)	√	
Source Scale	LDP_SOURCE_SCALE	NUMBER (12.0)		
Geometric Type	LDP_GEOMETRIC_TYPE	CHARACTER (50)	√	
Reference Point	LDP_REFERENCE_POINT	CHARACTER (50)	√	
Vertical Measure	LDP_VERT_MEAS	NUMBER (8.2)	√	
Vertical Collection Method	LDP_VERTICAL_METHOD_CODE	CHARACTER (3)	√	
Vertical Datum	LDP_VERTICAL_DATUM	CHARACTER (60)	√	
Vertical Accuracy	LDP_VERT_ACC_VALUE	NUMBER (8.2)	√	
Time Zone	TIME_ZONE_NAME	CHARACTER (30)		
Supporting Agency	AGENCY_CODE	CHARACTER (8)	√	
Street Address	STREET_ADDRESS	CHARACTER (240)	√	
City Code	CITY_CODE	CHARACTER (8)		
Urban Area Code	UAR_CODE	CHARACTER (4)		
AQCR	AQCR_CODE	CHARACTER (8)		
Land Use Type	LAND_USE_TYPE	CHARACTER (20)	√	

Name	Database Field	Type (Length)	Req'd	Key
Location Setting	LOCATION_SETTING	CHARACTER (50)	√	
Date Site Established	SITE_ESTAB_DATE	DATE	√	
Date Site Terminated	SITE_TERMINATED_DATE	DATE		
Zip Code	ZIP_CODE	CHARACTER (9)		
Congressional District	CONGR_DISTR_NUM	NUMBER (12.0)		
Census Tract	CENSUS_TRACT_NUM	CHARACTER (6)		
Block Group	N/A (Unused)	CHARACTER (1)		
Block	BLOCK_NUM	CHARACTER (4)		
Class I Area	CLASS_I_AREA_CODE	CHARACTER (8)		
Local Region	LOCAL_REGION_CODE	CHARACTER (8)		
Local Site Name	LOCAL_SITE_NAME	CHARACTER (70)		
HQ Evaluation Date	HQ_EVAL_DATE	DATE		
EPA Region Evaluation Date	REGIONAL_EVAL_DATE	DATE		
Direction from Central Business District to Site	COMPASS_SECTOR_CBD	CHARACTER (3)		
Distance from Central Business District to Site	CITY_DIST	NUMBER (8.2)		
Meteorological Site Type	MET_SITE_TYPE	CHARACTER (20)		
Meteorological Site ID	MET_SITE_ID	CHARACTER (11)		
Direction to Meteorological Site	COMPASS_SECTOR_MET_SITE	CHARACTER (3)		
Distance to Meteorological Site	MET_SITE_DIST	NUMBER (8.2)		
Local Site ID	LOCAL_SITE_ID	CHARACTER (40)		
Created User	CREATED_USER	CHARACTER (40)		
Created Date	CREATED_DATE	DATE		
Modified User	MODIFIED_USER	CHARACTER (40)		
Modified Date	MODIFIED_DATE	DATE		

3.2 Tangent Roads

3.2.1 Description

The Tangent Roads view contains information about streets near a monitoring site, including: the name, positioning relative to the site, and general use characteristics. A Tangent Roads record is uniquely identified by the combination of state, county, site ID, and street number. Its parent is the Sites view; its child view is Monitor Tangent Roads.

3.2.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Tribal Code	TRIBAL_CODE	CHARACTER (3)		√
State Code	STATE_CODE	CHARACTER (2)	√	√
County Code	COUNTY_CODE	CHARACTER (3)	√	√
Site ID	SITE_ID	CHARACTER (4)	√	√
Tangent Street Number	TANGENT_ROAD_NUM	NUMBER (12.0)	√	√
Status Indicator	STATUS_IND	CHARACTER (1)	√	
Street Name	TANGENT_ROAD_NAME	CHARACTER (50)	√	
Road Type	ROAD_TYPE	CHARACTER (20)	√	
Direction from Site to Street	COMPASS_SECTOR	CHARACTER (3)	√	
Traffic Count	DAILY_TRAFFIC_CNT	NUMBER (12.0)		
Year of Traffic Count	DAILY_TRAFFIC_YEAR	NUMBER (4.0)		
Source of Traffic Count	TRAFFIC_VOLUME_SOURCE	CHARACTER (50)		
Created User	CREATED_USER	CHARACTER (40)		
Created Date	CREATED_DATE	DATE		
Modified User	MODIFIED_USER	CHARACTER (40)		
Modified Date	MODIFIED_DATE	DATE		

3.3 Open Paths

3.3.1 Description

The Open Paths view contains information about open paths at a monitoring site, including relative positioning and dimensions. An open paths record is uniquely identified by the combination of state, county, site ID, and path number. Its parent is the Sites view.

3.3.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Tribal Code	TRIBAL_CODE	CHARACTER (3)		
State Code	STATE_CODE	CHARACTER (2)	√	√
County Code	COUNTY_CODE	CHARACTER (3)	√	√
Site ID	SITE_ID	CHARACTER (4)	√	√
Open Path Number	OPEN_PATH_NUM	NUMBER (12.0)	√	√
Status Indicator	STATUS_IND	CHARACTER (1)	√	
Direction from Receiver to Transmitter	COMPASS_SECTOR	CHARACTER (3)	√	
Land Use Under Path	LAND_USE_TYPE	CHARACTER (20)	√	
Beam Length	BEAM_LENGTH	NUMBER (8.2)	√	
Minimum Beam Height	MIN_BEAM_HEIGHT	NUMBER (8.2)	√	
Maximum Beam Height	MAX_BEAM_HEIGHT	NUMBER (8.2)	√	
Height of Receiver	RECEIVER_HEIGHT	NUMBER (8.2)	√	
Height of Transmitter	TRANSMITTER_HEIGHT	NUMBER (8.2)	√	
Created User	CREATED_USER	CHARACTER (40)		

Name	Database Field	Type (Length)	Req'd	Key
Created Date	CREATED_DATE	DATE		
Modified User	MODIFIED_USER	CHARACTER (40)		
Modified Date	MODIFIED_DATE	DATE		

3.4 Primary Monitor Periods

3.4.1 Description

The Primary Monitor Periods view defines the periods of time during which a monitor serves as the designated primary monitor for a combinable parameter. A Primary Monitor Periods record is uniquely identified by the combination of monitor and begin date.

3.4.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Monitor ID	MO_ID	NUMBER(10,0)	√	√
Begin Date	BEGIN_DATE	DATE	√	√
End Date	END_DATE	DATE		
Created User	CREATED_USER	VARCHAR2(30)		
Created Date	CREATED_DATE	DATE		
Modified User	MODIFIED_USER	VARCHAR2(30)		
Modified Date	MODIFIED_DATE	DATE		

AQS Monitor Views

3.5 Monitors

3.5.1 Description

The Monitors view contains information about air quality monitoring stations, including: parameter, Pollutant Occurrence Code (POC), dominant source of pollution, measurement scale, and probe description information. A Monitors record is uniquely identified by the combination of site ID, parameter, and POC. Its parent is the Sites view; its child views are: Sample Periods, Monitor Type Assignments, Monitor Agency Roles, Monitor Objectives, Required Collection Frequencies, Monitor Tangent Roads, Monitor Pollutant Areas, Monitor Regulatory Compliances, Monitor Protocols, Monitor Collocation Periods, Probe Obstructions, Comments, NAAQS Averages, Daily Summaries, Quarterly Summaries, and Annual Summaries.

3.5.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Monitor ID	MO_ID	NUMBER(10,0)		√
Site ID	SI_SI_ID	NUMBER(10,0)	√	
Parameter Code	PA_PARAMETER_CODE	VARCHAR2(5)	√	
Parameter Occurrence Code	POC	NUMBER(2,0)	√	
Status Indicator	STATUS_IND	VARCHAR2(1)	√	
Screening Group	SG_SCREENING_GROUP_NUM	NUMBER(12,0)	√	
Post Indicator	RAW_DATA_POST_IND	VARCHAR2(1)	√	
Measurement Scale	MS_MEASUREMENT_SCALE	VARCHAR2(20)		
Project Class	PTY_PROJECT_TYPE_CODE	VARCHAR2(8)		
Probe Location	PL_PROBE_LOCATION	VARCHAR2(20)	√	
Dominant Source	DS_DOMINANT_SOURCE	VARCHAR2(20)		
Probe Height	PROBE_HEIGHT	NUMBER(10,2)		
Probe Horizontal Distance	PROBE_HORIZ_DIST	NUMBER(10,2)		
Probe Vertical Distance	PROBE_VERT_DIST	NUMBER(10,2)		
Unrestricted Air Flow Indicator	UNRESTR_AIR_FLOW_IND	VARCHAR2(1)		
Sample Residence Time	SAMPLE_RESIDENCE_TIME	NUMBER(10,2)		
Last Post Date	LAST_RAW_DATA_POST_DATE	DATE		
	OP_OP_ID	NUMBER(10,0)		
Last Sampling Date	LAST_SAMPLING_DATE	DATE		
Surrogate Indicator	SURROGATE_IND	VARCHAR2(1)		
Created User	CREATED_USER	VARCHAR2(40)		
Created Date	CREATED_DATE	DATE		
Modified User	MODIFIED_USER	VARCHAR2(40)		
Modified Date	MODIFIED_DATE	DATE		
Screening Group Number	SES_SGA_SG_SCREENING_GROUP_NUM	NUMBER(12,0)		
Oracle User ID	SES_SGA_UP_ORACLE_USER_ID	VARCHAR2(40)		
Session Date	SES_SESSION_DATE	DATE		
Post Date	RAW_DATA_POST_DATE	DATE		
Close Date	CLOSE_DATE	DATE		

3.6 Monitor Pollutant Areas

3.6.1 Description

The Monitor Pollutant Areas view contains information about designations of monitors to pollutant areas, which are geographic areas defined by a program office in which a certain pollutant should be closely watched. Pollutant area types are Monitoring Areas, Monitor Planning Areas, and Status Areas. A Monitor Pollutant Areas record is uniquely identified by the combination of monitor and pollutant area. Its parent is the Monitors view.

3.6.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Tribal Monitor ID	TRIBAL_MONITOR_ID	CHARACTER (20)		√
Monitor ID	MONITOR_ID	CHARACTER (20)	√	√
Pollutant Area Code	POLLUTANT_AREA_CODE	CHARACTER (5)	√	√
Status Indicator	STATUS_IND	CHARACTER (1)	√	
Pollutant Area Type	POLLUTANT_AREA_TYPE	CHARACTER (40)	√	
Worst Site Type	WORST_SITE_TYPE	CHARACTER (8)		
Community Monitoring Zone	COMMUNITY_MONITORING_ZONE	NUMBER (4.0)		
Applicable NAAQS Indicator	APPLICABLE_NAAQS_IND	CHARACTER (1)		
Spatial Average Indicator	SPATIAL_AVERAGE_IND	CHARACTER (1)		
Schedule Exemption Indicator	SCHEDULE_EXEMPTION_IND	CHARACTER (1)		
Created User	CREATED_USER	CHARACTER (40)		
Created Date	CREATED_DATE	DATE		
Modified User	MODIFIED_USER	CHARACTER (40)		
Modified Date	MODIFIED_DATE	DATE		

3.7 Sample Periods

3.7.1 Description

The Sample Periods view defines the time periods during which sampling took place at a monitor. A Sample Periods record is uniquely identified by the combination of monitor and the date sampling began. Its parent is the Monitors view.

3.7.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Tribal Monitor ID	TRIBAL_MONITOR_ID	CHARACTER (20)		√
Monitor ID	MONITOR_ID	CHARACTER (20)	√	√
Date Sampling Began	SAMPLING_BEGIN_DATE	DATE	√	√
Date Sampling Ended	SAMPLING_END_DATE	DATE		
Status Indicator	STATUS_IND	CHARACTER (1)	√	
Created User	CREATED_USER	CHARACTER (40)		
Created Date	CREATED_DATE	DATE		
Modified User	MODIFIED_USER	CHARACTER (40)		
Modified Date	MODIFIED_DATE	DATE		

3.8 Monitor Type Assignments

3.8.1 Description

The Monitor Type Assignments view defines time periods during which a monitor was assigned a particular monitor type, e.g. Local Air Monitoring Station (SLAMS), National Air Monitoring Station (NAMS), or Photochemical Assessment Monitoring System (PAMS). A Monitor Type Assignments record is uniquely identified by the combination of monitor, monitor type, and the date the assignment began. Its parent is the Monitors view.

3.8.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Tribal Monitor ID	TRIBAL_MONITOR_ID	CHARACTER (20)		√
Monitor ID	MONITOR_ID	CHARACTER (20)	√	√
Monitor Type	MONITOR_TYPE	CHARACTER (20)	√	√
Monitor Type Begin Date	MONITOR_TYPE_BEGIN_DATE	DATE	√	√
Monitor Type End Date	MONITOR_TYPE_END_DATE	DATE		
Status Indicator	STATUS_IND	CHARACTER (1)	√	
Action Type	ACTION_TYPE	CHARACTER (8)		
Action Date	MONITOR_TYPE_ACTION_DATE	DATE		
Action Reason	ACTION_REASON_CODE	CHARACTER (8)		
Created User	CREATED_USER	CHARACTER (40)		
Created Date	CREATED_DATE	DATE		
Modified User	MODIFIED_USER	CHARACTER (40)		
Modified Date	MODIFIED_DATE	DATE		

3.9 Monitor Agency Roles

3.9.1 Description

The Monitor Agency Roles view defines time periods during which a role, (PQAO, reporting, collecting, analyzing), for a monitor was assigned to an agency. A Monitor Agency Roles record is uniquely identified by the combination of monitor, role, and the date the role assignment began. Its parent is the Monitors view.

3.9.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Tribal Monitor ID	TRIBAL_MONITOR_ID	CHARACTER (20)		√
Monitor ID	MONITOR_ID	CHARACTER (20)	√	√
Agency Role Name	ROLE	CHARACTER (20)	√	√
Agency Code	AGENCY_CODE	CHARACTER (8)	√	
Agency Role Begin Date	AGENCY_ROLE_BEGIN_DATE	DATE	√	√
Agency Role End Date	AGENCY_ROLE_END_DATE	DATE		
Status Indicator	STATUS_IND	CHARACTER (1)	√	
Created User	CREATED_USER	CHARACTER (40)		
Created Date	CREATED_DATE	DATE		
Modified User	MODIFIED_USER	CHARACTER (40)		
Modified Date	MODIFIED_DATE	DATE		

3.10 Monitor Objectives

3.10.1 Description

The Monitor Objectives view contains information that classifies the reason air monitoring is being performed, and the target of that monitoring. A Monitor Objectives record is uniquely identified by the combination of monitor and the objective type. Its parent is the Monitors.

3.10.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Tribal Monitor ID	TRIBAL_MONITOR_ID	CHARACTER (20)		√
Monitor ID	MONITOR_ID	CHARACTER (20)	√	√
Monitor Objective Type	MONITOR_OBJ_TYPE	CHARACTER (50)	√	√
Status Indicator	STATUS_IND	CHARACTER (1)	√	
Urban Area Represented	UAR_CODE	CHARACTER (4)		
MSA Represented	MSA_CODE	CHARACTER (8)		
CMSA Represented	CMSA_CODE	CHARACTER (8)		
CBSA Represented	CBSA_CODE	CHARACTER (5)		
CSA Represented	CSA_CODE	CHARACTER (3)		
Created User	CREATED_USER	CHARACTER (40)		
Created Date	CREATED_DATE	DATE		
Modified User	MODIFIED_USER	CHARACTER (40)		
Modified Date	MODIFIED_DATE	DATE		

3.11 Required Collection Frequencies

3.11.1 Description

The Required Collection Frequencies view defines time periods during which a designated frequency of data collection was required. A Required Collection Frequencies record is uniquely identified by the required collection frequency ID. Its parent is the Monitors view.

3.11.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Required Collection Frequencies ID	RCF_ID	NUMBER(10,0)	√	√
Monitor ID	MO_MO_ID	NUMBER(10,0)		
Required Collection Frequency Begin Date	REQ_COLL_FREQ_BEGIN_DATE	DATE		
Required Collection Frequency Code	CF_COLL_FREQ_CODE	VARCHAR2(8)		
Status Indicator	STATUS_IND	VARCHAR2(1)		
Required Collection Frequency End Date	REQ_COLL_FREQ_END_DATE	DATE		
Created User	CREATED_USER	VARCHAR2(40)		
Created Date	CREATED_DATE	DATE		
Modified User	MODIFIED_USER	VARCHAR2(40)		
Modified Date	MODIFIED_DATE	DATE		
Screening Group Number	SES_SGA_SG_SCREENING_GROUP_NUM	NUMBER(12,0)		
Oracle User ID	SES_SGA_UP_ORACLE_USER_ID	VARCHAR2(40)		
Session Date	SES_SESSION_DATE	DATE		

3.12 Sample Schedules

3.12.1 Description

The Sample Schedules view contains information about monthly collection frequencies for seasonal or random required collection frequency period. A Sample Schedules record is uniquely identified by the combination of required collection frequency ID and month. Its parent is the Required Collection Frequencies view.

3.12.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Sample Schedule ID	SS_ID	NUMBER(10,0)	√	√
Required collection Frequency ID	RCF_RCF_ID	NUMBER(10,0)		
Sample Schedule Month	SAMPLE_SCHEDULE_MONTH	NUMBER(2,0)		
Status Indicator	STATUS_IND	VARCHAR2(1)		
Created User	CREATED_USER	VARCHAR2(40)		
Created Date	CREATED_DATE	DATE		
Modified User	MODIFIED_USER	VARCHAR2(40)		
Modified Date	MODIFIED_DATE	DATE		
Screening Group Number	SES_SGA_SG_SCREENING_GROUP_NUM	NUMBER(12,0)		
Oracle User ID	SES_SGA_UP_ORACLE_USER_ID	VARCHAR2(40)		
Session Date	SES_SESSION_DATE	DATE		
Monthly Required Collection Frequency	CF_COLL_FREQ_CODE	VARCHAR2(8)		

3.13 Monitor Tangent Roads

3.13.1 Description

The Monitor Tangent Roads view defines the distance between a monitor and a tangent road. A Monitor Tangent Roads record is uniquely identified by the combination of monitor and street number. Its parents are the Monitors and Tangent Roads views.

3.13.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Tribal Monitor ID	TRIBAL_MONITOR_ID	CHARACTER (20)		√
Monitor ID	MONITOR_ID	CHARACTER (20)	√	√
Tangent Street Number	TANGENT_ROAD_NUM	NUMBER (12.0)	√	√
Status Indicator	STATUS_IND	CHARACTER (1)	√	
Distance from Monitor to Tangent Road	DIST_TO_TANGENT_ROAD	NUMBER (8.2)	√	
Created User	CREATED_USER	CHARACTER (40)		
Created Date	CREATED_DATE	DATE		
Modified User	MODIFIED_USER	CHARACTER (40)		
Modified Date	MODIFIED_DATE	DATE		

3.14 Probe Obstructions

3.14.1 Description

The Probe Obstructions view contains information about any restriction of airflow around the probe. A Probe Obstructions record is uniquely identified by the combination of monitor and obstruction type. Its parent is the Monitors view.

3.14.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Tribal Monitor ID	TRIBAL_MONITOR_ID	CHARACTER (20)		√
Monitor ID	MONITOR_ID	CHARACTER (20)	√	√
Probe Obstruction Type	PROBE_OBSTR_TYPE	CHARACTER (20)	√	√
Direction from Monitor to Probe Obstruction	COMPASS_SECTOR	CHARACTER (3)	√	√
Status Indicator	STATUS_IND	CHARACTER (1)	√	
Distance from Monitor to Probe Obstruction	PROBE_OBSTR_DIST	NUMBER (8.2)	√	
Probe Obstruction Height	PROBE_OBSTR_HEIGHT	NUMBER (8.2)	√	
Created User	CREATED_USER	CHARACTER (40)		
Created Date	CREATED_DATE	DATE		
Modified User	MODIFIED_USER	CHARACTER (40)		
Modified Date	MODIFIED_DATE	DATE		

3.15 Monitor Regulatory Compliances

3.15.1 Description

The Monitor Regulatory Compliances view documents compliance of a monitor with a regulation. A Monitor Regulatory Compliances record is uniquely identified by monitor and regulation. Its parent is the Monitors view.

3.15.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Tribal Monitor ID	TRIBAL_MONITOR_ID	CHARACTER (20)		√
Monitor ID	MONITOR_ID	CHARACTER (20)	√	√
Regulation Code	REGULATION_CODE	CHARACTER (8)	√	√
Status Indicator	STATUS_IND	CHARACTER (1)	√	
Compliance Indicator	COMPLIANCE_IND	CHARACTER (3)		
Compliance Date	COMPLIANCE_DATE	DATE		
Created User	CREATED_USER	CHARACTER (40)		
Created Date	CREATED_DATE	DATE		
Modified User	MODIFIED_USER	CHARACTER (40)		
Modified Date	MODIFIED_DATE	DATE		

3.16 Monitor Collocation Periods

3.16.1 Description

The Monitor Collocation Periods view defines the periods of time during which a monitor pair were collocated for the purpose of collecting precision data. A Monitor Collocation Periods record is uniquely identified by the combination of monitor and the date collocation began. Its parent is the Monitors view.

3.16.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Tribal Monitor ID	TRIBAL_MONITOR_ID	CHARACTER (20)		√
Monitor ID	MONITOR_ID	CHARACTER (20)	√	√
Collocation Begin Date	CLOC_BEGIN_DATE	DATE	√	√
Status Indicator	STATUS_IND	CHARACTER (1)	√	
Primary Sampler Indicator	PRI_MONITOR_IND	CHARACTER (1)	√	
Distance from Primary Sampler	CLOC_DIST	NUMBER (8.2)		
Collocation End Date	CLOC_END_DATE	DATE		
Primary Sampler Monitor ID	PRIMARY_MONITOR_ID	CHARACTER (20)		
Created User	CREATED_USER	CHARACTER (40)		
Created Date	CREATED_DATE	DATE		
Modified User	MODIFIED_USER	CHARACTER (40)		
Modified Date	MODIFIED_DATE	DATE		

3.17 Monitor Protocols

3.17.1 Description

The Monitor Protocols view contains the protocols by which sample data for a monitor are collected. A Monitor Protocols record is uniquely identified by the combination of monitor, protocols, and alternate method detectable limit (MDL). Its parents are the Monitors and Protocols views; its child views are Raw Data, Composite Data, Summary Protocols, Precision Summary Protocols, and Accuracy Summary Protocols.

3.17.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Monitor ID	MO_MO_ID	NUMBER(10,0)	√	√
Monitor Protocol ID	MP_ID	NUMBER(4,0)	√	√
Status Indicator	STATUS_IND	VARCHAR2(1)		
Protocol ID	PRO_PRO_ID	NUMBER(10,0)		
Alternate Method Detectable Limit (MDL)	ALT_MDL	NUMBER(10,5)		
Created User	CREATED_USER	VARCHAR2(40)		
Created Date	CREATED_DATE	DATE		
Modified User	MODIFIED_USER	VARCHAR2(40)		
Modified Date	MODIFIED_DATE	DATE		
Screening Group Number	SES_SGA_SG_SCREENING_GROUP_NUM	NUMBER(12,0)		
Oracle User ID	SES_SGA_UP_ORACLE_USER_ID	VARCHAR2(40)		
Session ID	SES_SESSION_DATE	DATE		
Standard Scale	ALT_MDL_STD_SCALE	NUMBER(1,0)		

AQS Pollutant Data Views

3.18 Composite Data

3.18.1 Description

The Composite Data view contains the concentrations of air pollutants as measured by air monitoring equipment from composite air samples. In the composite sampling technique, two or more air samples obtained at different times are combined and analyzed as one sample. This yields something of an average concentration for the time period during which the individual samples were collected.

A Composite Data record is uniquely identified by the combination of monitor, year, and composite period. Its parent is the Monitor Protocols view; its child view is Composite Qualifier Details.

3.18.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Tribal Monitor ID	TRIBAL_MONITOR_ID	CHARACTER (20)		√
Monitor ID	MONITOR_ID	CHARACTER (20)	√	√
Composite Year	COMP_YEAR	NUMBER (4.0)	√	√
Composite Period	PERIOD	NUMBER (2.0)	√	√
Status Indicator	STATUS_IND	CHARACTER (1)	√	√
Monitor Protocol ID	MP_ID	NUMBER (4.0)	√	
Number of Samples	SAMPLE_CNT	NUMBER (10.0)		
Reported Sample Value	REPORTED_SAMPLE_VALUE	NUMBER (5.5)		
Reported Scale	REPORTED_SCALE	NUMBER (1.0)		
Standard Sample Value	STD_SAMPLE_VALUE	NUMBER (5.5)		
Standard Scale	SUMMARY_SCALE	NUMBER (1.0)		
Standard Unit	UN_UNIT_STD	CHARACTER (3)		
Uncertainty Value	UNCERTAINTY_VALUE	NUMBER (6.5)		
Primary Qualifier Code	QUALIFIER_CODE	CHARACTER (8)		
Primary Qualifier Type	QUALIFIER_TYPE	CHARACTER (8)		
Half MDL Substitution Indicator	LT_HALF_MDL_IND	CHARACTER (1)		
Null Data Concurrence Indicator	NULL_DATA_CONCURRENCE__IND	CHARACTER (1)		
EPA Region Concurrence Indicator	EPA_CONCURRENCE_IND	CHARACTER (1)		
Exclusion Indicator	EXCLUSION_IND	CHARACTER (1)		
Exclusion Date	EXCLUSION_DATE	DATE		
Freeze Indicator	FREEZE_IND	CHARACTER (3)		
Action Indicator	ACTION_IND	CHARACTER (1)		
Session Screening Group	SCREENING_GROUP_NUM	NUMBER (12.0)		
Session User	ORACLE_USER_ID	CHARACTER (40)		
Session Date/Time	SESSION_DATE	DATE		

3.19 Composite Qualifier Details

3.19.1 Description

The Composite Qualifier Details view contains qualification information about the composite sample. Types of qualification are: exceptional event, natural events, and quality assurance.

A Composite Qualifier Details record is uniquely identified by the combination of monitor, year, composite period and qualifier. Its parent is the Composite Data view.

3.19.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Tribal Monitor ID	TRIBAL_MONITOR_ID	CHARACTER (20)		√
Monitor ID	MONITOR_ID	CHARACTER (20)	√	√
Composite Year	COMP_YEAR	NUMBER (4.0)	√	√
Composite Period	PERIOD	NUMBER (2.0)	√	√
Status Indicator	STATUS_IND	CHARACTER (1)	√	√
Qualifier Code	QUALIFIER_CODE	CHARACTER (8)	√	√

3.20 Raw Data

3.20.1 Description

The Raw Data view contains the concentrations of various air pollutants as measured by air monitoring equipment throughout the U.S. The values may result from equipment that monitors continuously, or monitors that require manual intervention to collect the data, e.g., a monitor that draw air through a filter would require the removal and weighting of the filter to determine the amount of particulate matter in the sampled air.

A Raw Data record is uniquely identified by the combination of monitor and date/time. Its parent is the Monitor Protocols view; its child view is Raw Qualifier Details.

3.20.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Raw Data Key	RD_ID	NUMBER(10,0)	√	√
Tribal Monitor ID	TRIBAL_MONITOR_ID	CHARACTER (20)		√
Monitor ID	MP_MO_MO_ID	NUMBER(10,0)	√	
Monitor Protocol ID	MP_MP_ID	NUMBER(4,0)	√	
Sample Date/Time	SAMPLING_BEGIN_DATETIME	DATE	√	
Status Indicator	STATUS_IND	VARCHAR2(1)	√	
Raw Data Type	RD_TYPE	VARCHAR2(10)	√	
Reported Sample Value	REPORTED_SAMPLE_VALUE	NUMBER(10,5)		
Reported Scale	REPORTED_SCALE	NUMBER(1,0)		
Standard Sample Value	STD_SAMPLE_VALUE	NUMBER(10,5)		
Standard Scale				
Reported Unit				
Reported Unit Desc				
Standard Unit	UN_UNIT_STD	VARCHAR2(3)		
Std Unit Desc				
Primary Qualifier Code	QU_QUALIFIER_CODE	VARCHAR2(8)		
Primary Qualifier Type	QT_QUALIFIER_TYPE	VARCHAR2(8)		
Half MDL Substitution Indicator	LT_HALF_MDL_IND	VARCHAR2(1)		
Uncertainty Value	UNCERTAINTY_VALUE	NUMBER(11,5)		
Sample Date/Time: YYYY				
Sample Date/Time: "Q"Q				
Sample Date/Time: Mon				
Sample Date/Time: DD				
Sample Date/Time: HH24				
Sample Date/Time: MI				
Sample Count	SAMPLE_CNT	NUMBER(10,0)		
EPA Region Concurrence Indicator	EPA_CONCURRENCE_IND	VARCHAR2(1)		
Freeze Indicator	FREEZE_IND	VARCHAR2(3)		
Action Indicator	ACTION_IND	VARCHAR2(1)		
Exclusion Indicator	EXCLUSION_IND	VARCHAR2(1)		
Exclusion Date	EXCLUSION_DATE	DATE		
Session Screening Group	SES_SGA_SG_SCREENING_GROUP_NUM	NUMBER(12,0)		
Session User	SES_SGA_UP_ORACLE_USER_ID	VARCHAR2(40)		
Session Date/Time	SES_SESSION_DATE	Date		

3.21 Raw Qualifier Details

3.21.1 Description

The Raw Qualifier Details view contains qualification information about the raw sample. Types of qualification are: null data, exceptional event, natural events, and quality assurance.

A Raw Qualifier Details record is uniquely identified by the combination of monitor, sample date/time, and qualifier. Its parent is the Raw Data view.

3.21.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Tribal Monitor ID	TRIBAL_MONITOR_ID	CHARACTER (20)		√
Monitor ID	MONITOR_ID	CHARACTER (20)	√	√
Sample Date/Time	SAMPLING_BEGIN_DATETIME	DATE	√	√
Status Indicator	STATUS_IND	CHARACTER (1)	√	√
Qualifier Code Sample Date/Time: YYYY	QUALIFIER_CODE	CHARACTER (8)	√	√
Sample Date/Time: "Q"Q				
Sample Date/Time: Mon				
Sample Date/Time: DD				
Sample Date/Time: HH24				
Sample Date/Time: MI				

3.22 Precision Data

3.22.1 Description

The Precision Data view contains the precision check results for monitors for a pollutant. Precision checks are determined by performing repeated measurements of ambient-level "calibration" gases at two-week intervals for continuous analyzers, or by obtaining duplicate results from collocated samplers for manual methods.

A Precision Data record is uniquely identified by the combination of monitor and date. Its parent is the Monitor Protocols view.

3.22.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Tribal Monitor ID	TRIBAL_MONITOR_ID	CHARACTER (20)		√
Monitor ID	MONITOR_ID	CHARACTER (20)	√	√
Precision Date	PREC_DATE	DATE	√	√
Precision ID	PREC_ID	NUMBER (2.0)	√	√
Monitor Protocol ID	MP_ID	NUMBER (4.0)	√	
Precision Class	AUDIT_CLASS	CHARACTER (20)	√	
Precision Scale	PREC_SCALE	NUMBER (1.0)	√	
Precision Sample ID	PREC_SAMPLE_ID	CHARACTER (10)		
Actual Value	ACTUAL_VALUE	NUMBER (5.5)	√	
Actual Method	ACTUAL_METHODOLOGY_CODE	CHARACTER (8)		
Indicated Value	INDICATED_VALUE	NUMBER (5.5)	√	
Indicated Method	INDICATED_METHODOLOGY_CODE	CHARACTER (8)	√	
Percent Difference	PERCENT_DIFF	NUMBER	√	
Collocated POC	COLLOCATED_POC	NUMBER (2.0)		
Agency Performing FRM Audit	AGENCY_CODE	CHARACTER (8)		
Created User	CREATED_USER	CHARACTER (40)		
Created Date	CREATED_DATE	DATE		
Modified User	MODIFIED_USER	CHARACTER (40)		
Modified Date Prec Date: YYYY Prec Date: Mon	MODIFIED_DATE	DATE		
Prec Date: DD				
Created Date: YYYY				
Created Date: Mon				
Created Date: DD				
Modified Date: YYYY				
Modified Date: Mon				
Modified Date: DD				
~~Precision Type~~	~~PRECISION_TYPE~~	~~CHARACTER(30)~~	~~√~~	

3.23 Accuracy Data

3.23.1 Description

The Accuracy Data view contains the accuracy audits results for monitors for a pollutant. Accuracy assessments indicate the agreement between an analyzer measurement and a known audit standard concentration for continuous analyzers, or the agreement between an observed value and a known or reference value for manual methods.

An Accuracy Data record is uniquely identified by the combination of monitor, audit class, accuracy type, date and Accuracy Audit ID Number. Its parent is the Monitor Protocols view.

3.23.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Tribal Monitor ID	TRIBAL_MONITOR_ID	CHARACTER (20)		√
Monitor ID	MONITOR_ID	CHARACTER (20)	√	√
Accuracy Date	ACC_DATE	DATE	√	√
Audit Class	AUDIT_CLASS	CHARACTER (20)	√	√
Accuracy Type	ACC_TYPE	CHARACTER (20)	√	√
Accuracy Audit ID Number	ACC_AUDIT_ID	NUMBER (2.0)	√	√
Audit Level	LEVEL_NUM	NUMBER (2.0)	√	√
Monitor Protocol ID	MP_ID	NUMBER (4.0)	√	
Local Primary Standard	LOCAL_PRI_STD	CHARACTER (30)	√	
Audit Type	AUDIT_TYPE	CHARACTER (20)	√	
Year Represented	YEAR_REPRESENTED	NUMBER (4.0)	√	
Quarter Represented	QTR_REPRESENTED	NUMBER (1.0)	√	
Audit Sample ID	AUDIT_SAMPLE_ID	CHARACTER (10)		
Expiration Date	EXPIRATION_DATE	DATE		
Audit Scheduled	AUDIT_SCHEDULED	DATE		
Zero Span	ZERO_SPAN_VALUE	NUMBER (5.5)		
Zero Span Scale	ZERO_SPAN_SCALE	NUMBER (1.0)		
Audit Scale	ACC_AUDIT_SCALE	NUMBER (1.0)	√	
Actual Value	ACTUAL_VALUE	NUMBER (5.5)	√	
Indicated Value	INDICATED_VALUE	NUMBER (5.5)	√	
Percent Difference	PERCENT_DIFF	NUMBER	√	
Created User	CREATED_USER	CHARACTER (40)		
Created Date	CREATED_DATE	DATE		
Modified User	MODIFIED_USER	CHARACTER (40)		
Modified Date	MODIFIED_DATE	DATE		

3.24 Blanks Data

3.24.1 Description

The Blanks Data view contains information about field and trip blank assessments.

A Blank Data record is uniquely identified by the combination of monitor, date/time, and blank type. Its parent is the Monitor Protocols view.

3.24.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Tribal Monitor ID	TRIBAL_MONITOR_ID	CHARACTER (20)		√
Monitor ID	MONITOR_ID	CHARACTER (20)	√	√
Blank Date/Time	BLANK_DATETIME	DATE	√	√
Blank Type	BLANK_TYPE	CHARACTER (20)	√	√
Monitor Protocol ID	MP_ID	NUMBER (4.0)	√	
Blank Value	BLANK_VALUE	NUMBER (5.5)		
Blank Scale	BLANK_SCALE	NUMBER (1.0)		
Uncertainty Value	UNCERTAINTY_VALUE	NUMBER (6.5)		
Primary Qualifier Code	QUALIFIER_CODE	CHARACTER (8)		
Primary Qualifier Type	QUALIFIER_TYPE	CHARACTER (8)		

3.25 Blanks Qualifier Details

3.25.1 Description

The Blanks Qualifier Details view contains qualification information about the blanks sample. Types of qualification are: exceptional event, natural events, and quality assurance.

A Blanks Qualifier Detail record is uniquely identified by the combination of monitor, sample date/time, and qualifier. Its parent is the Blank Data view.

3.25.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Tribal Monitor ID	TRIBAL_MONITOR_ID	CHARACTER (20)		√
Monitor ID	MONITOR_ID	CHARACTER (20)	√	√
Blank Date/Time	BLANK_DATETIME	DATE	√	√
Blank Type	BLANK_TYPE	CHARACTER (20)	√	√
Qualifier Code	QUALIFIER_CODE	CHARACTER (8)	√	√

3.26 Comments

3.26.1 Description

The Comments view contains free text narratives for sites, and monitors. Its parent is either the Sites or Monitors views.

3.26.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Tribal_Code-Site	TRIBAL_SITE_ID	CHARACTER(8)		√
State-County-Site	SITE_ID	CHARACTER (11)		√
Tribal Monitor ID	TRIBAL_MONITOR_ID	CHARACTER (20)		√
Monitor ID	MONITOR_ID	CHARACTER (20)		√

Name	Database Field	Type (Length)	Req'd	Key
Sequence Number	SEQUENCE_NUM	NUMBER (12.0)	√	√
Text	COMMENT_TEXT	CHARACTER (255)	√	

AQS Pollutant Summary Views

3.27 NAAQS Averages

3.27.1 Description

The NAAQS_Averages view contains system-calculated averages of hourly sample data for some criteria pollutants. The averages are used for evaluation of compliance with National Ambient Air Quality Standards (NAAQS). The averages cover multi-hour periods <= 24 hrs.

A NAAQS_Averages record is uniquely identified by the combination of monitor, date/time, duration, exceptional data type, and pollutant standard ID. Its parent is the Monitors view.

3.27.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Tribal Monitor ID	TRIBAL_MONITOR_ID	CHARACTER (20)		√
Monitor ID	MO_MO_ID	NUMBER(10,0)	√	√
NAAQS Date/Time	NAAQS_AVG_DATETIME	DATE	√	√
Duration Code	SD_DURATION_CODE	VARCHAR2(8)	√	√
Exceptional Data Type ID	EDT_EDT_ID	NUMBER(10,0)	√	√
Pollutant Standard	POLLUTANT_STD_ID	NUMBER	√	√
Arithmetic Mean	NAAQS_ARITH_MEAN	NUMBER(10,5)		
Created User	CREATED_USER	VARCHAR2(40)		
Created Date	CREATED_DATE	DATE		
Modified User	MODIFIED_USER	VARCHAR2(40)		
Modified Date	MODIFIED_DATE	DATE		

3.28 Daily Summaries

3.28.1 Description

The Daily Summaries view contains calculated values of concentrations of monitor samples, which have been summarized for a monitor, day, sampling duration, and exceptional data indicator combination. For a pollutant, Daily Summaries may be computed for both sample measurements (hourly and daily) and NAAQS_Averages. They are explicitly for one calendar day.

A Daily Summaries record is uniquely identified by the combination of monitor, date, duration, exceptional data type, and pollutant standard ID. Its parent is the Monitors view.

3.28.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Monitor ID	MO_MO_ID	NUMBER(10,0)	√	√
Collection Date	DAILY_COLL_DATE	DATE	√	√
Duration Code	SD_DURATION_CODE	VARCHAR2(8)	√	√
Exceptional Data Type ID	EDT_EDT_ID	NUMBER(10,0)	√	√
Pollutant Standard	POLLUTANT_STD_ID		√	√
Arithmetic Mean	DAILY_ARITH_MEAN	FLOAT(22)		
Count of Observations	DAILY_OBS_CNT	NUMBER(10,0)		
Percent of Observations	DAILY_OBS_PCT	NUMBER(10,4)		
Hour of Maximum Value	DAILY_MAX_COLL_HOUR	NUMBER(2,0)		
Maximum Value	DAILY_MAX_SAMPLE_VALUE	NUMBER(10,5)		
Daily Rank	DAILY_RANKING_NUM	NUMBER(3,0)		

Name	Database Field	Type (Length)	Req'd	Key
Count of Primary Exceedances	VALUES_GT_PRI_LEVEL_DS	NUMBER(10,0)		
Count of Secondary Exceedances	VALUES_GT_SEC_LEVEL_DS	NUMBER(10,0)		
Count of Non-Overlapping Exceedances	NON_OVERLAPPING_AVG_GT_STD	NUMBER(10,0)		
Summary Criteria Indicator	DAILY_CRITERIA_IND	VARCHAR2(1)		
AQI Value	AQI_VALUE	NUMBER		
Created User	CREATED_USER	VARCHAR2(40)		
Created Date	CREATED_DATE	DATE		
Modified User	MODIFIED_USER	VARCHAR2(40)		
Modified Date	MODIFIED_DATE	DATE		

3.29 Quarterly Summaries

3.29.1 Description

The Quarterly Summaries view contains calculated values of concentrations of monitor samples, which have been summarized for a quarter, sampling duration, and exceptional data indicator combination. Quarterly Summaries are computed for each calendar quarter. They may be computed for both sample measurements and NAAQS_Averages

A Quarterly Summaries record is uniquely identified by the combination of monitor, year, quarter, duration, exceptional data type and pollutant standard ID. Its parent is the Monitors view.

Two exceptional event situations may exist: either exceptional event data is flagged or not.

No exceptional event data is flagged: This is the case where only type 0 (No Exceptional Events) daily summaries exist for the monitor and quarter. A single quarterly summary row is determined using Quarterly Arithmetic Mean = Average of all daily values (on any day, not just scheduled days).

Exceptional event data is flagged: This is the case where daily summaries with a type=2 (Exceptional Events Included) or type=5 (Regionally concurred Exceptional Events Excluded) exist. Three quarterly summary rows are created:

- one with Exceptional Events Included (Quarterly Arithmetic Mean = Average of all daily values (on any day, not just scheduled days, and exceptional data types 0 & 2)
- one with all Exceptional Events excluded (Quarterly Arithmetic Mean = Average of all daily values (on any day, not just scheduled days, and exceptional data types 0 & 1)
- one with Regionally concurred Exceptional Events excluded. (Quarterly Arithmetic Mean = Average of all daily values (on any day, not just scheduled days, with exceptional data type 0 OR exceptional data type 5 AND Applicable Standard = "Annual")

For PM2.5, quarterly summaries are only used for computing the Arithmetic Mean values in the Annual Summaries; i.e. they are not used for computing the 98th percentile values. Therefore, the only quarterly summaries that exclude concurred exceptional event data that need to be computed are those with the Applicable Standard = "Annual."

3.29.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Monitor ID	MO_MO_ID	NUMBER(10,0)	√	√
Summary Year	QTR_YEAR	NUMBER(4,0)	√	√
Summary Quarter	QTR_NUM	NUMBER(1,0)	√	√
Duration Code	SD_DURATION_CODE	VARCHAR2(8)	√	√
Exceptional Data Type ID	EDT_EDT_ID	NUMBER(10,0)	√	√
Pollutant Standard	POLLUTANT_STD_ID	NUMBER	√	√
Arithmetic Mean	QTR_ARITH_MEAN	FLOAT(22)		
Count of Observations	QTR_OBS_CNT	NUMBER(12,0)		
Percent of Observations	QTR_OBS_PCT	NUMBER(10,4)		
Summary Criteria Indicator	QTR_CRITERIA_IND	VARCHAR2(3)		
Direct Entry Indicator	QTR_DIRECT_ENTRY_IND	VARCHAR2(1)		
Created User	CREATED_USER	VARCHAR2(40)		
Created Date	CREATED_DATE	DATE		
Modified User	MODIFIED_USER	VARCHAR2(40)		
Modified Date	MODIFIED_DATE	DATE		
Estimated Days Greater than Standard	EST_DAYS_GT_STANDARD	NUMBER		
Valid Day Count	VALID_DAY_CNT	NUMBER		
Valid Sample Count	VALID_SAMPLE_CNT	NUMBER		
Count of Values Greater than Primary Standard	VALUES_GT_PRIMARY_STANDARD	NUMBER		
Scheduled Sample Count	SCHEDULED_SAMPLES	NUMBER		
Percent Days	PERCENT_DAYS	NUMBER		
Quarterly Minimum	QUARTER_MINIMUM	NUMBER		
Quarterly Maximum	QUARTER_MAXIMUM	NUMBER		
Percent one value	PERCENT_ONE_VALUE	NUMBER		

3.30 Annual Summaries

3.30.1 Description

The Annual Summaries view contains calculated values of concentrations of monitor samples, which have been summarized for a year, sampling duration, and exceptional data indicator combination. Annual summaries are computed for each calendar year. They may be computed for both sample measurements and NAAQS_Averages. They may include statistics based on any of the lower level summaries (Daily or Quarterly) or sample measurements. Part of the key is the sample measurement durations summarized (e.g., hourly, daily or NAAQS Average.)

An Annual Summaries record is uniquely identified by the combination of monitor, year, duration, exceptional data type and pollutant standard ID. Its parent is the Monitors view; its child view is Summary Maximums, Summary Percentiles, and Summary Protocols.

3.30.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Annual Summary ID	ANS_ID	NUMBER(10,0)	√	√
Monitor ID	MO_MO_ID	NUMBER(10,0)		
Summary Year	ANNUAL_SUMMARY_YEAR	NUMBER(4,0)		
Duration Code	SD_DURATION_CODE	VARCHAR2(8)		

Name	Database Field	Type (Length)	Req'd	Key
Exceptional Data Type ID	EDT_EDT_ID	NUMBER(10,0)		
Pollutant Standard	POLLUTANT_STD_ID	NUMBER	√	√
Summary Type	ANS_TYPE	VARCHAR2(10)		
Collection Frequency Code	CF_COLL_FREQ_CODE	VARCHAR2(8)		
Summary Criteria Indicator	ANNUAL_CRITERIA_IND	VARCHAR2(3)		
Count of Methods	SUMMARY_METHOD_CNT	NUMBER(12,0)		
Count of Observations	ANNUAL_OBS_CNT	NUMBER(10,0)		
Annual Minimum Sample Value	MIN_SAMPLE_VALUE	NUMBER(10,5)		
Arithmetic Mean	ANNUAL_ARITH_MEAN	NUMBER		
Geometric Mean	ANNUAL_GEOM_MEAN	NUMBER(10,5)		
Arithmetic Standard Deviation	ANNUAL_ARITH_STDDV	NUMBER		
Geometric Standard Deviation	ANNUAL_GEOM_STDDV	NUMBER(12,5)		
Percent of Observations	ANNUAL_OBS_PCT	NUMBER(10,4)		
Direct Entry Indicator	ANNUAL_DIRECT_ENTRY_IND	VARCHAR2(3)		
Count of Null Data Values	NULL_DATA_OBS_CNT	NUMBER(10,0)		
Count of Exceptional Events	EXCEPTIONAL_DATA_CNT	NUMBER(10,0)		
Certificate Indicator	CERT_IND	VARCHAR2(3)		
Count of Primary Exceedances	VALUES_GT_PRI_LEVEL	NUMBER(10,0)		
Counts of Half-MDL Substitutions	OBS_CNT_LT_HALF_MDL	NUMBER(10,0)		
Count of Secondary Exceedances	VALUES_GT_SEC_LEVEL	NUMBER(10,0)		
Count of Valid Days	VALID_DAY_CNT	NUMBER(3,0)		
Count of Days Greater than Alert Level	DAYS_GT_ALERT_LEVEL	NUMBER(3,0)		
Count of Non-Overlapping Exceedances	NON_OVERLAPPING_AVG_GT_STD	NUMBER(10,0)		
Count of Missing Days Assumed Less than Standard	MISSING_DAYS_ASSUMED_LT_STD	NUMBER(3,0)		
Estimate of Days Greater than Standard	EST_DAYS_GT_STD	NUMBER(5,2)		
Count of Required Days	REQ_MONITORING_CNT	NUMBER(3,0)		
Weighted Arithmetic Mean	WEIGHTED_ARITH_MEAN	NUMBER		
Date of Last Update	LAST_UPDATE_DATE	DATE		
Summary Scale	SUMMARY_SCALE	NUMBER		
Created User	CREATED_USER	VARCHAR2(40)		
Created Date	CREATED_DATE	DATE		
Modified User	MODIFIED_USER	VARCHAR2(40)		
Modified Date	MODIFIED_DATE	DATE		
Begin Date of Monitoring Season	MONITORING_SEASON_BEGIN_DATE	DATE		
End Date of Monitoring Season	MONITORING_SEASON_END_DATE	DATE		
Count of Complete Quarters	COMPLETE_QUARTER_COUNT	NUMBER		

3.31 Site Daily Values

3.31.1 Description

The Site Daily Values view contains daily values for PM2.5, lead, and other parameters at a given site where the valid daily values from a site's primary sampler are combined with the coalesced values from the same site's collocated samplers for any days the primary sampler was not available. Daily values are combined for a site, day, and exceptional data indicator combination.

A Site Daily Values record is uniquely identified by the combination of site key, parameter, sample day, exceptional data type and pollutant standard ID. Its parent is the Sites view.

3.31.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Site Key	SI_ID	NUMBER(10,0)	√	√
Parameter Code	PARAMETER_CODE	VARCHAR2(5)	√	√
Sample Day	SAMPLE_DAY	DATE	√	√
Exceptional Data Type ID	EDT_ID	NUMBER(10,0)	√	√
Pollutant Standard	POLLUTANT_STD_ID	NUMBER	√	√
Duration Code	DURATION_CODE	VARCHAR2(8)		
Daily Value	DAILY_VALUE	NUMBER	√	
Source Indicator	SOURCE_IND	VARCHAR2(1)	√	
Created User	CREATED_USER	VARCHAR2(30)		
Created Date	CREATED_DATE	DATE		
Modified User	MODIFIED_USER	VARCHAR2(30)		
Modified Date	MODIFIED_DATE	DATE		

3.32 Site Quarterly Summaries

3.32.1 Description

The Site Quarterly Summaries view contains calculated values of concentrations of monitor samples at a given site, which have been summarized for a quarter, parameter and exceptional data indicator combination. Site quarterly summaries are calculated only for pollutants for which the attainment designation is per site (not per monitor). Currently, this applies only to PM2.5 and lead.

A Site Quarterly Summaries record is uniquely identified by the combination of site key, parameter, year, quarter, exceptional data type and pollutant standard ID. Its parent is the Sites view.

Two exceptional event situations may exist: either exceptional event data is flagged or not.

No exceptional event data is flagged: This is the case where only type 0 (No Exceptional Events) site-level daily summaries exist for the site and quarter. A single quarterly summary row for the site and quarter is determined using site-level Quarterly Arithmetic Mean = Average of all site-level daily values (on any day, not just scheduled days).

Exceptional event data is flagged: This is the case where site-level daily summaries with a type=2 (Exceptional Events Included) or type=5 (Regionally concurred Exceptional Events Excluded) exist. Three quarterly summary rows for the site and quarter are created:

- one with Exceptional Events Included (Site-level Quarterly Arithmetic Mean = Average of all site-level daily values (on any day, not just scheduled days, and exceptional data types 0 & 2)
- one with all Exceptional Events excluded (Site-level Quarterly Arithmetic Mean = Average of all site-level daily values (on any day, not just scheduled days, and exceptional data types 0 & 1)
- one with Regionally concurred Exceptional Events excluded. (Site-level Quarterly Arithmetic Mean = Average of all site-level daily values (on any day, not just scheduled days, with exceptional data type 0 OR exceptional data type 5 AND Applicable Standard = "Annual")

3.32.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Site Key	SI_ID	NUMBER(10,0)	√	√
Parameter Code	PARAMETER_CODE	VARCHAR2(5)	√	√
Summary Year	SUMMARY_YEAR	NUMBER(4,0)	√	√
Summary Quarter	SUMMARY_QUARTER	NUMBER(1,0)	√	√
Exceptional Data Type ID	EDT_ID	NUMBER(10,0)	√	√
Pollutant Standard	POLLUTANT_STD_ID	NUMBER	√	√
Arithmetic Mean	ARITH_MEAN	NUMBER		
Count of Creditable Samples	CRED_SAMPLE_CNT	NUMBER		
Percent of Completeness	PCT_COMPLETE	NUMBER(3,0)		
Observation Count	PCT_OBS	NUMBER		
Substituted Mean	SUBST_MEAN	NUMBER		
Created User	CREATED_USER	VARCHAR2(30)		
Created Date	CREATED_DATE	DATE		
Modified User	MODIFIED_USER	VARCHAR2(30)		
Modified Date	MODIFIED_DATE	DATE		

3.33 Site Annual Summaries

3.33.1 Description

The Site Annual Summaries view contains calculated values of concentrations of monitor samples at a given site, which have been summarized for a year, parameter and exceptional data indicator combination. Site annual summaries are calculated only for pollutants for which the attainment designation is per site (not per monitor). Currently, this applies only to PM2.5 and lead.

A Site Annual Summaries record is uniquely identified by the combination of site key, parameter, year, exceptional data type and pollutant standard ID. Its parent is the Sites view.

3.33.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Site Key	SI_ID	NUMBER(10,0)	√	√
Parameter Code	PARAMETER_CODE	VARCHAR2(5)	√	√
Summary Year	SUMMARY_YEAR	NUMBER(4,0)	√	√
Exceptional Data Type ID	EDT_ID	NUMBER(10,0)	√	√
Pollutant Standard	POLLUTANT_STD_ID	NUMBER	√	√

Weighted Arithmetic Mean	ARITH_MEAN	NUMBER		
Mean Completeness Indicator	ARITH_MEAN_COMPLETE_IND	VARCHAR2(1)		
Substituted Annual Mean	SUBST_MEAN	NUMBER		
Count of Creditable Samples	CRED_SAMPLE_CNT	NUMBER		
98th Percentile	PERCENTILE_98TH	NUMBER		
98th Percentile Completeness Indicator	PERCENTILE_98TH_COMPLETE_IND	VARCHAR2(1)		
First Maximum	FIRST_MAXIMUM	NUMBER		
Second Maximum	SECOND_MAXIMUM	NUMBER		
Third Maximum	THIRD_MAXIMUM	NUMBER		
Fourth Maximum	FOURTH_MAXIMUM	NUMBER		
Created User	CREATED_USER	VARCHAR2(30)		
Created Date	CREATED_DATE	DATE		
Modified User	MODIFIED_USER	VARCHAR2(30)		
Modified Date	MODIFIED_DATE	DATE		

3.34 Lead Site Monthly Summaries

3.34.1 Description

Lead Site Monthly Summaries is a table used to store the monthly lead summaries as defined for the 2008 Lead NAAQS in Appendix R to Part 50 in the CFR. This table contains aggregated daily values of monitor samples at a given site. These values are aggregated for a month, parameter, exceptional data indicator and pollutant standard combination. These summaries are calculated only for FRM/FEM Lead-TSP (14129) and FRM/FEM Lead-PM10 (85129), i.e., the two lead parameters that correspond to the 2008 Lead NAAQS.

A record is uniquely identified by the combination of site key, parameter, summary year, summary month and exceptional data type. Its parent is the Sites view.

3.34.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Site Key	SI_ID	NUMBER(10)	√	√
Parameter Code	PARAMETER_CODE	VARCHAR2(5)	√	√
Summary Year	SUMMARY_YEAR	NUMBER(4)	√	√
Summary Month	SUMMARY_MONTH	NUMBER(2)		
Exceptional Data Type ID	POLLUTANT_STANDARD_ID	NUMBER(10)	√	√
Pollutant Standard	EDT_ID	NUMBER	√	√
Arithmetic Mean	ARITH_MEAN	NUMBER		
Count of Creditable Days	CREDITABLE_DAY_COUNT	INTEGER		
Count of Scheduled Days	SCHEDULED_DAY_COUNT	INTEGER		
Data Capture Rate	DATA_CAPTURE_RATE	NUMBER		
Total Number of Sampled Days	TOTAL_SAMPLED_DAY_COUNT	INTEGER		
Monthly Minimum	MONTHLY_MINIMUM	NUMBER		
Monthly Maximum	MONTHLY_MAXIMUM	NUMBER		
Created User	CREATED_USER	VARCHAR2(30)		
Created Date	CREATED_DATE	DATE		
Modified User	MODIFIED_USER	VARCHAR2(30)		
Modified Date	MODIFIED_DATE	DATE		

3.35 Lead 3 Monthly Summaries

3.35.1 Description

Lead 3-Month Summaries is a view that aggregates Lead Site Monthly Summaries at a given site into running 3-month summaries. Each record represents a combination of 3-month period, parameter, exceptional data indicator and pollutant standard. As the name indicates, Lead 3 Month summaries are calculated only for lead pollutant. As with Lead Site Monthly Summaries, these are calculated only for FRM/FEM Lead-TSP (14129) and FRM/FEM Lead-PM10 (85129), i.e., the two lead parameters that correspond to the 2008 Lead NAAQS.

A record is uniquely identified by the combination of site key, parameter, summary year, summary month for the last month being summarized and exceptional data type. Its parent is the Sites view.

3.35.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Site Key	SI_ID	NUMBER(10)	√	√
Parameter Code	PARAMETER_CODE	VARCHAR2(5)	√	√
Summary Year	SUMMARY_YEAR	NUMBER(4)	√	√
Summary Month	SUMMARY_MONTH	NUMBER(2)		
Pollutant Standard	POLLUTANT_STANDARD_ID	NUMBER	√	√
Exceptional Data Type ID	EDT_ID	NUMBER(10)	√	√
Arithmetic Mean	ARITH_MEAN	NUMBER		
Data Capture Rate	DATA_CAPTURE_RATE	NUMBER		
Criteria Indicator	CRITERIA_INDICATOR	VARCHAR2(1)		
Created User	CREATED_USER	VARCHAR2(30)		
Created Date	CREATED_DATE	DATE		
Modified User	MODIFIED_USER	VARCHAR2(30)		
Modified Date	MODIFIED_DATE	DATE		

3.36 PM2.5 Site Design Values

3.36.1 Description

The Site _Design_Values view contains average values of annual summaries at a given site, which have been calculated for a three year period, parameter and exceptional data indicator combination and pollutant standard ID.

A Site _Design_Values record is uniquely identified by the combination of site key, parameter, design year and exceptional data type. Its parent is the Sites view.

3.36.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Site Key	SI_ID	NUMBER(10,0)	√	√
Parameter Code	PARAMETER_CODE	VARCHAR2(5)	√	√
Design Year	DESIGN_YEAR	NUMBER(4,0)	√	√
Exceptional Data Type ID	EDT_ID	NUMBER(10,0)	√	√
Pollutant Standard	POLLUTANT_STD_ID	NUMBER	√	√
Single-site Annual Standard Design Value	ANNUAL_DESIGN_VALUE	NUMBER		
Annual Standard Design Value Validity Indicator	ANNUAL_VALIDITY_IND	VARCHAR2(1)		
Substituted Annual Design Value	SUBST_ANNUAL_VALUE	NUMBER		

24-Hour Standard Design Value	24_HOUR_DESIGN_VALUE	NUMBER		
24-Hour Design Value Validity Indicator	24_HOUR_VALIDITY_IND	NUMBER		
Created User	CREATED_USER	VARCHAR2(30)		
Created Date	CREATED_DATE	DATE		
Modified User	MODIFIED_USER	VARCHAR2(30)		
Modified Date	MODIFIED_DATE	DATE		

3.37 Summary Maximums

3.37.1 Description

The Summary_Maximums view contains information about a predetermined number of the highest values that were recorded by a monitor within a year.

A Summary_Maximums record is uniquely identified by the combination of annual summary key, indicator and level. Its parent is the Annual_Summaries view.

3.37.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Maximum Level	MAX_LEVEL	NUMBER(4,0)	√	√
Maximum Value	MAX_SAMPLE_VALUE	NUMBER(10,5)		
Maximum Indicator	MAX_IND	VARCHAR2(3)	√	√
Maximum Value Date/Time	MAX_COLL_DATETIME	DATE		
Annual Summary Key	ANS_ANS_ID	VARCHAR2(40)	√	√
Created User	CREATED_USER	DATE		
Created Date	CREATED_DATE	VARCHAR2(40)		
Modified User	MODIFIED_USER	DATE		
Modified Date	MODIFIED_DATE	DATE		

3.38 Summary Percentiles

3.38.1 Description

The Summary_Percentiles view contains information about predetermined percentiles that were calculated for a monitor within a year.

A Summary_Percentiles record is uniquely identified by the combination of annual summary key and percentile. Its parent is the Annual_Summaries view.

3.38.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Annual Summary Key	ANS_ANS_ID	NUMBER(10,0)	√	√
Percentile	PERCENTILE_NUM	NUMBER(3,0)	√	√
Percentile Sample Value	PERCENTILE_SAMPLE_VALUE	NUMBER(10,5)		
Created User	CREATED_USER	VARCHAR2(40)		
Created Date	CREATED_DATE	DATE		
Modified User	MODIFIED_USER	VARCHAR2(40)		
Modified Date	MODIFIED_DATE	DATE		

3.39 Summary Protocols

3.39.1 Description

The Summary_Protocols view documents the protocols that were used for a monitor within a year.

A Summary_Protocols record is uniquely identified by the combination of monitor, year, duration, exceptional data type, and monitor protocol. Its parent is the Annual_Summaries view.

3.39.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Tribal Monitor ID	TRIBAL_MONITOR_ID	CHARACTER (20)		√
Monitor ID	MONITOR_ID	CHARACTER (20)	√	√
Summary Year	ANNUAL_SUMMARY_YEAR	NUMBER (4.0)	√	√
Duration Code	DURATION_CODE	CHARACTER (8)	√	√
Exceptional Data Type ID	EDT_ID	NUMBER (10.0)	√	√
Monitor Protocol ID	MP_ID	NUMBER (4.0)	√	√

3.40 Monitor Precision Summaries

3.40.1 Description

The Monitor_Precision_Summaries view contains information about yearly and quarterly precision statistics for monitors for a pollutant by a reporting organization. Types of information that are calculated are: number of checks, mean, standard deviation, and number of valid collocated sample pairs.

A Monitor_Precision_Summaries record is uniquely identified by the combination of monitor, reporting organization, class and time period. Its parent is the Monitor_Agency_Roles view; its child view is Precision_Summary_Protocols. (Note: Precision Summaries are only calculated for data collected up to 12/31/2006.)

3.40.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Tribal Monitor ID	TRIBAL_MONITOR_ID	CHARACTER (20)		√
Monitor ID	MONITOR_ID	CHARACTER (20)	√	√
Reporting Organization	AGENCY_CODE	CHARACTER (8)	√	√
Precision Class	AUDIT_CLASS	CHARACTER (20)	√	√
Summary Year	PREC_YEAR	NUMBER (4.0)	√	√
Time Period	TIME_PERIOD	CHARACTER (2)	√	√
Recording Mode	RECORDING_MODE	CHARACTER (30)	√	
Mean	PREC_MEAN	NUMBER (6.4)	√	
Standard Deviation	PREC_STDDV	NUMBER (6.4)	√	
Count of Precision Checks	PREC_CHECK_CNT	NUMBER (3.0)	√	
Count of Valid Collocated Data Pairs	VALID_CLOC_DATA_PAIR_CNT	NUMBER (3.0)	√	

3.41 Precision Summary Protocols

3.41.1 Description

The Precision_Summary_Protocols view contains information about the protocols used to assess precision checks for a monitor for a year by a reporting organization.

A Precision_Summary_Protocols record is uniquely identified by the combination of monitor, reporting organization, class, time period, and monitor protocols. Its parent is the Monitor_Precision_Summaries view. (Note: Precision Summaries are only calculated for data collected up to 12/31/2006.)

3.41.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Tribal Monitor ID	TRIBAL_MONITOR_ID	CHARACTER (20)		√
Monitor ID	MONITOR_ID	CHARACTER (20)	√	√
Reporting Organization	AGENCY_CODE	CHARACTER (8)	√	√
Precision Class	AUDIT_CLASS	CHARACTER (20)	√	√
Summary Year	PREC_YEAR	NUMBER (4.0)	√	√
Time Period	TIME_PERIOD	CHARACTER (2)	√	√
Monitor Protocol ID	MP_ID	NUMBER (4.0)	√	√

3.42 Reporting Organization Precision Summaries

3.42.1 Description

The Reporting Organization Precision Summaries view contains information about yearly and quarterly precision statistics for reporting organizations and pollutants. Types of information that are calculated are: number of checks, mean, standard deviation, number of valid collocated sample pairs, and lower and upper probability limits or confidence intervals.

A Reporting Organization Precision Summaries record is uniquely identified by the combination of reporting organization, parameter, class and time period. Its parent is the Agencies and Parameters views. (Note: Precision Summaries are only calculated for data collected up to 12/31/2006.)

3.42.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Reporting Organization	AGENCY_CODE	CHARACTER (8)	√	√
Parameter	PARAMETER_CODE	CHARACTER (5)	√	√
Precision Class	AUDIT_CLASS	CHARACTER (20)	√	√
Summary Year	PREC_YEAR	NUMBER (4.0)	√	√
Time Period	TIME_PERIOD	CHARACTER (2)	√	√
Recording Mode	RECORDING_MODE	CHARACTER (30)	√	
Mean	PREC_MEAN	NUMBER (6.4)	√	
Standard Deviation	PREC_STDDV	NUMBER (6.4)		
Count of Precision Checks	PREC_CHECK_CNT	NUMBER (3.0)	√	
Count of Valid Collocated Data Pairs	VALID_CLOC_DATA_PAIR_CNT	NUMBER (3.0)		
Count of Analyzers	ANALYZER_CNT	NUMBER (12.0)	√	
Count of Collocated Sites	CLOC_SITE_CNT	NUMBER (12.0)	√	

Name	Database Field	Type (Length)	Req'd	Key
Lower Probability/Confidence Limit	PREC_LOWER_PROB_LIMIT	NUMBER (6.4)	√	
Upper Probability/Confidence Limit	PREC_UPPER_PROB_LIMIT	NUMBER (6.4)	√	

3.43 Monitor Accuracy Summaries

3.43.1 Description

The Monitor_Accuracy_Summaries view contains information about yearly and quarterly accuracy statistics for reporting organizations and pollutants. Types of information that are calculated are: number of audits.

A Monitor_accuracy_Summaries record is uniquely identified by the combination of monitor, reporting organization, class, type, and time period. Its parent is the Agencies_Roles view; its child view is Accuracy_Summary_Protocols. (Note: Accuracy Summaries are only calculated for data collected up to 12/31/2006.)

3.43.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Tribal Monitor ID	TRIBAL_MONITOR_ID	CHARACTER (20)		√
Monitor ID	MONITOR_ID	CHARACTER (20)	√	√
Reporting Organization	AGENCY_CODE	CHARACTER (8)	√	√
Recording Mode	RECORDING_MODE	CHARACTER (30)	√	√
Audit Class	AUDIT_CLASS	CHARACTER (20)	√	√
Accuracy Type	ACC_TYPE	CHARACTER (20)	√	√
Summary Year	ACC_SUMMARY_YEAR	NUMBER (4)	√	√
Time Period	TIME_PERIOD	CHARACTER (2)	√	√
Local Primary Standard	LOCAL_PRI_STD	CHARACTER (30)	√	
Audit Type	AUDIT_TYPE	CHARACTER (30)	√	
Audit Level	LEVEL_NUM	NUMBER (2)	√	
Count of Accuracy Audits	AUDIT_CNT	NUMBER (12)	√	
Mean	ACC_MEAN	NUMBER (5.5)		

3.44 Accuracy Summary Protocols

3.44.1 Description

The Accuracy_Summary_Protocols view documents the protocols used to collect accuracy audits for a monitor for a year or quarter.

An Accuracy_Summary_Protocols record is uniquely identified by the combination of monitor, reporting organization, class, type, time period, and monitor protocol. Its parent is the Monitor_Accuracy_Summaries view. (Note: Accuracy Summaries are only calculated for data collected up to 12/31/2006.)

3.44.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Tribal Monitor ID	TRIBAL_MONITOR_ID	CHARACTER (20)		√
Monitor ID	MONITOR_ID	CHARACTER (20)	√	√
Reporting Organization	AGENCY_CODE	CHARACTER (8)	√	√
Recording Mode	RECORDING_MODE	CHARACTER (30)	√	√
Audit Class	AUDIT_CLASS	CHARACTER (20)	√	√
Accuracy Type	ACC_TYPE	CHARACTER (20)	√	√
Summary Year	ACC_SUMMARY_YEAR	NUMBER (4)	√	√
Time Period	TIME_PERIOD	CHARACTER (2)	√	√
Monitor Protocol ID	MP_ID	NUMBER (4)	√	√

3.45 Reporting Organization Accuracy Summaries

3.45.1 Description

The Reporting_Organization_Accuracy_Summaries view contains information about yearly and quarterly accuracy statistics for reporting organizations and pollutants. Types of information that are calculated are: number of audits, mean, standard deviation, and lower and upper probability limits or confidence intervals.

A Reporting_Organization_Accuracy_Summaries record is uniquely identified by the combination of reporting organization, parameter, recording mode, class, type, and time period. Its parent is the Agencies_and_Parameters views. (Note: Accuracy Summaries are only calculated for data collected up to 12/31/2006.)

3.45.2 Elements

Name	Database Field	Type (Length)	Req'd	Key
Reporting Organization	AGENCY_CODE	CHARACTER (8)	√	√
Parameter	PARAMETER_CODE	CHARACTER (5)	√	√
Recording Mode	RECORDING_MODE	CHARACTER (30)	√	√
Audit Class	AUDIT_CLASS	CHARACTER (20)	√	√
Accuracy Type	ACC_TYPE	CHARACTER (20)	√	√
Summary Year	ACC_SUMMARY_YEAR	NUMBER (4)	√	√
Time Period	TIME_PERIOD	CHARACTER (2)	√	√
Local Primary Standard	LOCAL_PRI_STD	CHARACTER (30)	√	
Audit Type	AUDIT_TYPE	CHARACTER (30)	√	
Audit Level	LEVEL_NUM	NUMBER (2)	√	
Count of Accuracy Audits	AUDIT_CNT	NUMBER (12)	√	
Mean	ACC_MEAN	NUMBER (5.5)		
Standard Deviation	ACC_STDDV	NUMBER (7.5)		
Lower Probability/Confidence Limit	ACC_LOWER_PROB_LIMIT	NUMBER (6.4)		
Upper Probability/Confidence Limit	ACC_UPPER_PROB_LIMIT	NUMBER (6.4)		

4 AQS Data Fields

4.1 98th Percentile Completeness Indicator (Annual)

4.1.1 Description

Flag indicating whether the annual 98th percentile is complete.

4.1.2 Source

System generated during Post process

4.1.3 Attributes

Type: Varchar2
Length: 1
Required: No

4.1.4 Uses

Site Annual Summaries

4.1.5 Value Assignment

4.1.5.1 Site-Level PM2.5

The valid values are "Y" and "N". Set to valid (i.e. 'Y') according to the following rules:

- All 4 site-level quarterly summaries are present, and
- One of the following is true:
  - All 4 quarters are 75% complete, or
  - Annual 98th percentile value greater than the 24-hour standard (35 ug/m^3).

4.2 Accuracy Audit ID Number

4.2.1 Description

A sequentially assigned number used to identify a unique measurement data group for a monitor on a specific date.

4.2.2 Source

User-specified, via Accuracy Data (RA) Transaction, or AQS Maintain Accuracy (L62).

4.2.3 Attributes

Type: Number
Length: 2.0
Required: Yes

4.2.4 Uses

Accuracy Data

4.3 Accuracy Date

4.3.1 Description

The calendar date for which the accuracy audit information pertains.

4.3.2 Source

User-specified, via Accuracy Data (RA) Transaction, or AQS Maintain Accuracy (L62).

4.3.3 Attributes

Type: Date
Length: Not Applicable
Required: Yes

4.3.4 Uses

Accuracy Data

4.3.5 Value Assignment

The field is only assigned a date, with the time portion defaulting to 00:00:00.

4.4 Accuracy Type

4.4.1 Description

A description of the type of accuracy test performed.

4.4.2 Source

User-specified, via Accuracy Data (RA) Transaction, or AQS Maintain Accuracy (L62).

4.4.3 Attributes

Type: Character
Length: 20
Required: Yes

4.4.4 Uses

Accuracy Data
Monitor Accuracy Summaries
Accuracy Summary Protocols
Reporting Organization Accuracy Summaries

4.4.5 Value Assignment

4.4.5.1 Accuracy Data

Must be an entry in the *Accuracy Types* view.

4.4.5.2 Monitor & Reporting Organization Accuracy Summaries

Represents the *Accuracy Type* value assigned to all *Accuracy Data* records that are aggregated in the summary record.

4.5 Action Date

4.5.1 Description

The date that administrative action was taken by EPA headquarters.

4.5.2 Source

User-specified, via the Maintain Monitor form.

4.5.3 Attributes

Type: Date
Length: Not Applicable
Required: No

4.5.4 Uses

Monitor Type Assignments

4.5.5 Value Assignment

Applies only to the assignment of the monitor types National Air Monitoring Station (NAMS) or Photochemical Assessment Monitoring System (PAMS).

4.6 Action Indicator

4.6.1 Description

Indicates the data manipulation action to be performed by the transaction.

4.6.2 Source

User-specified, via Raw Data (RD) or Composite Data (RC) Transactions, or AQS Maintain Raw Data (L54) or Maintain Composite Data (L51).

4.6.3 Attributes

Type: Character
Length: 1
Required: No

4.6.4 Uses

Raw Data
Composite Data

4.6.5 Value Assignment

4.6.5.1 Pre-Production Status

A value is required when the *Raw Data* or *Composite Data* record is at pre-production status, (i.e., the *Status Indicator* value is "R" or "S"). The valid values are:

I - Insert
U - Update
D - Delete

4.6.5.2 Production Status

The field must be null when the *Raw Data* or *Composite Data* record is at production status, (i.e., the *Status Indicator* value is "P").

4.7 Action Reason

4.7.1 Description

A code indicating the reason for negative actions by EPA headquarters with regard to a monitor.

4.7.2 Source

User-specified, via the Maintain Monitor form.

4.7.3 Attributes

Type: Character
Length: 8
Required: No

4.7.4 Uses

Monitor Type Assignments

4.7.5 Value Assignment

Must be an entry in the *Action Reasons* view.

4.8 Action Type

4.8.1 Description

The type of administrative action taken by EPA headquarters.

4.8.2 Source

User-specified, via the Maintain Monitor form.

4.8.3 Attributes

Type: Character
Length: 8
Required: No

4.8.4 Uses

Monitor Type Assignments

4.8.5 Value Assignment

Must be an entry in the *Action Types* view.

4.9 Actual Method

4.9.1 Description

Identifies the particular method for collecting and analyzing a precision check value.

4.9.1.1 Analytical

The method used to collect and analyze the known gaseous concentration with which the sampler is challenged.

4.9.1.2 Flow

The method used to collect and analyze the known flow rate with which the sampler is challenged.

4.9.1.3 Collocated

The method used to collect and analyze the ambient air sample from the primary sampler.

4.9.2 Source

User-specified, via Precision Data (RP) Transaction, or AQS Maintain Precision (L61).

4.9.3 Attributes

Type: Character
Length: 3
Required: Yes

4.9.4 Uses

Precision Data

4.9.5 Value Assignment

The *Actual Method* value, in combination with the *Parameter* value, must exist in the *Sampling Methodologies* view.

4.10 Actual Value

4.10.1 Description

4.10.1.1 Analytical

The standard gaseous concentration value with which the sampler is challenged.

4.10.1.2 Flow

The standard flow rate value with which the monitor is challenged.

4.10.1.3 Collocated

The concentration produced from the primary sampler, (i.e., routine monitor), in a collocated sampler pair.

4.10.2 Source

For a precision check, user-specified, via Precision Data (RP) Transaction, or AQS Maintain Precision (L61). For an accuracy audit, user-specified, via Accuracy Data (RA) Transaction, or AQS Maintain Accuracy (L62).

4.10.3 Attributes

Type: Number
Length: 5.5
Required: Yes

4.10.4 Uses

Precision Data
Accuracy Data

4.10.5 Value Assignment

4.10.5.1 Analytical Check

The *Actual Value* for a precision check must not exceed the maximum value allowed for the *Parameter*.

4.10.5.2 Analytical Audit

The *Actual Value* for an analytical audit must fall within the range of standard concentrations specified for the *Parameter* at the given *Audit Level.*

4.10.5.3 Collocated Check

The *Actual Value* for a precision check must not exceed the maximum value allowed for the *Parameter*.

4.11 Agency Code

4.11.1 Description

An agency responsible for performing a role for the monitor.

4.11.2 Source

User-specified, via Basic Site Information (AA) transaction or The Maintain Site form..

User-specified, via Monitor Agency Roles (MD) Transaction, or the Maintain Monitor form.

4.11.3 Attributes

Type: Character
Length: 8
Required: Yes

4.11.4 Uses

Monitor Agency Roles

4.11.5 Value Assignment

Must be an entry on the *Agencies* view, and, in combination with *State Code*, on the *State Agencies* view.

4.12 Agency Performing FRM Audit

4.12.1 Description

The agency submitting precision data resulting from a Federal Reference Method (FRM) audit of the manual method for Particulate Matter (PM)-2.5 monitoring. This agency is commonly an Environmental Protection Agency (EPA) laboratory or independent laboratory.

4.12.2 Source

User-specified, via Precision Data (RP) Transaction, or AQS Maintain Precision (L61).

4.12.3 Attributes

Type: Character
Length: 8
Required: No

4.12.4 Uses

Precision Data

4.12.5 Value Assignment

The *Agency Performing FRM Audit* value must exist on the *Agencies* view.

4.13 Agency Role Begin Date

4.13.1 Description

The date on which the agency began performance of the role for the monitor. For the role of reporting, it also indicates the date that precision and accuracy data applies to the agency as reporting organization.

4.13.2 Source

User-specified, via Monitor Agency Roles (MD) Transaction, or the Maintain Monitor form.

4.13.3 Attributes

Type: Date
Length: Not Applicable
Required: Yes

4.13.4 Uses

Monitor Agency Roles

4.14 Agency Role End Date

4.14.1 Description

The date on which the agency ended a period of performance of the role for the monitor. For the role of reporting, it also indicates the last date that precision and accuracy data applies to the agency as reporting organization.

4.14.2 Source

User-specified, via Monitor Agency Roles (MD) Transaction, or the Maintain Monitor form.

4.14.3 Attributes

Type: Date
Length: Not Applicable
Required: No

4.14.4 Uses

Monitor Agency Roles

4.15 Agency Role Name

4.15.1 Description

Classification of an agency's role in regard to the monitor.

4.15.2 Source

User-specified, via Monitor Agency Roles (MD) Transaction, or the Maintain Monitor form.

4.15.3 Attributes

Type: Character
Length: 20
Required: Yes

4.15.4 Uses

Monitor Agency Roles

4.15.5 Value Assignment

Must be “PQAO”, “REPORTING”, “COLLECTING”, or “ANALYZING”.

4.16 Alternate Method Detectable Limit

4.16.1 Description

The method detectable limit (MDL) defined for the monitor by the QA agency, which supercedes the EPA-defined method detectable limit for the designated methodology.

4.16.2 Source

User-specified, via the Raw Data (RD), Composite Data (RC), or Monitor Protocols (MK) Transactions (), or via Maintain Monitor (L2).

4.16.3 Attributes

Type: Number
Length: 5.5
Required: No

4.16.4 Uses

Monitor Protocols

4.17 Applicable NAAQS Indicator

4.17.1 Description

An indication of whether the data from a monitor in a monitor planning area should be compared to either the short-term or annual National Ambient Air Quality Standards (NAAQS), or both.

4.17.2 Source

User-specified, via Basic Monitor Information (MA) Transaction, or the Maintain Monitor form.

4.17.3 Attributes

Type: Character
Length: 3
Required: No

4.17.4 Uses

Monitor Pollutant Areas

4.17.5 Value Assignment

The valid values are:

S – Short-Term
A – Annual
B - Both

4.17.5.1 Monitor Pollutant Areas

Applicable NAAQS Indicator is required for Monitor Planning Areas (PM2.5).

4.17.5.2 Default

Applicable NAAQS Indicator is not allowed for other than Monitor Planning Areas (PM2.5).

4.18 AQCR

4.18.1 Description

Specifies in which of the 247 Air Quality Control Regions (AQCRs) the monitoring site is located.

4.18.2 Source

User-specified via the Basic Site Information (AA) Transaction, or The Maintain Site form..

4.18.3 Attributes

Type: Character
Length: 8
Required: No

4.18.4 Uses

Sites

4.18.5 Value Assignment

Must be a value on the *AQCR* view, and, in combination with the *State Code* and *County Code*, on the *AQCR Counties* view.

4.19 AQI Value

4.19.1 Description

The Air Quality Index (AQI) is a measure for reporting daily air quality. It focuses on health effects that may be experienced within a few hours or days after breathing polluted air. AQI is calculated for the following major air pollutants regulated by the Clean Air Act: Ozone, PM 2.5, PM 10, carbon monoxide, sulfur dioxide, and nitrogen dioxide. The AQI is a mapping from pollutant concentrations to the common index. The index is based on defining seven levels of concentration/index values that are classified as follows:

- Good (with AQI values from 0 to 50),
- Moderate (with AQI values from 51 to 100),
- Unhealthy for Sensitive Groups (with AQI values from 101 to 150),
- Unhealthy (with AQI values from 151 to 200),
- Very Unhealthy (with AQI values from 201 to 300),
- Hazardous (with AQI values from 301 to 400),
- Very Hazardous (with AQI values from 401 to 500).

The upper and lower bounds of each AQI level classification are called "breakpoints" for the level. The EPA defines specific pollutant concentrations to be associated with each breakpoint; e.g. for Ozone, the "Moderate" classification level has the concentration of 0.060 ppm associated with its lower AQI value of 50, and the concentration of 0.075 associated with its higher AQI value of 100. AQI values in this concentration range are then computed by linear interpolation (by the formula provided later in this requirements document).

4.19.2 Source

System-generated during the Post process

4.19.3 Attributes

Type: Number
Required: No

4.19.4 Uses

Daily Summaries

4.19.5 Value Assignment

4.19.5.1 PM2.5

Air Quality Index Formula:
Within the concentration range of a classification, the AQI value for a pollutant concentration shall be computed by linear interpolation as per the following formula:

$$AQI = \left(\left(\frac{I_{Hghi} - I_{Low}}{BP_{High} - BP_{Low}} \right) \times \left(Conc - BP_{Low} \right) \right) + I_{Low}$$

Where:

- *Conc* is the concentration of the pollutant
- I_{High} is the AQI value of the upper breakpoint of the level
- I_{Low} is the AQI value of the lower breakpoint of the level
- BP_{High} is the concentration associated with the upper breakpoint of the level
- BP_{Low} is the concentration associated with the upper breakpoint of the level

4.20 Arithmetic Mean (Annual)

4.20.1 Description

The measure of central tendency obtained from the sum of the observed pollutant data values or National Ambient Air Quality Standards (NAAQS) averages in the yearly data set divided by the number of values that comprise the sum for the yearly data set. For criteria pollutants, the sum of values only adds the values with the appropriate flagging and concurrence for the exceptional data type.

4.20.2 Source

System-generated during the Post process, or user-specified via the Annual Summaries (RS) Transaction () or Maintain Annual Summaries (L9).

4.20.3 Attributes

Type: Number
Length: 5.5
Required: No

4.20.4 Uses

Annual Summaries
Site Annual Summaries

4.20.5 Value Assignment

4.20.5.1 1-Hour & 8-Hour Ozone

$$u = \sum_{j=1}^{n} d_j \Big/ v$$

where:

u = mean,
d = valid 1-hour or 8-hour daily maximum occurring in effective monitoring season,
v = *Count of Valid Days*.

The arithmetic mean is the sum of (Daily Maximum Values in the Effective Monitoring Season) / Number of Valid Days.
Format: Rounded to 4 digits after the decimal.
Sum of values only adds the values with the appropriate flagging and concurrence for the exceptional data type.

4.20.5.2 Non-Ozone National Ambient Air Quality Standards (NAAQS) Durations

Not valued.

4.20.5.3 Default

$$u = \sum_{j=1}^{n} s_j \Big/ n$$

where:

u = mean,
s = sample value,
n = *Count of Observations (Annual)*.

The arithmetic mean is the sum of (Values) / Count of Observations, where:

- Sum of values only adds the values with the appropriate flagging and concurrence for the exceptional data type.
- Count of Observations: Count of values (sample measurements or valid days – pollutant specific) with the appropriate flagging and concurrence for the exceptional data type (EDT_ID) of the summary. Note: samples with null data codes (i.e. with no measurement value) are not included in the count.

Format: Rounded to 1 place greater than the minimum summary scale (for output purposes).

4.21 Arithmetic Mean (Daily)

4.21.1 Description

The measure of central tendency obtained from the sum of the observed pollutant data values or National Ambient Air Quality Standards (NAAQS) averages in the daily data set divided by the number of values that comprise the sum for the daily data set. For criteria pollutants, the sum of values only adds the values with the appropriate flagging and concurrence for the exceptional data type.

4.21.2 Source

System-generated during the Post process.

4.21.3 Attributes

Type: Number
Length: 5.5
Required: No

4.21.4 Uses

Daily Summaries

4.21.5 Value Assignment

4.21.5.1 Hourly & NAAQS Durations

$$u = \sum_{j=1}^{n} s_j \Big/ n$$

where:

u = mean,
s = sample value or valid *NAAQS Arithmetic Mean*,
n = *Count of Observations (Daily)*.

4.21.5.2 Daily Criteria

$$u = s$$

where:

u = mean,
s = sample value.

4.22 Arithmetic Mean (3-Month)

4.22.1 Description

The measure of central tendency obtained from the sum of monthly means in the 3-month rolling data set divided by the number of values that comprise the sum for 3 month rolling data set. The sum of values only adds the values with the appropriate flagging and concurrence for the exceptional data type.

4.22.2 Source

System-generated during the Post process.

4.22.3 Attributes

Type: Number
Required: No

4.22.4 Uses

Lead Site 3 Month Summaries

4.22.5 Value Assignment

4.22.5.1 FRM/FEM Lead-TSP & FRM/FEM Lead – PM10

Computed with respect to exclusion using the following formula:

$$\frac{1}{n}\sum_{i=1}^{n} X_i$$

Where:

- n= the number of monthly means available to be averaged (typically 3, sometimes 1 or 2 if one or two months have no valid daily values); and
- X_i= The mean for month *i*

The result is rounded to the nearest hundredth μg/m^3, i.e., to two decimal places.

4.23 Arithmetic Mean (Monthly)

4.23.1 Description

The measure of central tendency obtained from the sum of Site Daily values in the monthly data set divided by the number of values that comprise the sum for monthly data set. The sum of values only adds the values with the appropriate flagging and concurrence for the exceptional data type.

4.23.2 Source

System-generated during the Post process.

4.23.3 Attributes

Type: Number
Required: No

4.23.4 Uses

Lead Site Monthly Summaries

4.23.5 Value Assignment

4.23.5.1 FRM/FEM Lead-TSP & FRM/FEM Lead – PM10

Computed with respect to exclusion using the following formula:

$$\frac{1}{n}\sum_{i=1}^{n} X_i$$

Where:

- n = the number of daily values in the month (creditable plus extra samples); and
- X_i= the i^{th} value in the month.

The result is neither rounded nor truncated.

4.24 Arithmetic Mean (NAAQS)

4.24.1 Description

The measure of central tendency obtained from the sum of the observed pollutant data values in National Ambient Air Quality Standards (NAAQS) hourly interval divided by the number of values that comprise the sum for the NAAQS hourly interval. For criteria pollutants, the sum of values only adds the values with the appropriate flagging and concurrence for the exceptional data type.

4.24.2 Source

System-generated during the Post process.

4.24.3 Attributes

Type: Number
Length: 10.5
Required: Yes

4.24.4 Uses

NAAQS Averages

4.24.5 Value Assignment

4.24.5.1 8-Hour Ozone

Where there are between 6 and 8 hourly samples in an 8-hour period, (i.e. at least 75% of the required data is present):

$$u = \sum_{j=1}^{n} s_j \Big/ n$$

where:

u = arithmetic mean,
s = sample value,
n = number of samples.

Where there are less than 6 samples in an 8-hour period, (i.e. at least 75% of the required data is not present):

$$u = \frac{\left(\sum_{j=1}^{n} s_j + \left((8 - n) * h\right) \right)}{8}$$

where:

u= arithmetic mean,
s = 1-hour sample value,
h = ½ method detectable limit (MDL) substitution,
n = number of 1-hour sample values,

and u exceeds the standard.

Sum of values only adds the values with the appropriate flagging and concurrence for the exceptional data type.

4.24.5.2 8-Hour Carbon Monoxide

Where there are between 6 and 8 samples in an 8-hour period, (i.e. at least 75% of the required data is present):

$$u = \sum_{j=1}^{n} s_j \Big/ n$$

where:

u = arithmetic mean,
s = sample value,
n = number of sample values.

Sum of values only adds the values with the appropriate flagging and concurrence for the exceptional data type.

4.24.5.3 3-Hour Sulfur Dioxide

When there are 3 hourly samples in a 3-hour block:

$$u = \sum_{j=1}^{3} s_j \Big/ 3$$

where:

u = arithmetic mean,
s = sample value.

When there less than 3 hourly samples in a 3-hour block:

$$u = \sum_{j=1}^{n} s_j \Big/ 3$$

where:

u= arithmetic mean,
s = 1-hour sample value,
n = number of 1-hour sample values,

and u exceeds the secondary standard.

Sum of values only adds the values with the appropriate flagging and concurrence for the exceptional data type.

4.24.5.4 24-Hour Sulfur Dioxide

When there are between 18 and 24 hourly samples in an 24-hour period, (i.e. at least 75% of the required data is present):

$$u = \sum_{j=1}^{n} s_j \Big/ n$$

where:

u = arithmetic mean,
s = sample value,
n = number of samples.

When there are less than 18 hourly samples in a 24-hour period:

$$u = \sum_{j=1}^{n} s_j \Big/ 24$$

where:

u= arithmetic mean,
s = sample value,
n = number of samples,

and u exceeds the primary standard.

Sum of values only adds the values with the appropriate flagging and concurrence for the exceptional data type.

4.24.5.5 24-Hour PM10

Where there are between 18 and 24 hourly samples in an 24-hour period, (i.e. at least 75% of the required data is present):

$$u = \sum_{j=1}^{n} s_j \Big/ n$$

where:

u = arithmetic mean,
s = 1-hour sample value,
n = number of 1-hour sample values.

Where there are less than 18 hourly samples in a 24-hour period:

$$u = \sum_{j=1}^{n} s_j \Big/ 24$$

where:

u= arithmetic mean,
s = 1-hour sample value,
n = number of 1-hour sample values,

and u, when rounded to -1 places, (i.e., to the nearest 10), exceeds the primary standard.

Sum of values only adds the values with the appropriate flagging and concurrence for the exceptional data type.

4.24.5.6 24-Hour PM2.5

Where there are between 18 and 24 hourly samples based on the appropriate exceptional data type in a 24-hour period, (i.e. at least 75% of the required data is present):

$$u = \sum_{j=1}^{n} s_j \Big/ n$$

where:

u = arithmetic mean,
s = 1-hour sample value,
n = number of 1-hour sample values.

Where there are less than 18 hourly samples in a 24-hour period:

$$u = \sum_{j=1}^{n} s_j \Big/ 24$$

where:

u= arithmetic mean,
s = 1-hour sample value,
n = number of 1-hour sample values,

and u, when rounded to zero places, i.e., to the nearest integer, exceeds the primary standard.

Sum of values only adds the values with the appropriate flagging and concurrence for the exceptional data type.

4.25 Arithmetic Mean (Quarterly)

4.25.1 Description

The measure of central tendency obtained from the sum of the observed pollutant data values in the quarterly data set divided by the number of values that comprise the sum for the quarterly data set. For criteria pollutants, the sum of values only adds the values with the appropriate flagging and concurrence for the exceptional data type.

4.25.2 Source

System-generated during the Post process.

4.25.3 Attributes

Type: Number
Length: 5.5
Required: No

4.25.4 Uses

Quarterly Summaries
Site Quarterly Summaries

4.25.5 Value Assignment

4.25.5.1 Hourly & NAAQS Durations

$$u = \sum_{j=1}^{n} s_j \Big/ n$$

where:

u = mean,
s = sample value or valid *NAAQS Arithmetic Mean*,
n = *Count of Observations (Quarterly)*.

4.25.5.2 Site-Level PM2.5

$$u = \sum_{j=1}^{n} s_j \Big/ n$$

where:

u = mean,
s = site-level daily value, based on appropriate exceptional data type, on any day not just scheduled day
n = *Count of Observations (Quarterly)*.

4.26 Arithmetic Standard Deviation

4.26.1 Description

The measure of the dispersion about the central tendency of a pollutant that is the square root of the arithmetic mean of the squares of the variation of each data value from the arithmetic mean of the data values of the yearly data set.

4.26.2 Source

System-generated during the Post process, or user-specified via the Annual Summaries (RS) Transaction () or Maintain Annual Summaries (L9).

4.26.3 Attributes

Type: Number
Length: 5.5
Required: No

4.26.4 Uses

Annual Summaries

4.26.5 Value Assignment

4.26.5.1 1-Hour & 8-Hour Ozone

$$\sigma = \sqrt{\frac{\left(\left(v * \sum_{j=1}^{v} d_j^2\right) - \left(\sum_{j=1}^{v} d_j\right)^2\right)}{\left(v * (v-1)\right)}}$$

where:

σ = standard deviation,
d = valid 1-hour or 8-hour daily maximum occurring in effective monitoring season,
v = *Count of Valid Days*,

and $v > 1$.

If the number of valid days is exactly 1, then the standard deviation is assigned a value of 0.

4.26.5.2 Non-Ozone National Ambient Air Quality Standards (NAAQS) Durations

No value assigned.

4.26.5.3 Default

$$\sigma = \sqrt{\frac{\left(\left(n * \sum_{j=1}^{n} s_j^{\,2}\right) - \left(\sum_{j=1}^{n} s_j\right)^2\right)}{\left(n * (n-1)\right)}}$$

where:

σ = standard deviation,
s = hourly sample value,
n = *Count of Observations (Annual)*,

and $n > 1$.

If the number of samples is exactly 1, then the standard deviation is assigned a value of 0.

4.27 Audit Class

4.27.1 Description

Description of the class of audit taken at the monitor.

4.27.2 Source

User-specified via Accuracy Data (RA) Transaction, or AQS Maintain Accuracy (L62), or system-generated via Accuracy Data (RA) Transaction, or AQS Maintain Accuracy (L62).

4.27.3 Attributes

Type: Character
Length: 20
Required: Yes

4.27.4 Uses

Accuracy Data
Monitor Accuracy Summaries
Accuracy Summary Protocols
Reporting Organization Accuracy Summaries

4.27.5 Value Assignment

4.27.5.1 Accuracy Data

Must be a value on the *Audit Classes* view.

4.27.5.2 Monitor & Reporting Organization Accuracy Summaries

Represents the *Audit Class* value assigned to all *Accuracy Data* records that are aggregated in the summary record.

4.28 Audit Level

4.28.1 Description

A number identifying a regulatory-specified concentration range for the Parameter, or, when there is no level defined, a sequential identifier use to differentiate multiple value pairs in an accuracy audit.

4.28.2 Source

Derived from User-specified via the Accuracy Data (RA) Transaction, or AQS Maintain Accuracy (L62).

4.28.3 Attributes

Type: Date
Length: Not Applicable
Required: Yes

4.28.4 Uses

Accuracy Data

4.28.5 Value Assignment

The values of *Audit Level* are derived from *Level n* fields on the RA transaction, with *Other Level* being assigned a value of 5. From Maintain Accuracy (L62), the levels are explicitly entered by the user.

4.29 Audit Sample ID

4.29.1 Description

The unique identity (ID) number of the reference sample used to challenge the instrument.

4.29.2 Source

User-specified via the Accuracy Data (RA) Transaction, or AQS Maintain Accuracy (L62).

4.29.3 Attributes

Type: Character
Length: 10
Required: No

4.29.4 Uses

Accuracy Data

4.30 Audit Scale

4.30.1 Description

The number of digits to the right of the decimal point of the accuracy audit.

4.30.2 Source

Derived from User-specified via the Accuracy Data (RA) Transaction, or AQS Maintain Accuracy (L62).

4.30.3 Attributes

Type: Number
Length: 1
Required: Yes

4.30.4 Uses

Accuracy Data

4.30.5 Value Assignment

The value is derived from the number of digits to the right of the decimal point for the corresponding audit value pair in the Accuracy Data (RA) Transaction, or on the L62 form.

4.31 Audit Scheduled

4.31.1 Description

The initial date that the performance audit was scheduled.

4.31.2 Source

User-specified via the Accuracy Data (RA) Transaction, or AQS Maintain Accuracy (L62).

4.31.3 Attributes

Type: Date
Length: Not Applicable
Required: No

4.31.4 Uses

Accuracy Data

4.32 Audit Type

4.32.1 Description

Description of who performed the audit and how the audit standard was certified.

4.32.2 Source

User-specified via the Accuracy Data (RA) Transaction, or AQS Maintain Accuracy (L62).

4.32.3 Attributes

Type: Character
Length: 20
Required: Yes

4.32.4 Uses

Accuracy Data
Monitor Accuracy Summaries
Reporting Organization Accuracy Summaries

4.32.5 Value Assignment

4.32.5.1 Accuracy Data

Must be a value on the *Audit Types* view.

4.32.5.2 Monitor & Reporting Organization Accuracy Summaries

The most frequently assigned audit type for accuracy audits aggregated in the summary record.

4.33 Beam Length

4.33.1 Description

The length of the beam projected between the transmitter and the receiver at the site, in meters.

4.33.2 Source

User-specified via the Open Paths (AC) Transaction, or The Maintain Site form..

4.33.3 Attributes

Type: Number
Length: 8.2
Required: Yes

4.33.4 Uses

Open Paths

4.34 Blank Date

4.34.1 Description

The calendar date at which the blank data was recorded.

4.34.2 Source

User-specified via the Blank Data (RB) Transaction, or AQS Maintain Blank Data (L53).

4.34.3 Attributes

Type: Date
Length: 8
Required: Yes

4.34.4 Uses

Forms and Reports

4.34.5 Value Assignment

On input: Coupled with Blank Time to set Blank Date/Time
On output: Extracted from Blank Date/Time

4.35 Blank Date/Time

4.35.1 Description

The calendar date and time at which the blank data was recorded.

4.35.2 Source

User-specified via the Blank Data (RB) Transaction, or AQS Maintain Blank Data (L53).

4.35.3 Attributes

Type: Date
Length: Not Applicable
Required: Yes

4.35.4 Uses

Blank Data
Blank Qualifier Details

4.36 Blank Scale

4.36.1 Description

The number of digits to the right of the decimal point of the blank value.

4.36.2 Source

User-specified via the Blank Data (RB) Transaction, or AQS Maintain Blank Data (L53).

4.36.3 Attributes

Type: Number
Length: 1
Required: Yes

4.36.4 Uses

Blank Data

4.36.5 Value Assignment

The value is derived from the number of digits to the right of the decimal point in the Blank Data (RB) Transaction, or on the L53 form.

4.37 Blank Time

4.37.1 Description

The 24 hour clock time at which the blank data was recorded.

4.37.2 Source

User-specified via the Blank Data (RB) Transaction, or AQS Maintain Blank Data (L53).

4.37.3 Attributes

Type: Date
Length: 5
Required: Yes

4.37.4 Uses

Forms and Reports

4.37.5 Value Assignment

On input: Coupled with Blank Time to set Blank Date/Time
On output: Extracted from Blank Date/Time

4.38 Blank Type

4.38.1 Description

The type of blank data being recorded.

4.38.2 Source

User-specified via Blank Data (RB) Transaction, or AQS Maintain Blank Data (L53).

4.38.3 Attributes

Type: Character
Length: 20
Required: Yes

4.38.4 Uses

Blank Data
Blank Qualifier Details

4.38.5 Value Assignment

Must be a value on the *Blank Types* view, (i.e., "TRIP" or "FIELD").

4.39 Blank Value

4.39.1 Description

The reported blank value.

4.39.2 Source

User-specified via Blank Data (RB) Transaction, or AQS Maintain Blank Data (L53).

4.39.3 Attributes

Type: Number
Length: 5.5
Required: No

4.39.4 Uses

Blank Data

4.40 CBSA Represented

4.40.1 Description

The Core Based Statistical Area (CBSA) from which the concentrations originated, not the location of the monitor.

4.40.2 Source

User-specified via the Monitoring Objective Information (ME) Transaction, or the Maintain Monitor form.

4.40.3 Attributes

Type: Character
Length: 5
Required: No

4.40.4 Uses

Monitor Objectives

4.40.5 Value Assignment

Must have a value if none of *CMSA Represented*, *CSA Represented*, *MSA Represented*, or *Urban Area Represented* are valued. Conversely, must not have a value if any of *CMSA Represented*, *CSA Represented*, *MSA Represented*, or *Urban Area Represented* are valued. If valued, that value must exist on the *CORE_BASED_STATISTICAL_AREAS* view.

4.41 Census Block

4.41.1 Description

The U.S. Census Bureau block within which the site is located.

4.41.2 Source

Derived from the EPA master geospatial database (Envirofacts) by using the user-specified site location (Latitude and Longitude). Note: This derivation from Envirofacts was implemented on August 11, 2007. For sites created prior to this date, or with locations not updated since, the field was entered by the user on either the Batch AA transaction or the Maintain Site form.

4.41.3 Attributes

Type: Character
Length: 4
Required: No

4.41.4 Uses

Sites

4.41.5 Value Assignment

If a value is provided by the user, it will be compared to the value derived from the Envirofacts database, and a warning will be generated if they differ. (The value derived from the Envirofacts database will be stored for the site.)

4.42 Census Block Group

4.42.1 Description

This is the first digit of the Census Block. It is not stored in the database..

4.42.2 Source

User-specified via the Basic Site Information (AA) Transaction, or The Maintain Site form..

4.42.3 Attributes

Type: Character
Length: 1
Required: No

4.42.4 Uses

Sites

4.42.5 Value Assignment

First digit of the Census Block.

4.43 Census Tract

4.43.1 Description

The U.S. Census Bureau census tract/block numbering area within which the site is located.

4.43.2 Source

Derived from the EPA master geospatial database (Envirofacts) by using the user-specified site location (Latitude and Longitude). Note: This derivation from Envirofacts was implemented on August 11, 2007. For sites created prior to this date, or with locations not updated since, the field was entered by the user on either the Batch AA transaction or the Maintain Site form.

4.43.3 Attributes

Type: Character
Length: 6
Required: No

4.43.4 Uses

Sites

4.43.5 Value Assignment

If a value is provided by the user, it will be compared to the value derived from the Envirofacts database, and a warning will be generated if they differ. (The value derived from the Envirofacts database will be stored for the site.)

4.44 Certification Indicator

4.44.1 Description

An indication that the accuracy of the information on the annual summary record has been certified by the owner.

4.44.2 Source

User-specified via the Certification (J) form.

4.44.3 Attributes

Type: Character
Length: 3
Required: No

4.44.4 Uses

Annual Summaries

4.44.5 Value Assignment

The only valid value is “Y”.

4.45 City Code

4.45.1 Description

The city within whose legal boundaries the monitoring site is located.

4.45.2 Source

Derived from the EPA master geospatial database (Envirofacts) by using the user-specified site location (Latitude and Longitude). Note: This derivation from Envirofacts was implemented on August 11, 2007. For sites created prior to this date, or with locations not updated since, the field was entered by the user on either the Batch AA transaction or the Maintain Site form.

4.45.3 Attributes

Type: Character
Length: 5
Required: No

4.45.4 Uses

Sites

4.45.5 Value Assignment

If a value is provided by the user, it will be compared to the value derived from the Envirofacts database, and a warning will be generated if they differ. (The value derived from the Envirofacts database will be stored for the site.)

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4.46 Class I Area

4.46.1 Description

The Class One Area within which the site is located. A Class One Area is a geographic area recognized by EPA as being of the highest environmental quality and requiring maximum protection.

4.46.2 Source

User-specified via the Basic Site Information (AA) Transaction, or The Maintain Site form..

4.46.3 Attributes

Type: Character
Length: 8
Required: No

4.46.4 Uses

Sites

4.46.5 Value Assignment

Must be a value on the *Class One Areas* view.

4.47 Close Date

4.47.1 Description

The Close Date is a field that may be supplied by a user to "close" a monitor by setting the end date of all of the subordinates of a monitor (e.g. Sample Periods, Monitor Type Assignments, Agency Role Assignments, and etc).

4.47.2 Source

User-specified via the Monitor Basis (MA) Transaction, or the Maintain Monitor form.

4.47.3 Attributes

Type: Date
Length: 8
Required: No

4.47.4 Uses

Monitors (updates only)

4.47.5 Value Assignment

Must be in the format YYYYMMDD, and must be greater than all sample period begin dates for the Monitor and any Raw, Precision, and Accuracy data.

4.48 CMSA Represented

4.48.1 Description

The Consolidated Metropolitan Statistical Area (CMSA) from which the concentrations originated, not the location of the monitor.

4.48.2 Source

User-specified via the Monitoring Objective Information (ME) Transaction, or the Maintain Monitor form.

4.48.3 Attributes

Type: Character
Length: 8
Required: No

4.48.4 Uses

Monitor Objectives

4.48.5 Value Assignment

Must have a value if none of *CBSA Represented*, *CSA Represented*, *MSA Represented*, or *Urban Area Represented* are valued. Conversely, must not have a value if any of *CBSA Represented*, *CSA Represented*, *MSA Represented*, or *Urban Area Represented* are valued. If valued, that value must exist on the *CMSAs* view.

4.49 Collection Date

4.49.1 Description

The date for which sample data is summarized.

4.49.2 Source

System-generated as part of the Post process.

4.49.3 Attributes

Type: Date
Length: Not Applicable
Required: Yes

4.49.4 Uses

Daily Summaries

4.50 Collection Frequency Code

4.50.1 Description

The frequency, according to which sample observations are to be made, specified as the amount of time that elapses between observations. Indicates how often 24-hour samples are taken, e.g., daily, every third day, stratified random, etc.

4.50.2 Source

User-specified via the Monitor Protocol (MK) or Raw Data (RD) Transaction, or the Maintain Monitor form.

4.50.3 Attributes

Type: Character
Length: 8
Required: No

4.50.4 Uses

Monitor Protocols

4.50.5 Value Assignment

The value must be on the *Collection Frequencies* view, and, in conjunction with *Duration Code*, *Parameter*, *Method Code*, *Unit*, and *Composite Type*, on the *Protocols* view.

4.51 Collocated POC

4.51.1 Description

The Parameter Occurrence Code (POC) of the duplicate sampler. Only applies to collocated data where the duplicate value is a recorded daily raw data point.

4.51.2 Source

User-specified via the Precision Data (RP) Transaction, or AQS Maintain Precision Data (L61).

4.51.3 Attributes

Type: Number
Length: 2
Required: No

4.51.4 Uses

Precision Data

4.51.5 Value Assignment

In conjunction with *State Code*, *County Code*, *Site ID*, and *Parameter*, the value must exist on the *Monitors* view.

4.52 Collocation Begin Date

4.52.1 Description

The beginning date of the time period during which a collocated monitor pair recorded precision and accuracy data. Used to determine data completeness.

4.52.2 Source

User-specified via the Monitor Protocol (MJ) Transaction, or the Maintain Monitor form.

4.52.3 Attributes

Type: Date
Length: Not Applicable
Required: Yes

4.52.4 Uses

Monitor Collocation Periods

4.53 Collocation End Date

4.53.1 Description

The ending date of the time period during which a collocated monitor pair recorded precision and accuracy data. Used to determine data completeness.

4.53.2 Source

User-specified via the Monitor Protocol (MJ) Transaction, or the Maintain Monitor form.

4.53.3 Attributes

Type: Date
Length: Not Applicable
Required: Yes

4.53.4 Uses

Monitor Collocation Periods

4.54 Comment Text

4.54.1 Description

A free-form narrative to be used in anyway the user desires, but generally to explain or further describe the related item, i.e., site, monitor, or sample.

4.54.2 Source

User-specified, via Maintain Site (L1), Maintain Monitor (L2), Maintain Raw Data (L54), or Maintain Composite Data (L51).

4.54.3 Attributes

Type: Character
Length: 255
Required: Yes

4.54.4 Uses

Comments

4.55 Community Monitoring Zone

4.55.1 Description

A sequential number assigned to an optional averaging area with an established, defined boundary within a monitor planning area that has relatively uniform concentration of annual PM-2.5. Community monitoring zones do not cross geographical lines.

4.55.2 Source

User-specified via the Basic Monitor Information (MA) Transaction, or the Maintain Monitor form.

4.55.3 Attributes

Type: Number
Length: 4.0
Required: No

4.55.4 Uses

Monitor Pollutant Areas

4.55.5 Value Assignment

4.55.5.1 Monitor Planning Areas

May be assigned a value when the *Pollutant Area Type* value is not Monitor Planning Area.

4.55.5.2 Default

May not be assigned a value when the *Pollutant Area Type* value is not Monitor Planning Area.

4.56 Compliance Date

4.56.1 Description

The date on which the current status of the monitor=s compliance with the regulation was achieved.

4.56.2 Source

User-specified via the Monitor Regulatory Compliance (MI) Transaction, or the Maintain Monitor form.

4.56.3 Attributes

Type: Date
Length: Not Applicable
Required: No

4.56.4 Uses

Monitor Regulatory Compliances

4.56.5 Assignment

4.57 Compliance Indicator

4.57.1 Description

The compliance status of a monitor with respect to an EPA regulation.

4.57.2 Source

User-specified via the Monitor Regulatory Compliance (MI) Transaction, or the Maintain Monitor form.

4.57.3 Attributes

Type: Character
Length: 3
Required: Yes

4.57.4 Uses

Monitor Regulatory Compliances

4.57.5 Value Assignment

Regulation Code	Valid Values
ST	Y, N
RM	Y, N
FC	Y, N
QA	Y, N, C
SC	Y, N, W

4.58 Composite Period

4.58.1 Description

Indicates the time period within the year to which the observation applies. It is expressed in units that may be inferred from the Composite Type.

4.58.2 Source

User-specified via the Composite Data (RC) Transaction, or AQS Maintain Composite Data (L51).

4.58.3 Attributes

Type: Number
Length: 2.0
Required: Yes

4.58.4 Uses

Composite Data
Composite Qualifier Details

4.59 Composite Type

4.59.1 Description

The time period over which samples are composited, or the frequency of submitting composite samples.

4.59.2 Source

User-specified via the Monitor Protocol (MK) or Composite Data (RC) Transactions, or the Maintain Monitor form.

4.59.3 Attributes

Type: Character
Length: 10
Required: No

4.59.4 Uses

Composite Type

4.59.5 Value Assignment

The value must be on the Composite Types view, and, in conjunction with Duration Code, Parameter, Method Code, Unit, and Collection Frequency Code, on the Protocols view.

4.60 Composite Year

4.60.1 Description

The calendar year for which the observation was reported.

4.60.2 Source

User-specified via the Composite Data (RC) Transaction, or AQS Maintain Composite Data (L51).

4.60.3 Attributes

Type: Number
Length: 4.0
Required: Yes

4.60.4 Uses

Composite Data
Composite Qualifier Details

4.61 Congressional District

4.61.1 Description

The Congressional district within which the site is located.

4.61.2 Source

Derived from the EPA master geospatial database (Envirofacts) by using the user-specified site location (Latitude and Longitude). Note: This derivation from Envirofacts was implemented on August 11, 2007. For sites created prior to this date, or with locations not updated since, the field was entered by the user on either the Batch AA transaction or the Maintain Site form.

4.61.3 Attributes

Type: Number
Length: 12.0
Required: No

4.61.4 Uses

Sites

4.61.5 Value Assignment

If a value is provided by the user, it will be compared to the value derived from the Envirofacts database, and a warning will be generated if they differ. (The value derived from the Envirofacts database will be stored for the site.)

4.62 Count of Accuracy Audits (Monitor Accuracy Summary)

4.62.1 Description

The number of accuracy audits recorded during the time period for the monitor.

4.62.2 Source

System-generated via Accuracy Data (RA) Transaction, or Maintain Accuracy (L61).

4.62.3 Attributes

Type: Number
Length: 12.0
Required: Yes

4.62.4 Uses

Monitor Accuracy Summaries

4.63 Count of Accuracy Audits (Reporting Organization Accuracy Summary)

4.63.1 Description

The number of accuracy audits recorded during the time period.

4.63.2 Source

System-generated via Accuracy Data (RA) Transaction, or Maintain Accuracy (L61).

4.63.3 Attributes

Type: Number
Length: 12.0
Required: Yes

4.63.4 Uses

Reporting Organization Accuracy Summaries

4.63.5 Value Assignment

If either quarter in either half of the year has an *Audit Count* of 1, then the audits for both quarters will be counted and reported with the second quarter for the half (Q2 or Q4). However, for the first quarter in the half (Q1 or Q3), the audits will still be counted and reported with that quarter.

4.64 Count of Analyzers

4.64.1 Description

The average number of approved analyzers in the network.

4.64.2 Source

System-generated via Precision Data (RP) Transaction, or Maintain Precision (L62).

4.64.3 Attributes

Type: Number
Length: 12.0
Required: Yes

4.64.4 Uses

Reporting Organization Precision Summaries

4.64.5 Value Assignment

4.64.5.1 Gaseous or Flow

The number of monitors for which checks were recorded during the time period.

4.64.5.2 Collocated

The number of collocated sampler pairs that recorded collocated value pairs during the time period, (i.e., the Count of Collocated Sites).

4.64.5.3 Federal Reference Method (FRM) audits

Assigned a default value of 0.

4.65 Count of Collocated Sites

4.65.1 Description

The average number of sites having collocated samplers.

4.65.2 Source

System-generated via Precision Data (RP) Transaction, or Maintain Precision (L62).

4.65.3 Attributes

Type: Number
Length: 12.0
Required: Yes

4.65.4 Uses

Reporting Organization Precision Summaries

4.65.5 Value Assignment

4.65.5.1 Collocated

The number of collocated sampler pairs that recorded collocated value pairs during the time period.

4.65.5.2 Gaseous, Flow, or Federal Reference Method (FRM) Audits

Assigned a default value of 0

4.66 Count of Complete Quarters

4.66.1 Description

The number of quarterly summaries, with corresponding pollutant standard and exceptional data type, where the summary criterion is met.

4.66.2 Source

System-generated via the Post process.

4.66.3 Attributes

Type: Number
Required: No

4.66.4 Uses

Annual Summaries

4.66.5 Value Assignment

4.66.5.1 1-Hour Sulfur Dioxide (SO_2)

The number of quarterly summaries, with corresponding pollutant standard and exceptional data type, where the summary criterion is met.

A quarter meets summary criterion when:

- Annual Standard: Observation Percentage >= 75%.
- 1-hour Standard: Percent Days >= 75%.

Percent Days is the percentage of valid days (days where summary criterion is met, with respect to pollutant standard and exceptional data type) in a quarter compared to the total number of days in the quarter.

4.66.5.2 1-Hour Nitrogen Dioxide (NO_2)

Number quarterly summaries, with the corresponding pollutant standard and exceptional data type, where the Percent Days >= 75%

Percent Days is the percentage of valid days (days with corresponding pollutant standard and exceptional data type, where summary criterion is met,) in a quarter compared to the total number of days in the quarter.

4.66.5.3 Default

Valued

4.67 Count of Creditable Days

4.67.1 Description

The number of scheduled days plus make-up days for missing scheduled days without respect to event exclusion.

4.67.2 Source

System-generated via the Post process.

4.67.3 Attributes

Type: Integer
Required: No

4.67.4 Uses

Lead Site Monthly Summaries

4.67.5 Value Assignment

4.67.5.1 FRM/FEM Lead-TSP & FRM/FEM Lead – PM10

The sum of valued, scheduled sampling days, plus valid make-ups for missing scheduled days without respect to event exclusion.

Scheduled days are the days on which sampling is scheduled based on the required sampling frequency for the monitoring site. A scheduled day for a site is a day that is a scheduled day for any monitor at the site.

A valid Make-Up Sample:

- can be made by either the primary or collocated instruments;
- is either taken before the next required sampling day, or exactly one week after the missed (or voided) sampling day;
- may not be in another year than the missed sample.
- may be in another month than the missed sample.
- Only two make-up samples are permitted each calendar month -- these are counted according to the month in which the miss and not the makeup occurred.

4.67.5.2 Default

Valued

4.68 Count of Creditable Samples

4.68.1 Description

The number of scheduled days plus make-up days for missing scheduled days.

4.68.2 Source

System-generated via the Post process.

4.68.3 Attributes

Type: Number
Length: 3.0
Required: No

4.68.4 Uses

Site Annual Summaries
Site Quarterly Summaries

4.68.5 Value Assignment

4.68.5.1 PM2.5

The sum of valued, scheduled sampling days, plus make-ups for missing scheduled days.

Scheduled days are the number of days within the year that were scheduled for sampling, as determined by the EPA-defined calendar for the required collection frequency, and which also fall within the period of operation, as defined by sampling periods.

A make-up day is a sample recorded in the same stratum as, or exactly seven days after, a missing scheduled sample. In both conditions, the make-up sample must occur within the same quarter as the missed sample. A maximum of five make-up samples are allowed per quarter. (References: EPA-454/R-99-008 Guideline on Data Handling Conventions for the PM NAAQS; Memorandum: February 3, 1999 Use of Make-Up Samples to Replace Scheduled PM Samples)

4.68.5.2 Default

Not valued

4.69 Count of Exceptional Events

4.69.1 Description

The number of data points in the annual data set affected by events.

4.69.2 Source

System-generated via the Post process, or user-generated via either the Annual Summaries (RS) Transaction or Maintain Annual Summaries (L7).

4.69.3 Attributes

Type: Number
Length: 10.0
Required: Yes

4.69.4 Uses

Annual Summaries

4.69.5 Value Assignment

4.69.5.1 Observed Durations

A count of the *Raw Data* or *Composite Data* records for the monitor and year whose *Primary Qualifier Type* value is either "EX", (for exceptional event qualifiers), or "NAT", (for natural event qualifiers).

4.69.5.2 National Ambient Air Quality Standards (NAAQS) Durations

Not valued.

4.70 Count of Days Greater Than Alert Level

4.70.1 Description

The number of days within the year where the monitor had sample values that exceeded the alert level for the pollutant.

4.70.2 Source

System-generated via the Post Process.

4.70.3 Attributes

Type: Number
Length: 3.0
Required: No

4.70.4 Uses

Annual Summaries

4.70.5 Value Assignment

Comparisons to alert levels are based on sample values converted to the pollutant's standard unit.

4.70.5.1 1-Hour Ozone

The number of days where the hourly *Maximum Value (Daily)* is greater than 0.2 parts per million (ppm).

4.70.5.2 8-Hour Carbon Monoxide

The number of days where the 8-Hour *Maximum Value (Daily)* is greater than 15 ppm.

4.70.5.3 Daily & 24-Hour Sulfur Dioxide

The number of days where daily sample value or 24-hour block average is greater than 0.3 ppm.

4.70.5.4 Annual Nitrogen Dioxide

If the *Arithmetic Mean (Annual)* exceeds 0.6 ppm, then 1; otherwise, 0.

4.70.5.5 Daily & 24 Hour PM10

The number of days where either the daily sample value or 24-hour block average is greater than 350 micrograms per cubic meter – standard conditions ($\mu g/m^3$ SC).

4.70.5.6 Default

Not valued.

4.71 Count of Half-MDL Substitutions

4.71.1 Description

The number of samples in the calendar year whose calculated standard value was less than the applicable method detectable limit (MDL), and for which ½ of that MDL was substituted for the calculated standard value.

4.71.2 Source

System-generated as part of the Post process.

4.71.3 Attributes

Type: Number
Length: 10.0
Required: No

4.71.4 Uses

Annual Summaries

4.71.5 Value Assignment

4.71.5.1 Hourly PM2.5

Not valued.

4.71.5.2 National Ambient Air Quality Standards (NAAQS) Durations

Not valued.

4.71.5.3 Default

The count of *Raw Data* or *Composite Data* records for the year that are flagged as having had half the MDL substituted (*Half MDL Substitution Indicator* = "Y") for the calculated *Standard Sample Value*, where the latter value is less than the MDL.

4.72 Count of Methods

4.72.1 Description

The number of methods used to collect samples for the monitor during the year.

4.72.2 Source

System-generated via the Post process.

4.72.3 Attributes

Type: Number
Length: 12.0
Required: No

4.72.4 Uses

Annual Summaries

4.72.5 Value Assignment

4.72.5.1 Observed Durations

Always valued.

4.72.5.2 National Ambient Air Quality Standards (NAAQS) Durations

Never valued.

4.73 Count of Missing Days Assumed Less Than Standard

4.73.1 Description

The number of invalid or missing days in the effective monitoring season whose daily maximums are assumed to be less than or equal to the standard.

4.73.2 Source

System-generated via the Post process.

4.73.3 Attributes

Type: Number
Length: 3.0
Required: No

4.73.4 Uses

Annual Summaries

4.73.5 Value Assignment

4.73.5.1 1-Hour Ozone

A missing or invalid day is assumed to be less than the standard when either of the following conditions exists:

- The daily maximums on the days immediately preceding, and immediately succeeding, the missing day were less than, or equal to, 75% of the standard.
- The number of valid samples for the day was less than 18, and the sum of the following is greater than, or equal, to 18, i.e., 75% of the possible values:

- Number of valid samples;
- Number of null samples that were both flagged as not likely to exceed the standard, and for which the Regional Office has indicated concurrence;
- Number of omitted samples that were flagged with event qualifiers, and for which the Regional Office has indicated concurrence.

4.73.5.2 8-Hour Ozone

A missing or invalid day is assumed to be less than the standard for the following condition:

- The number of valid 8-hour arithmetic averages for the day was less than 18, and the sum of the following is greater than, or equal, to 18, i.e., 75% of the possible values:

- Number of valid 8-hour arithmetic averages;
- Number of missing 8-hour arithmetic averages that would be valid if excluded samples (null or event-qualified) were included, where those excluded samples have concurrence from the EPA Regional Office.

4.73.5.3 Default

Not valued.

4.74 Count of Non-Overlapping Exceedances (Annual)

4.74.1 Description

The number of primary exceedances with 8 or more hours between any other exceedances.

4.74.2 Source

System-generated via the Post process.

4.74.3 Attributes

Type: Number
Length: 10.0
Required: No

4.74.4 Uses

Annual Summaries

4.74.5 Value Assignment

4.74.5.1 8-Hour Carbon Monoxide

Always valued with an integer of 0 or greater.

4.74.5.2 Default

Not valued.

4.75 Count of Non-Overlapping Exceedances (Daily)

4.75.1 Description

The number of primary exceedances with 8 or more hours between any other exceedances.

4.75.2 Source

System-generated via the Post process.

4.75.3 Attributes

Type: Number
Length: 10.0
Required: No

4.75.4 Uses

Daily Summaries

4.75.5 Value Assignment

4.75.5.1 8-Hour Carbon Monoxide

Always valued with an integer of 0 or greater.

4.75.5.2 Default

Not valued.

4.76 Count of Null Data Values

4.76.1 Description

The number of null samples that occurred within the calendar year

4.76.2 Source

System-generated during the Post process.

4.76.3 Attributes

Type: Number
Length: 10.0
Required: No

4.76.4 Uses

Annual Summaries

4.76.5 Value Assignment

4.76.5.1 Composite Data

Not valued.

4.76.5.2 National Ambient Air Quality Standards (NAAQS) Durations

Not valued.

4.76.5.3 Default

The count of Raw Data records where the Primary Qualifier Type is “NULL”.

4.77 Count of Observations (Annual)

4.77.1 Description

The number of raw data values that are the basis for the summary values.

4.77.2 Source

System-generated via the Post process, or user-generated via either the Annual Summaries (RS) Transaction or Maintain Annual Summaries (L7).

4.77.3 Attributes

Type: Number
Length: 10.0
Required: No

4.77.4 Uses

Annual Summaries

4.77.5 Value

4.77.5.1 PM 2.5

Count of total number of days in the year with daily summaries (not just scheduled days)

4.78 Count of Observations (Daily)

4.78.1 Description

The number of raw data values that are the basis for the summary values.

4.78.2 Source

System-generated via the Post process.

4.78.3 Attributes

Type: Number
Length: 10.0
Required: No

4.78.4 Uses

Daily Summaries

4.78.5 Value

4.78.5.1 PM2.5

Daily observation count = 1

4.79 Count of Observations (Quarterly)

4.79.1 Description

The number of raw data values that are the basis for the summary values.

4.79.2 Source

System-generated via the Post process.

4.79.3 Attributes

Type: Number
Length: 10.0
Required: No

4.79.4 Uses

Quarterly Summaries
Site Quarterly Summaries

4.79.5 Value

4.79.5.1 PM 2.5

Count of total number of days in quarter with daily summaries (not just scheduled days)

4.79.5.2 Site-Level PM2.5

Count of total number of days in quarter with site daily values (not just scheduled days)

4.80 Count of Precision Checks (Monitor Precision Summary)

4.80.1 Description

The number of precision checks, (gaseous, flow, collocated, Federal Reference Method, i.e., FRM) recorded during the time period.

4.80.2 Source

System-generated via Precision Data (RP) Transaction, or Maintain Precision (L62).

4.80.3 Attributes

Type: Number
Length: 3.0
Required: No

4.80.4 Uses

Monitor Precision Summaries

4.81 Count of Precision Checks (Reporting Organization Precision Summary)

4.81.1 Description

The number of precision checks, (gaseous, flow, collocated, Federal Reference Method, i.e., FRM) recorded during the time period.

4.81.2 Source

System-generated via Precision Data (RP) Transaction, or Maintain Precision (L62).

4.81.3 Attributes

Type: Number
Length: 12.0
Required: No

4.81.4 Uses

Reporting Organization Precision Summaries

4.82 Count of Primary Exceedances (Annual)

4.82.1 Description

The number of exceedances of the primary standard during the year for the monitor.

4.82.2 Source

System-generated via the Post process.

4.82.3 Attributes

Type: Number
Length: 10.0
Required: No

4.82.4 Uses

Annual Summaries

4.82.5 Value Assignment

4.82.5.1 1-Hour Ozone

The number of days in the effective monitoring season when the *Maximum Value (Daily)* was greater than, or equal to, 0.125 parts per million (ppm).

4.82.5.2 8-Hour Ozone

The number of days in the effective monitoring season where the *Maximum Value (Daily)* was greater than, or equal to, 0.085 ppm.

4.82.5.3 1-Hour Carbon Monoxide

The number of samples in the year that were greater than, or equal to, 35.5 ppm.

4.82.5.4 8-Hour Carbon Monoxide

The number of 8-hour *Arithmetic Mean (NAAQS)* values in the year that were greater than, or equal to, 9.5 ppm.

4.82.5.5 Daily & 24-Hour Sulfur Dioxide

The number of daily samples, or 24-hour block *Arithmetic Mean (NAAQS)* values, in the year that were greater than, or equal to, 0.145 ppm.

4.82.5.6 1 – Hour Sulfur Dioxide

The number of sample measurements, with the appropriate flagging and concurrence for the exceptional data type, that are greater than the primary standard

- Annual Standard: count of values > 30 ppb
- 1-Hour Standard: count of values > 75 ppb

4.82.5.7 Daily & 24-Hour PM10

The number of daily samples, or 24-hour block *Arithmetic Mean (NAAQS)* values, in the year that were greater than, or equal to, 155 micrograms per cubic meter – standard conditions ($\mu g/m^3$ SC).

4.82.5.8 Daily & 24-Hour PM2.5

The number of daily samples, or 24-hour block *Arithmetic Mean (NAAQS)* values, in the year that were greater than, or equal to, 65 micrograms per cubic meter – local conditions ($\mu g/m^3$ LC).

4.82.5.9 1 – Hour Nitrogen Dioxide

The number of sample measurements, with the appropriate flagging and concurrence for the exceptional data type, that are greater than the primary standard

- Annual Standard: count of values > 53 ppb
- 1-Hour Standard: count of values > 100 ppb

4.82.5.10 Lead

The number of *Arithmetic Mean (Quarterly)* values, that are greater than, or equal to, 1.55 $\mu g/m^3$ SC.

4.82.5.11 Default

Not valued

4.83 Count of Primary Exceedances (Daily)

4.83.1 Description

The number of exceedances of the primary standard during the 24-hour period for the monitor.

4.83.2 Source

System-generated via the Post process.

4.83.3 Attributes

Type: Number
Length: 10.0
Required: No

4.83.4 Uses

Daily Summaries

4.83.5 Value Assignment

4.83.5.1 1-Hour Ozone

The number of samples within the 24-hour period that were greater than, or equal to, 0.125 parts per million (ppm).

4.83.5.2 8-Hour Ozone

The number of 8-hour *Arithmetic Mean (NAAQS)* values, in the 24-hour period that were greater than, or equal to, 0.085 ppm.

4.83.5.3 1-Hour Carbon Monoxide

The number of samples in the 24-hour period that were greater than, or equal to, 35.5 ppm.

4.83.5.4 8-Hour Carbon Monoxide

The number of 8-hour *Arithmetic Mean (NAAQS)* values, in the 24-hour period that were greater than, or equal to, 9.5 ppm.

4.83.5.5 Daily & 24-Hour Sulfur Dioxide

The number of samples, or 24-hour block *Arithmetic Mean (NAAQS)* values, in the 24-hour period that were greater than, or equal to, 0.145 ppm, i.e., 0 or 1.

4.83.5.6 1-Hour Sulfur Dioxide

The number of samples in the 24-hour period, with the appropriate flagging and concurrence for the exceptional data type, that are greater than the 1-Hour standard i.e., 75 ppb.

4.83.5.7 Daily & 24-Hour PM10

The number of daily samples, or 24-hour block *Arithmetic Mean (NAAQS)* values, in the 24-hour period that were greater than, or equal to, 155 micrograms per cubic meter – standard conditions ($\mu g/m^3$ SC), i.e., 0 or 1.

4.83.5.8 Daily & 24-Hour PM2.5

The number of daily samples, or 24-hour block *Arithmetic Mean (NAAQS)* values, in the 24-hour period that were greater than, or equal to, 65 micrograms per cubic meter – local conditions ($\mu g/m^3$ LC), i.e., 0 or 1.

4.83.5.9 1-Hour Nitrogen Dioxide

The number of samples in the 24-hour period, with the appropriate flagging and concurrence for the exceptional data type, that are greater than the 1-Hour standard i.e., 100 ppb.

4.83.5.10 Default

Not valued

4.84 Count of Primary Exceedances (Quarterly)

4.84.1 Description

The number of exceedances of the primary standard during the quarter for the monitor.

4.84.2 Source

System-generated via the Post process.

4.84.3 Attributes

Type: Number
Length: 10.0
Required: No

4.84.4 Uses

Quarterly Summaries

4.85 Count of Required Days

4.85.1 Description

The number of required monitoring days during the year.

4.85.2 Source

System-generated via the Post process.

4.85.3 Attributes

Type: Number
Length: 3.0
Required: No

4.85.4 Uses

Annual Summaries

4.85.5 Value Assignment

4.85.5.1 1-Hour & 8-Hour Ozone

The number of active days within the effective monitoring season.

4.85.5.2 Daily PM10 & PM2.5

Scheduled days are the number of days within the year that were scheduled for sampling, as determined by the EPA-defined calendar for the required collection frequency, and which also fall within the period of operation, as defined by sampling periods.

Seasonal and random frequencies are sub-divided in monthly-required frequencies; otherwise, the required frequency applies to a defined period of time. A PM10 or PM2.5 monitor must have a defined collection frequency for each active day, by rule.

The reference point for the EPA calendar is January 4, 1956. For example, in the year 2003, the every 6th day calendar would comprise: 1/3/2003, 1/9/2003, 1/15/2003, etc., and the every 3rd day calendar would comprise: 1/3/2003, 1/6/2003, 1/9/2003, 1/12/2003, etc. For a monitor doing seasonal sampling, with every 6th day sampling in April and every 3rd day sampling in May, both months in 2003, the schedule would be as follows: 4/15/03, 4/21/03, 4/27/03, 5/3/03, 5/6/03, 5/9/03, etc.

4.85.5.3 24-Hour PM10 & PM2.5

The number of active days in the year.

4.85.5.4 Default

Not valued.

4.86 Count of Scheduled Days

4.86 Count of Scheduled Days

4.86.1 Description

Scheduled days are the days on which sampling is scheduled based on the required sampling frequency for the monitoring site.

4.86.2 Source

System-generated via the Post process.

4.86.3 Attributes

Type: Integer
Required: No

4.86.4 Uses

4.86.5 Lead Site Monthly SummariesValue Assignment

4.86.5.1 FRM/FEM Lead-TSP & FRM/FEM Lead – PM10

A scheduled day for a site is a day that is a scheduled day for any monitor at the site.

4.86.5.2 Default

Valued

4.87 Count of Scheduled Samples

4.87.1 Description

The count of sample measurements, for which sampling is scheduled during the time period.

4.87.2 Source

System-generated via the Post process.

4.87.3 Attributes

Type: Integer
Required: No

4.87.4 Uses

Quarterly Summaries

4.88 Count of Secondary Exceedances (Annual)

4.88.1 Description

The number of exceedances of the secondary standard during the year for the monitor.

4.88.2 Source

System-generated via the Post process.

4.88.3 Attributes

Type: Number
Length: 10.0
Required: No

4.88.4 Uses

Annual Summaries

4.88.5 Value Assignment

4.88.5.1 1-Hour Ozone

The number of days in the effective monitoring season when the *Maximum Value (Daily)* was greater than, or equal to, 0.125 parts per million (ppm).

4.88.5.2 8-Hour Ozone

The number of days in the effective monitoring season where the *Maximum Value (Daily)* was greater than, or equal to, 0.085 ppm.

4.88.5.3 1-Hour Carbon Monoxide

The number of samples in the year that were greater than, or equal to, 35.5 ppm.

4.88.5.4 8-Hour Carbon Monoxide

The number of 8-hour *Arithmetic Mean (NAAQS)* values in the year that were greater than, or equal to, 9.5 ppm.

4.88.5.5 3-Hour Sulfur Dioxide

The number of 3-hour *Arithmetic Mean (NAAQS)* values in the year that were greater than, or equal to, 0.55 ppm.

4.88.5.6 Daily & 24-Hour PM10

The number of daily samples, or 24-hour block *Arithmetic Mean (NAAQS)* values, in the year that were greater than, or equal to, 155 micrograms per cubic meter – standard conditions ($\mu g/m^3$ SC).

4.88.5.7 Daily & 24-Hour PM2.5

The number of daily samples, or 24-hour block *Arithmetic Mean (NAAQS)* values, in the year that were greater than, or equal to, 65 micrograms per cubic meter – local conditions ($\mu g/m^3$ LC).

4.88.5.8 Lead

The number of *Arithmetic Mean (Quarterly)* values that were greater than, or equal to, 1.55 $\mu g/m^3$ SC.

4.88.5.9 Default

Not valued.

4.89 Count of Secondary Exceedances (Daily)

4.89.1 Description

The number of exceedances of the secondary standard during the 24-hour period for the monitor.

4.89.2 Source

System-generated via the Post process.

4.89.3 Attributes

Type: Number
Length: 10.0
Required: No

4.89.4 Uses

Daily Summaries

4.89.5 Value Assignment

4.89.5.1 1-Hour Ozone

The number of samples within the 24-hour period that were greater than, or equal to, 0.125 parts per million (ppm).

4.89.5.2 8-Hour Ozone

The number of 8-hour *Arithmetic Mean (NAAQS)* values in the 24-hour period that were greater than, or equal to, 0.085 ppm.

4.89.5.3 1-Hour Carbon Monoxide

The number of samples in the 24-hour period that were greater than, or equal to, 35.5 ppm.

4.89.5.4 8-Hour Carbon Monoxide

The number of 8-hour *Arithmetic Mean (NAAQS)* values in the 24-hour period that were greater than, or equal to, 9.5 ppm.

4.89.5.5 3-Hour Sulfur Dioxide

4.89.5.6 The number of 3-hour *Arithmetic Mean (NAAQS)* values in the 24-hour period that were greater than, or equal to, 0.55 ppm.Daily & 24-Hour PM10

The number of daily samples, or 24-hour block *Arithmetic Mean (NAAQS)* values, in the 24-hour period that were greater than, or equal to, 155 micrograms per cubic meter – standard conditions ($\mu g/m^3$ SC), i.e., 0 or 1.

4.89.5.7 Daily & 24-Hour PM2.5

4.89.5.8 The number of daily samples, or 24-hour block *Arithmetic Mean (NAAQS)* values, in the 24-hour period that were greater than, or equal to, 65 $\mu g/m^3$ LC, i.e., 0 or 1.Default

Not valued

4.90 Count of Valid Collocated Data Pairs (Monitor Precision Summary)

4.90.1 Description

The number of valid collocated value pairs recorded during the time period.

4.90.2 Source

System-generated via Precision Data (RP) Transaction, or Maintain Precision (L62).

4.90.3 Attributes

Type: Number
Length: 3.0
Required: No

4.90.4 Uses

Monitor Precision Summaries

4.90.5 Value Assignment

4.90.5.1 Collocated

A valid collocated value pair is one where both the primary and duplicate value exceeds the minimum collocated value defined for the parameter on the Parameters view. The minimum values for criteria pollutants are:

Parameter		Minimum Value
Code	**Name**	
11101	TSP	20 µg/m^3 SC
12128	Lead	.015 µg/m^3 SC
42401	SO2	.01717 ppm
42602	NO2	.01593 ppm
81102	PM10	20 µg/m^3 SC
88101	PM2.5	6 µg/m^3 LC

where:

ppm - parts per million
µg/m^3 SC - micrograms per cubic meter (standard conditions)
µg/m^3 LC - micrograms per cubic meter (local conditions).

If a minimum collocated value is not defined for the parameter, then the value pair is assumed valid.

4.90.5.2 Default

The field is not applicable to gaseous or flow checks, in which cases it is assigned a default value of 0.

4.91 Count of Valid Collocated Data Pairs (Reporting Organization Precision Summary)

4.91.1 Description

The number of valid collocated value pairs recorded during the time period.

4.91.2 Source

System-generated via Precision Data (RP) Transaction, or Maintain Precision (L62).

4.91.3 Attributes

Type: Number
Length: 12.0
Required: No

4.91.4 Uses

Reporting Organization Precision Summaries

4.91.5 Value Assignment

4.91.5.1 Collocated

A valid collocated value pair is one where both the primary and duplicate value exceeds the minimum collocated value defined for the parameter on the Parameters view. The minimum values for criteria pollutants are:

Parameter		Minimum Value
Code	**Name**	
11101	TSP	20 µg/m^3 SC
12128	Lead	.015 µg/m^3 SC
42401	SO2	.01717 ppm
42602	NO2	.01593 ppm
81102	PM10	20 µg/m^3 SC
88101	PM2.5	6 µg/m^3 LC

where:

ppm - parts per million
µg/m^3 SC - micrograms per cubic meter (standard conditions)
µg/m^3 LC - micrograms per cubic meter (local conditions).

If a minimum collocated value is not defined for the parameter, then the value pair is assumed valid.

4.91.5.2 Default

The field is not applicable to gaseous or flow checks, in which cases it is assigned a default value of 0.

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4.92 Count of Valid Days

4.92.1 Description

The number of required monitoring days where the monitoring criteria were met.

4.92.2 Source

System-generated via the Post process.

4.92.3 Attributes

Type: Number
Length: 3.0
Required: No

4.92.4 Uses

Annual Summaries
Quarterly Summaries

4.92.5 Value Assignment

4.92.5.1 1-Hour & 8-Hour Ozone

The number of active days within the effective monitoring season when minimum daily criteria were met, i.e., the *Summary Criteria Indicator (Daily)* value is "Y".

4.92.5.2 Daily PM10

The number of valued strata in the year. (A valued stratum is where at least one observation is made on, or after, a scheduled day, but before the next scheduled day.)

4.92.5.3 Daily PM2.5

The sum of valued, scheduled sampling days, plus make-ups for missing scheduled days. A make-up day is a sample recorded in the same stratum as, or exactly seven days after, a missing scheduled sample. In both conditions, the make-up sample must occur within the same quarter as the missed sample. A maximum of five make-up samples are allowed per quarter. (References: EPA-454/R-99-008 Guideline on Data Handling Conventions for the PM NAAQS; Memorandum: February 3, 1999 Use of Make-Up Samples to Replace Scheduled PM Samples)

4.92.5.4 24-Hour PM10 & PM2.5

The number of valid 24-hour block *Arithmetic Mean (NAAQS)* values within the year.

4.92.5.5 Annual PM2.5

The sum of scheduled sampling days, plus make-ups for missing scheduled days for the year.

4.92.5.6 Site-Level Annual PM2.5

The count of scheduled days for available quarters where a site-level summary exists (of any type) plus count of make up days. (Note: This is not affected by the existence of data flagged for exceptional event exclusion.)

4.92.5.7 Site-Level Quarterly PM2.5

The count of scheduled days in the quarter where a site-level summary exists (of any type) plus count of make up days. (Note: This is not affected by the existence of data flagged for exceptional event exclusion.)

4.92.5.8 1 – Hour Sulfur Dioxide

The count of Daily Summaries with corresponding pollutant standard and exceptional data type, where the summary criterion is met

4.92.5.9 1 – Hour Nitrogen Dioxide

The count of Daily Summaries where the summary criterion is met

4.92.5.10 Default

Not valued.

4.93 Count of Valid Samples

4.93.1 Description

The number of sample measurements where the monitoring criteria were met.

4.93.2 Source

System-generated via the Post process.

4.93.3 Attributes

Type: Number
Required: No

4.93.4 Uses

Quarterly Summaries

4.94 County Code

4.94.1 Description

A Federal Information Processing Standards (FIPS) code that identifies a county, or other geo-political entity, such as tribe, parish or independent city. For foreign countries, it identifies the geo-political equivalent to U. S. states, such as Mexican states or Canadian provinces.

4.94.2 Source

User-specified via the Basic Site Information (AA) Transaction, or The Maintain Site form.. If a user creates a tribal site via either of these two methods, then the State Code is derived from the EPA master geospatial database (Envirofacts) by using the user-specified site location (Latitude and Longitude).

4.94.3 Attributes

Type: Character
Length: 3
Required: Yes

4.94.4 Uses

Sites
Tangent Roads
Open Paths
Monitors

4.94.5 Value Assignment

The value must exist on the Counties view.

4.95 Created Date

4.95.1 Description

The date when the record was created.

4.95.2 Source

System-generated via any of the AQS transactions, or any of the Maintain modules.

4.95.3 Attributes

Type: Date
Length: Not applicable
Required: No

4.95.4 Uses

Sites
Tangent Roads
Open Paths
Primary Monitor Periods
Monitors
Monitor Pollutant Areas
Sample Periods
Monitor Type Assignments
Monitor Agency Roles
Monitor Objectives
Required Collection Frequencies
Sample Schedules
Monitor Tangent Roads
Probe Obstructions
Monitor Regulatory Compliances
Monitor Collocation Periods
Monitor Protocols
Accuracy Data
Precision Data
Site Daily Values
Site Annual Summaries
Site Quarterly Summaries
Site Design Values
Summary Percentiles
Summary Maximums
Lead Site Monthly Summaries
Lead 3 Month Summaries

4.96 Created User

4.96.1 Description

The Oracle user ID of the user who created the record.

4.96.2 Source

System-generated via any of the AQS transactions, or any of the Maintain modules.

4.96.3 Attributes

Type: Character
Length: 40
Required: No

4.96.4 Uses

Sites
Tangent Roads
Open Paths
Primary Monitor Periods
Monitors
Monitor Pollutant Areas
Sample Periods
Monitor Type Assignments
Monitor Agency Roles
Monitor Objectives
Required Collection Frequencies
Sample Schedules
Monitor Tangent Roads
Probe Obstructions
Monitor Regulatory Compliances
Monitor Collocation Periods
Monitor Protocols
Accuracy Data
Precision Data
Annual Summaries
Site Daily Values
Site Annual Summaries
Site Quarterly Summaries
Site Design Values
Summary Percentiles
Summary Maximums
Lead Site Monthly Summaries
Lead 3 Month Summaries

4.96.5 Value Assignment

The value must exist on the *AIRS User Profiles* view.

4.97 CSA Represented

4.97.1 Description

The Combined Statistical Area (CSA) from which the concentrations originated, not the location of the monitor.

4.97.2 Source

User-specified via the Monitoring Objective Information (ME) Transaction, or the Maintain Monitor form.

4.97.3 Attributes

Type: Character
Length: 3
Required: No

4.97.4 Uses

Monitor Objectives

4.97.5 Value Assignment

Must have a value if none of *CBSA Represented*, *CMSA Represented*, *MSA Represented*, or *Urban Area Represented* are valued. Conversely, must not have a value if any of *CBSA Represented*, *CMSA Represented*, *MSA Represented*, or *Urban Area Represented* are valued. If valued, that value must exist on the *COMBINED_STATISTICAL_AREA* view.

4.98 Daily Rank

4.98.1 Description

The rank of the Maximum Value relative to all other maximum values for the year, with 1 signifying the maximum value for the entire year.

4.98.2 Source

System-generated via the Post process.

4.98.3 Attributes

Type: Number
Length: 3.0
Required: No

4.98.4 Uses

Daily Summaries

4.98.5 Value Assignment

Only computed for *Exceptional Data Type* values 0 and 2.

4.99 Daily Value

4.99.1 Description

The combined daily value for a site.

4.99.2 Source

System-generated via the Post process or when updating Primary Monitor Periods from the application.

4.99.3 Attributes

Type: Number
Required: No

4.99.4 Uses

Site Daily Values

4.99.5 Value Assignment

Only computed for combinable parameters.

4.100 Data Capture Rate (3-Month)

4.100.1 Description

The percent of actual data values that were reported compared to the number of data values that could have been reported for the 3 month period at a given site.

4.100.2 Source

System-generated via the Post process.

4.100.3 Attributes

Type: Number
Required: No

4.100.4 Uses

Lead 3 Month Summaries

4.100.5 Value Assignment

4.100.5.1 FRM/FEM Lead-TSP & FRM/FEM Lead – PM10

The value is rounded to the nearest integer.

Computed using the following formula:

$$\frac{1}{n}\sum_{i=1}^{n} X_i$$

Where:

- n= the number of monthly Summaries available (typically 3, sometimes 1 or 2 if one or two months have no valid daily values); and
- X_i= The Data Capture Rate for month *i*

4.101 Data Capture Rate (Monthly)

4.101.1 Description

The percent of actual data values that were reported compared to the number of data values that could have been reported for the month at a given site.

4.101.2 Source

System-generated via the Post process.

4.101.3 Attributes

Type: Number
Required: No

4.101.4 Uses

Lead Site Monthly Summaries

4.101.5 Value Assignment

4.101.5.1 FRM/FEM Lead-TSP & FRM/FEM Lead – PM10

The value is neither rounded nor truncated.

$$\text{Data Capture Rate} = \frac{NumberOfCr\ editableSa\ mples}{NumberOfSc\ heduledSam\ ples}$$

4.102 Date Sampling Began

4.102.1 Description

The date, on which a distinct period of operations, i.e., collection of air quality samples, began for the monitor.

4.102.2 Source

User-specified via the Monitor Sampling Periods (MB) Transaction, or the Maintain Monitor form.

4.102.3 Attributes

Type: Date
Length: Not Applicable
Required: Yes

4.102.4 Uses

Sample Periods

4.103 Date Sampling Ended

4.103.1 Description

The date, on which a distinct period of operations, i.e., collection of air quality samples, stopped for the monitor.

4.103.2 Source

User-specified via the Monitor Sampling Periods (MB) Transaction, or the Maintain Monitor form.

4.103.3 Attributes

Type: Date
Length: Not Applicable
Required: No

4.103.4 Uses

Sample Periods

4.104 Date Site Established

4.104.1 Description

The date on which an air-monitoring site began collecting air quality data.

4.104.2 Source

User-specified via the Basic Site Information (AA) Transaction, or The Maintain Site form..

4.104.3 Attributes

Type: Date
Length: Not Applicable
Required: Yes

4.104.4 Uses

Sites

4.105 Date Site Terminated

4.105.1 Description

The date on which a monitoring site ceased to operate.

4.105.2 Source

User-specified via the Basic Site Information (AA) Transaction, or The Maintain Site form..

4.105.3 Attributes

Type: Date
Length: Not Applicable
Required: No

4.105.4 Uses

Sites

4.106 Design Validity Indicator (24 Hr)

4.106.1 Description

Flag indicating whether the 24-hour Standard Design Value is valid.

4.106.2 Source

System generated during Post process

4.106.3 Attributes

Type: Varchar2
Length: 1
Required: No

4.106.4 Uses

Site Design Values

4.106.5 Value Assignment

4.106.5.1 Site-Level PM2.5

The valid values are "Y" and "N". Set to valid (i.e., 'Y') if any of the following is true:

- The Annual 98th Percentile Completeness Indicator for the current year and the two immediately prior years exists and is set to "valid" (i.e. 'Y').
- The 24-hour Standard Design Value > the standard (35)

4.107 Design Validity Indicator (Annual)

4.107.1 Description

Flag indicating whether the Single Site Annual Design Value is valid.

4.107.2 Source

System generated during Post process

4.107.3 Attributes

Type: Varchar2
Length: 1
Required: No

4.107.4 Uses

Site Design Values

4.107.5 Value Assignment

4.107.5.1 Site-Level PM2.5

The valid values are "Y" and "N". Set to valid (i.e., 'Y') if any of the following is true:

- The present year and the two prior year Annual Mean Completeness Indicators are set to complete (i.e. 'Y').
- The Single Site Annual Standard Design Value is above the standard (15).
- The Substituted Annual Design Value exists and is above the standard (15).

4.108 Design Value (24Hr)

4.108.1 Description

The measure of a central tendency, computed if and only if the annual 98th Percentile Values exist for the current year and the two immediately prior years, obtained from the sum of Annual 98th percentile values (of appropriate exceptional data type) for current year and prior two years divided by 3.

4.108.2 Source

System generated during Post process

4.108.3 Attributes

Type: Number
Required: No

4.108.4 Uses

Site Design Values

4.108.5 Value Assignment

4.108.5.1 Site-Level PM2.5

$$\sum_{i=1}^{3} u_i \Big/ 3$$

where:

u_i = Annual Summary Arithmetic Mean (of appropriate exceptional data type) for current year and prior two years

(Format: Rounded to zero digits after decimal point)

4.109 Design Value (Annual)

4.109.1 Description

The measure of a central tendency, computed if and only if the site-level annual summary Arithmetic Mean exists for the current year and two immediately prior years, obtained from the sum of Annual Summary Arithmetic Mean (of appropriate exceptional data type) for current year and prior two years divided by 3.

4.109.2 Source

System generated during Post process

4.109.3 Attributes

Type: Number
Required: No

4.109.4 Uses

Site Design Values

4.109.5 Value Assignment

4.109.5.1 Site-Level PM2.5

$$\sum_{i=1}^{3} u_i / 3$$

where:

u_i = Annual Summary Arithmetic Mean (of appropriate exceptional data type) for current year and prior two years

(Format: Rounded to one digit after decimal point)

4.110 Direct Entry Indicator

4.110.1 Description

An indication of whether the summary record was system-generated as part of the Post process, or user-specified via the Annual Summary Data (RS) Transaction, or AQS Maintain Annual Summary (L7).

4.110.2 Source

System-generated via the Post or Load processes, or AQS Maintain Annual Summary (L7).

4.110.3 Attributes

Type: Character
Length: 3
Required: No

4.110.4 Uses

Annual Summaries

4.110.5 Value Assignment

"N" signifies the record was system-generated via the Post process; "Y" signifies the record was user-specified via either the Annual Summary Data (RS) Transaction, or AQS Maintain Annual Summary (L7).

4.111 Direction from Central Business District to Site

4.111.1 Description

A representation of the true, as opposed to magnetic, direction of the site from the central business district. If the site is within the central business district, it is a representation of the direction the probe faces.

4.111.2 Source

User-specified, via Sites (AA) Transaction, or The Maintain Site form..

4.111.3 Attributes

Type: Character
Length: 3
Required: No

4.111.4 Uses

Sites

4.111.5 Value Assignment

The value must exist in the *Compass Sectors* view

4.112 Direction from Monitor to Probe Obstruction

4.112.1 Description

The direction from the monitor to the obstruction.

4.112.2 Source

User-specified via the Monitor Obstruction Information (MH) Transaction, or the Maintain Monitor form.

4.112.3 Attributes

Type: Character
Length: 3
Required: Yes

4.112.4 Uses

Probe Obstructions

4.112.5 Value Assignment

The value must exist on the *Compass Sectors* view.

4.113 Direction from Receiver to Transmitter

4.113.1 Description

The direction from the receiver to the transmitter at the site.

4.113.2 Source

User-specified, via Site Open Path Information (AC) Transaction, or The Maintain Site form..

4.113.3 Attributes

Type: Character
Length: 3
Required: Yes

4.113.4 Uses

Open Paths

4.113.5 Value Assignment

The value must exist on the *Compass Sectors* view.

4.114 Direction from Site to Street

4.114.1 Description

The direction from the site to the street at its nearest point.

4.114.2 Source

User-specified, via Site Street Information (AB) Transaction, or The Maintain Site form..

4.114.3 Attributes

Type: Character
Length: 3
Required: Yes

4.114.4 Uses

Tangent Roads

4.114.5 Value Assignment

The value must exist on the *Compass Sectors* view.

4.115 Direction to Meteorological Site

4.115.1 Description

The true, as opposed to the magnetic, direction of the meteorological site from this site.

4.115.2 Source

User-specified via the Basic Site Information (AA) Transaction, or The Maintain Site form..

4.115.3 Attributes

Type: Character
Length: 3
Required: No

4.115.4 Uses

Sites

4.115.5 Value Assignment

The value must exist on the *Compass Sectors* view.

4.116 Distance from Central Business District to Site

4.116.1 Description

The distance, in kilometers, to the site from the center of the downtown central business district of the city in which the site is located.

4.116.2 Source

User-specified, via Sites (AA) Transaction, or The Maintain Site form..

4.116.3 Attributes

Type: Number
Length: 8.2
Required: No

4.116.4 Uses

Sites

4.117 Distance from Monitor to Probe Obstruction

4.117.1 Description

The distance, in meters, between the probe and obstruction

4.117.2 Source

User-specified via the Monitor Obstruction Information (MH) Transaction, or the Maintain Monitor form.

4.117.3 Attributes

Type: Number
Length: 8.2
Required: Yes

4.117.4 Uses

Probe Obstructions

4.118 Distance from Monitor to Tangent Road

4.118.1 Description

The distance in meters between the sensing of air sampling equipment at a monitoring site and the nearest edge of the roadway.

4.118.2 Source

User-specified via the Monitor Street Description (MG) Transaction, or the Maintain Monitor form.

4.118.3 Attributes

Type: Number
Length: 8.2
Required: Yes

4.118.4 Uses

Monitor Tangent Roads

4.119 Distance from Primary Sampler

4.119.1 Description

The distance, in meters, between a duplicate sampler and the primary sampler in a collocated pair.

4.119.2 Source

User-specified via the Monitor Collocation Period (MJ) Transaction, or the Maintain Monitor form.

4.119.3 Attributes

Type: Number
Length: 8.2
Required: No

4.119.4 Uses

Monitor Collocation Periods

4.120 Distance to Meteorological Site

4.120.1 Description

The distance of the associated meteorological site from the air quality monitoring site, in meters. This information is required if the site has monitors that are part of a Photochemical Assessment Monitoring System (PAMS) network. The associated site need not be an AQS site.

4.120.2 Source

User-specified via the Basic Site Information (AA) Transaction, or The Maintain Site form..

4.120.3 Attributes

Type: Number
Length: 8.2
Required: No

4.120.4 Uses

Sites.

4.121 Dominant Source

4.121.1 Description

The primary source of the pollutant being measured.

4.121.2 Source

User-specified via the Basic Monitor Information (MA) Transaction, or the Maintain Monitor form.

4.121.3 Attributes

Type: Character
Length: 20
Required: No

4.121.4 Uses

Monitors

4.121.5 Value Assignment

The value must exist on the *Dominant Sources* view.

4.122 Duration Code

4.122.1 Description

The length of time, also called interval, used to acquire raw samples that are analyzed by monitors.

4.122.2 Source

User-specified via the Monitor Protocol (MK), Raw Data (RD), or Composite Data (RC) Transactions, or the Maintain Monitor form, or system-generated via the Post process.

4.122.3 Attributes

Type: Character
Length: 8
Required: Yes

4.122.4 Uses

Monitor Protocols
NAAQS Averages
Daily Summaries
Quarterly Summaries
Annual Summaries
Site Daily Values

4.122.5 Value Assignment

4.122.5.1 Monitor Protocols

In combination with Parameter Code, Method Code, Reported Unit, Collection Frequency Code and Composite Type, must exist on the Protocols view.

4.122.5.2 NAAQS Averages, Daily, Quarterly & Annual Summaries, and Site Daily Values

1. For summarized sample data, the duration used to acquire the sample data being summarized.
2. For summarized National Ambient Air Quality Standards (NAAQS) averages, the duration assigned for the NAAQS interval being summarized.
3. For Site Daily Values, the duration associated with the source parameter and duration being combined.

4.123 A Region Concurrence Indicator

4.123.1 Description

Indicates whether the appropriate EPA regional office has concurred with either an event-qualified sample value, or a null ozone sample value qualified with the null data code "BG", which signifies "Missing ozone data not likely to exceed level of standard".

4.123.2 Source

Specified by the appropriate EPA regional office via AQS Maintain Concurrence (L8).

4.123.3 Attributes

Type: Character
Length: 1
Required: No

4.123.4 Uses

Raw Data
Composite Data

4.123.5 Value Assignment

The valid values are "Y" and "N". "Y" signifies that the regional office has reviewed the required supporting documentation provided by the data owner, and agrees that use of the qualification is appropriate. Conversely, "N" signifies that they have reviewed that documentation, but disagree with the use of the qualification. (No value signifies that the review has not occurred, or is still in process.)

4.124 EPA Region Evaluation Date

4.124.1 Description

The date on which the most recent regional evaluation of the site for siting criteria occurred.

4.124.2 Source

User-specified via the Basic Site Information (AA) Transaction, or The Maintain Site form..

4.124.3 Attributes

Type: Date
Length: Not applicable
Required: No

4.124.4 Uses

Sites

4.125 Estimate of Days Greater Than Standard

4.125.1 Description

The estimated number of days greater than the standard is computed and is utilized to determine whether the standard is attained. It is computed for specific pollutants when an exceedance has occurred during the year. The underlying assumption is that missing data is just as likely to exceed the standard as reported data.

4.125.2 Source

System-generated via the Post process.

4.125.3 Attributes

Type: Number
Length: 3.2
Required: No

4.125.4 Uses

Annual Summaries
Quarterly Summaries

4.125.5 Value Assignment

The estimate exceedance is rounded to 1 decimal place.

4.125.5.1 1-Hour Ozone

$$e = d + \left(\left(d/v\right) * (r - v - a)\right)$$

where

e = expected days greater than the standard,
r = *Count of Required Days*,
v = *Count of Valid Days*,
a = *Count of Missing Days Assumed Less Than Standard*,
d = *Count of Primary Exceedances.*

4.125.5.2 Daily PM10

$$e = \sum_{q=1}^{4} e_q$$

where:

e = estimated number of exceedances for the year,
e_q = the estimated number of exceedances for calendar quarter q,
q = the index for calendar quarter, q=1, 2, 3 or 4.

The estimate of the expected number of exceedances for a quarter is calculated using the following formula:

$$e = \left(\frac{a}{v}\right) * \sum_{j=1}^{v} \left(\frac{x_j}{n_j}\right)$$

where:

e = the estimated number of exceedances for calendar quarter q,
d = the number of days in calendar quarter q,
v = the number of valued strata in calendar quarter q,
x_j = the number of exceedances in stratum j,
o_j = the number of observations in stratum j,
a_j = the number of days in stratum j, or, when the quarter has partial strata*, the number of days in partial plus adjacent stratum j,
s = the daily interval of the quarterly minimum collection frequency.

The quarterly exceedance estimate is set to 1 for a calendar quarter in which the first observed exceedance has occurred if:

- There was only one exceedance in the calendar quarter,
- Everyday sampling is subsequently initiated and maintained for 4 calendar quarters, in accordance with 40 CFR 58.13,
- Data capture of 75 percent is achieved during the required period of everyday sampling.

In addition, if the first exceedance is observed in a calendar quarter in which the monitor is already sampling every day, no adjustment for missing data will be made to the first exceedance if a 75 percent data capture rate was achieved in the quarter in which it was observed.

* For a monitor sampling every 3rd day in 2003, the 1st stratum on the 2nd quarter begins on 4/3. For this formula, the stratum is expanded to include the preceding partial stratum of 4/1-4/2, and so the partial plus adjacent stratum is 4/1-4/5. In that same quarter, the last stratum ends on 6/28. That stratum is expanded to include the succeeding partial stratum of 6/29-6/30, and so the partial plus adjacent stratum is 6/26-6/30.

4.125.5.3 24-Hour PM10

$$e = \sum_{q=1}^{4} e_q$$

where:

e = estimated number of exceedances for the year,
e_q = the estimated number of exceedances for calendar quarter q,
q = the index for calendar quarter, q=1, 2, 3 or 4.

The estimate of the expected number of exceedances for a quarter is calculated using the following formula:

$$e = v * \left(\frac{a}{n}\right)$$

where:

e = the estimated number of exceedances for calendar quarter q,
v = the observed number of exceedances for calendar quarter q,
a = the number of days in calendar quarter q,
n = the number of observations in calendar quarter q.

The quarterly exceedance estimate is set to 1 for a calendar quarter in which the first observed exceedance has occurred if:

12. There was only one exceedance in the calendar quarter,
13. Everyday sampling is subsequently initiated and maintained for 4 calendar quarters in accordance with 40 CFR 58.13,
14. Data capture of 75 percent is achieved during the required period of everyday sampling.

In addition, if the first exceedance is observed in a calendar quarter in which the monitor is already sampling every day, no adjustment for missing data will be made to the first exceedance if a 75 percent data capture rate was achieved in the quarter in which it was observed.

4.125.5.4 Default

Not valued.

4.126 Exceptional Data Type ID

4.126.1 Description

An AQS designation that indicates how a summary value is affected by exceptional events. It indicates whether exceptional data exists in the time period being summarized, and whether such exceptional data is included in the reported summary values.

For summaries of sample measurements, the following Exceptional Data Types are available:

- 0: No Events. None of the measurement data contributing to the summary (count, mean, etc.) has been flagged for exceptional event exclusion.
- 1: All Events Excluded. The summary excludes any measurements that have been flagged for exceptional event exclusions. (These measurements are excluded whether or not EPA has concurred with the flagging.)
- 2: All Events Included. Measurements included in the summary have been flagged for exceptional event exclusion. (These measuements are included whether or not EPA has concurred with the flagging.)
- 5: Concurred Events Excluded. The summary excludes any measurements that have been flagged for exceptional event exclusion AND the EPA Regional Office has concurred with the flagging.)

For any site/monitor and summary time period, either a type 0 summary will exist (no data was flagged), or a type 1, type 2 and type 5 summary will all exist together.

For summaries created from lower-level summaries (e.g. daily summaries created from NAAQS_Average rows):

- 0: Created only when only lower-level summaries with EDT_ID = 0 exist
- 1: Created from lower-level summaries with EDT_ID 0 and 1
- 2: Created from lower-level summaries with EDT_ID 0 and 2
- 5: Created from lower-level summaries with EDT_ID 0 and 5

4.126.2 Source

System-generated via the Post process, or user-generated via either the Annual Summaries (RS) Transaction or Maintain Annual Summaries (L7).

4.126.3 Attributes

Type: Number
Length: 10.0
Required: Yes

4.126.4 Uses

NAAQS Averages
Daily Summaries
Quarterly Summaries
Annual Summaries
Site Daily Values
Site Quarterly Values

Site Design Values
Site Annual Summaries
Lead Site Monthly Summaries
Lead 3 Month Summaries

4.126.5 Value Assignment

The meaning of the identifiers are as follows:

ID	Description
0	No events
1	Events excluded
2	Events included
3	Exceptional events excluded
4	Natural events excluded
5	Events with concurrence excluded
6	Exceptional events with concurrence excluded
7	Natural events with concurrence excluded

The event qualifiers and types are as follows:

Code	Description	Type
A	High Winds	Natural Event
B	Stratospheric Ozone Intrusion	Natural Event
C	Volcanic Eruptions	Natural Event
D	Sandblasting	Exceptional Event
E	Forest Fire	Natural Event
F	Structural Fire	Exceptional Event
G	High Pollen Count	Natural Event
H	Chemical Spills & Indust. Accidents	Exceptional Event
I	Unusual Traffic Congestion	Exceptional Event
J	Construction/Demolition	Exceptional Event
K	Agricultural Tilling	Exceptional Event
L	Highway Construction	Exceptional Event
M	Rerouting Of Traffic	Exceptional Event
N	Sanding/Salting Of Streets	Exceptional Event
O	Infrequent Large Gatherings	Exceptional Event
P	Roofing Operations	Exceptional Event
Q	Prescribed Burning	Exceptional Event
R	Clean Up After A Major Disaster	Exceptional Event
S	Seismic Activity	Natural Event
U	Sahara Dust	Natural Event

4.127 Exclusion Date

4.127.1 Description

Indicates the date when the data owner flagged the pre-production sample data record to be excluded from the statistical check/critical review, and post processes.

4.127.2 Source

System-generated via the AQS Maintain Raw Data (L54) or AQS Maintain Composite Data (L51) modules.

4.127.3 Attributes

Type: Date
Length: Not Applicable
Required: No

4.127.4 Uses

Raw Data
Composite Data

4.127.5 Value Assignment

4.127.5.1 Pre-Production Status

May be valued when the *Status Indicator* is "R" or "S".

4.127.5.2 Production Status

May not be valued when the *Status Indicator* is "P".

4.128 Exclusion Indicator

4.128.1 Description

Indication by the data owner to exclude the pre-production sample data record from the statistical check/critical review, and post processes.

4.128.2 Source

User-specified via the AQS Maintain Raw Data (L54) or AQS Maintain Composite Data (L51) modules.

4.128.3 Attributes

Type: Character
Length: 1
Required: No

4.128.4 Uses

Raw Data
Composite Data

4.128.5 Value Assignment

4.128.5.1 Pre-Production Status

May be assigned a value of "Y" when the *Status Indicator* is "R" or "S".

4.128.5.2 Production Status

May not be assigned a value when the *Status Indicator* is "P".

4.129 Expiration Date

4.129.1 Description

The expiration date for the local primary standard.

4.129.2 Source

User-specified, via Accuracy Data (RA) Transaction, or AQS Maintain Accuracy (L62).

4.129.3 Attributes

Type: Date
Length: Not Applicable
Required: No

4.129.4 Uses

Accuracy Data

4.130 Freeze Indicator

4.130.1 Description

Indicates whether EPA headquarters has determined that the sample value cannot be changed by the owner of that value.

4.130.2 Source

EPA Headquarters-specified via AQS Restore/Freeze Data (G1).

4.130.3 Attributes

Type: Character
Length: 3
Required: No

4.130.4 Uses

Raw Data
Composite Data

4.130.5 Value Assignment

May be assigned a value of "Y".

4.131 Geometric Mean

4.131.1 Description

The measure of central tendency obtained from the sum of the logarithms of observed sample values in the yearly data set, divided by the number of values, with that result applied as an exponent to 10.

4.131.2 Source

System-generated via the Post process, or user-generated via either the Annual Summaries (RS) Transaction or Maintain Annual Summaries (L7).

4.131.3 Attributes

Type: Number
Length: 5.5
Required: No

4.131.4 Uses

Annual Summaries

4.131.5 Value Assignment

4.131.5.1 Total Suspended Particulate (TSP) & Lead

$$\mu = 10^{x}$$

where:

u = mean,
x =

$$\sum_{j=1}^{n} \log_{10} s_j \Big/ n$$

and:

s = sample value,
n = *Count of Observations (Annual)*.

4.131.5.2 Default

Not valued.

4.132 Geometric Standard Deviation

4.132.1 Description

The measure of the dispersion about the central tendency of a pollutant that is based on the variation between the geometric mean of a sample of values and the logarithms of the values themselves.

4.132.2 Source

System-generated via the Post process, or user-generated via either the Annual Summaries (RS) Transaction or Maintain Annual Summaries (L7).

4.132.3 Attributes

Type: Number
Length: 7.5
Required: No

4.132.4 Uses

Annual Summaries

4.132.5 Value Assignment

4.132.5.1 Total Suspended Particulate (TSP) & Lead

$$\sigma = 10^{x}$$

where:

σ = standard deviation,
x =

$$\sqrt{\frac{\left(\left(n * \sum_{j=1}^{n} \log_{10} s_j^{2}\right) - \left(\sum_{j=1}^{n} \log_{10} s_j\right)^{2}\right)}{\left(n*(n-1)\right)}}$$

where:

s = sample value,
n = *Count of Observations (Annual)*.

and $n > 1$.

If the Count of Observations (Annual) is exactly 1, or:

$$n * \sum_{j=1}^{n} \log_{10} s_j^{2} < \left(\sum_{j=1}^{n} \log_{10} s_j\right)^{2}$$

where:

s = sample value,
n = *Count of Observations (Annual)*,

then the standard deviation is assigned a value of 0.

4.132.5.2 Default

Not valued.

4.133 Geometric Type

4.133.1 Description

The geometric entity represented by the air-monitoring site.

This data element is required by EPA Locational Data Policy. More information regarding EPA's data standards and policies may be found on the EPA Environmental Data Registry (EDR) Website (http://www.epa.gov/edr/).

4.133.2 Source

The system-generated via the Basic Site Information (AA) Transaction, or the Maintain Site form.

4.133.3 Attributes

Type: Character
Length: 50
Required: Yes

4.133.4 Uses

Sites

4.133.5 Value Assignment

Always “POINT”.

4.134 Half MDL Substitution Indicator

4.134.1 Description

Indicates whether ½ the applicable method detectable limit (MDL) was substituted for the computed standard sample value when that computed value is less the applicable MDL.

4.134.2 Source

The system-generated via the Raw Data (RD) or Composite Data (RC) Transactions, or AQS Maintain Raw Data (L54), or AQS Maintain Composite Data (L51).

4.134.3 Attributes

Type: Character
Length: 1
Required: No

4.134.4 Uses

Raw Data
Composite Data

4.134.5 Value Assignment

4.134.5.1 Hourly PM2.5

Will not be assigned a value. (The actual computed standard value is always used in this case.)

4.134.5.2 Default

May be assigned a value of "Y".

4.135 Height of Receiver

4.135.1 Description

The height of the receiver above the ground, in meters.

4.135.2 Source

The system-generated via the Site Open Path Information (AC) Transaction, or The Maintain Site form..

4.135.3 Attributes

Type: Number
Length: 8.2
Required: Yes

4.135.4 Uses

Open Paths

4.136 Height of Transmitter

4.136.1 Description

The height of the transmitter above the ground, in meters.

4.136.2 Source

The system-generated via the Site Open Path Information (AC) Transaction, or The Maintain Site form..

4.136.3 Attributes

Type: Number
Length: 8.2
Required: Yes

4.136.4 Uses

Open Paths

4.137 Horizontal Accuracy

4.137.1 Description

Description of the accuracy of the site coordinates, as a range reported in meters. Only the least accurate measurement needs to be recorded, whether it is latitude or longitude (or Universe Transverse Mercator (UTM) coordinates).

For example, here are accuracy standards for various scale maps, assuming that the maps conform to the national mapping accuracy standards:

1:1,200 ∀ 1.02 meter
1:2,400 ∀ 2.04 meters
1:4,800 ∀ 4.06 meters
1:10,000 ∀ 8.47 meters
1:12,000 ∀ 10.16 meters
1:24,000 ∀ 12.20 meters
1:63,360 ∀ 32.20 meters
1:100,000 ∀ 50.81 meters

Map interpolation would also introduce error.

For Global Positioning System (GPS), the accuracy values vary. The type of GPS used along with operating conditions affect accuracy. The GPS receiver may provide accuracy values associated with specific coordinate readings.

This data element is required by EPA Locational Data Policy (LDP). More information regarding EPA=s data standards and policies may be found on EPA's Environmental Data Registry (EDR) Website (http://www.epa.gov/edr/).

4.137.2 Source

User-specified via the via the Basic Site Information (AA) Transaction, or The Maintain Site form..

4.137.3 Attributes

Type: Number
Length: 8.2
Required: Yes

4.137.4 Uses

Sites

4.138 Horizontal Collection Method

4.138.1 Description

The code for the method used to determine the latitude/longitude or Universal Transverse Mercator (UTM) coordinates.

Required by EPA Locational Data Policy (LDP). More information regarding EPA=s data standards and policies may be found on EPA's Environmental Data Registry (EDR) Website (http://www.epa.gov/edr/).

4.138.2 Source

User-specified via the Basic Site Information (AA) Transaction, or The Maintain Site form..

4.138.3 Attributes

Type: Character
Length: 8
Required: Yes

4.138.4 Uses

Sites

4.138.5 Value Assignment

Must be a value on the *LDP Collection Methods* view

4.139 Hour of Maximum Value

4.139.1 Description

The hour of the day at which the *Maximum Value (Daily)* was reported.

4.139.2 Source

System-generated via the Post process.

4.139.3 Attributes

Type: Number
Length: 2.0
Required: No

4.139.4 Uses

Daily Summaries

4.139.5 Value Assignment

Must be a value between 0 and 23.

4.140 HQ Evaluation Date

4.140.1 Description

The date on which the most recent evaluation of the site by EPA headquarters (HQ) occurred.

4.140.2 Source

User-specified via the Basic Site Information (AA) Transaction, or The Maintain Site form..

4.140.3 Attributes

Type: Date
Length: Not Applicable
Required: No

4.140.4 Uses

Sites

4.141 Indicated Method

4.141.1 Description

Identifies the particular method for collecting and analyzing a precision check value.

4.141.1.1 Analytical

The method used to collect and analyze the known gaseous concentration with which the sampler is challenged.

4.141.1.2 Flow

The method used to collect and analyze the known flow rate with which the sampler is challenged.

4.141.1.3 Collocated

The method used to collect and analyze the ambient air sample from the duplicate sampler.

4.141.2 Source

User-specified, via Precision Data (RP) Transaction, or AQS Maintain Precision (L61).

4.141.3 Attributes

Type: Character
Length: 3
Required: Yes

4.141.4 Uses

Precision Data

4.141.5 Value Assignment

The *Indicated Method* value, in combination with the *Parameter* value, must exist in the *Sampling Methodologies* view.

4.142 Indicated Value

4.142.1 Description

4.142.1.1 Analytical

The measurement recorded by a monitor for a standard gaseous concentration with which it has been challenged.

4.142.1.2 Flow

The measurement recorded by a monitor for a standard flow rate with which it has been challenged.

4.142.1.3 Collocated

The concentration produced from the duplicate sampler in a collocated sampler pair.

4.142.2 Source

For a precision check, user-specified, via Precision Data (RP) Transaction, or AQS Maintain Precision (L61). For an accuracy audit, user-specified, via Accuracy Data (RA) Transaction, or AQS Maintain Accuracy (L62).

4.142.3 Attributes

Type: Number
Length: 5.5
Required: Yes

4.142.4 Uses

Precision Data
Accuracy Data

4.142.5 Value Assignment

4.142.5.1 Analytical Check

The *Indicated Value* for a precision check must not exceed the maximum value allowed for the *Parameter*.

4.142.5.2 Collocated Check

The *Indicated Value* for a precision check must not exceed the maximum value allowed for the *Parameter*.

4.143 Land Use Type

4.143.1 Description

For a site, the prevalent land use within 1/4 mile of that site.

4.143.2 Source

User-specified, via Sites (AA) or AQS Maintain Sites (L1).

4.143.3 Attributes

Type: Character
Length: 20
Required: Yes

4.143.4 Uses

Sites
Open Paths

4.143.5 Value Assignment

The value must exist on the *Land Use Types* view.

4.144 Land Use Under Path

4.144.1 Description

For an open path, the prevalent land use under the path of the beam being projected between the receiver and transmitter.

4.144.2 Source

Open Paths (AC) Transaction, or AQS Maintain Sites (L1), Open Paths.

4.144.3 Attributes

Type: Character
Length: 20
Required: Yes

4.144.4 Uses

Sites
Open Paths

4.144.5 Value Assignment

The value must exist on the *Land Use Types* view.

4.145 Last Post Date

4.145.1 Description

The last date and time at which the screening group owner, (or data administrator acting as a proxy), ran a Post process that posted data for the monitor.

4.145.2 Source

System-generated via the Post process.

4.145.3 Attributes

Type: Date
Length: Not Applicable
Required: No

4.145.4 Uses

Monitors

4.146 Last Sampling Date

4.146.1 Description

The maximum date for which sample date has been reported for the monitor.

4.146.2 Source

System-generated via the Post process.

4.146.3 Attributes

Type: Date
Length: Not Applicable
Required: No

4.146.4 Uses

Monitors

4.147 Local Primary Standard

4.147.1 Description

A description of the source of the local primary standards.

4.147.2 Source

User-specified via Accuracy Data (RA) Transaction, or AQS Maintain Accuracy (L62), or system-generated via Accuracy Data (RA) Transaction, or AQS Maintain Accuracy (L62).

4.147.3 Attributes

Type: Character
Length: 30
Required: Yes

4.147.4 Uses

Accuracy Data
Monitor Accuracy Summaries
Reporting Organization Accuracy Summaries

4.147.5 Value Assignment

4.147.5.1 Accuracy Data

Must be a value on the *Local Primary Standards* view.

4.147.5.2 Monitor & Reporting Organization Accuracy Summaries

The most frequently assigned value for the population of source data.

4.148 Local Region

4.148.1 Description

A code representing a state-defined geographic/administrative area within which the site is located.

4.148.2 Source

User-specified via the Basic Site Information (AA) Transaction, or The Maintain Site form..

4.148.3 Attributes

Type: Character
Length: 8
Required: No

4.148.4 Uses

Sites

4.148.5 Value Assignment

In combination with *State Code*, the value must exist on the *Local Regions* view

4.149 Local Site ID

4.149.1 Description

Identification code used by a state, tribe or local agency, if different from the AQS site ID.

4.149.2 Source

User-specified via the Basic Site Information (AA) Transaction, or The Maintain Site form..

4.149.3 Attributes

Type: Character
Length: 40
Required: No

4.149.4 Uses

Sites.

4.150 Local Site Name

4.150.1 Description

The locally defined name of the site.

4.150.2 Source

User-specified via the Basic Site Information (AA) Transaction, or The Maintain Site form..

4.150.3 Attributes

Type: Character
Length: 70
Required: No

4.150.4 Uses

Sites

4.151 Location Setting

4.151.1 Description

A description of the environmental setting within which the site is located.

4.151.2 Source

User-specified via the Basic Site Information (AA) Transaction, or The Maintain Site form..

4.151.3 Attributes

Type: Character
Length: 50
Required: Yes

4.151.4 Uses

Sites

4.151.5 Value Assignment

The value must exist on the *Location Settings* view.

4.152 Lower Probability/Confidence Limit (Reporting Organization Accuracy Summary)

4.152.1 Description

The lower bound of either a probability distribution, or confidence interval, for the applicable population of accuracy audits.

If either quarter in either half of the year has an Audit Count of 1, then the source data for both quarters in that half will be merged for purposes of calculating the lower probability/confidence limit, and reported with the second quarter of the half (i.e., Q2 or Q4). In this case, there will be no value for the corresponding first quarter in the half (i.e., Q1 or Q3).

4.152.2 Source

System-generated via Accuracy Data (RA) Transaction, or Maintain Accuracy (L61).

4.152.3 Attributes

Type: Number
Length: 6.4
Required: No

4.152.4 Uses

Reporting Organization Accuracy Summaries

4.152.5 Value Assignment

4.152.5.1 PM2.5 Flow

$$l = D - \left(\frac{S * t_{0.975,\, n-1}}{\sqrt{n}} \right)$$

where:

l = lower 95% confidence limit,
D = *Mean (Reporting Organization Accuracy Summary)*,
S = *Standard Deviation (Reporting Organization Accuracy Summary)*,
$t_{0.975,\, n-1}$ = the 0.975 quantile of the Student's T distribution with degrees of freedom equal to $n-1$,
n = *Count of Accuracy Audits (Reporting Organization Accuracy Summary)*.

4.152.5.2 Default

$$l = D - (S * 1.96)$$

where:

l = lower 95% probability limit,
D = Mean (Reporting Organization Accuracy Summary),
S = Standard Deviation (Reporting Organization Accuracy Summary).

4.153 Lower Probability/Confidence Limit (Reporting Organization Precision Summary)

4.153.1 Description

The lower bound of either a probability distribution, or confidence interval, for the applicable population of precision checks.

4.153.2 Source

System-generated via Precision Data (RP) Transaction, or Maintain Precision (L62).

4.153.3 Attributes

Type: Number
Length: 6.4
Required: No

4.153.4 Uses

Reporting Organization Precision Summaries

4.153.5 Value Assignment

4.153.5.1 Analytical & Non-PM2.5 Flow

$$l = D - (S * 1.96)$$

where:

l = lower 95% probability limit,
D = Mean (Reporting Organization Precision Summary),
S = Standard Deviation (Reporting Organization Precision Summary).

4.153.5.2 PM2.5 Flow

$$l = D - \left(\frac{S * t_{0.975,\, n-1}}{\sqrt{n}} \right)$$

where:

l = lower 95% confidence limit,
D = Mean (Reporting Organization Precision Summary),
S = Standard Deviation (Reporting Organization Precision Summary),
$t_{0.975,\, n-1}$ = the 0.975 quantile of the Student's T distribution with degrees of freedom equal to *n-1,*
n = Count of Precision Checks (Reporting Organization Precision Summary).

4.153.5.3 PM2.5 Collocated

$$l = CV\sqrt{\frac{n}{\chi^2_{0.95,\,n}}}$$

where:

l = lower 90% confidence limit,
CV = coefficient of variation,
n = *Count of Valid Collocated Data Pairs (Reporting Organization Precision Summary)*,
$X^2_{0.95,n}$ = the 0.95 quantile of the chi-square distribution with degrees of freedom equal to n.

4.153.5.4 Other Collocated

$$l = D - \left(\frac{S * 1.96}{\sqrt{2}}\right)$$

where:

l = lower 95% probability limit,
D = *Mean (Reporting Organization Precision Summary)*,
S = *Standard Deviation (Reporting Organization Precision Summary).*

4.153.5.5 Federal Reference Method (FRM) Audit

$$l = D - \left(\frac{S * t_{0.975,\,n\,-\,1}}{\sqrt{n}}\right)$$

where:

l = lower 95% confidence limit,
D = *Mean (Reporting Organization Precision Summary)*,
S = *Standard Deviation (Reporting Organization Precision Summary),*
$t_{0.975,\,n-1}$ = the 0.975 quantile of the Student's T distribution with degrees of freedom equal to *n-1,*
n = *Count of Precision Checks (Reporting Organization Precision Summary)*.

4.154 Maximum Beam Height

4.154.1 Description

The height of the beam (at the highest point from the ground) being projected between the receiver and transmitter at the site, in meters.

4.154.2 Source

User-specified via the Site Open Path Information (AC) Transaction, or The Maintain Site form..

4.154.3 Attributes

Type: Number
Length: 8.2
Required: Yes

4.154.4 Uses

Open Paths

4.155 Maximum Indicator

4.155.1 Description

An indication of the type of maximum value.

4.155.2 Source

System-generated via the Post process.

4.155.3 Attributes

Type: Character
Length: 3
Required: Yes

4.155.4 Uses

Summary Maximums

4.155.5 Value Assignment

Indicator	Description
OVR	Non-overlapping 8-Hour Carbon Monoxide
ACT	Actual 8-Hour Carbon Monoxide
REG	All other cases

4.156 Maximum Level

4.156.1 Description

The numeric rank of a value, relative to other values in the same value set, in descending value order.

4.156.2 Source

System-generated via the Post process.

4.156.3 Attributes

Type: Number
Length: 4.0
Required: Yes

4.156.4 Uses

Summary Maximums

4.157 Maximum Value (Annual)

4.157.1 Description

A value in a value set of a certain associated Daily Rank, relative to other values in the same value set.

4.157.2 Source

System-generated via the Post process.

4.157.3 Attributes

Type: Number
Length: 5.5
Required: Yes

4.157.4 Uses

Summary Maximums
Site Annual Summaries

4.157.5 Value Assignment

4.157.5.1 Ozone (1-Hour & 8-Hour)

The ten highest 1-hour or 8-hour *Maximum Value (Daily)* values for the year, regardless of monitoring season or whether daily summary criteria were met. Non-Overlapping 8-Hour Carbon Monoxide

The two highest valid 8-hour *Arithmetic Mean (NAAQS)* values of the year where there is at least one other non-overlapping *Arithmetic Mean (NAAQS)* that is greater than, or equal to, the second highest average, and the dates and hours for which each was computed. (Note: The first actual maximum is always the first non-overlapping maximum.)

In the following example, the fourth actual maximum is the second non-overlapping maximum because, while it overlaps the first and second actual maximums, it does not overlap the third. Since the second actual overlaps the first, and the third overlaps both the first and second, neither one qualifies to be the second non-overlapping maximum.

Actual Rank	8-Hour Average (mg)	Date/Time	Does it overlap all of the higher values?
1	16	Dec. 8 10:01 AM – 6:00 PM	--
2	15	Dec. 8 9:01 AM – 5:00 PM	Yes
3	15	Dec. 8 11:01 AM – 7:00 PM	Yes
4	14	Dec. 8 3:01 AM – 11:00 AM	No
5	13	Nov. 20 10:01 AM – 6:00 PM	
6	13	Nov. 11 11:01 AM – 7:00 PM	

7	13	Feb. 9 9:01 AM – 5:00 PM
8	12	Nov. 11 10:01 AM – 6:00 PM
9	12	Oct. 29 10:01 AM – 6: 00 PM

4.157.5.2 Actual 8-Hour Carbon Monoxide

The ten highest valid 8-hour *Arithmetic Mean (NAAQS)* values of the year, regardless of whether they overlap.

4.157.5.3 Site-Level PM2.5

Maximum value of all site daily means

4.157.5.4 1- Hour Nitrogen Dioxide

Maximum Values 1 - 10:
For the Annual Standard:

- The 10 highest measurement values for year.

For the 1-Hour Standard:
Ten highest Daily Maximum Values where the summary criteria is met.

4.157.5.5 1- Hour Sulphur Dioxide

Maximum Values 1 - 10:
For the Annual Standard:

- The 10 highest measurement values for year.

For the 1-Hour Standard:
Ten highest Daily Maximum Values where the summary criteria is met.

4.157.5.6 Default

4.158 The ten highest values for the year Maximum Value (and Second Highest through Fifth Highest)

4.158.1 Description

A value in a value set of a certain associated Daily Rank, relative to other values in the same value set.

4.158.2 Source

User-generated using Annual Summary (RS) transaction, or AQS Maintain Annual Summary Information (L7).

4.158.3 Attributes

Type: Number
Length: 5.5
Required: Yes

4.158.4 Uses

Summary Maximums

4.158.5 Value Assignment

On entry: Calculated and reported by the user in appropriate order.

4.159 Maximum Value (and Second Highest through Fourth Highest)

4.159.1 Description

A value in a value set of a certain associated Daily Rank, relative to other values in the same value set.

4.159.2 Source

System generated through post process

4.159.3 Attributes

Type: Number
Required: No

4.159.4 Uses

Site Annual Summaries

4.159.5 Value Assignment

4.159.5.1 Site Level PM2.5

First through fourth maximum value among all site daily means for the year

4.160 Maximum Value (Daily)

4.160.1 Description

The maximum value for the 24-hour period.

4.160.2 Source

System-generated via the Post process.

4.160.3 Attributes

Type: Number
Length: 5.5
Required: Yes

4.160.4 Uses

Daily Summaries

4.161 Maximum Value (Monthly)

4.161.1 Description

Maximum value specifies the maximum sample value in the month.

4.161.2 Source

System generated during POST.

4.161.3 Attributes

Type: Number
Required: No

4.161.4 Uses

Lead Site Monthly Summaires

4.161.5 Value Assignment

4.161.5.1 FRM/FEM Lead-TSP & FRM/FEM Lead – PM10

The maximum site daily value in the month, including both creditable and extra samples

4.162 Maximum Value (Quarterly)

4.162.1 Description

The maximum Daily Maximum Value in quarter (over all days, not just valid days), with the appropriate flagging and concurrence for the exceptional data type and pollutant standard.

4.162.2 Source

System-generated via the Post process.

4.162.3 Attributes

Type: Number
Required: No

4.162.4 Uses

Quarterly Summaries

4.162.5 Value Assignment

4.162.5.1 Default

Valued

4.163 Maximum Value Date

4.163.1 Description

The date for which an annual Maximum Value was recorded.

4.163.2 Source

User specified via Summary (RS) Transaction, or AQS Maintain Annual Summary Information (L7).

4.163.3 Attributes

Type: Date
Length: 8
Required: Yes

4.163.4 Uses

Forms and reports

4.163.5 Value Assignment

On input: Coupled with Maximum Value Time to set Maximum Value Date/Time on field where Maximum Level = 1

On output: Extracted from Maximum Value Date/Time on field where Maximum Level = 1

4.164 Maximum Value Date of Second Highest

4.164.1 Description

The date for which a second highest Maximum Value was recorded.

4.164.2 Source

User specified via Summary (RS) Transaction, or AQS Maintain Annual Summary Information (L7).

4.164.3 Attributes

Type: Date
Length: 8
Required: Yes

4.164.4 Uses

Forms and reports

4.164.5 Value Assignment

On input: Coupled with Maximum Value Time to set Maximum Value Date/Time on record where Maximum Level = 2

On output: Extracted from Maximum Value Date/Time on record where Maximum Level = 2

4.165 Maximum Value Date/Time

4.165.1 Description

The date and time for which an annual Maximum Value was recorded.

4.165.2 Source

System-generated as part of the Post process.

4.165.3 Attributes

Type: Date
Length: Not Applicable
Required: Yes

4.165.4 Uses

Summary Maximums

4.166 Maximum Value Time

4.166.1 Description

The 24-hour clock time at which an annual Maximum Value was recorded.

4.166.2 Source

User specified via Summary (RS) Transaction, or AQS Maintain Annual Summary Information (L7).

4.166.3 Attributes

Type: Date
Length: 5
Required: Yes

4.166.4 Uses

Forms and reports

4.166.5 Value Assignment

On input: Coupled with Maximum Value Date to set Maximum Value Date/Time on field where Maximum Level = 1

On output: Extracted from Maximum Value Date/Time on field where Maximum Level = 1

4.167 Maximum Value Date of Second Highest

4.167.1 Description

The 24-hour clock time at which a second highest Maximum Value was recorded.

4.167.2 Source

User specified via Summary (RS) Transaction, or AQS Maintain Annual Summary Information (L7).

4.167.3 Attributes

Type: Date
Length: 5
Required: Yes

4.167.4 Uses

Forms and reports

4.167.5 Value Assignment

On input: Coupled with Maximum Value Date to set Maximum Value Date/Time on record where Maximum Level = 2

On output: Extracted from Maximum Value Date/Time on record where Maximum Level = 2

4.168 Mean (Monitor Accuracy Summary)

4.168.1 Description

A measure of the central tendency of the applicable population of accuracy audits.

4.168.2 Source

System-generated via Accuracy Data (RA) Transaction, or Maintain Accuracy (L61).

4.168.3 Attributes

Type: Number
Length: 5.5
Required: No

4.168.4 Uses

Monitor Accuracy Summaries

4.168.5 Value Assignment

$$D = \frac{\sum_{i=1}^{n} d_i}{n}$$

where:

D = estimate of accuracy (mean),
d_i = *Percent Difference* of a analytical or flow audit,
n = *Count of Accuracy Audits (Monitor Accuracy Summary)*.

4.169 Mean (Monitor Precision Summary)

4.169.1 Description

A measure of the central tendency of the applicable population of precision checks.

4.169.2 Source

System-generated via Precision Data (RP) Transaction, or Maintain Precision (L62).

4.169.3 Attributes

Type: Number
Length: 6.4
Required: Yes

4.169.4 Uses

Monitor Precision Summaries

4.169.5 Value Assignment

4.169.5.1 Analytical & Flow

$$D = \frac{\sum_{i=1}^{n} d_i}{n}$$

where:

D = estimate of precision (mean),
d_i = *Percent Difference* of an analytical or flow precision check,
n = *Count of Precision Checks (Monitor Precision Summary)*.

4.169.5.2 Collocated (PM2.5)

$$CV = \sqrt{\frac{\sum_{i=1}^{n} \left(\frac{|d_i|}{\sqrt{2}} \right)^2}{n}}$$

where:

CV = coefficient of variation, i.e., estimate of precision,
d_i = *Percent Difference* of a valid collocated data pair,
n = *Count of Valid Collocated Data Pairs (Monitor Precision Summary)*.

4.169.5.3 Collocated (Other)

$$D = \frac{\sum_{i=1}^{n} d_i}{n}$$

where:

D = estimate of precision (mean),
d_i = *Percent Difference* of a valid collocated data pair,
n = *Count of Valid Collocated Data Pairs (Monitor Precision Summary)*.

4.170 Mean (Reporting Organization Accuracy Summary)

4.170.1 Description

A measure of the central tendency of the applicable population of accuracy audits.

4.170.2 Source

System-generated via Accuracy Data (RA) Transaction, or Maintain Accuracy (L61).

4.170.3 Attributes

Type: Character
Length: 5.5
Required: No

4.170.4 Uses

Reporting Organization Accuracy Summaries

4.170.5 Value Assignment

$$D = \frac{\sum_{i=1}^{n} d_i}{n}$$

where:

D = estimate of accuracy (mean),
d_i = *Percent Difference* of a analytical or flow audit,
n = *Count of Accuracy Audits (Reporting Organization Accuracy Summary)*.

If either quarter in either half of the year has a *Count of Accuracy Audits (Reporting Organization Accuracy Summary)* of 1, then the source data for both quarters in that half will be merged for purposes of calculating the mean, and reported with the second quarter of the half (i.e., Q2 or Q4). In this case, there will be no value for the corresponding first quarter in the half (i.e., Q1 or Q3).

4.171 Mean (Reporting Organization Precision Summary)

4.171.1 Description

A measure of the central tendency of the applicable population of precision checks.

4.171.2 Source

System-generated via Precision Data (RP) Transaction, or Maintain Precision (L62).

4.171.3 Attributes

Type: Number
Length: 6.4
Required: No

4.171.4 Uses

Reporting Organization Precision Summaries

4.171.5 Value Assignment

4.171.5.1 Analytical & Flow

$$D = \frac{\sum_{i=1}^{n} d_i}{n}$$

where:

D = estimate of precision (mean),
d_i = *Percent Difference* of a analytical or flow precision check,
n = *Count of Precision Checks (Reporting Organization Precision Summary)*.

4.171.5.2 Collocated (PM 2.5)

$$CV = \sqrt{\frac{\sum_{i=1}^{n} \left(\frac{|d_i|}{\sqrt{2}} \right)^2}{n}}$$

where:

CV = coefficient of variation, i.e., estimate of precision,
d_i = *Percent Difference* of a valid collocated data pair,
n = *Count of Valid Collocated Data Pairs (Reporting Organization Precision Summary)*.

4.171.6 Collocated (Other)

$$D = \frac{\sum_{i=1}^{n} d_i}{n}$$

where:

D = estimate of precision (mean),
d_i = *Percent Difference* of a valid collocated data pair,
n = *Count of Valid Collocated Data Pairs (Reporting Organization Precision Summary)*.

4.171.6.1 Federal Reference Method (FRM) Audit

$$D = \frac{\sum_{i=1}^{n} d_i}{n}$$

where:

D = estimate of precision (mean),
d_i = *Percent Difference* of an FRM audit pair,
n = *Count of Precision Checks (Reporting Organization Precision Summary)* (i.e., FRM audits).

4.172 Mean Completeness Indicator (Annual)

4.172.1 Description

Flag indicating whether the annual mean is complete

4.172.2 Source

System generated during Post process

4.172.3 Attributes

Type: Varchar2
Length: 1
Required: No

4.172.4 Uses

Site Annual Summaries

4.172.5 Value Assignment

4.172.5.1 Site-Level PM2.5

The valid values are "Y" and "N". Set to "complete" (i.e. 'Y') according to the following rules:

- All 4 site-level quarterly summaries are present, and
- One of the following is true:
  - All 4 quarters are 75% complete, or
  - All quarters have at least 11 actual values and the annual mean > the annual standard (i.e. 15), or

The Substituted Annual Mean exists and is greater than the annual standard (i.e. 15)

4.173 Measurement Scale

4.173.1 Description

A denotation of the geographic scope of the air quality measurements made by the monitor. The implication is that the same measurement made elsewhere within the measurement scale would produce an equivalent result to that produced at the monitoring site.

4.173.2 Source

User-specified via the Basic Monitor Information (MA) Transaction, or the Maintain Monitor form.

4.173.3 Attributes

Type: Character
Length: 20
Required: No

4.173.4 Uses

Monitors

4.173.5 Value Assignment

The value must exist on the *Measurement Scales* view.

4.174 Meteorological Site ID

4.174.1 Description

The AQS site ID where meteorological data is collected, if not collected at this site.

4.174.2 Source

User-specified via the Basic Site Information (AA) Transaction, or The Maintain Site form..

4.174.3 Attributes

Type: Character
Length: 11
Required: No

4.174.4 Uses

Sites

4.174.5 Value Assignment

The value must reference an existing record on the *Sites* view.

4.175 Meteorological Site Type

4.175.1 Description

The type of meteorological station identified for the monitoring site. Required for sites with monitors in a Photochemical Assessment Monitoring System (PAMS) network.

4.175.2 Source

User-specified via the Basic Site Information (AA) Transaction, or The Maintain Site form..

4.175.3 Attributes

Type: Character
Length: 20
Required: No

4.175.4 Uses

Sites

4.175.5 Value Assignment

The value must exist on the *Met Site Types* view

4.176 Method Code

4.176.1 Description

A code representing a particular method for collecting and analyzing samples of the specified parameter.

4.176.2 Source

User-specified via the Monitor Protocol (MK), Raw Data (RD), or Composite Data (RC) Transactions, or the Maintain Monitor form.

4.176.3 Attributes

Type: Character
Length: 8
Required: Yes

4.176.4 Uses

Monitor Protocols

4.176.5 Value Assignment

In combination with *Parameter*, the value must exist on the *Sampling Methodologies* view.

4.177 Minimum Beam Height

4.177.1 Description

The height of the beam (at the lowest point from the ground) being projected between the receiver and transmitter at the site, in meters.

4.177.2 Source

4.177.3 Source

User-specified via the Site Open Path Information (AC) Transaction, or The Maintain Site form..

4.177.4 Attributes

Type: Number
Length: 8.2
Required: Yes

4.177.5 Uses

Open Paths

4.178 Minimum Collection Frequency

4.178.1 Description

The code for the minimum collection frequency with which the yearly samples were reported.

4.178.2 Source

System-generated via the Post process.

4.178.3 Attributes

Type: Character
Length: 8
Required: No

4.178.4 Uses

Annual Summaries

4.178.5 Value Assignment

4.178.5.1 Daily PM10

Must be assigned a value, which is a code on the *Collection Frequencies* table.

4.178.5.2 24-Hour PM10

Always valued with "1", which signifies "Every Day" on the *Collection Frequencies* table.

4.178.5.3 Default

Not valued.

4.179 Minimum Sample Value (Annual)

4.179.1 Description

The lowest value for the year.

4.179.2 Source

System-generated via the Post process.

4.179.3 Attributes

Type: Number
Length: 5.5
Required: No

4.179.4 Uses

Annual Summaries

4.179.5 Value Assignment

4.179.5.1 Ozone (1-Hour and 8-Hour)

The lowest 1-hour or 8-hour *Maximum Value (Daily)* that occurred in the year, regardless of monitoring season or whether daily summary criteria were met.

4.179.5.2 Non-Ozone National Ambient Air Quality Standards (NAAQS) Durations

The lowest valid *Arithmetic Mean (NAAQS)* that occurred in the year.

4.179.5.3 Default

The lowest sample data value that occurred in the year.

4.180 Minimum Value (Monthly)

4.180.1 Description

Minimum Values specifies the minimum sample value in a month.

4.180.2 Source

System generated during POST.

4.180.3 Attributes

Type: Number
Required: No

4.180.4 Uses

Lead Site Monthly Summaires

4.180.5 Value Assignment

4.180.5.1 FRM/FEM Lead-TSP & FRM/FEM Lead – PM10

The minimum site daily value in the month, including both creditable and extra samples

4.181 Minimum Value (Quarterly)

4.181.1 Description

The minimum Daily Maximum Value for Valid days in a quarter, with the appropriate flagging and concurrence for the exceptional data type and pollutant standard.

4.181.2 Source

System-generated via the Post process.

4.181.3 Attributes

Type: Number
Required: No

4.181.4 Uses

Quarterly Summaries

4.181.5 Value Assignment

4.181.5.1 Default

Valued

4.182 Modified Date

4.182.1 Description

The date when the record was last modified.

4.182.2 Source

System-generated via any of the AQS transactions, or any of the Maintain modules.

4.182.3 Attributes

Type: Date
Length: Not applicable
Required: No

4.182.4 Uses

Sites
Tangent Roads
Open Paths
Primary Monitor Periods
Monitors
Monitor Pollutant Areas
Sample Periods
Monitor Type Assignments
Monitor Agency Roles
Monitor Objectives
Required Collection Frequencies
Sample Schedules
Monitor Tangent Roads
Probe Obstructions
Monitor Regulatory Compliances
Monitor Collocation Periods
Monitor Protocols
Accuracy Data
Precision Data
Annual Summaries
Site Daily Values
Site Annual Summaries
Site Quarterly Summaries
Site Design Values
Summary Percentiles
Summary Maximums
Lead Site Monthly Summaries
Lead 3 Month Summaries

4.183 Modified User

4.183.1 Description

The Oracle ID of the user who last modified the record.

4.183.2 Source

System-generated via any of the AQS transactions, or any of the Maintain modules.

4.183.3 Attributes

Type: Character
Length: 40
Required: No

4.183.4 Uses

Sites
Tangent Roads
Open Paths
Primary Monitor Periods
Monitors
Monitor Pollutant Areas
Sample Periods
Monitor Type Assignments
Monitor Agency Roles
Monitor Objectives
Required Collection Frequencies
Sample Schedules
Monitor Tangent Roads
Probe Obstructions
Monitor Regulatory Compliances
Monitor Collocation Periods
Monitor Protocols
Accuracy Data
Precision Data
Annual Summaries
Site Daily Values
Site Annual Summaries
Site Quarterly Summaries
Site Design Values
Summary Percentiles
Summary Maximums
Lead Site Monthly Summaries
Lead 3 Month Summaries

4.183.5 Value Assignment

The value must exist on the *AIRS User Profiles* view.

4.184 Monitor ID

4.184.1 Description

The AIRS Monitor ID, which identifies the monitor to which the data applies.

4.184.2 Source

User-specified by any of the following transactions:

Basic Monitor Information (MA)
Monitor Sampling Periods (MB)
Monitor Type Information (MC)
Monitor Agency Role (MD)
Monitoring Objective Information (ME)
Monitor Sampling Schedule (MF)
Monitor Street Description (MG)
Monitor Obstruction Information (MH)
Monitor Regulatory Compliance (MI)
Monitor Collocation Period (MJ)
Monitor Protocol (MK)
Composite Raw Data (RC)
Raw Data (RD)
Accuracy Data (RA)
Precision Data (RP)
Blank Data (RB)
Annual Summary (RS)

or user-specified via any of the following AQS Maintenance Forms:

Maintain Monitor (L2)
Maintain Composite Data (L51)
Maintain Blank Data (L53)
Maintain Raw Data (L54)
Maintain Accuracy Data (L62)
Maintain Precision Data (L61)
Maintain Annual Summary (L7)

or system-generated via the Post process, or system-generated via the Accuracy Data (RA) or Precision Data (RP) Transactions, or system-generated via AQS Maintain Accuracy Data (L62) or AQS Maintain Precision Data (L61).

4.184.3 Attributes

Type: Character
Length: 20
Required: Yes

4.184.4 Uses

Monitors
Monitor Pollutant Areas
Sample Periods
Monitor Type Assignments
Monitor Agency Roles
Monitor Objectives
Required Collection Frequencies
Sample Schedules
Monitor Tangent Roads
Probe Obstructions
Monitor Regulatory Compliances
Monitor Collocation Periods
Monitor Protocols
Composite Data
Composite Qualifier Details
Raw Data
Raw Qualifier Details
Precision Data
Accuracy Data
Blank Data
Blank Qualifier Details
Comments
NAAQS Averages
Daily Summaries
Quarterly Summaries
Annual Summaries
Summary Maximums
Summary Percentiles
Summary Protocols
Monitor Precision Summaries
Precision Summary Protocols
Monitor Accuracy Summaries
Accuracy Summary Protocols

4.184.5 Value Assignment

The value is a concatenation of *State Code*, *County Code*, *Site ID*, *Parameter*, and *POC,* with each separated by "-".

4.185 Monitor Objective Type

4.185.1 Description

Identification of the reason for measuring air quality by the monitor.

4.185.2 Source

User-specified via the Monitoring Objective Information (ME) Transaction, or the Maintain Monitor form

4.185.3 Attributes

Type: Character
Length: 50
Required: Yes

4.185.4 Uses

Monitor Objectives

4.185.5 Value Assignment

The value must exist on the *Monitor Objective Types* view.

4.186 Monitor Protocol ID

4.186.1 Description

The sequential identification number used to distinguish combinations of sample duration, unit, method, collection frequency, composite type, and alternate method detectable limit (MDL) for a monitor.

4.186.2 Source

User-specified via the Monitor Protocols (MK), Composite Data (RC), Raw Data (RD), Blanks Data (RB), Accuracy Data (RA), or Precision Data (RP) Transactions, or the Maintain Monitor form.

4.186.3 Attributes

Type: Number
Length: 4.0
Required: Yes

4.186.4 Uses

Monitor Protocols
Raw Data
Composite Data
Blank Data
Accuracy Data
Precision Data

4.187 Monitor Protocol ID (Annual)

4.187.1 Description

The ID for one of the protocols used to collect, analyze, and report the monitor's sample data for the year.

4.187.2 Source

System-generated via the Post process.

4.187.3 Attributes

Type: Number
Length: 4.0
Required: Yes

4.187.4 Uses

Summary Protocols

4.188 Monitor Protocol ID (Monitor Accuracy Summary)

4.188.1 Description

The protocols used to collect, analyze, and report the audits for the time period.

4.188.2 Source

System-generated via the Accuracy Data (RA) Transaction, or AQS Maintain Accuracy Data (L62).

4.188.3 Attributes

Type: Number
Length: 4.0
Required: Yes

4.188.4 Uses

Accuracy Summary Protocols

4.189 Monitor Protocol ID (Monitor Precision Summary)

4.189.1 Description

The protocols used to collect, analyze, and report the precision checks for the time period.

4.189.2 Source

System-generated via the Precision Data (RP) Transaction, or AQS Maintain Precision Data (L61).

4.189.3 Attributes

Type: Number
Length: 4.0
Required: Yes

4.189.4 Uses

Precision Summary Protocols

4.190 Monitor Type

4.190.1 Description

An administrative classification for the monitor.

4.190.2 Source

User-specified via the Monitor Type Information (MC), or the Maintain Monitor form.

4.190.3 Attributes

Type: Character
Length: 20
Required: Yes

4.190.4 Uses

Monitor Type Assignments

4.190.5 Value Assignment

The value must exist on the *Monitor Types* view.

4.191 Monitor Type Begin Date

4.191.1 Description

The date on which the monitor type assignment went into effect

4.191.2 Source

User-specified via the Monitor Type Information (MC), or the Maintain Monitor form.

4.191.3 Attributes

Type: Date
Length: Not Applicable
Required: Yes

4.191.4 Uses

Monitor Type Assignments

4.192 Monitor Type End Date

4.192.1 Description

The date on which a monitor type assignment ends.

4.192.2 Source

User-specified via the Monitor Type Information (MC), or the Maintain Monitor form.

4.192.3 Attributes

Type: Date
Length: Not Applicable
Required: No

4.192.4 Uses

Monitor Type Assignments

4.193 Monitoring Season Begin Date

4.193.1 Description

The begin date of effective monitoring season.

4.193.2 Source

System generated via POST.

4.193.3 Attributes

Type: Date
Length: Not Applicable
Required: No

4.193.4 Uses

Annual Summaries

4.193.5 Value Assignment

4.193.5.1 Ozone

The begin date of effective monitoring season.

4.193.5.2 Default

None

4.194 Monitoring Season End Date

4.194.1 Description

The end date of effective monitoring season.

4.194.2 Source

System generated via POST.

4.194.3 Attributes

Type: Date
Length: Not Applicable
Required: No

4.194.4 Uses

Annual Summaries

4.194.5 Value Assignment

4.194.5.1 Ozone

The end date of effective monitoring season.

4.194.5.2 Default

None

4.195 Monthly Required Collection Frequency

4.195.1 Description

Specifies the collection frequency required for the Sample Schedule Month when the Required Collection Frequency Code represents “Stratified Random”, “Random”, or “Seasonal”.

4.195.2 Source

User-specified via the Monitor Sampling Schedule (MF), or the Maintain Monitor form.

4.195.3 Attributes

Type: Character
Length: 8
Required: Yes

4.195.4 Uses

Sample Schedules

4.195.5 Value Assignment

The value must exist on the *Collection Frequencies* view.

4.196 MSA Represented

4.196.1 Description

The Metropolitan Statistical Area (MSA) from which the concentrations originated, not the location of the monitor.

4.196.2 Source

User-specified via the Monitoring Objective Information (ME) Transaction, or the Maintain Monitor form.

4.196.3 Attributes

Type: Character
Length: 8
Required: No

4.196.4 Uses

Monitor Objectives

4.196.5 Value Assignment

Must have a value if none of *CBSA Represented*, *CMSA Represented*, *CSA Represented*, or *Urban Area Represented* are valued. Conversely, must not have a value if any of *CBSA Represented*, *CMSA Represented*, *CSA Represented*, or *Urban Area Represented* are valued. If valued, that value must exist on the *MSAs* view.

4.197 NAAQS Date/Time

4.197.1 Description

The date and hour identifying a National Ambient Air Quality Standards (NAAQS) average.

4.197.2 Source

System-generated via the Post process.

4.197.3 Attributes

Type: Date
Length: Not Applicable
Required: Yes

4.197.4 Uses

NAAQS Averages

4.197.5 Value Assignment

4.197.5.1 8-Hour Ozone

The first hour of the 8-hour period.

4.197.5.2 8-Hour Carbon Monoxide

The last hour of the 8-hour period.

4.197.5.3 3-Hour Sulfur Dioxide

The last hour of the 3-hour period.

4.197.5.4 24-Hour Sulfur Dioxide, PM10, & PM2.5

The last hour of the 24-hour period.

4.198 Null Data Code

4.198.1 Description

This is a code to explain why no sample or blank value was reported.

4.198.2 Source

User-specified, via the Raw Data (RD) or Raw Blanks (RB) transactions, or AQS Maintain Raw Data or Maintain Blanks Data forms.

4.198.3 Attributes

Type: Character
Length: 8
Required: No

4.198.4 Uses

Raw Data and Blanks Data

4.198.5 Value Assignment

On Data Input: A Null Data Code is stored in Qualifier Code field.
The value must exist as a NULL type in the *Qualifiers* view.
A Null Data Code precludes entry of other Qualifier Codes
A Null Data Code requires an empty Sample Value in the Record.

4.199 Number of Samples

4.199.1 Description

Indicates the number of samples that were combined to yield the composite sample value.

4.199.2 Source

User-specified via the Composite Data (RC) Transaction, or AQS Maintain Composite Data (L51).

4.199.3 Attributes

Type: Number
Length: 10.0
Required: Yes

4.199.4 Uses

Composite Data

4.200 Open Path Number

4.200.1 Description

A unique numeric identifier for the individual open path at a site. Each open path represents a different monitor.

4.200.2 Source

User-specified via the Site Open Path Information (AC) Transaction, or The Maintain Site form..

4.200.3 Attributes

Type: Number
Length: 12.0
Required: Yes

4.200.4 Uses

Open Paths
Monitors

4.201 Parameter

4.201.1 Description

The code assigned to the parameter measured by the monitor. Parameters may be pollutants or non-pollutants.

4.201.2 Source

User-specified

4.201.3 Attributes

Type: Character
Length: 5
Required: Yes

4.201.4 Uses

Monitors
Primary Monitor Periods
Reporting Organization Precision Summaries
Reporting Organization Accuracy Summaries
Site Daily Values
Site Design Values
Site Quarterly Summaries
Site Annual Summaries
Lead Site Monthly Summaries
Lead 3 Month Summaries

4.202 Percent One Value

4.202.1 Description

Percent One Value is the percentage of days with at least one sample measurement (ignoring flagging and concurrence).

4.202.2 Source

System-generated via the Post process.

4.202.3 Attributes

Type: Number
Required: No

4.202.4 Uses

Quarterly Summaries

4.202.5 Value Assignment

$$PercentOneValue = \frac{SampledDayCount}{NumberOfDaysInQuarter}$$

Where:

- Sampled Day Count: Number of days where at least one sample was recorded
- Number of Days in Quarter: Number of calendar days in quarter

4.203 Percent Days

4.203.1 Description

Percent Days is the percentage of valid days in a quarter compared to the total number of days in the quarter.

4.203.2 Source

System-generated via the Post process.

4.203.3 Attributes

Type: Number
Required: No

4.203.4 Uses

Quarterly Summaries

4.203.5 Value Assignment

4.203.5.1 1-Hour Sulfur Dioxide (SO_2)

$$PercentDays = \frac{ValidDayCount}{NumberOfDaysInQuarter}$$

Where:

- Valid Day Count: Count of daily summaries with the corresponding pollutant standard and exceptional data type, where the summary criterion is met
- Number of Days in Quarter: Number of calendar days in quarter

4.203.5.2 1-Hour Nitrogen Dioxide (NO_2)

$$PercentDays = \frac{ValidDayCount}{NumberOfDaysInQuarter}$$

Where:

- Valid Day Count: Number of days where the summary criteria is met
- Number of Days in Quarter: Number of calendar days in quarter

4.203.5.3 Default

$$PercentDays = \frac{ValidDayCount}{NumberOfDaysInQuarter}$$

Where:

- Valid Day Count: Number of days where the summary criteria is met
- Number of Days in Quarter: Number of calendar days in quarter

4.204 Percent Difference

4.204.1 Description

The measure of variation between the values in a precision check or accuracy audit value pair.

4.204.2 Source

System-generated via the Accuracy Data (RA) or Precision Data (RP) Transactions, or AQS Maintain Accuracy (L62), or AQS Maintain Precision (L61).

4.204.3 Attributes

Type: Number
Length: Unbounded
Required: Yes

4.204.4 Uses

Precision Data
Accuracy Data

4.204.5 Value Assignment

4.204.5.1 Analytical & Flow

$$d = \frac{(Y - X)}{X} * 100$$

where:

d = percent difference,
Y = indicated concentration or flow rate,
X = actual, or known, concentration or flow rate,

4.204.5.2 Pre-2007 Collocated Pairs

$$d = \frac{(Y - X)}{\left(\frac{(Y + X)}{2}\right)} * 100$$

where:

d = percent difference,
X = measurement produced by primary sampler (routine monitor), i.e., the Actual Value,
Y = measurement produced by duplicate sampler (monitor used for quality control), i.e., the Indicated Value.

4.204.5.3 Federal Reference Method (FRM) Audit

$$d = \frac{(Y - X)}{X} * 100$$

where:

d = percent difference,
Y = measurement produced from the state-operated sampler, i.e. Indicated Value,
X = measurement produced from the Performance Evaluation Program (PEP) sampler, i.e., Actual Value.

4.205 Percent of Observations (Annual)

4.205.1 Description

The percent of actual data values that were reported compared to the number of data values that could have been reported for the year.

4.205.2 Source

System-generated via the Post process, or user-generated via either the Annual Summaries (RS) Transaction or Maintain Annual Summaries (L7).

4.205.3 Attributes

Type: Number
Length: 6.4
Required: No

4.205.4 Uses

Annual Summaries

4.205.5 Value Assignment

The value is always rounded to the integer.

4.205.5.1 1-Hour Ozone

$$p = \left(v / r \right) * 100$$

where:

p = percentage,
v = *Count of Valid Days*,
r = *Count of Required Days*.

4.205.5.2 8-Hour Ozone

$$p = \left(\left(v + a \right) / r \right) * 100$$

where:

p = percentage,
v = *Count of Valid Days*,
a = *Count of Missing Days Assumed Less Than Standard*,
r = *Count of Required Days*.

4.205.5.3 Daily & 24-Hour PM2.5 & PM10

$$p = \left(v / m \right) * 100$$

where:

p = percentage,
v = *Count of Valid Days*,
m = number of scheduled days (i.e., *Count of Required Days*).

4.205.5.4 8-Hour Carbon Monoxide, and 3-Hour & 24-Hour Sulfur Dioxide

Not valued.

4.205.5.5 1-Hour Sulfur Dioxide

$$ObservationPercentage = \frac{TotalNumberOfObservations}{MaximumNumberForQuarter}$$

where:

- *TotalNumberOfObservations* is the total number of measurement values for the year, ignoring flagging and concurrence
- *MaximumNumberForQuarter* is the total number of hours in the year

4.205.5.6 1-Hour Nitrogen Dioxide

$$ObservationPercentage = \frac{TotalNumberOfObservations}{MaximumNumberForQuarter}$$

where:

- *TotalNumberOfObservations* is the total number of measurement values for the year, ignoring flagging and concurrence
- *MaximumNumberForQuarter* is the total number of hours in the year

4.205.5.7 Default Daily

Not valued.

4.205.5.8 Default Hourly

$$p = \left(\frac{n}{\left(a * 24 / l \right)} \right) * 100$$

where:

p = observation percentage,
n = *Count of Observations (Annual)*,
l = duration length (in hours),
a = number of active days in the year.

4.206 Percent of Observations (Daily)

4.206.1 Description

The percent of actual data values that were reported compared to the number of data values that could have been reported for the 24-hour period.

4.206.2 Source

System-generated via the Post process.

4.206.3 Attributes

Type: Number
Length: 6.4
Required: No

4.206.4 Uses

Daily Summaries

4.206.5 Value Assignment

The value is always rounded to the integer.

$$p = \left(\frac{n}{\left(\frac{24}{l} \right)} \right) * 100$$

where:

p = observation percentage,
n = *Count of Observations (Daily)*,
l = duration length (in hours).

4.207 Percent of Observations (Quarterly)

4.207.1 Description

The percent of actual data values that were reported compared to the number of data values that could have been reported for the quarter.

4.207.2 Source

System-generated via the Post process.

4.207.3 Attributes

Type: Number
Length: 6.4
Required: No

4.207.4 Uses

Quarterly Summaries
Site Quarterly Summaries

4.207.5 Value Assignment

The value is always rounded to the integer.

4.207.5.1 1-Hour & 8-Hour Ozone

$$p = \left(n \Big/ (q * 24) \right) * 100$$

where:

p = observation percentage,
n = number of samples or 8-hour averages in the quarter, regardless of monitoring season, (i.e., *Count of Observations (Quarterly)*),
q = number of active days in the quarter, regardless of monitoring season.

4.207.5.2 24-Hour PM2.5 & PM10

$$p = \left(n \Big/ q \right) * 100$$

where:

p = observation percentage,
n = number of valid 24-hour block averages (i.e., *Number of Observations (Quarterly)*),
q = number of active days in the quarter.

4.207.5.3 Daily PM10

$$p = \left(v / q \right) * 100$$

where:

p = observation percentage,
v = number of valued strata (i.e., *Count of Valid Days*),
r = number of scheduled days (i.e., *Count of Required Days*).

A valid stratum is one where the scheduled day occurs in the quarter and at least one observation occurs in the stratum.

Scheduled days are the number of days within the quarter that were scheduled for sampling, as determined by the EPA-defined calendar for the required collection frequency, and which also fall within the period of operation, as defined by sampling periods.

Seasonal and random frequencies are sub-divided in monthly-required frequencies; otherwise, the required frequency applies to a defined period of time

The reference point for the EPA calendar is January 4, 1956. For example, in the year 2003, the every 6th day calendar would comprise: 1/3/2003, 1/9/2003, 1/15/2003, etc., and the every 3rd day calendar would comprise: 1/3/2003, 1/6/2003, 1/9/2003, 1/12/2003, etc. For a monitor doing seasonal sampling, with every 6th day sampling in April and every 3rd day sampling in May, both months in 2003, the schedule would be as follows: 4/15/03, 4/21/03, 4/27/03, 5/3/03, 5/6/03, 5/9/03, etc.

4.207.5.4 PM2.5

$$p = \left(v / r \right) * 100$$

where:

p = observation percentage,
v = *Count of Valid Days*,
r = number of scheduled days (i.e., *Count of Required Days*).

Valid days are equal to the sum of valued, scheduled sampling days, plus make-ups for missing scheduled days. A make-up day is a sample recorded in the same stratum as, or exactly seven days after, a missing scheduled sample. In both conditions, the make-up sample must occur within the same quarter as the missed sample. A maximum of five make-up samples are allowed per quarter.

Scheduled days are the number of days within the quarter that were scheduled for sampling, as determined by the EPA-defined calendar for the required collection frequency, and which also fall within a period of operation, as defined in sampling periods.

Seasonal and random frequencies are sub-divided in monthly-required frequencies; otherwise, the required frequency applies to a defined period of time. A PM2.5 monitor must have a defined collection frequency for each active day, by rule.

The reference point for the EPA calendar is January 4, 1956. For example, in the year 2003, the every 6th day calendar would comprise: 1/3/2003, 1/9/2003, 1/15/2003, etc., and the every 3rd day calendar would comprise: 1/3/2003, 1/6/2003, 1/9/2003, 1/12/2003, etc. For a monitor doing seasonal sampling, with every 6th day sampling in April and every 3rd day sampling in May, the scheduled days for 2003 would be as follows: 4/15/03, 4/21/03, 4/27/03, 5/3/03, 5/6/03, 5/9/03, etc.

4.207.5.5 Site-Level PM2.5 (Quarterly)

$$p = \left(v / r \right) * 100$$

where:

p = observation percentage,
v = *Count of Valid Days in the quarter*,
r = number of scheduled days (i.e., *Count of Required Days*) in the quarter.

4.207.5.6 1-Hour Sulfur Dioxide

$$ObservationPercentage = \frac{TotalNumberOfObservations}{MaximumNumberForQuarter}$$

where:

- *TotalNumberOfObservations* is the total number of measurement values for the quarter, ignoring flagging and concurrence
- *MaximumNumberForQuarter* is the total number of hours in the quarter

4.207.5.7 1-Hour Nitrogen Dioxide

$$ObservationPercentage = \frac{TotalNumberOfObservations}{MaximumNumberForQuarter}$$

where:
- *TotalNumberOfObservations* is the total number of measurement values for the quarter, ignoring flagging and concurrence
- *MaximumNumberForQuarter* is the total number of hours in the quarter

4.207.5.8 Default Hourly

$$p = \left(n \Big/ \left(a * 24 \Big/ l \right) \right) * 100$$

where:

p = observation percentage,
n = *Count of Observations (Quarterly)*,
l = duration length (in hours),
a = number of active days in the quarter.

4.207.6 Default Daily

Not valued.

4.208 Percentile

4.208.1 Description

An EPA-assigned percentile level for which a *Percentile Sample Value* is determined.

4.208.2 Source

System-generated via the Post Process, or user-specified via the Annual Summary (RS) Transaction or AQS Maintain Annual Summary (L7).

4.208.3 Attributes

Type: Number
Length: 3
Required: Yes

4.208.4 Uses

Summary Percentiles

4.208.5 Value Assignment

The possible values are: 10, 25, 50, 75, 90, 95, 98, and 99.

4.209 Percentile Sample Value

4.209.1 Description

The value for the year where there are *k* values less than or equal to it, where *k* is the calculated rank for the *Percentile*.

4.209.2 Source

System-generated via the Post Process, or user-specified via the Annual Summary (RS) Transaction or AQS Maintain Annual Summary (L7).

4.209.3 Attributes

Type: Number
Length: 5.5
Required: Yes

4.209.4 Uses

Summary Percentiles
In forms and reports there are 8 instances of this field with values based on the *Percentile*.
Site Annual Summaries (98th Percentile)

4.209.5 Value Assignment

4.209.5.1 Ozone 1-Hour & 8-Hour

The 1-hour or 8-hour *Maximum Value (Daily)* where there are *k Maximum Value (Daily)* values less than or equal to it, where *k* is the calculated rank for the *Percentile*. The formula for determining the rank is:

$$k = CEILING\left(v * \left(p / 100 \right) \right)$$

where:

k = percentile rank
p = *Percentile*,
v = *Count of Valid Days*.

Note: A CEILING function returns the smallest integer higher than, or equal to, the given number.

4.209.5.2 Daily Non-Seasonal PM2.5

The sample value where there are *k* values less than or equal to it, where *k* is the calculated rank for the percentile. The formula for determining the rank is:

$$k = CEILING\left(n - \left(n \times p / 100\right)\right)$$

Where:

k = Percentile rank
n = Count of creditable samples for the year
p = Percentile

Note: A CEILING function returns the smallest integer higher than, or equal to, the given number.

4.209.5.3 Daily Seasonal PM2.5

The minimum sample value that makes:

$$W(x) \times 100 > p$$

where:

$$W(x) = \left(\left({d_h}/{d_h + d_l} \right) \times F_h(x) \right) + \left(\left({d_l}/{d_h + d_l} \right) \times F_l(x) \right)$$

where:

d_h = number of calendar days in the high season,
d_l = number of calendar days in the low season,
p = *Percentile*,
x = the measured concentration, and

$$F_a(x) = {l_a}/{n_a}$$

where:

a = high or low,
l_a = number of samples in season a that are <= x,
n_a = number of samples in season a.

The high season are those months where the monthly required frequency is that with minimum daily interval for the year; the low season is all others months.

(Reference: EPA-454/R-99-008 Guideline on Data Handling Conventions for the PM NAAQS)

4.209.5.4 Site-Level Annual PM2.5 98th Percentile

The Annual 98th percentile is computed based on seasonal and non-seasonal PM2.5 using all daily summaries for the year

4.209.5.5 1 – Hour Sulfur Dioxide

For the Annual Standard:

- Percentiles are computed directly from the measurement values as per the algorithm below. (99^{th}, 98^{th}, 95^{th}, 90^{th}, 75^{th}, 50^{th}, 25^{th}, and 10^{th})

For the 1-Hour Standard

- The following percentiles shall be computed: 99^{th} (Other percentiles, 98^{th}, 95^{th}, 90^{th}, 75^{th}, 50^{th}, 25^{th}, and 10^{th}, **may** be computed at the developer's discretion.)
- Percentiles are computed for two distinct sets of data, as per the algorithm below, and the larger of these values is taken as the percentile value for the year. The sets are: 1) The valid daily maxima (i.e. maximum for days with 18 or more total hours), and 2) all daily maxima (i.e. including all days with at least 1 non-excluded value). Note: In both cases the daily maxima must correspond to the exceptional data type and pollutant standard of the annual summary being computed.

Algorithm:

$$k = CEIL\left(n - \frac{nP}{100} \right)$$

Where :

- k is the k^{th} maximum (e.g. 1^{st} maximum for k = 1)
- *CEIL(x)* is the function that produces the smallest integer greater than or equal to x
- *n* is the total number of values (days) with at least 1 non-excluded value
- *P* is the percentile level, e.g. 99 for the 99^{th} percentile

Format: No rounding or truncation.

4.209.5.6 1 – Hour Nitrogen Dioxide

Percentile Values:

For the Annual Standard:

- Percentiles are computed directly from the measurement values as per the algorithm below. (99^{th}, 98^{th}, 95^{th}, 90^{th}, 75^{th}, 50^{th}, 25^{th}, and 10^{th})

For the 1-Hour Standard:

- The following percentiles shall be computed: 98^{th} (Other percentiles, 99^{th}, 95^{th}, 90^{th}, 75^{th}, 50^{th}, 25^{th}, and 10^{th}, **may** be computed at the developer's discretion.)
- Percentiles are computed for two distinct sets of data, as per the algorithm below, and the larger of these values is taken as the percentile value for the year. The sets are: 1) The valid daily maxima (i.e. maximum for days with 18 or more total hours), and 2) all daily maxima (i.e. including all days with at least 1 non-excluded value). Note: In both cases the daily maxima must correspond to the exceptional data type and pollutant standard of the annual summary being computed.

Algorithm:

$$k = CEIL\left(n - \frac{nP}{100} \right)$$

Where :

- k is the k^{th} maximum (e.g. 1^{st} maximum for k = 1)
- *CEIL(x)* is the function that produces the smallest integer greater than or equal to x;
- *n* is the total number of values (days) with at least 1 non-excluded value
- *P* is the percentile level, e.g. 98 for the 98^{th} percentile

Format: No rounding or truncation.

4.209.5.7 Hourly and Non-PM2.5 Daily

The sample value where there are *k* sample values less than or equal to it, where *k* is the calculated rank for the percentile. The formula for calculating the rank is:

$$k = CEILING\left(n * \left(p / 100 \right) \right)$$

where:

k = percentile rank
p = *Percentile*,
n = *Count of Observations (Annual)*.

Note: A CEILING function returns the smallest integer higher than, or equal to, the given number.

4.209.5.8 Non-Ozone National Ambient Air Quality Standards (NAAQS)

The valid 8-hour average where there are *k* valid 8-hour averages less than or equal to it, where *k* is the calculated rank for the percentile. The formula for calculating the rank is:

$$k = CEILING\left(n * \left(p / 100 \right) \right)$$

where:

k = percentile rank
p = *Percentile*,
n = *Count of Observations (Annual)*.

Note: A CEILING function returns the smallest integer higher than, or equal to, the given number.

4.210 POC

4.210.1 Description

Pollutant Occurrence Code. An identifier used to distinguish between multiple monitors at the same site that are measuring the same parameter. For example, the first monitor established to measure carbon monoxide (CO) at a site could have a *POC* of 1. If an additional monitor were established at the same site to measure CO, that monitor could have a *POC* of 2. However, if a new instrument were installed to replace the original instrument used as the first monitor, that would be the same monitor and it would still have a *POC* of 1.

For criteria pollutants, data from different sampling methods should only be stored under the same *POC* if the sampling intervals are the same and the methods are reference or equivalent. For sites where duplicate sampling is being conducted by multiple agencies or by one agency with multiple samplers, multiple *POCs* must be utilized to store all samples.

For non-criteria pollutants, data from multiple sampling methods can be stored under the same *POC* if the sampling intervals are the same and there is only one sample for the time reported. If multiple open path monitors are reporting data for the same parameter, each open path would be assigned a different *POC*.

4.210.2 Source

User-specified via the Basic Monitor Information (MA) Transaction, or the Maintain Monitor form.

4.210.3 Attributes

Type: Number
Length: 2.0
Required: Yes

4.210.4 Uses

Monitors

4.211 Pollutant Area Code

4.211.1 Description

Designation of a pollutant area to which the monitor is assigned. Pollutant areas are geographic areas defined by a program office in which a certain pollutant should be closely watched. Most are problem or non-attainment areas, but attainment areas requiring special attention may also be defined. Types of pollutant areas are: status areas, monitoring areas, and monitor planning areas.

4.211.2 Source

User-specified, via the Monitor Basic (MA) Transaction, or Maintain Monitor (L2).

4.211.3 Attributes

Type: Character
Length: 5
Required: Yes

4.211.4 Uses

Monitor Pollutant Areas. There are 5 pollutant areas that can be defined for a monitor.

4.211.5 Value Assignment

The value must exist on the *Pollutant Areas* view, and the corresponding type must be valid for the *Parameter*.

4.212 Pollutant Area Type

4.212.1 Description

Types of pollutant areas, such as status area, monitoring area, monitor-planning area.

4.212.2 Source

System-generated, via the Monitor Basic (MA) Transaction (), or Maintain Monitor (L2).

4.212.3 Attributes

Type: Character
Length: 40
Required: Yes

4.212.4 Uses

Monitor Pollutant Areas

4.212.5 Value Assignment

The value must exist on the *Pollutant Area Types* view.

4.213 Pollutant Standard Id

4.213.1 Description

Number that identifies unique Pollutant Standard.

4.213.2 Source

System-generated, via Post transaction

4.213.3 Attributes

Type: Number
Required: Yes

4.213.4 Uses

NAAQS Averages
Daily Summaries
Quarterly Summaries
Annual Summaries
Site Daily Values
Site Annual Summaries
Site Quarterly Summaries
Site Design Values
Lead Site Monthly Summaries
Lead 3 Month Summaries

4.213.5 Value Assignment

.

4.214 Precision Class

4.214.1 Description

Description of the class of precision check taken at the monitor.

4.214.2 Source

System-generated, via the Precision Data (RP) Transaction (), or Maintain Precision Data (L61).

4.214.3 Attributes

Type: Character
Length: 20
Required: Yes

4.214.4 Uses

Precision Data
Monitor Precision Summaries
Precision Summary Protocols
Reporting Organization Precision Summaries

4.214.5 Value Assignment

4.214.5.1 Precision Data

- If the method is automated (continuous), and the unit is not a flow unit, and the reported duration is not 24-hour block average, then the class is "Analytical". This class will generally include gaseous criteria pollutants, such as ozone (O3), carbon monoxide (CO), sulfur dioxide (SO2), and nitrogen dioxide (NO2), that were recorded using automated methods.
- If the method is either automated or manual (intermittent), and the unit is a flow unit, then the class is "Flow". This category will generally include particulate criteria pollutants, such as lead (Pb), PM2.5 and PM10, that were recorded using automated methods.
- If the method is manual and the unit is not a flow unit, or the method is automated, the unit is not a flow unit, and the duration is a 24-hour block average, then the class is "Collocated". This category will include particulate criteria pollutants such as PM2.5 (both manual and automated) and PM10 (manual only).

4.214.5.2 Monitor & Reporting Organization Precision Summaries

The *Precision Class* specified for the precision checks that are being aggregated in the summary.

4.215 Precision Date

4.215.1 Description

The calendar date for which the precision check is being reported.

4.215.2 Source

User-specified, via the Precision Data (RP) Transaction (), or Maintain Precision Data (L61).

4.215.3 Attributes

Type: Date
Length: Not Applicable
Required: Yes

4.215.4 Uses

Precision Data

4.216 Precision ID

4.216.1 Description

A sequentially assigned number used to identify a particular precision check from others, when multiple checks are performed on the same day.

4.216.2 Source

User-specified, via the Precision Data (RP) Transaction (), or Maintain Precision Data (L61).

4.216.3 Attributes

Type: Number
Length: 2.0
Required: Yes

4.216.4 Uses

Precision Data

4.217 Precision Sample ID

4.217.1 Description

The unique identity (ID) number of the reference sample used to challenge the instrument.

4.217.2 Source

User-specified, via the Precision Data (RP) Transaction (), or Maintain Precision Data (L61).

4.217.3 Attributes

Type: Character
Length: 10
Required: No

4.217.4 Uses

Precision Data

4.218 Precision Scale

4.218.1 Description

Indicates the number of places to the right of the decimal point provided by the data owner at submission, including trailing zeros. If the Actual Value and Indicated Value have differing scales, then the larger of the two is used.

4.218.2 Source

System-generated, via the Precision Data (RP) Transaction (), or Maintain Precision Data (L61).

4.218.3 Attributes

Type: Number
Length: 1.0
Required: Yes

4.218.4 Uses

Precision Data

4.219 Primary Monitor Begin Date

4.219.1 Description

The date on which the primary monitor period begins.

4.219.2 Source

User-specified via the Maintain Site form.

4.219.3 Attributes

Type: Date
Length: Not Applicable
Required: Yes

4.219.4 Uses

Primary Monitor Period

4.220 Primary Monitor End Date

4.220.1 Description

The date on which the primary monitor period ends.

4.220.2 Source

User-specified via the Maintain Site form.

4.220.3 Attributes

Type: Date
Length: Not Applicable
Required: Yes

4.220.4 Uses

Primary Monitor Period

4.221 Primary POC

4.221.1 Description

The POC for the monitor assigned as the primary monitor for a site.

4.221.2 Source

User-specified via the Maintain Site form.

4.221.3 Attributes

Type: Number
Length: 2.0
Required: Yes

4.221.4 Uses

Primary Monitor Periods

4.222 Primary Qualifier Code

4.222.1 Description

The primary qualifier for a raw, composite, or blank sample.

4.222.2 Source

User-specified or system-generated, via the Raw Data (RD), Composite Data (RC), or Blank Data (RB) Transactions, or AQS Maintain Raw Data (L54), Maintain Composite Data (L51), or Maintain Blank Data (L53).

4.222.3 Attributes

Type: Character
Length: 8
Required: No

4.222.4 Uses

Raw Data
Composite Data
Blank Data

4.222.5 Value Assignment

If the user specifies a Null Data code, that value is always assigned, else, it is replicated from the corresponding *Qualifier Details (Raw, Composite, or Blank)* for the record, according to the following hierarchy:

1. Exceptional Event codes,
2. Natural Event codes,
3. The code for "Validated Value",
4. Any other qualifier code.

Note: Null Data codes are not valid for *Composite Data.*

4.223 Primary Qualifier Type

4.223.1 Description

The qualifier type of the *Primary Qualifier Code*.

4.223.2 Source

User-specified or system-generated, via the Raw Data (RD), Composite Data (RC), or Blank Data (RB) Transactions, or AQS Maintain Raw Data (L54), Maintain Composite Data (L51), or Maintain Blank Data (L53).

4.223.3 Attributes

Type: Character
Length: 8
Required: No

4.223.4 Uses

Raw Data
Composite Data
Blank Data

4.224 Primary Sampler Indicator

4.224.1 Description

Indicates whether the monitor is the primary or duplicate monitor in a collocated monitor pair.

4.224.2 Source

User-specified, via the Monitor Collocation Period (MJ) Transaction (), or Maintain Monitor (L2).

4.224.3 Attributes

Type: Character
Length: 1
Required: Yes

4.224.4 Uses

Monitor Collocation Periods

4.224.5 Value Assignment

The value must be "Y", which indicates the monitor is the primary sampler, or "N", which indicates that it is the duplicate sampler.

4.225 Primary Sampler Monitor ID

4.225.1 Description

The monitor ID of the duplicate sampler's primary sampler in the collocated pair.

4.225.2 Source

System-generated, via the Monitor Collocation Period (MJ) Transaction (), or Maintain Monitor (L2).

4.225.3 Attributes

Type: Character
Length: 20
Required: No

4.225.4 Uses

Monitor Collocation Periods

4.225.5 Value Assignment

Must be valued when *Primary Sampler Indicator* is "N"; may not be valued when it is "Y".

4.226 Probe Height

4.226.1 Description

The height of the sampling probe from the ground in meters.

4.226.2 Source

User-specified via the Basic Monitor Information (MA) Transaction, or the Maintain Monitor form.

4.226.3 Attributes

Type: Number
Length: 8.2
Required: No

4.226.4 Uses

Monitors

4.227 Probe Horizontal Distance

4.227.1 Description

The horizontal distance, in meters, of the probe from its supports.

4.227.2 Source

User-specified via the Basic Monitor Information (MA) Transaction, or the Maintain Monitor form.

4.227.3 Attributes

Type: Number
Length: 8.2
Required: No

4.227.4 Uses

Monitors

4.228 Probe Location

4.228.1 Description

The location of the sampling probe.

4.228.2 Source

User-specified via the Basic Monitor Information (MA) Transaction, or the Maintain Monitor form.

4.228.3 Attributes

Type: Character
Length: 20
Required: No

4.228.4 Uses

Monitors

4.228.5 Value Assignment

The value must exist on the *Probe Locations* view.

4.229 Probe Obstruction Height

4.229.1 Description

The height, in meters, of the top of the obstruction above the probe.

4.229.2 Source

User-specified via the Monitor Obstruction Information (MH) Transaction, or the Maintain Monitor form.

4.229.3 Attributes

Type: Number
Length: 8.2
Required: Yes

4.229.4 Uses

Probe Obstructions

4.230 Probe Obstruction Type

4.230.1 Description

The type of obstruction responsible for the restricted airflow of a monitor.

4.230.2 Source

User-specified via the Monitor Obstruction Information (MH) Transaction, or the Maintain Monitor form.

4.230.3 Attributes

Type: Character
Length: 20
Required: Yes

4.230.4 Uses

Probe Obstructions

4.230.5 Value Assignment

The value must exist on the *Probe Obstruction Types* view

4.231 Probe Vertical Distance

4.231.1 Description

The vertical distance, in meters, of the probe from its supports.

4.231.2 Source

User-specified via the Basic Monitor Information (MA) Transaction, or the Maintain Monitor form.

4.231.3 Attributes

Type: Number
Length: 8.2
Required: No

4.231.4 Uses

Monitors

4.232 Project Class

4.232.1 Description

The code for the type of sampling performed by the monitor.

4.232.2 Source

User-specified via the Basic Monitor Information (MA) Transaction, or the Maintain Monitor form.

4.232.3 Attributes

Type: Character
Length: 8
Required: No

4.232.4 Uses

Monitors

4.232.5 Value Assignment

The value must exist on the *Project Types* view.

4.233 Qualifier Code

4.233.1 Description

Qualifications used to describe the sample data point. They may document exceptional data events that are natural or anthropogenic, or quality assurance exceptions.

4.233.2 Source

User-specified, via the Raw Data (RD), Blank Data (RB), or Composite Data (RC) Transactions, or AQS Maintain Raw Data (L54), Maintain Blank Data (L53), or Maintain Composite Data (L51).

4.233.3 Attributes

Type: Character
Length: 8
Required: Yes

4.233.4 Uses

Raw Qualifier Details
Composite Qualifier Details
Blank Qualifier Details
Data records can contain up to 10 qualifier codes

4.233.5 Value Assignment

The value must exist on the *Qualifiers* view.
The value must be a type allowed for the pollutant parameter.

4.234 Quarter Represented

4.234.1 Description

The quarter represented by the audit. For a particular audit, indicates the actual dates (Quarter) in which the sample was collected. Valid values are Q1, Q2, Q3, or Q4, and must be less than or equal to the quarter of the analysis, or any quarter of the previous year.

The Quarter Represented is required only for lead (Pb) analytical audits performed in the laboratory to link the quarter to the concentration samples analyzed during the audits.

If the user does not enter a value for this field, then the system will generate a value for this field same as the Accuracy Date quarter.

4.234.2 Source

User-specified or system-generated, via the Accuracy Data (RA) Transaction, or Maintain Accuracy Data (L62).

4.234.3 Attributes

Type: Number
Length: 1.0
Required: Yes

4.234.4 Uses

Accuracy Data

4.234.5 Value Assignment

4.234.5.1 Lead

User-specified, via the Accuracy Data (RA) Transaction, or AQS Maintain Accuracy Data (L62). Value is either the year of or the year prior to the Accuracy Date.

4.234.5.2 Default

Derived from the record's *Accuracy Date* value.

4.235 Recording Mode

4.235.1 Description

A term that describes how the methods recorded the source samples.

4.235.2 Source

System-generated, via the Accuracy Data (RA) or Precision Data (RP) Transactions, or AQS Maintain Precision Data (L61) or Maintain Accuracy Data (L62).

4.235.3 Attributes

Type: Character
Length: 30
Required: Yes

4.235.4 Uses

Monitor Precision Summaries
Reporting Organization Precision Summaries
Monitor Accuracy Summaries
Accuracy Summary Protocols
Reporting Organization Accuracy Summaries

4.235.5 Value Assignment

The possible values are: CONTINUOUS (i.e., Automated), and INTERMITTENT (i.e., Manual). The value is derived from the applicable methodology records.

4.236 Reference Point

4.236.1 Description

A term that describes the place for which locational coordinates were determined.

This data element is required by EPA Locational Data Policy. More information regarding EPA=s data standards and policies may be found on EPA's Environmental Data Registry (EDR) Website (http://www.epa.gov/edr/).

4.236.2 Source

System-generated via the Basic Site Information (AA) Transaction, or The Maintain Site form..

4.236.3 Attributes

Type: Character
Length: 50
Required: Yes

4.236.4 Uses

Sites

4.236.5 Value Assignment

Always “MONITORING POINT”.

4.237 Regulation Code

4.237.1 Description

A code that represents an EPA regulation for which compliance documentation is required.

4.237.2 Source

User-specified via the Monitor Regulation Compliance (MI) Transaction, or the Maintain Monitor form.

4.237.3 Attributes

Type: Character
Length: 8
Required: Yes

4.237.4 Uses

Monitor Regulatory Compliances

4.237.5 Value Assignment

Code	Description
RM	Reference Method Used
SC	Siting Criteria Met
QC	Quality Assurance Criteria Met
FC	First PM10 Exceedance Correction
ST	Short Term Satisfied

4.238 Reported Sample Value

4.238.1 Description

The value of an observation being reported.

4.238.2 Source

User-specified via the Raw Data (RD) or Composite Data (RC) Transactions, AQS Maintain Raw Data (L54), or AQS Maintain Composite Data (L51).

4.238.3 Attributes

Type: Number
Length: 5.5
Required: No

4.238.4 Uses

Raw Data
Composite Data

4.239 Reported Scale

4.239.1 Description

Indicates the number of places to the right of the decimal point provided by the data owner at submission, including trailing zeros.

4.239.2 Source

System-generated via the Raw Data (RD) or Composite Data (RC) Transactions, AQS Maintain Raw Data (L54), or AQS Maintain Composite Data (L51).

4.239.3 Attributes

Type: Number
Length: 1.0
Required: No

4.239.4 Uses

Raw Data
Composite Data

4.240 Reported Unit

4.240.1 Description

The dimensional system in which a pollutant concentration or parameter reading is expressed.

4.240.2 Source

User-specified via the Monitor Protocol (MK), Raw Data (RD), or Composite Data (RC) Transactions, or the Maintain Monitor form.

4.240.3 Attributes

Type: Character
Length: 3
Required: Yes

4.240.4 Uses

Monitor Protocols

4.240.5 Value Assignment

The value must exist on the *Units* view

4.241 Reporting Organization

4.241.1 Description

A code identifying the agency that generated the source precision or accuracy data for the summary.

4.241.2 Source

System-generated, via the Accuracy Data (RA) or Precision Data (RP) Transactions, or AQS Maintain Precision Data (L61) or Maintain Accuracy Data (L62).

4.241.3 Attributes

Type: Character
Length: 8
Required: Yes

4.241.4 Uses

Monitor Precision Summaries
Precision Summary Protocols
Reporting Organization Precision Summaries
Monitor Accuracy Summaries
Accuracy Summary Protocols
Reporting Organization Accuracy Summaries

4.242 Required Collection Frequency Begin Date

4.242.1 Description

The date on which the Required Collection Frequency (RCF) went into effect.

4.242.2 Source

User-specified via the Monitor Sampling Schedule (MF) Transaction, or the Maintain Monitor form.

4.242.3 Attributes

Type: Date
Length: Not Applicable
Required: Yes

4.242.4 Uses

Required Collection Frequencies
Sample Schedules

4.243 Required Collection Frequency Code

4.243.1 Description

The Required Collection Frequency (RCF), required by either Photochemical Assessment Monitoring System (PAMS) regulations for organic compounds: PM-2.5 or PM-10 monitors.

4.243.2 Source

User-specified via the Monitor Sampling Schedule (MF) Transaction, or the Maintain Monitor form.

4.243.3 Attributes

Type: Character
Length: 8
Required: Yes

4.243.4 Uses

Required Collection Frequencies

4.243.5 Value Assignment

The value must exist on the *Collection Frequencies* view.

4.244 Required Collection Frequency End Date

4.244.1 Description

The date on which the Required Collection Frequency (RCF) ended.

4.244.2 Source

User-specified via the Monitor Sampling Schedule (MF) Transaction, or the Maintain Monitor form.

4.244.3 Attributes

Type: Date
Length: Not Applicable
Required: No

4.244.4 Uses

Required Collection Frequencies

4.245 Road Type

4.245.1 Description

The type of road or street being described.

4.245.2 Source

User-specified via the Site Street Information (AB) Transaction, or The Maintain Site form..

4.245.3 Attributes

Type: Character
Length: 20
Required: Yes

4.245.4 Uses

Tangent Roads

4.245.5 Value Assignment

The value must exist on the *Road Types* view

4.246 Sample Date

4.246.1 Description

The calendar date on which the sample data was recorded.

4.246.2 Source

User-specified via the Raw Data (RD) Transaction, or AQS Maintain Raw Data (L51).

4.246.3 Attributes

Type: Date
Length: 8
Required: Yes

4.246.4 Uses

Forms and Reports

4.246.5 Value Assignment

On input: Coupled with Sample Time to set Sample Date/Time
On output: Extracted from Sample Date/Time

4.247 Sample Date/Time

4.247.1 Description

The date and time for which the observation is being reported.

4.247.2 Source

User-specified via the Raw Data (RD) Transaction, or AQS Maintain Raw Data (L54).

4.247.3 Attributes

Type: Date
Length: Not Applicable
Required: Yes

4.247.4 Uses

Raw Data
Raw Qualifier Details

4.248 Sample Residence Time

4.248.1 Description

The time in seconds for the sample to move from the probe inlet to the monitor.

4.248.2 Source

User-specified via the Basic Monitor Information (MA) Transaction, or the Maintain Monitor form.

4.248.3 Attributes

Type: Number
Length: 8.2
Required: No

4.248.4 Uses

Monitors

4.249 Sample Schedule Month

4.249.1 Description

The month number for which a Monthly Required Collection Frequency applies.

4.249.2 Source

System-generated via the Monitor Sampling Schedule (MF) Transaction, or the Maintain Monitor form.

4.249.3 Attributes

Type: Number
Length: 2.0
Required: Yes

4.249.4 Uses

Sample Schedules

4.249.5 Value Assignment

Number	Month
1	January
2	February
3	March
4	April
5	May
6	June
7	July
8	August
9	September
10	October
11	November
12	December

4.250 Sample Time

4.250.1 Description

The 24-hour clock time at which the sampling for the reported observation began, in standard time at the location of the monitoring site.

4.250.2 Source

User-specified via the Raw Data (RD) Transaction, or AQS Maintain Raw Data (L51).

4.250.3 Attributes

Type: Date
Length: 5
Required: Yes

4.250.4 Uses

Forms and Reports

4.250.5 Value Assignment

On input: Coupled with Sample Date to set Sample Date/Time
On output: Extracted from Sample Date/Time

4.251 Schedule Exemption Indicator

4.251.1 Description

Indicates whether the sampling schedule differs from that required by the standard, by approval of the Regional Administrator.

4.251.2 Source

User-specified via the Basic Monitor Information (MA) Transaction, or the Maintain Monitor form.

4.251.3 Attributes

Type: Character
Length: 1
Required: No

4.251.4 Uses

Monitor Pollutant Areas

4.251.5 Value Assignment

4.251.5.1 Monitor Planning Areas

The field may be "Y" and "N" for Monitor Planning Areas.

4.251.5.2 Default

Not valued.

4.252 Screening Group Number

4.252.1 Description

The number for the screening group that created the monitor, i.e., its owner.

4.252.2 Source

System-generated via the Basic Monitor Information (MA) Transaction, or the Maintain Monitor form.

4.252.3 Attributes

Type: Number
Length: 12.0
Required: Yes

4.252.4 Uses

Monitors

4.252.5 Value Assignment

The value must exist on the *Screening Groups* view.

4.253 Sequence Number

4.253.1 Description

The sequential identification number used to distinguish Comment Texts for a specific monitor, site, or qualifier detail.

4.253.2 Source

User-specified via the Maintain Site form, Maintain Monitor (L2), Maintain Raw Data (L54), or Maintain Composite Data (L51).

4.253.3 Attributes

Type: Number
Length: 12.0
Required: Yes

4.253.4 Uses

Comments

4.254 Session Date

4.254.1 Description

The date and time of the AQS session under which the sample point was submitted.

4.254.2 Source

System-generated via Raw Data (RD) or Composite Data (RC) Transactions, or AQS Maintain Raw Data (L54) or Maintain Composite Data (L51).

4.254.3 Attributes

Type: Date
Length: Not Applicable
Required: No

4.254.4 Uses

Raw Data
Composite Data

4.254.5 Value Assignment

4.254.5.1 Pre-Production Status

May be valued when the *Status Indicator* is "R" or "S".

4.254.5.2 Production Status

May not be valued when the *Status Indicator* is "P".

4.255 Session Screening Group

4.255.1 Description

The number of the AQS session screening group under which the sample point was submitted.

4.255.2 Source

System-generated via Raw Data (RD) or Composite Data (RC) Transactions, or AQS Maintain Raw Data (L54) or Maintain Composite Data (L51).

4.255.3 Attributes

Type: Number
Length: 12.0
Required: No

4.255.4 Uses

Raw Data
Composite Data
Monitor Protocols

4.255.5 Value Assignment

4.255.5.1 Pre-Production Status

May be valued when the *Status Indicator* is "R" or "S". The value must exist on the *Screening Groups* view.

4.255.5.2 Production Status

May not be valued when the *Status Indicator* is "P".

4.256 Session User ID

4.256.1 Description

The user of the AQS session under which the sample point was submitted.

4.256.2 Source

System-generated via Raw Data (RD) or Composite Data (RC) Transactions, or AQS Maintain Raw Data (L54) or Maintain Composite Data (L51).

4.256.3 Attributes

Type: Character
Length: 40
Required: No

4.256.4 Uses

Raw Data
Composite Data
Monitor Protocols

4.256.5 Value Assignment

4.256.5.1 Pre-Production Status

May be valued when the *Status Indicator* is "R" or "S". The value must exist on the *Airs User Profiles* view.

4.256.5.2 Production Status

May not be valued when the *Status Indicator* is "P".

4.257 Site ID

4.257.1 Description

A numeric identifier (ID) that uniquely identifies each air monitoring site within a county, and if it is a tribal site, within all counties included in a tribal area. There is no requirement that *Site IDs* be assigned continuously or in any particular order. Regional or local organizations are thus free to allocate *Site IDs* in any way they choose, as long as there is no duplication within a county or the counties that include a common tribal area.

A specific *Site ID* is associated with a specific physical location and address. Any change in address requires a new *Site ID* to be assigned. This address change could include a change from the roof of one building to another. A change in location on the same roof should not normally require a new *Site ID*. Although an address change would routinely mean a new *Site ID*, some changes that do not change the site's location in respect to surrounding sources and its measurement scale would require no change. An EPA regional office should be consulted for assistance in determining whether a new site ID is required.

If a new *Site ID* is needed for a site not operated by the air pollution control agency, that agency should be contacted to assist in the ID assignment, to ensure that the ID is unique within the county and, if appropriate, the ajoining counties sharing a common tribal area. In other words, when a new *Site ID* is assigned, it must be different from any other *Site ID* already existing for that combination of *State Code* and *County Code* and *Tribal Area*.

4.257.2 Source

User-specified via the Basic Site Information (AA) Transaction, or The Maintain Site form..

4.257.3 Attributes

Type: Character
Length: 4
Required: Yes

4.257.4 Uses

Sites

4.258 Source Indicator

4.258.1 Description

Identifies the source (primary or collocated) of the site daily value.

4.258.2 Source

System-generated via the Post process or when updating Primary Monitor Periods from the application.

4.258.3 Attributes

Type: Character
Length: 1
Required: No

4.258.4 Uses

Site Daily Values

4.259 Source of Traffic Count

4.259.1 Description

The method by which the traffic volume/flow count was obtained.

4.259.2 Source

User-specified via the Site Street Information (AB) Transaction, or The Maintain Site form..

4.259.3 Attributes

Type: Character
Length: 50
Required: No

4.259.4 Uses

Tangent Roads

4.259.5 Value Assignment

The value must exist on the *Traffic Volume Sources* view.

4.260 Source Scale

4.260.1 Description

Identifies the ratio of the map or cartographic product to the true location. The data element for scale should be the X value of the 1:X ratio (e.g., if the scale is 1:24,000, the value of the scale data element should be 24,000). The United States Geological Survey 1:24,000 is usually the smallest reasonable scale for locating sub-facility points, such as stacks or pipes. The relative accuracies of maps as a locational tool decreases as the X value increases. This field is required when the Horizontal Collection Method is not based on GPS but upon use of a map and photos. EPA Locational Data Policy requires this data element for maps and photos. More information regarding EPA's data standards and policies may be found on EPA's Environmental Data Registry (EDR) Website (http://www.epa.gov/edr/)..

4.260.2 Source

User-specified via the Basic Site Information (AA) Transaction, or The Maintain Site form.

4.260.3 Attributes

Type: Number
Length: 12.0
Required: Conditionally -- It is required when a site's coordinates are derived from a map or photo, but not for GPS methods.

4.260.4 Uses

Sites

4.260.5 Value Assignment

This field is required when the *Horizontal Collection Method* is based upon a map or a photo.

4.261 Spatial Average Indicator

4.261.1 Description

Indicates whether spatial averaging is to be performed for the all-individual annual weighted means for sites that are flagged and in the same community-monitoring zone.

4.261.2 Source

User-specified via the Basic Monitor Information (MA) Transaction, or the Maintain Monitor form.

4.261.3 Attributes

Type: Character
Length: 1
Required: No

4.261.4 Uses

Monitor Pollutant Areas

4.261.5 Value Assignment

4.261.5.1 Monitor Pollutant Areas

The field may be "Y" and "N" for Monitor Planning Areas.

4.261.5.2 Default

Not valued.

4.262 Standard Deviation (Monitor Precision Summary)

4.262.1 Description

The measure of the dispersion about the central tendency of a pollutant that is the square root of the precision mean of the squares of the variation of each Relative Percent Differences of a value pair from the precision mean of the Relative Percent Differences of the value pairs for the time period.

4.262.2 Source

System-generated, via the Precision Data (RP) Transaction, or AQS Maintain Precision Data (L61).

4.262.3 Attributes

Type: Number
Length: 6.4
Required: Yes

4.262.4 Uses

Monitor Precision Summaries

4.262.5 Value Assignment

4.262.5.1 Analytical & Flow

$$S = \sqrt{\frac{\left(\left(n * \sum_{i=1}^{n} d_i^{\,2}\right) - \left(\sum_{i=1}^{n} d_i\right)^2\right)}{\left(n * (n-1)\right)}}$$

where:

S = standard deviation,
d_i = *Percent Difference* of a analytical or flow precision check,
n = number of gaseous or flow checks (i.e., *Count of Precision Checks (Monitor Precision Summary)*),

and $n > 1$.

If $n = 1$, then the standard deviation is assigned to be 0.

4.262.5.2 Collocated (PM2.5)

Standard deviation is not computed for collocated PM2.5.

4.262.5.3 Collocated (Other)

$$S = \sqrt{\frac{\left(\left(n * \sum_{i=1}^{n} d_i^2\right) - \left(\sum_{i=1}^{n} d_i\right)^2\right)}{\left(n * (n - 1)\right)}}$$

where:

S = standard deviation,
d_i = *Percent Difference* of a valid collocated pair,
n = *Count of Valid Collocated Data Pairs (Monitor Precision Summary)*,

and $n > 1$.

If $n = 1$, then the standard deviation is assigned to be 0.

4.263 Standard Deviation (Reporting Organization Accuracy Summary)

4.263.1 Description

The measure of the dispersion about the central tendency of a pollutant that is the square root of the precision mean of the squares of the variation of each Relative Percent Differences of a value pair from the precision mean of the Relative Percent Differences of the value pairs for the time period.

4.263.2 Source

System-generated, via the Accuracy Data (RA) Transaction, or Maintain Accuracy Data (L62).

4.263.3 Attributes

Type: Number
Length: 7.5
Required: No

4.263.4 Uses

Reporting Organization Accuracy Summaries

4.263.5 Value Assignment

$$S = \sqrt{\frac{\left(\left(n * \sum_{i=1}^{n} d_i^{\,2}\right) - \left(\sum_{i=1}^{n} d_i\right)^2\right)}{\left(n * (n-1)\right)}}$$

where:

S = standard deviation,
d_i = *Percent Difference* of a analytical or flow audit,
n = *Count of Accuracy Audits (Reporting Organization Accuracy Summary)*.

If either quarter in either half of the year has an *Count of Accuracy Audits (Reporting Organization Accuracy Summary)* of 1, then the source data for both quarters in that half will be merged for purposes of calculating the standard deviation, and reported with the second quarter of the half (i.e., Q2 or Q4). In this case, there will be no value for the corresponding first quarter in the half (i.e., Q1 or Q3)

4.264 Standard Deviation (Reporting Organization Precision Summary)

4.264.1 Description

The measure of the dispersion about the central tendency of a pollutant that is the square root of the precision mean of the squares of the variation of each Relative Percent Differences of a value pair from the precision mean of the Relative Percent Differences of the value pairs for the time period.

4.264.2 Source

System-generated via the Precision Data (RP) Transaction, or AQS Maintain Precision Data (L61).

4.264.3 Attributes

Type: Number
Length: 6.4
Required: No

4.264.4 Uses

Reporting Organization Precision Summaries

4.264.5 Value Assignment

4.264.5.1 Analytical & Flow

$$S = \sqrt{\frac{\left(\left(n * \sum_{i=1}^{n} d_i^2\right) - \left(\sum_{i=1}^{n} d_i\right)^2\right)}{\left(n * (n - k)\right)}}$$

where:

S = standard deviation,
d_i = *Percent Difference* of a analytical or flow precision check,
n = number of gaseous or flow checks (i.e., Count of Precision Checks (Reporting Organization Precision Summary)),
k = number of monitors (i.e. Count of Analyzers).

and $n > k$.

If $n = k$, then the standard deviation is assigned to be 0.

4.264.5.2 Collocated (PM2.5)

Standard deviation is not computed for collocated PM2.5.

4.264.5.3 Collocated (Other)

$$S = \sqrt{\frac{\left(\left(n * \sum_{i=1}^{n} d_i^2\right) - \left(\sum_{i=1}^{n} d_i\right)^2\right)}{\left(n*(n-k)\right)}}$$

where:

S = standard deviation,
d_i = *Percent Difference* of a valid collocated pair,
n = Count of Valid Collocated Data Pairs (Reporting Organization Precision Summary),
k = number of collocated sites (i.e. Count of Collocated Sites).

and $n > k$.

If $n = k$, then the standard deviation is assigned to be 0.

4.264.5.4 Federal Reference Method (FRM) Audit

$$S = \sqrt{\frac{\left(\left(n * \sum_{i=1}^{n} d_i^2\right) - \left(\sum_{i=1}^{n} d_i\right)^2\right)}{\left(n*(n-1)\right)}}$$

where:

S = standard deviation,
d_i = *Percent Difference* of an FRM audit pair (2.1.3 Percent Difference),
n = number of FRM audits (i.e., *Count of Precision Checks (Reporting Organization Precision Summary)*),

and $n > 1$.

If $n = 1$, then the standard deviation is assigned to be 0.

4.265 Standard Horizontal Datum

4.265.1 Description

It has been decided to compute a "standard" location representation for all site location/coordinates, so that data from AQS can be more easily used for mapping and geospatial analysis. This is accomplished by the EPA master geospatial database (Envirofacts), which converts the user-provided coordinates into Latitude and Longitude with the standard horizontal datum. The datum, WGS84 has been selected for this purpose. (i.e. This field will always be WGS84.)

4.265.2 Source

System derived.

4.265.3 Attributes

Type: Character
Length: 120
Required: Yes

4.265.4 Uses

Sites

4.265.5 Value Assignment

Always assigned the value WGS84.

4.266 Standard Latitude

4.266.1 Description

It has been decided to compute a "standard" location representation for all site location/coordinates, so that data from AQS can be more easily used for mapping and geospatial analysis. This is accomplished by converting the user-provided coordinates into Latitude and Longitude with the standard horizontal datum, WGS84.

4.266.2 Source

Derived from the EPA master geospatial database (Envirofacts) by using the user provided Latitude and Longitude or (UTM) coordinates, on the Basic Site Information (AA) Transaction, or AQS Maintain Site form.

4.266.3 Attributes

Type: Number
Length: 2.6
Required: Yes

4.266.4 Uses

Sites

4.267 Standard Longitude

4.267.1 Description

. It has been decided to compute a "standard" location representation for all site location/coordinates, so that data from AQS can be more easily used for mapping and geospatial analysis. This is accomplished by converting the user-provided coordinates into Latitude and Longitude with the standard horizontal datum, WGS84.

4.267.2 Source

Derived from the EPA master geospatial database (Envirofacts) by using the user provided Latitude and Longitude or (UTM) coordinates, on the Basic Site Information (AA) Transaction, or AQS Maintain Site form.

4.267.3 Attributes

Type: Number
Length: 3.6
Required: Yes

4.267.4 Uses

Sites

4.268 Standard Sample Value

4.268.1 Description

The *Reported Sample Value* converted to a value in the *Standard Unit* for the *Parameter*.

4.268.2 Source

System-generated via the Raw Data (RD) or Composite Data (RC) Transactions, AQS Maintain Raw Data (L54), or AQS Maintain Composite Data (L51).

4.268.3 Attributes

Type: Number
Length: 5.5
Required: No

4.268.4 Uses

Raw Data
Composite Data

4.268.5 Value Assignment

Each *Reported Unit-Standard Unit* combination has a record in the *Unit Conversions* view. That record specifies the values to be used in the following formula:

$$v = s + (l * r * m^i * c^j)$$

where:

v = the value in standard units (*Standard Sample Value*),
s = the scalar factor,
l = the linear factor,
r = the sample value in reported units (*Reported Sample Value*),
m = the molecular weight of the *Parameter*,
i = indication of whether molecular weight applies, (0 means "No", 1 means "Yes"),
c = the carbon count of the *Parameter*,
j = indication of whether carbon count applies, (0 means "No", 1 means "Yes").

When the calculated *Standard Sample Value* is less than the applicable method detectable limit (MDL) and the parameter is flagged for substitution for values below the applicable MDL, then the calculated value is superseded by a value equal to ½ the applicable MDL. When such a substitution occurs, the *Half MDL Substitution Indicator* is set to "Y".

For any sample, the applicable MDL generally is that which is assigned to the method by the EPA. This EPA-assigned, i.e., federal, MDL, may be superseded by an alternative MDL. An *Alternate MDL* is specified by the submitting agency as part of a raw data transaction. This *Alternate MDL* is stored with the corresponding *Monitor Protocol*, and is converted to the *Standard Unit*, using the above formula, for comparison to the corresponding *Standard Sample Value*.

A *Standard Sample Value* that is either greater than, or equal to, the applicable MDL, or below that applicable MDL but flagged for rescaling of ½ MDL substitutions, is subject to rescaling. If the applicable MDL is the Federal MDL, or the applicable MDL is the *Alternate MDL* and parameter is not flagged for ½ MDL substitution for values below the applicable MDL, then the scaling factor is that scale which is assigned to the method by the EPA, (i.e., the summary scale). If the applicable MDL is an *Alternate MDL* and the parameter is flagged for ½ MDL substitutions, then the scaling factor is the number of digits of that *Alternate MDL* when it is converted to the *Standard Unit*. (Note: The maximum possible scale is 5.) Rescaling is either rounding or truncation of the converted value to the number of decimal places specified in the summary scale. Each parameter has a *Conversion Indicator* field, which specifies whether truncation or rounding applies. (Rounding is the default.)

4.269 Standard Scale

4.269.1 Description

Indicates the number of places to the right of the decimal point for the Standard Sample Value, including trailing zeros.

4.269.2 Source

System-generated via the Raw Data (RD) or Composite Data (RC) Transactions, AQS Maintain Raw Data (L54), or AQS Maintain Composite Data (L51).

4.269.3 Attributes

Type: Number
Length: 1.0
Required: No

4.269.4 Uses

Raw Data
Composite Data

4.269.5 Value Assignment

Replicated from the Summary Scale for the Parameter and Method Code on the Sampling Methodologies view.

4.270 Standard Unit

4.270.1 Description

The Standard Unit for the Parameter.

4.270.2 Source

System-generated via the Raw Data (RD) or Composite Data (RC) Transactions, AQS Maintain Raw Data (L54), or AQS Maintain Composite Data (L51).

4.270.3 Attributes

Type: Character
Length: 3
Required: No

4.270.4 Uses

Raw Data
Composite Data

4.270.5 Value Assignment

Replicated from the *Standard Unit* for the *Parameter* on the *Parameters* view.

4.271 State Code

4.271.1 Description

A Federal Information Processing Standards (FIPS) code that identifies one of the 50 states, U. S. territories, Washington, DC, or foreign countries. For batch loading data formats only, it may be set to "TT" to indicate that the County Code/Tribal Code field contains a Tribal Code.

4.271.2 Source

User-specified via the batch Basic Site Information (AA) Transaction, or Maintain Site form. If a user creates a tribal site via either of these two methods, then the State Code is derived from the EPA master geospatial database (Envirofacts) by using the user-specified site location (Latitude and Longitude).

4.271.3 Attributes

Type: Character
Length: 2
Required: Yes

4.271.4 Uses

Sites

4.271.5 Value Assignment

The value must exist on the *States* view.

4.272 Status Indicator

4.272.1 Description

An indication of the status of the record.

4.272.2 Source

System-generated by AQS Load, Stat/CR, Post, Maintain Site (L1), Maintain Monitor (L2), Maintain Raw Data (L54), and Maintain Composite Data (L51).

4.272.3 Attributes

Type: Character
Length: 1
Required: Yes

4.272.4 Uses

Sites
Tangent Roads
Open Paths
Monitors
Monitor Pollutant Areas
Sample Periods
Monitor Type Assignments
Monitor Agency Roles
Monitor Objectives
Required Collection Frequencies
Sample Schedules
Monitor Tangent Roads
Probe Obstructions
Monitor Regulatory Compliances
Monitor Collocation Periods
Monitor Protocols
Raw Data
Composite Data

4.272.5 Value Assignment

Indicator	Description
F	Validated to field-level
R	Relationally complete (Raw & Composite Data Only)
S	Statistically checked (Raw & Composite Data Only)
P	Production
I	Inactive (Raw & Composite Data Only)

4.273 Street Address

4.273.1 Description

Specifies the building/street location of the monitoring site.

4.273.2 Source

User-specified via the Basic Site Information (AA) Transaction, or The Maintain Site form..

4.273.3 Attributes

Type: Character
Length: 240
Required: Yes

4.273.4 Uses

Sites

4.274 Street Name

4.274.1 Description

The name of a street adjacent or near the monitoring site.

4.274.2 Source

User-specified via the Site Street Information (AB) Transaction, or The Maintain Site form..

4.274.3 Attributes

Type: Character
Length: 50
Required: Yes

4.274.4 Uses

Tangent Roads

4.275 Substitute Design Value (Annual)

4.275.1 Description

The measure of a central tendency, computed if and only if the Substituted Annual Mean exists for the present year or one of the prior two years, obtained from the sum of Substituted Annual Mean (of appropriate exceptional data type) for any of the three years when present and the Annual Mean when not present divided by 3.

4.275.2 Source

System-generated via the Post process.

4.275.3 Attributes

Type: Number
Required: No

4.275.4 Uses

Site Design Values

4.275.5 Value Assignment

4.275.5.1 Site-Level PM2.5

$$\sum_{i=1}^{3} u_i \Big/ 3$$

where:

u_i = Site Substitute Annual Mean (if present, else Site-Level Annual Mean), of appropriate exceptional data type

(Format: Rounded to one digit after decimal point)

4.276 Substitute Mean (Annual)

4.276.1 Description

The measure of a central tendency, computed only if a quarterly substituted mean exists for one of the quarters in the year, obtained from the sum of the quarterly substitute mean for each quarter where present or quarterly arithmetic mean where not present (based on appropriate exceptional data type), divided by the number of quarters present in the year.

4.276.2 Source

System-generated via the Post process.

4.276.3 Attributes

Type: Number
Required: No

4.276.4 Uses

Site Annual Summaries

4.276.5 Value Assignment

4.276.5.1 Site-Level PM2.5

$$\sum_{i=1}^{q} u_i \Big/ q$$

where:

i = quarter,
u_i = *Site-Level Quarterly Substitute Mean (if present, else Site-Level Quarterly Arithmetic Mean),* of appropriate exceptional data type
q = number of active quarters.

4.277 Substitute Mean (Quarterly)

4.277.1 Description

The measure of a central tendency, computed only if the actual sample days for a quarter are less than 11, obtained from the sum of the site-level daily arithmetic means in the quarter when present or the three year minimum site-level daily arithmetic mean in the corresponding quarter when not present (based on appropriate exceptional data type), divided by 11.

4.277.2 Source

System-generated via the Post process.

4.277.3 Attributes

Type: Number
Required: No

4.277.4 Uses

Site Quarterly Summaries

4.277.5 Value Assignment

4.277.5.1 Site-Level PM2.5

$$(SUM(DV) + MD \times Three_year_\min) \Big/ 11$$

Where:

- DV = site-level daily arithmetic means in the quarter (on any day, not just scheduled days) of appropriate exceptional data type
- MD = 11 – the number of Actual Sample Days
- Three_Year_Min = minimum site-level daily arithmetic mean in the corresponding calendar quarter for the three year period.

(Format: No rounding or truncation)

4.278 Summary Criteria Indicator (Annual)

4.278.1 Description

An indication of whether minimum summary criteria have been by the monitor for the year.

4.278.2 Source

System-generated via the Post process.

4.278.3 Attributes

Type: Character
Length: 3
Required: No

4.278.4 Uses

Annual Summaries

4.278.5 Value Assignment

The possible values are "Y" and "N".

4.278.5.1 8-Hour Ozone

Minimum summary criteria are met when the percentage derived from the following formula, rounded to an integer, is greater than, or equal to, 75%:

$$p = \left({(v + a)}/{r} \right) * 100$$

where:

p = percentage,
v = *Count of Valid Days*,
a = *Count of Missing Days Assumed Less Than Standard*,
r = *Count of Required Days*.

4.278.5.2 8-Hour Carbon Monoxide, 3-Hour and 24-Hour Sulfur Dioxide

Minimum summary criteria are met where the annual Count of Observations is greater than 0.

4.278.5.3 1 – Hour Sulfur Dioxide

A minimum criterion is met when *Count of complete quarters* is equal to 4.

4.278.5.4 1 – Hour Nitrogen Dioxide

- Annual Standard: A minimum criterion is met when *Percent of Observations (Annual)* is greater than, or equal to, 75%.
- 1-Hour Standard: A minimum criterion is met when *Count of complete quarters* is equal to 4.

4.278.5.5 Default Hourly

Minimum summary criteria are met when the *Percent of Observations (Annual)* is greater than, or equal to, 75%.

4.278.5.6 Default Daily & 24-Hour PM10 & PM2.5

For daily, 24-Hour PM10, 24-Hour PM2.5, weekly, monthly, composite weekly, and composite monthly data, annual minimum summary criteria are met when each of the four quarters in the year have met quarterly minimum summary criteria, i.e. the *Summary Criteria Indicator (Quarterly)* values are "Y".

For quarterly, composite quarterly, and composite seasonal data, minimum summary criteria are met when the *Count of Observations (Annual)* is greater than, or equal to, 3.

4.279 Summary Criteria Indicator (Daily)

4.279.1 Description

An indication of whether minimum summary criteria have been by the monitor for the day.

4.279.2 Source

System-generated via the Post process.

4.279.3 Attributes

Type: Character
Length: 3
Required: No

4.279.4 Uses

Daily Summaries

4.279.5 Value Assignment

4.279.5.1 1-Hour Ozone

Minimum summary criteria are met when there were either at least nine samples from 9:01 AM Local Standard Time (LST) to 9:00 PM LST, (i.e., at least 75% of possible hourly samples were measured), or at least one exceedance.

4.279.5.2 8-Hour Ozone

Minimum summary criteria are met where either of the following conditions exists:

- there are at least 18 valid 8-hour averages (i.e., *Count of Observations (Daily)*) for the 24-hour period,
- the Maximum Value (Daily) is greater than the standard (i.e., Count of Primary Exceedances (Daily) >= 1).

4.279.5.3 1-Hour PM10 & PM2.5

Minimum summary criteria are met when the *Percent of Observations (Daily)* is greater than, or equal to, 75%.

4.279.5.4 Default

Not valued.

4.280 Summary Criteria Indicator (3 Monthly)

4.280.1 Description

An indication of whether minimum summary criteria have been by the site for the 3 month period.

4.280.2 Source

System-generated via the Post process.

4.280.3 Attributes

Type: Varchar2
Length: 1
Required: No

4.280.4 Uses

Lead 3 Monthly summaries

4.280.5 Value Assignment

4.280.5.1 Lead

Minimum summary criterion is met when the 3-Month Data Capture Rate is greater than, or equal to, 75%.

4.281 Summary Criteria Indicator (Quarterly)

4.281.1 Description

An indication of whether minimum summary criteria have been by the monitor for the quarter.

4.281.2 Source

System-generated via the Post process.

4.281.3 Attributes

Type: Character
Length: 3
Required: No

4.281.4 Uses

Quarterly Summaries

4.281.5 Value Assignment

4.281.5.1 Daily & 24-Hour PM10 & PM2.5

Minimum summary criteria are met when the *Percent of Observations (Quarterly)* is greater than, or equal to, 75%.

4.281.5.2 1 – Hour Sulfur Dioxide

- Annual Standard: A minimum criterion is met when *Percent of Observations (Quarterly)* is greater than, or equal to, 75%.
- 1-Hour Standard: A minimum criterion is met when *Percent of Days (Quarterly)* is greater than, or equal to, 75%.

4.281.5.3 1 – Hour Nitrogen Dioxide

- Annual Standard: A minimum criterion is met when *Percent of Observations (Quarterly)* is greater than, or equal to, 75%.
- 1-Hour Standard: A minimum criterion is met when *Percent of Days (Quarterly)* is greater than, or equal to, 75%.

4.281.5.4 Default Hourly

Minimum summary criteria are met when the *Percent of Observations (Quarterly)* is greater than, or equal to, 75%.

4.281.5.5 Default Daily

Minimum summary criteria are met for the quarter when the *Count of Observations (Quarterly*) is greater than, or equal to, a duration-specific threshold. Those thresholds are:

Duration	Threshold

Duration	Threshold
Daily	12
Weekly; Composite Weekly	9
Monthly; Composite Monthly	2
Quarterly; Composite Quarterly; Composite Seasonal	1

4.282 Summary Month

4.282.1 Description

The month number (1-12) identifies a monthly or 3 month rolling summary. For 3-month summaries the month number identifies the last month being summarized

4.282.2 Source

System-generated via the Post process.

4.282.3 Attributes

Type: Number
Length: 2.0
Required: Yes

4.282.4 Uses

Lead Site Monthly Summaries
Lead 3 Month Summaries

4.283 Summary Quarter

4.283.1 Description

The quarter number (1-4) identifying a quarterly summary.

4.283.2 Source

System-generated via the Post process.

4.283.3 Attributes

Type: Number
Length: 1.0
Required: Yes

4.283.4 Uses

Quarterly Summaries
Site quarterly Summaries

4.284 Summary Year

4.284.1 Description

The year identifying a summary.

4.284.2 Source

System-generated via the Post process, the Accuracy Data (RA) or Precision Data (RP) Transactions, or AQS Maintain Accuracy Data (L62) or Maintain Precision Data (L61).

4.284.3 Attributes

Type: Number
Length: 4.0
Required: Yes

4.284.4 Uses

Annual Summaries
Quarterly Summaries
Monitor Precision Summaries
Precision Summary Protocols
Reporting Organization Precision Summaries
Monitor Accuracy Summaries
Accuracy Summary Protocols
Reporting Organization Accuracy Summaries
Site Annual Summaries
Site Quarterly Summaries
Site Design Values
Lead Site Monthly Summaries
Lead 3 Month Summaries

4.285 Supporting Agency

4.285.1 Description

Identifies the agency responsible for the operation of the monitoring site.

4.285.2 Source

User-specified via the Basic Site Information (AA) Transaction, or The Maintain Site form..

4.285.3 Attributes

Type: Character
Length: 8
Required: Yes

4.285.4 Uses

Sites

4.285.5 Value Assignment

The value must exist on the *Agencies* view, and, in combination with *State Code*, on the *State Agencies* view.

4.286 Surrogate Indicator

4.286.1 Description

Indicates whether a Total Suspended Particulate (TSP) monitor serves as a surrogate monitor for PM-10.

4.286.2 Source

User-specified via the Basic Monitor Information (MA) Transaction, or the Maintain Monitor form.

4.286.3 Attributes

Type: Character
Length: 1
Required: No

4.286.4 Uses

Monitors

4.286.5 Value Assignment

The valid values are “Y” and “N”.

4.287 Tangent Street Number

4.287.1 Description

Identifies the number of the street around the site for which the data are being submitted. Street number is used to associate detailed street information for the site to streets closest to the monitors at this site.

4.287.2 Source

User-specified via the Site Street Information (AB) Transaction, or The Maintain Site form..

4.287.3 Attributes

Type: Number
Length: 12.0
Required: Yes

4.287.4 Uses

Tangent Roads

4.288 Time Period

4.288.1 Description

Indicates the period of time for which the summary covers.

4.288.2 Source

System-generated via the Accuracy Data (RA) or Precision Data (RP) Transactions, or AQS Maintain Accuracy Data (L62) or Maintain Precision Data (L61).

4.288.3 Attributes

Type: Character
Length: 2
Required: Yes

4.288.4 Uses

Monitor Precision Summaries
Precision Summary Protocols
Reporting Organization Precision Summaries
Monitor Accuracy Summaries
Accuracy Summary Protocols
Reporting Organization Accuracy Summaries

4.288.5 Value Assignment

Time Period	Description
Q1	1st quarter
Q2	2nd quarter
Q3	3rd quarter
Q4	4th quarter
YR	Entire year

4.289 Time Zone

4.289.1 Description

A standard time zone, as established by Section 1 of the Standard Time Act, as amended by Section 4 of the Uniform Time Act of 1966 (15 U.S.C. 261).

4.289.2 Source

User-specified via the Basic Site Information (AA) Transaction, or The Maintain Site form..

4.289.3 Attributes

Type: Character
Length: 30
Required: No

4.289.4 Uses

Sites

4.289.5 Value Assignment

The value must exist on the *Time Zones* view.

4.290 Traffic Count

4.290.1 Description

An estimate of the daily traffic volume on the roadway.

4.290.2 Source

User-specified via the Site Street Information (AB) Transaction, or The Maintain Site form..

4.290.3 Attributes

Type: Number
Length: 12.0
Required: No

4.290.4 Uses

Tangent Roads

4.291 Tribal Code

4.291.1 Description

A Federal Information Processing Standards (FIPS) code that identifies one of the tribal areas. Used for Sites and Monitors owned or managed by Tribal Agencies that are within tribal boundaries. This is a separate data field though in batch load it is used in conjunction with a "TT" State Code value and OVERLAYS a County Code in batch load formats.

4.291.2 Source

User-specified via the Site Information (AA, AB, AC) Transactions, the Monitor Transactions (MA through MK); or The Maintain Site form., Maintain Monitor (L2) and Standard Report Selection (R31).

4.291.3 Attributes

Type: Character
Length: 3
Required: Yes, only for Tribal Sites

4.291.4 Uses

Sites
Tangent Roads
Open Paths

4.291.5 Value Assignment

The value must exist in the TRIBAL_AREAS table.

4.292 Tribal Indicator

4.292.1 Description

A flag, with value "TT", to indicate that this data is for a Native American Tribe, and that the next field identifies a tribal area using the Bureau of Indian Affairs tribal code.

4.292.2 Source

User-specified via batch input transactions.

4.292.3 Attributes

Type: Character
Length: 2
Required: Yes, only for Tribal Sites

4.292.4 Uses

- Batch input transactions.
- Maintain Forms
- Standard Reports

4.292.5 Value Assignment

Must have value "TT".

4.293 Uncertainty Value

4.293.1 Description

The measure of method uncertainty associated with the sample data point, which will include components of both the analytical and the volume uncertainty. No blank corrections are assumed (other than laboratory baseline corrections which are an integral part of each analysis).

4.293.2 Source

User-specified via the Raw Data (RD), Composite Data (RC), or Blank Data (RB) Transactions, AQS Maintain Raw Data (L54), Maintain Blank Data (L53), or AQS Maintain Composite Data (L51).

4.293.3 Attributes

Type: Number
Length: 6.5
Required: No

4.293.4 Uses

Raw Data
Composite Data
Blank Data

4.294 Unrestricted Air Flow Indicator

4.294.1 Description

Indication of whether the flow of air to the monitor is restricted.

4.294.2 Source

User-specified via the Basic Monitor Information (MA) Transaction, or the Maintain Monitor form.

4.294.3 Attributes

Type: Character
Length: 1
Required: No

4.294.4 Uses

Monitors

4.294.5 Value Assignment

Indicator	Description
Y	Flow is unrestricted
N	Flow is restricted by obstructions
W	Flow is restricted unavoidably, and the probe location has been approved by the EPA

4.295 Upper Probability Limit (Reporting Organization Accuracy Summary)

4.295.1 Description

The upper bound of either a probability distribution, or confidence interval, for the applicable population of accuracy audits.

If either quarter in either half of the year has an *Count of Accuracy Audits (Reporting Organization Accuracy Summary)* of 1, then the source data for both quarters in that half will be merged for purposes of calculating the upper probability/confidence limit, and reported with the second quarter of the half (i.e., Q2 or Q4). In this case, there will be no value for the corresponding first quarter in the half (i.e., Q1 or Q3).

4.295.2 Source

System-generated via Accuracy Data (RA) Transaction, or Maintain Accuracy (L61).

4.295.3 Attributes

Type: Number
Length: 6.4
Required: No

4.295.4 Uses

Reporting Organization Accuracy Summaries

4.295.5 Value Assignment

4.295.5.1 Analytical & Flow (Non-PM 2.5)

$$u = D + (S * 1.96)$$

u = upper 95% probability limit, where:
D = Mean (Reporting Organization Accuracy Summaries),
S = Standard Deviation (Reporting Organization Accuracy Summaries).

4.295.5.2 Flow (PM 2.5)

$$u = D + \left(\frac{S * t_{0.975,\, n-1}}{\sqrt{n}} \right)$$

where:

u = upper 95% confidence limit,
D = Mean (Reporting Organization Accuracy Summaries),
S = Standard Deviation (Reporting Organization Accuracy Summaries),
$t_{0.975,\, n-1}$ = the 0.975 quantile of the Student's T distribution with degrees of freedom equal to *n-1,*
n = Count of Accuracy Audits (Reporting Organization Accuracy Summary).

4.296 Upper Probability Limit (Reporting Organization Precision Summary)

4.296.1 Description

The upper bound of either a probability distribution, or confidence interval, for the applicable population of precision checks.

4.296.2 Source

System-generated via Precision Data (RP) Transaction, or Maintain Precision (L62).

4.296.3 Attributes

Type: Number
Length: 6.4
Required: No

4.296.4 Uses

Reporting Organization Precision Summaries

4.296.5 Value Assignment

4.296.5.1 Analytical & Flow (Other)

$$u = D + (S * 1.96)$$

where:

u = upper 95% probability limit,
D = Mean (Reporting Organization Precision Summaries),
S = Standard Deviation (Reporting Organization Precision Summaries).

4.296.5.2 Flow (PM 2.5)

$$u = D + \left(\frac{S * t_{0.975,\, n-1}}{\sqrt{n}} \right)$$

where:

u = upper 95% confidence limit,
D = *Mean (Reporting Organization Precision Summaries)*,
S = *Standard Deviation (Reporting Organization Precision Summaries)*
$t_{0.975,\, n-1}$ = the 0.975 quantile of the Student's T distribution with degrees of freedom equal to $n-1$,
n = number of flow checks (i.e. *Count of Precision Checks (Reporting Organization Precision Summary)*).

4.296.5.3 Collocated (PM 2.5)

$$u = CV \sqrt{\frac{n}{\chi^2_{0.05,\, n}}}$$

where:

u = upper 90% confidence limit,
CV = coefficient of variation, (i.e., mean),
n = *Count of Valid Collocated Data Pairs (Reporting Organization Precision Summary)*,
$X^2_{0.95,n}$ = the 0.95 quantile of the chi-square distribution with degrees of freedom equal to n.

4.296.5.4 Collocated (Other)

$$u = D + \left(\frac{S * 1.96}{\sqrt{2}} \right)$$

where:

u = upper 95% probability limit,
D = *Mean (Reporting Organization Precision Summaries)*,
S = *Standard Deviation (Reporting Organization Precision Summaries)*.

4.296.5.5 Federal Reference Method (FRM) Audit

$$u = D + \left(\frac{S * t_{0.975,\, n-1}}{\sqrt{n}} \right)$$

where:

u = upper 95% confidence limit,
D = *Mean (Reporting Organization Precision Summaries)*,
S = *Standard Deviation (Reporting Organization Precision Summaries)*,
$t_{0.975,\, n-1}$ = the 0.975 quantile of the Student's T distribution with degrees of freedom equal to $n-1$,
n = number of FRM pairs (i.e., *Count of Precision Checks (Reporting Organization Precision Summary)*).

4.297 Urban Area Code

4.297.1 Description

The urbanized area within which the monitoring site is located. An urbanized area is a U.S. Census Bureau demographic entity that comprises a place and the adjacent densely-settled surrounding territory that together have a minimum population of 50,000 people.

4.297.2 Source

Derived from the EPA master geospatial database (Envirofacts) by using the user-specified site location (Latitude and Longitude). Note: This derivation from Envirofacts was implemented on August 11, 2007. For sites created prior to this date, or with locations not updated since, the field was entered by the user on either the Batch AA transaction or the Maintain Site form.

4.297.3 Attributes

Type: Character
Length: 4
Required: No

4.297.4 Uses

Sites

4.297.5 Value Assignment

If a value is provided by the user, it will be compared to the value derived from the Envirofacts database, and a warning will be generated if they differ. (The value derived from the Envirofacts database will be stored for the site.).

4.298 Urban Area Represented

4.298.1 Description

The urbanized area from which the concentrations originated (not the location of the monitor).

4.298.2 Source

User-specified via the Monitoring Objective Information (ME) Transaction, or the Maintain Monitor form.

4.298.3 Attributes

Type: Character
Length: 4
Required: No

4.298.4 Uses

Monitor Objectives

4.298.5 Value Assignment

Must have a value if none of *CBSA Represented*, *CMSA Represented*, *CSA Represented*, or *MSA Represented* are valued. Conversely, must not have a value if any of *CBSA Represented*, *CBSA Represented*, C*MSA Represented*, or *MSA Represented* are valued. If valued, that value must exist on the *Urbanized Areas* view.

4.299 User Horizontal Datum

4.299.1 Description

The edition of North American Datum used as the basis for determining the site coordinates. (The editions of North American Datum establish a network of monuments and reference points defining a mathematical surface from which geographic computations can be made.) The World Geodetic Survey 1984 (WGS84) is one horizontal datum used by many Global Positioning System (GPS) instruments. United States Geological Survey (USGS) maps often use the North Atlantic Datum 1927 (NAD27).

This data element is required by the EPA Locational Data Policy. More information regarding EPA data standards and policies may be found on the EPA Environmental Data Registry (EDR) Website (http://www.epa.gov/edr/).

4.299.2 Source

User-specified via the Basic Site Information (AA) Transaction or The Maintain Site form..

4.299.3 Attributes

Type: Character
Length: 120
Required: Yes

4.299.4 Uses

Sites

4.299.5 Value Assignment

The value must exist on the *LDP Horizontal Data* view.

4.300 User Latitude

4.300.1 Description

The monitoring site's angular distance north or south of the equator measured in decimal degrees. The associated sign specifies the direction of measurement, a positive number indicating north and negative indicating south.

The EPA Locational Data Policy (LDP) requires that coordinates be provided for all sites. More information regarding EPA data standards and policies may be found on the EPA Environmental Data Registry (EDR) Website (http://www.epa.gov/edr/).

4.300.2 Source

User-specified via the Basic Site Information (AA) Transaction or The Maintain Site form..

4.300.3 Attributes

Type: Number
Length: 2.6
Required: Yes

4.300.4 Uses

Sites

4.301 User Longitude

4.301.1 Description

The monitoring site's angular distance east or west of the prime meridian at Greenwich, measured in decimal degrees. The associated sign specifies the direction of measurement, a positive number indicating east and negative indicating west.

The EPA Locational Data Policy requires that coordinates be provided for all sites. More information regarding EPA data standards and policies may be found on the EPA Environmental Data Registry (EDR) Website (http://www.epa.gov/edr/).

4.301.2 Source

User-specified via the Basic Site Information (AA) Transaction or The Maintain Site form..

4.301.3 Attributes

Type: Number
Length: 3.6
Required: Yes

4.301.4 Uses

Sites

4.302 UTM Easting

4.302.1 Description

The easting Universe Transverse Mercator (UTM) coordinate, expressed in meters (i.e., the horizontal distance from the reference edge of the UTM zone) for the site.

EPA Locational Data Policy requires that coordinates be provided for all sites. More information regarding EPA=s data standards and policies may be found on EPA's Environmental Data Registry (EDR) Website (http://www.epa.gov/edr/).

4.302.2 Source

User-specified via the Basic Site Information (AA) Transaction or The Maintain Site form..

4.302.3 Attributes

Type: Number
Length: 8.2
Required: No

4.302.4 Uses

Sites

4.303 UTM Northing

4.303.1 Description

The northing Universe Transverse Mercator (UTM) coordinate expressed in meters (i.e., for the Northern hemisphere, the vertical distance from the equator; for the Southern hemisphere, 10,000,000 minus the vertical distance from the equator) for the site.

EPA Locational Data Policy requires that coordinates be provided for all sites. More information regarding EPA's data standards and policies may be found on EPA's Environmental Data Registry (EDR) Website (http://www.epa.gov/edr/).

4.303.2 Source

User-specified via the Basic Site Information (AA) Transaction or The Maintain Site form..

4.303.3 Attributes

Type: Number
Length: 8.2
Required: No

4.303.4 Uses

Sites

4.304 UTM Zone

4.304.1 Description

The zone of the Universal Transverse Mercator (UTM) system in which a site is located.

EPA Locational Data Policy requires that coordinates be provided for all sites. More information regarding EPA=s data standards and policies may be found on EPA's Environmental Data Registry (EDR) Website (http://www.epa.gov/edr/).

4.304.2 Source

User-specified via the Basic Site Information (AA) Transaction or The Maintain Site form..

4.304.3 Attributes

Type: Number
Length: 12
Required: No

4.304.4 Uses

Sites

4.305 Vertical Accuracy

4.305.1 Description

Description of the accuracy of the vertical measure, reported in meters.

This data element is required by EPA Locational Data Policy (LDP). More information regarding EPA=s data standards and policies may be found on EPA's Environmental Data Registry (EDR) Website (http://www.epa.gov/edr/).

4.305.2 Source

User-specified via the Basic Site Information (AA) Transaction or The Maintain Site form..

4.305.3 Attributes

Type: Number
Length: 8.2
Required: Yes

4.305.4 Uses

Sites

4.306 Vertical Collection Method

4.306.1 Description

The method used to determine the Locational Data Policy (LDP) vertical measure.

This data element is required by EPA LDP. More information regarding EPA=s data standards and policies may be found on EPA's Environmental Data Registry (EDR) Website (http://www.epa.gov/edr/).

4.306.2 Source

User-specified via the Basic Site Information (AA) Transaction or The Maintain Site form..

4.306.3 Attributes

Type: Character
Length: 3
Required: Yes

4.306.4 Uses

Sites

4.306.5 Value Assignment

The value must exist on the *Vertical Collection Methods* view

4.307 Vertical Datum

4.307.1 Description

The edition of North American Datum used as the basis for determining the site coordinates. (The editions of North American Datum establish a network of monuments and reference points defining a mathematical surface from which geographic computations can be made.)

This data element is required by EPA Locational Data Policy (LDP). More information regarding EPA=s data standards and policies may be found on EPA's Environmental Data Registry (EDR) Website (http://www.epa.gov/edr/).

4.307.2 Source

User-specified via the Basic Site Information (AA) Transaction or The Maintain Site form..

4.307.3 Attributes

Type: Character
Length: 60
Required: Yes

4.307.4 Uses

Sites

4.307.5 Value Assignment

The value must exist on the *Vertical Data* view.

4.308 Vertical Measure

4.308.1 Description

The elevation, in meters, above or below mean sea level (MSL) of the site.

This data element is required by EPA Locational Data Policy (LDP). More information regarding EPA=s data standards and policies may be found on EPA's Environmental Data Registry (EDR) Website (http://www.epa.gov/edr/).

4.308.2 Source

User-specified via the Basic Site Information (AA) Transaction or the AQS Maintain Site form.

4.308.3 Attributes

Type: Number
Length: 8.2
Required: Yes

4.308.4 Uses

Sites

4.309 Weighted Arithmetic Mean

4.309.1 Description

The weighted arithmetic mean.

4.309.2 Source

System-generated via the Post process.

4.309.3 Attributes

Type: Number
Length: 5.5
Required: No

4.309.4 Uses

Annual Summaries
Site Annual Summaries

4.309.5 Value Assignment

4.309.5.1 Seasonal and Everyday PM10

$$\sum_{i=1}^{q} u_i \Big/ q$$

where:

i = quarter,
u_i = *Arithmetic Mean (Quarterly)*,
q = number of active quarters.

4.309.5.2 Stratified PM10

$$\frac{\sum_{k=1}^{q}\left(\frac{\sum_{j=1}^{s}\left(\frac{\sum_{i=1}^{n} v_i}{n}\right)_j}{s}\right)_k}{q}$$

where:

i = a sample value occurrence,
n = number of sample values in a stratum,
v_i = a sample value,
j = a valued stratum,
s = number of valued strata,
k = a quarter with valued strata,
q = number of quarters with valued strata.

4.309.5.3 PM2.5

$$\sum_{i=1}^{q} u_i \Big/ q$$

where:

i = quarter,
u_i = *Arithmetic Mean (Quarterly)* of appropriate exceptional data type,
q = number of active quarters.

4.309.5.4 Site-Level PM2.5

$$\sum_{i=1}^{q} u_i \Big/ q$$

where:

i = quarter,
u_i = *Arithmetic Mean (Site-Level Quarterly)* of appropriate exceptional data type,
q = number of active quarters.

4.309.5.5 Default

Not valued.

4.310 Worst Site Type

4.310.1 Description

Within a particular monitoring area, those monitors with the highest PM-10 concentrations must have their worst site type set to 1, and are expected to monitor at the recommended collection frequency. Other monitors must be classified as either not worst site monitors, or monitoring on an accelerated schedule, but not at the recommended collection frequency.

4.310.2 Source

User-specified via the Basic Monitor Information (MA) Transaction, or the Maintain Monitor form.

4.310.3 Attributes

Type: Character
Length: 20
Required: Yes

4.310.4 Uses

Monitor Pollutant Areas

4.310.5 Value Assignment

Value	Description
1	Classified as having the highest PM-10 concentration and is expected to monitor at recommended sampling frequency.
2	Classified as not being a worst site monitor.
3	Monitoring on an accelerated schedule, but not at the recommended sampling frequency.

4.310.5.1 Monitoring Areas

May be valued for a Monitoring Area.

4.310.5.2 Default

Not valued.

4.311 Year of Traffic Count

4.311.1 Description

The year when the Traffic Count value was estimated.

4.311.2 Source

User-specified via the Site Street Information (AA) Transaction, or The Maintain Site form..

4.311.3 Attributes

Type: Number
Length: 4.0
Required: Yes

4.311.4 Uses

Tangent Roads

4.312 Year Represented

4.312.1 Description

The year represented by the audit. For a particular audit, indicates the actual dates (Year) in which the sample was collected. Valid values are in the format YYYY and must be less than or equal to the accuracy date's year.

The Year Represented is required only for lead (Pb) analytical audits performed in the laboratory to link the year to the concentration samples analyzed during the audits.

If the user does not enter a value for this field, then the system will generate a value for this field same as the Accuracy Date year.

4.312.2 Source

User-specified or system-generated via the Accuracy Data (RA) Transaction or AQS Maintain Accuracy (L62).

4.312.3 Attributes

Type: Number
Length: 4
Required: Yes

4.312.4 Uses

Accuracy Data

4.312.5 Value Assignment

4.312.5.1 Lead

User-specified. Value is either the year of or the year prior to the Accuracy Date.

4.312.5.2 Default

Derived from *Accuracy Date*.

4.313 Zero Span

4.313.1 Description

A measurement obtained with gas from a zero concentration. Zero span is the observed value read from the instrument when the concentration of the specific parameter used to test the monitor was zero.

4.313.2 Source

User-specified via the Accuracy Data (RA) Transaction or AQS Maintain Accuracy (L62).

4.313.3 Attributes

Type: Number
Length: 5.5
Required: No

4.313.4 Uses

Accuracy Data

4.314 Zero Span Scale

4.314.1 Description

The number of digits to the right of the decimal point that were specified by the user, including trailing zeros.

4.314.2 Source

System-generated via the Accuracy Data (RA) Transaction or AQS Maintain Accuracy (L62).

4.314.3 Attributes

Type: Number
Length: 1.0
Required: No

4.314.4 Uses

Accuracy Data

4.315 Zip Code

4.315.1 Description

The U.S. Postal Service Zone Improvement Plan (ZIP) Code used to address the monitoring site.

4.315.2 Source

Derived from the EPA master geospatial database (Envirofacts) by using the user-specified site location (Latitude and Longitude). Note: This derivation from Envirofacts was implemented on August 11, 2007. For sites created prior to this date, or with locations not updated since, the field was entered by the user on either the Batch AA transaction or the Maintain Site form.

4.315.3 Attributes

Type: Character
Length: 9
Required: No

4.315.4 Uses

Sites

4.315.5 Value Assignment

If a value is provided by the user, it will be compared to the value derived from the Envirofacts database, and a warning will be generated if they differ. (The value derived from the Envirofacts database will be stored for the site.)