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hazard abatement in target housing and child occupied facilities being transferred or resolving facility-related work due to an occupant child with an elevated blood lead. In these projects, it is required that the specification editor has appropriate training regarding lead-based paint activities. Certification as a project designer per 40 CFR 745 is required.

NOTE: Where LBP/PWL is not specifically being removed/controlled as a hazard abatement action or deleading, use Section 02 83 13.00 20 LEAD IN CONSTRUCTION.

NOTE: The classification of the lead-based paint or paint with lead as hazardous waste must be performed in accordance with 40 CFR 261, and in the design phase of the project. This classification is prerequisite to the requirement of special handling, storage, and disposal according to Federal, state and local hazardous waste management regulations.

NOTE: When historic preservation work will remove LBP/PWL, refer to the Secretary of the Interior's Standards for the Treatment of Historic Properties and/or Brief 37, "Appropriate Methods for Reducing Lead-Paint Hazards in Historic Housing" as appropriate.

NOTE: Projects involving housing improvement, maintenance, or repair are not considered a lead-based paint hazard abatement action even if the effect of the work removes (or controls) lead exposure potentials to the occupants. However, appropriate precautions for protecting occupants and leaving the housing clean (clearance) after concluding any work disturbing paint with lead must be considered. Specific training and certification requirements (40 CFR 745 or authorized state program requirements) may not be necessary for all projects. However, it is strongly recommended that the specification editor have appropriate training regarding lead-based paint.

NOTE: Obtain from the activity information on lead-based paint/paint with lead to be removed by the project.

NOTE: Projects that involve cutting, sawing, sanding, scraping, needle gunning, abrasive blasting, high temperature removal, etc., of lead-based paint/paint with lead materials may result in lead exposures in excess of OSHA limits. Therefore, personal protective equipment should be used and controls implemented. Institute worker protection controls as indicated in 29 CFR 1926.62 and herein. Also, some work practices are prohibited for LBP/LBP hazard abatement (e.g., machine sanding, abrasive blasting) unless used with HEPA exhaust controls (see 40 CFR 745.227).

NOTE: Drawings should indicate the location, extent and condition of the LBP/PWL to be removed/controlled. Clearly indicate if the LBP/PWL is to be removed to the substrate.

PART 1 GENERAL

1.1 REFERENCES

NOTE: This paragraph is used to list the publications cited in the text of the guide specification. The publications are referred to in the text by basic designation only and listed in this paragraph by organization, designation, date, and title.

Use the Reference Wizard's Check Reference feature when you add a RID outside of the Section's Reference Article to automatically place the reference in the Reference Article. Also use the Reference Wizard's Check Reference feature to update the issue dates.

References not used in the text will automatically be deleted from this section of the project specification when you choose to reconcile references in the publish print process.

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

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI Z88.2 (1992) Respiratory Protection

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT (HUD)

HUD 6780 (1995; Errata Aug 1996; Rev Ch. 7 - 1997)
Guidelines for the Evaluation and Control

of Lead-Based Paint Hazards in Housing

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

29 CFR 1926.103	Respiratory Protection
29 CFR 1926.21	Safety Training and Education
29 CFR 1926.33	Access to Employee Exposure and Medical Records
29 CFR 1926.55	Gases, Vapors, Fumes, Dusts, and Mists
29 CFR 1926.59	Hazard Communication
29 CFR 1926.62	Lead
29 CFR 1926.65	Hazardous Waste Operations and Emergency Response
40 CFR 260	Hazardous Waste Management System: General
40 CFR 261	Identification and Listing of Hazardous Waste
40 CFR 262	Standards Applicable to Generators of Hazardous Waste
40 CFR 263	Standards Applicable to Transporters of Hazardous Waste
40 CFR 264	Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
40 CFR 265	Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
40 CFR 268	Land Disposal Restrictions
40 CFR 745	Lead-Based Paint Poisoning Prevention in Certain Residential Structures
49 CFR 172	Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements
49 CFR 178	Specifications for Packagings

UNDERWRITERS LABORATORIES (UL)

UL 586	(2009) Standard for High-Efficiency Particulate, Air Filter Units
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1.2 DEFINITIONS

1.2.1 Abatement

As applied to target housing and child occupied facilities, "abatement" means any set of measures designed to permanently eliminate lead-based paint hazards in accordance with standards established by appropriate Federal agencies. Such term includes:

a. The removal of lead-based paint and lead-contaminated dust, the permanent containment or encapsulation of lead-based paint, the replacement of lead-painted surfaces or fixtures, and the removal or covering of lead contaminated soil; and

b. All preparation, cleanup, disposal, and post-abatement clearance testing activities associated with such measures.

1.2.2 Action Level

Employee exposure, without regard to use of respirators, to an airborne concentration of lead of 30 micrograms per cubic meter of air averaged over an 8 hour period in a work environment.

1.2.3 Area Sampling

Sampling of lead concentrations within the lead control area and inside the physical boundaries, which is representative of the airborne lead concentrations but is not collected in the breathing zone of personnel.

1.2.4 Child Occupied Facility

A building or portion of a building constructed prior to 1978 visited regularly by the same child, 6 years of age or under, on a least two different days within any week, provided each days visit last at least 3 hours and the combined weekly visit last at least 6 hours and the combined annual visit last at least 60 hours. Child occupied facilities may include, but are not limited to day-care centers, preschools and kindergarten classrooms.

1.2.5 Competent Person (CP)

As used in this section, refers to a person employed by the Contractor who is trained in the recognition and control of lead hazards in accordance with current federal, State, and local regulations. A Certified Industrial Hygienist (CIH) certified for comprehensive practice by the American Board of Industrial Hygiene or a Certified Safety Professional (CSP) certified by the Board of Certified Safety Professionals is the best choice.

1.2.6 Contaminated Room

Refers to a room for removal of contaminated personal protective equipment (PPE).

1.2.7 Decontamination Shower Facility

That facility that encompasses a clean clothing storage room, and a contaminated clothing storage and disposal rooms, with a shower facility in between.

1.2.8 Deleading

Activities conducted by a person who offers to eliminate lead-based paint or lead-based paint hazards or to plan such activities in commercial buildings, bridges or other structures.

1.2.9 Eight-Hour Time Weighted Average (TWA)

Airborne concentration of lead to which an employee is exposed, averaged over an 8 hour workday as indicated in 29 CFR 1926.62.

1.2.10 High Efficiency Particulate Air (HEPA) Filter Equipment

HEPA filtered vacuuming equipment with a UL 586 filter system capable of collecting and retaining lead-contaminated paint dust. A high efficiency particulate filter means 99.97 percent efficient against 0.3 micron or larger size particles.

1.2.11 Lead

Metallic lead, inorganic lead compounds, and organic lead soaps.

1.2.12 Lead-Based Paint (LBP)

Paint or other surface coating that contains lead in excess of 1.0 milligrams per centimeter squared or 0.5 percent by weight.

1.2.13 Lead-Based Paint Activities

In the case of target housing or child occupied facilities, lead-based paint activities include; a lead-based paint inspection, a risk assessment, or abatement of lead-based paint hazards.

1.2.14 Lead-Based Paint Hazard (LBP Hazard)

Any condition that causes exposure to lead from lead-contaminated dust, lead-contaminated soil, lead-based paint that is deteriorated or present in accessible surfaces, friction surfaces, or impact surfaces that would result in adverse human health effects.

1.2.15 Paint with Lead (PWL)

Any paint that contains lead as determined by the testing laboratory using a valid test method. The requirements of this section does not apply if no detectable levels of lead are found using a quantitative method for analyzing paint using laboratory instruments with specified limits of detection (usually 0.01%). An X-Ray Fluorescence (XRF) instrument is not considered a valid test method.

1.2.16 Lead Control Area

A system [of control methods] to prevent the spread of lead dust, paint chips or debris to adjacent areas that may include temporary containment, floor or ground cover protection, physical boundaries, and warning signs to prevent unauthorized entry of personnel. HEPA filtered local exhaust equipment may be used as engineering controls to further reduce personnel exposures or building/outdoor environmental contamination.

1.2.17 Lead Permissible Exposure Limit (PEL)

Fifty micrograms per cubic meter of air as an 8 hour time weighted average as determined by 29 CFR 1926.62. If an employee is exposed for more than eight hours in a workday, the PEL shall be determined by the following formula:

$$\text{PEL (micrograms/cubic meter of air)} = 400/\text{No. hrs worked per day}$$

1.2.18 Personal Sampling

Sampling of airborne lead concentrations within the breathing zone of an employee to determine the 8 hour time weighted average concentration in accordance with 29 CFR 1926.62. Samples shall be representative of the employees' work tasks. Breathing zone shall be considered an area within a hemisphere, forward of the shoulders, with a radius of 150 to 225 mm 6 to 9 inches and centered at the nose or mouth of an employee.

1.2.19 Physical Boundary

Area physically roped or partitioned off around an enclosed lead control area to limit unauthorized entry of personnel. As used in this section, "inside boundary" shall mean the same as "outside lead control area but inside the physical boundary."

1.2.20 Target Housing

Housing constructed prior to 1978. It does not include housing for the elderly, or persons with disabilities unless any one or more children age 6 years and younger resides or is expected to reside in such housing.

1.3 DESCRIPTION

1.3.1 Description of Work

NOTE: Specify the location (doors, windows, walls, ceilings, floors, piping or building materials), extent (specific surfaces or components) and condition (intact, flaking, chalking, alligatored, chipped, peeling) of the LBP/PWL to be removed/controlled. Drawings shall provide dimensions sufficient to enable the contractor to do a quantity take-off.

Remove/control lead-based / paint with lead in [_____] condition, located [_____] and as indicated on the drawings.

1.3.2 Coordination with Other Work

The contractor shall coordinate with work being performed in adjacent areas. Coordination procedures shall be explained in the Removal/Control Plan and shall describe how the Contractor will prevent lead exposure to other contractors and/or Government personnel performing work unrelated to lead activities.

1.4 SUBMITTALS

NOTE: Review submittal description (SD) definitions in Section 01 33 00 SUBMITTAL PROCEDURES and edit the following list to reflect only the submittals required for the project. Submittals should be kept to the minimum required for adequate quality control.

A "G" following a submittal item indicates that the submittal requires Government approval. Some submittals are already marked with a "G". Only delete an existing "G" if the submittal item is not complex and can be reviewed through the Contractor's Quality Control system. Only add a "G" if the submittal is sufficiently important or complex in context of the project.

For submittals requiring Government approval on Army projects, a code of up to three characters within the submittal tags may be used following the "G" designation to indicate the approving authority. Codes for Army projects using the Resident Management System (RMS) are: "AE" for Architect-Engineer; "DO" for District Office (Engineering Division or other organization in the District Office); "AO" for Area Office; "RO" for Resident Office; and "PO" for Project Office. Codes following the "G" typically are not used for Navy, Air Force, and NASA projects.

Choose the first bracketed item for Navy, Air Force and NASA projects, or choose the second bracketed item for Army projects.

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are [for Contractor Quality Control approval.][for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government.] The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-03 Product Data

Vacuum Filters; G

Respirators; G

SD-06 Test Reports

sampling results; G

Occupational and Environmental Assessment Data Report; G

SD-07 Certificates

Qualifications of CP; G

- Testing Laboratory qualifications; G
- [Occupant Notification; G]
- [Training Certification of workers and supervisors; G]
- [Notification of the Commencement of [LBP] Hazard Abatement; G]

 NOTE: Refer to Criteria Notes in paragraphs titled
 "Air and Wipe Sampling" and "Clearance
 Certification" to determine whether this item should
 be included in the project.

- [Third Party Consultant Qualifications; G]
- lead-based paint/paint with lead removal/control plan including CP approval (signature, date, and certification number); G
- Rental equipment notification; G
- Respiratory Protection Program; G
- Hazard Communication Program; G
- [EPA] [or] [State] approved hazardous waste treatment, storage, or disposal facility for lead disposal; G
- Lead Waste Management Plan; G
- Vacuum filters; G
- [Clearance Certification; G]

SD-11 Closeout Submittals

- Completed and signed hazardous waste manifest from treatment or disposal facility; G
- Certification of Medical Examinations; G
- Employee Training Certification; G
- [Waste turn-in documents or weight tickets for non-hazardous wastes that are disposed of at sanitary or construction and demolition landfills; G]

1.5 QUALITY ASSURANCE

1.5.1 Qualifications

1.5.1.1 Qualifications of CP

Submit name, address, and telephone number of the CP selected to perform responsibilities specified in paragraph entitled "Competent Person (CP) Responsibilities." Provide previous experience of the CP. Submit proper documentation that the CP is trained [and licensed] [and certified] in

accordance with Federal, State, and local laws.

1.5.1.2 Training Certification

**NOTE: State or local regulations may consider
LBP/PWL removal/control work as "lead-based paint
hazard reduction activities" or "deleading." The
training provider may be required to be "accredited"
by either the State or the United States
Environmental Protection Agency (USEPA).**

Submit a certificate for each employee and supervisor, signed and dated by the [authorized] training provider [meeting 40 CFR 745 (Subpart L) requirements], stating that the employee or supervisor has received the required lead training [and is certified to perform or supervise deleading or lead removal]. [Submit proof the work will be performed by a certified firm.]

1.5.1.3 Testing Laboratory

Submit the name, address, and telephone number of the testing laboratory selected to perform the air [and wipe] [and soil] sampling, testing, and reporting of airborne concentrations of lead. Use a laboratory accredited under the EPA National Lead Laboratory Accreditation Program (NLLAP) by either the American Association for Laboratory Accreditation (A2LA) or the American Industrial Hygiene Association (AIHA) and that is successfully participating in the Environmental Lead Proficiency Analytical Testing (ELPAT) program to perform sample analysis. Laboratories selected to perform blood lead analysis shall be OSHA approved.

[1.5.1.4 Third Party Consultant Qualifications

**NOTE: Refer to Criteria Notes in paragraphs titled
"Air and Wipe Sampling" and "Clearance
Certification" to determine whether this paragraph
should be included in the project.**

Submit the name, address, and telephone number of the third party consultant selected to perform the wipe sampling for determining concentrations of lead in dust or soil sampling. Submit proper documentation that the consultant is trained and certified as an inspector technician or inspector/risk assessor by the USEPA authorized State (or local) certification and accreditation program.

]1.5.2 Requirements

1.5.2.1 Competent Person (CP) Responsibilities

- a. Verify training meets all federal, State, and local requirements.
- b. Review and approve lead-based paint/paint with lead removal/control plan for conformance to the applicable standards. Ensure work is performed in strict accordance with specifications at all times.

- c. Continuously inspect lead-based paint removal/control work for conformance with the approved plan.
- d. Perform air and wipe sampling.
- e. Control work to prevent hazardous exposure to human beings and to the environment at all times.
- f. Certify the conditions of the work as called for elsewhere in this specification.

1.5.2.2 Lead-Based Paint/Paint with Lead Removal/Control Plan (LBP/PWL R/CP)

NOTE: State or local regulations may have specific requirements for written project designs. Research specific State or local requirements for public, commercial buildings or structures. Consider the bracketed occupant protection plan for high profile sensitive work such as present in family housing, childcare facilities, administrative buildings, kitchens, etc.

Submit a detailed job-specific plan of the work procedures to be used in the removal/control of LBP/PWL. The plan shall include a sketch showing the location, size, and details of lead control areas, location and details of decontamination facilities, viewing ports, and mechanical ventilation system. Include a description of equipment and materials, controls and job responsibilities for each activity from which lead is emitted. Include in the plan, eating, drinking, smoking and sanitary procedures, interface of trades, sequencing of lead related work, collected waste water and paint debris disposal plan, air sampling plan, respirators, personal protective equipment, and a detailed description of the method of containment of the operation to ensure that lead is not released outside the lead control area. Include site preparation, cleanup and clearance procedures. Include occupational and environmental sampling, training, sampling methodology, frequency, duration of sampling, and qualifications of sampling personnel in the air sampling portion of the plan. Include a description of arrangements made among contractors on multi-contractor worksites to inform affected employees and to clarify responsibilities to control exposures.

[The Removal/Control Plan shall be developed by a certified planner/project designer.]

[In occupied buildings, the Removal/Control Plan shall also include an occupant protection program that describes the measures that will be taken during the work to protect the building occupants.]

1.5.2.3 Occupational and Environmental Assessment Data Report

NOTE: Sampling results of previous jobs or initial monitoring during the job determine the requirements for further monitoring and the need to fully implement the control and protective requirements. Some LBP or PWL work may not require full

implementation of the requirements of 29 CFR 1926.62. Based on the experience of the Contractor with specific process or method for performing the work, the Contractor may be able to provide historic data (previous 12 months) to demonstrate that airborne exposures are controlled below the action level. Such methods or controls shall be fully presented in the Lead Removal/Control Plan.

If initial monitoring is necessary, submit occupational and environmental sampling results to the Contracting Officer within three working days of collection, signed by the testing laboratory employee performing the analysis, the employee that performed the sampling, and the CP.

[In order to reduce the full implementation of 29 CFR 1926.62, the Contractor shall provide documentation. Submit a report that supports the determination to reduce full implementation of the requirements of 29 CFR 1926.62 and supporting the Lead Removal/Control Plan.]

a. The initial monitoring shall represent each job classification, or if working conditions are similar to previous jobs by the same employer, provide previously collected exposure data that can be used to estimate worker exposures per 29 CFR 1926.62. The data shall represent the worker's regular daily exposure to lead for stated work.

b. Submit worker exposure data gathered during the task based trigger operations of 29 CFR 1926.62 with a complete process description. This includes manual demolition, manual scraping, manual sanding, heat gun, power tool cleaning, rivet busting, cleanup of dry expendable abrasives, abrasive blast enclosure removal, abrasive blasting, welding, cutting and torch burning where lead containing coatings are present.

c. The initial assessment shall determine the requirement for further monitoring and the need to fully implement the control and protective requirements including the lead compliance plan per 29 CFR 1926.62.

1.5.2.4 Medical Examinations

Initial medical surveillance as required by 29 CFR 1926.62 shall be made available to all employees exposed to lead at any time (1 day) above the action level. Full medical surveillance shall be made available to all employees on an annual basis who are or may be exposed to lead in excess of the action level for more than 30 days a year or as required by 29 CFR 1926.62. Adequate records shall show that employees meet the medical surveillance requirements of 29 CFR 1926.33, 29 CFR 1926.62, and 29 CFR 1926.103. Maintain complete and accurate medical records of employees for a period of at least 30 years or for the duration of employment plus 30 years, whichever is longer.

1.5.2.5 Training

Train each employee performing paint removal, disposal, and air sampling operations prior to the time of initial job assignment and annually thereafter, in accordance with 29 CFR 1926.21, 29 CFR 1926.62, and State and local regulations where appropriate.

1.5.2.6 Respiratory Protection Program

a. Provide each employee required to wear a respirator a respirator fit test at the time of initial fitting and at least annually thereafter as required by 29 CFR 1926.62.

b. Establish and implement a respiratory protection program as required by ANSI Z88.2, 29 CFR 1926.103, 29 CFR 1926.62, and 29 CFR 1926.55.

1.5.2.7 Hazard Communication Program

Establish and implement a Hazard Communication Program as required by 29 CFR 1926.59.

1.5.2.8 Lead Waste Management

NOTE: Research local requirements. The EPA has clarified waste requirements where lead-based paint debris generated by contractors in households is excluded from RCRA Subtitle C hazardous waste regulations. Contractors may dispose of LBP-wastes as household wastes subject to applicable State regulations. Some construction waste contains lead at lower concentrations, which may be disposed of at local sanitary landfills or Construction and Demolition (C&D) landfills, which are not approved by EPA.

The **Lead Waste Management Plan** shall comply with applicable requirements of federal, State, and local hazardous waste regulations and address:

a. Identification and classification of hazardous wastes associated with the work.

b. Estimated quantities of wastes to be generated and disposed of.

c. Names and qualifications of each contractor that will be transporting, storing, treating, and disposing of the wastes. Include the facility location [and operator] and a 24-hour point of contact. Furnish two copies of proof of [EPA] [State] [and] [local] hazardous waste [permit applications] [permits] [manifests] [and] [EPA Identification numbers][Transporter Number].

d. Names and qualifications (experience and training) of personnel who will be working on-site with hazardous wastes.

e. List of waste handling equipment to be used in performing the work, to include cleaning, volume reduction, and transport equipment.

f. Spill prevention, containment, and cleanup contingency measures including a health and safety plan to be implemented in accordance with 29 CFR 1926.65.

g. Work plan and schedule for waste containment, removal and disposal. Wastes shall be cleaned up and containerized daily. Proper containment

of the waste includes using acceptable waste containers (e.g., 55-gallon drums) as well as proper marking/labeling of the containers.

h. Unit cost for waste disposal according to this plan.

1.5.2.9 Environmental, Safety and Health Compliance

NOTE: Include applicable State, regional, and local laws, regulations, and statutes. Do careful research since not all State and local laws apply to Federal installations. Verify with the State or local authorities whether the city, county, State, and/or the USEPA has jurisdiction and whether licensing and/or certification is required. Also identify the authority or code sponsor and the laws, regulations, and statutes cited under paragraph titled "References" using complete title and number.

In addition to the detailed requirements of this specification, comply with laws, ordinances, rules, and regulations of Federal, State, and local authorities regarding removing, handling, storing, transporting, and disposing of lead waste materials. Comply with the applicable requirements of the current issue of 29 CFR 1926.62. Submit matters regarding interpretation of standards to the Contracting Officer for resolution before starting work. Where specification requirements and the referenced documents vary, the most stringent requirement shall apply. [The following [local] [and] [State] laws, ordinances, criteria, rules and regulations regarding removing, handling, storing, transporting, and disposing of lead-contaminated materials apply:

- a. [_____]
- b. [_____]
- c. [_____]

[[Licensing] [and certification] in the State of [_____] is required.]

1.5.3 Pre-Construction Conference

Along with the CP, meet with the Contracting Officer to discuss in detail the lead waste management plan and the lead-based paint/paint with lead removal/control plan, including work procedures and precautions for the removal plan.

1.6 EQUIPMENT

1.6.1 Respirators

Furnish appropriate respirators approved by the National Institute for Occupational Safety and Health (NIOSH), Department of Health and Human Services, for use in atmospheres containing lead dust. Respirators shall comply with the requirements of 29 CFR 1926.62.

1.6.2 Special Protective Clothing

Furnish personnel who will be exposed to lead-contaminated dust with proper [disposable] [uncontaminated, reusable] protective whole body clothing, head covering, gloves, and foot coverings as required by 29 CFR 1926.62. Furnish proper disposable plastic or rubber gloves to protect hands. Reduce the level of protection only after obtaining approval from the CP.

1.6.3 Rental Equipment Notification

If rental equipment is to be used during lead-based paint handling and disposal, notify the rental agency in writing concerning the intended use of the equipment. Furnish a copy of the written notification to the Contracting Officer.

1.6.4 Vacuum Filters

UL 586 labeled HEPA filters.

1.6.5 Equipment for Government Personnel

**NOTE: Verify the number of sets required with
OICC/ROICC.**

Furnish the Contracting Officer with [two] [_____] complete sets of personal protective equipment (PPE) daily, as required herein, for entry into and inspection of the paint removal work within the lead controlled area. Personal protective equipment shall include disposable whole body covering, including appropriate foot, head, and hand protection. PPE shall remain the property of the Contractor. The Government will provide respiratory protection for the Contracting Officer.

1.7 PROJECT/SITE CONDITIONS

1.7.1 Protection of Existing Work to Remain

Perform paint removal work without damage or contamination of adjacent areas. Where existing work is damaged or contaminated, restore work to its original condition or better.

PART 2 PRODUCTS

Section 01 35 26 GOVERNMENT SAFETY REQUIREMENTS.

PART 3 EXECUTION

3.1 PREPARATION

3.1.1 Protection

3.1.1.1 Notification

a. Notify the Contracting Officer [20] [_____] days prior to the start of any paint removal work.

[b. Occupant Notification

NOTE: Projects in target housing involving improvement, or maintenance (renovation or repair), that disrupt more than 2 square feet of painted surface while being occupied requires occupant notification prior to work.

Submit occupant written acknowledgment of the delivery of lead hazard information pamphlet (EPA 747-K-99-001 "Protect Your Family From Lead in Your Home") prior to commencing the renovation work for each affected unit per 40 CFR 745 Subpart E.]

[c. Notification of the Commencement of [LBP] Hazard Abatement

NOTE: In some states, notification of lead-based paint hazard abatement work by the contractor must be made prior to work. Research if prior notification is required for the locality where work is conducted.

[Submit a copy of the notification of the commencement of [LBP] hazard abatement to [_____] according to the procedures established by [_____.]]

3.1.1.2 Boundary Requirements

a. Provide physical boundaries around the lead control area by roping off the area designated in the work plan or providing curtains, portable partitions or other enclosures to ensure that lead will not escape outside the lead control area.

b. Warning Signs - Provide warning signs at approaches to lead control areas. Locate signs at such a distance that personnel may read the sign and take the necessary precautions before entering the area. Signs shall comply with the requirements of 29 CFR 1926.62.

3.1.1.3 Furnishings

NOTE: Verify with the activity furniture/equipment requirements.

[The Government will remove furniture and equipment from the building before lead-based paint removal work begins.]

[Existing [furniture] [and] [equipment] is lead contaminated, [decontaminate] [dispose of as lead contaminated waste].]

3.1.1.4 Heating, Ventilating and Air Conditioning (HVAC) Systems

Shut down, lock out, and isolate HVAC systems that supply, exhaust, or pass through the lead control areas. Seal intake and exhaust vents in the lead control area with 0.15 mm 6 mil plastic sheet and tape. Seal seams in HVAC

components that pass through the lead control area. [Provide temporary HVAC system for areas in which HVAC has been shut down outside the lead control area.]

3.1.1.5 Decontamination Shower Facility

Provide clean and contaminated change rooms and shower facilities in accordance with this specification and 29 CFR 1926.62.

3.1.1.6 Eye Wash Station

Where eyes may be exposed to injurious corrosive materials, suitable facilities for quick drenching or flushing of the eyes shall be provided within the work area.

3.1.1.7 Mechanical Ventilation System

a. Use adequate ventilation to control personnel exposure to lead in accordance with 29 CFR 1926.62.

b. To the extent feasible, use local exhaust ventilation connected to HEPA filters or other collection systems, approved by the CP. Local exhaust ventilation systems shall be evaluated and maintained in accordance with 29 CFR 1926.62.

c. Vent local exhaust outside the building only and away from building ventilation intakes.

d. Use locally exhausted, power actuated, paint removal tools.

3.1.1.8 Personnel Protection

Personnel shall wear and use protective clothing and equipment as specified herein. Eating, smoking, or drinking or application of cosmetics is not permitted in the lead control area. No one will be permitted in the lead control area unless they have been appropriately trained and provided with protective equipment.

3.2 ERECTION

3.2.1 Lead Control Area Requirements

NOTE: Choose the first paragraph if LBP will be removed by means which will not likely create airborne, lead-containing dust (such as careful wet scraping or chemical stripping). Choose the second paragraph if removal/control practice will create airborne, lead-containing dust (such as sanding, abrasive blasting, thermal cutting, demolition, or needle gun use).

[Establish a lead control area by situating critical barriers and physical boundaries around the area or structure where LBP/PWL removal/control operations will be performed.]

NOTE: The Designer should consider the use of

viewing ports for lead control areas under 100 square meters 1,000 square feet to save inspection time.

[Full containment - Contain removal operations by the use of [critical barriers] [and HEPA filtered exhaust] [a negative pressure enclosure system with decontamination facilities and with HEPA filtered exhaust if required by the CP]. For containment areas larger than 100 square meters 1,000 square feet install a minimum of two 450 mm 18 inch square viewing ports. Locate ports to provide a view of the required work from the exterior of the enclosed contaminated area. Glaze ports with laminated safety glass.]

3.3 APPLICATION

3.3.1 Work Procedures

Perform removal of lead-based paint in accordance with approved lead-based paint/paint with lead removal/control plan. Use procedures and equipment required to limit occupational and environmental exposure to lead when lead-based paint is removed in accordance with 29 CFR 1926.62. Dispose of removed paint chips and associated waste in compliance with Environmental Protection Agency (EPA), State, and local requirements.

3.3.2 Lead-Based Paint Removal/Control/Deleading

NOTE: Use bracketed prohibition on manual and power sanding when appropriate. Large scale manual or power sanding of painted surfaces should never be allowed in family housing, administrative buildings, galleys, barracks, etc., due to problems associated with the resulting dust fallout/contamination of crevices and cracks which may retain unseen quantities of lead-contaminated dust. Use of this type of removal technique for exteriors of the aforementioned facility types should be extremely limited, because the resulting airborne dust could result in significant contamination of the ground in the immediate vicinity of the facility. Manual or power sanding of interior and exterior surfaces may be an acceptable work method only if appropriate control for personnel/environmental protection are in place.

[Manual or power sanding of interior and exterior surfaces is not permitted unless tools are equipped with HEPA attachments or wet methods. The dry sanding or grinding of surfaces that contain lead is prohibited] Provide methodology for LBP removal/control in work plan. Remove paint within the areas designated on the drawings in order to completely expose the substrate. Take whatever precautions necessary to minimize damage to the underlying substrate.

[Avoid [flash rusting][deterioration] of the substrate. Provide surface preparations for painting in accord with Section 09 90 00 PAINTS AND COATINGS.]

NOTE: Listed below are various types of paint removal techniques. Designer may be required to specify a particular technique in order to limit potential conflicts or problems.

1. Wood, Drywall, Interior Partitions
 - a. Scraping
 - b. Heat Stripping
 - c. Chemical Stripping
 - d. Power Tool Cleaning (least acceptable)
 - e. Wet Abrasive Blasting

Chemical stripping should be carefully researched as a removal method for soft wood (e.g., pine or redwood) substrates. The wrong chemical strippers can increase the risk of residual lead contamination in the substrate.

2. Steel and Metal Surfaces (Industrial)
 - a. Power/Hand Tool Cleaning (least acceptable)
 - b. Dry Abrasive Blast with Water Ring (Wet "Halo")
 - c. Wet Abrasive Blast
 - d. Low Volume High Pressure Water Blast
 - e. Chemical Stripping
 - f. Vacuum Blast

The following practices are restricted during lead hazard abatement work on housing per 40 CFR 745: Open flame burning or torching is prohibited; machine sanding or grinding or abrasive blasting on LBP is prohibited unless used with High Efficiency Particulate Air (HEPA) exhaust control; dry scraping in conjunction with heat guns, or around electrical outlets, is permitted if limited to no more than 2 square feet in any one room (20 square feet on exterior surfaces); heat guns must operate at a temperature below 1100 degrees Fahrenheit.

NOTE: For lead hazard abatement work in housing or child occupied facilities, consult the risk assessment report to select abatement or interim control techniques to be used in target housing. For commercial/public buildings and industrial buildings, the designer will have to ascertain appropriate procedures, methods and techniques to control lead hazards. The use of encapsulation, enclosure, or soil barriers as an abatement/control system requires the input of engineering/architectural experts familiar with these controls. Encapsulation should not be specified for areas where water damage exists or could easily occur. The designer may need to test the existing substrates to ascertain that encapsulation is feasible at all. Methods listed or taken from the 1995 HUD Guidelines may be considered. Add additional paragraphs to address unique local or state requirements.

Provide methodology for LBP/PWL [removal] [abatement/control] and processes

to minimize contamination of work areas outside the control area with lead-contaminated dust or other lead-contaminated debris/waste and to ensure that unprotected personnel are not exposed to hazardous concentrations of lead. Describe this LBP/PWL removal/control process in the LBP/PWL R/CP. []

3.3.2.1 Indoor Paint Removal

Perform [manual][mechanical][thermal][chemical] paint removal in lead control areas using enclosures, barriers, or containments [and powered locally exhausted paint removal tools]. Collect residue [debris] for disposal in accordance with federal, State, and local requirements.

3.3.2.2 Outdoor Paint Removal

Perform outdoor removal as indicated in federal, State, and local regulations and in the LBP/CPR/CP. The worksite preparation (barriers or containments) shall be job dependent and presented in the LBP/PWL R/CP.

3.3.3 Personnel Exiting Procedures

Whenever personnel exit the lead-controlled area, they shall perform the following procedures and shall not leave the work place wearing any clothing or equipment worn during the work day:

- a. Vacuum themselves off.
- b. Remove protective clothing in the contaminated change room, and place them in an approved impermeable disposal bag.

NOTE: Showering is the preferred method of personal decontamination. However, extenuating circumstances may prevent the use of a shower at the work site.

- [c. Shower.]
- [c. Wash hands and face at the site, don appropriate disposable or uncontaminated reusable clothing; move to an appropriate facility; shower.]
- d. Change to clean clothes prior to leaving the physical boundary designated around the lead control area.

3.4 FIELD QUALITY CONTROL

3.4.1 Tests

3.4.1.1 Air and Wipe Sampling

Air sample for lead in accordance with 29 CFR 1926.62 and as specified herein. Air and wipe sampling shall be directed or performed by the CP.

- a. The CP shall be on the job site directing the air and non-clearance wipe sampling and inspecting the lead-based paint removal/control work to ensure that the requirements of the contract have been satisfied during the entire lead-based paint removal operation.

b. Collect personal air samples on employees who are expected to have the greatest risk of exposure as determined by the CP. In addition, collect air samples on at least 25 percent of the work crew or a minimum of two employees, whichever is greater, during each work shift.

c. Submit results of air samples, within 72 hours after the air samples are taken.

NOTE: Include the following paragraph for high profile, sensitive work such as present in family housing, child care facilities, administrative buildings, kitchens, barracks, etc. Use the following paragraph along with clearance certification by a third party consultant specified in paragraph titled "Clearance Certification" to determine if significant contamination was due to the contract work. Surface dust sampling to determine clearance (i.e., that the work has not contaminated surfaces within and adjacent to the control area) should be performed by a third party to reduce a conflict of interest. Samples must be conducted by an individual not paid or employed or otherwise compensated by the LBP/PWL removal/control Contractor. State or local regulations may require third party testing if the LBP/PWL removal/control operation is considered a lead hazard reduction activity.

[d. Before any work begins, [a third party consultant shall] collect and analyze baseline wipe [and soil] samples in accordance with methods defined in federal, State, and local standards inside and outside of the physical boundary to assess the degree of dust contamination in the facility prior to lead-based paint removal/control.]

NOTE: To assure containment adequacy in occupied facilities, use this paragraph for target housing, child occupied facilities or high profile LBP/PWL removal/control work.

[e. Collect surface wipe samples at a location no greater than 3 m 10 feet outside the lead control area at a frequency of once per day while lead removal work is conducted. Surface wipe results shall meet criteria in paragraph "Clearance Certification."]

3.4.1.2 Air Sampling During Paint Removal Work

Conduct area air sampling daily, on each shift in which lead-based paint removal operations are performed, in areas immediately adjacent to the lead control area. Sufficient area monitoring shall be conducted to ensure unprotected personnel are not exposed at or above 30 micrograms per cubic meter of air. If 30 micrograms per cubic meter of air is reached or exceeded, stop work, correct the condition(s) causing the increased levels. Notify the Contracting Officer immediately. Determine if condition(s) require any further change in work methods. Removal work shall resume only after the CP and the Contracting Officer give approval. For

outdoor operations, at least one sample on each shift shall be taken on the downwind side of the lead control area.

3.4.1.3 Sampling After Paint Removal/Control

After the visual inspection, [conduct soil sampling if bare soil is present during external removal/control operations and] collect wipe samples according to the HUD protocol contained in HUD 6780 to determine the lead content of settled dust and dirt in micrograms per square meter foot of surface area [and parts per million (ppm) or micrograms per gram (ug/g) for soil].

[3.4.1.4 Testing of Removed Paint and Used Abrasive

NOTE: Testing of Removed Paint and Used Abrasive

Test removed paint and used abrasive in accordance with 40 CFR 261 for hazardous waste.

]3.5 CLEANING AND DISPOSAL

3.5.1 Cleanup

Maintain surfaces of the lead control area free of accumulations of paint chips and dust. Restrict the spread of dust and debris; keep waste from being distributed over the work area. Do not dry sweep or use compressed air to clean up the area. At the end of each shift and when the paint removal operation has been completed, clean the area of visible lead paint contamination by vacuuming with a HEPA filtered vacuum cleaner, wet mopping the area and wet wiping the area as indicated by the CP. Reclean areas showing dust or residual paint chips or debris. After visible dust, chips and debris is removed, wet wipe and HEPA vacuum all surfaces in the work area. If adjacent areas become contaminated at any time during the work, clean, visually inspect, and then wipe sample all contaminated areas. The CP shall then certify in writing that the area has been cleaned of lead contamination before restarting work.

3.5.1.1 Clearance Certification

NOTE: The second paragraph must be used for high profile, sensitive work such as present in family housing, child care facilities, kitchens, etc. For work in administrative buildings or the conversion of industrial lead work areas (e.g., firing ranges) into non-industrial work areas open for public access, use the third paragraph otherwise delete. For industrial buildings, use visual clearance only. Surface dust sampling to determine clearance (i.e., that the work has not contaminated surfaces within and adjacent to the control area) should be performed by a third party to avoid a conflict of interest. The last paragraph must be used for lead-based paint hazard abatement work.

The CP shall certify in writing that air samples collected outside the lead

control area during paint removal operations are less than 30 micrograms per cubic meter of air; the respiratory protection used for the employees was adequate; the work procedures were performed in accordance with 29 CFR 1926.62 and 40 CFR 745; and that there were no visible accumulations of material and dust containing lead left in the work site. Do not remove the lead control area or roped off boundary and warning signs prior to the Contracting Officer's acknowledgement of receipt of the CP certification.

- [The third party consultant shall certify surface wipe sample results collected inside and outside the work area are [less than 40 micrograms per 0.1 square meter square foot on floors, less than 250 micrograms per 0.1 square meter square foot on interior window sills and less than 400 micrograms per 0.1 square meter square foot on window troughs] [not significantly greater than the initial surface loading determined prior to work].]
- [The third party consultant shall certify surface wipe sample results collected inside and outside the work area are less than 200 micrograms per 0.1 square meter square foot on floors or horizontal surfaces.]
- [Certify surface wipe samples are not significantly greater than the initial surface loading determined prior to work.]
- [For exterior paint removal/control work, soil samples taken at the exterior of the work site shall be used to determine if soil lead levels had increased at a statistically significant level (significant at the 95 percent confidence limit) from the soil lead levels prior to the work. If soil lead levels do show a statistically significant increase or is above any applicable Federal or State standard for lead in soil, the soil shall be remediated back to the pre-work level.]
- [Clear the lead control area in industrial facilities of all visible dust and debris.]
- [For lead-based paint hazard abatement work, surface wipe and soil sampling shall be conducted and clearance determinations made according to the work practice standards presented in 40 CFR 745.227.]

3.5.2 Disposal

NOTE: Proper segregation and handling of waste can significantly reduce the generated volume (and cost) of disposing hazardous wastes.

NOTE: Federal regulations (40 CFR 260-265) require a U.S. EPA generator identification number of the site for use on the Uniform Hazardous Waste Manifest prior to commencement of removal work. A USEPA generator identification number will not be required if it is certain that the work will not generate HW.

NOTE: Amend text to reflect State, regional, and local laws, regulations, and statutes.

NOTE: Amend text to reflect State, regional, and local requirements regarding the recycling of lead wastes. The entire waste stream or discrete portions of the waste may be appropriately packaged and transported for recycling (Consider Section 01 74 19 CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT). If waste is eligible for sanitary landfill or C&D landfill disposal, some of these requirements are not applicable.

- a. Collect lead-contaminated waste, scrap, debris, bags, containers, equipment, and lead-contaminated clothing that may produce airborne concentrations of lead particles. Label the containers in accordance with 29 CFR 1926.62 and 40 CFR 262. Dispose of lead-contaminated waste material at an [EPA] [or] [State] approved hazardous waste treatment, storage, or disposal facility off Government property.
- b. Place waste materials in U.S. Department of Transportation (49 CFR 178) approved 208 liter 55 gallon drums. Properly label each drum to identify the type of waste (49 CFR 172) and the date the drum was filled. For hazardous waste, the collection drum requires marking/labeling in accordance with 40 CFR 262 during the accumulation/collection timeframe. The Contracting Officer or an authorized representative will assign an area for interim storage of waste-containing drums. Do not store hazardous waste drums in interim storage longer than 90 calendar days from the date affixed to each drum.
- c. Handle, transport, and dispose lead or lead-contaminated material classified as hazardous waste in accordance with 40 CFR 260, 40 CFR 261, 40 CFR 262, 40 CFR 263, 40 CFR 264, and 40 CFR 265. Comply with land disposal restriction notification requirements as required by 40 CFR 268.
- d. All material, whether hazardous or non-hazardous shall be disposed in accordance with laws and provisions and Federal, State, or local regulations. Ensure waste is properly characterized. The result of each waste characterization (TCLP for RCRA materials) will dictate disposal requirements.

3.5.2.1 Disposal Documentation

NOTE: Include the following paragraph if the Contractor is to dispose of waste.

Submit written evidence to demonstrate the hazardous waste treatment, storage, or disposal facility (TSD) is approved for lead disposal by the EPA, State or local regulatory agencies. Submit one copy of the completed hazardous waste manifest, signed and dated by the initial transporter in accordance with 40 CFR 262. Contractor shall provide a certificate that the waste was accepted by the disposal facility. [Provide turn-in documents or weight tickets for non-hazardous waste disposal.]

3.5.3 Payment for Hazardous Waste

Payment for disposal of hazardous and non-hazardous waste will not be made until a signed copy of the manifest from the treatment or disposal facility certifying the amount of lead-containing materials or non-hazardous waste delivered is returned and a copy is furnished to the Government.

-- End of Section --