Technical Information Bulletin

Air Sampling during Wave Maintenance

SCOPE OF TESTING
Testing was performed to measure airborne lead dust wave solder maintenance. An industrial hygienist collected samples from the breathing zone of an employee during dedross activities and at various points in and around the equipment.

EQUIPMENT CONFIGURATION (see **Figure 1**)
An filter unit, Model number F8240C, provided extraction to the wave solder machine and to a downdraft table used for cleaning parts.

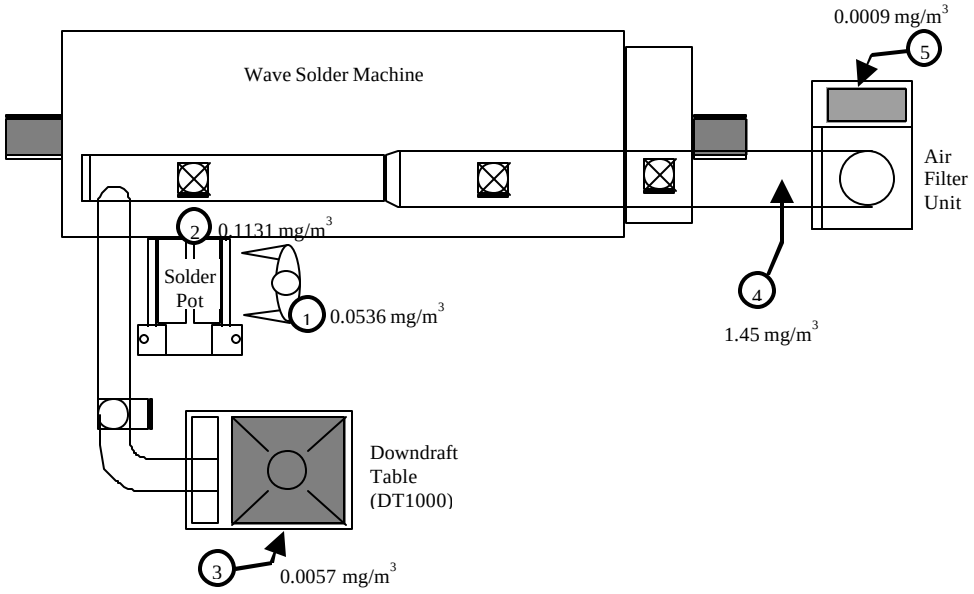

Figure 1 -- Collection Pump Locations and Measured Concentration Levels

RESULTS

1. The above results demonstrate that wave solder maintenance generates a relatively high concentration of airborne lead contaminants (location **1** and **2**) that exceeds the OSHA action level for lead exposure (0.030 mg/m^3).

2. The concentration level above the downdraft table (location **3**) was far below the action level, which shows that the downdraft table effectively fulfilled its purpose (see **Figure 2**).

3. The high concentration of airborne lead above the solder pot (location **2**) demonstrates the need for fume extraction over the solder pot during maintenance.

4. Contaminated air entering into the filter unit was shown to filter at a 99.94% efficiency level (see **Table 1**), reducing contaminants to almost non-detectable levels.

Figure 2 -- Comparison of Airborne Lead Concentration Levels

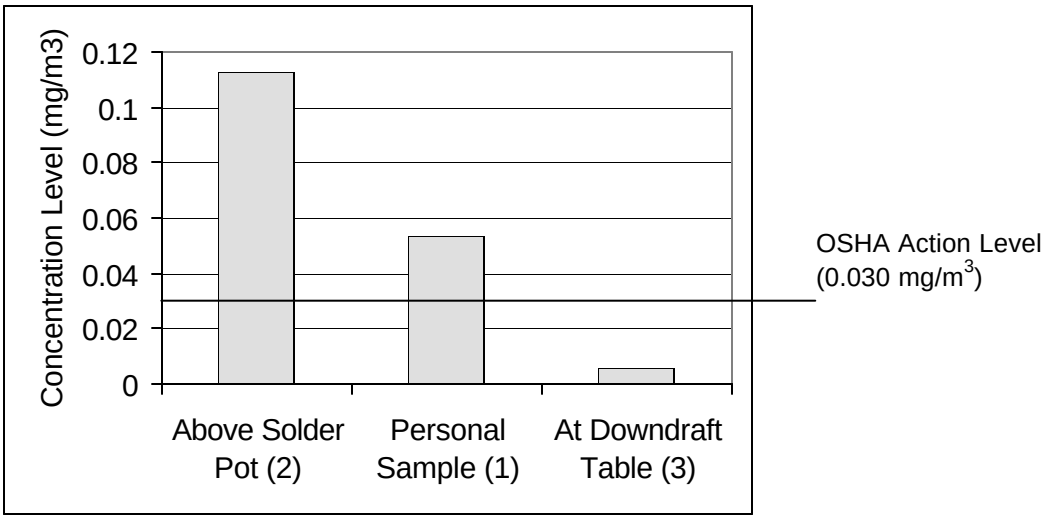

Table 1 -- Filter Unit (F8240C) Efficiency

	Prior to Filtration (4)	Post Filtration (5)	System Efficiency
Concentration Level (mg/m3)	1.45	0.0009	99.94%

COMMENTS

The measured results and visual observations made during the maintenance procedures demonstrate that significant amounts of lead dust become airborne during wave solder maintenance. Filter units extracting and filtering the air can significantly reduce health hazards and prevent the contamination of a facility.