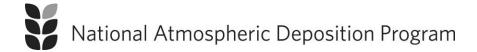
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NADP AMNet Standard Operating Procedure Site Report C - Laboratory: Quarterly Maintenance



Wisconsin State Laboratory of Hygiene

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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

PBM_{2.5} 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

WSLH Wisconsin State Laboratory of Hygiene

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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, <u>before</u> going to the field site. This document identifies consumables that are required, and the tools necessary to perform the work. Clean, non-talc gloves <u>must</u> 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 1. Quarterly Equipment Maintenance, Laboratory Activities.

	V 1 1
Maintenance required	Prepare 2537 Teflon zero air and sample filter
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.