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**VIA eREGULATIONS SYSTEM**

January 4, 2021

Senator Craig Miner  
Senator James Maroney  
Representative Susan M. Johnson  
Representative Nicole Klarides-Ditria  
Legislative Regulation Review Committee  
State Capitol, Room 011  
Hartford, Connecticut 06106

***Re: Legislative Regulation Review Committee Review of Proposal to Adopt Regulations Concerning the Remediation Standard Regulations PR2016-005, LRRC 2020-015***

Dear Senators Miner and Maroney and Representatives Johnson and Klarides-Ditria:

Pursuant to section 4-170 of the Connecticut General Statutes, I am pleased to resubmit for your consideration and approval a proposal to amend the Remediation Standard Regulations (“RSRs”). These regulations replace existing regulations concerning the standards for remediation of soil and groundwater found in §22a-133k-1 through 22a-133k-3 of the Regulations of Connecticut State Agencies.

This resubmission addresses substantive concerns and technical corrections identified by the Legislative Commissioner’s Office in its memorandum dated November 19, 2020 as accepted by the LRRC at its meeting on November 24, 2020. The attached response document explains the Department’s response to those concerns and shows the language that was updated since the last submission to the LRRC. The Office of the Attorney General approved the updated version of the regulation as legally sufficient on December 28, 2020.

The proposed amendments provide increased options to address environmental pollution in a cost-effective manner while ensuring the protection of human health and the environment. This proposal strikes the correct balance between protecting human health and the environment while seeking to decrease the cost for responsible parties to comply with the requirements of the regulations. The amendments clarify the requirements within the RSRs and increased the number of options that can be implemented without DEEP staff oversight or approval by Licensed Environmental Professional (“LEPs”). This allows DEEP staff to spend their time on the highest risk pollution issues.

These regulations are a key component of Goal 5 of DEEP’s 20 By 20 initiative aimed at increasing predictability, efficiency, and transparency of DEEP’s environmental permitting and regulatory processes. The RSRs will make the process of implementing environmental cleanups

more efficient and predictable while still protecting human health and the environment. Adoption of this proposal, together with the complimentary Environmental Use Restriction regulations that are being submitted under separate cover for your review, will result in increased opportunities for parties responsible for cleaning up environmental pollution to reach practical and protective endpoints faster and with less DEEP involvement.

If there are any general questions regarding this submission, please contact James Albis, Senior Advisor to the Commissioner, Office of the Commissioner, by electronic mail at [James.Albis@ct.gov](mailto:James.Albis@ct.gov) or at 860-424-3136. If you have any substantive or rule drafting questions, please contact Kevin Neary of the Bureau of Water Protection and Land Reuse by electronic mail at [Kevin.Neary@ct.gov](mailto:Kevin.Neary@ct.gov) or at 860-424-3947.

Thank you for your assistance with this matter.

Sincerely,

*Betsy Wingfield* for

Katherine S. Dykes  
Commissioner

## Responses to the Legislative Commissioners' Office (LCO) Report on

### LRRC Regulation No. 2020-015A

### eRegulations Tracking No. 2016-005

All of the concerns identified in the LCO Report dated November 24, 2020 are addressed as specified. All the changes are reflected in the proposed regulation version uploaded in the eRegulations system maintained by the Secretary of the State's office.

#### **Substantive Concerns:**

1. Comment #1 - On page 10, in section 22a-133k-1(b)(3), the proposed regulation states that in the event any provision of the RSRs "augments or supplements any provision of any other statute or regulation, both shall apply". It is unclear what this provision means or is intended to address. A regulation cannot expand the meaning or intent of a statute. It is questionable whether this provision, as written, is needed since the provisions of a statute and a regulation, or of various regulations, can coexist with each having meaning and enforceability without containing a statement to such effect.

Response: This comment goes back to an issue raised in the October 27, 2020 Legislative Commissioner's Office ("LCO") report, comment #5, regarding the following sentence. "In the event that any provision of sections 22a-133k-1 through 22a-133k-3, inclusive, of the Regulations of Connecticut State Agencies conflicts with any provision of any other statute or regulation, the more stringent provision shall prevail." The LCO Report stated that "[t]he agency does not have the authority to require that a more stringent provision of a regulation override a different standard set forth in a provision of the general statutes." This sentence has been in the RSRs since their initial promulgation in 1996 and the Department of Energy and Environmental Protection ("DEEP" or "the Department") did not propose any revisions to this sentence. It is clear from LCO comment above that the resolution proposed by the Department continues to raise concerns. As such, even though DEEP has not proposed a change to this provision, it will delete the aforementioned sentence. (This is shown, by the inclusion of this sentence within the brackets).

#### **New Language:**

##### (3) Other Requirements

[Any person conducting a] All remediation [in accordance with said sections 22a-133k-1 through 22a-133k-3, inclusive, of the Regulations of Connecticut State Agencies] undertaken to satisfy the RSRs shall [obtain] be conducted in accordance with all federal, state, and local requirements, including, but not limited to, 40 CFR Part 761, all permits, and other required authorizations [required by state, federal and local law and shall comply with all applicable state, federal and local laws, including without limitation the requirements of 40 CFR Part 761. In the event that any provision of sections 22a-133k-1 through 22a-133k-3, inclusive, of the Regulations of Connecticut State Agencies conflicts with any provision of any other statute or regulation, the more stringent provision shall prevail]. Nothing in this subsection shall be construed as requiring any further remediation of any release which has been remediated and which remediation has been approved in writing by the [Commissioner] commissioner, unless the [Commissioner] commissioner takes action to require such remediation pursuant to any section of Chapter 446k of the Connecticut General Statutes.

2. Comment #2 - On page 19, section 22a-133k-1(i)(2), appears to be a sentence fragment and it is not clear what the meaning of the provision is. The agency deleted existing language at the beginning of subsection (i) which used to say that "Soil polluted with lead may be remediated... provided". Without that preceding language, there are various conditions stated in subparagraphs (A) to (D) of said subdivision, but it is unclear what they are a condition for. This provision should be clarified.

Response: Consistent with the comment DEEP has made clarifying changes to section 22a-133k-1(i) so that this section now reads as follows:

**New Language:**

**[(g)] (i) [Remediation of Soils Polluted with Lead.] Applicability of Remediation to Volatilization Criteria**

[Soil polluted with lead may be remediated to a concentration of 500 milligrams per kilogram in compliance with Section 22a-133k-2(b) provided:]

(1) [Prior to the effective date of this subsection] Provided the requirements of subdivision (2) of this subsection are satisfied, notwithstanding sections 22a-133k-3(a) and 22a-133-3(c) of the RSRs, volatile organic substances in groundwater may be remediated to:

(A) [Such remediation has been initiated; or] No more than fifteen (15) feet from the ground surface and no more than fifteen (15) feet from the lowest portion of a building under which groundwater is polluted with such substances; and

(B) [A remedial action plan has been completed for such release area; and] The applicable groundwater volatilization criteria listed in the following table.

<b><u>Volatile Substance</u></b>	<b><u>Residential Volatilization Criteria for Groundwater in ug/L (ppb)</u></b>	<b><u>Industrial/Commercial Volatilization Criteria for Groundwater in ug/L (ppb)</u></b>
<u>Acetone</u>	<u>50,000</u>	<u>50,000</u>
<u>Benzene</u>	<u>215</u>	<u>530</u>
<u>Bromoform</u>	<u>920</u>	<u>3,800</u>
<u>2-Butanone (MEK)</u>	<u>50,000</u>	<u>50,000</u>
<u>Carbon Tetrachloride</u>	<u>16</u>	<u>40</u>
<u>Chlorobenzene</u>	<u>1,800</u>	<u>6,150</u>
<u>Chloroform</u>	<u>287</u>	<u>710</u>
<u>1,2-Dichlorobenzene</u>	<u>30,500</u>	<u>50,000</u>
<u>1,3-Dichlorobenzene</u>	<u>24,200</u>	<u>50,000</u>
<u>1,4-Dichlorobenzene</u>	<u>50,000</u>	<u>50,000</u>
<u>1,1-Dichloroethane</u>	<u>34,600</u>	<u>50,000</u>

<u>Volatile Substance</u>	<u>Residential Volatilization Criteria for Groundwater in <math>\mu\text{g/L}</math> (ppb)</u>	<u>Industrial/Commercial Volatilization Criteria for Groundwater in <math>\mu\text{g/L}</math> (ppb)</u>
<u>1,2-Dichloroethane</u>	<u>21</u>	<u>90</u>
<u>1,1-Dichloroethylene</u>	<u>1</u>	<u>6</u>
<u>1,2-Dichloropropane</u>	<u>14</u>	<u>60</u>
<u>1,3-Dichloropropene</u>	<u>6</u>	<u>25</u>
<u>Ethyl benzene</u>	<u>50,000</u>	<u>50,000</u>
<u>Ethylene dibromide (EDB)</u>	<u>4</u>	<u>16</u>
<u>Methyl-tert-butyl-ether</u>	<u>50,000</u>	<u>50,000</u>
<u>Methyl isobutyl ketone</u>	<u>50,000</u>	<u>50,000</u>
<u>Methylene chloride</u>	<u>50,000</u>	<u>50,000</u>
<u>Styrene</u>	<u>580</u>	<u>2,065</u>
<u>1,1,1,2-Tetrachloroethane</u>	<u>12</u>	<u>50</u>
<u>1,1,2,2-Tetrachloroethane</u>	<u>23</u>	<u>100</u>
<u>Tetrachloroethylene</u>	<u>1,500</u>	<u>3,820</u>
<u>Toluene</u>	<u>23,500</u>	<u>50,000</u>
<u>1,1,1-Trichloroethane</u>	<u>20,400</u>	<u>50,000</u>
<u>1,1,2-Trichloroethane</u>	<u>8,000</u>	<u>19,600</u>
<u>Trichloroethylene</u>	<u>219</u>	<u>540</u>
<u>Vinyl chloride</u>	<u>2</u>	<u>2</u>
<u>Xylenes</u>	<u>21,300</u>	<u>50,000</u>

(2) [On or before twenty-four months after the effective date of this subsection such remediation has been completed.] Compliance with subparagraphs (A) to (D) of this subdivision is required in order to be eligible to use the remediation standards set forth in subdivision (1) of this subsection.

(A) Prior to *{insert the effective date of this subparagraph}*:

(i) Remediation of such volatile organic substances shall have already been initiated or an LEP shall have documented in a Remedial Action Plan submitted to the Commissioner such LEP's determination that no remediation of such substances is required; and

(ii) If required, public notice of such remediation shall have been published, pursuant to subsection (d) of this section or any provision of the Connecticut General Statutes;

(B) On or before *{insert date that is twenty-four months after the effective date of this subparagraph}*, remediation of such volatile organic substances shall have been completed and approved by the commissioner, or completed sufficient to support an LEP's verification, as that term is defined in section 22a-133v-1(dd) of the Regulations of Connecticut State Agencies;

(C) Compliance with all other requirements in the RSRs regarding volatile organic substances in groundwater shall have been achieved; and

(D) Documentation demonstrating compliance with this subsection is submitted to the commissioner by the earliest of the following dates:

- (i) The applicable deadline set forth in section 22a-134a(g)(1)(B) or section 22a-134a(g)(1)(C) of the Connecticut General Statutes;
- (ii) The deadline set forth in any order issued by the commissioner;
- (iii) The deadline set forth in any judgment issued by a court; or
- (iv) *{insert date five years after the effective date of this clause}.*

(3) In the event the requirements of subdivision (2) of this subsection are not complied with, volatile organic substances in groundwater shall be remediated to the standards set forth in section 22a-133k-3 of the RSRs, and not those in subdivision (1) of this subsection.

3. Comment #3 - On page 26, in section 22a-133k-2(c)(2)(B)(i)(I), and throughout the remainder of the proposed regulation, including the appendices, the proposed regulation uses a unit or designator for the subdivision of the section that is not recognized or authorized. The use of designators "(a)" and "(b)" following a subclause designation should not be used because it could create confusion about what is being referred to, since it is only the italicization that distinguishes them from a subsection designator. Accordingly, the division of the text in the proposed should be reorganized or simplified in each such instance to avoid the use of such designators.

Response: DEEP identified the following sections, 6 in all, where italicized designators were used: section 22a-133k-2(c)(2), section 22a-133k-2(c)(5)(A), section 22a-133k-2(f)(2)(C), section 22a-133k-2(h)(3)(C), section 22a-133k-3(c)(1) and (2), and section 22a-133k-3(d)(2). DEEP has revised each of these sections to eliminate the use of the italicized designators noted in the comment. Different approaches to this issue were necessary, due to the differing nature of the sections, and often resulted in changes to other subdivisions, subparagraphs, clauses or subclauses. These revisions also address, or make it unnecessary to address, certain technical comments regarding the italicized designator sections, including technical comments #31, #32, #61 and #67. Each of the sections noted in this response has been revised as follows:

#### **New Language:**

a) Section 22a-133k-2(c)(2) is revised as follows:

(2) [Specific Circumstances] Optional Criteria for Polluted Soil in a GA Area

(A) Polluted [Soils] Soil in [a] any GA Area [.]

[A] Substances in polluted soil in a GA area [that is polluted with a substance which soil is at or above the seasonal low water table, or at or above the seasonal high water table if remediation to the seasonal low water table is not technically practicable or would not result in the permanent elimination of a source of pollution,] may be remediated to [at least that] a concentration [at which] equal to or less than the groundwater protection criteria for such substance based upon the analytical laboratory results of a TCLP or SPLP analysis [of such soil for such substance do not exceed the ground-water protection criterion for such substance].

(B) [Soils Polluted with Volatile Organic Substances] Polluted Soil, Except for Either PCBs or ETPH in [a] Certain GA [area.] Areas

(i) [A] Substances, except for either PCBs or ETPH, in polluted soil in a GA area, [that is

polluted with a volatile organic substance which soil is at or above the seasonal low water table, or at or above the seasonal high water table if remediation to the seasonal low water table is not technically practicable or would not result in the permanent elimination of a source of pollution,] may be remediated to a concentration at which the analytical laboratory results of:

(I) [at least that concentration at which the results of a] TCLP or SPLP analysis [of such soil] for such substance [do not exceed] in soil is equal to or less than ten (10) times the [ground-water protection criterion for such substance multiplied by ten or] groundwater protection criteria;

(II) TCLP or SPLP analysis for such substance in soil is equal to or less than the groundwater protection criteria multiplied by an alternative dilution or dilution and attenuation factor, approved in writing by the commissioner in accordance with subsection (d)(3)(B) of this section;

(III) [the results of a mass] Mass analysis [of such soil] for such substance [do not exceed] in soil, is equal to or less than ten (10) times the applicable pollutant mobility [criterion for such substances multiplied by ten or] criteria in Appendix B of the RSRs or approved in writing by the commissioner in accordance with subsection (c)(6) of this section; or

(IV) Mass analysis for such substance in soil is equal to or less than the applicable pollutant mobility criteria multiplied by an alternative dilution or dilution and attenuation factor approved in writing by the [Commissioner] commissioner in accordance with [subdivision (4) of subsection (d) of this section,] subsection (d)(3)(B) of this section.

(ii) The remediation standards specified in clause (i) of this subparagraph may be used only if conditions at a release area satisfy the requirements of subparagraphs (C) and (D) of this subdivision and the notice requirements of subparagraph (E) of this subdivision are satisfied.

(C) Conditions at a release area shall comply with the following requirements: [provided no non-aqueous phase liquids are]

(i) NAPL is not present [in the subject release area] as determined in accordance with subdivision [(3)](4) of this subsection [,];

(ii) [the] The water table is at least fifteen (15) feet above the surface of the bedrock; and

(iii) [the] The downward vertical flow velocity of groundwater is [not greater] equal to or less than the horizontal flow velocity [, and:];

(D) Conditions at the release area shall satisfy clause (i) or (ii) of this subparagraph.

(i)(I) [(aa) a] A public water supply distribution system is available within [200] two hundred (200) feet of the [subject] parcel on which the release area is located, within two hundred (200) feet of all adjacent parcels, and within two hundred (200) feet of any parcel within the areal extent of the [ground-water] groundwater plume [caused by] from the subject release area [,];

(II) [(bb) the] The groundwater within the areal extent of [such] the [ground-water] groundwater plume from the subject release area is not used for drinking water [,];

(III) [(cc) no] No public or private water supply wells exist within [500] five hundred (500) feet of the subject release area [,]; and

(IV) [(dd) the] The [ground water] groundwater affected by the subject release area is not a potential public water supply resource or in an aquifer protection area; or

(ii) The groundwater plume resulting from the subject release is a diminishing state groundwater plume and either:

(I) [(aa) the] The concentration of any [volatile organic] substance in [a] the [ground-

water] groundwater plume from the subject release area and within seventy-five (75) feet of the nearest downgradient parcel boundary [does not exceed] is equal to or less than the [ground-water protection criterion,] groundwater protection criteria; or

[(bb) except for seasonal variation, the areal extent of volatile organic substances in the ground-water plume not increasing over time and the concentration of any volatile organic substance in the ground-water plume is not increasing, except as a result of natural attenuation, at any point over time and the concentration of any volatile organic substance in the ground-water plume is not increasing, except as a result of natural attenuation, at any point over time and (cc) notice of such condition is provided to the Commissioner on a form furnished by the Commissioner, which notice shall include: a brief description of the release area; a brief description of the distribution and concentration of volatile organic substances in soil and ground water; a map showing the location of the release area, and based on reasonable inquiry all other volatile organic substance release areas in the vicinity of the subject release area, all ground-water and soil monitoring points, and the areal extent of the volatile organic substance ground-water plume; and the results of all laboratory analyses conducted to determine whether the requirements of this subparagraph have been met; or]

(II) [(iii) (aa) the] The concentration of any [volatile organic] substance within [such] the [ground-water] groundwater plume [does not exceed] from the subject release area is equal to or less than the [ground-water protection criterion] groundwater protection criteria for such substance at a location downgradient of the subject release area, on the subject parcel, and within twenty-five (25) feet of such release area [, and (bb) notice of such condition is provided to the Commissioner on a form furnished by the Commissioner, which notice shall include: a brief description of the release area; a brief description of the distribution and concentration of volatile organic substances in soil and ground water; a map showing the location of the release area, and based on reasonable inquiry all other volatile organic substance release areas in the vicinity of the subject release area, and all ground-water and soil monitoring points; and the results of all laboratory analyses conducted to determine whether the requirements of this subparagraph have been met].

(E) Written notice of the use of optional criteria calculated by an LEP under subparagraph (B) of this subdivision shall be submitted to the commissioner in accordance with section 22a-133k-1(g) of the RSRs.

b) Section 22a-133k-2(c)(5)(A) is revised as follows:

[(4)] (5) [Exceptions.] Conditional Exemptions to Pollutant Mobility Criteria

(A) Environmentally Isolated Soil

[The pollutant mobility criteria do not apply to environmentally isolated soil] Polluted soil at a release area above the seasonal high water table is not required to be remediated to the pollutant mobility criteria, provided that:

(i) Such soil does not contain substances that are a continuing source of pollution;

(ii) Regardless of groundwater classification, if such soil contains volatile organic substances in excess of GA area pollutant mobility criteria, the concentrations of such substances have been reduced or immobilized to the maximum extent prudent;

(iii) [an environmental land use restriction] An EUR is in effect [with respect to the parcel, or portion thereof, containing such soil which environmental land use restriction ensures that soil will not be exposed to infiltration of soil water due to, among other things, demolition of the building.] for the subject area, which restriction shall:

(I) Prohibit infiltration of liquid into such soil; and

(II) Require compliance with clause (i) and, if applicable, clause (ii) of this subparagraph; and

(iv) The EUR specified in clause (iii) of this subparagraph shall also:

(I) Require that any building that renders soil environmentally isolated consists of a roof and structural walls that prevent infiltration of liquid into the soil beneath the building footprint, and prohibit removal of such building; or

(II) Require that the use of a permanent structure that renders soil environmentally isolated and prevents infiltration of liquid into the soil beneath the structure's footprint has been approved in writing by the commissioner and prohibit the removal of such structure.

c) Section 22a-133k-2(f)(2)(C) is revised as follows:

[(B)] (C) Commissioner Approval of an Engineered Control Variance

The commissioner may approve or deny in writing a request for a variance under this subsection.

No request shall be approved unless such request demonstrates to the commissioner's satisfaction that the eligibility requirements in subparagraph (A) of this subdivision and the requirements of this subparagraph have been met. A request [to use an engineered control shall be submitted to the Commissioner in writing and] for the commissioner's approval of an engineered control variance shall be submitted in accordance with section 22a-133k-1(g) of the RSRs. Any such request shall [be accompanied by] include a demonstration of compliance with the eligibility requirements of subparagraph (A) of this subdivision and include a detailed written report and plan which [demonstrates] demonstrate that:

(i) Such engineered control is supported by specifications that are signed and sealed by a professional engineer and indicate that such engineered control will function with minimum maintenance, will promote drainage and minimize erosion of or other damage to such control, and will accommodate settling and subsidence of the underlying soil so as to maintain the control's functional integrity;

(ii) Measures are in place to ensure that the structural integrity, function, and effectiveness of the engineered control will be maintained. Such measures shall include, without limitation:

(I) Measures that ensure the continued effectiveness of the engineered control;

(II) Measures to prevent storm run-on or run-off from damaging the engineered control;

(III) Inspections, on a schedule approved by the commissioner. Such inspections may be done in conjunction with and satisfy the inspection requirements in the EUR Regulations; and

(IV) Repairs to correct the effects of any settling, subsidence, erosion or other damaging events or conditions no later than sixty (60) days following identification of damage to the engineered control provided if weather prevents repairs from being made within sixty (60) days of the identification of damage, as long as temporary repairs or measures have been taken, repairs can be made as soon as the weather permits;

(iii) An EUR is or will be in effect for the subject area, which restriction shall:

(I) Prohibit any activity that could disturb either the engineered control or the polluted soil; and

(II) Except for clauses (iv) and (v) of this subparagraph, require compliance with the

requirements of this subparagraph and with all conditions imposed by the commissioner when approving such variance under this subdivision:

(iv) A copy of the required public notice that was posted in accordance with section 22a-133k- 1(d) of the RSRs;

(v) Calculation of the required financial assurance in accordance with section 22a-133k-1(f) of the RSRs;

(vi) The owner of the subject area on which such engineered control will be placed acknowledges and consents to such engineered control; and

(vii) In addition to clauses (i) to (vi), inclusive of this subparagraph:

[(i) (I) [if the] For a variance from direct exposure criteria, such engineered control shall be [is to address exceedances of the direct exposure criteria, the proposed engineered control has been] designed, [and will be] constructed, and will be maintained, to physically isolate polluted soil from human contact with such soil; [or]

[(II) [if the] For a variance from pollutant mobility criteria, such engineered control shall be [is to address exceedances of the pollutant mobility criteria, the proposed engineered control has been] designed, [and will be] constructed, and will be maintained, to minimize migration of liquids through polluted soil and [have] reduce the permeability of such soil to a permeability of less than  $10^{-6}$  cm/sec and groundwater monitoring at the release area shall be adequate to ensure that any substance migrating from the release area will be detected. [or, unless otherwise specified by the Commissioner in writing, to have the permeability specified in a closure plan implemented under sections 22a-209-1 et seq. of the Regulations of Connecticut State Agencies for a release area which is a lawfully authorized solid waste disposal area; and]

[(ii) for all engineered controls, the proposed engineered control has been designed, and will be constructed to function with minimum maintenance, to promote drainage and minimize erosion of or other damage to such control, and to accommodate settling and subsidence of the underlying soil so as to maintain the control's functional integrity;] In addition, if a variance under this subclause includes volatile organic substances, such engineered control shall be designed, constructed, and will be maintained, to ensure that any soil vapor migrating from the subject release area complies with all applicable volatilization criteria in accordance with section 22a-133k-3(c)(3) of the RSRs;

[(iii) plans for ground-water monitoring at the subject release area are adequate to ensure that any substance migrating therefrom will be detected;]

[(iv) plans for maintenance of the subject release area are adequate to ensure that the structural integrity, design permeability, and effectiveness of the engineered control will be maintained; such plans shall include without limitation measures to prevent run-on and run-off of storm water from eroding or otherwise damaging the engineered control and measures to repair such control to correct the effects of any settling, subsidence, erosion or other damaging events or conditions;]

[(v) an environmental land use restriction is or will be in effect with respect to the parcel at which the subject release area is located, which restriction ensures that such parcel will not be used in a manner that could disturb the engineered control or the polluted soil;]

(III) For an engineered control that includes immobilization, including, but not limited to, the immobilization of NAPL, such engineered control shall be designed, constructed, and will be maintained, to reduce the migration of contaminants from the subject area, achieve compliance with groundwater criteria, and reduce the permeability of such soil to a

permeability of less than  $10^{-6}$  cm/sec or if permeability is reduced by immobilization that such permeability of impacted soil is approved in writing by the commissioner and at a minimum is adequate to immobilize contaminants in the soil to achieve compliance with applicable groundwater criteria; and

[(vi)] (IV) [any other information that the Commissioner reasonably deems necessary; and] For an engineered control using paved surfaces or hardscape, the engineered control is based on specifications which demonstrate that the surface and sub-base materials are suitable for the intended use and are able to function with minimal maintenance and repair for fifteen (15) years and which specifications are signed and sealed by a professional engineer.

[(vii)] with respect to any release area subject to any of the requirements of section 22a-209-4(i) or section 22a-449(c)-100 through 110 of the Regulations of Connecticut State Agencies, all such requirements are or will be satisfied. With respect to a release area which is not subject to any such regulations, the owner of the subject parcel shall demonstrate that he or she has posted or will post a surety in a form and amount approved in writing by the Commissioner, which surety during the first year after installation of the engineered control, shall be equal to the cost of one year's maintenance and monitoring of the engineered control, and which in each subsequent year shall be increased in amount by adding an amount equal to the cost of one year's maintenance and monitoring, until the total amount of such surety is equal to the cost of five year's of maintenance and monitoring, which amount shall be maintained in effect for the next twenty-five years or for such other period as may be required by the Commissioner.]

d) Section 22a-133k-2(h)(3)(C) is revised as follows:

(3) Polluted [soil.] Soil

...

(C) [Such soil is not placed in an area subject to erosion; and] Polluted soil from a release area may be reused on a parcel other than the parcel for which the polluted soil was excavated, only if prior to any reuse, the commissioner approves such reuse in writing and such soil to be reused:

(i) Is polluted with substances at concentrations equal to or less than the applicable direct exposure criteria in Appendix A of the RSRs or criteria otherwise approved by the commissioner pursuant to subsection (b)(7) of this section and the applicable pollutant mobility criteria in Appendix B of the RSRs or criteria otherwise approved by the commissioner pursuant to subsection (c)(6) of this section for the location on the parcel where the polluted soil will be relocated;

(ii) Is placed over soil and groundwater which has already been affected by a release of similar substances; and

(iii) Either:

[(D) Any such soil in which the concentration of any substance exceeds the pollutant mobility criteria applicable to a GA area is not placed over soil and ground water which have not been affected by a release at the parcel at which placement is proposed; and]

[(E) For soils polluted with PCB, the Commissioner has issued a written approval in accordance with by section 22a-467 of the General Statutes.]

(I) The cumulative depth of all reused polluted soil from all other parcels does not exceed four (4) feet above the pre-remedial grade; or

(II) The cumulative depth of all reused polluted soil from all other parcels does not

exceed ten (10) feet, provided that a demonstration has been made to the commissioner's satisfaction that the depth greater than four (4) feet is required for redevelopment purposes and all slopes are designed, created, and will be maintained to prevent erosion.

e) Section 22a-133k-3(c)(1) and (2) is revised as follows:

(c) **Volatilization [criteria.] Criteria**

(1) Volatilization Criteria for Groundwater

(A) Residential Volatilization Criteria

[Except as specified in subdivisions (2), (3), (4) and (5) of] Unless otherwise specified in this subsection, [all] each volatile organic substance in groundwater [ground water polluted with a volatile organic substance within 15 feet of the ground surface or a building,] shall be remediated [such that the concentration of each such substance] to a concentration that is equal to or less than [the applicable] the residential volatilization [criterion] criteria for [ground water] groundwater.

[(2)] (B) Industrial/Commercial Volatilization Criteria

[If ground water polluted with a volatile organic substance is below a building used solely for industrial or commercial activity, such ground water shall be remediated such that the concentration of such substance is equal to or less than the applicable] Each volatile organic substance in groundwater may be remediated to a concentration that is equal to or less than the industrial/commercial volatilization [criterion for ground water] criteria for groundwater, provided that the subject area above the groundwater polluted with volatile organic substances:

(i) Is not used for residential activity;

(ii) Has limited access only to those individuals working at or temporarily visiting for industrial/commercial activity; and

(iii) [an environmental land use restriction] An EUR is in effect [with respect to the parcel or portion thereof upon which such building is located] for the subject area or the entire parcel, which restriction [ensures that the parcel or portion thereof will not be used for any residential purpose in the future and that any future use of the parcel or portion thereof is limited to industrial or commercial activity;] shall:

(I) Prohibit residential activity; and

(II) Require compliance with clause (ii) of this subparagraph.

(C) Applicability of Volatilization Criteria

Subdivision (1) of this subsection shall apply to:

(i) Volatile organic substances, other than volatile petroleum substances, within thirty (30) feet or less of the ground surface and within thirty (30) feet or less of the lowest portion of a building under which groundwater is polluted with such substances; and

(ii) Volatile petroleum substances, within ten (10) feet or less of the ground surface and within ten (10) feet or less of the lowest portion of a building under which groundwater is polluted with such substances.

[(3)] (2) Alternative Demonstration of Compliance with Volatilization Criteria for Groundwater

(A) Soil Vapor Below a Building

[Remediation of a] For volatile organic [substance] substances in groundwater, remediation to the volatilization [criterion for ground water shall] criteria specified in subdivision (1) of

this subsection may not be required if the concentration of such [substance] substances in soil vapors below a building is equal to or less than:

(i) [the] The residential volatilization [criterion] criteria for soil vapor; or

(ii) [the] The industrial/commercial volatilization [criterion] criteria for soil vapor, [if] provided that to use such criteria, the requirements of subdivision (1)(B) of this subsection are satisfied. [such building is solely used for industrial or commercial activity and, an environmental land use restriction is in effect with respect to the parcel or portion thereof upon which such building is located, which restriction ensures that the parcel or portion thereof will not be used for any residential purpose in the future and that any future use of the parcel or portion thereof is limited to industrial or commercial activity.]

(B) Concentrations at the Water Table [The requirements of subdivision (1), (2), and (3) of this subsection do not apply if: (i) measures acceptable to the Commissioner have been taken to prevent the migration of such substance into any overlying building, (ii) a program is implemented to maintain and monitor all such measures, and (iii) notice of such measures has been submitted to the Commissioner on a form furnished by him which notice includes (aa) a brief description of the areal extent of the ground-water plume and of the area which exceeds any such volatilization or soil vapor criterion; (bb) a brief description of the method of controlling the migration of such substance into any overlying building; (cc) a plan for the monitoring and maintenance of such control method; and (dd) a map showing all existing buildings, the areal extent of the ground-water plume, and the location of such control method.] For volatile organic substances in groundwater, remediation to the volatilization criteria specified in subdivision (1) of this subsection may not be required if the substances in groundwater exceeding volatilization criteria are not at the water table and all of the laboratory analytical results from sampling the concentration of such substances at the water table, as seasonally demonstrated by groundwater monitoring representative of the uppermost portion of the water column are equal to or less than:

(i) The residential volatilization criteria for groundwater; or

(ii) The industrial/commercial volatilization criteria for groundwater, provided that to use such criteria the requirements of subdivision (1)(B) of this subsection are satisfied.

f) Section 22a-133k-3(d)(2) to (5), inclusive, is revised as follows:

(2) [If prior to any ground-water remediation the maximum concentration of a substance in a ground-water plume in a GA area is equal to or less than the ground-water protection criteria, remediation of ground water to achieve background ground-water concentration is not required, provided that the extent of the ground-water plume is not increasing over time and, except for seasonal variations, the concentration of the subject substance in such ground-water plume is not increasing at any point over time.]

Alternative Groundwater Protection Criteria

With respect to substances in groundwater for which groundwater water protection criteria are specified in Appendix C of the RSRs, or approved by the commissioner pursuant to subsection (i)(1) of this section, alternative groundwater protection criteria may be calculated by an LEP pursuant to subdivision (3) of this subsection or approved in writing by the commissioner pursuant to subdivision (4) or (5) of this subsection.

(3) LEP Calculation of Alternative Groundwater Protection Criteria

(A) For a substance in groundwater located in an area designated on the department's

“Potential Alternative Groundwater Protection Criteria Map” in Appendix I of the RSRs, alternative groundwater protection criteria may be calculated by an LEP, in accordance with subparagraph (B) or (C) of this subdivision, as applicable, provided that:

(i) Written notice of the use of alternative groundwater protection criteria is submitted to the commissioner in accordance with section 22a-133k-1(g) of the RSRs, and any such notice includes:

(I) The alternative groundwater protection criteria calculation in accordance with subparagraph (B) or (C) of this subdivision; and

(II) Documentation demonstrating compliance with the requirements of this subdivision, including, but not limited to, a water supply well receptor survey;

(ii) Any alternative groundwater protection criteria shall not exceed:

(I) One hundred (100) times the groundwater protection criteria specified in Appendix C of the RSRs or approved by the commissioner in accordance with subsection (i)(1) of this section; and

(II) The residential volatilization criteria for groundwater specified in Appendix E of the RSRs or approved by the commissioner in accordance with subsection (i)(3) of this section;

(iii) No public or private drinking water supply well is present on any subject parcel within or adjacent to the areal extent of the portion of the subject groundwater plume in which a substance exceeds the background concentration;

(iv) A public water supply distribution system is available within five hundred (500) feet downgradient and two hundred (200) feet in any direction of the subject groundwater plume;

(v) All releases to soil that constitute a source of pollution resulting in the subject groundwater plume have been remediated so there is no longer an on-going source in soil impacting groundwater;

(vi) No alternative pollutant mobility criteria is used for the same substance for which an alternative groundwater protection criteria is used;

(vii) The subject groundwater plume is a diminishing state groundwater plume; and

(viii) The alternative groundwater protection criteria being calculated is not used for any portion of the subject groundwater plume located in bedrock unless approved by the commissioner in accordance with subdivision (5) of this subsection.

(B) For volatile organic substances, the following equation shall be used to calculate alternative groundwater protection criteria in accordance with this subdivision:

$$\text{Alternative GWPC} = \frac{\text{TAC} \times \text{HV} \times \text{ER} \times \text{MC}}{\text{f} \times \text{WFR}}$$

<u>Terms</u>	<u>Description</u>	<u>Value</u>	<u>Units</u>
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<u>Alternative GWPC</u>	<u>Criteria in groundwater as alternative to groundwater protection criteria</u>	<u>calculated</u>	<u>µg/L</u>
<u>TAC</u>	<u>Target Indoor Air Concentration as approved by the commissioner in accordance with Appendix G of the RSRs</u>	<u>substance-specific</u>	<u>µg/m<sup>3</sup></u>
<u>f</u>	<u>Fraction of substance concentration volatilized</u>	<u>0.5</u>	<u>unitless</u>
<u>HV</u>	<u>House Volume</u>	<u>1,000</u>	<u>m<sup>3</sup></u>
<u>ER</u>	<u>Air exchange rate per day, as a time weighted average</u>	<u>134</u>	<u>times per day</u>
<u>MC</u>	<u>Mixing coefficient</u>	<u>0.33</u>	<u>none</u>
<u>WFR</u>	<u>Water Flow Rate</u>	<u>3,183</u>	<u>L/day</u>

(C) For semi-volatile organic substances, inorganic substances and pesticides, the following equation shall be used to calculate alternative groundwater protection criteria in accordance with this subdivision:

$$\text{Alternative GWPC} = \text{WSF} \times \text{RSC} \times \text{DEC} \times \text{UCF}$$

<u>Terms</u>	<u>Description</u>	<u>Value</u>	<u>Units</u>
<u>Alternative GWPC</u>	<u>Criteria in groundwater as alternative to groundwater protection criteria</u>	<u>calculated</u>	<u>µg/L</u>
<u>WSF</u>	<u>Water to soil concentration factor, based upon accumulation of arsenic in soil</u>	<u>0.02</u>	<u>(mg/L)/ (mg/kg)</u>
<u>RSC</u>	<u>Relative source contribution to account for other background contributions to semi-volatile organic substances in soil</u>	<u>0.2</u>	<u>unitless</u>
<u>DEC</u>	<u>Residential direct exposure criteria in Appendix A of the RSRs or criteria approved by the commissioner pursuant to section 22a-133k-2(b)(7) of the RSRs</u>	<u>substance-specific</u>	<u>mg/kg</u>
<u>UCF</u>	<u>Unit Conversion Factor</u>	<u>1,000</u>	<u>µg/mg</u>

(4) Commissioner Approval of Alternative Groundwater Protection Criteria Not In Mapped Areas

For a substance in groundwater that is not located in an area designated on the department's "Potential Alternative Groundwater Protection Criteria Map" in Appendix I of the RSRs, the commissioner may approve or deny in writing a request for an alternative groundwater protection criteria pursuant to this subparagraph. A request for such alternative groundwater protection criteria shall be submitted to the commissioner in accordance with section 22a-133k-1(g) of the RSRs. No request shall be approved unless such request demonstrates to the commissioner's satisfaction:

(A) Compliance with the requirements of clauses (i) to (viii), inclusive, of subdivision (3)(A) of this subsection;

(B) Calculation of proposed alternative groundwater protection criteria in accordance with subparagraphs (B) and (C) of subdivision (3) of this subsection, as applicable; and

(C) Compliance with clause (i) or (ii) of this subparagraph.

(i) Documentation from a public or private water company subject to regulation by

the Department of Public Health demonstrating that public drinking water is available in the area where the subject groundwater plume is located, including a public water service area map on file with the Department of Public Health indicating that public water is available. This clause can be used only if:

(I) A public water supply distribution system has become available to any parcel within or adjacent to the areal extent of the portion of the groundwater plume not previously included on the department's "Potential Alternative Groundwater Protection Criteria Map" in Appendix I of the RSRs; and

(II) The subject groundwater plume is not located in an aquifer protection area or in an aquifer suitable for development of a public water supply.

(ii) As a result of stratified drift aquifer conditions where the subject groundwater plume is located:

(I) The aquifer is not suitable for development of a public water supply due to the hydrogeology, depth, saturated thickness of the surficial materials or other hydrogeologic factors;

(II) There is less than twenty feet of saturated sand or sand and gravel in such aquifer or pumping more than fifteen gallons per minute from such aquifer is not sustainable for public water use; and

(III) A cross-sectional map is provided showing the nature and distribution of surficial materials in such aquifer.

(5) Commissioner Approval of Alternative Groundwater Protection Criteria Where Any Portion of a Plume Is In Bedrock

For a substance in groundwater that is located in an area designated on the department's "Potential Alternative Groundwater Protection Criteria Map" in Appendix I of the RSRs, and where the portion of the groundwater plume is located in bedrock. A request for such alternative groundwater protection criteria shall be submitted to the commissioner in accordance with section 22a-133k-1(g) of the RSRs. No request shall be approved unless such request includes a map showing the horizontal and vertical extent of the bedrock groundwater plume that exceeds or could be expected to exceed the groundwater protection criteria and demonstrates to the commissioner's satisfaction:

(A) Compliance with the requirements of clauses (i) to (vii), inclusive, of subdivision (3)(A) of this subsection; and

(B) That the groundwater plume that exceeds the groundwater protection criteria will not pose a risk to human health and the environment.

[(3)] [Any ground water in a GB area and which is used for drinking or other domestic purposes shall be remediated to reduce the concentration of each substance therein to a concentration equal to or less than the applicable ground-water protection criterion until such time as the use of such ground water for drinking or other domestic purposes is permanently discontinued.]

4. Comment #4 - On page 38, in section 22a-133k-2(e)(3)(A)(ii), the proposed regulation refers to "the nearest location practicable outside the subject release area". It is unclear who determines what constitutes such a location. This provision should be further clarified.

Response: DEEP has revised section 22a-133k-2(e)(3)(A)(ii) to provide the clarification sought by the comment. This section has been revised as follows:

**New Language:**

(ii) Collected from the nearest location practicable outside the subject release area, as demonstrated to the satisfaction of the commissioner; and

5. Comment #5 - On page 102, in Appendix I, the proposed regulation contains a depiction of a map to be used in connection with potential alternative groundwater protection criteria. However, as contained on page 102, such map contains no legend and it is unclear what the map depicts. The map should contain a legend so that it is clear what the map is intended to indicate.

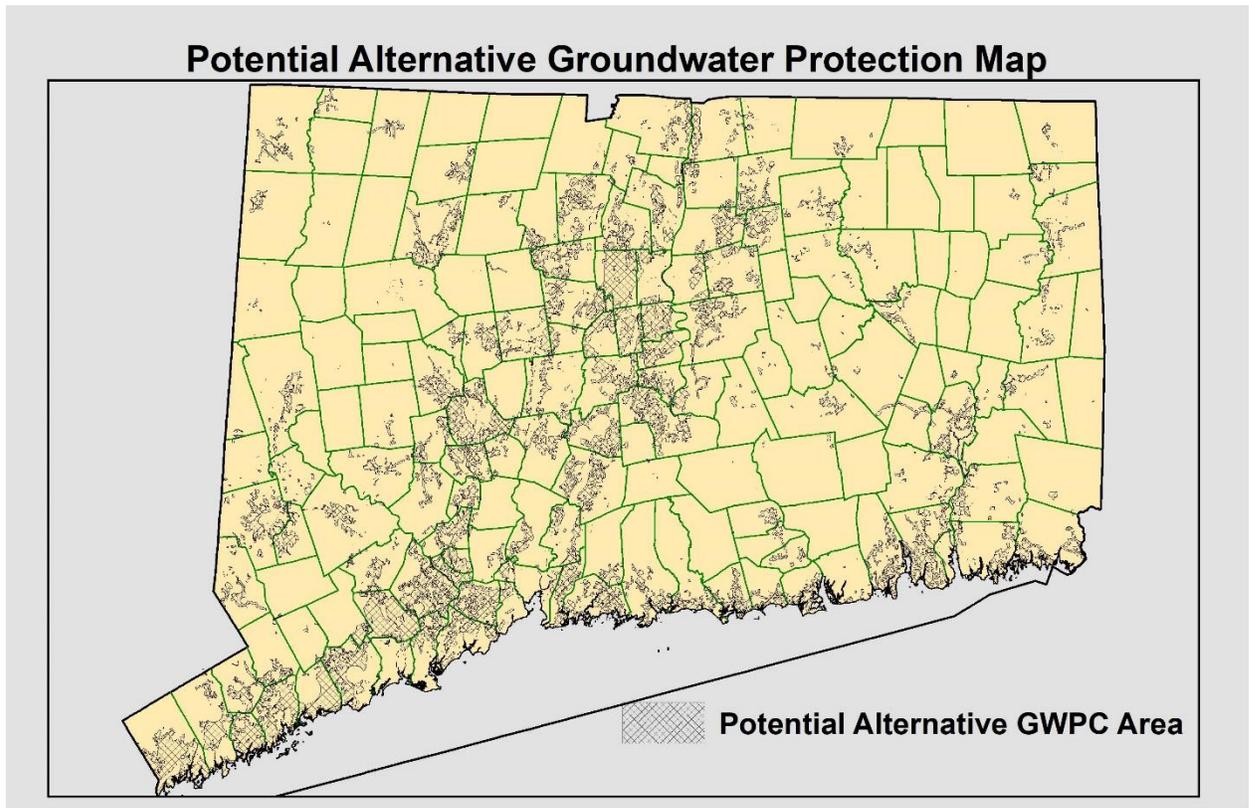
Response: This comment also appeared in LCO's previous, October 27, 2020 comments. The Department responded to this comment by including a legend on the map comprising Appendix I and adding additional text to the language of Appendix I to explain where and how this map is used. Apparently, despite the fact that the map on the Secretary of the State's ("SOTS") eRegs website includes these elements, when this map is transmitted to the Legislative Regulations Review Committee, some elements of this map are lost, in particular, the legend showing the potential alternative groundwater protection areas. DEEP has brought his issue to the attention of the SOTS who was not aware of glitch and could not explain why elements of the map in the eRegs system changed when the map was transmitted to the LRRC.

Unfortunately, resolving this issue is not within DEEP's control. Nevertheless, in the hopes that black and white on the map will remain, DEEP has prepared a new map using cross-hatching instead of color. In addition, DEEP has added additional text to Appendix I.

**New Language:**

Appendix I of the RSRs

Potential Alternative Groundwater Protection Criteria Map, dated December 22, 2020



The map in this Appendix is for use in accordance with 22a-133k-3(d)(2) of the RSRs. The department shall make this map, titled "Potential Groundwater Protection Criteria Map" dated December 22, 2020, as provided in this Appendix, available on the department's Internet website and shall also make such map available during regular business hours at the Department of Energy and Environmental Protection, Division of Water Protection and Land Reuse, 79 Elm Street, 2nd floor, Hartford, Connecticut.

If a reader is viewing said map in hard copy or on the DEEP website, any such area shaded in the color or using a similar designation is an area where a potential alternative groundwater protection area has been identified. If a reader is viewing such map on the eregs system, any area shaded in a cross-hatched pattern is an area where a potential alternative groundwater protection area has been identified.

### **Technical Corrections:**

All technical corrections identified in the LCO report have been made as described in the LCO report, except those corrections identified below:

Response to Selected Technical Comments:

1. Comment #1 - Throughout the proposed regulation, text appears to be covered by the "eRegulations ct.gov logo" and the agency should ensure that the text is part of the final regulation. This issue appears on pages 3, 5, 7, 25, 47, 49, 56, 85, 86, 93 and 94.

Response: Similar to the fifth substantive comment, this is an issue that is unfortunately beyond the control of the Department. The document that the Department uploads into the eregs system does not have the "eRegulations ct.gov logo" noted in this comment and DEEP has no way to control why, where and how this logo appears. DEEP has brought this issue to the attention of the SOTS who noted that it might be a software issue that will require modification to the eregs system.

2. Comment #14 - On page 12, in section 22a-133k-1(d)(4), in the first line, "notice" should be inserted before "requirements", in the first and second lines, "this subsection shall satisfy the notice requirements" should be deleted and in the third line, "shall satisfy the notice requirements of this subsection" should be inserted after "applicable", for clarity.

Response: The comment concerns a provision in the RSRs regarding public comment. The provision in question was put in to make clear that compliance with the regulation would satisfy certain statutory notice requirements. Making the revision noted in the comment would change the meaning of the proposed rule. Instead of compliance with regulation satisfying the notice requirements of certain statutes, making the revision in the comment would make compliance with the public notice requirements of the statute satisfy the public notice requirements of the regulation. Not only is that not the case, this revision runs counter to the Department's intent. Since the Department can clarify elsewhere that compliance with the rule satisfies the public notice requirements of certain statutes, DEEP has deleted section 22a-133k-1(d)(4) and renumbered the remaining provision.

3. Comment #48 - On page 40, in section 22a-133k-2(f)(1)(C)(v), "portions" should be "proportion" and the semicolon should be underlined, to accurately reflect the text of the existing regulation.

Response: DEEP revised this provision, but instead of using the term "proportions" has decided to use the word "percentage" and delete the term "relative." From DEEP's perspective, this change is not only responsive to the comment, but also better reflects the Department's intent. Section 22a-133k-2(f)(1)(C)(v) has been revised as follows:

(C) Commissioner Approval of a Widespread Polluted Fill Variance

[In determining whether to grant or deny such a variance, the Commissioner may consider] The commissioner may approve or deny in writing a request for a variance under this subsection. No request shall be approved unless such request demonstrates to the commissioner's satisfaction the eligibility requirements in subparagraph (A) of this subdivision and the requirements of this subparagraph have been satisfied. A request for such variance shall be submitted to the commissioner in accordance with section 22a-133k-1(g) of the RSRs, and shall also include:

...

(v) [how extensive] The three-dimensional extent of [the polluted] such fill [is, what relative proportion] and the percentage of such fill [occurs] occurring on the subject parcel [,]; and