This SOP is subject to
review and revision in 2015.

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

TECHNICAL SERVICES DIVISION

QUALITY ASSURANCE PROJECT PLAN

STANDARD OPERATING PROCEDURE

DATA MGT SOP 608

NATTS

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STANDARD OPERATING PROCEDURE
BAAQMD Technical Services Division

NATTS Data Management

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Purpose

The purpose of this Data Management Standard Operating Procedure (SOP) is to document data validation procedures for National Air Toxics Trends Stations (NATTS) monitoring used by the BAAQMD. The goal is to define the staff responsible for the review, a review timeline, and the specific steps and objectives of the review process.

Background

In 2003 the EPA established the NATTS nationwide network and designated the San Jose station as a NATTS site with measurements on a one in six day schedule. The NATTS network was created to expand and improve national toxics monitoring with the major goal of identifying toxics trends in urban and rural settings throughout the United States. NATTS pollutants can be grouped into three categories: hazardous air pollutants (HAPs), polycyclic aromatic hydrocarbons (PAHs), and continuous measurements.

In 2012, the BAAQMD is measuring the following 15 HAPs for the NATTS program at San Jose:

Benezene	Acetaldehyde
1, 3 Butadiene	Antimony
Carbon tetrachloride	Arsenic
Chloroform	Cadmium
Tetrachloroethylene	Manganese
Trichloroethylene	Nickel
Acrolein	Chromium*
Formaldehyde	

* Chromium is measured as an estimate of hexavalent chromium concentrations. Hexavalent chromium is the only airborne HAP that the Air District does not directly measure because the current sampling methodology allows significant deterioration of the compound before the analysis can be performed.

In 2012, the BAAQMD is also measuring the following 22 PAH compounds for the NATTS program at San Jose.

9-Fluorenone	Coronene
Acenaphthene	Cyclopenta(cd)pyrene
Acenaphthylene	Dibenz(a,h)anthracene
Anthracene	Fluoranthene
Benzo(a)anthracene	Fluorene
Benzo(a)pyrene	Indeno(1,2,3-cd)pyrene
Benzo(b)fluoranthene	Naphthalene
Benzo(e)pyrene	Perylene
Benzo(g,h,i)perylene	Phenanthrene
Benzo(k)fluoranthene	Pyrene
Chrysene	Retene

The BAAQMD is also measuring carbon monoxide, continuously. High sensitivity carbon monoxide is measured because of its correlation to benzene and 1, 3 butadiene, two of the largest contributors to air toxic exposure.

Data Review and Validation Procedures

All toxics compounds are collected on a one in six day sampling schedule. Carbon monoxide is monitored continuously. These data are collected by various methods as described below.

Benzene; 1,3 butadiene; carbon tetrachloride, chloroform, tetrachloroethylene, trichloroethylene, and acrolein are collected in canisters using a Xontech 910 sampler. Data review and validation procedures are found in the Data Management Toxics SOP at H:\Tech\Quality System Docs\QAPP Appendix A SOPs\Data Mgt SOP 606 Toxics910.pdf

Formaldehyde and acetaldehyde (carbonyls) are collected in cartridges using a Xontech 924 sampler. Data review and validation procedures are found in the Xontech 924 SOP at H:\Tech\Quality System Docs\QAPP Appendix A SOPs\Data Mgt SOP 607 Toxics924.pdf

Antimony, arsenic, cadmium, manganese, nickel, and chromium are collected using an SAS $PM_{2.5}$ sampler, as part of the EPA Chemical Speciation Network Program. The BAAQMD uses filters from Eastern Research Group (ERG), operates the sampler for 24 hours and mails the filters to ERG for analysis. ERG sends the results of the analyses to the BAAQMD Director of Technical Services who reviews the data. The Director of Technical Services has 45 days to find and report errors to ERG.

Analysis of PAH compounds is also done by ERG. ERG provides the filter media and analysis. PAH compounds are collected on a filter for a 24-hour period using a standard HiVol Polyurethane Foam (PUF) sampler on the NATTS 1-in-6 day sampling schedule. Filters are then sent to the ERG laboratory for analysis.

Carbon monoxide is monitored using a high sensitivity carbon monoxide monitor. It is measured to the nearest tenth of a pptm. Data review and validation procedures are the same for this monitor as other carbon monoxide monitors, which can be found at: H:\Tech\Quality System Docs\QAPP Appendix A SOPs\Data Mgt SOP 601 Gaseous Pollutants.pdf

Archival

Meteorology and Quality Assurance (MQA) archives the San Jose benzene, 1,3 butadiene, carbon tetrachloride, chloroform, tetrachloroethylene, trichloroethylene acrolein, formaldehyde, acetaldehyde, and carbon monoxide data within 90 days after the end of each month in the EPA AQS database.

ERG archives the San Jose antimony, arsenic, cadmium, manganese, nickel, and chromium data in the EPA AQS database after the BAAQMD Director of Technical Services certifies the data by email to ERG.

ERG also archives all 22 PAH compound measurements in the EPA AQS database after the Director of Technical Services certifies the data by email to ERG. Also the Director of Technical Services puts the data on a BAAQMD network drive making it available to staff.

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