Air Resources Board

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QUALITY ASSURANCE BULLETIN-006 **Post-Processing of Ambient Air Quality Data**
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Introduction

This bulletin is intended to provide clarification for the ambient air monitoring organizations within the California Air Resources Board (ARB) Primary Quality Assurance Organization (PQAO) regarding the post-processing of ambient air quality data. Post-processing of data refers to any adjustments made to ambient concentrations after initial recording by the instrument. Data post-processing does not include typical data conversions (i.e., compiling minute data to hourly averages, changing local conditions to standard conditions, etc.). In general, the post-processing of data is discouraged; however, in some circumstances correction factors may be used when calculations and/or formulas are not applied correctly.

Policy

ARB's policy regarding post-processing of data is outlined in its Standard Operating Procedures (SOP) for Data Review and Validation (AQSB SOP 610). When quality control check results exceed the established limits (see below), corrective action must be initiated by the site operator to identify and resolve the problem.

O3	±7%	PM10 (Hivol)	±7% (flow)
CO, NO2, SO2	±10%	PM10/PM2.5 (Lovol)	±4% (flow)
TSP (Hivol)	±10% (flow)		

Corrective action limits are designed around the data quality objectives outlined in the U.S. Environmental Protection Agency's Code of Federal Regulations. If the control limit exceedance is the result of calculations and/or formulas not being applied correctly (i.e., temperature/pressure corrections, slope and intercept, etc.) and is verified independently by the calibration staff, post-processing of data may be utilized to correctly reflect true concentrations. Otherwise, the appropriate data qualifier or null code must be applied. Examples of when post-processing of data should NOT occur include:

- Nightly span check results show the O3 instrument to be -6.2% from the expected value.
- Nightly zero check results show the NO2 instrument to be 3 ppb high.
- Bi-weekly precision check results show the CO instrument to be +8.0% from the expected value.
- Bi-annual as-is NO/NOx/NO2 calibration results show a -7.5% shift at all levels.
- Side-by-side comparison of O3 instruments shows a 5.0% difference.
- Monthly PM2.5 flow check results show the sampler to be -3.5% from the expected value.

All of the above examples show QC information that fall within acceptable limits and thus all associated ambient data would be reported as-is. However, site operators should initiate corrective action when QC check results approach the established control limits. If a site operator discovers a reoccurring or systemic issue (i.e., contamination, flow rate, leaks, etc.) causing the QC check results to approach the established control limits, a Corrective Action Notification should be issued. If you have any questions regarding data and what corrective measures, should be applied, if any, please contact Mr. Patrick Rainey at (916) 327-4756 or patrick.rainey@arb.ca.gov.