

Implementation of the Exceptional Event Rule In AQS



AQS Conference

August 21, 2008

Exceptional Event Rule

§ Background/History

§ AQS Implementation

- New Qualifier Codes
- Database Changes
- Software Changes
- New Report

§ System Implementation

Background/History

- § Exceptional event data – defined initially in a EPA guideline for monitoring data
 - Defined applicable events and pollutants applicable
 - Regional Concurrence for exceptional event
 - Data summarized (3 records) based on event flag and concurrence

- § Exceptional Events Split into categories in current AQS
 - NAT – caused by nature
 - EX – caused by man
 - Data summarized (7 records) by category and concurrence

- § Exceptional Event Rule (EER) became effective May 21, 2007
 - Authorized data exclusion from attainment analysis
 - Expanded/increased documentation and defined schedule for submission
 - Created revised definitions for events and applicable pollutants

AQS Annual Summary Records

Exceptional Data Type ID	Exceptional Data Type
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

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New Qualifier Codes

§ Problem with current codes

- Same flags apply to all pollutants
- Always creates multiple summary records
- Low response rate for concurrence

§ New codes

- Differentiate purpose - documentation or regulatory
- Match regulatory definitions for events
- “Other” category for undefined events
- Comments assist in defining event

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New Qualifier Codes

§ Types

- INFORM

- Informational only - no application for the EER
- Document any event that might affect concentration
- Use with any pollutant

- REQEXC

- Criteria pollutants – concentration above NAAQS or contribute
- Documentation/comment – submission schedule defined
- EPA concurrence action – required and based on submitted documentation , defined schedule to respond

Old and New EE Qualifiers

Exceptional Events	
Code	Description
D	SANDBLASTING
F	STRUCTURAL FIRE
H	CHEMICAL SPILLS & INDUST. ACCIDENTS
I	UNUSUAL TRAFFIC CONGESTION
J	CONSTRUCTION/DEMOLITION
K	AGRICULTURAL TILLING
L	HIGHWAY CONSTRUCTION
M	REROUTING OF TRAFFIC
N	SANDING/SALTING OF STREETS
O	INFREQUENT LARGE GATHERINGS
P	ROOFING OPERATIONS
Q	PRESCRIBED BURNING
R	CLEAN UP AFTER A MAJOR DISASTER
Z	Other event

Natural Events	
A	HIGH WINDS
B	STRATOSPHERIC OZONE INTRUSION
C	VOLCANIC ERUPTIONS
E	FOREST FIRE
G	HIGH POLLEN COUNT
S	SEISMIC ACTIVITY
U	SAHARA DUST

Event Description	Inform- ational	Request Exclusions
	Code	Code
African Dust	IA	RA
Asian Dust	IB	RB
Chem. Spills :Industr. Accidents	IC	RC
Cleanup After a Major Disaster	ID	RD
Demolition	IE	RE
Fire - Canadian	IF	RF
Fire - Mexico/Central America	IG	RG
Fireworks	IH	RH
High Pollen Count	II	RI
High Winds	IJ	RJ
Infrequent Large Gatherings	IK	RK
Other	IL	RL
Prescribed Fire	IM	RM
Seismic Activity	IN	RN
Stratospheric Ozone Intrusion	IO	RO
Structural Fire	IP	RP
Terrorist Act	IQ	RQ
Unique Traffic Disruption	IR	RR
Volcanic Eruptions	IS	RS
Wildfire-U. S.	IT	RT
Wildland Fire Use Fire-U. S.	IU	RU

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Database Changes

- § Add creation dates to several database records to track date submitted
- § Add tables to document an “event” (several days and impacts multiple monitors)
- § Add documentation fields for flags
- § Add all applicable new codes to reference tables

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Software Changes

- § Develop process to maintain “events” – to enter comments for multiple raw data values
- § Modify the concurrence process for the new flags
- § Modify the update process to retain initial update date
- § Modify the summary process to compute fewer records (no events, included, omit concurred)
- § Modify reports to display the new summary records

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New Report

§ Report created using standard report process

- Standard geographic selections
- Pollutant and date range selection

§ Report and/or Work file

§ Report options

- Flag types – INFORM, REQEXC, QA, NULL
- Concurrence value – blank, yes, no
- Counts by monitor of flags

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New Report

§ Example format

- Additional meta data?
- Other data elements

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New Report

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA QUALIFIERS REPORT

Parameter: Ozone (44201)
Standard Units: Parts Per Million (007)

Date: Aug. 21, 2008
State: North Carolina
County: Wake

Monitor Key	Measurement Date-Time	Measurement Value	Qual. Code	Qualifier Description / Event Description / Justification for exclusion	Action Date	Concurrence Indicator	Concurrence Date
SS-CCC-SSS-PPPPP-PP	YYYYMMDD	0.ddd	Rx	Description of qualifier code	YYYYMMDD	1997 Std	YYYYMMDD
			Event:	Initial description of event	YYYYMMDD		
			Justification:	Multi-line (wrapped) text comment or URL	YYYYMMDD		
TT-nnn-SSS-PPPPP-PP	YYYYMMDD	0.ddd	RH	Fireworks	YYYYMMDD	2008 Std	YYYYMMDD
			Event:	July 4 fireworks display at fairground	YYYYMMDD		
			Justification:	Sent via certified mail to John Doe on Aug. 7, 2007. USPS tracking no. 123456789	YYYYMMDD		
SS-CCC-SSS-PPPPP-PP	YYYYMMDD	0.ddd	RQ	Terrorist Attack	YYYYMMDD	Not Concurred	YYYYMMDD
			Event:	Terrorist Attack on state capitol	YYYYMMDD		
			Justification:	http://www.enr.state.nc.us/unreal_attack.html	YYYYMMDD		
			QA Qual	xx QA Qualifier Description	YYYYMMDD		
			QA Qual	xx Second QA Qualifier Description	YYYYMMDD		
SS-CCC-SSS-PPPPP-PP	YYYYMMDD	0.ddd	Rx	Description of qualifier code	YYYYMMDD		
			Event:				
			Justification:				
			Monitor Qualifier Counts:	RH 1			
				RQ 1			
				IQ 6			
				LL 1			
				6 1			
			Grand Total Qualifier Counts:	RH 1			
				RQ 1			
				IQ 6			
				LL 1			
				6 1			

System Implementation

§ Install software

§ EX/NAT Code Conversion

- Make codes invalid
- INFORM if not concurred
- REQEX if concurred

§ Calculate new summary records