Design Value Report

(June 2010)

Objectives for Report

- To meet user demand for a “report” from AQS that generates the statistics that will be used for NAAQS determinations.
- To allow assessment of the effect of exceptional event flagging on Design Values
- To allow assessment of attainment issues based on partial data

What is a Design Value?

Design Values are the metrics (i.e. statistics) that are compared to the National Ambient Air Quality levels to determine compliance with the Federal regulations for air quality (40 CFR Part 50). They are specific to each criteria pollutant. For pollutants with more than one NAAQS, distinguished by averaging period, statistical form, and/or level, there is a distinct design value for each NAAQS.

Pollutant Specific Design Values

- Ozone: 3-Year average of annual 4th max
- PM 10: 3-Year average of annual "Expected Value" for exceedance count
- PM 2.5:
  - Daily Standard: 3-Year average of annual 98th percentile
  - Annual Standard: 3-Year Average of annual weighted arithmetic means
- NO_2 (old standard): Annual Arithmetic Mean
- Lead (old standard): Quarterly Mean

Pollutant Specific Design Values (Cont.)

- CO:
  - 1-Hour Standard: Annual 2nd Maximum
  - 8-Hour Standard: Annual 2nd Maximum (non-overlapping)
- SO2:
  - Annual Standard: Annual Arithmetic Mean
  - Daily Standard: Annual 2nd Maximum
  - Secondary 3-Hour Standard: Annual 2nd Maximum

New AQS Capabilities

- Formatted report for each pollutant with 3-Year Design Values
- Workfile for input to other software for each pollutant with 3-Year Design Values
- Discoverer “folders” for each pollutant with 3-Year Design Values

(examples of each provided in handouts)

Operational Aspects

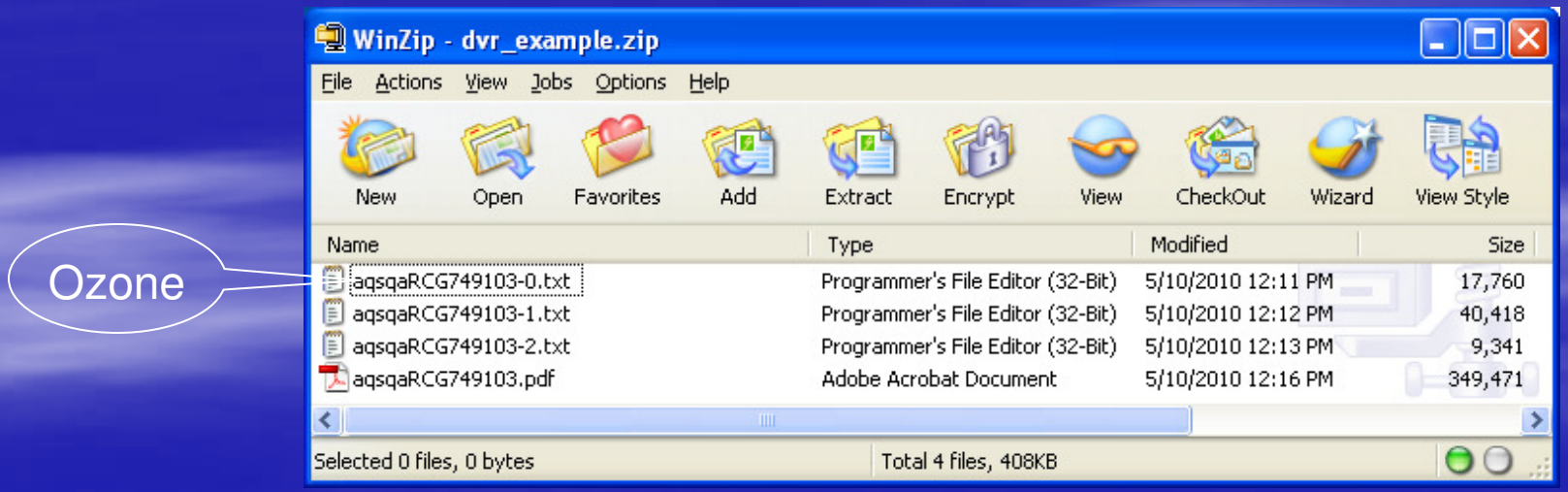
- Data Selection:
  - Any Geographical Selection
  - Pollutant: Pollutant Type and Parameter Code
  - Screening Group
  - Year Range
  - Monitor Type
  - Land Use
  - PQAO

Operational Aspects (2)

- Options:
  - Site Metadata: {Street Address, Local Site ID, Local Site Name, County Name, City Name, CBSA Name, Urbanized Area} (Note: Latitude & Longitude always in workfile)
  - Quarterly Statistics for PM 10 & PM 2.5
  - Workfile Delimiter ('|', or ',')
  - Exceptional Event Inclusion/Exclusion:
    - Exclude Regionally Concurred Flagged Data
    - Include all data
    - Exclude all flagged data
  - Applicable Standard for Exceptional Event Concurrence/Exclusion

Operational Aspects (3)

- Separate workfile for each parameter (in Zip Archive)
  - *-0.txt Always Ozone (even if none selected)
  - *-1.txt Always PM 2.5 (even if none selected)
  - *-2.txt Always PM 10 (even if none selected)



Caveats & Limitations

- No site/monitor combination of partial data
- No spatial averaging
- Blank page if Ozone excluded
- PM 10 Quarterly Scheduled Samples not populated yet

Discoverer Access

- Three new folders:
  - Ozone_Design_Values
  - PM25_Design_Values
  - PM10_Design_Values
- Each row is a 3-Year summary & includes annual statistics and quarterly statistics for PM
- All site metadata in each row (including Latitude and Longitude)

Discoverer Example

- Ozone Folder (selected columns)

State Code	County Code	Tribal Code	Site Id	Parameter Code	Poc	Dv Year	Street Address	Local Site Id	Local Site Name	Latitude	Longitude
01	055		0011	44201	1	2002	1450 PARKER ANDERSON LANE, SOUTHSIDE, AL 35907	011	SOUTHSIDE	33.904039	-86.053867
01	055		0011	44201	1	2002	1450 PARKER ANDERSON LANE, SOUTHSIDE, AL 35907	011	SOUTHSIDE	33.904039	-86.053867
01	055		0011	44201	1	2003	1450 PARKER ANDERSON LANE, SOUTHSIDE, AL 35907	011	SOUTHSIDE	33.904039	-86.053867
01	055		0011	44201	1	2011	1450 PARKER ANDERSON LANE, SOUTHSIDE, AL 35907	011	SOUTHSIDE	33.904039	-86.053867

Dv Year Season Begin Date	Dv Year Season End Date	Dv Year Valid Days	Dv Year Missing Days Alts	Dv Year Required Days	Dv Year Percent Complete	Dv Year 4th Max
01-MAR-2002	31-OCT-2002	189	0	245	77	0.083
01-MAR-2002	31-OCT-2002	189	0	245	77	0.083
01-MAR-2003	31-OCT-2003	244	0	245	100	0.076

Dv Percent Complete	Design Value	Dv Validity Ind	Edt Id	Standard Id	Primary Standard Level	Standard Description	Statistic Name
26	0.083	N	0	11	0.075	Ozone 8-Hour 2008	Annual 4th Maximum
26	0.080	N	0	10	0.080	Ozone 8-Hour 1997	Annual 4th Maximum
59	0.079	N	0	11	0.075	Ozone 8-Hour 2008	Annual 4th Maximum
38	0.060	N	0	10	0.080	Ozone 8-Hour 1997	Annual 4th Maximum

Attachments

- Work File Formats
- Sample Report