

DESIGN AND CONSTRUCTION GUIDELINES AND STANDARDS

DIVISION 2 • EXISTING CONDITIONS

02 61 00 • CONTAMINATED SITE MATERIAL REMOVAL

SECTION INCLUDES

Contaminated Soil Removal

RELATED GUIDELINE SECTIONS

02 65 00 Underground Storage Tank Removal
31 00 00 Earthwork
33 00 00 Site Utilities

REFERENCES

310 CMR 40.000 Massachusetts Contingency Plan

<http://www.mass.gov/eea/agencies/massdep/cleanup/regulations/massachusetts-contingency-plan.html>

MassDEP Policy #WSC-00-425 Construction of Buildings in Contaminated Areas

<https://www.mass.gov/doc/wsc-00-425-construction-of-buildings-in-contaminated-areas-0/download>

MassDEP Policy #WSC-16-435 Vapor Intrusion Guidance

<https://www.mass.gov/files/documents/2016/10/nu/vapor-intrusion-guidance-10-14-2016.pdf>

ASTM E1527-13: Phase I Environmental Property Assessment

INVESTIGATION

The discovery of Oil and Hazardous Material (OHM) contaminated soils can result in large change orders and be very disruptive to a construction contract.

Researching the historic uses of a property can help anticipate the likelihood of encountering contaminated soils. Properties with historic industrial, manufacturing, dry cleaning, and automotive property uses, or a history of Underground Storage Tanks (USTs) have a greater potential for soil contamination. Research regarding a property's environmental history is most efficiently conducted utilizing MassDEP's online data portal: <https://eeaonline.eea.state.ma.us/portal#!/search/wastesite>. Research on adjoining properties should be conducted as well, as contamination plumes may cross property lines. An ASTM Phase I Environmental Property Assessment may be commissioned when published information is limited. **Refer to figure 1 – THE CONTAMINATED SOIL DECISION MATRIX at the end of this section.**

If soil contamination is known or suspected, subsurface exploration including the advancement of soil test pits, borings, and groundwater monitoring wells, can be conducted to determine the horizontal and vertical extent. Subsurface exploration field work can be completed alongside geotechnical field work for increased efficiency. This work should be completed under the supervision of a Licensed Site Professional (LSP) or environmental consultant hired by the LHA or

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LHA's design consultant. Data gathered during subsurface exploration can be useful for eventual soil disposal qualification, and for calculating anticipated volumes.

If contamination or evidence of a release is found, the LSP and/or environmental consultant will determine the applicability of MassDEP Reporting Requirements and determine the next steps.

If soil contamination is identified during the installation of underground utilities, cleanup efforts may be eligible for management under a simplified Utility Release Abatement Measure (URAM) pursuant to 310 CMR 40.0460.

Should a project involve the construction of occupied buildings in areas of contaminated soil, the potential for vapor intrusion should be evaluated and mitigated pursuant to MassDEP Policy #WSC-16-435 Vapor Intrusion Guidance. It is advisable to incorporate an active or passive Sub-Slab Depressurization System into foundation designs for buildings in areas with soil contamination. Vapor intrusion considerations continue to apply even after contaminated soils have been excavated and removed from the property, as it is typically impossible to eliminate all traces of contamination.

DESIGN

For projects where contaminants are found, plans and specifications should be prepared in accordance with all local regulations and pursuant to the most recent edition of 310 CMR 40.0000, the Massachusetts Contingency Plan and MassDEP Policy #WSC-00-425 Construction of Buildings in Contaminated Areas. The plans should require that an LSP be hired by the LHA or the LHA's design consultant and should include a narrative addressing any contamination found during the excavation. If contamination is found during construction, the narrative should be amended and incorporated into applicable reports generated throughout the MassDEP regulatory process.

If there is any question as to whether contamination is present in soil, sampling and analyses should be completed. Indicators of potential soil contamination include dark staining, an oily or greasy sheen, petroleum or solvent odors, and the presence of Urban Fill (*i.e.*, coal ash, wood ash, brick, glass, etc.). In addition, the discovery of previously unknown underground structures, including USTs, dry wells or other leaching structures, and unidentified piping should trigger an investigation into potential soil contamination. Any ensuing regulatory coordination with MassDEP should be directed by an LSP.

Contact Dig Safe and other non-Dig Safe member utilities and obtain a trench permit, if required, prior to commencing any excavation or subsurface investigation. Verify that all parties have obtained clearance and have recorded Dig Safe ticket numbers. The consultant should hire a utility locator service to locate any privately-owned utilities.



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EXECUTION

The Contractor must comply with all federal, state, and local regulations regarding contaminated soils removal. The soil characterization, excavation, transport, and disposal process should be completed under the direction of an LSP.

Prior to the start of work, a soil sampling and analyses plan should be developed and executed. Soil sampling and analysis data will determine the appropriate method of soil reuse, disposal, or recycling, and will determine if material is eligible for receipt at a given facility. Excavation dewatering may be required if groundwater is encountered. The Contractor shall be solely responsible for dewatering and the management of groundwater, including any contaminated groundwater, if encountered. The contractor must evaluate the need for and obtain any required permits, including but not limited to National Pollutant Discharge Elimination System (NPDES) permits and municipal sewer and/ or stormwater discharge permits.



The Contractor shall prepare a site-specific Health and Safety Plan (HASP). The HASP shall outline procedures for the on-site handling and storage of impacted soil, personal protective equipment (PPE) requirements, worksite safety protocols, and equipment and vehicle decontamination procedures. The Plan shall be submitted to the LSP within 7 days of Notice to Proceed. The Contractor shall be responsible for preparing all hazardous material manifests and/or bills of lading with all applicable sampling and analyses data, supporting documents, notifications, and control forms. The Contractor shall submit these to the LSP for review. The LSP will incorporate these results into applicable MassDEP regulatory process documentation.

The LHA will be the designated Waste Generator/Responsible Party and, in conjunction with the LSP, will sign all manifests and/or bills of lading.

EXCAVATION OF CONTAMINATED MATERIAL

Work and decontamination procedures in areas containing contaminated material shall be performed in accordance with standard engineering practices. The Contractor shall employ methods necessary to isolate contaminated soils from noncontaminated soils. The excavation may include removing additional soils found to contain residual contamination as directed by the LSP.

The Contractor shall direct-load contaminated soil into roll-off containers or trucks for transportation and disposal off-site if feasible. Material that requires on-site storage prior to shipment off the property should be stockpiled atop a double layer of heavy-duty High-Density Polyethylene (HDPE) sheeting. The stockpile should be covered with HDPE sheeting at the end of each workday and sufficiently secured or weighed down in such a manner as to prevent wind or precipitation from disturbing or eroding the soil stockpile. The soil stockpile should be positioned so that it may be secured in the same manner as required for open excavations.

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SOIL RECYCLING, REUSE, OR DISPOSAL

The Contractor shall be responsible for obtaining approvals for final disposal of contaminated material. The Contractor shall assist the LHA in obtaining a Resource Conservation and Recovery Act (RCRA) generator ID number for hazardous waste, if required.

The Contractor shall be required to submit a copy of all analytical results to the LSP within 5 days of receipt of the laboratory report. Analytical data shall be kept confidential and distributed to the LSP and LHA only. The LSP shall review data within 5 days. Sampling and analyses of contaminated soil shall be completed at sufficient and adequately distributed locations so that OHM concentrations are adequately characterized. The sampling and analyses regimen should consider individual receiving facility requirements that dictate sampling frequency (*i.e.* number of samples analyzed per volume of soil) and analytical method requirements. The LSP shall be present to observe sample collection activities.

The receiving facility shall be fully permitted in accordance with all applicable local, state and federal regulations and shall be a hot mix asphalt plant, thermal processing plant, cold mix emulsion plant, approved landfill, or MassDEP permitted Reclamation Project site. The facility shall be eligible to accept petroleum contaminated soil without direct MassDEP approval provided that levels of contaminants in the soil comply with the specific levels established in the facility's permit. An out-of-state recycling facility shall be approved or permitted by the state in which it is located to accept petroleum contaminated soil with contaminant concentration ranges specified in its permit.



The Contractor shall submit to the LSP initial approvals or letters of intent and facility information for the disposal or recycling facility selected.

The facility information shall include the following:

1. General Information
 - a. Facility Name
 - b. Facility Address
 - c. Name of Contact Person
 - d. Title of Contact Person
 - e. Telephone Number of Contact Person.
 - f. Permit Number.
2. Written confirmation that the facility is permitted to accept and will accept the classified soil of the general quality and quantity expected at the site.
3. A listing of all current and valid facility permits, licenses, letters of approval, and other authorizations to operate, pertaining to the receipt and management of the soils or materials specified in the Contract.

The Contractor shall submit a complete list of the disposal facility's permitted allowable contaminant levels and physical characteristic

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requirements for contaminated material, and list any required regulatory approvals for individual waste streams.

WASTE PROFILES AND MANIFESTS

The Contractor shall be responsible for preparing all waste profile applications and questionnaires and submitting them to the LSP for review, for coordinating with disposal facilities, and for coordinating with all Federal and State environmental agencies.

The Contractor shall be responsible for preparing all hazardous material manifests and/or bills of lading with all required supporting documentation, notification, and control forms. The Contractor shall submit these to the LSP for review at least 5 business days before transport. The LHA will sign bills of lading in conjunction with the LSP.

The Contractor shall be required to provide a written log using the appropriate prescribed forms, if applicable, for the transport of each load from the site. At a minimum, the forms should include load volume, tractor/trailer registrations and fleet numbers, time of departure, time of arrival at the receiving facility, and signature of vehicle operator.

The Contractor shall also provide certified tare and gross weight slips for each load received at the designated disposal facility. These shall be attached to each returned manifest and/or bill of lading.

The LHA will be designated as generator and will sign all manifests and waste profile application or questionnaires in conjunction with the LSP.

The Contractor shall furnish all generator copies of the hazardous material manifest to the Engineer for submittal to the appropriate State environmental agencies, if required, and for the LHA's records.

The Contractor shall submit to the LSP, no later than 10 business days and prior to receiving progress payment, all original documentation certifying that all materials were transported to, accepted, and disposed of, at the selected disposal facility.

The documentation shall include the following, at a minimum:

1. Documentation shall be provided for each load from the site to the disposal facility, including all manifests and any other transfer documentation as applicable.
2. All documentation for each load shall be tracked by the original manifest.
3. If material is transported under a Massachusetts Bureau of Waste Site Cleanup transmittal form (BWSC Form 113, parts A, B, and C), all original forms must be returned with original signatures, including the final signature of the receiving facility verifying receipt, no later than 10 business days from completion of transporting soil.

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Figure 1 – Research Decision Matrix

