

## SECTION 02 83 00.98

## LEAD PAINT ABATEMENT

## PART 1 GENERAL

## 1.1 REFERENCES

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 Z9.2 (1979; R 1991) Fundamentals Governing the Design and Operation of Local Exhaust Systems

ANSI Z88.2 (1992) Respiratory Protection

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

29 CFR 1926.21 Safety Training and Education

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

29 CFR 1926.103 Respiratory Protection

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

## 1.2 DEFINITIONS

### 1.2.1 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 an occupational/industrial environment.

### 1.2.2 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.

### 1.2.3 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. An industrial hygienist or safety professional certified for comprehensive practice by the American Board of Industrial Hygiene or by the Board of Certified Safety Professionals is the best choice.

### 1.2.4 Contaminated Room

Room for removal of contaminated personal protective equipment (PPE).

### 1.2.5 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.

### 1.2.6 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.

### 1.2.7 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.

### 1.2.8 Lead

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

### 1.2.9 Lead Based Paint (LBP)

Protective or decorative coating which contains lead.

### 1.2.10 Lead Control Area

An enclosed area or structure, constructed as a temporary containment equipped with HEPA filtered local exhaust, which prevents the spread of lead dust, paint chips, or debris existing as a condition of lead based paint removal operations. The lead control area is also isolated by physical boundaries to prevent unauthorized entry of personnel.

### 1.2.11 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 work day, the PEL shall be determined by the following formula:

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

### 1.2.12 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 six to nine inches and centered at the nose or mouth of an employee.

### 1.2.13 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 boundary."

## 1.3 QUALITY ASSURANCE

### 1.3.1 Medical Examinations

Before exposure to lead-contaminated dust, provide workers with a comprehensive medical examination as required by 29 CFR 1926.62 and 29 CFR 1926.103. The examination will not be required if adequate records show that employees have been examined as required by 29 CFR 1926.62 within the last year.

#### 1.3.1.1 Medical Records

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.

#### 1.3.1.2 Medical Surveillance

Provide medical surveillance to all personnel exposed to lead as indicated in 29 CFR 1926.62.

#### 1.3.2 Competent Person (CP) Responsibilities

- a. Certify training as meeting all federal, State, and local requirements.
- b. Review and approve lead based paint removal plan for conformance to the applicable referenced standards.
- c. Continuously inspect lead based paint removal work for conformance with the approved plan.
- d. Perform air and wipe sampling.
- e. Ensure work is performed in strict accordance with specifications at all times.
- f. Control work to prevent hazardous exposure to human beings and to the environment at all times.
- g. Certify the conditions of the work as called for elsewhere in this specification.

#### 1.3.3 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.

##### 1.3.3.1 Training Certification

Submit a certificate for each employee, signed and dated by the approved training source, stating that the employee has received the required lead training.

#### 1.3.4 Respiratory Protection Program

- a. Furnish each employee required to wear a negative pressure respirator or other appropriate type with a respirator fit test at the time of initial fitting and at least every six months 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.

#### 1.3.5 Hazard Communication Program

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

#### 1.3.6 Hazardous Waste Management

The Hazardous 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 State and local hazardous waste [permit applications] [permits] [manifests] [and] [EPA Identification numbers].
- 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.
- h. Cost for hazardous waste disposal according to this plan.

#### 1.3.7 Safety and Health Compliance

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. Ohio Department of Health, Lead Hazard Abatement, Chapter 3701-32, Ohio Administrative Code
- b. Ohio Department of Health, Lead Training, Programs; Environmental Lead, analytical Laboratories, Chapter 3701-82, Ohio Administrative Code
- c. Glenn Occupational Health Programs Manual,  
[http://smad-ext.grc.nasa.gov/emo/pub/ohpm/ohpm5-lead\(13\).pdf](http://smad-ext.grc.nasa.gov/emo/pub/ohpm/ohpm5-lead(13).pdf)

#### 1.3.8 Pre-Construction Conference

Along with the CP, meet with the Contracting Officer to discuss in detail the hazardous waste management plan and the lead based paint removal plan,

including work procedures and precautions for the removal plan.

#### 1.4 DESCRIPTION OF WORK

Remove all paint in the work area is considered lead based paint as needed to complete the work under this contract square feet of lead based paint.

#### 1.5 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. Submit the following in accordance with Section 01 33 00.98 SUBMITTAL PROCEDURES:

##### 1.5.1 SD-03, Product

- a. Vacuum filters
- b. Respirators

##### 1.5.2 SD-06, Test Reports

- a. Sampling results

##### 1.5.2.1 Occupational and Environmental Sampling Results

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.

##### 1.5.3 SD-07, Certificates

- a. Qualifications of CP
- b. Testing laboratory and consultant qualifications
- c. Lead based paint removal plan including CP approval (signature, date, and certification number)
- d. Rental equipment notification
- e. Respiratory protection program
- f. Hazard communication program
- g. EPA approved hazardous waste treatment or disposal facility for lead disposal
- h. Hazardous waste management plan
- i. Vacuum filters
- j. Completed and signed hazardous waste manifest from treatment or disposal facility
- k. Certification of medical examinations
- l. Employee training certification

#### 1.5.3.1 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 in accordance with federal, State, and local laws.

#### 1.5.3.2 Testing Laboratory and Consultant

Submit the name, address, and telephone number of the testing laboratory and consultant selected to perform the 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.

#### 1.5.3.3 Lead Based Paint Removal Plan (LBPRP)

Submit a detailed job-specific plan of the work procedures to be used in the removal of LBP. 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 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 airborne lead concentrations of 30 micrograms per cubic meter of air and baseline lead dust concentrations are not reached or exceeded outside of the lead control area. Include occupational and environmental sampling, training and strategy, sampling methodology, frequency, duration of sampling, and qualifications of sampling personnel in the air sampling portion of the plan.

#### 1.5.4 SD-08, Manufacturer's Instructions

- a. Chemicals and equipment
- b. Materials
- c. Material safety data sheets for all chemicals

#### 1.6 REMOVAL

##### 1.6.1 Title to Materials

Materials resulting from demolition work, except as specified otherwise, shall become the property of the Contractor and shall be disposed of in accordance with Section 01 35 40.98, except as specified herein.

#### 1.7 EQUIPMENT

##### 1.7.1 Respirators

Furnish appropriate respirators approved by the Mine Safety and Health Administration (MSHA) and 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.

#### 1.7.2 Special Protective Clothing

Furnish personnel who will be exposed to lead-contaminated dust with proper disposable 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.

#### 1.7.3 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.

#### 1.7.4 Vacuum Filters

UL 586 labeled HEPA filters.

#### 1.7.5 Equipment for Government Personnel

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. Respiratory protection for the Contracting Officer will be provided by the Government.

### PART 2 PRODUCTS

#### 2.1 CHEMICALS

Submit applicable Material Safety Data Sheets for all chemicals used in paint removal work. Use the least toxic product approved by the Contracting Officer.

#### 2.2 MATERIALS

The soluble metal content and the total metal content shall not exceed values which would cause a material to be classified as a hazardous waste.

### PART 3 EXECUTION

#### 3.1 PROTECTION

##### 3.1.1 Notification

Notify the Contracting Officer 20 days prior to the start of any paint removal work.

##### 3.1.2 Lead Control Area Requirements

Establish a lead control area by completely enclosing with containment screens and lead caution tapethe area or structure where lead based paint removal operations will be performed.

### 3.1.3 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.

### 3.1.4 Boundary Requirements

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 airborne concentrations of lead will not reach 30 micrograms per cubic meter of air outside of the lead control area.

### 3.1.5 Furnishings

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

### 3.1.6 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 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.

### 3.1.7 Decontamination Shower Facility

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

### 3.1.8 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 fixed local exhaust ventilation connected to HEPA filters or other collection systems, approved by the CP. Local exhaust ventilation systems shall be designed, constructed, installed, and maintained in accordance with ANSI Z9.2.
- c. Vent local exhaust outside the building only and away from building ventilation intakes.
- d. Use locally exhausted, power actuated, paint removal tools.

### 3.1.9 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.

### 3.1.10 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.

### 3.2 WORK PROCEDURES

Perform removal of lead based paint in accordance with approved lead based paint removal 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, except as specified herein. Dispose of removed paint chips and associated waste in compliance with Environmental Protection Agency (EPA), federal, State, and local requirements.

#### 3.2.1 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.
- c. Wash hands, face and exposed skin.
- d. Change to clean clothes prior to leaving the physical boundary designated around the lead control area.

#### 3.2.2 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 wipe sampling and inspecting the lead based paint removal 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 anticipated to have the greatest risk of exposure as determined by the CP. In addition, collect air samples on at least twenty-five percent of the work crew or a minimum of two employees, whichever is greater, during each work shift.
- c. Submit results of air samples, signed by the CP, within 72 hours after the air samples are taken. Notify the Contracting Officer immediately of exposure to lead at or in excess of the action level of 30 micrograms per cubic meter of air outside of the lead control area.
- d. Before any work begins, collect and analyze baseline wipe 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.

### 3.2.2.1 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 conditions(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 approval is given by the CP and the Contracting Officer. For outdoor operations, at least one sample on each shift shall be taken on the downwind side of the lead control area.

### 3.2.3 Lead Based Paint Removal

Manual or power sanding of interior and exterior surfaces is not permitted. Provide methodology for removing LBP 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 or other deterioration of the substrate. Provide surface preparations for painting in accordance with Section 09 90 00, "PAINTS AND COATINGS".

Select paint removal processes to minimize contamination of work areas with lead-contaminated dust or other lead-contaminated debris/waste. Describe this paint removal process in the lead based paint removal plan. Perform manual wet sanding and scraping to the maximum extent feasible.

#### 3.2.3.1 Indoor Lead Paint Removal

Perform manual or mechanical paint removal in lead control areas using negative pressure enclosures with HEPA filtered exhaust and power actuated locally exhausted paint removal tools. Collect paint residue for disposal in accordance with EPA, State, and local requirements.

#### 3.2.3.2 Outdoor Lead Paint Removal

Perform outdoor LBP removal as indicated in federal, State, and local regulations and in the work plan.

#### 3.2.3.3 Air and Wipe Sampling After Paint Removal

After the visual inspection, collect air samples inside and outside the lead control area to determine the airborne levels of lead inside and outside the work area. Collect wipe samples according to the HUD protocol to determine the lead content of settled dust and dirt in micrograms per square foot of surface area.

### 3.2.4 Cleanup and Disposal

#### 3.2.4.1 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.

#### 3.2.4.2 Certification

The CP shall certify in writing that the final air samples collected inside and outside the lead control area are less than 30 micrograms per cubic meter of air [and that the surface wipe sample results collected inside and outside the work area are less than 100 micrograms per square foot on uncarpeted floors, less than 500 micrograms per square foot on interior window sills and less than 800 micrograms per square foot on window troughs]; 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 lead based paint and dust 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.

#### 3.2.4.3 Disposal

- a. Collect lead-contaminated waste, scrap, debris, bags, containers, equipment, and lead-contaminated clothing which may produce airborne concentrations of lead particles. Label the containers in accordance with 29 CFR 1926.62 and 40 CFR 261. Dispose of lead-contaminated waste material at an EPA or State approved hazardous waste treatment, storage, or disposal facility off Government property.
- b. Store waste materials in U.S. Department of Transportation (49 CFR 178) approved 55 gallon drums. Properly label each drum to identify the type of waste (49 CFR 172) and the date the drum was filled. 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, store, transport, and dispose lead or lead-contaminated 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.

#### 3.2.5 Disposal Documentation

Submit written evidence that the hazardous waste treatment, storage, or disposal facility (TSD) is approved for lead disposal by the EPA and State or local regulatory agencies. Submit one copy of the completed manifest, signed and dated by the initial transporter in accordance with 40 CFR 262.

#### 3.2.6 Payment for Hazardous Waste

Payment for disposal of 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 delivered is returned and a copy is furnished to the Government.

-- End of Section --

## SECTION 02 61 00.98 00

## REMOVAL AND DISPOSAL OF CONTAMINATED SOILS

10/06

## PART 1 GENERAL

## 1.1 REFERENCES

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.

## CODE OF FEDERAL REGULATIONS (CFR)

10 CFR 20	(1991) Standards for Protection Against Radiation
29 CFR 1910	(1996) Occupational Safety and Health Standards
29 CFR 1926	(1996) Safety and Health Regulations for Construction
40 CFR 261	(1993) Identification and Listing of Hazardous Waste
40 CFR 262	(1993) Standards Applicable to Generators of Hazardous Waste
49 CFR 171	(1993) General Information, Regulations and Definitions
49 CFR 172	(1993) Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements
49 CFR 178	(1993) Shipping Containers Specifications

## 1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. Submit the following in accordance with Section 01 33 00.98 SUBMITTAL PROCEDURES:

**SD-07 Certificates**

Statements shall be submitted for the following items in accordance with paragraphs entitled, "Site Specific Health and Safety Plan" and "Site Specific Work Plan," of this section.

**Site Specific Health and Safety Plan G**

## Site Specific Work Plan G

### 1.2.1 Site Specific Health and Safety Plan

For companies performing contaminated waste soil operations, a Detailed Description of the work to be performed shall be submitted. The plan shall include but not be limited to objectives, methods, resources and personnel required to complete the task and shall evaluate the potential hazards of the chemical contaminants and explain how workers shall be protected from those hazards. Personnel performing [solid and]hazardous waste activities shall be trained pursuant to 29 CFR 1910, Hazardous Waste Operations and Emergency Response (HAZWOPER) and 49 CFR 172, Transportation of Hazardous Materials. For all workers and supervisors performing [solid and] hazardous waste activities, include 40-hour HAZWOPER training certificates. Employees handling hazardous materials shall be trained in compliance with 49 CFR 172, and the Work Plan shall include evidence of such training. For companies performing hazardous waste operations, a copy of the Contractor's Hazard Communication Program shall be attached to the Site Specific Health and Safety Plan as an Appendix. The Program shall address the evaluation of the potential hazards of chemicals in the work place, communicating information concerning these hazards to employees and descriptions of appropriate measures. Six (6) copies of the Site Specific Health and Safety Plan (including the Hazard Communication Program if required) shall be submitted at least three (3) weeks prior to beginning excavation activities.

### 1.2.2 Site Specific Work Plan

For contaminated waste soil operations, a Detailed Description of the work to be performed shall be submitted. The work plan shall include but not be limited to objectives, methods, resources and personnel required to complete the task including plans for the decontamination of equipment and personnel. The following shall be included:

1. Licenses/Permits - Provide the name and licenses for the waste hauler and the disposal facility.
2. Container Sizes and Suppliers - Provide sizes and suppliers of drums, roll-offs, dump trailers, dump trucks, tanker trucks and frac tank.
3. Profiles - Provide completed Waste Profile Sheets, Waste Product Questionnaires, or Waste Characterization Reports describing the type of solid or hazardous waste generated, volume, frequency, generator name and address, broker and certification statement. Land Disposal Restriction Notification forms shall be included if applicable. Analytical data, to be provided by NASA, shall accompany the Waste Profile. The COTR will obtain the required NASA signatures on the Waste Profiles.
4. Draft Manifests - Provide completed DRAFT Hazardous Waste and Solid Waste Manifests describing the waste being disposed of in accordance with 40 CFR 261.
5. A description of how stormwater and surface runoff will be prevented from entering the excavation shall also be included.
6. If Hazardous Waste soils are to be excavated, a description of the Hazardous Waste Zones Implementation shall be included (see paragraph

3.3 of this specification section).

Six (6) copies of the Site Specific Work Plan shall be submitted at least three (3) weeks prior to beginning excavation activities.

### 1.3 NOTIFICATIONS

#### 1.3.1 Landfill Approval Letter

Letters, forms, or other written documents supplied to the Contractor from the facility designated for the disposal of hazardous or solid waste acknowledging the wastes are acceptable for disposal. All approvals shall be on company letterhead and bear the signature of an authorized representative of the disposal facility. Provide approval letters at least one week (1) prior to beginning excavation activities. No excavation activities shall be permitted prior to NASA's receipt and acknowledgement of the landfill approval letter.

#### 1.3.2 Disposal Records

Provide Disposal Tickets, Weigh Tickets or other records supplied by the disposal facility documenting the weight of waste material disposed of at the disposal facility.

Provide disposal records to NASA within one (1) week of receipt by the Contractor.

#### 1.3.3 Final Manifests

Provide Final, Signed Hazardous Waste and Solid Waste Manifests completed by the Contractor and the disposal facility in accordance with [40 CFR 261](#). The NASA Waste Management Team (WMT) (address: Glenn Research Center, Mail Stop 6-1, 21000 Brookpark Road, Cleveland, Ohio 44135) shall receive the final signed Manifest directly from the disposal facility. In the event that the Contractor receives the Final signed manifests, it shall be immediately forwarded to the NASA WMT.

### 1.4 QUALITY ASSURANCE

No contaminated soil shall be removed from the site without written authorization from the Government in the form of completed and signed Waste Manifests and Property Passes.

The COTR will obtain the required NASA signature on all waste profiles, (Land Disposal Restriction Forms, if applicable), property passes and manifests for contaminated waste soil shipments.

The COTR may perform inspections of containers intended for the storage or transportation of soils at any time, and will perform weekly inspections of all containers storing contaminated waste soils.

## PART 2 PRODUCTS

### 2.1 DRUMS

Metal and fiberglass drums shall comply with [49 CFR 178](#).

Drums shall be marked with the manufacturer's certification, specification, approval, or exemption mark.

Reconditioned drums shall be free of old labels and markings.

Containers shall be of a suitable size and constructed of material which is compatible with the waste being placed in them. Containers shall be leak proof, sift proof and lined with 10 mil (minimum) plastic liner to prevent materials from coming into contact with the inner surface of the container.

Drums shall be identified with number provided by the COTR.

## 2.2 ROLL-OFFS

Containers shall be leak proof, sift proof and lined with 10 mil (minimum) plastic liner to prevent materials from coming into contact with the inner surface of the container.

Containers shall be constructed of materials which are compatible with the waste being placed in them.

Containers shall be covered with leak proof tarpaulin and secured at all times except when being loaded so that no foreign materials, debris, or rainwater enters the container.

Rolloff boxes shall be identified with number provided by the COTR.

## 2.3 DUMP TRAILERS AND SUMP TRUCKS

Containers shall be leak proof, sift proof and lined with 10 mil (minimum) plastic liner to prevent materials from coming into contact with the inner liner surface of the container.

Containers shall be covered with a tarpaulin and secured at all times except when loaded so that no foreign materials, debris, or rainwater enters the container.

## 2.4 TANKER TRUCKS

Inner and outer valves shall be in working condition with visible means of secure closure to prevent leakage.

## 2.5 FRAC TANKS

Inner and outer valves shall be in working condition with visible means of secure closure to prevent leakage.

Holding tanks used for the temporary storage shall be made of material which are compatible with the liquid waste.

## 2.6 CONTAINERS

All containers used for storage and transportation of hazardous waste soils shall meet the requirements of 49 CFR 178. Containers and liners shall also meet the requirements of the disposal facility. Containers used for the transportation of hazardous waste soils shall be labeled in accordance with 49 CFR 171 and 49 CFR 172.

## PART 3 EXECUTION

### 3.1 STORAGE AND TRANSPORTATION

The Contractor shall obtain approval from the COTR for the location of any temporary stored soils and containers.

Excavated solid waste soil shall be placed directly into containers or trucks to prohibit infusion of rainwater or foreign debris. Excavated solid waste soils shall not be permitted to be stockpiled.

Excavated hazardous waste soil shall be placed directly into a container or truck and covered to prohibit infusion of rainwater or foreign debris. Excavated hazardous waste soils shall not be permitted to be stockpiled.

All containers shall be properly labeled and marked prior to filling. If the soil is non-hazardous solid waste, the standard green non-hazardous waste label shall be used. If the soil is hazardous waste, the standard red and white Environmental Protection Agency (EPA)/ Department of Transportation (DOT) label shall be used until shipped. At the time of shipping, the yellow and red hazardous waste label shall be placed over the red and white label and completely filled out. Labels shall include, at a minimum, the date of generation, the project title, the Contractor's name and phone number, and the COTR's name and phone number.

Storage of any hazardous waste soil shall not exceed 90 days from the date of generation in accordance with 40 CFR 262.

Vehicles transporting waste soils for disposal shall be weighed on NASA scales located at Building 119. Vehicles shall be weighed by the Government prior to and after loading of excavated materials. The resulting weight of the waste shall be recorded on the Waste Manifests.

Vehicles transporting waste soils for disposal shall not leave NASA without a completed and signed Property Pass, and completed, numbered and signed Waste Manifest. This paperwork is required for each load leaving GRC. NASA employees are the only ones legally authorized to sign a manifest on the Government's behalf. The Contractor shall not sign any Waste Manifests. The COTR shall also obtain manifest numbers for each document. The top white copy of the Property Pass with the actual signature shall be surrendered to the Security Guards at the Main Gate when exiting the Glenn Research Center.

### 3.2 DISPOSAL

All soil designated as a solid waste shall be disposed of at an OEPA licensed solid waste facility. The Contractor shall comply with the requirements of the disposal facility. Soil has been designated a solid waste [in areas shown on drawings][location] due to [describe contamination].

All soil designated as a hazardous waste shall be disposed of at a state permitted hazardous waste facility. The Contractor shall comply with the requirements of the disposal facility. Soil has been designated a hazardous waste in [in areas shown on drawings][location] due to the presence of [describe contamination] which requires the soil to be considered as a RCRA listed hazardous waste with a waste code of [FO02]

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### 3.3 HAZARDOUS WASTE OPERATIONS

To reduce the spread of hazardous waste soil from contaminated areas, the Contractor shall delineate zones on the site where different types of operations will occur. The flow of personnel among these zones shall be controlled. This information shall be provided in the Work Plan.

The site shall be divided into at least 3 zones.

1. Exclusion Zone - This is the area where most of the work is accomplished and contamination is present. The outer boundary shall be identified as the Hotline. The Hotline shall be marked by hazard tape, signs, barricades and fences. Flow of personnel and equipment shall be controlled.
2. Containment Reduction Zone - This is the transition area between the contamination area and the clean area. Decontamination of personnel and equipment shall take place in this area. The outer boundary shall be identified as Contamination Control Line.
3. Support Zone - This is the outermost area. No contamination of any kind shall exist in this area. Administrative and support functions shall be performed in this area.

### 3.4 STORM AND SURFACE WATER

The Contractor shall prevent Storm Water runoff from entering any open Solid Waste or Hazardous Waste excavation. The Contractor shall notify the COTR of the presence of Storm Water in excavations. Any Storm Water that accumulates in such an excavation shall be considered as a solid waste or a hazardous waste liquid and shall be containerized by the Contractor for analysis. The Contractor shall obtain sampling and analysis of the liquid in accordance with the Northeast Ohio Regional Sewer District (NEORS) Pre-Treatment Standards. The Contractor shall coordinate the sampling and analytical through the COTR. Once the data is available, NASA will coordinate with the COTR, and shall be in accordance with this Section. If NEORS determines that the liquid meets the Pre-Treatment Standards, NASA will direct the Contractor on the appropriate method of discharge to the Sanitary Sewer System. With either determination, the Contractor shall be responsible for all costs associated with the sampling, analysis, containerizing, transportation and disposal of the Storm Water Runoff.

### 3.5 GROUNDWATER

The Contractor shall notify the COTR of the presence of groundwater in excavations. Any groundwater that accumulates in such an excavation shall be considered as a solid waste or a hazardous waste liquid and shall be containerized for analysis. NASA shall obtain sampling and analysis of the liquid in accordance with the Northeast Ohio Regional Sewer District (NEORS) Pre-Treatment Standards and shall coordinate the sampling and analytical. Once the data is available, NASA will coordinate with the NEORS and determine the disposition of the water. If NEORS determines that a liquid does not meet the Pre-Treatment Standards, all subsequent transportation and disposal shall be coordinated with the COTR, and shall be in accordance with this Section. If NEORS determines that the liquid meets the Pre-Treatment Standards, NASA will direct the Contractor on the

appropriate method of discharge to the Sanitary Sewer System. With either determination, NASA shall be responsible for all costs associated with the sampling, analysis, containerizing, transportation and disposal of the groundwater.

### 3.6 DIFFERING SITE CONDITIONS

There is the possibility that the Contractor, in the execution of the Work, may encounter a pre-existing soil or groundwater contamination, of which NASA is unaware. If a condition occurs where contamination appears that is different than the contamination expected, the Contractor shall stop work within the immediate area of the impact and notify the COTR. The Contractor shall isolate the impacted area of the differing site condition to the smallest possible footprint, and may continue work in areas outside of the impacted area.

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