NADP AMNet Standard Operating Procedure
Site Report C - Laboratory: Quarterly Maintenance
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Abbreviations

AIRMoN   Atmospheric Integrated Research Monitoring Network
AMNet    Atmospheric Mercury Network
AMoN     Ammonia Monitoring Network
CAMD     Clean Air Markets Division
CAMNET   Canadian Atmospheric Mercury Network
CASTNET  Clean Air Status and Trends Network
CVAFS    Cold Vapor Atomic Fluorescence Spectroscopy
DFU      Dry Filter Unit
DQO      Data Quality Objectives
GEM      Gaseous Elemental Mercury (expressed in ng/m³)
GOM      Gaseous Oxidized Mercury (expressed in pg/m³)
Hg       Mercury, the element (“hydrargyrum”)
LPM      Liters per Minute
LST      Local Standard Time
MDE      Mercury Deposition Event
MDN      Mercury Deposition Network
MSDS     Material Safety and Data Sheets
NADP     National Atmospheric Deposition Program
NIST     National Institute of Standards and Technology
NOAA     National Oceanic and Atmospheric Administration
NOS      Network Operations Subcommittee
NTN      National Trends Network
OSHA     Office Safety and Health Administration
PBM2.5   Particle-Bound Mercury less than 2.5 μm in diameter (expressed in pg/m³)
PO       NADP Program Office
QA       Quality Assurance
QAAG     Quality Assurance Advisory Group
QC       Quality Control
QR       Quality Rating
RF       Response Factor
RGM      Reactive Gaseous Mercury
RPF      Regenerable Particulate Filter
SOP      Standard Operating Procedure
SQL      Structured Query Language
TGM      Total Gaseous Mercury
UHP      Ultra High Purity
U.S. EPA United States Environmental Protection Agency
USGS     United States Geological Survey
Introduction

Maintenance activities are required each calendar quarter for each site in the NADP Atmospheric Mercury Network (AMNet). The activities described in this Standard Operating Procedure (SOP) document, *Site Report C - Laboratory: Quarterly Maintenance*, cover aspects of the quarterly maintenance that are completed in the laboratory, before going to the field site. This document identifies consumables that are required, and the tools necessary to perform the work. Clean, non-talc gloves must be worn when handling the Tekran equipment.

Field activities that must be completed on a quarterly basis are described in a separate document, *Site Report C – Field: Quarterly Maintenance*. Field activities are completed after the laboratory activities have been completed.

This SOP is not intended to be a troubleshooting guide. Additional information is available in the user manuals for the instrumentation, the instrument Tech Notes, and from the AMNet site liaison.

Laboratory Activities

<table>
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<tr>
<th>Maintenance required</th>
<th>Prepare 2537 Teflon zero air and sample filter</th>
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| **Consumables required** | Two 47 mm Teflon filters  
Reagent grade water  
Laboratory grade methanol |
| **Tools required** | Clean, non-talc gloves  
Filter wrenches, adjustable |

2537 Teflon sample and zero air filter change - Access to a complete set of back-up filter holders is recommended. This facilitates filter changes in a controlled environment.

Step 1. Remove retaining ring using filter wrenches.
Step 2. Place ring thread side down on a clean surface.
Step 3. Remove inlet and filter. Place filter housing outlet onto ring.
Step 4. Inspect filter inlet and clean with lint free wipe if necessary.
Step 5. Using a pair of clean Teflon-coated tweezers, remove a Teflon filter, discard the blue filter separators. Install the filter smooth side up (grid side to grid).
Step 6. Place the inlet housing over the outlet housing, ensuring the filter remains flat and forms a seal between the two pieces.
Step 7. Hand-tighten the retaining ring making sure the inlet housing does not spin on the outlet housing.
Step 8. Tighten the retaining ring further using the filter wrenches.
Step 9. Cap the inlet and outlet ends with plastic travel caps and store the housing in a double zip-type bag for storage and transport to the site.
Step 10. Repeat procedure for second filter. The 2537 sample and zero air filters are identical.