AUI Department of Environmental Safety & Security
Annual Fume Hood Ventilation Survey

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Inspector Name: **Date:** **Time:**

Location of Inspection:

FUMEHOOD VENTILATION SURVEY FOR CHEMCAIL FUME HOODS

Using the instructions below evaluate individual chemical fume hoods annually. Note any deficiencies and required actions with due date. All work orders for deficiencies must accompany this survey form.

*** Surveys must be conducted on an annual basis**

*** Maintain this survey as documentation of this requirement**

Note: Do **not** use this ventilation survey for acid wash-down fume hoods or for fume hoods using peroxide forming chemicals.

The average face velocity of 100 FPM +/- 20% is acceptable. (Source: ANSI Standard Z9. 5-1992 Section 5.7 requires that, "Each hood shall maintain an average face velocity of 80-120 fpm with no face velocity measurement more than plus or minus 20% of the average.")

Instructions:

Face Velocity -

Using a NIST certified anemometer;

1. If required, adjust the anemometer for altitude.
2. Set the anemometer for feet per minute (FPM).
3. With the sash all the way open - take a measurement every square foot along the front of the fume hood face and record the measurements below.
4. Hold the anemometer at the sash position in the fume hood face.
5. In one foot square intervals, take a reading from the anemometer.
6. Determine the average open face velocity record it.
7. With the sash set at 50%, take a measurement at every square foot, determine the average reading and record it.
8. With the sash set at 25%, take a measurement a every square foot, determine the average reading and record it.
9. With sash set at working height, take a measurement at every square foot, determine average reading and record it.

Open average face velocity: _____

_____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____

50% average face velocity:_____

____ _____ _____ _____ _____ _____ _____

25% average face velocity:_____

_____ _____ _____ _____ _____ _____

Working Height average face velocity:_____

_____ _____ _____ _____ _____ _____

Instrument Details:

1. Name and model of Instrument.
2. Date of calibration.
3. Attach a copy of calibration certificate to this form.

Local Smoke Visualization Test –

ANSI/ASHRAE 110, *Method of Testing Performance of Laboratory Fume Hoods*.

PPE: Safety Glasses and an N-95 filtering face piece is optional – Use only small general smoke tubes do not use smoke bombs as they are too dangerous.

Fume Hood:

1. Turn on fume hood, open sash the way.

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2. Using a smoke tube: point smoke around inside sash area starting at bottom and work up around entire inside sash area. Point smoke around the work surface and corners of the work surface following a "line" pattern – Be sure smoke is being evacuated in an even manner across the baffles or back middle (where the exhaust is located) and not coming out of the fume hood.
3. Draw approximately 8 inch circles in the middle and on each side of the work surface inside the fume hood. Observe the smoke pattern. The smoke should be evenly captured and evacuated.
4. Point the smoke tube around the inside sash bottom of the work surface of the fume hood following the line across the front sash opneing.

Grade the smoke visualization test as below:
GOOD – No reverse flow of smoke. Active evacuation of smoke around boundaries.
FAIR – Some reverse flow of smoke but not at the opening. No visible smoke escape at the sash opening.
FAIL – Smoke observed escaping out of fume hood.

On fume hood sticker, denote Visual Smoke Test with proper grade, denote face average velocity, initial and date the sticker. Place sticker in lower left hand corner of inside of fume hood sash facing outwards.

Are there any corrections required? If yes, attach all correspondence for the corrections to this form.

How to determine the average face velocity.
Average Face Velocity = (Sum of ($Reading_1$ + $Reading_2$ + $Reading_3$ + $Reading_{i...}$)) / (Number of Readings)
NOTE: Typically, ES&S would work with the HVAC person to have the fume hood and the room air balanced. The air flow of the room affects the air flow of the fume hood.