

SECTION 02 61 00
REMOVAL AND DISPOSAL OF CONTAMINATED SOIL

PART 1 GENERAL

1.01 SUMMARY

- A. This section describes the Work involved in removal, handling, testing, and disposal of hazardous and nonhazardous soil, debris, excavated waste, and wastewater if such material is encountered or generated during performance of the Work.
- B. No contaminated soils are known to be present at the Project Site. However, upon discovery of contaminated soils, the following will apply.

1.02 REFERENCES

- A. The following is a list of standards which may be referenced in this section:
 - 1. Arizona Division of Occupational Safety and Health (ADOSH).
 - 2. Resources Conservation and Recovery Act (RCRA).
 - 3. Toxic Substances Control Act (TSCA).
 - 4. U.S. Code of Federal Regulations (CFR):
 - a. Title 29, Labor, Chapter XVII Occupational Safety and Health Administration (OSHA), Part 1910, Occupational Safety and Health Standards: Part 1910.120, Hazardous Waste Operations and Emergency Response.
 - b. Title 40, Protection of Environment, Chapter I Environmental Protection Agency (EPA), Part 261, Identification and Listing of Hazardous Waste:
 - 1) Part 261.21, Characteristic of Ignitability.
 - 2) Part 261.22, Characteristic of Corrosivity.
 - 3) Part 261.23, Characteristic of Reactivity.

1.03 DEFINITIONS

- A. ACM: Asbestos-containing materials.
- B. Excavated Waste: Buried solid waste, refuse, demolition waste, construction waste, and special waste regulations. Excavated waste does not include demolition debris, solid waste, refuse, construction waste, or special waste created by Contractor incidental to the Work.
- C. Free Product: Free-standing petroleum or chemical liquid product present in excavation or floating on water in excavation.

- D. Hazardous Soil and Debris: Material which qualifies as a hazardous or toxic waste as defined by the Resources Conservation and Recovery Act (RCRA) or the Toxic Substances Control Act (TSCA).
- E. Nonhazardous Soil and Debris: Material which does not qualify as a hazardous or toxic waste as defined by RCRA or TSCA and includes excavated waste as defined above.
- F. Wastewater: Water produced by Contractor's operation, including groundwater removed, stormwater entering excavation pits despite controls, washdown water, used decontamination water, and other water that requires handling by Contractor to accomplish the Work. Wastewater may be hazardous or nonhazardous and shall require special handling and testing.

1.04 SUBMITTALS

A. Informational Submittals:

- 1. Submit the following, upon discovery of contaminated soils:
 - a. Permits and certification for soil, debris, and waste haulers.
 - b. Permits, certification, and acceptance requirements for proposed soil, debris, and wastewater disposal or treatment facilities.
 - c. Qualifications:
 - 1) Contractor documentation of experience.
 - 2) Contractor's Personnel: Documentation personnel proposed for Work with contaminated materials have been 40-hour trained in accordance with 29 CFR 1910.120.
 - 3) Waste Transporter: Documentation of licensing and equipment capabilities.
 - 4) Offsite Disposal and Treatment Facilities: Documentation of licensing, disposal requirements, and acceptance of waste.
 - d. Soil and Debris Analytical and Physical Characterization Testing Plan within 1 week after discovery of contaminated soils.
 - e. Inspection reports, including photographs, and other items requested by Contracting Officer.
 - f. Excavation and Water Control Plan demonstrating controls for migration of water into active excavation areas.
 - g. Site-specific Health and Safety Plan:
 - 1) In accordance with 29 CFR 1910.120.
 - 2) Include Contractor-proposed monitoring, personnel protective gear, worker training and certifications, and emergency procedures.
 - 3) State criteria or measures when air monitoring and work by HAZWOPER-trained personnel are no longer necessary.
 - h. Emergency Response Plan: Details how to handle an emergency during execution of the Work (for example, encountering drums

with unknown contents; encountering pockets of hazardous atmospheres; response to spills caused by excavation of materials by Contractor or Contractor's equipment; response to fire or injured personnel).

2. During excavation and removal activities submit the following:
 - a. Daily job progress log detailing information on review of progress with respect to previously established milestones and schedules, major problems, corrective actions, injury reports, equipment breakdown, and sampling results.
 - b. Weekly excavation plans.
 - c. Copies of manifests or bills of lading, and waste disposal or treatment facility receipts, including weight or volume tickets, for waste materials, solid or liquid, removed from Site and transported to disposal facilities.

1.05 QUALITY ASSURANCE

A. Qualifications:

1. Contractor:
 - a. Proven history of successfully executing similar projects for a minimum of 3 years.
 - b. Certifications or licenses if required by state or local authorities.
 - c. Proper equipment and personnel experienced in similar work.
 - 1) Personnel shall be formally trained in procedures for contaminated soil and water removal (for example, HAZWOPER training).
2. Contractor's Site Professional shall have minimum of 3 years' experience in planning, sampling, and performing quality control in remediation of contaminated sites.
3. Waste Transporter: Licensed waste haulers with trucks equipped with containment and cover systems to transport solid and liquid waste materials on public streets and roads without spillage.
4. Offsite Disposal and Treatment Facilities: Proposed facilities shall be licensed to accept the various waste types and quantities to be generated during the Work.

B. Codes and Regulations:

1. Comply with federal, state, and local regulations in handling, testing, transporting, and disposing materials and in performing the Work.
2. Prior to commencing removal operations, obtain applicable local, state, and federal permits and licenses that directly impact Contractor's ability to perform the Work.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Plastic Sheeting:
 - 1. Nylon-reinforced polyethylene sheeting, opaque/frosted.
 - 2. Thickness: Minimum 10 mils.
- B. Tape and Glue: Capable of sealing joints of adjacent sheets of plastic and capable of adhering under wet conditions.
- C. Ballast: Sandbags or other ballast materials of sufficient weight and quantity to maintain polyethylene sheeting securely in place.

PART 3 EXECUTION

3.01 GENERAL

- A. Contractor shall be responsible for the following:
 - 1. Providing means, methods, and equipment necessary for sampling, excavating, collecting, handling, processing, loading, and disposing of hazardous and nonhazardous soil, debris, excavated waste, and wastewater generated as part of the Work.
 - 2. Selecting, providing, and coordinating with qualified transporters, disposal facilities, and treatment facilities for transporting, disposing, and documenting hazardous and nonhazardous waste transportation and disposal in accordance with this specification.
 - 3. Complying with federal, state, and local requirements for transporting solid and liquid materials from Site through applicable jurisdictions, and be responsible for associated fines, penalties, and other costs for noncompliance.
 - 4. Obtaining and submitting acceptance letters and receipts for materials disposed at each facility.
 - 5. Including provisions in its construction sequence and schedule for sampling, analysis, and review of sampling results.
- B. Excavation and Water Control Plan:
 - 1. Plan shall include, but not be limited to, the following:
 - a. Means and sequencing of excavation.
 - b. Proposed locations, layout, and controls for materials stockpile areas.
 - c. Numbers and types of proposed equipment.
 - d. Methods of handling, segregating, and stockpiling excavated materials.

- e. Methods of controlling water and sediment in excavation and proposed stockpile areas.
- f. Proposed locations, types, and capacities of temporary water storage facilities, if required.
- g. Sheet piling, shoring, and bracing, as required.

C. Soil and Debris Analytical and Physical Characterization Testing Plan:

- 1. Plan shall include, but not be limited to, the following:
 - a. Plan view showing proposed sample locations, depths, and number of samples for characterization and disposal facility acceptance testing, and for confirmatory testing, if required.
 - b. Sampling and analysis of areas found to contain hazardous materials. Results shall be used to determine if material should be handled and disposed of as hazardous and to define extent of this material.
 - c. Detail sampling and characterization of other materials excavated from Site.
 - d. Testing requirements shall include chemical and physical analyses necessary to assess the material's environmental and geotechnical characteristics where appropriate.
 - e. Sampling plan shall characterize materials, and conform to treatment and disposal facility acceptance requirements, if any.
 - f. Proposed testing laboratory, analyses required, and testing methods.

- D. Provide qualified Licensed Site Professional to oversee and supervise sampling, excavation, and waste handling operations at Site and to coordinate with proposed disposal and treatment facilities.

3.02 WASTE CHARACTERIZATION SAMPLING AND ANALYSIS

- A. Prior to commencing excavation, perform onsite sampling and laboratory testing to screen Site for potential hazardous waste and to conform to acceptance criteria of proposed disposal or treatment facilities. Sampling and testing shall be done in accordance with approved Soil and Debris Analytical and Physical Characterization Testing Plan.
- B. Allow a minimum of 4 weeks in schedule for testing and review by disposal facility and Contracting Officer.
- C. Test for ignitability, corrosivity, and reactivity in accordance with 40 CFR 261.21, 40 CFR 261.22, and 40 CFR 261.23, if required by proposed treatment facility or disposal facility.
- D. Test for any additional contaminants per the request of the approved waste disposal facility.

3.03 WASTE EXCAVATION

- A. Hazardous and nonhazardous soil and debris may be encountered during excavation for facilities at Site. Material shall be removed, handled, and disposed in accordance with environmental regulations.
- B. Perform waste excavation in accordance with requirements of Section 31 23 16, Excavation, unless otherwise specified in this section and approved Excavation and Water Control Plan.
- C. Water control shall be provided in accordance with approved Excavation and Water Control Plan.
- D. Sheet piling, shoring, and bracing required to support excavation operations shall be provided in accordance with approved Excavation and Water Control Plan.
- E. Conduct Work in excavated area in accordance with Contractor's Site-specific safety plan.
- F. Excavate methodically and submit weekly excavation plans no later than Thursday of week preceding the Work.
- G. At Contracting Officer request, excavate test pits no greater than 4 feet deep in advance of excavation for purpose of sampling and delineating material to be excavated.
- H. Immediately stop excavation and notify Contracting Officer upon encountering material unanticipated or outside scope of this Specification. This may include, but is not limited to, free product, tanks, ACM, or solid material other than excavated waste.
- I. Overexcavation:
 - 1. Excavate only amount of soil required to construct the Work shown on the Drawings.
 - 2. Overexcavation of additional hazardous soil/debris, solid waste, or soil beyond amount required for construction of foundation and subgrade preparation shall not be performed without written authorization by Contracting Officer.
 - 3. Overexcavation of hazardous soil/debris, solid waste, or soil that is not authorized by Contracting Officer shall be disposed and replaced at Contractor's own expense.

3.04 FREE PRODUCT REMOVAL

- A. In the event that free product is encountered during excavation:
 - 1. Immediately notify Contracting Officer to determine appropriate sampling, removal, and disposal requirements.
 - 2. Remove product in a manner that minimizes spread of contamination into previously uncontaminated zones by using containment recovery and storage system to contain and remove product.
 - 3. Provide onsite storage suitable for recovered material.
 - 4. Material shall remain onsite until Contractor completes a characterization analysis.
 - 5. Material shall not be transported to a disposal facility until analysis is complete.

3.05 CONFIRMATORY SAMPLING AND BACKFILL

- A. Upon completion of excavation, Contractor shall take confirmation samples.
 - 1. Confirmatory samples shall be based on the constituents of the initial discovery of the contaminated soils.
- B. Do not perform activities such as backfill or installation of foundations in excavated area until confirmation sampling, inspections, or other confirmatory measures have been taken and approval has been given by Contracting Officer to proceed with subsequent work.
- C. Backfill, where required to complete the Work, shall be done in accordance with requirements of Section 31 23 23, Fill and Backfill. Other work in completed excavation shall be done in accordance with the Drawings and applicable specification section.

3.06 WASTE HANDLING AND DISPOSAL

- A. To extent possible, schedule and coordinate Work such that excavated waste and wastewater can be loaded and removed from Site with minimal handling or storage requirements.
- B. Where temporary storage or stockpiling is necessary, provide and maintain adequate containment and environmental controls, including but not limited to containers, dikes, linings, covers, erosion and sediment controls, and other measures of sufficient capacity to store materials without unauthorized release of contaminants into ground, air, or surface water.
 - 1. Temporary Stockpile:
 - a. Provide with perimeter dike at least 12 inches high and lined with plastic sheeting.

- b. Anchor plastic sheeting with sandbags or other approved ballast over stockpile(s) at end of working day.
 - 2. Liquid Container Storage:
 - a. Provide with perimeter dike and plastic lining.
 - b. Volume of lined storage area shall be at least the volume of the largest container within the area plus a minimum of 1 foot of freeboard.
 - 3. Seams for diked area linings shall be appropriately sealed to prevent release of contaminated materials or liquids within containment area.
 - 4. Cover systems shall be lapped or sealed as required to prevent leakage of rainwater into stockpiled materials.
 - 5. Inspect containment areas daily, or after each rainfall event, and remove standing water.
- C. Provide labor, equipment, and materials to stabilize or process waste materials as necessary to meet minimum requirements for offsite transport and disposal.
- D. Transportation:
 - 1. Provide sealed or lined vehicles and other measures necessary to prevent spillage or tracking of waste materials, mud, or other debris on local streets or roads.
 - 2. Inspect and document vehicles and containers for proper operation and covering.
 - 3. Inspect vehicles and containers for proper markings, manifests, and other requirements for waste shipment.
 - 4. Perform and document decontamination procedures prior to leaving Site and again before leaving disposal or treatment facility.
 - 5. Obtain and submit receipts of confirmation from disposal or treatment facilities that solid and liquid wastes were accepted for disposal or treatment, including weight tickets or other confirmation of quantities received.

3.07 EQUIPMENT DECONTAMINATION

- A. Decontaminate equipment that has come into contact with hazardous soil or debris, solid waste, or impacted water by methods approved by Contracting Officer.
- B. Wastewater and sediment generated by decontamination activities shall be contained and treated or disposed of in accordance with provisions stated in this section.

END OF SECTION