

**RSR Wave 2 Conceptual Language  
Public Comments  
June 1, 2016**

The Connecticut Department of Energy and Environmental Protection (DEEP) released the RSR Wave 2 Conceptual Language document on April 5, 2016, prior to beginning the formal regulation amendment process. Public feedback was accepted through May 6, 2016. The following document provides a compilation by topic of all written comments received to date. Thank you to everyone who provided comments. They will help improve the formal proposed regulation. Where a party suggested alternative language, the proposed DEEP language remains red and underlined, and the proposed DEEP deleted language remains blue and bracketed. The party's suggested added language is green and underlined, whereas the suggested deleted language is ~~blue, bracketed and strikethrough~~.

**22a-133k-1(a)(NEW#) page 1**

**(Anthropogenic Origin)**

- **Comment:** “Anthropogenic origin” would not apply to coal ash fill and Historically Impacted Material because filling at the property could be construed as an historic activity at the subject parcel. [Matt Hackman]
- **Comment:** “Anthropogenic origin” would appear to preclude aerial deposition of heavy metals and PAHs from a coal-fired power plant in the area, since this could constitute a “single discernable of-site source”. [Matt Hackman]
- **Comment:** The definition of ‘anthropogenic origin’ is incomprehensible. Could you please fix it? Also, it would be confusing to have spills not considered to be of anthropogenic origin. How about ‘non-point source pollution’ as an alternative term? [Jim Morrison]
- **Comment:** After the Wave 2 meeting we came up with a relatively simple solution to address the ambiguity and confusion we believe will be caused by the introduction of the term “anthropogenic origin”, as well as its unintended and deleterious impact on the concept of background. With this suggested approach, we believe that CTDEEP can implement the changes it desires without using or having to problematically define the term “anthropogenic origin”.

All the confusion created by defining “anthropogenic origin” goes away IF we replace that term at 3 specific locations in the proposed RSR revisions with the specific intentions of what is to be exempted under the definition of “Historically impacted materials”. #1 p on p. 8 under the definition of HIM; #2 on page 34 under 22a-133k-2(a) General at (a)(2)(D)(iii) ; and, #3 on page 46 under HIM (i)(aa). Do this and we subsequently can continue to use anthropogenic in the conventional sense without compromising anything else!

Delete the definition of Anthropogenic Origin because it becomes unnecessary. Very ambiguous and counterintuitive with conventional definitions of anthropogenic and origin. [Tim Whiting and Gail Batchelder]

- **Comment:** “Anthropogenic origin” means [the presence of a substance in environmental media due to the migration or deposition of a substance that is not from any single discernible off-site source and] as a result of human activities unrelated to current or historical activities at the subject parcel or of a single discernible off-site event that was the direct result of human activity. Reason: Anthropogenic does not relate to the presence of a substance, only to the activity. The proposed definition of “background” already includes the use of the term “substance”. [Scott Bristol]
- **Comment** The definition is unclear. Suggest the following modified definition: “Anthropogenic origin means the presence of a substance in environmental media due to the migration or deposition of a substance that is not from any single discernible off-site source and is of human origin. [as a result of human activities unrelated to current or historical activities at the subject parcel.]” [EPOC]
- **Comment:** How is fill that has come from a single off site source defined? Under this definition, that fill is not from “anthropogenic origin”. However later (page 8) the definition of historically impacted fill allows for fill associated with anthropogenic origins... maybe needs some clarification? [Rick Standish]
- **Comment:** The definition is unclear as written and seems to conflict with the new definition of background concentration. How could a substance of anthropogenic origin be deposited at a site without it being related to a current or historical activity at the subject parcel? Suggest rewording definition of Anthropogenic Origin as follows: “Anthropogenic origin” means the presence of a substance in environmental media due to the migration or deposition of a substance that is not from any single discernible off-site source and as a result of human activities unrelated to a release due to current or historical activities at the subject parcel. [TRC]
- **Comment:** The definition of “Anthropogenic origin” is confusing and possibly conveys meaning not intended by the DEEP. Please consider simplifying definitions for clarity so they are consistent with conventional connotations, and so they minimize the use of exclusions/negatives, and double negatives. This will reduce the potential for confusion and unintended consequences. For example, “anthropogenic” can be defined as “caused or produced by humans”, and “origin” can be defined as “from or derived from, either directly or indirectly”. See also “background concentration”. [Evan Glass]
- **Comment:** Historical activities at a parcel could have resulted in the presence of substances in environmental media. It is suggested that the definition be revised to say unrelated to any current or historical discernible source whether from on-site or off site as follows:  
  
”Anthropogenic origin” means the presence of a substance in environmental media due to the migration or deposition of a substance as a result of human activities that is not from any single discernible [off-site] source and [as a result of human activities] unrelated to [a-from] current or historical activities at the subject parcel. [AECOM]
- **Comment:** Either the language or the intent is unclear. It would seem that the term should be applicable to off-site sources that may or may not be known or discernible. It would also seem that historical activities of unknown timing or origin should be included. If the intent is to restrict this definition to sources such as atmospheric deposition or flooding, the language should be more explicit. There does not seem to be any reason in subsequent references to this term, that the limitation for atmospheric deposition or flooding would be necessary. [HRP]

- **Comment:** Just defining the term "anthropogenic" would be preferable, since the currently proposed language is somewhat confusing and unclear. Could the language be changed to "influence" as opposed to "origin"? It may fit the intent better. An alternative would be to eliminate the definition of "anthropogenic origin", leaving the word "anthropogenic" as it is commonly defined, use the word "influence" when appropriate, and specifically identify the nature of the material to which the word "anthropogenic origin" is intended to refer. [HRP]
- **Comment proposed definition of historically impacted material:** The proposed definition appears to require clarification if the Department did not intend to include typical materials present in urban fill, such as ceramic, glass, brick, cement, or wood fragments related to building materials. "Substances associated with anthropogenic origins" certainly could include those materials, but that phrase does not convey a message that such constituents as mercury, lead, or PAHs present as a result of atmospheric deposition are the only types of "substances associated with anthropogenic origin" that were intended. Would changing the language to "anthropogenic influences" instead of "anthropogenic origins" and identifying atmospheric deposition specifically be more appropriate (as noted in previous comments 1 and 2)? [HRP]

## 22a-133k-1(a)(NEW#) page 2

## (Application of Pesticides)

- **Comment:** “Application of pesticides” means, in the context of 22a-133k-1 through 22a-133k-3, the spraying, spreading, injection, placement or other intentional usage ~~[controlled releases]~~ of pesticides to the environment for the pesticide’s intended purpose, excluding releases related to handling, mixing, storage, spilling, leaking or disposal, or equipment cleaning or repair. Reason: to avoid the use of the word “releases” in a manner that would seemingly conflict with the intent of other sections of regulations and statutes. [Scott Bristol]

## 22a-133k-1(a)(NEW#) page 2, page 6, page 17 (APH, EPH, VPH)

- **Comment:** It looks like definitions for VPH, EPH, and APH were included to make it clear that they require compliance with the RSRs. But the definition for VPH/EPH/APH is ‘the analytical results obtained using the...method’, which seems to exclude them from being substances. A substance is an ‘element, compound, or material.’ I think this definition worked for ETPH because ETPH had default criteria in the RSRs. If there are not default criteria for VPH/EPH/APH, and if these are methods (not substances), do they require a compliance demonstration? I think the definitions of VPH/EPH/APH or the definition of a substance should be re-worked to make this clearer. [Jim Morrison]

## 22a-133k-1(a)(5) page 2

## (Background)

- **Comment:** Strike "or nearby" to avoid contradiction with the off-site anthropogenic component of “Background concentration” listed in the last sentence.  
  
“Background concentration” means the site-specific concentration of a substance in environmental media that would be expected to exist in the absence of any release due to current or historical site-related ~~[or nearby]~~ activities. A background concentration may result from a combination of naturally occurring conditions and anthropogenic origins. [EPOC]
- **Comment:** “Background concentration” means the site-specific concentration of a substance in environmental media that would be expected to exist in the absence of any release. [~~due to current or~~

~~historical site related or nearby activities~~. A background concentration may result from a combination of naturally occurring conditions and anthropogenic ~~origins~~ influences.

Historical site related or nearby activities is unnecessary, keep it simple and fundamental to avoid confusion. OK to use “anthro influences”; it is consistent with conventional definition of anthropogenic. [Tim Whiting and Gail Batchelder]

- **Comment:** The definition of “background concentration” is confusing, and perhaps too nuanced and vague in its exclusion of substances from current or historical site activities, and exclusion of substances from “nearby” activities. Please consider:

Defining “natural background” and “anthropogenic background”

Explicitly not requiring remediation for natural background concentrations

Defining and drawing a distinction between anthropogenic releases from:

1. “Site operations and activities”,
2. “Historically Impacted Material” (newly defined by Wave 2, with a proposed modification – see below),
3. “Substances related to “General Construction and Site Maintenance” and
4. “Releases from Off-site Parcels”.

- “Site operations and activities” could include such items as on-site operation of USTs and ASTs, and on-site manufacturing (i.e., everything not in the next three categories). Releases from “Site operations and activities” would be required to be remediated (e.g., by the property owner, certifying party and/or other responsible party).
- “Historically Impacted Materials” (HIMs) could include activities such as historical filling (“polluted fill”), atmospheric fallout (e.g., lead in soil adjacent to roadways) and historical legal pesticides applications. Although in the same general category, these different varieties of HIMs could have differing remedial requirements from each other.
- “Substances related to General Construction and Site Maintenance”, such as those associated with telephone pole and other treated wood preservatives, and clean fill (i.e., containing asphalt, concrete and/or brick, etc.) used as pavement sub-base. Please consider in-place “Substances Related to General Construction and Site Maintenance” as part of the “built environment” that does not appear to warrant DEEP regulation at the present time. There should be restrictions to prevent such materials from being inappropriately utilized in manners not consistent with their current usage (e.g., dug up and moved to the found surface at another site).
- “Point source releases from off-site parcels” would include groundwater plumes, NAPL and soil contamination determined to be from an off-site (often adjacent) parcel. It seems fair that remediation of such releases would be the responsibility (under a new law, that covers more than transfer act sites) of the entities responsible for the off-site parcels where the releases originated. [Evan Glass]

- **Comment:** The exclusion of a release due to “nearby activities” is vague and does not make sense. For example, an historical release from a nearby, adjacent property or a nearby upstream source could be excluded as background under this definition. Suggest removing “or nearby” from the definition, as follows:

“Background concentration” means the site-specific concentration of a substance in environmental media that would be expected to exist in the absence of any release due to current or historical site related ~~for nearby~~ activities. A background concentration may result from a combination of naturally occurring conditions and anthropogenic origins. [AECOM]

- **Comment:** problematic language -- primarily because it uses the word "nearby" without providing any indication of what "nearby" means. Furthermore, the wording should be "... due to naturally occurring conditions or due to current or historical site-related...". Mentioning naturally occurring conditions in the next sentence is not sufficient, as that just demonstrates that both naturally occurring and anthropogenic influences can co-exist. The first sentence must also acknowledge "naturally occurring concentrations" since it is the actual definition of the term "background concentrations". [HRP]
- **Comment:** The changes to the RSRs that the Remediation Division is proposing will not protect human health, will not protect the water resources of the State and is in violation of the Water Quality Standards, the Water Pollution Control Act, and even the enabling legislation under which the RSRs were adopted.

The revisions would mean that contamination at levels that pose a significant risk to public health and the environment could simply be considered “background” for which no remediation would be required.

In the Proposed Conceptual Language for the next revision of the RSRs, the Remediation Division has proposed to change the definition of background so that soil on a site that is contaminated, even at concentrations that pose a risk to human health and the environment, would not require remediation unless it can be shown that the contamination is caused by site-related activities.

The proposed conceptual language is:

*“Anthropogenic origin” means the presence of a substance in environmental media due to the migration or deposition of a substance that is not from any single discernable off-site source and as a result of human activities unrelated to current or historical activities at the subject parcel.”*

*“Background concentration” means the site-specific concentration of a substance that would be expected to exist in the absence of any release due to current or historical site-related or nearby activities. A background concentration may result from a combination of naturally occurring conditions and anthropogenic origins.*

Consider that the Remediation Division previously released a discussion paper that asserted that contamination unrelated to “operations at a site” could contain contaminants at such high levels that the soil would be considered hazardous or would constitute a Significant Environmental Hazard as defined in Conn. Gen. Stats. § 22a-6u. Any reasonable person would construe that “unrelated to operations at a site” is the same as “unrelated to on-site activities” and therefore would be considered by the Department as “Background”. Since the regulations would not require cleanup of background, it would seem that the Department intends that such gross contamination could remain on a site after cleanup.

These definitions are fundamentally at odds not only with the Water Quality Standards but also with the legislature’s intent in enacting the Connecticut Water Pollution Control Act, Conn. Gen. Stats. § 22a-416 - § 22a-484 and the liability scheme established by the water pollution control laws.

Under section 22a-432 of the Water Pollution Control Act, any person who is maintaining a source of pollution to the waters of the state, including simple ownership of a property with soil contamination, is liable to investigate and remediate such potential source of pollution regardless of how such potential source of contamination was created and without regard to fault. There have been numerous appeals to the Superior Court regarding this issue and, the courts, including the Connecticut Supreme Court in *Susan Starr v. Commissioner of Environmental Protection*, 226 Conn. 358, 382 (1993), have consistently upheld the Commissioner's authority to require a property owner or a certifying party to remediate a source of pollution without regard to whether that person had any role in creating the contamination and without regard to how the soil pollution came to be located on that persons property. If the commissioner adopted the proposed language as regulation, that authority would be completely undermined.

Also, with the assistance of the Office of the Attorney General, the Department has created a body of case law that expanded liability for maintaining a source of pollution to include personal liability of corporate officers and members of limited liability companies who take no action to remediate pollution. See, for example, the Supreme Court and Appellate Court decisions in *BEC Corp. v. Dept. of Environmental Protection*, 256 Conn. 602 (2001) and *Vorlon Holding, LLC v. Commissioner of Energy and Environmental Protection*, 161 Conn. App. 837 (2015).

If the Commissioner adopted these definitions, all of the above efforts of the Department and the Office of the Attorney General would also be undermined.

The Department would be unable to enforce the cleanup requirements even if it disagreed with a property owner's or a Licensed Environmental Professionals opinion that soil pollution was unrelated to on-site activities.

The proposed language is, at a minimum, unclear. What is included in "site related activities"? Would VOCs on a parcel that had only been used for sand and gravel extraction be considered background? Would midnight dumping of solvents by unknown parties be considered site-related? Would the placement of foundry slag on a site that had nothing to do with the foundry be considered unrelated to current or historical activities at the parcel? What about industrial waste that was used to fill a commercial property that was never used for industrial purposes?

If an LEP concludes that the contamination on a site is not related to on-site activities but the Agency disagrees, it would be the Department's burden to prove that contamination was related to a specific on-site activity – a difficult if not impossible task given the ambiguity of the proposed regulations and the inability to identify all past site related activities. This is in stark contrast to the current strict liability scheme in which the Department only has to show that soil pollution exists without regard to what activities resulted in the presence of soil pollution.

If the Commissioner adopts these definition, then the responsibility for cleaning up "Background" contamination would be transferred to the State.

The taxpayers of Connecticut are not more responsible for the cleanup of contamination that poses a risk to human health than the property owner who is maintaining a potential source of pollution or the certifying party under the Property Transfer Act who certified that they would remediate pollution resulting from any release on an establishment. However, of greater concern is the potential that the State wouldn't act on its responsibility. In fact, an Assistant Director of the Remediation Division stated that it would be unlikely that the State would cleanup contamination from "anthropogenic sources.

If the Commissioner adopts these definitions, then the RSRs would not meet the requirements of Conn. Gen. Stats. § 22a-133k, the enabling statute under which the RSRs are adopted.

That statute requires the Commissioner to adopt regulations that fully protect human health and the environment. Clearly a regulation that would not require the cleanup of Significant Environmental hazards would fail that legislative objective. The Attorney General should not consider the proposed revision to the RSRs as authorized by the enabling statute.

For all the above reasons, the Department should withdraw the proposed conceptual language regarding “anthropogenic origins” and “background”. The current regulations reflect the liability scheme established in the Water Pollution Control Act, the hazardous waste laws, and all other authorities that the Commissioner has to effect remediation of a site, as well the body of case law and case law that support those authorities. [Elsie Patton]

### 22a-133k-1(a)(NEW#) page 3

### (Building)

- **Comment:** How would this definition (along with the new definition for “Potentially Occupied Structure”) work with a facility that has areas that have slabs in some areas, but other areas that do not? Some older structures may have several basement areas, sometimes without slabs while slabs are located in other areas in the facility. [Chris Koelle]
- **Comment:** “Building” means any structure enclosed by a roof, structural walls, and building slab(s), which prevents infiltration of precipitation into the [polluted] soil beneath the building footprint and prevents human contact with such [polluted] soil. Reason: A structure does not need to be underlain by polluted soil to be considered a “building”. Vapors could migrate into a building even though it is not underlain by polluted soil. [Scott Bristol]
- **Comment:** The use of the term “slab” in the definition seems to imply a concrete slab, which would preclude many structures which are buildings from being defined as buildings. The definition should be broadened to allow for buildings that may be constructed with other flooring material that both prevents infiltration (in combination with the roof which is included as part of the definition) and direct contact with the underlying soil. [TRC]
- **Comment:** By defining the term "building", one issue is resolved, but by using the term "permanent structure" with no accompanying definition, it would seem that another is created. The value of not defining the term is that there could be more flexibility in what constitutes a permanent structure, but the same was essentially true for the word "building". Therefore, it would seem that a definition of "permanent structure" would be appropriate. [HRP]

### 22a-133k-1(a)(NEW#)

### (Demarcation layer)

- **Comment:** A demarcation layer need not be puncture resistant. For example, orange snow fence is often used as a demarcation layer and has, by design, holes in it. Suggest “Demarcation layer” means a brightly colored, [puncture resistant] environmentally stable marker layer ... [EPOC]
- **Comment:** As some materials commonly used as demarcation layers have holes by design (e.g., snow fencing) and as the purpose of the demarcation layer is simply to warn of underlying impacted soils

and is not to render the soils themselves inaccessible, it seems potentially contradictory to include the words “puncture resistant” in this definition. [TRC]

- **Comment:** A demarcation layer can serve a separate purpose from a separation barrier or geotextile cap. Demarcation layers serve as a visual cue, not as a physical barrier. Suggest striking “puncture-resistant” from the definition of a demarcation layer and incorporating a requirement for a puncture-resistance elsewhere in the regulations where a physical barrier is required. It is suggested that “puncture-resistant” be struck from the definition, as follows:

“Demarcation layer” means a brightly-colored, ~~[puncture-resistant]~~ environmentally stable marker layer installed at an appropriate depth, suitable to warn of the presence of contaminated material beneath the layer. [AECOM]

- **Comment:** How is "puncture-resistant" defined? Puncture-resistant to organisms or a backhoe? There should be a minimum standard. Also, to account for demarcation layers on sidewalls, the words "or adjacent to" should be added between "beneath" and "the" in the last sentence. [HRP]

## 22a-133k-1(a)(NEW#) page 4

## (Diminishing Plume)

- **Comment:** Consider this change to the definition of “Diminishing State Groundwater Plume”: a plume in which the concentrations decrease over time, allowing for seasonal variation; ~~[in which the breakdown components are not expected to exceed applicable criteria in the future; and where there is no migration or expansion in any direction at concentrations exceeding applicable criteria,]~~ as determined by three-dimensional and seasonal characterization of the groundwater plume.

Then add the deleted parts of the definition to the relevant MNA section. Whether a plume is in diminishing state or not shouldn’t really depend on the criteria. [EPOC]

- **Comment:** this definition seems confusing in that it addresses “concentrations” then “breakdown components” and then “concentrations” again. What about the case where breakdown components are increasing over time but below criteria? Can you have a diminishing state groundwater plume with current concentrations above criteria and yet comply with the other requirements? [Rick Standish]
- **Comment:** The definition of “Diminishing State Groundwater Plume” seems to disregard the notion of plumes in which steady state concentrations have been reached (degradation, etc. has become asymptotic). In the context of where this term is used in the proposed regulations, this seems too restrictive and should include, as the current language does, a provision for concentrations that are not increasing over time. [TRC]
- **Comment:** Migration of dissolved solutes occurs in steady-state and diminishing-state plumes, despite attenuation processes that prevent plume expansion in such instances. Suggest striking “migration or” from the definition.

“Diminishing state groundwater plume” means a plume in which the concentrations decrease over time, allowing for seasonal variation; in which the breakdown components are not expected to exceed applicable criteria in the future; and where there is no ~~[migration or]~~ expansion in any direction at concentrations exceeding applicable criteria, as determined by three-dimensional and seasonal characterization of the groundwater plume. [AECOM]

- **Comment:** The Groundwater Compliance Monitoring Fact Sheet will need to be revised, since the term "diminishing state groundwater plume" is not currently included. [HRP]

## 22a-133k-1(a)(16) page 5

## (Engineered Control)

- **Comment:** This definition does not clarify the issue of what an engineered control is. The definition of environmentally isolated soil says that soil is environmentally isolated if it is beneath an engineered control and the definition of engineered control says that it is soil that is environmentally isolated. It is a circular argument sufficient to make my head spin.

Linking the definition of an engineered control to soil that is environmentally isolated (i.e. under a building) or inaccessible (more than 2 feet below pavement or 4 feet below unpaved areas) didn't make sense in the first place.

I understand that the Department wanted to add a specific requirement to remediate VOCs beneath a cap to the maximum extent prudent because of concern that the VOCs might migrate laterally beyond the cap and potentially migrate into a building at a concentration that would pose a risk to human health. In one circumstance the Department indicated that even a building hundreds of feet away might be at risk. However, I am unaware of any site where such lateral migration has been shown to occur. Further, I can't come up with a conceptual model that would support such a concern to any significant degree. Soil vapor under a cap is not under some pressure gradient that would force the VOCs sideways. Although diffusion of the VOCs at the edge of the cap may cause some migration, such a process is so slow that it would be hard to even measure it. Even if there were horizontal migration, when the soil vapor migrated beyond the cap, there would be a gradient caused by atmospheric pressure that would cause the vapor to migrate upward and dissipate to the atmosphere. I can't think of a mechanism that would allow the continued horizontal migration. It is for this reason that you can't demonstrate compliance with the soil vapor criteria using samples collected outside a building.

The only circumstance that I can think of that would result in horizontal migration of vapors that would pose a risk to air quality in a building is where the cap is actually tied into the building and the pressure gradients created by the heating of the building might draw VOCs laterally where it could migrate into the building. In most cases, such a building would require a sub-slab depressurization system or other mitigation measures anyway. But in the odd circumstance that vapor mitigation was not otherwise required, the Department has all the authority it needs in the existing regulation to require a vapor mitigation plan necessary to protect public health.

I recommend that the Department define an engineered control as a barrier or cap that prevents the migration of water through polluted soil above the water table and prevents human exposure to polluted soil that was the stated purpose of an EC in the original regulations. Keep the concept of environmentally isolated, which does not require any long term actions to maintain or monitor, separate from the concept of an engineered control that does require long term maintenance and monitoring.

I also recommend that to truly protect human health from volatilization risks, the most important changes to the Regs the Department could make would be to update the criteria – not fuss around with VOCs under a cap. [Elsie Patton]

## 22a-133k-1(a)(18) page 5

## (Environmentally Isolated)

- **Correction:** Delete “either” after volatile organic substance. [Chris Koelle]
- **Comment:** "Environmentally isolated soil" means inaccessible soil above the seasonal high water table that is not a continuing source of pollution to other soil, groundwater, surface water and/or indoor air as a result of being located beneath a building or other engineered control. Reason: to simplify the definition without changing the meaning or intent. [Scott Bristol]
- **Comment:** Third bullet of Concept: The concept presumes that VOCs in soils above PMC pose a vapor intrusion issue. This is frequently not the case. Please clarify that if VOCs are present above PMC, the potential for vapor migration must be considered and taken into account if needed for the engineered control.

Either as part of (B)(ii) or as another option, indicate an acceptable "or" would be VOCs present at concentrations that do not exceed applicable soil vapor volatilization criteria at the base of the engineered control. [EPOC]

- **Comment:** The clause “not a continuing source of pollution” in the revised definition is confusing and unnecessary. Presumably, environmentally isolated soil could be a continuing source of contamination if not isolated. Where impacted soil is a continuing source, the portion above the water table is not likely the cause, but the portion below the water table, which by definition is not environmentally isolated and is not subject to the Pollutant Mobility Criteria, would be the continuing source. If such soil is a continuing source, the need to achieve compliance with RSR groundwater contamination will drive remediation. Therefore it is suggested that the definition be revised as follows:

(18) "Environmentally isolated soil" means [polluted] soil above the seasonal high water table [that is not a continuing source of pollution and] that is [which]: [AECOM]

## 22a-133k-1(a)(NEW#) page 7

## (EUR)

- **Comment:** This terminology is readily confused with Environmental Land Use Restriction. Suggest deleting this definition and specifying Environmental Land Use Restriction and Notice of Activity and Use Limitation separately, as appropriate, elsewhere in the regulations. [AECOM]

## 22a-133k-1(a)(NEW#) page 8

## (Historically Impacted Materials)

- **Comment:** Be specific and you can strike anthro origin and replace it with exactly what DEEP has in mind! i.e., atmospheric deposition of Hg and Pb, or brick, ceramics, wire etc. The meaning of the phrase (and intent of) “substances associated with anthropogenic origins” is entirely unclear and ambiguous. [Tim Whiting and Gail Batchelder]
- **Comment:** The department has stated that the definition of historically impacted material closely tracks the current definition of “polluted fill”. However “historically impacted material” is substantially different. Polluted fill as currently defined is soil that has contaminants in it when placed on a site as fill. The polluted fill exemption from the pollutant mobility criteria is only for the contaminants in soil prior to its use fill that are present only because of wood, wood ash, coal

fragments, coal ash, or asphalt paving fragments. This exemption applies only the soil that was placed on the ground to change the grade of a site - it does not apply to the material (coal ash etc) itself. . The exemption was adopted because polluted fill that contains contaminants associated with the above materials generally do not leach into groundwater. If effect, the exemption applies to soil that we are confident would meet the PMC anyway and saves the responsible party from the added cost to prove something that we can assume to be true.

The very name of the proposed definition "... Impacted Material" which means "fill or soil" ... implies that the exemption could apply to the actual materials listed above with the addition of, coal slag and clinkers, (otherwise why distinguish between fill and soil). These materials are generally solid waste which may, in fact, cause groundwater contamination. Certainly coal ash landfills are known to have polluted groundwater, and asphalt fragments, when ground up and used as fill are also known to pollute groundwater. Even land-clearing debris is known to have caused groundwater pollution.

I also recommend that the Department delete "coal slag". How would a person distinguish between coal slag and other types of slag such as foundry slag which could in fact cause groundwater contamination? That is an uncertainty that should be avoided.

In addition the term "impacted" is being used, I assume, as a euphemism for "polluted". Since the fundamental liability scheme is to address "pollution" or a "potential source of pollution", the Department should use those terms, not the term "impacted". I understand that many parties responsible to abate pollution would rather use the term "impacted" to imply something more benign than 'pollution'. But the term "impacted" isn't defined and most people would assume that there is a difference between "impacted" and "polluted".

I recommend that the department delete the definition of "Historically Impact Material". [Elsie Patton]

## **22a-133k-1(a)(NEW#) page 8**

## **(Immobilization)**

- **Comment:** The word "soil" at the end of the sentence might be better if changed to "fill or soil" to address the possibility that there could be an ash layer that might be able to be immobilized or Historically Impacted Materials. [HRP]

## **22a-133k-1(a)(32) page 9**

## **(Inaccessible Soil)**

- **Comment:** The term "permanent structure" is not defined. Should it be defined to eliminate any confusion and provide a guideline as to suitable examples of a permanent structure? [HRP]

## **22a-133k-1(a)(NEW#) page 11**

## **(MNA)**

- **Comment:** The concept of "reasonable timeframe" should be fleshed out more, or have some parameters associated with it, in the RSRs to avoid ambiguity. Maybe at least an absolute maximum number of years? The alternative is that DEEP should finalize a guidance document with respect to MNA. [Chris Koelle]
- **Comment:** "Monitored Natural Attenuation" means monitoring the natural attenuation of a diminishing state plume that occurs within a reasonable timeframe from completion of [source\_area remediation] site investigation activities. Reason: Source area remediation may not be necessary to comply with soil standards. [Scott Bristol]

- **Comment:** Source area remediation should not be part of the definition of monitored natural attenuation. Recommend that definition of MNA be shortened to:

"Monitored Natural Attenuation" means monitoring the natural attenuation of a diminishing state plume [that occurs within a reasonable timeframe from completion of source area remediation].  
[EPOC]

- **Comment:** The proposed definition for "Monitored Natural Attenuation" raised a few questions that should be addressed. 1) Why would the concept only apply if remediation of the source area occurred (... "from completion of source area remediation")? What about natural attenuation that may be a remedial approach if remediating the source area would not be prudent or possible or for situations in which a source area cannot be clearly identified. MNA should be considered as a viable remedial approach in those types of situations. 2) What is a reasonable time-frame? When would it start -- from submittal of RAP? If it is not considered desirable to commit to a specific "reasonable time-frame" in regulation, it will be necessary to provide guidance on the subject before the regulations are promulgated. 3) How would the language in this section affect the time-frame allowed to achieve compliance? [HRP]

## 22a-133k-1(a)(NEW#) page 12

## (Petroleum Substance)

- **Comment:** Why is the definition limited to fuels and additives? Other petroleum types should also be added to the definition, such as lubricating oils, Stoddard solvent, motor oils, and possibly waste oils. [Chris Koelle]
- **Comment:** Use language from other sections of various regulations (for example – 22a-449(d)-1) Reason: consistency with other regulatory language [Scott Bristol]
- **Comment:** Within the proposed language, #2 fuel oil is notably absent. Suggest adding #2 fuel oil - or any fuel oil that can migrate at ambient conditions. [EPOC]
- **Comment:** It doesn't appear that heating oil or hydraulic oil are included? [Rick Standish]
- **Comment:** The term "fuel oil" should be added to this list, and the word "fuel" should be added after diesel or use the term "#2 oil" or something similar to cover both fuel oil and diesel fuel. Also, other petroleum products, such as motor oil and petroleum-based cutting oils should be included. In order to keep the list general, adding language that says "including, but not limited to" or something to that effect should be considered. [HRP]

## 22a-133k-1(a)(NEW#) page 13

## (Potentially Occupied Structure)

- **Comment:** Occupied should have duration associated with it or clarified further as to the parameters that comprise the definition of occupied. As an extreme example, would a structure occupied 8 hours out of an entire year fall under this definition? The definition for this term, as written, is too vague. [Chris Koelle]
- **Comment:** Please clarify the definition so as to make clear the types of structures that are intended to be included (e.g., barns, garages, sheds, tents, etc.), and the types and lengths of occupancy intended to be included (e.g., occupancy by humans only? Occupancy ever/once?). There is "*potential*" for

almost anything, and anything "may" occur, so using these words in this context in the RSRs is likely to lead to varying interpretations and unintended consequences. [EPOC]

- **Comment:** Where do sheds or detached garages fall in this definition? (They could be potentially occupied.) [Rick Standish]
- **Comment:** Where possible, I suggest using defined terms and definitions that are in common usage under different, related bodies of law, such as zoning, wetlands and building codes. In this case, the concept of potentially occupied structures has been addressed in real estate laws, zoning ordinances and building codes, whose definitions are familiar to and well understood by the regulated community. Examples include:

Building - any structure having a roof supported by columns or walls and intended for the shelter, housing or enclosure of persons, animals or personal property.

Structure - anything constructed whether or not the resulting structure is raised above ground. It may be constructed of natural or artificial material. Structures shall include, without limitation, swimming pools, tennis courts and garages. [such structures are not necessarily relevant to the RSRs but I am including this definition for reference.] [Anne Peters & Pamela Elkow]

- **Comment:** Please clarify this definition. [TRC]

## **22a-133k-1(a)(54) page 13**

### **(Prudent)**

- **Comment:** "Prudent" means reasonable, after taking into consideration cost and timeframe for the remedy to achieve compliance or significant reduction of risk, in light of the social and environmental benefits. "Timeframe for remedy" is subjective; linking "Prudent" to the elimination of exposure pathways rather than an arbitrary "time" value may be more appropriate. In this way, the distinction between use and non-use (GA and GB) waters can be recognized. [Mike Cote]
- **Comment:** Replace "social" with "societal" [Scott Bristol]

## **22a-133k-1(a)(58) page 15**

### **(Residential)**

- **Comment:** The term "outdoor recreational area", which is included as a residential activity, should be defined. For instance, does a 200-acre open space forested area with hiking trails fall under this definition? [EPOC]

## **22a-133k-1(b) page 18**

### **(Applicability - Release Areas)**

- **Comment:** Please change the second "based on" to "including", so as not to seem to elevate the SCGD to a status above that of other prevailing standards and guidelines. [EPOC]
- **Comment 1(b)(2):** The specific inclusion of the Site Characterization Guidance Document (SCGD) into the RSRs under Applicability section 1(b)(2) incorporates a document into the regulations as regulation where the document itself has not undergone the regulatory adoption process. Suggest striking specific reference to the SCGD in this section as follows:

(2) Actions conducted in fulfillment of the requirements of section 22a-133k-1 through 22a-133k-3, inclusive, of the Regulations of Connecticut State Agencies shall be based on appropriate characterization of a release completed in accordance with prevailing standards and guidelines [based on, but not limited to, the State of Connecticut, Department of Energy and Environmental Protection “Site Characterization Guidance Document”, as amended and approved by the Commissioner].  
[AECOM]

## 22a-133k-1(c)(NEW#) page 19 (Reasonable Confidence Protocols)

- **Comment:** The reporting limit requirements should recognize that reporting limits should not be greater than criteria for constituents of concern. As an example, VOC analysis by EPA method 8260 cannot achieve groundwater protection criteria for certain substances (e.g., 1,2 dibromoethane, as recognized by the Reasonable Confidence Protocols) but alternate analyses for this substances should only be required if they are constituents of concern for the site. [EPOC]
- **Comment:** It seems like the title of the section should also include Surface Water in addition, to Soil, Sediment, and Groundwater.

Analytical interferences due to instrument software limitations: The word “software” should be removed throughout this entire section. Interferences can be due to hardware or software limitations; therefore it is more appropriate to refer to “instrument limitations”.

Analytical interferences due to instrument software limitations: If the criterion for a substance is less than the reporting limit, additional methods or modifications should only be required to be pursued if the substance is a contaminant of concern at the site. Most of the time, laboratories analyze for full lists of VOCs, SVOCs, pesticides, etc. and there may be select compounds on these lists where the criteria is less than the reporting limit. However, if these compounds are not contaminants of concern at the site based on site history, etc., further analysis should not be required. This is most common with groundwater where the criteria for several analytes (specifically, some PAHs, bis[2-ethylhexyl]phthalate, hexachloroethane, hexachlorobenzene, pentachlorophenol, and dieldrin) may be below the routine reporting limits for these compounds. This could also occur for surface water with some PAHs and hexachlorobenzene). If these compounds are contaminants of concern, further analyses should not be required. (1) (C) (i) (bb): There is a specific reference to soil in this subsection but it should be for all matrices, not just soil.

(1) (C) (ii) (aa): This subsection is not clear and does not make sense with the opening sentence. Please clarify.

(1) (C) (iii): This subsection has a reference to soil vapor. If soil vapor should be included, please change the overall title of the section to include this matrix.

(1) (C) (iii): This subsection is very difficult to understand. It is recommended that the first part of the subsection be revised as follows: “If after re-analyzing the sample and attempting to compensate for instrument software limitations, any applicable criterion for a substance is *still* less than the reporting limit for such substance that can be consistently and accurately achieved in a specific sample due solely to instrument software limitations, compliance....”

(1)(D) Matrix interference effects: If the criterion for a substance is less than the reporting limit, additional methods or modifications should only be required to be pursued if the substance is a contaminant of concern at the site. Most of the time, laboratories analyze for full lists of VOCs,

SVOCs, pesticides, etc. and there may be select compounds on these lists where the criteria is less than the reporting limit. However, if these compounds are not contaminants of concern at the site based on site history, etc., further analysis should not be required. This is most common with groundwater where the criteria for several analytes (specifically, some PAHs, bis[2-ethylhexyl]phthalate, hexachloroethane, hexachlorobenzene, pentachlorophenol, and dieldrin) may be below the routine reporting limits for these compounds. This could also occur for surface water with some PAHs and hexachlorobenzene). If these compounds are contaminants of concern, further analyses should not be required.

(1) (D) (i) (bb): There is a specific reference to soil in this subsection but it should be for all matrices, not just soil.

(1) (D) (ii): It is unclear what is meant by requiring the modification of methods in accordance with cleanup procedures. If the intent is to require specific cleanup procedures after attempting different analytical methods, this should be clarified. In addition, the requirement to modify methods should be revised to state "...shall be modified, if possible...."

(1) (D) (iii): There are 3 specific references to soil in this subsection but it should be for all matrices, not just soil.

(1) (D) (iii): This subsection is very difficult to understand. It is recommended that the first part of the subsection be revised as follows: "If after re-analyzing the subject soil sample and attempting to compensate for matrix interference effects, any applicable criterion for a substance in soil is *still* less than the reporting limit for such substance that can be consistently and accurately achieved in a specific sample due solely to instrument software limitations, compliance...."

(1) (E): Specific requirements for soil samples: Change title of this subsection to also include sediment samples. Replace "analytical analyses" with "chemical analyses". [TRC]

- **Comment:** There needs to be additional language to indicate a date after which this requirement must be met, otherwise the proposed language would preclude the use of old data on sites with a long investigation/remediation history. There is language in the RCP guidance document that could be adapted to indicate that how to address historical data. [HRP]

## 22a-133k-1(d)(2) page 23

## (Public Notice)

- **Comment:** Amount of detailed information requested for the public notice will make for a very long and expensive legal notice, when simple notice of intent with contact information would suffice. Consider keeping a basic amount of information for the public notice with a "Fact Sheet" with more details at the ready for those that request it or available on DEEP web site (similar to NYSDEC)? At a minimum, consider limiting the expanded information requirements to the notice to the Commissioner and letters to the Director of Health. [EPOC]
- **Comment:** Submitting copies of notices, reports and AULs to a chief municipal official and municipal health director has not proven to be an effective way to notify the public. Not only does the public not inquire of either the CMO or the health director when planning to acquire, occupy or develop a parcel, but neither official typically has a system of filing such reports in a way that would enable the public to find them. Although this may require statutory as well as regulatory changes, I suggest that the notices be sent to the Land Use Department and/or the Building Department, both of which maintain reasonably searchable files by property and are consulted regularly by the public. [Anne Peters & Pamela Elkow]
- **Comment:** Please consider clarifying that if a site/release area does not require remediation, then the public notice (and RAP) requirements do not apply. [Evan Glass]

- **Comment:** The requirement to fully repeat public notice for the re-initiation of remediation is burdensome and unnecessary. However, we recognize the need to provide a point of contact for the public when reinitiating remediation and in fact often do re-post a sign when re-mobilizing after an extended break in site work. It is suggested that the proposed text of section 1](e)(1)(B) be revised as follows:

(B) Supplemental Notices. If a previously noticed release area or one or more additional release areas require a subsequent remedial action plan, and such a remedial action plan is to address greater than 200 cubic yards of soil, groundwater contamination leaving the site, or will result in surficial site disturbances extending for more than ninety days, supplemental notice shall be provided in accordance with subparagraph(A)(iv). [AECOM]

- **Comment:** What is the basis for using 200 cubic yards as the limit for additional remediation that does not require supplemental notice? It seems somewhat arbitrary, without justification being included in concept language to explain why what appears to be a fairly low volume would be selected. The same comment applies to the time limit for site disturbances greater than 90 days. It would seem that a volume more in the range of at least 500 cubic yards might be appropriate, or perhaps the limit could be tied to a percentage of the originally proposed excavation volume if greater than a specific amount. For example, an increased volume of 500 cubic yards would make more of a difference in the public's expectations if the original volume to be excavated was 300 cubic yards, but would make far less difference if the original volume to be excavated was 5,000 cubic yards. For establishing a time limit for disturbances greater than 90 days, a time limit of 180 days might be more reasonable to resolve issues and complete remedial activities, but still not leave the site in an unresolved state for an excessive period of time. [HRP]

## 22a-133k-1(NEW) page 27

## (Financial Assurance)

- **Comment:** As indicated, obtaining financial assurance documents is a costly and quite time consuming process. Accordingly, having a de minimis exemption makes wonderful sense and the proposed subsection (8) is a great idea. However, since I don't think there is an engineered control that could be implemented for \$5000 (inspection costs alone could cost this much), and the cost to finalize the documents is so steep, I would suggest (after speaking with many LEPs and Bar members) that an appropriate amount would be 25K. I would also suggest that the word "value" in subsection 8 be replaced with "total surety amount (as calculated in Section 1(f))."

I would also suggest an exemption for engineered controls being proposed by municipalities for properties owned by the municipality. Many towns cannot comply (per Charter restrictions) with the terms of the various financial assurance documents. If a town completes remediation, and the assurance is only meant to protect the State if the town disappears or defaults, the risk to the State is de minimis as our municipalities are (hopefully) not going bankrupt. [Jane Warren]

- **Comment:** All financial mechanisms in 40 CFR 264.143 are listed except (f) "Financial test and corporate guarantee for closure." Why is this not listed as an allowable instrument to satisfy financial assurance requirements? [EPOC]
- **Comment:** 1(f)(8) It is helpful that a lower limit below which financial assurance is not required is being proposed; however, the establishment of a financial assurance instrument can cost well in excess of the amount proposed. It is suggested that the amount be revised as follows:

(8) No financial assurance is required for any value less than \$25,000 [~~\$5,000~~], unless the Commissioner requires a financial assurance for such lesser amount; and [AECOM]

- **Comment:** To what does the word "value" refer? More description is necessary. Also, if the full cost of a remedy is supposed to cover 30 years, a cost limit of \$5,000 is far too low and would effectively be of no benefit. A higher threshold, at least \$25,000 or even \$50,000 should be considered if this section is to be of any use. Also, please clarify what is intended with respect to "Certificate of Insurance" [HRP]

## 22a-133k-1(i) page 31

## (Transition)

- **Comment:** Strike "with the exception of (B -- which should read "C") of this subsection" and section C. A simple transition approach similar to the 2013 revisions based on RSRs at the time of RAP Public Notice is simple and clean and defensible (and what private parties signed on to upon committing).

(i) Remediation of any release area may continue to utilize any provision of sections 22a133k-1 through 22a-133k-3, inclusive, of the Regulations of Connecticut State Agencies, as adopted on June 27, 2013, [~~with the exception of (B) of this subsection and~~] provided that: [EPOC]

## 22a-133k-2(a) page 33

## (Background)

- **Comment:** Does the DEEP intend that the notice be required for remediation meeting the natural background concentration for soil, or just for remediation meeting the anthropogenic background?

We do not fully understand this provision as written. Please re-word and clarify, and provide informative examples in the "Concept" portion of the Wave 2 proposal.

We do not fully understand this provision as written. Please re-word and clarify, and provide informative examples in the "Concept" portion of the Wave 2 proposal. Please indicate who would be responsible for remediating the "separate, previous release", again perhaps with benefit of informative examples. [EPOC]

- **Comment:** Expect you will get push back on (D)(ii) due to the "outside the subject release area"; however this works if we appreciate the concept that we don't have to demonstrate compliance/remediate for a COC that isn't a constituent of a release!

Delete anthropogenic origin and use specific language to describe exactly what you are trying to except!

(iii) not affected by another release of the same substance or another release affecting the same substance, except that of [~~anthropogenic origin~~]; or [Tim Whiting and Gail Batchelder]

## 22a-133k-2(b)(2) page 34

## (PCBs)

- **Comment (2)(B):** It is not clear why Section 40 CFR 761.123 of the Toxic Substance Control Act (TSCA), which governs the spill of PCBs at greater than 50 mg/kg after May 4, 1987 is applied to PCB releases under the RSRs, rather than the PCB Remediation Waste provisions, which are applicable to PCBs that are present in soil due to historic spills. The definition of "other restricted access location" incorporated into the RSRs derives from TSCA Subpart G PCB Spill Policy, which

itself is only applicable to spills that occur after May, 4, 1987 (761.120(a)). The majority of PCB contamination that is encountered at sites subject to the RSRs are from historic uses of PCBs, where releases of PCB materials occurred prior to this date. The application of direct exposure criteria under the RSR is more appropriately referenced to TSCA Subpart D Storage and Disposal, specifically 40 CFR Section 761.61, PCB Remediation Waste, which provides cleanup and disposal options for PCB remediation waste. Soil impacted by a release of PCBs is typically managed as a PCB bulk remediation waste under TSCA, whereas use of the provisions for “other restricted access locations” is rare under TSCA. Under 40 CFR Section 761.61, the self-implementing clean-up levels for PCB bulk remediation waste are as follows:

761.61(a)(4)(i)(A) High Occupancy Areas-  $\leq 1$ ppm unless covered by a cap. If covered by a cap the high occupancy cleanup level is  $\leq 10$ ppm

761.61(a)(4)(i)(B) Low Occupancy Areas-  $\leq 25$ ppm. If secured by a fence and marked in accordance with TSCA requirements,  $\leq 50$ ppm; and if covered by a cap  $\leq 100$ ppm.

High and Low Occupancy areas are defined in TSCA Section 761.3 and are based on the hours that an area is occupied, regardless of use. High Occupancy is essentially unlimited and the definition specifically includes residences, schools and daycares as examples. Low occupancy is limited to an average of less than 6.7 hours per week. Examples given in TSCA include electrical substations, or locations at industrial facilities where workers spend small amounts of time per week such as areas outside buildings, equipment vaults, or non-office areas in a warehouse and would include areas such as parking lots.

These definitions apply equally on residential, commercial, and industrial properties. The 10m/kg cleanup criterion for PCBs is, under the current regulations [RCSA 22a-133k-2(b)(3)], a criterion specifically for Inaccessible soil and only happens to be listed as an industrial/commercial direct exposure criterion in Appendix A, but is not referenced as an I/C DEC under the RSR, except in reference to electrical substations or other restricted access locations, which are different from industrial/commercial properties. There is no need to restrict the use of properties containing PCBs at concentrations  $> 1$  ppm in soil, if that soil is Inaccessible. Exposure is already prevented by the ELUR rendering soil Inaccessible. Residential uses of overlying land need not be restricted to protect human health in the case of PCBs, when they are not for any other substance regulated under the RSRs. It is suggested that the proposed changes to the application of the DEC to PCBs be revised as follows to bring the RSRs into closer agreement with TSCA regulations:

(C) Unless an alternative criterion has been approved in accordance with subsection 22a-133k-2(d)(7), [i] Inaccessible soil polluted with PCB may be remediated to a concentration of 10 ppm PCB by weight, provided that:

(i)(aa) an environmental land use restriction is in effect with respect to the subject parcel or to the portion of such parcel containing such release area, which environmental land use restriction ensures that such soils will not be exposed as a result of excavation, demolition or other activities;

(bb) any pavement that is necessary to render such soil inaccessible is maintained in good condition. [- and

(cc) any future use of such parcel or restricted portion thereof is limited to an industrial activity as specified in section 40 CFR 761, until such restriction is released in accordance with said section 22a-133q of the RSCA; and]

(D) Unless an alternative criterion has been approved in accordance with subsection 22a-133k-

2(d)(7). Inaccessible soil polluted with PCB may be remediated to a concentration of 25 ppm PCB by weight, provided that:

(i)(aa) an environmental land use restriction is in effect with respect to the subject parcel or to the portion of such parcel containing such release area, which environmental land use restriction ensures that such soils will not be exposed as a result of excavation, demolition or other activities;

(bb) any pavement that is necessary to render such soil inaccessible is maintained in good condition. ~~[- and]~~

(cc) any future use of such parcel is limited to an industrial or commercial activity as defined at 22a-133k-1(a)(33) of the RCSA and the portion of such parcel polluted with such concentrations of PCBs is limited to a low-occupancy use area as specified in section 40 CFR 761.3; ~~[(A)](ii)If such inaccessible soil polluted with PCB is located on a parcel which is an “other restricted access location” as defined in said section 40 CFR 761.123, such soil may be remediated to a concentration of 25 ppm PCB by weight[-,]; or~~

[(B)](iii)If such inaccessible soil **polluted with PCB** is located on a parcel which is an “outdoor electrical substation” as defined in 40 CFR 761.123, such soil may be remediated to a concentration of 25 ppm PCB by weight, or if a label or notice is visibly placed in the area in accordance with 40 CFR Part 761, to a concentration of 50 ppm PCB by weight. [AECOM]

## 22a-133k-2(b)(3) page 35

## (PCBs)

- **Comment:** The proposed language reads that future uses must be limited to “industrial activity as specified in section 40 CFR 761”, however, 40 CFR 761 has no such requirement to limit site uses specifically to “industrial activities”. Proposed section (cc) should simply read: “any future use of such parcel or restricted portion thereof is remediated in accordance with 40 CFR 761”, or section (cc) should list the actual requirements as specified in 40 CFR 761 to allow PCBs to remain in soil up to 10 ppm (low occupancy area with a cap and deed restriction). PCBs in soil up to 10 ppm could remain on any parcel with any type of use as long as the area where the PCBs exist up to 10 ppm has a deed restriction that limits the area to low occupancy uses and has a cap meeting the requirements of 40 CFR 761. [Chris Koelle]
- **Comment 2(b)(3)(C)(i)(cc):** “Industrial Activity” is not a defined term under 40 CFR 761. In addition, the concept of adding a requirement that soils containing PCBs up to 10 ppm can only be rendered inaccessible on an industrial property does nothing to add protectiveness to human health or the environment. Adding this additional hurdle will make closure on many properties unattainable; because this would force Sites to utilize a DEC Engineered Control which is much less palatable to developers and potential purchaser of properties. The fact is that a DEC Engineered Control (EC) is NOT more protective than rendering a soil inaccessible. (i.e., you at least need 2 feet with the asphalt for the inaccessible for PCBs, whereas a DEC can just be the pavement). I hope the CTDEEP will consider removing this additional condition for PCBs. [Michael Manolakas]
- **Comments:** There are several references in the RSR to part 761 and also to defined terms found in the EPA Spill clean up policy (40 CFR 761.120 to 761.135), such as "other restricted access (nonsubstation) locations" and "outdoor electrical substations." As EPA notes in the PCB Question and Answer Manual, in response to a question about self-implementing clean ups, "The Spill Cleanup Policy was designed for quick and effective cleanup of fresh spills that have had a very limited time to migrate from the spill site or otherwise spread into the ambient environment. A quick and effective cleanup means a recovery of almost all of the spilled material based on visible traces. To meet the

environmental cleanup objectives a spill has to be fresh, that is less than 72 hours old. For spills more than 72 hours old, refer to §761.61(a) for other self-implementing cleanup and disposal options."

While the RSRs apply to new releases, most remediation is of historical releases, and the PCB Remediation Waste provisions, found at 40 CFR 761.61, are a more appropriate reference, if there is to be a reference to 40 CFR 761 at all. This would ensure that remediation performed to address historical releases of PCBs that must meet both state and federal standards are using the same concepts. For example, 761.61 refers to low and high occupancy areas, rather than "other restricts access areas." [Anne Peters & Pamela Elkow]

- **Comments:** The Wave 2 concepts also require that inaccessible soils containing less than 10 ppm of PCBs must also be restricted to "an industrial activity" as referenced in 761. There is no explanation as to why soils that are inaccessible need to also be restricted by use; this concept is not applied to any other constituent. If the concern is that any remediation must also be consistent with the applicable federal requirements, a more efficient and effective way of ensuring that objective is met is to simply require that any remediation performed under the RSRs must also comply with 40 CFR 761.61. Lastly, there is no definition of "industrial activity" in 761. [Anne Peters & Pamela Elkow]

## **22a-133k-2(b)(4); 22a-133k-2(c)(5); and 22a-133k-3(f)** **page 37, 49, 91** **(Pesticides)**

- **Comment:** The proposed remedy for widespread, historical pesticide contamination in soil includes, "a long-term maintenance program to ensure that such soil will not be exposed as a result of erosion, excavation, demolition or other activities and that any vegetative cover which is necessary to prevent exposure to such soil is maintained in good condition." (22a-133k-2(b)(4), pp.37-38 of the RSR Wave 2 Conceptual Language April 5, 2016)

Does this mean that property that has been contaminated with pesticides, because it was used in the past for agriculture, cannot be used for farming going forward, because tilling of the contaminated soil would be required to prepare the soil and to plant the crop, thus exposing the pesticide contaminated soil?

For this question, presume that the historical pesticide contamination resulted from application of pesticides that were legal at the time and were applied in customary and usual practice, not from mixing, spilling or other activities which were not part of normal application. [Holly Winger]

- **Comment:** Can the partial exemption for pesticides be used if the time of use and/or the method of application are not known, which is typical of the vast majority of sites where pesticides are typically found? If the time of use is not known, then one cannot determine if the pesticides were used in accordance with accepted practices at the time of use. Also, it is not clear why such a requirement is necessary to begin with, as long as the location where the pesticides are found does not appear to be indicative of illegal disposal or a concentrated release due to poor storage or handling practices. Please consider eliminating the requirement for the knowledge of "time of use" and "accepted practices". Otherwise, it will not be possible to use this partial exemption on the majority of pesticide sites. [Chris Koelle]
- **Comment 22a-133k-2(b)(4)(B)(i):** The implemented plan must be "acceptable" to the Commissioner. Does this actually mean "approved" by the Commissioner? [Chris Koelle]

- **Comment:** Direct exposure criteria do not apply to pesticides in soil... which are uniformly distributed. In some cases, that may be difficult to demonstrate uniformity – would we need to show a hot spot analysis (say 10 or 100 times average concentration?) to prove uniform distribution? [Rick Standish]
- **Comment:** Will the need for a long-term maintenance plan for pesticide soils restrict the ability to continue to use these properties for agricultural purposes?

Will the land records need to be modified each time the maintenance plan is modified?

Does the notice on the land records need to be an EUR under 133q or is something less formal allowable? [Greg Sharp]

- **Comment:** Given the ubiquitous nature of pesticides, the agricultural history of our state and the longevity in the environment of previously banned pesticides, the added provisions related to pesticides in the proposed regulations appear to be overbearing. In particular, the notion that the proposed language calls for management plans to be developed and approved and EUR(s) implemented seems inconsistent in light of the fact that typically, historically agricultural tracts of land are subdivided into many smaller tracts of land, only some of which may be captured under these obligations while others derived from the same overall tract of land and that have been subjected to exactly the same practices may not. [TRC]

## 22a-133k-2(c)(2)(C) page 39

## (10x PMC)

- **Comment:** The Concept states that the alternative dilution or dilution attenuation factor provision is not allowed under TSCA, so the reference to PCBs is being dropped. This reasoning is flawed because TSCA does not regulate PCBs by leachable concentrations in any way at all (except for disposal of Bulk Product Waste at certain landfills). TSCA only regulates TOTAL PCBs. Therefore, PCBs should not be removed from this provision for the specific reason stated in the Concept. [Chris Koelle]
- **Comment:** The Wave 2 concept description indicates that PCBs are being dropped from the 10x dilution factor to evaluate PMC compliance for Specific Circumstances because it is not allowed under TSCA. However, TSCA does not consider dilution attenuation factors for soil, let alone allow or disallow them. TSCA regulates PCBs in soil on a mass basis, and does not incorporate a leachability component like the PMC. Therefore, TSCA has no impact on the applicability of the PMC to PCBs. On this basis it is suggested that the reference to PCBs be retained in this section:

(C) Inorganic, semi-volatile, [PCB] PCB or pesticide contamination in a GA area. A soil in a GA area that is polluted with inorganic substances, pesticides, PCB or semi-volatile substances, [~~other than PCB,~~] PCB or pesticides, 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 level: [AECOM]

## 22a-133k-2(c)(4) page 45

## (PMC Exemptions and Variances)

- **Comment: (bb)** should be reworded such that an engineered control designed to address soil vapor volatilization criteria can use the PMC exception for other constituents. [EPOC]

- **Comment:** Just be specific about what you are trying to capture and you can avoid having to use and previously define “anthropogenic origin”. You can still use “anthropogenic” in its conventional sense without issue (or needing to add a new definition)

~~[(i)(aa) such material [fill] is polluted in excess of remedial criteria only due to the presence of [only with] coal ash, wood ash, coal fragments, coal slag, coal clinkers, asphalt paving fragments, [deposition from anthropogenic origin,] or any combination thereof; [Tim Whiting and Gail Batchelder]~~

- **Comment:** The exception for Historically Impacted Material excludes soil impacted by a VOC as written seems to contradict the definition of Environmentally Isolated, which allows VOCs if there is an appropriate engineered control. Suggest that the clause be revised as follows:

(B) Historically Impacted Material

(i) The pollutant mobility criteria do not apply to Historically Impacted Material [polluted fill] on a parcel if:

~~(bb) such material [fill] is not polluted with any volatile organic substance which exceeds an applicable pollutant mobility criterion, or applicable soil vapor volatilization criterion unless: [under an engineered control, building, or other permanent structure approved by the Commissioner;] (ii) the concentration of such substances has been reduced in concentration, or immobilized, to the maximum extent prudent as described at 22a-133k-1(a)(18) for Environmentally Isolated Soils; or (iii) such material is located beneath an engineered control specifically designed to address vapor intrusion.~~ [AECOM]

- **Comment:** Should "deposition from anthropogenic origin" actually be "deposition of anthropogenic origin" or perhaps deposition from "anthropogenic sources"? It is important to clarify what is actually intended by the term "anthropogenic origin" if it is intended only to refer to such sources as atmospheric deposition. As noted in previous comments, using the term "anthropogenic influences" and referring specifically to atmospheric deposition as an anthropogenic source might be a preferable approach. [HRP]

## 22a-133k-2(c)(4)(C) page 47

## (80% rule)

- **Comment:** For the Pollutant Mobility Criteria exemption for Soils Subject to Infiltration, the proposed new language would additionally require that 80% of the contaminant **mass** has been subject to the required 5 years of infiltration. Quantitatively establishing the remaining contaminant mass of a release area is oftentimes technically infeasible. Even under the best of circumstances, establishing this value would require a significant and technically challenging investigative effort, negating the usefulness of this provision.

The current standard requiring that 80% of the release area be subject to infiltration is conservative and protective. For those specific instances in which a (nonvolatile) hotspot may exist under a building, pollutant mobility in the unsaturated zone would generally be severely limited by the lack of infiltration. However, if such hotspots beneath a building pose a concern to DEEP, then it is suggested that the 80% mass determination could be included, but only for these specific instances. [EPOC]

- **Comment:** What about a "steady-state" groundwater plume? [HRP]

## 22a-133k-2(f)(1) page 55

## (WSPF)

- **Comment 22a-133k-2(f)(1)(B)(iii):** DEEP is proposing to add approval of this variance contingent (potentially at least in part) based on “the degree to which such fill exceeds the PMC”. What does this mean? Does DEEP intend to set a policy regarding maximum contaminant levels in fill that could qualify for the Widespread Polluted Fill variance? Adding an arbitrary requirement such as this could potentially limit the usefulness of this provision and add unnecessary uncertainty. DEEP should consider elimination of this factor. [Chris Koelle]

## 22a-133k-2(f)(2) page 57

## (Engineered Control)

- **Comment 2(f)(2)(B)(iii):** "The design of any proposed or existing paved surface or hardscape proposed for use as an engineered controls shall include specifications signed and sealed by a professional engineer indicating 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 years and shall be signed and sealed by a professional engineer...". It may be problematic to get a PE to sign off on the acceptability and lifespan of an existing hardscape surface that he/she did not design and they may not have specifications to adequately assess it. PE stamped plans for EC control designs are required now, but only for new installations for which approval is being requested. [EPOC]
- **Comment 2(f)(2)(D)(iv)(aa):** "reinforced" concrete (meaning concrete with imbedded wire mesh, rebar or similar) is not always necessary for light duty paved surfaces - suggest delete "reinforced" to avoid unintended additional costs not warranted for all paved surfaces. [EPOC]
- **Comment Shrubbery:** I love this term but it means something very specific – and probably not what DEEP is intending - to gardeners, Anglophiles and Monty Python fans. I am not sure how best to describe a vegetated landscape featuring shrubs, trees and other vegetation having a moderate to deep root structure but this is likely what wetlands scientists call a vegetative buffer. There are guidelines and principals for creating effective buffers and I believe that the 2002 CT E&S Guidelines may be a useful resource, as can the Inland Wetlands Division of DEEP and UConn’s CLEAR program. [Anne Peters & Pamela Elkow]
- **Comment:** Would a PE ever be able to sign off on the acceptability and lifespan of an existing surface that the engineer did not design and for which specifications may not be available? Currently, PE stamps are only required when approval is sought for new Engineered Controls designs. Also, how does one decide what constitutes "minimal maintenance and repair"? Some specifics, or at least guidelines, should be provided. [HRP]

## 22a-133k-2(g) page 65

## (Removal of Non-aqueous Phase Liquids)

- **Comment 22a-133k-2(g)(2)(C):** Does DEEP intend to issue guidance regarding the requirements and the data needed to prepare and support a “maximum extent prudent determination”? Will such a determination be self-implementing or require Commissioner approval or acceptance? [Chris Koelle]
- **Comment (2)(g)(2)(A):** Suggest text be modified as follows for clarity: "Migrating non-aqueous phase liquids shall be removed from the soil and groundwater to the extent that such non-aqueous phase liquids ~~do not~~ no longer migrate" [EPOC]

- **Comment (2)(g)(2)(A):** Migrating non-aqueous phase liquids shall be removed ...to the extent that such non-aqueous phase liquids do not migrate. I suggest that DEEP adopt some of the new language for LNAPL analysis from the Massachusetts DEP Guidance in that they define macro-scale and micro-scale migration. NAPL could migrate into a monitoring well but not be migrating on site. Requiring that NAPL not migrate at all may be unattainable. [Rick Standish]
- **Comment:** Please provide an example of what the Department would consider as acceptable “proof” that NAPL has been removed to the point at which it does not migrate. It would seem as though the current wording indicating that NAPL must be removed to the maximum extent prudent suffices. [TRC]
- **Comment:** Clarification on the applicability of the removal of LNAPL to the maximum extent practicable is provided. However, the requirement to remove LNAPL “to the maximum extent practicable” derives specifically from the underground storage tank (UST) regulations 22a-449(d)-106, and therefore the clause should only reference the UST regulations. The requirement is not referenced in the other citations given. It is suggested that the clause be modified as follows:

2(g)(1) Removal of [light] non-aqueous phase liquids from soil and ground water [shall be conducted in accordance with] that is required pursuant to section [22a-449(d)-(1)] 22a-449(d)-106, [and 25-54cc-5] of the Regulations of Connecticut State Agencies [and section 22a-467 of the Connecticut General Statutes] shall be conducted in accordance with section 22a-449(d)-106(f) of the Regulations of Connecticut State Agencies. [AECOM]

## 22a-133k-2(h)(4) page 68

## (Background)

- **Comment:** Not that the proposed changes affect this section, but what about the case where naturally occurring high As soils (i.e., 10-20 mg/kg from parts of E. CT) could be reused at a site where as background conditions aren’t as high? [Tim Whiting and Gail Batchelder]

## 22a-3(b) page 69

## (Alternative SWPC)

- **Comment 3(b)(3)(A) and (B):** Only applied to water quality classifications of AA, A, and B? What about C or D (do they still exist). Only applied to water quality classifications of SA and SB? What about SC or SD (do they still exist). [EPOC]
- **Comment:** Use of Freshwater Aquatic Life Criteria should be specified and use of Saltwater Aquatic Life Criteria should be specified. [EPOC]
- **Comment:** What is the rationale behind the Department’s “long-standing policy” that site specific SWPC cannot be more than 100 times the default SWPC? It would seem as though for some of the State’s larger water bodies/courses, there may be circumstances under which a high multiplier would be protective. [TRC]
- **Comment:** Also do not agree with limiting to 100x as higher dilutions may still be protective in some larger water bodies. [EPOC]
- **Comment:** The proposed text includes the lower of the human health or aquatic life WQS for limited dilution scenarios. The Human health WQS are based on the consumption of fish or water and fish. These values are appropriate for Class A water bodies with established fisheries. However, the limited

dilution water bodies referenced in this section are wetlands, intermittent watercourses, and tidal flats. The incorporation of the human health WQS in these situations is not warranted, as wetlands and intermittent streams are not drinking water supplies and do not contain fisheries, and thus the aquatic life criteria are the appropriate comparison standards. Furthermore, tidal flats are not limited dilution water bodies. They are subject to inundation from the ocean every 12 hours and as such are among the highest dilution water bodies in existence, when considered on the time scale of environmental exposures. It is suggested that the proposed language be modified as follows:

(2) Where a groundwater plume discharges to surface water bodies that have limited dilution, [if a ground-water plume]

(A) defined as either:

[(A)](i) [discharges to] a [~~tidal flat,~~] wetland or an intermittent [steam] watercourse, or

[(B)](ii) [discharges at] a location where the areal extent of such ground-water plume occupies more than 0.5%, or other percentage [which]that is approved in writing by the Commissioner, of the upstream drainage basin of the [stream] water body to which such plume discharges measured from the intersection of the [stream] water body and such ground-water plume[.];

[(C)](B) each substance [therein] in such plume shall be remediated to a concentration equal to or less than the [~~lower of the human health or~~] applicable aquatic life criteria contained in Table 3 [Appendix D] of the most recent Water Quality Standards, or equal to or less than an alternative water quality criterion adopted by the Commissioner in accordance with Water Quality Standards [section 22a-426 of the General Statutes and paragraph 12b of the Water Quality Standards effective May 15, 1992]. [AECOM]

- **Comment:** Methods for calculating an Alternative SWPC for such surface water bodies as lakes and ponds is not provided. It should at least be acknowledged that such surface water bodies exist and that plumes could discharge into those types of surface water bodies. Depending on the size of the water bodies, it seems that some recognition should be made in the regulations that would make it possible to calculate an alternative SWPC, even if that calculation might require Commissioner approval due to the site-specific characteristics of the water body. [HRP]

## 22a-3(b)(3)(C) page 73

## (Alternative SWPC -Aquifer Dilution)

- **Comment:** What is DEEP's reasoning as to why this proposed provision cannot be used in conjunction with other Alt. SWPC provisions? It would could make this provision much more useful in attaining compliance for sites if this provision can be combined with others, especially if the LEP can demonstrate that combining provisions is fully protective of human health and the environment. DEEP should consider eliminating that restriction or requiring the combination of provisions to be approved by the Commissioner. [Chris Koelle]
- **Comment:** The word "downgradient" should be inserted between "feet" and "of" in the first sentence. [HRP]
- **Comment:** In the final sentence of this section, it seems that using the word "factor" would be more appropriate than the word "ratio". The wording "an additional dilution factor of one" is somewhat confusing. Perhaps something like, "a value of "1" may be added to the dilution factor of "5" for each 100 feet between ..." [HRP]

## **22a-3(b)(3)(D) page 74 (Alternative SWPC Commissioner Option)**

- **Comment:** I don't see how a format change to the language and replacing 7Q10 with Q99 makes the Alternative SWPC Commissioner approval option any more usable than it was originally. DEEP would need to make modifications to the requirements for Commissioner approval in order to actually make this provision more useful. Otherwise the concept should be changed to simply replacing the 7Q10 with Q99 and other editorial changes. [Chris Koelle]

## **22a-133k-3(c)(1)&(2)(Volatilization Criteria Applicability & Requirements)**

- **Comment:** No methodology for evaluating whether a complete vapor intrusion pathway exists is included. It is recommended that guidance on this topic be provided or existing guidance on the subject, such as that published by EPA or ITRC be identified by the Department. [HRP]

## **22a-133k-3(c)(5) page 79 (Volatilization Downgradient Exception)**

- **Comment:** Please clarify what the Department's expectations are regarding "best efforts" to ensure that property owners with land overlying polluted groundwater (those other than the owner of the "target property" record EURs. It seems like an impossibility that adjacent land owners would be willing to encumber their property and more of impossibility to "police" that. [TRC]

## **22a-133k-3(d)(1) page 81 (GA groundwater criteria)**

- **Comment (1)(A):** There seems to be some confusion as to what effect the new language will actually have, based on how the new language should be interpreted. In the group of LEPs reviewing and discussing the language, about half read it one way and half read it another way. What is the actual intent of the additional language and could it be described in a less confusing manner? [HRP]
- **Comment (2):** Does the described approach also apply to a steady-state plume in addition to a diminishing state groundwater plume? [HRP]

## **22a-133k-3(d)(4)(New) page 83 (Alt. GWPC)**

- **Comment 3(d)(4)(A)(iv):** What is DEEP's reasoning as to not allow use of this provision in conjunction with subsection (2)(d) Alt PMC for the same substance? If an Alt PMC is protective of groundwater quality at a site there should be no reason not to allow both provisions to be used in conjunction, assuming the LEP can demonstrate protectiveness of using both provision in conjunction. Again, eliminating such restriction could make the Alt GWPC much more useful. It seems to be a common theme for DEEP not to allow alternative provisions to be used in conjunction with each other, without any clear technical reasoning as to why combination must be prohibited. In general, allowing provisions to be used in combination could make the RSRs as a whole much more effective at facilitating the path to site closure while maintaining the intended purpose of protecting human health and the environment. [Chris Koelle]
- **Comment 22a-133k-3(d)(4)(A)(viii):** I fully understand DEEP's concern with regard to uncertainty of flow direction and natural attenuation rates in bedrock aquifers. However, completely barring the use of the Alt GWPC provision if a substance is present in bedrock above the default GWPC could be

overly restrictive in some circumstances and could limit the usefulness of this provision. Consideration of allowing the use of the Alt GWPC provision when the default GWPC is exceeded in bedrock should be made for sites where the contaminant levels are just slightly over the default GWPC or are not greater than a certain factor such as 2x the GWPC or possibly higher. Also, if the receptor survey finds that public water is available in all areas within a certain distance from the site and no potable wells are present in the search area, it should be prudent to allow use of the Alt GWPC even if substances are present in bedrock above the default GWPC. DEEP could set a very conservative minimum radius from the site, for example: public water available in all areas and no potable wells within 1,000 feet and no levels in bedrock >2x the default GWPC (or potentially a factor higher than 2x the default). [Chris Koelle]

- **Comment 22a-133k-3(d)(4)(C):** Why is the concentration of the Alt. GWPC limited to no greater than 50% of the applicable Volatilization Criteria? Since the Volatilization Criteria are already protective of human health, limiting the Alt. GWPC to 50% of the VC does not seem to have technical merit, and appears to be an unnecessary constraint. DEEP should consider limiting the Alt. GWPC to no greater than the VC in Appendix E or a calculated VC in Appendix G, not 50% of the VC. [Chris Koelle]
- **Comment:** Since volatilization criteria apply to groundwater anyhow, we do not understand the rationale for setting an upper bound for Alt. GWPC at 50% of the volatilization criteria. This also does not consider deep groundwater plumes not otherwise subject to volatilization criteria. Suggest deleting "nor 50% of the applicable Volatilization Criteria..." (to end of sentence) [EPOC]
- **Comment 22a-133k-3(d)(4)(C)(i):** The default parameters listed in the table for the Alt. GWPC need to be defined. Such as: HV = Volume (of what?, I assume it is the interior of the building) and WHF = Water Flow Rate (groundwater flow rate?). [Chris Koelle]
- **Comment 22a-133k-3(d)(4)(C)(i):** The proposed language does not mention the option of using site-specific parameters in place of the default values. In order to make this provision as useful as possible, use of site-specific parameters should be allowed, especially in the circumstance of the plume being wholly contained within the subject parcel. [Chris Koelle]
- **Comment:** The restriction on use of alternative groundwater protection criteria for plumes in bedrock has limited technical basis. Application of alternative groundwater protection criteria to bedrock aquifers are no more likely, and in most cases are less likely, to result in exposures than application of such criteria to overburden aquifers. However, it is acknowledged that bedrock hydrogeology is generally more complicated than overburden hydrogeology. Therefore it is suggested that this section be changed to allow development and use of alternative Groundwater Protection Criteria with approval of the Commissioner as follows:

(D) A person may apply to the Commissioner for approval and use of an alternative ground-water protection criterion for an area outside the Department's Potential Alternative GWPC Map or for a portion of a bedrock aquifer, pursuant to the following: [AECOM]

- **Comment:** What is the basis for selecting 100 times and 50 times as a limitation on the calculated alternative criteria? [HRP]

## 22a-133k-3(e)(2) page 86

## (Technical Impracticability)

- **Comment:** The addition of limited overburden plumes to the TI Variance section is helpful; however, the limitation of a plume no more than 100 feet from the property boundary is overly restrictive, as the having a plume larger than 100 feet doesn't make a technically impracticable situation more feasible to remediate. If the requirements for TI have been demonstrated, there should not be an arbitrary limit on the extent of the plume beyond the property boundary, because such a limitation ignores the physical realities that render remediation at certain sites technically impracticable. Suggest that the proposed text be modified as follows:

### (C) Limited Overburden Plumes.

(i) the portion of the plume subject to the TI Variance is limited to overburden, not extending into bedrock;

~~[(ii) the extent of the TI Zone does not extend more than one hundred feet beyond the property on which the release occurred;]~~

(iii) a study conducted to determine the risks to human health and the environment posed by the polluted ground water remaining after such remediation, restrictions and administrative controls concludes that there is no potential for the migration of contaminants exceeding remedial criteria beyond the TI Zone; [AECOM]

## 22a-133k-3(g)(2)(B) page 95

## (Background and 95%UCL)

- **Comment:** With respect to calculating the 95% UCL to demonstrate compliance with background or the ground water protection criteria, what is the technical basis for requiring that the UCL be calculated at every individual well within the plume? This seems very restrictive, except in the case where the findings of a receptor survey identify a groundwater receptor within or threatened by the plume. [TRC]

## 22a-133k-3(g)(4)(New) page 98

## (Upgradient Policy)

- **Comment:** Clarification to (A) to provide that the obligation to remediate is limited to upgradient concentrations, clarification to (B) to provide that remediation in accordance with the RSRs is sufficient, and clarification to (C) to specify the content of the notice.

Suggested edits are below.

(A) such dissolved plume is present solely as a result of off-site source(s), or if such dissolved plume is contributing to an on-site plume, such on-site plume is remediated to the concentration(s) of pollutants entering the site from the offsite source(s); (B) any exposure pathways to drinking water in supply wells or from volatilization into buildings or potentially occupied structures on such downgradient property are eliminated or mitigated in accordance with the provisions of sections 22a-133k-1 through -133k-3, inclusive, of the Regulations of Connecticut State Agencies or otherwise to the extent necessary to protect human health; and (C) notice of the reliance on the provisions of this subsection is submitted to the Commissioner on a form prescribed by the Commissioner. [EPOC]

- **Comment:** Clarification of this policy is welcome; however, the limitation of the policy to dissolved phase only penalizes innocent landowners when their property has been impacted by NAPL originating from an offsite property. In public meetings the Department has stated that the reason for this stance is that a subsequent landowner could purchase a property and not be aware that it is impacted by NAPL. It is noted that this same situation exists for dissolved phase contamination. This situation

could be remedied by the use of an AUL requirement and perhaps also a requirement that the downgradient landowner facilitate reasonable access to their property for the purposes of the upgradient property owner or the Department performing investigation or remediation. The current clause requiring notice to the commissioner also provides a mechanism to provide notice for an impact from an upgradient property regardless of whether or not it is dissolved or NAPL. Therefore, it is suggested that the proposed language be modified as follows:

(4) A downgradient property owner is not responsible for remediating a [dissolved] groundwater plume migrating onto his or her property from an upgradient property, provided that: (A) such [dissolved] plume is present solely as a result of off-site source(s); (B) any exposure pathways to drinking water in supply wells or from volatilization into buildings or potentially occupied structures on such downgradient property are eliminated or mitigated to the extent necessary to protect human health; and (C) notice is submitted to the Commissioner on a form prescribed by the Commissioner. [AECOM]

## 22a-133k-3(h)(2) page 102

## (APS for SWPC)

- **Comment:** The statement regarding APS for SWPC: “the Commissioner may approve in writing a surface water protection criterion to apply to such substance” could be interpreted as allowing the Commissioner to create new criteria without going through the regulatory review process. [Matt Hackman]
- **Comment:** It’s not clear how one would develop APS SWPC and Volatilization criteria for VPH/EPH/APH/ETPH. The APS calculations use ‘substance-specific’ toxicity values, which are not available for VPH/EPH/APH/ETPH. DEEP’s recommended criteria were calculated using surrogate compounds, which does not seem to be an available tool with the conceptual wave 2 changes. [Jim Morrison]

## 22a-133k-Appendix G page 104

## (APS calculations and tables)

- **Comment:** Input values for ADEC are based upon previous EPA exposure criteria. Recommend updating to current USEPA criteria – Relevant for all tables where occur:

Adult Resident Averaging time – non-carcinogens – 7300 days (based on revised  
Adult Resident Exposure Duration of 20 years)  
Exposure Duration Adult Resident non-carcinogen – 20 years  
Body Weight Adult – 80 kg  
Water Ingestion Rate 2.5 l/day

Section 5

Total Exposure Duration – 26 years

Section 1 (A)(i) Equation for Carcinogenic Substances and non-carcinogenic substances – “adult” side of equations has a typo  $CT = CF$

Section 3 (A) and (B) – typo  $CT = CF$  [TRC]

- **Comment:** The exposure parameters and assumptions used in the revised Appendix G calculations are not consistent with the latest EPA risk assessment guidance. It is suggested that DEEP consider information in the latest EPA risk assessment guidance (the 2009 Risk Assessment for Superfund guidance document) prior to finalization of these regulations.

### Section 1 Additional Direct Exposure Criteria

The formulas given at (A)(i) and (A)(ii) for risk-based Res DEC include the variable “CT.” The correct variable to be used “CF,” as provided at (A)(iii).

Section 3 Additional Groundwater Protection Criteria The formulas given at (A) and (B) for GWPC include the variable “CT.” The correct variable to be used “CF,” as provided at (C). [Written: AECOM]

- **Comment:** What is the basis for the ceiling values indicated? Justification for selection of the ceiling values should be provided. Using the same arbitrary values for all compounds does not appear to be consistent with risk-based standards. [HRP]

## Miscellaneous:

- **Comment: 22a-133k-2(a)(3)(B):** The proposed language indicates that “road” is defined in 22a-133q, however, I could not find a definition for road under 133q. Please consider adding a definition of “road” to the RSRs, or reference another RSCA section where it is already defined. [Chris Koelle]
- **Comment Site Specific Risk:** Perhaps this is more of a “Wave 3” question, but I would suggest that an over-arching stumbling block in the RSRs is the absence of a mechanism for site specific risk-reduction/pathway elimination provisions as a method of achieving compliance. I’ll grant you that the Engineered Control process and the new “hardscape” considerations do this to some extent, but less onerous procedures may be acceptable under certain conditions at specific sites. I would suggest that an Exposure Pathway Elimination approval mechanism be codified within the RSRs so that creative site-specific solutions can be offered for DEEP approval within a prescribed process. [Mike Cote]
- **Comment Permanent Structures:** It is our understanding that the Department may want to refrain from providing a definition of a “permanent structure” in the regulations as it is clear throughout that this is left to the discretion of the Commissioner, however, it would be helpful if the Department were to provide a mechanism for soliciting approval for a permanent structure. It seems that a simple form would best serve as the means to accomplish this. [TRC]
- **Comment EURs/ELURs:** There are an ever-increasing number of provisions in the proposed RSRs that rely upon implementing EURs (the details of the implementation of which have not yet been disclosed to the regulated community). In our experience, the implementation of restrictions has been a very long, costly and overall cumbersome activity that may or may not result in success (depending upon the recalcitrant nature of subordinating parties) and that has a high likelihood of resulting in sites that cannot be verified or otherwise closed out. Before the regulated community is asked to consider changes to the regulations that invoke the need for use restrictions, it would seem appropriate that we be briefed on the details of the implementations of the EURs and that any issues associated therewith be addressed first. [TRC]
- **Comment Sediment:** The absence of any proposed revisions to the regulations regarding sediments continues to leave a rather large gap in Connecticut’s regulatory framework. [TRC]
- **Comment Guidance:** There are several instances in the proposed language where there are documents referenced that have not been made available to the public for review or that have not been formalized and/or finalized (e.g., Potential Alternative GWPC Map, WQS / Q99 calculations, EUR provisions, various guidance documents that were referenced in the Q&A session as needing to be developed to further flesh out ideas and to act as companion documents to the regulations). In our opinion (and

understanding that this is not the formal comment period), it may be premature to present the changes for consideration and review in the absence of key pieces of information that may influence the understanding of the regulations by the regulated community. [TRC]

- **Comment Ecological:** Overall, the continued changes proposed to the Remediation Standard Regulations (RSRs) are a positive step forward in providing more alternatives to close out sites. However, with the exception of the surface water protection criteria (SWPC), the RSRs address human health concerns and not ecological evaluation. The RSRs, frankly, do not contain any ecological assessment regulatory language. Yet, it is the Department of Energy and Environmental Protection's (DEEP's) position that ecological assessment is required for sites undergoing evaluation.

With regard to human health concerns (and the SWPC), the process of investigating and cleaning up sites is predictable and the alternatives to achieve compliance are clear. For ecological assessment, however, there is no clear standard, the objective is not clear and the current system offers no practical pathway to an endpoint. The current state of ecological assessment points to various guidance, but the practice of performing such assessments is not anything close to uniform. There is enormous room for subjective judgment. And, it is well known that; for sites that attract DEEP attention for a site-specific evaluation, the process and outcome are completely unpredictable, including the timeframe to achieve some kind of resolution. Some have referred to this process as a "black hole."

When DEEP asserts that the Wave 2 RSR revisions will assist the process of sites achieving "closure," that can only be true for the human health and SWPC concerns. The unspoken assumption is that ecological assessment is either somehow either taking care of itself or is not actually necessary to achieve closure.

I recognize that ecological assessment will not be addressed in Wave 2. I am skeptical about promises for Connecticut-specific guidance coming soon, as this has been promised before. There needs to be an active discussion about the basic issues that need to be addressed at each site and the means to resolve those issues in a predictable way. Presented below are some key topics that I think would help. Establishing some kind of de minimis standard, especially for terrestrial receptors and wetlands areas. Other states, such as Massachusetts have such standards. Many sites are fully developed and have small areas of contamination - often in non-natural areas, such as lawns. In theory, every one of these is supposed to be evaluated, regardless of land area affected. A de minimis land area standard would be beneficial.

Clear guidance on the receptor population-level affected that is significant. This relates to the first item. It is tempting to DEEP to keep every case site- and fact-specific, but there has to be a level (excluding threatened or endangered species) at which "potential" impacts on the populations are not significant. It should be clearly established that general features of site and area development are not a potential remediation issue – hence, should not need to be evaluated. For instance, contaminants contributed by roadways or parking lots should not become the subject of RSR remediation as releases of contaminants. If DEEP wishes to address these kinds of issues, some other authority or vehicle should be used. This issue sometimes arises in the form of storm water detention basins built with the explicit intention of capturing contaminants (often from parking lots) before they reach a natural water body. It is really DEEP's intention that these constructed retention basins be evaluated as if they are natural wetlands and periodically remediated. If this is the case, a mechanism for doing so would seem to fit more appropriately with the local authority that approved the construction of the retention basin in the first place. In any event, as a practitioner, I have observed inconsistency in how these issues are addressed, so clarification is necessary.

If contamination ventures off-site, DEEP expects that the whole area or influence of contamination be investigated and addressed, and appropriately so. Therefore, it also seems appropriate in ecological assessments that off-site, adjoining areas of habitat be considered in evaluating the potential for population-level effects on receptors for on-site releases. Guidance on how this topic should be addressed is needed. Otherwise, small sites are unnecessarily penalized.

The issues that I have raised are not limited to significant potential impacts on important ecological resources. Rather, these kinds of issues tend to arise in assessment of common industrial/commercial sites in areas that are fully developed.

I suggest that some sort of policy statement in the short term needs to be developed to create a practical pathway to site "closure" while regulatory language is developed, in a reasonable period of time, to more formally address ecological assessment. [Mark Franson]