U. S. Environmental Protection Agency

Welcome to the AQS Quarterly Newsletter

Volume 1, Issue 1 November 2002

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Air Quality System

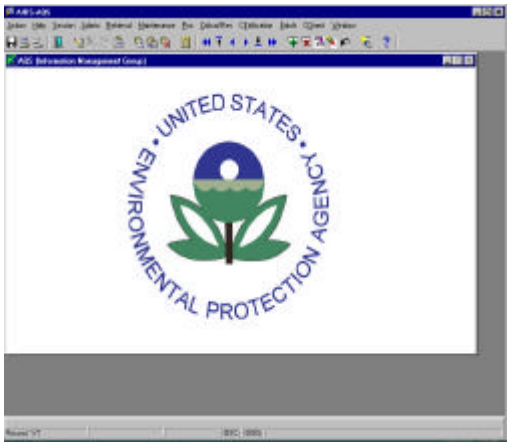
OH NO, NOT ANOTHER NEWSLETTER

Ed Lillis

This newsletter has been prepared to let folks know about what is going on with the new Air Quality System (AQS). In addition to those who routinely work with AQS, this newsletter is being sent to others who frequently use AQS data in their work.

Though I want to encourage you to read the entire newsletter, I=d like to draw your attention to 2 articles. On page 2, Mike Letke describes our plans to move AQS to a web application and to integrate the data flow thru the Agency=s Central Data Exchange in April 2003. The article highlights the changes that the Regional Offices and State, local and tribal agencies need to be aware of for a successful implementation, including our plans for hands-on computer training in early 2003.

The other article by Jake Summers below describes the recent improvements that have been made to some AQS Reports in response to user requests. Now, some



AQS reports are available in a text format that allows users to easily customize the data into a specific format. We are continuing to convert the other AQS reports with this feature.

We plan to distribute the newsletter quarterly and welcome any questions or comments you may have.

AQS STATUS

Jake Summers

AQS has been in production for 9 months with over 50 million values updated. The data input process is becoming more stable with very few new software bugs being reported by users. We continue to work to correct all bugs related to data input and summarization so that all computed statistics are in compliance with NAAQS interpretation. The following is a list of major projects and the current status:

Summary Calculations - The precision and accuracy report was modified so that it now provides summary data as well as the raw data. The summary calculations for PM10 and PM2.5 have been modified to correct various errors related to the new standards that were not implemented in the old system. The updated maintain monitor screens will be distributed in mid-November to allow for correct processing of season sampling frequencies. The seasonal sampling frequencies for PM2.5 will be updated and then all summary statistics will be recomputed. An email will be sent after completed so that any

AQS Status continued

agencies waiting to certify 2001 data will know it is final.

Report Optimization/Text Output Creation - Individual reports are being modified to improve retrieval speed as well as creating text output and verifying all options are correct. The first three raw data reports were distributed October 25. The remaining raw data reports (AMP 350D and 350MX) will be completed by the end of December and then other reports will be scheduled for conversion based on efficiency and usage. After the raw data reports are complete, AMP430 - Data Completeness and AMP450 - Quick Look Criteria will be next.

Work file creation - Develop raw data work file. The original proposal will be sent to users for comment and then developed based on user input. The initial format was submitted for comment but has not been implemented. Based on experience with work files since May, other formats will be proposed before implementation.
Develop AQI detailed work file.
Develop site/monitor work file.
Develop other work files as requested.

Develop a new public access query site - The current AQS Query has not been updated with new data since January. We plan to develop a new public access tool that will use the new database, will be updated on a regular basis, and will provide access to other tables such as reference tables. This project will be available early next year.

Web and CDX Updates

Mike Letke

Soon after the AQS client server version was released in February 2002, work began on converting to a web version of AQS. The AQS web, while similar to the client server version in the 'look & feel', will have some significant improvements.

The improvements fall into 3 categories should make using AQS easier and more user friendly:

1) Transmitting data using the Central Data Exchange
2) Users will enter Maintenance, Correct etc. in query mode as opposed to the current enter data mode.
3) No SecuRemote

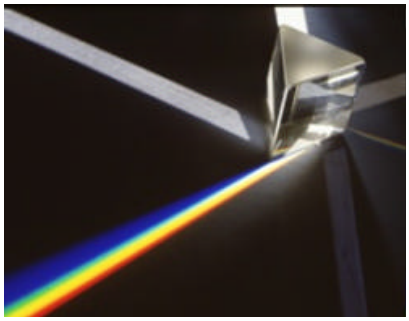
The EPA Central Data Exchange facility will replace using FTP to send/receive files. The Central Data Exchange or CDX is the electronic front door to the EPA and AQS web is one the early applications.

In the client server version of AQS, the user was placed into input mode when they entered areas such as Maintain. The result was that users would have to click the Enter Query icon to get to the query mode. In the web version, the user is placed in query mode which means they can immediately start entering data in the fields and then click the Execute Query icon to start the query. This change should make using the application much more user friendly.

Last, but not least, there will not be a reason to use SecuRemote. The user will access a web address using their browser. Although they will still have to provide a user id/password, accessing AQS should be much easier.

The goal is to begin testing the AQS Web in November, 2002 and release it to production in April 2003. In order to prepare for this there will be a series of hands-on computer training classes offered early 2003.

Mike Letke is the contact for the AQS Web, CDX and training classes and can be reached at (919) 541-0773 or letke.michael@epa.gov.



Tips for Uploading Data into AQS

Ed Lillis

The submittal of air quality data to AQS is important to EPA and we appreciate your efforts in this regard. Submitting data in an efficient manner is also important and we encourage folks to do so. Some suggestions that may improve the speed of you uploads are listed below:

Load size - Generally, we do not see differences in the speed of the load rate based on load size, except for very small jobs (e.g., less than 500 records per job). Loads of less than 500 records generally process slower than other load sizes.
Suggestion: When convenient, upload data in batches greater than 500-1000 records. (Some agencies upload 100,000-400,000 records at a time).

Loads during the week - Loads submitted on Mondays and Fridays run faster than those submitted on other days. The server seems to have fewer jobs to process on these days.
Suggestion: When convenient, upload data on Mondays and Fridays.

Loads during the day - Uploads submitted early in the morning (by 8:00 am and before 10:00am (EST)) or after 5:00 pm (EST) upload at a faster rate than during the core business hours. The server seems to have fewer jobs to process during these times.
Suggestion: When convenient, upload data either early or late in the day.

Loads at the end of a month or quarter - We have observed that load rates are generally lower on the last week of a month, particularly if it is the last week of a calendar quarter.
Suggestion: When convenient, avoid uploading data during the last week of a month.

Loads on the weekends -Though AQS is generally operational on weekends, there are some weekends when either the AQS database or the UNIX server(s) is taken off line for certain reasons. Occasionally, the Oracle database support group (DBSS) will need to perform special maintenance. Saturday mornings from 8 AM to 10 AM eastern time have been reserved for this support. You will be notified in advance, via email, when AQS is scheduled for Saturday morning maintenance. Sunday evenings, 8 PM until midnight eastern, is reserved for the UNIX system admin group. Users should not anticipate on the system being available during this time. Unfortunately, when the system or the server is taken down, all uncompleted AQS jobs are terminated.

On weekends when AQS is operational, routine maintenance and support activities occur which can affect the performance of the load process. For example, the AQS data are typically backed up on Saturday evening and night. Although, AQS is not taken offline for these routine support activities, weekend jobs will generally run at a slower rate than during the week.
Suggestion: Watch for emails that will alert you to the database being offline on a weekend. Expect AQS to be offline on Sunday evenings after 8 PM eastern time. Use your judgment on loading data over the weekend. Remember that data backups and other routine system maintenance activities could affect your load rate over the weekend.

Loads with multiple errors - Load rates can be affected by the number of errors in the data being loaded. Generally, the fewer the number of errors, the faster the load rate.
Suggestion: Review the load for potential errors before submitting. Avoid submitting data files that have already been submitted.

We hope these suggestions are helpful and would be happy to hear from users who have other suggestions as well.

AQS Stats - Utilization and Performance for September 2002

Michael Hamlin

AQS was put in production at the end of January 2002. Recently, we began to measure various parameters to assess how well AQS is performing. This information indicates that a considerable amount of work is done each day by AQS and generally done in a timely manner.

In September, there were 426 upload sessions of 1,000 records (about 1 month of data for a continuous monitor) or more. 6.7 million records were added to AQS during September 2002.

The average number of records uploaded at a time was about 16,000 records. About 58% of the uploads were completed in 15 minutes or less, 72% in 30 minutes; 85% in 1 hour and 93% in 2 hours, or less (clock-time).

During September, there were 12 upload jobs of 100,000 records or more, each of which took several hours to complete. The largest upload (393,921 records which is equivalent to 1 year of data from 39 continuous monitoring sites) was completed in 14 clock hours (11 CPU-hrs). This was a very large amount of data.

From September 8 to October 2, there were about 2700 retrievals of data from AQS. Many of these retrievals involve detailed (e.g., hourly) data rather than summary statistics. About 50% of these retrievals were completed in 2 minutes or less, 68 % in 5 minutes or less and 93% in 30 minutes or less (clock-time).

Some reports run for several hours. We are reviewing these long running jobs to identify ways to streamline them.

2003 AQS Conference

Jerry Husketh

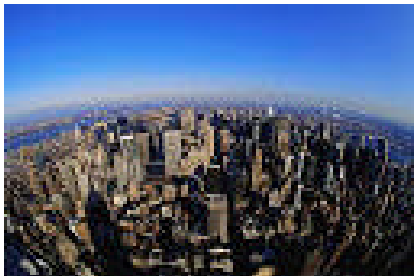
The question to be answered is: "When and where will the next AQS Conference be?" After 'teaming up' to determine where next and what will we have to offer our clients, the AQS team has begun looking at 3 cities for next year's conference. These are Albuquerque, San Antonio and Denver. Of course, the next question is: "When is the best time to hold a conference in those cities?" In order to respect the dates already announced by other EPA conferences, (AIRNOW in San Antonio in February and Toxics in late April in San Diego) we need to consider either early April OR late May/early June.

Albuquerque would be great if we continue to pursue the early April dates we want. Observing Easter the week of April 20 and the Jewish holidays celebrating Passover the week of April 14, we are focusing on the first 2 weeks of April. San Antonio, which enjoys great spring time and fall weather but suffers the same high temperatures as Albuquerque would also be a delightful setting in April.

Denver, on the other hand, could present severe weather problems in early April but May/June time frames might be an awesome host city. Contractual rules have to be considered as well. We (the AQS team) are, as we speak, discussing the rollout of the web version of AQS and the associated RO training we intend to hold. We want to maximize the effectiveness of the conference and realize timing and early announcement play a big part in that. For now, we are looking at early April as our best guess.

I'm aware of the fiscal year predicaments of many of our attendees and plans for summer vacations have to be honored as well, so… We will let you know as soon as arrangements have been made.

Any questions or comments about the AQS Conference can be directed to Jerry Husketh at (919) 541-5449 or husketh.jerry@epa.gov.

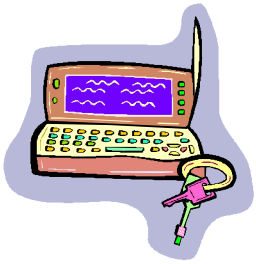


Oracle Discoverer

Bonnie Johnson

Discovering the Solution

Oracle Discoverer is the tool for performing ad hoc queries against the AQS database. IMG trained over 100 users at the AQS Conference earlier this year to use this tool. Many agencies have the client/server version of this software and are using it now.



IMG just obtained the latest version of Discoverer included with Oracle 9iAS and will be beginning work on installing it and setting it up for users. The good news is that, according to our friends in the NCC, the 9iAS Discoverer configuration does not require a 9i database, so its use is not dependent on any database upgrades. (I.e., It should work with the current 8.1.7 database.) The even better news from the NCC is that there's no charge for using Discoverer under 9iAS from a browser, whether a person has a desktop version or not! We will let you know as soon as this version is available for general use.

Meanwhile, folks with a copy of Discoverer 3.1 may continue to use it to query the AQSPROD database. Configuration information and the patch to version 3.1.28 are posted on the web site under the Frequently Asked Questions page (http://www.epa.gov/ttn/airs/airsaqs/faq/aqsfaq_discoverer.htm).

Looking for Raw Data on a National level?

Bonnie Johnson

Looking for Speciation or PM 2.5 Data?

All registered AQS users may use the AQS retrieval option to create files of raw data, but the majority of researchers and consultants, as well as the general public, do not have this access. We have created a web page with links to numerous files of raw data to satisfy this need. At present, files are being posted as they are requested and disk space is available.

Once all the frequently requested files are created and provided from this page, we plan to update the last year of available data on a regular basis. Understand that the files posted are large text-based files that have been zipped to reduce their file size.

Currently, the following data files are posted:

- CO (1970-2000)
- NO_2 (1970-2000)
- Ozone (1970-2001)
- PM Speciation (2001)
- PM2.5 (1990-2001)
- PM10 (1980-2000)
- SO_2 (1970-2000)

The formatting for the files varies but is provided from the web page. Users MUST be aware of the dates when these data were retrieved. Any updates made after that date are obviously not included.

Please check out the page at http://www.epa.gov/ttn/airs/airsaqs/archived%20data/archivedaqsdata.htm or via the link to "Request for Archived Data" on the "home" page: http://www.epa.gov/ttn/airs/airsaqs/index.htm.

User Support - Notification of Outages and Performance Problems

Chuck Isbell

A number of users have expressed an interest in being notified when known problems prevent users from logging onto AQS and/or affect the performance of AQS. Currently, the National Computer Center (NCC) does not notify the UNIX user community (at large) or the AQS user community when there are outage problems. The NCC's position has been to rely on the user to call the Technical Support Center (a.k.a. Customer Call Center) for the latest status information.

We are working with the Technical Support Center (TSC), which provides AQS user support, to establish procedures for timely notification and status updates of outage problems. Our plan is for the TSC to send an email to all AQS users once an outage is identified, and a follow-up email of when the problem is resolved and AQS is back online. For those problems (outages) that do not have a quick solution, status information (as it becomes available) will be passed along via email. We have begun testing the new notification procedures.

These procedures are not intended to discourage users from calling the TSC when they are experiencing problems, but are intended to reduce the user's burden of trying (and retrying) to log onto AQS when there are known outages. Most times, it is a user's phone call that alerts the TSC to the fact that there is an outage.

For any questions about the Technical Support Center please contact Chuck Isbell at (919) 541-5448 or isbell.chuck@epa.gov.

Precision and Accuracy Data and PARS

Michael Hamlin

Users of AQS are able to upload precision and accuracy (p and a) data into the system by one of several ways:

Precision and Accuracy Reporting System (PARS): PARS is a data entry program developed to analyze and format precision and accuracy transactions that will be loaded into AQS. P & A transactions can be manually or imported into PARS with the capability of creating reports and exporting the edited file to a specified designation that can be FTP'd to AQS. Users can download the PARS software from the AQS website (www.epa.gov/ttn/airs/airsaqs/). Unfortunately, PARS is not compatible with Windows 2000 so users with this operating system will need to use another approach

Online Correct: An AQS user can access the system and select the heading entitled "Correct" on the "Main Menu." When the drop down menu appears on the screen, the user should select either Accuracy or Precision. Upon selection of the data type that is to be entered, a template will appear on the screen. The user can now populate the template with precision or accuracy data and click the "Save" button that is under the heading entitled "action". The user should now go back to the "Main Menu" and select the heading entitled "Batch." At this time, the user should click on "Submit corrected data" to actually put data in AQS.

Online Maintenance: An AQS user can access the system and select the heading entitled "Maintenance" on the "Main Menu." When the drop down menu appears on the screen, the user should select either Accuracy or Precision. Upon selection of the data type that is to be entered, a template will appear on the screen. The user can now populate the template with precision or accuracy data and click the "Save" button that is under the heading entitled "Action." This will save data in AQS. In the event the user has several records for input, each record must be entered individually and saved.

Other Methods: Users of AQS have developed both spreadsheets and databases which will create a format that is acceptable for precision and accuracy transactions being loaded into AQS. When an acceptable format is achieved, the user can run the batch process in order to put data into AQS.

Top Ten Items from the AQS Conference 2002

Jake Summers

User Recommendations from the AQS Conference - At the last AQS Conference in Louisville, users identified a number of improvements they would like to see in AQS. Our goal is to make as many of these changes within budget and other constraints. Since the Conference, we have addressed some (though not all) of these recommendations. The table below identifies what we have done with respect to each of the Top Ten Recommendations. We plan to provide a more complete list in the next Newsletter.

Rank/Recommendation	Action so far	Comments
1. Provide all reports with a useable text report file.	Text files are now available for: AMP 350H-raw data-1 hr listing; AMP350HP-raw data hourly preproduction; and AMP350NW-raw data NAAQS	Working on or in que: AMP 350D-raw data-daily; AMP 350MX-raw data max values; AMP 430-data completeness; These reports expected in December 2002. Other reports will be scheduled based on frequent use (e.g., AMP 450).
2. Need detailed explanation of error codes. Error messages are cryptic.	A number of error codes have been modified.	Remaining error codes will be modified as they are found or brought to our attention.
3. Need Quarterly standard report; Quarterly quick look and quarterly completeness reports.	The completeness report currently can be run by quarter or any other date range selected. The initial system design limits the quarterly summary statistics to arithmetic mean, observations, and criteria flag. These statistics are easy to list with Discoverer.	Will address new reports in 2003.

Top Ten Items from the AQS Conference 2002 continued

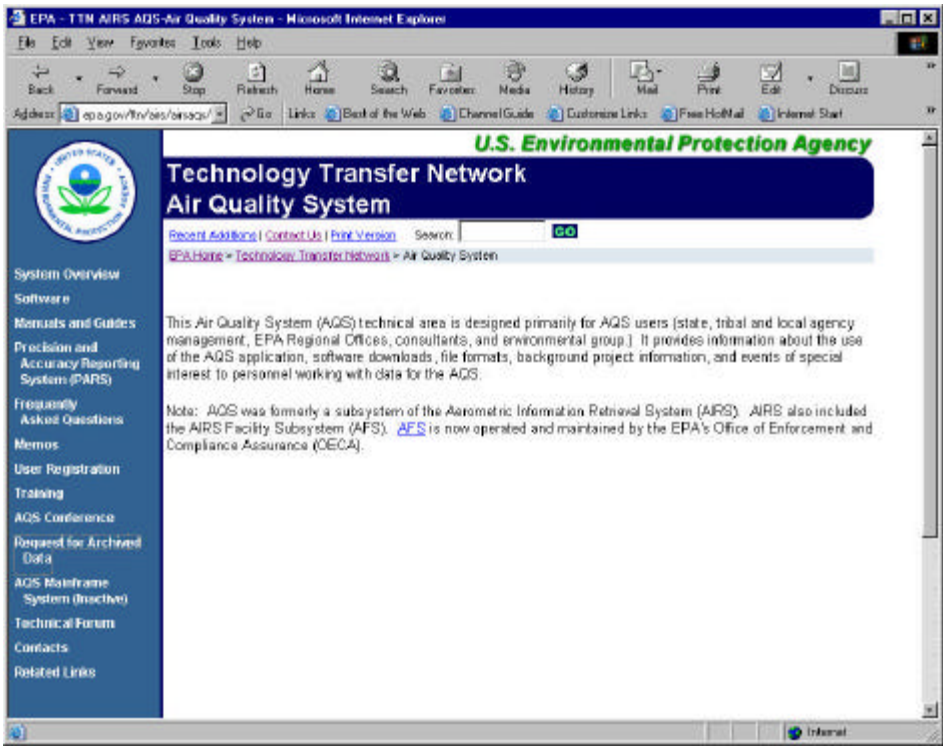
Jake Summers

Rank/Recommendation	Action so far	Comments
4. Load, query and retrieve are slow. Cannot post raw data.	Large uploads and retrievals run slowly though the majority of jobs run in less than 15 mins (see article on pg 3). -Several changes have been made to increase speed. -Load rates have improved. -Reports are being optimized to improve speed at the time they are being modified to provide text files. Post has been modified and works correctly.	We are looking at additional ways (e.g., a dedicated server) to improve AQS speed. AQS contractor is able to run AQS 2 x faster on its server than it runs on EPA network so there may be opportunities for improvement.
5. Cancel query button sometimes exits user from system.	This problem should be fixed when AQS is converted to a web application in Feb 2003.	
6. Need mechanism to post tips and alert all users (not just Regional Office) of system / communication problems.	-Have established a new alert system to notify all users when AQS is or is expected to be off-line (see article on pg 5). -AQS website has list of frequently asked questions (FAQs). -AQS Newsletter can be used to discuss useful tips and info.	
7. Users want to -(In browse) select/sort by date, site, monitor and POC, -Retrieve by RO, -Retrieve by POC, -Retrieve by monitor type on all reports.	-Will address after web forms are in place Feb 2003. -Retrieval by RO now available -Retrieval by POC to be implemented when reports are converted to text format (see #1). -Retrieval by monitor type is in place for reports, where valid.	
8. Null data codes and exceptional events flag back to raw data.	The null data codes/exceptional event flags are being added to the raw data reports as they are being converted to text format (see #1).	
9. Want a batch edit to make global changes in Correct. Want to see all errors listed in Correct dialog box at one time.	The current correct screen has always permitted global changes. As designed, the screen displays all messages for one record at a time.	We need more specifics on this item.
10. Issues certifying SLAMS reports, makeup samples not appearing.	Data certification issues have been mostly resolved. Precision and accuracy report modified to provide summary data and raw data. Procedures to handle makeup samples, seasonal sampling frequency and minimum detectable level have been corrected. New software to implement seasonal sampling will be distributed by mid-November 2002.	PM10 and PM2.5 summaries will be recomputed after the software distribution to process seasonal sampling correctly. After these are complete, summary data will be available for certification.

What's on the WEB for AQS?

The Technology Transfer Network – Air Quality System

The TTN includes an area for AQS primarily designed for technical users of AQS. From this page: http://www.epa.gov/ttn/airs/airsaqs, users can find the software to use the AQS database. Look here also for the AQS User Registration form, information about upcoming training, information about AQS Conferences, manuals and other guidance. We are working to keep information at this area up-to-date, so check it on a regular basis.



AirData

The "Queries" section of the AirData area on the EPA web site provides data to the general public from AQS. This area provides summary data based on information in the AQS database on the EPA mainframe computer as of 12/19/01. A "public" version of the new AQS database should be available sometime in 2003. When it is ready, the "Queries" will go directly to that database and will provide current summary data.

EPA United States Environmental Protection Agency

Office of Air Quality Planning and Standards
Information Transfer and Program Integration Division
Information Management Group
Research Triangle Park, NC 27711

FAX: (919) 541-7674

Current Number of Users by Region

Region 1 = 54 Users	**Region 6 = 49 Users**
Region 2 = 18 Users	**Region 7 = 30 Users**
Region 3 = 32 Users	**Region 8 = 31 Users**
Region 4 = 79 Users	**Region 9 = 107 Users**
Region 5 = 41 Users	**Region 10 = 20 Users**

OAQPS / Other Users = 96

TOTAL AQS USERS = 557

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User Support - Expansion of AQS User Support Beyond 5 PM EDT

Chuck Isbell

Since the AQS Conference in Louisville, we have been working with EPA:s National Technical Services Division (NTSD) which runs the National Computer Center, to extend the AQS user support function beyond 5 p.m. eastern time. Currently, the hours for user support are 8:00 AM to 5:00 PM, Eastern Standard Time. Our plan is to provide level 2 and 3 AQS technical support for an additional one or two hours beyond 5 p.m. eastern time.

A new contract has been awarded to DynCorp to replace Lockheed Martin as the facility contractor for the National Computer Center. The Technical Support Center (TSC), which provides AQS user support, will be staffed by the new DynCorp contractor. It is our belief that DynCorp will hire many of the Lockheed Martin staff to fill the positions within the new contract.

NTSD's recommendation is to wait until the transition from Lockheed Martin to the new contractor has taken effect (mid-November) before making the final decision on the extension of AQS user support. Currently, we do not have enough details about the new contract to know what specific services and hours of support will be provided. We will inform you once a decision has been made concerning the extension of user support beyond 5 p.m.

Level I Support: (from left to right) **Jainaba Jeng, Cynthia Scearce, Troy Paylor, Sirena Hardy, Rosetta Jones**

Level II Support: (from left to right) **Milton Kicklighter, Donna Follman, Ed Peckham, Pamela McIntyre, Tom Lewis**