

Interior Dust Cleaning Work Plan for Residential Area near the Shapiro Brothers Festus Site

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FIGURES

Figure 1 Site Location Map

APPENDICES

None

ACRONYMS AND ABBREVIATIONS

cm	centimeter
COC	chain of custody
DHSS	Department of Health and Senior Services
DQO	data quality objectives
DU	decision unit
EU	exposure unit
HRS	Hazard Ranking System
ICS	incremental composite sampling
IDW	investigation derived wastes
MDNR	Missouri Department of Natural Resources
mg/kg	milligrams per kilogram
PAH	polycyclic aromatic hydrocarbons
PCB	polychlorinated biphenyls
PBDE	polychlorinated biphenyl ethers
PPE	personal protection equipment
QAPP	Quality Assurance Project Plan
RAL	Removal Action Levels
RCRA	Resource Conservation and Recovery Act
SAP	Sampling and Analysis Plan
SU	sampling unit
USEPA	U.S. Environmental Protection Agency

1.0 Introduction

On behalf of MW Recycling Inc., AMEC has prepared this Interior Dust Cleaning Work Plan (DCWP) for proposed residential dust cleaning as required by the Missouri Department of Natural Resources (MDNR)¹. The scope of the AMEC DCWP will concentrate on point-of-entry/exit areas between outdoor and indoor areas and interior living spaces, which are considered the primary potential exposure areas for residents. At each target residential parcel where total yard concentrations exceed 400 mg/kg for lead, interior dust cleaning will be conducted only after exterior soil cleanup has been completed, to avoid the potential for recontamination of interior areas from the “track-in” of yard soil with elevated lead concentrations.

2.0 Site Information

2.1 Site Location

The facility is located at the intersection of 12th Street and Vine in Festus, Missouri. It is a rectangular 9-acre area, oriented primarily north-south, along the boundary that separates Festus and Crystal City, Missouri (Figure 1). The Site consists of residential properties that require site characterization and/or yard soil remediation. The residences where we will undertake interior dust cleaning are located to the east, south and west of the facility.

2.2 Description

The Shapiro Brothers Festus yard has been used as a metal scrap processing and recycling facility since the 1940s. Prior to fall of 2011, when a truck wash system was installed in to clean the undercarriage and wheels of trucks leaving the southern gate, trucks left the unpaved facility unwashed. During periods of wet soil conditions, trucks would historically have tracked mud from the facility onto nearby streets. In late 2010, Shapiro Brothers began operating a street sweeper in the roads around the facility to remove residual material tracked into the streets by trucks, and this practice continues to present.

Prior to the spring of 2011, trucks primarily approached the facility by traveling along 12th Street to and from Truman Boulevard (U.S. Highway 61). A heavy spring flood event in 2011 washed out the culvert beneath 12th Street near the facility making the road impassable. Since then, trucks have traveled south from the facility on the residential street (Delmar Avenue) before connecting with Truman Boulevard via 6th Street. .

¹ MW Recycling believes that the lead contamination in the yards and potentially the residential homes is not from the Shapiro yard and that MDNR has neglected key data in demonstrating the completed exposure pathway from exterior residential soil to interior dust, i.e. the residential dust lead analysis. Not all lead containing dust is available for exposure to the targeted receptor, the child. MW Recycling, by agreeing to offer interior dust cleaning to certain residences, does not admit that it is responsible for any contamination that may exist in the dust in these residences, nor liable for the deposition of interior lead dust within the residential structure.

2.3 History/Contaminants of Concern

In July and September 2011, the Missouri Department of Natural Resources conducted a series of environmental inspections at the Shapiro Brothers Festus yard. (Site). The inspections were conducted in response to a complaint received from the city of Festus concerning soil being tracked onto city streets from the site. Sampling conducted by the city indicated elevated lead levels in street sweepings collected from roadways near the facility which resulted in additional sampling being conducted by MDNR as part of a CERCLA Combined Site Inspection/Removal Site Evaluation. The Department's investigation identified elevated lead levels in the soils of residential yards adjacent to the facility and along haul residential roads used by trucks leaving the facility. Based on the results of the sampling events, lead has been determined to be the contaminant of concern in the residential areas near the Site.

3.0 Interior Dust Cleaning Program

Interior dust cleaning will be performed at a given property where total yard concentrations exceed 400 mg/kg for lead. The interior dust cleaning objective is to remove lead containing dust² within a designated area of the structure meeting the single sample HUD Clearance Dust Standards (see below).

Much of the guidance for cleaning house dust derives from the Guidelines for the Evaluation and Control of Lead-based Paint Hazards in Housing (HUD 1995) (the HUD Guidelines). The HUD Guidelines address a variety of lead paint abatement procedures. The interior dust cleaning associated with the MDNR Program is not intended to be a lead abatement program; however, the following components of the HUD Guidelines have been used as guidance in developing of the DCWP: Chapter 11, Section V - Interim Controls for dust removal and control, Section V, Chapter 14, - Cleaning Throughout Hazard Controls, Section V, Chapter 15 - Clearance, Section VI and Appendix 13.1 Wipe Sampling for Settled Lead-Contaminated Dust. Only portions of Chapters 11, 14 and 15 of HUD Guidelines have been used as guidance in developing the cleaning procedures, i.e., Those specific to settled dust. While MW Recycling has agreed to undertake this limited residential lead dust cleaning, MW Recycling believes that no such remediation is warranted based on present information.

3.1 Interior Dust Cleaning Program Activities

This section presents a description of the various dust cleaning activities to be performed at individual properties where total yard concentrations exceed 400 mg/kg for lead. Included in this section is information for obtaining access, dust cleaning activities, post-dust cleaning sampling, and debriefing/reporting. It is important to note that the property owner may elect not to have all of the cleaning activities described within this Section be performed.

² There are two potential sources of lead containing dust in the interior of the homes. The first is the lead impacted dust from the soil that is exterior to the home and the second is interior sources of lead impacted dust that is inherent to the home; e.g. lead-base paint.

3.1.1 Interior Dust Cleaning Property Access

Dust cleaning activities at a particular property cannot proceed until a property owner has signed a property access agreement specifically authorizing interior dust cleaning activities. AMEC personnel will be responsible for soliciting the access agreements.

3.1.2 Pre-Dust Cleaning Inspection

Prior to initiating interior dust cleaning activities, the Site Manager (SM) or Project Manger (PM) will obtain access from the property owner to conduct the interior dust cleaning activities. The SM/PM will then prepare an AMEC interior dust cleaning form. To prepare the AMEC interior dust cleaning form, the SM/PM will first inspect the home interior in the company of the property owner or tenant that would include visual observations of any interior lead source(s) and completion of a checklist. During this inspection, the SM/PM will document all pertinent details of the upcoming interior dust cleaning, including identifying items to be relocated to facilitate dust cleaning access, identifying all interior dust cleaning areas, and itemizing any specific areas that the property owner or tenant requests remain unaddressed.

In addition to the identification of all items that require relocating and itemization, AMEC will also complete a photo-documentation log of the residence. AMEC will request that all personal possessions, valuables, keepsakes, and fragile objects be put away during the dust cleaning activities to avoid breakage. Any damage to the home interior will also be noted during the inspection/site walk through; including any damage to furniture and other features; including flooring (carpet and rugs); tiled or hardwood floors or hard floors of other surface types (vinyl tiles, laminate, etc.); kitchen and bathroom countertops; other horizontal hard surfaces, such as tops of tables, bureaus, bookcases, etc.; all window sills; lower areas of supply and return air ducts (as applicable by the SM/PM); points of outdoor entry/exit to the interior of the structure; and deteriorated paint prior to cleaning activities will be noted and NOT repaired.

AMEC will document the digital photographs in a digital log that will be reviewed with each property owner (and tenant for tenant occupied properties) prior to the initiation of Site cleaning activities to ensure both parties, AMEC and the Resident, are protected.

The SM/PM will include the dust cleaning form at the completion of the inspection; and the property owner and tenant will be asked to acknowledge the details of the dust cleaning plan by signing the interior dust cleaning form. The SM/PM will provide the property owner and tenant with a copy of the signed interior dust cleaning form. If the property owner fails to attend or declines to sign the dust cleaning form after review, the SM/PM will record the failure of the property owner to attend the inspection or any concerns raised by the owner and how the SM/PM attempted to address such concerns.

3.1.3 Dust Cleaning Activities

The SM/PM will attempt to notify the property owner and tenant of the intended start date for activities at a particular property at least four calendar days in advance of their planned initiation. Implementation may proceed at a given property with shorter notice if the property owner and/or tenant consent to such implementation.

3.1.4 Dust Cleaning Methods

Consistent with HUD guidance, a combination of wet cleaning and vacuuming with a High-Efficiency Particulate Air (HEPA) vacuum will be used to remove both surface and embedded dust from targeted household surfaces. All horizontal surfaces will be cleaned, beginning with vacuuming, with a HEPA vacuum, followed by wet cleaning using a household cleaning agent selected to minimize any discoloration or damage to the surfaces to be cleaned. Dust removal will begin at the top rear room in the dwelling, working forward and down, keeping a similar sequence in all rooms so that surfaces will not be missed. Within rooms, the highest surface will be cleaned first and work down. The windows, other dust traps and finally the floors will be cleaned.

A HEPA vacuum is one that is equipped with a special filter that removes nearly all small particles from the vacuum's exhaust airstream that would otherwise be redistributed throughout the house. Protocols for the use of the HEPA vacuum are provided within this DCWP, more specifically within the HUD Guidelines, Section V, Chapter 11: Interim Controls and Chapter 14: Cleaning Throughout Hazard Controls. HEPA filters and bags will be changed outside the residence in a controlled environment, following all appropriate manufacturers' instructions.

Wet cleaning will be conducted, if appropriate and required for surfaces that cannot be cleaned with a vacuum. The targeted surfaces will be wiped with a wet cloth dipped in warm soapy water until no surface dust is visible. After which, the surface will be rinsed with clean water using a new sponge or cloth and dried, if appropriate. The environmental technicians, who clean the homes, will not be required to have any Missouri lead certifications.

3.1.4.1 Surfaces to be Cleaned

Dust cleaning will focus on accessible horizontal surfaces and other specified areas of the interior residential living structure, as well as points of entry and exit to the interior areas where dust cleaning is being performed. "Living areas" are defined as the interior portions of the dwelling that are typically furnished and heated. Points of entry and exit may include accessible portions of garages, carports, patios, balconies, and porches. Inaccessible and infrequently accessed areas

will be excluded from this dust cleaning program due to the limited exposure risk associated with such areas.

"Horizontal surfaces" are considered "accessible" to the extent exposures to young children may readily occur. Accessible areas may include "soft" surfaces such as rugs and upholstered furniture and "hard" surfaces such as tabletops, counters, and floors. Wet cleaning as defined in HUD guidelines, Chapter 11, Section 5, Part B.1. will be the primary method used for cleaning hard surfaces and areas. If dust levels are excessive prior to the wet cleaning, HEPA vacuuming may be used as a preparatory step in the wet cleaning process. Accessible surfaces and areas subject to wet cleaning may include the following unless the surface consists of deteriorated paint (e.g., chalking, cracking, peeling, etc.):

- Tiled or hardwood floors or hard floors of other surface types (vinyl tiles, laminate, etc.)
- Kitchen and bathroom countertops
- Other horizontal hard surfaces, such as tops of tables, bureaus, bookcases, etc.
- Window sills
- Blinds or shutters and similar window coverings
- Points of outdoor entry/exit to the interior of the structure

HEPA vacuuming will be conducted according to guidelines set forth in HUD Chapter 14, Sections III and IV and Chapter 11, Section V, Part B.2 and B.3, on the following surfaces:

- Area or wall-to-wall carpeting
- Upholstered furniture
- Draperies/curtains and other similar window coverings
- Heating, ventilation, and air conditioning vent covers, including cold air return vent covers
- Fixtures, including light, bathroom and kitchen
- The portion of a surface area that is excluded from wet cleaning due to deteriorated paint

3.1.5 Access for Property Residents

During dust cleaning activities, the property owner or tenant will be provided access to the home at all times. Appropriate measures will be taken to ensure that the property owner or tenant will not have to walk through dust cleaning areas where possible. Residents will be asked to avoid areas where active dust cleaning activities are underway. All handicapped and special needs

access will be addressed, as required and as applicable. The projected duration for this interior dust cleaning work is approximately one to two days for each targeted property.

3.1.6 Clearance

Consistent with the number and locations of dust clean sampling in Chapter 15 of the HUD Guidelines (and the method of dust sampling in Appendix 13.1) for the dust clearance sampling, the single sample dust loading results from the wipe sampling for the interior surfaces will be compared to the Dust Lead Hazard Standards (**Table 1**). The Environmental Professional(s) that read the sample for single sample dust loading clearance will be required to have the appropriate Missouri lead certifications as a lead inspector or lead risk assessor. All clearance sampling will be conducted by an independent third party not associated with the indoor remedial contractor. The independent third party firm, to be named at a later date, will be required to have the appropriate Missouri lead certifications as a lead inspector or lead risk assessor. The following number and locations of samples to be taken in the residential homes for clearance sampling will be as follows:

Within rooms, clearance dust samples will be taken from floors, interior window sills (if present) and window troughs (if present). As least one floor sample will be collected in each room using single surface sampling and one sample alternating between a sill and trough (if present) will be collected in each sampled room, i.e., collect a sill sample in one room and a trough sample in the next and so forth. A minimum of two single-surface wipe samples will be taken from each room, e.g., two floor samples (in rooms without windows), a floor and a sill sample, or a floor and a trough sample. All samples will be submitted to a National Lead Laboratory Accreditation Program (NLLAP) laboratory for laboratory analysis.

Table 1 – HUD Dust Lead Hazard Standards

Surface	Single Sample Dust Loading Results equal to or less than:	Single Sample Dust Loading Results equal to or less than:
Bare and carpeted floors	40 ug/ft ²	0.43 mg/m ²
Interior window sills	250 ug/ft ²	2.7 mg/m ²
Window troughs	400 ug/ft ²	4.3 mg/m ²

If any sample results is equal to or above the applicable standard for the horizontal surface, the area will be re-cleaned and resampled until the clearance standards are met.

3.1.7 Follow-up Activities

The AMEC Program Manager, Eugene M. Watson and the QA Manager will conduct follow-up activities after dust cleaning activity completion at a given property to verify that the work has been performed appropriately, as described below.

3.1.7.1 Repair Work

Dust cleaning activities will be conducted in a manner that minimizes damage to the home interior, including furniture and other features. Damaged features, such as furniture and flooring, will be repaired or replaced upon their discovery. Deteriorated paint that was present prior to cleaning activities will not be repaired.

3.1.7.2 Property Inspection

Upon completion of dust cleaning (and any necessary repairs, of which there should be none), the AMEC Site Manager and Project Manager will inspect the structure with the property owner or tenant if the property will not be available. As part of this inspection, the dust cleaning form will be finalized with the property owner, the digital photographic log will be reviewed with the AMEC PM and property owner during the Residential Site walk and the AMEC SM/PM and Property owner will sign off that the work performed is consistent with what was described during the pre-dust cleaning inspection. If the property owner fails to attend or declines to sign the dust cleaning form, the AMEC PM will record the failure of the property owner to attend the inspection or any concerns raised by the owner; how the AMEC PM attempted to address such concerns; include the dust cleaning form and the final digital photographic log (in DVD format) in the Property Dust Cleaning Completion Report (PDCCR).

3.1.8 Reporting

Once dust cleaning activities are complete at a specific property where total yard concentrations exceed 400 mg/kg for lead, a PDCCR will be provided to the property owner and MDNR. The PDCCR will document all dust cleaning activities, the photo-documentation log of the

Residence as detailed in Section 3.1.2, and a final report documenting all disposal manifests (if any), . This report will contain a description of the dust cleaning activities and the photo-documentation results on DVD.

3.2 Disposal

Materials generated from the dust cleaning activities will be disposed of properly at a MDNR approved landfill, if required.. A waste profile will be completed for disposal of bagged solids (i.e. dust rags, HEPA filters, air filters, etc.) that are accumulated for landfill disposal. The bagged solids will be disposed of as residential waste, if possible.

4.0 Dust Cleaning Management Considerations

This section describes overall management considerations associated with implementing the interior dust cleaning, including sequencing of activities, logistical requirements for various aspects of the work, and health and safety requirements.

4.1 Scheduling of Dust Cleaning Activities

The removal of the impacted soil and the placement of the sod will occur prior to the initiation of interior dust cleaning activities. MW Recycling or its consultant do not anticipate initiating interior work activities until at least several weeks after soil/sod work has been completed in the area and weather conditions are conducive to the commencement of interior work, dependent on site conditions.

In scheduling dust cleaning work activities at the Site, AMEC will attempt to accommodate owners/tenant scheduling needs.

4.2 Quality Assurance/Quality Control

QA/QC and inspection procedures will be implemented to ensure proper dust cleaning and compliance with the dust cleaning plan and specifications as well as with the site-specific QAPP ((AMEC, August 2013)

4.3 Health and Safety

AMEC has prepared a Health and Safety Plan that is protective of the environment and of the health of workers and the public. During all dust cleaning activities, AMEC will have a

designated Health and Safety Coordinator. AMEC's Health and Safety Coordinator will have authority over all AMEC personnel to enforce all applicable AMEC Health and Safety requirements.

5.0 Reporting

A PDCCR will be prepared for each property where dust cleaning was performed. AMEC will provide an electronic copy of the PDCCR and digital photography log to the property owner once the MDNR representative has reviewed and approved each report for each Parcel requiring interior dust cleaning. Progress reports will be submitted to the MDNR and the client on a bi-weekly basis. Progress reports will include all copies of the PDCCRs electronically delivered to property owners during the reporting period.

6.0 References

- EPA, 1995. Residential Sampling for Lead: Protocols for Dust and Soil Sampling Final Report (PA747/R-95-001), March.
- EPA, 2003, Superfund Lead-Contaminated Residential Sites Handbook (OSWER Directive 9285.7-50).
- HUD, 1995. Guidelines for the Evaluation and Control of Lead-based Paint Hazards in Housing, June.
- Toxic Substances Control Act (TSCA), Section 403, Residential Lead-Based Paint Hazard Reduction Act of 1992
- MDNR, 2009. Missouri Department of Health and Senior Services, Lead Poison Prevention Manual, 2009. <http://health.mo.gov/living/environment/lead/manual/index.php>
- USEPA, 1990. U.S. Environmental Protection Agency Hazard Ranking System, 40 CFR Part 300, Appendix A, 55 FR 51583, December 14, 1990, <http://www.thefederalregister.com/d.p/2007-05-25-E7-10055>.
- USEPA, 1992. U.S. Environmental Protection Agency Hazard Ranking System Guidance Manual, EPA/540/R-92/026, November, 1992. <http://www.epa.gov/superfund/sites/npl/hrsres/index.htm>

Figures

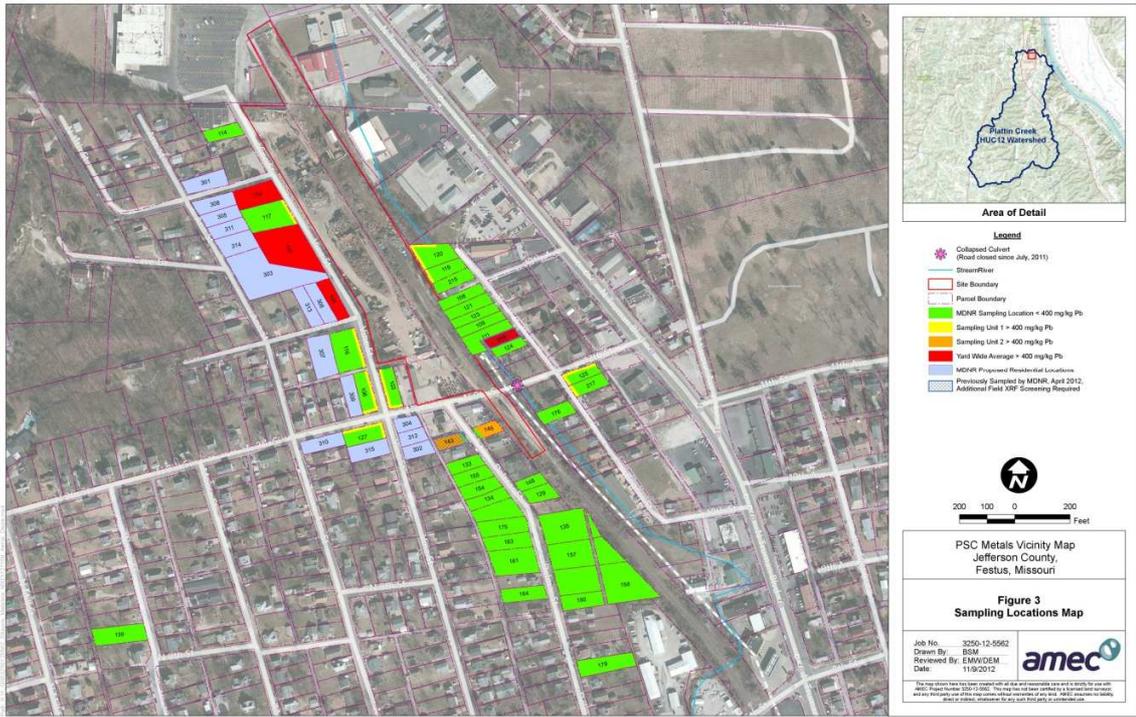


Figure 1. Site Location Map- Shapiro Brothers Facility, Festus, MO