

Requested Agenda Items for the Air Pollution Control District
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At the March 27, 2013 Board Meeting, I requested that two items be placed on a future agenda. They are:

1. Establish a policy for posting data and analyses on the APCD website related to reports which the APCD produces.
2. Perform an audit of data and report handling methods and techniques.

The basis for these requests follows.

1. POLICY NEEDED FOR POSTING APCD DATA

All of the data from the Phase 2 Study and the recent Community Monitoring study has been posted in PDF formats on the District's website instead of the actual Excel spreadsheets from which the PDFs were prepared.

This technique makes it difficult to examine the data, and it is sometimes used to prevent others from accessing the data. Here is a quote from CFO.com, "Let's be honest. I think a lot of people convert their Excel files to PDF because they don't want the recipient to be able to reuse the data in Excel."

As a government agency, we should not be putting up barriers to those who want to look at our data. Both the US EPA and the California Air Resources Board provide data in spreadsheet formats, yet our staff post PDF's. At a recent Board meeting, I requested that the Community Monitoring data spreadsheets be posted on the web. Instead, only PDF's were posted. When I questioned Mr. Allen in an email, he replied: "We typically only post pdf files to our website".

Phase 2 Study Example

When the original PDF's of the Phase 2 Study were posted, APCD staff attempted to prevent anyone from making use of the data. Not only were PDF's posted (which were derived from spreadsheets), but the PDF's themselves were encrypted, password protected, and copying disallowed which made it very difficult to use the underlying data.

A contractor for State Parks was unable to access the data in the PDF's so they requested the original spreadsheets from APCD. APCD denied the request since staff stated the data was already posted on the website. This is a violation of the California Records Act which requires that agencies release data in electronic format if requested.

State Parks had a considerable interest in the results of the study yet APCD staff refused to cooperate.

With some effort, I was able to crack the Phase 2 data PDF's protection and generate spreadsheets which I later shared with State Parks when I found out that APCD was refusing

their requests. (Note that staff later removed the “padlock” on the PDF following some pushback by me through a Board Member as I was not on the Board at the time.)

In an effort to make the APCD more transparent, the following is proposed.

PROPOSED POLICY

Staff shall post on the APCD website, the underlying data in a common spreadsheet format for all air quality reports of a technical nature presented to the Board. Further, staff shall also post spreadsheets (or other original formats) of analyses, graphs, etc. contained in such reports. The posting shall be in advance of the Board meeting when such reports are presented.

2. PERFORM AN AUDIT OF DATA AND REPORT HANDLING METHODS AND TECHNIQUES

There have been numerous problems with errors in APCD reports and data handling yet those problems have never been brought before the Board as an agenda item for discussion by the Board. Further, staff has implied that they caught the errors during an internal review which is not the case.

In the 2008-09 Air Quality Annual Report, these problems are described on page 20 which is included as Attachment 1 to this report. This annual report was included in a Board packet as a Consent Agenda item so there was no discussion of the multiple errors at the Board meeting when it was presented.

The report states: “Review of the 2000-2007 Annual Reports during the South County Phase 2 Particulate Study revealed several problems with how data was presented in those reports.” And “After discovering these errors, changes were made to data transcription and screening tools and revised data presentation procedures”.

The clear implication is that an internal review found these errors. Actually, it was I who found numerous errors in the Annual Reports. I was looking at trends using data I downloaded myself and I could not recreate some of the graphs found in the reports. I then looked more closely at other graphs and found errors in every graph I looked at including both PM10 and Ozone graphs. Apparently, staff found additional errors in their data handling after I brought the errors in annual reports to their attention.

Errors and mistakes of this magnitude need to be brought before the Board for discussion and resolution, not buried in a report. There is also a larger problem which is that staff does not admit to mistakes.

More recently, I found a mistake in the recent air quality trend report presented to our Board on March 27, 2013 which affected the conclusion concerning PM10 trends in South County.

If the Board is going to be assured that data and reports which this District uses to assess air quality trends and to use as the basis for regulations, then the Board needs to have an outside review of data and report handling in order to determine if there are ways to improve the program.

Although on paper, the Air Resources Board has a program to review local districts, the last review was conducted for Lake County APCD five years ago and the review took three years.

The following is proposed.

PROPOSED

The Board directs staff to propose some options to conduct an audit of both data handling methods and report preparation techniques. The purpose of the audit is to find ways to improve the overall air quality program to prevent future occurrences of data management and report preparation problems.

Attachment 1 – Page 20 from 2008 – 09 Annual Report

Changes to Data Presentation for 2006-2007 Annual Reports

Review of the 2000-2007 Annual Reports during the South County Phase 2 Particulate Study revealed several problems with how data was presented in those reports. Although all monitoring data was correctly obtained and correctly reported to the California Air Resources Board and the Federal Environmental Protection Agency for those years, the APCD Annual Reports for years 2000 to 2007 showed several errors in data presentation tables and graphics. The APCD maintains a “local” copy of all data submitted for quality assurance/quality control procedures. The Federal Air Quality System (AQS) database or “standard” is the official data. As a result of our internal review, several changes were made to data transcription and screening tools and revisions were made to data presentation procedures to ensure these errors do not recur in future years. Data presentation issues discovered in our review are summarized below:

Ozone data 2000-2007:

- Morro Bay data value for 1999 was missing in the 2000 Annual Report.
- Red Hills and Carrizo Plains data noted in the 2001 Annual Report had very small value differences due to differences between APCD and Federal collection, recording and database protocols.
- The ozone trend charts shifted 2 years forward in the 2004 Annual Report and thereafter due to missing data bars from pre-2000 years.

PM data 2000-2007:

- APCD and Federal database review noted some rounding differences due to differences between APCD and Federal collection, recording and database protocols.
- Prior to 2003, data presentation files were manually constructed, increasing the possibility of errors.
- For non-District monitoring stations, some differences were noted between APCD and Federal databases:
 - Prior to 2006 at UCD1, a contractor input the data to the federal database.
 - Prior to 2002, ARB input data to the Federal database, with probable errors. After 2002, APCD staff input data into the Federal database.
 - SLO station moved in 2005. Data was averaged for that year between the 2 stations.
- 2003 data noted 1 transcription error, 1 flagging error, and 1 make-up run error.

After discovering these errors, changes were made to data transcription and screening tools and revised data presentation procedures, as summarized below:

- Data was re-loaded to the APCD local database from the Federal database to resolve any database differences. In the future, APCD will use only the Federal database for compiling the annual report.
- APCD will use our ozone screening tool to eliminate transcription errors, with a new annual count section.
- APCD will use Federal tools for PM data counts and PM charts as well as the ozone trend chart.
- Very small data differences between Federal and APCD ozone databases are acceptable as they result from minor data collection, data recording and database artifacts.
- Charts and tables will have clearer labels. Example: Trend charts for ozone will state “65 ppb and above” clearly in the axis title.
- Annual Report PM 10 trend graphs will note the change from geometric to arithmetic mean in 2002.
- Cross-check procedures will include review of each staff’s work by another staff.
- Other data presentation issues that included missing data in Annual Reports or counting errors would be resolved by the above methods.
- Procedures will document how to use APCD and Federal database reports and tools to generate tables and graphs.