

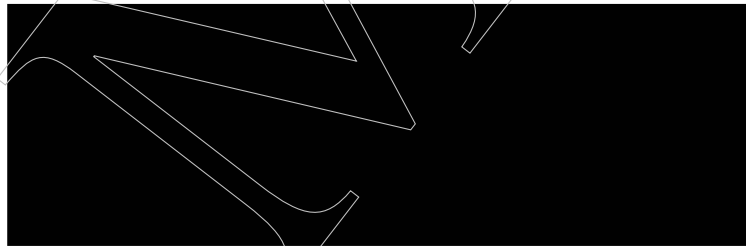
# Tri-Tech Building Hygiene Services

## LEAD-BASED PAINT INSPECTION AND RISK ASSESSMENT REPORT

[REDACTED]  
Highland Park, Michigan



Prepared For:



Prepared by:

Joseph Burley  
*Certified Lead Inspector/Risk Assessor P# – 04983*  
Tri-Tech Building Hygiene Services  
248.721.8574

February 1, 2012

*Commercial-Grade Indoor Environmental Services on a Residential Budget*

*Asbestos • Lead Paint • Mold*

[www.tri-techttesting.com](http://www.tri-techttesting.com)

**TABLE OF CONTENTS**

**Executive Summary**

**1.0 INTRODUCTION ..... 1**

1.1 NOTIFICATIONS ..... 1

1.2 BACKGROUND INFORMATION ..... 2

1.2.1 Health Effects of Lead Exposure ..... 2

1.2.2 Sources of Lead Poisoning ..... 2

1.2.3 Methods to Reduce Exposure the Lead Hazards ..... 3

1.3 REGULATORY STANDARDS ..... 3

**2.0 SITE DESCRIPTION ..... 4**

2.1 OCCUPANCY INFORMATION ..... 4

**3.0 LEAD PAINT INSPECTION/RISK ASSESSMENT ..... 4**

3.1 SAMPLING PROCEDURES..... 5

3.1.1 XRF Surface Testing..... 5

3.1.2 Paint Chip Sampling ..... 5

3.1.3 Soil Sampling..... 6

3.1.4 Dust Wipe Sampling..... 6

3.2 ANALYTICAL PROCEDURES ..... 6

3.3 SUMMARY OF LEAD PAINT INSPECTION RESULTS ..... 6

3.4 SUMMARY OF RISK ASSESSMENT RESULTS..... 7

3.4.1 Dust Wipe Sampling..... 7

3.4.2 Exposed Soil Sampling ..... 9

3.4.3 Paint Hazards ..... 9

3.4.4 Hazard Control Options ..... 9

**4.0 ONGOING MONITORING AND RE-EVALUATION SCHEDULE.....10**

4.1 Visual Surveys..... 11

4.2 Risk Assessment Re-evaluation..... 11

4.3 Recommended Maintenance Practices ..... 12

**5.0 LIMITATIONS .....12**

**6.0 CERTIFICATION .....13**

**7.0 ADDITIONAL RESOURCES .....14**

**APPENDICES**

- A: [BUILDING/PAINT CONDITION FORM/RESIDENT QUESTIONNAIRE](#)
- B: [LABORATORY REPORTS](#)
- C: [XRF PAINT SAMPLE DATA TABLE](#)
- D: [SUMMARY TABLE OF LEAD-BASED PAINT](#)
- E: [SUMMARY TABLE OF LEAD-BASED PAINT HAZARDS](#)
- F: [HAZARD CLEANING PROTOCOL/RE-EVALUATION SCHEDULE](#)
- G: [INSPECTOR ACCREDITATION](#)

# LBP INSPECTION/RISK ASSESSMENT

[REDACTED]  
Highland Park, Michigan  
February 1, 2012

## EXECUTIVE SUMMARY

Tri-Tech Building Hygiene Services (Tri-Tech) was retained by the [REDACTED] (Client) of Highland Park, Michigan to conduct a Lead-Based Paint (LBP) Inspection and Risk Assessment of the referenced property. The field inspection was conducted on January 20 and 23, 2012.

The results of the Lead-Based Paint inspection revealed heavy usage of LBP throughout the interior and exterior of the residence. In general, all of the windows contained LBP. Moderate amounts of LBP were noted on ceiling, wall, floor, trim and door members as well as specialized members such as stairwell components. In addition, damaged LBP determined to be a hazard or potential hazard was identified at numerous locations throughout the building. Except for the rear porch door and canopy ceiling, all exterior paint on wood was generally LBP in poor condition and a hazard or potential hazard.

The LBP components, LBP hazards and LBP potential hazards are summarized in tables in this report. The residence will require extensive work to achieve "lead-safe" conditions.

In addition, floor dust testing revealed unacceptable floor lead dust levels in the basement. Dust hazards were also detected associated window sills and troughs. All windows troughs contained lead paint dust and debris and were concluded to be hazards.

Notwithstanding seasonal observation limitations, the exterior soil risk assessment indicated that the property Owner does not maintain groundcover in lawn and garden areas. Soil testing was performed at one bare garden dripline soil location (side D at A). The result indicated acceptable levels of lead. Additional bare soil was located along the east side of the house (side D at C) and below a rear deck area. Additional soil testing or mulching is required for a "lead-safe" soil clearance.

The Client and homeowner/landlord are reminded of the following legal requirements:

- Michigan Lead Hazard Control regulations require this report be submitted within 20 business days of completion to the homeowner/landlord.
- Upon receipt of this report, the homeowner/landlord is now required by law to disclose lead paint testing information (along with the prescribed EPA information pamphlet)

February 1, 2012

during new leases, lease renewals and other property transactions. **This should be documented with a signed acknowledgement form.**

- The EPA-prescribed occupant notice ("*Renovate Right*" pamphlet) with a signature receipt is required for renovations that may disturb more than 2 square feet of any pre-1978 painted surface. **This should be documented by the renovator with a signed acknowledgement form .**
- Disturbance of lead-based paint exceeding 6 square feet in the interior, 20 square feet on the exterior or over 10% of a small building component surface must be conducted by an EPA-certified Lead Renovator (resident homeowners doing their own work are exempt from regulation).
- Under some conditions, aggressive disturbance of non-lead based paint may cause a lead dust hazard. It is therefore recommended that the lead content of paint be checked prior to any maintenance-related aggressive disturbance (e.g. dry sanding) of paint and precautionary controls be implemented as required.
- Records should be kept (or this report updated) of LBP building components as they are replaced to document removal and so that replacement components will not be subject to future lead paint testing or risk assessment requirements.
- No amount of repainting will cause a change in Lead-Based Paint component classification as the XRF testing result is not affected by the "dilution" of the paint layer.

Additional assistance with proposed renovation and lead abatement options can be provided upon request. Tri-Tech is certified to conduct independent third-party clearance testing of lead abatement activities.



## 1.0 INTRODUCTION

On January 20 and 23, 2012, Joseph E. Burley, a State-certified Lead Inspector/Risk Assessor with Tri-Tech Building Hygiene Services conducted an investigation at the referenced property to determine the presence of lead-based paint (and other leaded building component finishes) and the location and severity of existing or potential lead hazards. As required by law, a notification to the Michigan Department of Community Health of these activities was made on or before February 15, 2012.

The general scope of this investigation included a determination of lead concentration in regulated building components and architectural finishes (pre-1978 and non-factory finishes) utilizing an X-ray fluorescence analyzer (XRF). Paint chip sampling was conducted where appropriate if XRF testing of a surface was inconclusive or could not be performed. Inaccessible components and building finishes, if any, were assumed to be lead-based. Dust and soil sampling was also performed in accordance with State Risk Assessment requirements.

## 1.1 NOTIFICATIONS

Under Federal law, a summary of this report must be provided to each new lessee (tenant) or purchaser of this property before they become obligated under a lease or sales contract. The complete report must be provided to purchasers at closing, and made available to tenants upon request.

Landlords (lessors) and sellers are also required by Federal law to distribute the educational pamphlet entitled, "*Protect Your Family from Lead in Your Home*"; and include standard warning language in their leases or sales contracts to ensure that parents have the information they need to protect their children from lead-based paint hazards. For full details of your obligations under Federal lead-based paint regulations, contact the National Lead Information Center at 800-424-LEAD (5323).

In addition, the EPA-prescribed occupant notice ("*Renovate Right*" pamphlet) is required for renovations that may disturb more than 2 square feet of any pre-1978 painted surface and should be documented by signed receipt or similar record of these notices.

## **1.2 BACKGROUND INFORMATION**

### **1.2.1 Health Effects of Lead Exposure**

Lead is a soft, naturally-occurring metal found in the Earth's crust. It has been shown that lead has no useful purpose in the human body, and acts as a poison (toxin). It takes the place of essential minerals such as calcium, potassium, and iron, which are vital to the making and repairing of bones, organs and blood. Lead exposures have become a major health concern, especially in young children under the age of six.

Children, due to their smaller body mass and higher metabolism, are affected by lead exposures much more severely than adults. They ingest (swallow) lead through daily hand-to-mouth activities and to a lesser extent, may inhale lead dust. Children exposed to lead may develop severe attention deficit disorders, irreversible brain injury, learning disabilities and aggressive behaviors. The symptoms of lead poisoning are often misdiagnosed for other illnesses, such as flu, colic or general malaise. It is recommended that children have a blood test for lead if they have lived in a building constructed before 1978 and are believed to have been exposed to damaged paint or associated lead dust. It is recommended that testing be done as early as 12 months of age and at 24 months.

### **1.2.2 Sources of Lead Poisoning**

Since lead can be inadvertently ingested by daily activities such as eating, playing and working, it is important to understand potential sources of lead exposures. The most common places to find lead in household settings are interior and exterior paint, and contaminated dust or soil. Lead-based paint is most hazardous when it is chipping, peeling, cracking, or chalking; or applied to friction surfaces of components such as doors, windows, and floors. The action of painted surfaces rubbing together causes lead-containing paints to be ground into a fine dust. Lead dust can also be created from decaying vinyl mini blinds. Lead dust then settles on furniture, play area floors, and children's toys, where children are exposed during routine activities.

Several other sources of lead in the home include lead dust brought into the home from occupational exposures, water pipes, fixtures, and joints; decorative china, "leaded" crystal, fishing sinkers, firearms ammunition, wine goblets and cosmetics. Some hobbies may also contribute to lead contamination within the home. Exposures to all sources of lead should be minimized or eliminated.

February 1, 2012

### 1.2.3 Methods to Reduce Exposure the Lead Hazards

The simplest and often most effective way to reduce lead exposures is through regular washing of hands, toys, and flat surfaces in the home with a liquid hand soap, or dish soap, and water. It is recommended that disposable cleaning materials be used to wash surfaces, so as not to re-contaminate them with a used mop, sponge, or cloth.

Other ways of reducing lead hazards within the home include taking shoes off before entering living areas, letting water run prior to drinking or cooking, covering exposed soil with groundcover/mulch, and vacuuming with a High Efficiency Particulate Air (HEPA) filtered vacuum. Normal vacuums are inadequate for removing fine lead dust.

## 1.3 REGULATORY STANDARDS

Compliance with the following federal regulatory standards defines "Lead-Safe" housing:

#### Lead dust:

- ✓ <40 ug/sq.ft. for floors
- ✓ <250 ug/sq.ft. for window sills
- ✓ <400 ug/sq.ft. for window troughs

#### Lead in exposed soil (>9 square feet):

- ✓ <400 ppm in children's play areas
- ✓ <1200 ppm in general yard areas

#### Deteriorated paint:

- ✓ <2 square feet of deteriorated LBP on one interior surfaces per room,
- ✓ <10 square feet of deteriorated LBP on exterior surfaces
- ✓ <10% of the surface area of LBP of any small component.

#### Impact surfaces:

- ✓ No damage to lead-based painted surfaces from impact by another building component.

#### Friction surfaces:

- ✓ No dust present on friction surfaces such as floors and stairwells.

#### Chewable surfaces:

- ✓ No visible evidence of teeth marks on lead-painted surfaces.

February 1, 2012

In addition, buildings that do not have any lead-based paint (LBP) are generally considered "Lead Safe" even though it is possible for lead hazards to occur from non-LBP sources.

Where any of the above standards are exceeded, response actions are required to address the lead paint hazards identified. Depending on the circumstances, interim control measures or permanent abatement methods may be implemented.

## 2.0 SITE DESCRIPTION

The referenced property consists of a five-bedroom two-story single-family residential building. According to city records, the building is 2724 square feet of finished living space and was constructed in 1918.

The original building interior wall and ceiling finish appeared to be plaster on lath. All ceilings were observed to be plaster. The basement was partially finished. The wood sash windows appeared to be original. Foundation windows were glass block but the original painted wood casings remained. There was generally poor access to the windows due to treatments and other obstructions.

A rear garage was excluded from the scope-of-work by the Client.

See [Appendix A](#) for the Building Condition Form and Resident Questionnaire.

## 2.1 OCCUPANCY INFORMATION

The building was occupied by multiple adults and children, with two children below six years of age. The interior was observed to be clean and generally in good condition.

## 3.0 LEAD PAINT INSPECTION/RISK ASSESSMENT

A general inspection of the residential unit was performed and the living areas were delineated into "Room Equivalents." Building and paint film condition observations were made and recorded. Occupant interviews were conducted if not completed prior to the inspection. Unusual or noteworthy conditions were photographed.

A lead-based paint inspection consists of a component by component evaluation of painted architectural building surfaces to determine the lead content of each painted surface. Glazed brick/ceramic, porcelain, mirrors and factory-finished metal components and similar older factory-finished components, if present, are selectively tested for lead content on a discretionary basis due to the potential to cause a hazard from lead dust if severely damaged.



February 1, 2012

The objective of the risk assessment is to identify lead hazards that may exist within a building. Lead hazards are defined as follows:

1. Lead paint that is deteriorated (flaking, chipped, peeling, etc.).
2. Lead paint on a friction surface (i.e. rubbing doors, sliding windows, etc.) where associated dust levels exceed safe limits.
3. Lead paint on an impact surface (i.e. door jambs, stair treads, etc.) where the impact is caused by another building component.
4. Lead paint on a chewable surface (i.e. window sills, shelves, etc.) where there is visible evidence of teeth marks.
5. Lead dust and bare soil levels exceeding safe limits.

In cases where survey methods detected LBP and the paint was in poor condition (cracked, peeling, chalking, etc.), a determination of the hazard presented was performed based on the area of the damage, location, child exposure potential and dust samples results (if applicable).

### **3.1 SAMPLING PROCEDURES**

The following summarizes the sampling procedures utilized:

#### **3.1.1 XRF Surface Testing**

Identification of lead-based paint was performed using an Innov-X Alpha-3000 X-ray fluorescence analyzer (XRF), serial no. 6396, in accordance with Performance Characteristic Sheet specifications. XRF technology utilizes low level radiation to fluoresce atoms within painted surfaces. The XRF analyzer interprets the fluorescence from the lead atoms to determine the amount of lead in paint. Lead present at or above  $1.0 \text{ mg/cm}^2$  is defined by EPA and HUD as "lead-based paint."

Lead data are recorded by location ("Room Equivalent"), color, substrate, and component/architectural surface. The lead results are recorded by the instrument and downloaded into the enclosed XRF data table.

#### **3.1.2 Paint Chip Sampling**

Paint chip samples are sometimes collected as unusual circumstances dictate, such as inconclusive readings as specified by the detector or irregular or inaccessible surfaces that cannot be tested by XRF. Chip samples are collected of discrete layers of paint if possible.

February 1, 2012

For this investigation, no paint chip samples were collected.

### 3.1.3 Soil Sampling

Samples of bare soil areas exceeding 9 square feet or as deemed appropriate by the Risk Assessor, were collected following HUD guidelines from within the boundaries of the property, such as sandbox, play areas, and foundation gardens along the drip line.

All groundcover was observed to be maintained by lawn or wood mulch and no exposed soil was observed except for the side garden along the dripline and below the rear deck. There were no child play areas (except for open lawns).

### 3.1.4 Dust Wipe Sampling

Dust wipe samples, in locations deemed appropriate by the Risk Assessor, were collected as follows:

- A single dust wipe sample was taken on the floor, and one alternately on the window sill or trough, in six rooms. If the dwelling had less than six rooms, than all rooms were sampled. Bedrooms of young children are preferentially tested. Sills are tested if no troughs are present.
- The wipe was then placed into a container, labeled with the sample identification, and sent to the accredited laboratory for analysis.

For this investigation, a total of 12 dust wipe samples were collected from the residence.

## 3.2 ANALYTICAL PROCEDURES

Dust and soil samples were analyzed by Accurate Analytical Testing of Belleville, Michigan, an accredited laboratory that participates in the Environmental Lead Proficiency Analytical Testing (ELPAT) quality control rounds and is approved by the National Lead Laboratory Accreditation Program (NLLAP) for analysis of lead. Laboratory reports and the chain of custody form are included in [Appendix B](#).

## 3.3 SUMMARY OF LEAD PAINT INSPECTION RESULTS

Component by component XRF readings are summarized in [Appendix C](#). A table summarizing the positive components (lead-based paint readings) is presented in [Appendix D](#).

February 1, 2012

The LBP inspection identified LBP components too numerous to list individually. Categorically, they include architectural eaves troughs, balusters/balustrade, baseboard, cabinets, ceiling crown, ceilings and walls, coat rack, doors and door frames, fireplace/mantle, fixtures, radiators, shelving, shutters, soffits, stair members, window components and many exterior components.

Floor tile in the entry foyer and second floor half bathroom were determined to be lead-glazed. These building materials are not considered LBP but should be maintained with care to avoid a potential lead dust hazard.

The tabulation of LBP data in the tables includes a depth flag column. Where "surface" is reported in the column, the XRF has determined that the lead-based paint is at or near the surface.

### **3.4 SUMMARY OF RISK ASSESSMENT RESULTS**

A summary table of LBP hazards (Table 3.) and potential LBP hazards (Table 4.) is presented in [Appendix E](#). The following is a summary of the Risk Assessment sampling results:

#### **3.4.1 Dust Wipe Sampling**

Lead dust sampling is required in areas where children are most likely to come into contact with dust. Areas for consideration include: children's bedroom(s), family rooms, play rooms, kitchens, bathrooms, etc. Lead dust samples are to be taken from at least six different Room Equivalents with samples from both the floor and alternately a window sill or window well within each room.

February 1, 2012

The following is a summary of the dust wipe sampling results:

### Summary of Dust Wipe Sampling Results

Sample Number	Location	Lead Concentration (µg/sq.ft.)	Allowable Limit (µg/sq.ft.)
Living Room			
floor	side C	<10	40
sill	side D	141	250
trough	--	--	400
Informal Dining			
floor	side D	<10	40
sill	--	--	250
<b>trough</b>	<b>side C</b>	<b>41,000</b>	<b>400</b>
Basement Storage (future play area)			
<b>floor</b>	<b>side C</b>	<b>138</b>	<b>40</b>
<b>sill</b>	<b>side D</b>	<b>598</b>	<b>250</b>
trough	--	--	400
Child Bedroom AD			
floor	center	<10	40
sill	--	280	250
<b>trough</b>	<b>side A</b>	<b>94,000</b>	<b>400</b>
Bedroom AB			
floor	center	12	40
<b>sill</b>	<b>side A</b>	<b>5700</b>	<b>250</b>
trough	--	--	400
Bedroom CD			
floor	center	10	40
<b>sill</b>	<b>side D</b>	<b>487</b>	<b>250</b>
trough	--	--	400

Notes: results reported to two significant figures; exceedances **bolded**

The dust wipe sampling results indicated all floor dust sample results were within acceptable limits in the general living space. However, a basement storage area that was targeted due to

February 1, 2012

children's toy storage and a prospective future play area was a hazard. The source of the lead dust was suspected to be floor paint that was worn by foot traffic friction. In addition, the corresponding window sill in that room was a dust hazard. In addition, the troughs were identified as hazards due to deteriorated paint and dust. In addition, the window sills in the bedrooms were identified as dust hazards and hazards can be inferred at other window sill locations (except for the Living Room).

### 3.4.2 Exposed Soil Sampling

One soil sample comprising five subsamples was collected along the side garden dripline along exterior wall D adjacent to side A. The following is a result of the laboratory analyses:

Sample number	Location	No. of sub-samples	Play Area (yes/no)	Results (ppm)	Allowable Limit (ppm)
SS-001	side garden (DA)	6	no	276 (PASS)	1200

Groundcover was absent in the side garden north of the chimney and below the rear deck. Additional groundcover (lawn, mulch or pavement) or soil sampling was required of these areas for a soil clearance.

### 3.4.3 Paint Hazards

The interior and exterior building risk assessment identified numerous existing and potential LBP hazards, as summarized in Tables 3 and 4 respectively in [Appendix E](#). Lead paint hazards were observed in the child living space, including the bedrooms and bathrooms. The identified hazards included hazards attributable to deteriorated paint conditions and well as window sash friction and door strikes.

Potential hazards were identified, generally consisting of lead-based paint that was damaged, but less than 2 square feet in area or was less than 10% of surface area of the component and not involving a building component strike or friction.

### 3.4.4 Hazard Control Options

The identified hazards are too numerous to present an analysis of appropriate abatement or interim control measure options for each component. The Client has indicated that the contract amount for this project exceeds \$25,000. Above this threshold, HUD specifies use of abatement

February 1, 2012

methods for interior hazards. However, due to the number of hazards identified, some judgment may be required to determine if this can be achieved within budgetary limits. In general, abatement consists of options involving permanent enclosure, encapsulation or removal. Tri-Tech would recommend prioritizing abating the hazards as follows:

1. windows
2. doors and casing components
3. child toy storage/future basement play area
4. deteriorated walls in basement
5. misc. interior components
6. exterior

Presumably, the children spend the most time on the second floor and then the first floor, which should be prioritized ahead of the basement and exterior.

In general, component removal is generally the most cost-effective and practical option for smaller components (e.g. baseboards, doors, windows). Enclosure or encapsulation is generally reserved for larger components not readily removed such as fixed ceilings and walls. Historical preservation requirements, if applicable, may need to be considered for exterior facing components such as windows.

Dust hazards identified in section 3.4.1 should be addressed by proper cleaning of all the window sills and troughs (if the components are not replaced). The floor dust hazard identified in the basement indicates that the entire basement floor should be properly cleaned of lead dust, including the stairwell.

Tri-Tech has only compiled a list of potential hazards based on existing building conditions or proposed renovations. There is no requirement to abate potential hazards at this time but monitoring is required to assure that the conditions do not deteriorate further into a hazard. As such, some judgment is required to determine the cost-effectiveness of addressing potential hazards by abatement or interim control methods at this time.

Additional potential hazards include areas of the residence where the occupant or owner may be completing renovation activities in the future. The homeowner (or selected renovation contractor) should follow "lead safe work practices" during renovation to avoid creating lead dust hazards.

#### **4.0 ONGOING MONITORING AND RE-EVALUATION SCHEDULE**

Ongoing monitoring is required in all dwellings where LBP is present, regardless of the paint's present condition. Ongoing monitoring is not required in buildings that do not contain LBP. The purpose of monitoring and re-evaluation is to assure that LBP surfaces remain in good (intact)

February 1, 2012

condition. LBP surfaces that are peeling, cracking, blistering or causing dust from friction or impact should be corrected immediately to prevent exposure hazards.

This Lead-Based Paint Inspection report should be updated after abatement actions are conducted so that the homeowner and future Risk Assessors have a comprehensive and up to date inventory of lead-based paint components and know where future monitoring activities should focus.

Monitoring and re-evaluation consists of two elements: an owner's visual survey and a Risk Assessment re-evaluation, described further below:

#### 4.1 Visual Surveys

Visual surveys should be conducted by owners or their representatives at the following times:

- ✓ Whenever the owner receives a resident complaint.
- ✓ Whenever the dwelling turns over or becomes vacant.
- ✓ Whenever significant damage occurs (i.e., flooding, vandalism, fire, etc.).
- ✓ At least once every year.

When conducting a visual survey, the owner should examine all painted surfaces, all lead-based paint hazard controls, and all ground cover. The results of the visual survey and any corrective measures taken should be documented.

#### 4.2 Risk Assessment Re-evaluation

A Risk Assessment Re-evaluation is typically scheduled every two years, but more frequent re-evaluations may be required depending on site conditions, rental insurance requirements or municipal requirements. It is recommended that an owner retain a certified LBP risk assessor to determine whether (1) conditions at the home have changed possibly causing additional hazards, (2) the initial hazard control options implemented have been effective or (3) if further work is warranted. In general, it is expected that high-risk buildings and areas will require more frequent re-evaluation.

The HUD *Standard Re-evaluation Schedule* enclosed in [Appendix F](#) can be used as guidance for when to request a Risk Assessment Re-evaluation. The frequency of re-evaluations is dependent on both the Risk Assessment results and the hazard control options that are chosen and implemented. As an alternative to following the chart schedule, a building owner can opt to follow the most stringent re-evaluation cycle of 6 months, 1 year and then 2 years.

February 1, 2012

There is no need to perform a LBP re-inspection as the concentration of lead in paint will generally not change until removed from the building (re-painting can slightly increase the concentration of lead over time due to the legally allowable small concentrations of lead contaminant in non-lead paints). As previously stated, lead concentrations will never decrease (in the absence of unusual actions such as partial film stripping). However, it is recommended that the LBP Inspection report be updated as necessary due to renovations and abatements so that the report provided to the occupant and successive owners is current. However, this process is not currently prescribed by Federal or State regulations.

### 4.3 Recommended Maintenance Practices

Owners should maintain all buildings in good condition utilizing the following the maintenance and management practices as appropriate:

- ✓ High-efficiency particulate air (HEPA) vacuuming, wet mopping, and cleaning of floors, window troughs, and interior window sills at turnover.
- ✓ Providing the lead-based paint advisory pamphlet and unit-testing information to new residents.
- ✓ Installing a washable doormat inside the primary entrance to the unit .
- ✓ Maintaining ground cover.
- ✓ Encouraging residents to report any signs of paint deterioration or failure of hazard control treatments.

A recommended cleaning protocol is included in [Appendix F](#) for areas suspected or known to contain dust from LBP.

### 5.0 LIMITATIONS

Limitations to the standard methods of a LBP/RA may include areas or surfaces that could not be tested, inaccessible areas, locked doors, problems due to inclement weather, etc. Materials that could not be tested or sampled must be assumed to be lead based paint and treated as such.

In addition, Inspectors do not remove items that are fastened shut, down, together or otherwise impede access. Drop ceiling panels, furniture, equipment, and other items are not moved by the inspectors, as those areas should be made to be accessible to the inspector by the building owner. These circumstances could be cause for a building component to be omitted from testing. It is also possible that wall hangings, flags, banners, pictures, wall shelving



February 1, 2012

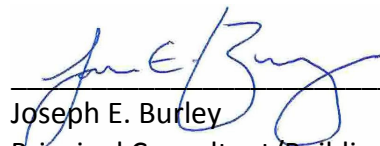
units and large furniture may hide component or floor/wall damage. If those items are covering up damage, it could change the classification of that component from intact or fair to poor. If this is the case, treat those damaged surfaces as though they are a hazard.

Bare soil areas evaluated for the Risk Assessment will change with usage, weather and other factors and may not necessarily correspond with those identified in this report.

## 6.0 CERTIFICATION

The information contained in this report is representative of the lead-based paint and dust conditions at the referenced property at the time of the investigation, based on the judgment and experience of the inspector and the professional standard of care. Michigan Lead Inspector/Risk Assessor accreditation is presented in [Appendix G](#).

Report prepared by:



Joseph E. Burley

Principal Consultant/Building Hygienist

Michigan Certified Lead Inspector and Risk Assessor, No. P-#04983

**TRI-TECH BUILDING HYGIENE SERVICES**

A SUBSIDIARY OF FREELANCE ENVIRO-TECH SERVICES LLC

## 7.0 ADDITIONAL RESOURCES

For more information regarding lead poisoning and prevention, contact your local health department or one of the following resources:

National Lead Information Center: .....800-424-LEAD (5323)  
U.S. Department of Housing and Urban Development: .....888-532-3547 (LEADLIST)  
State of Michigan – Healthy Homes Section: .....866-691-LEAD (5323)

### PUBLICATIONS

*“Lead in Your Home: A Parent’s Reference Guide,”* U.S. Environmental Protection Agency

*“Protect Your Family From Lead in Your Home,”* U.S. Environmental Protection Agency

*“Lead Paint Safety: A Field Guide for Painting, Home Maintenance, and Renovation Work,”* U.S. Department of Housing and Urban Development

**Appendix A**

**Building Condition Form/Resident Questionnaire**

**Tri-Tech Building Hygiene Services**

<b>Building Condition Form</b>		
<u>Condition</u>	<b>Yes</b>	<b>No</b>
Roof missing parts of surface covering?		
Roof has holes or large cracks?		
Gutters or downspouts broken?		
Chimney or masonry cracked, with loose or missing components, out of plumb or otherwise deteriorated?		
Exterior or interior walls have large cracks, or damage requiring more than routine painting?		
Exterior siding missing components?		
Water stains on interior walls or ceilings?		
Plaster walls deteriorated?		
Two or more windows or doors missing, broken or boarded up?		
Porch or steps have major cracks, missing materials, structural leans, or visibly unsound?		
Foundation has damage, structural leans or is unsound		
<b>Other conditions not listed:</b>		
<b>Proposed Renovation Work:</b>		

**Resident Questionnaire for Unit/Address: \_\_\_\_\_**

Do you have children that live or visit on a regular basis?	YES	NO	COMMENTS
Are there women of child-bearing age living in the house?	YES	NO	COMMENTS

If answers to both questions above are NO, skip to the bottom of this page and sign and date. Otherwise, complete the entire form.

**Eat, sleep, and play data for children under the age of six**

Name	Age	Sleeping location(s)	Eating location(s)	Primary indoor play location	Primary outdoor play location

Names of children with known elevated blood levels: \_\_\_\_\_

Is there any visible evidence of chewed painted surfaces such as window sills, toys, jewelry etc? Yes \_\_\_ No \_\_\_ Locations: \_\_\_\_\_

Are there any areas of peeling paint on walls, ceilings, stairs, woodwork, furniture or toys? Yes \_\_\_ No \_\_\_ Locations: \_\_\_\_\_

Are there any other known problems areas including areas that have been repaired? Yes \_\_\_ No \_\_\_ Locations: \_\_\_\_\_

Do any of the children under the age of 6 take calcium or phosphorus supplements? Yes \_\_\_ No \_\_\_ If "Yes", list names: \_\_\_\_\_

Which entrances are used most frequently? \_\_\_\_\_

Where are toys stored/kept? \_\_\_\_\_

Which windows are opened most frequently? \_\_\_\_\_

List locations of any window air conditioners: \_\_\_\_\_

List locations of any vegetable gardens: \_\_\_\_\_

List types of uncaged pets: \_\_\_\_\_

How often is the household cleaned? \_\_\_\_\_

What cleaning methods are used? \_\_\_\_\_

List planned building renovations or repairs: \_\_\_\_\_

List any resident's jobs or hobbies involving lead such as batteries, firearms, lead casting etc.: \_\_\_\_\_

**ACCESS ARRANGEMENTS** (note: homes/units without children are still subject to inspection)

The building owner/landlord will provide advance inspection notice for **Tri-Tech Building Hygiene Services** access in accordance with applicable lease terms and regulations. If desired, reasonable efforts will be made to perform the inspection while you are home based on your general work/school schedule, provided as follows:

**ADDITIONAL COMMENTS** (attach an additional page if necessary)

Please list other comments or concerns regarding how and where your child might be exposed to lead paint (e.g. child stays often at grandparent's home which is old and deteriorated, child eats dirt; etc.):

have lived here \_\_\_ years

Questionnaire completed by Name: \_\_\_\_\_ Date: \_\_\_\_\_  
(please print full name)

Best method to contact (e.g. phone number or email): \_\_\_\_\_

**Thank you for your assistance in helping Tri-Tech and your landlord make your housing Lead-Safe!**

**Appendix B**

**Laboratory Reports and Chain of Custody Record**



**Appendix C**

**XRF Paint Sample Data Table**

SAMPLE



**Table 1. XRF Data Table by Room Equivalent**  
**Lead-Based Paint Inspection**

Level: **L1**



Space Name	Component	Substrate	Side <sup>1</sup>	Color	Lead Reading (mg/cm <sup>2</sup> )	Result <sup>2</sup>	Precision (+/-)	Depth Flag	Condition (if not intact)	Notes
coat closet	baseboard	wood	A	white	> 1.30	Positive	0.15	surface	--	--
coat closet	ceiling	plaster	A	white	0.1	Negative	0.12	--	cracked	stable
coat closet	coat rack	wood	A	white	> 1.43	Positive	0.19	surface	--	--
coat closet	door trim	wood	B	white	> 2.50	Positive	0.61	surface	--	--
coat closet	floor	wood	A	stain	0.03	Negative	0.02	--	--	--
coat closet	wall	plaster	A	white	> 1.61	Positive	0.29	surface	--	--
coat closet	win trim	wood	A	white	> 1.32	Positive	0.16	surface	--	see results for entry window
dining	baseboard	wood	A	white	1.0	Positive	0.16	--	--	--
dining	ceiling crown	wood	C	tan	0	Negative	0	--	--	--
dining	ceiling	plaster	C	white	0	Negative	0	--	--	spray-on
dining	chair rail	wood	A	white	0	Negative	0	--	--	--
dining	door	wood	A	stain	0.06	Negative	0.02	surface	--	--
dining	door	wood	D	white	0.08	Negative	0.06	--	--	--
dining	door trim	wood	A	white	> 2.05	Positive	0.5	surface	--	--
dining	radiator	metal	B	silver	3.79	Positive	0.36	surface	--	--
dining	soffit	plaster	C	tan	0	Negative	0	--	--	--
dining	wall	plaster	A	tan	0.01	Negative	0.01	--	--	--
dining	wall	plaster	A	white	> 1.23	Positive	0.35	--	--	--
dining	wall	plaster	B	tan	> 1.00	Positive	0.24	--	--	--
dining	wall	plaster	B	white	0	Negative	0	--	--	--
dining	wall	paneling	C	tan	0	Negative	0	--	--	--

**Appendix D**

**Summary Table of Lead-Based Paint Components**

**Table 2. Summary of Positive Lead-Based Paint Readings**

**Lead-Based Paint Inspection**



Unit/ Space No./Level	Space Name	Component	Substrate	Side <sup>1</sup>	Color	Depth Flag	Condition (if not intact)	Notes
B	basement	floor	concrete	A	silver	--	fair	--
B	basement	win casing	wood	B	white	surface	--	--
B	bathroom	win casing	wood	C	grey	surface	--	--
B	laundry	wall	wood	A	white	surface	fair	--
B	laundry	wall	brick	B	white	surface	poor	hazard
B	laundry	wall	brick	B	white	surface	poor	hazard
B	laundry	wall	brick	C	white	surface	poor	hazard
B	laundry	win casing	wood	C	grey	surface	fair	--
B	mechanical	win trim	wood	D	white	--	chipped	hazard
B	stair down	door casing	wood	C	white	surface	--	--
B	stair down	door trim	wood	C	white	surface	--	--
B	stair down	stair base cap	wood	B	pink	surface	--	--
B	stair down	stair riser	wood	B	grey	surface	fair	--
B	stair down	stair tread	wood	B	grey	surface	worn	--
B	stair down	stringer	wood	B	grey	surface	--	--
B	stair down	wall	plaster	D	pink	--	--	--
L1	coat closet	baseboard	wood	A	white	surface	--	--
L1	coat closet	coat rack	wood	A	white	surface	--	--
L1	coat closet	door trim	wood	B	white	surface	--	--
L1	coat closet	wall	plaster	A	white	surface	--	--

**Appendix E**

**Summary Table of LBP Hazards**

**Table 3. Summary of Lead-Based Paint Hazards**

**Lead-Based Paint Inspection/Risk Assessment**

44 Moss, Highland Park, Michigan

Unit/ Space No./Level	Space Name	Component	Substrate	Side <sup>1</sup>	Color	Depth Flag	Condition (if not intact)	Notes
B	laundry	wall	brick	B	white	surface	poor	hazard
B	laundry	wall	brick	B	white	surface	poor	hazard
B	laundry	wall	brick	C	white	surface	poor	hazard
B	mechanical	win trim	wood	D	white	--	chipped	hazard
L1	entry foyer	door casing	wood	A	white	surface	chipped	hazard-chipped from door strike
L1	entry foyer	door jamb	wood	C	white	surface	--	hazard-door strike
L1	storage	win sash	wood	C	white	surface	--	friction hazard
Ext.	exterior	arch eave trough	wood	C	white	surface	poor	hazard
Ext.	exterior	fence post	wood	B	green	surface	poor	hazard
Ext.	exterior	wall	wood	B	white	surface	poor	hazard
Ext.	exterior	wall	wood	C	white	surface	poor	hazard
Ext.	exterior	wall	wood	C	white	surface	poor	hazard
Ext.	exterior	wall trim	wood	B	white	surface	poor	hazard
Ext.	exterior	window	wood	D	white	surface	cracked	hazard
Ext.	exterior	window	wood	D	white	surface	poor	foundation window-haz.
Ext.	front porch	ballustrade	wood	A	white	--	poor	hazard
Ext.	front porch	ceil crown	wood	A	white	surface	poor	hazard

**Table 4. Summary of Potential Lead-Based Paint Hazards**  
**Lead-Based Paint Inspection/Risk Assessment**

44 Moss, Highland Park, Michigan

Unit/ Space No./Level	Space Name	Component	Substrate	Side <sup>1</sup>	Color	Depth Flag	Condition (if not intact)	Notes
L1	pantry	wall	plaster	A	white	surface	--	damage at wall tear-out (pot. haz.)
L1	pantry	wall	plaster	B	white	--	cracked	stable-pot. haz.
L1	sunroom	window	wood	D	white	surface	--	painted shut (pot. haz.)
Ext.	exterior	wall	wood	D	white	surface	fair	chip/crack <10 s.f. (pot. hazard)
Ext.	rear porch	ceil crown	wood	A	white	surface	fair	potential hazard
L2	child bedroom CD	ceiling	plaster	C	white	--	cracked	potential hazard
L2	child bedroom CD	wall	plaster	D	beige	surface	cracked	potential hazard
L2	master	ceiling	plaster	D	white	--	cracked	potential hazard

**Notes/Key to abbreviations:**

1. Side: Side A is the address side of the building. Proceeding in a clockwise direction the adjacent sides are labeled B, C and D (bedrooms may be labelled by exterior wall sides).

Except for walls, readings on a component apply to other like components not listed unless additional readings are recorded for those components. All closet walls are assumed the same unless tested individually.

**Appendix F**

**Cleaning Protocol/  
HUD Hazard Re-Evaluation Schedule**

## HUD Standard Re-evaluation Schedule

Schedule	Evaluation Results	Action Taken	Reevaluation Frequency and Duration	Visual Survey (by owner or owner's representative)
1	Combination risk assessment/inspection finds no leaded dust or soil and no lead-based paint.	None.	None.	None.
2	No lead-based paint hazards found during risk assessment conducted before hazard control or at clearance (hazards include dust and soil).	None.	3 Years.	Annually and whenever information indicates a possible problem .
3	The average of leaded dust levels on all floors, interior window sills, or window troughs sampled exceeds the applicable standard, but by less than a factor of 10.	A. Interim controls and/or hazard abatement (or mixture of the two), including, but not necessarily limited to, dust removal. This schedule does not include window replacement.	1 Year, 2 Years.	Same as Schedule 2, except for encapsulants. The first visual survey of encapsulants should be done one month after clearance; the second should be done 6 months later and annually thereafter.
		B. Treatments specified in section A plus replacement of all windows with lead hazards.	1 Year.	
		C. Abatement of all lead-based paint using encapsulation or enclosure.	None.	Same as Schedule 3 above.
		D. Removal of all lead-based paint.	None.	None.
4	The average of leaded dust levels on all floors, interior window sills, or window troughs sampled exceeds the applicable standard by a factor of 10 or more.	A. Interim controls and/or hazard abatement (or mixture of the two), including, but not necessarily limited to dust removal. This schedule does not include window replacement.	6 Months, 1 Year, 2 Years.	Same as Schedule 3.
		B. Treatments specified in section A plus replacement of all windows with lead hazards.	6 Months, 2 Years.	Same as Schedule 3.
		C. Abatement of all lead-based paint using encapsulation and enclosure.	None.	Same as Schedule 3.
		D. Removal of all lead-based paint.	None.	None.
5	No leaded dust or leaded soil hazards identified, but lead-based paint or lead-based paint hazards are found.	A. Interim controls or mixture of interim controls and a batement (not including window replacement).	2 Years.	Same as Schedule 3.
		B. Mixture of interim controls and abatement, including window replacement.	3 Years.	Same as Schedule 3.
		C. Abatement of all lead-based paint hazards, but not all lead-based paint.	4 Years.	Same as Schedule 3.
		D. Abatement of all lead-based paint using encapsulation or enclosure.	None.	Same as Schedule 3.
		E. Removal of all lead-based paint.	None.	None.
6	Bare leaded soil exceeds standard, but less than 5,000 µg/g.	Interim controls.	None.	Three months to check new ground cover, then annually to identify new bare spots.
7	Bare leaded soil greater than or equal to 5,000 µg/g.	Abatement (paving or removal).	None.	None for removal, annually to identify new bare spots or deterioration of paving.



# A Guide To Cleaning Up Lead Paint Chips and Dust

## Step 1 - Supplies



Gloves, absorbent throw-away wipes or towels, garbage bags, spray bottle with liquid detergent and water, disposable towels and mop. Children should not be present while cleaning.

## Step 2 – HEPA Vacuum



HEPA vacuum obtained from your local health department. A regular vacuum is NOT recommended. CAUTION: Do not open, change bag, or empty contents inside the home.

## Step 3 – Wet Surfaces



HEPA\* vacuum windows, floors, and porches, and then mist lightly with the soap solution. If a HEPA is not available, carefully remove dirt and paint chips with a wet towel. Replace towels until the surface is clean.

## Step 4 – Clean Surfaces



Wipe surfaces clean by applying pressure. This has proven to be effective in removing lead dust.

\* A HEPA vacuum has a high efficiency particulate air filter built in that catches fine lead dust. This filter catches up to 99% of the dust and dirt sucked into the vacuum. The HEPA vacuum should meet ANSI Z9.2 standards and OSHA and EPA regulations. Check the vacuum or owner's manual.

# A Guide To Cleaning Up Lead Paint Chips and Dust

## Step 5 – Wipe Floors



Misting with the soap solution and then wiping with towels is the best way to remove lead dust.

## Step 6 – Mop Floors



A second choice is to damp mop vinyl and wood floors with the soap solution. Start at the back of the room and work toward the exit door. This way is not as good as Step 5.

## Step 7 – Bag It



Change towels often until no paint chips or dirt can be seen. Put them in a garbage bag, and seal with tape or a knot. The bag can be put out for normal trash pickup.

## Step 8 – Clean Often



Do these steps often to protect your children from lead poisoning. They count on you for a lead-safe home to grow up healthy and smart.

Special acknowledgement to the Field Neurosciences Institute/Saint Mary's Hospital, Saginaw, Michigan for their contribution in the development of this cleaning guide.

January 2005

**Appendix G**

**Inspector/Risk Assessor Accreditation**

Michigan  
Department of  
Community  
Health



Healthy Homes Section

**Joseph Burley**

**Lead Inspector/Risk Assessor**

Cert. number **P-04983**

Annual fee due by March 31**2012**

*Appropriate refresher training and exam must be taken to renew this certification before March 31, **2013***

SAMPLE

## Professional Environmental Testing Services

Mold  
Asbestos  
Lead Paint  
Indoor Air Quality  
Hazardous Materials

## Tri-Tech Building Hygiene Services

a subsidiary of Freelance Enviro-Tech Services LLC

8751 West Troy  
Oak Park, Michigan 48237  
248.721.8574