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Environmental Programs Directorate

Standard Operating Procedure

for **AIRNET—INSTALLATION OF NEW STATIONS**

APPROVAL SIGNATURES:

| Subject Matter Expert: | Organization | Signature | Date |
|----------------------------------|---------------------|-------------------|-------------|
| Andrew Green | WES-EDA | Signature on File | 4/6/2009 |
| Responsible Line Manager: | Organization | Signature | Date |
| Craig Eberhart | WES-EDA | Signature on File | 4/6/2009 |

1.0 PURPOSE AND SCOPE

This standard operating procedure (SOP) states the responsibilities and describes the installation of new AIRNET stations for the Los Alamos National Laboratory (LANL) Waste and Environmental Services Division (WES).

All WES participants shall implement this procedure when installing new AIRNET stations.

2.0 BACKGROUND AND PRECAUTIONS

2.1 Background

Radioactive particulates and tritium in the ambient air are monitored by a network of air monitoring stations (AIRNET). At times, operational or compliance drivers, call for the installation of new monitoring stations. Each installation is intended to copy existing stations as closely as possible.

Installations are always made in a legal, environmentally-sensitive and as good-neighborly manner as possible.

2.2 Precautions

None

3.0 EQUIPMENT AND TOOLS

Equipment and materials needed:

- timbers (at least 4 in. x 4 in.)
- lag bolts (size 5/16 in. diameter, 3 in. long) and flat washers
- ratchet set and hammer
- AIRNET housing with installed control panel (kept at TA 54)
- air sampling pump
- calibrators (for silica gel and air filter flows; see WES SOP 5145)
- level

4.0 STEP-BY-STEP PROCESS DESCRIPTION

4.1 Installing a new AIRNET station

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| AIRNET Project Leader | <ol style="list-style-type: none">1. Identify a new station location ensuring the station has been sited according to SOP-5147.2. Submit a PR-ID (by either contractor or project leader) if new station is on LANL property.3. Obtain an excavation permit, if required as a result of the PR-ID evaluation. It is required for digging deeper than 6 inches.4. Assign the station a name, a master site number, and a 2-digit local station number. |
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- Installer
5. Equipment and materials needed:
 - timbers (at least 4 inch x 4 inch)
 - lag bolts (size 5/16 inch diameter, 3 inch long) and flat washers
 - ratchet set and hammer
 - AIRNET housing with installed control panel (kept at TA 54)
 - air sampling pump
 - calibrators (for silica gel and air filter flows; see WES SOP 5145)
 - level
 6. Setting up the housing:
 - The orientation of the station is not critical, although it is preferable that the front access panel faces the source of interest.
 - Bolt the timbers to the legs of the housing by using the ratchet set (start the bolt using the hammer).
 - Check the level of the ground surface (If leveling the ground is necessary do not penetrate the ground without first evaluating whether or not an excavation permit is needed. Deeper than 6 inches requires a permit.
 - Do not install the pump until the electricity has been connected.
 - Ensure the height of the access door is 5 to 6 ft above ground.
 7. After the electricity has been installed to the station housing, collect the materials and tools listed below:
 - air sampling pump
 - stainless-steel exhaust tubing
 - filter holder (prepared according to WES SOP 5143)
 - silica gel cartridge (prepared according to WES SOP 5144)
 - calibrators (for silica gel and air filter flows)
 - 2 padlocks with same key core as other station locks
 - level
 - station number label and disconnect notice

4.2 Set up the Station and Pump

- Installer
1. Check the proper wiring of the newly-installed electrical outlet with a circuit polarity tester.
 2. Check the proper wiring of the newly-installed electrical outlet with a circuit polarity tester.
 3. If necessary, install the polyvinyl chloride (PVC) holder for the silica gel cartridge in the floor of the housing.
 4. Put the pump inside the housing, to the left of the control panel.
 5. Connect the silica gel vacuum hose from the module (already attached to front of module) to the silica gel cartridge and install the silica gel cartridge in its holder on through the floor of the housing.
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| Installer | <ol style="list-style-type: none">6. Install the filter head. 7. Attach stainless steel exhaust hose from the outlet on the vacuum pump to the outlet on the floor to the rear of the housing. 8. Attach the vacuum hose coming from the back of the module to the pump inlet. 9. Plug in the pump to the outlet inside the housing. 10. Calibrate the silica gel and filter flow according to procedure WES SOP-5145. 11. Lock both sides of the housing with a padlock. 12. Label the housing with its unique station number and the power-off notice label with the group phone number. 13. Document the housing installation, calibration, and start-up time and date in the field logbook. 14. Determine the coordinates of the new location, using either map techniques or a global positioning system unit. |
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4.3 Adding the New Station to the System

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| Installer | <ol style="list-style-type: none">1. The new station's identification number and location name must be added to the appropriate records:<ul style="list-style-type: none">• Request a revision to WES SOP-5143 to reflect the new location.• Request the AIRNET data manager to add the new station and its coordinates to the database of locations.• Request that the Project Manager and the Chemistry Data Coordinator revise the clumping paperwork and the shipping documents for filters, tritium, and composites. |
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4.4 Records Management

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| Installer | <ol style="list-style-type: none">1. Maintain and submit records and/or documents generated to the Records Processing Facility according to EP-DIR-SOP-4004, Records Transmittal and Retrieval Process, AIRNET Project files. |
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5.0 DEFINITIONS

N/A

6.0 PROCESS FLOW CHART

N/A

7.0 ATTACHMENTS

N/A

8.0 REVISION HISTORY

| Revision No. <i>[Enter current revision number, beginning with Rev.0]</i> | Effective Date <i>[DCC inserts effective date for revision]</i> | Description of Changes <i>[List specific changes made since the previous revision]</i> |
|--|--|---|
| 0 | 02/5/97 | New document. |
| 1 | 04/23/98 | Remove reference to procedure ESH-17-220; add bullet in "Adding the new station to the system." |
| 2 | 02/2/99 | Added requirements for wearing safety shoes when moving pumps, station housings, or timbers. |
| 3 | 02/22/00 | Added steps for installation of ground rods and silica gel holders. Other minor editorial changes. |
| 4 | 07/30/01 | Added reference to study of particle collection efficiency and made other minor changes. |
| 5 | 07/2/02 | Quick-change revision to address soil disturbance requirements. |
| 6 | 09/10/03 | Added requirement for ESH-ID reviews of new station installations. |
| 7 | 02/8/05 | Changed steps to coordinate with KSL on need for excavation permit and PR-ID, and made other edits. |
| 0 | NEW DATE | New document number and reformatted for WES division. Formerly ENV-MAQ-217. |