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# Technical Update

## Considerations for Managing Contaminated Soil: RCRA Land Disposal Restrictions and Contained-In Determinations

*The information contained in this Technical Update is intended solely as guidance. This document does not create any substantive or procedural rights, and is not enforceable by any party in any administrative proceeding with the Commonwealth. Parties using this guidance should be aware that there may be other acceptable alternatives for achieving and documenting compliance with the applicable regulatory requirements and performance standards of the Massachusetts Contingency Plan ("MCP").*

### 1.0 Summary

This Technical Update revises and expands a November, 2002 MCP Q&A question on the implications and application of the U.S. Environmental Protection Agency ("USEPA") Land Disposal Restrictions ("LDR") regulations under the Resource Conservation and Recovery Act ("RCRA") to soil managed under the Massachusetts Contingency Plan ("MCP", 310 CMR 40.0000). This Technical Update provides guidance on managing contaminated soil to meet the requirements of several applicable regulatory programs administered by both MassDEP and USEPA.

The focus of this Technical Update is the determination of whether contaminated soil must be managed as a hazardous waste subject to RCRA requirements and the process an LSP/PRP can use to make and document that determination, subject to MassDEP's presumptive approval.

### 2.0 USEPA Land Disposal Restrictions (LDR)

The USEPA LDR program is designed to ensure that wastes are properly treated prior to land disposal, by immobilizing the harmful constituents or reducing the waste toxicity or by destroying or removing the harmful constituents. The LDR requirements stipulate treatment standards that apply to all hazardous wastes and also provide for optional alternative treatment standards for some specific wastes. Importantly, alternative treatment standards are available for contaminated soil - commonly identified at Massachusetts disposal sites being assessed and remediated pursuant to the MCP. USEPA has published an extensive summary of the LDR requirements in an August 2001 guidance document, "Land Disposal Restrictions: Summary of Requirements" (EPA530-R-01-007), available online at:

<http://www.epa.gov/osw/hazard/tsd/ldr/ldr-sum.pdf>.

MassDEP has received authorization from USEPA for the implementation of the LDR requirements effective August 23, 2010.

USEPA has stated that soil is generally subject to the RCRA Land Disposal Restrictions (LDR) program under Title 40, Part 268 of The Code of Federal Regulations, (40 CFR 268), including the LDR treatment standards, if the following conditions are met:

- the soil is generated; and
- the soil contains a hazardous waste regulated under RCRA.

Each of these conditions is discussed in more detail below.

### ***When is contaminated soil considered to be “generated”?***

Soil is considered generated for purposes of the LDR requirements when it is excavated and accumulated/placed in containers (drums, roll-offs, etc.), tanks or other RCRA regulated units, treated ex-situ, or removed from the Area of Contamination (“AOC”)<sup>1</sup>.

USEPA has stated that the LDR treatment standards do not apply to *in-situ* soils left in place, nor do they force soil to be excavated. If the contaminated soil is re-graded and/or consolidated within an AOC, the soil would not be considered generated, and the LDR requirements do not apply, even if the soil had been "removed from the land" within the AOC. As long as excavated soils are not treated *ex-situ* and/or not placed into containers, tanks, or a treatment or other RCRA-regulated unit, or moved outside of the AOC, they will not be considered generated.

### ***When is contaminated soil considered to contain a hazardous waste?***

Soil is considered to contain a hazardous waste (hazardous waste soil) under RCRA and 310 CMR 30.000, the Massachusetts Hazardous Waste Regulations, if, when generated, it meets either or both of the following two conditions:

- the soil exhibits one or more of the characteristics of a hazardous waste pursuant to 310 CMR 30.120 [such as exhibiting a characteristic of toxicity under 310 CMR 30.125B (TCLP)]; or
- the soil contains hazardous constituents from a listed hazardous waste identified in 310 CMR 30.130 or Title 40, Chapter I, Part 261 (Identification and Listing of Hazardous Waste) of the Code of Federal Regulations.

This is known as EPA's Contained-In Policy.

### ***How can hazardous waste soil be considered “non-hazardous”?***

Soil that would be considered to contain a hazardous waste can become (or be considered) “non-hazardous” under certain conditions, depending upon the factors that originally would make it a hazardous waste.

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<sup>1</sup> In Massachusetts, the Area of Contamination is equivalent to the disposal site, as defined under 310 CMR 40.0006.

In the first case above, (that is, the soil is a characteristic hazardous waste), the soil ceases to be a hazardous waste when it is treated and no longer exhibits a characteristic of a hazardous waste under 310 CMR 30.120.

In the second case (that is, the soil contains a listed hazardous waste), the soil is no longer considered a hazardous waste when a site-specific determination concludes that the soil does not contain the hazardous constituents for which the waste was listed at concentrations that require it to be regulated as a hazardous waste. USEPA reasserted in the November 30, 1998 final Hazardous Waste Identification Rule for Contaminated Media that under the contained-in policy, authorized states have the authority to establish concentrations below which environmental media (such as soil) may be determined to not contain hazardous waste and therefore such soils do not require management as a listed hazardous waste. Application of the Contained-In Policy at M.G.L. c.21E disposal sites in Massachusetts is discussed in detail below.

***Do the LDR treatment standards apply to formerly hazardous waste soils?***

The Land Disposal Restrictions apply to the soil if the soil was considered to contain a hazardous waste at the time of generation. In other words, if (a) the treatment that removes the characteristic of a hazardous waste from the soil, or (b) the contained-in determination that the soil does not contain a hazardous waste occurs after the soil is generated, then the LDR treatment standards apply.

Table 1, reproduced directly from USEPA's 2001 LDR guidance, summarizes the applicability of the LDR treatment standards to soil containing listed hazardous waste.

<b>Table 1 Application of Land Disposal Treatment Standards To Soil Containing Listed Hazardous Waste<sup>1</sup></b>			
<b>If LDRs:</b>	<b>And if LDRs</b>	<b>And If:</b>	<b>Then You:</b>
Applied to the listed waste when it contaminated the soil	Apply to the listed waste now	—	Must comply with the LDRs
Did not apply to the listed waste when the waste contaminated the soil	Apply to the listed waste now	No contained-in determination has been made prior to the generation of the contaminated soil	Must comply with LDR treatment standards
Did not apply to the listed waste when it contaminated the soil	Apply to the listed waste now	The soil has been determined not to contain the listed hazardous waste prior to the soils first being generated	Do not need to comply with LDR treatment standards
Did not apply to the listed waste when it contaminated the soil	Do not apply to the listed waste now	—	Do not need to comply with the LDR treatment standards

<sup>1</sup> Table from U.S. Environmental Protection Agency's August 2001 guidance document, "Land Disposal Restrictions: Summary of Requirements" (EPA530-R-01-007), page 4-13.  
This document may be obtained electronically at <http://www.epa.gov/osw/hazard/tsd/ldr/ldr-sum.pdf>.

### 3.0 Contained-In Determinations in Massachusetts

At the present time (August, 2010), MassDEP has received authorization from USEPA to regulate most of the RCRA hazardous constituents and wastes commonly encountered at Massachusetts disposal sites. Under the authorized state RCRA program, MassDEP has established specific criteria for making determinations consistent with the USEPA Contained-In Policy for sites undergoing assessment and cleanup under the Massachusetts Contingency Plan.

MassDEP policy provides for the use of the MCP Category S-1 standards promulgated at 310 CMR 40.0975(6)(a) to make contained-in determinations by the LSP-of-Record conducting work at a disposal site where the soil is managed as part of a Response Action. Such determinations are subject to review and presumptive approval by MassDEP and the documentation supporting the determination must accompany the submittal.

While alternative approaches for making contained-in determinations may be considered (e.g., a contained-in determination is sought by a person other than the LSP-of-Record for a disposal site, a method other than a comparison to the S-1 soil standards is proposed, or S-1 soil standards do not currently exist for the hazardous constituents at issue) such approaches fall outside the scope of this policy and such determinations must be submitted directly to the MassDEP hazardous waste management program for explicit written approval.

#### ***Criteria and Conditions for Making Contained-In Determinations***

Soil that contains hazardous constituents derived from a listed hazardous waste is not considered to be a hazardous waste if ***all*** of the following criteria are met:

- the source of the hazardous constituents is a listed hazardous waste under 310 CMR 30.130 that Massachusetts is authorized to regulate under RCRA by USEPA;
- the soil is not a characteristic hazardous waste, pursuant to 310 CMR 30.120;
- the concentrations<sup>2</sup> of the hazardous constituents in the soil are less than or equal to the MCP Method 1 Category S-1 soil standards (S-1/GW-1, S-1/GW-2, and S-1/GW-3) listed at 310 CMR 40.0975(6)(a);
- the soil is appropriately characterized by representative sampling; this includes the identification, segregation and sampling of "hot spots" (note: hot spots will be handled as a hazardous waste, rather than being included in a contained-in determination, if treatment does not lower the concentration of listed wastes within the hot spots to less than or equal to the MCP Method 1 Category S-1 soil standards);
- the concentrations are achieved either by removal or treatment and not by dilution;

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<sup>2</sup> The calculation of constituent concentration for comparison to the MCP Method 1 Category S-1 soil standards shall be conducted consistent with the requirements of 310 CMR 40.0926, including separate concentration calculations for Hot Spots.

- the activities are performed in accordance with the requirements of 310 CMR 40.0000; and
- any excavated soil is managed in accordance with the requirements of 310 CMR 40.0030, Management Procedures for Remediation Wastes, including those of 310 CMR 40.0032(2) and 310 CMR 40.0032(3) and any other applicable laws and regulations.

### ***Submittal and Review of Contained-In Determinations***

LSPs must demonstrate that all of the above criteria are met in order to make a “contained-in” determination. An LSP must submit a contained-in determination petition to MassDEP for review at least 21 days *prior to* managing the soil as a non-hazardous waste. The petition and all related documentation must be made by written request using a Transmittal Form (BWSC126) provided by the Department. (See Appendix A for a sample petition letter.)

The LSP must wait 21 days after submitting a petition *before* proceeding to manage the soil as a non-hazardous waste. The petition is subject to review by MassDEP during this 21 day period. If MassDEP objects to the “contained-in determination” by the end of the 21 day period, then the soil may not be handled as a non-hazardous waste, pending further review by MassDEP. If MassDEP does not object by the end of the 21 days, then the soil may be handled as a non-hazardous waste. (As with all MCP submittals, a “contained-in” determination is still subject to later audit by MassDEP.)

### ***Documentation Required for a “Contained-In” Determination***

The “contained-in” determination petition must document that:

- the source of the hazardous constituents is a listed hazardous waste under 310 CMR 30.130 that Massachusetts is authorized to regulate under RCRA by EPA;
- the soil is not a characteristic hazardous waste, pursuant to 310 CMR 30.120;
- the concentrations of the hazardous constituents in the soil are less than or equal to the MCP Method 1 Category S-1 soil standards;
- the soil is appropriately characterized by representative sampling; this includes the identification, segregation and sampling of "hot spots" and quantification of the soil volume subject to the determination;
- the concentrations are achieved either by removal or treatment and not by dilution.

All records of contained-in determinations, including records of analytical testing of the soil, and the determination petition must be kept for a minimum of three years, in compliance with 310 CMR 30.331(4).

### ***Subsequent Management of Contaminated Soil***

Any excavated soil must be managed in accordance with the requirements of 310 CMR 40.0030, Management Procedures for Remediation Wastes, including those of 310 CMR 40.0032(2) and 310 CMR 40.0032(3) and any other applicable laws and regulations.

### ***Considerations for Out-of-State Management of Excavated Soil***

Note that this policy regarding "contained-in" determinations made for soil generated within Massachusetts does not limit the responsibility of generators to comply with the applicable requirements of other states.

Before shipping the soil out of Massachusetts, an LSP or generator must contact both the operator of the landfill or other receiving facility and the relevant state agency (or the relevant USEPA region, if the state does not administer the RCRA program) to determine if they are willing to accept the determination by the LSP that the soil does not contain a listed hazardous waste. The LSP or generator should explain the Massachusetts process of making "contained-in" determinations to the relevant parties and keep records of any such conversations.

**Appendix A**  
**Sample Contained-In Determination Petition**

DATE

Massachusetts Department of Environmental Protection  
Bureau of Waste Site Cleanup  
REGIONAL OFFICE  
ADDRESS

Re: Contained-In Determination for Soil from Site RTN-X-YYYYYYYY

Dear Program Manager,

I have made a "contained-in" determination regarding soil from the following M.G.L. c. 21E disposal site:

RTN: \_\_\_\_\_ - \_\_\_\_\_  
Site Name: \_\_\_\_\_  
Street Address: \_\_\_\_\_  
City/Town: \_\_\_\_\_  
Zip Code: \_\_\_\_\_

The soil contained the listed hazardous waste(s) with waste codes:  
\_\_\_\_\_, which MassDEP is authorized to regulate under the Resource Conservation and Recovery Act (RCRA) by the U.S. Environmental Protection Agency (USEPA). However, the soil (check one):

- Met all applicable S-1 standards upon removal; or
- Was treated through a method of treatment other than dilution so as to meet all applicable S-1 standards.

The levels of the listed hazardous waste constituents in the generated soil are:

*[Provide summary of listed hazardous waste constituents and concentrations existing prior to and/ or after treatment, in the soil, and the applicable S-1 standards.]*

*[If the soil was treated, describe the date(s) and type(s) of treatment implemented.]*

In addition, the soil does not exhibit any characteristics of hazardous waste, pursuant to 310 CMR 30.120.

These determinations were made through the testing of \_\_\_\_\_ soil samples. The soil from which the samples were taken had a volume of \_\_\_\_\_. The soil was sampled on \_\_\_\_\_. The soil was sampled in a representative manner that adequately demonstrated the levels of hazardous material present in the soil. It was also appropriately characterized, including the identification, segregation and sampling of "hot spots." I have attached documentation of the methods and results of the sampling and testing of the soil that corroborates the above statements. This documentation includes the location of samples within the soil.

I understand that my "contained-in" determination is subject to a 21-day holding period, during which the determination is subject to review by the MassDEP and that the soil cannot be handled as non-hazardous waste until the 21 day review period passes without objection from MassDEP or USEPA.

I also understand that if the soil is to be transported out-of-state, it must first be determined if the operator of the landfill or other receiving facility and the relevant state agency (or the relevant USEPA region, if the state does not administer the RCRA program) are willing to accept contained-in determinations performed by a Massachusetts Licensed Site Professional. In doing so, the process by which "contained-in" determinations are performed in Massachusetts will be explained to the relevant parties and proper documentation of all conversations will be retained.

I, \_\_\_\_\_, attest under the pains and penalties of perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this submittal, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the person or entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate or incomplete information.

By: \_\_\_\_\_  
Signature Date

LSP #: \_\_\_\_\_  
LSP Name: \_\_\_\_\_  
Telephone: \_\_\_\_\_ ext: \_\_\_\_\_ fax: \_\_\_\_\_

For: \_\_\_\_\_  
Name of person or entity

\_\_\_\_\_  
Title