

Appendix 8.1: Example of a Pre-Rehabilitation Risk Assessment and Limited Paint Testing Report for a Single-Family Dwelling Operated By a Small-Scale Owner

A sample report is attached to demonstrate the various components that should be included in a report.

The original source of this document is "Making it Work: Implementing the Lead Safe Housing Rule in CPD-funded Programs" at http://www.hud.gov/offices/lead/training/training_curricula.cfm, (accessed 7/27/2012) with revisions as appropriate.

Pre-Rehabilitation Lead Hazard Risk Assessment & Limited Lead-Based Paint Testing Report



PERFORMED AT:

Private Residence (William Jones, Occupant)
123 Olympic Street
Coolsville, Anystate 12347-5432

PREPARED FOR:

Mr. Bruce Smith
City of Coolsville
25 Glory Road
Coolsville, Anystate 12344-1111
555-555-0022

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Project No.: ABC98765

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**Environmental Consultant:
ABC Environmental**

SIGNATURE OF RISK ASSESSOR _____
Name
Date

Executive Summary

As a result of the Lead Hazard Risk Assessment and the limited Lead-Based Paint Testing (Assessment) conducted on 2/14/2012, it was found that lead-based surface coatings (paint) and lead hazards were present on the subject property as of the date of the Assessment. The analytical results from this Assessment effort identified the following lead-based paint (LBP) and Lead hazards, as defined by EPA and/or HUD standards:

LBP

- ◆ Paint on All painted Exterior Components of the house, including the front porch

Existing Lead-Based Paint Hazards and Potential Lead Hazards

The following areas are coated with Lead-Based Paint (LBP) that is *deteriorated* and currently present existing lead-based paint hazards. All component substrates are wood.

- ◆ All exterior windows (windows are in fair condition)
- ◆ Roof fascia of house
- ◆ SW Bedroom door and door casing

A dust hazard was identified on the bathroom floor.

No soil lead hazards were identified.

The following areas are coated with LBP that is *intact* and that do not currently present lead hazards. However, the upcoming renovation plans include work inside the house and scraping and repainting the exterior. If these renovations occur, lead-safe work practices will need to be implemented during the project to ensure that lead hazards are not created.

- ◆ LBP on the exterior siding
- ◆ Front door and casing
- ◆ All exterior roof fascia and trim
 - LBP on all front porch components (floor, columns, frame, railing, door)
 - Bathroom wall
 - Kitchen wall

The planned renovation includes disturbance of the following components that do not contain lead-based paint:

- ◆ Floors that were tested throughout the house
- ◆ Interior doors that were tested (except SW Bedroom)
- ◆ Interior walls in bedrooms and living room

Please remember that all identified LBP and Lead Hazards should always be properly addressed by professionally trained, experienced, and/or licensed lead workers.

Following is a report of the information collected during this Assessment:

Identifying Information and Purpose of Risk Assessment

A Lead Hazard Risk Assessment and Limited LBP Testing (Assessment) was conducted at 123 Olympic Street, in Coolsville, Anystate for Mr. Bruce Smith on 2/14/2012. The Assessment was conducted for ABC Environmental, Coolsville, Anystate 12346-2868, Anystate State Certification #AN00-1234, by Susan McGee, a Certified Risk Assessor (Anystate License # AN00-011110). The purpose of the Assessment was to identify the presence of lead hazards on and/or in a limited number of surfaces inside and outside the residence, as well as to identify the presence of deteriorated lead-based paint (LBP) and LBP that may be disturbed during planned renovations. The City of Coolsville is providing funds from the U.S. Department of Housing and Urban Development to perform a remodeling project at this home. This Assessment was also completed to help the City and the homeowner determine if any of the upcoming HUD-funded renovation activities have the potential to create additional lead hazards. Based upon conversations with the Owner and the City of Coolsville Housing Agency (Client), to the knowledge of this Assessor, there has not been any previous LBP testing at this home.

As part of the Assessment, a visual survey of the property and structure was conducted, dust wipe sampling was performed on a limited number of interior surfaces, and composite soil samples were collected. In addition, limited on-site paint testing using an x-ray fluorescence (XRF) lead-in-paint analyzer was performed.

The Assessment was contracted for by Mr. Bruce Smith, City of Coolsville, Coolsville, Anystate 12344, (555) 555-0022. Further information concerning this project can be obtained from this contracting agency. The results of the limited assessment are summarized below.

Identified Lead Hazards

While the building and its paint was generally in good condition during the Assessment, the XRF results from the deteriorated paint that was tested showed that LBP hazards exist, as defined in the Residential LBP Hazard Reduction Act of 1992 (Title X) and as defined by the Environmental Protection Agency (EPA) regulation published in the January 5, 2001 Federal Register. The XRF results indicate that lead levels above EPA and/or US Department of Housing and Urban Development (HUD) criteria exist in the following locations:

Existing Lead Hazards

The following areas are coated with Lead-Based Paint (LBP) that is *deteriorated* and currently present existing lead-based paint hazards. All component substrates are wood.

1. All exterior windows (windows are in fair condition)
2. Roof fascia of house
3. SW Bedroom door and casing

Potential Lead Hazards

1. LBP is present on the exterior siding
2. LBP is present on the front door and casing

3. LBP is present on all exterior roof fascia and trim.
4. LBP is present on all front porch components.
5. LBP is present on bathroom and kitchen walls

A listing of environmental sampling locations and their associated lead contamination levels can be found in the sections addressing the analytical laboratory results for paint, dust, and soil.

Hazard control options and associated cost estimates for the areas or components identified with LBP or lead hazards are also discussed later in this report. In an effort to aid in the interpretation of the listed findings a glossary of terms and a list of publications and resources addressing lead hazards and their health effects are included at the end of this report.

Ongoing Monitoring

Ongoing monitoring is necessary in all dwellings in which LBP is known or presumed to be present. At these dwellings, the very real potential exists for LBP hazards to develop. Hazards can develop by means such as, but not limited to: the failure of lead hazard control measures; previously intact LBP becoming deteriorated; dangerous levels of lead-in-dust (dust lead) re-accumulating through friction, impact, and deterioration of paint; or, through the introduction of contaminated exterior dust and soil into the interior of the structure. Ongoing monitoring typically includes two different activities: re-evaluation and annual visual assessments. A re-evaluation is a risk assessment that includes limited soil and dust sampling and a visual evaluation of paint films and any existing lead hazard controls. Re-evaluations are supplemented with visual assessments by the Client, which should be conducted at least once a year, when the Client or its management agent (if the housing is rented in the future) receives complaints from residents about deteriorated paint or other potential lead hazards, when the residence (or if, in the future, the house will have more than one dwelling unit, any unit that turns over or becomes vacant), or when significant damage occurs that could affect the integrity of hazard control treatments (e.g., flooding, vandalism, fire). The visual assessment should cover the dwelling unit (if, in the future, the housing will have more than one dwelling unit, each unit and each common area used by residents), exterior painted surfaces, and ground cover (if control of soil-lead hazards is required or recommended). Visual assessments should confirm that all Paint with known or suspected LBP is not deteriorating, that lead hazard control methods have not failed, and that structural problems do not threaten the integrity of any remaining known, presumed or suspected LBP.

The visual assessments do not replace the need for professional re-evaluations by a certified risk assessor. The re-evaluation should include:

1. A review of prior reports to determine where lead-based paint and lead-based paint hazards have been found, what controls were done, and when these findings and controls happened;
2. A visual assessment to identify deteriorated paint, failures of previous hazard controls, visible dust and debris, and bare soil;
3. Environmental testing for lead in dust, newly deteriorated paint, and newly bare soil; and
4. A report describing the findings of the reevaluation, including the location of any lead-based paint hazards, the location of any failures of previous hazard controls, and, as needed, acceptable options for the control of hazards, the repair of previous controls, and modification of monitoring and maintenance practices.

The first reevaluation should be conducted no later than two years after completion of hazard controls, or, if specific controls or treatments are not conducted, two years from the beginning of ongoing lead-based paint monitoring and maintenance activities. Subsequent reevaluations should be conducted at intervals of two years, plus or minus 60 days. If two consecutive reevaluations are conducted two years apart without finding a lead-based paint hazard, reevaluation may be discontinued.

Please refer to your community development agency, housing authority, or other applicable agency for additional local/regional regulations and guidelines governing re-evaluation activities.

Disclosure Regulations

A copy of this complete report must be made available to new lessees (tenants) and/or must be provided to purchasers of this property under Federal law before they become obligated under any future lease or sales contract transactions (Section 1018 of Title X – found in 24 CFR Part 35 and 40 CFR Part 745), until the demolition of this property. Landlords (Lessors) and/or sellers are also required to distribute an educational pamphlet developed by the EPA 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 LBP hazards.

Future Remodeling Precautions

It should be noted that during this Assessment, a limited number of areas were tested for the presence of LBP. All LBP, dust, and soil hazards that were identified are addressed in this report. However, LBP, dust lead hazards, and/or soil lead hazards may be present at other locations of the property. Additional paint testing should precede any future remodeling activities that occur at any untested areas. Additional dust and/or soil sample collection and analysis should follow any hazard control activity, repair, remodeling, or renovation effort, and any other work efforts that may in any way disturb LBP and/or any lead containing materials. These Assessment activities will help the Client and owner to ensure the health and safety of the occupants and the neighborhood. Details concerning lead-safe work techniques and approved hazard control methods can be found in the HUD publication entitled: *“Guidelines for the Evaluation and Control of LBP Hazards in Housing”* (www.hud.gov/offices/lead). Remodeling, repair, renovation and painting at the residence beyond the scale of minor repair and maintenance activities must be conducted in accordance with the EPA’s Lead Repair, Renovation, and Painting Rule (within 40 CFR part 745); see the EPA’s website on the RRP Rule at <http://www.epa.gov/lead/pubs/renovation.htm> for the scope and requirements of that Rule. Lead-based paint abatement or lead-based paint hazard abatement at the residence must be conducted in accordance with the EPA’s Lead Abatement Rule (also within 40 CFR 745); see the EPA’s website for Lead Abatement Professionals at <http://www.epa.gov/lead/pubs/traincert.htm>.

Conditions & Limitations

Staff of ABC Environmental has performed the tasks listed above requested by the Client in a thorough and professional manner consistent with commonly accepted standard industry practices, using state of the art practices and best available known technology, as of the date of the assessment. ABC Environmental cannot guarantee and does not warrant that this Assessment/Limited LBP Testing has identified all adverse environmental factors and/or conditions affecting the subject property on the date of the Assessment. ABC Environmental cannot and will not warrant that the Assessment/Limited Testing that was requested by the

client will satisfy the dictates of, or provide a legal defense in connection with, any environmental laws or regulations. It is the responsibility of the client to know and abide by all applicable laws, regulations, and standards, including EPA's Renovation, Repair and Painting regulation.

The results reported and conclusions reached by ABC Environmental are solely for the benefit of the client. The results and opinions in this report, based solely upon the conditions found on the property as of the date of the Assessment, will be valid only as of the date of the Assessment. ABC Environmental assumes no obligation to advise the client of any changes in any real or potential lead hazards at this residence that may or may not be later brought to our attention. Further conditions and limitations to this contracted report are included in the general terms and conditions supplied to the client with the contract for services.

Site Information and Field Testing

Resident Questionnaire

A resident questionnaire was completed as part of the Assessment, to help the Client identify particular use patterns, which may be associated with potential LBP hazards, such as opening and closing windows painted with LBP. The answers to the questionnaire were obtained during an interview with the occupants, Mr. and Mrs. Homeowner. Following is a summary of the information obtained during that interview:

Children in the Household:	2 (Ages 1, 3); None visit frequently
Children's bedroom locations:	SW bedroom
Children's eating locations:	Kitchen
Primary interior play area(s):	Living Room
Primary exterior play area(s):	Back Yard; on and near play equipment
Toy Storage:	NA
Pets:	2 cats (indoor)
Children's blood lead testing history:	None
Observed chewed surfaces:	None
Women of child bearing age:	1
Previous lead testing:	None
Most frequently used entrances:	Front door
Most frequently opened windows:	Kitchen and Living Room
Structure cooling method:	Central Air Conditioning
Gardening – type and location(s):	Previous vegetable garden (in back yard)
Plans for landscaping:	None
Cleaning regiment:	Weekly
Cleaning methods:	Mopping, sweeping, dusting, vacuuming
Recently completed renovations:	None recent
Demolition debris on site:	None
Resident(s) with work lead exposure:	None
Planned renovations:	A preliminary Scope of Work document for this residence was supplied prior to the onset of the Assessment. A copy of that document is included in Appendix E of this report. The planned renovation is through the City of Coolsville program. A complete list of pending renovation activities can be obtained from Mr. Bruce Smith, City of Coolsville, Anystate.

Building Conditions Survey

Date of Construction:	1937
Apparent Building Use:	Residential
Setting:	Residential
Front Entry Faces:	East
Design:	Bungalow
Construction Type:	Wood framed, wood shingles
Lot Type:	Slight slope, drains to the east
Roof:	Fair (curled shingles), no apparent roof leaks
Foundation:	Good, no known basement leaks or visible foundation cracks
Front Lawn Condition:	Approx. 10% bare soil
Back Lawn Condition:	Aprox. 20% bare soil; existence of play structure
Drip Line Condition:	Some Paint chips along the driplines
Site Evaluation:	Very good
Exterior Structural Condition:	Exterior structural is good and paint condition is fair
Interior Structural Condition:	Excellent
Overall Building/Site Condition:	Very Good

Paint Condition Survey

Please Note: EPA and HUD have provided a specific definition for the term “deteriorated paint.” Deteriorated paint is defined as “any interior or exterior paint or other coating that is peeling, chipping, chalking or cracking, or any paint or coating located on an interior or exterior surface or fixture that is otherwise damaged or separated from the substrate.” This definition is most typically associated with surface conditions only. Usage of this term in describing conditions other than those associated with surface coatings are not known to be defined by EPA or HUD.

Identified Deteriorated Paint, Paint Conditions, Lead Content, & Most Apparent Cause of Deterioration:

- ◆ Lead-based paint on the exterior windows, portions of porch and fascia are peeling over wood.
- ◆ Paint on one bathroom wall was deteriorated; that wall was painted with lead-based paint.
- ◆ Lead in dust on the bathroom floor was above the dust-lead standard.
- ◆ Moisture and age are the most likely causes of the damage.

The remaining paint exhibited no apparent signs of deterioration, as of the date of the Assessment.

Paint Sampling and Testing

Limited LBP Testing, conforming with HUD regulation 24 CFR 35.930(c), (d) was accomplished at this residence on surfaces found to have deteriorated paint and/or where it was indicated to the Assessor that planned renovation would occur. No paint chip samples were taken. On 2/14/2012, a total of 23 tests (assays) were taken at a limited number of specified surfaces on the inside and outside of the residence using an x-ray fluorescence analyzer. Deteriorated paint and areas that were specified to be disturbed during the planned renovation project were tested. Lead concentrations that meet or exceed the HUD published levels identified as being potentially dangerous (e. g., greater than or equal to 1.0 milligrams per centimeter square [$> 1.0 \text{ mg/cm}^2$]) were encountered on the exterior siding and trim, the exterior window components and trim, and all front porch components.

Some of the remaining test locations exhibited lead-in-paint levels below the HUD levels, but in great enough quantities to be detectable by our XRF analyzer. It should be noted that lead concentrations (in paint) that are less than the levels that identify a surface coating as LBP still have the potential of causing lead poisoning. Should these or any potential LBP painted components and/or surfaces be disturbed in any manner that generates dust, extreme care must be taken to limit its spread. **It should be presumed that any and all painted surfaces, components, or surfaces not requested to be tested as part of this investigation, or any previous investigations, are coated with LBP, and that renovation or repair activities in these areas dictate the use of safe work practices that limit dust generation and area contamination.**

Testing was performed by Susan McGee, a State of Anystate certified Risk Assessor, using the Weluvexraze X-ray Fluorescence analyzer (S/N 1234, State of Anystate license #AN99-4321). Please refer to the appendices for the detailed XRF, dust and soil sampling analytical reports.

Interior Dust Sampling

A total of 6 single surface dust wipe samples were collected in an effort to help to determine the levels of lead-containing dust on the interior window sills and floors. These samples were collected from areas most likely to be lead-contaminated if lead-in-dust is present. These samples were collected in accordance with the requirements of ASTM Standard E-1728, Standard Practice for Field Collection of Settled Dust Samples Using Wipe Sampling Methods for Lead Determination by Atomic Spectrometry Techniques. EPA, HUD and State of Anystate regulations define the following as hazardous levels for lead dust in residences: floors – $\geq 40 \text{ mg/ft}^2$ (micrograms per square foot); interior window sills – $\geq 250 \text{ mg/ft}^2$. There is no EPA dust-lead hazard standard for window troughs. Please refer to **Appendix B – Dust Wipe Analytical Results** for the laboratory reports and to **Appendix I – Lead and Lead Safety Information and Resources** for a list of publications and resources addressing lead hazards and their health effects; both are located at the end of this report. As indicated below, a hazardous level of leaded dust, as defined by EPA and HUD, was detected in one sample. **This sample was obtained from the bathroom floor and constitutes a dust-lead hazard in that room.**

	Type	Location	Component	Sample Size (ft ²)	Sample Location	Test Results (µg/ft ²)
1	Dust Wipe	Bathroom	Floor	1.00	Floor, Center of room.	80.0
2	Dust Wipe	Living Room	Sill	0.66	Wood, Wall A, sill.	41.1
3	Dust Wipe	Kitchen	Floor	1.00	Carpet, Center of room.	<20.0
4	Dust Wipe	Kitchen	Sill	0.50	Wood, Wall D, sill.	<40.0
5	Dust Wipe	Master Bedroom	Floor	1.00	Carpet, Center of room.	<20.0
6	Dust Wipe	Master Bedroom	Sill	0.74	Wood, Wall C, sill	<27.0

Laboratory Information:

Anytown Laboratories

2222 West Street
Anytown, Anystate 12347 (800) 555-0055

Dust Wipe Analysis Protocol:

EPA Method SW846, 7420, implementing a microwave-assisted digestion process.

Dust Wipe medium used:

Lead-Wipes, ASTM # E1792-96aqq

National Lead Laboratory Accreditation Program

Serial number:

#987654

Soil Sampling and Laboratory Information

Two (2) composite soil samples were collected at this residence in accordance with the requirements of ASTM Standard E-1727, Standard Practice for Field Collection of Soil Samples for Lead Determination by Atomic Spectrometry Techniques. A composite sample is a sample containing soil from a stated number of locations mixed together to form a Composite sample. The first sample consisted of soil from four locations in the front yard flower garden at 1’ on center (O.C.). The second sample was collected from four separate locations in the B (south) side yard at 1’ O.C. The samples were collected from bare soil areas only. The analytical results did not identify lead concentrations at or above the levels that EPA and HUD identifies as hazardous. See the following table for a summary of the soil sampling results. Please refer to **Appendix C – Soil Sample Analytical Data** for the detailed analytical reports. Testing data in **bold face** indicates soil lead levels at or above the EPA Hazardous Levels of Lead regulations that were published on January 5, 2001.

	Type	Location	Comments	Test Results (µg/g)
7	Composite	Front flower garden	Bare Soil sample	990
8	Composite	Backyard under play equipment – play area	Bare Soil sample	260

Laboratory Information:

Anytown Laboratories	2222 West Street Anytown, Anystate 12346 (800) 555-0055
Soil Analysis Protocol:	EPA Method SW846, 7420, implementing a microwave-assisted digestion process.
National Lead Laboratory Accreditation Program Serial number:	#987654

Lead Hazard Control Options and Cost Estimates

Lead-safe work practices and worker/occupant protection practices complying with current EPA, HUD and OSHA standards will be necessary to safely complete all work involving the disturbance of LBP coated surfaces and components. In addition, any work considered lead hazard control will enlist the use of interim control (temporary) methods and/or abatement (permanent) methods. It should be noted that all lead hazard control activities have the potential of creating additional hazards or hazards that were not present before.

Details for the listed lead hazard control options and issues surrounding occupant/worker protection practices can be found in the publication entitled: **Guidelines for the Evaluation and Control of LBP Hazards in Housing** published by HUD, the Environmental Protection Agency (EPA) lead-based paint regulations, and the Occupational Safety and Health Administration (OSHA) regulations found in its Lead in Construction Industry Standard.

The associated cost estimates, unless otherwise noted, include the labor and materials to accomplish the stated activity and most additional funds typically found to be necessary to complete worker protection, site containment, and cleanup procedures. These are approximate estimates only and due to a variety of potential factors, may not accurately reflect all local cost factors. A precise estimate must be obtained from a certified LBP abatement contractor or a contractor trained in lead-safe work practices. Properly trained and/or licensed persons, as well as properly licensed firms (as mandated) should accomplish all abatement/interim control activities conducted at this residence.

Interim controls, as defined by HUD, means a set of measures designed to temporarily reduce human exposure to LBP hazards and/or lead containing materials. These activities include, but are not limited to: component and/or substrate repairs; paint and varnish repairs; the removal of dust-lead hazards; renovation; remodeling; maintenance; temporary containment; placement of seed, sod or other forms of vegetation over bare soil areas; the placement of at least 6 inches of an appropriate mulch material over an impervious material, laid on top of bare soil areas; the tilling of bare soil areas; extensive and specialized cleaning; and, ongoing LBP maintenance activities.

Abatement, as defined by HUD, means any set of measures designed to permanently eliminate LBP and/or LBP hazards. The product manufacturer and/or contractor must warrant abatement methods to last a minimum of twenty (20) years, or these methods must have a design life of at least twenty (20) years. These activities include, but are not necessarily limited to: the removal of LBP from substrates and components; the replacement of components or fixtures with lead containing materials and/or lead containing paint; the permanent enclosure of LBP with construction materials; the encapsulation of LBP with approved products; the removal or permanent covering (concrete or asphalt) of soil-lead hazards; and, extensive and specialized cleaning activities. (EPA's definition is substantively the same.)

SPECIFICATION EXCERPTS:

All work shall be done in accordance with the EPA RRP Rule or the EPA Lead Abatement Rule, as applicable, or the corresponding EPA-authorized State or tribal program, based on the control strategy determined by the owner or owner’s representative. These rules incorporate the protocols in the HUD *Guidelines for the Evaluation and Control of LBP Hazards in Housing*.

All firms performing interim control or lead abatement activities must certified by the State of Anystate, which is authorized by EPA to conduct the certification programs. All persons performing interim control or lead abatement activities must have successfully completed a State of Anystate accredited training program in “renovation” (more specifically, renovation, repair and painting); or have successfully completed a State of Anystate accredited training program in lead abatement work or supervision and been certified by the State of Anystate, as applicable, except that, if the housing is not receiving federal housing or rehabilitation assistance, the workers need only on-the-job training from the certified renovator.

SPECIAL CLEANING PRECEDING LEAD HAZARD CONTROL ACTIVITIES

- a) Before any lead hazard control activities begin, the structure and site must be inspected and pre-cleaned. Some of the required steps include removing large debris and paint chips followed by HEPA vacuuming of all horizontal surfaces (floors, window sills, troughs, etc.). (The cleaning protocols described in this publication can assist the contractor in doing a preliminary cleaning and improving the chances of passing clearance inspections after remediation.)

Precleaning \$XX/S.F.

HAZARD 1: Deteriorated LBP on the exterior siding and trim

- a) INTERIM CONTROLS – STABILIZATION: A lead hazard could be created if the exterior siding is improperly prepared for repainting (scraped) during the upcoming renovations. Following preparation work, the lead-based paint coatings on the exterior siding and trim may be addressed by stabilizing the underlying substrate and then repainting. (This activity has the potential to create a high volume of lead-contaminated dust, and extra care must be taken by the contractor to limit and contain the dust generated.)

Stabilization \$XX/S.F.

- b) ABATEMENT – ENCLOSURE: Enclose all exterior siding and trim with vinyl siding and pre-finished aluminum wrap materials. Use caulk to seal the bottom of the siding to the house and prevent leaded dust from falling through to the ground. (This method usually generates smaller amounts of lead-contaminated dust than does scraping and repainting, and would permanently enclose the surfaces, eliminating future hazards. Even though the potential for leaded dust contamination is generally less with this method of remediation, special attention to work practices will be necessary to limit dust generation.)

Siding/Trim Enclosure \$XX/S.F.

HAZARD 2: Deteriorated LBP on all exterior window components and trim

- a) INTERIM CONTROLS – PAINT STABILIZATION: A lead hazard could be created if the exterior window components and trim is prepared for repainting (scraped) during the upcoming renovations. Following preparation work, the lead-based paint coatings on the exterior window components and trim may be addressed by stabilizing the surfaces with new paint. (This activity has the potential to create a high volume of lead-contaminated dust, and extra care must be taken by the contractor to limit and contain the dust generated.)

Stabilization \$XX/S.F.

- b) ABATEMENT – WINDOW REPLACEMENT: This involves removing the exterior window components and installing new replacement windows. All windows must be sealed off from the inside of the house during the duration of the work and extra care must be taken by the contractor to limit and contain the dust generated. (This activity has the potential to create a high volume of lead-contaminated dust.)

Removal of exterior window components
and installation of replacement windows. \$XXX/ea.

HAZARD 3: Deteriorated LBP on all painted front porch components (e.g., floor, columns, frame, door)

- a) INTERIM CONTROLS – PAINT STABILIZATION: Stabilize the underlying substrate and then repaint. (This activity has the potential to create a high volume of lead-contaminated dust, and extra care must be taken by the contractor to limit and contain the dust generated.)

Stabilization \$XXX/S.F.

- b) ABATEMENT – COMPONENT REPLACEMENT: Remove and replace all of the painted porch components (This remediation option has the potential to generate extremely high amounts of lead-contaminated dust and would require extensive containment.)

Replacement of all porch components \$XXX- \$XXX

HAZARD 4: Deteriorated paint on wall and floor dust-lead hazard in bathroom

- a) INTERIM CONTROLS – REMOVAL OF DUST LEAD HAZARD AND STABILIZATION: The existing dust on the bathroom floor must be removed prior to preparing the room for the paint stabilization work, in particular, before the plastic sheeting is laid on the floor. The deteriorated lead-based paint coating and the underlying bathroom wall substrates must be stabilized and then repainted. During the cleaning phase of the project, special care must be taken to ensure that the dust is removed from the floor. (This activity has the potential to create a high volume of lead-contaminated dust, and extra care must be taken by the contractor to limit and contain the dust generated.)

Stabilization of bathroom walls \$XXX/S.F.

- b) **ABATEMENT – COMPONENT REPLACEMENT:** Remove and replace of all bathroom walls components. The existing dust on the bathroom floor must be removed prior to preparing the room for the paint stabilization work, in particular, before the plastic sheeting is laid on the floor. During the cleaning phase of the project, special care must be taken to ensure that the dust is removed from the floor. (This remediation option has the potential to generate extremely high amounts of lead-contaminated dust and would require extensive containment. Abatement would normally not be the most feasible or cost-effective approach for this room, but remains an option.)

Replacement of painted components in bathroom \$XXXX

SPECIAL CLEANING FOLLOWING LEAD HAZARD CONTROL ACTIVITIES

As part of the end of all lead hazard control activities, the structure and site must be inspected and cleaned in accordance with either the EPA RRP Rule or the EPA Lead Abatement Rule, as applicable.

CLEARANCE FOLLOWING LEAD HAZARD CONTROL ACTIVITIES

Because this housing is receiving federal rehabilitation assistance, and the total amount of painted surfaces to be disturbed in the lead hazard control and rehabilitation work exceed HUD’s *de minimis* amounts, HUD requires a clearance examination following the rehabilitation. Because of this regulatory requirement, cleaning verification as described in EPA’s RRP rule is not allowable on this project and clearance must be performed.

Replacement of painted components in bathroom \$XXXX

Additional Notes:

Accumulation of debris is not permitted, and all plastic drop cloths must be cleaned, folded inward, tied, and disposed of properly each day. All trash must be promptly and properly removed from the site or stored securely prior to removal, and the area must be left clean and as close to original condition as possible, or better. Following the HUD Guidelines will help increase the chances of attaining State of Anystate lead-in-dust clearance levels.

Remember that lead testing occurred at a limited number of locations in the structure; so LBP, lead-based paint hazards (of paint, dust or soil) and/or other lead-containing materials could still be present in the unit at areas not tested as part of this Lead Hazard Risk Assessment. If, at a later date, any repair, maintenance, remodeling or renovation activities disturb any paint where the concentrations of lead are not known, procedures should be used that presume that paint is lead-based paint, or that paint should be tested to determine if it is lead-based paint.

Appendix A

XRF Lead-Based Paint Testing Results

Appendix A – XRF Analytical Sampling Results for 123 Olympic Street, Coolsville, Anystate 12347 2/14/2012									
Reading Number	Location ¹	Side	Structure	Feature	Condition	Substrate	Color	Result	Lead (mg/cm ²)
1	LR	A	Wall	Interior	Good	Drywall	White	NEG	0.5
2	Back Porch	D	Porch Door	Interior side	Good	Wood	White	NEG	0.6
3	Front Porch	A	Column	Exterior	Fair	Wood	Tan	POS	6.7
4	Front Porch	A	Railing		Fair	Wood	Tan	POS	6.7
5	Front Porch	A	Ceiling		Fair	Wood	Tan	POS	6.7
6	Front Porch	A	Wall		Fair	Wood	Tan	POS	6.7
7	Front Porch	A	Posts		Fair	Wood	Tan	POS	6.7
8	Front Porch	A	Stairs	Treads	Fair	Wood	Tan	POS	6.7
9	DR-exterior	A	Window	Sash	Fair	Wood	Tan	POS	11.8
10	Exterior	A	Window	Casing	Fair	Wood	Tan	POS	5.4
11	Exterior	D	Wall	Siding	Good	Wood	Green	POS	8.5
12	Exterior	B	Wall	Siding	Good	Wood	Green	POS	5.3
13	Front Porch	A	Floor		Good	Concrete	Gray	POS	2.6
14	Front Door	A	Exterior side	Door	Poor	Wood	White	POS	1.9
15	Front Door	A	Casing	Casing	Poor	Wood	White	POS	1.9
16	Bathroom	B	Wall		Fair	Drywall	Blue	POS	9.1
17	Bathroom	B	Wall	Baseboard	Good	Wood	Blue	NEG	0.1
18	Bathroom	B	Wall	Shoemolding	Good	Wood	Blue	NEG	0.1
19	Mstr Bdrm	Center	Floor		Good	Wood	Brown	NEG	0.3
20	Mstr Bdrm	Center	Wall		Good	Drywall	White	NEG	0.2

21	Mstr Bdrm	Center	Wall	Baseboard	Good	Wood	White	NEG	0.2
22	Mstr Bdrm	Center	Wall	Top Molding	Good	Wood	White	NEG	0.1
23	Mstr Bdrm	Center	Ceiling		Good	Drywall	White	NEG	0.1
24	Mstr Bdrm	B	Door		Good	Wood	White	NEG	0.1
25	SW Bdrm	A	Door		Good	Wood	White	POS	5.2
26	SW Bdrm	A	Door	Casing	Good	Wood	White	POS	9.5
27	SW Bdrm	B	Wall		Good	Drywall	Blue	NEG	0.8
28	SW Bdrm	B	Trim		Good	Wood	Blue	NEG	0.5
29	Kitchen	C	Exterior Door	Door - interior side	Good	Wood	White	NEG	0.3
30	Kitchen	D	Wall	Interior-next to refrig.	Good	Drywall	Yellow	POS	4.1
31	Back Prch	D	Wall	Interior	Good	Wood	White	NEG	0.7
32	Back Prch	B	Wall	Interior	Good	Drywall	White	NEG	0.3
33	Front Porch	A	Trim	Exterior SE corner	Good	Wood	Tan	POS	4.9
34	Exterior	A	Trim	Fascia-NE edge	Good	Wood	Tan	POS	4.7
35	Exterior	C	Wall	Siding	Good	Wood	Green	POS	2.8
36	DR		Floor		Good	Wood	Brown	NEG	0.3

¹ See Sketch in Appendix A

XRF Calibration Checks

C-1	Calibration Verify	NIST Lead Paint Film Standard, 1.0 + .1, (Red NIST Film)	1.0
C-2	Calibration Verify	NIST Lead Paint Film Standard, 1.0 + .1, (Red NIST Film)	1.1
C-3	Calibration Verify	NIST Lead Paint Film Standard, 1.0 + .1, (Red NIST Film)	0.9

Performed by ABC Environmental, 920 Massachusetts Avenue, Poolsville, Anystate 12346-2868

Appendix B
Dust Wipe Sample Analytical Data

ANYTOWN LABORATORIES

INCORPORATED
 2222 West Street
 Anytown, Anystate 12346 (555) 555-0055 · 800-555-0033 · (Fax) 555-555-0099
Excellence in Customer Service and Technology
 AIHA/ELLAP 100100, NVLAP 0000, CAELAP 1111, RRLAP 1010

LABORATORY ANALYSIS REPORT

Lead Analysis by EPA 3050B/7420 Method

CLIENT #:	ABC-123	DATE COLLECTED:	2/14/2012
CLIENT:	ABC Environmental	DATE RECEIVED:	2/15/2012
ADDRESS:	7941 Westgate Street	DATE ANALYZED:	2/15/2012
	Poolsville, Anystate 12346-2636	DATE REPORTED:	2/15/2012
PO #:	N/A	SAMPLE TYPE:	Wipe
PROJECT NAME:	City of Coolsville		
JOB LOCATION:	123 Olympic Street, Coolsville, Anystate 12347		

ALI Sample No	Client Sample No.	Sample Description	Sample Area (ft ²)	Dilution Factor	Total Lead (µg)*	Lead Concentration (µg/ft ²)
021559	1234-1	Bathroom floor-center	1.0	1	80.0	80.0
021560	1234-2	Living Rm Sill	.66	1	41.1	41.1
021561	1234-3	Kitchen Floor	1.00	1	<20.0	<20.0
021562	1234-4	Kitchen D Sill	1.00	1	<40.0	<40.0
021563	1234-5	Mstr Bdrm Floor	1.00	1	<20.0	<20.0
021564	1234-6	Mstr Bdrm Sill	0.74	1	<27.0	<27.0

QC – 18081	10.0 ppm Calibration Std				1,012.3	101.2%
QC – 18081	200 µg spike				210.7	105.4%
QC – 18081	5.0 ppm Calibration Std				521.7	104.4%
QC – 18081	Blank				<20.0	
QC – 18081	NIST 2710 Standard				569.7	103.0%

JUDITH JUNE

ANALYST: Judith June

Total No. of Pages in Report: 1

Matthew Monday, CIH

REVIEWED BY: Matthew Monday, CIH, Dept. Head

Minimum Reporting Limit: 20 µg Total Lead. Effective 3/6/01, EPA Lead Hazard Standards: 40 µg/ft² for floors and 250 µg/ft² for interior window sills, 400 µg/ft² for window troughs. Industrial projects may have limits established per project. *For true values, assume two (2) significant figures.

Appendix C

Soil Sample Analytical Data

ANYTOWN LABORATORIES INCORPORATED

2222 West Street
 Anytown, Anystate 12346 (555) 555-0055 · 800-555-0033 · (Fax) 555-555-0099
Excellence in Customer Service and Technology
 AIHA/ELLAP 100100, NVLAP 0000, CAELAP 1111, RRLAP 1010

LABORATORY ANALYSIS REPORT

Lead Analysis by EPA 3050B/7420 Method

CLIENT #:	ABC-123	DATE COLLECTED:	2/14/2012
CLIENT:	ABC Environmental	DATE RECEIVED:	2/15/2012
ADDRESS:	7941 Westgate Street	DATE ANALYZED:	2/15/2012
	Poolsville, Anystate 12346-2636	DATE REPORTED:	2/15/2012
PO #:	N/A	SAMPLE TYPE:	Soil

PROJECT NAME: City of Coolsville
 JOB LOCATION: 123 Olympic Street, Coolsville, Anystate 12347

ALI Sample No	Client Sample No.	Sample Description	Sample Wt (mg)	Dilution Factor	Total Lead (μg)*	Lead Concentration (% by wt)	Lead Conc (ppm)
021565	1234-S1	Front Flower Garden	1,580	1	990	.067	670
021566	1234-S2	Backyard-under play equipment	1,275	1	560	.045	450

QC – 14669	10.0 ppm Calibration Std		967.2	96.7%	
QC – 14669	200 μg spike		196.0	98.0%	
QC – 14669	5.0 ppm Calibration Std		503.8	100.8%	
QC – 14669	Blank		>20.0		
QC – 14669	NIST 2710 Standard		541.8	97.9%	

William W. Webster
 ANALYST: William Wilbur Webster
 Total No. of Pages in Report: 1

Matthew M. Monday, CIH
 REVIEWED BY: Matthew Milton Monday, CIH, Dept. Head

*Minimum Reporting Limit: 20 μg Total Lead. Effective 3/6/01, EPA Lead Hazard Standards: 40 $\mu\text{g}/\text{ft}^2$ for floors and 250 $\mu\text{g}/\text{ft}^2$ for interior window sills, 400 $\mu\text{g}/\text{ft}^2$ for window troughs. Industrial projects may have limits established per project. *For true values, assume two (2) significant figures.*

Appendix D

Site and Floor Plan

Insert site and floor plans indicating the locations of XRF testing, soil lead and dust lead sampling performed at this property.

Appendix E

Scope of Renovation Work, As Provided to Assessor

If applicable, insert governing authority's supplied scope of planned renovation work on this page and all additional pages necessary.

Appendix F

Copy of Risk Assessor's License/Certification

NOTE: In this age of electronic alteration and reproduction, HUD encourages all lead-based paint professionals to give serious consideration to the issue of whether they wish to attach photocopies of their certification(s) or license(s).

Insert copy of State/EPA Risk Assessor license/certification.

Appendix G

Copy of Firm's Lead Activity License/Certification

Insert copy of firm's lead activity license/certification.

Appendix H

Copy of XRF Training Certificate and XRF Performance Characteristics Sheet

Insert copy of XRF training certificate.

Insert PCS. (If more than one XRF model was used, insert the PCS for each.)

Appendix I

“LEAD SPEAK” – A Brief Glossary

Abatement: A measure or set of measures designed to permanently eliminate lead-based paint hazards or lead-based paint. Abatement strategies include the removal of lead-based paint, enclosure, encapsulation, replacement of building components coated with lead-based paint, removal of lead-contaminated dust, and removal of lead-contaminated soil or overlaying of soil with a durable covering such as asphalt (grass and sod are considered interim control measures). All of these strategies require preparation; cleanup; waste disposal; post-abatement clearance testing; recordkeeping; and, if applicable, monitoring. (For full EPA definition, see 40 CFR 745.223).

Bare soil: Soil not covered with grass, sod, some other similar vegetation, or paving, including the sand in sandboxes.

Chewable surface: An interior or exterior surface painted with lead-based paint that a young child can mouth or chew. A chewable surface is the same as an “accessible surface” as defined in 42 U.S.C. 4851b(2). Hard metal substrates and other materials that cannot be dented by the bite of a young child are not considered chewable.

Deteriorated paint: Any paint coating on a damaged or deteriorated surface or fixture, or any interior or exterior lead-based paint that is peeling, chipping, blistering, flaking, worn, chalking, alligating, cracking, or otherwise becoming separated from the substrate.

Dripline/foundation area: The area within 3 feet out from the building wall and surrounding the perimeter of a building.

Dust-lead hazard: Surface dust in residences that contains an area or mass concentration of lead equal to or in excess of the standard established by the EPA under Title IV of the Toxic Substances Control Act. EPA standards for dust-lead hazards, which are based on wipe samples, are published at 40 CFR 745.65(b); as of the publication of this edition of these *Guidelines*, these are 40 µg/ft² on floors and 250 µg/ft² on interior windowsills. Also called lead-contaminated dust.

Friction surface: Any interior or exterior surface, such as a window or stair tread, subject to abrasion or friction.

Garden area: An area where plants are cultivated for human consumption or for decorative purposes.

Impact surface: An interior or exterior surface (such as surfaces on doors) subject to damage by repeated impact or contact.

Interim controls: A set of measures designed to temporarily reduce human exposure or possible exposure to lead-based paint hazards. Such measures include, but are not limited to, specialized cleaning, repairs, maintenance, painting, temporary containment, and the establishment and operation of management and resident education programs. Monitoring, conducted by owners, and reevaluations, conducted by professionals, are integral elements of interim control. Interim controls include dust removal; paint film stabilization; treatment of friction and impact surfaces; installation of soil coverings, such as grass or sod; and land use controls. Interim controls that disturb painted surfaces are renovation activities under EPA’s Renovation, Repair and Painting Rule.

Lead-based paint: Any paint, varnish, shellac, or other coating that contains lead equal to or greater than 1.0 mg/cm² as measured by XRF or laboratory analysis, or 0.5 percent by weight (5000 mg/g, 5000 ppm, or 5000 mg/kg) as measured by laboratory analysis. (Local definitions may vary.)

Lead-based paint hazard: A condition in which exposure to lead from lead-contaminated dust, lead-contaminated soil, or deteriorated lead-based paint would have an adverse effect on human health (as established by the EPA at 40 CFR 745.65, under Title IV of the Toxic Substances Control Act). Lead-based paint hazards include, for example, **paint-lead hazards, dust-lead hazards, and soil-lead hazards.**

Paint-lead hazard: Lead-based paint on a friction surface that is subject to abrasion and where a dust-lead hazard is present on the nearest horizontal surface underneath the friction surface (e.g., the window sill, or floor); damaged or otherwise deteriorated lead-based paint on an impact surface that is caused by impact from a related building component; a chewable lead-based painted surface on which there is evidence of teeth marks; or any other deteriorated lead-based paint in any residential building or child-occupied facility or on the exterior of any residential building or child-occupied facility.

Play area: An area of frequent soil contact by children of under age 6 as indicated by, but not limited to, such factors including the following: the presence of outdoor play equipment (e.g., sandboxes, swing sets, and sliding boards), toys, or other children's possessions, observations of play patterns, or information provided by parents, residents, care givers, or property owners.

Soil-lead hazard: Bare soil on residential property that contains lead in excess of the standard established by the EPA under Title IV of the Toxic Substances Control Act. EPA standards for soil-lead hazards, published at 40 CFR 745.65(c), as of the publication of this edition of these *Guidelines*, is 400 µg/g in play areas and 1,200 µg/g in the rest of the yard. Also called lead-contaminated soil.

Appendix J

Additional Lead and Lead Safety Resource Data

Key Units of Measurement

Gram (g or gm): A unit of mass in the metric system. A nickel weighs about 1 gram, as does a 1 cube of water 1 centimeter on each side. A gram is equal to about 35/1000 (thirty-five thousandths of an ounce). Another way to think of this is that about 28.4 grams equal 1 ounce.

µg (microgram): A microgram is 1/1000th of a milligram. To put this into perspective, a penny weighs 2 grams. To get a microgram, you would need to divide the penny into 2 million pieces. A microgram is one of those two million pieces.

µg/dL (microgram per deciliter): used to measure the level of lead in children’s and worker’s blood to establish whether intervention is needed. A deciliter is a little less than a half a cup.

µg/ft² (micrograms per square feet): the unit used to express levels of lead in dust samples. All reports should report levels of lead in dust in µg/ft².

mg/cm² (milligrams per square centimeter): used to report levels of lead in paint thru XRF testing.

ppm (parts per million): Typically used to express the concentrations of lead in soil. Can also be used to express the amount of lead in a surface coating on a mass concentration basis. This measurement can also be shown as: µg/g, mg/kg or mg/l.

ppb (parts per billion): Typically used to express the amount of lead found in drinking water. This measurement is also sometimes expressed as: µg/L (micrograms per liter).

EPA/HUD Lead-Based Paint and Lead-Based Paint Hazard Standards

Lead-Based Paint (may be determined in either of two ways)

- ◆ Surface concentration (mass of lead per area) 1.0 µg/cm²
- ◆ Bulk concentration (mass of lead per volume) 0.5%, 5000 µg/g, or 5000 ppm

Dust-thresholds for Lead-Contamination

- ◆ Floors 40 µg/ft²
- ◆ Interior Window Sills 250 µg/ft²
- ◆ Window Troughs (clearance examination only) 400 µg/ft²

Soil-thresholds for Lead Contamination

- ◆ Play areas used by children under age 6 400 µg/g, or 400 ppm
- ◆ Other areas 1200 µg/g, or 1200 ppm

Resources For Additional Information On Lead-Based Paint And Lead-Based Paint Hazards:

National Lead information Center & Clearinghouse:

1-800-424 LEAD

www.epa.gov/lead/pubs/nlic.htm

Centers for Disease Control and Prevention Lead Program:

www.cdc.gov/lead

Toll-free CDC Contact Center: 800-CDC-INFO; TTY 888-232-6348

Consumer Product Safety Commission

www.cpsc.gov

Toll-free consumer hotline: 1-800-638-2772; TTY 301-595-7054

Environmental Protection Agency Lead Program:

www.epa.gov/lead

202-566-0500

HUD Office of Healthy Homes and Lead Hazard Control:

www.hud.gov/offices/lead

202-402-7698

Anystate Department of Health and Environment, Lead Poisoning Prevention Program

<http://depthealth.state.an/lead/>

Hearing- or speech-challenged individuals may access the federal agency numbers above through TTY by calling the toll-free Federal Relay Service at 800-877-8339; see also <http://www.federalrelay.us/tty>.