WATSON TATE SAVORY
architecture interiors planning

ADDENDUM NO.: TWO DATE: 5 February 2015

PROJECT TITLE: **819 Barnwell Exterior Painting and Repairs**

University of South Carolina
State Project No. H27-6100
WTS Project No. 1426

WRITTEN BY: J. Sanders Tate, AIA LEED AP

TO: Prospective Bidders / Plan Holders

This addendum is issued pursuant to Article 1.1.1 of the AIA General Conditions of the Contract (A201) in connection with the revision of Bidding Documents which have been previously issued.

Addenda are issued prior to execution of Contract. All instructions contained herein shall be reflected in the Contract Sum and this Addendum will be made a part of the Contract Documents, if, as, and when a Construction Contract is awarded.

This Addendum forms a part of the Contract Documents and modifies the original documents dated January 6, 2015 and January 30, 2015 as noted below. Acknowledge receipt of this Addendum in this space provided on the Bid Form. Failure to do so will subject the Bidder to disqualification.

This Addendum consists of 01 pages plus the following attachment:

1. Section 02080 . . . . . 48 pages

REVISIONS TO THE PROJECT MANUAL:

1. Replace Section 02080 Asbestos and Lead--Based Paint Removal and Related Tasks with the Section 02080 attached.

END OF ADDENDUM

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SECTION 02080 - ASBESTOS & LEAD-BASED PAINT REMOVAL AND RELATED TASKS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Documents affecting work of this Section include, but are not necessarily limited to USC's HAZMAT survey for asbestos-containing materials (ACM) and lead-based paint (LBP) dated September 23, 2014, performed by USC HAZMAT personnel and drawing AB-1. The survey results identify exterior components of USC's Psychology Annex that are coated with lead-based paint, as well as asbestos-containing caulking associated with exterior doors and window systems. See the appendix for copies of the survey and analytical results.

B. Other documents affecting work of this Section include, but are not necessarily limited to, Section 06910, Wood Repairs.

1.2 ABATEMENT CONTRACTOR QUALIFICATIONS - SPECIAL STANDARDS OF RESPONSIBILITY

A. Abatement Contractor's Qualifications:

1. A qualified firm that has not less than five (5) years of experience in the removal and proper disposal of lead-based paint (LBP) and building components painted and/ or coated with lead-based paint, as well as five (5) years' experience in the removal and proper disposal of asbestos-containing materials (ACM).
2. A qualified firm that has successfully completed the lead-based paint abatement as well as asbestos abatement on a minimum of five (5) projects over a period of three (3) years and where the scope of lead-based paint and asbestos abatement work was over $100,000.00.
3. Contractor must agree to exercise special care during all phases of the Work to ensure that the existing building, its details, materials, and finishes that are to remain are not damaged by the work being performed.

1.3 SCOPE OF WORK - SUMMARY

A. The University of South Carolina (Owner) is planning to renovate the exterior of the Psychology Annex building located at 819 Barnwell Street in Columbia, South Carolina. Both asbestos-containing materials (ACM) and lead-based paint (LBP) will be impacted by the proposed renovations and must be removed prior to the start of renovation activities. For this reason, the scope of work for this abatement generally includes the removal and proper disposal of the ACM and LBP from the exterior components of the subject structure (Work) as indicated on the provided drawing and referenced in these specifications.

B. Prior to commencement of removal activities, Contractor shall submit required documents as outlined in Section 1.15 herein.

C. Contractor shall clean exterior perimeter surfaces of the building prior to commencing LBP abatement work. See Sections 3.3 and 3.5 herein for more detail.

D. Contractor shall remove LBP utilizing work practices as outlined by OSHA's and the SCDHEC's regulations. Exterior lead removal includes the removal of loose,

chipped, cracking, flaking, blistering, or chalking paint down to bare wood in preparation for repainting as identified in other specification sections. The purpose of this removal is to prepare existing exterior surfaces for new layers of primer and non-lead paint.

E. Contractor shall be required to complete some work within the interior of the building. This work will involve activities necessary to dislodge and free windows for opening and closing. All of the interior window components within the interior of the building are coated with LBP. Contractor shall be required to utilize methods that will minimize the impact and damage to these painted surfaces associated with the interior of the windows. Contractor shall be required to utilize appropriate methods (i.e. HEPA vacuum, poly on the floor etc.) to contain and collect all paint chips and debris generated and dispose of properly. All interior surfaces of the windows, floors and areas directly adjacent to the windows shall be HEPA vacuumed after this work is completed and all poly is removed. Contractor and GC will be required to coordinate these activities with the building occupants to minimize disturbances to ongoing activities in the building and displacement of USC staff.

F. The Contractor shall refer to provided elevations for locations and limits of removal activities.

G. Contractor shall be responsible and arrange for either a lift and/or scaffolding to be employed during the pre-cleaning and LBP removal in order to access all exterior windows and lead-containing wood components. All exterior surfaces (i.e. sidewalks and driveways) shall be protected from damage.

H. Contractor shall ensure that soils and vegetation surrounding the subject building are not contaminated by debris from the removal work activities.

I. Abatement activities are focused on exterior materials associated with the subject structure, and will address the following materials:

1. Wood Exterior Components: Lead-based paint is to be removed from wood exterior components, to include doors and door frames, window frames, columns, as well as fascia, soffits, and eaves (all exterior painted wooden components). Materials are located throughout the exterior of the subject multi-story structure. However, where the wood components are too damaged, warped, etc., Contractor shall remove them as and dispose of as lead-contaminated waste along with other LBP debris.

2. Window & Door Caulking: ACM window and door caulking is to be removed from all of the exterior windows and doors. The asbestos containing caulking removal, handling, and disposal must follow applicable local, state, and federal regulations. See Section 3.6 herein for more information related to this asbestos containing material.

J. All materials and procedures described herein shall be implemented by the Contractor unless specifically noted otherwise.

K. Contractor shall ensure that windows and associated glass are not damaged during abatement activities. Contractor will be responsible for all damage to the windows and glass.

L. Contractor shall be responsible for verification of all site conditions and quantities associated with the abatement and removal tasks prior to the bid. Actual quantities shall be documented and confirmed during the abatement operations by the Contractor and Owner's Representative.

M. Contractor may base bid for ACM and LBP abatement on the quantities listed below. Bid shall include all materials and labor necessary to remove, handle, transport and dispose of ACM and LBP from the exterior of the structure and complete the abatement operations. ACM and LBP to be removed and/or impacted from the subject building structure during the abatement operations shall include the following:

1. Non-friable ACM abatement of exterior ACM caulking at all levels (Est. 39 window units, 4 door units)

2. LBP removal from wood exterior components to include windows, window frames, doors, door frames, columns, fascia, soffits, and eaves.

   Note: Excludes windows located on rear of structure on basement level and plywood walls associated with closed-in back porch.

1.4 CONTRACTOR'S DUTIES - SUMMARY

A. The Contractor is to provide and pay for the following, except as specifically noted:

1. Labor, material, tools, required equipment (i.e. scaffolding, etc.) and machinery.

2. All other facilities and services necessary for proper execution and completion of Work.

3. Pay legally-required sales, consumer and use taxes.

B. Contractor will absorb costs for the following:

1. Permits

2. Government fees

3. Licenses

C. Contractor shall provide notifications to appropriate entities based on applicable regulations.

D. Contractor shall comply with codes, ordinances, rules, regulations, orders, and other legal requirements of public authorities which bear on performance of Work.

E. Contractor shall provide personal protective equipment to workers

F. Contractor shall enforce strict discipline and good order among employees. Do not employ on Work, on Project or Work Site:

1. Unfit persons.

2. Persons not skilled in assigned task.

1.5 REFERENCES

A. The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (DHEC)

R 61-86.1	Standards of Performance for Asbestos Projects
R 61-107.19	SWM: Solid Waste Landfills and Structural Fill

OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA)

29 CFR 1910	General Industry Standards
29 CFR 1910.1025	Lead Standard for General Industry
29 CFR 1910.134	Respiratory Protection
29 CFR 1910.1200	Hazard Communication
29 CFR 1910.245	Specifications for Accident Prevention (Sign and Tags)
29 CFR 1926	Construction Industry Standards
29 CFR 1926.62	Construction Industry Lead Standard

ENVIRONMENTAL PROTECTION AGENCY (USEPA)

40 CFR Part 61 Regulations	United States Environmental Protection Agency

UNIVERSITY OF SOUTH CAROLINA

Facility Services Lead Management Program

1.6 DEFINITIONS

A. Abatement/Removal

1. Any measure designed to permanently eliminate lead- based paint hazards in accordance with standards established by the EPA Administrator pursuant to Title IV of the Toxic Substances Control Act (TSCA). Abatement strategies include: removal of lead- based paint; enclosure of lead- based paint; encapsulation of lead- based paint (with a product that has been shown to meet standards established or recognized pursuant to Title IV of TSCA); replacement of building components coated by lead- based paint; removal of lead- contaminated dust; removal or covering of lead- contaminated soil with a durable covering (not grass or sod, which are considered interim control measures); as well as all preparation, cleanup, disposal, post- abatement clearance testing, record- keeping, and monitoring (if applicable).

B. Abatement Area

1. The exterior of the building or an area isolated from the building interior by containment.

C. Action Level

1. An indoor air concentration which should prompt consideration of the need to implement a recommended response. The Action Level for lead is 30 ug/m^3 (0.3 mg/m^3) calculated as an 8-hour time-weighted average.

D. Asbestos

1. Asbestos includes chrysotile, amosite, crocidolite, tremolite asbestos, anthophylite asbestos, actinolite asbestos, and any of these minerals that have been chemically treated and/or altered.

E. Contractor Employer Program

1. In accordance with the Hazard Communication Standard, each outside contractor working on a USC owned property (on-site) is responsible for developing, implementing, and informing other on-site employers of all hazard communication related information. Under the Program, each outside employer must provide USC, and other employer(s) working on-site, with unrestricted, on-site access to material safety data sheets (MSDSs) for all hazardous materials used, handled or stored on-site to which an employee may potentially be exposed to during their normal course of work.

F. Disturbance

1. A contact which releases fibers from ACM or debris containing ACM. This term includes activities that disrupt the matrix of ACM, render ACM friable, or generate visible debris. Disturbance includes cutting away small amounts of ACM no greater than the amount that can be contained in one standard sized glove bag or waste bag in order to access a building component. In no event shall the amount of ACM so disturbed exceed that which can be contained in one glove bag or waste bag which shall not exceed 60 inches in length and width.

G. Enclosure

1. Covering surfaces and sealing or caulking with durable materials so as to prevent or control chalking, peeling, or flaking substances containing toxic levels of lead from becoming part of house dust or accessible to children.

H. Hazardous Waste

1. Generation and disposal of hazardous waste is regulated under the Resource Conservation and Recovery Act (RCRA). If a waste exhibits toxicity, corrosivity, ignitability, or reactivity characteristics it is considered hazardous.

I. High Efficiency Particulate Air (HEPA) Filter

1. A filter that is capable of filtering at least 99.97% of all airborne particles down to 0.3 micrometers (µm) in diameter.

J. HEPA Vacuum Cleaner

1. An electrical device that cleans surfaces by suction and discharges exhaust air through a HEPA filter.

K. Lead-Contaminated Material

1. Any paint, material or coating containing any detectable quantity of lead.

L. Lead-Based Paint/ Material

1. Any paint, material or coating containing >0.06% by weight (600 ppm) total lead OR containing ≥ 0.7 mg/cm^2 as measured with an XRF (X-ray diffraction) analyzer.

M. Permissible Exposure Limit (PEL)

1. Employee exposure, without regard to the use of respirators, to an airborne concentration of lead of 50 micrograms per cubic meter of air (50 µg/m^3) calculated as an 8-hour time-weighted average.

N. Intact

1. ACM which has not crumbled, been pulverized, or otherwise deteriorated so that it is no longer likely to be bound with its matrix.

O. Substrate

1. The underlying material a building component is made from, over which is often applied a surface finish such as paint. Common substrates include, plaster, concrete, wood, metal, and gypsum.

P. Time-Weighted Average (TWA)

1. The TWA for lead is an airborne concentration of lead of 30 micrograms per cubic meter of air (30 ug/m^3) representing a lead worker's 8-hour workday as defined in CFR 29 Part 1926, Section 1926.62. The TWA for asbestos is an 8-hour time weighted average of airborne concentration of fibers (longer than 5 micrometers) per cubic centimeter of air which represents the employee's 8-hour workday as determined by Appendix A of CFR 29 Part 1926, Section 1926.58.

1.7 DESCRIPTION OF WORK

A. The work covered by this section includes the requirements for the removal, transportation, disposal, storage, containment of, and housekeeping activities involving ACM and LBP contaminated materials associated with the Psychology Annex building located at 819 Barnwell Street.

1.8 SECURITY

A. Contractor shall be required to maintain the security of the building. All windows and doors shall be maintained secure during all phases of the abatement.

1.9 MEDICAL REQUIREMENTS

A. Contractor shall comply with appropriate medical requirements as outlined in 29 CFR 1926.62 and 29 CFR 1926.1101(m).

1.10 TRAINING

A. All Contractor personnel involved with lead removal work must be trained and tested prior to any work, and shall be thoroughly familiar with the Contractor's standard operating procedure for the lead abatement work. All personnel shall undergo the specific medical examinations required by OSHA. The superintendent and the foreman shall be thoroughly familiar with all applicable regulations and practices for lead removal work and shall have participated in at least two abatement projects of similar size and scope within the past two years. All personnel shall be in possession of valid respirator fit test paperwork.

1.12 HAZARD COMMUNICATION PROGRAM

A. A hazard communication program shall be established and implemented in accordance with CFR 29 Part 1926, Section 1926.59.

1.13 SAFETY AND HEALTH COMPLIANCE

A. In addition to detailed requirements of this specification, the work shall comply with applicable laws, ordinances, criteria, rules, and regulations of Federal, state, regional, and local authorities regarding handling, storing, transporting, and disposing of asbestos waste materials and with the applicable requirements of CFR 29 Part 1910, CFR 29 Part 1926, CFR 40 Part 61, Subpart A, and CFR 40 Part 61, Subpart M, NFPA 10, NFPA 70, NFPA 90A, NFPA 101. Matters of interpretation of standards shall be submitted to the appropriate administrative agency for resolution before starting work. Where the requirements of this specification, applicable laws, rules, criteria, ordinances, regulations, and referenced documents vary, the most stringent requirement as defined by the Owner shall apply.

B. Personnel shall wear and utilize protective clothing and equipment and employ safe work practices for the duration of the project. Personnel shall restrict activities within work area to work-related tasks. Personnel of other trades not engaged in lead-based paint abatement activities shall not be exposed at any time to airborne concentrations of lead unless all the administrative and personal protective provisions as required by the Contractor's Lead-Based Paint Abatement Plan are complied with.

1.14 PERMITS, LICENSES AND NOTIFICATIONS

A. The Contractor shall obtain all necessary permits and licenses in conjunction with the project asbestos abatement, transportation and disposal actions and timely notification furnished of such actions required by Federal, state, regional, and local authorities and as otherwise specified herein. The Contractor shall notify the SCDHEC and the Owner in writing at least 10 days prior to the commencement of work in accordance with CFR 40 Part 61, Subpart M, state and local requirements to include the mandatory "Notification of Demolition and Renovation Record" form and other required notification documents. Notification shall be by Certified Mail - Return Receipt Requested. The Contractor shall furnish copies of the receipts to the Owner prior to the commencement of work.

B. The Contractor shall notify the Owner if any of the following occur:

1. If the Contractor or any of its subcontractors are served with notice of violation of any law, regulation, permit or license which relates to this Contract.
2. Proceedings are commenced which could lead to revocation of related permits or licenses.
3. Permits, licenses or other Owner authorizations relating to this Contract are revoked.
4. Litigation is commenced which would affect this Contract.
5. If the Contractor or any of its Subcontractors become aware that its equipment or facilities are not in compliance or may fail to comply in the future with applicable laws or regulations.

1.15 SUBMITTALS

The following shall be submitted to the Owner and/or the Owner's Representative prior to the start of abatement operations:

A. Manufacturer's catalog data for all materials and equipment to be used in the work, including brand name, model, capacity, performance characteristics and any other pertinent information.

B. Lead-Based Paint Abatement Work Plan

1. A written work plan outlining the project sequencing, methods, etc. must be accepted in writing by the Owners' Representative prior to start of any site work.

C. Safety Plan

1. A written safety plan and comprehensive site-specific accident prevention plan at least 30 days prior to start of work. This plan must be accepted in writing by the Owners' Representative prior to start of any site work.

D. Employee Training and Certification of Worker Acknowledgement

The following training documentation for each employee to be engaged in the abatement work:

1. Copy of training certification for completion of lead abatement worker training.
2. Copy of certification of accreditation for completion of "workers" course (for workers) or "Contractor/Supervisor" Course (for Contractors and onsite supervisory staff) meeting the requirements of EPA's CFR 40 Part 763 or more stringent state criteria, and all subsequent annual refresher training certificates meeting same requirements.
3. A copy of a Contractor generated form entitled Certificate of Workers Acknowledgment shall be completed for each employee.

E. Negative Exposure Assessment

1. The Contractor may demonstrate that employee exposures will be below the PELs by data in compliance with CFR 29 Part 1926.1101 and CFR 29 Part 1926.62.

F. Notifications

1. The Owner shall be notified in writing 4 days prior to the start of asbestos work.

G. Records

1. Respirator Program
   a. If respirators are deemed necessary by Contractor based on initial data, records of the Contractor's respirator program as required by ANSI Z88.2, CFR 29 Part 1910, Section 1910.134, CFR 29 Part 1926, Section 1926.58.

2. Asbestos Containing Materials Waste Shipment Record
   a. Final completed copies of the Waste Shipment Record for all shipments of waste material as specified in CFR 40 Part 61, Subpart M and other required state waste manifest shipment records as specified herein. Detailed information of all asbestos waste disposals on the "MANDATORY WASTE SHIPMENT RECORD" form in accordance with revised CFR 40 Part 61, Subpart M. Such completed forms signed and dated by the agent of the landfill shall be submitted within 3 days after date of delivery of ACM to the landfill.

1.16 PERSONAL PROTECTIVE EQUIPMENT

A. Respirators

1. Respiratory protection shall be worn by workers while working in areas where airborne lead contaminated dust occurs in TWA concentration of 30 $\mu g/m^3$ or greater. Where respirators are used by workers, the Contractor shall ensure that all elements of a respiratory protection program and suitable fit testing methods are utilized.

B. Body Protection

1. Personnel performing the lead-based paint removal will be provided safety equipment suitable for working on a construction site, including, but not limited to, hard hats, gloves, eye protection, steel-lined boots, and fall protection (where applicable). Eye protection provided shall be in accordance with ANSI Z87.1. All other items for personal safety shall be provided as required and approved by the Contractor.

1.17 WARNING SIGNS AND TAPE

A. Contractor shall ensure that the outdoor lead work areas are properly demarcated, and that all personnel understand warning signs.

1.18 TOOLS

A. Hand scraping techniques using flat blade "puddy knives" shall be employed. No sanding, grinding or any other method that will produce large quantities of dust are allowed; furthermore, power tools shall not be used to remove LBP.

B. All residual lead-based paint shall be removed from reusable tools prior to storage and reuse. Reusable tools shall be thoroughly decontaminated prior to being removed from the work areas.

1.19 EXPENDABLE SUPPLIES

A. Duct Tape

1. Industrial grade duct tape shall be provided in 2 inch and 3 inch widths and shall be suitable for bonding sheet plastic and disposal containers specified herein.

B. Disposal Containers

1. Leak-tight disposal containers shall be provided for LBP debris generated as specified herein. Leak-tight means neither solids, liquids or dust can escape or spill out. All disposal containers shall be labeled according as required.

C. Disposal Bags

1. 6-mil thick leak-tight pre-labeled (OSHA warning label) bags shall be provided for placement of asbestos generated waste.

D. Sheet Plastic

1. Sheet plastic shall be provided as specified herein and in the largest sheet size necessary to minimize seams, as indicated on the project drawings.

E. Polyethylene Sheet – General

1. 6-mil (minimum) thick polyethylene sheeting shall be clear, frosted and/or black and conform to ASTM D 4397.

F. Polyethylene Sheet - Flame Resistant

1. Where a potential for fire exists, 6-mil (minimum) thick flame-resistant polyethylene sheet shall be provided. Flame-resistant polyethylene film shall be frosted and/or black and shall conform to the requirements of NFPA 701.

1.20 MATERIAL SAFETY DATA SHEETS

A. Material safety data sheets (MSDS) shall be provided for all hazardous materials brought onto the work-site. One copy shall be provided to the Owner's Representative and one copy shall be included in the Contractor's Hazard Communication Program.

1.21 OTHER ITEMS

A. A sufficient quantity of other items shall be provided that may include, but not be limited to: scrapers, brushes, brooms, staple guns, tarpaulins, shovels, rubber squeegees, dust pans, other tools, scaffolding, staging, enclosed chutes, wooden ladders, material and chords, first aid kits, portable toilets, spray paint in bright color to mark areas, project boundary fencing, etc.

1.22 PRECONSTRUCTION CONFERENCE

A. The Contractor, and the Contractor's designated onsite "competent person," shall participate in a preconstruction conference with the Owner's Representative and Owner prior to beginning work to discuss the details of the Contractor's Lead-Based Paint Abatement Plan, including work procedures and safety precautions. Once

accepted by the Owners Representative and Owner, the Asbestos Hazard Abatement Plan, will be enforced as if an addition to the specification.

PART 2 - PRODUCTS

2.1 SECTION NOT UTILIZED

PART 3 - EXECUTION

3.1 GENERAL

A. Lead-based paint abatement work shall be performed as specified herein. Also see attached elevation drawings.

B. Contractor shall evaluate each work activity to determine if employee exposure to lead may occur.

3.2 PRE-CLEANING AND DAILY CLEAN-UP

A. Contractor shall clean the exterior perimeter surfaces of the subject facility prior to the start lead-based paint removal activities.

B. The Contractor shall maintain a clean work area on a daily basis by performing housekeeping functions at the end of each shift. All waste from the lead-removal activities will be handled as a hazardous material and stored appropriately.

3.3 PREPARATION AND PROTECTION OF ADJACENT WORK OR AREAS TO REMAIN

A. Prior to lead removal activities, preparation of the subject property shall include protection of all vegetation, shrubs, etc.

B. Lead-based paint abatement work shall be performed without damage or contamination of adjacent work or areas. This requirement includes the protection of surrounding soils, vegetation, and the collection of run-off from any activities involving water to include the initial pre-cleaning phase.

C. Contractor shall insure that equipment utilized to access building components at elevated levels will not damage existing sidewalks and driveways. Damage and the associated repairs to these exterior surfaces shall be at the Contractors expense.

D. Where such work or area is damaged or contaminated as verified by the Owner's Representative using visual inspection and/or sample analysis, it shall be restored to its original condition or decontaminated by the Contractor at no expense to the Owner as deemed appropriate by the Owners Representative. This includes damage or contamination due to inadvertent spill of dirt, dust or debris in which it is reasonable to conclude that lead-based paint may exist. When these spills occur, work shall stop in all affected areas immediately, the Owner's Representative and Owner shall be notified. The condition shall be corrected to the satisfaction of the Owners' Representative and Owner. When satisfactory visual inspection and/or sampling analysis results are obtained and have been evaluated by the Contractor and the Owners Representative, work may proceed.

3.4 AIR MONITORING

A. The Contractor shall determine worker's exposure to airborne lead for each phase of work, i.e., removal of paint from brick walls, removal of building components, preparation of surfaces for repainting, cleaning of work areas, etc. Personal air sampling shall be conducted at the start of each phase of work. Initial personal exposure monitoring shall be performed on employees who are anticipated to have the highest exposures for each activity.

B. Where a determination conducted in accordance with 29 CFR 1926.62, paragraphs (d)(1), (2), and (3) is made that no employee is exposed to airborne concentrations of lead at or above the action level, the Contractor shall make a written record of such determination. The record shall include at least the information specified in 29 CFR 1926.62, paragraph (d)(3)(i) and shall also include the date of determination, location within the worksite, and the name and social security number of each employee monitored.

C. If the initial determination reveals employee exposure to be below the action level further exposure determination need not be repeated except as otherwise provided in 29 CFR 1926.62, paragraph (d)(7).

3.5 LEAD-BASED PAINT REMOVAL

A. All paint on the exterior surfaces is to be assumed positive for lead content and shall be handled appropriately. Scraping and other accepted lead-based paint removal methods shall be applied in a manner that protects the integrity of the exterior materials.

B. Where it is determined that the wood window frame and column components are rotted or deteriorated beyond repair, those wood building components shall be removed and discarded as LBP-containing waste. See Section 06910, Wood Repairs for criteria to be utilized when determining which boards are to stay and which are to be removed for disposal as LBP-containing waste.

C. Material resulting from abatement work, except as specified otherwise, shall become the property of the Contractor and shall be disposed of as specified in applicable local, state, and federal regulations and herein.

3.6 ASBESTOS CONTAINING MATERIALS HANDLING PROCEDURES

A. Asbestos will be encountered in the form of window and door caulking. All caulking is to be removed from around each individual window and door and disposed of as an asbestos containing material.

B. The Contractor shall employ proper handling procedures in accordance with CFR 29 Part 1926 and CFR 40 Part 61, Subpart M and the specification requirements herein. Contractor shall also ensure proper notification; fees, etc. are provided to SCDHEC as required in R61.86.1.

3.7 FINAL CLEANING AND VISUAL INSPECTION

A. Final cleaning and visual inspections shall occur prior to the application of any exterior primer paint.

B. The abatement work area to include the exterior surfaces and adjacent ground shall be cleaned at the completion of the abatement by collecting, packing, and storing all gross contamination. A final cleaning shall include HEPA vacuum and wet cleaning of all exposed surfaces and equipment in the work area.

C. Upon completion of the final cleaning, the Contractor's competent person shall conduct a pre-visual inspection of the cleaned area in preparation for the final inspection to be conducted with the Owner's Representative. The Contractor shall re-clean, as necessary.

D. Once the results of the final cleaning are accepted by the Owner's Representative, the Contractor and the Owner's Representative shall conduct a final visual inspection of the cleaned work area. If the Owner's Representative rejects the abatement area as not being satisfactory, the Contractor shall re-clean as necessary and have a follow-up inspection with the Owner's Representative. Re-cleaning and follow-up re-inspections by the Owner's Representative shall be at the Contractor's expense.

3.8 SITE INSPECTION

A. While performing abatement work, the Contractor shall be subject to onsite inspection by the Owner's Representative who may be assisted by or represented by quality assurance, safety and/ or industrial hygiene personnel. If the work is found to be in violation of this specification or regulations referenced herein, the Owner or his representative will issue a "Stop Work Order" to be in effect immediately and until the violation is resolved. Standby time required to resolve the violation shall be at the Contractor's expense.

3.9 CLEAN-UP AND DISPOSAL

A. Housekeeping

1. Surfaces of the abatement work area shall be kept free of accumulation of lead-based paint debris. Meticulous attention shall be given to restricting the spread of dust and debris during the abatement activities. HEPA filtered vacuum cleaners shall be used. The space shall not be blown down with compressed air.

B. Title to Materials

1. Material resulting from abatement work, except as specified otherwise, shall become the property of the Contractor and shall be disposed of as specified in applicable local, state, and Federal regulations and herein.

3.10 COLLECTION AND DISPOSAL OF LEAD-BASED PAINT AND ASBESTOS

A. Lead-based paint waste and lead-contaminated debris must be deposited in a Class Three Landfill as defined in R61 107.19.

B. Asbestos waste, scrap, debris, bags, containers, equipment, and contaminated clothing, shall be collected and placed in sealed leak-tight, containers (e.g. double 6-mil plastic bags), sealed 6-mil double wrapped polyethylene sheet, sealed fiberboard boxes or other approved containers. Waste within the containers must be wetted in case the container is breeched. A warning and Department of Transportation (DOT) label shall be affixed or preprinted on each bag. Waste asbestos material shall be

disposed of at an EPA, state and local approved asbestos landfill. For temporary storage, sealed impermeable containers shall be stored in asbestos waste load-out unit or in a storage/transportation conveyance (i.e.; dumpster, roll-off waste boxes, etc.) in a manner as accepted by and in an area as assigned by the Owner. Procedure for hauling and disposal shall comply with CFR 40 Part 61, Subpart M, and state, regional, and local standards.

ATTACHMENTS

Asbestos and LBP Investigation Reports

(Prepared by USC HAZMAT Personnel)

FM00413486 *FM00413486* USC Work Order

Description HAZMAT SURVEY DM12 819 BARNWELL EXTERIOR REPAIRS

Site	COLUMBIA	**Assigned To**	JPROVENCE
Building	034 819 BARNWELL STREET	**Crew**	HAZMAT
Floor	**Room:**	**Start Date**	**Priority** 3
Equipment		**Due date**	25-SEP-14
		Request Date	29-NOV-12 **by** CHAPMAS

Request # FM00413486 **Description** HAZMAT SURVEY DM12 819 BARNWELL EXTERIOR REPAIRS
Parent WO #

CP Number CP00366438 DM12 819 BARNWELL EXTERIOR REPAIRS

State/Internal Project Number H27-6100

Requestor	ABRAMS,JEFF	**Project Manager**	ABRAMS, JEFFREY R
Telephone	239-8074	**Telephone**	777-3594
Alternate		**Estimated Cost**	$ 0.00
Telephone		**Billing**	FIXED PRICE
Non-Available Time		53100-W797-57120	(DEFERRED MAINTENANCE 2012)

Task List

ERIC, THIS IS FOR HAZMAT SURVEY OF EXTERIOR, TO INCLUDE ALL PAINTED WOOD, WINDOW GLAZING MATERIAL, AND ANY EXTERIOR CAULKING. PLEASE CONTACT ME FOR A TIME TO GO OVER AND LOOK AT THE BUILDING PRIOR TO THE SURVEY. THANKS, JEFF ABRAMS, SEPT 11, 2014.

(CHECK ALL THAT APPLY AND PROVIDE ADDITIONAL INFORMATION AS NEEDED)

HAZMAT SURVEY(S) REQUESTED FOR THE FOLLOWING
_____ FLOOR TILE
_____ JOINT COMPOUND
_____ WALLS
_____ MASTIC
_____ CEILING TILE
_____ PIPE INSULATION
_____ VINYL SHEET FLOORING
_____ FIREPROOFING
_____ FUME HOODS/TABLE TOPS
_____ ROOFING MATERIALS
_____ FIRE DOORS
_____ GASKETS/VALVES
_____ BOILER INSULATION
_____ ACOUSTICAL POPCORN CEILING
_____ DUCT WORK
_____ OTHER (PLEASE DESCRIBE BELOW)

DATE WORK STARTED	CAUSE
DATE WORK COMPLETED	CONDITION
EQUIPMENT	
CLOSING REMARKS	

BENCHSTOCK MATERIALS

Qty	Description	Price Per Unit

Supervisor's Approval _____

Note Date	Title

23-SEP-14 HAZMAT SURVEY RESULTS

SURVEY DATES: 9/19/14

INSPECTOR #: DARRYL WASHINGTON (BI-00568)

STATUS: THE FOLLOWING MATERIALS HAVE BEEN TESTED FOR ASBESTOS AND RESULTS FOLLOW:

ASBESTOS SECTION:

WINDOW CAULKING- POSITIVE FOR ASBESTOS

WINDOW GLAZING- NEGATIVE FOR ASBESTOS

LEAD SECTION: LEAD RESULTS PREVIOUS TESTING WAS PERFORMED ON ANOTHER PROJECT ON 9/1/11

DOOR FRAME PAINT (WHITE)- POSITIVE FOR LEAD

WINDOW FRAME PAINT (WHITE)- POSITIVE FOR LEAD

COLUMN PAINT (WHITE)- POSITIVE FOR LEAD

IF YOU ENCOUNTER ANY OTHER MATERIALS IN PLACE AND DEEM THEM SUSPECT FOR ASBESTOS AND/OR LEAD, PLEASE STOP WORK AND CONTACT THE ASBESTOS PROGRAM MANAGER FOR FURTHER TESTING OR ABATEMENT. PLEASE NOTE THAT THE MATERIAL QUANTITY PROVIDED ON THE FIELD SHEET IS ONLY AN ESTIMATE FOR SAMPLING PURPOSES. THE QUANTITY SHOULD BE FIELD VERIFIED FOR ALL OTHER PURPOSES INCLUDING ABATEMENT.

REFER TO THE SURVEY RESULTS ATTACHED TO THE WORK ORDER FOR DETAILED INFORMATION.

02-APR-04 ASBESTOS MAY BE PRESENT IN THIS BUILDING

WARNING - ASBESTOS EXPOSURE ALERT - EXPOSURE TO ASBESTOS MAY BE HARMFUL TO YOUR HEALTH

AS OF 02/04/2004 THE FOLLOWING AREAS WITHIN THE BUILDING HAVE BEEN IDENTIFIED BY SURVEY TO CONTAIN ASBESTOS:

BLDG 034 GIBBS HOUSE 819 BARNWELL
BASEMENT --> FLUE OVER HOT WATER TANK [26 SQ. FT.]

THE FOLLOWING COMMON TYPES OF BUILDING COMPONENTS COULD CONTAIN MATERIALS THAT, WHEN DISTURBED, MIGHT EXPOSE YOU TO ASBESTOS:

1. FLOOR TILE
2. PIPE INSULATION
3. BLACK MASTIC

4. HVAC DUCT MASTIC
5. SPRAYED-ON FIREPROOFING
6. SPRAYED-ON CEILINGS
7. SHEETROCK JOINT COMPOUND

BEFORE DISTURBING THESE TYPES OF COMPONENTS, CONFIRM THAT THEY DO NOT CONTAIN ASBESTOS AND TAKE PROPER PRECAUTIONS AT ALL TIMES

EMSL Analytical, Inc.
706 Gralin Street, Kernersville, NC 27284
Phone/Fax: (336) 992-1025 / (336) 992-4175
http://www.EMSL.com greensborolab@emsl.com

EMSL Order:	021405303
CustomerID:	UNSC62
CustomerPO:	
ProjectID:	

Attn: **USC Hazmat**
University of South Carolina
743 Greene Street
Columbia, SC 29208

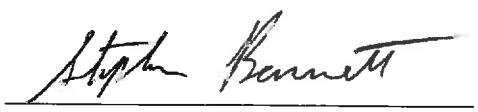
Phone:	(803) 777-7000
Fax:	(803) 777-3990
Received:	09/18/14 10:15 AM
Analysis Date:	9/18/2014
Collected:	

Project: **819 Barnell St.**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
1 *021405303-0001*	Window Caulking	Brown/Gray/White Non-Fibrous Heterogeneous	<1% Cellulose	100% Non-fibrous (other)	**None Detected**
2 *021405303-0002*	Window Caulking	Gray/Tan/White Non-Fibrous Heterogeneous	<1% Cellulose	100% Non-fibrous (other)	**None Detected**
3 *021405303-0003*	Window Caulking	Tan Fibrous Homogeneous		95% Non-fibrous (other)	**5% Chrysotile**
4 *021405303-0004*	Window Glazing	Gray/White/Beige Non-Fibrous Heterogeneous	<1% Cellulose	100% Non-fibrous (other)	**None Detected**
5 *021405303-0005*	Window Glazing	Gray/Tan/White Non-Fibrous Heterogeneous	<1% Cellulose <1% Fibrous (other)	100% Non-fibrous (other)	**None Detected**
6 *021405303-0006*	Window Glazing	Gray/Tan/White Non-Fibrous Homogeneous	<1% Fibrous (other)	100% Non-fibrous (other)	**None Detected**

Analyst(s)
Kristie Elliott (2)
Scott Combs (4)



Stephen Bennett, Laboratory Manager
or other approved signatory

Initial report from 09/19/2014 10:09:58

EMSL Analytical, Inc.
706 Gralin Street, Kernersville, NC 27284
Phone/Fax: (336) 992-1025 / (336) 992-4175
http://www.EMSL.com greensborolab@emsl.com

EMSL Order:	021405303
CustomerID:	UNSC62
CustomerPO:	
ProjectID:	

Attn: **USC Hazmat**
University of South Carolina
743 Greene Street
Columbia, SC 29208

Phone:	(803) 777-7000
Fax:	(803) 777-3990
Received:	09/18/14 10:15 AM
Analysis Date:	9/19/2014
Collected:	

Project: **819 Barnell St.**

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by TEM via EPA/600/R-93/116 Section 2.5.5.1

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
6 *021405303-0006*	Window Glazing	Gray/White Non-Fibrous Heterogeneous	100	<0.25 Fibrous (other)	No Asbestos Detected

Analyst(s)

Stephen Bennett (1)

Stephen Bennett, Laboratory Manager
or other approved signatory

Initial report from 09/19/2014 16:46:49

OrderID: 021405303

EMSL ANALYTICAL, INC.

Asbestos Bulk Building Material Chain of Custody

EMSL Order Number (*Lab Use Only*): 021405303

EMSL ANALYTICAL INC
200 ROUTE 130 NORTH
CINNAMINSON, NJ 08077
PHONE (800) 220-3675
FAX (856) 786-5974

Company: University of South Carolina	**EMSL-Bill to:** ☒ Same ☐ Different If Bill to is Different note instructions in Comments" *Third Party Billing requires written authorization from third party*
Street: 743 Greene Street	
City: Columbia **State/Province:** SC	**Zip/Postal Code:** 29208 **Country:** US
Report To (Name): USC Hazmat	**Telephone #:** 803-509-3376
Email Address: asbestos@mailbox.sc.edu	**Fax #:** **Purchase Order:**
Project Name/Number: 619 Bennett St	**Please Provide Results:** ☐ Fax ☒ Email
U.S. State Samples Taken: SC	**CT Samples:** ☐ Commercial/Taxable ☐ Residential/Tax Exempt

Turnaround Time (TAT) Options* – Please Check

☐ 3 Hour ☐ 6 Hour ☑ 24 Hour ☐ 48 Hour ☐ 72 Hour ☐ 96 Hour ☐ 1 Week ☐ 2 Week

*For TEM Air 3 hr through 6 hr, please call ahead to schedule. *There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide

PLM - Bulk (reporting limit)

- ☒ PLM EPA 600/R-93/116 (<1%)
- ☐ PLM EPA NOB (<1%)
- Point Count ☐ 400 (<0.25%) ☐ 1000 (<0 1%)
- Point Count w/Gravimetric ☐ 400 (<0 25%) ☐ 1000 (<0.1%)
- ☐ NIOSH 9002 (<1%)
- ☐ NY ELAP Method 198 1 (friable in NY)
- ☐ NY ELAP Method 198.6 NOB (non-friable-NY)
- ☐ OSHA ID-191 Modified
- ☐ Standard Addition Method

TEM – Bulk

- ☑ TEM EPA NOB – EPA 600/R-93/116 Section 2 5 5 1
- ☐ NY ELAP Method 198 4 (TEM)
- ☐ Chatfield Protocol (semi-quantitative)
- ☐ TEM % by Mass – EPA 600/R-93/116 Section 2.5.5.2
- ☐ TEM Qualitative via Filtration Prep Technique
- ☐ TEM Qualitative via Drop Mount Prep Technique

Other

- ☐

☒ **Check For Positive Stop – Clearly Identify Homogenous Group** **Date Sampled:**

Samplers Name: **Samplers Signature:**

Sample #	HA #	Sample Location	Material Description

Client Sample # (s): **Total # of Samples:** 6

Relinquished (Client): **Date:** **Time:**

Received (Lab): NS **Date:** 9/18/14 **Time:** 10:15

Comments/Special Instructions: FL7900555178 CO

021405303

UNIVERSITY OF SOUTH CAROLINA

OrderID: 021405303

Sample Analysis

Building # 034 819 BARNWELL ST

Type of Analysis: Lead / ~~Asbestos~~ Date: 9/17/14

Turn Around Time 24 HRS

Area	Sample ID	Material Sampled	Material Location	F/NF	Cond	Quantity	Pot to Disturb
A	1	WINDOW CAULKING	1ST LOWER WINDOW EAST SIDE	NF	FAIR	<400 SQ FT	LOW
A	2	WINDOW CAULKING	1ST LOWER WINDOW SOUTH SIDE	NF	FAIR	<400 SQ FT	LOW
A	3	WINDOW CAULKING	MIDDLE LOWER WINDOW NORTH SIDE	NF	FAIR	<400 SQ FT	LOW
B	4	WINDOW GLAZING	1ST LOWER WINDOW SOUTH SIDE	NF	FAIR	<500 SQ FT	LOW
B	5	WINDOW GLAZING	1ST LOWER WINDOW EAST SIDE	NF	FAIR	<500 SQ FT	LOW
B	6	WINDOW GLAZING	MIDDLE LOWER WINDOW NORTH SIDE	NF	FAIR	<500 SQ FT	LOW

License # BI-00568 FM# FM00413486 Signature _____ Requestor JEFF ABRAMS

Send lab results in PDF and CSV format as soon as possible to: asbestos@mailbox.sc.edu

FM00413486 *FM00413486* USC Work Order

Description HAZMAT SURVEY DM12 819 BARNWELL EXTERIOR REPAIRS

Site	COLUMBIA	**Assigned To**	JPROVENCE
Building	034 819 BARNWELL STREET	**Crew**	HAZMAT
Floor	**Room:**	**Start Date**	**Priority** 3
Equipment		**Due date**	25-SEP-14
		Request Date	29-NOV-12 **by** CHAPMAS

Request # FM00413486 **Description** HAZMAT SURVEY DM12 819 BARNWELL EXTERIOR REPAIRS
Parent WO #

CP Number CP00366438 DM12 819 BARNWELL EXTERIOR REPAIRS

State/Internal Project Number H27-6100

Requestor	ABRAMS,JEFF	**Project Manager**	ABRAMS, JEFFREY R
Telephone	239-8074	**Telephone**	777-3594
Alternate		**Estimated Cost**	$ 0.00
Telephone		**Billing**	FIXED PRICE
Non-Available Time		53100-W797-57120	(DEFERRED MAINTENANCE 2012)

Task List

ERIC, THIS IS FOR HAZMAT SURVEY OF EXTERIOR, TO INCLUDE ALL PAINTED WOOD, WINDOW GLAZING MATERIAL, AND ANY EXTERIOR CAULKING. PLEASE CONTACT ME FOR A TIME TO GO OVER AND LOOK AT THE BUILDING PRIOR TO THE SURVEY. THANKS, JEFF ABRAMS, SEPT 11, 2014.

(CHECK ALL THAT APPLY AND PROVIDE ADDITIONAL INFORMATION AS NEEDED)

HAZMAT SURVEY(S) REQUESTED FOR THE FOLLOWING
_____ FLOOR TILE
_____ JOINT COMPOUND
_____ WALLS
_____ MASTIC
_____ CEILING TILE
_____ PIPE INSULATION
_____ VINYL SHEET FLOORING
_____ FIREPROOFING
_____ FUME HOODS/TABLE TOPS
_____ ROOFING MATERIALS
_____ FIRE DOORS
_____ GASKETS/VALVES
_____ BOILER INSULATION
_____ ACOUSTICAL POPCORN CEILING
_____ DUCT WORK
_____ OTHER (PLEASE DESCRIBE BELOW)

DATE WORK STARTED	CAUSE
DATE WORK COMPLETED	CONDITION
EQUIPMENT	
CLOSING REMARKS	

BENCHSTOCK MATERIALS

Qty	Description	Price Per Unit

Supervisor's Approval _____

Note Date	Title

23-SEP-14 HAZMAT SURVEY RESULTS

SURVEY DATES: 9/19/14

INSPECTOR #: DARRYL WASHINGTON (BI-00568)

STATUS: THE FOLLOWING MATERIALS HAVE BEEN TESTED FOR ASBESTOS AND RESULTS FOLLOW:

ASBESTOS SECTION:

WINDOW CAULKING- POSITIVE FOR ASBESTOS

WINDOW GLAZING- NEGATIVE FOR ASBESTOS

LEAD SECTION: LEAD RESULTS PREVIOUS TESTING WAS PERFORMED ON ANOTHER PROJECT ON 9/1/11

DOOR FRAME PAINT (WHITE)- POSITIVE FOR LEAD

WINDOW FRAME PAINT (WHITE)- POSITIVE FOR LEAD

COLUMN PAINT (WHITE)- POSITIVE FOR LEAD

IF YOU ENCOUNTER ANY OTHER MATERIALS IN PLACE AND DEEM THEM SUSPECT FOR ASBESTOS AND/OR LEAD, PLEASE STOP WORK AND CONTACT THE ASBESTOS PROGRAM MANAGER FOR FURTHER TESTING OR ABATEMENT. PLEASE NOTE THAT THE MATERIAL QUANTITY PROVIDED ON THE FIELD SHEET IS ONLY AN ESTIMATE FOR SAMPLING PURPOSES. THE QUANTITY SHOULD BE FIELD VERIFIED FOR ALL OTHER PURPOSES INCLUDING ABATEMENT.

REFER TO THE SURVEY RESULTS ATTACHED TO THE WORK ORDER FOR DETAILED INFORMATION.

11-DEC-14 HAZMAT SURVEY - 12/10/14

SURVEY DATE: 12/10/14

INSPECTOR #: DARRYL WASHINGTON II (BI-00568)

STATUS: THE FOLLOWING MATERIALS HAVE BEEN TESTED FOR LEAD AND THE RESULTS FOLLOW:

INTERIOR WINDOW PAINT (WHITE)- (BOTH FLOORS)- POSITIVE FOR LEAD

IF YOU ENCOUNTER ANY OTHER MATERIALS IN PLACE AND DEEM THEM SUSPECT FOR ASBESTOS AND/OR LEAD, PLEASE STOP WORK AND CONTACT THE ASBESTOS PROGRAM MANAGER FOR FURTHER TESTING OR ABATEMENT.

REFER TO THE SURVEY RESULTS ATTACHED TO THE WORK ORDER FOR DETAILED INFORMATION.

02-JAN-15 HAZMAT SURVEY RESULTS - 1/2/15
SURVEY DATE: 1/2/15

INSPECTOR #: ERIC MELARO (BI-01296)

STATUS: THE FOLLOWING MATERIALS HAVE BEEN TESTED FOR LEAD AND THE RESULTS FOLLOW:

WHITE PAINT ON PLYWOOD SURROUNDING BACK PORCH – NEGATIVE FOR LEAD

WHITE PAINT ON BOARDS COVERING 3 WINDOWS NEAR BACK PORCH – NEGATIVE FOR LEAD

WHITE PAINT ON 2 DOORS AND DOOR FRAMES ON BACK PORCH – NEGATIVE FOR LEAD

IF YOU ENCOUNTER ANY OTHER MATERIALS IN PLACE AND DEEM THEM SUSPECT FOR ASBESTOS AND/OR LEAD, PLEASE STOP WORK AND CONTACT THE ASBESTOS PROGRAM MANAGER FOR FURTHER TESTING OR ABATEMENT.

PLEASE NOTE THAT THE MATERIAL QUANTITY PROVIDED ON THE FIELD SHEET IS ONLY AN ESTIMATE FOR SAMPLING PURPOSES. THE QUANTITY SHOULD BE FIELD VERIFIED FOR ALL OTHER PURPOSES INCLUDING ABATEMENT.

REFER TO THE SURVEY RESULTS ATTACHED TO THE WORK ORDER FOR DETAILED INFORMATION.

02-APR-04 ASBESTOS MAY BE PRESENT IN THIS BUILDING
WARNING - ASBESTOS EXPOSURE ALERT - EXPOSURE TO ASBESTOS MAY BE HARMFUL TO YOUR HEALTH

AS OF 02/04/2004 THE FOLLOWING AREAS WITHIN THE BUILDING HAVE BEEN IDENTIFIED BY SURVEY TO CONTAIN ASBESTOS:

BLDG 034 GIBBS HOUSE 819 BARNWELL
BASEMENT --> FLUE OVER HOT WATER TANK [26 SQ. FT.]

THE FOLLOWING COMMON TYPES OF BUILDING COMPONENTS COULD CONTAIN MATERIALS THAT, WHEN DISTURBED, MIGHT EXPOSE YOU TO ASBESTOS:

1. FLOOR TILE
2. PIPE INSULATION
3. BLACK MASTIC
4. HVAC DUCT MASTIC
5. SPRAYED-ON FIREPROOFING
6. SPRAYED-ON CEILINGS
7. SHEETROCK JOINT COMPOUND

BEFORE DISTURBING THESE TYPES OF COMPONENTS, CONFIRM THAT THEY DO NOT CONTAIN ASBESTOS AND TAKE PROPER PRECAUTIONS AT ALL TIMES

Time	Component	Substrate	Side	Condition	Color	Site	Inspector	Floor	Room	Results	Action Level	PbC
12/10/2014 10:07	WINDOW	WOOD		INTACT	WHITE	819 barnwell	wash	FIRST	100	Positive	0.7	< LOD
12/10/2014 10:07	WINDOW	WOOD		INTACT	WHITE	819 barnwell	wash	FIRST	100	Positive	0.7	< LOD
12/10/2014 10:08	WINDOW	WOOD		INTACT	WHITE	819 barnwell	wash	FIRST	100	Positive	0.7	10.6
12/10/2014 10:09	WINDOW	WOOD		INTACT	WHITE	819 barnwell	wash	SECOND	200	Positive	0.7	20.8
1/2/2015 10:21	calibrate				green	819 barnwell	melaro			Negative	0.7	< LOD
1/2/2015 10:23	wall	wood	around back porch	flaking	white	819 barnwell	melaro			Negative	0.7	0.27
1/2/2015 10:23	wall	wood	around back porch	flaking	white	819 barnwell	melaro			Negative	0.7	< LOD
1/2/2015 10:23	wall	wood	around back porch	flaking	white	819 barnwell	melaro			Null	0.7	< LOD
1/2/2015 10:24	wall	wood	around back porch	flaking	white	819 barnwell	melaro			Negative	0.7	< LOD
1/2/2015 10:25	boarded window	wood	west, back	flaking	white	819 barnwell	melaro			Negative	0.7	< LOD
1/2/2015 10:25	boarded window	wood	west, back	flaking	white	819 barnwell	melaro			Negative	0.7	< LOD
1/2/2015 10:25	boarded window	wood	west, back	flaking	white	819 barnwell	melaro			Negative	0.7	< LOD
1/2/2015 10:26	door	wood	back porch, lower	flaking	white	819 barnwell	melaro			Negative	0.7	< LOD
1/2/2015 10:26	door	wood	back porch, lower	flaking	white	819 barnwell	melaro			Negative	0.7	< LOD
1/2/2015 10:27	door	metal	back porch, upper	flaking	white	819 barnwell	melaro			Negative	0.7	< LOD
1/2/2015 10:27	door	metal	back porch, upper	flaking	white	819 barnwell	melaro			Negative	0.7	< LOD
1/2/2015 10:28	calibrate				green	819 barnwell	melaro			Negative	0.7	< LOD

USC LEAD MANAGEMENT PLAN

UNIVERSITY OF
SOUTH CAROLINA

University of South Carolina
Facility Services
Lead Management Program

Requirements for
Managing Projects That Involve
Lead-Containing Materials

Table of Contents

1.0 INTRODUCTION

This document is the official Facility Services position on procedures and operations involving the disturbance of lead-containing materials by employees or outside contractors.

This document was developed from a template developed by USC Environmental Health and Safety to ensure University compliance with Occupational Safety and Health Administration (OSHA), Environmental Protection Agency (EPA) and the office of Housing and Urban Development (HUD) Standards.

The entity that is responsible for management of work affected by this program is also responsible for following the requirements herein.

2.0 PURPOSE

The purpose of this Lead Management Program is to prevent lead exposure of all employees, regardless of job title, as well as students, and to help prevent the potential for building contamination from lead during demolition, maintenance, and renovation activities in University of South Carolina owned structures.

The requirements in this Program set standards for work that disturbs lead-containing materials. Contractors engaged in such projects are expected to possess the managerial expertise, experience and to employ workers with skill, training, and experience so that the work is carried out in compliance with these requirements.

3.0 DEFINITIONS

Action Level (AL) – Employee exposure, without regard to the use of respirators, to an airborne concentration of lead of 30 micrograms per cubic meter of air (30ug/m^3) calculated as an 8-hour time-weighted average.

Child Occupied Facility – a building or portion of a building constructed before 1978 that is visited regularly by a child who is 6 years of age or less, on at least 2 different days within a given week, if each day's visit is at least 3 hours and the combined weekly visit is at least 6 hours in length, and the combined annual visits are at least 60 hours in length. Child occupied facility includes but is not limited to a day-care center, a preschool, and a kindergarten classroom.

Contractor Employer Program - In accordance with the Hazard Communication Standard, each outside contractor working on a USC owned property (on-site) is responsible for developing, implementing, and informing other on-site employers of all hazard communication related information. Under the Program, each outside employer must provide USC, and other employer(s) working on-site, with unrestricted, on-site access to material safety data sheets (MSDSs) for all hazardous materials used, handled or stored on-site to which an employee may potentially be exposed to during their normal course of work.

Hazardous Waste – Generation and disposal of hazardous waste is regulated under the Resource Conservation and Recovery Act (RCRA). If a waste exhibits toxicity, corrosivity, ignitability, or reactivity characteristics it is considered hazardous.

HEPA – A HEPA filter is one that is capable of filtering 99.97% of all airborne particles at 0.3 micrometers (μm) in diameter.

HEPA Vacuum Cleaner - An electrical device that cleans surfaces by suction and discharges exhaust air through a HEPA filter.

Lead-Containing Material – Any paint, material or coating containing any detectable quantity of lead.

Lead-Based Material – Any paint, material or coating containing >0.06% by weight (600 ppm) total lead OR containing >= 0.7 mg/cm^2 as measured with an XRF (X-ray diffraction) analyzer.

Permissible Exposure Limit (PEL) - Employee exposure, without regard to the use of respirators, to an airborne concentration of lead of 50 micrograms per cubic meter of air ($50ug/m^3$) calculated as an 8-hour time-weighted average.

Presumed Lead Containing Material (PLCM) – Any material that is presumed to contain any quantity of lead.

Representative Sample – Sample that accurately captures a particular material or area based on the typical characteristic of that material or area.

Substrate – The underlying material a building component is made from, over which is often applied a surface finish such as paint. Common substrates include, plaster, concrete, wood, metal, and gypsum.

Target Housing – Any housing constructed before 1978, except any of the following:

(a) Housing for the elderly or persons with disabilities, unless any 1 or more children age 6 years or less resides or is expected to reside in that housing.
(b) A 0-bedroom dwelling.
(c) An unoccupied dwelling unit pending demolition, provided the dwelling unit remains unoccupied until demolition.

Toxicity Characteristic Leachate Procedure (TCLP) - Test conducted to determine if a substance is a hazardous waste. The hazardous waste limit for lead is 5 parts per million (ppm).

4.0 DUTIES AND RESPONSIBLITIES

The Office of Environmental Health and Safety (EHS) shall:

1) Provide technical guidance to University personnel concerning lead hazard evaluation and control.

2) Review results of area air monitoring and clearance dust wipe sampling and provide interpretation for departments managing work.

3) Direct the University Departments conducting the work to modify or stop lead related work practices if employees, students, or the public are being exposed to lead hazards.

4) Maintain records of all sampling data submitted to EHS.

5) Communicate requirements of Lead Management Program.

6) Periodically review the Lead Management Program and revise as necessary.

7) Provide Lead Training in accordance with 29 CFR 1926.62 (L)(2) for University employees anticipated to have occupational lead exposure.

Facility Services shall:

1) Disclose known information regarding the presence of lead in building and construction materials to any contractor retained to conduct demolition or renovation work at Facility Services

2) Contact EHS a minimum of 5 working days in advance of upcoming projects that may impact coated surfaces that may contain lead.

3) Ensure that the Contractor has read, understands, and will abide by the minimum performance standards required in this Program for controlling lead hazards.

4) Report any problems associated with implementation of the Lead Management Program to EHS.

5) Stop or modify lead related work practices if employees, students, or the public are being exposed to lead hazards.

6) Conduct area air monitoring and clearance sampling by qualified consultant as required by this program and provide EHS with all sample results.

7) Ensure all lead related work-sites and all areas that have been contaminated resulting from the work conducted are properly cleaned and meet the clearance criteria required by this Program.

8) Ensure all hazardous waste is properly identified, labeled, segregated and stored at the job-site until removed by approved hazardous waste contractor.

9) Provide specific contractor language regarding projects that may contain lead to outside contractors bidding on projects.

5.0 LEAD IDENTIFICATION

Because of its physical properties, lead has been widely used as an additive to many building materials. Although lead has been banned from use on potable water supplies and residential paint, it may still be present in older buildings. Some lead containing building materials continue to be used to this day. The following materials should be presumed to contain lead unless manufacturer information, MSDS, or testing proves otherwise.

Presumed Lead Containing Materials (PLCM):

- Interior and exterior paint
- Steel and iron primer
- Industrial paint
- Industrial electrical jacketing
- Roof flashing
- Tank linings
- Soft solder
- Glazed Ceramics
- Sheeting, blocks, and bricks in floors and walls for x-ray penetration protection

The OSHA Lead Standard applies to any detectable concentration of lead in a material. The presence of any lead in a material triggers the worker protection and work practice requirements of this program.

Facility Services may decide to conduct lead identification sampling to determine if a presumed lead containing material contains lead and requires lead management.

Sampling may only be conducted by a qualified USC employee or a qualified consulting firm. USC Facility Services has qualified personnel that are available conduct sampling for the identification of lead.

6.0 LEAD EXPOSURE

According to the Occupational Safety and Health Association (OSHA), any lead containing material has the potential to create an airborne exposure to lead. Contractors that disturb lead-containing material or presumed lead containing material must protect their employees from airborne lead exposure in compliance with the OSHA Lead Standard 29 CFR 1926.62. In accordance with OSHA, Contractors must protect their own employees with personal protective equipment, training, and medical surveillance.

Contractors conducting lead work on multi-contractor sites must also inform all site workers of potential exposure to lead.

USC employees must also be protected, regardless of job title, from lead exposures according to the OSHA General Industry Standard 29 CFR 1910.1025. Protecting these individuals from lead exposure will be accomplished by making sure the Contractor contains all airborne lead to the work site by using appropriate work practice controls and meeting the minimum performance criteria listed below.

7.0 WORK CATEGORIES

Projects involving lead are categorized according to the tasks performed, depending on the risk level. In order to ensure the appropriate measure will be taken to protect all individuals at USC, all projects will be categorized by Facility Services prior to initiation. Use the following tasks described below to categorize the work being conducted. Recommended minimum work practice controls can be found in Section 14.0.

Level 0

Level 0 tasks have been documented through personal air monitoring not to result in exposures above the OSHA Action Limit, and do not generate dust/debris or other waste requiring special waste management practices.

- Tasks conducted with lead-containing or lead-based materials that are not anticipated to create dust or debris and are not listed as Level 1, 2 or 3 Tasks. (example: use of manual (i.e. hammer, screwdriver) or power (i.e. pneumatic nail gun/electric drill) tools to insert nails or screws into surfaces through intact paint or coating which remains intact during work)
- Power drilling holes into materials or coatings <=0.06% by weight, or <0.7 mg/cm^2 as measured with XRF)
- Manual demolition of materials or coatings containing <=0.06% by weight, or <0.7 mg/cm^2 as measured with XRF)
- Manual scraping or sanding of materials or coatings containing <=0.06% by weight, or <0.7 mg/cm^2 as measured with XRF) using wet methods
- Chemical stripping of materials or coatings containing <=0.06% by weight, or <0.7 mg/cm^2 as measured with XRF)

Level 1

Level 1 tasks have been documented via personal air monitoring to result in exposures consistently below the OSHA Action Limit, but require more extensive work practices to minimize dust generation, contain lead contamination, and properly manage waste material resulting from work.

Example tasks may include, but are not limited to:

- Manual demolition of lead-based materials or coatings (contains >0.06% by weight, or >=0.7 mg/cm^2 as measured with XRF)
- Manual scraping or sanding of lead-based materials or coatings (contains >0.06% by weight, or >=0.7 mg/cm^2 as measured with XRF) using wet methods
- Power tool disturbance of lead based materials or coatings (contains >=0.06% by weight, or >0.7 mg/cm^2 as measured with XRF) with a dust collection system
- Power tool disturbance of materials or coatings containing <0.06% by weight, or <=0.7 mg/cm^2 as measured with XRF) with a dust collection system
- Chemical stripping of lead-based materials or coatings (contains >0.06% by weight, or >=0.7 mg/cm^2 as measured with XRF)

Level 2

Level 2 tasks either have been documented via personal air monitoring to result in exposures above the OSHA Action Limit, or may result in an unknown exposure due to lack of personal air monitoring data. Example tasks may include, but are not limited to:

- Using lead-containing mortar
- Lead burning
- Rivet busting on lead containing materials or coatings
- Power tool disturbance of lead containing materials or coatings without a dust collection system
- Clean-up of dry expendable abrasives used to remove a lead containing coating
- Spray painting with lead-based paint
- Use of a heat gun on lead containing materials or coatings

Level 3

Level 3 tasks are anticipated to generate high levels of airborne dust and pose a high risk of exposure above the OSHA PEL. Example tasks may include, but are not limited to:

- Abrasive blasting on lead containing materials or coatings
- Welding on lead containing materials or coatings
- Cutting on lead containing materials or coatings
- Torch burning on lead containing materials or coatings

8.0 PROJECT NOTIFICATION

Prior to the initiation of any interior or exterior work involving lead containing or presumed lead containing material by an outside contractor, Facility Services must provide EHS with an Initial Lead Project Notification. The initial notification must contain the general scope of work to be done, dates for the start and proposed completion of the work, and the precautions which will be employed to protect building occupants.

Facility Services must complete and submit the form 15 days prior to the start of the project. This form can be found in Appendix 1.

9.0 NOTIFICATION TO BUILDING OCCUPANTS

Prior to the initiation of any interior or exterior work involving lead containing or presumed lead containing material, Facility Services will forward an informational memo to all appropriate persons on the building contact directory list located in the building that lead work is conducted. This memo will contain the general scope of work to be done, dates for the start and proposed completion of the work, and the precautions which will be employed to protect building occupants.

10.0 TRAINING

All maintenance and custodial staff must attend Lead Awareness training annually. This training requirement is satisfied through the comprehensive safety training program conducted by EHS.

All USC employees conduct, or that are anticipated to enter a lead work site other than Level 0 must receive Occupational Exposure to Lead Training in accordance with 29 CFR 1926.62(L)(2). Lead training shall be conducted annually by EHS and will consist of the following:

- The specific nature of the operations which could result in exposure to lead above the action level
- Procedures and work practices required to minimize lead exposure and properly manage resulting waste material
- The purpose, proper selection, fitting, use and limitations of respirators
- The purpose and description of the medical surveillance and medical removal programs, including health effects of lead exposure and potential reproductive consequences
- The contents of this compliance plan.
- Instruction that chelating agents should not be used unless under the direction of a licensed physician.
- Explanation of engineering controls and work practices for lead-related work
- The employee's right of access to records

11.0 PERFORMANCE CRITERIA FOR CONTRACTORS

Minimum Performance Criteria have been established for outside contractors conducting lead related work to ensure that no University employee or student is exposed above the OSHA Action Level of 30 ug/m^3 of airborne lead or has the potential to come into contact with lead dust as a result of contractor's activities. At a minimum, a Contractor disturbing lead related materials must meet the following requirements.

- Possess, at a minimum, 2 years of experience with lead related work.
- Limit access to worksites in which Level 1, 2 and 3 tasks are taking place to trained and authorized personnel only.
- Adequately limit all migration of lead containing dust and debris to any areas outside the worksite.
- Ensure that USC employees and students not associated with the worksite are not exposed to lead levels above the OSHA Action Level.
- Prevent the contamination of USC property (i.e., computers, chairs, desks, carpet, floors, walls, etc.) from lead dust and debris.
- Collect and manage hazardous wastes produced in accordance with RCRA hazardous waste requirements.
- Ensure that workers contaminated with lead containing dust and debris do not transfer that material outside the worksite

Facility Services will ensure airborne lead and dust is contained to the worksite by conducting or contracting for approved third party Area Air Monitoring and Clearance Dust

Wipe Sampling (information on Area Air Monitoring and Clearance Dust Wipe Sampling can be found in Sections 15 and 16) when required by this program.

Note: USC employees designated to conduct lead related work will be protected in accordance with the OSHA Lead in Construction Standard 29 CFR 1926.62.

12.0 LEAD COMPLIANCE PLAN

OSHA requires contractors that employ workers occupationally exposed to lead establish and implement a Lead Compliance Plan. The Lead Compliance Plan shall be prepared by the Contractor, as required by the OSHA Standard (29 CFR 1926.62) and submitted to Facility Services and EHS. When Facility Services conducts any Level 1 tasks or above, a Lead Compliance Plan will also be developed. The document must include the following:

- Description of each activity in which lead containing, or presumed lead containing material is disturbed (i.e., equipment used, material involved and % Pb, controls in place, operating procedures, crew size and corresponding employee job responsibilities).
- Work Practice Controls to be used to prevent lead contamination from occurring outside the work-site.
- Regular inspections of the work-site and equipment by a competent person named by the Contractor.
- A description of arrangements made among Contractors on multi-contractor sites to inform workers of potential exposure to lead and their responsibility to comply with the OSHA Lead in Construction Standard 29 CFR 1926.62.
- Proof of appropriate Lead Training for each employee on-site.
- Proof of appropriate written respirator program and compliance under 29 CFR 1910.134.
- Certification that the Contractor has read understands and will abide by the minimum performance standards required in this Program for controlling lead hazards.

13.0 SIGNAGE

The Contractor conducting lead work shall post warning signs outside any entrance to the worksite in accordance with the OSHA standard below:

1926.62(m)(2)(i) The employer shall post the following warning signs in each work area where employee exposure to lead is above the PEL.

WARNING:
LEAD WORK AREA
POISON
NO SMOKING OR EATING

1926.62(m)(2)(ii) The employer shall assure that signs required by this paragraph are illuminated and cleaned as necessary so that the legend is readily visible.

Additionally all work areas (other than Category 0), regardless of airborne lead concentrations, shall be posted with the following sign. An example of this sign can be found in Appendix 2.

WARNING
LEAD WORK AREA
NO EMPLOYEE PERMITTED ENTRANCE
WITHOUT PROOF OF LEAD TRAINING
for further information, please contact:
(Project Manger) at (Phone #)

Facility Services will ensure that signs are posted and maintained appropriately.

14.0 RECOMMENDED MINIMUM WORK PRACTICE CONTROLS

Recommended work practices have been developed for lead related work conducted at USC. Work involving lead-containing material must be well planned out to avoid worker and occupant exposure. The following work practices are recommended for meeting the performance criteria listed in the Requirements of Contractors Section of this Program.

Level 0 Tasks

Training - Employees engaged in Level 0 tasks must have received Lead Awareness training within the past year.

PPE - No PPE Required

Required Work Practices

- Establish "safe zone" around work using barrier tape. Do not allow public access to work area.
- Use care to minimize the production of dust and debris.
- Visually inspect area for any debris/dust resulting from work conducted.

Level 1 Tasks

Training - Employees engaged in Level 1 tasks must have received Occupational Exposure to Lead training within the past year.

PPE – Tyvek suit or coveralls to prevent contamination of street clothing. A half-face , air purifying respirator with HEPA cartridges is optional. Note that any employee wearing a respirator must be enrolled in the Respiratory Protection Program and be qualified to wear a respirator.

Required Work Practices

- Barrier tape will be used to isolate the work area in such a way that staff, students, and the public cannot get within 10 ft of the work area.
- A warning sign should be posted outside any unsecured entry to the work site. Refer to the Signage Section of this Program (Section 13).
- Daily clean-up of the worksite will include removal of debris (with the exception of contaminated plastic sheeting) and disposal of protective clothing.
- Complete Lead Compliance Plan prior to beginning work.
- Identify and require the use of hand/face washing facility and change area.
- Personal air monitoring should be conducted periodically to confirm exposures remain below the OSHA Action Limit.
- For work occurring in occupied areas (i.e., office, cafeteria, gym, dormitory, apartments, study room, labs) the work area should be enclosed with, minimally, 6 mil plastic in a manner that prevents transfer of dust outside the work area.
- Remove all movable objects (desk, chairs, and books) within the enclosed work area. Non-movable objects should be securely covered with 6-mil plastic sheeting, as to prevent lead dust contamination. Facility Services employee entry to the work area will be limited to those individuals with documented Lead Awareness Training.
- For work occurring in unoccupied areas (i.e., hallway, stairwell, foyers, mechanical spaces, etc) prepare work area by placing 6mil plastic sheeting a minimum of six (6) feet horizontally out in all directions from the work area. Adequately secure plastic to ensure all debris and dust is collected on plastic.
- Cover all air vents within the work area.
- For exterior projects, capture all lead containing material and presumed lead containing material to prevent contamination of the surrounding environment (i.e. secure one layer of 6-mil plastic on the ground extending 10 feet beyond the perimeter of the worksite).
- Use care to minimize the production of dust from scraping or sanding. Use either wet sanding/scraping or HEPA filtration fitted equipment.
- After disturbance work is completed a HEPA vacuum should be used to remove any small debris and visible dust from interior/exterior surfaces and plastic sheeting.
- Visually inspect area for any debris resulting from work conducted. Remove any debris from area.
- Decontaminate Tyvek or coveralls with HEPA vacuum before leaving the regulated area.
- After work is completed, a HEPA vacuum should be used to remove any small debris and visible dust from all surfaces. After visible debris is removed from the plastic sheeting, it should be rolled inward and placed in a "hazardous" waste container, along with all disposable clothing. All "hazardous" waste shall be adequately labeled and stored in accordance with all Local, State, and Federal rules and in accordance with University Procedures.

Level 2 and 3 Tasks

Training - Employees engaged in Level 2 and 3 tasks must have received Occupational Exposure to Lead training within the past year.

PPE – Tyvek suit or coveralls to prevent contamination of street clothing. Depending upon the operation and expected exposure levels, all employees must wear, at a minimum, a powered air purifying respirator with tight-fitting face piece. Note that any employee wearing a respirator must be enrolled in the Respiratory Protection Program and be qualified to wear a respirator.

Required Work Practices

- Complete Lead Compliance Plan prior to beginning work.
- Lead dust/debris shall be contained to the work area by sealing all doors, windows, and air vents with 6-mil plastic sheeting. This may require turning off localized HVAC systems.
- The entrance to the work area should be equipped with an adequate air lock constructed of 6 mil plastic sheeting at a minimum. The air lock must control any dust migration or transfer out of the controlled work area.
- A three-stage decontamination unit, including equipment room, shower and clean room must be established at the entrance to the work area.
- Disposable coveralls must be donned prior to entering the work-site and contaminated coveralls must be doffed prior to exiting the work-site.
- Entry to the work area will be limited to workers with documented Occupational Exposure to Lead training.
- All furniture that cannot be removed from the work area should be covered in 6-mil plastic sheeting in a manner which provides protection from lead dust contamination.
- Place a minimum of 6-mil plastic sheeting on all finished floors in the work area, and tape all seams as necessary. The contractor must notify Facility Serice if plastic sheeting is not appropriate for floor application and provide an alternative floor protection control method.
- Mechanical ventilation may not be used, unless resulting exhaust outside the work area is equipped with HEPA filtration and the termination of the exhaust is monitored in accordance with Section 15 of this Program.
- Barrier tape will be used to isolate the work area in such a way that staff, students, and the public cannot get within 10 ft of the work area.
- A warning sign should be posted outside any unsecured entry to the work site. Refer to the Signage Section of this Program (Section 13).
- Daily clean-up of the worksite will include removal of debris (with the exception of contaminated plastic sheeting) and disposal of protective clothing.
- After lead project work is completed, a HEPA vacuum should be used to remove any small debris and visible dust from all surfaces. After visible debris is removed from the plastic sheeting, it should be rolled inward and placed in a

"hazardous" waste container, along with all disposable clothing. All "hazardous" waste shall be adequately labeled and stored in accordance with all Local, State, and Federal rules and in accordance with University Procedures.

- In situations where work is complete, but plastic sheeting was not used on the floor, a HEPA vacuum should be used to remove any small debris and visible dust, followed by a wet mopping with lead specific detergent of the entire floor. All liquid waste must be treated as "hazardous" until otherwise determined by analysis and characterization.
- The work area may not be released for general use or occupancy until clearance wipe samples are collected and results reviewed and approved by EHS. Information on Clearance Criteria and associated sampling can be found in Section 16 of this Program.

Required exterior work practices for Level 2 and 3 Tasks include:

- Building occupants shall be notified to close windows and doors within 20 feet of work area until work is complete.
- Controls shall be in place to eliminate contaminating HVAC systems and air intakes that have the potential to draw in air from the work-site. Control methods must be submitted to EHS for review and approval.
- Capture all lead containing material and presumed lead containing material to prevent contamination of the surrounding environment (i.e. secure one layer of 6-mil plastic on the ground extending 10 feet beyond the perimeter of the worksite).
- Erect temporary fencing or barrier tape at a 20 foot perimeter around work-site.
- Daily clean-up of the worksite will include removal of debris, plastic sheeting, and disposal of coveralls. All "hazardous" waste shall be adequately labeled and stored in accordance with all Local, State, and Federal rules and in accordance with University Procedures.
- Keep all hazardous waste in a secure indoor area until disposal.

15.0 SAMPLING

USC requires all lead sampling to be conducted by qualified individuals, consultants, and labs. Additionally, all laboratory analysis of bulk, air, and wipe samples must be conducted by an AIHA approved lead laboratory.

15.1 BULK SAMPLING FOR LEAD IDENTIFICATION

The department managing the work may decide to conduct lead identification sampling to determine if a presumed lead containing material contains lead and requires lead management. The only method currently recognized is bulk sampling for laboratory analysis. Sampling may only be conducted by a qualified USC employee or an approved consulting firm.

At a minimum, a qualified person conducting lead identification sampling will:

- Have previous bulk sampling for lab analysis experience.
- Have a working understanding of the National Institutes for Occupational Safety and Health (NIOSH) sampling methodologies.
- Capable of determining appropriate sampling methodologies documenting and submitting a "representative" sampling plan.

At a minimum, Lead Identification Sampling must provide the following:

- Sampling must be representative of the material selected. One sample is needed for each homogenous (same color and substrate) component and each individual component must be sampled separately. For example, if a door is painted 2 different colors, a sample is needed for each color, or if a wall is half plaster and half drywall, a sample is need for each substrate.
- A collection of all paint layers from the substrate, and minimize the collection of actual substrate.
- A record of the component, substrate, color, and location for each sample taken.
- Sampling results must be provided to the Department Managing the work and EHS.

15.2 AREA AIR SAMPLING

Facility Services must provide area air sampling for all Level 2 and 3 tasks, or when HEPA equipped ventilation is exhausted outside the work-site. Sampling may only be conducted by a qualified individual(s).

At a minimum, a qualified person conducting air sampling will:

- Have previous air sampling experience and work under the supervision of an Industrial Hygiene Professional.
- Possess the ability to calibrate and maintain all air sampling equipment.
- Have an understanding of the National Institutes for Occupational Safety and Health (NIOSH) sampling methodologies.
- Have the ability to answer questions on sampling procedures, laboratory results, and or, instrument readings.

At a minimum, Area Air Sampling must provide the following:

- One air sample which represents an area outside the worksite, no more than 3 feet from the entrance.
- One air sample at the termination of any mechanical ventilation device used in the work-site which is exhausted outside of the worksite.
- One sample that represents the closest occupied area, or adjacent public space.

- Area air sampling must be conducted for every shift where HEPA equipped ventilation is used or abrasive blasting is conducted.
- Analytical results of air samples must be provided by an American Industrial Hygiene Association accredited lab within 24 hours of sample collection.
- Area air sample results must be provided to EHS daily. EHS will review all air sample results and contact the department managing the work the next business day if results are at or above 30ug/m3. The results must contain the date, time, duration, associated room number, and a floor plan drawing that identifies sample location. An area air sample result at, or above 30ug/m3, for any shift, will be considered a breach in dust containment. All surfaces represented in the area sample are considered to be contaminated with lead dust and represent an exposure potential for future or existing building occupants.

Work must be stopped immediately and the following must occur:

- The affected area must be HEPA vacuumed, removing all visible dust from all affected surfaces.
- Clearance Dust Sampling must be conducted to ensure lead dust was removed. A re-clean of the area will be required until the University Clearance Criteria is met.

Information on Clearance Dust Sampling is provided below.

15.3 CLEARANCE DUST WIPE SAMPLING

Facility Services must provide Clearance Dust Wipe Sampling at the completion of the Level 2 and 3 tasks in which more than 2 square feet of a lead containing material is impacted. Results of the sampling will determine if the worksite is free of lead dust contamination and if the worksite can be opened for unrestricted access. Sampling will also provide confirmation that an area that was accidentally contaminated was sufficiently cleaned. Sampling may only be conducted by a qualified individual(s).

At a minimum, a qualified person conducting clearance sampling will:

- Have previous sampling experience and work under the supervision of an Industrial Hygiene Professional.
- Have the ability to answer questions on sampling procedures and laboratory results.
- Be completely independent of the contractor conducting the lead work. In target housing (University Apartments) and child occupied facilities, the person conducting clearance sampling must possess EPA Lead Inspector or Risk Assessor certification.

At a minimum, Clearance Dust Wipe Sampling must provide the following:

- One representative floor dust wipe sample per room, or per every 1000 square foot of floor space for rooms over 1000 square foot in size. Sample locations will represent the areas that have the highest potential for contamination within the work-site, or areas that have been identified as contaminated.
- One dust wipe sample for every hand contact surface located in the work site, or hand contact surfaces that have been identified as contaminated.
- Clearance dust wipe samples shall be collected no sooner than one hour from the completion of work. Samples collected within an hour of the completion of work will not be considered accurate representations of actual conditions in the work area.
- Clearance dust wipe sampling shall be conduced after the worksite is HEPA vacuumed by the Contractor and all visible dust is removed and prior to use or occupancy.
- Analytical results of dust wipe samples must be provided by an American Industrial Hygiene Association accredited lab.
- Clearance dust wipe sample results must be provided to EHS for review. EHS will notify The University department managing the work the next business day if area testing results meets the Clearance Criteria, and or, the space can be released for unrestricted access. University Clearance Criteria is listed below.

Dust Wipe Clearance Criteria

Area	Clearance Criteria
All interior surfaces (eg., floors, stair treads, window sills)	100 ug/ft^2
All exterior horizontal surfaces extending 20-feet from work-site up to a height of 6-feet (eg., stairs, pavement, concrete, window sills)	400 ug/ft^2

The University department or contractor conducting lead work on campus shall be responsible for returning the work area to below the appropriate clearance level. In settings where baseline samples show existing lead concentrations above the clearance level, the contractor must clean the work area to the baseline level or below. If baseline data is used as clearance criteria, the department or contractor must contact EHS BEFORE work is conducted to request baseline wipe sampling. Failure to contact EHS before work is started will require use of the listed clearance limits.

Clearance dust wipe sample results above the Clearance Criteria represent surface lead contamination. Any areas that contain surface contamination must remain a restricted lead worksite, until a re-clean is completed and clearance dust wipes are collected by a third-party Sampling Technician and results reviewed for approval by EHS.

Note: Clearance Criteria for lead contamination in "Target Housing" or Child-Occupied Facilities must meet requirements listed in the US Department of Housing and Urban Development (HUD), "Guidelines for the Control of Lead-Based Paint Hazards in Housing."

15.0 LEAD WASTE

There are comprehensive federal, state and local regulations for the management of hazardous waste. These rules apply to all University personnel; from those who initially generate the hazardous waste to those who arrange for waste disposal. The University is regulated as a hazardous waste generator. Strict regulatory requirements apply to labeling, handling, storing and disposing of hazardous wastes. In order to remain compliant with the Resource Conservation and Recovery Act (RCRA) solid waste must be reviewed to determine if it is a regulated waste. In the case of construction debris, there is a potential for lead contamination from lead based paint. Any waste which leaches lead at a rate of 5 parts per million or greater is considered to be a hazardous waste.

The University has determined that there are four types of lead contaminated waste which may be created as a result of maintenance and construction operations. These four types are:

- Dust – Any material with a surface area of less than 2 square inches, to include, but not limited to, paint scrapings, small bits of construction debris, and dust from drilling, sanding, cutting, etc.
- Debris – Any material with a surface are greater than or equal to 2 square inches in size, to include, but not limited to, Personal Protective Equipment (PPE), rags, wood, construction debris, paper, plastic, Scrap Metal which is not sent for recycling, etc.
- Water – Waste water from processes involving the removal of lead based paint or lead contaminated debris, to include, but not limited to, mop water, rinse water, etc.
- Scrap Metal – Any painted metal which is being discarded as a waste, and can be sent to a metal recycling facility, to include, but not limited to, railings, stairs, shutters, doors, etc.

Waste Sampling

Many wastes which are or have the potential to be contaminated with lead must be sampled by an approved Third Party Sampling Technician or by a qualified University employee and be submitted for testing to an EPA accredited lab for Toxicity Characteristic Leaching Procedure (TCLP) analysis.

For the purposes of this program, the University will require testing and analytical for all Water, and Debris, and for *large volumes of Dust on a case by case basis. Scrap Metal sent for recycling is not required to be tested.

> ***Note:** Due to the cost of analytical it does not make sense to analyze insignificant amounts of material. Any small (less than 5 pounds) quantities of dust should be automatically managed as a hazardous waste and disposed of accordingly.*

EHS requires Facility Services use a qualified laboratory for sampling and analytical of the waste material. The lab provides a sampling service for a fee and all associated cost will be the responsibility of the department managing the work.

A proper sample must be representative of the waste. Proper sampling protocol will be ensured if employing the approved laboratory to sample and analyze the material. If the department managing the work chooses not to employ an approved laboratory, a sampling protocol must be submitted to the EHS for approval, five business days in advance of sampling.

EHS recommends that a representative waste sample be taken and results submitted to EHS prior to waste generation. By making a waste determination before work starts, the Contractor and the department managing the work can make the appropriate arrangements for storage and disposal of the waste in advance.

Waste Determination

Once the analytical results are received, a hazardous waste determination must be made by the contractor. Facility Services must submit a copy of sample results for review by EHS. Waste may only be removed from the worksite after EHS has made a waste determination, based on the analytical results.

Once materials are deemed to be a hazardous waste they must be managed as such. If the material is determined by EHS to be non-hazardous it may be treated as a Municipal Solid Waste, Construction Debris, or Scrap Metal and can be managed and removed by the contractor. The material cannot be determined to be non-hazardous until the EHS receives and reviews a copy of the analytical for review and notification of determination is given to the Hazardous Waste Manager (see description below). Only then can the material sampled be treated as non-hazardous.

APPENDIX 1

University of South Carolina

Office of Environmental Health and Safety

Initial Lead Project Notification

USC Building_____/ #_____ Floor ____ Room_____

Building Contact_____ PH #_____

Project Representative _____ PH #_____

General
Contractor_____No._____

Scope of Work (Including Engineering Controls):

Start Date __/__/__ End Date __/__/__ Hours __:__ to __:__

Baseline Wipe Samples Requested yes___ no___

Presumed Lead Containing Material Tested? yes___ no___

If yes, who tested the material and what were the results:

Fax Completed Form to EHS at (803) 777/5275 at least 15 days before start

APPENDIX 2

LEAD WORK WARNING SIGN