LEAD-SAFE WORK PRACTICES SURVEY PROJECT REPORT

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Prepared for

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EXECUTIVE SUMMARY

The National Association of Home Builders (NAHB) has conducted an assessment of renovation/ remodeling (R&R) activities to measure levels of lead dust generated by home improvement contractors. The objective of this project was to measure the amount of lead dust generated during typical R&R activities and assess whether routine R&R activities increased lead dust levels in the work area and property.

In conducting this project, 342 air samples and 407 surface dust wipe samples were collected during 60 typical R&R activities conducted in five separate residential properties in Roselle, IL, Wallingford, CT, Farmington, CT, Cheshire, CT and Milwaukee, WI. This project evaluated complete renovation and remodeling (R&R) activities as they would occur in the marketplace. The activities evaluated during this project were selected in consultation with remodeling contractors, and represent the most common jobs performed by renovation and remodeling firms. The R&R work was performed by professional renovation and remodeling contractors from each of the areas where the properties were located.

Field data collection was performed by Atrium Environmental Health and Safety Services, LLC (Atrium). The National Center for Healthy Housing (NCHH) reviewed the data, conducted a quality control review of field activities, and conducted statistical analyses of the sampling results.

1. The properties included in this study had higher lead levels than is typical for housing containing LBP. Many of the R&R activities assessed were on surfaces and fixtures that contained lead levels of more than 9.9 mg/cm^2. While the lead content of the paint was relatively high, pre-work surface dust levels measured on floors and window sills in the work areas of these properties were within the ranges of surface dust levels measured in occupied dwellings during a similar HUD-funded study.

2. Fewer events where EPA/HUD LSWP were used were evaluated than events where Routine or Modified (Mod) LSWP were used.

3. The air and surface dust sampling data values were widely distributed.

4. Based on the data collected during this project, EPA/HUD Lead Safe Work Practices (LSWP) took approximately twice the labor effort to implement when compared to routine work practices.

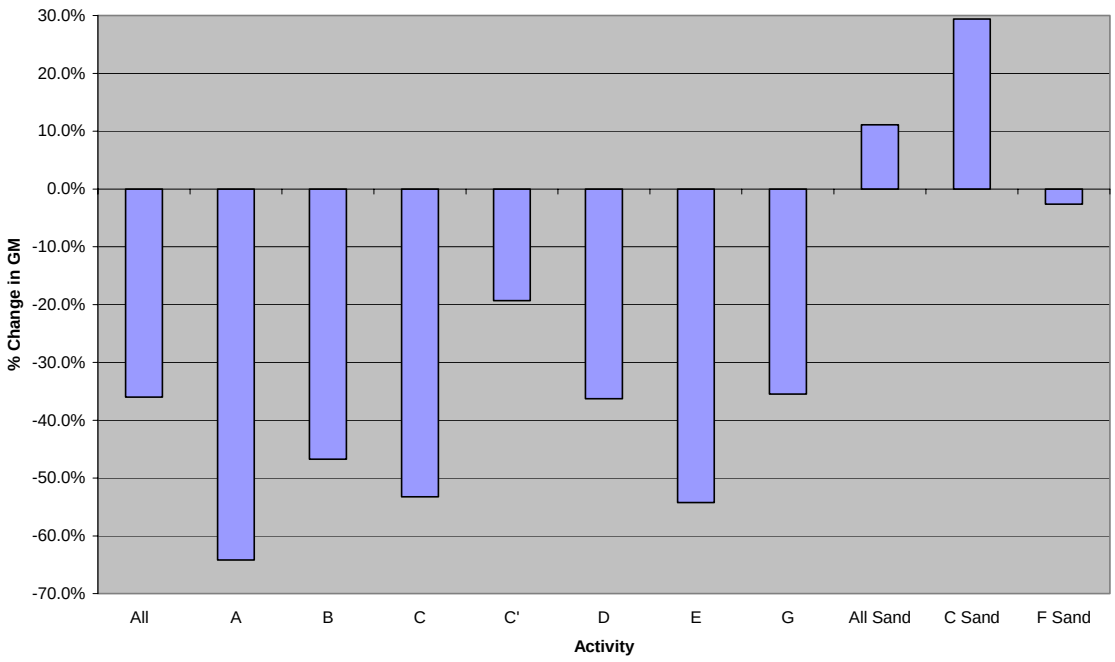
Responses to three fundamental questions that formulated the objectives of this project are offered as follows:

1. **Do typical renovation and remodeling activities create lead hazards?**

Renovation and remodeling activities evaluated during this project did not create new lead dust hazards.

In all of the properties tested, pre-work (baseline) testing identified surface dust levels that exceeded current HUD/EPA criteria for floors and window sills. When considering R&R activities where no sanding was performed, the post-work samples collected from all surfaces were lower than the pre-work dust samples in all of the activities evaluated.

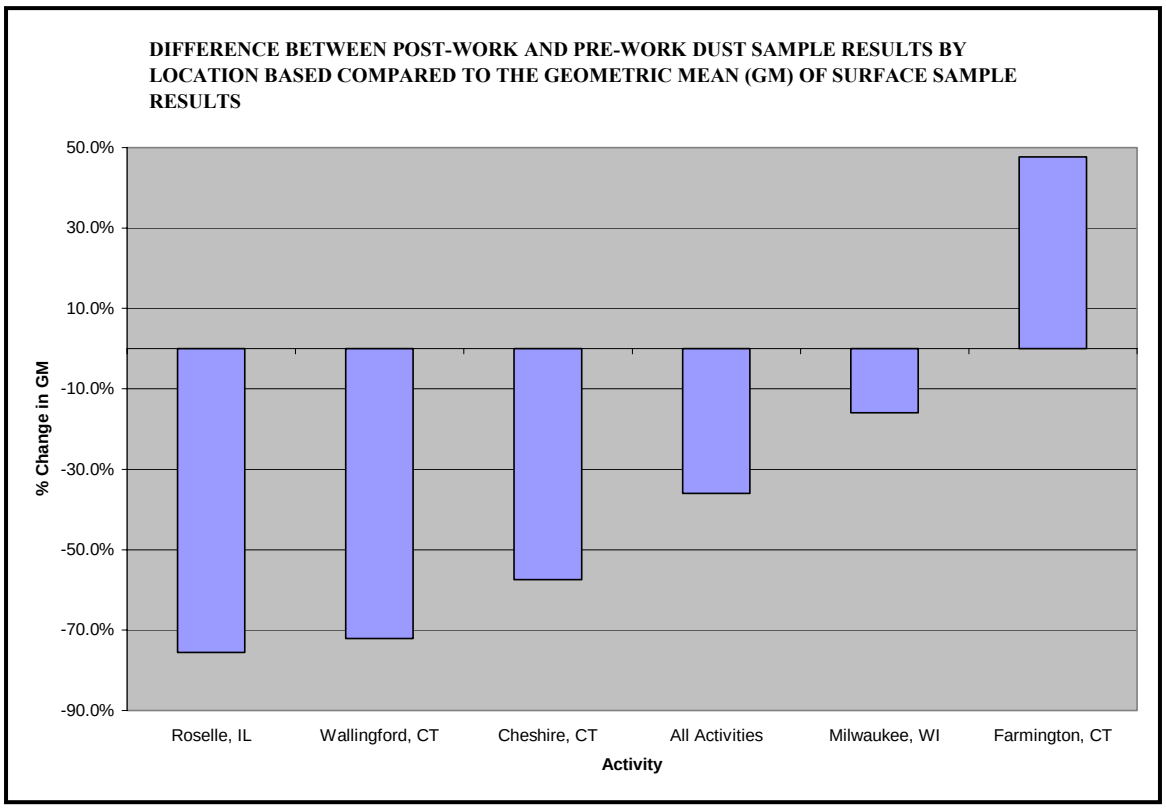
DIFFERENCE BETWEEN POST-WORK AND PRE-WORK DUST SAMPLES BY ACTIVITY BASED ON THE GEOMETRIC MEAN (GM) OF ALL SURFACES SAMPLED



Activity Label Legend

Label	Activity
A	Wall and Ceiling Removal
B	Wall and Ceiling Modification
C	Window Replacement (no sanding involved)
C'	Window Alteration (no sanding involved)
D	Kitchen and Bath Work
E	Floor Covering Removal
G	Sawing into Wood & Plaster Covered by LBP
All Sand	All Sanding Events
C Sand	Window and Door Replacement, Removal or Alteration (sanding events)
F Sand	Surface Preparation (sanding)

When considering lead dust loading on surfaces throughout a single property, results showed that overall all but one of the properties evaluated (Farmington, CT) showed lower levels of lead dust when the R&R contractors completed the work than when they arrived.



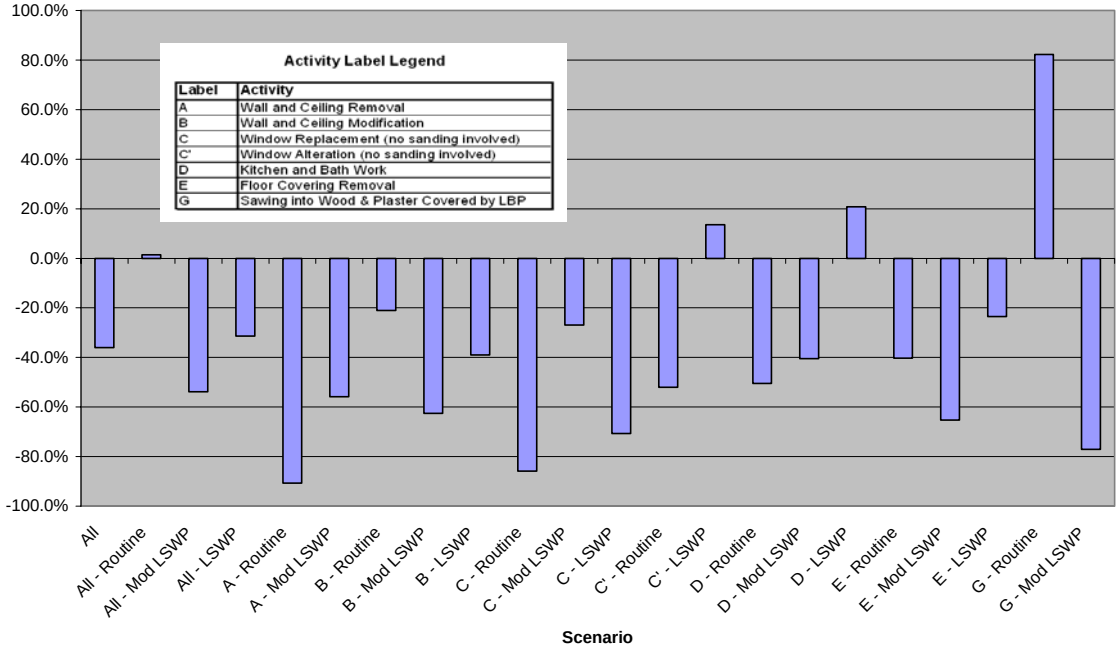
2. **When applying EPA's lead-safe work practices to a set of typical renovation and remodeling activities, are surface lead hazards (>40 µg/ft^2 on floors, >250 µg/ft^2 on window sills), or airborne hazards (> 50 µg/m^3 in the air) created?**

   In reviewing the results from all activities and all work practices, the trend was a reduction in both lead loading in surface dust as well as airborne lead based on the personal breathing zone (PBZ) air sample results. These results demonstrate that in most cases, no new hazards were created as a result of the renovation and remodeling activities conducted.

   Based on the results of the wipe samples collected during this project, pre-work surface dust loading results already exceeded 40 µg/ft^2 on floors and 250 µg/ft^2 on window sills for all activities and all work practices employed – Routine, Mod LSWP, and LSWP.

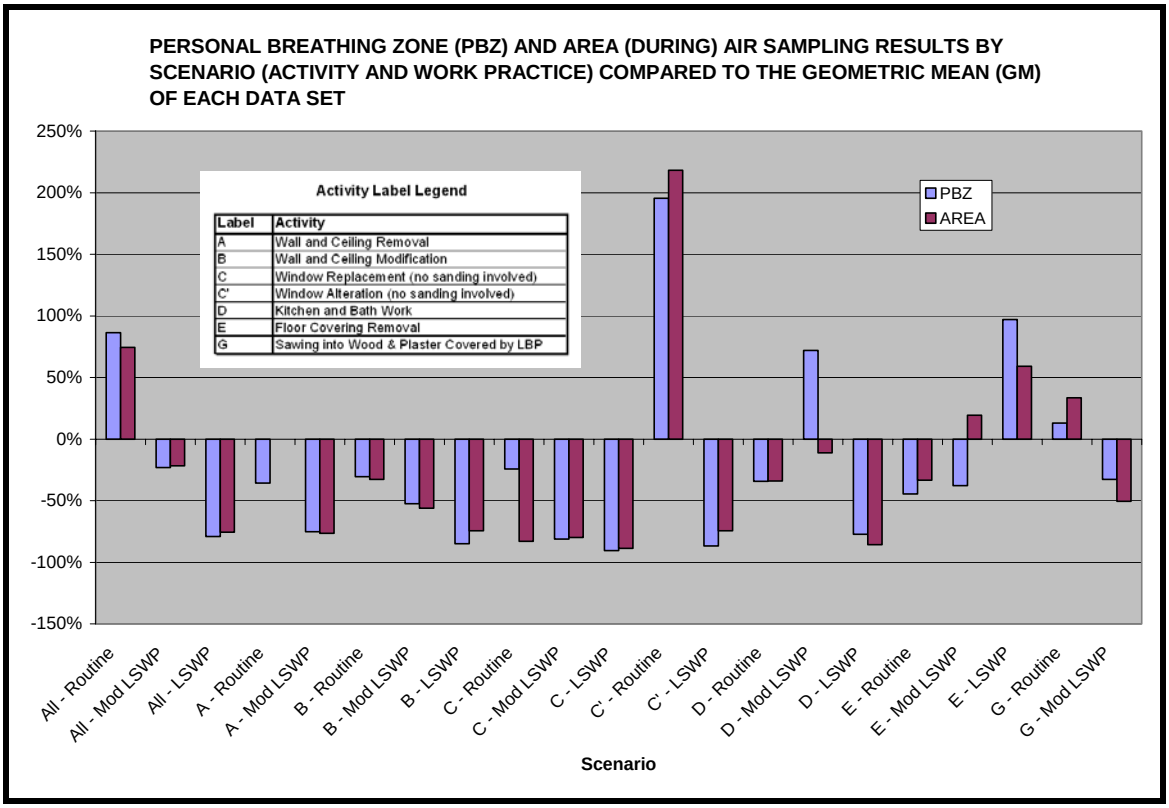
   There are several work practices that were demonstrated to have obvious benefits. Misting surfaces with water during work appears to significantly reduce airborne lead dust. Events where misting was used showed a significant reduction in airborne lead dust levels when compared to events where no misting was used.

DIFFERENCE BETWEEN POST-WORK AND PRE-WORK DUST SAMPLE RESULTS BY SCENARIO (ACTIVITY AND WORK PRACTICE) COMPARED TO THE GEOMETRIC MEAN (GM) OF SURFACE SAMPLE RESULTS



Airborne lead dust levels were substantially lower when only hand tools or only hand sanding were used when compared to events where one or more power tools were used. Ventilated (shrouded) tools connected to HEPA filter-equipped vacuum cleaners showed a reduction when compared to sanding using non-shrouded orbital sanders and belt sanders, respectively.

For surface dust, reductions in the lead loading were observed when either re-useable drop cloths or disposable drop cloths were used. However, a more substantial reduction was shown in events where disposable drop cloths were used. The use of HEPA filter-equipped vacuum cleaners combined with either wet wiping or Swiffer® mops during post-work clean-up showed the greatest effect on reducing lead loading in surface dust.



3. **Do modified lead-safe work practices reduce lead exposures below the PEL?**

The PBZ samples collected during this project represented 35 workers' 8-hour TWA exposures. Twenty-six of the calculated 8-hour TWA exposures were less than the OSHA Action Level of 30 μg/m^3; and 29 were below the PEL of 50 μg/m^3.

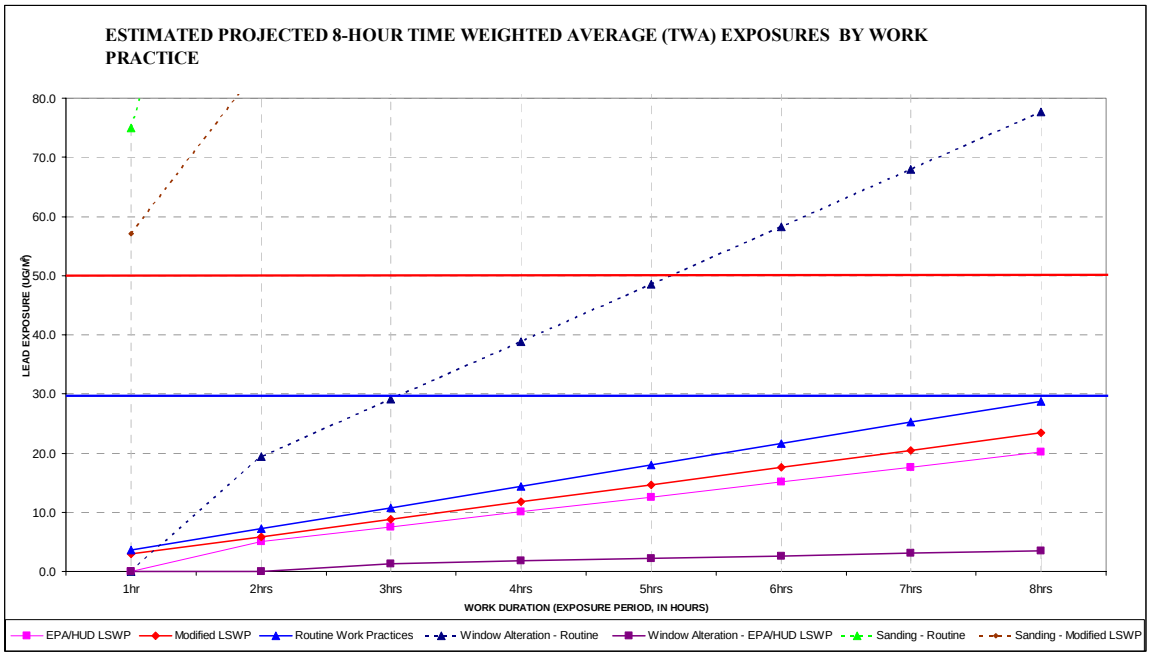
Estimating 8-hour TWA exposures by activity, regardless of work practice, showed that the following tasks can likely be performed for an entire work shift without exceeding the OSHA Action Level:

- Wall and ceiling demolition;
- Wall and ceiling modification;
- Window replacement with no sanding;
- Cabinet removal; and,
- Baseboard removal.

It is likely that window alterations with no sanding involved may be conducted using routine practices for shorter periods of time (e.g. less than 5 hours during a shift) without exceeding the OSHA PEL. Activities involving sanding resulted in projected 8-hour TWA exposures that exceeded the OSHA Action Level and PEL.

In most instances, those employees' whose 8-hour TWA exposures exceeded the action level performed some type of sanding activity during their work day. Using ventilated (shrouded) tools connected to HEPA filter-equipped vacuum cleaners and other dust

control measures during sanding reduced airborne concentrations of lead dust, in most cases. During window and door alterations where sanding was conducted, employing some degree of dust control showed a reduction in airborne dust levels, in most cases, when compared to sanding with no controls. Performing surface preparation activities using dust control devices or techniques also showed a reduction over uncontrolled sanding during surface preparation.



1.0 INTRODUCTION

The National Association of Home Builders (NAHB) has conducted an assessment of renovation/ remodeling (R&R) activities to measure levels of lead dust generated by home improvement contractors. The objective of this project was to measure the amount of lead dust generated during typical R&R activities and assess whether routine R&R activities increased lead dust levels in the work area and property.

Air and surface dust samples were collected during typical R&R activities conducted from the following residential properties:

- A single family home in Roselle, IL;
- A two-story duplex in Wallingford, CT;
- A single family home in Farmington, CT;
- A single family home in Cheshire, CT; and,
- An apartment above a retail store front in Milwaukee, WI.

This project evaluated complete R&R activities as they would occur in the marketplace. The activities evaluated during this project were selected in consultation with remodeling contractors, and they represent the most common jobs performed by renovation and remodeling firms. The R&R work was performed by professional renovation and remodeling contractors from each of the communities where the properties were located. All of the R&R workers who participated in this project had previously attended and successfully completed the EPA/HUD curriculum for *Lead Safety for Remodeling, Repair, & Painting*.

Field data collection was performed by Atrium Environmental Health and Safety Services, LLC (Atrium). The National Center for Healthy Housing (NCHH) reviewed the data and conducted statistical analyses of the sampling results.

2.0 BACKGROUND

The Residential Lead-Based Paint Hazard Reduction Act (Title X), passed in 1992, directs the Environmental Protection Agency (EPA), the Department of Housing and Urban Development (HUD), and the Occupational Safety and Health Administration (OSHA) to develop programs to eliminate lead-based paint (LBP) hazards in all "target housing." Target housing is defined as all residential structures built prior to 1978 that could be occupied by a child under the age of six. Approximately 68 percent of the existing housing stock meets this definition.

Title X directed EPA to issue appropriate LBP rules for the renovation and remodeling industry by 1996. Within this directive, EPA was tasked with conducting a study to determine which segments of the renovation and remodeling industry conduct activities which result in the creation of lead hazards. Additionally, the statute grants the EPA Administrator the discretion to exempt certain segments of the industry from regulation if they do not create lead hazards.

EPA spent the past few years working on a voluntary program incorporating lead-safe work practices for the renovation and remodeling industry. In 2003, EPA and HUD developed a joint curriculum, *Lead Safety for Remodeling, Repair, & Painting,* designed to teach lead-safe work practices to firms working in government-assisted housing. However, within the past year, facing mounting pressure due to the long past statutory deadline, the Agency abruptly abandoned work on the voluntary program and resumed the process of developing a mandatory program.[i]

EPA conducted an exposure study, published in 2000, on renovation and remodeling activities the Agency deemed typical. It found seven specific activities which resulted in lead dust levels near or above the OSHA exposure limit for workers (manual paint removal, paint removal with power tools, large structure removal (interior demolition), interior surface preparation for painting, HVAC work, sawing in wood covered by LBP, sawing in plaster covered by LBP). However, EPA did not examine whether modifying or initiating lead safe work practices might reduce worker and occupant exposure levels. Nor has it ever tested the efficacy of its own suite of lead-safe work practices.

On January 10, 2006, the EPA published its proposed Lead; Renovation, Repair, and Painting Program Rule in the Federal Register. EPA closed the comment period on this proposed rule on May 25, 2006.

Furthermore, OSHA is facing the possibility of a review of the lead in construction standard under section 610 of the Regulatory Flexibility Act and section 5 of Executive Order 12866 on Regulatory Planning and Review. In 2002, the Office of Management and Budget (OMB) directed OSHA to accept public comment on the LBP rule. OSHA began accepting public comments on the Rule in June, 2005.[ii]

3.0 PROJECT APPROACH

Research on lead-safe work practices could be instrumental in helping to modify OSHA's Lead in Construction Rule, and to adjust EPA's proposed Renovation and Remodeling Rule for greater relevance to the residential construction industry. To help make scientifically sound decisions and recommendations as new regulations and guidelines are developed for the construction industry, NAHB conducted research to answer the following fundamental questions related to lead-safe work practices:

1. Do typical renovation and remodeling activities create lead hazards?
2. When applying EPA's lead-safe work practices to a set of typical renovation and remodeling activities, are surface lead hazards (>40 µg/ft^2 on floors, >250 µg/ft^2 on window sills), or airborne hazards (> 50 µg/m^3 in the air) created?
3. Do modified lead-safe work practices reduce lead exposures below the PEL?

To answer these questions, air monitoring and surface dust measurements were collected in homes that contain LBP during renovation and remodeling activities. The following types of measurements were collected:

- Work area air measurements (measured in µ/m^3)
- Personal breathing zone (PBZ) measurements (measured in µ/m^3)
- Surface dust wipe samples following completion of work (measured in µg/ft^2)

3.1 Terms used in this Report

The terminology used during this Project and in this report is defined in Table 3.1 below.

TABLE 3.1
TERMINOLOGY USED IN THIS REPORT

Property	A *property* refers to a residential building (single family home, apartment, or duplex) where renovation and remodeling activities were conducted during this Project.
Event	An *event* is a specific evaluation effort, including air and dust sampling, of a specific renovation and remodeling activity at a specific property. Each event has a specific date and time, and represents a specific scenario (see below). A total of sixty events were evaluated during this Project.
Activity	An *activity* is a specific renovation and remodeling effort. A listing of Key and Miscellaneous activities, which is summarized in Table 3.2, was provided by NAHB prior to beginning this Project. For the data analysis purposes, some activities were segregated further. Table 3.3 is a listing of the activities evaluated and analyzed during this effort. Six key activities and two miscellaneous activities were evaluated during this Project.
Work Practice	*Work practice* refers to the type and detail of the controls used to minimize dust generation during renovation and remodeling activities and the techniques used to clean the work area following work. Three types of work practices were evaluated during this

TABLE 3.1 TERMINOLOGY USED IN THIS REPORT	
	Project: routine; modified lead-safe work practices; and lead-safe work practices as described by HUD and the EPA. These work practices are discussed in detail under the Project Approach section of this report.
Scenario	A *scenario* is the combination of renovation and remodeling activity and work practice used during a single event. There were 24 possible scenarios evaluated during this Project. Each scenario was assigned an alpha-numeric identification code for data management. A summary of the scenario codes is included in Table 3.3.
Work Area	A *work area* is a specific room or location within a property where a specific renovation and remodeling event was conducted. Work areas were segregated from adjacent areas of the property by fixed walls and doors; or, where walls or doors were not present, by polyethylene (plastic) sheeting barriers installed by the renovation and remodeling contractors.
Task	A *task* is a specific type of work performed during an activity. For the purposes of classifying and analyzing data collected during this project, activities that involved the tasks of sanding or sawing were categorized into the miscellaneous activities of surface preparation (sanding) and sawing.
Wall or Ceiling Removal (Demolition)	*Wall or ceiling removal (demolition)* refers to the removal of wall or ceiling finishes exposing the frame. These tasks were generally conducted using hand tools, including hammers and pry bars. The tasks and methods necessary to accomplish the activity were left to the professional judgment of the experienced renovation and remodeling contractor performing the work.
Wall or Ceiling Modification	*Wall or ceiling modification* refers to activities where walls or ceilings were modified or altered. Activities including installing recessed lighting, installing wall outlets and light switches, and installing windows or doors in walls were classified as modifications. These tasks were typically conducted using hand tools (hammers and pry bars) and electric saws (such as sawsalls). The tasks and methods necessary to accomplish the activity were left to the professional judgment of the experienced renovation and remodeling contractor performing the work.
Window or Door Removal and/or Replacement	*Window or door removal* and/or replacement refers to an activity involving removal of an existing window or door. This may include removal of the frame, casing, sash, or door, and may include installing a new door or window. Due to material limitations and the planned disposition of the properties, window replacements were simulated using raw lumber materials (planks and plywood) rather than finished materials and windows. The tasks and methods necessary to accomplish the activity were left to the professional judgment of the experienced renovation and remodeling contractor performing the work.
Window or Door Alteration	*Window or door alteration* refers to an activity involving the modification or alteration – other than replacement – of a door or

TABLE 3.1 TERMINOLOGY USED IN THIS REPORT	
	window. Alteration may involve work on the trim, molding, casing, sash or sill; but does not remove or replace an existing door or window. The tasks and methods necessary to accomplish the activity were determined by the professional judgment of the experienced renovation and remodeling contractor performing the work.
Surface Preparation	*Surface preparation* refers to any activity where manual or mechanical sanding was performed to prepare a surface for a new finish. The surface condition and the extent of sanding and finishing necessary were determined by the professional judgment of the experienced renovation and remodeling contractor performing the work.
Controlled Sanding	*Controlled sanding* refers to a sanding task where a ventilated or shrouded mechanical tool (such as an orbital sander) was connected to a vacuum cleaner equipped with a high efficiency particulate air (HEPA) filter.
Manual Sanding	*Manual sanding* refers to hand sanding using a sheet of sand paper or a sanding block.
Uncontrolled Sanding	*Uncontrolled sanding* refers to a sanding task where a power tool (such as an orbital sander or belt sander) was used without any supplemental or integrated ventilation or dust collection system.
Disposable Drop Cloth	A *disposable drop cloth* was a plastic (polyethylene or "poly") sheet or other material that was laid out within the work area to protect the floor, floor covering and other non-moveable objects in the room. Disposable drop cloths were HEPA-vacuumed and/or wiped cleaned, then folded inward during the clean-up phase of the work. Disposable drop cloths were treated as waste following the work event, and were placed into waste bags at the completion of work.
Re-usable Drop Cloth	A *re-usable drop cloth* refers to a canvas or other drop cloth that was not disposed of as waste following R&R work. Re-useable drop cloths were typically folded inward during clean-up.
HEPA-equipped vacuum cleaner	A *HEPA-equipped vacuum cleaner* is a vacuum cleaner that is equipped with a high efficiency particulate air (HEPA) filter. A HEPA filter is capable of filtering 99.97% of particles greater than or equal to 0.3µm in diameter.
Area Air Sample	An *area air sample* is an air sample collected inside or nearby a work area. During this project, area air samples were collected by connecting the sampling media to a portable air sampling pump using Tygon® tubing. The sampling media were positioned to a height approximate to the breathing zone. Six types of area air samples were collected during this Project: 1. "Pre-work - Inside" area air samples were collected inside of work areas before work began. These samples were used to document background levels of airborne lead dust. 2. "During - Inside" area air samples were collected inside of work areas while R&R work was performed. These samples were

TABLE 3.1 TERMINOLOGY USED IN THIS REPORT	
	used to document levels of airborne lead dust during work activities. 3. "Post-work - Inside" area air samples were collected inside of work areas following the completion of R&R work activities, including clean-up. These samples were used to document levels of airborne lead dust following completion of work activities. 4. "Pre-work - Outside" area air samples were collected in interior areas adjacent to or nearby work areas before work began. These samples were used to document background levels of airborne lead dust. 5. "During - Outside" area air samples were collected in interior areas adjacent to or nearby work areas while R&R work was performed. These samples were used to document levels of airborne lead dust outside of the work areas during work activities. 6. "Post-work - Outside" area air samples were collected in interior areas adjacent to or nearby work areas following the completion of R&R work activities, including clean-up. These samples were used to document levels of airborne lead dust outside of the work areas following completion of work activities. An area air sample configuration is depicted in Figure 3.2.
PBZ Air Sample	A *personal breathing zone (PBZ) air sample* is an air sample worn by a worker during sample collection. The sample collection media is placed within the worker's breathing zone, typically near the worker's collar. The sampling media is connected to a portable, battery-operated air sampling pump by Tygon® tubing, and the worker wears the pump on his or her belt. A PBZ air sample configuration is depicted in Figure 3.3. The purpose of PBZ air sampling during this Project was to measure the concentration of airborne lead dust in the workers' breathing zone during R&R work activities. The concentration measured and reported represents the worker's exposure to airborne lead during the duration of the event evaluated.
Time Weighted Average	A *time-weighted average (TWA*) measurement is a worker's exposure over a period of time. The OSHA action level (AL) and permissible exposure limit (PEL) for lead are based on an 8-hour exposure period. For this Project, the results from PBZ air samples were used to calculate 8-hour TWA exposures for comparison to the PEL. If multiple events were conducted by a single worker over an 8-hour period, the PBZ air sampling results from each event conducted were used to calculate the worker's 8-hour TWA exposure using the following formula: $TWA = (C_aT_a+C_bT_b+ . .C_nT_n)÷480$ Where: *TWA* is the equivalent exposure for the working shift;

TABLE 3.1 TERMINOLOGY USED IN THIS REPORT	
	C is the concentration during any period of time T where the concentration remains constant; and, *T* is the duration in minutes of the exposure at the concentration C.[iii] For periods where no work was conducted, it was assumed that there was no exposure to lead.
Wipe Sampling	A wipe sample is a dust sample collected from surfaces inside the work area. The purpose of wipe sampling was to document lead dust loading on surfaces. Because the EPA and HUD have developed dust loading criteria based on the surface tested, wipe sampling was conducted on the following surfaces: 1. Floors within each work area; 2. Window sills within each work area; and, 3. Floor outside of or adjacent to work areas. "Pre-work" wipe sampling was conducted before R&R work began to document background lead loading in surface dust. "Post-work" wipe sampling was conducted following the completion of R&R work, including clean-up, to document lead loading in surface dust following the R&R activity.

3.2 Renovation and Remodeling (R&R) Activities

To answer the three questions above, the project had to evaluate specific R&R activities performed using different work practice controls.

Table 3.2 includes list of key and miscellaneous activities, developed by NAHB in consultation with remodeling contractors, that represent the most common jobs performed by renovation and remodeling firms that have the potential to disturb surfaces coated with LBP. All of the key activities and most of the miscellaneous activities listed in this table were evaluated during this project. The only miscellaneous activity not evaluated during this project was HVAC work. No heating, ventilation and air conditioning (HVAC) components in the properties included in this project were tested for lead-based paint.

TABLE 3.2 KEY AND MISCELLANEOUS RENOVATION AND REMODELING ACTIVITIES EVALUATED
Key Activities
1) Wall and ceiling removal (demolition) [e.g.; for an addition], including: a. Removing a wall to open a room b. Removing a finished ceiling to install a suspended ceiling system
2) Wall and ceiling modification (e.g.;. for adding a door), including: a. Cutting into a wall for new door or window b. Cutting into a ceiling to install new lighting
3) Window and door replacement which involves the removal or alteration of trims, moldings and jambs or anything else that may have LBP applied to the surface, including: a. Replacing a window

TABLE 3.2 KEY AND MISCELLANEOUS RENOVATION AND REMODELING ACTIVITIES EVALUATED
Key Activities
b. Replacing a door c. Modifying or altering a door or window, including trim, moldings, and jambs.
4) Kitchen and bath work (e.g.; cabinet replacement.)
5) Floor covering removal, including: a. Removing baseboards coated with LBP. b. Stripping floor finishings.
Miscellaneous Activities
6) Surface preparation.
7) Sawing into wood & plaster covered by LBP.
8) HVAC work – NOT EVALUATED DURING THIS PROJECT

3.3 Work Practices

To determine the effect that specific work practices had on the lead dust levels generated, each R&R activity was evaluated using one or more of the following work practice controls.

Routine. Routine practices are those work practices typically conducted by R&R contractors, and are not specialized for LBP on building components.

Modified Lead Safe Work Practices (LSWP). Modified LSWP work practices include using one or more of the dust control and clean-up methods discussed in the EPA/HUD curriculum for *Lead Safety for Remodeling, Repair, & Painting*.

Figure 3.0 is a modified checklist from EPA/HUD curriculum for *Lead Safety for Remodeling, Repair, & Painting* that includes specific LSWP that may be used using modified LSWP.

EPA/HUD LSWP. EPA/HUD LSWP include implementing those dust control and clean-up methods discussed in the EPA/HUD curriculum for *Lead Safety for Remodeling, Repair, & Painting*. These methods include:

1) Removing or covering all objects in the work area.
2) Closing and covering all forced air HVAC ducts in the work area.
3) Closing all windows in the work area.
4) Closing and sealing all doors in the work area. Doors within the work area that must be used while the job is being performed must be covered with plastic sheeting or other impermeable material in a manner that allows workers to pass through, while confining dust and debris to the work area.
5) Covering the floor surface, including installed carpet, with taped-down plastic sheeting in the work area.
6) All personnel, tools, and other items, including the exterior of containers of waste, must be free of dust and debris when leaving the work area.

Exhibit A includes the completed field data collections sheets for all of the events evaluated during this project. The work practices used during each event are shown on these sheets.

Table 3.3 is a matrix of the activity/work practice combinations, or scenarios, evaluated during this effort. Each scenario was assigned a unique code (ID) so that data collected during each scenario could be tracked.

TABLE 3.3
SUMMARY OF EVENTS EVALUATED BY ACTIVITY / WORK PRACTICE SCENARIO AND ASSIGNED ID CODES

Activities	Work Practices		
	Routine R&R Activities	**Modified Lead Safe Work Practices**	**EPA/HUD Lead Safe Work Practices**
Key Activities			
Wall and ceiling removal (demolition)	**A1**	**A2**	**A3**
Wall and ceiling modification	**B1**	**B2**	**B3**
Window and door removal and/or replacement	**C1**	**C2**	**C3**
Window and door alteration	**C'1**	**C'2**	**C'3**
Kitchen and bath work	**D1**	**D2**	**D3**
Floor covering removal.	**E1**	**E2**	**E3**
Miscellaneous Activities			
Surface preparation.	**F1**	**F2**	**F3**
Sawing into wood & plaster covered by LBP.	**G1**	**G2**	**G3**
HVAC work	**H1**	**H2**	**H3**

During field evaluations, key data on the work practices and tools used during R&R event were recorded using the checklist shown in Figure 3.0. This checklist provided a standard list of tools and work practices associated with R&R work, and expedited the recording of key work practices and tools used during each event. The purpose of using this standardized checklist to collect work practice and tool information was to provide a method for easily comparing and analyzing the activities, and determine the influence work practices and tools influenced had on air and dust sample results.

3.4 Property Selection

Residential properties used for testing during this project were selected from a listing of eligible properties provided by NAHB. Decision criteria used in unit selection included:

- Available testing data to demonstrate age (pre-1978) and presence of LBP;
- Number of housing units or potential test areas at a single property;
- Contractor and property schedule for availability and access to work areas;
- Separation and isolation from nearby occupants and community residents; and,
- Geographic accessibility of the property.

One other key criterion in the selection of properties included in this study involved the planned future use of the property. In order to capitalize on the number of events that could be evaluated in a single property, and with a view toward limiting possible tort allegations, vacant properties that were scheduled for demolition or extensive renovation were selected for this Project.

All properties considered for this project were assessed for the presence of LBP by an EPA-accredited Lead Inspector. Surveys previously conducted for property owners in accordance with HUD guidelines were used, if they existed. NAHB contracted with accredited firms to assess target properties for the presence of LBP. At a minimum, assessments included the surfaces tested, the room(s) where those surfaces exist, and the XRF or laboratory result for paint or coating on the surface.

FIGURE 3.0 – WORK PRACTICE AND TOOL CHECKLIST

WORK PRACTICE AND TOOL CHECKLIST			
Hygienist		**Work Practices/Tools (cont.)**	
Activity		Shop or Industrial Vacuum	
Work Practice		HEPA-equipped Vacuum	
		HEPA-rated Vacuum	
DATE		Shrouded Sander/Grinder/Planer	
LOCATION		Power Washing Equipment	
SCENARIO		Needle Gun connected to HEPA	
Work Area Preparation		Belt Sander	
Pre-cleaning w/ wet wiping and vac		Orbital Sander	
Rope		Other Non-ventilated Power Tools	
Barrier Tape		Heavy Duty Garbage Bags	
Saw Horses		**Work Area/Personnel Clean-up**	
Orange Cones		Roll Dropcloths Inward	
Signs		Wet Wipe Surfaces or Use	
Doorways/Openings Covered		Reusable Wet Mop w/ One	
HVAC Openings Sealed		Reusable Wet Mop w/ Two	
Reusable Drop Cloth		Use Swifter or Similar Disposable	
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth		Disposable Hand Towels	
Disposable Mesh		Pump Sprayer	
Staple Gun		HEPA-equipped Vacuum	
Tape		Shop or Industrial Vacuum	
Utility Knife		Brooms	
Tack Pad		Shovels	
Disposable Towels for Wipe Down		**Personal Protective Equipment**	
Work Practices/Tools		Full Body Disposable Coveralls	
Hammers/Prybars		N100 Respirator	
Misting Bottle		Gloves	
Sandpaper/Sanding Sponge		Disposable Shoe Covers	
Chemical Stripper		Safety Glasses	
Heat Gun		Disposable Towels	

A property was considered acceptable for research purposes if multiple surfaces that would be affected by any of the R&R activities included in this study are found to contain LBP present at 1.0 mg/cm^2 or greater by XRF testing or 0.5% or greater by paint-chip sampling. In order to maximize the number of activities evaluated, this study focused on properties with LBP on multiple surfaces.

Once the property test sites were selected, specific events, dates, times, locations and testing needs were scheduled. In order to organize this process, property-specific work plans were prepared defining:

- Dates of work activities
- Location of the property
- A list of possible activities that could be evaluated at the property based on lead paint inspection results
- A tentative testing schedule for each day

3.5 Work Force

The R&R work was performed by professional renovation and remodeling contractors from each of the communities where the properties were located. All of the R&R workers who participated in this project had previously attended and successfully completed the EPA/HUD curriculum for *Lead Safety for Remodeling, Repair, & Painting*.

3.6 Data Collection Procedures and Sampling Techniques

3.6.1 On-site Project Introduction and Orientation.

At the beginning of each day that testing was conducted, a project orientation session was conducted after all contractor personnel arrived at the property. This introduction and orientation session included:

- A review of the purpose and schedule of the project as it related to the property.
- A walk-through of the property to verify location and layout of the work areas and R&R events, as well as a review of general property specific safety issues.
- Confirmation that on site R&R personnel received (at a minimum):
  - training on the EPA/HUD curriculum for *Lead Safety for Remodeling, Repair, & Painting;*
  - information and training necessary to comply with standard construction safety guidelines and OSHA requirements for their assigned tasks; and,
  - each R&R professional participating in the Project received a medical evaluation by a physician or licensed health care provider and was found to be medically able to wear an N100 filtering-facepiece respirator.
- Confirmation that R&R contractors had sufficient labor, tools and materials to complete the scheduled test activity.
- An explanation of testing methods and analysis planned for the environmental monitoring data collected.
- Questions and answers, as needed.

3.6.2 Worker Protection.

Personal breathing zone (PBZ) air samples were collected on workers to determine if typical R&R activities on surfaces with lead-based paint result in lead exposures that exceed the OSHA permissible exposure limit (PEL) of 50 micrograms of lead per cubic meter of air (50 $\mu g/m^3$). The OSHA Lead in Construction standard (29 CFR 1926.62) requires that until exposure monitoring shows that the PEL is not exceeded, employees must be provided appropriate protection when performing the certain activities on surfaces with lead-based paint, assuming that exposures will not exceed ten (10) times the PEL. These regulated activities include:

- manual demolition of structures (e.g., dry wall);
- manual scraping; and
- manual sanding.[iv]

Because these regulated activities were also activities that were evaluated during this project, workers were required to wear personal protective equipment, including respiratory protection, to comply with the OSHA standard. The personal protective equipment worn by workers performing R&R work during this project included:

- Full-body disposable coveralls with hoods, elastic wrists, and elastic ankles;
- Disposable non-skid shoe covers;
- Safety glasses; and
- N100 filtering face-piece respirators approved by the National Institute for Occupational Safety and Health (NIOSH).

Only those workers determined to be medically qualified to wear a respirator were allowed to conduct R&R work during this project. Prior to beginning work, all R&R contractor personnel were medically qualified to wear a respirator, and were trained and fit-tested on a 3M 8322 N100 filtering face-piece respirator.

Fit testing was performed using the Bitrex™ (Denatonium Benzoate) Solution Aerosol Qualitative Fit Test (QLFT) Protocol referenced in Appendix A of the OSHA Respiratory Protection standard, 29 CFR 1910.134.

Workers were also provided wetted wipes to wipe their hands and face following work. Where running water was available, workers were provided soap to wash their hands and face. Workers were advised to wash their hands and face prior to eating, smoking or drinking.

3.6.3 Cross-Contamination Control.

Due to the nature of this project and the limited availability of properties, multiple R&R activities were performed and evaluated simultaneously to maximize the amount of data collected from each property. To obtain useful data, each event had to be considered discreet, with little or no impact from adjacent or nearby activities. Therefore, minimizing the possibility of dust migration and contamination from one work area to another was critical.

Strategies for separating work areas to control dust migration were highly dependant on the activities evaluated, the configuration of the work area, and the overall configuration of the property. However the following methods and procedures were used to control dust migration and cross-contamination:

- When separate work activities were performed simultaneously, they were separated as much as possible (e.g.; separate rooms as far apart as possible, different floors, etc.).

- When physical barriers did not exist between two work areas, plastic sheeting (4- or 6-mil thick) was used to construct a floor-to-ceiling barrier between work areas, regardless of whether activities in the areas were conducted simultaneously.
- When plastic sheeting barriers were constructed and a passageway was necessary, an opening with at least two overlaying flaps was constructed. The flapped opening was constructed to minimize air movement between the two areas.
- Workers were instructed to don clean (unused), disposable, slip-resistant shoe covers upon entry into work areas, and doff the shoe covers prior to leaving a work area. Worn shoe covers remained in the work area until all air and wipe sampling was completed.

3.6.4 Environmental Sampling.

Two types of dust lead measurements were collected during this project: air samples and dust wipe samples. Air samples included area air samples and personal breathing zone (PBZ) samples. Area air samples were collected before, during and after the work activity. The PBZ sample was collected during the work activity. Dust wipe samples were collected before work started and after final clean-up. Dust wipe samples were routinely collected from floors near the work activity and in some cases collected from a window sill and/or window well. Floor dust wipe samples were also collected before and after work from outside of the work area. The location of each sample is reported in the appendix.

Air Sampling Strategy. Area and PBZ air samples were collected during each event conducted. Area air samples were collected to measure airborne lead dust concentrations in the property and work area before R&R activities began, during the work, and after all work and clean-up was completed. PBZ air samples were collected during each scenario to measure worker exposures during work activities, and to calculate the 8-hour time weighted average (TWA) exposure for comparison to the OSHA action level (AL) of 30 $\mu g/m^3$ and the PEL of 50 $\mu g/m^3$. A summary of the locations of air samples collected during each event evaluated during this project are summarized in Table 3.3.

TABLE 3.4
NUMBER OF AIR SAMPLES COLLECTED DURING EACH EVENT

Sample Location	Prior to Work (Background)	During Work	Following Completion of Work
Area Air Samples	1 to 2 depending on size of work area	Same number as background	Same number as background
PBZ Samples	None collected	1 to 2 depending on the number of workers	None collected
Outside of work area	1 to 2 depending on configuration of area	1 to 2 depending on configuration of area	1 to 2 depending on configuration of area

Field blanks were submitted with each batch of air samples sent to the laboratory for analysis. One field blank was submitted for every 10 air samples submitted.

Air Sampling Methodology. All personal breathing zone air samples and ambient area air samples collected during this project were collected and analyzed in accordance with the National Institute for Occupational Safety and Health (NIOSH) Method 7300, *Element by*

ICP. All air samples were collected at a flow rate of 1.0 to 4.0 liters of air per minute (lpm). The volume of air sampled was determined based on the duration of the task, the amount of airborne dust present in the area where samples are collected, and the minimum reportable limit for the method. The minimum reportable limit is based on the analytical limit of detection (LOD). The analytical LOD for this project was 2.0 µg of lead/sample filter.

Area air samples were collected by connecting a 37-millimeter cassette loaded with a 0.8 micrometer (µm) pore size cellulose ester fiber (MCEF) membrane filter to a battery-operated portable air sampling pump by flexible Tygon® tubing. The cassettes were placed at a height approximately to the breathing zone. A photograph depicting an area air sample configuration is shown in Figure 3.1.

Figure 3.1 - Photograph of an Area Air Sample Collected During an R&R Work Event

Figure 3.2 - Photograph of a PBZ Air Sample on an R&R Worker

PBZ samples were collected in the same manner; but the air sampling pump was connected to the worker's belt and the cassette was placed in the worker's breathing zone by connecting the tubing to the collar. A photograph depicting a PBZ air sample configuration is shown in Figure 3.2.

All air sampling pumps were calibrated at the beginning and end of each sampling period using a BIOS DryCal, a primary calibration standard.

Air Sampling Data Quality Objectives. Air samples collected during this project achieved a reporting limit that was sufficiently below the OSHA action level of 30 micrograms of lead per cubic meter of air (µg/m^3), which is equivalent to 0.03 milligrams of lead per cubic meter of air (mg/m^3). To ensure a sufficient reporting limit, the sampling and analytical error (SAE) for the method was determined. The SAE for 95% confidence in the air sampling result was determined as follows:

$$SAE_{95\%} = (SQRT(C_{vA}^2 + C_{vS}^2)) * 1.645$$

Where: C_{vA} = coefficient of variability for the analytical method
C_{vS} = coefficient of variability for the sampling method

The sampling and analytical method used during this project was NIOSH method 7300, *Element by ICP*. The C_{vA} for air samples analyzed for lead using this technique is 0.024. The assumed sampling error is 5%, or 0.05. Based on these errors, the SAE for NIOSH Method 7300 is 0.091.[v]

The OSHA Technical Manual (OTM) states that determining compliance with a permissible exposure limit (PEL) is based on a 95% confidence that the PEL is exceeded. The OTM states:

1. a violation of the PEL exists if the upper confidence limit (UCL) exceeds unity, or 1;
2. a violation of the PEL does not exist if the lower confidence limit (LCL) is less than unity, or 1; and,
3. a violation of the PEL may exist if the LCL is greater than 1 and the UCL is less than 1.

According to the OTM; UCL and LCL values are calculated as follows:

$$UCL = \frac{\text{Measured result} - SAE}{\text{Exposure limit}}$$

$$LCL = \frac{\text{Measured result} + SAE}{\text{Exposure limit}}$$ [vi]

For the purposes of this Project, it was important that the minimum reportable limit for air samples is less than the LCL. When no measurable concentration of lead was detected on the sampling media, the laboratory reports the result as "<" the minimum reportable limit. In order to achieve a 95% confidence that a result reported as a "<" value is below the 30 µg/m^3 OSHA action level (AL) for lead, the LCL calculation had to be manipulated to determine the minimum reportable limit as follows:

Measured result (minimum reportable limit) = AL (1 – SAE)

The minimum reportable limit required to achieve 95% confidence that the action level was not exceeded when no lead was detected on the sample using NIOSH Method 7300 is 27.27 µg/m^3. For this Project, air sampling was conducted to achieve a minimum reportable concentration of 25 µg/m^3 (0.025 mg/m^3). In other words, there is at least 95% confidence that the OSHA action level was not been exceeded if the laboratory reports results as <25 µg/m^3 (<0.025 mg/m^3).

Based on the limit of quantification for the analytical method (2µg per sample), and to achieve a 95% confidence interval relative to the OSHA AL, the minimum volume collected on each air sample was 80 liters of air.

Air samples results were reported in micrograms of lead per cubic meter of air (µg/m^3). Laboratory results reported in milligrams of lead per cubic meter of air (mg/m^3) were converted to µg/m^3 prior to data analysis for consistency.

All air samples were analyzed by an American Industrial Hygiene Association (AIHA) accredited laboratory.

Surface Dust Sampling Strategy. Surface dust samples were collected to measure surface lead dust loading in the property and work area before R&R activities began and after all work and clean-up was completed. Surface dust samples were collected from the floor and a window sill (or other relevant surface) in each work area. A summary of the locations of surface dust samples collected during each event evaluated during this project are summarized in Table 3.4.

TABLE 3.5
NUMBER OF SURFACE DUST SAMPLES COLLECTED DURING EACH EVENT

Sample Location	Prior to Work (Background)	Following Completion of Work
Floors inside work area	2	Same number as background
Sills or other surfaces in work area	1 or 2, depending on area	Same number as background
Outside of work area	1 or 2 on floor, depending on area; 1 or 2 on sill or other surface, depending on area	Same number as background

Field blanks were submitted with each batch of wipe samples sent to the laboratory for analysis. One field blank was submitted for every 10 air samples submitted.

Surface Dust Sampling Methodology. Settled dust was collected using wipe sampling techniques referenced in Chapter 15 of the HUD publication *Guidelines for the Evaluation and Control of Lead-Based Paint in Public Housing*. Sampling was conducted using "ghost wipes." Samples were analyzed in accordance with NIOSH Method 7082, *Lead by Flame AAS* (Atomic Absorption Spectrophotometer). This technique is equivalent to EPA Method 3050/7420. The limit of quantification for this method was 10 µg of lead per wipe sample.

Surface Dust Sampling Data Quality Objectives. Surface dust sampling was conducted by lead professionals who maintained appropriate accreditation and licensure required by local authorities.

For consistency of results, the area sampled were measured and reported in square foot (ft^2) units. Each wipe sample represented approximately 1.0 ft^2 of area sampled, if feasible.

Wipe samples results were reported in micrograms of lead per square foot ($\mu g/ft^2$). Laboratory results reported in milligrams of lead per square foot (mg/ft^2) were converted to $\mu g/ft^2$ prior to data analysis for consistency.

All wipe samples were analyzed by a laboratory that participates in the AIHA Environmental Lead Laboratory Accreditation Program (ELLAP), which is recognized by the EPA.

Field Data Documentation. All field data collected, including key property information, work data, and air and wipe sampling data were recorded for each event conducted during this Project.

To ensure consistent comparison of work practices used, work practices used during each event were documented. Photographs of work areas prior to the beginning of work, during work activities, and at the completion (including any clean-up) were taken for each event.

The field data collection form used during this project is included in Exhibit A.

3.7 Statistical Analysis Techniques

Field data collected was entered onto an Microsoft® Office Excel 2003 spreadsheet. The Excel data was read into SAS Version 9.1, which was used for all computations (Copyright © 2002-2003 by SAS Institute Inc., Cary, NC, USA.)

A paired t-test on the log-transformed dust lead was used to test the null that the geometric mean (GM) dust lead loadings was the same pre and post-work. Fisher's exact test was used to test the null that the percentages of dust lead or air lead samples above an applicable cut-point were the same for different activities.

Significance was defined as having an observed significance level (p-value) below 0.05. If the p-value was less than 0.10 and at least 0.05 then the result was marginally significant.

4.0 RESULTS

In conducting this project, 342 air samples and 407 surface dust (wipe) samples (not including field blanks) were collected during 60 typical R&R activities conducted in five separate properties. The R&R work was conducted on interior surfaces and building components with paint containing between 0.9 mg/cm^2 and 25.3 mg/cm^2, as measured by X-ray fluorescence (XRF) instrumentation, which is considered lead-based paint (LBP).

Based on observations made when evaluating the R&R work performed during this Project, some of the activities included in NAHB's original list of R&R activities (as shown in Table 3.2) were further defined so the data analysis provided information that NAHB could use in issuing guidance to its members. Some scenarios were not evaluated due to limitations in surfaces and building components with lead-based paint to test.

Table 4.1 is a matrix of the activity/work practice combinations, or scenarios, evaluated during this project. This table also shows the number of events that were evaluated in each scenario. Table 4.2 is a summary of each of the events evaluated during this Project.

TABLE 4.1
NUMBER OF EVENTS EVALUATED BY SCENARIO

Activities [ID Code]	Work Practices [ID Code]		
	Routine R&R Activities [1]	**Modified Lead Safe Work Practices (Mod LSWP) [2]**	**EPA/HUD Lead Safe Work Practices (LSWP) [3]**
Key Activities			
Wall and ceiling removal (demolition) **[A]**	**1**	**3**	**0**
Wall and ceiling modification **[B]**	**6**	**7**	**1**
Window and door replacement which involves the removal or alteration of trims, moldings and jambs or anything else that may have LBP applied to the surface, including			
Window and door removal and/or replacement (no sanding involved) **[C]**	**1**	**3**	**1**
Window and door alteration (no sanding involved) **[C']**	**1**	**0**	**1**
Sanding on windows and doors **[C-sand]**	**6**	**3**	**0**
Kitchen and bath work (only cabinet removal was performed) **[D]**	**2**	**2**	**1**
Floor covering removal (only baseboard and stair removal were performed) **[E]**	**3**	**4**	**1**
Miscellaneous Activities			
Surface preparation (sanding) **[F]**	**4**	**5**	**0**
Sawing into wood & plaster covered by LBP **[G]**	**2**	**2**	**0**
HVAC work **[H]**	**0**	**0**	**0**

TABLE 4.2
SUMMARY OF R&R EVENTS EVALUATED

Event	Location	Date	Scenario	XRF Result	Scenario ID		No. of Workers
					Activity	Work Practice	
1	ROSL	012506	WINDOW REPLACEMENT - JAMBS REMOVED - ROUTINE	20.1	C	1	1
2	ROSL	012506	WINDOW REPLACEMENT - JAMBS NOT REMOVED - LSWP	22.7	C	3	2
3	ROSL	012606	WINDOW REPLACEMENT - JAMBS NOT REMOVED - MOD LSWP	13.6	C	2	1
4	ROSL	012606	INSTALL RECESSED LIGHTING IN CEILING - MOD LSWP	2.9	B	2	1
5	ROSL	012606	INSTALL DOOR IN CLOSET WALL - MOD LSWP	2.9	G	2	1
6	WLFD	041906	REMOVE PLASTER WALL & CEILING - ROUTINE - BATH 2	8.7	A	1	1
7	WLFD	041806	REMOVE PLASTER WALL & CEILING - MOD LSWP - BSMNT	1.5	A	2	1
8	WLFD	041806	CEILING MODIFICATION CUTTING WOOD - MOD LSWP - R FOYER 1	9.9	B	2	1
9	WLFD	041806	REMOVING WINDOW SASH - ROUTINE - LIV RM 2	9.9	C'	1	1
10	WLFD	041806	SANDING DOORS - ROUTINE - BED 4	9.9	C-SAND	1	1
11	WLFD	041806	SANDING WINDOW STOPS - ROUTINE - BED 4	9.9	C-SAND	1	1
12	WLFD	041806	SANDING DOORS - MOD LSWP - BED 1	9.9	C-SAND	2	1
13	WLFD	041806	SANDING WINDOW STOPS - MOD LSWP - BED 1	9.9	C-SAND	2	1
14	WLFD	041806	CABINET REMOVAL - ROUTINE - KIT 2	6.9	D	1	1
15	WLFD	041806	BASEBOARD WORK - ROUTINE - BED 3	9.9	E	1	1
16	WLFD	041806	REMOVING BASEBOARDS - MOD LSWP - BED 2	9.9	E	2	1
17	WLFD	041906	REMOVE & SAND MOLDING - ROUTINE - LIV RM 2	1.0	F-SAND	1	1
18	WLFD	041906	SANDING STAIRS - ROUTINE - STAIRWELL	9.9	F-SAND	1	1
19	WLFD	041806	SANDING STAIRS - MOD LSWP - STAIRWELL	9.9	F-SAND	2	1
20	CHSR	042106	WALL MODIFICATION - PLASTER - ROUTINE - BATH 6	1.0	B	1	1
21	CHSR	042106	WALL MODIFICATION - PLASTER - MOD LSWP - 1ST FL BATH	1.4	B	2	1
22	CHSR	042106	WALL MODIFICATION - PLASTER - MOD LSWP - BATH 5	1.0	B	2	1
23	FGTN	042006	WINDOW REPAIR - ROUTINE - BED 2	9.9	C-SAND	1	1
24	FGTN	042007	WINDOW REPAIR - ROUTINE - LIVING ROOM	9.9	C-SAND	1	1
25	FGTN	042006	WINDOW REPAIR - MOD LSWP - BED 3	9.9	C-SAND	2	1
26	FGTN	042006	CABINET REMOVAL - ROUTINE - 1ST FL BATH	2.1	D	1	1
27	FGTN	042007	CABINET REMOVAL - MOD LSWP - DINING ROOM	9.9	D	2	1
28	FGTN	042006	BASEBOARDS - ROUTINE - FAMILY ROOM	0.9	E	1	1
29	FGTN	042006	DOOR WORK - MOD LSWP - BED 1	9.9	F	2	1
30	FGTN	042006	CUT SHELVING - ROUTINE - REAR FOYER	1.6	G	1	1
31	FGTN	042006	BASEBOARDS - MOD LSWP - REAR FOYER	9.9	E	2	1
32	FGTN	042006	CUT SHELVING - ROUTINE - BED 2	1.4	G	1	1
33	FGTN	042006	CUT SHELVING - MOD LSWP - BED 3	9.9	G	2	1
34	MIL	050206	CEILING MODIFICATION - 3RD FL BR1	2.8	B	1	1
35	MIL	050206	WALL MODIFICATION (OUTLET INSTALLATION)- 2ND FL BR2	13.4	B	1	1
36	MIL	050206	WINDOW INSTALLATION - LIVING ROOM	22.5	C	2	1
37	MIL	050206	OUTLET INSTALLATION - 2ND FL BR1	13.4	B	3	1
38	MIL	050206	WINDOW MODIFICATION (SASHES AND STOPS) - LIVING ROOM	18.9	C'	3	1
39	MIL	050206	WINDOW WORK - SANDING - 2ND FL BR1	13.8	C-SAND	1	1
40	MIL	050306	BANISTER REMOVAL AND INSTALLATION - 3RD FL	4.4	A	2	2
41	MIL	050206	BASEBOARD REMOVAL - 3RD FL BR1	9.9	E	1	1
42	MIL	050206	FLOOR SANDING - PANTRY	2.3	F-SAND	2	1
43	MIL	050306	BASEBOARD REMOVAL - PANTRY	19.2	E	3	1
44	MIL	050306	CEILING MODIFICATION (RECESSED LIGHTS) - 3RD FL BR1	2.8	B	1	1
45	MIL	050306	CEILING SANDING - LIVING ROOM	16.5	F-SAND	2	1
46	MIL	050306	WALL MODIFICATION (DOOR INSTALLATION) - 2ND FL BR2	13.4	B	1	1
47	MIL	050306	WALL MODIFICATION (WINDOW INSTALLATION) - 2ND FL BR1	13.4	B	1	1
48	MIL	050306	CABINET REMOVAL - BATHROOM	9.6	D	3	1
49	MIL	050306	SURFACE PREPARATION (WINDOW FRAME) - 3RD FL BR2	6.0	F-SAND	2	1
50	MIL	050406	WALL DEMOLITION - 2ND FL BR1	13.4	A	2	2
51	MIL	050406	WALL MODIFICATION (OUTLET INSTALLATION) - 3RD FL BR1	4.5	B	2	1
52	MIL	050406	WINDOW REMOVAL - DINING ROOM	11.0	C	2	1
53	MIL	050406	SURFACE PREP (SAND STAIR TREADS) - STAIRWELL	13.0	F-SAND	1	1
54	MIL	050506	REMOVE SHELF SUPPORTS - CLOSET	25.3	B	2	1
55	MIL	050506	CEILING MODIFICATION (RECESSED LIGHTING) - 3RD FL BR1	2.9	B	2	2
56	MIL	050506	WINDOW MODIFICATION - LIVING ROOM	22.5	C-SAND	1	2
57	MIL	050506	CABINET REMOVAL - KITCHEN	9.4	D	2	1
58	MIL	050506	BASEBOARD REMOVAL - BATH	7.4	E	2	1
59	MIL	050506	STAIR REPLACEMENT	13.0	E	2	1
60	MIL	050506	CEILING SANDING - LIVING ROOM	16.5	F-SAND	1	2

Note: The highest possible readings in the Connecticut properties were 9.9 mg/cm^2. This was the maximum reportable limit for the XRF instrument used. Actual lead concentrations may be higher.

Tables summarizing air and wipe sampling data (Tables 4.6 through 4.21) and all graphical representations of sampling results are included at the end of this Section.

Exhibit B includes the field data summaries for each of the events evaluated during this project.

4.1 Quality Control Review of Field Data Collection Efforts

NCHH conducted an on-site evaluation of quality control procedures used during the collection of air and wipes samples, as well as other work activity data collection methods. This evaluation was conducted at the Milwaukee, Wisconsin property. NCHH's trip report is summarized as follows:

Property Description. All work was being done on the upper two stories of the structure. No electrical power was on in the upper two stories, necessitating the use of power cords running down the stairs to the lower level. Surfaces containing lead-based paint had been marked with red spray paint. A review of the XRF data on site showed that appropriate calibration checks and other documentation were satisfactory, although NCHH did not directly observe collection of XRF data.

Worker Training. It was reported to NCHH that all workers had been trained in a one-day course in lead-safe work practices. Different workers were used on different days. Workers were told they would be doing three levels of work practices, which were described as follows: "traditional, lead-safe, and modified lead-safe." No definitions of these terms were provided to workers. The work was to be done by experienced housing renovators, remodelers and painters and the construction/demolition or repair techniques to be used were to be based on their expert judgment to represent real world conditions.

Worker Protection. Workers were qualitatively fit tested with N-100 3M dust masks using a small shroud fitted over the worker's head. A "bitter" challenge aerosol was introduced into the shroud near the worker's breathing zone. Workers provided documentation from a medical health care provider that they were fit to wear a respirator. The respirator qualitative fit testing technique was observed to be adequate. All workers also wore disposable Tyvek suits and other personal protective equipment which was observed to be adequate.

Air and Wipe Sampling. Personal breathing zone and area air samples were collected using air sampling pumps operating at a nominal flow rate of approximately 2.5 liters per minute using 0.8 ug mixed cellulose ester filters housed in closed-face 35 mm cassettes. The cassettes were labeled with an expiration date of April 2009. Calibration was done before and after each sample was collected with the filter in line. All air samples were collected for at least one hour, reportedly to achieve sufficient sampling volume to gain a low enough detection limit, even if the work being studied did not last for the entire hour. All pump calibrations were performed with the filter in line and were observed to be done correctly.

Wipe samples were collected by two individuals licensed to do so in Wisconsin. Their technique was observed to be adequate. No spikes were inserted into the sampling stream.

In those cases where the work was completed in less than an hour, air sampling pumps, tubing, and filter cassettes used to collect personal breathing zone samples were left in the work area.

Other Observations. Each room at the property was separated by two-flap overlapping plastic sheets draped over doorway openings in order to minimize airborne dust migration from one work site to another. Air vents in each room were also covered with plastic and taped in a dust tight manner. The building's air ventilation system was kept off during the work. Although workers were told to don or remove disposable shoe coverings when moving through the airlocks, compliance with this directive by workers was inconsistent.

Air and dust wipe samples were collected inside the room and in the adjacent room outside the work site. Post-cleanup wipe samples were collected one hour after the work was completed to permit airborne dust to settle. For the work observed, compliance with the one hour requirement was adequate.

Measurements of the size of the painted areas to be treated were reportedly collected, but this was not observed directly. For some work practices, not all layers of paint were removed. The extent of paint removal was based instead on the expert judgment of the individual remodeling contractor. In some cases, the paint surface preparation involved removal of or abrading the top paint layer, which could mean that the lead paint layer(s), which are likely to be underneath non-lead paint layers, was not disturbed. For some work practices, there was dry vacuuming or dry sweeping only. Both HEPA vacuum and non-HEPA shop vacuums were used. For others, a "wet" cleaning step was used in addition to the vacuuming. The wet cleaning consisted of using a wet "Swiffer."™ Mops and mop buckets were not observed to be used, although in some cases paper towels moistened with water but no cleaning agent were used in addition to the Swiffer. ™ The Swiffer™ failed to moisten significant portions of floors, some of which were uneven and deteriorated. Some of the workers stated they would not be using the Swiffer in their typical work. The chemical content of the moistening agent used in the Swiffer™ was not identified on the package label, although a white residue was observed on the hard wood floors after drying.

Waste generated by the work was placed into large plastic bags or covered with plastic sheeting. Given the layout of the house and the restrictions reportedly stated by the owner, cross-area dust contamination control measures were problematic, especially during waste removal.

A review of data collection forms and chain of custody forms indicated they were adequate. Samples were observed to be adequately labeled and field notes taken by Atrium personnel and those collecting wipe samples were collected on standardized forms.

4.2 Summary of Tools Used and Time Required to Complete Work

As part of this project, data on the work area preparation activities, work practices and tools used, work area clean-up practices, and personal protection equipment used were recorded. In addition, the number of person-hours required to complete each event were collected. A

summary of the work practices and tools used, shown as a percentage of the events conducted using each work practice is shown in Table 4.3.

TABLE 4.3
SUMMARY OF WORK PRACTICES AND TOOLS USED

Work Area Preparation	ROUTINE (n = 26)	Mod LSWP (n = 29)	EPA/HUD LSWP (n = 5)	Work Area/Personnel Clean-up	ROUTINE (n = 26)	Mod LSWP (n = 29)	EPA/HUD LSWP (n = 5)
Pre-cleaning w/ wet wiping and vac	13.0%	12.5%	80.0%	Roll Dropcloths Inward	76.0%	89.3%	80.0%
Saw Horses	8.7%	18.5%	0.0%	Reusable Wet Mop w/ Two Buckets	0.0%	0.0%	20.0%
Signs	0.0%	0.0%	0.0%	Disposable Hand Towels	36.0%	61.5%	80.0%
Doorways/Openings Covered	96.0%	92.9%	100.0%	Pump Sprayer	0.0%	0.0%	60.0%
HVAC Openings Sealed	0.0%	8.3%	20.0%	HEPA-equipped Vacuum	4.3%	89.3%	60.0%
Reusable Drop Cloth	48.0%	12.0%	0.0%	Shop or Industrial Vacuum	80.0%	11.1%	0.0%
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	48.0%	85.7%	80.0%	Brooms	30.4%	16.0%	0.0%
Staple Gun	30.4%	40.7%	100.0%				
Tape	88.0%	89.3%	100.0%				
Utility Knife	72.0%	75.0%	80.0%				
Tack Pad	0.0%	0.0%	0.0%				
Disposable Towels for Wipe Down	0.0%	4.2%	60.0%				
Work Practices/Tools	**ROUTINE (n = 26)**	**Mod LSWP (n = 29)**	**EPA/HUD LSWP (n = 5)**	**Personal Protective Equipment**	**ROUTINE (n = 26)**	**Mod LSWP (n = 29)**	**EPA/HUD LSWP (n = 5)**
Hammers/Prybars	68.0%	74.1%	60.0%	Full Body Disposable Coveralls	100.0%	100.0%	100.0%
Misting Bottle	0.0%	12.5%	100.0%	N100 Respirator	100.0%	100.0%	100.0%
Sandpaper/Sanding Sponge	17.4%	20.8%	0.0%	Gloves	43.5%	52.0%	80.0%
Chemical Stripper	0.0%	0.0%	0.0%	Disposable Shoe Covers	100.0%	100.0%	80.0%
Heat Gun	0.0%	0.0%	0.0%	Safety Glasses	17.4%	40.0%	80.0%
Shop or Industrial Vacuum	48.0%	0.0%	0.0%	Disposable Towels	88.0%	80.0%	80.0%
HEPA-equipped Vacuum	0.0%	67.9%	60.0%				
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	0.0%	20.0%	0.0%				
Belt Sander	8.7%	25.9%	0.0%				
Orbital Sander	16.0%	12.5%	0.0%				
Other Non-ventilated Power Tools	48.0%	53.8%	40.0%				
Heavy Duty Garbage Bags	47.8%	70.4%	60.0%				

The time to complete each event, by activity and by work practice, is summarized in Tables 4.4 and 4.5.

TABLE 4.4
LABOR REQUIRED (IN WORKER-HOURS) TO COMPLETE WORK BY R&R ACTIVITY

Activities	Range		Average Time to Complete (min)
	Shortest Period (min)	Longest Period (min)	
Key Activities			
A. Wall and ceiling removal	48	518	230
B. Wall and ceiling modification	18	165	65
C. Window and door replacement, removal or alteration.	18	420	111
D. Kitchen and bath work	48	150	93
E. Floor covering removal.	18	240	80
Miscellaneous Activities			
F. Surface preparation.	41	108	62
G. Sawing into wood & plaster covered by LBP.	41	75	52

TABLE 4.5
LABOR REQUIRED (IN WORKER-HOURS) TO COMPLETE WORK BY WORK PRACTICE

Work Practices	Range		Average Time to Complete (min)
	Shortest Period (min)	Longest Period (min)	
Routine R&R Activities	18	282	71
Modified Lead Safe Work Practices	42	518	109
EPA/HUD Lead Safe Work Practices	36	210	142

4.3 Overall Summary of Sampling Results

In analyzing the air and wipe sampling results, the arithmetic mean (mean) and the geometric mean (GM) were used to assess the data sets. The GM of the data set is typically used to describe environmental and occupational exposure data that is lognormally distributed, consisting of mostly lower results (many less than the analytical limit of quantification) and few higher results. The arithmetic mean of the data set is commonly used by industrial hygienists to make decisions regarding exposures, particularly when assessing exposures to substances with chronic toxicity, such as lead.[vii]

Many of air samples collected had results that were below the limit of quantification (LOQ). Because these results provide critical information regarding the exposure profile, they were not discarded in the analysis of the data. Because of the wide distribution of the air sampling data sets, samples reported as less than the LOQ were considered to have lead concentrations of 50% of the LOQ. This approach is referenced in the American Industrial Hygiene Association (AIHA) publication *A Strategy for Assessing and Managing Occupational Exposures*.[viii]

Personal Breathing Zone Samples: The Occupational Safety and Health Administration (OSHA) has established an Action Level of 30 $\mu g/m^3$ during construction activities and has set a permissible exposure limit (PEL) of 50 $\mu g/m^3$. These exposure limits are based on an 8-hour time weighted average exposure (TWA).

During this project, 65 PBZ air samples were collected during 60 R&R events evaluated. Activity-based exposure measurements – worker exposures measured for the duration of the R&R event - were widely distributed, ranging from less than the LOQ to 1,700 $\mu g/m^3$.

- Results of 31 (48%) of the PBZ samples had no measurable lead on the sample (less than the LOQ).
- The mean of all PBZ air sample results for all of the R&R activities evaluated was 121 $\mu g/m^3$.
- The GM of all PBZ air sample results was 26.4 $\mu g/m^3$.

Area Air Samples: A total of 278 area air samples were collected during this project. Of the 209 samples collected inside work areas, 163 results (78%) were less than the LOQ.

Pre-work area air samples were collected in each room before work began to establish background airborne lead levels. Post-work samples were collected in each work area for approximately one hour following completion of the work activities. Because multiple work activities occurred consecutively in the same room, the results from the post-work area air samples from a morning activity were used as the pre-work, background levels for the afternoon activity in the same room.

- Results of 64 of 65 (99%) of the pre-work area air samples were less than the LOQ. The levels measured ranged from less than the limit of quantification to 190 $\mu g/m^3$. The only pre-work area sample with a result above the LOQ was a post-work sample from a morning R&R event that was used as the pre-work sample for an afternoon R&R event.
- Results of 62 of 67 (93%) of the post-work area air samples less than the LOQ. The levels measured ranged from less than the LOQ to 190 $\mu g/m^3$.

Results of the area air samples collected during work were similar to the PBZ results.

- Results of 37 of 74 (50%) of work area air samples were below the limit of quantification. The levels measured ranged from less than the LOQ to 1,780 $\mu g/m^3$.
- The mean of all area sample results collected during work for all of the R&R activities evaluated was 85.5 $\mu g/m^3$.
- The GM of area sample results collected during work was 17.6 $\mu g/m^3$.

Sixty-nine area air samples were collected outside of each work area prior to and during each R&R event. Generally, the area samples collected during work activities were similar to those collected before work began.

- Results from 36 of 38 (95%) of the pre-work air samples collected outside of the work area were less than the LOQ. The levels measured ranged from less than the LOQ to 53 $\mu g/m^3$.
- Result from 26 of 31 (90%) of air samples collected outside of the work area during work were less than the LOQ. The levels measured ranged from less than the LOQ to 83 $\mu g/m^3$.

Surface Dust Sampling. Pairs of settled dust lead samples were collected from each work area and outside the work area. Pre-work samples were collected prior to R&R activities. Post-work samples were collected following completion of the work and clean-up of the work area by the R&R contractor. Samples were collected after at least one hour had passed to allow for airborne dust to settle. This strategy is consistent with the HUD *Guidelines for the Evaluation and Control of Lead-Based Paint in Public Housing*. Post-work samples were collected in approximately the same area where the pre-work samples were collected.

During this project, 241 pairs of surface dust samples were collected and analyzed. The results were highly variable.

- Pre-work dust loading measurements ranged from less than the LOQ (< 10 $\mu g/ft^2$) to 108,000 $\mu g/ft^2$. Only one sample result was less than the LOQ. The mean pre-work measurement was 3,423 $\mu g/ft^2$. The GM of all pre-work measurements was 499 $\mu g/ft^2$.

- Post-work dust loading measurements ranged from less than the LOQ (< 15 μg/ft^2) to 39,200 μg/ft^{2*}. Only two sample results were less than the LOQ. The mean post-work measurement was 1,185 μg/ft^2. The GM of all post-work measurements was 320 μg/ft^2.

A total of 160 pairs of surface dust samples were analyzed from floors and window sills within work areas. The larger data set (241 pairs) represents all surfaces that were sampled. Therefore, fewer pairs of wipe samples representing floors and window sills were included in the analysis of lead dust loading on these surfaces.

- For 106 pairs of surface dust samples collected from floors:
  - Pre-work sample results ranged from less than the LOQ to 6,080 μg/ft^2. One sample was less than the LOQ. The GM of the pre-work dust loading measurements was 239 μg/ft^2. For comparison, pre-intervention levels measured on floors in 424 occupied residential dwellings as part of a HUD-funded study ranged from 0.1 μg/ft^2 to 9,407 μg/ft^2.[ix] Therefore, the pre-work dust loadings in the subject study were within the range of occupied housing.
  - Post-work sample results ranged from 18.2 μg/ft^2 to 11,400 μg/ft^2. The GM of the post-work dust loading measurements was 225 μg/ft^2.
- For 54 pairs of surface dust samples collected from window sills:
  - Pre-work sample results ranged from 136 μg/ft^2 to 108,000 μg/ft^2. The GM of the pre-work dust loading measurements was 1,850 μg/ft^2. These numbers are within the range of pre-intervention levels measured on window sills in 424 occupied residential dwellings as part of a HUD-funded study, which ranged from 3 μg/ft^2 to 129,188 μg/ft^2.[x]
  - Post-work sample results ranged from 19.9 μg/ft^2 to 10,800 μg/ft^2. The GM of the post-work dust loading measurements was 553 μg/ft^2.

The difference between the GM of the post-work dust sampling results (320 μg/ft^2) and the GM of the pre-work dust sampling results (499 μg/ft^2) for all surfaces and all activities represented a 36% reduction in lead dust loading.

The difference between the GM of the post-work dust sampling results from floors (225 μg/ft^2) and the GM of the pre-work dust sampling results from floors (239 μg/ft^2) for all activities represented a 6% reduction in lead dust loading.

The difference between the GM of the post-work dust sampling results from window sills (553 μg/ft^2) and the GM of the pre-work dust sampling results from window sills (1,850 μg/ft^2) for all activities represented a 71% reduction in lead dust loading.

4.4 Results by Activity

The air and wipe sample data collected was analyzed by R&R activity to assess the airborne lead levels and surface dust lead loading resulting from each activity. For the purpose of providing guidance to R&R contractors, all activities where sanding was conducted were segregated and analyzed separately from the other activities.

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[*] This result represents a composite sample from a sill and trough.

The PBZ air sampling results are summarized by activity in Table 4.6. Figure 4.1 shows the how GM of the PBZ air sampling results for each activity compared to the GM of the PBZ air sampling results for all activities.

The area air sampling results collected inside the work area during work are summarized by activity in Table 4.7. Figure 4.2 shows the GM of the area air sampling results for each activity compared to the GM of the area air sampling results for all activities.

The surface dust sampling results collected inside the work area are summarized by activity in Table 4.8. Figure 4.3 shows the difference between post-work surface dust samples and the pre-work surfaces dust samples by activity based on the GM of all surfaces sampled.

Surface dust sampling by surface tested is summarized for each activity in Table 4.9.

4.5 Results for Specific Tasks

For the purpose of providing guidance to R&R contractors, the air and dust sampling results for specific tasks likely to generate dust - sanding (surface preparation) and sawing - were analyzed. Each of these tasks was analyzed by the substrate (wood or plaster) on which the work was performed.

The PBZ air sampling results are summarized by sanding and sawing tasks in Table 4.10. Figure 4.4 shows the how GM of the PBZ air sampling results for each task compared to the GM of the PBZ air sampling results for all activities.

The area air sampling results collected inside the work area during work are summarized by sanding and sawing tasks in Table 4.11. Figure 4.5 shows the GM of the area air sampling results for each task compared to the GM of the area air sampling results for all activities.

The surface dust sampling results collected inside the work area are summarized by sanding and sawing tasks in Table 4.12. Figure 4.6 shows the difference between post-work surface dust samples and the pre-work surfaces dust samples by sanding and sawing task based on the GM of all surfaces sampled.

4.6 Results by Work Practice and Scenario

The PBZ air sampling results are summarized by work practice and scenario (activity and work practice combination) in Table 4.13. Figures 4.7A & 4.7B show the how GM of the PBZ air sampling results for each work practice and scenario compared to the GM of the PBZ air sampling results for all activities.

The area air sampling results collected inside the work area during work are summarized by work practice and scenario in Table 4.14. Figures 4.8A & 4.8B show the GM of the area air sampling results for each work practice and scenario compared to the GM of the area air sampling results for all activities.

The surface dust sampling results collected inside the work area are summarized by work practice and scenario in Table 4.15. Figures 4.9A & 4.9B show the difference between post-work surface dust samples and the pre-work surfaces dust samples by work practice and scenario based on the GM of all surfaces sampled.

Surface dust sampling by surface tested is summarized for each work practice in Table 4.16.

4.7 Results by Property

The PBZ air sampling results are summarized by property in Table 4.17. Figure 4.10 shows the how GM of the PBZ air sampling results for each property compared to the GM of the PBZ air sampling results for all activities.

The area air sampling results collected inside the work area during work are summarized by property in Table 4.18. Figure 4.11 shows the GM of the area air sampling results for each property compared to the GM of the area air sampling results for all activities.

The surface dust sampling results collected inside the work area are summarized by property in Table 4.19. Figure 4.12 shows the difference between post-work surface dust samples and the pre-work surfaces dust samples by property based on the GM of all surfaces sampled.

Surface dust sampling by surface tested is summarized for each property in Table 4.20.

4.8 Worker Exposures

The OSHA action level and permissible exposure limit (PEL) are based on an 8-hour time-weighed average (TWA) exposure. During this Project, personal breathing zone (PBZ) air samples were collected for the duration of the work activity being evaluated. For example, if the scenario being evaluated was a Window Replacement using Routine Work Practices (C1) and the activity took 90 minutes to complete (including set-up and clean-up), the PBZ sample was collected for the 90 minutes the worker was performing the work.

Utilizing this sampling strategy allowed for measuring worker exposures during each activity performed, and results from each activity could be used to calculate each worker's 8-hour TWA exposure. The data was also used to estimate projected 8-hour TWA exposures for each activity.

When multiple events were conducted by a single worker over an 8-hour period, the PBZ air sampling results from each event conducted were used to calculate the worker's 8-hour TWA exposure using the following formula:

$$8\text{-hour TWA} = (C_aT_a + C_bT_b + \ldots C_nT_n) \div 480$$

Where:
8-hour TWA is the equivalent exposure for the working shift;
C is the concentration during any period of time T where the concentration remains constant; and,
T is the duration in minutes of the exposure at the concentration C.[xi]

For periods where no work was conducted, it was assumed that there was no exposure to lead.

The calculated 8-hour TWA results, which are directly comparable to the OSHA AL of 30 $\mu g/m^3$ and the PEL of 50 $\mu g/m^3$, are summarized in Table 4.21.

The PBZ samples collected represent 35 workers' 8-hour TWA exposures. The 8-hour TWA exposures ranged from 0.7 $\mu g/m^3$ to 197 $\mu g/m^3$.

- For all R&R events evaluated during this project, the duration of work ranged from 18 minutes to 259 minutes. The average work duration was 81.5 minutes.
- Twenty-six (74%) of the calculated 8-hour TWA exposures were less than the OSHA Action Level of 30 $\mu g/m^3$.
- Twenty-nine (83%) of the 8-hour TWA exposures were below the PEL of 50 $\mu g/m^3$.
- The mean 8-hour TWA exposure was 29.5 $\mu g/m^3$. The GM of the 8-hour TWA exposures was 8.5 $\mu g/m^3$.
- The highest calculated TWA exposures were measured on workers during sanding activities. Calculated 8-hour TWAs for workers who performed sanding work ranged from 32.8 $\mu g/m^3$ and 197 $\mu g/m^3$.

Projected 8-hour TWA Exposure Estimates. While the 8-hour TWA measured for each worker is useful in identifying which tasks can result in exposures that exceed the OSHA action level and PEL, the data is limited on estimating exposures for specific activities that take longer to complete than those evaluated during this Project. The PBZ air sampling data was used to estimate projected 8-hour TWA exposures for each activity and scenario.

R&R activities took between 18 minutes and 259 minutes to complete. Because exposure monitoring was conducted over the entire activity period, including set-up, work, and clean-up, the duration of the activity represents the period of time the worker was exposed to airborne lead dust. The mean PBZ result and mean exposure time (the time required to complete the event) were used to estimate 8-hour TWA exposures for various work durations for each activity. These estimated exposure projections are shown in Figure 4.22.

It is critical to note that these are estimated exposures assume that the mean exposures for the activity or work practice are representative and consistent over the course of the work shift. These estimates are not intended to replace the requirement to conduct personal exposure monitoring under the OSHA standard.

TABLE 4.6
PBZ AIR SAMPLING RESULTS SUMMARIZED BY WORK ACTIVITY

Activity	PBZ (µg/m^3) n	Range	Mean	GM	GSD
All Activities (**LC_{XRF} (mg/cm^2)** n = 65 , Range = 0.9 - 25.3 , Mean = 10.0)	65	2.0 - 1700	122	26.4	5.4
A - Wall and Ceiling Removal (**LC_{XRF} (mg/cm^2)** n = 5 , Range = 1.5 - 13.4 , Mean = 6.5)	5	2.0 - 92.0	23.5	7.9	5.0
B - Wall and Ceiling Modification (**LC_{XRF} (mg/cm^2)** n = 15 , Range = 1.0 - 25.3 , Mean = 7.4)	15	2.5 - 68.0	21.7	13.5	2.7
C - Window Replacement (no sanding involved) (**LC_{XRF} (mg/cm^2)** n = 6 , Range = 11.0 - 22.7 , Mean = 18.8)	6	2.5 - 20.0	6.9	5.0	2.3
C' - Window Alteration (no sanding involved) (**LC_{XRF} (mg/cm^2)** n = 2 , Range = >9.9[1] - 18.9 , Mean = 14.4)	2	3.5 - 78	40.8	16.5	9.0
D - Kitchen and Bath Work (**LC_{XRF} (mg/cm^2)** n = 5 , Range = 2.1 - >9.9[1] , Mean = 7.6)	5	6.0 - 49.0	26.4	20.6	2.3
E - Floor Covering Removal (**LC_{XRF} (mg/cm^2)** n = 8 , Range = 0.9 - 19.2 , Mean = 10.0)	8	6.5 - 56.0	26.0	18.2	2.6
G - Sawing into Wood & Plaster Covered by LBP (**LC_{XRF} (mg/cm^2)** n = 4 , Range = 1.4 - >9.9[1] , Mean = 3.9)	4	7.0 - 111	42.8	23.0	3.9
All Sanding Events (**LC_{XRF} (mg/cm^2)** n = 20 , Range = 1.0 - 22.5 , Mean = 11.5)	20	6.0 - 1700	341	129	5.4
C - Window and Door Replacement, Removal or Alteration (sanding events) (**LC_{XRF} (mg/cm^2)** n = 10 , Range = >9.9[1] - 22.5 , Mean = 12.8)	10	8.0 - 1050	414	210	4.6
F - Surface Preparation (sanding) (**LC_{XRF} (mg/cm^2)** n = 10 , Range = 1.0 - 16.5 , Mean = 10.2)	10	6.0 - 1700	269	79.3	5.5

LC_{XRF} = Lead content of affected surfaces based on measurement by X-Ray Fluorescence (XRF) instrumentation.
[1] The XRF measurement reported (9.9) was the maximum reportable limit for the XRF instrument used.

FIGURE 4.1 - COMPARISON OF THE GM OF PBZ AIR SAMPLING RESULTS BY ACTIVITY TO THE GM OF THE PBZ AIR SAMPLING RESULTS FOR ALL ACTIVITIES

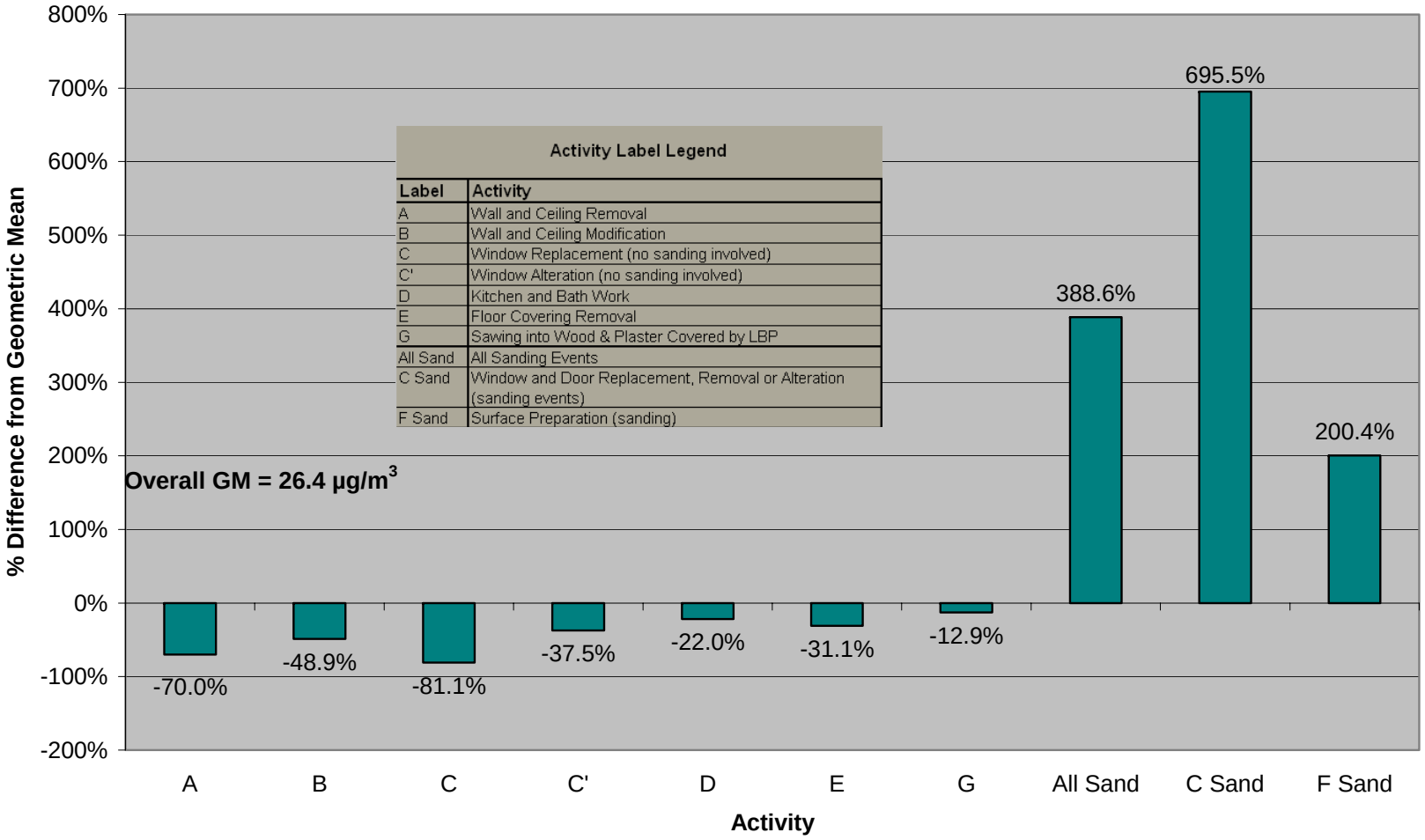


TABLE 4.7
AREA AIR SAMPLING RESULTS SUMMARIZED BY WORK ACTIVITY

Activity	Area During (µg/m^3)				
	n	Range	Mean	GM	GSD
All Activities (**LC_{XRF} (mg/cm^2)** n = 74 , Range = 0.9 - 25.3 , Mean = 10.5)	74	1.0 - 1780	85.5	17.6	4.8
A - Wall and Ceiling Removal (**LC_{XRF} (mg/cm^2)** n = 4 , Range = 1.5 - 13.4 , Mean = 8.3)	4	1.5 - 52.0	14.4	4.1	5.5
B - Wall and Ceiling Modification (**LC_{XRF} (mg/cm^2)** n = 15 , Range = 1.0 - 25.3 , Mean = 8.4)	15	2.0 - 54.0	13.0	9.1	2.3
C - Window Replacement (no sanding involved) (**LC_{XRF} (mg/cm^2)** n = 7 , Range = 11 - 22.7 , Mean = 19.3)	7	1.5 - 7.5	3.6	2.9	1.9
C' - Window Alteration (no sanding involved) (**LC_{XRF} (mg/cm^2)** n = 4 , Range = >9.9[1] - 18.9 , Mean = 14.4)	4	4.5 - 63.0	30.0	15.7	4.3
D - Kitchen and Bath Work (**LC_{XRF} (mg/cm^2)** n = 6 , Range = 2.1 - >9.9[1] , Mean = 8.0)	6	2.5 - 21.0	12.4	10.4	2.1
E - Floor Covering Removal (**LC_{XRF} (mg/cm^2)** n = 10 , Range = 0.9 - 19.2 , Mean = 9.4)	10	7.0 - 140	28.7	17.1	2.6
G - Sawing into Wood & Plaster Covered by LBP (**LC_{XRF} (mg/cm^2)** n = 4 , Range = 1.4 - >9.9[1] , Mean = 3.9)	4	2.0 - 69.0	29.3	14.3	4.9
All Sanding Events (**LC_{XRF} (mg/cm^2)** n = 24 , Range = 1.0 - 22.5 , Mean = 11.3)	24	6.0 - 1780	227	69.7	5.2
C - Window and Door Replacement, Removal or Alteration (sanding events) (**LC_{XRF} (mg/cm^2)** n = 11 , Range = >9.9[1] - 22.5 , Mean = 12.5)	11	32.0 - 868	267	163	3.0
F - Surface Preparation (sanding) (**LC_{XRF} (mg/cm^2)** n = 10 , Range = 1.0 - 16.5 , Mean = 10.2)	10	6.0 - 1780	194	34.0	5.7

LC_{XRF} = Lead content of affected surfaces based on measurement by X-Ray Fluorescence (XRF) instrumentation.
[1] The XRF measurement reported (9.9) was the maximum reportable limit for the XRF instrument used.

FIGURE 4.2 - COMPARISON OF THE GM OF AREA (DURING) AIR SAMPLING RESULTS BY ACTIVITY TO THE GM OF THE AREA (DURING) AIR SAMPLING RESULTS FOR ALL ACTIVITIES

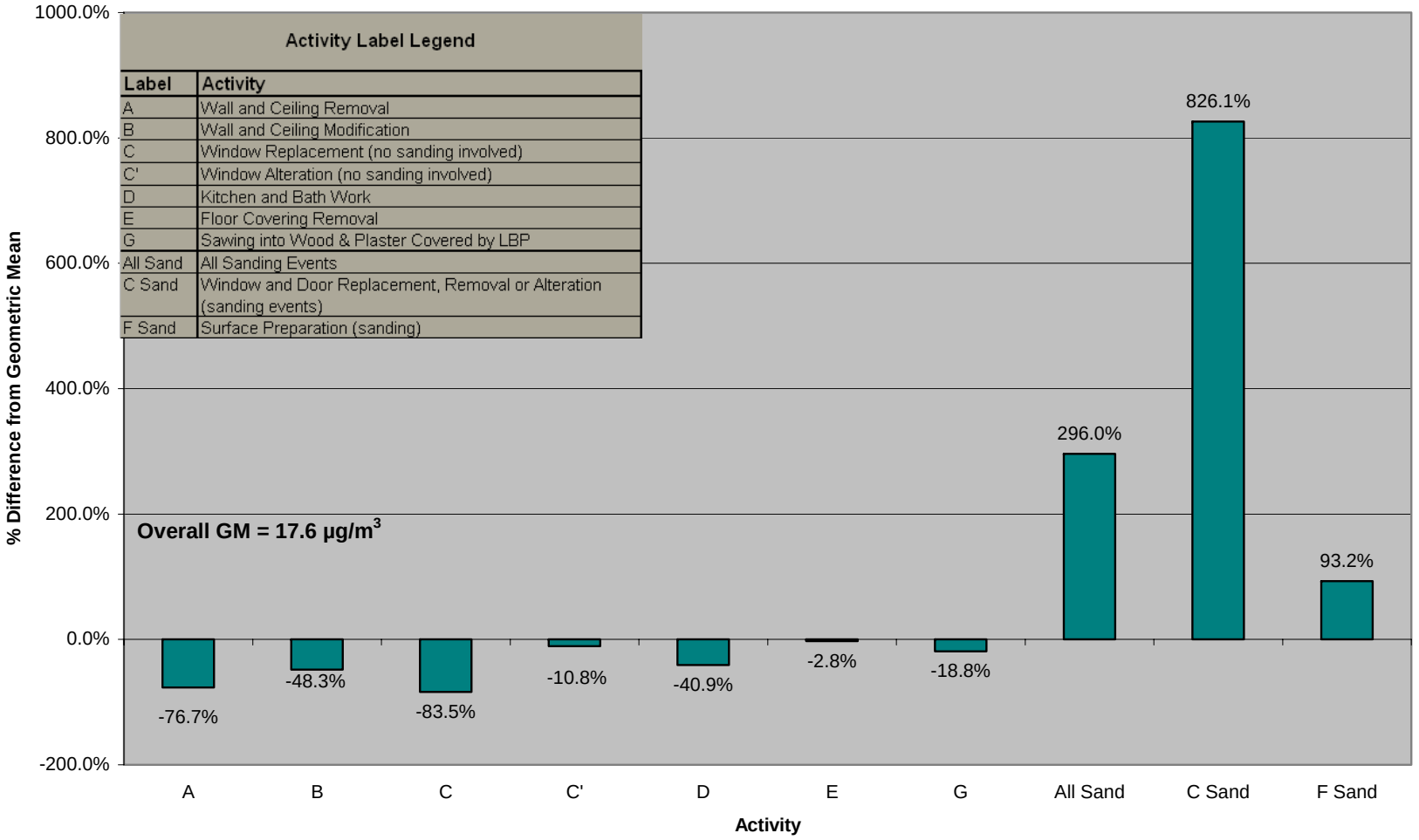


TABLE 4.8
SURFACE DUST SAMPLING RESULTS SUMMARIZED BY WORK ACTIVITY

Activity	n	Pre (µg/ft^2)			Post (µg/ft^2)			Δ GM	% Increase
		Range	Mean	GM	Range	Mean	GM		
All Activities	241	10.0 - 108000	3423	499	15.0 - 39200	1185	320	-179	-36.0%
A - Wall and Ceiling Removal	15	40.3 - 98000	10118	857	74.0 - 3800	604	307	-550	-64.2%
B - Wall and Ceiling Modification	56	13.4 - 12300	1286	401	18.2 - 3000	518	213	-187	-46.7%
C - Window Replacement (no sanding involved)	25	117 - 36000	2592	784	22.4 - 11400	1496	367	-417	-53.2%
C' - Window Alteration (no sanding involved)	6	152 - 16000	2958	575	33.2 - 1360	749	464	-111	-19.3%
D - Kitchen and Bath Work	20	15.0 - 43600	3996	436	16.3 - 2840	633	278	-158	-36.3%
E - Floor Covering Removal	33	13.0 - 108000	4549	528	15.9 - 39200	1716	242	-286	-54.2%
G - Sawing into Wood & Plaster Covered by LBP	16	10.0 - 10800	1651	208	14.9 - 2880	458	134	-73.8	-35.5%
All Sanding Events	69	15.0 - 91200	3734	545	19.8 - 14600	1873	606	60.8	11.1%
C - Window and Door Replacement, Removal or Alteration (sanding events)	32	15.0 - 91200	5938	471	19.8 - 10800	2193	638	145.0	29.4%
F - Surface Preparation (sanding)	37	27.0 - 14600	1836	595	48.7 - 14600	1589	579	-15.5	-2.6%

n = no. of pairs of samples, where a pair equals one pre-work sample and one post-work sample from approximatlely the same location.

Figure 4.3 - DIFFERENCE BETWEEN POST-WORK DUST SAMPLES AND PRE-WORK DUST SAMPLES BASED ON GM OF ALL SUFACES SAMPLED

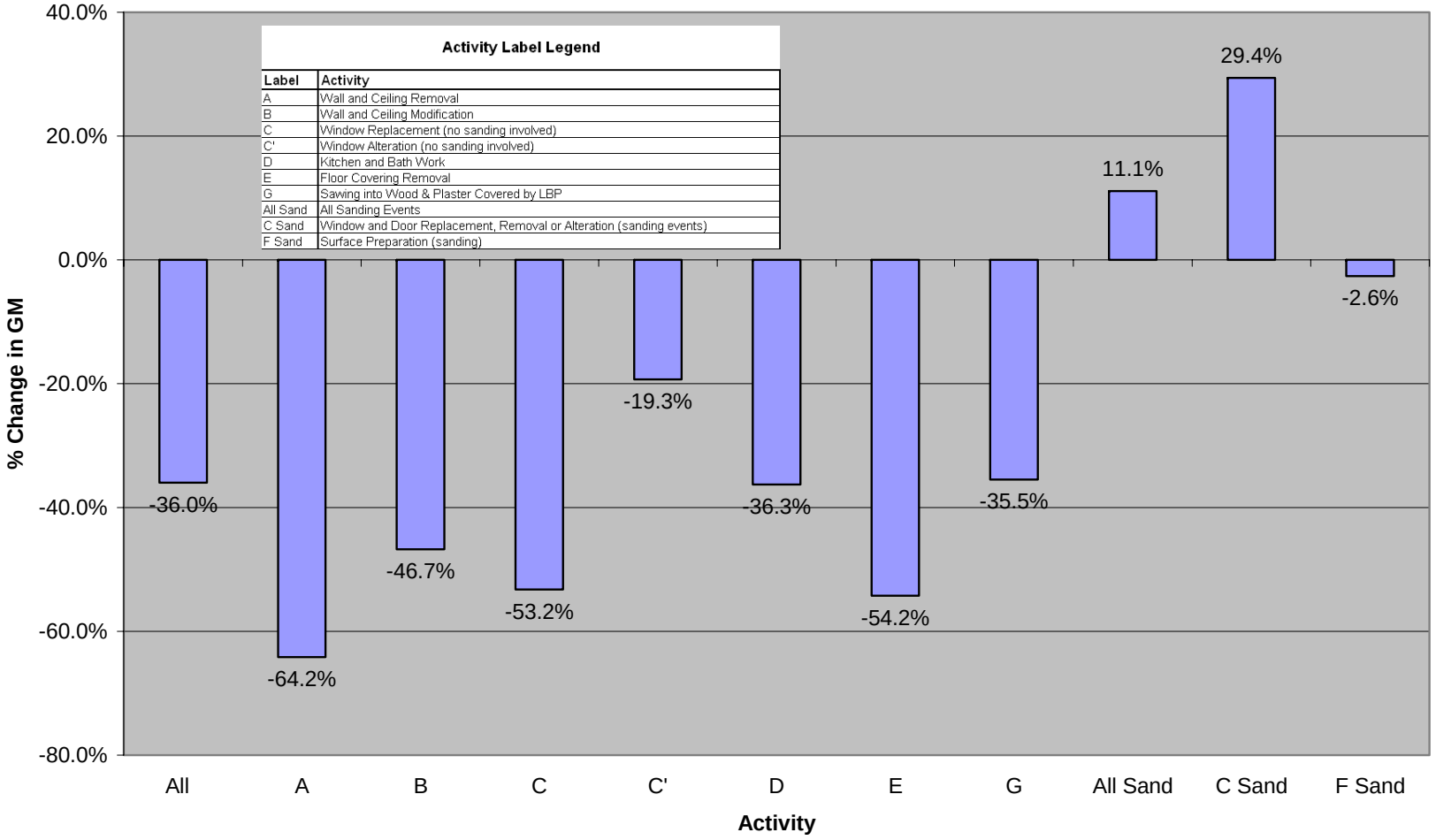


TABLE 4.9
CHANGES IN SETTLED DUST LEAD LOADINGS IN WORK AREA BY WORK ACTIVITY

Surface	Activity	No.	Pre-Work Results (µg/ft²) Range	Pre-Work Results (µg/ft²) Geometric Mean	Post-Work Results (µg/ft²) Range	Post-Work Results (µg/ft²) Geometric Mean	Change
Floor in Work Area	Wall and ceiling removal	7	40.3 - 1,200	327	74 - 3,800	418	28%
	Wall and ceiling modification	26	13.4 - 5,020	144	18.2 - 3,000	84	-42%[a]
	Window and door replacement, removal or alteration.	29	33.6 - 1,320	266	33.2 - 11,400	314	18%
	Kitchen and bath work (cabinet removal)	6	15.4 - 4,060	88	84.4 - 1,490	119	35%
	Floor covering removal (baseboard removal)	16	13 - 4,700	344	26.4 - 5,020	192	-44%
	Surface preparation.	16	33.2 - 6,080	516	48.7 - 9,700	788	53%
	Sawing into wood & plaster covered by LBP.	6	<10 - 4,320	116	49.2 - 1,040	156	34%
	All	**106**	**<10 - 6,080**	**239**	**18.2 - 11,400**	**225**	**-6%**
Window Sill in Work Area	Wall and ceiling removal	2	263 - 44,000	3,402	200 - 896	423	-88%
	Wall and ceiling modification	14	252 - 12,300	1,176	19.9 - 2,700	242	-79%[b]
	Window and door replacement, removal or alteration.	21	366 - 91,200	1,927	79.4 - 10,800	1,102	-43%
	Kitchen and bath work (cabinet removal)	5	213 - 43,600	2,409	95.7 - 2,840	536	-78%[a]
	Floor covering removal (baseboard removal)	5	136 - 108,000	2,004	81.8 - 873	272	-86%
	Surface preparation.	5	683 - 3,300	1,683	58.7 - 3,200	595	-65%[b]
	Sawing into wood & plaster covered by LBP.	2	6440 - 10,800	8,340	133 - 872	341	-96%
	All	**54**	**136 - 108,000**	**1,850**	**19.9 - 10,800**	**553**	**-71%[b]**

a = marginally significant change ($p<0.10$); b = statistically significant change ($p<0.05$)

Note: This analysis was limited to only samples collected from floors and window sills within work areas, and only included pairs from a specific location. Other surfaces within work areas were also sampled, and samples were also collected outside of the work area. Therefore, more pairs of wipe samples were collected but not included in the analysis of lead dust loading on floors and window sills.

TABLE 4.10
PBZ AIR SAMPLING RESULTS SUMMARIZED BY SANDING AND SAWING TASKS

Expanded by Sanding and Cutting Tasks	PBZ (µg/m^3) n	Range	Mean	GM	GSD
All Activities (**LC_{XRF} (mg/cm^2)** n = 65 , Range = 0.9 - 25.3 , Mean = 10.0)	65	2.0 - 1700	122	26.4	5.4
Surface Preparation (sanding plaster) (**LC_{XRF} (mg/cm^2)** n = 3 , Range = 16.5 - 16.5 , Mean = 16.5)	3	6.0 - 95.0	50.7	30.7	4.3
Surface Preparation (sanding wood) (**LC_{XRF} (mg/cm^2)** n = 12 , Range = 1.0 - 13.8 , Mean = 8.8)	12	6.5 - 1700	372	155	4.5
Sawing & Cutting LBP Covered Surfaces (plaster) (**LC_{XRF} (mg/cm^2)** n = 10 , Range = 1.0 - 13.4 , Mean = 6.6)	10	2.5 - 68.0	19.4	10.4	2.9
Sawing & Cutting LBP Covered Surfaces (wood) (**LC_{XRF} (mg/cm^2)** n = 8 , Range = 1.4 - >9.9[1] , Mean = 4.5)	8	7.5 - 111	36.9	24.6	2.7

LC_{XRF} = Lead content of affected surfaces based on measurement by X-Ray Fluorescence (XRF) instrumentation.

[1] The XRF measurement reported (9.9) was the maximum reportable limit for the XRF instrument used.

FIGURE 4.4 - COMPARISON OF THE GM OF PBZ AIR SAMPLING RESULTS BY SPECIFIC TASK TO THE GM OF THE PBZ AIR SAMPLING RESULTS FOR ALL ACTIVITIES

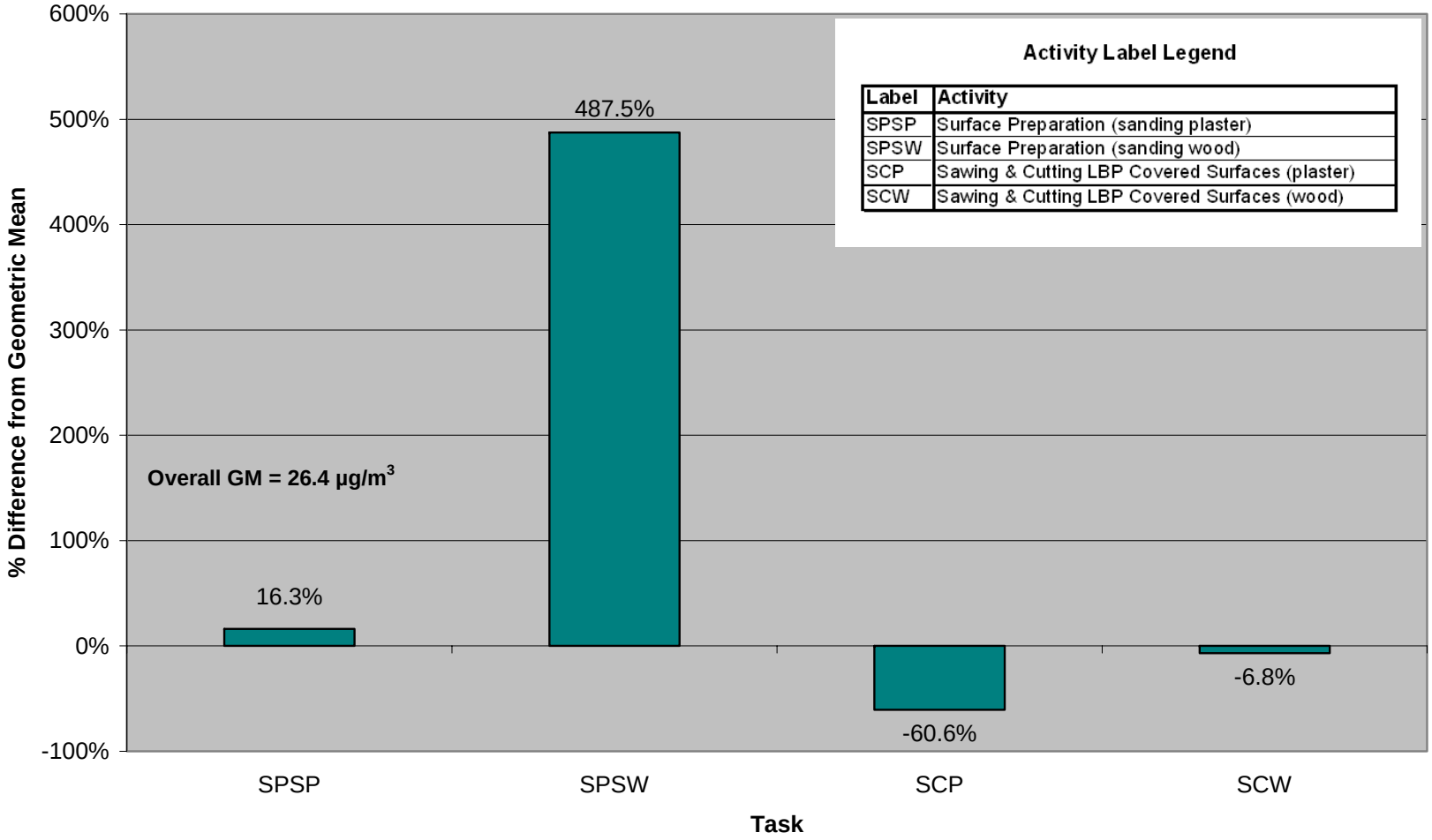


TABLE 4.11
AREA AIR SAMPLING RESULTS SUMMARIZED BY SANDING AND SAWING TASKS

Expanded by Sanding and Cutting Tasks	Area During (µg/m^3)				
	n	Range	Mean	GM	GSD
All Activities (**LC_{XRF} (mg/cm^2)** n = 74 , Range = 0.9 - 25.3 , Mean = 10.5)	74	1.0 - 1780	85.5	17.6	4.8
Surface Preparation (sanding plaster) (**LC_{XRF} (mg/cm^2)** n = 4 , Range = 16.5 - 16.5 , Mean = 16.5)	4	6.0 - 30.0	16.4	12.8	2.3
Surface Preparation (sanding wood) (**LC_{XRF} (mg/cm^2)** n = 9 , Range = 1.0 - 13.0 , Mean = 7.3)	9	6.5 - 1780	272	52.5	6.7
Sawing & Cutting LBP Covered Surfaces (plaster) (**LC_{XRF} (mg/cm^2)** n = 9 , Range = 1.0 - 13.4 , Mean = 8.1)	9	2.0 - 28.0	8.7	6.7	2.1
Sawing & Cutting LBP Covered Surfaces (wood) (**LC_{XRF} (mg/cm^2)** n = 8 , Range = 1.4 - >9.9[1] , Mean = 4.5)	13	7.5 - 69.0	28.1	19.8	2.5

LC_{XRF} = Lead content of affected surfaces based on measurement by X-Ray Fluorescence (XRF) instrumentation.
[1] The XRF measurement reported (9.9) was the maximum reportable limit for the XRF instrument used.

FIGURE 4.5 - COMPARISON OF THE GM OF AREA AIR SAMPLING RESULTS BY SPECIFIC TASK TO THE GM OF THE AREA AIR SAMPLING RESULTS FOR ALL ACTIVITIES

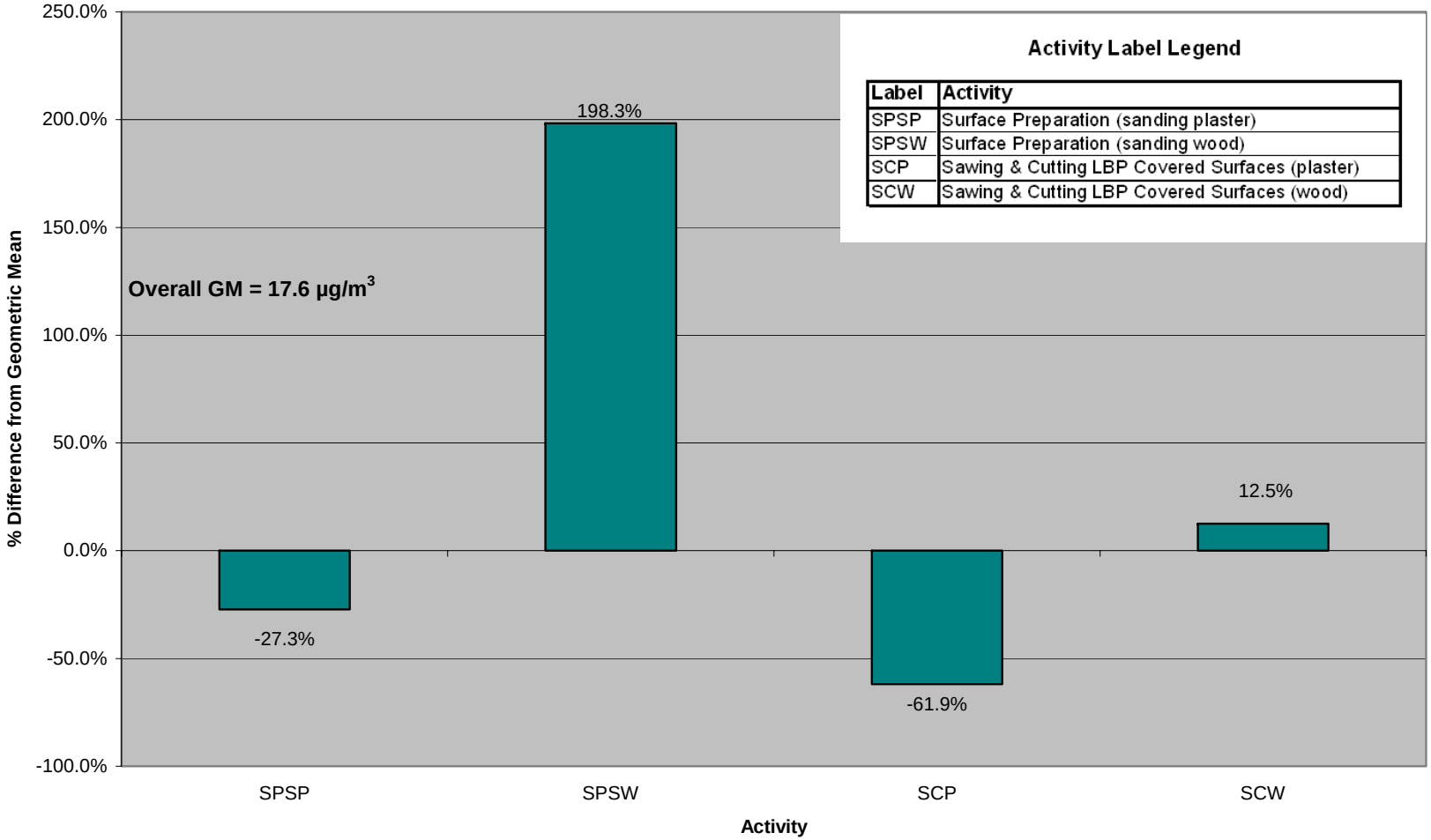


TABLE 4.12
SURFACE DUST SAMPLING RESULTS SUMMARIZED BY SANDING AND SAWING TASKS

Activity	n	Pre (µg/ft^2)			Post (µg/ft^2)			GM Δ	% Increase
		Range	Mean	GM	Range	Mean	GM		
All Activities	241	10.0 - 108000	3423	499	15.0 - 39200	1185	320	-179	-36.0%
Surface Preparation (sanding plaster)	8	642 - 5440	2739	2009	186 - 2350	945	657	-1352	-67.3%
Surface Preparation (sanding wood)	29	27.0 - 14600	1617	444	48.7 - 14600	1773	559	116	26.0%
Sawing & Cutting LBP Covered Surfaces (plaster)	37	13.4 - 11400	913	261	14.9 - 1470	276	110	-151	-57.7%
Sawing & Cutting LBP Covered Surfaces (wood)	31	10.0 - 12300	1760	393	16.3 - 3000	613	295	-97.8	-24.9%

n = no. of pairs of samples, where a pair equals one pre-work sample and one post-work sample from approximatlely the same location.

FIGURE 4.6 - DIFFERENCE BETWEEN POST-WORK DUST SAMPLES AND PRE-WORK DUST SAMPLES BY TASK BASED ON GM OF ALL SURFACES SAMPLED

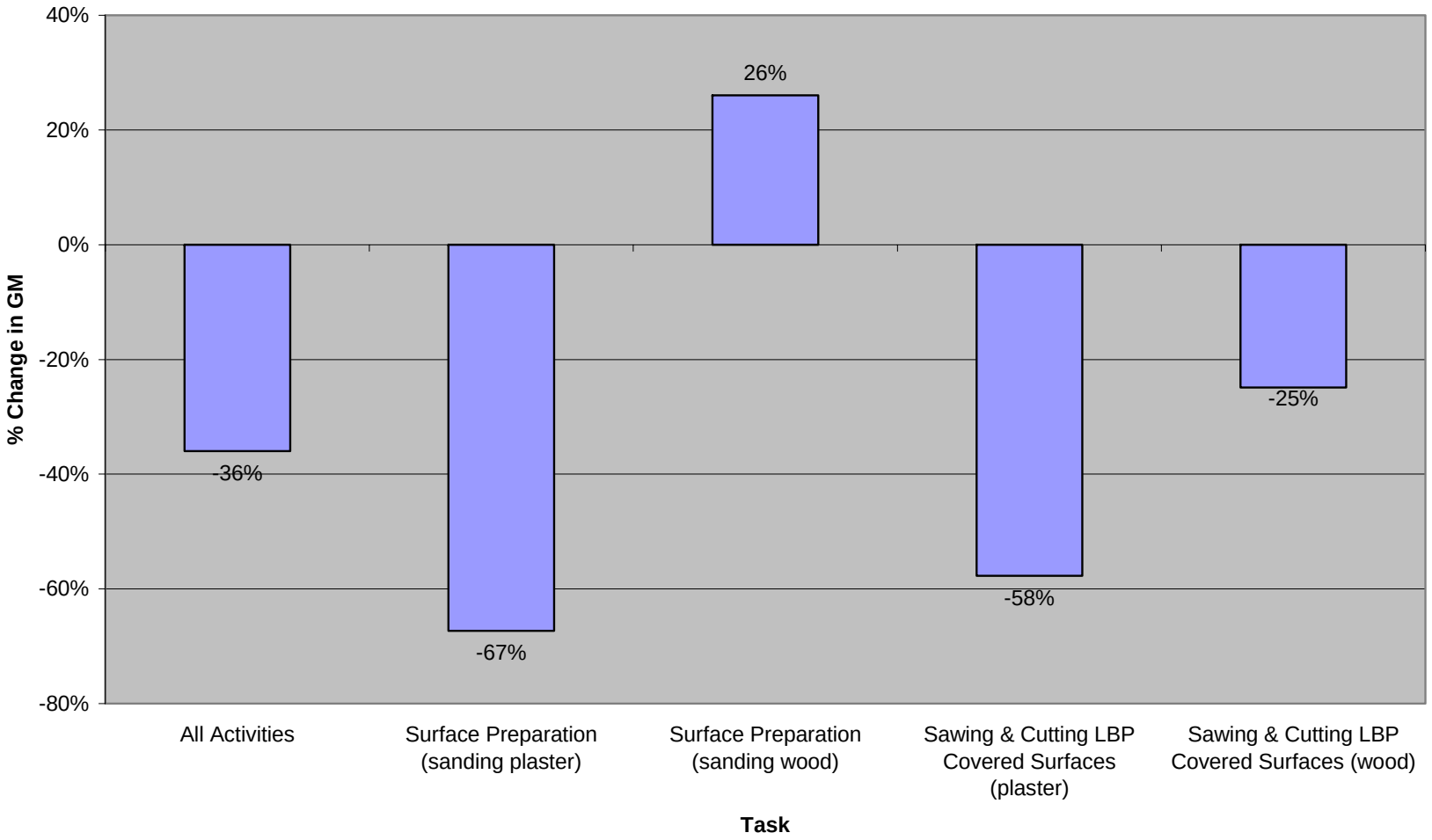


TABLE 4.13
PBZ AIR SAMPLING RESULTS SUMMARIZED BY SCENARIO (ACTIVITY & WORK PRACTICE)

Activity	PBZ (µg/m^3) n	Range	Mean	GM	GSD
All Routine Activities (**LC_{XRF} (mg/cm^2)** n = 28 , Range = 0.9 - 22.5 , Mean = 9.8)	28	6.5 - 1700	203	49.2	5.5
All Mod LSWP Activities (**LC_{XRF} (mg/cm^2)** n = 31 , Range = 1.0 - 25.3 , Mean = 8.6)	31	2.0 - 805	69.1	20.3	4.6
All LSWP Activities (**LC_{XRF} (mg/cm^2)** n = 6 , Range = 9.6 - 22.7 , Mean = 17.8)	6	2.5 - 52.0	11.8	5.5	3.2
A1 - Wall and Ceiling Removal (Routine) (**LC_{XRF} (mg/cm^2)** n = 1 , Range = 8.7 - 8.7 , Mean = 8.7)	1	17.0 - 17.0	17.0	17.0	NA
A2 - Wall and Ceiling Removal (Mod LSWP) (**LC_{XRF} (mg/cm^2)** n = 4 , Range = 1.5 - 13.4 , Mean = 5.9)	4	2.0 - 92.0	25.1	6.5	6.0
B1 - Wall and Ceiling Modification (Routine) (**LC_{XRF} (mg/cm^2)** n = 6 , Range = 1.0 - 13.4 , Mean = 7.8)	6	6.5 - 68.0	28.5	18.3	2.7
B2 - Wall and Ceiling Modification (Mod LSWP) (**LC_{XRF} (mg/cm^2)** n = 8 , Range = 1.0 - 25.3 , Mean = 6.3)	8	2.5 - 63.0	18.9	12.5	2.7
B3 - Wall and Ceiling Modification (LSWP) (**LC_{XRF} (mg/cm^2)** n = 1 , Range = 13.4 - 13.4 , Mean = 13.4)	1	4.0 - 4.0	4.0	4.0	NA
C1 - Window Replacement (no sanding involved) (Routine) (**LC_{XRF} (mg/cm^2)** n = 1 , Range = 20.1 - 20.1 , Mean = 20.1)	1	20.0 - 20.0	20.0	20.0	NA
C2 - Window Replacement (no sanding involved) (Mod LSWP) (**LC_{XRF} (mg/cm^2)** n = 3 , Range = 11.0 - 22.5 , Mean = 15.7)	3	2.5 - 7.0	5.5	5.0	1.8
C3 - Window Replacement (no sanding involved) (LSWP) (**LC_{XRF} (mg/cm^2)** n = 2 , Range = 22.7 - 22.7 , Mean = 22.7)	2	2.5 - 2.5	2.5	2.5	1.0
C'1 - Window Alteration (no sanding involved) (Routine) (**LCXRF (mg/cm2)** n = 1 , Range = >9.9[1] - >9.9[1] , Mean = >9.9[1])	1	78.0 - 78.0	78.0	78.0	NA
C'3 - Window Alteration (no sanding involved) (LSWP) (**LC_{XRF} (mg/cm^2)** n = 1 , Range = 18.9 - 18.9 , Mean = 18.9)	1	3.5 - 3.5	3.5	3.5	NA

TABLE 4.13 (cont'd)
PBZ AIR SAMPLING RESULTS SUMMARIZED BY SCENARIO (ACTIVITY & WORK PRACTICE)

Activity	PBZ ($\mu g/m^3$) n	Range	Mean	GM	GSD
D1 - Kitchen and Bath Work (Routine) (**LC_{XRF} (mg/cm^2)** n = 2 , Range = 2.1 - 6.9 , Mean = 4.5)	2	15.0 - 20.0	17.5	17.3	1.2
D2 - Kitchen and Bath Work (Mod LSWP) (**LC_{XRF} (mg/cm^2)** n = 2 , Range = 9.4 - >9.9[1] , Mean = 9.7)	2	42.0 - 49.0	45.5	45.4	1.1
D3 - Kitchen and Bath Work (LSWP) (**LC_{XRF} (mg/cm^2)** n = 1 , Range = 9.6 - 9.6 , Mean = 9.6)	1	6.0 - 6.0	6.0	6.0	NA
E1 - Floor Covering Removal (Routine) (**LC_{XRF} (mg/cm^2)** n = 3 , Range = 0.9 - >9.9[1] , Mean = 6.9)	3	7.0 - 56.0	23.7	14.6	3.2
E2 - Floor Covering Removal (Mod LSWP) (**LC_{XRF} (mg/cm^2)** n = 4 , Range = 7.4 - 13.0 , Mean = 10.1)	4	6.5 - 38.0	21.3	16.4	2.4
E3 - Floor Covering Removal (LSWP) (**LC_{XRF} (mg/cm^2)** n = 1 , Range = 19.2 - 19.2 , Mean = 19.2)	1	52.0 - 52.0	52.0	52.0	NA
G1 - Sawing into Wood & Plaster Covered by LBP (Routine) (**LC_{XRF} (mg/cm^2)** n = 2 , Range = 1.4 - 1.6 , Mean = 1.5)	2	8.0 - 111	59.5	29.8	6.4
G2 - Sawing into Wood & Plaster Covered by LBP (Mod LSWP) (**LC_{XRF} (mg/cm^2)** n = 2 , Range = 2.9 - >9.9[1] , Mean = 6.4)	2	7.0 - 45.0	26.0	17.7	3.7
All Sanding Events (Routine) (**LC_{XRF} (mg/cm^2)** n = 11 , Range = 1.0 - 22.5 , Mean = 12.1)	12	6.5 - 1700	432	160	6.0
All Sanding Events (Mod LSWP) (**LC_{XRF} (mg/cm^2)** n = 8 , Range = 2.3 - 16.5 , Mean = 9.3)	8	6.0 - 805	206	93.0	4.4
C1 - Window and Door Replacement, Removal or Alteration (sanding events) (Routine) (**LC_{XRF} (mg/cm^2)** n = 6 , Range = >9.9[1] - 22.5 , Mean = 12.7)	7	8.0 - 1050	455	233	5.3
C2 - Window and Door Replacement, Removal or Alteration (sanding events) (Mod LSWP) (**LC_{XRF} (mg/cm^2)** n = 3 , Range = >9.9[1] - >9.9[1] , Mean = 9.9)	3	60.0 - 805.0	319	164	4.0
F1 - Surface Preparation (sanding) (Routine) (**LC_{XRF} (mg/cm^2)** n = 5 , Range = 1.0 - 16.5 , Mean = 11.4)	5	6.5 - 1700	400	95.1	7.4
F2 - Surface Preparation (sanding) (Mod LSWP) (**LC_{XRF} (mg/cm^2)** n = 5 , Range = 2.3 - 16.5 , Mean = 8.9)	5	6.0 - 420	138	66.1	4.8

TABLE 4.13 (cont'd)
PBZ AIR SAMPLING RESULTS SUMMARIZED BY SCENARIO (ACTIVITY & WORK PRACTICE)

Expanded by Sanding and Cutting Tasks	PBZ (µg/m^3) n	Range	Mean	GM	GSD
All Activities (**LC_{XRF} (mg/cm^2)** n = 65 , Range = 0.9 - 25.3 , Mean = 10.0)	65	2.0 - 1700	122	26.4	5.4
Surface Preparation (sanding plaster) (Routine) (**LC_{XRF} (mg/cm^2)** n = 2 , Range = 16.5 - 16.5 , Mean = 16.5)	2	51.0 - 95.0	73.0	69.6	1.6
Surface Preparation (sanding plaster) (Mod LSWP) (**LC_{XRF} (mg/cm^2)** n = 1 , Range = 16.5 - 16.5 , Mean = 16.5)	1	6.0 - 6.0	6.0	6.0	NA
Surface Preparation (sanding wood) (Routine) (**LC_{XRF} (mg/cm^2)** n = 3 , Range = 1.0 - 13.0 , Mean = 8.0)	3	6.5 - 1700	617	117	16.3
Surface Preparation (sanding wood) (Mod LSWP) (**LC_{XRF} (mg/cm^2)** n = 4 , Range = 2.3 - 9.9 , Mean = 7.0)	4	47.0 - 420	171	120	2.6
Sawing & Cutting LBP Covered Surfaces (plaster) (Routine) (**LC_{XRF} (mg/cm^2)** n = 5 , Range = 1.0 - 13.4 , Mean = 8.8)	5	6.5 - 68.0	31.8	20.0	3.0
Sawing & Cutting LBP Covered Surfaces (plaster) (Mod LSWP) (**LC_{XRF} (mg/cm^2)** n = 4 , Range = 1.0 - 2.9 , Mean = 2.0)	4	2.5 - 12.0	7.6	6.6	2.0
Sawing & Cutting LBP Covered Surfaces (plaster) (LSWP) (**LC_{XRF} (mg/cm^2)** n = 1 , Range = 13.4 - 13.4 , Mean = 13.4)	1	4.0 - 4.0	4.0	4.0	NA
Sawing & Cutting LBP Covered Surfaces (wood) (Routine) (**LC_{XRF} (mg/cm^2)** n = 3 , Range = 1.4 - 2.8 , Mean = 1.9)	3	8.0 - 111	43.7	22.0	4.1
Sawing & Cutting LBP Covered Surfaces (wood) (Mod LSWP) (**LC_{XRF} (mg/cm^2)** n = 5 , Range = 2.9 - 9.9 , Mean = 6.0)	5	7.5 - 63.0	32.9	26.4	2.3

LC_{XRF} = Lead content of affected surfaces based on measurement by X-Ray Fluorescence (XRF) instrumentation.
[1] The XRF measurement reported (9.9) was the maximum reportable limit for the XRF instrument used.

FIGURE 4.7A - COMPARISON OF THE GM OF PBZ AIR SAMPLING RESULTS BY SCENARIO TO THE GM OF THE PBZ AIR SAMPLING RESULTS FOR ALL ACTIVITIES

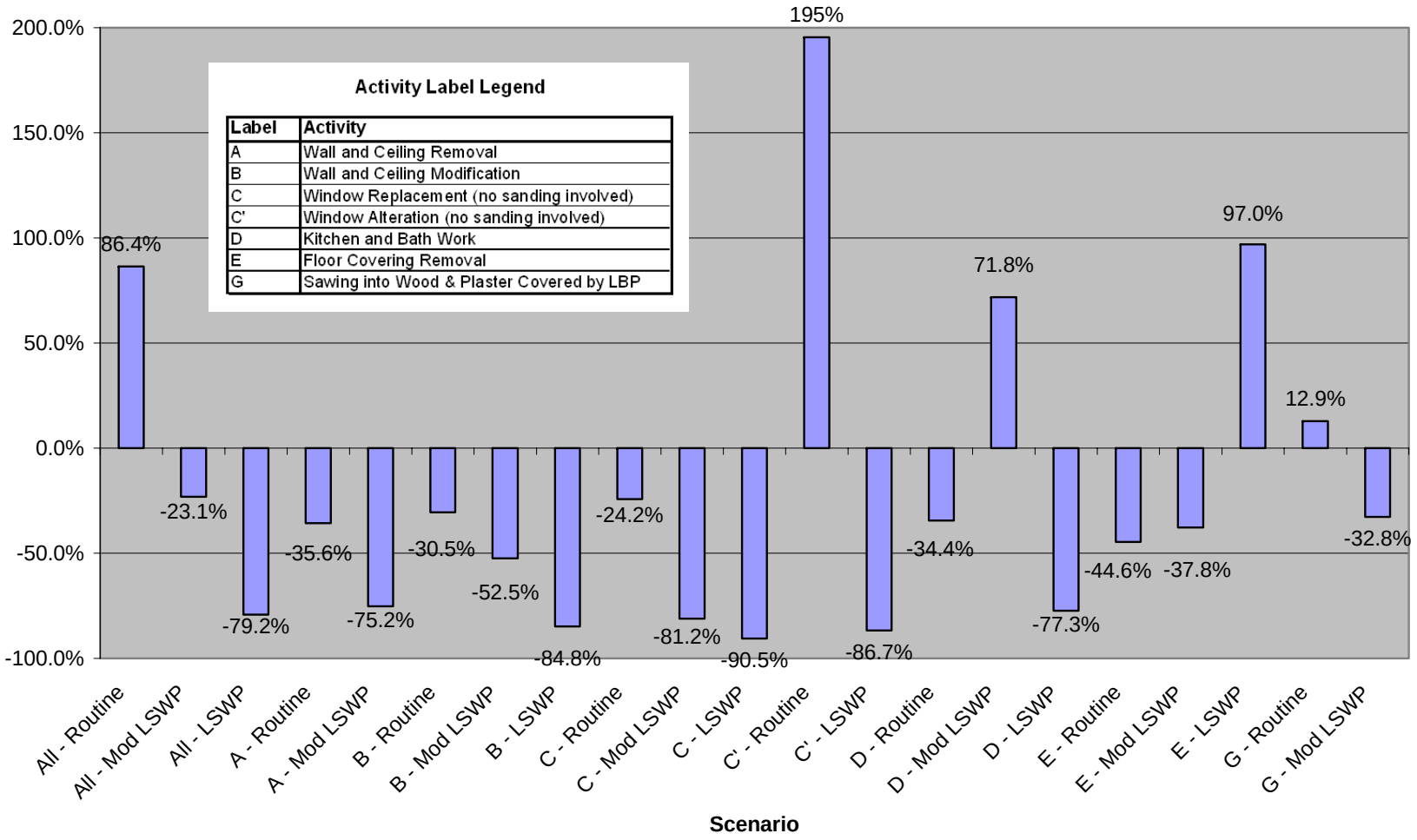


FIGURE 4.7B - COMPARISON OF THE GM OF PBZ AIR SAMPLING RESULTS BY SCENARIO TO THE GM OF THE PBZ AIR SAMPLING RESULTS FOR ALL ACTIVITIES

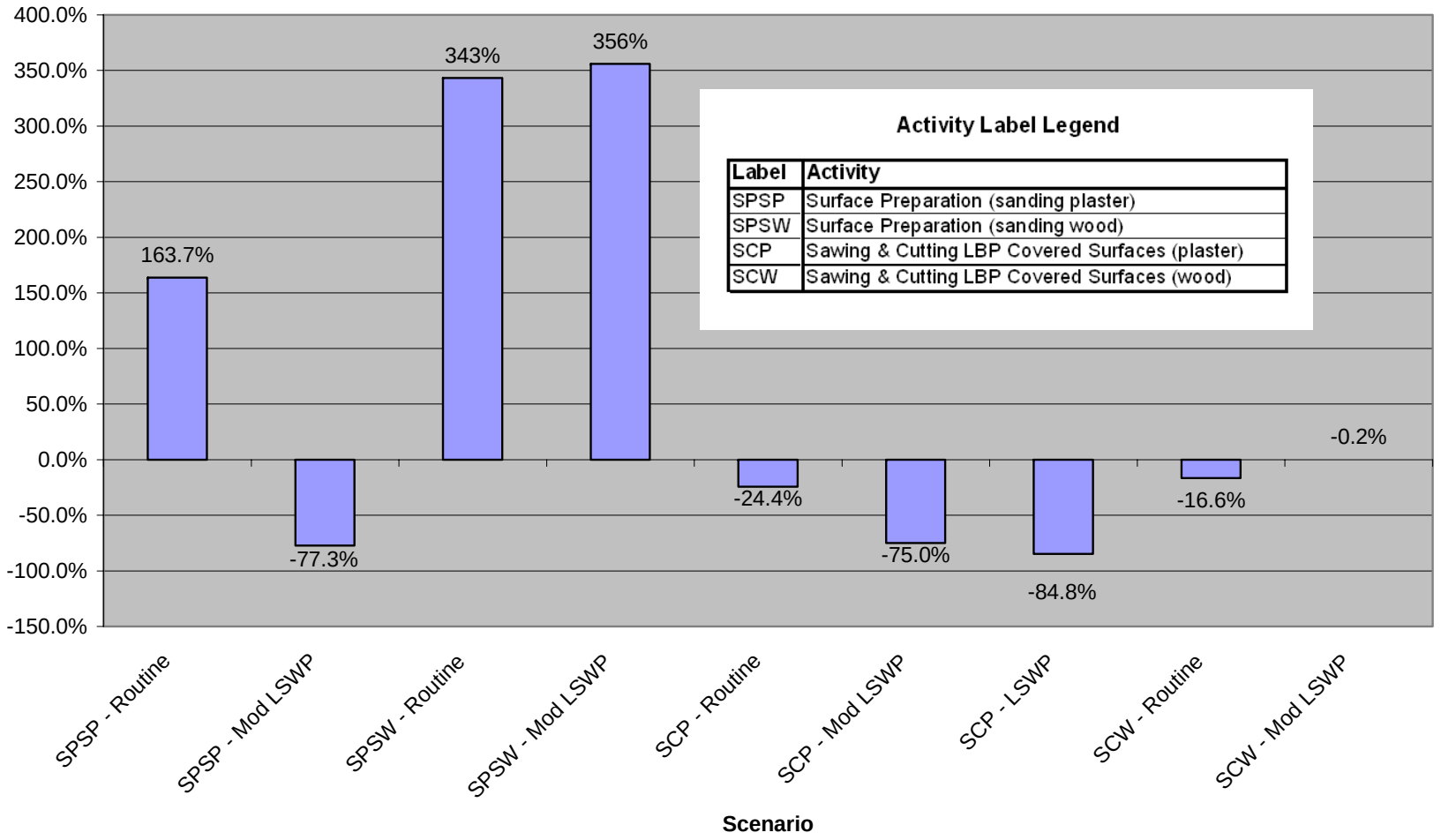


TABLE 4.14
AREA (DURING) AIR SAMPLING RESULTS SUMMARIZED BY SCENARIO (ACTIVITY & WORK PRACTICE)

Activity	Area During (µg/m^3)				
	n	Range	Mean	GM	GSD
All Routine Activities (**LC_{XRF} (mg/cm^2)** n = 28 , Range = 0.9 - 22.5 , Mean = 9.8)	33	3.0 - 1780	142	30.7	5.1
All Mod LSWP Activities (**LC_{XRF} (mg/cm^2)** n = 31 , Range = 1.0 - 25.3 , Mean = 8.6)	34	1.5 - 428	47.0	13.8	4.6
All LSWP Activities (**LC_{XRF} (mg/cm^2)** n = 6 , Range = 9.6 - 22.7 , Mean = 17.8)	7	2.0 - 28.0	6.9	4.3	2.5
A1 - Wall and Ceiling Removal (Routine) (**LC_{XRF} (mg/cm^2)** n = 1 , Range = 8.7 - 8.7 , Mean = 8.7)	0	0.0 - 0.0	NA	NA	NA
A2 - Wall and Ceiling Removal (Mod LSWP) (**LC_{XRF} (mg/cm^2)** n = 4 , Range = 1.5 - 13.4 , Mean = 8.2)	4	1.5 - 52.0	14.4	4.1	5.5
B1 - Wall and Ceiling Modification (Routine) (**LC_{XRF} (mg/cm^2)** n = 7 , Range = 1.0 - 13.4 , Mean = 8.6)	7	3.5 - 54.0	17.5	11.8	2.5
B2 - Wall and Ceiling Modification (Mod LSWP) (**LC_{XRF} (mg/cm^2)** n = 7 , Range = 1.0 - 25.3 , Mean = 6.8)	7	2.0 - 27.0	9.8	7.7	2.1
B3 - Wall and Ceiling Modification (LSWP) (**LC_{XRF} (mg/cm^2)** n = 1 , Range = 13.4 - 13.4 , Mean = 13.4)	1	4.5 - 4.5	4.5	4.5	NA
C1 - Window Replacement (no sanding involved) (Routine) (**LC_{XRF} (mg/cm^2)** n = 1 , Range = 20.1 - 20.1 , Mean = 20.1)	1	3.0 - 3.0	3.0	3.0	NA
C2 - Window Replacement (no sanding involved) (Mod LSWP) (**LC_{XRF} (mg/cm^2)** n = 4 , Range = 11.0 - 22.5 , Mean = 17.4)	4	1.5 - 7.5	4.5	3.5	2.3
C3 - Window Replacement (no sanding involved) (LSWP) (**LC_{XRF} (mg/cm^2)** n = 2 , Range = 22.7 - 22.7 , Mean = 22.7)	2	2.0 - 2.0	2.0	2.0	1.0
C'1 - Window Alteration (no sanding involved) (Routine) (**LC_{XRF} (mg/cm^2)** n = 1 , Range = 9.9 - 9.9 , Mean = 9.9)	2	48.0 - 63.0	55.5	56.0	1.2
C'3 - Window Alteration (no sanding involved) (LSWP) (**LC_{XRF} (mg/cm^2)** n = 2 , Range = 18.9 - 18.9 , Mean = 18.9)	2	4.5 - 4.5	4.5	4.5	1.0

TABLE 4.14 (cont'd)
AREA (DURING) AIR SAMPLING RESULTS SUMMARIZED BY WORK ACTIVITY

Activity	Area During (µg/m^3)				
	n	Range	Mean	GM	GSD
D1 - Kitchen and Bath Work (Routine) (**LC_{XRF} (mg/cm^2)** n = 2 , Range = 2.1 - 6.9 , Mean = 4.5)	2	9.0 - 15.0	12.0	11.6	1.4
D2 - Kitchen and Bath Work (Mod LSWP) (**LC_{XRF} (mg/cm^2)** n = 3 , Range = 9.4 - >9.9[1] , Mean = 9.7)	3	13.0 - 21.0	16.0	15.6	1.3
D3 - Kitchen and Bath Work (LSWP) (**LC_{XRF} (mg/cm^2)** n = 1 , Range = 9.6 - 9.6 , Mean = 9.6)	1	2.5 - 2.5	2.5	2.5	NA
E1 - Floor Covering Removal (Routine) (**LC_{XRF} (mg/cm^2)** n = 4 , Range = 0.9 - 9.9 , Mean = 5.4)	4	7.5 - 33.0	14.5	11.7	2.0
E2 - Floor Covering Removal (Mod LSWP) (**LC_{XRF} (mg/cm^2)** n = 5 , Range = 7.4 - 13.0 , Mean = 10.6)	5	7.0 - 140	40.2	21.0	3.3
E3 - Floor Covering Removal (LSWP) (**LC_{XRF} (mg/cm^2)** n = 1 , Range = 19.2 - 19.2 , Mean = 19.2)	1	28.0 - 28.0	28.0	28.0	NA
G1 - Sawing into Wood & Plaster Covered by LBP (Routine) (**LC_{XRF} (mg/cm^2)** n = 2 , Range = 1.4 - 1.6 , Mean = 1.5)	2	8.0 - 69.0	38.5	23.5	4.6
G2 - Sawing into Wood & Plaster Covered by LBP (Mod LSWP) (**LC_{XRF} (mg/cm^2)** n = 2 , Range = 2.9 - 9.9 , Mean = 6.4)	2	2.0 - 38.0	20.0	8.7	8.0
All Sanding Events (Routine) (**LC_{XRF} (mg/cm^2)** n = 14 , Range = 1.0 - 22.5 , Mean = 11.2)	15	6.0 - 1780	286	79.1	5.9
All Sanding Events (Mod LSWP) (**LC_{XRF} (mg/cm^2)** n = 9 , Range = 2.3 - 16.5 , Mean = 10.1)	9	6.0 - 428	129	56.4	4.5
C1 - Window and Door Replacement, Removal or Alteration (sanding events) (**LC_{XRF} (mg/cm^2)** n = 7 , Range = 9.9 - 22.5 , Mean = 12.3)	8	32.0 - 868	298	186	3.0
C2 - Window and Door Replacement, Removal or Alteration (sanding events) (**LC_{XRF} (mg/cm^2)** n = 3 , Range = 9.9 - 9.9 , Mean = 9.9)	3	52.0 - 428.0	183	1115	3.2
F1 - Surface Preparation (sanding) (Routine) (**LC_{XRF} (mg/cm^2)** n = 7 , Range = 1.0 - 16.5 , Mean = 10.1)	7	6.0 - 1780	271	29.9	7.1
F2 - Surface Preparation (sanding) (Mod LSWP) (**LC_{XRF} (mg/cm^2)** n = 6 , Range = 2.3 - 16.5 , Mean = 10.2)	6	6.0 - 411	103	39.6	5.1

TABLE 4.14 (cont'd)
AREA (DURING) AIR SAMPLING RESULTS SUMMARIZED BY WORK ACTIVITY

Expanded by Sanding and Cutting Tasks	Area During (µg/m^3)				
	n	Range	Mean	GM	GSD
All Activities (**LC_{XRF} (mg/cm^2)** n = 65 , Range = 0.9 - 25.3 , Mean = 10.0)	74	1.0 - 1780	86	17.6	4.8
Surface Preparation (sanding plaster) (Routine) (**LC_{XRF} (mg/cm^2)** n = 2 , Range = 16.5 - 16.5 , Mean = 16.5)	2	23.0 - 30.0	26.5	26.3	1.2
Surface Preparation (sanding plaster) (Mod LSWP) (**LC_{XRF} (mg/cm^2)** n = 2 , Range = 16.5 - 16.5 , Mean = 16.5)	2	6.0 - 6.5	6.3	6.2	1.1
Surface Preparation (sanding wood) (Routine) (**LC_{XRF} (mg/cm^2)** n = 5 , Range = 1.0 - 13.0 , Mean = 7.6)	5	6.0 - 1780	369	31.4	10.9
Surface Preparation (sanding wood) (Mod LSWP) (**LC_{XRF} (mg/cm^2)** n = 4 , Range = 2.3 - 9.9 , Mean = 7.0)	4	42.0 - 411	151	99.6	2.7
Sawing & Cutting LBP Covered Surfaces (plaster) (Routine) (**LC_{XRF} (mg/cm^2)** n = 5 , Range = 1.0 - 13.4 , Mean = 10.9)	5	3.5 - 28.0	10.9	8.4	2.1
Sawing & Cutting LBP Covered Surfaces (plaster) (Mod LSWP) (**LC_{XRF} (mg/cm^2)** n = 4 , Range = 1.0 - 2.9 , Mean = 2.0)	4	2.0 - 9.0	5.3	4.1	2.3
Sawing & Cutting LBP Covered Surfaces (plaster) (LSWP) (**LC_{XRF} (mg/cm^2)** n = 1 , Range = 13.4 - 13.4 , Mean = 13.4)	1	4.5 - 4.5	4.5	4.5	NA
Sawing & Cutting LBP Covered Surfaces (wood) (Routine) (**LC_{XRF} (mg/cm^2)** n = 4 , Range = 1.4 - 2.8 , Mean = 2.2)	4	8.0 - 69.0	36.3	25.4	2.8
Sawing & Cutting LBP Covered Surfaces (wood) (Mod LSWP) (**LC_{XRF} (mg/cm^2)** n = 4 , Range = 2.9 - 9.9 , Mean = 6.8)	4	7.5 - 38.0	20.0	15.5	2.3

LC_{XRF} = Lead content of affected surfaces based on measurement by X-Ray Fluorescence (XRF) instrumentation.

[1] The XRF measurement reported (9.9) was the maximum reportable limit for the XRF instrument used.

FIGURE 4.8A - COMPARISON OF THE GM OF AREA (DURING) AIR SAMPLING RESULTS BY SCENARIO TO THE GM OF THE AREA (DURING) AIR SAMPLING RESULTS FOR ALL ACTIVITIES

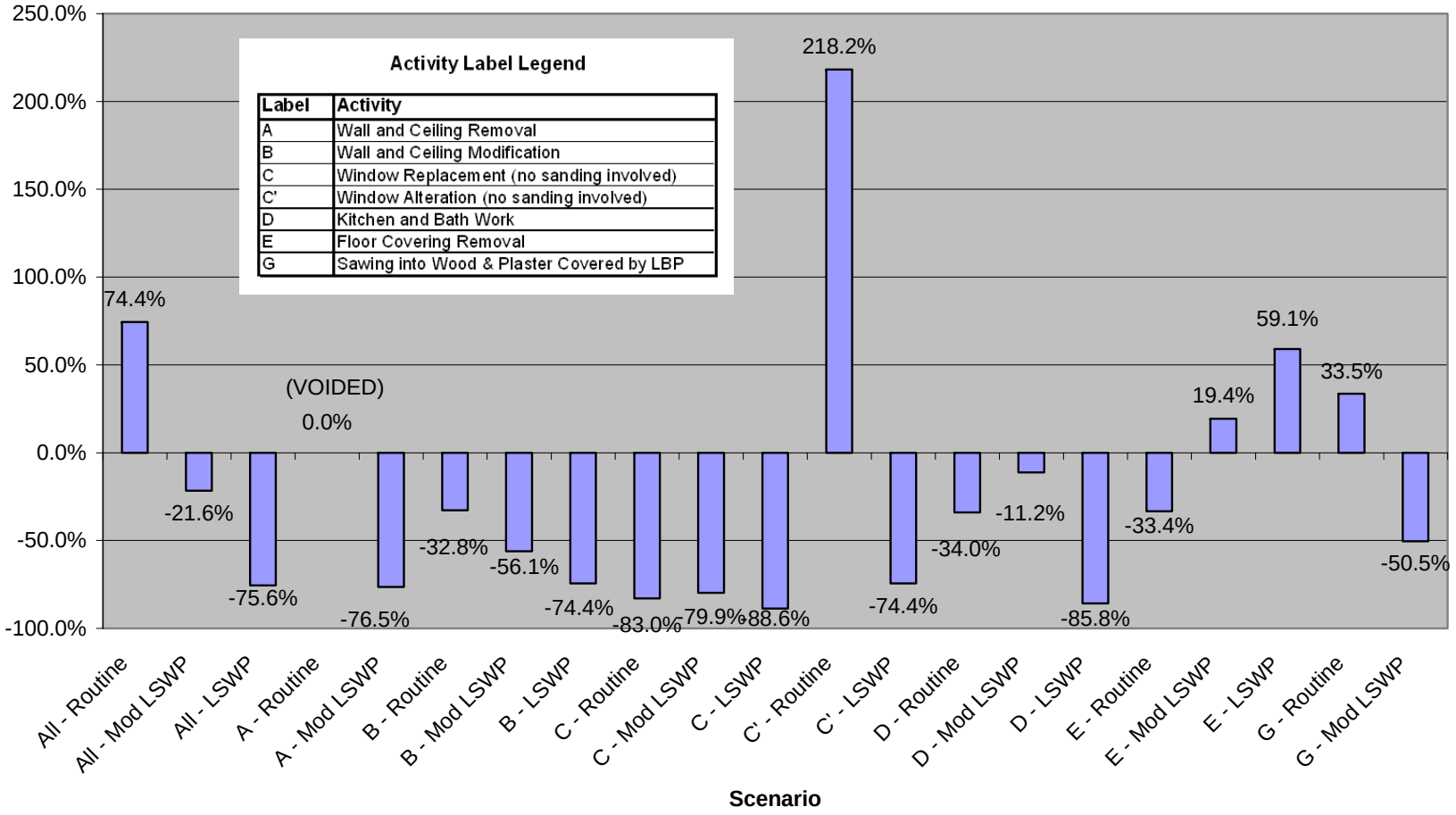


FIGURE 4.8B - COMPARISON OF THE GM OF AREA (DURING) AIR SAMPLING RESULTS BY SCENARIO TO THE GM OF THE AREA (DURING) AIR SAMPLING RESULTS FOR ALL ACTIVITIES

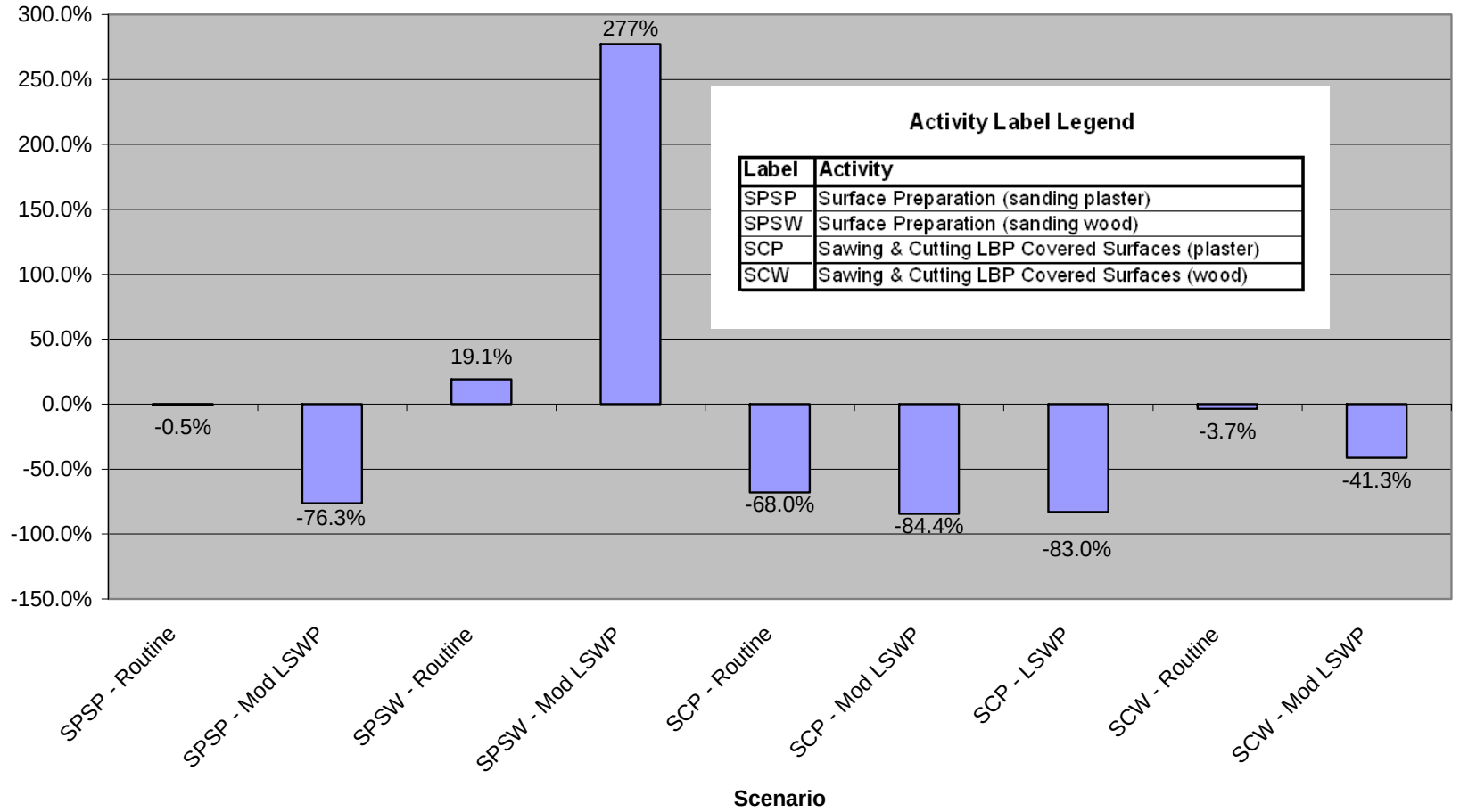


TABLE 4.15
SURFACE DUST SAMPLING RESULTS SUMMARIZED BY SCENARIO

Activity	n	Pre (µg/ft^2)			Post (µg/ft^2)			Δ GM	% Change
		Range	Mean	GM	Range	Mean	GM		
All Activities	241	10.0 - 108000	3423	499	15.0 - 39200	1185	320	-179	-36.0%
All Activities (Routine)	100	10.0 - 6200	3336	407	15.9 - 39200	1898	413	5.9	1.5%
All Activities (Mod LSWP)	120	13.4 - 108000	4371	567	14.9 - 11400	1022	262	-305	-53.8%
All Activities (LSWP)	21	141 - 8540	1335	687	36.2 - 1470	623	471	-216	-31.4%
A - Wall and Ceiling Removal (Routine)	2	1200 - 44000	22600	7266	503 - 896	700	671	-6595	-90.8%
A - Wall and Ceiling Removal (Mod LSWP)	13	40.3 - 98000	8197	617	74.0 - 3800	589	272	-345	-55.9%
B - Wall and Ceiling Modification (Routine)	24	17.8 - 11400	1189	414	30.1 - 1470	486	327	-87.3	-21.1%
B - Wall and Ceiling Modification (Mod LSWP)	28	13.4 - 12300	1411	355	18.2 - 3000	553	133	-222	-62.6%
B - Wall and Ceiling Modification (LSWP)	4	210 - 2090	998	748	402 - 535	459	456	-292	-39.0%
C - Window Replacement (no sanding involved) (Routine)	4	117 - 1640	713	451	22.4 - 113	73.9	63.4	-388	-85.9%
C - Window Replacement (no sanding involved) (Mod LSWP)	16	340 - 36000	3139	881	42.6 - 11400	2173	644	-237	-26.9%
C - Window Replacement (no sanding involved) (LSWP)	5	141 - 8540	2344	840	36.2 - 1140	466	246	-594	-70.7%
C' - Window Alteration (no sanding involved) (Routine)	3	152 - 16000	5436	722	33.2 - 1360	773	347	-375	-52.0%
C' - Window Alteration (no sanding involved) (LSWP)	4	324 - 800	560	527	402 - 1320	677	599	71.7	13.6%
D - Kitchen and Bath Work (Routine)	8	15.0 - 43600	5982	365	16.3 - 2840	590	181	-184	-50.5%
D - Kitchen and Bath Work (Mod LSWP)	8	15.0 - 19600	3607	419	20.5 - 1490	510	250	-170	-40.5%
D - Kitchen and Bath Work (LSWP)	4	213 - 1210	805	673	354 - 1470	966	813	140	20.8%
E - Floor Covering Removal (Routine)	11	13.0 - 8760	1713	384	15.9 - 39200	3797	229	-155	-40.3%
E - Floor Covering Removal (Mod LSWP)	18	16.3 - 108000	6911	612	15.9 - 5020	696	212	-399	-65.3%
E - Floor Covering Removal (LSWP)	4	150 - 5440	1717	653	231 - 888	583	499	-153	-23.5%
G - Sawing into Wood & Plaster Covered by LBP (Routine)	8	10.0 - 6440	1078	116	16.3 - 2880	638	212	95.6	82.3%
G - Sawing into Wood & Plaster Covered by LBP (Mod LSWP)	8	26.1 - 10800	2225	373	14.9 - 1040	278	85.1	-288	-77.2%

n = no. of pairs of samples, where a pair equals one pre-work sample and one post-work sample from approximatlely the same location.

TABLE 4.15 (cont'd)
SURFACE DUST SAMPLING RESULTS SUMMARIZED BY SANDING AND SAWING TASKS

Activity	n	Pre (µg/ft^2)			Post (µg/ft^2)			GM Δ	% Increase
		Range	Mean	GM	Range	Mean	GM		
All Activities	241	10.0 - 108000	3423	499	15.0 - 39200	1185	320	-179	-36.0%
All Sanding Events (Routine)	40	15.0 - 62000	2572	422	20.5 - 14600	2090	725	303	72.0%
All Sanding Events (Mod LSWP)	29	50.2 - 91200	5351	781	19.8 - 10800	1581	477	-304	-39.0%
C - Window and Door Replacement, Removal or Alteration (sanding events) (Routine)	22	15.0 - 62000	3720	440	20.5 - 10200	1845	603	162	36.8%
C - Window and Door Replacement, Removal or Alteration (sanding events) (Mod LSWP)	10	50.2 - 91200	11358	650	19.8 - 10800	2959	723	74	11.3%
F - Surface Preparation (sanding) (Routine)	18	27.0 - 4560	1087	399	48.7 - 14600	2408	922	523	131%
F - Surface Preparation (sanding) (Mod LSWP)	19	54.2 - 14600	2505	852	58.7 - 5440	856	383	-469	-55.1%
Surface Preparation (sanding plaster) (Routine)	4	3300 - 4560	3787	3748	186 - 2350	1414	1015	-2733	-72.9%
Surface Preparation (sanding plaster) (Mod LSWP)	4	642 - 5440	1954	1258	253 - 888	476	425	-833	-66.2%
Surface Preparation (sanding wood) (Routine)	14	27.0 - 1630	508	247	48.7 - 14600	2714	895	648	263%
Surface Preparation (sanding wood) (Mod LSWP)	15	54.2 - 14600	2652	767	58.7 - 5440	958	372	-395	-51.5%
Sawing & Cutting LBP Covered Surfaces (plaster) (Routine)	16	17.8 - 11400	1622	522	30.1 - 1470	479	281	-241	-46.1%
Sawing & Cutting LBP Covered Surfaces (plaster) (Mod LSWP)	17	13.4 - 898	227	105	14.9 - 118	42.1	32.8	-72.2	-68.7%
Sawing & Cutting LBP Covered Surfaces (plaster) (LSWP)	4	210 - 2090	998	748	402 - 535	459	456	-292	-39.0%
Sawing & Cutting LBP Covered Surfaces (wood) (Routine)	16	10.0 - 6440	727	177	16.3 - 2880	568	306	129	73.2%
Sawing & Cutting LBP Covered Surfaces (wood) (Mod LSWP)	15	108 - 12300	2861	922	27.0 - 3000	661	284	-638	-69.2%

n = no. of pairs of samples, where a pair equals one pre-work sample and one post-work sample from approximatlely the same location.

Figure 4.9A - DIFFERENCE BETWEEN POST-WORK DUST SAMPLES AND PRE-WORK DUST SAMPLES BASED ON GM OF ALL SURFACES SAMPLED BY SCENARIO

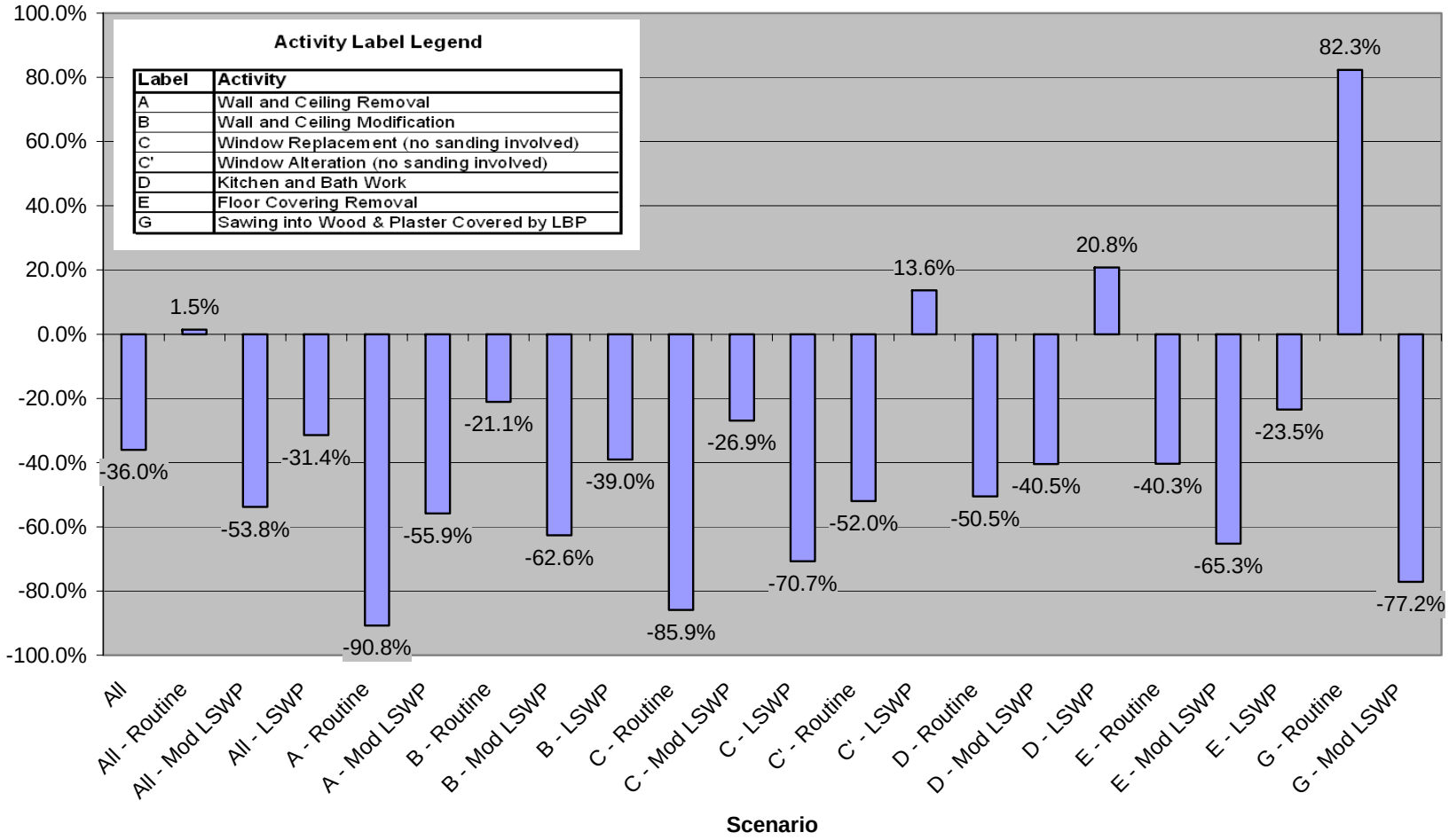


FIGURE 4.9B - DIFFERENCE BETWEEN POST-WORK DUST SAMPLES AND PRE-WORK DUST SAMPLES BASED ON GM OF ALL SURFACES SAMPLED BY SCENARIO

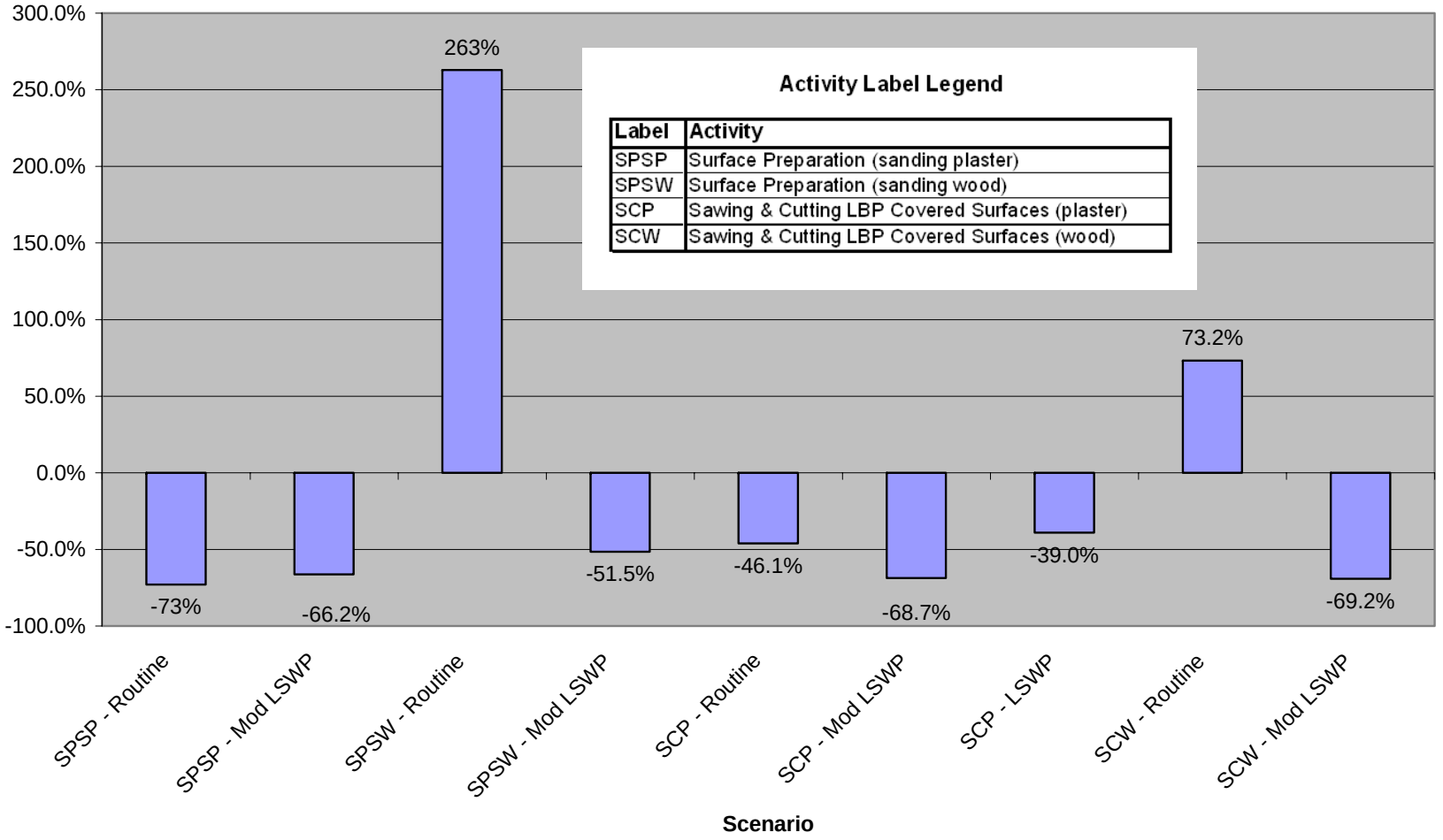


TABLE 4.16
CHANGES IN SETTLED DUST LEAD LOADINGS IN WORK AREA BY WORK PRACTICE

Surface	Work Practice	Number	Pre-Work Results ($\mu g/ft^2$) Range	Pre-Work Results ($\mu g/ft^2$) Geometric Mean	Post-Work Results ($\mu g/ft^2$) Range	Post-Work Results ($\mu g/ft^2$) Geometric Mean	Change
Floor in Work Area	EPA/HUD LSWP	6	150 - 1210	238	36.2 - 1470	196	-18%
	MOD LSWP	52	13.4 - 6080	246	18.2 - 11400	202	-18%
	Routine Work Practice	48	<10 - 4700	231	26.4 - 9,700	258	12%
	All	106	<10 - 6080	239	18.2 - 11400	225	-6%
Window Sill in Work Area	EPA/HUD LSWP	8	213 - 2090	995	354 - 1140	694	-30%
	MOD LSWP	25	136 - 108000	1,779	19.9 - 10,800	355	-80%[a]
	Routine Work Practice	21	366 - 62000	2,454	79.4 - 10,200	783	-68%[a]
	All	54	136 - 108000	1,850	19.9 - 10800	553	-71%[a]

a = Statistically significant change ($p<0.05$)

TABLE 4.17
PBZ AIR SAMPLING RESULTS SUMMARIZED BY PROPERTY

Location	PBZ (µg/m^3)				
	n	Range	Mean	GM	GSD
All (**LC_{XRF} (mg/cm^2)** n = 65 , Range = 0.9 - 25.3 , Mean = 10.0)	65	2.0 - 1700	122	26.4	5.4
Roselle, IL (**LC_{XRF} (mg/cm^2)** n = 6 , Range = 2.9 - 22.7 , Mean = 14.1)	6	2.5 - 20.0	6.2	4.2	2.4
Wallingford, CT (**LC_{XRF} (mg/cm^2)** n = 14 , Range = 1.0 - >9.9[1] , Mean = 8.4)	14	6.5 - 1700	278	82.2	4.8
Farmington, CT (**LC_{XRF} (mg/cm^2)** n = 11 , Range = 0.9 - >9.9[1] , Mean = 6.8)	11	8.0 - 926	213	58.8	5.7
Cheshire, CT (**LC_{XRF} (mg/cm^2)** n = 3 , Range = 1.0 - 1.4 , Mean = 1.1)	3	9.0 - 12.0	10.2	10.1	1.2
Milwaukee, WI (**LC_{XRF} (mg/cm^2)** n = 31 , Range = 2.3 - 25.3 , Mean = 11.9)	31	2.0 - 420	51.7	18.6	4.3

LC_{XRF} = Lead content of affected surfaces based on measurement by X-Ray Fluorescence (XRF) instrumentation.

[1] The XRF measurement reported (9.9) was the maximum reportable limit for the XRF instrument used.

FIGURE 4.10 - COMPARISON OF THE GM OF PBZ AIR SAMPLING RESULTS BY PROPERTY TO THE GM OF THE PBZ AIR SAMPLING RESULTS FOR ALL PROPERTIES

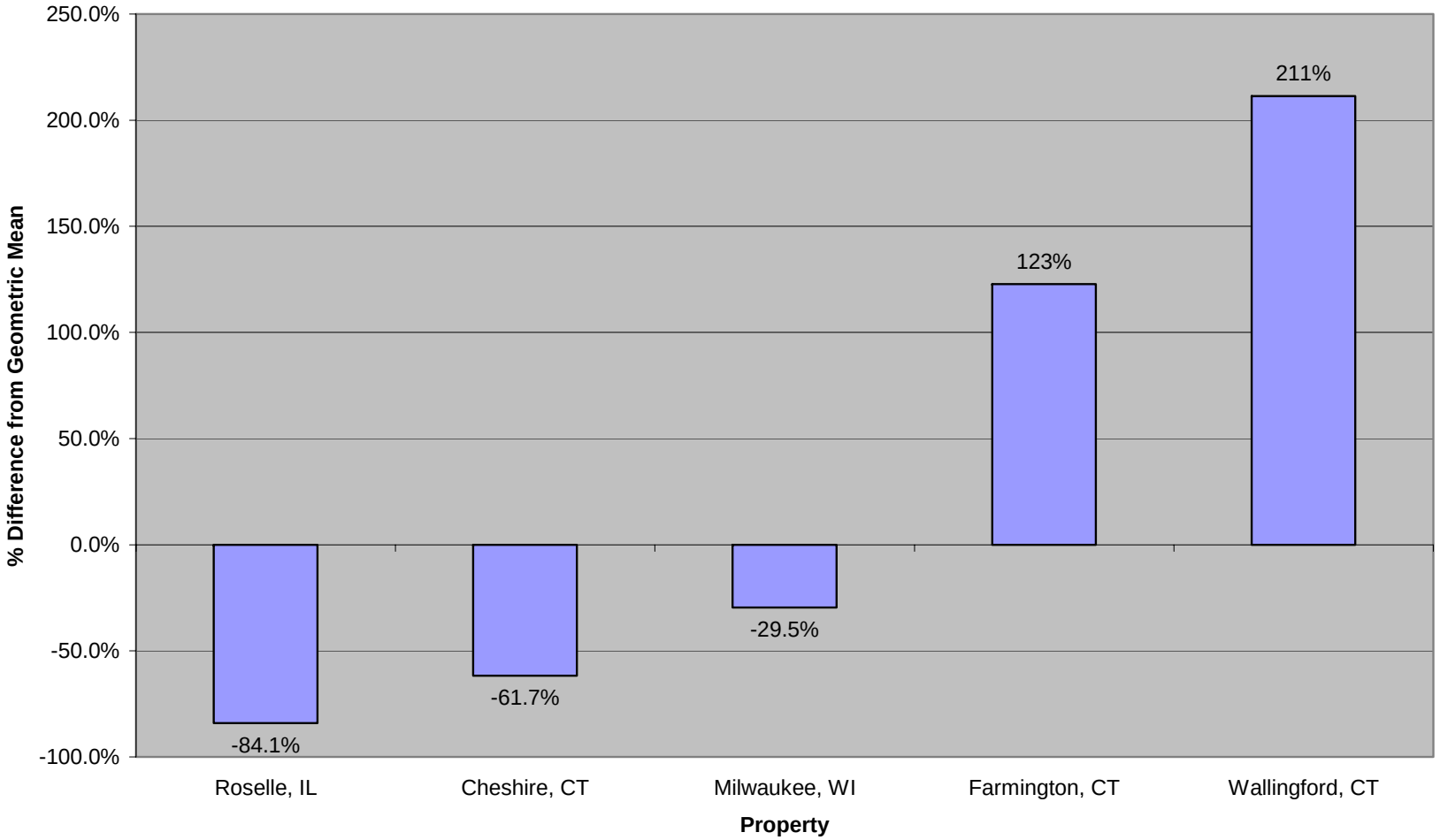


TABLE 4.18
AREA (DURING) AIR SAMPLING RESULTS SUMMARIZED BY PROPERTY

Location	AREA (DURING) (µg/m^3)				
	n	Range	Mean	GM	GSD
All (**LC_{XRF} (mg/cm^2)** n = 74 , Range = 0.9 - 25.3 , Mean = 10.5)	74	1.0 - 1780	85.5	17.6	4.8
Roselle, IL (**LC_{XRF} (mg/cm^2)** n = 6 , Range = 2.9 - 22.7 , Mean = 14.1)	6	2.0 - 3.0	2.2	2.1	1.2
Wallingford, CT (**LC_{XRF} (mg/cm^2)** n = 15 , Range = 1.0 - >9.9[1] , Mean = 8.0)	15	8.0 - 1780	209.9	56.6	4.5
Farmington, CT (**LC_{XRF} (mg/cm^2)** n = 14 , Range = 0.9 - >9.9[1] , Mean = 6.9)	14	8.0 - 868	135	39.2	5.1
Cheshire, CT (**LC_{XRF} (mg/cm^2)** n = 3 , Range = 1.0 - 1.4 , Mean = 1.1)	3	7.5 - 9.0	8.2	8.1	1.1
Milwaukee, WI (**LC_{XRF} (mg/cm^2)** n = 36 , Range = 2.3 - 25.3 , Mean = 13.1)	36	1.5 - 411	34.6	12.0	3.9

LC_{XRF} = Lead content of affected surfaces based on measurement by X-Ray Fluorescence (XRF) instrumentation.

[1] The XRF measurement reported (9.9) was the maximum reportable limit for the XRF instrument used.

FIGURE 4.11 - COMPARISON OF THE GM OF AREA (DURING) AIR SAMPLING RESULTS BY PROPERTY TO THE GM OF THE AREA (DURING) AIR SAMPLING RESULTS FOR ALL PROPERTIES

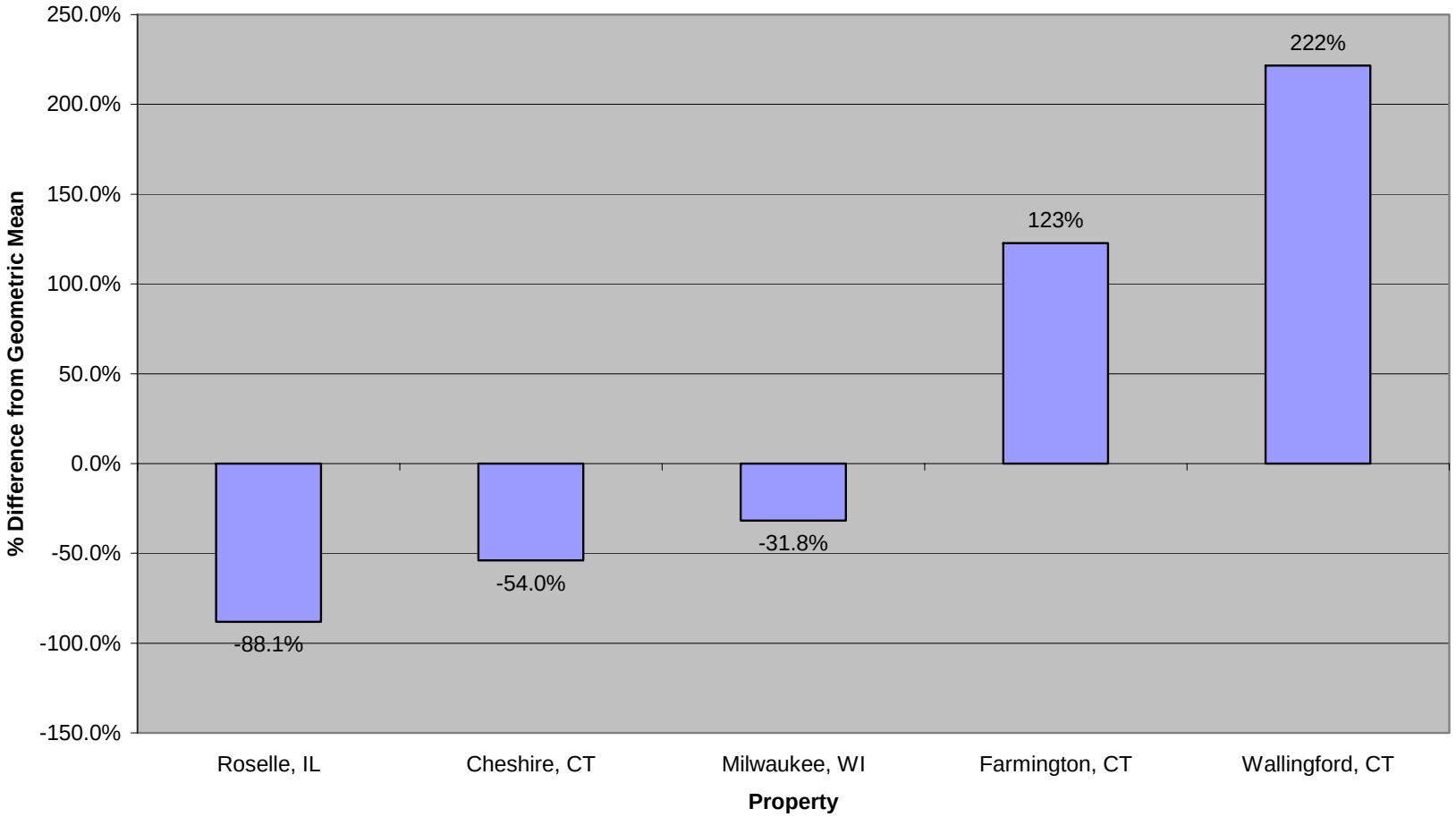


TABLE 4.19
SURFACE DUST SAMPLING RESULTS SUMMARIZED BY PROPERTY

Activity	n	Pre (µg/ft^2)			Post (µg/ft^2)			Δ GM	% Change
		Range	Mean	GM	Range	Mean	GM		
All Activities	241	10 - 108000	3422.56	499.07	15 - 39200	1185.23	320.39	-178.68	-36%
Roselle, IL	22	26.1 - 36000	2445.96	354.53	14.9 - 5380	402.48	86.70	-267.83	-76%
Wallingford, CT	45	33.2 - 108000	12415.67	1621.83	19.8 - 39200	2581.67	452.75	-1169.08	-72%
Farmington, CT	44	10 - 10800	840.18	127.58	15.9 - 10800	883.09	188.39	60.81	48%
Cheshire, CT	12	13.4 - 898	269.28	93.60	18.2 - 183	52.37	39.85	-53.75	-57%
Milwaukee, WI	118	27 - 19600	1365.90	644.25	27 - 11400	1038.33	541.46	-102.79	-16%

n = no. of pairs of samples, where a pair equals one pre-work sample and one post-work sample from approximatlely the same location.

FIGURE 4.12 - DIFFERENCE BETWEEN POST-WORK DUST SAMPLES AND PRE-WORK DUST SAMPLES BY LOCATION BASED ON GM OF ALL SURFACES SAMPLED

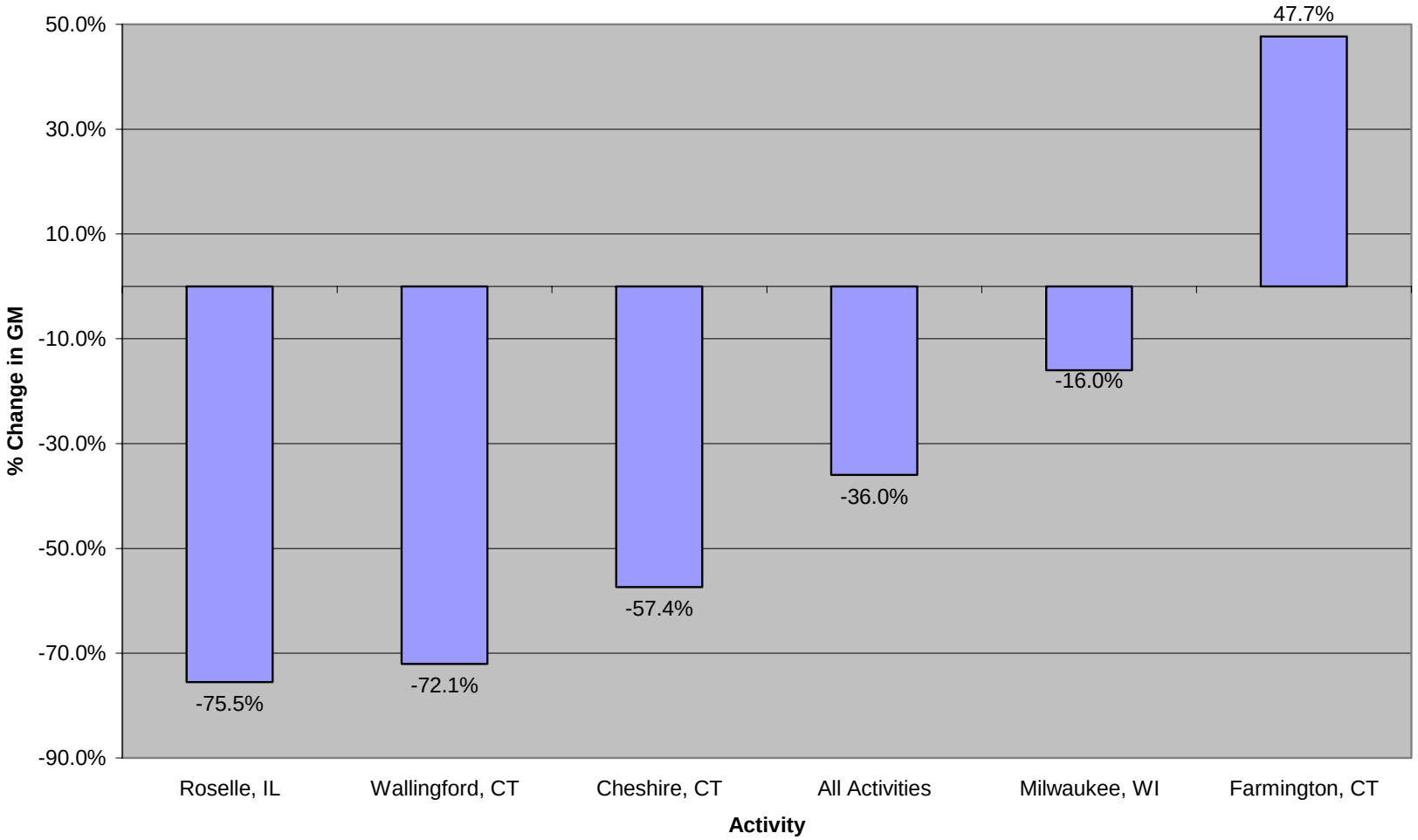


TABLE 4.20
CHANGES IN SETTLED DUST LEAD LOADINGS IN WORK AREA BY PROPERTY

Surface Tested	Location	# of Paired Samples	% with Increase	Pre-Work (µg/ft²) Range	Pre-Work (µg/ft²) Geometric Mean	Post-Work (µg/ft²) Range	Post-Work (µg/ft²) Geometric Mean	% Change
Floor	Cheshire	6	50%	13.4 - 231	38	18 - 61.5	30	-21%
	Farmington	17	82%	<10 - 4320	64	27 - 4320	163	155%[a]
	Milwaukee	38	63%	54.3 - 6080	512	69 - 11400	657	28%
	Roselle	6	17%	76.5 - 824	218	27 - 111	51	-77%[a]
	Wallingford	27	44%	33.2 - 4700	440	26 - 9700	290	-34%
	All	94	57%	<10 - 6080	270	18 - 11400	281	4%
Window Sill	Cheshire	3	0%	554 - 898	725	20 - 183	75	-90%[a]
	Farmington	8	38%	366 - 10800	1,103	59 - 10800	793	-28%
	Milwaukee	20	20%	136 - 19600	1,337	82 - 3300	603	-55%[a]
	Roselle	5	20%	252 - 1960	739	79 - 1140	298	-60%[a]
	Wallingford	10	0%	1360 - 108000	23,491	120 - 10200	1,758	-93%[a]
	All	46	17%	136 - 108000	2,172	20 - 183	645	-70%[a]

a = Statistically significant change ($p<0.05$)

TABLE 4.21
CALCULATED 8-HOUR TIME WEIGHTED AVERAGE (TWA) EXPOSURES TO LEAD DURING RENOVATION AND REMODELING ACTIVITIES

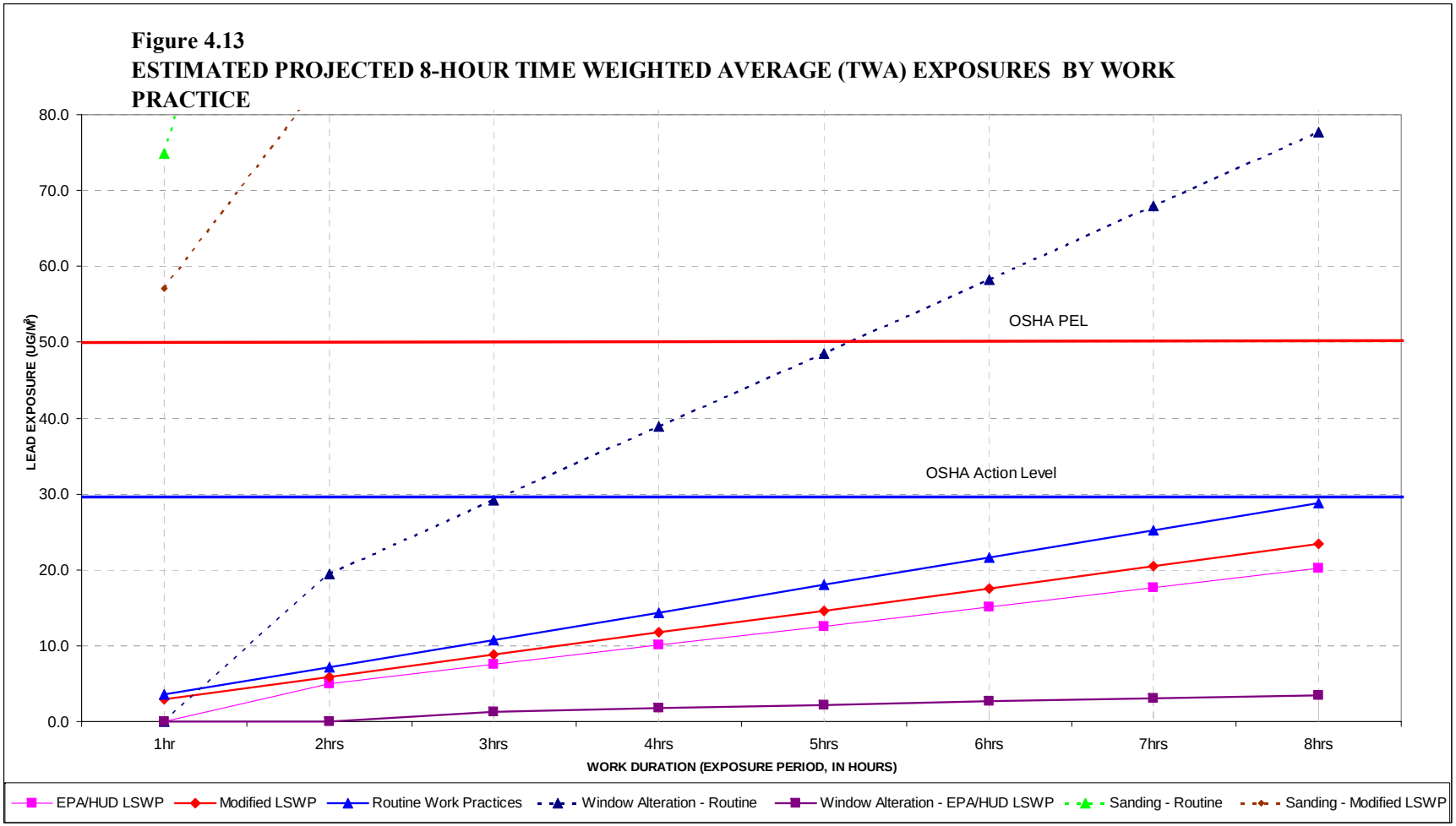
					OSHA Exposure Criteria (µg/m^3)					
Date	**Location**	**ID**	**TWA**	**8-hour TWA* (µg/m^3)**	**PEL**	**AL**	**AL Exceeded**	**PEL Exceeded**	**X Over PEL**	**Activity with the greatest contribution to exposure**
25-Jan-06	Roselle, IL	Worker 1	2.5	0.8	50	30	NO	NO	0.02	
25-Jan-06	Roselle, IL	Worker 2	11.3	6.6	50	30	NO	NO	0.13	
26-Jan-06	Roselle, IL	Worker 3	4.0	3.6	50	30	NO	NO	0.07	
18-Apr-06	Wallingford, CT	Worker 1	**343.9**	**100**	50	30	**YES**	**YES**	**2.01**	Sanding window stops with belt sander-Routine Work Practices = 545 µg/m^3
18-Apr-06	Wallingford, CT	Worker 2	**427.2**	**141**	50	30	**YES**	**YES**	**2.81**	Sanding doors - Routine Work Practices = 1050 µg/m^3
18-Apr-06	Wallingford, CT	Worker 3	47.3	12.2	50	30	NO	NO	0.24	
18-Apr-06	Wallingford, CT	Worker 4	70.7	18.0	50	30	NO	NO	0.36	
18-Apr-06	Wallingford, CT	Worker 5	865.7	**197**	50	30	**YES**	**YES**	**3.93**	Sanding stair stringers with belt sander - Routine Work Practices = 1700 µg/m^3
19-Apr-06	Wallingford, CT	Worker 1	60.0	9.0	50	30	NO	NO	0.18	
19-Apr-06	Wallingford, CT	Worker 2	17.0	1.9	50	30	NO	NO	0.04	
19-Apr-06	Wallingford, CT	Worker 3	6.5	0.8	50	30	NO	NO	0.02	
19-Apr-06	Wallingford, CT	Worker 4	38.0	4.8	50	30	NO	NO	0.10	
20-Apr-06	Farmington, CT	Worker 1	565.7	**112**	50	30	**YES**	**YES**	**2.24**	Window jamb removal and sanding with orbital sander - Routine Work Practices = 926 µg/m^3
20-Apr-06	Farmington, CT	Worker 2	393.7	**127**	50	30	**YES**	**YES**	**2.54**	Window jamb removal and sanding with shrouded orbital sander- Mod LSWP = 805 µg/m^3
20-Apr-06	Farmington, CT	Worker 3	27.3	9.1	50	30	NO	NO	0.18	
20-Apr-06	Farmington, CT	Worker 4	122.3	**38.7**	50	30	**YES**	NO	0.77	Window jamb removal and sanding with orbital sander - Routine Work Practices = 324 µg/m^3
21-Apr-06	Cheshire, CT	Worker 1	12.0	1.2	50	30	NO	NO	0.02	
21-Apr-06	Cheshire, CT	Worker 2	9.0	0.8	50	30	NO	NO	0.02	
21-Apr-06	Cheshire, CT	Worker 3	9.5	1.1	50	30	NO	NO	0.02	
2-May-06	Milwaukee, WI	Worker 1	5.0	1.6	50	30	NO	NO	0.03	
2-May-06	Milwaukee, WI	Worker 2	36.4	20.5	50	30	NO	NO	0.41	
2-May-06	Milwaukee, WI	Worker 3	238.9	**68.7**	50	30	**YES**	**YES**	**1.37**	Floor sanding (not ventilated) - Mod LSWP = 420 µg/m^3
3-May-06	Milwaukee, WI	Worker 1	6.3	3.5	50	30	NO	NO	0.07	
3-May-06	Milwaukee, WI	Worker 2	2.0	0.7	50	30	NO	NO	0.01	
3-May-06	Milwaukee, WI	Worker 3	9.1	2.5	50	30	NO	NO	0.05	
3-May-06	Milwaukee, WI	Worker 4	93.7	**32.8**	50	30	**YES**	NO	0.66	Sanding window frames/surface prep w/ belt sander (not ventilated)- Mod LSWP = 140 µg/m^3
3-May-06	Milwaukee, WI	Worker 5	21.9	10.3	50	30	NO	NO	0.21	
4-May-06	Milwaukee, WI	Worker 1	4.0	2.2	50	30	NO	NO	0.04	
4-May-06	Milwaukee, WI	VOIDED								
4-May-06	Milwaukee, WI	Worker 3	7.1	4.2	50	30	NO	NO	0.08	
4-May-06	Milwaukee, WI	Worker 4	145.0	15.4	50	30	NO	NO	0.31	
5-May-06	Milwaukee, WI	Worker 1	17.0	3.6	50	30	NO	NO	0.07	
5-May-06	Milwaukee, WI	Worker 2	28.3	9.0	50	30	NO	NO	0.18	
5-May-06	Milwaukee, WI	Worker 3	126.7	**36.4**	50	30	**YES**	NO	0.73	Window modification w/ hand sanding (147 µg/m^3) & ceiling prep w/ hand sanding (95 µg/m^3) - Routine Work Practices
5-May-06	Milwaukee, WI	Worker 4	24.8	7.0	50	30	NO	NO	0.14	
5-May-06	Milwaukee, WI	Worker 5	34.8	12.6	50	30	NO	NO	0.25	

Exposure monitoring was conducted over the entire activity period, including set-up, work, and clean-up.

*** The 8-hour TWA assumes no exposures to lead during periods where no work was being conducted.**

Results reported as "<" were recorded as actual values when calculating TWAs.

Figure 4.13
ESTIMATED PROJECTED 8-HOUR TIME WEIGHTED AVERAGE (TWA) EXPOSURES BY WORK PRACTICE



5.0 DISCUSSION OF FINDINGS

Based on the findings analyzed and reported in this report, the following observations are offered:

1. **Property Selection**. The properties included in this study had higher lead levels than is typical for housing containing LBP. Most painted surfaces, even in older housing, are not coated with LBP. HUD estimates that only 2% of all interior painted surfaces contain LBP. With time, this percentage continues to fall.[xii] The properties included in this study were selected because of the prevalence of LBP on surfaces, and the amount of lead measured in painted surfaces using XRF instrumentation. Many of the R&R activities assessed were on surfaces and fixtures that contained >9.9 mg/cm^2 (the highest level reported by the XRF instrument used in the Farmington and Cheshire properties).

2. **R&R Professionals**. The R&R professionals who performed the work during this project had all attended and successfully completed the EPA/HUD curriculum for *Lead Safety for Remodeling, Repair, & Painting* prior to participating in the project. Different R&R professionals participated in the project each day that work was performed and evaluated in Roselle, IL and Milwaukee, WI. The same R&R contractor team performed the work evaluated in Wallingford, Farmington and Cheshire, CT. While the variability in the R&R professionals who participated in the project may cause variability in how work is performed, it did provide a more representative sample of R&R work performed throughout the United States. Therefore, the results from this project are likely to be more representative of work conducted by R&R contractors throughout the country than if a single contractor crew was used for the entire project.

3. **Time Required to Complete Work**. Wall and ceiling demolition was the most time-consuming activity averaging approximately four person-hours to complete. EPA/HUD LSWP was the most time-consuming work practice to employ, averaging approximately 2.3 person-hours to complete an activity using these practices. This was approximately twice the labor effort when compared to using routine work practices.

4. **Air Sampling Results.** The personal breathing zone and area air measurements during routine renovation and remodeling (R&R) activities were widely distributed, ranging from less than the LOQ to 1,700 µg/m^3 for PBZ air samples and from less than the LOQ to 1,780 µg/m^3 for area air samples. Approximately half (49%) of these air measurements were below the analytical LOQ. When the data is segregated by specific activity and task, the following observations can be made:
   a. Seven typical R&R activities generated relatively low levels of airborne lead dust, based on the mean and GM of the PBZ and area air samples.
      - Wall and ceiling removal (demolition)
      - Wall and ceiling modification
      - Window replacement (no sanding involved)
      - Cabinet removal (kitchen and bath work)
      - Floor covering removal and baseboard removal
      - Sawing into wood and plaster covered by LPB

The geometric mean (GM) of the PBZ air sampling results measured during these activities ranged from 5 µg/m^3 to 23 µg/m^3. The GM for all PBZ air samples collected was 26.4 µg/m^3.

The GM of the area air sampling results measured inside the work area during these activities ranged from 3 2.9 µg/m^3 to 17.1 µg/m^3. The GM for all area air samples collected inside work areas during work was 17.6 µg/m^3.

As shown in Tables 4.6 and 4.7, the GM of the PBZ and area air sampling results for these activities were less than the GM for the PBZ and area air sampling results for all activities.

b. Three activities generated higher airborne lead dust concentrations**.** These were:
   - Window alteration
   - Window and door replacement, removal and alteration (sanding involved)
   - Surface preparation (sanding)

   The GM of the PBZ air sampling results measured during these activities ranged from 23.8 µg/m^3 to 225 µg/m^3. The GM for all PBZ air samples collected was 26.4 µg/m^3.

   The GM of the area air sampling results measured inside the work area during these activities ranged from 21.9 µg/m^3 to 161 µg/m^3. The GM for all area air samples collected inside work areas during work was 17.6 µg/m^3.

   As shown in Tables 4.6 and 4.7, the GM of the PBZ and area air sampling results for these activities were greater than the GM for the PBZ and area air sampling results for all activities.

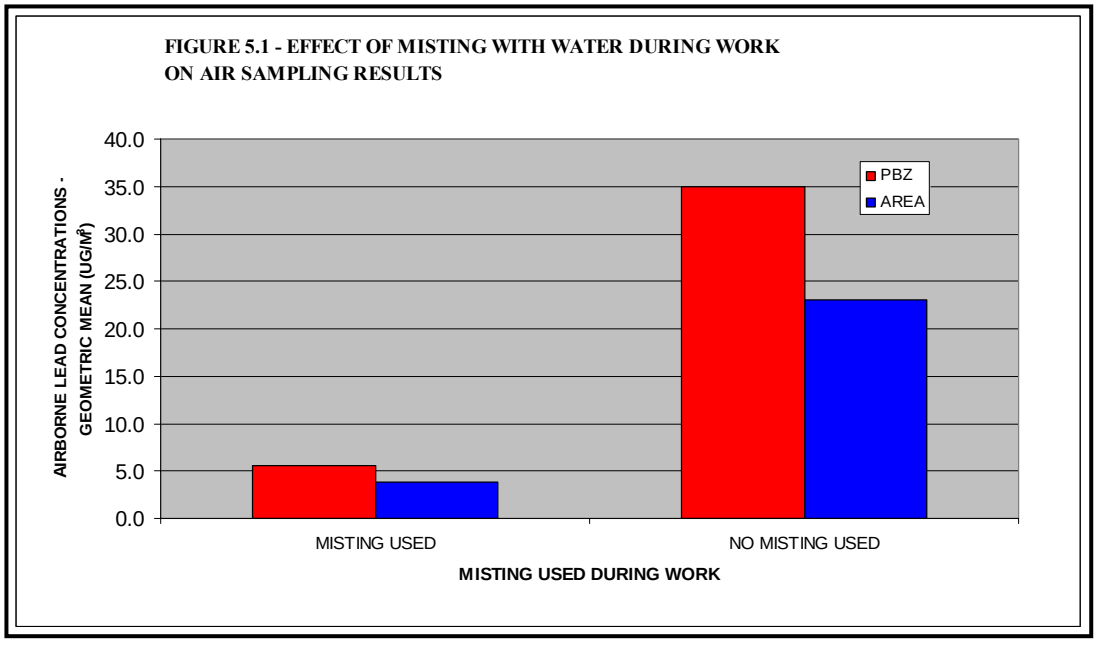
c. Sanding and cutting tasks generated the highest levels of airborne lead dust. The GM of the PBZ air sampling results measured during sanding and cutting tasks was 58.7 µg/m^3. The GM of the area air sampling results measured during sanding and cutting tasks was 33.3 µg/m^3. The GM of the PBZ (58.7 µg/m^3) and area air sampling (33.3 µg/m^3) results for these activities was greater than the GM for the PBZ and area air sampling results for all activities (26.4 µg/m^3 for PBZ samples and 17.6 µg/m^3 for area air samples). Of these tasks, sanding wood surfaces, including surface preparation and window alteration, generated the highest levels of airborne dust (PBZ GM = 205 µg/m^3; area GM = 78.3 µg/m^3).

d. Work practices. Employing a modified set of the EPA/HUD LSWP (Mod LSWP) reduces airborne lead dust concentrations when compared to routine work practices. In comparing the GM of the PBZ air sampling results, the GM for samples collected during events where Mod LSWP were used were 23% lower than the GM for all PBZ air samples collected. (GM = 20.3 µg/m^3 for Mod LSWP PBZ; GM = 26.4 µg/m^3 for all PBZ samples). For comparison, the GM for PBZ air samples collected during events where Routine work practices were used, were 86% higher than the GM for all PBZ air samples collected. (GM = 203 µg/m^3 for Routine PBZ; GM = 26.4 µg/m^3 for

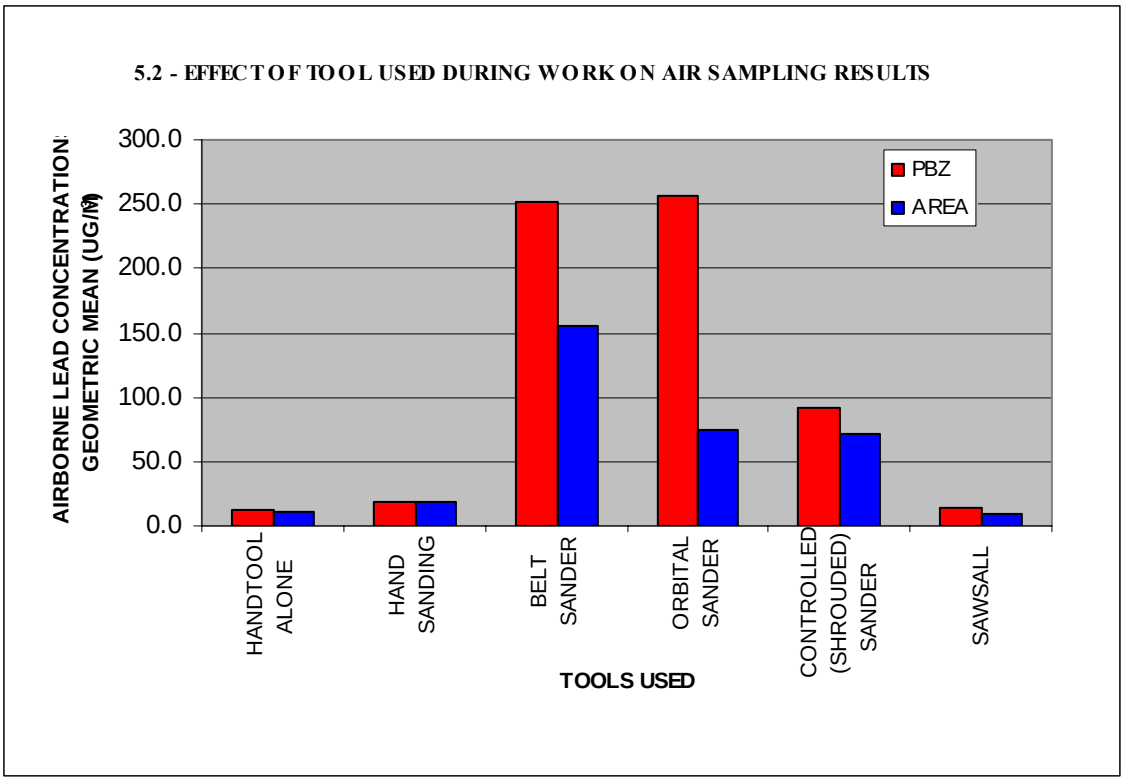
all PBZ samples). Using the EPA/HUD LSWP reduced airborne concentration even lower (80% lower than the GM for all PBZ air samples).

In reviewing the results from all activities and all work practice, the trend was a reduction in airborne lead based on the PBZ sample results as more dust control techniques were employed (Routine > Mod LSWP > EPA LSWP), as would be expected.

e. Misting surfaces with water during work appears to reduce airborne lead dust substantially. Misting was used during work in 11% of the events evaluated where Mod LSWP were employed, and 100% of the events evaluated where EPA/HUD LSWP were employed. Events where misting was used (n = 10, GM = 5.5 µg/m^3) showed an 84% reduction in airborne lead dust levels when compared to events where no misting was used (n = 55, GM = 5.5 µg/m^3). Area air samples showed the same trend. Figure 5.1 shows the effect misting during work had on airborne lead levels measured by PBZ and area air sampling.



f. Tools used. Airborne lead dust levels were substantially lower when only hand tools (n = 14, GM = 12.1 µg/m^3) or only hand sanding (n = 7, GM = 19 µg/m^3) was used when compared to events where one or more power tools were used. Ventilated (shrouded) tools connected to HEPA filter-equipped vacuum cleaners (n = 5, GM = 91.2 µg/m^3) were used in 20% of the events conducted using Mod LSWP. Power tool sanding conducted using shrouded tools showed an 64% to 65% reduction when compared to sanding using non-shrouded belt sanders (n = 4, GM = 252 µg/m^3) and orbital sanders (n = 6, GM = 257 µg/m^3), respectively.



g. Results by property. When comparing the PBZ air sampling results by property, the lowest levels of airborne lead dust were measured during work in Roselle, IL (n = 6, GM = 4.2 µg/m^3), and the highest levels were measured in Farmington, CT (n = 11, GM = 59 µg/m^3) and Wallingford, CT (n = 14, GM = 82 µg/m^3). The largest sample data set was collected from the Milwaukee, WI property (n = 31, GM = 18.6 µg/m^3), which represented the median for airborne lead dusts levels measured during this project. Area air samples collected inside work areas during work activities showed the same trend.

h. Worker exposures. The PBZ samples collected during this project represented 35 workers' 8-hour TWA exposures. The 8-hour TWA exposures measured during this project ranged from 0.7 µg/m^3 to 197 µg/m^3. Twenty-six (74%) of the calculated 8-hour TWA exposures were less than the OSHA Action Level of 30 µg/m^3; and 29 (83%) were below the PEL of 50 µg/m^3. The highest calculated TWA exposures were measured on workers performing window repair work in Farmington, CT and during sanding activities.

Worker's 8-hour TWA exposures for a specific activity and work practice were estimated using the mean PBZ result and mean sampling time for each activity. In projecting exposures, it is estimated that the following work can be performed for an 8-hour work shift without exceeding the OSHA Action Level as an 8-hour TWA:

- Wall and ceiling demolition;
- Wall and ceiling modification;
- Window replacement with no sanding;
- Cabinet removal; and,

- Baseboard removal;

It is critical to note that these are estimated exposures intended to show relative exposures based on activity. Because of the limited number of samples collected, they are not intended to be used as objective data for negative exposure assessments required under OSHA standards. Full-shift personal breathing zone air monitoring is the only acceptable method for verifying that worker exposures are below the Action Level.

1. **Surface Dust Sampling Results.** The wipe samples collected to measure lead loading in surface dust before and after renovation and remodeling (R&R) activities were conducted were widely distributed. Pre-work sample results from all surfaces ranged from less than the LOQ to 108,000 μg/ft^2. The results of pre-work samples collected from floors within work areas ranged from less than the LOQ to 6,080 μg/ft^2. For comparison, pre-intervention levels measured on floors in 424 occupied residential dwellings as part of a HUD-funded study ranged from 0.1 μg/ft^2 to 9,407 μg/ft^2.[xiii] The results of pre-work samples collected from window sills within work areas ranged from 110 μg/ft^2 to 91,200 μg/ft^2. Again, for comparison, pre-intervention levels measured on window sills in 424 occupied residential dwellings as part of a HUD-funded study ranged from 3 μg/ft^2 to 129,188 μg/ft^2.[xiv] Based on comparison to known reference points, the pre-work levels measured during this project should be considered to be representative of potential work conditions.

   Post-work sample results for all surfaces ranged from less than the LOQ to 39,200 μg/ft^{2*}. Comparing the paired (n = 241 pairs) pre-work (GM = 499 μg/ft^2) and post-work (GM = 320 μg/ft^2) surface lead dust measurements from all surfaces sampled within work areas showed a 35% reduction in lead dust loading following completion of work.

   When the data is segregated by specific activity and work practice (i.e. scenario), the following observations can be made:

   a. Results by activity. (Please see Table 4.9) When comparing the paired pre-work and post-work surface lead dust measurements from all surfaces sampled within work areas, all activities showed a reduction in lead dust loading following completion of work.

      When comparing the paired results based on the surface tested (floor or window sill), a statistically significant reduction (-42%) was measured in the floor samples following wall and ceiling modifications (n = 26). There was no increase in lead dust in floor samples overall, nor was there any statistically significant increase in floor samples after any activity, including those with large sample sizes. Significant reductions were measured on window sills following wall and ceiling modifications (-79%, n = 14), cabinet removal (-78%, n = 5), and surface preparation (-65%, n = 5). No activity produced an increase in the sill loading samples; all activities produced lower readings. Many of the changes were larger, and several were significant. For all activities combined, the reduction in surface dust on window sills (n = 54) was statistically significant (-71%).

* This result represents a composite sample from a sill and trough.

b. Results by work practice. (Please see Table 4.15) When comparing the paired pre-work and post-work surface lead dust measurements from all surfaces sampled, Mod LSWP (n = 120) and EPA/HUD LSWP (n = 21) showed a reduction in lead dust loading following completion of all R&R activities (-53% and -31%, respectively). Reductions in lead dust loading were measured for all activities performed using Routine work practices, except window alteration with no sanding involved (27.0% increase, n = 7) and sawing into wood or plaster (82% increase, n = 8).

Regardless of the work practice employed, window alteration with no sanding involved showed an increase in lead dust loading (21.8% increase, n = 11).

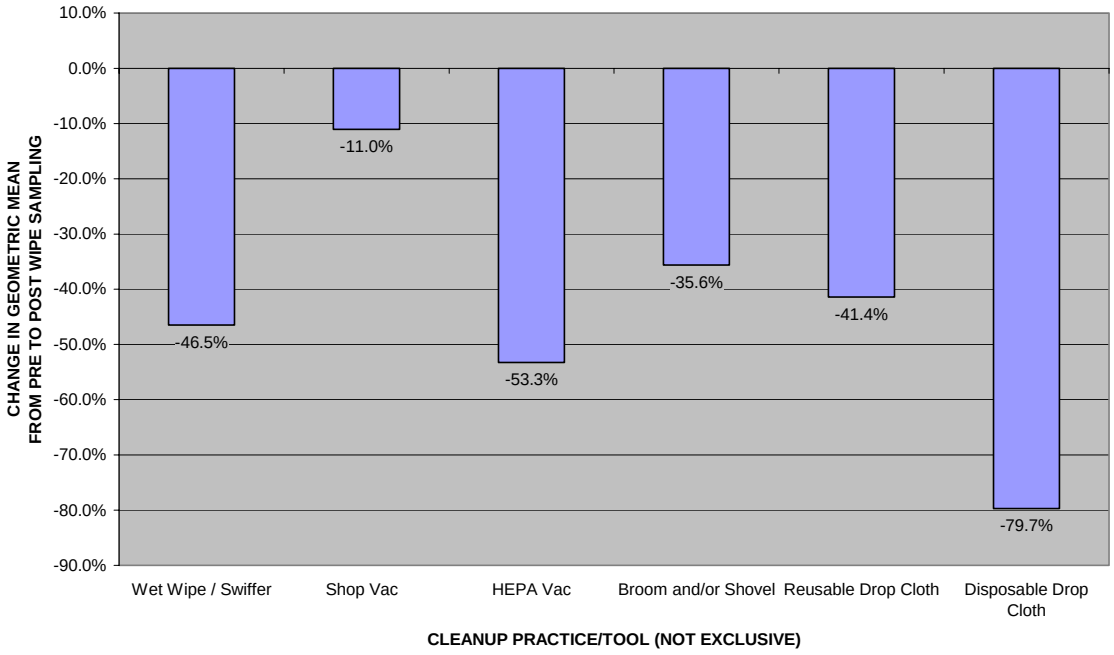
When comparing the paired results based on the surface tested (floor or window sill)(Table 4.16), statistically significant reductions were measured on window sills following Mod LSWP (-80%, n = 25) and routine work practices (-68%, n = 21). For all work practices combined, the reduction in surface dust on window sills was significant (-71%, n = 54).

Based on the results of the wipe samples collected, it appears that Mod LSWP and EPA/HUD LSWP are more effective at reducing lead loading in surface dust than Routine work practices.

c. Preparation and clean-up methods used. Figure 5.3 shows a comparison of different cleaning methods employed and their effect on the reduction of lead dust loading in work areas. When comparing the paired pre-work and post-work surface lead dust measurements from all surfaces sampled, the use of HEPA filter-equipped vacuum cleaners (n = 121) and the use of wet wiping or Swiffer® mops (n = 97) appear to have the most significant effect on reducing lead loading in surface dust. These techniques showed a reduction of lead surface dust of 53% and 46.5%, respectively.

When comparing the use of drop cloths, reductions in the lead loading in surface dust were observed when either re-useable drop cloths or disposable drop cloths were used. However, a more significant reduction was shown in events where disposable drop cloths were used (-79%, n = 237) compared to events where only re-useable drop cloths were used (-41%, n = 66).

FIGURE 5.3
EFFECT OF CLEAN-UP PRACTICE USED ON WIPE SAMPLES



d. Results by property. (Please see Table 4.19) The differences between pre-work and post-work surface lead dust loading was similar for the Roselle (-75.5%, n = 22), Wallingford (-72%, n = 45) and Cheshire (-57%, n = 12) properties when comparing measurements from all surfaces. While sampling in Milwaukee showed a reduction in lead dust loading (-16%, n = 118), the reduction was smaller than the overall reduction for all activities at all properties (-36%, n = 241). The Farmington property showed a 48% (n = 44) increase in lead loading in surface dust.

When comparing the paired results based on the surface tested (floor or window sill)(Table 4.20), statistically significant reductions were measured on the floors in Roselle (-77%, n = 6) and on the window sills in Cheshire (-90%, n = 3), Milwaukee (-55%, n = 20), Roselle (-60%, n = 5), and Wallingford (-93%, n = 10). For all properties combined, the reduction in surface dust on window sills was statistically significant (-70%, n = 46), and there was no statistically significant overall increase in dust on floors.

6.0 CONCLUSIONS

Responses to three fundamental questions that formulated the objectives of this project are offered as follows:

1. **Do typical renovation and remodeling activities create lead hazards?** Renovation and remodeling activities evaluated during this project did not create new lead dust hazards. In all of the properties tested, pre-work (baseline) testing identified surface dust levels that exceeded current HUD/EPA criteria for floors and window sills. Although post-work lead loading measurements were widely distributed, the post-work samples collected from all surfaces were lower than the pre-work dust samples in 8 of the 9 (89%) of the R&R activities evaluated. When considering lead dust loading on surfaces throughout a single property, results showed that overall 4 of the 5 properties evaluated (80%) had lower lead dust levels when the R&R contractors completed the work than when they arrived.

2. **When applying EPA's lead-safe work practices to a set of typical renovation and remodeling activities, are surface lead hazards (>40 µg/ft^2 on floors, >250 µg/ft^2 on window sills), or airborne hazards (> 50 µg/m^3 in the air) created?** When comparing the paired pre-work and post-work surface lead dust measurements from all surfaces sampled, 89% of the R&R activities evaluated showed a reduction in lead dust loading following completion of the activities.

   When comparing the paired pre-work and post-work surface lead dust measurements, Mod LSWP and EPA/HUD LSWP, on average, showed reduction in lead dust loading. Reductions in lead dust loading were measured for all activities performed using Routine work practices, except sawing into wood or plaster.

   When comparing the paired results based on the surface tested (floor or window sill), statistically significant reductions were measured on window sills following Mod LSWP and routine work practices. For all work practices combined, the reduction in surface dust on window sills was significant.

   Based on the results of the wipe samples collected during this project, surface dust loading results exceeded 40 µg/ft^2 on floors and 250 µg/ft^2 on window sills for all work practices employed – Routine, Mod LSWP, and LSWP. The results do indicate that Mod LSWP and EPA/HUD LSWP are more effective at reducing lead loading in surface dust than Routine work practices.

   Employing a modified set of the EPA/HUD LSWP (Mod LSWP) reduces airborne lead dust concentrations when compared to Routine work practices. Using the EPA/HUD LSWP reduced airborne concentration even lower. In reviewing the results from all activities and all work practice, the trend was a reduction in airborne lead based on the personal breathing zone (PBZ) air sample results as more dust control techniques were employed (Routine > Mod LSWP > EPA/HUD LSWP), as would be expected.

Misting surfaces with water during work appears to significantly reduce airborne lead dust. Events where misting was used showed an 84% reduction in airborne lead dust levels when compared to events where no misting was used.

Airborne lead dust levels were significantly lower when only hand tools or only hand sanding were used when compared to events where one or more power tools were used. Ventilated (shrouded) tools connected to HEPA filter-equipped vacuum cleaners showed a 64% to 65% reduction when compared to sanding using non-shrouded orbital sanders and belt sanders, respectively.

When comparing the use of drop cloths, reductions in the lead loading in surface dust were observed when either re-useable drop cloths or disposable drop cloths were used. However, a more significant reduction was shown in events where disposable drop cloths were used. The use of HEPA filter-equipped vacuum cleaners and wet wiping or Swiffer® mops during post-work clean-up showed the most significant effect on reducing lead loading in surface dust.

3. **Do modified lead-safe work practices reduce lead exposures below the PEL?** The PBZ samples collected during this project represented 35 workers' 8-hour TWA exposures. The 8-hour TWA exposures measured during this project ranged from 0.7 $\mu g/m^3$ to 197 $\mu g/m^3$. Twenty-six (74%) of the calculated 8-hour TWA exposures were less than the OSHA Action Level of 30 $\mu g/m^3$; and 29 (83%) were below the PEL of 50 $\mu g/m^3$.

   It was difficult to assess and estimate 8-hour TWA exposures by work practice for the following reasons:
   - Each worker performed multiple work activities using different work practices in a work day; and,
   - A smaller number of events using EPA/HUD LSWP were evaluated when compared to the number of events where Routine or Mod LSWP were used.

   Estimating 8-hour TWA exposures by activity, regardless of work practice, showed that the following tasks can be performed for an entire work shift without exceeding the OSHA Action Level:
   - Wall and ceiling demolition;
   - Wall and ceiling modification;
   - Window replacement with no sanding;
   - Cabinet removal; and,
   - Baseboard removal.

   It is likely that window alterations with no sanding involved may be conducted using routine practices for shorter periods of time (e.g. less than 5 hours during a shift) without exceeding the OSHA PEL. Activities involving sanding resulted in projected 8-hour TWA exposures that exceeded the OSHA Action Level and PEL.

   In most instances, those employees' whose 8-hour TWA exposures exceeded the action level performed some type of sanding activity during their work day. Using ventilated (shrouded) tools connected to HEPA filter-equipped vacuum cleaners and other dust

control measures during sanding reduced airborne concentrations of lead dust, in most cases. During window and door alterations where sanding was conducted, employing some level of dust control showed a reduction in airborne dust levels, in most cases, when compared to sanding with no controls. Performing surface preparation activities using dust control devices or techniques also showed a reduction over uncontrolled sanding during surface preparation.

Employing a modified set of the EPA/HUD LSWP (Mod LSWP) reduces airborne lead dust concentrations when compared to routine work practices. Using the EPA/HUD LSWP reduced airborne concentration even lower. In reviewing the results from all activities and all work practices, the trend was a reduction in airborne lead based on the personal breathing zone (PBZ) air sample results as more dust control techniques were employed (Routine > Mod LSWP > EPA/HUD LSWP), as would be expected.

Recommendations for future studies or research include:

1. By comparison, fewer events where EPA/HUD LSWP were employed were evaluated during this project. A robust comparison of work practices relative to EPA/HUD LSWP is somewhat limited by the number of samples collected during activities where this work practice was employed. Additional evaluations of R&R events where EPA/HUD LSWP are employed would provide a better comparison of work practices.

2. Notably higher levels of airborne lead dust were measured in air samples collected at the Wallingford, CT and Farmington, CT as compared to the other three properties. The work performed in these properties and the lead concentrations in the paint in these properties were similar to the other properties, as measured by XRF. While outside the scope of this study, a more detailed analysis of the data collected from these two properties could be performed to research possible causes of this difference.

3. Notably higher airborne levels of airborne lead dust were measured during sanding or sawing on wood surfaces as compared to sanding or sawing on plaster surfaces. While outside of the scope of this study, informal discussions with coatings experts hypothesized that surface absorption of the paint differs between wood and plaster and may account for how much paint dust is generated during these activities. However, no published research on this issue was identified at the time this report was prepared.

7.0 REFERENCES

[i] National Association of Home Builders, Request For Proposal Lead-Safe Work Practices Survey Project, November 2005.

[ii] Federal Register: June 6, 2005 (Volume 70, Number 107)

[iii] "Air contaminants," Code of Federal Regulations, Title 29, Part 1910.1000, 71 FR 16673, April 3, 2006.

[iv] "Lead," Code of Federal Regulations, Title 29, Part 1926.62, 71 FR 16674, April 3, 2006.

[v] Provided by Andrew Teague, CIH, of Analytics Corporation (Analytics). Analytics is the AIHA accredited laboratory that analyzed the air samples for the Project.

[vi] OSHA Technical Manual, Section II, Chapter 1, Appendix II:1-6. Sampling And Analytical Errors (SAE's)

[vii] Mulhausen, J.R., and J. Damiano, Quantitative Exposure Data: Interpretation, Decision Making, and Statistical Tools. In *A Strategy for Assessing and Managing Occupational Exposures,* AIHA Press, Fairfax, VA, 1998.

[viii] IBID.

[ix] Wilson, J., et al, *Evaluation of HUD-funded Lead Hazard Control Treatments at 6 Years Post-intervention,* Environmental Research, pp *237-248,* Volume 102, Issue 2, October 2006.

[x] IBID

[xi] "Air contaminants," Code of Federal Regulations, Title 29, Part 1910.1000, 71 FR 16673, April 3, 2006.

[xii] Jacobs, D.E., et al, *The Prevalence of Lead-Based Paint Hazards in U.S. Housing,* Environmental Health Perspectives, pp A599 – A606, Volume 110, No. 10, October 2002.

[xiii] Wilson, J., et al, *Evaluation of HUD-funded Lead Hazard Control Treatments at 6 Years Post-intervention,* Environmental Research, pp *237-248,* Volume 102, Issue 2, October 2006.

[xiv] IBID

EXHIBIT A

FIELD DATA COLLECTION TOOL

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

Date		**Hygienist**	

	Event	**ID**	**Activity**	**Work Practice**
Scenario				

Site Address	Street Address	
	City, State, Zip	

Structure Type		Single Family		Apartment	Approx. Construction Date (Yr)	
		Town House		Other (describe)	Approx. Square Footage	
		Condomium			No. of Separate Rooms	

Location of Work w/in structure	

Lead Content of Affected Surfaces				**Work Statistics**	
Surface	XRF Result		% Lead		
				No. of Workers	
				Start Time	
		and/or		Stop Time	
				Total Time (hrs)	
				Tools and Equipment Used	
				Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)	Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)	Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)

Post-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)	Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)

Wipe Sampling

Wipe Sampling

Sample No. (P-*ScenariloD-Date* -##-W-*Location*)	Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)

Wipe Sampling

Sample No. (P-*ScenariloD-Date* -##-W-*Location*)	Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)

OS - Outside of work area

Surface type - wood, tile, linoleum, concrete, carpet, metal, etc.

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	
Work Practice	

DATE	
LOCATION	
SCENARIO	
Work Area Preparation	
Pre-cleaning w/ wet wiping and vac	
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	
HVAC Openings Sealed	
Reusable Drop Cloth	
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	
Disposable Mesh	
Staple Gun	
Tape	
Utility Knife	
Tack Pad	
Disposable Towels for Wipe Down	
Work Practices/Tools	
Hammers/Prybars	
Misting Bottle	
Sandpaper/Sanding Sponge	
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	
HEPA-equipped Vacuum	
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	
Power Washing Equipment	
Needle Gun connected to HEPA Vacuum	
Belt Sander	
Orbital Sander	
Other Non-ventilated Power Tools	
Heavy Duty Garbage Bags	
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	
Wet Wipe Surfaces or Use Detergent	
Reusable Wet Mop w/ One Bucket	
Reusable Wet Mop w/ Two Buckets	
Use Swifter or Similar Disposable Wet Mop	
Disposable Hand Towels	
Pump Sprayer	
HEPA-equipped Vacuum	
Shop or Industrial Vacuum	
Brooms	
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	
N100 Respirator	
Gloves	
Disposable Shoe Covers	
Safety Glasses	
Disposable Towels	

EXHIBIT B

PROJECT DATA SUMMARIES

Date	1/25/2006			Hygienist	
	Event	**ID**	**Activity**	**Work Practice**	
Scenario	1	C1	Window Replacement - jambs removed	Routine	

Site Address	City, State, Zip	Roselle, IL

Structure Type	x	Single Family		Apartment	Approx. Construction Date (Yr)	1920
		Town House		Other (describe)	Approx. Square Footage	2000
		Condomium			No. of Separate Rooms	8

Location of Work w/in structure	Living Room			
Lead Content of Affected Surfaces				**Work Statistics**
Surface	XRF Result		% Lead	
window jamb LR	**17.837**			No. of Workers 2
window jamb LR	**20.125**	and/or		Start Time 9:00
window sash LR	**2**			Stop Time 12:30
				Total Time (hrs) 3.5
				Tools and Equipment Used
				Use attached checklist

Pre-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)			Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
P-	C1-012406-001	-A-Area	Kitchen	20B	3:05	3.01	5:20	2.958	135	2.958	399.33	<5
P-	C1-012406-002	-A-Area	Living Room	21B	3.15	3.01	5:30	2.998	135	2.998	404.73	<5
P-	C1-012506-005	-A-OS**	Stair Landing (Up)	30B	9:12	2	1:10	1.91	248	1.91	473.68	<4

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)			Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D-	C1-012506-003	-A-Area	Living Room	27B	9:05	3.02	12:30	1.52	205	1.52	311.6	<6
D-	C1-012506-00	-A-Area	Kitchen	20B	9:10	3.01	void					
D-	C1-012506-00	-A-PBZ	Worker 1	74B	10:07	3.01	void					
D-	C1-012506-007	-A-PBZ	Worker 2	29B	10:07	3.03	12:28	3.47	141	3.03	427.23	20

Post-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)			Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-	C1-012506-016	-A-Area	Living Room	29B	4:55	2.97	8:57	3.00	242	2.97	718.74	<3

* - Post-work PBZ only required for scenarios where clean-up or other activiites with exposures different than "during work" activities and that work will take at least 135 min (2-hrs, 15-min)

Wipe Sampling

Date	1/25/2016	**Collected by**	

Pre-Work Wipe Sampling

Sample No. (P-*ScenariloD-Date-##*-W-*Location*)			Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
P-	C1-012406-003	-W-Area	Living Room	Window Well	Metal	0.75	1640
P-	C1-012406-004	-W-Area	Living Room	Window Sill	Wood	1.00	836
P-	C1-012406-005	-W-Area	Living Room	Floor	Wood	1.00	258
P-	C1-012406-006	-W-OS	Stair Landing (Up)	Floor	Wood	1.00	117

Surface type - wood, tile, linoleum, concrete, carpet, metal, etc.

Post-Work Wipe Sampling

Sample No. (P-*ScenariloD-Date-##*-W-*Location*)			Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-	C1-012506-020	-W-Area	Living Room	Window Well	Metal	0.75	22.4
C-	C1-012506-021	-W-Area	Living Room	Window Sill	Wood	1.00	79.4
C-	C1-012506-022	-W-Area	Living Room	Floor	Wood	1.00	80.6
C-	C1-012506-023	-W-OS	Stair Landing (Up)	Floor	Wood	1.00	113

OS - Outside of work area

Surface type - wood, tile, linoleum, concrete, carpet, metal, etc.

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	WINDOW REMOVAL W/JAMBS
Work Prac	ROUTINE

DATE	1/25/2006
LOCATION	Roselle, IL
SCENARIO	**C1**
Work Area Preparation	
Pre-cleaning w/ wet wiping and va	
Rope	
Barrier Tape	
Saw Horses	**X**
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	
Reusable Drop Cloth	**X**
4 or 6-mil Plastic Sheeting or	**X**
Disposable Mesh	
Staple Gun	**X**
Tape	**X**
Utility Knife	**X**
Tack Pad	
Disposable Towels for Wipe	
Work Practices/Tools	
Hammers/Prybars	**X**
Misting Bottle	
Sandpaper/Sanding Sponge	
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	
HEPA-equipped Vacuum	
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer	
Power Washing Equipment	
Needle Gun connected to HEPA	
Belt Sander	
Orbital Sander	
Other Non-ventilated Power	
Heavy Duty Garbage Bags	**X**
Sawsall	**X**
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	
Wet Wipe Surfaces or Use	
Reusable Wet Mop w/ One	
Reusable Wet Mop w/ Two	
Use Swifter or Similar Disposable	
Disposable Hand Towels	
Pump Sprayer	
HEPA-equipped Vacuum	
Shop or Industrial Vacuum	**X**
Brooms	**X**
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	
Disposable Shoe Covers	
Safety Glasses	
Disposable Towels	**X**

Date	1/25/2006			Hygienist	

	Event	ID	Activity	Work Practice
Scenario	2	C3	Window Replacement --jambs not removed	HUD/EPA LSWP

Site Address	City, State, Zip	Roselle, IL

Structure Type	x	Single Family	Apartment	Approx. Construction Date (Yr)	1920
		Town House	Other (describe)	Approx. Square Footage	2000
		Condomium		No. of Separate Rooms	8

Location of Work w/in structure	Bedroom # 1 and Bedroom # 3				
Lead Content of Affected Surfaces				**Work Statistics**	
Surface	XRF Result		% Lead		
window jamb BR #1	**19.214**			No. of Workers	2
window jamb BR #1	**22.717**	and/or		Start Time	2:00
window sash BR #3	**6.212**			Stop Time	5:30
window jamb BR #3	**14.839**			Total Time (hrs)	3.5
window jamb BR #3	**6.507**			Tools and Equipment Used	
				Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
P-	C3-012506-001 -A-Area	Bedroom #1	26B	9:08	3.01	11:27	2.97	135	2.97	400.95	<5
P-	C3-012506-002 -A-Area	Bedroom #3	21B	9:06	3.15	11:25	3.33	135	3.15	425.25	<5
P-	C3-012506-008 -A-OS**	Top of stair landing	30B	1:12	2.02	4:40	2:04	308	2.02	622.16	<3

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D-	C3-012506-009 -A-Area	Upstairs Hall	27B	1:59	3.01	4:36	3.11	155	3.01	466.55	<4
D-	C3-012506-012 -A-Area	Bedroom # 1	26B	1:58	3.04	4:35	3.07	153	3.04	465.12	<4
D-	C3-012506-010 -A-PBZ	Worker 1	29B	1:55	3.02	4:32	2.97	147	2.97	436.59	<5
D-	C3-012506-011 -A-PBZ	Worker 2	19B	1:55	3.03	4:25	2.95	140	2.95	413.00	<5

Post-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-	C3-012506-014 -A-Area	Upstairs Hall	27B	4:45	3.11	9:04	2.99	259	2.99	774.41	<3
C-	C3-012506-015 -A-Area	Bedroom #1	26B	4:45	3.07	9:01	3.07	256	3.07	785.92	<3

Wipe Sampling

Date	1/25/2016	Collected by	

Pre-Work Wipe Sampling

Sample No. (P-*ScenariloD-Date-##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
P-	C3-012406-005 -W-Area	Bedroom #3	Window Well	Metal	0.611	8540
P-	C3-012406-006 -W-Area	Bedroom #2	Window Sill	Wood	0.64	1960
P-	C3-012406-007 -W-Area	Bedroom #1	Floor	Tile	1.00	202
P-	C3-012406-008 -W-OS	Top of stair landing	Floor	Wood	0.96	141
P-	C3-012406-009 -W-Area	Bedroom #3	Window Sill	Wood	0.69	878

Surface type - wood, tile, linoleum, concrete, carpet, metal, etc.

Post-Work Wipe Sampling

Sample No. (P-*ScenariloD-Date-##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-	C3-012506-030 -W-Area	Bedroom #3	Window Well	Wood	0.50	108
C-	C3-012506-031 -W-Area	Bedroom #2	Window Sill	Wood	0.67	792
C-	C3-012506-032 -W-Area	Bedroom #1	Floor	Tile	1.00	36.2
C-	C3-012506-033 -W-OS	Top of Stair Landing	Floor	Wood	0.96	254
C-	C3-012506-034 -W-Area	Bedroom #3	Window Sill	Wood	0.38	1140

OS - Outside of work area

Surface type - wood, tile, linoleum, concrete, carpet, metal, etc.

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	WINDOW REMOVAL W/O JAMBS
Work Prac	LSWP

DATE	1/26/2006
LOCATION	Roselle, IL
SCENARIO	**C3**
Work Area Preparation	
Pre-cleaning w/ wet wiping and va	
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	**X**
Reusable Drop Cloth	
4 or 6-mil Plastic Sheeting or	**X**
Disposable Mesh	
Staple Gun	**X**
Tape	**X**
Utility Knife	**X**
Tack Pad	
Disposable Towels for Wipe	
Work Practices/Tools	
Hammers/Prybars	**X**
Misting Bottle	**X**
Sandpaper/Sanding Sponge	
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	
HEPA-equipped Vacuum	**X**
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer	
Power Washing Equipment	
Needle Gun connected to HEPA	
Belt Sander	
Orbital Sander	
Other Non-ventilated Power	
Heavy Duty Garbage Bags	
Sawsall	
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	**X**
Wet Wipe Surfaces or Use	**X**
Reusable Wet Mop w/ One	
Reusable Wet Mop w/ Two	**X**
Use Swifter or Similar Disposable	**X**
Disposable Hand Towels	**X**
Pump Sprayer	
HEPA-equipped Vacuum	**X**
Shop or Industrial Vacuum	
Brooms	
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	
Disposable Shoe Covers	
Safety Glasses	
Disposable Towels	**X**

Date	1/26/2006	Hygienist	

	Event	ID	Activity	Work Practice
Scenario	3	C2	Window Replacement --jambs not removed	modified LSWP

Site Address	

Structure Type	x	Single Family	Apartment	Approx. Construction Date (Yr)	1920
		Town House	Other (describe)	Approx. Square Footage	2000
		Condomium		No. of Separate Rooms	8

Location of Work w/in structure	Living Room/Dining Room				
Lead Content of Affected Surfaces				**Work Statistics**	
Surface	XRF Result		% Lead		
window jamb Dining Room	**13.597**			No. of Workers	1
		and/or		Start Time	8:30
				Stop Time	10:48
				Total Time (hrs)	2.25
				Tools and Equipment Used	
				Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C	C1012506-016	Living Room	29B	4:55	2.97	8:57	3.00	242	2.97	718.74	<3
P-	B2-012606-001	Kitchen	27B	8:01	3.01	10:51	2.88	170	2.88	489.6	<3

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)			Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D-	C2-012606007	-A-Area	Dining Room	30B	8:35	3.04	11:25	2.97	170	2.97	504.9	<4
D-	C2-012606006	-A-PBZ*	Worker 3	20B	8:53	3.07	11:20	2.57	147	2.57	377.79	<5

Post-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)			Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-	C2-012606-020	-A-Area	Living Room	30B	11:30	2.97	1:50	2.92	135	2.92	394.2	<5

Wipe Sampling

Date	1/25/2016	Collected by	

Pre-Work Wipe Sampling

Sample No. (P-*ScenariloD-Date-##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
P-	C2-012606-002	-W-Area	Dining Room	Window Well	Metal	0.56	36000
P-	C2-012606-003	-W-Area	Dining Room	Window Sill	Wood	0.67	609
P-	C2-012606-004	-W-Area	Dining Room	Floor	Wood	1.00	340
P-	C2-012606-005	-W-OS	Kitchen	Floor	Tile	1.00	534

Surface type - wood, tile, linoleum, concrete, carpet, metal, etc.

Post-Work Wipe Sampling

Sample No. (P-*ScenariloD-Date-##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-	C2-012606-021	-W-Area	Dining Room	Window Well	Metal	0.61	5380
C-	C2-012606-022	-W-Area	Dining Room	Window Sill	Wood	0.40	326
C-	C2-012606-023	-W-Area	Dining Room	Floor	Wood	1.00	42.6
C-	C2-012606-024	-W-OS	Kitchen	Floor	Tile	1.00	77.6

OS - Outside of work area

Surface type - wood, tile, linoleum, concrete, carpet, metal, etc.

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	WINDOW REMOVAL W/O JAMBS
Work Prac	Modified LSWP

DATE	1/26/2006
LOCATION	Roselle, IL
SCENARIO	**C2**
Work Area Preparation	
Pre-cleaning w/ wet wiping and va	
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	
Reusable Drop Cloth	
4 or 6-mil Plastic Sheeting or	**X**
Disposable Mesh	
Staple Gun	
Tape	**X**
Utility Knife	**X**
Tack Pad	
Disposable Towels for Wipe	
Work Practices/Tools	
Hammers/Prybars	**X**
Misting Bottle	
Sandpaper/Sanding Sponge	
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	
HEPA-equipped Vacuum	
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer	
Power Washing Equipment	
Needle Gun connected to HEPA	
Belt Sander	
Orbital Sander	
Other Non-ventilated Power	
Sawzall	**X**
Heavy Duty Garbage Bags	**X**
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	**X**
Wet Wipe Surfaces or Use	**X**
Reusable Wet Mop w/ One	
Reusable Wet Mop w/ Two	
Use Swifter or Similar Disposable	**X**
Disposable Hand Towels	
Pump Sprayer	
HEPA-equipped Vacuum	**X**
Shop or Industrial Vacuum	
Brooms	
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	
Disposable Shoe Covers	
Safety Glasses	
Disposable Towels	**X**

Date	1/26/2006			Hygienist	

	Event	ID	Activity	Work Practice
Scenario	4	B2	Install Recessed Lighting in Ceiling Plaster	modified LSWP

Site Address	City, State, Zip	Roselle, IL

Structure Type	x	Single Family	Apartment	Approx. Construction Date (Yr)	1920
		Town House	Other (describe)	Approx. Square Footage	2000
		Condomium		No. of Separate Rooms	8

Location of Work w/in structure	Kitchen Ceiling			
Lead Content of Affected Surfaces				**Work Statistics**
Surface	XRF Result		% Lead	
Ceiling	**2.859**			No. of Workers 1
		and/or		Start Time 11:11
				Stop Time 1:45
				Total Time (hrs) 2.75
				Tools and Equipment Used
				Use attached checklist

Pre-Work Sampling

Air Sampling

Sample No. (*P-ScenarioID-Date-## -A-Type*)			Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
P-	B2-012606-001	-A-Area	Kitchen	27B	8:01	3.01	10:51	2.88	170	2.88	489.6	<4
C-	C2-012606-020	-A-OS**	Living Room	30B	11:30	2.97	1:50	2.92	135	2.92	394.2	<5

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (*P-ScenarioID-Date-## -A-Type*)			Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D-	B2-012606-019	-A-Area	Kitchen	27B	10:55	2.88	1:48	2.84	173	2.84	491.32	<4
D-	B2-012606-018	-A-PBZ	Worker 3	74B	11:21	3.05	1:45	2.82	144	2.82	406.08	<5

Post-Work Sampling

Air Sampling

Sample No. (*P-ScenarioID-Date-## -A-Type*)			Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-	B2-012606-026	-A-Area	Kitchen	27B	1:55	2.84	4:20	2.84	145	2.84	411.8	<5

* - Post-work PBZ only required for scenarios where clean-up or other activiites with exposures different than "during work" activities and that work will take at least 135 min (2-hrs, 15-min)

Wipe Sampling

Date	1/25/2016	Collected by	

Pre-Work Wipe Sampling

Sample No. (*P-ScenarioID-Date-##-W-Location*)			Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
P-	B2-012606-008	-W-Area	Kitchen	Window Sill	Wood	0.61	252
P-	B2-012606-009	-W-Area	Kitchen	Counter Top	Formica	1.00	60.3
P-	B2-012606-010	-W-Area	Kitchen	Floor	Tile	1.00	95.1
P-	B2-012606-011	-W-Area	Kitchen	Floor	Tile	1.00	824
C-	C2-012606-023	-W-Area	Dining Room	Floor	Wood	1.00	42.6

Surface type - wood, tile, linoleum, concrete, carpet, metal, etc.

Post-Work Wipe Sampling

Sample No. (*P-ScenarioID-Date-##-W-Location*)			Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-	B2-012606-028	-W-Area	Kitchen	Window Sill	Wood	0.58	101
C-	B2-012606-029	-W-Area	Kitchen	Counter Top	Formica	1.00	18.6
C-	B2-012606-030	-W-Area	Kitchen	Floor	Tile	1.00	45.2
C-	B2-012606-031	-W-Area	Kitchen	Floor	Tile	1.00	27
C-	B2-012606-032	-W-OS	Dining Room	Floor	Wood	1.00	53.1

OS - Outside of work area

Surface type - wood, tile, linoleum, concrete, carpet, metal, etc.

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	INSTALLATION OF LIGHTING IN CEILING
Work Prac	Modified LSWP

DATE	1/26/2006
LOCATION	Roselle, IL
SCENARIO	**B2**
Work Area Preparation	
Pre-cleaning w/ wet wiping and va	
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	
Reusable Drop Cloth	
4 or 6-mil Plastic Sheeting or	**X**
Disposable Mesh	
Staple Gun	**X**
Tape	**X**
Utility Knife	**X**
Tack Pad	
Disposable Towels for Wipe	
Work Practices/Tools	
Hammers/Prybars	
Misting Bottle	
Sandpaper/Sanding Sponge	
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	
HEPA-equipped Vacuum	
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer	
Power Washing Equipment	
Needle Gun connected to HEPA	
Belt Sander	
Orbital Sander	
Other Non-ventilated Power	
Hand Saw	**X**
Heavy Duty Garbage Bags	**X**
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	**X**
Wet Wipe Surfaces or Use	**X**
Reusable Wet Mop w/ One	
Reusable Wet Mop w/ Two	
Use Swifter or Similar Disposable	**X**
Disposable Hand Towels	
Pump Sprayer	
HEPA-equipped Vacuum	**X**
Shop or Industrial Vacuum	
Brooms	
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	
Disposable Shoe Covers	
Safety Glasses	
Disposable Towels	**X**

Date 1/26/2006 **Hygienist**

	Event	ID	Activity	Work Practice
Scenario	5	G2	Install Door In Closet Wall	Modified LSWP

Site Address	City, State, Zip	Roselle, IL

Structure Type	x	Single Family	Apartment	Approx. Construction Date (Yr)	1920
		Town House	Other (describe)	Approx. Square Footage	2000
		Condomium		No. of Separate Rooms	8

Location of Work w/in structure	Bedroom # 1 closet

Lead Content of Affected Surfaces				**Work Statistics**	
Surface	XRF Result		% Lead	No. of Workers	1
Closet Wall	**2.851**			Start Time	3:05
		and/or		Stop Time	4:35
				Total Time (hrs)	1.25
				Tools and Equipment Used	
				Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
P-	-G2012606-012 -A-Area	BR #1	19B	10:10	3.09	1:10	2.99	180	2.99	538.2	<4
P-	-G2012606-013 -A-OS**	Upstairs Hall	26B	3:23	3.05	5:52	2.99	149	2.99	445.51	<4

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D-	-G2012606-025 -A-Area	BR #1 By Closet	19B	3:19	2.99	5:45	3.00	156	2.99	466.44	<4
D-	-G2012606-027 -A-PBZ	Worker 3	74B	3:15	3.03	5:35	3.05	140	3.03	424.20	7

Post-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-	-G2012606-041 -A-Area	BR #1 By Closet	19B	5:45	3.00	8:50	2.92	185	2.92	540.2	<4

Wipe Sampling

Date 1/25/2016 **Collected by**

Pre-Work Wipe Sampling

Sample No. (P-*ScenariloD-Date-##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
P-	-G2012606-014 -W-Area	Closet BR # 1	Built In Shelf	Wood	1.00	325
P-	-G2012606-015 -W-Area	Closet BR # 1	Cabinet	Wood	1.00	54.5
P-	-G2012606-016 -W-Area	Closet BR # 1	Floor	Wood	1.00	76.5
P-	-G2012606-017 -W-OS	Upstairs Hall	Floor	Tile	1.00	26.1

Surface type - wood, tile, linoleum, concrete, carpet, metal, etc.

Post-Work Wipe Sampling

Sample No. (P-*ScenariloD-Date-##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-	-G2012606-037 -W-Area	Closet BR # 1	Built In Shelf	Wood	1.00	15.2
C-	-G2012606-038 -W-Area	Closet BR # 1	Cabinet	Wood	1.00	14.9
C-	-G2012606-039 -W-Area	Closet BR # 1	Floor	Wood	1.00	111
C-	-G2012606-040 -W-OS	Upstairs Hall	Floor	Tile	1.00	16.8

OS - Outside of work area

Surface type - wood, tile, linoleum, concrete, carpet, metal, etc.

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	INSTALLATION OF DOOR IN CLOSET
Work Prac	MODIFIED LSWP

DATE	1/26/2006
LOCATION	Roselle, IL
SCENARIO	**G2**
Work Area Preparation	
Pre-cleaning w/ wet wiping and va	
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	
Reusable Drop Cloth	
4 or 6-mil Plastic Sheeting or	**X**
Disposable Mesh	
Staple Gun	
Tape	**X**
Utility Knife	**X**
Tack Pad	
Disposable Towels for Wipe	
Work Practices/Tools	
Hammers/Prybars	**X**
Misting Bottle	
Sandpaper/Sanding Sponge	
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	
HEPA-equipped Vacuum	**X**
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer	
Power Washing Equipment	
Needle Gun connected to HEPA	
Belt Sander	
Orbital Sander	
Other Non-ventilated Power	
Heavy Duty Garbage Bags	
Sawsall	**X**
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	**X**
Wet Wipe Surfaces or Use	**X**
Reusable Wet Mop w/ One	
Reusable Wet Mop w/ Two	
Use Swifter or Similar Disposable	**X**
Disposable Hand Towels	**X**
Pump Sprayer	
HEPA-equipped Vacuum	**X**
Shop or Industrial Vacuum	
Brooms	
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	
Disposable Shoe Covers	
Safety Glasses	
Disposable Towels	**X**

Date	4/19/2006	Hygienist	.

	Event	ID	Activity	Work Practice
Scenario	6	A1	CEILING AND WALL DEMOLITION	ROUTINE

Site Address	City, State, Zip	WALLINGFORD, CT

Structure Type		Single Family		Apartment	Approx. Construction Date (Yr)	1910
		Town House	X	Other (describe)	Approx. Square Footage	2300
		Condomium		DUPLEX	No. of Separate Rooms	16

Location of Work w/in structure	2ND FLOOR REAR BATHROOM

Lead Content of Affected Surfaces				Work Statistics	
Surface	XRF Result		% Lead		
Wall A	8.7			No. of Workers	1
Wall B	7.0	and/or		Start Time	9:15
Wall D	5.6			Stop Time	10:05
Ceiling	4.7			Total Time (hrs)	0.8
				Tools and Equipment Used	
				Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-## -A-Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	**Volume (L)**	Result (ug/m^3)
P-	A1-041806-65	-A-Area	2ND FL BATH - CENTER	16666	17:02	2.63	17:39	2.67	37	2.63	97.3	**<21.0**
D-	0-041806-55	-A-Area	2ND FL KITCHEN	16608	15:20	2.54	17:43	2.59	143	2.54	363.2	**<6**

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-## -A-Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
AREA SAMPLE VOIDED, CASSETTE BECAME DISCONNECTED FROM SAMPLING TRAIN											
D-	A1-041906-78	-A-PBZ	WORKER	18105	9:12	2.57	10:05	2.53	53	2.53	134.1	**17**
D-	0-041906-69	-A-OS**	2ND FL KITCHEN	16608	8:42	2.51	11:14	2.34	173	2.51	434.2	**<5**

Post-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-## -A-Type*)		Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-	A1-041906-79	-A-Area	2ND FL BATH - CENTER	18110	10:17	2.51	11:21	2.5	64	2.5	160	**<12.0**

Wipe Sampling

Date	4/19/2006	Collected by:	

Pre-Work Wipe Sampling

Sample No. (P-*ScenariloD-Date-*##-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
P-	A1-041906-100	-W-Area	2ND FL BATH	FLOOR	CERAMIC TILE	1.00	**1200**
P-	A1-041906-102	-W-Area	2ND FL BATH	SILL	WOOD	0.25	**44000**
C-	D1-041806-62	-W-Area*	2ND FLOOR KITCHEN - B WALL	FLOOR	LINOLEUM	1.00	**136**
C-	D1-041806-63	-W-Area*	2ND FLOOR KITCHEN - D WALL	FLOOR	LINOLEUM	1.00	**173**
C-	D1-041806-64	-W-Area*	2ND FLOOR KITCHEN - B WALL	SILL	WOOD	0.25	**2840**

* - used as preliminary (background) outside samples for this scenario

Post-Work Wipe Sampling

Sample No. (P-*ScenariloD-Date-*##-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-	A1-041906-12	-W-Area	2ND FL BATH	FLOOR	CERAMIC TILE	1.00	**503**
C-	A1-041906-13	-W-Area	2ND FL BATH	SILL	WOOD	0.25	**896**
C-	0-041906-17	-W-OS	2ND FLOOR KITCHEN - B WALL	FLOOR	LINOLEUM	1.00	**206**
C-	0-041906-18	-W-OS	2ND FLOOR KITCHEN - D WALL	FLOOR	LINOLEUM	1.00	**36.7**
C-	0-041906-19	-W-OS	2ND FLOOR KITCHEN - B WALL	SILL	WOOD	0.25	**520**

OS - Outside of work area

Surface type - wood, tile, linoleum, concrete, carpet, metal, etc.

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	CEILING AND WALL DEMOLITION
Work Practice	ROUTINE

DATE	4/19/2006
LOCATION	WALLINGFORD, CT
SCENARIO	**A1a**
Work Area Preparation	
Pre-cleaning w/ wet wiping and vac	
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	
Reusable Drop Cloth	**X**
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	
Disposable Mesh	
Staple Gun	
Tape	**X**
Utility Knife	**X**
Tack Pad	
Disposable Towels for Wipe Down	
Work Practices/Tools	
Hammers/Prybars	**X**
Misting Bottle	
Sandpaper/Sanding Sponge	
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	**X**
HEPA-equipped Vacuum	
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	
Power Washing Equipment	
Needle Gun connected to HEPA Vacuum	
Belt Sander	
Orbital Sander	
Other Non-ventilated Power Tools	
Heavy Duty Garbage Bags	
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	**X**
Wet Wipe Surfaces or Use Detergent	
Reusable Wet Mop w/ One Bucket	
Reusable Wet Mop w/ Two Buckets	
Use Swifter or Similar Disposable Wet Mop	
Disposable Hand Towels	
Pump Sprayer	
HEPA-equipped Vacuum	
Shop or Industrial Vacuum	**X**
Brooms	
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	
Disposable Shoe Covers	**X**
Safety Glasses	
Disposable Towels	**X**

Date	4/18/2006			Hygienist	.

	Event	ID	Activity	Work Practice
Scenario	7	A2	WALL AND CEILING DEMOLITION	MODIFIED LSWP

Site Address	City, State, Zip	WALLINGFORD, CT

Structure Type		Single Family		Apartment	Approx. Construction Date (Yr)	1910
		Town House	X	Other (describe)	Approx. Square Footage	2300
		Condomium		DUPLEX	No. of Separate Rooms	16

Location of Work w/in structure	BASEMENT STAIRWELL

Lead Content of Affected Surfaces				Work Statistics	
Surface	XRF Result		% Lead		
Wall A	1.3			No. of Workers	1
Wall B	1.0	and/or		Start Time	1508
Ceiling	1.5			Stop Time	1600
				Total Time (hrs)	1
				Tools and Equipment Used	
				Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
P-A2-041806-02	-A-Area	BASEMENT STAIRWELL	17185	7:45	2.60	8:37	2.58	52	2.58	134.2	**<15**
P-A2-041806-05	-A-OS	1ST FL LIVING ROOM - NORTH	17164	8:01	2.59	8:38	2.58	36	2.53	91.1	**<22**
P-A2-041806-06	-A-OS	1ST FL LIVING ROOM - SOUTH	16669	8:05	2.59	8:38	2.69	38	2.62	99.6	**<20**
D-0-041806-23	-A-OS	1ST FL KITCHEN	17865	11:40	2.63	14:50	2.66	190	2.63	499.7	**<4**

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D-A2-041806-17	-A-Area	BASEMENT STAIRWELL	17185	15:19	2.58	16:02	2.58	43	2.58	110.9	**52**
D-A2-041806-49	-A-PBZ	WORKER	18110	15:08	2.50	16:00	2.53	52	2.5	130.0	**92**
D-A2-041806-43	-A-OS	1ST FL LIVING ROOM - NORTH	17184	15:08	2.57	16:10	2.56	62	2.56	158.7	**37**
D-A2-041806-44	-A-OS	1ST FL LIVING ROOM - SOUTH	16669	15:09	2.54	16:10	2.50	61	2.5	152.5	**38**
D-0-041806-47	-A-OS	1ST FL KITCHEN	17856	15:12	2.64	17:23	2.58	133	2.58	343.1	**<6**

Post-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-A2-041806-57	-A-Area	BASEMENT STAIRWELL	18110	17:04	2.65	18:04	2.66	60	2.65	159.0	**<13.0**
C-A2-041806-60	-A-OS	1ST FL LIVING ROOM - NORTH	17184	16:21	2.56	17:23	2.55	62	2.55	158.1	**<13.0**
C-A2-041806-59	-A-OS	1ST FL LIVING ROOM - SOUTH	16669	16:21	2.50	17:23	2.61	62	2.50	155.0	**<13.0**

Wipe Sampling

Date	4/18/2006	Collected by:	

Pre-Work Wipe Sampling

Sample No. (P-*ScenarioD-Date-##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
P-A2-041806-04	-W-Area	BASEMENT STAIRWELL	LEDGE	WOOD	1.00	**1430**
P-A2-041806-05	-W-Area	BASEMENT STAIRWELL	TREAD	WOOD	0.67	**3540**
P-D1-041806-01	-W-Area*	1ST FL LIVING ROOM - NEAR B WALL	FLOOR	CARPET	1.00	**346**
P-D1-041806-02	-W-Area*	1ST FL LIVING ROOM - NEAR D WALL	FLOOR	CARPET	1.00	**40.3**

* - used as preliminary (background) outside samples for this scenario

Post-Work Wipe Sampling

Sample No. (P-*ScenarioD-Date-##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-A2-041806-76	-W-Area	BASEMENT STAIRWELL	LEDGE	WOOD	1.00	**489**
C-A2-041806-77	-W-Area	BASEMENT STAIRWELL	PLYWOOD (INSTALLED OVER STAIRS)	WOOD	0.67	**203**
C-0-041806-85	-W-Area*	1ST FL LIVING ROOM - NEAR B WALL	FLOOR	CARPET	1.00	**1590**
C-0-041806-86	-W-Area*	1ST FL LIVING ROOM - NEAR D WALL	FLOOR	CARPET	1.00	**74**

* - used as outside samples for this scenario

OS - Outside of work area

Surface type - wood, tile, linoleum, concrete, carpet, metal, etc.

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	CEILING AND WALL DEMOLITION
Work Practice	MODIFIED LSWP

DATE	4/18/2006
LOCATION	WALLINGFORD, CT
SCENARIO	**A2a**
Work Area Preparation	
Pre-cleaning w/ wet wiping and vac	
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	
Reusable Drop Cloth	
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	**X**
Disposable Mesh	
Staple Gun	
Tape	**X**
Utility Knife	**X**
Tack Pad	
Disposable Towels for Wipe Down	
Work Practices/Tools	
Hammers/Prybars	**X**
Misting Bottle	
Sandpaper/Sanding Sponge	
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	
HEPA-equipped Vacuum	**X**
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	
Power Washing Equipment	
Needle Gun connected to HEPA Vacuum	
Belt Sander	
Orbital Sander	
Other Non-ventilated Power Tools	
Heavy Duty Garbage Bags	**X**
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	**X**
Wet Wipe Surfaces or Use Detergent	
Reusable Wet Mop w/ One Bucket	
Reusable Wet Mop w/ Two Buckets	
Use Swifter or Similar Disposable Wet Mop	
Disposable Hand Towels	**X**
Pump Sprayer	
HEPA-equipped Vacuum	**X**
Shop or Industrial Vacuum	
Brooms	**X**
Shovels	**X**
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	
Disposable Shoe Covers	**X**
Safety Glasses	
Disposable Towels	**X**

Date	4/18/2006		Hygienist	.

	Event	ID	Activity	Work Practice
Scenario	8	B2	WALL AND CEILING MODIFICATION	MODIFIED LSWP

Site Address	City, State, Zip	WALLINGFORD, CT

Structure Type		Single Family		Apartment	Approx. Construction Date (Yr)	1910
		Town House	X	Other (describe)	Approx. Square Footage	2300
		Condomium		DUPLEX	No. of Separate Rooms	16

Location of Work w/in structure	CUTTING 2' X 2' HOLE IN PAINTED WOOD CEILING IN 1ST FL REAR FOYER

Lead Content of Affected Surfaces				Work Statistics	
Surface	XRF Result		% Lead		
Ceiling	>9.9			No. of Workers	1
		and/or		Start Time	1146
				Stop Time	1245
				Total Time (hrs)	1
				Tools and Equipment Used	
				Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (*P-ScenarioID-Date-## -A-Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
P- B2-041806-08	-A-Area	1ST FL REAR FOYER	16609	8:05	2.59	8:38	2.63	33	2.59	85.5	**<23**
P- 0-041806-07	-A-OS	1ST FL KITCHEN	17805	8:01	2.59	8:38	2.63	37	2.59	95.8	**<21**

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (*P-ScenarioID-Date-## -A-Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D- B2-041806-22	-A-Area	1ST FL REAR FOYER	16609	11:42	2.63	12:45	2.57	63	2.57	161.9	**27**
D- B2-041806-35	-A-PBZ	WORKER	18110	11:46	2.52	12:45	2.5	59	2.5	147.5	**63**
D- 0-041806-23	-A-OS	1ST FL KITCHEN	17865	11:40	2.63	14:50	2.66	190	2.63	499.7	**<4**

Post-Work Sampling

Air Sampling

Sample No. (*P-ScenarioID-Date-## -A-Type*)		Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C- B2-041806-37	-A-Area	1ST FL REAR FOYER	16609	13:07	2.57	14:40	2.56	97	2.55	247.4	**<8.0**

Wipe Sampling

Date	4/18/2006	Collected by:	

Pre-Work Wipe Sampling

Sample No. (*P-ScenariloD-Date-##-W-Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
P- B2-041806-19	-W-Area	1ST FL REAR FOYER (C Wall)	FLOOR	WOOD	1.00	**2480**
P- B2-041806-20	-W-Area	1ST FL REAR FOYER (D Wall)	FLOOR	WOOD	1.00	**202**
P- B2-041806-21	-W-Area	1ST FL REAR FOYER (C Wall)	SILL	WOOD	0.42	**12300**
P- 0-041806-12	-W-OS	1ST FL KITCHEN - B WALL	FLOOR	LINOLEUM	1.00	**1630**

Post-Work Wipe Sampling

Sample No. (*P-ScenariloD-Date-##-W-Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C- B2-041806-46	-W-Area	1ST FL REAR FOYER (C Wall)	FLOOR	WOOD	1.00	**3000**
C- B2-041806-47	-W-Area	1ST FL REAR FOYER (D Wall)	FLOOR	WOOD	1.00	**641**
C- B2-041806-48	-W-Area	1ST FL REAR FOYER (C Wall)	SILL	WOOD	0.42	**2670**
C- 0-041806-49	-W-OS	1ST FL KITCHEN - B WALL	FLOOR	LINOLEUM	1.00	**475**

OS - Outside of work area

Surface type - wood, tile, linoleum, concrete, carpet, metal, etc.

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	WALL AND CEILING MODIFICATION
Work Practice	MODIFIED LSWP

DATE	4/18/2006
LOCATION	WALLINGFORD, CT
SCENARIO	**B2a**
Work Area Preparation	
Pre-cleaning w/ wet wiping and vac	
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	
Reusable Drop Cloth	
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	**X**
Disposable Mesh	
Staple Gun	
Tape	**X**
Utility Knife	**X**
Tack Pad	
Disposable Towels for Wipe Down	
Work Practices/Tools	
Hammers/Prybars	
Misting Bottle	
Sandpaper/Sanding Sponge	
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	
HEPA-equipped Vacuum	**X**
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	
Power Washing Equipment	
Needle Gun connected to HEPA Vacuum	
Belt Sander	
Orbital Sander	
Other Non-ventilated Power Tools	**X**
Heavy Duty Garbage Bags	**X**
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	**X**
Wet Wipe Surfaces or Use Detergent	
Reusable Wet Mop w/ One Bucket	
Reusable Wet Mop w/ Two Buckets	
Use Swifter or Similar Disposable Wet Mop	
Disposable Hand Towels	**X**
Pump Sprayer	
HEPA-equipped Vacuum	**X**
Shop or Industrial Vacuum	
Brooms	**X**
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	
Disposable Shoe Covers	**X**
Safety Glasses	
Disposable Towels	**X**

Date	4/18/2006	Hygienist	.

	Event	ID	Activity	Work Practice
Scenario	9	C1	REMOVING WINDOW SASH	ROUTINE

Site Address	City, State, Zip	WALLINGFORD, CT

Structure Type		Single Family		Apartment	Approx. Construction Date (Yr)	1910
		Town House	X	Other (describe)	Approx. Square Footage	2300
		Condomium		DUPLEX	No. of Separate Rooms	16

Location of Work w/in structure	2ND FLOOR LIVING ROOM				
Lead Content of Affected Surfaces				**Work Statistics**	
Surface	XRF Result		% Lead		
WINDOW CASING	>9.9			No. of Workers	1
WINDOW SASH	>9.9	and/or		Start Time	15:20
WINDOW SILL	>9.9			Stop Time	16:20
				Total Time (hrs)	1
				Tools and Equipment Used	
				Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (*P-ScenarioID-Date-## -A-Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
P-C1-041806-09	-A-Area	2ND FL - LIVING ROOM - NORTH	18122	8:20	2.52	8:56	2.56	36	2.52	90.7	**<22**
P-C1-041806-10	-A-Area	2ND FL - LIVING ROOM - SOUTH	18105	8:25	2.55	9:01	2.59	36	2.55	91.8	**<22**
P-D1-041806-11	-A-Area*	2ND FL KITCHEN	16608	8:26	2.64	9:03	2.66	37	2.64	97.7	**<21**

* - sample used as an outside work area sample for this scenario

During Work Sampling

Air Sampling

Sample No. (*P-ScenarioID-Date-## -A-Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D-C1-141806-41	-A-Area	2ND FL - LIVING ROOM - NORTH	18122	15:19	2.56	16:20	2.52	61	2.52	153.7	**63**
D-C1-141806-42	-A-Area	2ND FL - LIVING ROOM - SOUTH	18105	15:19	2.52	16:21	2.52	62	2.52	156.2	**48**
D-C1-141806-54	-A-PBZ	WORKER	16666	15:17	2.58	16:20	2.49	63	2.49	156.9	**78**
D-0-041806-55	-A-Area	2ND FL KITCHEN	16608	15:21	2.54	17:44	2.59	143	2.54	363.2	**<6**

Post-Work Sampling

Air Sampling

Sample No. (*P-ScenarioID-Date-## -A-Type*)		Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-C1-141806-61	-A-Area	2ND FL - LIVING ROOM - SOUTH	18105	16:28	2.52	17:30	2.52	62	2.52	156.2	**<13.0**
C-C1-141806-62	-A-Area	2ND FL - LIVING ROOM - NORTH	18122	16:28	2.51	17:31	2.55	63	2.51	158.1	**<13.0**

Wipe Sampling

Date	4/18/2006	Collected by:	

Sample No. (*P-ScenarioID-Date-##-W-Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
P-C1-041806-25	-W-Area	2ND FL LIVING ROOM - B WALL	FLOOR	CARPET	1.00	155
P-C1-041806-26	-W-Area	2ND FL LIVING ROOM - D WALL	FLOOR	CARPET	1.00	152
P-C1-041806-27	-W-Area	2ND FL LIVING ROOM - B WALL	SILL	WOOD	0.25	16000
Post-Work Wipe Sampling						
Sample No. (*P-ScenarioID-Date-##-W-Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-C1-041806-91	-W-Area	2ND FL LIVING ROOM - B WALL	FLOOR	CARPET	1.00	925
C-C1-041806-92	-W-Area	2ND FL LIVING ROOM - D WALL	FLOOR	CARPET	1.00	33.2
C-C1-041806-93	-W-Area	2ND FL LIVING ROOM - B WALL	SILL	WOOD	0.25	1360

OS - Outside of work area

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	REMOVING WINDOW SASH
Work Practice	ROUTINE

DATE	4/18/2006
LOCATION	WALLINGFORD, CT
SCENARIO	**C1b**
Work Area Preparation	
Pre-cleaning w/ wet wiping and vac	
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	
Reusable Drop Cloth	**X**
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	
Disposable Mesh	
Staple Gun	
Tape	**X**
Utility Knife	**X**
Tack Pad	
Disposable Towels for Wipe Down	
Work Practices/Tools	
Hammers/Prybars	**X**
Misting Bottle	
Sandpaper/Sanding Sponge	
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	**X**
HEPA-equipped Vacuum	
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	
Power Washing Equipment	
Needle Gun connected to HEPA Vacuum	
Belt Sander	
Orbital Sander	
Other Non-ventilated Power Tools	
Heavy Duty Garbage Bags	
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	**X**
Wet Wipe Surfaces or Use Detergent	
Reusable Wet Mop w/ One Bucket	
Reusable Wet Mop w/ Two Buckets	
Use Swifter or Similar Disposable Wet Mop	
Disposable Hand Towels	**X**
Pump Sprayer	
HEPA-equipped Vacuum	
Shop or Industrial Vacuum	**X**
Brooms	
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	
Disposable Shoe Covers	**X**
Safety Glasses	
Disposable Towels	**X**

Date	4/18/2006	Hygienist	.

	Event	ID	Activity	Work Practice
Scenario	10	C1	SANDING DOORS	Routine

Site Address	City, State, Zip	WALLINGFORD, CT

Structure Type						Approx. Construction Date (Yr)	1910
		Single Family		Apartment		Approx. Square Footage	2300
		Town House	X	Other (describe)		No. of Separate Rooms	16
		Condomium		DUPLEX			

Location of Work w/in structure	2ND FL FRONT BEDROOM (BEDROOM 4)

Lead Content of Affected Surfaces				Work Statistics	
Surface	XRF Result		% Lead		
DOORS FROM VARIOUS ROOMS (ALL >9.9 MG/CM2)	>9.9			No. of Workers	1
		and/or		Start Time	15:15
				Stop Time	16:15
				Total Time (hrs)	1
				Tools and Equipment Used	
				Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-## -A-Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-C1-041806-40	-A-Area	CENTER OF BEDROOM 4	18107	13:25	2.63	14:40	2.62	75	2.62	196.5	**<10**
D-C1-041806-27	-A-OS**	2ND FLOOR REAR FOYER	16608	11:37	2.64	14:58	2.54	201	2.54	510.5	**<4**
C-C1-041806-11	-A-OS	UPSTAIRS KITCHEN	16608	8:26	2.64	9:03	2.66	37	2.64	97.7	**<21**

During Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-## -A-Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D-C1-041806-51	-A-Area	CENTER OF BEDROOM 4	18107	15:00	2.62	16:15	2.61	75	2.61	195.8	**613**
D-C1-041806-53	-A-PBZ	WORKER	16668	15:14	2.67	16:13	2.56	59	2.56	151.0	**1050**
D-C1-041806-55	-A-OS	UPSTAIRS KITCHEN	16608	15:20	2.54	17:43	2.59	143	2.54	363.2	**<6.0**

Post-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-## -A-Type*)		Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-C1-041806-63	-A-Area	CENTER OF BEDROOM 4	18107	16:30	2.61	17:32	2.62	62	2.61	161.8	**<13**

Wipe Sampling

Date	4/18/2006	Collected by:	

Sample No. (P-*ScenariloD-Date-##-W-Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-C1-041806-56	-W-Area	BEDROOM 4 - NEAR B WALL	FLOOR	CARPET	1.00	**567**
C-C1-041806-57	-W-Area	BEDROOM 4 - NEAR D WALL	FLOOR	CARPET	1.00	**660**
C-C1-041806-58	-W-Area	BEDROOM 4 - NEAR A WALL	SILL	WOOD	0.25	**10200**
Post-Work Wipe Sampling						
Sample No. (P-*ScenariloD-Date-##-W-Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-C1-041806-88	-W-Area	BEDROOM 4 - NEAR B WALL	FLOOR	CARPET	1.00	**37.8**
C-	-W-Area	BEDROOM 4 - NEAR D WALL	FLOOR	CARPET	1.00	**57.5**
C-	-W-Area	BEDROOM 4 - NEAR A WALL	SILL	WOOD	0.25	**3310**

OS - Outside of work area

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	SANDING DOORS
Work Practice	ROUTINE

DATE	4/18/2006
LOCATION	WALLINGFORD, CT
SCENARIO	**C1**
Work Area Preparation	
Pre-cleaning w/ wet wiping and vac	
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	
Reusable Drop Cloth	**X**
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	
Disposable Mesh	
Staple Gun	
Tape	**X**
Utility Knife	**X**
Tack Pad	
Disposable Towels for Wipe Down	
Work Practices/Tools	
Hammers/Prybars	
Misting Bottle	
Sandpaper/Sanding Sponge	
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	
HEPA-equipped Vacuum	
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	
Power Washing Equipment	
Needle Gun connected to HEPA Vacuum	
Belt Sander	
Orbital Sander	**X**
Other Non-ventilated Power Tools	
Heavy Duty Garbage Bags	
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	**X**
Wet Wipe Surfaces or Use Detergent	
Reusable Wet Mop w/ One Bucket	
Reusable Wet Mop w/ Two Buckets	
Use Swifter or Similar Disposable Wet Mop	
Disposable Hand Towels	
Pump Sprayer	
HEPA-equipped Vacuum	
Shop or Industrial Vacuum	**X**
Brooms	
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	
Disposable Shoe Covers	**X**
Safety Glasses	
Disposable Towels	**X**

Date	4/18/2006		Hygienist	

	Event	ID	Activity	Work Practice
Scenario	11	C1	SANDING WINDOW STOPS W/ BELT SANDER	ROUTINE

Site Address	City, State, Zip	WALLINGFORD, CT

Structure Type		Single Family		Apartment	Approx. Construction Date (Yr)	1910
		Town House	X	Other (describe)	Approx. Square Footage	2300
		Condomium		DUPLEX	No. of Separate Rooms	16

Location of Work w/in structure	2ND FLOOR FRONT BEDROOM (BEDROOM 4)

Lead Content of Affected Surfaces				Work Statistics	
Surface	XRF Result		% Lead		
WINDOW CASINGS/SASH/STOPS	> 9.9			No. of Workers	1
		and/or		Start Time	11:10
				Stop Time	13:00
				Total Time (hrs)	1.33
				Tools and Equipment Used	
				Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-## -A-Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
P-C1-041806-13	-A-Area	CENTER OF BEDROOM 4	18107	8:31	2.63	9:10	2.67	39	2.63	102.6	**<19.5**
P-C1-041806-09	-A-OS**	2ND FL - LIVING ROOM - NORTH	18122	8:20	2.52	8:56	2.56	36	2.52	90.7	**<22**
P-C1-041806-10	-A-OS**	2ND FL - LIVING ROOM - SOUTH	18105	8:25	2.55	9:01	2.59	36	2.55	91.8	**<22**
P-C1-041806-12	-A-OS**	2ND FLOOR REAR FOYER	16608	8:29	2.64	9:06	2.64	37	2.64	97.7	**<21**

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-## -A-Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D-C1-041806-28	-A-Area	CENTER OF BEDROOM 4	18107	11:31	2.67	12:59	2.63	88	2.63	231.4	**310**
D-C1-041806-33	-A-PBZ	WORKER	16608	11:41	2.61	12:59	2.67	78	2.61	203.6	**545**
D-C1-041806-24	-A-OS**	2ND FL - LIVING ROOM - NORTH	18122	11:34	2.52	13:23	2.52	109	2.52	274.7	**83**
D-C1-041806-25	-A-OS**	2ND FL - LIVING ROOM - SOUTH	18105	11:34	2.55	13:23	2.56	109	2.55	278.0	**37**
D-C1-041806-27	-A-OS**	2ND FLOOR REAR FOYER	16608	11:37	2.64	14:58	2.54	201	2.54	510.5	**<4**

Post-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-## -A-Type*)		Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-C1-041806-40	-A-Area	CENTER OF BEDROOM 4	18107	13:25	2.63	14:40	2.62	75	2.62	196.5	**<10**

Wipe Sampling

Date	4/18/2006		Collected by:	

Pre-Work Wipe Sampling

Sample No. (P-*ScenariloD-Date-*##-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
P-C1-041806-22	-W-Area	BEDROOM 4 - NEAR B WALL	FLOOR	CARPET	1.00	**625**
P-C1-041806-23	-W-Area	BEDROOM 4 - NEAR D WALL	FLOOR	CARPET	1.00	**755**
P-C1-041806-24	-W-Area	BEDROOM 4 - NEAR A WALL	SILL	WOOD	0.25	**62000**
P-C1-041806-35	-W-OS	2ND FLOOR REAR FOYER - NEAR B WALL	FLOOR	WOOD	1.00	**2020**

Post-Work Wipe Sampling

Sample No. (P-*ScenariloD-Date-*##-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-C1-041806-56	-W-Area	BEDROOM 4 - NEAR B WALL	FLOOR	CARPET	1.00	**567**
C-C1-041806-57	-W-Area	BEDROOM 4 - NEAR D WALL	FLOOR	CARPET	1.00	**660**
C-C1-041806-58	-W-Area	BEDROOM 4 - NEAR A WALL	SILL	WOOD	0.25	**10200**
C-C1-041806-69	-W-OS	2ND FLOOR REAR FOYER - NEAR B WALL	FLOOR	WOOD	1.00	**2550**

OS - Outside of work area

Surface type - wood, tile, linoleum, concrete, carpet, metal, etc.

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	SANDING WINDOW STOPS W/ BELT SANDER
Work Practice	ROUTINE

DATE	4/18/2006
LOCATION	WALLINGFORD, CT
SCENARIO	**C1a**
Work Area Preparation	
Pre-cleaning w/ wet wiping and vac	
Rope	
Barrier Tape	
Saw Horses	**X**
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	
Reusable Drop Cloth	
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	**X**
Disposable Mesh	
Staple Gun	**X**
Tape	**X**
Utility Knife	**X**
Tack Pad	
Disposable Towels for Wipe Down	
Work Practices/Tools	
Hammers/Prybars	
Misting Bottle	
Sandpaper/Sanding Sponge	
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	
HEPA-equipped Vacuum	
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	
Power Washing Equipment	
Needle Gun connected to HEPA Vacuum	
Belt Sander	**X**
Orbital Sander	
Other Non-ventilated Power Tools	
Heavy Duty Garbage Bags	
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	
Wet Wipe Surfaces or Use Detergent	
Reusable Wet Mop w/ One Bucket	
Reusable Wet Mop w/ Two Buckets	
Use Swifter or Similar Disposable Wet Mop	
Disposable Hand Towels	
Pump Sprayer	
HEPA-equipped Vacuum	
Shop or Industrial Vacuum	**X**
Brooms	
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	
Disposable Shoe Covers	**X**
Safety Glasses	
Disposable Towels	**X**

Date	4/19/2006	Hygienist	.

	Event	ID	Activity	Work Practice
Scenario	12	C2	SANDING DOORS	MODIFIED LSWP

Site Address	City, State, Zip	WALLINGFORD, CT

Structure Type						Approx. Construction Date (Yr)	1910
		Single Family		Apartment		Approx. Square Footage	2300
		Town House	X	Other (describe)		No. of Separate Rooms	16
		Condomium		DUPLEX			

Location of Work w/in structure	1ST FL FRONT BEDROOM (BEDROOM 1)

Lead Content of Affected Surfaces				Work Statistics	
Surface	XRF Result		% Lead		
DOORS FROM VARIOUS ROOMS (ALL >9.9 MG/CM2)	>9.9			No. of Workers	1
		and/or		Start Time	9:15
				Stop Time	10:25
				Total Time (hrs)	1.2
				Tools and Equipment Used	
				Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (*P-ScenarioID-Date-## -A-Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-C2-041806-58	-A-Area	1ST FL FRONT BEDROOM (BED1)	17179	17:02	2.65	18:02	2.64	60	2.64	158.4	**<13**
C-0-041806-59	-A-OS	1ST FL LIVING ROOM - NORTH	17184	16:21	2.56	17:51	2.58	62	2.55	158.1	**<13**
C-0-041806-60	-A-OS	1ST FL LIVING ROOM - SOUTH	16669	16:21	2.5	17:51	2.61	62	2.5	155.0	**<13**

During Work Sampling

Air Sampling

Sample No. (*P-ScenarioID-Date-## -A-Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D-C2-041906-70	-A-Area	1ST FL FRONT BEDROOM (BED1)	16608	9:16	2.52	10:26	2.51	70	2.51	175.7	**52**
D-C2-041906-75	-A-PBZ	WORKER	17179	9:16	2.58	10:28	2.54	72	2.54	182.9	**60**
D-0-041906-67	-A-OS	1ST FL LIVING ROOM	18104	8:31	2.57	11:24	2.64	173	2.57	444.6	**<4.0**

Post-Work Sampling

Air Sampling

Sample No. (*P-ScenarioID-Date-## -A-Type*)		Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-C2-041906-83	-A-Area	1ST FL FRONT BEDROOM (BED1)	16608	10:27	2.51	11:29	2.55	62	2.51	155.6	**<13.0**

Wipe Sampling

Date	4/19/2006	Collected by:	

Sample No. (*P-ScenarioID-Date-##-W-Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
P-C2-041806-81	-W-Area	1ST FL FRONT BEDROOM (BED 1)	FLOOR	CARPET	1.00	198
P-C2-041806-82	-W-Area	1ST FL FRONT BEDROOM (BED 1)	FLOOR	CARPET	1.00	2990
P-C2-041806-83	-W-Area	1ST FL FRONT BEDROOM (BED 1)	SILL	WOOD	0.25	6720
P-0-041806-49	-W-OS	1ST FL KITCHEN	FLOOR	LINOLEUM	1.00	475

Post-Work Wipe Sampling

Sample No. (*P-ScenarioID-Date-##-W-Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-C2-041906-1	-W-Area	1ST FL FRONT BEDROOM (BED 1)	FLOOR	CARPET	1.00	20.4
C-C2-041906-2	-W-Area	1ST FL FRONT BEDROOM (BED 1)	FLOOR	CARPET	1.00	19.8
C-C2-041906-3	-W-Area	1ST FL FRONT BEDROOM (BED 1)	SILL	WOOD	0.25	2320
C-0-041906-7	-W-OS	1ST FL LIVING ROOM	FLOOR	CARPET	1.00	1290

OS - Outside of work area

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	SANDING DOORS
Work Practice	mod LSWP

DATE	4/19/2006
LOCATION	WALLINGFORD, CT
SCENARIO	**C2**
Work Area Preparation	
Pre-cleaning w/ wet wiping and vac	
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	
Reusable Drop Cloth	**X**
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	
Disposable Mesh	
Staple Gun	
Tape	**X**
Utility Knife	**X**
Tack Pad	
Disposable Towels for Wipe Down	
Work Practices/Tools	
Hammers/Prybars	
Misting Bottle	
Sandpaper/Sanding Sponge	
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	
HEPA-equipped Vacuum	**X**
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	**X**
Power Washing Equipment	
Needle Gun connected to HEPA Vacuum	
Belt Sander	**X**
Orbital Sander	
Other Non-ventilated Power Tools	
Heavy Duty Garbage Bags	
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	**X**
Wet Wipe Surfaces or Use Detergent	
Reusable Wet Mop w/ One Bucket	
Reusable Wet Mop w/ Two Buckets	
Use Swifter or Similar Disposable Wet Mop	
Disposable Hand Towels	**X**
Pump Sprayer	
HEPA-equipped Vacuum	**X**
Shop or Industrial Vacuum	
Brooms	
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	
Disposable Shoe Covers	**X**
Safety Glasses	
Disposable Towels	**X**

Date	4/18/2006	Hygienist	.

	Event	ID	Activity	Work Practice
Scenario	13	C2	SANDING WINDOW STOPS	MODIFIED LSWP

Site Address	City, State, Zip	WALLINGFORD, CT

Structure Type						Approx. Construction Date (Yr)	1910
		Single Family		Apartment		Approx. Square Footage	2300
		Town House	X	Other (describe)		No. of Separate Rooms	16
		Condomium		DUPLEX			

Location of Work w/in structure	1ST FL FRONT BEDROOM (BEDROOM 1)

Lead Content of Affected Surfaces				Work Statistics	
Surface	XRF Result		% Lead		
WINDOW STOPS FROM VARIOUS ROOMS (ALL >9.9 MG/CM2)	>9.9			No. of Workers	1
		and/or		Start Time	15:06
				Stop Time	16:08
				Total Time (hrs)	1
				Tools and Equipment Used	
				Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-C2-041806-03	-A-Area	1ST FL FRONT BEDROOM (BED1)	17179	7:48	2.54	8:24	2.58	36	2.54	91.4	**<22**
C-0-041806-07	-A-OS	1ST FLOOR KITCHEN	17865	8:01	2.59	8:38	2.63	37	2.59	95.8	**<21**

During Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D-C2-041806-20	-A-Area	1ST FL FRONT BEDROOM (BED1)	17179	15:06	2.58	16:08	2.65	62	2.58	160.0	**68**
D-C2-041805-50	A-PBZ	WORKER	16612	15:06	2.66	16:08	2.62	62	2.62	162.4	**91**
D-0-041806-47	-A-OS	1ST FLOOR KITCHEN	17865	15:12	2.64	17:23	2.58	133	2.58	343.1	**<6**

Post-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-C2-141806-58	-A-Area	1ST FL FRONT BEDROOM (BED1)	17179	17:02	2.65	18:02	2.64	60	2.64	158.4	**<13.0**

Wipe Sampling

Date	4/18/2006	Collected by:	

Sample No. (P-*ScenariloD-Date-*##-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
P-C2-041806-06	-W-Area	1ST FL FRONT BEDROOM (BED1) - B WALL	FLOOR	CARPET	1.00	**50.2**
P-C2-041806-07	-W-Area	1ST FL FRONT BEDROOM (BED1) - D WALL	FLOOR	CARPET	1.00	**534**
P-C2-041806-08	-W-Area	1ST FL FRONT BEDROOM (BED1) - A WALL	SILL	WOOD	0.25	**91200**
Post-Work Wipe Sampling						
Sample No. (P-*ScenariloD-Date-*##-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-C1-041806-81	-W-Area	1ST FL FRONT BEDROOM (BED1) - B WALL	FLOOR	CARPET	1.00	**198**
C-C1-041806-82	-W-Area	1ST FL FRONT BEDROOM (BED1) - D WALL	FLOOR	CARPET	1.00	**2990**
C-C1-041806-83	-W-Area	1ST FL FRONT BEDROOM (BED1) - A WALL	SILL	WOOD	0.25	**6720**

OS - Outside of work area

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	SANDING WINDOW STOPS
Work Practice	mod LSWP

DATE	4/18/2006
LOCATION	WALLINGFORD, CT
SCENARIO	**C2**
Work Area Preparation	
Pre-cleaning w/ wet wiping and vac	
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	
Reusable Drop Cloth	**X**
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	
Disposable Mesh	
Staple Gun	
Tape	**X**
Utility Knife	**X**
Tack Pad	
Disposable Towels for Wipe Down	
Work Practices/Tools	
Hammers/Prybars	
Misting Bottle	
Sandpaper/Sanding Sponge	
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	
HEPA-equipped Vacuum	**X**
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	**X**
Power Washing Equipment	
Needle Gun connected to HEPA Vacuum	
Belt Sander	**X**
Orbital Sander	
Other Non-ventilated Power Tools	
Heavy Duty Garbage Bags	
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	**X**
Wet Wipe Surfaces or Use Detergent	
Reusable Wet Mop w/ One Bucket	
Reusable Wet Mop w/ Two Buckets	
Use Swifter or Similar Disposable Wet Mop	
Disposable Hand Towels	**X**
Pump Sprayer	
HEPA-equipped Vacuum	**X**
Shop or Industrial Vacuum	
Brooms	
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	
Disposable Shoe Covers	**X**
Safety Glasses	
Disposable Towels	**X**

Date	4/18/2006	Hygienist	

	Event	ID	Activity	Work Practice
Scenario	14	D1	Cabinet Removal	Routine

Site Address	City, State, Zip	WALLINGFORD, CT

Structure Type							
		Single Family		Apartment	Approx. Construction Date (Yr)	1910
		Town House	X	Other (describe)	Approx. Square Footage	2300
		Condomium		DUPLEX	No. of Separate Rooms	16

Location of Work w/in structure	2nd Floor Kitchen

Lead Content of Affected Surfaces				Work Statistics	
Surface	XRF Result		% Lead		
cabinet door	6.9			No. of Workers	1
		and/or		Start Time	1135
				Stop Time	1250
				Total Time (hrs)	1.25
				Tools and Equipment Used	
				Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (*P-ScenarioID-Date-## -A-Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
P-D1-041806-11	-A-Area	2ND FLOOR KITCHEN	17180	826	2.64	903	2.66	37	2.64	97.7	**<21.0**
P-D1-041806-12	-A-OS**	2ND FL REAR FOYER	16608	8:29	2.64	9:06	2.64	37	2.64	97.7	**<21.0**

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (*P-ScenarioID-Date-## -A-Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D-D1-041806-26	-A-Area	2ND FLOOR KITCHEN	17180	1135	2.66	1252	2.62	77	2.62	201.7	**15**
D-D1-041806-34	-A-PBZ	WORKER	16612	1138	2.62	1252	2.66	72	2.62	188.6	**15**
D-D1-041806-27	-A-OS	2ND FL REAR FOYER	16608					201	2.54	510.5	**<4**

Post-Work Sampling

Air Sampling

Sample No. (*P-ScenarioID-Date-## -A-Type*)		Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-D1-041806-38	-A-Area	2ND FLOOR KITCHEN	17180	1329	2.62	1445	2.59	77	2.59	199.4	**<10.0**

Wipe Sampling

Wipe Sampling

Sample No. (*P-ScenarioD-Date-##-W-Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
P-D1-041806-31	-W-Area	2nd FL Kitchen (B Wall)	Floor	Linoleum	1	**1440**
P-D1-041806-32	-W-Area	2nd FL Kitchen (D Wall)	Floor	Linoleum	1	**1530**
P-D1-041806-33	-W-Area	2nd FL Kitchen (B Wall)	Sill	Wood	0.25	**43600**
P-D1-041806-34	-W-Area	2nd FL Kitchen (B Wall)	Counter	Formica	1	**679**
P-D1-041806-35	-W-OS	2ND FL REAR FOYER - B WALL	Floor	Wood	1	**2020**

Wipe Sampling

Sample No. (*P-ScenarioD-Date-##-W-Location*)		Location	Surface	Surface Type	Sampled (ft^2)	Result (ug/ft^2)
C-D1-041806-62	-W-Area	2nd FL Kitchen (B Wall)	Floor	Linoleum	1	**136**
C-D1-041806-63	-W-Area	2nd FL Kitchen (D Wall)	Floor	Linoleum	1	**173**
C-D1-041806-64	-W-Area	2nd FL Kitchen (B Wall)	Sill	Wood	0.25	**2840**
C-D1-041806-65	-W-Area	2nd FL Kitchen (B Wall)	Counter	Formica	1	**1270**
C-D1-041806-69	-W-OS	2ND FL REAR FOYER - B WALL	Floor	Wood	1	**2550**

OS - Outside of work area

Surface type - wood, tile, linoleum, concrete, carpet, metal, etc.

Key for Scenario ID

Activities	No Safe Work Practices Used	HUD/EPA Lead Safe Work Practices (LSWP)	A Variation of EPA/HUD Work Practices
Key Activities			
Wall and ceiling removal (i.e. for an addition).	**A1**	**A2**	**A3**
Wall and ceiling modification (i.e. for adding a door)	**B1**	**B2**	**B3**
Window and door replacement which involves the removal or alteration of trims, moldings and jambs or anything else that may have LBP applied to the surface.	**C1**	**C2**	**C3**
Kitchen and bath work (i.e. cabinet replacement, tile work, etc.)	**D1**	**D2**	**D3**
Floor covering removal. This typically involves disturbing baseboards that may be coated with LBP.	**E1**	**E2**	**E3**
Miscellaneous Activities			
Surface preparation.	**F1**	**F2**	**F3**
Sawing into wood & plaster covered by LBP.	**G1**	**G2**	**G3**
HVAC work	**H1**	**H2**	**H3**

Sample Numbering for Blanks

Samples (B-ScenarioID-Date-## -A)

Samples (P-ScenarioD-Date-## -W)

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	CABINET REMOVAL
Work Practice	ROUTINE

DATE	4/18/2006
LOCATION	WALLINGFORD, CT
SCENARIO	**D1**
Work Area Preparation	
Pre-cleaning w/ wet wiping and vac	
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	
Reusable Drop Cloth	**X**
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	
Disposable Mesh	
Staple Gun	
Tape	**X**
Utility Knife	**X**
Tack Pad	
Disposable Towels for Wipe Down	
Work Practices/Tools	
Hammers/Prybars	**X**
Misting Bottle	
Sandpaper/Sanding Sponge	
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	
HEPA-equipped Vacuum	
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	
Power Washing Equipment	
Needle Gun connected to HEPA Vacuum	
Belt Sander	
Orbital Sander	
Other Non-ventilated Power Tools	**X**
Heavy Duty Garbage Bags	
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	**X**
Wet Wipe Surfaces or Use Detergent	
Reusable Wet Mop w/ One Bucket	
Reusable Wet Mop w/ Two Buckets	
Use Swifter or Similar Disposable Wet Mop	
Disposable Hand Towels	
Pump Sprayer	
HEPA-equipped Vacuum	
Shop or Industrial Vacuum	**X**
Brooms	
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	
Disposable Shoe Covers	**X**
Safety Glasses	
Disposable Towels	**X**

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

Date	4/18/2006	**Hygienist**	.

	Event	**ID**	**Activity**	**Work Practice**
Scenario	15	**E1**	REMOVE BASEBOARD	ROUTINE

Site Address	City, State, Zip	WALLINGFORD, CT

Structure Type		Single Family		Apartment		Approx. Construction Date (Yr)	1910
		Town House	X	Other (describe)		Approx. Square Footage	2300
		Condomium		DUPLEX		No. of Separate Rooms	16

Location of Work w/in structure	2ND FLOOR REAR BEDROOM (BEDROOM 3)			
Lead Content of Affected Surfaces				**Work Statistics**
Surface	XRF Result		% Lead	
BASEBOARD	> 9.9			No. of Workers: 1
		and/or		Start Time: 11:30
				Stop Time: 13:15
				Total Time (hrs): 1.75
				Tools and Equipment Used
				Use attached checklist

Pre-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
P- CI-041806-14	-A-Area	CENTER OF BEDROOM 3	18104	8:34	2.58	9:11	2.59	37	2.58	95.5	**<21**
P- CI-041806-09	-A-OS**	2ND FL - LIVING ROOM - NORTH	18122	8:20	2.52	8:56	2.56	36	2.52	90.7	**<22**
P- CI-041806-10	-A-OS**	2ND FL - LIVING ROOM - SOUTH	18105	8:25	2.55	9:01	2.59	36	2.55	91.8	**<22**
P- CI-041806-12	-A-OS**	2ND FLOOR REAR FOYER	16608	8:29	2.64	9:06	2.64	37	2.64	97.7	**<21**

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D- CI-041806-29	-A-Area	CENTER OF BEDROOM 3	18104	11:31	2.67	12:59	2.63	39	2.63	102.6	**33**
D- CI-041806-32	-A-PBZ	WORKER	16666	11:40	2.52	13:13	2.58	99	2.52	249.5	**56**
D- CI-041806-24	-A-OS**	2ND FL - LIVING ROOM - NORTH	18122	11:34	2.52	13:23	2.52	109	2.52	274.7	**83**
D- CI-041806-25	-A-OS**	2ND FL - LIVING ROOM - SOUTH	18105	11:34	2.55	13:23	2.56	109	2.55	278.0	**37**
D- CI-041806-27	-A-OS**	2ND FLOOR REAR FOYER	16608	11:37	2.64	14:58	2.54	201	2.54	510.5	**<4**

Post-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C- CI-041806-39	-A-Area	CENTER OF BEDROOM 3	18104	13:27	2.54	14:41	2.52	74	2.52	186.5	**<11**

Wipe Sampling

Date	4/18/2006	**Collected by:**	

Pre-Work Wipe Sampling

Sample No. (P-*ScenariloD-Date -##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
P- CI-041806-28	-W-Area	BEDROOM 3 - NEAR B WALL	FLOOR	CARPET	1.00	**4700**
P- CI-041806-29	-W-Area	BEDROOM 3 - NEAR D WALL	FLOOR	CARPET	1.00	**2810**
P- CI-041806-30	-W-Area	BEDROOM 3 - NEAR B WALL	SILL	WOOD	0.25	**8760**
P- CI-041806-35	-W-OS	2ND FLOOR REAR FOYER - NEAR B WALL	FLOOR	WOOD	1.00	**2020**

Post-Work Wipe Sampling

Sample No. (P-*ScenariloD-Date -##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C- CI-041806-59	-W-Area	BEDROOM 3 - NEAR B WALL	FLOOR	CARPET	1.00	**218**
C- CI-041806-60	-W-Area	BEDROOM 3 - NEAR D WALL	FLOOR	CARPET	1.00	**26.4**
C- CI-041806-61	-W-Area	BEDROOM 3 - NEAR B WALL	SILL + TROUGH	WOOD	0.42	**39200**
C- CI-041806-69	-W-OS	2ND FLOOR REAR FOYER - NEAR B WALL	FLOOR	WOOD	1.00	**2550**

OS - Outside of work area

Surface type - wood, tile, linoleum, concrete, carpet, metal, etc.

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	REMOVE BASEBOARDS
Work Practice	ROUTINE

DATE	4/18/2006
LOCATION	WALLINGFORD, CT
SCENARIO	**E1a**
Work Area Preparation	
Pre-cleaning w/ wet wiping and vac	
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	
Reusable Drop Cloth	**X**
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	
Disposable Mesh	
Staple Gun	
Tape	**X**
Utility Knife	**X**
Tack Pad	
Disposable Towels for Wipe Down	
Work Practices/Tools	
Hammers/Prybars	**X**
Misting Bottle	
Sandpaper/Sanding Sponge	
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	**X**
HEPA-equipped Vacuum	
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	
Power Washing Equipment	
Needle Gun connected to HEPA Vacuum	
Belt Sander	
Orbital Sander	
Other Non-ventilated Power Tools	
Heavy Duty Garbage Bags	
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	**X**
Wet Wipe Surfaces or Use Detergent	
Reusable Wet Mop w/ One Bucket	
Reusable Wet Mop w/ Two Buckets	
Use Swifter or Similar Disposable Wet Mop	
Disposable Hand Towels	
Pump Sprayer	
HEPA-equipped Vacuum	
Shop or Industrial Vacuum	**X**
Brooms	
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	
Disposable Shoe Covers	**X**
Safety Glasses	
Disposable Towels	**X**

Date	4/18/2006	Hygienist	.

	Event	ID	Activity	Work Practice
Scenario	16	E2	BASEBOARD REMOVAL	mod LSWP

Site Address	City, State, Zip	WALLINGFORD, CT

Structure Type							
		Single Family		Apartment		Approx. Construction Date (Yr)	1910
		Town House	X	Other (describe)		Approx. Square Footage	2300
		Condomium		DUPLEX		No. of Separate Rooms	16

Location of Work w/in structure

Lead Content of Affected Surfaces

Surface	XRF Result		% Lead
BASEBOARDS	>9.9		
		and/or	

Work Statistics

No. of Workers	1
Start Time	9:15
Stop Time	10:15
Total Time (hrs)	1
Tools and Equipment Used	
Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)			Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
P-	E2-041806-04	-A-Area	1ST FL BR (BED 2)		7:48	2.54	8:24	2.59	36	2.57	92.5	**<22.0**
P-	0-041806-07	-A-OS**	1ST FL KITCHEN	17865	8:01	2.59	8:38	2.63	37	2.59	95.8	**<21**

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)			Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D-	E2-041906-71	-A-Area	1ST FL BR #2	17180	9:15	2.58	10:21	2.58	66	2.58	170.3	**29**
D-	E2-041906-76	-A-PBZ	WORKER	16612	9:15	2.59	10:16	2.55	61	2.55	155.6	**38**
D-	0-041906-67	-A-OS	1ST FL KITCHEN	18104	8:31	2.57	11:24	2.64	159	2.57	408.6	**<4**

Post-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)			Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-	E2-041906-82	-A-Area	1ST FL BR #2	17180	10:22	2.58	11:26	2.6	64	2.58	165.1	**<2.0**

Wipe Sampling

Wipe Sampling

Sample No. (P-*ScenariloD-Date-##*-W-*Location*)			Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
P-	E2-041806-09	-W-Area	1ST FL BR #2 (B Wall)	Floor	Carpet	1	177
P-	E2-041806-10	-W-Area	1ST FL BR #2 (D Wall)	Floor	Carpet	1	1590
P-	E2-041806-11	-W-Area	1ST FL BR #2 (D Wall)	Sill	Wood	0.25	108000
P-	0-041806-12	-W-OS	1ST FL KITCHEN (B WALL)	Floor	Linoleum	1	1630

Wipe Sampling

Sample No. (P-*ScenariloD-Date-##*-W-*Location*)			Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-	E2-041906-4	-W-Area	1ST FL BR #2 (B Wall)	Floor	Carpet	1	39.4
C-	E2-041906-5	-W-Area	1ST FL BR #2 (D Wall)	Floor	Carpet	1	79.6
C-	E2-041906-6	-W-Area	1ST FL BR #2 (D Wall)	Sill	Wood	0.25	120
C-	0-041906-7	-W-OS	1ST FL LR (B WALL)	Floor	Carpet	1	1290

OS - Outside of work area

Surface type - wood, tile, linoleum, concrete, carpet, metal, etc.

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	BASEBOARD REMOVAL
Work Practice	mod LSWP

DATE	4/18/2006
LOCATION	WALLINGFORD, CT
SCENARIO	**E2**
Work Area Preparation	
Pre-cleaning w/ wet wiping and vac	
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	
Reusable Drop Cloth	
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	**X**
Disposable Mesh	
Staple Gun	
Tape	**X**
Utility Knife	**X**
Tack Pad	
Disposable Towels for Wipe Down	
Work Practices/Tools	
Hammers/Prybars	**X**
Misting Bottle	
Sandpaper/Sanding Sponge	
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	
HEPA-equipped Vacuum	
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	
Power Washing Equipment	
Needle Gun connected to HEPA Vacuum	
Belt Sander	
Orbital Sander	
Other Non-ventilated Power Tools	
Heavy Duty Garbage Bags	
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	**X**
Wet Wipe Surfaces or Use Detergent	
Reusable Wet Mop w/ One Bucket	
Reusable Wet Mop w/ Two Buckets	
Use Swifter or Similar Disposable Wet Mop	
Disposable Hand Towels	
Pump Sprayer	
HEPA-equipped Vacuum	**X**
Shop or Industrial Vacuum	
Brooms	
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	
Disposable Shoe Covers	**X**
Safety Glasses	
Disposable Towels	**X**

Date	4/19/2006	Hygienist	.

	Event	ID	Activity	Work Practice
Scenario	17	F1	REMOVE & SAND MOLDING - ROUTINE - LIV RM 2	ROUTINE

Site Address	City, State, Zip	Wallingford, CT

Structure Type							
		Single Family		Apartment		Approx. Construction Date (Yr)	1910
		Town House	X	Other (describe)		Approx. Square Footage	2300
		Condomium		Duplex		No. of Separate Rooms	14

Location of Work w/in structure	2nd FL LIVING ROOM

Lead Content of Affected Surfaces

Surface	XRF Result		% Lead	Work Statistics	
CROWN MOLDING	1.0			No. of Workers	1
				Start Time	910
		and/or		Stop Time	1009
				Total Time (hrs)	1
				Tools and Equipment Used	
				Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)			Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D-	CI-041806-24	-A-Area	2ND FL - LIVING ROOM - NORTH	18122	11:34	2.52	13:23	2.52	109	2.52	274.7	**83**
D-	CI-041806-25	-A-Area	2ND FL - LIVING ROOM - SOUTH	18105	11:34	2.55	13:23	2.56	109	2.55	278.0	**37**

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)			Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D-	F1-041906-73	-A-Area	2nd FL LR North	17865	9:23	2.58	10:11	2.61	48	2.58	123.8	**<16.0**
D-	F1-041906-74	-A-Area	2nd FL LR South	16670	9:23	2.58	10:13	2.58	50	2.58	129	**<16.0**
D-	F1-041906-77	-A-PBZ	WORKER	16666	9:10	2.63	10:09	2.71	59	2.63	155.2	**<13.0**
D-	0-041906-69	-A-OS	2nd FL KITCHEN	16608	8:42	2.51	11:14	2.54	159	2.51	399.09	**<5.0**

Post-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)			Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-	F1-041906-80	-A-Area	2nd FL LR North	17865	10:15	2.61	11:18	2.56	63	2.56	161.3	**<12.0**
C-	F1-041906-81	-A-Area	2ND FL LR South	16670	10:14	2.58	11:16	2.54	62	2.54	157.5	**<13.0**

Wipe Sampling

Wipe Sampling

Sample No. (P-*ScenarioID-Date-##*-W-*Location*)			Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-	C1-041806-91	-W-Area	2ND FL LIVING ROOM - B WALL	FLOOR	CARPET	1.00	**925**
C-	C1-041806-92	-W-Area	2ND FL LIVING ROOM - D WALL	FLOOR	CARPET	1.00	**33.2**
C-	C1-041806-93	-W-Area	2ND FL LIVING ROOM - B WALL	SILL	WOOD	0.25	**1360**

Wipe Sampling

Sample No. (P-*ScenarioID-Date-##*-W-*Location*)			Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-	F1-041906-14	-W-Area	2ND FL LIVING ROOM - B WALL	FLOOR	CARPET	1.00	**64.1**
C-	F1-041906-15	-W-Area	2ND FL LIVING ROOM - D WALL	FLOOR	CARPET	1.00	**48.7**
C-	F1-041906-16	-W-Area	2ND FL LIVING ROOM - B WALL	SILL	WOOD	0.25	**824**
C-	0-041906-17	-W-OS	2ND FL KITCHEN - B WALL	FLOOR	LINOLEUM	1	**206**

OS - Outside of work area

Surface type - wood, tile, linoleum, concrete, carpet, metal, etc.

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	REMOVE AND SAND MOLDING
Work Practice	ROUTINE

DATE	4/19/2006
LOCATION	WALLINGFORD, CT
SCENARIO	**F1**
Work Area Preparation	
Pre-cleaning w/ wet wiping and vac	
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	
Reusable Drop Cloth	
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	**X**
Disposable Mesh	
Staple Gun	
Tape	**X**
Utility Knife	**X**
Tack Pad	
Disposable Towels for Wipe Down	
Work Practices/Tools	
Hammers/Prybars	**X**
Misting Bottle	
Sandpaper/Sanding Sponge	**X**
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	
HEPA-equipped Vacuum	
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	
Power Washing Equipment	
Needle Gun connected to HEPA Vacuum	
Belt Sander	
Orbital Sander	
Other Non-ventilated Power Tools	
Heavy Duty Garbage Bags	
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	**X**
Wet Wipe Surfaces or Use Detergent	
Reusable Wet Mop w/ One Bucket	
Reusable Wet Mop w/ Two Buckets	
Use Swifter or Similar Disposable Wet Mop	
Disposable Hand Towels	
Pump Sprayer	
HEPA-equipped Vacuum	
Shop or Industrial Vacuum	**X**
Brooms	
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	
Disposable Shoe Covers	**X**
Safety Glasses	
Disposable Towels	**X**

Date	4/18/2006	Hygienist	.

	Event	ID	Activity	Work Practice
Scenario	18	F1	Belt Sand Stair Stringer (Wood)	Routine

Site Address	City, State, Zip	Wallingford, CT

Structure Type							
		Single Family		Apartment	Approx. Construction Date (Yr)	1910
		Town House	X	Other (describe)	Approx. Square Footage	2300
		Condomium		Duplex	No. of Separate Rooms	14

Location of Work w/in structure					
Lead Content of Affected Surfaces				**Work Statistics**	
Surface	XRF Result		% Lead		
STAIR STRINGER	>9.9			No. of Workers	1
STAIR TREAD	>9.9	and/or		Start Time	1459
STAIR RISER	>9.9			Stop Time	1552
				Total Time (hrs)	1
				Tools and Equipment Used	
				Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)			Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-	F2-041806-36	-A-Area	Front Stairwell	17863	13:05	2.55	14:46	2.55	101	2.55	257.6	<8
P-	0-041806-23	-A-OS**	1ST FL KITCHEN	17865	11:40	2.63	14:50	2.61	190	2.61	495.9	<4

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)			Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D-	F1-041806-46	-A-Area	Front Stairwell	17863	1459	2.55	1552	2.56	53	2.55	135.2	1780
D-	F1-041806-48	-A-PBZ	WORKER	16670	1459	2.56	1552	2.54	53	2.54	134.6	1700
D-	0-041806-47	-A-OS	1ST FL KITCHEN	17865	15:12	2.64	17:51	2.58	133	2.58	343.1	<6

Post-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)			Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-	F1-041806-56	-A-Area	Front Stairwell	17863	1703	2.56	1803	2.56	60	2.56	153.6	<13.0

Wipe Sampling

Wipe Sampling

Sample No. (P-*ScenariloD-Date-##*-W-*Location*)			Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-	F2-041806-43	-W-Area	FRONT STAIRWELL	FLOOR	WOOD	1	83.2
C-	F2-041806-44	-W-Area	FRONT STAIRWELL	TREAD	WOOD	0.79	3680
C-	F2-041806-45	-W-Area	FRONT STAIRWELL	BANISTER	WOOD	0.33	110
P-		-W-OS					

Wipe Sampling

Sample No. (P-*ScenariloD-Date-##*-W-*Location*)			Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-	F1-041806-78	-W-Area	FRONT STAIRWELL	FLOOR	WOOD	1	9700
C-	F1-041806-79	-W-Area	FRONT STAIRWELL	TREAD	WOOD	0.79	14600
C-	F1-041806-80	-W-Area	FRONT STAIRWELL	BANISTER	WOOD	0.33	809
C-	0-041806-86	-W-OS	1ST FL LR (D WALL)	FLOOR	CARPET	1	74

OS - Outside of work area

Surface type - wood, tile, linoleum, concrete, carpet, metal, etc.

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	Belt Sand Stair Stringer (Wood)
Work Practice	ROUTINE

DATE	4/18/2006
LOCATION	WALLINGFORD, CT
SCENARIO	**F1**
Work Area Preparation	
Pre-cleaning w/ wet wiping and vac	
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	
Reusable Drop Cloth	
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	
Disposable Mesh	
Staple Gun	
Tape	
Utility Knife	
Tack Pad	
Disposable Towels for Wipe Down	
Work Practices/Tools	
Hammers/Prybars	
Misting Bottle	
Sandpaper/Sanding Sponge	
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	
HEPA-equipped Vacuum	
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	
Power Washing Equipment	
Needle Gun connected to HEPA Vacuum	
Belt Sander	**X**
Orbital Sander	
Other Non-ventilated Power Tools	
Heavy Duty Garbage Bags	
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	
Wet Wipe Surfaces or Use Detergent	
Reusable Wet Mop w/ One Bucket	
Reusable Wet Mop w/ Two Buckets	
Use Swifter or Similar Disposable Wet Mop	
Disposable Hand Towels	
Pump Sprayer	
HEPA-equipped Vacuum	
Shop or Industrial Vacuum	**X**
Brooms	
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	
Disposable Shoe Covers	**X**
Safety Glasses	
Disposable Towels	**X**

Date	4/18/2006			Hygienist	.
	Event	**ID**	**Activity**	**Work Practice**	
Scenario	19	F2	Sanding Stairwell (wood) (Treads)	Modified LSWP	
Site Address	City, State, Zip		Wallingford, CT		

Structure Type		Single Family		Apartment	Approx. Construction Date (Yr)	1910
		Town House	x	Other (describe)	Approx. Square Footage	2300
		Condomium		Duplex	No. of Separate Rooms	14

Location of Work w/in structure	Stairwell				
Lead Content of Affected Surfaces				**Work Statistics**	
Surface	XRF Result		% Lead		
STAIR STRINGER	>9.9			No. of Workers	1
STAIR TREAD	>9.9	and/or		Start Time	1137
STAIR RISER	>9.9			Stop Time	1233
				Total Time (hrs)	1
				Tools and Equipment Used	
				Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (*P-ScenarioID-Date-## -A-Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
P-F2-041806-01	-A-Area	FRONT STAIRWELL	17863	750	2.51	825	2.56	35	2.51	87.9	<23.0
P-0-041806-07	-A-OS**	1ST FL KITCHEN	17865	8:01	2.59	8:38	2.63	37	2.57	95.8	<21.0

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (*P-ScenarioID-Date-## -A-Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D-F2-041806-16	-A-Area	FRONT STAIRWELL	17863	1138	2.56	1233	2.55	55	2.55	140.3	42
D-F2-041806-31	-A-PBZ	WORKER	16670	1137	2.59	1233	2.56	56	2.56	143.4	76
D-0-041806-23	-A-PBZ	1ST FL KITCHEN	17865	11:40	2.63	14:50	2.64	190	2.63	499.7	<4.0

Post-Work Sampling

Air Sampling

Sample No. (*P-ScenarioID-Date-## -A-Type*)		Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-F2-041806-36	-A-Area	FRONT STAIRWELL	17863	1305	2.55	1446	2.55	101	2.55	257.6	<8.0

Wipe Sampling

Sample No. (*P-ScenarioID-Date-##-W-Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
P-F2-041806-16	-W-Area	FRONT STAIRWELL	FLOOR	WOOD	1	131
P-F2-041806-17	-W-Area	FRONT STAIRWELL	TREAD	WOOD	0.79	1050
P-F2-041806-18	-W-Area	FRONT STAIRWELL	BANISTER	WOOD	0.33	48.5
P-0-041806-12	-W-OS	1ST FL KITCHEN	FLOOR	LINOLEUM	1	1630

Wipe Sampling

Sample No. (*P-ScenarioID-Date-##-W-Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-F2-041806-43	-W-Area	FRONT STAIRWELL	FLOOR	WOOD	1	83.2
C-F2-041806-44	-W-Area	FRONT STAIRWELL	TREAD	WOOD	0.79	3680
C-F2-041806-45	-W-Area	FRONT STAIRWELL	BANISTER	WOOD	0.33	110
C-0-041806-49	-W-OS	1ST FL KITCHEN	FLOOR	LINOLEUM	1	475

OS - Outside of work area

Surface type - wood, tile, linoleum, concrete, carpet, metal, etc.

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	SAND STAIR TREADS
Work Practice	mod LSWP

DATE	4/18/2006
LOCATION	WALLINGFORD, CT
SCENARIO	**F2**
Work Area Preparation	
Pre-cleaning w/ wet wiping and vac	
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	**X**
Reusable Drop Cloth	
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	
Disposable Mesh	
Staple Gun	
Tape	
Utility Knife	
Tack Pad	
Disposable Towels for Wipe Down	
Work Practices/Tools	
Hammers/Prybars	
Misting Bottle	
Sandpaper/Sanding Sponge	
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	
HEPA-equipped Vacuum	**X**
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	**X**
Power Washing Equipment	
Needle Gun connected to HEPA Vacuum	
Belt Sander	
Orbital Sander	**X**
Other Non-ventilated Power Tools	
Heavy Duty Garbage Bags	
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	
Wet Wipe Surfaces or Use Detergent	
Reusable Wet Mop w/ One Bucket	
Reusable Wet Mop w/ Two Buckets	
Use Swifter or Similar Disposable Wet Mop	
Disposable Hand Towels	
Pump Sprayer	
HEPA-equipped Vacuum	**X**
Shop or Industrial Vacuum	
Brooms	
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	
Disposable Shoe Covers	**X**
Safety Glasses	
Disposable Towels	**X**

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

Date	4/21/2006	**Hygienist**	-

	Event	**ID**	**Activity**	**Work Practice**
Scenario	20	B1	WALL MODIFICATION	ROUTINE

Site Address	City, State, Zip	Cheshire, CT

Structure Type	x	Single Family		Apartment		Approx. Construction Date (Yr)	1900
		Town House		Other (describe)		Approx. Square Footage	6000
		Condomium				No. of Separate Rooms	34

Location of Work w/in structure	BATHROOM 6

Lead Content of Affected Surfaces				**Work Statistics**	
Surface	XRF Result		% Lead		
A - WALL	**1.0**			No. of Workers	1
		and/or		Start Time	9:24
				Stop Time	10:18
				Total Time (hrs)	0.9
				Tools and Equipment Used	
				Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
P- B1-041906-20	-A-Area	BATHROOM 6	18110	15:09	2.54	15:48	2.55	39	2.54	99.1	<20
P- 041906-18	-A-OS	2ND FL HALL	17183	15:06	2.58	15:40	2.41	34	2.41	81.9	<24

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D- B1-042106-75	-A-Area	BATHROOM 6	17865	9:24	2.60	10:16	2.54	52	2.54	132.1	<15
D- B1-042106-76	-A-PBZ	WORKER	16669	9:24	2.62	10:18	2.50	54	2.50	135.0	<19
D- 042106-70	-A-OS	2ND FL HALL	18105	9:19	2.55	11:07	2.55	108	2.55	275.4	<7

Post-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C- B1-042106-79	-A-Area	BATHROOM 6	17865	10:16	2.54	11:17	2.53	61	2.53	154.3	<13

Wipe Sampling

Date	4/21/2006	**Collected by**	

Pre-Work Wipe Sampling

Sample No. (P-*ScenariloD-Date -##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
P- B1-041906-61	-W-Area	BATHROOM 6	FLOOR - B WALL	TILE	1.00	31.1
P- B1-041906-62	-W-Area	BATHROOM 6	FLOOR - D WALL	TILE	1.00	17.8
P- B1-041906-63	-W-Area	BATHROOM 6	SILL - A WALL	WOOD	1.00	766
P- 041906-64	-W-OS	2ND FL HALL	FLOOR	STONE	1.00	NR

Post-Work Wipe Sampling

Sample No. (P-*ScenariloD-Date -##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C- B1-042106-8	-W-Area	BATHROOM 6	FLOOR - B WALL	TILE	1.00	30.1
C- B1-042106-9	-W-Area	BATHROOM 6	FLOOR - D WALL	TILE	1.00	61.5
C- B1-042106-10	-W-Area	BATHROOM 6	SILL - A WALL	WOOD	1.00	183
C- 042106-11	-W-OS	2ND FL HALL	FLOOR	STONE	1.00	40.8

OS - Outside of work area

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	WALL MODIFICATION
Work Practice	ROUTINE

DATE	4/21/2006
LOCATION	Cheshire, CT
SCENARIO	**B1**
Work Area Preparation	
Pre-cleaning w/ wet wiping and vac	
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	
HVAC Openings Sealed	
Reusable Drop Cloth	**X**
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	
Disposable Mesh	
Staple Gun	
Tape	
Utility Knife	
Tack Pad	
Disposable Towels for Wipe Down	
Work Practices/Tools	
Hammers/Prybars	**X**
Misting Bottle	
Sandpaper/Sanding Sponge	
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	**X**
HEPA-equipped Vacuum	
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	
Power Washing Equipment	
Needle Gun connected to HEPA Vacuum	
Belt Sander	
Orbital Sander	
Other Non-ventilated Power Tools	**X**
Heavy Duty Garbage Bags	**X**
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	**X**
Wet Wipe Surfaces or Use Detergent	
Reusable Wet Mop w/ One Bucket	
Reusable Wet Mop w/ Two Buckets	
Use Swifter or Similar Disposable Wet Mop	
Disposable Hand Towels	
Pump Sprayer	
HEPA-equipped Vacuum	
Shop or Industrial Vacuum	**X**
Brooms	
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	
Disposable Shoe Covers	**X**
Safety Glasses	
Disposable Towels	**X**

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

Date	4/21/2006	**Hygienist**	-

	Event	**ID**	**Activity**	**Work Practice**
Scenario	21	B2	WALL MODIFICATION	MOD LSWP

Site Address	City, State, Zip	Cheshire, CT

Structure Type	x	Single Family		Apartment		Approx. Construction Date (Yr)	1900
		Town House		Other (describe)		Approx. Square Footage	6000
		Condomium				No. of Separate Rooms	34

Location of Work w/in structure	1ST FLOOR BATHROOM

Lead Content of Affected Surfaces				**Work Statistics**	
Surface	XRF Result		% Lead		
A - WALL	**1.4**			No. of Workers	1
		and/or		Start Time	9:25
				Stop Time	10:14
				Total Time (hrs)	0.8
				Tools and Equipment Used	
				Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
P-	B2-041906-16	-A-Area	1ST FL BATH	17179	15:06	2.63	15:42	2.62	36	2.62	94.3	<21
P-	041906-17	-A-OS	1ST FL HALL	16608	15:09	2.60	15:44	2.60	35	2.60	91.0	<22

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D-	B2-042106-69	-A-Area	1ST FL BATH	17185	9:25	2.65	10:12	2.61	47	2.61	122.7	<16
D-	B2-042106-72	-A-PBZ	WORKER	18107	9:25	2.61	10:14	2.52	49	2.52	123.5	<24
D-	042106-71	-A-OS	1ST FL HALL	16608	9:25	2.58	11:13	2.59	108	2.58	278.6	<7

Post-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-	B2-042106-77	-A-Area	1ST FL BATH	17185	10:13	2.61	11:11	2.58	58	2.58	149.6	<13

Wipe Sampling

Date	4/21/2006	**Collected by**	

Pre-Work Wipe Sampling

Sample No. (P-*ScenariloD-Date-##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
P-	B2-041906-51	-W-Area	1ST FL BATHROOM	FLOOR - A WALL	TILE	1.00	124
P-	B2-041906-52	-W-Area	1ST FL BATHROOM	FLOOR - C WALL	TILE	1.00	15
P-	B2-041906-53	-W-Area	1ST FL BATHROOM	SILL - A WALL	WOOD	0.46	898
P-	041906-57	-W-OS	1ST FL HALL	FLOOR	STONE	1.00	42.5

Post-Work Wipe Sampling

Sample No. (P-*ScenariloD-Date-##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-	B2-042106-1	-W-Area	1ST FL BATHROOM	FLOOR - A WALL	TILE	1.00	21.4
C-	B2-042106-2	-W-Area	1ST FL BATHROOM	FLOOR - C WALL	TILE	1.00	18.2
C-	B2-042106-3	-W-Area	1ST FL BATHROOM	SILL - A WALL	WOOD	0.46	118
C-	042106-4	-W-OS	1ST FL HALL	FLOOR	STONE	1.00	31.2

OS - Outside of work area

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	WALL MODIFICATION
Work Practice	MOD LSWP

DATE	4/21/2006
LOCATION	Cheshire, CT
SCENARIO	**B2a**
Work Area Preparation	
Pre-cleaning w/ wet wiping and vac	
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	
Reusable Drop Cloth	
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	**X**
Disposable Mesh	
Staple Gun	
Tape	
Utility Knife	
Tack Pad	
Disposable Towels for Wipe Down	
Work Practices/Tools	
Hammers/Prybars	**X**
Misting Bottle	
Sandpaper/Sanding Sponge	
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	
HEPA-equipped Vacuum	**X**
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	
Power Washing Equipment	
Needle Gun connected to HEPA Vacuum	
Belt Sander	
Orbital Sander	
Other Non-ventilated Power Tools	**X**
Heavy Duty Garbage Bags	**X**
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	**X**
Wet Wipe Surfaces or Use Detergent	
Reusable Wet Mop w/ One Bucket	
Reusable Wet Mop w/ Two Buckets	
Use Swifter or Similar Disposable Wet Mop	
Disposable Hand Towels	
Pump Sprayer	
HEPA-equipped Vacuum	**X**
Shop or Industrial Vacuum	
Brooms	
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	
Disposable Shoe Covers	**X**
Safety Glasses	
Disposable Towels	**X**

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

Date	4/21/2006	**Hygienist**	-

	Event	**ID**	**Activity**	**Work Practice**
Scenario	22	B2	WALL MODIFICATION	MOD LSWP

Site Address	City, State, Zip	Cheshire, CT

Structure Type	x	Single Family		Apartment		Approx. Construction Date (Yr)	1900
		Town House		Other (describe)		Approx. Square Footage	6000
		Condomium				No. of Separate Rooms	34

Location of Work w/in structure	BATHROOM 5

Lead Content of Affected Surfaces				**Work Statistics**	
Surface	XRF Result		% Lead		
A - WALL	**1.0**			No. of Workers	1
		and/or		Start Time	9:22
				Stop Time	10:07
				Total Time (hrs)	0.8
				Tools and Equipment Used	
				Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
P- B2-041906-19	-A-Area	BATHROOM 5	17451	15:09	2.55	15:47	2.56	38	2.55	96.9	<21
P- 041906-18	-A-OS	2ND FL HALL	17183	15:06	2.58	15:40	2.41	34	2.41	81.9	<24

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D- B2-042106-73	-A-Area	BATHROOM 5	17180	9:22	2.63	10:05	2.57	43	2.57	110.5	<18
D- B2-042106-74	-A-PBZ	WORKER	18104	9:22	2.67	10:07	2.52	45	2.52	113.4	<18
D- 042106-70	-A-OS	2ND FL HALL	18105	9:19	2.55	11:07	2.55	108	2.55	275.4	<7

Post-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C- B2-042106-78	-A-Area	BATHROOM 5	17180	10:06	2.57	11:06	2.56	60	2.56	153.6	<13

Wipe Sampling

Date	4/21/2006	**Collected by**	

Pre-Work Wipe Sampling

Sample No. (P-*ScenariloD-Date -##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
P- B2-041906-58	-W-Area	BATHROOM 5	FLOOR - A WALL	TILE	1.00	231
P- B2-041906-59	-W-Area	BATHROOM 5	FLOOR - C WALL	TILE	1.00	13.4
P- B2-041906-60	-W-Area	BATHROOM 5	SILL - A WALL	WOOD	1.00	554
P- 041906-64	-W-OS	2ND FL HALL	FLOOR	STONE	1.00	NR

Post-Work Wipe Sampling

Sample No. (P-*ScenariloD-Date -##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C- B2-042106-5	-W-Area	BATHROOM 5	FLOOR - A WALL	TILE	1.00	28.5
C- B2-042106-6	-W-Area	BATHROOM 5	FLOOR - C WALL	TILE	1.00	35
C- B2-042106-7	-W-Area	BATHROOM 5	SILL - A WALL	TILE	1.00	19.9
C- 042106-11	-W-OS	2ND FL HALL	FLOOR	STONE	1.00	40.8

OS - Outside of work area

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	WALL MODIFICATION
Work Practice	MOD LSWP

DATE	4/21/2006
LOCATION	Cheshire, CT
SCENARIO	**B2b**
Work Area Preparation	
Pre-cleaning w/ wet wiping and vac	
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	
Reusable Drop Cloth	
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	**X**
Disposable Mesh	
Staple Gun	
Tape	
Utility Knife	
Tack Pad	
Disposable Towels for Wipe Down	
Work Practices/Tools	
Hammers/Prybars	**X**
Misting Bottle	
Sandpaper/Sanding Sponge	
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	
HEPA-equipped Vacuum	**X**
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	
Power Washing Equipment	
Needle Gun connected to HEPA Vacuum	
Belt Sander	
Orbital Sander	
Other Non-ventilated Power Tools	**X**
Heavy Duty Garbage Bags	**X**
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	**X**
Wet Wipe Surfaces or Use Detergent	
Reusable Wet Mop w/ One Bucket	
Reusable Wet Mop w/ Two Buckets	
Use Swifter or Similar Disposable Wet Mop	
Disposable Hand Towels	
Pump Sprayer	
HEPA-equipped Vacuum	**X**
Shop or Industrial Vacuum	
Brooms	
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	
Disposable Shoe Covers	**X**
Safety Glasses	
Disposable Towels	**X**

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

Date	4/20/2006	**Hygienist**	-

	Event	**ID**	**Activity**	**Work Practice**
Scenario	23	C1	Window jamb romoval (wood)	Routine

Site Address	City, State, Zip	Farmington, CT

Structure Type	x	Single Family		Apartment	Approx. Construction Date (Yr)	1800/1950
		Town House		Other (describe)	Approx. Square Footage	2000
		Condomium			No. of Separate Rooms	16

Location of Work w/in structure	BEDROOM 2

Lead Content of Affected Surfaces				**Work Statistics**	
Surface	XRF Result		% Lead		
WINDOW CASING	**>9.9**			No. of Workers	1
WINDOW SASH	**6.5**	and/or		Start Time	851
WINDOW SILL	**>9.9**			Stop Time	944
				Total Time (hrs)	1
				Tools and Equipment Used	
				Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
P-C1-041906-11	-A-Area	Bedroom 2	16668	13:33	2.62	14:07	2.60	34	2.60	88.4	< 23
P-041906-13	-A-OS**	2nd floor hall	18105	13:35	2.55	14:11	2.55	36	2.55	91.8	< 22

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D-C1-042006-23	-A-Area	Bedroom 2	16669	8:51	2.57	9:43	2.58	52	2.57	133.6	868
D-C1-042006-25	-A-PBZ	Worker	17185	8:51	2.62	9:44	2.59	53	2.59	137.3	926
D-042006-22	-A-OS	2nd floor hall	16609	7:55	2.59	11:09	2.58	194	2.58	500.5	53

Post-Work Sampling

Air Sampling

Sample No. (C-*ScenarioID-Date-##* -A-*Type*)		Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-C1-042006-34	-A-Area	Bedroom 2	16669	10:04	2.58	11:06	2.56	62	2.56	158.7	190

Wipe Sampling

Date	4/20/2006	**Collected by**	

Pre-Work Wipe Sampling

Sample No. (P-*ScenariloD-Date -##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
P-C1-041906-41	-W-Area	BEDROOM 2	FLOOR - A WALL	WOOD	1.00	983
P-C1-041906-42	-W-Area	BEDROOM 2	FLOOR - C WALL	WOOD	1.00	90.6
P-C1-041906-43	-W-Area	BEDROOM 2	SILL - D WALL	WOOD	0.25	812
P-041906-47	-W-OS	2ND FL HALL	FLOOR	WOOD	1.00	54.2

Post-Work Wipe Sampling

Sample No. (P-*ScenariloD-Date -##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-C1-042006-7	-W-Area	BEDROOM 2	FLOOR - A WALL	WOOD	1.00	1240
C-C1-042006-8	-W-Area	BEDROOM 2	FLOOR - C WALL	WOOD	1.00	774
C-C1-042006-9	-W-Area	BEDROOM 2	SILL - D WALL	WOOD	0.25	6440
C-042006-14	-W-OS	2ND FL HALL	FLOOR	WOOD	1.00	108

OS - Outside of work area

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	WINDOW JAMB REMOVAL
Work Practice	ROUTINE

DATE	4/20/2006
LOCATION	Farmington, CT
SCENARIO	**C1a**
Work Area Preparation	
Pre-cleaning w/ wet wiping and vac	
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	
Reusable Drop Cloth	**X**
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	**X**
Disposable Mesh	
Staple Gun	
Tape	**X**
Utility Knife	**X**
Tack Pad	
Disposable Towels for Wipe Down	
Work Practices/Tools	
Hammers/Prybars	**X**
Misting Bottle	
Sandpaper/Sanding Sponge	
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	**X**
HEPA-equipped Vacuum	
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	
Power Washing Equipment	
Needle Gun connected to HEPA Vacuum	
Belt Sander	
Orbital Sander	**X**
Other Non-ventilated Power Tools	**X**
Heavy Duty Garbage Bags	
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	**X**
Wet Wipe Surfaces or Use Detergent	
Reusable Wet Mop w/ One Bucket	
Reusable Wet Mop w/ Two Buckets	
Use Swifter or Similar Disposable Wet Mop	
Disposable Hand Towels	**X**
Pump Sprayer	
HEPA-equipped Vacuum	
Shop or Industrial Vacuum	**X**
Brooms	
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	
Disposable Shoe Covers	**X**
Safety Glasses	
Disposable Towels	**X**

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

Date	4/20/2006	**Hygienist**	-

	Event	**ID**	**Activity**	**Work Practice**
Scenario	24	C1	WINDOW JAMB REMOVAL	ROUTINE

Site Address	City, State, Zip	Farmington, CT

Structure Type	x	Single Family		Apartment	Approx. Construction Date (Yr)	1800/1950
		Town House		Other (describe)	Approx. Square Footage	2000
		Condomium			No. of Separate Rooms	16

Location of Work w/in structure	LIVING ROOM

Lead Content of Affected Surfaces				**Work Statistics**	
Surface	XRF Result		% Lead		
WINDOW CASING	**>9.9**			No. of Workers	1
WINDOW SILL	**1.4**	and/or		Start Time	8:58
				Stop Time	9:53
				Total Time (hrs)	0.9
				Tools and Equipment Used	
				Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
P-	C1-041906-06	-A-Area	LIVING ROOM N	17180	13:13	2.60	13:53	2.62	40	2.60	104.0	< 19
P-	C1-041906-07	-A-Area	LIVING ROOM S	18104	13:16	2.66	13:57	2.63	41	2.63	107.8	< 19
P-	041906-01	-A-OS	KITCHEN	16609	12:58	2.57	13:36	2.59	38	2.57	97.7	< 21

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D-	C1-042006-30	-A-Area	LIVING ROOM N	17865	8:58	2.56	9:54	2.62	56	2.56	143.4	165
D-	C1-042006-31	-A-Area	LIVING ROOM S	18112	8:58	2.57	9:56	2.62	58	2.57	149.1	179
D-	C1-042006-32	-A-PBZ	WORKER	17179	8:58	2.64	9:53	2.63	55	2.63	144.7	324
D-	042006-27	-A-OS	KITCHEN	17183	8:20	2.59	10:58	2.68	158	2.59	409.2	< 5

Post-Work Sampling

Air Sampling

Sample No. (C-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-	C1-042006-35	-A-Area	LIVING ROOM N	17865	9:57	2.62	11:00	2.60	63	2.60	163.8	32
C-	C1-042006-36	-A-Area	LIVING ROOM S	18112	9:58	2.62	11:02	2.59	64	2.59	165.8	29

Wipe Sampling

Date	4/20/2006	**Collected by**	

Pre-Work Wipe Sampling

Sample No. (P-*ScenariloD-Date -##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
P-	C1-041906-35	-W-Area	LIVING ROOM	FLOOR - A WALL	WOOD	1.00	33.6
P-	C1-041906-36	-W-Area	LIVING ROOM	FLOOR - C WALL	WOOD	1.00	37.2
P-	C1-041906-37	-W-Area	LIVING ROOM	SILL - D WALL	WOOD	0.25	366
P-	041906-31	-W-OS	KITCHEN	FLOOR	WOOD	1.00	15

Post-Work Wipe Sampling

Sample No. (P-*ScenariloD-Date -##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-	C1-042006-4	-W-Area	LIVING ROOM	FLOOR - A WALL	WOOD	1.00	77.1
C-	C1-042006-5	-W-Area	LIVING ROOM	FLOOR - C WALL	WOOD	1.00	205
C-	C1-042006-6	-W-Area	LIVING ROOM	SILL - D WALL	WOOD	0.25	3080
C-	042006-13	-W-OS	KITCHEN	FLOOR	CARPET	1.00	20.5

OS - Outside of work area

Surface type - wood, tile, linoleum, concrete, carpet, metal, etc.

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	WINDOW JAMB REMOVAL
Work Practice	ROUTINE

DATE	4/20/2006
LOCATION	Farmington, CT
SCENARIO	**C1b**
Work Area Preparation	
Pre-cleaning w/ wet wiping and vac	
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	
Reusable Drop Cloth	**X**
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	**X**
Disposable Mesh	
Staple Gun	
Tape	**X**
Utility Knife	**X**
Tack Pad	
Disposable Towels for Wipe Down	
Work Practices/Tools	
Hammers/Prybars	**X**
Misting Bottle	
Sandpaper/Sanding Sponge	
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	**X**
HEPA-equipped Vacuum	
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	
Power Washing Equipment	
Needle Gun connected to HEPA Vacuum	
Belt Sander	
Orbital Sander	**X**
Other Non-ventilated Power Tools	**X**
Heavy Duty Garbage Bags	
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	**X**
Wet Wipe Surfaces or Use Detergent	
Reusable Wet Mop w/ One Bucket	
Reusable Wet Mop w/ Two Buckets	
Use Swifter or Similar Disposable Wet Mop	
Disposable Hand Towels	**X**
Pump Sprayer	
HEPA-equipped Vacuum	
Shop or Industrial Vacuum	**X**
Brooms	
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	
Disposable Shoe Covers	**X**
Safety Glasses	
Disposable Towels	**X**

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

Date	4/20/2006	**Hygienist**	-

	Event	**ID**	**Activity**	**Work Practice**
Scenario	25	C2	Window jamb romoval (wood)	Mod LSWP

Site Address	City, State, Zip	Farmington, CT

Structure Type	x	Single Family		Apartment		Approx. Construction Date (Yr)	1800/1950
		Town House		Other (describe)		Approx. Square Footage	2000
		Condomium				No. of Separate Rooms	16

Location of Work w/in structure	BEDROOM 3

Lead Content of Affected Surfaces				**Work Statistics**	
Surface	XRF Result		% Lead		
WINDOW CASING	**>9.9**			No. of Workers	1
WINDOW SASH	**1.7**	and/or		Start Time	849
WINDOW SILL	**7.2**			Stop Time	1000
				Total Time (hrs)	1
				Tools and Equipment Used	
				Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
P- C2-041906-12	-A-Area	Bedroom 3	18107	13:35	2.55	14:11	2.55	36	2.55	91.8	< 22
P- 041906-13	-A-OS**	2nd floor hall	18105	13:35	2.55	14:11	2.55	36	2.55	91.8	< 22

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D- C2-042006-24	-A-Area	Bedroom 3	16612	8:49	2.61	10:02	2.60	73	2.60	189.8	428
D- C2-042006-26	-A-PBZ	Worker	17184	8:49	2.59	10:00	2.60	71	2.59	183.9	805
D- 042006-22	-A-OS	2nd floor hall	16609	7:55	2.59	11:09	2.58	194	2.58	500.5	53

Post-Work Sampling

Air Sampling

Sample No. (C-*ScenarioID-Date-##* -A-*Type*)		Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C- C2-042006-37	-A-Area	Bedroom 3	16612	10:03	2.60	11:04	2.60	61	2.60	158.6	126

Wipe Sampling

Date	4/20/2006	**Collected by**	

Pre-Work Wipe Sampling

Sample No. (P-*ScenariloD-Date -##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
P- C2-041906-44	-W-Area	BEDROOM 3	FLOOR - A WALL	WOOD	1.00	NR
P- C2-041906-45	-W-Area	BEDROOM 3	FLOOR - C WALL	WOOD	1.00	106
P- C2-041906-46	-W-Area	BEDROOM 3	SILL - D WALL	WOOD	0.25	370
P- 041906-47	-W-OS	2ND FL HALL	FLOOR	WOOD	1.00	54.2

Post-Work Wipe Sampling

Sample No. (P-*ScenariloD-Date -##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C- C2-042006-10	-W-Area	BEDROOM 3	FLOOR - A WALL	WOOD	1.00	4320
C- C2-042006-11	-W-Area	BEDROOM 3	FLOOR - C WALL	WOOD	1.00	2090
C- C2-042006-12	-W-Area	BEDROOM 3	SILL - D WALL	WOOD	0.25	10800
C- 042006-14	-W-OS	2ND FL HALL	FLOOR	WOOD	1.00	108

OS - Outside of work area

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	WINDOW JAMB REMOVAL
Work Practice	MOD LSWP

DATE	4/20/2006
LOCATION	Farmington, CT
SCENARIO	**C2**
Work Area Preparation	
Pre-cleaning w/ wet wiping and vac	
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	
Reusable Drop Cloth	
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	**X**
Disposable Mesh	
Staple Gun	
Tape	**X**
Utility Knife	**X**
Tack Pad	
Disposable Towels for Wipe Down	
Work Practices/Tools	
Hammers/Prybars	**X**
Misting Bottle	
Sandpaper/Sanding Sponge	
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	
HEPA-equipped Vacuum	**X**
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	**X**
Power Washing Equipment	
Needle Gun connected to HEPA Vacuum	
Belt Sander	
Orbital Sander	
Other Non-ventilated Power Tools	
Heavy Duty Garbage Bags	
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	**X**
Wet Wipe Surfaces or Use Detergent	
Reusable Wet Mop w/ One Bucket	
Reusable Wet Mop w/ Two Buckets	
Use Swifter or Similar Disposable Wet Mop	
Disposable Hand Towels	**X**
Pump Sprayer	
HEPA-equipped Vacuum	**X**
Shop or Industrial Vacuum	
Brooms	
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	
Disposable Shoe Covers	**X**
Safety Glasses	
Disposable Towels	**X**

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

Date	4/20/2006	**Hygienist**	-

	Event	**ID**	**Activity**	**Work Practice**
Scenario	26	D1	CABINET REMOVAL	ROUTINE

Site Address	City, State, Zip	Farmington, CT

Structure Type	x	Single Family		Apartment	Approx. Construction Date (Yr)	1800/1950
		Town House		Other (describe)	Approx. Square Footage	2000
		Condomium			No. of Separate Rooms	16

Location of Work w/in structure	1ST FLOOR BATHROOM

Lead Content of Affected Surfaces				**Work Statistics**	
Surface	XRF Result		% Lead		
CABINET SHELF	**2.1**			No. of Workers	1
		and/or		Start Time	11:24
				Stop Time	12:10
				Total Time (hrs)	0.8
				Tools and Equipment Used	
				Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
P-	D1-041906-02	-A-Area	BATHROOM	17184	13:01	2.52	13:38	2.54	37	2.52	93.2	< 21
P-	041906-01	-A-OS	KITCHEN	16609	12:58	2.57	13:36	2.59	38	2.57	97.7	< 21

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D-	D1-042006-41	-A-Area	BATHROOM	18105	11:24	2.55	12:08	2.55	44	2.55	112.2	< 18
D-	D1-042006-45	-A-PBZ	WORKER	17179	11:24	2.63	12:10	2.61	46	2.61	120.1	20
D-	042006-49	-A-OS	KITCHEN	17183	11:26	2.68	13:02	2.62	96	2.62	251.5	< 8

Post-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-	D1-042006-52	-A-Area	BATHROOM	18105	12:08	2.55	13:08	2.53	60	2.53	151.8	< 13

Wipe Sampling

Date	4/20/2006	**Collected by**	

Wipe Sampling

Sample No. (P-*ScenariloD-Date -##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
P-	D1-041906-28	-W-Area	BATHROOM	FLOOR - B WALL	LINOLEUM	1.00	31.3
P-	D1-041906-29	-W-Area	BATHROOM	FLOOR - D WALL	LINOLEUM	1.00	18.9
P-	D1-041906-30	-W-Area	BATHROOM	SILL - B WALL	WOOD	0.21	543
P-	041906-31	-W-OS	KITCHEN	FLOOR	CARPET	1.00	15

Wipe Sampling

Sample No. (P-*ScenariloD-Date -##*-W-*Location*)		Location	Surface	Surface Type	Sampled (ft^2)	Result (ug/ft^2)
C-	D1-042006-15	-W-Area	BATHROOM	FLOOR - B WALL	LINOLEUM	1.00	93.9
C-	D1-042006-16	-W-Area	BATHROOM	FLOOR - D WALL	LINOLEUM	1.00	91.4
C-	D1-042006-17	-W-Area	BATHROOM	SILL - B WALL	WOOD	0.21	95.7
C-	042006-21	-W-OS	KITCHEN	FLOOR	CARPET	1.00	16.3

OS - Outside of work area

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	CABINET REMOVAL
Work Practice	ROUTINE

DATE	4/20/2006
LOCATION	Farmington, CT
SCENARIO	**D1**
Work Area Preparation	
Pre-cleaning w/ wet wiping and vac	
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	
Reusable Drop Cloth	**X**
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	
Disposable Mesh	
Staple Gun	
Tape	**X**
Utility Knife	**X**
Tack Pad	
Disposable Towels for Wipe Down	
Work Practices/Tools	
Hammers/Prybars	**X**
Misting Bottle	
Sandpaper/Sanding Sponge	
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	**X**
HEPA-equipped Vacuum	
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	
Power Washing Equipment	
Needle Gun connected to HEPA Vacuum	
Belt Sander	
Orbital Sander	
Other Non-ventilated Power Tools	**X**
Heavy Duty Garbage Bags	**X**
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	**X**
Wet Wipe Surfaces or Use Detergent	
Reusable Wet Mop w/ One Bucket	
Reusable Wet Mop w/ Two Buckets	
Use Swifter or Similar Disposable Wet Mop	
Disposable Hand Towels	**X**
Pump Sprayer	
HEPA-equipped Vacuum	
Shop or Industrial Vacuum	**X**
Brooms	
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	
Disposable Shoe Covers	**X**
Safety Glasses	
Disposable Towels	**X**

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

Date	4/20/2006	**Hygienist**	-

	Event	**ID**	**Activity**	**Work Practice**
Scenario	27	D2	Cabinet Removal	Mod LSWP

Site Address	City, State, Zip	Farmington, CT

Structure Type	x	Single Family		Apartment	Approx. Construction Date (Yr)	1800/1950
		Town House		Other (describe)	Approx. Square Footage	2000
		Condomium			No. of Separate Rooms	16

Location of Work w/in structure	DINING ROOM

Lead Content of Affected Surfaces

Surface	XRF Result		% Lead
CABINET DOOR	**>9.9**		
CABINET SHELF	**9.8**	and/or	

Work Statistics

No. of Workers	1
Start Time	8:59
Stop Time	10:12
Total Time (hrs)	1.2
Tools and Equipment Used	
Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
P-D2-041906-08	-A-Area	DINING ROOM NW	16608	13:19	2.60	14:00	2.60	41	2.60	106.6	< 19
P-D2-041906-09	-A-Area	DINING ROOM SE	17179	13:21	2.60	14:02	2.62	41	2.60	106.6	< 19
P-041906-01	-A-OS	KITCHEN	16609	12:58	2.57	13:36	2.59	38	2.57	97.7	< 21

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D-D2-042006-29	-A-Area	DINING ROOM NW	16608	9:00	2.56	10:15	2.57	75	2.56	192.0	14
D-D2-042006-28	-A-Area	DINING ROOM SE	16670	8:59	2.56	10:13	2.57	74	2.56	189.4	13
D-D2-042006-33	-A-PBZ	WORKER	18107	8:59	2.60	10:12	2.56	73	2.56	186.9	42
D-042006-27	-A-OS	KITCHEN	17183	8:20	2.59	10:58	2.68	158	2.59	409.2	< 5

Post-Work Sampling

Air Sampling

Sample No. (C-*ScenarioID-Date-##* -A-*Type*)		Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-D2-042006-39	-A-Area	DINING ROOM NW	16608	10:16	2.57	11:13	2.58	57	2.57	146.5	< 14
C-D2-042006-38	-A-Area	DINING ROOM SE	16670	10:14	2.57	11:15	2.59	61	2.57	156.8	< 13

Wipe Sampling

Date	4/20/2006	**Collected by**	

Pre-Work Wipe Sampling

Sample No. (P-*ScenarioID-Date-##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
P-D2-041906-32	-W-Area	DINING ROOM	FLOOR - B WALL	WOOD	1.00	15.4
P-D2-041906-33	-W-Area	DINING ROOM	FLOOR - D WALL	WOOD	1.00	22.5
P-D2-041906-34	-W-Area	DINING ROOM	SILL - A WALL	WOOD	0.25	820
P-041906-31	-W-OS	KITCHEN	FLOOR	WOOD	1.00	15

Post-Work Wipe Sampling

Sample No. (P-*ScenarioID-Date-##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-D2-042006-1	-W-Area	DINING ROOM	FLOOR - B WALL	WOOD	1.00	84.4
C-D2-042006-2	-W-Area	DINING ROOM	FLOOR - D WALL	WOOD	1.00	170
C-D2-042006-3	-W-Area	DINING ROOM	SILL - A WALL	WOOD	1.00	328
C-042006-13	-W-OS	KITCHEN	FLOOR	CARPET	1.00	20.5

OS - Outside of work area

Surface type - wood, tile, linoleum, concrete, carpet, metal, etc.

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	CABINET REMOVAL
Work Practice	MOD LSWP

DATE	4/20/2006
LOCATION	Farmington, CT
SCENARIO	**D2**
Work Area Preparation	
Pre-cleaning w/ wet wiping and vac	
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	
Reusable Drop Cloth	
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	**X**
Disposable Mesh	
Staple Gun	
Tape	**X**
Utility Knife	**X**
Tack Pad	
Disposable Towels for Wipe Down	
Work Practices/Tools	
Hammers/Prybars	**X**
Misting Bottle	
Sandpaper/Sanding Sponge	
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	
HEPA-equipped Vacuum	**X**
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	
Power Washing Equipment	
Needle Gun connected to HEPA Vacuum	
Belt Sander	
Orbital Sander	
Other Non-ventilated Power Tools	**X**
Heavy Duty Garbage Bags	**X**
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	**X**
Wet Wipe Surfaces or Use Detergent	
Reusable Wet Mop w/ One Bucket	
Reusable Wet Mop w/ Two Buckets	
Use Swifter or Similar Disposable Wet Mop	
Disposable Hand Towels	**X**
Pump Sprayer	
HEPA-equipped Vacuum	**X**
Shop or Industrial Vacuum	
Brooms	
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	
Disposable Shoe Covers	**X**
Safety Glasses	
Disposable Towels	**X**

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

Date	4/20/2006	**Hygienist**	-

	Event	**ID**	**Activity**	**Work Practice**
Scenario	28	E1	BASEBOARD REMOVAL	ROUTINE

Site Address	City, State, Zip	Farmington, CT

Structure Type	x	Single Family		Apartment		Approx. Construction Date (Yr)	1800/1950
		Town House		Other (describe)		Approx. Square Footage	2000
		Condomium				No. of Separate Rooms	16

Location of Work w/in structure	FAMILY ROOM (**NO LBP ON AFFECTED SURFACES**)

Lead Content of Affected Surfaces				**Work Statistics**	
Surface	XRF Result		% Lead		
BASEBOARDS	**<1.0**			No. of Workers	1
WALLS	**<1.0**	and/or		Start Time	13:37
				Stop Time	14:24
				Total Time (hrs)	0.8
				Tools and Equipment Used	
				Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
P- E1-041906-04	-A-Area	FAMILY ROOM E	16669	13:07	2.58	13:47	2.55	40	2.55	102.0	< 20
P- E1-041906-05	-A-Area	FAMILY ROOM W	16612	13:10	2.65	13:51	2.62	41	2.62	107.4	< 19
P- 041906-01	-A-OS	KITCHEN	16609	12:58	2.57	13:36	2.59	38	2.57	97.7	< 21

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D- E1-042006-55	-A-Area	FAMILY ROOM E	166770	13:37	2.59	14:20	2.54	43	2.54	109.2	< 18
D- E1-042006-56	-A-Area	FAMILY ROOM W	16608	13:37	2.58	14:22	2.55	45	2.55	114.8	< 17
D- E1-042006-59	-A-PBZ	WORKER	17179	13:37	2.61	14:24	2.62	47	2.61	122.7	< 16
D- 042006-61	-A-OS	KITCHEN	17183	13:18	2.62	15:08	2.62	110	2.62	288.2	< 7

Post-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C- E1-042006-66	-A-Area	FAMILY ROOM W	16608	14:22	2.55	15:22	2.57	60	2.55	153.0	< 13
C- E1-042006-67	-A-Area	FAMILY ROOM E	16670	14:20	2.54	15:20	2.54	60	2.54	152.4	< 13

Wipe Sampling

Date	4/20/2006	**Collected by**	

Pre-Work Wipe Sampling

Sample No. (P-*ScenariloD-Date -##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
P- E1-041906-25	-W-Area	FAMILY ROOM	FLOOR - B WALL	WOOD	1.00	13
P- E1-041906-26	-W-Area	FAMILY ROOM	FLOOR - D WALL	WOOD	1.00	75.4
P- E1-041906-27	-W-Area	FAMILY ROOM	SILL - C WALL - CENTER	WOOD	0.21	643
P- 041906-31	-W-OS	KITCHEN	FLOOR	WOOD	1.00	15

Post-Work Wipe Sampling

Sample No. (P-*ScenariloD-Date -##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C- E1-042006-34	-W-Area	FAMILY ROOM	FLOOR - B WALL	WOOD	1.00	75.5
C- E1-042006-35	-W-Area	FAMILY ROOM	FLOOR - D WALL	WOOD	1.00	75.6
C- E1-042006-36	-W-Area	FAMILY ROOM	SILL - C WALL - CENTER	WOOD	0.25	200
C- 042006-37	-W-OS	KITCHEN	FLOOR	CARPET	1.00	15.9

OS - Outside of work area

Surface type - wood, tile, linoleum, concrete, carpet, metal, etc.

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	BASEBOARD REMOVAL
Work Practice	ROUTINE

DATE	4/20/2006
LOCATION	Farmington, CT
SCENARIO	**E1**
Work Area Preparation	
Pre-cleaning w/ wet wiping and vac	
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	
Reusable Drop Cloth	**X**
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	
Disposable Mesh	
Staple Gun	
Tape	**X**
Utility Knife	**X**
Tack Pad	
Disposable Towels for Wipe Down	
Work Practices/Tools	
Hammers/Prybars	**X**
Misting Bottle	
Sandpaper/Sanding Sponge	
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	**X**
HEPA-equipped Vacuum	
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	
Power Washing Equipment	
Needle Gun connected to HEPA Vacuum	
Belt Sander	
Orbital Sander	
Other Non-ventilated Power Tools	
Heavy Duty Garbage Bags	**X**
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	**X**
Wet Wipe Surfaces or Use Detergent	
Reusable Wet Mop w/ One Bucket	
Reusable Wet Mop w/ Two Buckets	
Use Swifter or Similar Disposable Wet Mop	
Disposable Hand Towels	**X**
Pump Sprayer	
HEPA-equipped Vacuum	
Shop or Industrial Vacuum	**X**
Brooms	
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	
Disposable Shoe Covers	**X**
Safety Glasses	
Disposable Towels	**X**

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

Date	4/20/2006	**Hygienist**	-

	Event	**ID**	**Activity**	**Work Practice**
Scenario	29	F2	DOOR SANDING	MOD LSWP

Site Address	City, State, Zip	Farmington, CT

Structure Type	x	Single Family		Apartment		Approx. Construction Date (Yr)	1800/1950
		Town House		Other (describe)		Approx. Square Footage	2000
		Condomium				No. of Separate Rooms	16

Location of Work w/in structure	BEDROOM 1

Lead Content of Affected Surfaces				**Work Statistics**	
Surface	XRF Result		% Lead		
FACE OF DOOR	**>9.9**			No. of Workers	1
LEFT JAMB	**2.9**	and/or		Start Time	13:26
RIGHT CASING	**>9.9**			Stop Time	14:08
				Total Time (hrs)	0.7
				Tools and Equipment Used	
				Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
P-	F2-041906-10	-A-Area	BEDROOM 1	17863	13:24	2.53	14:05	2.56	41	2.53	103.7	<19
P-	041906-13	-A-OS	2ND FL HALL	18105	13:35	2.55	14:11	2.55	36	2.55	91.8	< 22

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D-	F2-042006-58	-A-Area	BEDROOM 1	17180	13:26	2.61	14:06	2.53	40	2.53	101.2	78
D-	F2-042006-57	-A-PBZ	WORKER	17865	13:26	2.60	14:08	2.50	42	2.50	105.0	47
D-	042006-63	-A-OS	2ND FL HALL	16609	13:16	2.54	15:02	2.56	106	2.54	269.2	< 7

Post-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-	F2-042006-64	-A-Area	BEDROOM 1	17180	14:07	2.53	15:04	2.57	57	2.53	144.2	< 14

Wipe Sampling

Date	4/20/2006	**Collected by**	

Pre-Work Wipe Sampling

Sample No. (P-*ScenariloD-Date -##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
P-	F2-041906-38	-W-Area	BEDROOM 1	FLOOR - B WALL	WOOD	1.00	236
P-	F2-041906-39	-W-Area	BEDROOM 1	FLOOR - D WALL	WOOD	1.00	231
P-	F2-041906-40	-W-Area	BEDROOM 1	SILL - D WALL	WOOD	0.25	1480
P-	041906-47	-W-OS	2ND FL HALL	FLOOR	WOOD	1.00	54.2

Post-Work Wipe Sampling

Sample No. (P-*ScenariloD-Date -##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-	F2-042006-38	-W-Area	BEDROOM 1	FLOOR - A WALL	WOOD	1.00	443
C-	F2-042006-39	-W-Area	BEDROOM 1	FLOOR - C WALL	WOOD	1.00	318
C-	F2-042006-40	-W-Area	BEDROOM 1	SILL - C WALL	WOOD	1.00	58.7
C-	042006-41	-W-OS	2ND FL HALL	FLOOR	WOOD	1.00	103

OS - Outside of work area

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	DOOR SANDING
Work Practice	MOD LSWP

DATE	4/20/2006
LOCATION	Farmington, CT
SCENARIO	**F2**
Work Area Preparation	
Pre-cleaning w/ wet wiping and vac	
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	
Reusable Drop Cloth	
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	**X**
Disposable Mesh	
Staple Gun	**X**
Tape	**X**
Utility Knife	**X**
Tack Pad	
Disposable Towels for Wipe Down	
Work Practices/Tools	
Hammers/Prybars	
Misting Bottle	
Sandpaper/Sanding Sponge	
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	
HEPA-equipped Vacuum	**X**
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	**X**
Power Washing Equipment	
Needle Gun connected to HEPA Vacuum	
Belt Sander	
Orbital Sander	
Other Non-ventilated Power Tools	
Heavy Duty Garbage Bags	**X**
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	**X**
Wet Wipe Surfaces or Use Detergent	
Reusable Wet Mop w/ One Bucket	
Reusable Wet Mop w/ Two Buckets	
Use Swifter or Similar Disposable Wet Mop	
Disposable Hand Towels	**X**
Pump Sprayer	
HEPA-equipped Vacuum	**X**
Shop or Industrial Vacuum	
Brooms	
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	
Disposable Shoe Covers	**X**
Safety Glasses	
Disposable Towels	**X**

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

Date	4/20/2006	**Hygienist**	-

	Event	**ID**	**Activity**	**Work Practice**
Scenario	30	G1	CUT SHELVING - SAWING WOOD	ROUTINE

Site Address	City, State, Zip	Farmington, CT

Structure Type	x	Single Family		Apartment		Approx. Construction Date (Yr)	1800/1950
		Town House		Other (describe)		Approx. Square Footage	2000
		Condomium				No. of Separate Rooms	16

Location of Work w/in structure	REAR FOYER

Lead Content of Affected Surfaces					**Work Statistics**	
Surface	XRF Result		% Lead			
CLOSET SHELF	**1.6**				No. of Workers	1
		and/or			Start Time	11:25
					Stop Time	12:15
					Total Time (hrs)	0.8
					Tools and Equipment Used	
					Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
P- G1-041906-03	-A-Area	REAR FOYER	17185	13:04	2.67	13:44	2.63	40	2.63	105.2	< 19
P- 041906-01	-A-OS	KITCHEN	16609	12:58	2.57	13:36	2.59	38	2.57	97.7	< 21

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D- G1-042006-40	-A-Area	REAR FOYER	17451	11:25	2.61	12:12	2.62	47	2.61	122.7	< 16
D- G1-042006-44	-A-PBZ	WORKER	18107	11:25	2.56	12:15	2.60	50	2.56	128.0	< 16
D- 042006-49	-A-OS	KITCHEN	17183	11:26	2.68	13:02	2.62	96	2.62	251.5	< 8

Post-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C- G1-042006-53	-A-Area	REAR FOYER	17451	12:12	2.62	13:05	2.66	53	2.62	138.9	< 14

Wipe Sampling

Date	4/20/2006	**Collected by**	

Pre-Work Wipe Sampling

Sample No. (P-*ScenariloD-Date -##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
P- G1-041906-22	-W-Area	REAR FOYER	FLOOR - B WALL	WOOD	1.00	18
P- G1-041906-23	-W-Area	REAR FOYER	FLOOR - D WALL	WOOD	1.00	< 10.0
P- G1-041906-24	-W-Area	REAR FOYER	SHELF - BOTTOM OF CLOSET	WOOD	1.00	18.4
P- 041906-31	-W-OS	KITCHEN	FLOOR	WOOD	1.00	15

Post-Work Wipe Sampling

Sample No. (P-*ScenariloD-Date -##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C- G1-042006-18	-W-Area	REAR FOYER	FLOOR - B WALL	WOOD	1.00	90.3
C- G1-042006-19	-W-Area	REAR FOYER	FLOOR - D WALL	WOOD	1.00	49.2
C- G1-042006-20	-W-Area	REAR FOYER	SHELF - BOTTOM OF CLOSET	WOOD	1.00	2880
C- 042006-21	-W-OS	KITCHEN	FLOOR	CARPET	1.00	16.3

OS - Outside of work area

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	CUT SHELVING
Work Practice	ROUTINE

DATE	4/20/2006
LOCATION	Farmington, CT
SCENARIO	**G1b**
Work Area Preparation	
Pre-cleaning w/ wet wiping and vac	
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	
Reusable Drop Cloth	**X**
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	
Disposable Mesh	
Staple Gun	
Tape	**X**
Utility Knife	**X**
Tack Pad	
Disposable Towels for Wipe Down	
Work Practices/Tools	
Hammers/Prybars	**X**
Misting Bottle	
Sandpaper/Sanding Sponge	
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	**X**
HEPA-equipped Vacuum	
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	
Power Washing Equipment	
Needle Gun connected to HEPA Vacuum	
Belt Sander	
Orbital Sander	
Other Non-ventilated Power Tools	**X**
Heavy Duty Garbage Bags	**X**
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	**X**
Wet Wipe Surfaces or Use Detergent	
Reusable Wet Mop w/ One Bucket	
Reusable Wet Mop w/ Two Buckets	
Use Swifter or Similar Disposable Wet Mop	
Disposable Hand Towels	**X**
Pump Sprayer	
HEPA-equipped Vacuum	
Shop or Industrial Vacuum	**X**
Brooms	
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	
Disposable Shoe Covers	**X**
Safety Glasses	
Disposable Towels	**X**

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

Date	4/20/2006	**Hygienist**	-

	Event	**ID**	**Activity**	**Work Practice**
Scenario	31	E2	BASEBOARD REMOVAL	MOD LSWP

Site Address	City, State, Zip	Farmington, CT

Structure Type	x	Single Family		Apartment		Approx. Construction Date (Yr)	1800/1950
		Town House		Other (describe)		Approx. Square Footage	2000
		Condomium				No. of Separate Rooms	16

Location of Work w/in structure	REAR FOYER

Lead Content of Affected Surfaces					**Work Statistics**	
Surface	XRF Result		% Lead			
BASEBOARD	**>9.9**				No. of Workers	1
		and/or			Start Time	13:36
					Stop Time	14:17
					Total Time (hrs)	0.7
					Tools and Equipment Used	
					Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
P-E2-042006-53	-A-Area	REAR FOYER	17451	12:12	2.62	13:05	2.66	53	2.62	138.9	< 14
D-042006-49	-A-OS	KITCHEN	17183	11:26	2.68	13:02	2.62	96	2.62	251.5	< 8

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D-E2-042006-62	-A-Area	REAR FOYER	17451	13:36	2.66	14:18	2.64	42	2.64	110.9	< 18
D-E2-042006-60	-A-PBZ	WORKER	18107	13:36	2.60	14:17	2.56	41	2.56	105.0	< 19
D-042006-61	-A-OS	KITCHEN	17183	13:18	2.62	15:08	2.62	110	2.62	288.2	< 7

Post-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-E2-042006-65	-A-Area	REAR FOYER	17451	14:18	2.64	15:17	2.64	59	2.64	155.8	< 13

* - Post-work PBZ only required for scenarios where clean-up or other activiites with exposures different than "during work" activities and that work will take at least 135 min (2-hrs, 15-min)

Wipe Sampling

Date	4/20/2006	**Collected by**	

Pre-Work Wipe Sampling

Sample No. (P-*ScenariloD-Date -##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
P-E2-042006-18	-W-Area	REAR FOYER	FLOOR - B WALL	WOOD	1.00	90.3
P-E2-042006-19	-W-Area	REAR FOYER	FLOOR - D WALL	WOOD	1.00	49.2
P-E2-042006-20	-W-Area	REAR FOYER	SHELF - BOTTOM OF CLOSET	WOOD	1.00	2880
P-042006-21	-W-OS	KITCHEN	FLOOR	CARPET	1.00	16.3

Post-Work Wipe Sampling

Sample No. (P-*ScenariloD-Date -##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-E2-042006-31	-W-Area	REAR FOYER	FLOOR - D WALL	WOOD	1.00	58.7
C-E2-042006-32	-W-Area	REAR FOYER	FLOOR - B WALL	WOOD	1.00	26.5
C-E2-042006-33	-W-Area	REAR FOYER	FLOOR - A WALL	WOOD	0.25	138
C-042006-37	-W-OS	KITCHEN	FLOOR	CARPET	1.00	15.9

OS - Outside of work area

Surface type - wood, tile, linoleum, concrete, carpet, metal, etc.

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	BASEBOARD REMOVAL
Work Practice	MOD LSWP

DATE	4/20/2006
LOCATION	Farmington, CT
SCENARIO	**E2**
Work Area Preparation	
Pre-cleaning w/ wet wiping and vac	
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	
Reusable Drop Cloth	
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	**X**
Disposable Mesh	
Staple Gun	
Tape	**X**
Utility Knife	**X**
Tack Pad	
Disposable Towels for Wipe Down	
Work Practices/Tools	
Hammers/Prybars	**X**
Misting Bottle	
Sandpaper/Sanding Sponge	
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	
HEPA-equipped Vacuum	**X**
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	
Power Washing Equipment	
Needle Gun connected to HEPA Vacuum	
Belt Sander	
Orbital Sander	
Other Non-ventilated Power Tools	
Heavy Duty Garbage Bags	**X**
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	**X**
Wet Wipe Surfaces or Use Detergent	
Reusable Wet Mop w/ One Bucket	
Reusable Wet Mop w/ Two Buckets	
Use Swifter or Similar Disposable Wet Mop	
Disposable Hand Towels	**X**
Pump Sprayer	
HEPA-equipped Vacuum	**X**
Shop or Industrial Vacuum	
Brooms	
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	
Disposable Shoe Covers	**X**
Safety Glasses	
Disposable Towels	**X**

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

Date	4/20/2006	**Hygienist**	-

	Event	**ID**	**Activity**	**Work Practice**
Scenario	32	G1	CLOSET SHELF REMOVAL (WOOD) - SAWING WOOD	Routine

Site Address	City, State, Zip	Farmington, CT

Structure Type	x	Single Family		Apartment	Approx. Construction Date (Yr)	1800/1950
		Town House		Other (describe)	Approx. Square Footage	2000
		Condomium			No. of Separate Rooms	16

Location of Work w/in structure	BEDROOM 2				
Lead Content of Affected Surfaces				**Work Statistics**	
Surface	XRF Result		% Lead		
CLOSET DOOR	**1.4**			No. of Workers	1
				Start Time	11:21
		and/or		Stop Time	12:03
				Total Time (hrs)	0.7
				Tools and Equipment Used	
				Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (*P-ScenarioID-Date-## -A-Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
P- G1-042006-34	-A-Area	BEDROOM 2	16669	10:04	2.58	11:06	2.56	62	2.56	158.7	190
P- 042006-22	-A-OS	2ND FLOOR HALL	16609	7:55	2.59	11:09	2.58	194	2.58	500.5	53

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (*D-ScenarioID-Date-## -A-Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D- G1-042006-46	-A-Area	BEDROOM 2	16669	11:20	2.56	12:03	2.57	43	2.56	110.1	69
D- G1-042006-42	-A-PBZ	WORKER	17185	11:21	2.59	12:03	2.58	42	2.58	108.4	111
D- 042006-48	-A-OS	2ND FL HALL	16609	11:19	2.58	13:14	2.54	115	2.54	292.1	24

Post-Work Sampling

Air Sampling

Sample No. (*C-ScenarioID-Date-## -A-Type*)		Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C- G1-042006-50	-A-Area	BEDROOM 2	16669	12:04	2.57	13:12	2.54	68	2.54	172.7	25

Wipe Sampling

Date	4/20/2006	**Collected by**	

Pre-Work Wipe Sampling

Sample No. (*P-ScenariloD-Date -##-W-Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
P- G1-042006-7	-W-Area	BEDROOM 2	FLOOR - A WALL	WOOD	1.00	1240
P- G1-042006-8	-W-Area	BEDROOM 2	FLOOR - C WALL	WOOD	1.00	774
P- G1-042006-9	-W-Area	BEDROOM 2	SILL - D WALL	WOOD	0.25	6440
P- 042006-14	-W-OS	2ND FL HALL	FLOOR	WOOD	1.00	108

Post-Work Wipe Sampling

Sample No. (*P-ScenariloD-Date -##-W-Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C- G1-042006-22	-W-Area	BEDROOM 2	FLOOR IN CLOSET	WOOD	1.00	105
C- G1-042006-23	-W-Area	BEDROOM 2	FLOOR - C WALL	WOOD	1.00	254
C- G1-042006-24	-W-Area	BEDROOM 2	SILL - D WALL	WOOD	0.25	872
C- 042006-28	-W-OS	2ND FL HALL	FLOOR	WOOD	1.00	834

OS - Outside of work area

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	CLOSET SHELF REMOVAL
Work Practice	ROUTINE

DATE	4/20/2006
LOCATION	Farmington, CT
SCENARIO	**G1a**
Work Area Preparation	
Pre-cleaning w/ wet wiping and vac	
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	
Reusable Drop Cloth	**X**
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	
Disposable Mesh	
Staple Gun	
Tape	**X**
Utility Knife	**X**
Tack Pad	
Disposable Towels for Wipe Down	
Work Practices/Tools	
Hammers/Prybars	**X**
Misting Bottle	
Sandpaper/Sanding Sponge	
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	**X**
HEPA-equipped Vacuum	
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	
Power Washing Equipment	
Needle Gun connected to HEPA Vacuum	
Belt Sander	
Orbital Sander	
Other Non-ventilated Power Tools	**X**
Heavy Duty Garbage Bags	**X**
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	**X**
Wet Wipe Surfaces or Use Detergent	
Reusable Wet Mop w/ One Bucket	
Reusable Wet Mop w/ Two Buckets	
Use Swifter or Similar Disposable Wet Mop	
Disposable Hand Towels	**X**
Pump Sprayer	
HEPA-equipped Vacuum	
Shop or Industrial Vacuum	**X**
Brooms	
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	
Disposable Shoe Covers	**X**
Safety Glasses	
Disposable Towels	**X**

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

Date	4/20/2006	**Hygienist**	-

	Event	**ID**	**Activity**	**Work Practice**
Scenario	33	G2	CLOSET SHELF REMOVAL (WOOD) - SAWING WOOD	Mod LSWP

Site Address	City, State, Zip	Farmington, CT

Structure Type	x	Single Family	Apartment	Approx. Construction Date (Yr)	1800/1950
		Town House	Other (describe)	Approx. Square Footage	2000
		Condomium		No. of Separate Rooms	16

Location of Work w/in structure	BEDROOM 3

Lead Content of Affected Surfaces

Surface	XRF Result		% Lead
SHELF SUPPORT	**>9.9**		
		and/or	

Work Statistics

No. of Workers	1
Start Time	11:23
Stop Time	12:05
Total Time (hrs)	0.7
Tools and Equipment Used	
Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)	Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
P-G2-042006-37 -A-Area	BEDROOM 3	16612	10:03	2.60	11:04	2.60	61	2.60	158.6	126
P-042006-48 -A-OS	2ND FL HALL	16609	11:19	2.58	13:14	2.54	115	2.54	292.1	24

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)	Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D-G2-042006-47 -A-Area	BEDROOM 3	16612	11:23	2.60	12:05	2.58	42	2.58	108.4	38
D-G2-042006-43 -A-PBZ	WORKER	17184	11:23	2.60	12:05	2.58	42	2.58	108.4	45
D-042006-48 -A-OS	2ND FL HALL	16609	11:19	2.58	13:14	2.54	115	2.54	292.1	24

Post-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)	Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-G2-042006-51 -A-Area	BEDROOM 3	16612	12:06	2.58	13:11	2.58	65	2.58	167.7	13

Wipe Sampling

Date	4/20/2006	**Collected by**	

Pre-Work Wipe Sampling

Sample No. (P-*ScenariloD-Date-##*-W-*Location*)	Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
P-G2-042006-10 -W-Area	BEDROOM 3	FLOOR - A WALL	WOOD	1.00	4320
P-G2-042006-11 -W-Area	BEDROOM 3	FLOOR - C WALL	WOOD	1.00	2090
P-G2-042006-12 -W-Area	BEDROOM 3	SILL - D WALL	WOOD	0.25	10800
P-042006-14 -W-OS	2ND FL HALL	FLOOR	WOOD	1.00	108

Post-Work Wipe Sampling

Sample No. (P-*ScenariloD-Date-##*-W-*Location*)	Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-G2-042006-25 -W-Area	BEDROOM 3	FLOOR IN CLOSET	WOOD	1.00	56.7
C-G2-042006-26 -W-Area	BEDROOM 3	FLOOR - A WALL	WOOD	1.00	1040
C-G2-042006-27 -W-Area	BEDROOM 3	SILL - D WALL	WOOD	1.00	133
C-042006-28 -W-OS	2ND FL HALL	FLOOR	WOOD	1.00	834

OS - Outside of work area

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	CLOSET SHELF REMOVAL
Work Practice	MOD LSWP

DATE	4/20/2006
LOCATION	Farmington, CT
SCENARIO	**G2**
Work Area Preparation	
Pre-cleaning w/ wet wiping and vac	
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	
Reusable Drop Cloth	
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	**X**
Disposable Mesh	
Staple Gun	
Tape	**X**
Utility Knife	**X**
Tack Pad	
Disposable Towels for Wipe Down	
Work Practices/Tools	
Hammers/Prybars	**X**
Misting Bottle	
Sandpaper/Sanding Sponge	
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	
HEPA-equipped Vacuum	**X**
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	
Power Washing Equipment	
Needle Gun connected to HEPA Vacuum	
Belt Sander	
Orbital Sander	
Other Non-ventilated Power Tools	**X**
Heavy Duty Garbage Bags	**X**
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	**X**
Wet Wipe Surfaces or Use Detergent	
Reusable Wet Mop w/ One Bucket	
Reusable Wet Mop w/ Two Buckets	
Use Swifter or Similar Disposable Wet Mop	
Disposable Hand Towels	**X**
Pump Sprayer	
HEPA-equipped Vacuum	**X**
Shop or Industrial Vacuum	
Brooms	
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	
Disposable Shoe Covers	**X**
Safety Glasses	
Disposable Towels	**X**

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

Date	5/2/2006	**Hygienist**	

	Event	**ID**	**Activity**	**Work Practice**
Scenario	34	B1	CEILING MODIFICATION	ROUTINE

Site Address	City, State, Zip	Milwaukee, WI

Structure Type							
		Single Family	X	Apartment		Approx. Construction Date (Yr)	1890
		Town House		Other (describe)		Approx. Square Footage	5000
		Condomium				No. of Separate Rooms	18

Location of Work w/in structure	3RD FL BR 1

Lead Content of Affected Surfaces				**Work Statistics**	
Surface	XRF Result		% Lead		
CEILING	**2.8**			No. of Workers	1
		and/or		Start Time	940
				Stop Time	1005
				Total Time (hrs)	0.3
				Tools and Equipment Used	
				Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
P-B1-050106-003	-A-Area	3RD FL BR 1	17865	14:59	2.63	15:52	2.61	53	2.61	138.3	<14
P-B1-050106-001	-A-OS	3RD FL BR 3	17180	14:55	2.65	15:48	2.63	53	2.63	139.4	<14

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D-B1-050206-020	-A-Area	3RD FL BR 1	18105	9:39	2.59	10:52	2.54	73	2.54	185.4	54
D-B1-050206-019	-A-PBZ	WORKER	17183	9:39	2.64	10:50	2.64	71	2.64	187.4	68
D-B1-050206-021	-A-OS	3RD FL BR 3	18112	9:38	2.64	12:21	2.59	163	2.59	422.2	7

Post-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-B1-050206-027	-A-Area	3RD FL BR 1	18105	10:53	2.54	12:19	2.54	86	2.54	218.4	<9

Pre-work Wipe Sampling

Wipe Sampling

Sample No. (P-*ScenarioID-Date -##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
P-B1-050106-201	-W-Area	3RD FL BR 1	HAND RAIL	WOOD	0.58	464
P-B1-050106-202	-W-Area	3RD FL BR 1	FLOOR N	WOOD	1.00	124
P-B1-050106-203	-W-Area	3RD FL BR 1	FLOOR S	WOOD	1.00	94
P-B1-050106-207	-W-OS	3RD FL BR 3	FLOOR	WOOD	1.00	126

Clearance Wipe Sampling

Wipe Sampling

Sample No. (P-*ScenarioID-Date -##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-B1-050206-242	-W-Area	3RD FL BR 1	FLOOR N	WOOD	1.00	139
C-B1-050206-243	-W-Area	3RD FL BR 1	FLOOR S	WOOD	1.00	523
C-B1-050206-244	-W-Area	3RD FL BR 1	HAND RAIL	WOOD	0.50	513
C-B1-050206-241	-W-OS	3RD FL BR 3	FLOOR W	WOOD	1.00	657

OS - Outside of work area

Surface type - wood, tile, linoleum, concrete, carpet, metal, etc.

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	CEILING MODIFICATION
Work Practice	ROUTINE

DATE	5/2/2006
LOCATION	MILWAUKEE, WI
SCENARIO	**B1a**
Work Area Preparation	
Pre-cleaning w/ wet wiping and vac	
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	
Reusable Drop Cloth	
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	
Disposable Mesh	
Staple Gun	
Tape	**X**
Utility Knife	
Tack Pad	
Disposable Towels for Wipe Down	
Work Practices/Tools	
Hammers/Prybars	
Misting Bottle	
Sandpaper/Sanding Sponge	
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	
HEPA-equipped Vacuum	
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	
Power Washing Equipment	
Needle Gun connected to HEPA Vacuum	
Belt Sander	
Orbital Sander	
Other Non-ventilated Power Tools	**X**
Heavy Duty Garbage Bags	**X**
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	
Wet Wipe Surfaces or Use Detergent	
Reusable Wet Mop w/ One Bucket	
Reusable Wet Mop w/ Two Buckets	
Use Swifter or Similar Disposable Wet Mop	
Disposable Hand Towels	
Pump Sprayer	
HEPA-equipped Vacuum	
Shop or Industrial Vacuum	
Brooms	**X**
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	**X**
Disposable Shoe Covers	**X**
Safety Glasses	**X**
Disposable Towels	

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

Date	5/2/2006	Hygienist	

	Event	ID	Activity	Work Practice
Scenario	35	B1	WALL MODIFICATION	ROUTINE

Site Address	City, State, Zip	Milwaukee, WI

Structure Type							
		Single Family	X	Apartment		Approx. Construction Date (Yr)	1890
		Town House		Other (describe)		Approx. Square Footage	5000
		Condomium				No. of Separate Rooms	18

Location of Work w/in structure	2ND FL BR 2

Lead Content of Affected Surfaces				Work Statistics	
Surface	XRF Result		% Lead		
BR 1 Wall (assumed same)	13.4			No. of Workers	1
		and/or		Start Time	1247
				Stop Time	1320
				Total Time (hrs)	0.5
				Tools and Equipment Used	
				Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
P-B1-050106-008	-A-Area	2ND FL BR 2	16609	15:26	2.61	16:07	2.62	41	2.61	107.0	<19
P-C3-050106-004	-A-OS	GRND FL	17184	15:10	2.66	15:56	2.66	46	2.66	122.4	<16

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D-B1-050206-033	-A-Area	2ND FL BR 2	17184	12:47	2.66	13:46	2.57	59	2.57	151.6	<13
D-B1-050206-032	-A-PBZ	WORKER	17185	12:47	2.62	13:47	2.59	60	2.59	155.4	<13
D-C2-050206-040	-A-OS	KITCHEN	18110	12:34	2.53	15:22	2.53	168	2.53	425.0	<5
D-C2-050206-041	-A-OS	GRND FL	17451	12:38	2.68	15:06	2.67	148	2.67	395.2	<5

Post-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-B1-050206-048	-A-Area	2ND FL BR 2	17184	13:47	2.57	14:50	2.61	63	2.57	161.9	<12

Pre-work Wipe Sampling

Wipe Sampling

Sample No. (P-*ScenariloD-Date -##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
P-B1-050206-221	-W-Area	2ND FL BR 2	FLOOR N	WOOD	1.00	550
P-B1-050206-222	-W-Area	2ND FL BR 2	FLOOR S	WOOD	1.00	593
P-B1-050206-223	-W-Area	2ND FL BR 2	W-SILL	WOOD	0.46	1300
P-C3-050206-211	-W-OS	GROUND FL	FLOOR	WOOD	1.00	800

Clearance Wipe Sampling

Wipe Sampling

Sample No. (P-*ScenariloD-Date -##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-B1-050206-257	-W-Area	2ND FL BR 2	FLOOR N	WOOD	1.00	1070
C-B1-050206-258	-W-Area	2ND FL BR 2	FLOOR S	WOOD	1.00	150
C-B1-050206-256	-W-Area	2ND FL BR 2	W-SILL	WOOD	0.42	411
C-C3-050206-251	-W-OS	GROUND FL	FLOOR	WOOD	1.00	535

OS - Outside of work area

Surface type - wood, tile, linoleum, concrete, carpet, metal, etc.

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	WALL MODIFICATION
Work Practice	ROUTINE

DATE	5/2/2006
LOCATION	MILWAUKEE, WI
SCENARIO	**B1**
Work Area Preparation	
Pre-cleaning w/ wet wiping and vac	
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	
Reusable Drop Cloth	
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	**X**
Disposable Mesh	
Staple Gun	**X**
Tape	**X**
Utility Knife	**X**
Tack Pad	
Disposable Towels for Wipe Down	
Work Practices/Tools	
Hammers/Prybars	
Misting Bottle	
Sandpaper/Sanding Sponge	
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	
HEPA-equipped Vacuum	
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	
Power Washing Equipment	
Needle Gun connected to HEPA Vacuum	
Belt Sander	
Orbital Sander	
Other Non-ventilated Power Tools	**X**
Heavy Duty Garbage Bags	
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	**X**
Wet Wipe Surfaces or Use Detergent	**X**
Reusable Wet Mop w/ One Bucket	
Reusable Wet Mop w/ Two Buckets	
Use Swifter or Similar Disposable Wet Mop	
Disposable Hand Towels	**X**
Pump Sprayer	
HEPA-equipped Vacuum	
Shop or Industrial Vacuum	
Brooms	
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	**X**
Disposable Shoe Covers	**X**
Safety Glasses	
Disposable Towels	**X**

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

Date	5/2/2006		**Hygienist**	

	Event	**ID**	**Activity**	**Work Practice**
Scenario	36	C2	WINDOW INSTALLATION	mod LSWP

Site Address	City, State, Zip	Milwaukee, WI

Structure Type							
		Single Family	X	Apartment		Approx. Construction Date (Yr)	1890
		Town House		Other (describe)		Approx. Square Footage	5000
		Condomium				No. of Separate Rooms	18

Location of Work w/in structure	LIVING ROOM

Lead Content of Affected Surfaces				**Work Statistics**	
Surface	XRF Result		% Lead		
WINDOW SILL	**3.7**			No. of Workers	1
WINDOW SASH	**18.9**	and/or		Start Time	1305
WINDOW	**22.5**			Stop Time	1402
				Total Time (hrs)	1
				Tools and Equipment Used	
				Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-	C3-050206-029	-A-Area	LR S	16609	11:03	2.56	12:29	2.57	86	2.56	220.2	<9
C-	C3-050206-030	-A-Area	LR N	16666	11:03	2.63	12:31	2.61	88	2.61	229.7	<9
D-	C3-050206-026	-A-OS	KITCHEN	18110	8:53	2.65	12:24	2.53	211	2.53	533.8	<4

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D-	C2-050206-038	-A-Area	LR S	16609	13:03	2.50	13:57	2.58	54	2.50	135.0	<15
D-	C2-050206-039	-A-Area	LR N	16666	13:03	2.61	13:58	2.61	55	2.61	143.6	<14
D-	C2-050206-044	-A-PBZ	WORKER	17180	13:05	2.65	14:02	2.55	57	2.55	145.4	<14
D-	C2-050206-040	-A-OS	KITCHEN	18110	12:34	2.53	15:22	2.53	168	2.53	425.0	<5
D-	C2-050206-041	-A-OS	GRND FL	17451	12:38	2.68	15:06	2.67	148	2.67	395.2	<5

Post-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-	C2-050206-050	-A-Area	LR S	16609	13:58	2.58	15:00	2.58	62	2.58	160.0	<13
C-	C2-050206-051	-A-Area	LR N	16666	13:59	2.61	15:02	2.61	63	2.61	164.4	<12

Pre-work Wipe Sampling

Wipe Sampling

Sample No. (P-*ScenariloD-Date -##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-	C3-050206-250	-W-Area	LR	W-SILL	WOOD	0.29	452
C-	C3-050206-248	-W-Area	LR	FLOOR N	WOOD	1.00	1320
C-	C3-050206-249	-W-Area	LR	FLOOR S	WOOD	1.00	402
C-	C3-050206-251	-W-OS	GROUND FL	FLOOR	WOOD	1.00	535

Clearance Wipe Sampling

Wipe Sampling

Sample No. (P-*ScenariloD-Date -##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-	C2-050206-264	-W-Area	LR	W-SILL	WOOD	0.29	642
C-	C2-050206-265	-W-Area	LR	FLOOR N	WOOD	1.00	11400
C-	C2-050206-266	-W-Area	LR	FLOOR S	WOOD	1.00	306
C-	C2-050206-263	-W-OS	GROUND FL	FLOOR W	WOOD	1.00	1050

OS - Outside of work area

Surface type - wood, tile, linoleum, concrete, carpet, metal, etc.

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	WONDOW INSTALLATION
Work Practice	mod LSWP

DATE	5/2/2006
LOCATION	MILWAUKEE, WI
SCENARIO	**C2**
Work Area Preparation	
Pre-cleaning w/ wet wiping and vac	**X**
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	
Reusable Drop Cloth	
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	**X**
Disposable Mesh	
Staple Gun	**X**
Tape	**X**
Utility Knife	**X**
Tack Pad	
Disposable Towels for Wipe Down	
Work Practices/Tools	
Hammers/Prybars	**X**
Misting Bottle	
Sandpaper/Sanding Sponge	
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	
HEPA-equipped Vacuum	
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	
Power Washing Equipment	
Needle Gun connected to HEPA Vacuum	
Belt Sander	
Orbital Sander	
Other Non-ventilated Power Tools	**X**
Heavy Duty Garbage Bags	
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	**X**
Wet Wipe Surfaces or Use Detergent	**X**
Reusable Wet Mop w/ One Bucket	
Reusable Wet Mop w/ Two Buckets	
Use Swifter or Similar Disposable Wet Mop	**X**
Disposable Hand Towels	**X**
Pump Sprayer	
HEPA-equipped Vacuum	**X**
Shop or Industrial Vacuum	
Brooms	**X**
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	**X**
Disposable Shoe Covers	**X**
Safety Glasses	
Disposable Towels	**X**

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

Date	5/2/2006	Hygienist	

	Event	ID	Activity	Work Practice
Scenario	37	B3	OUTLET INSTALLATION	HUD/EPA LSWP

Site Address	City, State, Zip	Milwaukee, WI

Structure Type							
		Single Family	X	Apartment	Approx. Construction Date (Yr)	1890
		Town House		Other (describe)	Approx. Square Footage	5000
		Condomium			No. of Separate Rooms	18

Location of Work w/in structure	2ND FL BR 1

Lead Content of Affected Surfaces				Work Statistics	
Surface	XRF Result		% Lead		
WALL	13.4			No. of Workers	1
		and/or		Start Time	940
				Stop Time	1020
				Total Time (hrs)	0.6
				Tools and Equipment Used	
				Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
P-B3-050106-007	-A-Area	2ND FL BR 1	16608	15:24	2.59	16:05	2.58	41	2.58	105.8	<19
P-C3-050106-004	-A-OS	GRND FL	17184	15:10	2.66	15:56	2.66	46	2.66	122.4	<16

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D-B3-050206-022	-A-Area	2ND FL BR 1	16608	9:34	2.60	10:58	2.57	84	2.57	215.9	<9
D-B3-050206-017	-A-PBZ	WORKER	17185	9:19	2.65	10:56	2.62	97	2.62	254.1	<8
D-C3-050206-026	-A-OS	KITCHEN	18110	8:53	2.65	12:24	2.53	211	2.53	533.8	<4

Post-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-B3-050206-028	-A-Area	2ND FL BR 1	16608	10:59	2.57	12:26	2.55	87	2.55	221.9	<9

Pre-work Wipe Sampling

Wipe Sampling

Sample No. (P-*ScenariIoD-Date -##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
P-B3-050206-218	-W-Area	2ND FL BR 1	W-SILL	WOOD	0.46	2090
P-B3-050206-219	-W-Area	2ND FL BR 1	FLOOR W	WOOD	1.00	891
P-B3-050206-220	-W-Area	2ND FL BR 1	FLOOR E	WOOD	1.00	210
P-C3-050206-211	-W-OS	GROUND FL	FLOOR	WOOD	1.00	800

Clearance Wipe Sampling

Wipe Sampling

Sample No. (P-*ScenariIoD-Date -##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-B3-050206-247	-W-Area	2ND FL BR 1	W-SILL	WOOD	0.42	476
C-B3-050206-245	-W-Area	2ND FL BR 1	FLOOR N	WOOD	1.00	402
C-B3-050206-246	-W-Area	2ND FL BR 1	FLOOR S	WOOD	1.00	423
C-C3-050206-251	-W-OS	GROUND FL	FLOOR	WOOD	1.00	535

OS - Outside of work area

Surface type - wood, tile, linoleum, concrete, carpet, metal, etc.

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	WALL MOD - OUTLET INSTALLATION
Work Practice	LSWP

DATE	5/2/2006
LOCATION	MILWAUKEE, WI
SCENARIO	**B3**
Work Area Preparation	
Pre-cleaning w/ wet wiping and vac	**X**
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	**NA**
Reusable Drop Cloth	
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	
Disposable Mesh	
Staple Gun	**X**
Tape	**X**
Utility Knife	
Tack Pad	
Disposable Towels for Wipe Down	**X**
Work Practices/Tools	
Hammers/Prybars	
Misting Bottle	**X**
Sandpaper/Sanding Sponge	
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	
HEPA-equipped Vacuum	
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	
Power Washing Equipment	
Needle Gun connected to HEPA Vacuum	
Belt Sander	
Orbital Sander	
Other Non-ventilated Power Tools	**X**
Heavy Duty Garbage Bags	**X**
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	
Wet Wipe Surfaces or Use Detergent	**X**
Reusable Wet Mop w/ One Bucket	
Reusable Wet Mop w/ Two Buckets	
Use Swifter or Similar Disposable Wet Mop	**X**
Disposable Hand Towels	**X**
Pump Sprayer	
HEPA-equipped Vacuum	
Shop or Industrial Vacuum	
Brooms	
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	**X**
Disposable Shoe Covers	**X**
Safety Glasses	**X**
Disposable Towels	**X**

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

Date	5/2/2006		**Hygienist**	

	Event	**ID**	**Activity**	**Work Practice**
Scenario	38	C3	WINDOW MODIFICATION (SASHES AND STOPS)	HUD/EPA LSWP

Site Address	City, State, Zip	Milwaukee, WI

Structure Type		Single Family	X	Apartment	Approx. Construction Date (Yr)	1890
		Town House		Other (describe)	Approx. Square Footage	5000
		Condomium			No. of Separate Rooms	18

Location of Work w/in structure	LIVING ROOM

Lead Content of Affected Surfaces				**Work Statistics**	
Surface	XRF Result		% Lead		
WINDOW SASH	**18.9**			No. of Workers	1
WINDOW SILL	**3.7**	and/or		Start Time	940
				Stop Time	1023
				Total Time (hrs)	0.6
				Tools and Equipment Used	
				Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)			Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
P-	C3-050106-005	-A-Area	LR N	16666	15:17	2.68	16:02	2.68	45	2.68	120.6	<17
P-	C3-050106-006	-A-Area	LR S	16668	15:20	2.65	16:04	2.68	44	2.65	116.6	<17
P-	C3-050106-004	-A-OS	GRND FL	17184	15:10	2.66	15:56	2.66	46	2.66	122.4	<16

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)			Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D-	C3-050206-023	-A-Area	LR S	16609	9:34	2.60	11:02	2.56	88	2.56	225.3	<9
D-	C3-050206-024	-A-Area	LR N	16666	9:34	2.70	11:03	2.63	89	2.63	234.1	<9
D-	C3-050206-018	-A-PBZ	WORKER	16669	9:14	2.59	11:05	2.58	111	2.58	286.4	<7
D-	C3-050206-025	-A-OS	GRND FL	17451	8:49	2.68	12:36	2.67	227	2.67	606.1	<3
D-	C3-050206-026	-A-OS	KITCHEN	18110	8:53	2.65	12:24	2.53	211	2.53	533.8	<4

Post-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)			Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-	C3-050206-029	-A-Area	LR S	16609	11:03	2.56	12:29	2.57	86	2.56	220.2	<9
C-	C3-050206-030	-A-Area	LR N	16666	11:03	2.63	12:31	2.61	88	2.61	229.7	<9

Pre-work Wipe Sampling

Wipe Sampling

Sample No. (P-*ScenariloD-Date -##*-W-*Location*)			Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
P-	C3-050206-212	-W-Area	LR	FLOOR N	WOOD	1.00	437
P-	C3-050206-213	-W-Area	LR	FLOOR S	WOOD	1.00	324
P-	C3-050206-214	-W-Area	LR	W-SILL	WOOD	0.29	680
P-	C3-050206-211	-W-OS	GROUND FL	FLOOR	WOOD	1.00	800

Clearance Wipe Sampling

Wipe Sampling

Sample No. (P-*ScenariloD-Date -##*-W-*Location*)			Location	Surface	Surface Type	Sampled (ft^2)	Result (ug/ft^2)
C-	C3-050206-248	-W-Area	LR	FLOOR N	WOOD	1.00	1320
C-	C3-050206-249	-W-Area	LR	FLOOR S	WOOD	1.00	402
C-	C3-050206-250	-W-Area	LR	W-SILL	WOOD	0.29	452
C-	C3-050206-251	-W-OS	GROUND FL	FLOOR	WOOD	1.00	535

OS - Outside of work area

Surface type - wood, tile, linoleum, concrete, carpet, metal, etc.

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	WINDOW MODIFICATION
Work Practice	LSWP

DATE	5/2/2006
LOCATION	MILWAUKEE, WI
SCENARIO	**C3**
Work Area Preparation	
Pre-cleaning w/ wet wiping and vac	**X**
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	
Reusable Drop Cloth	
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	**X**
Disposable Mesh	
Staple Gun	**X**
Tape	**X**
Utility Knife	**X**
Tack Pad	
Disposable Towels for Wipe Down	**X**
Work Practices/Tools	
Hammers/Prybars	
Misting Bottle	**X**
Sandpaper/Sanding Sponge	
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	
HEPA-equipped Vacuum	
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	
Power Washing Equipment	
Needle Gun connected to HEPA Vacuum	
Belt Sander	
Orbital Sander	
Other Non-ventilated Power Tools	
Heavy Duty Garbage Bags	
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	**X**
Wet Wipe Surfaces or Use Detergent	
Reusable Wet Mop w/ One Bucket	
Reusable Wet Mop w/ Two Buckets	
Use Swifter or Similar Disposable Wet Mop	**X**
Disposable Hand Towels	
Pump Sprayer	**X**
HEPA-equipped Vacuum	
Shop or Industrial Vacuum	
Brooms	
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	**X**
Disposable Shoe Covers	**X**
Safety Glasses	**X**
Disposable Towels	

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

Date	5/2/2006	Hygienist	

	Event	ID	Activity	Work Practice
Scenario	39	C1	WINDOW WORK - SANDING	ROUTINE

Site Address	City, State, Zip	Milwaukee, WI

Structure Type							
		Single Family	X	Apartment	Approx. Construction Date (Yr)	1890
		Town House		Other (describe)	Approx. Square Footage	5000
		Condomium			No. of Separate Rooms	18

Location of Work w/in structure	2ND FL BR 1

Lead Content of Affected Surfaces				Work Statistics	
Surface	XRF Result		% Lead		
WINDOW SASH	13.8			No. of Workers	1
WINDOW SILL	12.7	and/or		Start Time	1342
				Stop Time	1400
				Total Time (hrs)	0.3
				Tools and Equipment Used	
				Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)	Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-B3-050206-028 -A-Area	2ND FL BR 1	16608	10:59	2.57	12:26	2.55	87	2.55	221.9	<9
D-C3-050206-025 -A-OS	GRND FL	17451	8:49	2.68	12:36	2.67	227	2.67	606.1	<3
D-C3-050206-026 -A-OS	KITCHEN	18110	8:53	2.65	12:24	2.53	211	2.53	533.8	<4

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)	Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D-C1-050206-047 -A-Area	2ND FL BR 1	16608	13:43	2.55	14:28	2.55	45	2.55	114.8	161
D-C1-050206-047 -A-Area	2ND FL BR 1	16608	13:43	2.55	14:28	2.55	45	2.55	114.8	161
D-C1-050206-046 -A-PBZ	WORKER	17183	13:42	2.63	14:29	2.63	47	2.63	123.6	184
D-C2-050206-040 -A-OS	KITCHEN	18110	12:34	2.53	15:22	2.53	168	2.53	425.0	<5
D-C2-050206-041 -A-OS	GRND FL	17451	12:38	2.68	15:06	2.67	148	2.67	395.2	<5

Post-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)	Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-C1-050206-052 -A-Area	2ND FL BR 1	16608	14:28	2.55	15:29	2.59	61	2.55	155.6	<13

Pre-work Wipe Sampling

Wipe Sampling

Sample No. (P-*ScenariloD-Date -##*-W-*Location*)	Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-B3-050206-245 -W-Area	2ND FL BR 1	FLOOR N	WOOD	1.00	402
C-B3-050206-246 -W-Area	2ND FL BR 1	FLOOR S	WOOD	1.00	423
C-B3-050206-247 -W-Area	2ND FL BR 1	W-SILL	WOOD	0.42	476
C-B1-050206-240 -W-OS	KITCHEN	FLOOR S	WOOD	1.00	293

Clearance Wipe Sampling

Wipe Sampling

Sample No. (P-*ScenariloD-Date -##*-W-*Location*)	Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-C1-050206-268 -W-Area	2ND FL BR 1	FLOOR N	WOOD	1.00	779
C-C1-050206-269 -W-Area	2ND FL BR 1	FLOOR S	WOOD	1.00	481
C-C1-050206-267 -W-Area	2ND FL BR 1	W-SILL	WOOD	0.42	315
C-F2-050206-262 -W-OS	KITCHEN	FLOOR S	WOOD	1.00	683

OS - Outside of work area

Surface type - wood, tile, linoleum, concrete, carpet, metal, etc.

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	WINDOW WORK
Work Practice	ROUTINE

DATE	5/2/2006
LOCATION	MILWAUKEE, WI
SCENARIO	**C1**
Work Area Preparation	
Pre-cleaning w/ wet wiping and vac	**X**
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	
Reusable Drop Cloth	
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	**X**
Disposable Mesh	
Staple Gun	
Tape	**X**
Utility Knife	
Tack Pad	
Disposable Towels for Wipe Down	
Work Practices/Tools	
Hammers/Prybars	**X**
Misting Bottle	
Sandpaper/Sanding Sponge	**X**
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	
HEPA-equipped Vacuum	
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	
Power Washing Equipment	
Needle Gun connected to HEPA Vacuum	
Belt Sander	
Orbital Sander	
Other Non-ventilated Power Tools	
Heavy Duty Garbage Bags	**X**
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	**X**
Wet Wipe Surfaces or Use Detergent	
Reusable Wet Mop w/ One Bucket	
Reusable Wet Mop w/ Two Buckets	
Use Swifter or Similar Disposable Wet Mop	
Disposable Hand Towels	
Pump Sprayer	
HEPA-equipped Vacuum	
Shop or Industrial Vacuum	
Brooms	**X**
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	**X**
Disposable Shoe Covers	**X**
Safety Glasses	**X**
Disposable Towels	

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

Date	5/3/2006	Hygienist	

	Event	ID	Activity	Work Practice
Scenario	40	A2	BANISTER REMOVAL AND INSTALLATION	mod LSWP

Site Address	City, State, Zip	Milwaukee, WI

Structure Type							
		Single Family	X	Apartment		Approx. Construction Date (Yr)	1890
		Town House		Other (describe)		Approx. Square Footage	5000
		Condomium				No. of Separate Rooms	18

Location of Work w/in structure	3RD FL BR 1

Lead Content of Affected Surfaces				Work Statistics	
Surface	XRF Result		% Lead		
STAIR HANDRAIL	4.4			No. of Workers	2
		and/or		Start Time	1315
				Stop Time	1551
				Total Time (hrs)	2.5
				Tools and Equipment Used	
				Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)	Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-B1-050306-073 -A-Area	3RD FL BR 1	16669	11:36	2.59	12:50	2.58	74	2.58	190.9	<11
D-F2-050306-060 -A-OS	3RD FL BR 3	18110	10:06	2.57	13:06	2.54	180	2.54	457.2	<4

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)	Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D-A2-050306-081 -A-Area	3RD FL BR 1	16669	13:13	2.58	16:08	2.53	175	2.53	442.8	<5
D-A2-050306-082 -A-PBZ	WORKER	17863	13:15	2.51	15:54	2.54	159	2.51	399.1	<5
D-A2-050306-083 -A-PBZ	WORKER	18104	13:14	2.57	16:10	2.53	176	2.53	445.3	<4
D-A2-050306-084 -A-OS	3RD FL BR 3	18110	13:07	2.54	15:09	2.49	122	2.49	303.8	<7

Post-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)	Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-A2-050306-097 -A-Area	3RD FL BR 1	16669	16:08	2.53	17:08	2.57	60	2.53	151.8	<13

Pre-work Wipe Sampling

Wipe Sampling

Sample No. (P-*ScenarioID-Date-##*-W-*Location*)	Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-B1-050306-270 -W-Area	3RD FL BR 1	HAND RAIL	WOOD	0.58	779
C-B1-050306-271 -W-Area	3RD FL BR 1	FLOOR S	WOOD	1.00	481
C-B1-050306-272 -W-Area	3RD FL BR 1	FLOOR N	WOOD	1.00	653
C-B1-050306-276 -W-OS	3RD FL BR 3	FLOOR W	WOOD	1.00	245

Clearance Wipe Sampling

Wipe Sampling

Sample No. (P-*ScenarioID-Date-##*-W-*Location*)	Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-A2-050306-306 -W-Area	3RD FL BR 1	FLOOR E	WOOD	1.00	163
C-A2-050306-307 -W-Area	3RD FL BR 1	FLOOR N	WOOD	1.00	151
C-A2-050306-308 -W-Area	3RD FL BR 1	FLOOR S	WOOD	1.00	3800
C-A2-050306-309 -W-OS	3RD FL BR 3	FLOOR E	WOOD	1.00	165

OS - Outside of work area

Surface type - wood, tile, linoleum, concrete, carpet, metal, etc.

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	BANISTER REMOVAL AND INSTALLATION
Work Practice	mod LSWP

DATE	5/3/2006
LOCATION	MILWAUKEE, WI
SCENARIO	**A2**
Work Area Preparation	
Pre-cleaning w/ wet wiping and vac	**X**
Rope	
Barrier Tape	
Saw Horses	**X**
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	**NA**
Reusable Drop Cloth	
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	**X**
Disposable Mesh	
Staple Gun	
Tape	**X**
Utility Knife	**X**
Tack Pad	
Disposable Towels for Wipe Down	
Work Practices/Tools	
Hammers/Prybars	**X**
Misting Bottle	**X**
Sandpaper/Sanding Sponge	**X**
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	
HEPA-equipped Vacuum	**X**
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	
Power Washing Equipment	
Needle Gun connected to HEPA Vacuum	
Belt Sander	
Orbital Sander	
Other Non-ventilated Power Tools	**X**
Heavy Duty Garbage Bags	**X**
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	**X**
Wet Wipe Surfaces or Use Detergent	
Reusable Wet Mop w/ One Bucket	
Reusable Wet Mop w/ Two Buckets	
Use Swifter or Similar Disposable Wet Mop	**X**
Disposable Hand Towels	**X**
Pump Sprayer	
HEPA-equipped Vacuum	**X**
Shop or Industrial Vacuum	
Brooms	
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	**X**
Disposable Shoe Covers	**X**
Safety Glasses	**X**
Disposable Towels	**X**

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

Date	5/2/2006	**Hygienist**	

	Event	**ID**	**Activity**	**Work Practice**
Scenario	41	E1	BASEBOARD REMOVAL	ROUTINE

Site Address	City, State, Zip	Milwaukee, WI

Structure Type							
		Single Family	X	Apartment		Approx. Construction Date (Yr)	1890
		Town House		Other (describe)		Approx. Square Footage	5000
		Condomium				No. of Separate Rooms	18

Location of Work w/in structure	3RD FL BR 1

Lead Content of Affected Surfaces				**Work Statistics**	
Surface	XRF Result		% Lead		
BASEBOARD	**9.9**			No. of Workers	1
		and/or		Start Time	1241
				Stop Time	1300
				Total Time (hrs)	0.3
				Tools and Equipment Used	
				Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (*P-ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-B1-050206-027	-A-Area	3RD FL BR 1	18105	10:53	2.54	12:19	2.54	86	2.54	218.4	<9
D-B1-050206-021	-A-OS	3RD FL BR 3	18112	9:38	2.64	12:21	2.59	163	2.59	422.2	7

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (*P-ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D-E1-050206-036	-A-Area	3RD FL BR 1	18105	12:41	2.51	13:35	2.52	54	2.51	135.5	<15
D-E1-050206-035	-A-PBZ	WORKER	17183	12:41	2.64	13:36	2.63	55	2.63	144.7	<14
D-E1-050206-037	-A-OS	3RD FL BR 3	18112	12:22	2.59	14:35	2.60	133	2.59	344.5	<6

Post-Work Sampling

Air Sampling

Sample No. (*P-ScenarioID-Date-##* -A-*Type*)		Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-E1-050206-045	-A-Area	3RD FL BR 1	18105	13:36	2.52	14:37	2.52	61	2.52	153.7	<13

Pre-work Wipe Sampling

Wipe Sampling

Sample No. (*P-ScenarioID-Date -##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-B1-050206-244	-W-Area	3RD FL BR 1	HAND RAIL	WOOD	0.50	513
C-B1-050206-242	-W-Area	3RD FL BR 1	FLOOR N	WOOD	1.00	139
C-B1-050206-243	-W-Area	3RD FL BR 1	FLOOR S	WOOD	1.00	523
C-B1-050206-241	-W-OS	3RD FL BR 3	FLOOR W	WOOD	1.00	657

Clearance Wipe Sampling

Wipe Sampling

Sample No. (*P-ScenarioID-Date -##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-E1-050206-252	-W-Area	3RD FL BR 1	HAND RAIL	WOOD	0.33	1050
C-E1-050206-253	-W-Area	3RD FL BR 1	FLOOR N	WOOD	1.00	158
C-E1-050206-254	-W-Area	3RD FL BR 1	FLOOR S	WOOD	1.00	312
C-E1-050206-255	-W-OS	3RD FL BR 3	FLOOR W	WOOD	1.00	431

OS - Outside of work area

Surface type - wood, tile, linoleum, concrete, carpet, metal, etc.

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	BASEBOARD REMOVAL
Work Practice	ROUTINE

DATE	5/2/2006
LOCATION	MILWAUKEE, WI
SCENARIO	**E1**
Work Area Preparation	
Pre-cleaning w/ wet wiping and vac	**X**
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	
Reusable Drop Cloth	
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	
Disposable Mesh	
Staple Gun	
Tape	**X**
Utility Knife	**X**
Tack Pad	
Disposable Towels for Wipe Down	
Work Practices/Tools	
Hammers/Prybars	**X**
Misting Bottle	
Sandpaper/Sanding Sponge	
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	
HEPA-equipped Vacuum	
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	
Power Washing Equipment	
Needle Gun connected to HEPA Vacuum	
Belt Sander	
Orbital Sander	
Other Non-ventilated Power Tools	**X**
Heavy Duty Garbage Bags	
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	
Wet Wipe Surfaces or Use Detergent	
Reusable Wet Mop w/ One Bucket	
Reusable Wet Mop w/ Two Buckets	
Use Swifter or Similar Disposable Wet Mop	
Disposable Hand Towels	
Pump Sprayer	
HEPA-equipped Vacuum	
Shop or Industrial Vacuum	
Brooms	**X**
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	**X**
Disposable Shoe Covers	**X**
Safety Glasses	
Disposable Towels	**X**

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

Date	5/2/2006	**Hygienist**	

	Event	**ID**	**Activity**	**Work Practice**
Scenario	42	F2	FLOOR SANDING	mod LSWP

Site Address	City, State, Zip	Milwaukee, WI

Structure Type							
		Single Family	X	Apartment		Approx. Construction Date (Yr)	1890
		Town House		Other (describe)		Approx. Square Footage	5000
		Condomium				No. of Separate Rooms	18

Location of Work w/in structure	PANTRY

Lead Content of Affected Surfaces				**Work Statistics**	
Surface	XRF Result		% Lead		
FLOOR	**2.3**			No. of Workers	1
FLOOR	**1.7**	and/or		Start Time	1242
FLOOR	**1.3**			Stop Time	1349
				Total Time (hrs)	1
				Tools and Equipment Used	
				Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (*P-ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
P-F2-050106-010	-A-Area	PANTRY	18107	15:33	2.67	16:13	2.68	40	2.67	106.8	<19
P-C3-050106-004	-A-OS	GRND FL	17184	15:10	2.66	15:56	2.66	46	2.66	122.4	<16

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (*P-ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D-F2-050206-034	-A-Area	PANTRY	17179	12:42	2.63	13:52	2.66	70	2.63	184.1	411
D-F2-050206-031	-A-PBZ	WORKER	16669	12:42	2.58	13:49	2.54	67	2.54	170.2	420
D-C3-050206-025	-A-OS	GRND FL	17451	8:49	2.68	12:36	2.67	227	2.67	606.1	<3
D-C3-050206-026	-A-OS	KITCHEN	18110	8:53	2.65	12:24	2.53	211	2.53	533.8	<4

Post-Work Sampling

Air Sampling

Sample No. (*P-ScenarioID-Date-##* -A-*Type*)		Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-F2-050206-049	-A-Area	PANTRY	17179	13:53	2.66	14:55	2.62	62	2.62	162.4	<12

Pre-work Wipe Sampling

Wipe Sampling

Sample No. (*P-ScenariloD-Date -##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
P-F2-050206-227	-W-Area	PANTRY	W-SILL	WOOD	0.42	1700
P-F2-050206-228	-W-Area	PANTRY	FLOOR E	WOOD	1.00	1090
P-F2-050206-229	-W-Area	PANTRY	FLOOR W	WOOD	1.00	6080
P-C3-050206-211	-W-OS	GROUND FL	FLOOR	WOOD	1.00	800

Clearance Wipe Sampling

Wipe Sampling

Sample No. (*P-ScenariloD-Date -##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-F2-050206-259	-W-Area	PANTRY	W-SILL	WOOD	0.42	208
C-F2-050206-260	-W-Area	PANTRY	FLOOR E	WOOD	1.00	5440
C-F2-050206-261	-W-Area	PANTRY	FLOOR W	WOOD	1.00	603
C-C2-050206-263	-W-OS	GROUND FL	FLOOR W	WOOD	1.00	1050

OS - Outside of work area

Surface type - wood, tile, linoleum, concrete, carpet, metal, etc.

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	FLOOR SANDING
Work Practice	mod LSWP

DATE	5/2/2006
LOCATION	MILWAUKEE, WI
SCENARIO	**F2**
Work Area Preparation	
Pre-cleaning w/ wet wiping and vac	
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	
Reusable Drop Cloth	
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	**X**
Disposable Mesh	
Staple Gun	**X**
Tape	**X**
Utility Knife	**X**
Tack Pad	
Disposable Towels for Wipe Down	
Work Practices/Tools	
Hammers/Prybars	
Misting Bottle	
Sandpaper/Sanding Sponge	
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	
HEPA-equipped Vacuum	
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	
Power Washing Equipment	
Needle Gun connected to HEPA Vacuum	
Belt Sander	
Orbital Sander	**X**
Other Non-ventilated Power Tools	
Heavy Duty Garbage Bags	
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	
Wet Wipe Surfaces or Use Detergent	**X**
Reusable Wet Mop w/ One Bucket	
Reusable Wet Mop w/ Two Buckets	
Use Swifter or Similar Disposable Wet Mop	**X**
Disposable Hand Towels	
Pump Sprayer	
HEPA-equipped Vacuum	
Shop or Industrial Vacuum	
Brooms	
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	**X**
Disposable Shoe Covers	**X**
Safety Glasses	
Disposable Towels	**X**

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

Date	5/3/2006		**Hygienist**	

	Event	**ID**	**Activity**	**Work Practice**
Scenario	43	E3	BASEBOARD REMOVAL	HUD/EPA LSWP

Site Address	City, State, Zip	Milwaukee, WI

Structure Type		Single Family	X	Apartment	Approx. Construction Date (Yr)	1890
		Town House		Other (describe)	Approx. Square Footage	5000
		Condomium			No. of Separate Rooms	18

Location of Work w/in structure	PANTRY

Lead Content of Affected Surfaces				**Work Statistics**	
Surface	XRF Result		% Lead		
BASEBOARD	**19.2**			No. of Workers	1
		and/or		Start Time	1355
				Stop Time	1505
				Total Time (hrs)	1.1
				Tools and Equipment Used	
				Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)	Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-F2-050206-049 -A-Area	PANTRY	17179	13:53	2.66	14:55	2.62	62	2.62	162.4	<12
D-C2-050206-040 -A-OS	KITCHEN	18110	12:34	2.53	15:22	2.53	168	2.53	425.0	<5
D-C2-050206-041 -A-OS	GRND FL	17451	12:38	2.68	15:06	2.67	148	2.67	395.2	<5

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)	Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D-E3-050306-085 -A-Area	PANTRY	16608	13:54	2.53	15:10	2.56	76	2.53	192.3	28
D-E3-050306-086 -A-PBZ	WORKER	18107	13:54	2.67	15:12	2.58	78	2.58	201.2	52
D-B1-050306-090 -A-OS	KITCHEN	18112	13:52	2.63	16:43	2.63	171	2.63	449.7	<4
D-B1-050306-091 -A-OS	DINING ROOM	17180	13:50	2.56	16:44	2.59	174	2.56	445.4	<10

Post-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)	Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-E3-050306-094 -A-Area	PANTRY	16608	15:11	2.56	16:23	2.54	72	2.54	182.9	<11

Pre-work Wipe Sampling

Wipe Sampling

Sample No. (P-*ScenariloD-Date -##*-W-*Location*)	Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-F2-050206-259 -W-Area	PANTRY	W-SILL	WOOD	0.42	1070
C-F2-050206-260 -W-Area	PANTRY	FLOOR E	WOOD	1.00	150
C-F2-050206-261 -W-Area	PANTRY	FLOOR W	WOOD	1.00	208
C-F2-050206-262 -W-OS	KITCHEN	FLOOR S	WOOD	1.00	5440

Clearance Wipe Sampling

Wipe Sampling

Sample No. (P-*ScenariloD-Date -##*-W-*Location*)	Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-E3-050306-298 -W-Area	PANTRY	W-SILL	WOOD	0.29	862
C-E3-050306-299 -W-Area	PANTRY	FLOOR E	WOOD	1.00	231
C-E3-050306-300 -W-Area	PANTRY	FLOOR W	WOOD	1.00	352
C-B1-050306-304 -W-OS	KITCHEN	FLOOR W	WOOD	1.00	888

OS - Outside of work area

Surface type - wood, tile, linoleum, concrete, carpet, metal, etc.

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	BASEBOARD REMOVAL
Work Practice	LSWP

DATE	5/3/2006
LOCATION	MILWAUKEE, WI
SCENARIO	**E3**
Work Area Preparation	
Pre-cleaning w/ wet wiping and vac	**X**
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	
Reusable Drop Cloth	
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	**X**
Disposable Mesh	
Staple Gun	**X**
Tape	**X**
Utility Knife	**X**
Tack Pad	
Disposable Towels for Wipe Down	
Work Practices/Tools	
Hammers/Prybars	**X**
Misting Bottle	**X**
Sandpaper/Sanding Sponge	
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	
HEPA-equipped Vacuum	**X**
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	
Power Washing Equipment	
Needle Gun connected to HEPA Vacuum	
Belt Sander	
Orbital Sander	
Other Non-ventilated Power Tools	
Heavy Duty Garbage Bags	**X**
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	**X**
Wet Wipe Surfaces or Use Detergent	**X**
Reusable Wet Mop w/ One Bucket	
Reusable Wet Mop w/ Two Buckets	
Use Swifter or Similar Disposable Wet Mop	**X**
Disposable Hand Towels	**X**
Pump Sprayer	**X**
HEPA-equipped Vacuum	**X**
Shop or Industrial Vacuum	
Brooms	
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	**X**
Disposable Shoe Covers	**X**
Safety Glasses	**X**
Disposable Towels	**X**

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

Date	5/3/2006	**Hygienist**	

	Event	**ID**	**Activity**	**Work Practice**
Scenario	44	B1	CEILING MODIFICATION (RECESSED LIGHTS)	ROUTINE

Site Address	City, State, Zip	Milwaukee, WI

Structure Type		Single Family	X	Apartment	Approx. Construction Date (Yr)	1890
		Town House		Other (describe)	Approx. Square Footage	5000
		Condomium			No. of Separate Rooms	18

Location of Work w/in structure	3RD FL BR 1

Lead Content of Affected Surfaces				**Work Statistics**	
Surface	XRF Result		% Lead		
CEILING	**2.8**			No. of Workers	1
		and/or		Start Time	1030
				Stop Time	1110
				Total Time (hrs)	0.6
				Tools and Equipment Used	
				Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-E1-050206-045	-A-Area	3RD FL BR 1	18105	13:36	2.52	14:37	2.52	61	2.52	153.7	<13
D-E1-050206-037	-A-OS	3RD FL BR 3	18112	12:22	2.59	14:35	2.60	133	2.59	344.5	<6

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D-B1-050306-058	-A-Area	3RD FL BR 1	16669	10:27	2.60	11:35	2.59	68	2.59	176.1	14
D-B1-050306-059	-A-PBZ	WORKER	17863	10:28	2.53	11:36	2.51	68	2.51	170.7	12
D-F2-050306-060	-A-OS	3RD FL BR 3	18110	10:06	2.57	13:06	2.54	180	2.54	457.2	<4

Post-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-B1-050306-073	-A-Area	3RD FL BR 1	16669	11:36	2.59	12:50	2.58	74	2.58	190.9	<11

Pre-work Wipe Sampling

Wipe Sampling

Sample No. (P-*ScenarioID-Date-##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-E1-050206-252	-W-Area	3RD FL BR 1	HAND RAIL	WOOD	0.33	452
C-E1-050206-254	-W-Area	3RD FL BR 1	FLOOR S	WOOD	1.00	1050
C-E1-050206-253	-W-Area	3RD FL BR 1	FLOOR N	WOOD	1.00	535
C-E1-050206-255	-W-OS	3RD FL BR 3	FLOOR W	WOOD	1.00	158

Clearance Wipe Sampling

Wipe Sampling

Sample No. (P-*ScenarilOD-Date-##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-B1-050306-270	-W-Area	3RD FL BR 1	HAND RAIL	WOOD	0.58	779
C-B1-050306-271	-W-Area	3RD FL BR 1	FLOOR S	WOOD	1.00	481
C-B1-050306-272	-W-Area	3RD FL BR 1	FLOOR N	WOOD	1.00	653
C-B1-050306-276	-W-OS	3RD FL BR 3	FLOOR W	WOOD	1.00	245

OS - Outside of work area

Surface type - wood, tile, linoleum, concrete, carpet, metal, etc.

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	CEILING MODIFICATION (RECESSED LIGHTS)
Work Practice	ROUTINE

DATE	5/3/2006
LOCATION	MILWAUKEE, WI
SCENARIO	**B1**
Work Area Preparation	
Pre-cleaning w/ wet wiping and vac	
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	
Reusable Drop Cloth	
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	**X**
Disposable Mesh	
Staple Gun	**X**
Tape	**X**
Utility Knife	**X**
Tack Pad	
Disposable Towels for Wipe Down	
Work Practices/Tools	
Hammers/Prybars	
Misting Bottle	
Sandpaper/Sanding Sponge	
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	**X**
HEPA-equipped Vacuum	
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	
Power Washing Equipment	
Needle Gun connected to HEPA Vacuum	
Belt Sander	
Orbital Sander	
Other Non-ventilated Power Tools	**X**
Heavy Duty Garbage Bags	**X**
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	**X**
Wet Wipe Surfaces or Use Detergent	
Reusable Wet Mop w/ One Bucket	
Reusable Wet Mop w/ Two Buckets	
Use Swifter or Similar Disposable Wet Mop	
Disposable Hand Towels	**X**
Pump Sprayer	
HEPA-equipped Vacuum	
Shop or Industrial Vacuum	**X**
Brooms	**X**
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	**X**
Disposable Shoe Covers	**X**
Safety Glasses	
Disposable Towels	**X**

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

Date	5/3/2006	Hygienist	

	Event	ID	Activity	Work Practice
Scenario	45	F2	CEILING SANDING	mod LSWP

Site Address	City, State, Zip	Milwaukee, WI

Structure Type							
		Single Family	X	Apartment	Approx. Construction Date (Yr)	1890
		Town House		Other (describe)	Approx. Square Footage	5000
		Condomium			No. of Separate Rooms	18

Location of Work w/in structure	LIVING ROOM

Lead Content of Affected Surfaces				Work Statistics	
Surface	XRF Result		% Lead		
CEILING	16.5			No. of Workers	1
		and/or		Start Time	1402
				Stop Time	1506
				Total Time (hrs)	1
				Tools and Equipment Used	
				Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)	Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-C2-050206-050	-A-Area	LR S	16609	13:58	2.58	15:00	2.58	62	2.58	160.0	<13
C-C2-050206-051	-A-Area	LR N	16666	13:59	2.61	15:02	2.61	63	2.61	164.4	<12
D-C2-050206-040	-A-OS	KITCHEN	18110	12:34	2.53	15:22	2.53	168	2.53	425.0	<5

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)	Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D-F2-050306-076	-A-Area	LR S	16666	14:02	2.63	15:03	2.61	61	2.61	159.2	<13
D-F2-050306-077	-A-Area	LR N	16609	14:00	2.65	15:05	2.55	65	2.55	165.8	<12
D-F2-050306-078	-A-PBZ	WORKER	17185	14:02	2.63	15:06	2.57	64	2.57	164.5	<12
D-B1-050306-090	-A-OS	KITCHEN	18112	13:52	2.63	16:43	2.63	171	2.63	449.7	<4
D-B1-050306-091	-A-OS	DINING ROOM	17180	13:50	2.56	16:44	2.59	174	2.56	445.4	<10

Post-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)	Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-F2-050306-092	-A-Area	LR S	16666	15:03	2.61	16:19	2.60	76	2.60	197.6	<10
C-F2-050306-093	-A-Area	LR N	16609	15:05	2.55	16:21	2.58	76	2.55	193.8	<10

Pre-work Wipe Sampling

Wipe Sampling

Sample No. (P-*ScenariloD-Date -##*-W-*Location*)	Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-C2-050206-264	-W-Area	LR	W-SILL	WOOD	0.29	683
C-C2-050206-265	-W-Area	LR	FLOOR N	WOOD	1.00	1050
C-C2-050206-266	-W-Area	LR	FLOOR S	WOOD	1.00	642
C-F2-050206-262	-W-OS	KITCHEN	FLOOR S	WOOD	1.00	5440

Clearance Wipe Sampling

Wipe Sampling

Sample No. (P-*ScenariloD-Date -##*-W-*Location*)	Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-F2-050306-295	-W-Area	LR	W-SILL	WOOD	0.29	253
C-F2-050306-296	-W-Area	LR	FLOOR N	WOOD	1.00	391
C-F2-050306-297	-W-Area	LR	FLOOR S	WOOD	1.00	370
C-B1-050306-304	-W-OS	KITCHEN	FLOOR W	WOOD	1.00	888

OS - Outside of work area

Surface type - wood, tile, linoleum, concrete, carpet, metal, etc.

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	CEILING SANDING
Work Practice	mod LSWP

DATE	5/3/2006
LOCATION	MILWAUKEE, WI
SCENARIO	**F2**
Work Area Preparation	
Pre-cleaning w/ wet wiping and vac	
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	
Reusable Drop Cloth	
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	**X**
Disposable Mesh	
Staple Gun	**X**
Tape	**X**
Utility Knife	
Tack Pad	
Disposable Towels for Wipe Down	
Work Practices/Tools	
Hammers/Prybars	**X**
Misting Bottle	
Sandpaper/Sanding Sponge	**X**
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	
HEPA-equipped Vacuum	**X**
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	
Power Washing Equipment	
Needle Gun connected to HEPA Vacuum	
Belt Sander	
Orbital Sander	**X**
Other Non-ventilated Power Tools	
Heavy Duty Garbage Bags	
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	**X**
Wet Wipe Surfaces or Use Detergent	
Reusable Wet Mop w/ One Bucket	
Reusable Wet Mop w/ Two Buckets	
Use Swifter or Similar Disposable Wet Mop	**X**
Disposable Hand Towels	**X**
Pump Sprayer	
HEPA-equipped Vacuum	**X**
Shop or Industrial Vacuum	
Brooms	
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	**X**
Disposable Shoe Covers	**X**
Safety Glasses	**X**
Disposable Towels	

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

Date	5/3/2006		**Hygienist**	

	Event	**ID**	**Activity**	**Work Practice**
Scenario	46	B1	WALL MODIFICATION (DOOR INSTALLATION)	ROUTINE

Site Address	City, State, Zip	Milwaukee, WI

Structure Type		Single Family	X	Apartment	Approx. Construction Date (Yr)	1890
		Town House		Other (describe)	Approx. Square Footage	5000
		Condomium			No. of Separate Rooms	18

Location of Work w/in structure	2ND FL BR 1

Lead Content of Affected Surfaces				**Work Statistics**	
Surface	XRF Result		% Lead		
BR 1 WALL	**13.4**			No. of Workers	1
		and/or		Start Time	1005
				Stop Time	1145
				Total Time (hrs)	1.6
				Tools and Equipment Used	
				Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-	C1-050206-052 -A-Area	2ND FL BR 1	16608	14:28	2.55	15:29	2.59	61	2.55	155.6	<13
D-	C2-050206-040 -A-OS	KITCHEN	18110	12:34	2.53	15:22	2.53	168	2.53	425.0	<5
D-	C2-050206-041 -A-OS	GRND FL	17451	12:38	2.68	15:06	2.67	148	2.67	395.2	<5

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D-	B1-050306-066 -A-Area	2ND FL BR 1	17184	10:03	2.67	11:54	2.61	111	2.61	289.7	<7
D-	B1-050306-067 -A-PBZ	WORKER	18107	10:02	2.62	11:47	2.67	105	2.62	275.1	12
D-	050306-068 -A-OS	KITCHEN	18112	10:05	2.64	13:51	2.63	226	2.63	594.4	<3
D-	050306-069 -A-OS	DINING ROOM	17180	10:05	2.65	13:49	2.65	224	2.65	593.6	<3

Post-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-	B1-050306-074 -A-Area	2ND FL BR 1	17184	11:55	2.61	13:28	2.61	93	2.61	242.7	<8
C-	B1-050306-070 -A-Area	2ND FL BR 2	18105	11:56	2.57	13:26	2.53	90	2.53	227.7	<9

Pre-work Wipe Sampling

Wipe Sampling

Sample No. (P-*ScenariloD-Date-##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-	C1-050206-267 -W-Area	2ND FL BR 1	W-SILL	WOOD	0.42	11400
C-	C1-050206-268 -W-Area	2ND FL BR 1	FLOOR N	WOOD	1.00	306
C-	C1-050206-269 -W-Area	2ND FL BR 1	FLOOR S	WOOD	1.00	315
C-	F2-050206-262 -W-OS	KITCHEN	FLOOR S	WOOD	1.00	5440

Clearance Wipe Sampling

Wipe Sampling

Sample No. (P-*ScenariloD-Date-##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-	B1-050306-277 -W-Area	2ND FL BR 1	W-SILL	WOOD	0.42	890
C-	B1-050306-278 -W-Area	2ND FL BR 1	FLOOR E	WOOD	1.00	240
C-	B1-050306-279 -W-Area	2ND FL BR 1	FLOOR W	WOOD	1.00	214
C-	D3-050306-283 -W-OS	KITCHEN	FLOOR S	WOOD	1.00	1470

OS - Outside of work area

Surface type - wood, tile, linoleum, concrete, carpet, metal, etc.

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	WALL MODIFICATION (DOOR INSTALLATION)
Work Practice	ROUTINE

DATE	5/3/2006
LOCATION	MILWAUKEE, WI
SCENARIO	**B1**
Work Area Preparation	
Pre-cleaning w/ wet wiping and vac	
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	
Reusable Drop Cloth	
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	**X**
Disposable Mesh	
Staple Gun	**X**
Tape	**X**
Utility Knife	**X**
Tack Pad	
Disposable Towels for Wipe Down	
Work Practices/Tools	
Hammers/Prybars	**X**
Misting Bottle	
Sandpaper/Sanding Sponge	
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	**X**
HEPA-equipped Vacuum	
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	
Power Washing Equipment	
Needle Gun connected to HEPA Vacuum	
Belt Sander	
Orbital Sander	
Other Non-ventilated Power Tools	**X**
Heavy Duty Garbage Bags	**X**
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	**X**
Wet Wipe Surfaces or Use Detergent	
Reusable Wet Mop w/ One Bucket	
Reusable Wet Mop w/ Two Buckets	
Use Swifter or Similar Disposable Wet Mop	
Disposable Hand Towels	**X**
Pump Sprayer	
HEPA-equipped Vacuum	
Shop or Industrial Vacuum	**X**
Brooms	**X**
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	**X**
Disposable Shoe Covers	**X**
Safety Glasses	
Disposable Towels	**X**

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

Date	5/3/2006		**Hygienist**	

	Event	**ID**	**Activity**	**Work Practice**
Scenario	47	B1	WALL MODIFICATION (WINDOW INSTALLATION)	ROUTINE

Site Address	City, State, Zip	Milwaukee, WI

Structure Type		Single Family	X	Apartment	Approx. Construction Date (Yr)	1890
		Town House		Other (describe)	Approx. Square Footage	5000
		Condomium			No. of Separate Rooms	18

Location of Work w/in structure	2ND FL BR 1

Lead Content of Affected Surfaces				**Work Statistics**	
Surface	XRF Result		% Lead		
BR 1 WALL	**13.4**			No. of Workers	1
		and/or		Start Time	1358
				Stop Time	1539
				Total Time (hrs)	1.6
				Tools and Equipment Used	
				Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (*P-ScenarioID-Date-## -A-Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C- B1-050306-074	-A-Area	2ND FL BR 1	17184	11:55	2.61	13:28	2.61	93	2.61	242.7	<8
C- B1-050306-070	-A-Area	2ND FL BR 2	18105	11:56	2.57	13:26	2.53	90	2.53	227.7	<9
D- 050306-068	-A-OS	KITCHEN	18112	10:05	2.64	13:51	2.63	226	2.63	594.4	<3
D- 050306-069	-A-OS	DINING ROOM	17180	10:05	2.65	13:49	2.65	224	2.65	593.6	<3

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (*P-ScenarioID-Date-## -A-Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D- B1-050306-087	-A-Area	2ND FL BR 1	17184	13:59	2.61	15:34	2.63	95	2.61	248.0	9
D- B1-050306-088	-A-Area	2ND FL BR 2	18105	13:58	2.53	15:36	2.58	98	2.53	247.9	28
D- B1-050306-089	-A-PBZ	WORKER	16612	13:58	2.57	15:39	2.59	101	2.57	259.6	63
D- B1-050306-090	-A-OS	KITCHEN	18112	13:52	2.63	16:43	2.63	171	2.63	449.7	<4
D- B1-050306-091	-A-OS	DINING ROOM	17180	13:50	2.56	16:44	2.59	174	2.56	445.4	<10

Post-Work Sampling

Air Sampling

Sample No. (*P-ScenarioID-Date-## -A-Type*)		Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C- B1-050306-095	-A-Area	2ND FL BR 1	17184	15:35	2.63	16:38	2.63	63	2.63	165.7	<12
C- B1-050306-096	-A-Area	2ND FL BR 2	18105	15:36	2.61	16:39	2.60	63	2.60	163.8	<12

Pre-work Wipe Sampling

Wipe Sampling

Sample No. (*P-ScenariloD-Date -##-W-Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C- B1-050306-277	-W-Area	2ND FL BR 1	W-SILL	WOOD	0.42	890
C- B1-050306-278	-W-Area	2ND FL BR 1	FLOOR E	WOOD	1.00	240
C- B1-050306-279	-W-Area	2ND FL BR 1	FLOOR W	WOOD	1.00	214
C- D3-050306-283	-W-OS	KITCHEN	FLOOR S	WOOD	1.00	1470

Clearance Wipe Sampling

Wipe Sampling

Sample No. (*P-ScenariloD-Date -##-W-Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C- B1-050306-301	-W-Area	2ND FL BR 1	W-SILL	WOOD	0.42	979
C- B1-050306-302	-W-Area	2ND FL BR 1	FLOOR N	WOOD	1.00	350
C- B1-050306-303	-W-Area	2ND FL BR 2	FLOOR S	WOOD	1.00	153
C- B1-050306-304	-W-OS	KITCHEN	FLOOR W	WOOD	1.00	888

OS - Outside of work area

Surface type - wood, tile, linoleum, concrete, carpet, metal, etc.

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	WALL MODIFICATION (WINDOW INSTALLATION)
Work Practice	ROUTINE

DATE	5/3/2006
LOCATION	MILWAUKEE, WI
SCENARIO	**B1**
Work Area Preparation	
Pre-cleaning w/ wet wiping and vac	
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	
Reusable Drop Cloth	
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	**X**
Disposable Mesh	
Staple Gun	**X**
Tape	**X**
Utility Knife	**X**
Tack Pad	
Disposable Towels for Wipe Down	
Work Practices/Tools	
Hammers/Prybars	
Misting Bottle	
Sandpaper/Sanding Sponge	
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	**X**
HEPA-equipped Vacuum	
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	
Power Washing Equipment	
Needle Gun connected to HEPA Vacuum	
Belt Sander	
Orbital Sander	
Other Non-ventilated Power Tools	**X**
Heavy Duty Garbage Bags	**X**
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	**X**
Wet Wipe Surfaces or Use Detergent	
Reusable Wet Mop w/ One Bucket	
Reusable Wet Mop w/ Two Buckets	
Use Swifter or Similar Disposable Wet Mop	**X**
Disposable Hand Towels	**X**
Pump Sprayer	
HEPA-equipped Vacuum	
Shop or Industrial Vacuum	**X**
Brooms	**X**
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	**X**
Disposable Shoe Covers	**X**
Safety Glasses	
Disposable Towels	**X**

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

Date	5/3/2006		**Hygienist**	

	Event	**ID**	**Activity**	**Work Practice**
Scenario	48	D2	CABINET REMOVAL	HUD/EPA LSWP

Site Address	City, State, Zip	Milwaukee, WI

Structure Type		Single Family	X	Apartment	Approx. Construction Date (Yr)	1905
		Town House		Other (describe)	Approx. Square Footage	
		Condomium			No. of Separate Rooms	15

Location of Work w/in structure	BATH

Lead Content of Affected Surfaces				**Work Statistics**	
Surface	XRF Result		% Lead		
CABINET	**9.6**			No. of Workers	1
		and/or		Start Time	1015
				Stop Time	1240
				Total Time (hrs)	2.5
				Tools and Equipment Used	
				Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (*P-ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
P-	D3-050106-011	-A-Area	BATH	17183	15:37	2.67	16:15	2.69	38	2.67	101.5	<20
P-	C3-050106-004	-A-OS	GRND FL	17184	15:10	2.66	15:56	2.66	46	2.66	122.4	<16

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (*P-ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D-	D3-050306-064	-A-Area	BATH	17179	10:15	2.64	12:41	2.63	146	2.63	384.0	<5
D-	D3-050306-065	-A-PBZ	WORKER	16608	10:15	2.57	12:43	2.53	148	2.53	374.4	6
D-	050306-069	-A-OS	DINING ROOM	17180	10:05	2.65	13:49	2.65	224	2.65	593.6	<3
D-	050306-068	-A-OS	KITCHEN	18112	10:05	2.64	13:51	2.63	226	2.63	594.4	<3

Post-Work Sampling

Air Sampling

Sample No. (*P-ScenarioID-Date-##* -A-*Type*)		Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-	D3-050306-080	-A-Area	BATH	17179	12:43	2.63	13:48	2.63	65	2.63	171.0	<12

Pre-work Wipe Sampling

Wipe Sampling

Sample No. (*P-ScenariloD-Date -##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
P-	D3-050206-215	-W-Area	BATH	W-SILL	WOOD	0.42	213
P-	D3-050206-216	-W-Area	BATH	FLOOR S	LINOLEUM	1.00	996
P-	D3-050206-217	-W-Area	BATH	FLOOR N	LINOLEUM	1.00	1210
P-	C3-050206-211	-W-OS	GROUND FL	FLOOR	WOOD	1.00	800

Clearance Wipe Sampling

Wipe Sampling

Sample No. (*P-ScenariloD-Date -##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-	D3-050306-280	-W-Area	BATH	W-SILL	WOOD	0.42	354
C-	D3-050306-281	-W-Area	BATH	FLOOR W	LINOLEUM	1.00	1470
C-	D3-050306-282	-W-Area	BATH	FLOOR E	LINOLEUM	1.00	571
C-	D3-050306-283	-W-OS	KITCHEN	FLOOR S	WOOD	1.00	1470

OS - Outside of work area

Surface type - wood, tile, linoleum, concrete, carpet, metal, etc.

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	CABINET REMOVAL
Work Practice	LSWP

DATE	5/3/2006
LOCATION	MILWAUKEE, WI
SCENARIO	**D3**
Work Area Preparation	
Pre-cleaning w/ wet wiping and vac	**X**
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	
Reusable Drop Cloth	
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	**X**
Disposable Mesh	
Staple Gun	**X**
Tape	**X**
Utility Knife	**X**
Tack Pad	
Disposable Towels for Wipe Down	**X**
Work Practices/Tools	
Hammers/Prybars	**X**
Misting Bottle	**X**
Sandpaper/Sanding Sponge	
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	
HEPA-equipped Vacuum	**X**
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	
Power Washing Equipment	
Needle Gun connected to HEPA Vacuum	
Belt Sander	
Orbital Sander	
Other Non-ventilated Power Tools	**X**
Heavy Duty Garbage Bags	**X**
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	**X**
Wet Wipe Surfaces or Use Detergent	**X**
Reusable Wet Mop w/ One Bucket	
Reusable Wet Mop w/ Two Buckets	
Use Swifter or Similar Disposable Wet Mop	**X**
Disposable Hand Towels	**X**
Pump Sprayer	**X**
HEPA-equipped Vacuum	**X**
Shop or Industrial Vacuum	
Brooms	
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	**X**
Disposable Shoe Covers	**X**
Safety Glasses	**X**
Disposable Towels	**X**

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

Date	5/3/2006	**Hygienist**	

	Event	**ID**	**Activity**	**Work Practice**
Scenario	49	F2	SURFACE PREPARATION (WINDOW FRAME)	mod LSWP

Site Address	City, State, Zip	Milwaukee, WI

Structure Type		Single Family	X	Apartment	Approx. Construction Date (Yr)	1890
		Town House		Other (describe)	Approx. Square Footage	5000
		Condomium			No. of Separate Rooms	18

Location of Work w/in structure	3RD FL BR 2

Lead Content of Affected Surfaces				**Work Statistics**	
Surface	XRF Result		% Lead		
WINDOW SASH	**6**			No. of Workers	1
WINDOW SILL	**5.6**	and/or		Start Time	1058
				Stop Time	1205
				Total Time (hrs)	1
				Tools and Equipment Used	
				Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
P-	F2-050106-002	-A-Area	3RD FL BR 2	18105	14:56	2.58	15:50	2.57	54	2.57	138.8	<14
P-	B1-050106-001	-A-OS	3RD FL BR 3	17180	14:55	2.65	15:48	2.63	53	2.63	139.4	<14

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D-	F2-050306-056	-A-Area	3RD FL BR 2	16670	10:58	2.55	12:04	2.54	66	2.54	167.6	73
D-	F2-050306-057	-A-PBZ	WORKER	18104	10:58	2.52	12:05	2.57	67	2.52	168.8	140
D-	F2-050306-060	-A-OS	3RD FL BR 3	18110	10:06	2.57	13:06	2.54	180	2.54	457.2	<4

Post-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-	F2-050306-075	-A-Area	3RD FL BR 2	16670	12:04	2.54	13:05	2.50	61	2.50	152.5	<13

Pre-work Wipe Sampling

Wipe Sampling

Sample No. (P-*ScenariloD-Date-##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
P-	B1-050106-204	-W-Area	3RD FL BR 2	FLOOR S	WOOD	1.00	236
P-	B1-050106-205	-W-Area	3RD FL BR 2	FLOOR N	WOOD	1.00	54.3
P-	B1-050106-206	-W-Area	3RD FL BR 2	W-SILL	WOOD	0.75	2590
P-	B1-050106-207	-W-OS	3RD FL BR 3	FLOOR	WOOD	1.00	126

Clearance Wipe Sampling

Wipe Sampling

Sample No. (P-*ScenariloD-Date-##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-	F2-050306-273	-W-Area	3RD FL BR 2	W-SILL	WOOD	0.67	734
C-	F2-050306-274	-W-Area	3RD FL BR 2	FLOOR N	WOOD	1.00	81.2
C-	F2-050306-275	-W-Area	3RD FL BR 2	FLOOR S	WOOD	1.00	1210
C-	B1-050306-276	-W-OS	3RD FL BR 3	FLOOR W	WOOD	1.00	245

OS - Outside of work area

Surface type - wood, tile, linoleum, concrete, carpet, metal, etc.

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	SURFACE PREPARATION (WINDOW FRAME)
Work Practice	mod LSWP

DATE	5/3/2006
LOCATION	MILWAUKEE, WI
SCENARIO	**F2**
Work Area Preparation	
Pre-cleaning w/ wet wiping and vac	
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	**X**
Reusable Drop Cloth	
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	**X**
Disposable Mesh	
Staple Gun	**X**
Tape	**X**
Utility Knife	
Tack Pad	
Disposable Towels for Wipe Down	
Work Practices/Tools	
Hammers/Prybars	
Misting Bottle	
Sandpaper/Sanding Sponge	**X**
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	
HEPA-equipped Vacuum	**X**
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	
Power Washing Equipment	
Needle Gun connected to HEPA Vacuum	
Belt Sander	**X**
Orbital Sander	
Other Non-ventilated Power Tools	
Heavy Duty Garbage Bags	
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	**X**
Wet Wipe Surfaces or Use Detergent	
Reusable Wet Mop w/ One Bucket	
Reusable Wet Mop w/ Two Buckets	
Use Swifter or Similar Disposable Wet Mop	**X**
Disposable Hand Towels	**X**
Pump Sprayer	
HEPA-equipped Vacuum	**X**
Shop or Industrial Vacuum	
Brooms	
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	**X**
Disposable Shoe Covers	**X**
Safety Glasses	
Disposable Towels	

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

Date	5/4/2006		**Hygienist**	

	Event	**ID**	**Activity**	**Work Practice**
Scenario	50	A2	WALL DEMOLITION	mod LSWP

Site Address	City, State, Zip	Milwaukee, WI

Structure Type		Single Family	X	Apartment	Approx. Construction Date (Yr)	1905
		Town House		Other (describe)	Approx. Square Footage	
		Condomium			No. of Separate Rooms	15

Location of Work w/in structure	2ND FL BR 1

Lead Content of Affected Surfaces				**Work Statistics**	
Surface	XRF Result		% Lead		
BR 1 WALL	**13.4**			No. of Workers	2
BR 2 CEILING	**12.7**	and/or		Start Time	950
				Stop Time	1405
				Total Time (hrs)	4.25
				Tools and Equipment Used	
				Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)	Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-B1-050306-095 -A-Area	2ND FL BR 1	17184	15:35	2.63	16:38	2.63	63	2.63	165.7	<12
C-B1-050306-096 -A-Area	2ND FL BR 2	18105	15:36	2.61	16:39	2.60	63	2.60	163.8	<12
D-B1-050306-091 -A-OS	DINING ROOM	17180	13:50	2.56	16:44	2.59	174	2.56	445.4	<10

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)	Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D-A2 -050406-103 -A-Area	2ND FL BR 1	18107	9:47	2.59	14:12	2.65	265	2.59	686.4	<3
D-A2-050406-104 -A-Area	2ND FL BR 2	16666	9:50	2.65	14:11	2.63	261	2.63	686.4	<3
D-A2-050406-105 -A-PBZ	WORKER	16612	9:48	2.63	14:07	2.60	259	2.60	673.4	4
D-A2-050406-106 -A-PBZ	WORKER	16608	9:48	2.57	VOIDED, SAMPLE DETACHED FROM PUMP					
D-A2-050406-107 -A-OS	LR	17451	9:52	2.62	16:35	2.60	403	2.60	1047.8	<2

Post-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)	Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-A2-050406-116 -A-Area	2ND FL BR 1	18107	14:14	2.65	15:34	2.65	80	2.65	212.0	<9
C-A2-050406-117 -A-Area	2ND FL BR 2	16666	14:15	2.63	15:36	2.63	81	2.63	213.0	<9

Pre-work Wipe Sampling

Wipe Sampling

Sample No. (P-*ScenariloD-Date-##*-W-*Location*)	Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
P-A2-050406-276 -W-Area	2ND FL BR 2	FLOOR	WOOD	1.00	227
P-A2-050406-277 -W-Area	2ND FL BR 1	FLOOR	WOOD	1.00	334
P-A2-050406-278 -W-Area	2ND FL BR 1	W-SILL	WOOD	0.88	263
C-B2-050406-282 -W-OS	3RD FL BR 3	FLOOR	WOOD	1.00	226

Clearance Wipe Sampling

Wipe Sampling

Sample No. (P-*ScenariloD-Date-##*-W-*Location*)	Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-A2-050406-284 -W-Area	2ND FL BR 2	FLOOR	WOOD	1.00	242
C-A2-050406-285 -W-Area	2ND FL BR 1	FLOOR	WOOD	1.00	271
C-A2-050406-286 -W-Area	2ND FL BR 1	W-SILL	WOOD	0.75	200
C-F1-050406-287 -W-OS	3RD FL BR 3	FLOOR	WOOD	1.00	219

OS - Outside of work area

Surface type - wood, tile, linoleum, concrete, carpet, metal, etc.

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	WALL DEMOLITION
Work Practice	mod LSWP

DATE	5/4/2006
LOCATION	MILWAUKEE, WI
SCENARIO	**A2**
Work Area Preparation	
Pre-cleaning w/ wet wiping and vac	**X**
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	
Reusable Drop Cloth	
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	**X**
Disposable Mesh	
Staple Gun	
Tape	**X**
Utility Knife	**X**
Tack Pad	
Disposable Towels for Wipe Down	
Work Practices/Tools	
Hammers/Prybars	**X**
Misting Bottle	**X**
Sandpaper/Sanding Sponge	
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	
HEPA-equipped Vacuum	
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	
Power Washing Equipment	
Needle Gun connected to HEPA Vacuum	
Belt Sander	
Orbital Sander	
Other Non-ventilated Power Tools	**X**
Heavy Duty Garbage Bags	**X**
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	**X**
Wet Wipe Surfaces or Use Detergent	**X**
Reusable Wet Mop w/ One Bucket	**X**
Reusable Wet Mop w/ Two Buckets	
Use Swifter or Similar Disposable Wet Mop	**X**
Disposable Hand Towels	**X**
Pump Sprayer	
HEPA-equipped Vacuum	**X**
Shop or Industrial Vacuum	
Brooms	
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	**X**
Disposable Shoe Covers	**X**
Safety Glasses	**X**
Disposable Towels	**X**

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

Date	5/4/2006		**Hygienist**	

	Event	**ID**	**Activity**	**Work Practice**
Scenario	51	B2	WALL MODIFICATION (OUTLET INSTALLATION)	mod LSWP

Site Address	City, State, Zip	Milwaukee, WI

Structure Type		Single Family	X	Apartment	Approx. Construction Date (Yr)	1890
		Town House		Other (describe)	Approx. Square Footage	5000
		Condomium			No. of Separate Rooms	18

Location of Work w/in structure	3RD FL BR 1

Lead Content of Affected Surfaces				**Work Statistics**	
Surface	XRF Result		% Lead		
WALL 4	**4.4**			No. of Workers	1
WALL 3	**4.5**	and/or		Start Time	955
				Stop Time	1045
				Total Time (hrs)	0.8
				Tools and Equipment Used	
				Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)	Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-A2-050306-097 -A-Area	3RD FL BR 1	16669	16:08	2.53	17:08	2.57	60	2.53	151.8	<13
D-A2-050306-084 -A-OS	3RD FL BR 3	18110	13:07	2.54	15:09	2.49	122	2.49	303.8	<7

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)	Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D-B2-050406-108 -A-Area	3RD FL BR 1	17180	9:58	2.60	10:49	2.59	51	2.59	132.1	<15
D-B2-050406-109 -A-PBZ	WORKER	18110	9:58	2.60	10:49	2.59	51	2.59	132.1	<15
D-B2-050406-110 -A-OS	3RD FL BR 3	18104	10:00	2.59	11:51	2.63	111	2.59	287.5	<7

Post-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)	Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-B2-050406-111 -A-Area	3RD FL BR 1	17180	10:48	2.59	11:50	2.59	62	2.59	160.6	<12

Pre-work Wipe Sampling

Wipe Sampling

Sample No. (P-*ScenariloD-Date-##*-W-*Location*)	Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-A2-050306-306 -W-Area	3RD FL BR 1	FLOOR E	WOOD	1.00	163
C-A2-050306-307 -W-Area	3RD FL BR 1	FLOOR N	WOOD	1.00	151
C-A2-050306-308 -W-Area	3RD FL BR 1	FLOOR S	WOOD	1.00	3800
C-A2-050306-309 -W-OS	3RD FL BR 3	FLOOR E	WOOD	1.00	165

Clearance Wipe Sampling

Wipe Sampling

Sample No. (P-*ScenariloD-Date-##*-W-*Location*)	Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-B2-050406-279 -W-Area	3RD FL BR 1	FLOOR	WOOD	1.00	68.7
C-B2-050406-280 -W-Area	3RD FL BR 1	FLOOR	WOOD	1.00	314
C-B2-050406-281 -W-Area	3RD FL BR 1	BANISTER	WOOD	0.37	<27
C-B2-050406-282 -W-OS	3RD FL BR 3	FLOOR	WOOD	1.00	226

OS - Outside of work area

Surface type - wood, tile, linoleum, concrete, carpet, metal, etc.

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	WALL MOD - OUTLET INSTALLATION
Work Practice	mod LSWP

DATE	5/4/2006
LOCATION	MILWAUKEE, WI
SCENARIO	**B2**
Work Area Preparation	
Pre-cleaning w/ wet wiping and vac	
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	
HVAC Openings Sealed	
Reusable Drop Cloth	
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	**X**
Disposable Mesh	
Staple Gun	
Tape	**X**
Utility Knife	**X**
Tack Pad	
Disposable Towels for Wipe Down	
Work Practices/Tools	
Hammers/Prybars	**X**
Misting Bottle	
Sandpaper/Sanding Sponge	**X**
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	
HEPA-equipped Vacuum	
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	
Power Washing Equipment	
Needle Gun connected to HEPA Vacuum	
Belt Sander	
Orbital Sander	
Other Non-ventilated Power Tools	**X**
Heavy Duty Garbage Bags	**X**
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	**X**
Wet Wipe Surfaces or Use Detergent	
Reusable Wet Mop w/ One Bucket	
Reusable Wet Mop w/ Two Buckets	
Use Swifter or Similar Disposable Wet Mop	**X**
Disposable Hand Towels	
Pump Sprayer	
HEPA-equipped Vacuum	
Shop or Industrial Vacuum	
Brooms	
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	**X**
Disposable Shoe Covers	**X**
Safety Glasses	**X**
Disposable Towels	

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

Date	5/4/2006	**Hygienist**	

	Event	**ID**	**Activity**	**Work Practice**
Scenario	52	C2	WINDOW REMOVAL	mod LSWP

Site Address	City, State, Zip	Milwaukee, WI

Structure Type		Single Family	X	Apartment	Approx. Construction Date (Yr)	1890
		Town House		Other (describe)	Approx. Square Footage	5000
		Condomium			No. of Separate Rooms	18

Location of Work w/in structure	DINING ROOM

Lead Content of Affected Surfaces				**Work Statistics**	
Surface	XRF Result		% Lead		
WINDOW SASH	**11**			No. of Workers	1
WINDOW SASH	**7.5**	and/or		Start Time	1130
				Stop Time	1503
				Total Time (hrs)	3.5
				Tools and Equipment Used	
				Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
P-C2-050106-013	-A-Area	DINING ROOM	16669	15:42	2.63	16:21	2.64	39	2.63	102.6	<20
P-C3-050106-004	-A-OS	GRND FL	17184	15:10	2.66	15:56	2.66	46	2.66	122.4	<16

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D-C2-050406-101	-A-Area	DINING ROOM	17179	11:30	2.66	15:29	2.67	239	2.66	635.7	<3
D-C2-050406-102	-A-PBZ	WORKER	16669	11:31	2.59	15:27	2.60	236	2.59	611.2	7
D-A2-050406-107	-A-OS	LR	17451	9:52	2.62	16:35	2.60	403	2.60	1047.8	<2

Post-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-C2-050406-120	-A-Area	DINING ROOM	17179	15:30	2.67	16:32	2.66	62	2.66	164.9	<12

Pre-work Wipe Sampling

Wipe Sampling

Sample No. (P-*ScenariloD-Date -##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
P-C2-050206-233	-W-Area	DINING ROOM	FLOOR N	WOOD	1.00	681
P-C2-050206-234	-W-Area	DINING ROOM	FLOOR S	WOOD	1.00	720
P-C2-050206-235	-W-Area	DINING ROOM	W-SILL	WOOD	0.50	5120
P-C3-050206-211	-W-OS	GROUND FL	FLOOR	WOOD	1.00	800

Clearance Wipe Sampling

Wipe Sampling

Sample No. (P-*ScenariloD-Date -##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-C2-050406-295	-W-Area	DINING ROOM	FLOOR	WOOD	1.00	180
C-C2-050406-296	-W-Area	DINING ROOM	W-SILL	WOOD	0.57	523
C-C2-050406-297	-W-Area	DINING ROOM	FLOOR	WOOD	1.00	239
C-C2-050406-298	-W-OS	LR	FLOOR	WOOD	1.00	1210

OS - Outside of work area

Surface type - wood, tile, linoleum, concrete, carpet, metal, etc.

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	WINDOW REMOVAL
Work Practice	mod LSWP

DATE	5/4/2006
LOCATION	MILWAUKEE, WI
SCENARIO	**C2**
Work Area Preparation	
Pre-cleaning w/ wet wiping and vac	
Rope	
Barrier Tape	
Saw Horses	**X**
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	
Reusable Drop Cloth	
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	**X**
Disposable Mesh	
Staple Gun	
Tape	**X**
Utility Knife	**X**
Tack Pad	
Disposable Towels for Wipe Down	
Work Practices/Tools	
Hammers/Prybars	**X**
Misting Bottle	
Sandpaper/Sanding Sponge	
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	
HEPA-equipped Vacuum	
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	
Power Washing Equipment	
Needle Gun connected to HEPA Vacuum	
Belt Sander	
Orbital Sander	
Other Non-ventilated Power Tools	**X**
Heavy Duty Garbage Bags	**X**
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	**X**
Wet Wipe Surfaces or Use Detergent	**X**
Reusable Wet Mop w/ One Bucket	
Reusable Wet Mop w/ Two Buckets	
Use Swifter or Similar Disposable Wet Mop	**X**
Disposable Hand Towels	**X**
Pump Sprayer	
HEPA-equipped Vacuum	**X**
Shop or Industrial Vacuum	
Brooms	
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	**X**
Disposable Shoe Covers	**X**
Safety Glasses	**X**
Disposable Towels	**X**

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

Date	5/4/2006		**Hygienist**	

	Event	**ID**	**Activity**	**Work Practice**
Scenario	53	F1	SURFACE PREP (SAND STAIR TREADS)	ROUTINE

Site Address	City, State, Zip	Milwaukee, WI

Structure Type		Single Family	X	Apartment	Approx. Construction Date (Yr)	1890
		Town House		Other (describe)	Approx. Square Footage	5000
		Condomium			No. of Separate Rooms	18

Location of Work w/in structure	STAIRWELL

Lead Content of Affected Surfaces				**Work Statistics**	
Surface	XRF Result		% Lead		
STAIR TREADS	**13**			No. of Workers	1
		and/or		Start Time	1405
				Stop Time	1455
				Total Time (hrs)	0.8
				Tools and Equipment Used	
				Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (*P-ScenarioID-Date-##* -A-*Type*)			Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
P-	F1-050106-009	-A-Area	STAIRWELL	17185	15:30	2.68	16:10	2.67	40	2.67	106.8	<19
P-	B1-050106-001	-A-OS	3RD FL BR 3	17180	14:55	2.65	15:48	2.63	53	2.63	139.4	<14
P-	C3-050106-004	-A-OS	GRND FL	17184	15:10	2.66	15:56	2.66	46	2.66	122.4	<16

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (*P-ScenarioID-Date-##* -A-*Type*)			Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D-	F1-050406-112	-A-Area	STAIRWELL	17185	14:05	2.67	14:57	2.61	52	2.61	135.7	45
C-	B2-050406-111	-A-Area	3RD FL BR 1	17180	10:48	2.59	11:50	2.59	62	2.59	160.6	<12
D-	F1-050406-113	-A-PBZ	WORKER	17863	14:04	2.60	14:55	2.53	51	2.53	129.0	145
D-	F1-050406-114	-A-OS	3RD FL BR 3	18104	14:01	2.66	16:17	2.62	136	2.62	356.3	<6

Post-Work Sampling

Air Sampling

Sample No. (*P-ScenarioID-Date-##* -A-*Type*)			Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-	F1-050406-118	-A-Area	STAIRWELL	17185	14:59	2.61	16:14	2.68	75	2.61	195.8	<10
C-	F1-050406-119	-A-Area	3RD FL BR 1	17180	15:00	2.56	16:16	2.63	76	2.56	194.6	<10

Pre-work Wipe Sampling

Wipe Sampling

Sample No. (*P-ScenarioID-Date-##*-W-*Location*)			Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-	B2-050406-281	-W-Area	3RD FL BR 1	BANISTER	WOOD	0.37	<27
C-	B2-050406-279	-W-Area	3RD FL BR 1	FLOOR	WOOD	1.00	68.7
C-	B2-050406-280	-W-Area	3RD FL BR 1	FLOOR	WOOD	1.00	314
P-	F1-050106-208	-W-Area	STAIRWELL	TOP TREAD	WOOD	0.63	645
P-	F1-050106-209	-W-Area	STAIRWELL	BOTTOM TREAD	WOOD	0.63	1630
P-	F1-050106-210	-W-Area	STAIRWELL	LANDING	LINOLEUM	1.00	341
P-	B1-050106-207	-W-OS	3RD FL BR 3	FLOOR	WOOD	1.00	126

Clearance Wipe Sampling

Wipe Sampling

Sample No. (*P-ScenarioID-Date-##*-W-*Location*)			Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-	F1-050406-288	-W-Area	3RD FL BR 1	BANISTER	WOOD	0.26	1100
C-	F1-050406-289	-W-Area	3RD FL BR 1	FLOOR	WOOD	1.00	707
C-	F1 -050406-290	-W-Area	3RD FL BR 1	FLOOR	WOOD	1.00	2020
C-	F1-050406-291	-W-Area	STAIRWELL	TREAD	WOOD	0.71	476
C-	F1-050406-292	-W-Area	STAIRWELL	W-SILL	WOOD	0.46	3200
C-	F1-050406-293	-W-Area	STAIRWELL	FLOOR	LINOLEUM	1.00	1520
C-	F1-050406-287	-W-OS	3RD FL BR 3	FLOOR	WOOD	1.00	219

OS - Outside of work area

Surface type - wood, tile, linoleum, concrete, carpet, metal, etc.

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	SURFACE PREP (SAND STAIR TREADS)
Work Practice	ROUTINE

DATE	5/4/2006
LOCATION	MILWAUKEE, WI
SCENARIO	**F1**
Work Area Preparation	
Pre-cleaning w/ wet wiping and vac	
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	
Reusable Drop Cloth	
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	
Disposable Mesh	
Staple Gun	
Tape	
Utility Knife	
Tack Pad	
Disposable Towels for Wipe Down	
Work Practices/Tools	
Hammers/Prybars	
Misting Bottle	
Sandpaper/Sanding Sponge	
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	
HEPA-equipped Vacuum	
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	
Power Washing Equipment	
Needle Gun connected to HEPA Vacuum	
Belt Sander	
Orbital Sander	**X**
Other Non-ventilated Power Tools	
Heavy Duty Garbage Bags	
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	
Wet Wipe Surfaces or Use Detergent	
Reusable Wet Mop w/ One Bucket	
Reusable Wet Mop w/ Two Buckets	
Use Swifter or Similar Disposable Wet Mop	
Disposable Hand Towels	
Pump Sprayer	
HEPA-equipped Vacuum	
Shop or Industrial Vacuum	**X**
Brooms	
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	**X**
Disposable Shoe Covers	**X**
Safety Glasses	
Disposable Towels	**X**

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

Date	5/5/2006	**Hygienist**	

	Event	**ID**	**Activity**	**Work Practice**
Scenario	54	B2	REMOVE SHELF SUPPORTS	mod LSWP

Site Address	City, State, Zip	Milwaukee, WI

Structure Type							
		Single Family	X	Apartment		Approx. Construction Date (Yr)	1890
		Town House		Other (describe)		Approx. Square Footage	5000
		Condomium				No. of Separate Rooms	18

Location of Work w/in structure	CLOSET

Lead Content of Affected Surfaces				**Work Statistics**	
Surface	XRF Result		% Lead		
Wall	**25.3**			No. of Workers	1
		and/or		Start Time	901
				Stop Time	952
				Total Time (hrs)	0.8
				Tools and Equipment Used	
				Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
P-B2-050206-015	-A-Area	CLOSET	16612	7:35	2.61	8:31	2.66	56	2.61	146.2	<14
P-C3-050206-016	-A-OS	GRND FL	17451	7:39	2.63	8:48	2.68	69	2.63	181.5	<11

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D-B2-050506-126	-A-Area	CLOSET	18104	9:00	2.63	9:50	2.66	50	2.63	131.5	<15
D-B2-050506-127	-A-PBZ	WORKER	17863	9:01	2.58	9:52	2.53	51	2.53	129.0	<16
D-C1-050506-125	-A-OS	2ND FL BR 2	16612	9:06	2.61	11:38	2.61	152	2.61	396.7	<5

Post-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-B2-050506-134	-A-Area	CLOSET	18104	9:51	2.66	11:27	2.64	96	2.64	253.4	<8

Pre-work Wipe Sampling

Wipe Sampling

Sample No. (P-*ScenariloD-Date -##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
P-B2-050206-230	-W-Area	CLOSET	FLOOR W	WOOD	1.00	1320
P-B2-050206-237	-W-Area	2ND FL STAIRWAY	W-SILL	WOOD	0.33	3090
P-B2-050206-231	-W-Area	CLOSET	FLOOR E	WOOD	1.00	4710
C-F1-050406-287	-W-OS	3RD FL BR 3	FLOOR	WOOD	1.00	219

Clearance Wipe Sampling

Wipe Sampling

Sample No. (P-*ScenariloD-Date -##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-B2-050506-302	-W-Area	CLOSET	FLOOR	WOOD	1.00	2670
C-B2-050506-303	-W-Area	2ND FL STAIRWAY	W-SILL	WOOD	0.73	2700
C-B2-050506-304	-W-Area	CLOSET	FLOOR	WOOD	1.00	1530
C-B2-050506-329	-W-OS	2ND FL BR 2	FLOOR	WOOD	1.00	186

OS - Outside of work area

Surface type - wood, tile, linoleum, concrete, carpet, metal, etc.

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	REMOVE SHELF SUPPORTS
Work Practice	mod LSWP

DATE	5/5/2006
LOCATION	MILWAUKEE, WI
SCENARIO	**B2**
Work Area Preparation	
Pre-cleaning w/ wet wiping and vac	
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	
HVAC Openings Sealed	
Reusable Drop Cloth	
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	**X**
Disposable Mesh	
Staple Gun	
Tape	**X**
Utility Knife	
Tack Pad	
Disposable Towels for Wipe Down	
Work Practices/Tools	
Hammers/Prybars	**X**
Misting Bottle	
Sandpaper/Sanding Sponge	
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	
HEPA-equipped Vacuum	
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	
Power Washing Equipment	
Needle Gun connected to HEPA Vacuum	
Belt Sander	
Orbital Sander	
Other Non-ventilated Power Tools	
Heavy Duty Garbage Bags	**X**
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	**X**
Wet Wipe Surfaces or Use Detergent	
Reusable Wet Mop w/ One Bucket	
Reusable Wet Mop w/ Two Buckets	
Use Swifter or Similar Disposable Wet Mop	
Disposable Hand Towels	
Pump Sprayer	
HEPA-equipped Vacuum	
Shop or Industrial Vacuum	
Brooms	
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	**X**
Disposable Shoe Covers	**X**
Safety Glasses	**X**
Disposable Towels	**X**

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

Date	5/5/2006		**Hygienist**	

	Event	**ID**	**Activity**	**Work Practice**
Scenario	55	B2	CEILING MODIFICATION (RECESSED LIGHTING)	mod LSWP

Site Address	City, State, Zip	Milwaukee, WI

Structure Type		Single Family	X	Apartment	Approx. Construction Date (Yr)	1890
		Town House		Other (describe)	Approx. Square Footage	5000
		Condomium			No. of Separate Rooms	18

Location of Work w/in structure	3RD FL BR 1

Lead Content of Affected Surfaces				**Work Statistics**	
Surface	XRF Result		% Lead	No. of Workers	2
CEILING	**2.9**			Start Time	1220
		and/or		Stop Time	1311
				Total Time (hrs)	0.8
				Tools and Equipment Used	
				Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-E2-050506-138	-A-Area	3RD FL BR 1	16609	10:41	2.61	11:44	2.58	63	2.58	162.5	<12

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D-B2-050506-145	-A-Area	3RD FL BR 1	16609	12:19	2.58	13:10	2.56	51	2.56	130.6	<15
D-B2-050506-146	-A-PBZ	WORKER	16669	12:20	2.57	13:11	2.60	51	2.57	131.1	26
D-B2-050506-147	-A-PBZ	WORKER	16670	12:20	2.68	13:12	2.65	52	2.65	137.8	23
D-B2-050506-148	-A-OS	3RD FL BR 3	17180	12:04	2.62	14:08	2.59	124	2.59	321.2	<6

Post-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-B2-050506-153	-A-Area	3RD FL BR 1	16609	13:10	2.56	14:11	2.56	61	2.56	156.2	<13

Pre-work Wipe Sampling

Wipe Sampling

Sample No. (P-*ScenariloD-Date-##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-E2-050506-310	-W-Area	3RD FL BR 1	FLOOR	WOOD	1.00	5020
C-E2-050506-311	-W-Area	3RD FL BR 1	FLOOR	WOOD	1.00	368
C-E2-050506-309	-W-Area	3RD FL BR 1	BANISTER	WOOD	0.36	733
C-F1-050406-287	-W-OS	3RD FL BR 3	FLOOR	WOOD	1.00	219

Clearance Wipe Sampling

Wipe Sampling

Sample No. (P-*ScenariloD-Date-##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-B2-050506-320	-W-Area	3RD FL BR 1	FLOOR	WOOD	1.00	295
C-B2-050506-321	-W-Area	3RD FL BR 1	FLOOR	WOOD	1.00	72.9
C-B2-050506-322	-W-Area	3RD FL BR 1	BANISTER	WOOD	0.24	342
C-B2-050506-319	-W-OS	3RD FL BR 3	FLOOR	WOOD	1.00	197

OS - Outside of work area

Surface type - wood, tile, linoleum, concrete, carpet, metal, etc.

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	CEILING MODIFICATION (RECESSED LIGHTS)
Work Practice	mod LSWP

DATE	5/5/2006
LOCATION	MILWAUKEE, WI
SCENARIO	**B2**
Work Area Preparation	
Pre-cleaning w/ wet wiping and vac	
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	
Reusable Drop Cloth	
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	**X**
Disposable Mesh	
Staple Gun	
Tape	**X**
Utility Knife	**X**
Tack Pad	
Disposable Towels for Wipe Down	
Work Practices/Tools	
Hammers/Prybars	**X**
Misting Bottle	
Sandpaper/Sanding Sponge	
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	
HEPA-equipped Vacuum	**X**
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	
Power Washing Equipment	
Needle Gun connected to HEPA Vacuum	
Belt Sander	
Orbital Sander	
Other Non-ventilated Power Tools	**X**
Heavy Duty Garbage Bags	**X**
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	**X**
Wet Wipe Surfaces or Use Detergent	
Reusable Wet Mop w/ One Bucket	
Reusable Wet Mop w/ Two Buckets	
Use Swifter or Similar Disposable Wet Mop	**X**
Disposable Hand Towels	**X**
Pump Sprayer	
HEPA-equipped Vacuum	**X**
Shop or Industrial Vacuum	
Brooms	
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	**X**
Disposable Shoe Covers	**X**
Safety Glasses	**X**
Disposable Towels	**X**

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

Date	5/5/2006	Hygienist	

	Event	ID	Activity	Work Practice
Scenario	56	C1	WINDOW MODIFICATION	ROUTINE

Site Address	City, State, Zip	Milwaukee, WI

Structure Type							
		Single Family	X	Apartment	Approx. Construction Date (Yr)	1890
		Town House		Other (describe)	Approx. Square Footage	5000
		Condomium			No. of Separate Rooms	18

Location of Work w/in structure	LIVING ROOM

Lead Content of Affected Surfaces				Work Statistics	
Surface	XRF Result		% Lead		
WINDOW SILL	3.7			No. of Workers	2
WINDOW SASH	18.9	and/or		Start Time	905
WINDOW	22.5			Stop Time	1030
				Total Time (hrs)	1.5
				Tools and Equipment Used	
				Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-F2-050306-092	-A-Area	LR S	16666	15:03	2.61	16:19	2.60	76	2.60	197.6	<10
C-F2-050306-093	-A-Area	LR N	16609	15:05	2.55	16:21	2.58	76	2.55	193.8	<10
D-B1-050306-091	-A-OS	DINING ROOM	17180	13:50	2.56	16:44	2.59	174	2.56	445.4	<10

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D-C1-050506-121	-A-Area	LR S	16666	9:02	2.64	10:25	2.67	83	2.64	219.1	32
D-C1-050506-122	-A-Area	LR N	17451	9:02	2.66	10:30	2.63	88	2.63	231.4	56
D-C1-050506-123	-A-PBZ	WORKER	16608	9:05	2.55	10:29	2.53	84	2.53	212.5	147
D-C1-050506-124	-A-PBZ	WORKER	17185	9:04	2.64	10:27	2.60	83	2.60	215.8	8
D-C1-050506-125	-A-OS	2ND FL BR 2	16612	9:06	2.61	11:38	2.61	152	2.61	396.7	<5

Post-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-C1-050506-135	-A-Area	LR S	16666	10:26	2.67	11:30	2.64	64	2.64	169.0	<12
C-C1-050506-136	-A-Area	LR N	17451	10:31	2.63	11:32	2.62	61	2.62	159.8	<13

Pre-work Wipe Sampling

Wipe Sampling

Sample No. (P-*ScenariloD-Date -##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
P-C1-050406-299	-W-Area	LR	W-SILL	WOOD	0.63	1030
P-C1-050406-300	-W-Area	LR	FLOOR	WOOD	1.00	402
P-C1-050406-301	-W-Area	LR	FLOOR	WOOD	1.00	411
C-C2-050406-298	-W-OS	LR	FLOOR	WOOD	1.00	1210

Clearance Wipe Sampling

Wipe Sampling

Sample No. (P-*ScenariloD-Date -##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-C1-050506-305	-W-Area	LR	FLOOR	WOOD	1.00	4560
C-C1-050506-306	-W-Area	LR	W-SILL	WOOD	0.64	3300
C-C1-050506-307	-W-Area	LR	FLOOR	WOOD	1.00	3500
C-B2-050506-329	-W-OS	2ND FL BR 2	FLOOR	WOOD	1.00	186

OS - Outside of work area

Surface type - wood, tile, linoleum, concrete, carpet, metal, etc.

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	WINDOW MODIFICATION
Work Practice	ROUTINE

DATE	5/5/2006
LOCATION	MILWAUKEE, WI
SCENARIO	**C1**
Work Area Preparation	
Pre-cleaning w/ wet wiping and vac	**X**
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	
Reusable Drop Cloth	
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	**X**
Disposable Mesh	
Staple Gun	
Tape	**X**
Utility Knife	
Tack Pad	
Disposable Towels for Wipe Down	
Work Practices/Tools	
Hammers/Prybars	**X**
Misting Bottle	
Sandpaper/Sanding Sponge	**X**
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	
HEPA-equipped Vacuum	
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	
Power Washing Equipment	
Needle Gun connected to HEPA Vacuum	
Belt Sander	
Orbital Sander	
Other Non-ventilated Power Tools	
Heavy Duty Garbage Bags	**X**
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	**X**
Wet Wipe Surfaces or Use Detergent	
Reusable Wet Mop w/ One Bucket	
Reusable Wet Mop w/ Two Buckets	
Use Swifter or Similar Disposable Wet Mop	
Disposable Hand Towels	
Pump Sprayer	
HEPA-equipped Vacuum	
Shop or Industrial Vacuum	
Brooms	**X**
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	**X**
Disposable Shoe Covers	**X**
Safety Glasses	**X**
Disposable Towels	**X**

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

Date	5/5/2006		**Hygienist**	

	Event	**ID**	**Activity**	**Work Practice**
Scenario	57	D2	CABINET REMOVAL	mod LSWP

Site Address	City, State, Zip	Milwaukee, WI

Structure Type		Single Family	X	Apartment	Approx. Construction Date (Yr)	1890
		Town House		Other (describe)	Approx. Square Footage	5000
		Condomium			No. of Separate Rooms	18

Location of Work w/in structure	KITCHEN

Lead Content of Affected Surfaces				**Work Statistics**	
Surface	XRF Result		% Lead		
CABINETS	**9.4**			No. of Workers	1
CABINETS	**5.2**	and/or		Start Time	856
				Stop Time	1050
				Total Time (hrs)	2
				Tools and Equipment Used	
				Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (*P-ScenarioID-Date-## -A-Type*)	Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
P-D2-050106-012 -A-Area	KITCHEN	18104	15:40	2.67	16:19	2.66	39	2.66	103.7	<19
P-C3-050206-016 -A-OS	GRND FL	17451	7:39	2.63	8:48	2.68	69	2.63	181.5	<11

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (*P-ScenarioID-Date-## -A-Type*)	Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D-D2 -050506-128 -A-Area	KITCHEN	18105	8:53	2.60	10:49	2.64	116	2.60	301.6	21
D-D2-050506-129 -A-PBZ	WORKER	17184	8:56	2.63	10:50	2.58	114	2.58	294.1	49
D-C1-050506-125 -A-OS	2ND FL BR 2	16612	9:06	2.61	11:38	2.61	152	2.61	396.7	<5

Post-Work Sampling

Air Sampling

Sample No. (*P-ScenarioID-Date-## -A-Type*)	Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-D2-050506-139 -A-Area	KITCHEN	18105	10:49	2.64	12:10	2.63	81	2.63	213.0	<9

Pre-work Wipe Sampling

Wipe Sampling

Sample No. (*P-ScenariloD-Date -##-W-Location*)	Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
P-D2-050206-224 -W-Area	KITCHEN	FLOOR S	WOOD	1.00	3520
P-D2-050206-225 -W-Area	KITCHEN	FLOOR N	WOOD	1.00	4060
P-D2-050206-226 -W-Area	KITCHEN	W-SILL	WOOD	0.46	19600
P-C3-050206-211 -W-OS	GROUND FL	FLOOR	WOOD	1.00	800

Clearance Wipe Sampling

Wipe Sampling

Sample No. (*P-ScenariloD-Date -##-W-Location*)	Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-D2-050506-315 -W-Area	KITCHEN	FLOOR	WOOD	1.00	1490
C-D2-050506-316 -W-Area	KITCHEN	FLOOR	WOOD	1.00	403
C-D2-050506-317 -W-Area	KITCHEN	W-SILL	WOOD	0.88	1400
C-B2-050506-329 -W-OS	2ND FL BR 2	FLOOR	WOOD	1.00	186

OS - Outside of work area

Surface type - wood, tile, linoleum, concrete, carpet, metal, etc.

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	CABINET REMOVAL
Work Practice	mod LSWP

DATE	5/5/2006
LOCATION	MILWAUKEE, WI
SCENARIO	**D2**
Work Area Preparation	
Pre-cleaning w/ wet wiping and vac	
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	
Reusable Drop Cloth	
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	**X**
Disposable Mesh	
Staple Gun	**X**
Tape	**X**
Utility Knife	
Tack Pad	
Disposable Towels for Wipe Down	**X**
Work Practices/Tools	
Hammers/Prybars	**X**
Misting Bottle	**X**
Sandpaper/Sanding Sponge	
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	
HEPA-equipped Vacuum	
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	
Power Washing Equipment	
Needle Gun connected to HEPA Vacuum	
Belt Sander	
Orbital Sander	
Other Non-ventilated Power Tools	**X**
Heavy Duty Garbage Bags	**X**
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	**X**
Wet Wipe Surfaces or Use Detergent	
Reusable Wet Mop w/ One Bucket	
Reusable Wet Mop w/ Two Buckets	
Use Swifter or Similar Disposable Wet Mop	**X**
Disposable Hand Towels	
Pump Sprayer	
HEPA-equipped Vacuum	**X**
Shop or Industrial Vacuum	
Brooms	
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	**X**
Disposable Shoe Covers	**X**
Safety Glasses	**X**
Disposable Towels	**X**

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

Date	5/5/2006	**Hygienist**	

	Event	**ID**	**Activity**	**Work Practice**
Scenario	58	E2	BASEBOARD REMOVAL	mod LSWP

Site Address	City, State, Zip	Milwaukee, WI

Structure Type							
		Single Family	X	Apartment	Approx. Construction Date (Yr)	1890
		Town House		Other (describe)	Approx. Square Footage	5000
		Condomium			No. of Separate Rooms	18

Location of Work w/in structure	BATH

Lead Content of Affected Surfaces				**Work Statistics**	
Surface	XRF Result		% Lead		
BASEBOARD	**7.4**			No. of Workers	1
		and/or		Start Time	1226
				Stop Time	1325
				Total Time (hrs)	1
				Tools and Equipment Used	
				Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (*P-ScenarioID-Date-## -A-Type*)	Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-D3-050306-080 -A-Area	BATH	17179	12:43	2.63	13:48	2.63	65	2.63	171.0	<12
D-050306-068 -A-OS	KITCHEN	18112	10:05	2.64	13:51	2.63	226	2.63	594.4	<3
D-050306-069 -A-OS	DINING ROOM	17180	10:05	2.65	13:49	2.65	224	2.65	593.6	<3

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (*P-ScenarioID-Date-## -A-Type*)	Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D-E2-050506-149 -A-Area	BATH	18104	12:26	2.64	13:21	2.63	55	2.63	144.7	<14
D-E2-050506-150 -A-PBZ	WORKER	17184	12:26	2.58	13:25	2.59	59	2.58	152.2	<13
D-E2-050506-144 -A-OS	2ND FL BR 2	16612	12:05	2.61	14:20	2.62	135	2.61	352.4	<6

Post-Work Sampling

Air Sampling

Sample No. (*P-ScenarioID-Date-## -A-Type*)	Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-E2-050506-154 -A-Area	BATH	18104	13:21	2.63	14:23	2.65	62	2.63	163.1	<12

Pre-work Wipe Sampling

Wipe Sampling

Sample No. (*P-ScenarioID-Date -##-W-Location*)	Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-D3-050306-280 -W-Area	BATH	W-SILL	WOOD	0.42	136
C-D3-050306-281 -W-Area	BATH	FLOOR W	LINOLEUM	1.00	401
C-D3-050306-282 -W-Area	BATH	FLOOR E	LINOLEUM	1.00	354
C-D3-050306-283 -W-OS	KITCHEN	FLOOR S	WOOD	1.00	1470

Clearance Wipe Sampling

Wipe Sampling

Sample No. (*P-ScenarioID-Date -##-W-Location*)	Location	Surface	Surface Type	Sampled (ft^2)	Result (ug/ft^2)
C-E2-050506-326 -W-Area	BATH	W-SILL	WOOD	0.65	81.8
C-E2-050506-327 -W-Area	BATH	FLOOR	LINOLEUM	1.00	347
C-E2-050506-328 -W-Area	BATH	FLOOR	LINOLEUM	1.00	164
C-B2-050506-329 -W-OS	2ND FL BR 2	FLOOR	WOOD	1.00	186

OS - Outside of work area

Surface type - wood, tile, linoleum, concrete, carpet, metal, etc.

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	BASEBOARD REMOVAL
Work Practice	mod LSWP

DATE	5/5/2006
LOCATION	MILWAUKEE, WI
SCENARIO	**E2**
Work Area Preparation	
Pre-cleaning w/ wet wiping and vac	
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	
Reusable Drop Cloth	
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	
Disposable Mesh	
Staple Gun	**X**
Tape	**X**
Utility Knife	**X**
Tack Pad	
Disposable Towels for Wipe Down	
Work Practices/Tools	
Hammers/Prybars	**X**
Misting Bottle	
Sandpaper/Sanding Sponge	
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	
HEPA-equipped Vacuum	
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	
Power Washing Equipment	
Needle Gun connected to HEPA Vacuum	
Belt Sander	
Orbital Sander	
Other Non-ventilated Power Tools	
Heavy Duty Garbage Bags	**X**
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	
Wet Wipe Surfaces or Use Detergent	
Reusable Wet Mop w/ One Bucket	
Reusable Wet Mop w/ Two Buckets	
Use Swifter or Similar Disposable Wet Mop	**X**
Disposable Hand Towels	
Pump Sprayer	
HEPA-equipped Vacuum	**X**
Shop or Industrial Vacuum	
Brooms	
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	**X**
Disposable Shoe Covers	**X**
Safety Glasses	**X**
Disposable Towels	

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

Date	5/5/2006		**Hygienist**	

	Event	**ID**	**Activity**	**Work Practice**
Scenario	59	E2	STAIR REPLACEMENT	mod LSWP

Site Address	City, State, Zip	Milwaukee, WI

Structure Type		Single Family	X	Apartment	Approx. Construction Date (Yr)	1890
		Town House		Other (describe)	Approx. Square Footage	5000
		Condomium			No. of Separate Rooms	18

Location of Work w/in structure	STAIRWELL

Lead Content of Affected Surfaces				**Work Statistics**	
Surface	XRF Result		% Lead		
TREAD	**13**			No. of Workers	2
RISER	**11.8**	and/or		Start Time	858
STRINGER	**11.3**			Stop Time	1028
				Total Time (hrs)	1.5
				Tools and Equipment Used	
				Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-F1-050406-118	-A-Area	STAIRWELL	17185	14:59	2.61	16:14	2.68	75	2.61	195.8	<10
D-F1-050406-114	-A-OS	3RD FL BR 3	18104	14:01	2.66	16:17	2.62	136	2.62	356.3	<6

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D-E2-050506-130	-A-Area	STAIRWELL	16670	8:58	2.67	10:36	2.68	98	2.67	261.7	140
D-E2-050506-132	-A-Area	3RD FL BR 1	16609	8:59	2.60	10:40	2.61	101	2.60	262.6	19
D-E2-050506-131	-A-PBZ	WORKER	16669	8:57	2.63	10:37	2.57	100	2.57	257.0	31
D-E2-050506-133	-A-OS	3RD FL BR 3	17180	8:46	2.61	11:47	2.62	181	2.61	472.4	<4

Post-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-E2-050506-137	-A-Area	STAIRWELL	16670	10:36	2.68	11:41	2.68	65	2.68	174.2	<12
C-E2-050506-138	-A-Area	3RD FL BR 1	16609	10:41	2.61	11:44	2.58	63	2.58	162.5	<12

Pre-work Wipe Sampling

Wipe Sampling

Sample No. (P-*ScenariloD-Date-##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-F1-050406-288	-W-Area	3RD FL BR 1	BANISTER	WOOD	0.26	1100
C-F1-050406-289	-W-Area	3RD FL BR 1	FLOOR	WOOD	1.00	707
C-F1 -050406-290	-W-Area	3RD FL BR 1	FLOOR	WOOD	1.00	2020
C-F1-050406-291	-W-Area	STAIRWELL	TREAD	WOOD	0.71	476
C-F1-050406-292	-W-Area	STAIRWELL	W-SILL	WOOD	0.46	3200
C-F1-050406-293	-W-Area	STAIRWELL	FLOOR	LINOLEUM	1.00	1520
C-F1-050406-287	-W-OS	3RD FL BR 3	FLOOR	WOOD	1.00	219

Clearance Wipe Sampling

Wipe Sampling

Sample No. (P-*ScenariloD-Date-##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-E2-050506-309	-W-Area	3RD FL BR 1	BANISTER	WOOD	0.36	733
C-E2-050506-310	-W-Area	3RD FL BR 1	FLOOR	WOOD	1.00	5020
C-E2-050506-311	-W-Area	3RD FL BR 1	FLOOR	WOOD	1.00	368
C-E2-050506-312	-W-Area	STAIRWELL	TREAD	WOOD	1.06	937
C-E2-050506-313	-W-Area	STAIRWELL	W-SILL	WOOD	0.45	873
C-E2-050506-314	-W-Area	STAIRWELL	FLOOR	LINOLEUM	1.00	3140
C-B2-050506-319	-W-OS	3RD FL BR 3	FLOOR	WOOD	1.00	197

OS - Outside of work area

Surface type - wood, tile, linoleum, concrete, carpet, metal, etc.

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	STAIR REPLACEMENT
Work Practice	mod LSWP

DATE	5/5/2006
LOCATION	MILWAUKEE, WI
SCENARIO	**E2**
Work Area Preparation	
Pre-cleaning w/ wet wiping and vac	
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	
Reusable Drop Cloth	
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	**X**
Disposable Mesh	
Staple Gun	**X**
Tape	**X**
Utility Knife	**X**
Tack Pad	
Disposable Towels for Wipe Down	
Work Practices/Tools	
Hammers/Prybars	**X**
Misting Bottle	
Sandpaper/Sanding Sponge	**X**
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	
HEPA-equipped Vacuum	**X**
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	
Power Washing Equipment	
Needle Gun connected to HEPA Vacuum	
Belt Sander	**X**
Orbital Sander	
Other Non-ventilated Power Tools	**X**
Heavy Duty Garbage Bags	**X**
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	**X**
Wet Wipe Surfaces or Use Detergent	
Reusable Wet Mop w/ One Bucket	
Reusable Wet Mop w/ Two Buckets	
Use Swifter or Similar Disposable Wet Mop	**X**
Disposable Hand Towels	
Pump Sprayer	
HEPA-equipped Vacuum	**X**
Shop or Industrial Vacuum	
Brooms	
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	**X**
Disposable Shoe Covers	**X**
Safety Glasses	
Disposable Towels	

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

Date	5/5/2006		**Hygienist**	

	Event	**ID**	**Activity**	**Work Practice**
Scenario	60	F1	CEILING SANDING	ROUTINE

Site Address	City, State, Zip	Milwaukee, WI

Structure Type							
		Single Family	X	Apartment	Approx. Construction Date (Yr)	1890
		Town House		Other (describe)	Approx. Square Footage	5000
		Condomium			No. of Separate Rooms	18

Location of Work w/in structure	LIVING ROOM

Lead Content of Affected Surfaces				**Work Statistics**	
Surface	XRF Result		% Lead		
CEILING	**16.5**			No. of Workers	2
		and/or		Start Time	1156
				Stop Time	1248
				Total Time (hrs)	0.9
				Tools and Equipment Used	
				Use attached checklist	

Pre-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-	C1-050506-135 -A-Area	LR S	16666	10:26	2.67	11:30	2.64	64	2.64	169.0	<12
C-	C1-050506-136 -A-Area	LR N	17451	10:31	2.63	11:32	2.62	61	2.62	159.8	<13
D-	C1-050506-125 -A-OS	2ND FL BR 2	16612	9:06	2.61	11:38	2.61	152	2.61	396.7	<5

** OS - Outside of work area - run air sample for the duration of the scenario

During Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location/Employee/Activity	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
D-	F1-050506-140 -A-Area	LR S	16666	11:55	2.64	12:46	2.61	51	2.61	133.1	23
D-	F1-050506-141 -A-Area	LR N	17451	11:55	2.62	12:48	2.60	53	2.60	137.8	30
D-	F1-050506-142 -A-PBZ	WORKER	17185	11:56	2.60	12:49	2.59	53	2.59	137.3	51
D-	F1-050506-143 -A-PBZ	WORKER	16608	11:57	2.53	12:51	2.54	54	2.53	136.6	95
D-	E2-050506-144 -A-OS	2ND FL BR 2	16612	12:05	2.61	14:20	2.62	135	2.61	352.4	<6

Post-Work Sampling

Air Sampling

Sample No. (P-*ScenarioID-Date-##* -A-*Type*)		Location	Pump ID	Time On	FR (lpm)	Time Off	FR (lpm)	Total Time (min)	Lowest FR (lpm)	Volume (L)	Result (ug/m^3)
C-	F1-050506-151 -A-Area	LR S	16666	12:47	2.61	13:55	2.62	68	2.61	177.5	<11
C-	F1-050506-152 -A-Area	LR N	17451	12:48	2.60	13:56	2.61	68	2.60	176.8	<11

Wipe Sampling

Wipe Sampling

Sample No. (P-*ScenariloD-Date -##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-	C1-050506-306 -W-Area	LR	W-SILL	WOOD	0.64	3300
C-	C1-050506-305 -W-Area	LR	FLOOR	WOOD	1.00	4560
C-	C1-050506-307 -W-Area	LR	FLOOR	WOOD	1.00	3500

Wipe Sampling

Sample No. (P-*ScenariloD-Date -##*-W-*Location*)		Location	Surface	Surface Type	Area Sampled (ft^2)	Result (ug/ft^2)
C-	F1-050506-323 -W-Area	LR	W-SILL	WOOD	0.62	2350
C-	F1-050506-324 -W-Area	LR	FLOOR	WOOD	1.00	1520
C-	F1-050506-325 -W-Area	LR	FLOOR	WOOD	1.00	1600
C-	B2-050506-329 -W-OS	2ND FL BR 2	FLOOR	WOOD	1.00	186

OS - Outside of work area

Surface type - wood, tile, linoleum, concrete, carpet, metal, etc.

ATRIUM ENVIRONMENTAL HEALTH SAFETY, LLC
LEAD SAFE WORK PRACTICES STUDY FIELD DATA SHEET

WORK PRACTICE AND TOOL CHECKLIST

Hygienist	
Activity	CEILING SANDING
Work Practice	ROUTINE

DATE	5/5/2006
LOCATION	MILWAUKEE, WI
SCENARIO	**F1**
Work Area Preparation	
Pre-cleaning w/ wet wiping and vac	
Rope	
Barrier Tape	
Saw Horses	
Orange Cones	
Signs	
Doorways/Openings Covered	**X**
HVAC Openings Sealed	
Reusable Drop Cloth	
4 or 6-mil Plastic Sheeting or Disposable Drop Cloth	**X**
Disposable Mesh	
Staple Gun	**X**
Tape	**X**
Utility Knife	
Tack Pad	
Disposable Towels for Wipe Down	
Work Practices/Tools	
Hammers/Prybars	**X**
Misting Bottle	
Sandpaper/Sanding Sponge	**X**
Chemical Stripper	
Heat Gun	
Shop or Industrial Vacuum	
HEPA-equipped Vacuum	
HEPA-rated Vacuum	
Shrouded Sander/Grinder/Planer connected to HEPA Vacuum	
Power Washing Equipment	
Needle Gun connected to HEPA Vacuum	
Belt Sander	
Orbital Sander	
Other Non-ventilated Power Tools	
Heavy Duty Garbage Bags	
Work Area/Personnel Clean-up	
Roll Dropcloths Inward	**X**
Wet Wipe Surfaces or Use Detergent	
Reusable Wet Mop w/ One Bucket	
Reusable Wet Mop w/ Two Buckets	
Use Swifter or Similar Disposable Wet Mop	**X**
Disposable Hand Towels	
Pump Sprayer	
HEPA-equipped Vacuum	
Shop or Industrial Vacuum	**X**
Brooms	
Shovels	
Personal Protective Equipment	
Full Body Disposable Coveralls	**X**
N100 Respirator	**X**
Gloves	**X**
Disposable Shoe Covers	**X**
Safety Glasses	**X**
Disposable Towels	**X**