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Environmental Programs Directorate

Standard Operating Procedure

for **AIRNET—MAINTENANCE OF FLOW CONTROL
PANELS**

APPROVAL SIGNATURES:

Subject Matter Expert:	Organization	Signature	Date
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1.0 PURPOSE AND SCOPE

This standard operating procedure (SOP) states the responsibilities and describes the maintenance of AIRNET flow control panels for the Los Alamos National Laboratory (LANL) Waste and Environmental Services Division (WES).

All WES participants shall implement this procedure when maintaining flow control panels for AIRNET.

2.0 BACKGROUND AND PRECAUTIONS

2.1 Background

Flow control panels from the AIRNET stations are usually replaced completely when there are problems with a panel. These removed panels must be cleaned and repaired as described in this procedure.

2.2 Precautions

None

3.0 EQUIPMENT AND TOOLS

Collect the following:

- needle nose pliers
- screwdriver
- adjustable wrench
- pipe thread compound
- drill with cutting bit
- Dow Corning high-vacuum grease
- paper towels
- spray cleaner (Fantastic® is preferred)

4.0 STEP-BY-STEP PROCESS DESCRIPTION

4.1 Cleaning and Repairing Control Panels

Worker	1.	In the hood, with the sash lowered below face level, blow out the control panel with compressed air. Wipe down and clean with paper towels and Fantastic® cleaner or water.
	2.	Disconnect all hoses and blow through each with compressed air.
	3.	Replace any hoses as needed and reconnect with removed hose clamps.
	4.	If needed, replace the Matheson flow meter.
	5.	Replace pressure sensor. When hooking up sensor, make sure vacuum hose is on “low” side (it is labeled). Make sure wires are connected correctly (timer will not function if wires are crossed).

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6. Clean out control valve to silica gel side by taking valve apart using an adjustable wrench. Clean with spray cleaner. Lubricate O-ring with vacuum grease. Reassemble valve.

OR

Replace control valve if needed.

7. Remove large hex nut and inner spring from back of control panel.
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8. Inspect O-ring and replace if cracked or nicked.
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9. Use needle nose pliers to remove black carbon plug. Clean with spray cleaner. Lubricate with vacuum grease.
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10. Inspect inside of opening for debris or dirt. Blow out with compressed air if necessary.
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11. Reassemble by installing black carbon plug and spring and large hex nut.
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12. Install air filter assembly in the hose from the silica gel.
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13. Hook up the panel to the appropriate filter and silica gel sample holders. Connect a pump and calibrate the flow through the sampler holders according to WES SOP 5145. Run the test for at least 2 minutes, and then recheck the calibration.

CAUTION: Operating the vacuum pumps inside the TA 54 1001 for long periods may cause permanent hearing damage.

14. Conduct long-term pump tests outdoors. Pumps may only be operated inside the building overnight OR for a maximum of two minutes during normal working hours. At the start of each work day, turn off any operating pumps and reconnect them outside the building, if needed.
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15. Mark or label the panel to indicate it has been cleaned and calibrated. Put refurbished panels in storage cabinet for future use as repair replacements.

4.2 Records Management

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| Worker | 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	8/26/98	New document.
1	1/25/99	Added caution about hearing damage and rule for running pumps outside building at start of work day.
2	3/9/00	Added HCP as Attachment 1 and changed risks in HCP.
3	7/30/01	Added step about installation of air filter and changed required test time after rebuild.
4	8/19/02	Changed steps on use of new flow meters.
5	11/21/05	Quick-change revision to replace attachment HCP with HR.
0	4/2/2009	New document number and reformatted for WES division. Formerly ENV-MAQ-229.

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