

**PM<sub>2.5</sub> Mass Analysis Laboratory Pre-certification and System Audit Programs**

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Since 1992, the California Air Resources Board's (ARB) Quality Assurance Section (QAS) has conducted system audits of laboratories performing PM<sub>10</sub> mass analysis. These system audits have identified several common problems encountered by the various laboratories, many of which resulted in the invalidation of several years of PM<sub>10</sub> data. With the promulgation of federal PM<sub>2.5</sub> air monitoring regulations which are much more stringent than those for PM<sub>10</sub>, the ARB initiated a program to avoid the loss of PM<sub>2.5</sub> air monitoring data and assure the quality of the PM<sub>2.5</sub> data. In 1998, the ARB implemented a PM<sub>2.5</sub> laboratory pre-certification program. The QAS developed a laboratory pre-certification questionnaire that addressed those requirements that must be followed by a laboratory conducting PM<sub>2.5</sub> mass analysis determinations. The questionnaire also included many, but not all, recommendations which would improve the overall quality of a laboratory's PM<sub>2.5</sub> operations. The requirements and recommendations are found in 40 CFR Part 50, Appendix L, U.S. EPA's Quality Assurance Handbook, Volume II, Method 2.12, and U.S. EPA's Model Quality Assurance Project Plan for the PM<sub>2.5</sub> Ambient Air Monitoring Program at State and Local Air Monitoring Stations. Pre-certification of California weighing facilities became a condition for submittal of PM<sub>2.5</sub> data to the U.S. EPA's Aerometric Information Retrieval System (AIRS) Air Quality Subsystem.

Pre-certification questionnaires were sent to those laboratories that planned on conducting PM<sub>2.5</sub> mass analysis. The laboratories had to submit the completed questionnaires to the QAS. The QAS reviewed the questionnaires and provided any comments back to the laboratories. Shortly thereafter, QAS staff scheduled an on-site visit and worked with laboratory staff to ensure that all requirements were met. The pre-certification program helped laboratories become aware of what was necessary to assure good quality data. All laboratories that were involved in the pre-certification program were granted pre-certification prior to the initiation of gravimetric analysis of PM<sub>2.5</sub> filters. The system audits entailed a more detailed review of the laboratory's quality control documentation as well as follow-up issues resulting from the pre-certification evaluation. Again, questionnaires were sent to each laboratory and staff conducted on-site visits. All laboratories have gone through a system audit with no loss of PM<sub>2.5</sub> air monitoring data to date.